



Local Solutions For Individual Customers Worldwide

STAUFF Clamps



STAUFF Test



Filtration Technology



Diagtronics



Hydraulic Accessories



Valves



Flanges



# ONE

General Product Catalogue







## STAUFF Clamps

Components and systems for the quick and easy, as well as secure installation of pipes, tubes, hoses, cables and other flexible and rigid components with outside diameters up to 1016 mm / 40.00 inch

Dear business partner,

**Thank you very much for your interest in STAUFF products!**

The STAUFF ONE general product catalogue contains almost 700 pages of general, ordering and technical information on the complete STAUFF range of fluid technology components for mechanical and plant engineering. In addition to the technical sophistication of these products, they stand out particularly due to their high availability from stock and unrivalled fast delivery, thanks to our tight global network of distributors and wholly-owned manufacturing facilities. Ensuring fast and cost effective supply no matter where in the world you are located.

From development through production at our dedicated state of the art facilities all STAUFF products undergo relevant testing in accordance with international standards and are governed by the high standards of our in-house quality management system. Furthermore, many items have received certifications and approvals from various international institutes, organisations and authorities who have independently confirmed the quality and performance of our products.

In addition to the standard range offered in our general product catalogue, STAUFF also provides special products and system solutions according to customer requirements or based on our own development. Simply consult your local STAUFF office to find out more!

**We look forward to a successful partnership.**



Jörg Deutz  
Chief Executive Officer  
STAUFF Group



Hendrik Schmücker  
Chief Marketing Officer  
STAUFF Group

P.S. We regularly provide information about new products and continuing developments in our range at our website – so it's worth paying a visit to **www.stauff.com!**

## STAUFF Test

Test couplings, test hoses, measuring devices and accessories for leak-free pressure monitoring, venting and obtaining of representative fluid samples in fluid power applications

## Filtration Technology

Filter housings and systems for the installation in both full flow and partial flow of hydraulic and lubrication oil systems; Comprehensive range of replacement filter elements from own productions

## Diagtronics

Analogue and digital measuring devices for monitoring the essential parameters in mobile and industrial hydraulics: Pressure, differential pressure, temperature, flow, fluid level, contamination and much more

## Hydraulic Accessories

Components for the construction of tanks, reservoirs, power packs and gear boxes in industrial and mobile hydraulics: Level and temperature indicators, tank filler breathers, suction strainers, diffusers and much more

## Valves

Manually operated ball valves and flow control valves for in-line assembly, manifold mounting and cartridge assembly for regulating, throttling and shutting off fluid media in industrial and mobile hydraulics

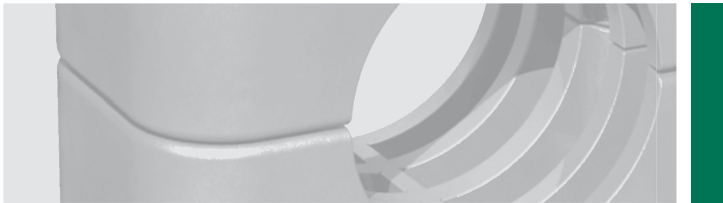
## Flanges

Complete range of SAE flange connectors in accordance with SAE J 518 C and/or ISO 6162-1/2 (standard and high-pressure); Gear pump flanges in accordance with German and Italian standards

## Appendix

Product Group Index  
Alphabetical Index  
General Information

A  
B  
C  
D  
E  
F  
G



## STAUFF Clamps

Components and systems for the quick and easy, as well as secure installation of pipes, tubes, hoses, cables and other flexible and rigid components with outside diameters up to 1016 mm / 40.00 inch



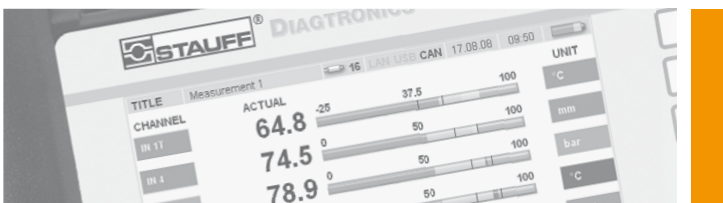
## STAUFF Test

Test couplings, test hoses, measuring devices and accessories for leak-free pressure monitoring, venting and obtaining of representative fluid samples in fluid power applications



## Filtration Technology

Filter housings and systems for the installation in both full flow and partial flow of hydraulic and lubrication oil systems; Comprehensive range of replacement filter elements from own productions



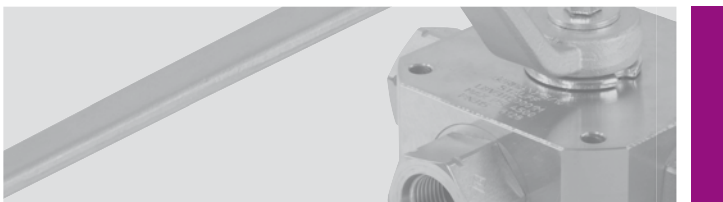
## Diagtronics

Analogue and digital measuring devices for monitoring the essential parameters in mobile and industrial hydraulics: Pressure, differential pressure, temperature, flow, fluid level, contamination and much more



## Hydraulic Accessories

Components for the construction of tanks, reservoirs, power packs and gear boxes in industrial and mobile hydraulics: Level and temperature indicators, tank filler breathers, suction strainers, diffusers and much more



## Valves

Manually operated ball valves and flow control valves for in-line assembly, manifold mounting and cartridge assembly for regulating, throttling and shutting off fluid media in industrial and mobile hydraulics



## Flanges

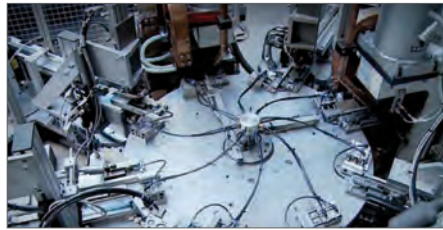
Complete range of SAE flange connectors in accordance with SAE J 518 C and/or ISO 6162-1/2 (standard and high-pressure); Gear pump flanges in accordance with German and Italian standards

## Appendix

Product Group Index  
Alphabetical Index  
General Information







**From clamps to measuring systems - we are driven by customer satisfaction.**

Over the last 6 decades, STAUFF has become a leading supplier of accessories in the hydraulics industry.

From the beginning, STAUFF has focused on market requirements, offering high-quality products in conjunction with outstanding service.

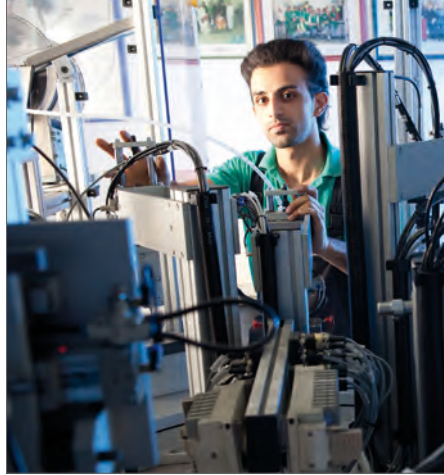
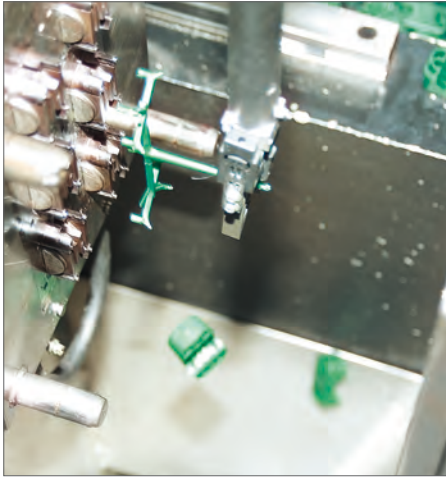
STAUFF is tuned in to the needs of the global market and this, together with the benefit of an experienced and highly motivated team of employees and the use of innovative technology, enables the company to offer a sophisticated product range which will satisfy the requirements of each and every customer worldwide.

Our commitment to our customers is the same now as it was almost 60 years ago. Our exceptionally high standards of quality, our fast delivery times, outstanding service and highly qualified staff enable STAUFF to meet the increasing demands in the hydraulics industry both now and in the future.

With our expert advice, friendly service and flexible approach, STAUFF will live up to all individual expectations, guaranteeing a high level of customer satisfaction.

Convince yourself by reviewing the global STAUFF service offering.





## A long history of expertise - the foundation for future vision and innovation.

The story of the STAUFF Group begins in the 1950s in the heart of Germany when the company was founded as a contract machine shop. The company supplied local industrial businesses with customised machined parts.

In the early 1960s, the founder of the company, Arnold Menshen, recognised the advantages of a vibration and noise reducing pipe support. This was the start of the STAUFF clamp success story. Originally made of wood, and then later plastic, the clamp is used as a support system for pipes and hoses.

**1955**

Foundation of  
Walter Stauffenberg KG  
as a machine shop

**1972**

Foundation of  
STAUFF in the  
United States

**1976**

Foundation of  
STAUFF in Australia

**1980**

Foundation of  
STAUFF in France

**1984**

Product expansion:  
Filtration Technology

**1995**

Foundation of  
STAUFF in Canada

**1964**

Product expansion:  
STAUFF Clamps

**1973**

Product expansion:  
Hydraulic Accessories

**1977**

Foundation of  
STAUFF in the  
United Kingdom

**1982**

Product expansion:  
STAUFF Test

**1994**

Foundation of  
STAUFF in China

**1996**

First certification in  
accordance with ISO 9001





In the modern fields of pipe construction, plant construction, mechanical engineering, mobile hydraulics, offshore and shipbuilding industries, life without the STAUFF clamp is unthinkable.

At the beginning of the company's history, all supplies were shipped from Germany. In 1972, STAUFF made the journey across the Atlantic to ensure the company could meet increasing demand and guarantee fast availability. The first overseas branch of STAUFF was established in New Jersey, giving birth to the STAUFF Corporation.

Over the years, STAUFF has continued to grow steadily under the direction of Knut Menshen, while the product portfolio has been continually adapted and expanded.

Today the global network of STAUFF distribution bases and manufacturing facilities covers all corners of the globe.

As a complete provider with branches and trading partners worldwide and a comprehensive product and service portfolio, STAUFF is one of today's leading suppliers of accessories in the international hydraulics industry.

The STAUFF company, which is wholly owned by the Menshen family, employs around 1200 staff and generates annual turnover in excess of EUR 190 million.



**1999**

Foundation of STAUFF in Brazil

**2003**

Foundation of STAUFF in New Zealand

**2005**

Foundation of STAUFF in Russia

Product expansion: Diagnostics

**2007**

Foundation of STAUFF in Ireland

First certification in accordance with ISO 14001 and OHSAS 18001

**2011**

Foundation of STAUFF in Malaysia and the Ukraine

Product expansion: Valves

**2013**

Foundation of STAUFF in Thailand

**2000**

Foundation of STAUFF in Italy and India

**2004**

Foundation of STAUFF in Poland and Korea

Product expansion: Flanges

**2012**

Foundation of STAUFF in Vietnam



**STAUFF worldwide -  
wherever you need us...  
we are there!**



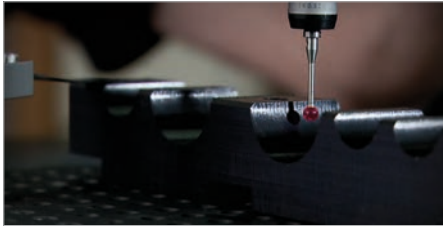
In 2002, the STAUFF logistics centre in Neuenrade-Küntrop was commissioned to ensure shortest possible order processing times. In addition to high capacity volumes, it offers flexibility with regard to delivery quality and reliability.



Selection of international approvals:







**Our word of honour -  
Constant checks guarantee  
consistently high quality.**

All STAUFF products undergo continuous checks and tests in our own laboratories, which meet international standards. The STAUFF quality management system, which is certified in accordance with ISO 9001, distinguishes itself with its continuous efforts to achieve best results.

This is complemented by the international guideline ISO 14001 for environmental protection. The successful implementation of the occupational health and safety management system OHSAS 18001 guarantees optimum protection at work and health and safety at work for employees, customers and visitors in the context of minimising downtime and production disruptions.



Affiliated services are also an important component in the management system alongside product quality, which is constantly focussed on the needs of our customers. These also take into account the expectations of all of the other partners involved.

Numerous country-specific approvals and certificates as well as the efforts of all of the STAUFF subsidiaries to conform to the highest standards concerning quality, the environment and health and safety, result in standards being set worldwide for all of the products and services and secures STAUFF a competitive advantage at all levels. Numerous independent product approvals confirm this.



*It's only by looking ahead  
that we can ensure customer  
satisfaction in the future.*

*Together with our customers  
we are constantly striving for  
progress and innovation."*

*We are driven by our sense of duty towards our customers.*



**QinetiQ**

**DVGW**



**BUREAU  
VERITAS**



**Lloyd's  
Register**



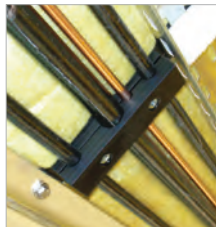
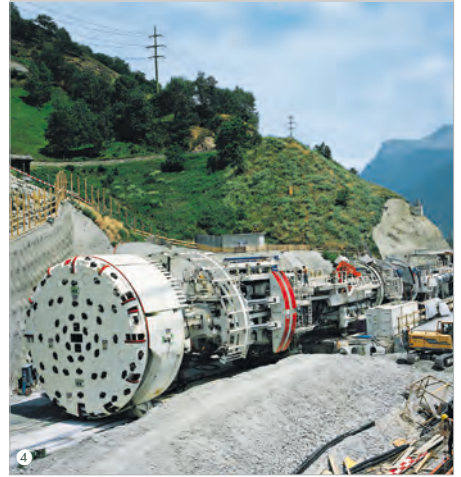
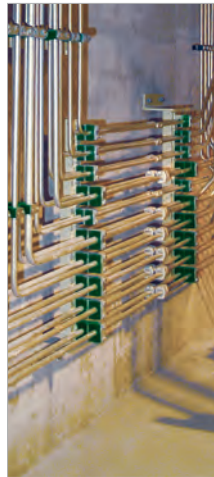
**Our products are a driving force, whether on land, on water or in the air.**

The exceptional quality of the equipment and the machines in which STAUFF products are used form the benchmark for the functionality and precision of the STAUFF product portfolio.

STAUFF products play a crucial role in many key sectors such as mobile and industrial hydraulics. The complete portfolio is as varied as the sectors in which the products are used.







Figures: 1 ThyssenKrupp Marine System AG 2 Nordex AG 3 Terex GmbH 4 Herrenknecht AG 5 Voith Paper GmbH & Co. KG

# Americas

## Brazil



### Brazil Head Office

STAUFF Brasil Ltda.  
Avenida Gupê 10767  
Galpão 2 - Bloco A  
Barueri - São Paulo  
CEP 06422-120

Tel.: +55 11 47 72 72 00  
Fax: +55 11 47 72 72 10  
[stauff@stauffbrasil.com](mailto:stauff@stauffbrasil.com)

## Canada



### Canada Head Office

STAUFF Canada Ltd.  
866 Milner Avenue  
Scarborough  
Ontario M1B 5N7

Tel.: +1 416 282 46 08  
Fax: +1 416 282 30 39  
[sales@stauffcanada.com](mailto:sales@stauffcanada.com)

## United States



### United States Head Office

STAUFF Corporation  
7 Wm. Demarest Place  
Waldwick, 07463-1542  
New Jersey

Tel.: +1 201 444 78 00  
Fax: +1 201 444 78 52  
[sales@stauffusa.com](mailto:sales@stauffusa.com)

# Europe

## Germany



### Global Head Office

Walter Stauffenberg GmbH & Co. KG  
Im Ehrenfeld 4  
58791 Werdohl

Tel.: +49 23 92 91 60  
Fax: +49 23 92 25 05  
[sales@stauff.com](mailto:sales@stauff.com)



### Manufacturing Plant

Walter Stauffenberg GmbH & Co. KG  
Lennestraße 2  
58840 Plettenberg

Tel.: +49 23 92 91 60  
Fax: +49 23 92 25 05  
[sales@stauff.com](mailto:sales@stauff.com)



### Logistics Centre

Walter Stauffenberg GmbH & Co. KG  
Wasserburgstraße 35  
58809 Neuenrade

Tel.: +49 23 92 91 60  
Fax: +49 23 92 25 05  
[sales@stauff.com](mailto:sales@stauff.com)

## France



### France Head Office

STAUFF S.A.S.  
230, Avenue du Grain d'Or  
Z.I. de Vineuil - Blois Sud  
41354 Vineuil-cedex

Tel.: +33 2 54 50 55 50  
Fax: +33 2 54 42 29 19  
[direction@stauffsa.com](mailto:direction@stauffsa.com)

## Ireland



### Ireland Head Office

STAUFF Ireland  
Block B, 9 Ferguson Drive  
Knockmore Hill Industrial Estate  
Lisburn, County Antrim BT28 2EX

Tel.: +44 2892 60 69 00  
Fax: +44 2892 60 26 88  
[sales@stauffireland.com](mailto:sales@stauffireland.com)

## Italy



### Italy Head Office

STAUFF Italia S.r.l.  
Via Borima 21 (Frazione Borima)  
23867 Suello (LC)

Tel.: +39 0362 63 80 70  
Fax: +39 0362 63 80 69  
[sales@stauff.it](mailto:sales@stauff.it)

## Poland



### Poland Head Office

STAUFF Polska Sp. z o.o.  
Miszewko 43 A  
80-297 Banino

Tel.: +48 58 660 11 60  
Fax: +48 58 629 79 52  
[sales@stauff.pl](mailto:sales@stauff.pl)

## Russian Federation



### Russia Head Office

STAUFF LLC  
Building 1  
19, Leninskaya Sloboda  
Moscow 115280

Tel.: +7 495 276 16 50  
Fax: +7 495 276 16 51  
[sales@stauff.ru](mailto:sales@stauff.ru)

## United Kingdom



### United Kingdom Head Office

STAUFF UK Ltd.  
500, Carlisle Street East  
Off Downgate Drive  
Sheffield, S4 8BS

Tel.: +44 114 251 85 18  
Fax: +44 114 251 85 19  
[sales@stauff.co.uk](mailto:sales@stauff.co.uk)



### Aberdeen Branch Office

STAUFF UK Ltd.  
Badentoy Avenue  
Badentoy Industrial Estate  
Portlethen  
Aberdeen, AB12 4YB

Tel.: +44 1224 78 61 66  
Fax: +44 1224 78 61 77  
[sales@stauffscotland.co.uk](mailto:sales@stauffscotland.co.uk)



### Southampton Branch Office

STAUFF UK Ltd.  
Unit 9  
Third Avenue  
Southampton Trade Park  
Southampton, SO15 0AD

Tel: +44 2380 69 87 00  
Fax: +44 2380 69 87 01  
[sales@stauffsouthampton.co.uk](mailto:sales@stauffsouthampton.co.uk)



# Asia

## China



### China Head Office

STAUFF China  
Building 1, No. 128, Die Qiao Road  
Jushuo Industrial Zone, Kang Qiao  
Shanghai, 201319

Tel.: +86 21 68 18 70 00  
Fax: +86 21 68 18 71 36  
[info@stauff.com.cn](mailto:info@stauff.com.cn)

## India



### India Head Office

STAUFF India Pvt. Ltd.  
Gat. No. 2340  
Pune Nagar Road, Wagholi  
Pune, 412207

Tel.: +91 20 6620 2466  
Fax: +91 20 2705 1567  
[sales@stauffindia.com](mailto:sales@stauffindia.com)



### Ahmedabad Branch Office

STAUFF India Pvt. Ltd.  
5/B, Krishna Complex  
Near Essar Petrol Pump  
Sarkhej Sanand Road, Sarkhej  
Ahmedabad, 382210

Tel.: +91 79 6542 5801  
[sales@stauffindia.com](mailto:sales@stauffindia.com)

## Korea



### Korea Head Office

STAUFF Korea Ltd.  
105, Hwajeon Sandan 5-ro  
Gangseo-gu  
Busan, 618-280

Tel.: +82 51 266 6666  
Fax: +82 51 266 8866  
[info@stauff.co.kr](mailto:info@stauff.co.kr)

## Malaysia



### Malaysia Head Office

STAUFF South East Asia Sdn Bhd  
2nd Floor, Lot 834  
Jalan Subang 7  
Kaw Perindustrian Subang  
Off Persiaran Subang, Selangor  
47500 Subang Jaya

Tel.: +60 3 8024 6168  
Fax: +60 3 8024 8168  
[sales@stauff.com.my](mailto:sales@stauff.com.my)

## Thailand



### Thailand Head Office

STAUFF (Thailand) Co., Ltd.  
65, 42 Tower, 3rd Floor, Room 302  
Soi Sukhumvit 42 (Kluaynamthai), Sukhumvit Road  
Prakanong Sub-District, Klongtoey District  
Bangkok 10110, Thailand

Tel.: +66 2 712 25 98  
Fax: +66 2 712 25 97  
[sales@stauff.co.th](mailto:sales@stauff.co.th)

## Vietnam



### Vietnam Head Office

STAUFF Vietnam Ltd.  
Eilink Group Building  
2nd Floor, Room 201  
37A, Phan Xich Long Street  
W. 03, Phu Nhuan District  
Ho Chi Minh City

Tel.: +84 8 3995 4723  
Fax: +84 8 3995 4723  
[sales@stauff.com.vn](mailto:sales@stauff.com.vn)

# Oceania

## Australia

### New South Wales



#### **Australia Head Office**

STAUFF Corporation Pty Ltd  
24-26 Doyle Avenue  
Unanderra, NSW 2526

Tel.: +61 2 4271 9000  
Fax: +61 2 4271 8432  
[info@stauff.com.au](mailto:info@stauff.com.au)

### Sydney



STAUFF Corporation Pty Ltd  
27B Davis Road  
Wetherill Park, NSW 2164

Tel.: +61 2 8787 8000  
Fax: +61 2 9725 2744  
[info@stauff.com.au](mailto:info@stauff.com.au)

### Queensland



#### **Brisbane**

STAUFF Corporation Pty Ltd  
83 Bluestone Circuit  
Seventeen Mile Rocks, QLD 4073

Tel.: +61 7 3716 1000  
Fax: +61 7 3217 0300  
[info@stauff.com.au](mailto:info@stauff.com.au)

### South Australia



#### **Adelaide**

STAUFF Corporation Pty Ltd  
Lakeside Business Park  
1/3 Endeavour Drive  
Port Adelaide, SA 5015

Tel.: +61 8 8415 1000  
Fax: +61 8 8341 1604  
[info@stauff.com.au](mailto:info@stauff.com.au)

### Victoria



#### **Melbourne**

STAUFF Corporation Pty Ltd  
3B 14-16 White Street  
Oakleigh East, VIC 3166

Tel.: +61 3 8542 5400  
Fax: +61 3 9543 5422  
[info@stauff.com.au](mailto:info@stauff.com.au)

## New Zealand

### New Zealand Head Office

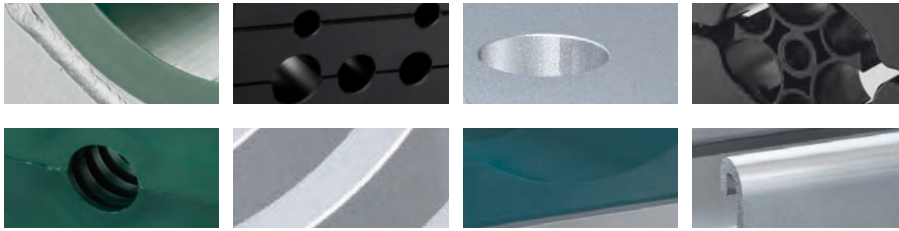


STAUFF Corporation (NZ) Ltd.  
Unit D, 103 Harris Road  
East Tamaki, Auckland

Tel.: +64 9 271 48 12  
Fax: +64 9 271 48 32  
[info@stauff.co.nz](mailto:info@stauff.co.nz)







In most industrial countries STAUFF Clamps symbolise quick and easy pipe and hose installations as well as a clean distinct pipe layout.

The vibration and noise reducing features are appreciated as being an important contribution to environmental protection.

Apart from the technical sophistication of STAUFF Clamps, the second-to-none delivery, prompt service even for special constructions, STAUFF Clamps are also the most economical ones to install.

STAUFF Clamps applications are almost unlimited. Due to the extraordinary wide product range, almost all areas of pipe, tube, hose and cable installation are covered:

- Industrial and Mobile Hydraulics
- Marine, Oil and Gas Industry
- Process and Chemical Industry
- Food and Beverage Industry
- Mining Industry
- Power Plants and Reactors
- Wind Energy Plants
- General Industrial Pipework
- Transport and Utility Lines
- Pneumatic, Lubrication and Grease Lines
- Instrumentation Lines

STAUFF Clamps have been successfully tested and approved by several international organisations, including:

- American Bureau of Shipping
- Bureau Veritas
- Department of the Navy, New York
- Germanischer Lloyd
- Lloyd's Register of Shipping
- Registro Italiano Navale
- Russian Maritime Register of Shipping
- Technischer Überwachungsverein TÜV
- United States Coast Guard

Please do not hesitate to contact STAUFF for further details.




























[www.stauff.com](http://www.stauff.com)

# A

## STAUFF Clamps

Index	A2
Standard Series (DIN 3015, Part 1)	A6
Heavy Series (DIN 3015, Part 2)	A24
Twin Series (DIN 3015, Part 3)	A40
Heavy Twin Series	A50
Compact Twin Series	A54
Agriculture Twin Series	A54
Plastic Saddle Clamps	A55
Custom-Designed Clamps	A56
Light Series	A58
Construction Series	A66
Flat and Round Steel U-Bolts	A68
Metal Pipe Clamps	A76
Heavy Saddles	A78
Light Saddles	A80
Cushion Clamp Series	A82
STAUFF ACT Clamps	A84
Industry-Specific Solutions	A86
Technical Appendix	A88













## Standard Series (DIN 3015, Part 1)

	<b>Clamp Body - Profiled Inside Surface</b> (PP / PA / SA / AL)		<b>A6</b>		<b>Hexagon Head Bolt</b> (for use with Cover Plate DP)	AS	<b>A16</b>
	<b>Clamp Body - Smooth Inside Surface</b> (PP / PA / SA)	H	<b>A7</b>		<b>Safety Washer (DIN 93)</b>	SI	<b>A17</b>
	<b>Clamp Body with Rubber Insert</b> (PP / PA)	RI	<b>A8</b>		<b>Safety Washer (DIN 463)</b>	SI	<b>A17</b>
	<b>Clamp Body - Compact Design</b> (PP / PA)	CC	<b>A9</b>		<b>Socket Cap Screw</b>	IS	<b>A18</b>
	<b>Clamp Body - Rectangular Design</b> (PP / PA)	VK	<b>A9</b>		<b>Slotted Head Screw</b>	LI	<b>A18</b>
	<b>Clamp Body - Oval Design</b> (PP / PA)		<b>A9</b>		<b>Hexagon Head Bolt</b> (for use with Insert ES / EP)	ASE	<b>A18</b>
	<b>Weld Plate</b>	SP	<b>A10</b>		<b>Insert</b>	ES / EP	<b>A18</b>
	<b>Elongated Weld Plate</b>	SPV	<b>A10</b>		<b>Safety Locking Plate</b>	SIG	<b>A19</b>
	<b>Twin Weld Plate</b>	DSP	<b>A11</b>		<b>Stacking Bolt</b>	AF	<b>A19</b>
	<b>Group Weld Plate</b>	RAP	<b>A11</b>		<b>Clamp Assemblies</b>		<b>A20</b>
	<b>Angled Weld Plate</b>	WSP	<b>A12</b>		<b>Technical Appendix</b>		<b>A88</b>
	<b>Bridge Weld Plate</b>	BSP	<b>A12</b>				
	<b>Multi-Group Weld Plate</b>	RAP-MGR	<b>A13</b>				
	<b>Clamp Body for Multi-Group Weld Plate</b> (PP / PA)	MGR	<b>A13</b>				
	<b>Hexagon Rail Nut</b>	SM / SMG	<b>A14</b>				
	<b>Mounting Rail</b>	TS	<b>A14</b>				
	<b>Channel Rail Adaptor</b>	CRA	<b>A15</b>				
	<b>Cover Plate</b>	DP	<b>A16</b>				

**Heavy Series (DIN 3015, Part 2)**

**Twin Series (DIN 3015, Part 3)**

	<b>Clamp Body - Profiled Inside Surface</b> (PP / PA / SA / AL)		<b>A24</b>
	<b>Clamp Body - Smooth Inside Surface</b>	H	<b>A26</b>
	<b>Clamp Body with Rubber Insert</b> (PP / PA)	RI	<b>A27</b>
	<b>Weld Plate for Single Clamps</b>	SPAL	<b>A28</b>
	<b>Weld Plate for Double Clamps</b>	SPAS	<b>A28</b>
	<b>Elongated Weld Plate for Single Clamps</b>	SPAL/DUEB	<b>A29</b>
	<b>Elongated Weld Plate for Double Clamps</b>	SPAS/DUEB	<b>A29</b>
	<b>Mounting Rail Nut</b>	GMV	<b>A30</b>
	<b>Mounting Rail</b>	STSV	<b>A30</b>
	<b>Channel Rail Adaptor</b>	CRA	<b>A31</b>
	<b>Cover Plate for Single Clamps</b>	DPAL	<b>A32</b>
	<b>Cover Plate for Double Clamps</b>	DPAS	<b>A32</b>
	<b>Hexagon Head Bolt</b>	AS	<b>A33</b>
	<b>Socket Cap Screw</b>	IS	<b>A33</b>
	<b>Safety Washer (DIN 93)</b>	SI	<b>A34</b>
	<b>Safety Washer (DIN 463)</b>	SI	<b>A34</b>
	<b>Safety Locking Plate</b>	SIP	<b>A35</b>
	<b>Stacking Bolt</b>	AF	<b>A35</b>
	<b>Clamp Assemblies</b>		<b>A36</b>
	<b>Technical Appendix</b>		<b>A88</b>

	<b>Clamp Body - Profiled Inside Surface</b> (PP / PA)		<b>A40</b>
	<b>Clamp Body - Smooth Inside Surface</b>	H	<b>A40</b>
	<b>Single Weld Plate</b>	SP	<b>A41</b>
	<b>Group Weld Plate</b>	RAP	<b>A41</b>
	<b>Hexagon Rail Nut</b>	SM / SMG	<b>A42</b>
	<b>Mounting Rail</b>	TS	<b>A42</b>
	<b>Channel Rail Adaptor</b>	CRA	<b>A43</b>
	<b>Cover Plate</b>	GD	<b>A44</b>
	<b>Hexagon Head Bolt</b>	AS	<b>A44</b>
	<b>Socket Cap Screw</b>	IS	<b>A45</b>
	<b>Safety Locking Plate</b>	SI	<b>A46</b>
	<b>Safety Locking Plate</b>	SIV	<b>A46</b>
	<b>Stacking Bolt</b>	AF	<b>A47</b>
	<b>Clamp Assemblies</b>		<b>A48</b>
	<b>Technical Appendix</b>		<b>A88</b>

### Heavy Twin Series

	<b>Clamp Body - Profiled Inside Surface</b> (PP / PA)		A50
	<b>Clamp Body with Rubber Inserts</b> (PP / PA)	RI	A50
	<b>Weld Plate</b>	SPAD	A51
	<b>Cover Plate</b>	DPAD	A51
	<b>Hexagon Head Bolt</b>	AS	A52
	<b>Mounting Rail Nut</b>	GMV	A52
	<b>Mounting Rail</b>	STSV	A52
	<b>Channel Rail Adaptor</b>	CRA	A52
	<b>Socket Cap Screw</b>	IS	A52
	<b>Safety Locking Plate</b>	SIPD	A52
	<b>Stacking Bolt</b>	AF	A52
	<b>Clamp Assemblies</b>		A53

### Compact Twin Series

	<b>Clamp Body - Profiled Inside Surface</b> (PP)	DS1	A54
	<b>Single Weld Plate</b>	SP DS1	A54
	<b>Cover Plate</b>	US DS1	A54
	<b>Hexagon Head Bolt</b>	AS DS1	A54

### Agriculture Twin Series

	<b>Clamp Body</b> (PP)	AG	A54
--	---------------------------	----	-----

### Plastic Saddle Clamps

	<b>Saddle Clamps for Cylinder Supply Lines</b> ZR 518	A55
	<b>Custom-Designed Plastic Saddle Clamps</b>	A55

### Custom-Designed Clamps

	<b>Machined Versions</b>	A56
	<b>Injection Moulded Versions (Flexi Clamps)</b>	A57

### Light Series - Types LBBU

	<b>Clamp Body - Single Design</b>	A58
	<b>Clamp Body - Twin Design</b>	A59
	<b>Weld Plate</b> LBBU-SP	A60
	<b>Sleeve</b> LBBU-HUE	A60
	<b>Cover Plate</b> LBBU-DP	A61
	<b>Hexagon Head Bolt</b> AS	A61

### Light Series - Types LB/LBG/LBU

	<b>Clamp Body - Single Design</b> LB	A62
	<b>Clamp Body - Twin Design</b> LBG/LBU	A63

### Light Series - Types LN/LNGF/LNUF

	<b>Clamp Body - Single Design</b> LN	A64
	<b>Clamp Body - Twin Design</b> LNGF/LNUF	A65
	<b>Cover Plate - Twin Design</b> DPL	A65

## Construction Series

## Light Saddles



Construction Series      KS / DKS      A66

Construction Series  
(for Anchor Bolt Fastening)      KSV / DKSV      A67



Light Saddles ▪ Single-Ended Design      DIN 1596      A80



Light Saddles ▪ Double-Ended Design      DIN 1597      A81

## Flat and Round Steel U-Bolts

## Cushion Clamp Series



Flat Steel U-Bolt with Plastic Pipe Saddle (Short) and U-Profile      FB / RUK      A68



Round Steel U-Bolt with Plastic Pipe Saddle (Short)      RB / RUK      A70



Round Steel U-Bolt with Plastic Pipe Saddle (Long)      RB / RUL      A72



Round Steel U-Bolt (DIN 3570, Type A) without Plastic Pipe Saddle      RBD      A74



Cushion Clamp Series      STC / SPC      A82



Channel Rail      SCS      A83

## Industry-Specific Solutions



STAUFF ACT Clamps:      A84

Efficient Prevention of Crevice Corrosion under Pipe Clamps on Stainless Steel Pipework

Middle- and Long-Term Cost Savings due to Extended Service and Maintenance Intervals

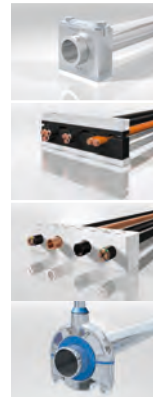
## Metal Pipe Clamps



Metal Pipe Clamp with Rounded Ends      DIN 3567-A      A76



Metal Pipe Clamp with Rounded Ends and One-Side Elongated Shaft      DIN 3567-B      A77



For Power Plants      A86

For Wind Power Stations      A86

For Rail Technology Applications      A86

For Process Technology Applications      A86

## Heavy Saddles



Heavy Saddles ▪ Single-Ended Design      DIN 1592      A78



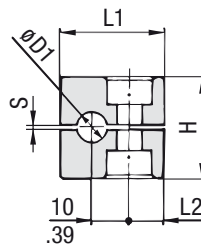
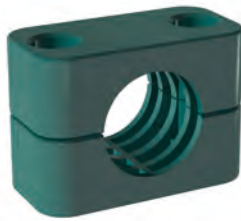
Heavy Saddles ▪ Double-Ended Design      DIN 1593      A79

## Technical Appendix

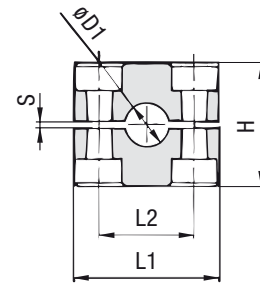
Standard Clamp Body Materials	A88
Standard Rubber Insert Materials	A89
Special Clamp Body Materials	A90
Standard Clamp Body Designs	A92
Materials and Surface Finishings of Metal Parts	A93
Property Classes / Grades of Bolts and Screws	A93
Thread Conversion Chart	A93
General Installation Instructions	A94
Tightening Torques / Maximum Loads in Pipe Direction	A95
Dimensions and Weights of Clamp Assemblies	A96
Packaging Units (Selection)	A97

### Clamp Body - Profiled Design

Profiled Inside Surface with Tension Clearance



STAUFF Group 1



STAUFF Group 1A to 8

#### Order Codes

##### Clamp Body

Clamp Body, STAUFF Group 1A

\*1\*06\*PP

\*1\*06A\*PP

One clamp body is consisting of two clamp halves.

\* STAUFF Group

1

\* Exact outside diameter Ø D1 (mm)

06

\* Material code (see below)

PP

#### Standard Materials



##### Polypropylene

Colour: Green

Material code: **PP**



##### Polyamide

Colour: Black

Material code: **PA**



##### Thermoplastic Elastomer (87 Shore-A)

Colour: Black

Material code: **SA**



##### Aluminium

Colour: Self-Colour

Material code: **AL**

See pages A88 / A89 for material properties and technical information.

#### Special Materials

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

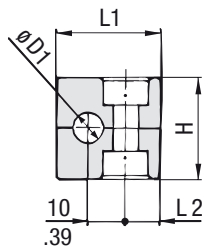
See pages A90 / A91 for material properties and technical information.

#### Product Features

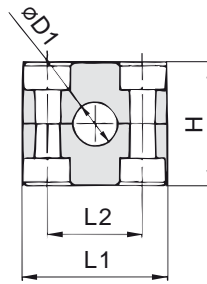
- Proven, tested and trusted product in various markets
- Recommended for the safe installation of rigid pipes and tubes
- Available for all commonly used pipe and tube outside diameters
- Environmental protection due to vibration/noise reducing design
- Excellent weathering resistance, even under extreme conditions

Group	STAUFF	DIN	Outside Diameter		Nominal Bore		Order Codes (2 Clamp Halves)	Dimensions (mm/in)								
			Pipe / Tube Ø D1 (mm)	(in)	Pipe (in)	Copper Tube ASTM B88 (in)		(** = Material)	L1	L2	H	S min.	Width			
1		0	6				106 **									
			6,4	1/4			106,4 **									
			8	5/16			108 **	28	9,5	27	0,4	30				
			9,5	3/8		1/4	109,5 **	1.10	.37	1.06	.02	1.18				
			10		1/8		110 **									
1A		1	6				106A **									
			6,4	1/4			106,4A **									
			8	5/16			108A **	37	20	27	0,4	30				
			9,5	3/8		1/4	109,5A **	1.46	.79	1.06	.02	1.18				
			10		1/8		110A **									
2		2	12				112 **									
			12,7	1/2		3/8	212,7 **									
			13,5		1/4		213,5 **									
			14				214 **	42	26	33	0,6	30				
			15				215 **	1.65	1.02	1.30	.02	1.18				
3		3	16	5/8		1/2	216 **									
			17,2		3/8		217,2 **									
			18				218 **									
			19	3/4			319 **									
			20				320 **									
4		4	21,3		1/2		321,3 **	50	33	36	0,6	30				
			22			3/4	322 **	1.97	1.30	1.42	.02	1.18				
			25				325 **									
			25,4	1			325,4 **									
			26,9		3/4		426,9 **									
5		5	28				428 **									
			28,6			1	428,6 **	59	40	42	0,6	30				
			30				430 **	2.32	1.57	1.65	.02	1.18				
			32				432 **									
			32	1-1/4			532 **									
6		6	33,7		1		533,7 **									
			35			1-1/4	535 **	71	52	58	0,8	30				
			38	1-1/2			538 **	2.80	2.05	2.28	.03	1.18				
			40				540 **									
			41,3		1-1/2		541,3 **									
7		7	42		1-1/4		542 **									
			44,5	1-3/4			644,5 **									
			48,3		1-1/2		648,3 **	86	66	66	0,8	30				
			50,8	2			650,8 **	3.39	2.60	2.60	.03	1.18				
			54		2		654 **									
8		8	57,2	2-1/4			757,2 **									
			60,3		2		760,3 **									
			63,5	2-1/2			763,5 **	121	94	93	0,8	30				
			70	2-3/4			770 **	4.76	3.70	3.66	.03	1.18				
			73		2-1/2 (ANSI B 36-10)		773 **									
8		8	76,1	3	2-1/2 (DIN EN 10220)		776,1 **									
			88,9		3		888,9 **	147	120	118	0,8	30				
			102	4	3-1/2		8102L **	5.79	4.72	4.65	.03	1.18				

Additional outside diameters are available upon request. Please consult STAUFF for further information.



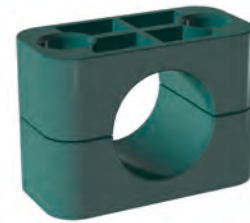
STAUFF Group 1



STAUFF Group 1A to 8

**Clamp Body ▪ Type H**

Smooth Inside Surface without Tension Clearance



Group	Outside Diameter		Order Codes (2 Clamp Halves)	Dimensions							
	Hose Ø D1 (mm)	(in)		(*** = Material)	L1	L2	H	Width			
1	0	6	106 ***	28	9,5	26	30				
		6,4	106,4 ***								
		8	108 ***								
		9,5	109,5 ***								
		10	110 ***								
		12	112 ***								
1A	1	6	106A ***	37	20	26	30				
		6,4	106,4A ***								
		8	108A ***								
		9,5	109,5A ***								
		10	110A ***								
		12	112A ***								
2	2	12,7	212,7 ***	42	26	32	30				
		13,5	213,5 ***								
		14	214 ***								
		15	215 ***								
		16	216 ***								
		17,2	217,2 ***								
		18	218 ***								
3	3	19	319 ***	50	33	35,5	30				
		20	320 ***								
		21,3	321,3 ***								
		22	322 ***								
		25	325 ***								
		25,4	325,4 ***								
4	4	26,9	426,9 ***	59	40	41,5	30				
		28	428 ***								
		30	430 ***								
		32	432 ***								
		32	532 ***					71	52	56,5	30
33,7	533,7 ***										
35	535 ***										
38	538 ***										
40	540 ***										
5	5	42	542 ***	2,80	2,05	2,22	1,18				
		44,5	644,5 ***								
		48,3	648,3 ***								
		50,8	650,8 ***								
6	6	54	654 ***	86	66	64,5	30				
		57,2	757,2 ***								
		60,3	760,3 ***								
		63,5	763,5 ***								
		70	770 ***								
7	7	73	773 ***	121	94	92	30				
		76,1	776,1 ***								
		88,9	888,9 ***					147	120	116	30
		102	8102L ***								

Additional outside diameters are available upon request. Please consult STAUFF for further information.

**Order Codes**
**Clamp Body** \*1\*06\*PPH  
**Clamp Body, STAUFF Group 1A** \*1\*06A\*PPH

One clamp body is consisting of two clamp halves.

* STAUFF Group	1
* Exact outside diameter Ø D1 (mm)	06
* Material code (see below)	PPH

**Standard Materials**

**Polypropylene**  
 Colour: Green  
 Material code: **PPH**

**Polyamide**  
 Colour: Black  
 Material code: **PAH**

**Thermoplastic Elastomer (87 Shore-A)**  
 Colour: Black  
 Material code: **SAH**

See pages A88 / A89 for material properties and technical information.

**Special Materials**

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

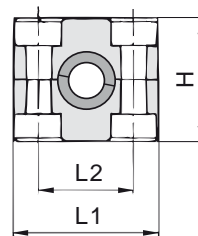
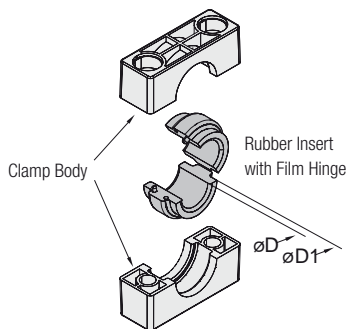
See pages A90 / A91 for material properties and technical information.

**Product Features**

- Proven, tested and trusted product in various markets
- Recommended for the safe installation of hoses and cables
- Chamfered edges avoid damaging of the hoses and cables
- Available for all commonly used hose and cable outside diameters
- Excellent weathering resistance, even under extreme conditions



### Clamp Body with Rubber Insert Type RI



Order Codes	
<b>Clamp Assembly</b>	<b>*4*06*PPR</b>
One assembly is consisting of one clamp body and one insert.	
* STAUFF Group	4
* Exact outside diameter $\varnothing D$ (mm)	06
* Material code (see below)	PPR
<b>Clamp Body</b>	<b>*4*PPR</b>
One clamp body is consisting of two clamp halves.	
* STAUFF Group	4
* Material code (see below)	PPR
<b>Rubber Insert</b>	<b>*RI*06*(4+4S)</b>
* Rubber Insert	RI
* Exact outside diameter $\varnothing D$ (mm)	06
* STAUFF Group 4 (Standard) and 4S (Heavy)	(4+4S)
6 (Standard) and 5S (Heavy)	(6+5S)

### Standard Materials



**Polypropylene**  
Colour: Black  
Material code: **PPR**



**Polyamide**  
Colour: Black  
Material code: **PAR**



Rubber Insert  
**Thermoplastic Elastomer** (73 Shore-A)  
Colour: Black

See pages A88 / A89 for material properties and technical information.

### Special Materials

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

See pages A90 / A91 for material properties and technical information.

### Product Features

- Proven, tested and trusted product in various markets
- Either for the extra vibration/noise reducing installation of pipes and tubes or the extra gentle installation of hoses and cables
- Available for all commonly used outside diameters
- Excellent weathering resistance, even under extreme conditions

Group	STAUFF	DIN	Outside Diameter		Order Codes (**R = Clamp Body Material)			Dimensions						
			Pipe / Tube / Hose	$\varnothing D$	Clamp Assembly (Clamp Body + Rubber Insert)	Clamp Body (2 Clamp Halves)	Rubber Insert *	<sup>(mm/in)</sup>						
			(mm)	(in)				$\varnothing D1$	L1	L2	H	Width		
4	4	4	6		406 **R	4 **R	RI 06 (4+4S)	25 .98	59 2.32	40 1.57	41,2 1.62	30 1.18		
			8	5/16	408 **R		RI 08 (4+4S)							
			10		410 **R		RI 10 (4+4S)							
			12		412 **R		RI 12 (4+4S)							
			12,7	1/2	412,7 **R		RI 12,7 (4+4S)							
			14		414 **R		RI 14 (4+4S)							
			15		415 **R		RI 15 (4+4S)							
			16	5/8	416 **R		RI 16 (4+4S)							
			17,2		417,2 **R		RI 17,2 (4+4S)							
			18		418 **R		RI 18 (4+4S)							
			19	3/4	419 **R		RI 19 (4+4S)							
6	6	6	20		620 **R	6 **R	RI 20 (6+5S)	38 1.50	86 3.39	66 2.60	64,5 2.54	30 1.18		
			21,3		621,3 **R		RI 21,3 (6+5S)							
			22	7/8	622 **R		RI 22 (6+5S)							
			25		625 **R		RI 25 (6+5S)							
			26,9		626,9 **R		RI 26,9 (6+5S)							
			28		628 **R		RI 28 (6+5S)							
			30		630 **R		RI 30 (6+5S)							
			32	1-1/4	632 **R		RI 32 (6+5S)							

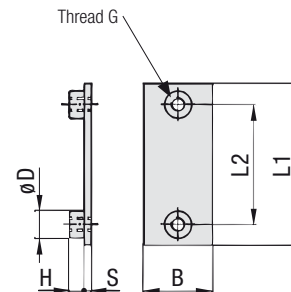
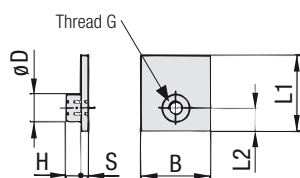
\* Rubber Inserts for Standard Series clamp bodies, STAUFF Group 4 also fit into Heavy Series clamp bodies, STAUFF Group 4S. Rubber Inserts for Standard Series clamp bodies, STAUFF Group 6 also fit into Heavy Series clamp bodies, STAUFF Group 5S.

Additional outside diameters are available upon request. Please consult STAUFF for further information.





### Single Weld Plate Type SP



STAUFF Group 1

STAUFF Group 1A to 8

#### Order Codes

#### Weld Plate

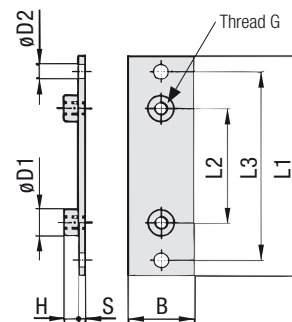
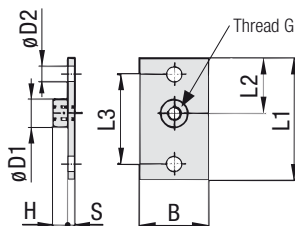
**\*SP\*1\*M\*W2**

- \* Single Weld Plate **SP**
- \* STAUFF Group **1**
- \* Thread code   Metric ISO thread **M**  
                    Unified coarse (UNC) thread **U**
- \* Material code   Carbon Steel, untreated **W1**  
                    Carbon Steel, phosphated **W2**  
                    Carbon Steel, zinc/nickel-plated **W3**  
  
                    Stainless Steel V2A **W4**  
                    1.4301 / 1.4305 (AISI 304 / 303)  
                    Stainless Steel V4A **W5**  
                    1.4401 / 1.4571 (AISI 316 / 316 Ti)

Group	STAUFF	DIN	Dimensions (mm/m)						ØD	Order Codes (Standard Options)
			Thread G	L1	L2	B	S	H		
1	0		M6	31,5	10	30	3	6,5	12	SP 1 M W2
			1/4-20 UNC	1.24	0.39	1.18	.12	.26	.47	SP 1 U W2
1A	1		M6	36	20	30	3	6,5	12	SP 1A M W2
			1/4-20 UNC	1.42	0.79	1.18	.12	.26	.47	SP 1A U W2
2	2		M6	42	26	30	3	6,5	12	SP 2 M W2
			1/4-20 UNC	1.65	1.02	1.18	.12	.26	.47	SP 2 U W2
3	3		M6	50	33	30	3	6,5	12	SP 3 M W2
			1/4-20 UNC	1.97	1.30	1.18	.12	.26	.47	SP 3 U W2
4	4		M6	60	40	30	3	6,5	12	SP 4 M W2
			1/4-20 UNC	2.36	1.57	1.18	.12	.26	.47	SP 4 U W2
5	5		M6	71	52	30	3	6,5	12	SP 5 M W2
			1/4-20 UNC	2.80	2.05	1.18	.12	.26	.47	SP 5 U W2
6	6		M6	88	66	30	3	6,5	12	SP 6 M W2
			1/4-20 UNC	3.46	2.60	1.18	.12	.26	.47	SP 6 U W2
7	7		M6	122	94	30	5	6,5	12	SP 7 M W2
			1/4-20 UNC	4.80	3.70	1.18	.20	.26	.47	SP 7 U W2
8	8		M6	148	120	30	5	6,5	12	SP 8 M W2
			1/4-20 UNC	5.83	4.72	1.18	.20	.26	.47	SP 8 U W2

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### Elongated Weld Plate Type SPV



STAUFF Group 1

STAUFF Group 1A to 8

#### Order Codes

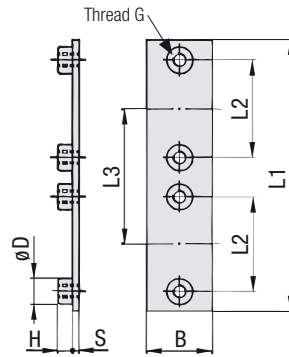
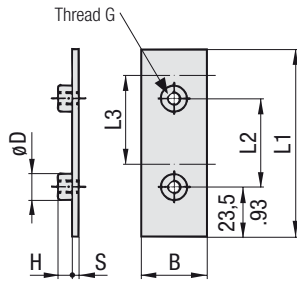
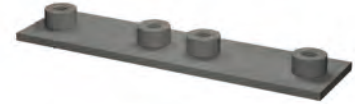
#### Weld Plate

**\*SPV\*1\*M\*W2**

- \* Elongated Weld Plate **SPV**
- \* STAUFF Group **1**
- \* Thread code   Metric ISO thread **M**  
                    Unified coarse (UNC) thread **U**
- \* Material code   Carbon Steel, untreated **W1**  
                    Carbon Steel, phosphated **W2**  
                    Carbon Steel, zinc/nickel-plated **W3**  
  
                    Stainless Steel V2A **W4**  
                    1.4301 / 1.4305 (AISI 304 / 303)  
                    Stainless Steel V4A **W5**  
                    1.4401 / 1.4571 (AISI 316 / 316 Ti)

Group	STAUFF	DIN	Dimensions (mm/m)						ØD1	ØD2	Order Codes (Standard Options)	
			Thread G	L1	L2	L3	B	S				H
1	0		M6	58	24,5	44	30	3	6,5	12	6,5	SPV 1 M W2
			1/4-20 UNC	2.28	.96	1.73	1.18	.12	.26	.47	.26	SPV 1 U W2
1A	1		M6	64	20	50	30	3	6,5	12	6,5	SPV 1A M W2
			1/4-20 UNC	2.52	.79	1.97	1.18	.12	.26	.47	.26	SPV 1A U W2
2	2		M6	70	26	56	30	3	6,5	12	6,5	SPV 2 M W2
			1/4-20 UNC	2.76	1.02	2.20	1.18	.12	.26	.47	.26	SPV 2 U W2
3	3		M6	78	33	64	30	3	6,5	12	6,5	SPV 3 M W2
			1/4-20 UNC	3.07	1.30	2.52	1.18	.12	.26	.47	.26	SPV 3 U W2
4	4		M6	87	40	73	30	3	6,5	12	6,5	SPV 4 M W2
			1/4-20 UNC	3.43	1.57	2.87	1.18	.12	.26	.47	.26	SPV 4 U W2
5	5		M6	100	52	86	30	3	6,5	12	6,5	SPV 5 M W2
			1/4-20 UNC	3.94	2.05	3.39	1.18	.12	.26	.47	.26	SPV 5 U W2
6	6		M6	115	66	100	30	3	6,5	12	6,5	SPV 6 M W2
			1/4-20 UNC	4.53	2.60	3.94	1.18	.12	.26	.47	.26	SPV 6 U W2
7	7		M6	150	94	136	30	5	6,5	12	6,5	SPV 7 M W2
			1/4-20 UNC	5.91	3.70	5.35	1.18	.20	.26	.47	.26	SPV 7 U W2
8	8		M6	178	120	162	30	5	6,5	12	6,5	SPV 8 M W2
			1/4-20 UNC	7.01	4.72	6.38	1.18	.20	.26	.47	.26	SPV 8 U W2

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

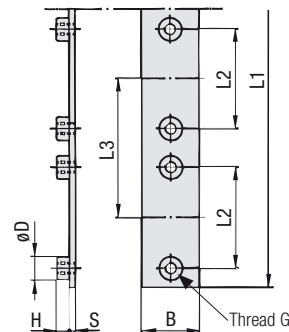
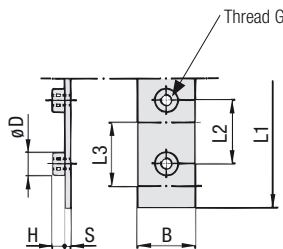

**Twin Weld Plate  
Type DSP**

**STAUFF Group 1**
**STAUFF Group 1A to 8**

Group STAUFF	DIN	Dimensions (mm/in)							Order Codes (Standard Options)		
		Thread G	L1	L2	L3	B	S	H	ØD		
1	0	M6	87	40	40	30	3	6.5	12	DSP 1/40 M W2	
		1/4-20 UNC	3.43	1.57	1.57	1.18	.12	.26	.47	DSP 1/40 U W2	
1A	1	M6	77	20	37	30	3	6.5	12	DSP 1A/37 M W2	
		1/4-20 UNC	3.03	.79	1.46	1.18	.12	.26	.47	DSP 1A/37 U W2	
2	2	M6	86	26	44	30	3	6.5	12	DSP 2/44 M W2	
		1/4-20 UNC	3.39	1.02	1.73	1.18	.12	.26	.47	DSP 2/44 U W2	
3	3	M6	102	33	52	30	3	6.5	12	DSP 3/52 M W2	
		1/4-20 UNC	4.02	1.30	2.05	1.18	.12	.26	.47	DSP 3/52 U W2	
4	4	M6	120	40	60	30	3	6.5	12	DSP 4/60 M W2	
		1/4-20 UNC	4.72	1.57	2.36	1.18	.12	.26	.47	DSP 4/60 U W2	
5	5	M6	145	52	75	30	3	6.5	12	DSP 5/75 M W2	
		1/4-20 UNC	5.71	2.05	2.95	1.18	.12	.26	.47	DSP 5/75 U W2	
6	6	M6	178	66	90	30	3	6.5	12	DSP 6/90 M W2	
		1/4-20 UNC	7.01	2.60	3.54	1.18	.12	.26	.47	DSP 6/90 U W2	

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Order Codes**
**Weld Plate**
**\*DSP\*1/40\*M\*W2**

* Twin Weld Plate		DSP
* STAUFF Group		1
* Pipe center spacing L3 (mm)		40
* Thread code	Metric ISO thread	M
	Unified coarse (UNC) thread	U
* Material code	Carbon Steel, untreated	W1
	Carbon Steel, phosphated	W2
	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	W4
	1.4301 / 1.4305 (AISI 304 / 303)	
	Stainless Steel V4A	W5
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	


**Group Weld Plate  
Type RAP**

**STAUFF Group 1**
**STAUFF Group 1A to 8**

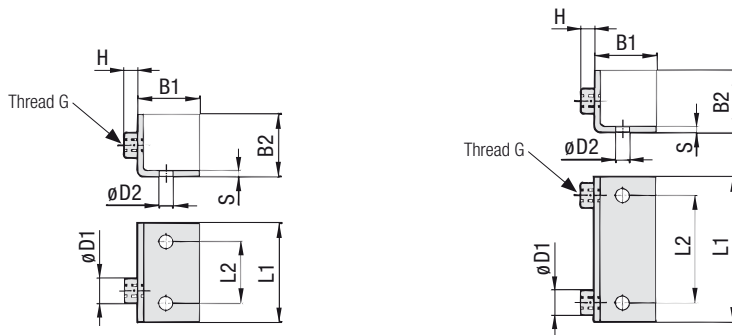
Group STAUFF	DIN	Dimensions (mm/in)							Order Codes (Standard Options)		
		Thread G	L1	L2	L3	B	S	H	ØD		
1	0	M6	314	31	31	30	4	6.5	12	RAP 1/31/10 M W1	
		1/4-20 UNC	12.36	1.22	1.22	1.18	.16	.26	.47	RAP 1/31/10 U W1	
1A	1	M6	373	20	37	30	4	6.5	12	RAP 1A/37/10 M W1	
		1/4-20 UNC	14.69	.79	1.46	1.18	.16	.26	.47	RAP 1A/37/10 U W1	
2	2	M6	442	26	44	30	4	6.5	12	RAP 2/44/10 M W1	
		1/4-20 UNC	17.40	1.02	1.73	1.18	.16	.26	.47	RAP 2/44/10 U W1	
3	3	M6	521	33	52	30	4	6.5	12	RAP 3/52/10 M W1	
		1/4-20 UNC	20.51	1.30	2.05	1.18	.16	.26	.47	RAP 3/52/10 U W1	
4	4	M6	300	40	60	30	4	6.5	12	RAP 4/60/5 M W1	
		1/4-20 UNC	11.81	1.57	2.36	1.18	.16	.26	.47	RAP 4/60/5 U W1	
5	5	M6	378	52	75	30	4	6.5	12	RAP 5/75/5 M W1	
		1/4-20 UNC	14.88	2.05	2.95	1.18	.16	.26	.47	RAP 5/75/5 U W1	
6	6	M6	450	66	90	30	4	6.5	12	RAP 6/90/5 M W1	
		1/4-20 UNC	17.72	2.60	3.54	1.18	.16	.26	.47	RAP 6/90/5 U W1	

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Order Codes**
**Weld Plate**
**\*RAP\*1/31/10\*M\*W1**

* Group Weld Plate		RAP
* STAUFF Group		1
* Pipe center spacing L3 (mm)		31
* Number of clamps		10
* Thread code	Metric ISO thread	M
	Unified coarse (UNC) thread	U
* Material code	Carbon Steel, untreated	W1
	Carbon Steel, phosphated	W2
	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	W4
	1.4301 / 1.4305 (AISI 304 / 303)	
	Stainless Steel V4A	W5
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	

**Angled Weld Plate**  
Type WSP



STAUFF Group 1

STAUFF Group 1A to 6

**Order Codes**

**Weld Plate**

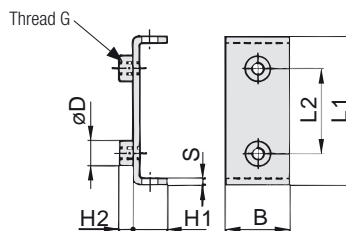
**\*WSP\*1\*M\*W1**

- \* Angled Weld Plate **WSP**
- \* STAUFF Group **1**
- \* Thread code    Metric ISO thread **M**  
                          Unified coarse (UNC) thread **U**
- \* Material code    Carbon Steel, untreated **W1**  
                          Carbon Steel, zinc/nickel-plated **W3**  
  
                          Stainless Steel V2A **W4**  
                          1.4301 / 1.4305 (AISI 304 / 303) **W4**  
                          Stainless Steel V4A **W5**  
                          1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

Group STAUFF	DIN	Dimensions (mm/m)								Order Codes (Standard Options)	
		Thread G	L1	L2	B1	B2	S	H	ØD1		ØD2
1	0	M6	30	14	30	30	3	6,5	12	6,5	WSP 1 M W1
		1/4-20 UNC	1.18	.55	1.18	1.18	.12	.26	.47	.26	WSP 1 U W1
1A	1	M6	32	20	30	30	3	6,5	12	6,5	WSP 1A M W1
		1/4-20 UNC	1.26	.79	1.18	1.18	.12	.26	.47	.26	WSP 1A U W1
2	2	M6	42	26	30	30	3	6,5	12	6,5	WSP 2 M W1
		1/4-20 UNC	1.65	1.02	1.18	1.18	.12	.26	.47	.26	WSP 2 U W1
3	3	M6	50	33	30	30	3	6,5	12	6,5	WSP 3 M W1
		1/4-20 UNC	1.97	1.30	1.18	1.18	.12	.26	.47	.26	WSP 3 U W1
4	4	M6	60	40	30	30	3	6,5	12	6,5	WSP 4 M W1
		1/4-20 UNC	2.36	1.57	1.18	1.18	.12	.26	.47	.26	WSP 4 U W1
5	5	M6	70	52	30	30	3	6,5	12	6,5	WSP 5 M W1
		1/4-20 UNC	2.76	2.05	1.18	1.18	.12	.26	.47	.26	WSP 5 U W1
6	6	M6	88	66	30	30	3	6,5	12	6,5	WSP 6 M W1
		1/4-20 UNC	3.46	2.60	1.18	1.18	.12	.26	.47	.26	WSP 6 U W1

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Bridge Weld Plate**  
Type BSP



**Order Codes**

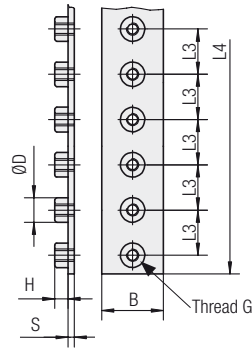
**Weld Plate**

**\*BSP\*1A\*M\*W1**

- \* Bridge Weld Plate **BSP**
- \* STAUFF Group **1A**
- \* Thread code    Metric ISO thread **M**  
                          Unified coarse (UNC) thread **U**
- \* Material code    Carbon Steel, untreated **W1**  
                          Carbon Steel, phosphated **W2**  
                          Carbon Steel, zinc/nickel-plated **W3**  
  
                          Stainless Steel V2A **W4**  
                          1.4301 / 1.4305 (AISI 304 / 303) **W4**  
                          Stainless Steel V4A **W5**  
                          1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

Group STAUFF	DIN	Dimensions (mm/m)								Order Codes (Standard Options)
		Thread G	L1	L2	B	S	H1	H2	ØD	
1A	1	M6	48	20	30	3	13	6,5	12	BSP 1A M W1
		1/4-20 UNC	1.89	.79	1.18	1.18	.12	.52	.26	.47
2	2	M6	54	26	30	3	13	6,5	12	BSP 2 M W1
		1/4-20 UNC	2.13	1.02	1.18	1.18	.12	.52	.26	.47
3	3	M6	62	33	30	3	13	6,5	12	BSP 3 M W1
		1/4-20 UNC	2.44	1.30	1.18	1.18	.12	.52	.26	.47
4	4	M6	71	40	30	3	13	6,5	12	BSP 4 M W1
		1/4-20 UNC	2.80	1.57	1.18	1.18	.12	.52	.26	.47
5	5	M6	85	52	30	3	13	6,5	12	BSP 5 M W1
		1/4-20 UNC	3.35	2.05	1.18	1.18	.12	.52	.26	.47
6	6	M6	98	66	30	3	13	6,5	12	BSP 6 M W1
		1/4-20 UNC	3.86	2.60	1.18	1.18	.12	.52	.26	.47

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



### Multi-Group Weld Plate Type RAP-MGR


 STAUFF  
Clamps  
**A**

Number of Weld Nuts	Dimensions (mm/in)							Order Codes (Standard Options)
	Thread G	L3	L4	B	S	H	ØD	
6	M6	26	156	30	4	6,5	12	RAP-MGR 25/156 M W1
	1/4-20 UNC	1.02	6.14	1.18	.16	.26	.47	RAP-MGR 25/156 U W1
9	M6	26	234	30	4	6,5	12	RAP-MGR 25/234 M W1
	1/4-20 UNC	1.02	9.21	1.18	.16	.26	.47	RAP-MGR 25/234 U W1
12	M6	26	312	30	4	6,5	12	RAP-MGR 25/312 M W1
	1/4-20 UNC	1.02	12.28	1.18	.16	.26	.47	RAP-MGR 25/312 U W1
15	M6	26	390	30	4	6,5	12	RAP-MGR 25/390 M W1
	1/4-20 UNC	1.02	15.35	1.18	.16	.26	.47	RAP-MGR 25/390 U W1
20	M6	26	520	30	4	6,5	12	RAP-MGR 25/520 M W1
	1/4-20 UNC	1.02	20.47	1.18	.16	.26	.47	RAP-MGR 25/520 U W1
27	M6	26	700	30	4	6,5	12	RAP-MGR 25/700 M W1
	1/4-20 UNC	1.02	27.55	1.18	.16	.26	.47	RAP-MGR 25/700 U W1

Cover a diameter range from 8 mm (.31 in) to 42 mm (1.65 in) with only one Group Weld Plate!

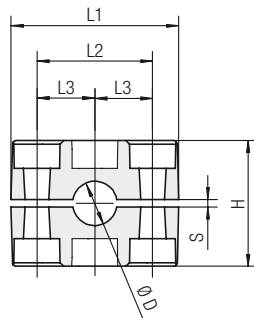
Multi-Group Weld Plates, type RAP-MGR are designed to be used in combination with Standard Series clamp bodies, STAUFF Group 2 (regular types, see pages A6 ff.) covering a diameter range from 8 mm / .31 in to 18 mm / .71 in, as well as Standard Series clamp bodies, STAUFF Group 5 (type MGR, see below) covering a diameter range from 20 mm / .79 in to 42 mm / 1.65 in. Thus, all Standard Series metal parts of these groups can be used.

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

#### Order Codes

#### Weld Plate \*RAP-MGR\*25/156\*M\*W1

* Multi Group Weld Plate	RAP-MGR
* Suitable for STAUFF Group 2 and 5	25
* Length L4 (mm)	156 (with 6 weld nuts) <b>156</b> 234 (with 9 weld nuts) <b>234</b> 312 (with 12 weld nuts) <b>312</b> 390 (with 15 weld nuts) <b>390</b> 520 (with 20 weld nuts) <b>520</b> 700 (with 27 weld nuts) <b>700</b>
* Thread code	Metric ISO thread <b>M</b> Unified coarse (UNC) thread <b>U</b>
* Material code	Carbon Steel, untreated <b>W1</b> Carbon Steel, phosphated <b>W2</b> Carbon Steel, zinc/nickel-plated <b>W3</b> Stainless Steel V2A <b>W4</b> 1.4301 / 1.4305 (AISI 304 / 303) <b>W4</b> Stainless Steel V4A <b>W5</b> 1.4401 / 1.4571 (AISI 316 / 316 Ti) <b>W5</b>

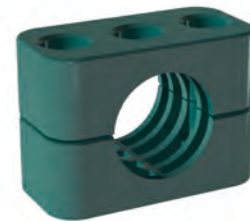


STAUFF Group 5

Group	Outside Diameter Pipe / Tube Ø D (mm) (in)	Nominal Bore Pipe (in)	Copper Tube ASTM B88 (in)	Order Codes (2 Clamp Halves) (** = Material)	Dimensions (mm/in)						
					L1	L2	L3	H	S min.	Width	
5	5	20		520 ** -MGR							
		21,3	1/2	521,3 ** -MGR							
		22		522 ** -MGR							
		23		523 ** -MGR							
		25		525 ** -MGR							
		26,9	3/4	526,9 ** -MGR							
		28		528 ** -MGR	71	52	26	58	0,8	30	
		30		530 ** -MGR	2.80	2.05	1.02	2.28	.03	1.18	
		32	1-1/4	532 ** -MGR							
		33,7	1	533,7 ** -MGR							
		35		535 ** -MGR							
		38	1-1/2	538 ** -MGR							
		40		540 ** -MGR							
		42	1-1/4	542 ** -MGR							

Additional outside diameters are available upon request. Please consult STAUFF for further information.

### Clamp Body for Multi-Group Weld Plate Type MGR



#### Order Codes

#### Clamp Body \*5\*20\*PP-MGR

One clamp body is consisting of two clamp halves.

* STAUFF Group	5
* Exact outside diameter Ø D1 (mm)	20
* Material code (see below)	PP-MGR

#### Standard Materials

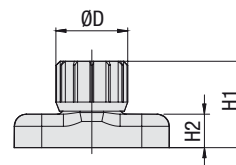
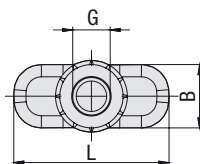
**Polypropylene**  
Colour: Green  
Material code: **PP-MGR**

**Polyamide**  
Colour: Black  
Material code: **PA-MGR**

See pages A88 / A89 for properties and technical information.

### Hexagon Rail Nut

Type SM / SMG (for Use with Mounting Rail TS)



Order Codes		
<b>Hexagon Rail Nut</b>	<b>*SM*1-8/1D*M*W3</b>	
* Hexagon Rail Nut		
Carbon Steel		<b>SM</b>
Stainless Steel		<b>SMG</b>
* STAUFF Group	1 to 8 (DIN Group 0 to 8)	<b>1-8/1D</b>
* Thread code	Metric ISO thread	<b>M</b>
	Unified coarse (UNC) thread	<b>U</b>
* Material code	Carbon Steel, zinc/nickel-plated	<b>W3</b>
	Stainless Steel V2A	<b>W4</b>
	1.4301 / 1.4305 (AISI 304 / 303)	
	Stainless Steel V4A	<b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	

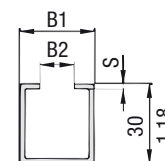
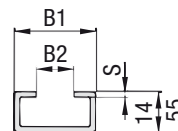
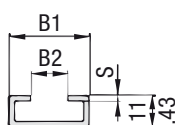
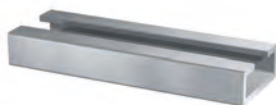
Group STAUFF	DIN	Dimensions (mm/in)						Order Codes (Standard Options)
		Thread G	L	B	H1	H2	ØD	
1	0							
1A	1							
2	2							
3	3							
4	4	M6	25,5	10,4	14,2	5,5	12	<b>SM 1-8/1D M W3</b>
		1/4-20 UNC	1.00	.41	.56	.22	.47	<b>SM 1-8/1D U W3</b>
5	5							
6	6							
7	7							
8	8							

Hexagon Rail Nuts, type SM 1-8/1D are also suitable for Twin Series, STAUFF Group 1D.

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### Mounting Rail

Type TS (for Use with Hexagon Rail Nut SM / SMG)



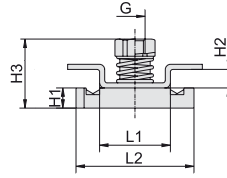
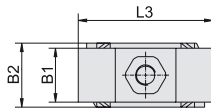
Order Codes		
<b>Mounting Rail</b>	<b>*TS*11*-1*W1</b>	
* Mounting Rail		<b>TS</b>
* Height of rail	11 mm / .43 in	<b>11</b>
	14 mm / .55 in	<b>14</b>
	30 mm / 1.18 in	<b>30</b>
* Length of rail	1 m / 3.28 ft	<b>-1M</b>
	2 m / 6.56 ft	<b>-2M</b>
	Alternative lengths available upon request. Consult STAUFF for further information.	
* Material code	Carbon Steel, untreated	<b>W1</b>
	Carbon Steel, zinc/nickel-plated	<b>W3</b>
	Stainless Steel V2A	<b>W4</b>
	1.4301 / 1.4305 (AISI 304 / 303)	
	Stainless Steel V4A	<b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	

Group STAUFF	DIN	Dimensions (mm/in)			Order Codes (Standard Options)	
		B1	B2	S	Length of Rail: 1 m / 3.28 ft	Length of Rail: 2 m / 6.56 ft
1	0					
1A	1				Height 11 mm / .43 in <b>TS 11-1M W1</b>	Height 11 mm / .43 in <b>TS 11-2M W1</b>
2	2					
3	3					
4	4	28	11	2	Height 14 mm / .55 in <b>TS 14-1M W1</b>	Height 14 mm / .55 in <b>TS 14-2M W1</b>
		1.10	.43	.08		
5	5					
6	6					
7	7					
8	8				Height 30 mm / 1.18 in <b>TS 30-1M W1</b>	Height 30 mm / 1.18 in <b>TS 30-2M W1</b>

Mounting Rails, type TS 11/14/30 are suitable for all Standard Series and Twin Series group sizes. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



## Channel Rail Adaptor (for Use with Various Channel Rails) Type CRA



Group STAUFF	DIN	Dimensions (mm/in)									Order Codes (Standard Options)	
		Thread G	L1	L2	L3	B1	B2	H1	H2	H3		
1	0											
1A	1											
2	2											
3	3											
4	4	M6	21	35	40	16	19	6	5,5	20,5	CRA 1-8/1D M W3 CRA 1-8/1D U W3	
		1/4-20 UNC	.83	1.38	1.57	.63	.75	.24	.22	.81		
5	5											
6	6											
7	7											
8	8											

### Order Codes

#### Adaptor

**\*CRA\*1-8/1D\*M\*W3**

* Channel Rail Adaptor		<b>CRA</b>
* STAUFF Group	1 to 8 (DIN Group 0 to 8)	<b>1-8/1D</b>
* Thread code	Metric ISO thread	<b>M</b>
	Unified coarse (UNC) thread	<b>U</b>
* Material code	Carbon Steel, zinc/nickel-plated	<b>W3</b>
	Stainless Steel V4A	<b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	

The Channel Rail Adaptor, type CRA 1-8/1D is also suitable for Twin Series, STAUFF Group 1D.

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

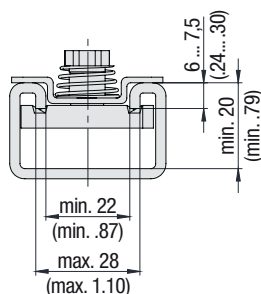


### Compatibility with Channel Rails

The STAUFF Channel Rail Adaptor, type CRA, is suitable for various channel rails, including the following types:

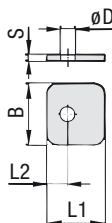
HALFEN	HILTI	UNISTRUT®	STAUFF (Cushion Clamp Series)
HM 41/41	MQ-21, MQ-41, MQ-52, MQ-72	P1000, P1000T, P1000V, P1000VT, P1001	SCS-048-1-PL, SCS-048-1-GR
HZA 41/22	MQ-21U, MQ-41U, MQ-72U	P2000, P2000T	SCS-120-1-PL, SCS-120-1-GR
HZM 41/41	MQ-21D, MQ-41D, MQ-52-72D	P3003, P3003T, P3300V, P3300VT, P3301	See page A83 for technical information.
HZM 41/22		P4000, P4000T	
HL 41/41, HL 41/B2		P5000, P5000T, P5001, P5500, P5500T, P5501	

Consult STAUFF to check compatibility with additional types of channel rails.

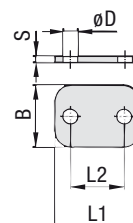


#### Basic dimensional requirements for channel rails to be used with STAUFF Channel Rail Adaptors, type CRA

## Cover Plate Type DP



STAUFF Group 1



STAUFF Group 1A to 8

### Order Codes

#### Cover Plate

\*DP\*1\*W3

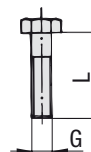
* Cover Plate	DP
* STAUFF Group	1
* Material code	Carbon Steel, zinc/nickel-plated
	Stainless Steel V2A
	1.4301 / 1.4305 (AISI 304 / 303)
	Stainless Steel V4A
	1.4401 / 1.4571 (AISI 316 / 316 Ti)
	W3
	W4
	W5

Group STAUFF	DIN	Dimensions (mm/in)					Order Codes (Standard Options)
		L1	L2	B	S	ØD	
1	0	28	9,5	30	3	7	DP 1 W3
		1.10	.37	1.18	.12	.28	
1A	1	34	20	30	3	7	DP 1A W3
		1.34	.79	1.18	.12	.28	
2	2	40,5	26	30	3	7	DP 2 W3
		1.59	1.02	1.18	.12	.28	
3	3	48	33	30	3	7	DP 3 W3
		1.89	1.30	1.18	.12	.28	
4	4	57	40	30	3	7	DP 4 W3
		2.24	1.57	1.18	.12	.28	
5	5	70	52	30	3	7	DP 5 W3
		2.76	2.05	1.18	.12	.28	
6	6	86	66	30	3	7	DP 6 W3
		3.39	2.60	1.18	.12	.28	
7	7	118	94	30	5	7	DP 7 W3
		4.65	3.70	1.18	.20	.28	
8	8	144	120	30	5	7	DP 8 W3
		5.67	4.72	1.18	.20	.28	

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

## Hexagon Head Bolt

### Type AS (for Use with Cover Plate DP)



Hexagon Head Bolt AS (according to DIN 931 / 933 or ANSI / ASME B18.2.1.)

Dimensions applicable only when used with Cover Plate DP

### Order Codes

#### Hexagon Head Bolt

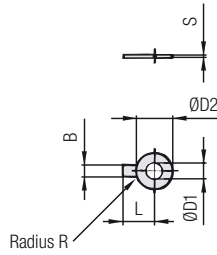
\*AS\*1\*M\*W3

* Type of bolt	Hexagon Head Bolt (according to DIN 931 / 933 or ANSI / ASME B18.2.1.)	AS
* STAUFF Group		1
* Thread code	Metric ISO thread	M
	Unified coarse (UNC) thread	U
* Material code	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	W4
	1.4301 / 1.4305 (AISI 304 / 303)	
	Stainless Steel V4A	W5
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	

Group STAUFF	DIN	Dimensions (mm/in)		Order Codes (Standard Options)
		Thread	G x L	
1	0	M6 x 30		AS 1 M W3
		1/4-20 UNC x 1-1/4		AS 1 U W3
1A	1	M6 x 30		AS 1A M W3
		1/4-20 UNC x 1-1/4		AS 1A U W3
2	2	M6 x 35		AS 2 M W3
		1/4-20 UNC x 1-3/8		AS 2 U W3
3	3	M6 x 40		AS 3 M W3
		1/4-20 UNC x 1-1/2		AS 3 U W3
4	4	M6 x 45		AS 4 M W3
		1/4-20 UNC x 1-7/8		AS 4 U W3
5	5	M6 x 60		AS 5 M W3
		1/4-20 UNC x 2-3/8		AS 5 U W3
6	6	M6 x 70		AS 6 M W3
		1/4-20 UNC x 2-3/4		AS 6 U W3
7	7	M6 x 100		AS 7 M W3
		1/4-20 UNC x 4		AS 7 U W3
8	8	M6 x 125		AS 8 M W3
		1/4-20 UNC x 4-7/8		AS 8 U W3

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



**Safety Washer  
Type SI (DIN 93)**

**Safety Washer SI** (according to DIN 93)

Group STAUFF	DIN	Dimensions (mm/in)						Order Codes (Standard Options)
		ØD1	B	ØD2	L	R	S	
1 to 8	0 to 8	6,4	7	19	18	4	0,5	SI 6,4 DIN 93 W3
		.25	.28	.75	.71	.16	.02	

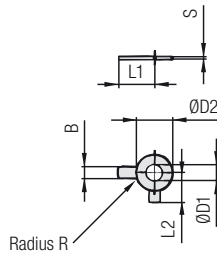
Safety Washers, type SI are used as locking devices to prevent Hexagon Head Bolts, type AS from loosening.  
Safety Washers, type SI are suitable for all Standard Series group sizes.

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Order Codes**
**Safety Washer \*SI\*6,4\*DIN 93\*W3**

\* Type of washer Safety washer with 1 tab (according to DIN 93) **SI 6,4 DIN 93**

\* Material code Carbon Steel, zinc/nickel-plated **W3**


**Safety Washer  
Type SI (DIN 463)**

**Safety Washer SI** (according to DIN 463)

Group STAUFF	DIN	Dimensions (mm/in)						Order Codes (Standard Options)	
		ØD1	B	ØD2	L1	L2	R		S
1 to 8	0 to 8	6,4	7	12	18	9	4	0,5	SI 6,4 DIN 463 W3
		.25	.28	.47	.71	.35	.16	.02	

Safety Washers, type SI are used as locking devices to prevent Hexagon Head Bolts, type AS from loosening.  
Safety Washers, type SI are suitable for all Standard Series group sizes.

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

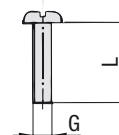
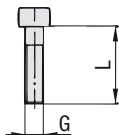
**Order Codes**
**Safety Washer \*SI\*6,4\*DIN 463\*W3**

\* Type of washer Safety washer with 2 tabs (according to DIN 463) **SI 6,4 DIN 463**

\* Material code Carbon Steel, zinc/nickel-plated **W3**



**Socket Cap Screw Type IS**      **Slotted Head Screw Type LI**



**Socket Cap Screw IS**

(according to ISO 4762 or ANSI / ASME B18.3)

Dimensions applicable only when used without Cover Plate DP

**Slotted Head Screw LI**

(according to ISO 1207 or ANSI / ASME B18.6.3)

Dimensions applicable only when used without Cover Plate DP

**Order Codes**

**Socket Cap Screw**

**\*IS\*1\*M\*W3**

**Slotted Head Screw**

**\*LI\*1\*M\*W3**

\* Type of bolt      Socket Cap Screw (according to ISO 4762 or ANSI / ASME B18.3)      **IS**  
 Slotted Head Screw (according to ISO 1207 or ANSI / ASME B18.6.3)      **LI**

Please note:      Socket cap screws IS and slotted head screws LI have to be used in conjunction with washers US, which are available separately.

\* STAUFF Group      **1**

\* Thread code      Metric ISO thread      **M**  
 Unified coarse (UNC) thread      **U**

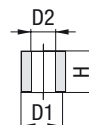
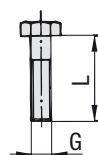
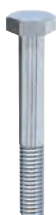
\* Material code      Carbon Steel, zinc/nickel-plated      **W3**  
 Stainless Steel V2A      **W4**  
 1.4301 / 1.4305 (AISI 304 / 303)      **W5**  
 Stainless Steel V4A      **W5**  
 1.4401 / 1.4571 (AISI 316 / 316 Ti)

Group STAUFF	DIN	Dimensions (mm/in) Thread G x L	Order Codes (Standard Options)	
			Socket Cap Screws	Slotted Head Screws
1	0	M6 x 20	IS 1 M W3	LI 1 M W3
		1/4-20 UNC x 3/4	IS 1 U W3	LI 1 U W3
1A	1	M6 x 20	IS 1A M W3	LI 1A M W3
		1/4-20 UNC x 3/4	IS 1A U W3	LI 1A U W3
2	2	M6 x 25	IS 2 M W3	LI 2 M W3
		1/4-20 UNC x 1	IS 2 U W3	LI 2 U W3
3	3	M6 x 30	IS 3 M W3	LI 3 M W3
		1/4-20 UNC x 1-1/8	IS 3 U W3	LI 3 U W3
4	4	M6 x 35	IS 4 M W3	LI 4 M W3
		1/4-20 UNC x 1-3/8	IS 4 U W3	LI 4 U W3
5	5	M6 x 50	IS 5 M W3	LI 5 M W3
		1/4-20 UNC x 2	IS 5 U W3	LI 5 U W3
6	6	M6 x 60	IS 6 M W3	LI 6 M W3
		1/4-20 UNC x 2-1/2	IS 6 U W3	LI 6 U W3
7	7	M6 x 90	IS 7 M W3	ON REQUEST ONLY
		1/4-20 UNC x 3-3/8	IS 7 U W3	
8	8	M6 x 110	IS 8 M W3	ON REQUEST ONLY
		1/4-20 UNC x 4-3/8	IS 8 U W3	

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Hexagon Head Bolt Type ASE**

**Insert Type ES / EP**



**Hexagon Head Bolt ASE**

(according to DIN 931 / 933 or ANSI / ASME B18.2.1.)

Dimensions applicable only when used with Inserts EP / ES

**Inserts ES (Steel) / EP (Plastic)**

**Order Codes**

**Hexagon Head Bolt**

**\*ASE\*1\*M\*W3**

\* Type of bolt      Hexagon Head Bolt (according to DIN 931 / 933 or ANSI / ASME B18.2.1.)      **AS**  
 for use with Insert ES / EP      **E**

\* STAUFF Group      **1**

\* Thread code      Metric ISO thread      **M**  
 Unified coarse (UNC) thread      **U**

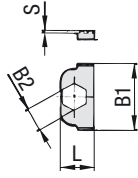
\* Material code      Carbon Steel, zinc/nickel-plated      **W3**  
 Stainless Steel V2A      **W4**  
 1.4301 / 1.4305 (AISI 304 / 303)      **W5**  
 Stainless Steel V4A      **W5**  
 1.4401 / 1.4571 (AISI 316 / 316 Ti)

Group STAUFF	DIN	Dimensions (mm/in) Thread G x L	Order Codes (Standard Options)	
			1	0
1A	1	1/4-20 UNC x 1-1/8	ASE 1 U W3	
		M6 x 27	ASE 1A M W3	
2	2	1/4-20 UNC x 1-1/8	ASE 1A U W3	
		M6 x 32	ASE 2 M W3	
3	3	1/4-20 UNC x 1-3/8	ASE 2 U W3	
		M6 x 35	ASE 3 M W3	
4	4	1/4-20 UNC x 1-3/8	ASE 3 U W3	
		M6 x 42	ASE 4 M W3	
5	5	1/4-20 UNC x 1-5/8	ASE 4 U W3	
		M6 x 57	ASE 5 M W3	
6	6	1/4-20 UNC x 2-3/8	ASE 5 U W3	
		M6 x 65	ASE 6 M W3	
7	7	1/4-20 UNC x 2-3/4	ASE 6 U W3	
		M6 x 95	ASE 7 M W3	
8	8	1/4-20 UNC x 4	ASE 7 U W3	
		M6 x 118	ASE 8 M W3	
8	8	1/4-20 UNC x 4-3/4	ASE 8 U W3	

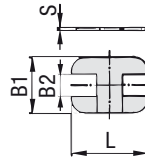
Group STAUFF	DIN	Dimensions (mm/in)				Order Codes (Standard Options)	
		D1	D2	H ES	H EP	ES (Steel)	EP (Plastic)
1 to 8	0 to 8	11,8 .46	6,5 .26	7,8 .31	8,6 .34	ES (Steel)	EP (Plastic)

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### Safety Locking Plate (for Use with Stacking Bolt AF) Type SIG



STAUFF Group 1



STAUFF Group 1A to 8



Group STAUFF	DIN	Dimensions (mm/in)				Order Codes (Standard Options)
		L	B1	B2	S	
1	0	16	32	11,2	1	SIG 1 W3
		.63	1.26	.44	.04	
1A	1	33	28	11,2	1	SIG 1A W3
		1.30	1.10	.44	.04	
2	2	39	28	11,2	1	SIG 2 W3
		1.54	1.10	.44	.04	
3	3	47	28	11,2	1	SIG 3 W3
		1.85	1.10	.44	.04	
4	4	56	28	11,2	1	SIG 4 W3
		2.20	1.10	.44	.04	
5	5	69	28	11,2	1	SIG 5 W3
		2.72	1.10	.44	.04	
6	6	85	28	11,2	1	SIG 6 W3
		3.35	1.10	.44	.04	
7	7	117	28	11,2	1	SIG 7 W3
		4.61	1.10	.44	.04	
8	8	143	28	11,2	1	SIG 8 W3
		5.63	1.10	.44	.04	

#### Order Codes

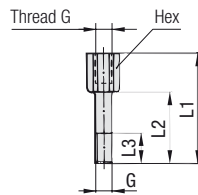
#### Safety Locking Plate

**\*SIG\*1\*W3**

* Safety Locking Plate		<b>SIG</b>
* STAUFF Group		<b>1</b>
* Material code	Carbon Steel, zinc/nickel-plated	<b>W3</b>
	Stainless Steel V2A	<b>W4</b>
	1.4301 / 1.4305 (AISI 304 / 303)	
	Stainless Steel V4A	<b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### Stacking Bolt (for Use with Safety Locking Plate SIG) Type AF



Group STAUFF	DIN	Dimensions (mm/in)					Order Codes (Standard Options)
		Thread G	L1	L2	L3 min.	Hex	
1	0	M6	34	20	12	11	AF 1 M W3
		1/4-20 UNC	1.34	.79	.47	.43	AF 1 U W3
1A	1	M6	34	20	12	11	AF 1A M W3
		1/4-20 UNC	1.34	.79	.47	.43	AF 1A U W3
2	2	M6	40	25	12	11	AF 2 M W3
		1/4-20 UNC	1.57	.98	.47	.43	AF 2 U W3
3	3	M6	44	30	12	11	AF 3 M W3
		1/4-20 UNC	1.73	1.18	.47	.43	AF 3 U W3
4	4	M6	49	35	12	11	AF 4 M W3
		1/4-20 UNC	1.93	1.38	.47	.43	AF 4 U W3
5	5	M6	64	50	12	11	AF 5 M W3
		1/4-20 UNC	2.52	1.97	.47	.43	AF 5 U W3
6	6	M6	74	60	12	11	AF 6 M W3
		1/4-20 UNC	2.91	2.36	.47	.43	AF 6 U W3
7	7	M6	99	85	12	11	AF 7 M W3
		1/4-20 UNC	3.90	3.35	.47	.43	AF 7 U W3
8	8	M6	124	110	12	11	AF 8 M W3
		1/4-20 UNC	4.88	4.33	.47	.43	AF 8 U W3

#### Order Codes

#### Stacking Bolt

**\*AF\*1\*M\*W3**

* Type of bolt	Stacking Bolt (according to STAUFF Standard)	<b>AF</b>
* STAUFF Group		<b>1</b>
* Thread code	Metric ISO thread	<b>M</b>
	Unified coarse (UNC) thread	<b>U</b>
* Material code	Carbon Steel, zinc/nickel-plated	<b>W3</b>
	Stainless Steel V2A	<b>W4</b>
	1.4301 / 1.4305 (AISI 304 / 303)	
	Stainless Steel V4A	<b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



### ① Type of Installation

Please select the type of installation (e.g. Weld Plates, Rail Nuts etc.) and add the corresponding Code to position ① of the order code for your clamp assembly.

Without Installation Equipment  
Code: **none**

#### Installation on Weld Plate

Single Weld Plate  
Code: **SP**

Elongated Weld Plate  
Code: **SPV**

Twin Weld Plate (for STAUFF Group 1 to 6 only)  
Code: **DSP**

Group Weld Plate (for STAUFF Group 1 to 6 only)  
Code: **RAP**

Angled Weld Plate (for STAUFF Group 1 to 6 only)  
Code: **WSP**

Bridge Weld Plate (for STAUFF Group 1A to 6 only)  
Code: **BSP**

#### Installation on Mounting / Channel Rail

Hexagon Rail Nut  
Code: **SM** (Carbon Steel)  
Code: **SMG** (Stainless Steel)

Channel Rail Adaptor  
Code: **CRA**

### ② Group Size & Diameter

Please select the required group size and diameter and add the corresponding Code to position ② of the order code for your clamp assembly.

Group	Outside Diameter	Availability of Clamp Body Materials & Designs			Code	
		STAUFF (DIN)	P / T / H (mm)	Profiled Design		Type H
1 (0)	6		●	●	○	106
	6,4		●	●	○	106,4
	8		●	●	○	108
	9,5		●	●	○	109,5
	10		●	●	○	110
1A (1)	12		●	●	○	112
	6		●	●	○	106A
	6,4		●	●	○	106,4A
	8		●	●	○	108A
	9,5		●	●	○	109,5A
2 (2)	10		●	●	○	110A
	12		●	●	○	112A
	12,7		●	●	○	212,7
	13,5		●	●	○	213,5
	14		●	●	○	214
	15		●	●	○	215
	16		●	●	○	216
3 (3)	17,2		●	●	○	217,2
	18		●	●	○	218
	19		●	●	○	319
	20		●	●	○	320
4 (4)	21,3		●	●	○	321,3
	22		●	●	○	322
	25		●	●	○	325
	25,4		●	●	○	325,4
	6		○	○	●	406
	8		○	○	●	408
	10		○	○	●	410
	12		○	○	●	412
	12,7		○	○	●	412,7
	14		○	○	●	414
	15		○	○	●	415
	16		○	○	●	416
	17,2		○	○	●	417,2
18		○	○	●	418	
19		○	○	●	419	
26,9		●	●	○	426,9	
28		●	●	○	428	
28,6		●	○	○	428,6	
30		●	●	○	430	
32		●	●	○	432	

Group	Outside Diameter	Availability of Clamp Body Materials & Designs			Code	
		STAUFF (DIN)	P / T / H (mm)	Profiled Design		Type H
5 (5)	32		●	●	○	532
	33,7		●	●	○	533,7
	35		●	●	○	535
	38		●	●	○	538
	40		●	●	○	540
	41,3		●	○	○	541,3
	42		●	●	○	542
6 (6)	20		○	○	●	620
	21,3		○	○	●	621,3
	22		○	○	●	622
	25		○	○	●	625
	26,9		○	○	●	626,9
	28		○	○	●	628
	30		○	○	●	630
	32		○	○	●	632
	44,5		●	●	○	644,5
	48,3		●	●	○	648,3
7 (7)	50,8		●	●	○	650,8
	54		●	●	○	654
	57,2		●	●	○	757,2
	60,3		●	●	○	760,3
	63,5		●	●	○	763,5
8 (8)	70		●	●	○	770
	73		●	●	○	773
	76,1		●	●	○	776,1
8 (8)	88,9		●	●	○	888,9
	102		●	●	○	8102L

● Standard Option

Additional outside diameters are available upon request. Please consult STAUFF for further information.

Please see pages A22 and A23 with detailed order examples for some of the most popular Standard Series clamp assemblies.

### ③ Clamp Body Design & Material

Please select the design and material of your clamp body and add the corresponding Code to position ③ of the order code for your clamp assembly.

Please check the availability of the selected clamp body design and material according to the matrix table in ②.

#### Profiled Design



Polypropylene  
Code: **PP**



Polyamide  
Code: **PA**



Thermoplastic Elastomer (87 Shore-A)  
Code: **SA**



Aluminium  
Code: **AL** (for STAUFF Group 1A to 6 only)

#### Type H (Smooth)



Polypropylene  
Code: **PPH**



Polyamide  
Code: **PAH**



Thermoplastic Elastomer (87 Shore-A)  
Code: **SAH**

#### Type RI (with Rubber Insert)



Polypropylene  
Code: **PPR** (for STAUFF Group 4 and 6 only)



Polyamide  
Code: **PAR** (for STAUFF Group 4 and 6 only)

See pages A88 / A89 for material properties and technical information.

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

### ④ Mounting & Fitting Combination

Please select the mounting and fitting combination (e.g. bolts, screws, cover plates etc.) and add the corresponding Code to position ④ of the order code for your clamp assembly.

#### Installation with Cover Plate and Bolts

Cover Plate DP with  
Hexagon Head Bolts AS  
Code: **DP-AS**

Cover Plate DP with  
Socket Cap Screws IS\*  
Code: **DP-IS**

#### Installation with Locking Plate and Bolts

Safety Locking Plate SIG with  
Stacking Bolts AF  
Code: **SIG-AF**

#### Installation with Inserts and Bolts

Inserts EP (Plastic) with  
Hexagon Head Bolts ASE  
Code: **EP-AS**

Inserts ES (Steel) with  
Hexagon Head Bolts ASE  
Code: **ES-AS**

#### Installation with Bolts only

Socket Cap Screws IS (Washers US included)  
Code: **IS**

Slotted Head Screws LI (Washers US included)  
Code: **LI** (for STAUFF Group 1 to 6 only)

\* Special lengths of Socket Cap Screws IS required. For exact lengths, please see details of Hexagon Head Bolt, type AS (for use with Cover Plates DP) on page A16.

### ⑤ Thread Type

Please select the required thread type and add the corresponding Code to position ⑤ of the order code for your clamp assembly.

Metric ISO thread  
Code: **M**

Unified coarse (UNC) thread  
Code: **U**

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table.

### ⑥ Material & Surface Finishing

Please select the required material & surface finishing of the metal parts and add the corresponding Code to position ⑥ of the order code for your clamp assembly.

Metal parts made of Carbon Steel, untreated **W1**

Metal parts made of Carbon Steel, phosphated **W2**

Metal parts made of Carbon Steel, zinc/nickel-plated **W3**

Metal parts made of Stainless Steel V2A  
1.4301 / 1.4305 (AISI 304 / 303) **W4**

Metal parts made of Stainless Steel V4A  
1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

Weld Plate made of Carbon Steel, phosphated; Other metal parts made of Carbon Steel, zinc/nickel-plated **W10**

Individual combinations of alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### ⑦ Assembling & Kitting

If required, please select an additional assembling and kitting option and add the corresponding Code to the last position of the order code for your clamp assembly.

**Components supplied separately**  
Code: **none** (standard option)

**Components assembled**  
Code: **#A** (special option)

**Components packed in kits**  
Code: **#K** (special option)



- 2x **Hexagon Head Bolt**  
Surface: W3  
Thread: Metric
- 1x **Cover Plate**  
Surface: W3
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Single Weld Plate**  
Surface: W2  
Thread: Metric

**Order Code****SP 212,7 PP DP-AS M W10**

W10 is the standard option for this type of installation.



- 2x **Socket Cap Screw**  
with Washer  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Single Weld Plate**  
Surface: W2  
Thread: Metric

**Order Code****SP 212,7 PP IS M W10**

W10 is the standard option for this type of installation.



- 2x **Slotted Head Screw**  
with Washer  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Single Weld Plate**  
Surface: W2  
Thread: Metric

**Order Code****SP 212,7 PP LI M W10**

W10 is the standard option for this type of installation.  
Available up to STAUFF Group 6 (DIN Group 6) only.



- 2x **Hexagon Head Bolt**  
Surface: W3  
Thread: Metric
- 1x **Cover Plate**  
Surface: W3
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Elongated Weld Plate**  
Surface: W2  
Thread: Metric

**Order Code****SPV 212,7 PP DP-AS M W10**

W10 is the standard option for this type of installation.



- 2x **Socket Cap Screw**  
with Washer  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Elongated Weld Plate**  
Surface: W2  
Thread: Metric

**Order Code****SPV 212,7 PP IS M W10**

W10 is the standard option for this type of installation.



- 2x **Slotted Head Screw**  
with Washer  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Elongated Weld Plate**  
Surface: W2  
Thread: Metric

**Order Code****SPV 212,7 PP LI M W10**

W10 is the standard option for this type of installation.  
Available up to STAUFF Group 6 (DIN Group 6) only.



- 2x **Hexagon Head Bolt**  
Surface: W3  
Thread: Metric
- 1x **Cover Plate**  
Surface: W3
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 2x **Hexagon Rail Nut**  
Surface: W3  
Thread: Metric

**Order Code** (Mounting Rail TS not included.)**SM 212,7 PP DP-AS M W3**

W3 is the standard option for this type of installation.



- 2x **Socket Cap Screw**  
with Washer  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 2x **Hexagon Rail Nut**  
Surface: W3  
Thread: Metric

**Order Code** (Mounting Rail TS not included.)**SM 212,7 PP IS M W3**

W3 is the standard option for this type of installation.



- 2x **Slotted Head Screw**  
with Washer  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 2x **Hexagon Rail Nut**  
Surface: W3  
Thread: Metric

**Order Code** (Mounting Rail TS not included.)**SM 212,7 PP LI M W3**

W3 is the standard option for this type of installation.  
Available up to STAUFF Group 6 (DIN Group 6) only.





- 2x **Hexagon Head Bolt**  
Surface: W3  
Thread: Metric
- 1x **Cover Plate**  
Surface: W3
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance

### Order Code

**212,7 PP DP-AS M W3**

W3 is the standard option for this type of installation.



- 2x **Socket Cap Screw**  
with Washer  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance

### Order Code

**212,7 PP IS M W3**

W3 is the standard option for this type of installation.



- 2x **Slotted Head Screw**  
with Washer  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
Tube-O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance

### Order Code

**212,7 PP LI M W3**

W3 is the standard option for this type of installation.



- 2x **Stacking Bolt**  
Surface: W3  
Thread: Metric
- 1x **Safety Locking Plate**  
Surface: W3
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance

### Order Code

**212,7 PP SIG-AF M W3**

W3 is the standard option for this type of installation.



- 1x **Socket Cap Screw**  
with Washer  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 1 (DIN 0)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance  
Thread: Metric
- 1x **Single Weld Plate**  
Surface: W2  
Thread: Metric

### Order Code\*

**SP 106 PP IS M W10**

W10 is the standard option for this type of installation.

### Thread codes

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table.

Metric ISO thread	<b>M</b>
Unified coarse (UNC) thread	<b>U</b>

### Material codes

The below listed material codes describe the materials and surface finishings of metal parts that are most relevant for Standard Series clamp assemblies. Individual combinations of alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

Metal parts made of Carbon Steel, untreated	<b>W1</b>
Metal parts made of Carbon Steel, phosphated	<b>W2</b>
Metal parts made of Carbon Steel, zinc/nickel-plated	<b>W3</b>
Metal parts made of Stainless Steel V2A	<b>W4</b>
1.4301 / 1.4305 (AISI 304 / 303)	<b>W4</b>
Metal parts made of Stainless Steel V4A	<b>W5</b>
1.4401 / 1.4571 (AISI 316 / 316 Ti)	<b>W5</b>
Weld Plate made of Carbon Steel, phosphated; Other metal parts made of Carbon Steel, zinc/nickel-plated	<b>W10</b>

### Technical Notes

\* Because of their design, STAUFF Group 1 (DIN Group 0) clamp assemblies only include one single bolt / screw.



- 2x **Hexagon Head Bolt**  
Surface: W3  
Thread: Metric
- 2x **Insert**  
Material: Plastic
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Single Weld Plate**  
Surface: W2  
Thread: Metric

### Order Code

**SP 212,7 PP EP-AS M W10**

W10 is the standard option for this type of installation.



- 2x **Hexagon Head Bolt**  
Surface: W3  
Thread: Metric
- 2x **Insert**  
Material: Plastic
- 1x **Clamp Body** (two halves)  
STAUFF Group 2 (DIN 2)  
O.D. 12,7 mm / .50 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Elongated Weld Plate**  
Surface: W2  
Thread: Metric

### Order Code

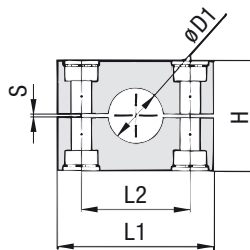
**SPV 212,7 PP EP-AS M W10**

W10 is the standard option for this type of installation.



### Clamp Body - Profiled Design

Profiled Inside Surface with Tension Clearance



#### Order Codes

##### Clamp Body

**\*3\*006\*PP**

One clamp body is consisting of two clamp halves.

- \* 1<sup>st</sup> part of STAUFF Group **3**
- \* Exact outside diameter Ø D1 (mm) **006**
- \* Material code (see below) **PP**

#### Standard Materials



**Polypropylene**  
Colour: Green  
Material code: **PP**



**Polyamide**  
Colour: Black  
Material code: **PA**



**Thermoplastic Elastomer** (87 Shore-A)  
Colour: Black  
Material code: **SA**



**Aluminium**  
Colour: Self-Colour  
Material code: **AL**

See pages A88 / A89 for material properties and technical information.

#### Special Materials

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

See pages A90 / A91 for material properties and technical information.

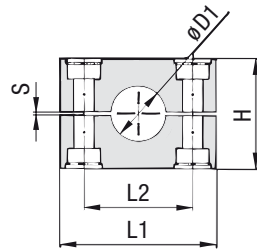
#### Product Features

- Proven, tested and trusted product in various markets
- Recommended for the safe installation of rigid pipes and tubes
- Available for all commonly used pipe and tube outside diameters
- Environmental protection due to vibration/noise reducing design
- Excellent weathering resistance, even under extreme conditions

Group	STAUFF	DIN	Outside Diameter		Nominal Bore		Order Codes (2 Clamp Halves) (** = Material)	Dimensions (mm/in)					
			Pipe / Tube Ø D1 (mm)	(in)	Pipe (in)	Copper Tube ASTM B88 (in)		L1 PP/PA/SA	L1 AL	L2	H	S min.	Width
3S	1	6					3006 **	55	56	33	32	0,6	30,5
		6,4	1/4			3006,4 **							
		8	5/16			3008 **							
		9,5	3/8	1/4		3009,5 **							
		10		1/8		3010 **							
		12				3012 **							
		12,7	1/2		3/8	3012,7 **							
		13,5		1/4		3013,5 **							
		14				3014 **							
		15				3015 **							
		16	5/8		1/2	3016 **							
		17,2		3/8		3017,2 **							
18				3018 **									
20				3020 **									
4S	2	19	3/4			4019 **	70	70	45	48	0,6	30,5	
		20				4020 **							
		21,3		1/2		4021,3 **							
		22			3/4	4022 **							
		25				4025 **							
		25,4	1			4025,4 **							
		26,9		3/4		4026,9 **							
		28				4028 **							
		30				4030 **							
		32	1-1/4			5032 **							
5S	3	33,7		1		5033,7 **	85	85	60	60	0,6	30,5	
		35			1-1/4	5035 **							
		38	1-1/2			5038 **							
		40				5040 **							
		41,3		1-1/2		5041,3 **							
		42		1-1/4		5042 **							
		38	1-1/2			6038 **							
6S	4	42		0		6042 **	115	120	90	89	2	45	
		44,5	1-3/4			6044,5 **							
		48,3		1-1/2		6048,3 **							
		50,8	2			6050,8 **							
		54			2	6054 **							
		55				6055 **							
		57				6057 **							
		57,2	2-1/4			6057,2 **							
		60,3		2		6060,3 **							
		63,5	2-1/2			6063,5 **							
65				6065 **									
70	2-3/4			6070 **									

See page A25 for STAUFF Group 7S to 12S (DIN Group 5 to 10).

Additional outside diameters are available upon request. Please consult STAUFF for further information.



### Clamp Body - Profiled Design

Profiled Inside Surface with Tension Clearance



Group	STAUFF	DIN	Outside Diameter		Nominal Bore	Order Codes (2 Clamp Halves) (** = Material)	Dimensions (mm/in)					
			Pipe / Tube Ø D1 (mm)	(in)			Pipe (in)	L1 PP/PA	L1 AL	L2	H	S min.
7S	5	60,3			7060,3 **	154	152	122	120	2	60	
		65			7065 **							
		70	2-3/4		7070 **							
		73		2-1/2 (ANSI B 36-10)	7073 **							
		75			7075 **							
		76,1	3	2-1/2 (DIN EN 10220)	7076,1 **							
		80			7080 **							
		82,5			7082,5 **							
8S	6	88,9	3-1/2	3	8088,9 **	206	208	168	168	2	80	
		100			8100 **							
		102	4	3-1/2	8102 **							
		108			8108 **							
		114	4-1/2	4	8114 **							
		127	5		8127 **							
		133			8133 **							
9S	7	127	5		9127 **	251	255	205	200	3	91	
		133			9133 **							
		140		5	9140 **							
		152	6		9152 **							
		159			9159 **							
		165			9165 **							
10S	8	168		6	10168 **	336	326	265	270	3	120	
		177,8			10177,8 **							
		193,7			10193,7 **							
		203	8		10203 **							
		216			10216 **							
11S	9	219		8	11219 **	470	470	395	410	8	162	
		273		10	11273 **							
		324		12	11324 **							
12S	10	356		14	12356 **	630	630	534	530	20	182	
		406		16	12406 **							

### Order Codes

#### Clamp Body

**\*7\*060,3\*PP**

One clamp body is consisting of two clamp halves.

- \* 1<sup>st</sup> part of STAUFF Group
- \* Exact outside diameter Ø D1 (mm)
- \* Material code (see below)

**7  
060,3  
PP**

### Standard Materials



**Polypropylene**  
Colour: Green  
Material code: **PP**



**Polyamide**  
Colour: Black  
Material code: **PA**



**Aluminium**  
Colour: Self-Colour  
Material code: **AL**

See pages A88 / A89 for material properties and technical information.

### Special Materials

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

See pages A90 / A91 for material properties and technical information.

### Product Features

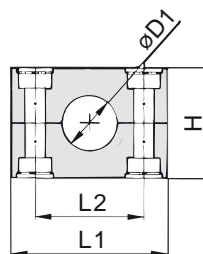
- Proven, tested and trusted product in various markets
- Recommended for the safe installation of rigid pipes and tubes
- Available for all commonly used pipe and tube outside diameters
- Environmental protection due to vibration/noise reducing design
- Excellent weathering resistance, even under extreme conditions

See page A24 for STAUFF Group 3S to 6S (DIN Group 1 to 4).

Additional outside diameters are available upon request. Please consult STAUFF for further information.

### Clamp Body ▪ Type H

Smooth Inside Surface without Tension Clearance



#### Order Codes

##### Clamp Body

**\*3\*006\*PPH**

One clamp body is consisting of two clamp halves.

- \* 1<sup>st</sup> part of STAUFF Group **3**
- \* Exact outside diameter Ø D1 (mm) **006**
- \* Material code (see below) **PPH**

#### Standard Materials



**Polypropylene**  
Colour: Green  
Material code: **PPH**



**Polyamide**  
Colour: Black  
Material code: **PAH**



**Thermoplastic Elastomer (87 Shore-A)**  
Colour: Black  
Material code: **SAH**

See pages A88 / A89 for material properties and technical information.

#### Special Materials

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

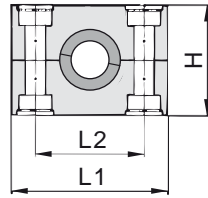
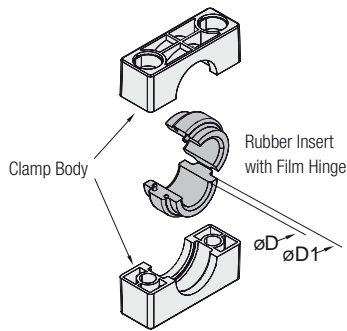
See pages A90 / A91 for material properties and technical information.

#### Product Features

- Proven, tested and trusted product in various markets
- Recommended for the safe installation of hoses and cables
- Chamfered edges avoid damaging of the hose or cable
- Available for all commonly used hose and cable outside diameters
- Excellent weathering resistance, even under extreme conditions

Group	STAUFF	DIN	Outside Diameter		Order Codes (2 Clamp Halves) (*** = Material)	Dimensions (mm/in)			
			Hose Ø D1 (mm)	(in)		L1	L2	H	Width
3S	1	6			3006 ***	55 2.16	33 1.30	30,5 1.20	30,5 1.20
		6,4		1/4	3006,4 ***				
		8		5/16	3008 ***				
		9,5		3/8	3009,5 ***				
		10			3010 ***				
		12			3012 ***				
		12,7		1/2	3012,7 ***				
		13,5			3013,5 ***				
		14			3014 ***				
		15			3015 ***				
		16		5/8	3016 ***				
		17,2			3017,2 ***				
18			3018 ***						
4S	2	19		3/4	4019 ***	70 2.76	45 1.77	46,5 1.83	30,5 1.20
		20			4020 ***				
		21,3			4021,3 ***				
		22			4022 ***				
		25			4025 ***				
		25,4		1	4025,4 ***				
		26,9			4026,9 ***				
		28			4028 ***				
30			4030 ***						
5S	3	30			5030 ***	85 3.35	60 2.36	58 2.28	30,5 1.20
		32		1-1/4	5032 ***				
		33,7			5033,7 ***				
		35			5035 ***				
		38		1-1/2	5038 ***				
		40			5040 ***				
		41,3			5041,3 ***				
42			5042 ***						
6S	4	38		1-1/2	6038 ***	115 4.53	90 3.54	87 3.43	45 1.77
		42			6042 ***				
		44,5		1-3/4	6044,5 ***				
		48,3			6048,3 ***				
		50,8		2	6050,8 ***				
		55			6055 ***				
		57			6057 ***				
		57,2		2-1/4	6057,2 ***				
		60,3			6060,3 ***				
		63,5		2-1/2	6063,5 ***				
65			6065 ***						
70		2-3/4	6070 ***						

Additional outside diameters are available upon request. Please consult STAUFF for further information.



### Clamp Body with Rubber Insert Type RI



Group	STAUFF DIN	Outside Diameter		Order Codes (**R = Clamp Body Material)			Dimensions (mm/in)				
		Pipe / Tube / Hose $\varnothing D$ (mm)	(in)	Clamp Assembly (Clamp Body + Rubber Insert)	Clamp Body (2 Clamp Halves)	Rubber Insert *	$\varnothing D1$	L1	L2	H	Width
4S	2	6		4006 **R	4S **R	RI 06 (4+4S)	25	70	45	46,5	30,5
		8	5/16	4008 **R		RI 08 (4+4S)					
		10		4010 **R		RI 10 (4+4S)					
		12		4012 **R		RI 12 (4+4S)					
		12,7	1/2	4012,7 **R		RI 12,7 (4+4S)					
		14		4014 **R		RI 14 (4+4S)					
		15		4015 **R		RI 15 (4+4S)					
		16	5/8	4016 **R		RI 16 (4+4S)					
		17,2		4017,2 **R		RI 17,2 (4+4S)					
		18		4018 **R		RI 18 (4+4S)					
19	3/4	4019 **R	RI 19 (4+4S)								
5S	3	20		5020 **R	5S **R	RI 20 (6+5S)	38	85	60	58	30,5
		21,3		5021,3 **R		RI 21,3 (6+5S)					
		22	7/8	5022 **R		RI 22 (6+5S)					
		25		5025 **R		RI 25 (6+5S)					
		26,9		5026,9 **R		RI 26,9 (6+5S)					
		28		5028 **R		RI 28 (6+5S)					
		30		5030 **R		RI 30 (6+5S)					
		32	1-1/4	5032 **R		RI 32 (6+5S)					
		32	1-1/4	6032 **R		RI 32 (6S)					
		33,7		6033,7 **R		RI 33,7 (6S)					
35		6035 **R	RI 35 (6S)								
38,7		6038,7 **R	RI 38,7 (6S)								
40		6040 **R	RI 40 (6S)								
42		6042 **R	RI 42 (6S)								
45,5		6045,5 **R	RI 45,5 (6S)								
48		6048 **R	RI 48 (6S)								
51	2	6051 **R	RI 51 (6S)								
53,4		6053,4 **R	RI 53,4 (6S)								
56,4		6056,4 **R	RI 56,4 (6S)								
7S	5	55		7055 **R	7S **R	RI 55 (7S)	88	154	122	120	60
		57	2-1/4	7057 **R		RI 57 (7S)					
		60		7060 **R		RI 60 (7S)					
		63,5	2-1/2	7063,5 **R		RI 63,5 (7S)					
		65		7065 **R		RI 65 (7S)					
		70	2-3/4	7070 **R		RI 70 (7S)					
		72		7072 **R		RI 72 (7S)					
		76	3	7076 **R		RI 76 (7S)					
8S	6	80		8080 **R	8S **R	RI 80 (8S)	114	208	168	168	80
		88,9	3-1/2	8088,9 **R		RI 88,9 (8S)					
		102		8102 **R		RI 102 (8S)					
		114		9114 **R		RI 114 (9S)					
9S	7	133	5-1/4	9133 **R	9S **R	RI 133 (9S)	150	251	205	200	91
		140		9140 **R		RI 140 (9S)					
		150		10150 **R		RI 150 (10S)					
10S	8	165		10165 **R	10S **R	RI 165 (10S)	200	336	265	270	120
		168		10168 **R		RI 168 (10S)					
		172		10172 **R		RI 172 (10S)					

\* Rubber Inserts for Heavy Series clamp bodies, STAUFF Group 4S also fit into Standard Series clamp bodies, STAUFF Group 4. Rubber Inserts for Heavy Series clamp bodies, STAUFF Group 5S also fit into Standard Series clamp bodies, STAUFF Group 6.

Additional outside diameters are available upon request. Please consult STAUFF for further information.

### Order Codes

#### Clamp Assembly

**\*4\*006\*PPR**

One assembly is consisting of one clamp body and one insert.

\* 1<sup>st</sup> part of STAUFF Group **4**  
 \* Exact outside diameter  $\varnothing D$  (mm) **006**  
 \* Material code (see below) **PPR**

#### Clamp Body

**\*4S\*PPR**

One clamp body is consisting of two clamp halves.

\* STAUFF Group **4S**  
 \* Material code (see below) **PPR**

#### Rubber Insert

**\*RI\*06\*(4+4S)**

\* Rubber Insert **RI**  
 \* Exact outside diameter  $\varnothing D$  (mm) **06**  
 \* STAUFF Group 4S (Heavy) and 4 (Standard) **(4+4S)**  
 5S (Heavy) and 6 (Standard) **(6+5S)**  
 6S (Heavy) **(6S)**  
 7S (Heavy) **(7S)**  
 8S (Heavy) **(8S)**  
 9S (Heavy) **(9S)**  
 10S (Heavy) **(10S)**

### Standard Materials



**Polypropylene**  
 Colour: Black  
 Material code: **PPR**



**Polyamide**  
 Colour: Black  
 Material code: **PAR**



**Rubber Insert**  
 4S to 6S: **Thermoplastic Elastomer** (73 Shore-A)  
 7S to 10S: **EPDM** (70 Shore-A)  
 Colour: Black

See pages A88 / A89 for material properties and technical information.

### Special Materials

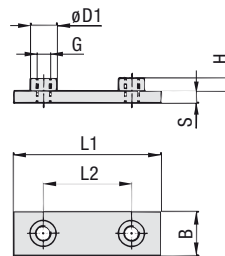
Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

See pages A90 / A91 for material properties and technical information.

### Product Features

- Proven, tested and trusted product in various markets
- Either for the extra vibration/noise reducing installation of pipes and tubes or the extra gentle installation of hoses and cables
- Available for all commonly used outside diameters
- Excellent weathering resistance, even under extreme conditions

**Weld Plate for Single Clamps**  
Type SPAL



**Order Codes**

**Weld Plate**

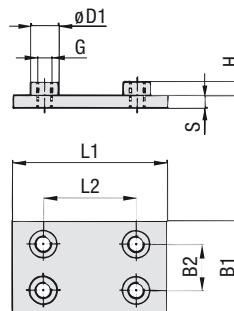
**\*SPAL\*3S\*M\*W2**

- \* Weld Plate for Single Clamps **SPAL**
- \* STAUFF Group **3S**
- \* Thread code   Metric ISO thread **M**  
                  Unified coarse (UNC) thread **U**
- \* Material code   Carbon Steel, untreated **W1**  
                  Carbon Steel, phosphated **W2**  
                  Carbon Steel, zinc/nickel-plated **W3**  
  
                  Stainless Steel V2A **W4**  
                  1.4301 / 1.4305 (AISI 304 / 303)  
                  Stainless Steel V4A **W5**  
                  1.4401 / 1.4571 (AISI 316 / 316 Ti)

Group	STAUFF	DIN	Dimensions (mm/m)					Thread G	ØD1	Order Codes (Standard Options)
			L1	L2	B	S	H			
3S	1	1	74	33	30	8	8	M10	18	SPAL 3S M W2
			2.91	1.30	1.18	.31	.31	3/8-16 UNC	.71	SPAL 3S U W2
4S	2	2	86	45	30	8	8	M10	18	SPAL 4S M W2
			3.39	1.77	1.18	.31	.31	3/8-16 UNC	.71	SPAL 4S U W2
5S	3	3	100	60	30	8	8	M10	18	SPAL 5S M W2
			3.94	2.36	1.18	.31	.31	3/8-16 UNC	.71	SPAL 5S U W2
6S	4	4	140	90	45	10	8	M12	20	SPAL 6S M W2
			5.51	3.54	1.77	.39	.31	7/16-14 UNC	.78	SPAL 6S U W2
7S	5	5	180	122	60	10	12	M16	24	SPAL 7S M W2
			7.09	4.80	2.36	.39	.47	5/8-11 UNC	.94	SPAL 7S U W2
8S	6	6	226	168	80	15	18	M20	30	SPAL 8S M W1
			8.90	6.61	3.15	.59	.71	3/4-10 UNC	1.18	SPAL 8S U W1
9S	7	7	270	205	90	15	21	M24	35	SPAL 9S M W1
			10.63	8.07	3.54	.59	.83	7/8-9 UNC	1.38	SPAL 9S U W1
10S	8	8	340	265	120	25	21	M30	45	SPAL 10S M W1
			13.39	10.43	4.72	.98	.83	1-1/8-7 UNC	1.77	SPAL 10S U W1
11S	9	9	520	395	160	30	38	M30	50	SPAL 11S M W1
			20.47	15.55	6.30	1.18	1.50	1-1/4-7 UNC	1.97	SPAL 11S U W1
12S	10	10	680	534	180	30	38	M30	50	SPAL 12S M W1
			27.16	21.02	7.09	1.18	1.50	1-1/4-7 UNC	1.97	SPAL 12S U W1

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Weld Plate for Double Clamps**  
Type SPAS



**Order Codes**

**Weld Plate**

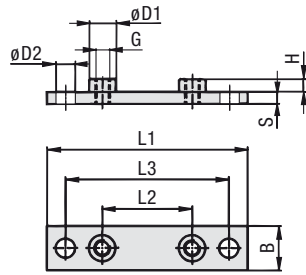
**\*SPAS\*3S\*M\*W2**

- \* Weld Plate for Double Clamps **SPAS**
- \* STAUFF Group **3S**
- \* Thread code   Metric ISO thread **M**  
                  Unified coarse (UNC) thread **U**
- \* Material code   Carbon Steel, untreated **W1**  
                  Carbon Steel, phosphated **W2**  
                  Carbon Steel, zinc/nickel-plated **W3**  
  
                  Stainless Steel V2A **W4**  
                  1.4301 / 1.4305 (AISI 304 / 303)  
                  Stainless Steel V4A **W5**  
                  1.4401 / 1.4571 (AISI 316 / 316 Ti)

Group	STAUFF	DIN	Dimensions (mm/m)					Thread G	ØD1	Order Codes (Standard Options)	
			L1	L2	B1	B2	S				
3S	1	1	74	33	60	30,5	8	8	M10	18	SPAS 3S M W2
			2.91	1.30	2.36	1.20	.31	.31	3/8-16 UNC	.71	SPAS 3S U W2
4S	2	2	86	45	60	30,5	8	8	M10	18	SPAS 4S M W2
			3.39	1.77	2.36	1.20	.31	.31	3/8-16 UNC	.71	SPAS 4S U W2
5S	3	3	100	60	60	30,5	8	8	M10	18	SPAS 5S M W2
			3.94	2.36	2.36	1.20	.31	.31	3/8-16 UNC	.71	SPAS 5S U W2
6S	4	4	140	90	90	46	10	8	M12	20	SPAS 6S M W2
			5.51	3.54	3.54	1.81	.39	.31	7/16-14 UNC	.78	SPAS 6S U W2
7S	5	5	180	122	120	61	10	12	M16	24	SPAS 7S M W2
			7.09	4.80	4.72	2.40	.39	.47	5/8-11 UNC	.94	SPAS 7S U W2
8S	6	6	226	168	160	81	15	18	M20	30	SPAS 8S M W1
			8.90	6.61	6.61	3.19	.59	.71	3/4-10 UNC	1.18	SPAS 8S U W1
9S	7	7	270	205	180	91	15	21	M24	35	SPAS 9S M W1
			10.63	8.07	7.09	3.58	.59	.83	7/8-9 UNC	1.38	SPAS 9S U W1
10S	8	8	340	265	240	121	25	21	M30	45	SPAS 10S M W1
			13.39	10.43	9.45	4.78	.98	.83	1-1/8-7 UNC	1.77	SPAS 10S U W1
11S	9	9	520	395	324	166	30	38	M30	50	SPAS 11S M W1
			20.47	15.55	12.76	6.54	1.18	1.50	1-1/4-7 UNC	1.97	SPAS 11S U W1
12S	10	10	680	534	364	186	30	38	M30	50	SPAS 12S M W1
			27.16	21.02	14.33	7.32	1.18	1.50	1-1/4-7 UNC	1.97	SPAS 12S U W1

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.





### Elongated Weld Plate for Single Clamps Type SPAL/DUEB



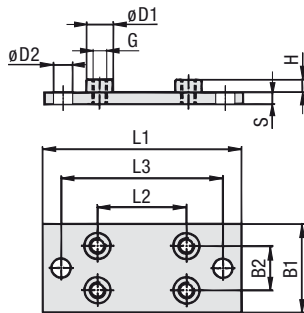
Group STAUFF	DIN	Dimensions (mm/m)										Order Codes (Standard Options)	
		L1	L2	L3	B	S	H	Thread G	$\varnothing D1$	$\varnothing D2$			
3S	1	113	33	85	30	8	8	M10	18	13	SPAL/DUEB 3S M W2		
		4.45	1.30	3.35	1.18	.31	.31	3/8-16 UNC	.71	.51	SPAL/DUEB 3S U W2		
4S	2	125	45	97	30	8	8	M10	18	13	SPAL/DUEB 4S M W2		
		4.92	1.77	3.82	1.18	.31	.31	3/8-16 UNC	.71	.51	SPAL/DUEB 4S U W2		
5S	3	140	60	112	30	8	8	M10	18	13	SPAL/DUEB 5S M W2		
		5.51	2.36	4.41	1.18	.31	.31	3/8-16 UNC	.71	.51	SPAL/DUEB 5S U W2		
6S	4	187	90	155	45	10	8	M12	20	16	SPAL/DUEB 6S M W2		
		7.36	3.54	6.10	1.77	.39	.31	7/16-14 UNC	.78	.62	SPAL/DUEB 6S U W2		
7S	5	238	122	198	60	10	12	M16	24	21	SPAL/DUEB 7S M W2		
		9.37	4.80	7.80	2.36	.39	.47	5/8-11 UNC	.94	.83	SPAL/DUEB 7S U W2		
8S	6	309	168	259	80	15	18	M20	30	26	SPAL/DUEB 8S M W1		
		12.17	6.61	10.20	3.15	.59	.71	3/4-10 UNC	1.18	1.02	SPAL/DUEB 8S U W1		
9S	7	370	205	310	90	15	21	M24	35	31	SPAL/DUEB 9S M W1		
		14.57	8.07	12.20	3.54	.59	.83	7/8-9 UNC	1.38	1.22	SPAL/DUEB 9S U W1		
10S	8	440	265	380	120	25	21	M30	45	31	SPAL/DUEB 10S M W1		
		17.32	10.43	14.96	4.72	.98	.83	1-1/8-7 UNC	1.77	1.22	SPAL/DUEB 10S U W1		
11S	9	590	395	530	160	30	38	M30	50	31	SPAL/DUEB 11S M W1		
		23.23	15.55	20.87	6.30	1.18	1.50	1-1/4-7 UNC	1.97	1.22	SPAL/DUEB 11S U W1		
12S	10	750	534	690	180	30	38	M30	50	31	SPAL/DUEB 12S M W1		
		29.53	21.02	27.17	7.09	1.18	1.50	1-1/4-7 UNC	1.97	1.22	SPAL/DUEB 12S U W1		

#### Order Codes

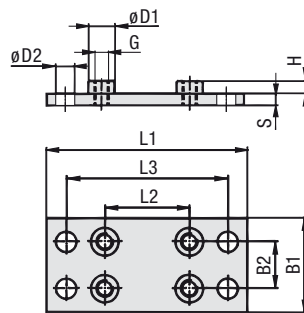
#### Weld Plate \*SPAL/DUEB\*3S\*M\*W2

- \* Elongated Weld Plate for Single Clamps **SPAL/DUEB**
- \* STAUFF Group **3S**
- \* Thread code Metric ISO thread **M**  
Unified coarse (UNC) thread **U**
- \* Material code Carbon Steel, untreated **W1**  
Carbon Steel, phosphated **W2**  
Carbon Steel, zinc/nickel-plated **W3**  
Stainless Steel V2A **W4**  
1.4301 / 1.4305 (AISI 304 / 303) **W4**  
Stainless Steel V4A **W5**  
1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



STAUFF Group 3S to 9S



STAUFF Group 10S to 12S

### Elongated Weld Plate for Double Clamps Type SPAS/DUEB



Design for STAUFF Group 10S to 12S

Group STAUFF	DIN	Dimensions (mm/m)										Order Codes (Standard Options)	
		L1	L2	L3	B1	B2	S	H	Thread G	$\varnothing D1$	$\varnothing D2$		
3S	1	113	33	85	60	30.5	8	8	M10	18	13	SPAS/DUEB 3S M W2	
		4.45	1.30	3.35	2.36	1.20	.31	.31	3/8-16 UNC	.71	.51	SPAS/DUEB 3S U W2	
4S	2	125	45	97	60	30.5	8	8	M10	18	13	SPAS/DUEB 4S M W2	
		4.92	1.77	3.82	2.36	1.20	.31	.31	3/8-16 UNC	.71	.51	SPAS/DUEB 4S U W2	
5S	3	140	60	112	60	30.5	8	8	M10	18	13	SPAS/DUEB 5S M W2	
		5.51	2.36	4.41	2.36	1.20	.31	.31	3/8-16 UNC	.71	.51	SPAS/DUEB 5S U W2	
6S	4	187	90	155	90	46	10	8	M12	20	16	SPAS/DUEB 6S M W2	
		7.36	3.54	6.10	3.54	1.81	.39	.31	7/16-14 UNC	.78	.62	SPAS/DUEB 6S U W2	
7S	5	238	122	198	120	61	10	12	M16	24	21	SPAS/DUEB 7S M W2	
		9.37	4.80	7.80	4.72	2.40	.39	.47	5/8-11 UNC	.94	.83	SPAS/DUEB 7S U W2	
8S	6	309	168	259	160	81	15	18	M20	30	26	SPAS/DUEB 8S M W1	
		12.17	6.61	10.20	6.61	3.19	.59	.71	3/4-10 UNC	1.18	1.02	SPAS/DUEB 8S U W1	
9S	7	370	205	310	180	91	15	21	M24	35	31	SPAS/DUEB 9S M W1	
		14.57	8.07	12.20	7.09	3.58	.59	.83	7/8-9 UNC	1.38	1.22	SPAS/DUEB 9S U W1	
10S	8	440	265	380	240	121	25	21	M30	45	31	SPAS/DUEB 10S M W1	
		17.32	10.43	14.96	9.45	4.78	.98	.83	1-1/8-7 UNC	1.77	1.22	SPAS/DUEB 10S U W1	
11S	9	590	395	530	324	166	30	38	M30	50	31	SPAS/DUEB 11S M W1	
		23.23	15.55	20.87	12.76	6.54	1.18	1.50	1-1/4-7 UNC	1.97	1.22	SPAS/DUEB 11S U W1	
12S	10	750	534	690	364	186	30	38	M30	50	31	SPAS/DUEB 12S M W1	
		29.53	21.02	27.17	14.33	7.32	1.18	1.50	1-1/4-7 UNC	1.97	1.22	SPAS/DUEB 12S U W1	

#### Order Codes

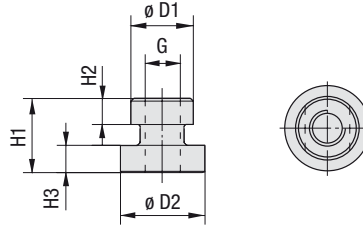
#### Weld Plate \*SPAS/DUEB\*3S\*M\*W2

- \* Elongated Weld Plate for Double Clamps **SPAS/DUEB**
- \* STAUFF Group **3S**
- \* Thread code Metric ISO thread **M**  
Unified coarse (UNC) thread **U**
- \* Material code Carbon Steel, untreated **W1**  
Carbon Steel, phosphated **W2**  
Carbon Steel, zinc/nickel-plated **W3**  
Stainless Steel V2A **W4**  
1.4301 / 1.4305 (AISI 304 / 303) **W4**  
Stainless Steel V4A **W5**  
1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### Mounting Rail Nut

Type **GMV** (for Use with Mounting Rail STSV)



#### Order Codes

Mounting Rail Nut **\*GMV\*3-5S\*M\*W3**

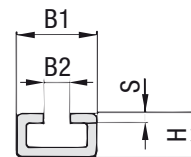
- \* Mounting Rail Nut **GMV**
- \* STAUFF Group 3S to 5S (DIN Group 1 to 3) **3-5S**  
6S (DIN Group 4) **6S**
- \* Thread code Metric ISO thread **M**  
Unified coarse (UNC) thread **U**
- \* Material code Carbon Steel, zinc/nickel-plated **W3**  
Stainless Steel V2A **W4**  
1.4301 / 1.4305 (AISI 304 / 303)  
Stainless Steel V4A **W5**  
1.4401 / 1.4571 (AISI 316 / 316 Ti)

Group STAUFF	DIN	Dimensions (mm / in)					Thread G	Order Codes (Standard Options)
		ØD1	ØD2	H1	H2	H3		
3S	1							
4S	2	17,8 .70	24 .94	21 .83	7,6 .30	7,4 .29	M10 3/8-16 UNC	GMV 3-5S M W3 GMV 3-5S U W3
5S	3							
6S	4	19,8 .78	24 .94	23 .91	8,8 .35	8,2 .32	M12 7/16-14 UNC	GMV 6S M W3 GMV 6S U W3

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### Mounting Rail

Type **STSV** (for Use with Mounting Rail Nut GMV)



#### Order Codes

Mounting Rail **\*STSV\*1\*W1**

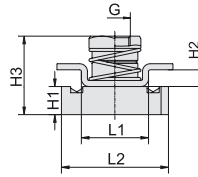
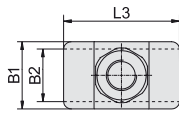
- \* Mounting Rail **STSV**
- \* Length of rail 1 m / 3.28 ft **-1M**  
2 m / 6.56 ft **-2M**  
Alternative lengths available upon request. Consult STAUFF for further information.
- \* Material code Carbon Steel, untreated **W1**  
Carbon Steel, zinc/nickel-plated **W3**  
Stainless Steel V4A **W5**  
1.4401 / 1.4571 (AISI 316 / 316 Ti)

Group STAUFF	DIN	Dimensions (mm / in)				Order Codes (Standard Options)	
		B1	B2	H	S	Length of Rail: 1 m / 3.28ft	Length of Rail: 2 m / 6.56ft
3S	1						
4S	2						
5S	3	40 1.57	13 .51	22 .86	5 .19	STSV -1M W1	STSV -2M W1
6S	4						

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



## Channel Rail Adaptor (for Use with Various Channel Rails) Type CRA



Group STAUFF	DIN	Dimensions (mm/in)									Order Codes (Standard Options)	
		Thread G	L1	L2	L3	B1	B2	H1	H2	H3		
3S	1											
4S	2	M10	22	35	38	22	20,5	9,2	5,5	27,5	CRA 3-5S M W3 CRA 3-5S U W3	
		3/8-16 UNC	.87	1.38	1.50	.87	.81	.36	.22	1.08		
5S	3											
6S	4	M12	21,5	35	45	25	19	9,2	5	27,5	CRA 6S M W3 CRA 6S U W3	
		7/16-14 UNC	.85	1.38	1.77	.98	.75	.36	.20	1.08		

### Order Codes

#### Adaptor

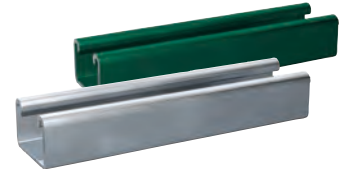
**\*CRA\*3-5S\*M\*W3**

* Channel Rail Adaptor	CRA
* STAUFF Group	3S to 5S (DIN Group 1 to 3) 6S (DIN Group 4)
* Thread code	Metric ISO thread Unified coarse (UNC) thread
* Material code	Carbon Steel, zinc/nickel-plated Stainless Steel V4A 1.4401 / 1.4571 (AISI 316 / 316 Ti)

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

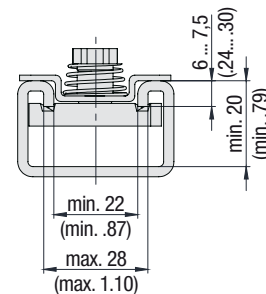
### Compatibility with Channel Rails

The STAUFF Channel Rail Adaptor, type CRA is suitable for various channel rails, including the following types:



HALFEN	HILTI	UNISTRUT®	STAUFF (Cushion Clamp Series)
HM 41/41	MQ-21, MQ-41, MQ-52, MQ-72	P1000, P1000T, P1000V, P1000VT, P1001	SCS-048-1-PL, SCS-048-1-GR
HZA 41/22	MQ-21U, MQ-41U, MQ-72U	P2000, P2000T	SCS-120-1-PL, SCS-120-1-GR
HZM 41/41	MQ-21D, MQ-41D, MQ-52-72D	P3003, P3003T, P3300V, P3300VT, P3301	See page A83 for technical information.
HZM 41/22		P4000, P4000T	
HL 41/41, HL 41/B2		P5000, P5000T, P5001, P5500, P5500T, P5501	

Consult STAUFF to check compatibility with additional types of channel rails.



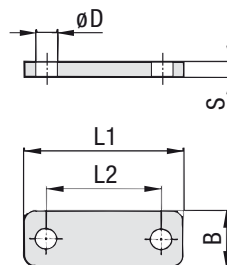
**Basic dimensional requirements for channel rails to be used with STAUFF Channel Rail Adaptors, type CRA**

### Recommended Bolt Lengths when using the Channel Rail Adaptor, Type CRA

Group STAUFF	DIN	Hexagon Head Bolts AS (used with Cover Plates DPAL or DPAS)		Socket Cap Screws IS (used without Cover Plates DPAL or DPAS)	
		Metric ISO thread	Unified coarse (UNC) thread	Metric ISO thread	Unified coarse (UNC) thread
3S	1	M10 x 40	3/8-16 UNC x 1-1/2	M10 x 25	3/8-16 UNC x 1
4S	2	M10 x 55	3/8-16 UNC x 2-1/4	M10 x 40	3/8-16 UNC x 1-1/2
5S	3	M10 x 65	3/8-16 UNC x 2-3/4	M10 x 50	3/8-16 UNC x 2
6S	4	M12 x 100	7/16-14 UNC x 3-3/4	M12 x 75	7/16-14 UNC x 3

Clamp assemblies including Channel Rail Adaptors, type CRA are supplied with the recommended bolt lengths by default. See page A36 for further information on ordering.

**Cover Plate for Single Clamps  
Type DPAL**



**Order Codes**

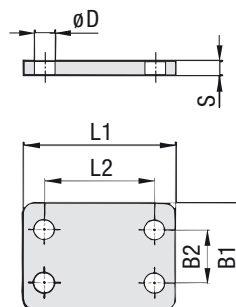
**Cover Plate** **\*DPAL\*3S\*W2**

- \* Cover Plate for Single Clamps **DPAL**
- \* STAUFF Group **3S**
- \* Material code
  - Carbon Steel, untreated **W1**
  - Carbon Steel, phosphated **W2**
  - Carbon Steel, zinc/nickel-plated **W3**
  - Stainless Steel V2A **W4**
  - 1.4301 / 1.4305 (AISI 304 / 303) **W4**
  - Stainless Steel V4A **W5**
  - 1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

Group STAUFF	DIN	Dimensions (mm/m)					Order Codes (Standard Options)
		L1	L2	B	S	ØD	
3S	1	55	33	30	8	11	DPAL 3S W2
		2.16	1.30	1.18	.31	.43	
4S	2	70	45	30	8	11	DPAL 4S W2
		2.76	1.77	1.18	.31	.43	
5S	3	85	60	30	8	11	DPAL 5S W2
		3.35	2.36	1.18	.31	.43	
6S	4	115	90	45	10	14	DPAL 6S W2
		4.53	3.54	1.77	.39	.55	
7S	5	152	122	60	10	19	DPAL 7S W2
		5.98	4.80	2.36	.39	.75	
8S	6	206	168	80	15	22	DPAL 8S W1
		8.11	6.61	3.15	.59	.87	
9S	7	251	205	90	15	26	DPAL 9S W1
		9.88	8.07	3.54	.59	1.02	
10S	8	320	265	120	25	35	DPAL 10S W1
		12.60	10.43	4.72	.98	1.38	
11S	9	470	395	160	30	35	DPAL 11S W1
		18.50	15.55	6.30	1.18	1.38	
12S	10	630	534	180	30	35	DPAL 12S W1
		24.80	21.02	7.09	1.18	1.38	

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Cover Plate for Double Clamps  
Type DPAS**



**Order Codes**

**Cover Plate** **\*DPAS\*3S\*W2**

- \* Cover Plate for Double Clamps **DPAS**
- \* STAUFF Group **3S**
- \* Material code
  - Carbon Steel, untreated **W1**
  - Carbon Steel, phosphated **W2**
  - Carbon Steel, zinc/nickel-plated **W3**
  - Stainless Steel V2A **W4**
  - 1.4301 / 1.4305 (AISI 304 / 303) **W4**
  - Stainless Steel V4A **W5**
  - 1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

Group STAUFF	DIN	Dimensions (mm/m)					Order Codes (Standard Options)	
		L1	L2	B1	B2	S		ØD
3S	1	55	33	60	30,5	8	11	DPAS 3S W2
		2.16	1.30	2.36	1.20	.31	.43	
4S	2	70	45	60	30,5	8	11	DPAS 4S W2
		2.76	1.77	2.36	1.20	.31	.43	
5S	3	83	60	60	30,5	8	11	DPAS 5S W2
		3.27	2.36	2.36	1.20	.31	.43	
6S	4	115	90	90	46	10	14	DPAS 6S W2
		4.53	3.54	3.54	1.81	.39	.55	
7S	5	152	122	120	61	10	19	DPAS 7S W2
		5.98	4.80	4.72	2.40	.39	.75	
8S	6	206	168	160	81	15	22	DPAS 8S W1
		8.11	6.61	6.61	3.19	.59	.87	
9S	7	251	205	180	91	15	26	DPAS 9S W1
		9.88	8.07	7.09	3.58	.59	1.02	
10S	8	320	265	240	121	25	35	DPAS 10S W1
		12.60	10.43	9.45	4.78	.98	1.38	
11S	9	470	395	321	166	30	35	DPAS 11S W1
		18.50	15.55	12.64	6.54	1.18	1.38	
12S	10	630	534	361	186	30	35	DPAS 12S W1
		24.80	21.02	14.21	7.32	1.18	1.38	

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

## Hexagon Head Bolt Type AS



### Hexagon Head Bolt AS

(according to DIN 931 / 933 or ANSI / ASME B18.2.1.)

Dimensions applicable only when used with Cover Plates DPAL or DPAS

Group STAUFF	DIN	Dimensions (mm/in) Thread G x L	Order Codes (Standard Options)
3S	1	M10 x 45	AS 3S M W1
		3/8-16 UNC x 1-3/4	AS 3S U W3*
4S	2	M10 x 60	AS 4S M W1
		3/8-16 UNC x 2-1/4	AS 4S U W3*
5S	3	M10 x 70	AS 5S M W1
		3/8-16 UNC x 2-3/4	AS 5S U W3*
6S	4	M12 x 100	AS 6S M W1
		7/16-14 UNC x 4	AS 6S U W3*
7S	5	M16 x 130	AS 7S M W1
		5/8-11 UNC x 5-1/4	AS 7S U W3*
8S	6	M20 x 190	AS 8S M W1
		3/4-10 UNC x 7-1/2	AS 8S U W1
9S	7	M24 x 220	AS 9S M W1
		7/8-9 UNC x 8-3/4	AS 9S U W1
10S	8	M30 x 300	AS 10S M W1
		1-1/8-7 UNC x 12	AS 10S U W1
11S	9	M30 x 450	AS 11S M W1
		1-1/4-7 UNC x 17-1/2	AS 11S U W1
12S	10	M30 x 560	AS 12S M W1
		1-1/4-7 UNC x 22	AS 12S U W1

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



### Order Codes

#### Hexagon Head Bolt \*AS\*3S\*M\*W1

* Type of bolt	Hexagon Head Bolt (according to DIN 931 / 933 or ANSI / ASME B18.2.1.)	AS
* STAUFF Group		3S
* Thread code	Metric ISO thread	M
	Unified coarse (UNC) thread	U
* Material code	Carbon Steel, untreated	W1
	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	W4
	1.4301 / 1.4305 (AISI 304 / 303)	
	Stainless Steel V4A	W5
1.4401 / 1.4571 (AISI 316 / 316 Ti)		

\* Standard finishing option for Heavy Series group sizes 3S to 7S in North America is W3 (Carbon Steel, zinc/nickel-plated).

## Socket Cap Screw Type IS



### Socket Cap Screw IS

(according to ISO 4762 or ANSI / ASME B18.3)

Dimensions applicable only when used without Cover Plates

Group STAUFF	DIN	Dimensions (mm/in) Thread G x L	Order Codes (Standard Options)
3S	1	M10 x 30	IS 3S M W1
		3/8-16 UNC x 1	IS 3S U W3*
4S	2	M10 x 40	IS 4S M W1
		3/8-16 UNC x 1-3/4	IS 4S U W3*
5S	3	M10 x 50	IS 5S M W1
		3/8-16 UNC x 2	IS 5S U W3*
6S	4	M12 x 80	IS 6S M W1
		7/16-14 UNC x 3-1/4	IS 6S U W3*

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

\* Standard finishing option in North America is W3 (Carbon Steel, zinc/nickel-plated).

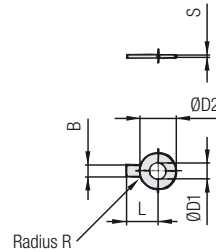


### Order Codes

#### Socket Cap Screw \*IS\*3S\*M\*W1

* Type of Bolt	Socket Cap Screw (according to ISO 4762 or ANSI / ASME B18.3)	IS
* STAUFF Group		3S
* Thread code	Metric ISO thread	M
	Unified coarse (UNC) thread	U
* Material code	Carbon Steel, untreated	W1
	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	W4
	1.4301 / 1.4305 (AISI 304 / 303)	
	Stainless Steel V4A	W5
1.4401 / 1.4571 (AISI 316 / 316 Ti)		

**Safety Washer**  
Type SI (DIN 93)



Safety Washer SI (according to DIN 93)

**Order Codes**

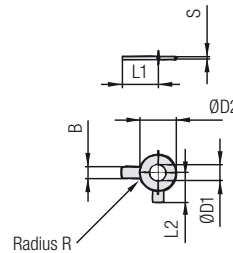
**Safety Washer \*SI\*10,5\*DIN 93\*W3**

- \* Safety Washer **SI**
- \* Exact inner diameter ØD1 (mm) **10,5**
- \* Type of washer Safety washer with 1 tab (according to DIN 93) **DIN 93**
- \* Material code Carbon Steel, zinc/nickel-plated **W3**

Group	STAUFF	DIN	Dimensions (mm / in)					S	Order Codes (Standard Options)
			ØD1	B	ØD2	L	R		
3S	1		10,5	10	26	22	4	0,75	SI 10,5 DIN 93 W3
			.41	.39	1.02	.87	.16	.03	
4S	2		10,5	10	26	22	4	0,75	SI 10,5 DIN 93 W3
			.41	.39	1.02	.87	.16	.03	
5S	3		10,5	10	26	22	4	0,75	SI 10,5 DIN 93 W3
			.41	.39	1.02	.87	.16	.03	
6S	4		13	12	30	28	6	1	SI 13 DIN 93 W3
			.51	.47	1.18	1.10	.24	.04	
7S	5		17	15	36	32	6	1	SI 17 DIN 93 W3
			.67	.59	1.42	1.26	.24	.04	
8S	6		21	18	42	36	6	1	SI 21 DIN 93 W3
			.83	.71	1.65	1.42	.24	.04	
9S	7		25	20	50	42	6	1	SI 25 DIN 93 W3
			.98	.79	1.97	1.65	.24	.04	
10S	8		31	26	63	52	10	1,6	SI 31 DIN 93 W3
			1.22	1.02	2.48	2.05	.39	.06	
11S	9		31	26	63	52	10	1,6	SI 31 DIN 93 W3
			1.22	1.02	2.48	2.05	.39	.06	
12S	10		31	26	63	52	10	1,6	SI 31 DIN 93 W3
			1.22	1.02	2.48	2.05	.39	.06	

Safety Washers, type SI are used as locking devices to prevent Hexagon Head Bolts, type AS from loosening. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Safety Washer**  
Type SI (DIN 463)



Safety Washer SI (according to DIN 463)

**Order Codes**

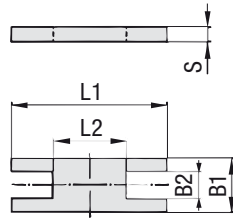
**Safety Washer \*SI\*10,5\*DIN 463\*W3**

- \* Safety Washer **SI**
- \* Exact inner diameter ØD1 (mm) **10,5**
- \* Type of washer Safety washer with 2 tabs (according to DIN 463) **DIN 463**
- \* Material code Carbon Steel, zinc/nickel-plated **W3**

Group	STAUFF	DIN	Dimensions (mm / in)					S	Order Codes (Standard Options)	
			ØD1	B	ØD2	L1	L2			R
3S	1		10,5	10	21	22	13	4	0,75	SI 10,5 DIN 463 W3
			.41	.39	.83	.87	.51	.16	.03	
4S	2		10,5	10	21	22	13	4	1	SI 10,5 DIN 463 W3
			.41	.39	.83	.87	.51	.16	.04	
5S	3		10,5	10	21	22	13	4	1	SI 10,5 DIN 463 W3
			.41	.39	.83	.87	.51	.16	.04	
6S	4		13	12	24	28	15	6	1	SI 13 DIN 463 W3
			.51	.47	.94	1.10	.59	.24	.04	
7S	5		17	15	30	32	18	6	1	SI 17 DIN 463 W3
			.67	.59	1.18	1.26	.71	.24	.04	
8S	6		21	18	37	36	21	6	1	SI 21 DIN 463 W3
			.83	.71	1.46	1.42	.83	.24	.04	
9S	7		25	20	44	42	25	6	1	SI 25 DIN 463 W3
			.98	.79	1.73	1.65	.98	.24	.04	
10S	8		31	26	56	52	32	10	1,6	SI 31 DIN 463 W3
			1.22	1.02	2.20	2.05	1.26	.39	.06	
11S	9		31	26	56	52	32	10	1,6	SI 31 DIN 463 W3
			1.22	1.02	2.20	2.05	1.26	.39	.06	
12S	10		31	26	56	52	32	10	1,6	SI 31 DIN 463 W3
			1.22	1.02	2.20	2.05	1.26	.39	.06	

Safety Washers, type SI are used as locking devices to prevent Hexagon Head Bolts, type AS from loosening. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### Safety Locking Plate (for Use with Stacking Bolt AF) Type SIP



Group STAUFF	DIN	Dimensions (mm/in)					Order Codes (Standard Options)
		L1	L2	B1	B2	S	
3S	1	57	13	30	15,2	8	SIP 3S W2
		2.24	.51	1.18	.60	.31	
4S	2	70	26	30	15,2	8	SIP 4S W2
		2.76	1.02	1.18	.60	.31	
5S	3	85	40	30	15,2	8	SIP 5S W2
		3.35	1.57	1.18	.60	.31	
6S	4	116	68	45	17,2	10	SIP 6S W2
		4.57	2.68	1.77	.68	.39	
7S	5	153	96	60	22	10	SIP 7S W2
		6.02	3.78	2.36	.87	.39	
8S	6	206	130	80	28	15	SIP 8S W1
		8.11	5.12	3.15	1.10	.59	
9S	7	251	166	90	31	15	SIP 9S W1
		9.88	6.54	3.54	1.22	.59	
10S	8	317	205	120	49	25	SIP 10 S W1
		12.48	8.07	4.72	1.93	.98	

#### Order Codes

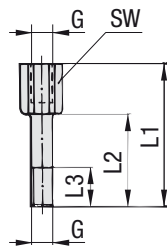
#### Safety Locking Plate

**\*SIP\*3S\*W2**

* Safety Locking Plate		SIP
* STAUFF Group		3S
* Material code	Carbon Steel, untreated	W1
	Carbon Steel, phosphated	W2
	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	W4
	1.4301 / 1.4305 (AISI 304 / 303)	W4
	Stainless Steel V4A	W5
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	W5

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### Stacking Bolt (for Use with Safety Locking Plate SIP) Type AF



Group STAUFF	DIN	Dimensions (mm/in)					Order Codes (Standard Options)
		L1	L2	L3 min.	Hex	Thread G	
3S	1	49	25	15	15	M10	AF 3S M W2
		1.93	.98	.59	.59	3/8-16 UNC	AF 3S U W3*
4S	2	65	40	15	15	M10	AF 4S M W2
		2.56	1.57	.59	.59	3/8-16 UNC	AF 4S U W3*
5S	3	77	51	15	15	M10	AF 5S M W2
		3.03	2.01	.59	.59	3/8-16 UNC	AF 5S U W3*
6S	4	110	82	18	17	M12	AF 6S M W2
		4.33	3.23	.71	.67	7/16-14 UNC	AF 6S U W3*
7S	5	144	110	24	22	M16	AF 7S M W2
		5.67	4.33	.94	.87	5/8-11 UNC	AF 7S U W3*
8S	6	200	150	30	27	M20	AF 8S M W2
		7.87	5.91	1.18	1.06	3/4-10 UNC	AF 8S U W1*
9S	7	240	180	50	30	M24	AF 9S M W2
		9.45	7.09	1.97	1.18	7/8-9 UNC	AF 9S U W1*
10S	8	331	256	62	46	M30	AF 10S M W2
		13.03	10.08	2.44	1.81	1-1/8-7 UNC	AF 10S U W1*

#### Order Codes

#### Stacking Bolt

**\*AF\*3S\*M\*W2**

* Stacking Bolt		AF
* STAUFF Group		3S
* Thread code	Metric ISO thread	M
	Unified coarse (UNC) thread	U
* Material code	Carbon Steel, untreated	W1
	Carbon Steel, phosphated	W2
	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	W4
	1.4301 / 1.4305 (AISI 304 / 303)	W4
	Stainless Steel V4A	W5
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	W5

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

\* Standard finishing option for Heavy Series group sizes 3S to 7S in North America is W3 (Carbon Steel, zinc/nickel-plated). Standard finishing option for Heavy Series group sizes 8S to 10S in North America is W1 (Carbon Steel, untreated).





① Type of Installation

Please select the type of installation (e.g. Weld Plates, Rail Nuts etc.) and add the corresponding Code to position ① of the order code for your clamp assembly.

Without Installation Equipment  
Code: **none**

Installation on Weld Plate

Weld Plate for Single Clamps  
Code: **SPAL**

Weld Plate for Double Clamps  
Code: **SPAS**

Elongated Weld Plate for Single Clamps  
Code: **SPAL/DUEB**

Elongated Weld Plate for Double Clamps  
Code: **SPAS/DUEB**

Installation on Mounting / Channel Rail

Mounting Rail Nut  
Code: **GMV** (for STAUFF Group 3S to 6S only)

Channel Rail Adaptor  
Code: **CRA** (for STAUFF Group 3S to 6S only)

② Group Size & Diameter

Please select the required group size and diameter and add the corresponding Code to position ② of the order code for your clamp assembly.

Group STAUFF (DIN)	Outside Diameter P / T / H (mm)	Availability of Clamp Body Materials & Designs Profiled			Code
		Design	Type H	Type RI	
3S (1)	6	●	●	○	3006
	6,4	●	●	○	3006,4
	8	●	●	○	3008
	9,5	●	●	○	3009,5
	10	●	●	○	3010
	12	●	●	○	3012
	12,7	●	●	○	3012,7
	13,5	●	●	○	3013,5
	14	●	●	○	3014
	15	●	●	○	3015
	16	●	●	○	3016
	17,2	●	●	○	3017,2
18	●	●	○	3018	
20	●	○	○	3020	

② Group Size & Diameter  
CONTINUATION

Group STAUFF (DIN)	Outside Diameter P / T / H (mm)	Availability of Clamp Body Materials & Designs Profiled			Code
		Design	Type H	Type RI	
4S (2)	6	○	○	●	4006
	8	○	○	●	4008
	10	○	○	●	4010
	12	○	○	●	4012
	12,7	○	○	●	4012,7
	14	○	○	●	4014
	15	○	○	●	4015
	16	○	○	●	4016
	17,2	○	○	●	4017,2
	18	○	○	●	4018
	19	●	●	●	4019
	20	●	●	○	4020
	21,3	●	●	○	4021,3
	22	●	●	○	4022
	25	●	●	○	4025
	25,4	●	●	○	4025,4
	26,9	●	●	○	4026,9
	28	●	●	○	4028
30	●	●	○	4030	
5S (3)	20	○	○	●	5020
	21,3	○	○	●	5021,3
	22	○	○	●	5022
	25	○	○	●	5025
	26,9	○	○	●	5026,9
	28	○	○	●	5028
	30	●	●	●	5030
	32	●	●	●	5032
	33,7	●	●	○	5033,7
	35	●	●	○	5035
38	●	●	○	5038	
40	●	●	○	5040	
41,3	●	●	○	5041,3	
42	●	●	○	5042	
6S (4)	32	○	○	●	6032
	33,7	○	○	●	6033,7
	35	○	○	●	6035
	38	●	●	○	6038
	38,7	○	○	●	6038,7
	40	○	○	●	6040
	42	●	●	●	6042
	44,5	●	●	○	6044,5
	45,5	○	○	●	6045,5
	48	○	○	●	6048
	48,3	●	●	○	6048,3
	50,8	●	●	○	6050,8
	51	○	○	●	6051
	53,4	○	○	●	6053,4
54	●	○	○	6054	

② Group Size & Diameter  
CONTINUATION

Group STAUFF (DIN)	Outside Diameter P / T / H (mm)	Availability of Clamp Body Materials & Designs Profiled			Code
		Design	Type H	Type RI	
6S (4)	55	●	●	○	6055
	56,4	○	○	●	6056,4
	57	●	●	○	6057
	57,2	●	●	○	6057,2
	60,3	●	●	○	6060,3
	63,5	●	●	○	6063,5
	65	●	●	○	6065
	70	●	●	○	6070
7S (5)	55	○	○	●	7055
	57	○	○	●	7057
	60	○	○	●	7060
	60,3	●	○	○	7060,3
	63,5	○	○	●	7063,5
	65	●	○	●	7065
	70	●	○	●	7070
	72	○	○	●	7072
	73	●	○	○	7073
	75	●	○	○	7075
	76	○	○	●	7076
	76,1	●	○	○	7076,1
80	●	○	○	7080	
82,5	●	○	○	7082,5	
88,9	●	○	○	7088,9	
8S (6)	80	○	○	●	8080
	88,9	●	○	●	8088,9
	100	●	○	○	8100
	102	●	○	●	8102
	108	●	○	○	8108
	114	●	○	○	8114
	127	●	○	○	8127
	133	●	○	○	8133
9S (7)	114	○	○	●	9114
	127	●	○	○	9127
	133	●	○	●	9133
	140	●	○	●	9140
	152	●	○	○	9152
	159	●	○	○	9159
	165	●	○	○	9165
168	●	○	○	9168	
10S (8)	150	○	○	●	10150
	165	○	○	●	10165
	168	●	○	●	10168
	172	○	○	●	10172
	177,8	●	○	○	10177,8
	193,7	●	○	○	10193,7
	203	●	○	○	10203
	216	●	○	○	10216
	219	●	○	○	10219
	219	●	○	○	11219
11S (9)	273	●	○	○	11273
	324	●	○	○	11324
12S (10)	356	●	○	○	12356
	406	●	○	○	12406

● Standard Option

Additional outside diameters are available upon request. Please consult STAUFF for further information.

Please see pages A38 and A39 with detailed order examples for some of the most popular Heavy Series clamp assemblies.

### ③ Clamp Body Design & Material

Please select the design and material of your clamp body and add the corresponding **Code** to position ③ of the order code for your clamp assembly.

Please check the availability of the selected clamp body design and material according to the matrix table in ②.

#### Profiled Design

**Polypropylene**  
Code: **PP**

**Polyamide**  
Code: **PA**

**Thermoplastic Elastomer** (87 Shore-A)  
Code: **SA** (for STAUFF Group 3S to 6S only)

**Aluminium**  
Code: **AL**

#### Type H (Smooth)

**Polypropylene**  
Code: **PPH** (for STAUFF Group 3S to 6S only)

**Polyamide**  
Code: **PAH** (for STAUFF Group 3S to 6S only)

**Thermoplastic Elastomer** (87 Shore-A)  
Code: **SAH** (for STAUFF Group 3S to 6S only)

#### Type RI (with Rubber Insert)

**Polypropylene**  
Code: **PPR** (for STAUFF Group 4S to 10S only)

**Polyamide**  
Code: **PAR** (for STAUFF Group 4S to 10S only)

See pages A88 / A89 for material properties and technical information.

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

### ④ Mounting & Fitting Combination

Please select the mounting and fitting combination (e.g. bolts, screws, cover plates etc.) and add the corresponding **Code** to position ④ of the order code for your clamp assembly.

#### Installation with Cover Plate and Bolts

**Cover Plate for Single Clamps DPAL with Hexagon Head Bolts AS**  
Code: **DPAL-AS**

**Cover Plate for Double Clamps DPAS with Hexagon Head Bolts AS**  
Code: **DPAS-AS**

**Cover Plate for Single Clamps DPAL with Socket Cap Screws IS\***  
Code: **DPAL-IS** (for STAUFF Group 3S to 6S only)

#### Installation with Locking Plate and Bolts

**Safety Locking Plate SIP with Stacking Bolts AF**  
Code: **SIP-AF**

#### Installation with Bolts only

**Socket Cap Screws IS**  
Code: **IS**

\* Special lengths of Socket Cap Screws IS required. For exact lengths, please see details of Hexagon Head Bolt, type AS (for use with Cover Plates DPAL or DPAS) on page A33.

### ⑤ Thread Type

Please select the required thread type and add the corresponding **Code** to position ⑤ of the order code for your clamp assembly.

**Metric ISO thread**  
Code: **M**

**Unified coarse (UNC) thread**  
Code: **U**

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table.

### ⑥ Material & Surface Finishing

Please select the required material & surface finishing of the metal parts and add the corresponding **Code** to position ⑥ of the order code for your clamp assembly.

Metal parts made of Carbon Steel, untreated **W1**

Metal parts made of Carbon Steel, phosphated **W2**

Metal parts made of Carbon Steel, zinc/nickel-plated **W3**

Metal parts made of Stainless Steel V2A 1.4301 / 1.4305 (AISI 304 / 303) **W4**

Metal parts made of Stainless Steel V4A 1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

Weld Plate made of Carbon Steel, phosphated; Other metal parts made of Carbon Steel, zinc/nickel-plated **W10**

Weld Plate and Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, untreated **W12**

Mounting Rail Nuts made of Carbon Steel, zinc/nickel-plated; Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, untreated **W13**

Weld Plate / Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, zinc/nickel-plated **W15**

Mounting Rail Nuts made of Carbon Steel, zinc/nickel-plated; Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, zinc/nickel-plated **W16**

Safety Locking Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, zinc/nickel-plated **W17**

Safety Locking Plate made of Carbon Steel, untreated; Bolts made of Carbon Steel, phosphated **W18**

Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, untreated **W19**

Individual combinations of alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### ⑦ Assembling & Kitting

If required, please select an additional assembling and kitting option and add the corresponding **Code** to the last position of the order code for your clamp assembly.

**Components supplied separately**  
Code: **none** (standard option)

**Components assembled**  
Code: **#A** (special option)

**Components packed in kits**  
Code: **#K** (special option)



- 2x **Hexagon Head Bolt**  
Surface: W1  
Thread: Metric
- 1x **Cover Plate for Single Clamps**  
Surface: W2
- 1x **Clamp Body** (two halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance
- 1x **Weld Plate for Single Clamps**  
Surface: W2  
Thread: Metric

**Order Code**

**SPAL 3006 PP DPAL-AS M W12**

W12 (STAUFF Group 3S to 7S) and W1 (STAUFF Group 8S to 12S) are the standard options for this type of installation.



- 4x **Hexagon Head Bolt**  
Surface: W1  
Thread: Metric
- 1x **Cover Plate for Double Clamps**  
Surface: W2
- 2x **Clamp Body** (four halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance
- 1x **Weld Plate for Double Clamps**  
Surface: W2  
Thread: Metric

**Order Code**

**SPAS 3006 PP DPAS-AS M W12**

W12 (STAUFF Group 3S to 7S) and W1 (STAUFF Group 8S to 12S) are the standard options for this type of installation.



- 2x **Hexagon Head Bolt**  
Surface: W1  
Thread: Metric
- 1x **Cover Plate for Single Clamps**  
Surface: W2
- 1x **Clamp Body** (two halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance
- 1x **Elongated Weld Plate for Single Clamps**  
Surface: W2  
Thread: Metric

**Order Code**

**SPAL/DUEB 3006 PP DPAL-AS M W12**

W12 (STAUFF Group 3S to 7S) and W1 (STAUFF Group 8S to 12S) are the standard options for this type of installation.



- 4x **Hexagon Head Bolt**  
Surface: W1  
Thread: Metric
- 1x **Cover Plate for Double Clamps**  
Surface: W2
- 2x **Clamp Body** (four halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance
- 1x **Elongated Weld Plate for Double Clamps**  
Surface: W2  
Thread: Metric

**Order Code**

**SPAS/DUEB 3006 PP DPAS-AS M W12**

W12 (STAUFF Group 3S to 7S) and W1 (STAUFF Group 8S to 12S) are the standard options for this type of installation.



- 2x **Socket Cap Screw**  
Surface: W1  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance
- 1x **Weld Plate for Single Clamps**  
Surface: W2  
Thread: Metric

**Order Code**

**SPAL 3006 PP IS M W12**

W12 is the standard option for this type of installation. Available up to STAUFF Group 6S (DIN Group 4) only.



- 2x **Socket Cap Screw**  
Surface: W1  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance
- 1x **Elongated Weld Plate for Single Clamps**  
Surface: W2  
Thread: Metric

**Order Code**

**SPAL/DUEB 3006 PP IS M W12**

W12 is the standard option for this type of installation. Available up to STAUFF Group 6S (DIN Group 4) only.



- 2x **Hexagon Head Bolt**  
Surface: W1  
Thread: Metric
- 1x **Cover Plate for Single Clamps**  
Surface: W2
- 1x **Clamp Body** (two halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance
- 2x **Mounting Rail Nut**  
Surface: W3  
Thread: Metric

**Order Code** (Mounting Rail STSV not included.)

### GMV 3006 PP DPAL-AS M W13

**W13** is the standard option for this type of installation.  
Available up to STAUFF Group 6S (DIN Group 4) only.



- 2x **Socket Cap Screw**  
Surface: W1  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance
- 2x **Mounting Rail Nut**  
Surface: W3  
Thread: Metric

**Order Code** (Mounting Rail STSV not included.)

### GMV 3006 PP IS M W13

**W13** is the standard option for this type of installation.  
Available up to STAUFF Group 6S (DIN Group 4) only.



- 2x **Hexagon Head Bolt**  
Surface: W1  
Thread: Metric
- 1x **Cover Plate for Single Clamps**  
Surface: W2
- 1x **Clamp Body** (two halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance

**Order Code**

### 3006 PP DPAL-AS M W19

**W19** (STAUFF Group 3S to 7S) and **W1** (STAUFF Group 8S to 12S) are the standard options for this type of installation.



- 2x **Stacking Bolt**  
Surface: W2  
Thread: Metric
- 1x **Safety Locking Plate**  
Surface: W2
- 1x **Clamp Body** (two halves)  
STAUFF Group 3S (DIN 1)  
O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface with tension clearance

**Order Code**

### 3006 PP SIP-AF M W2

**W2** (STAUFF Group 3S to 7S) and **W18** (STAUFF Group 8S to 10S) are the standard options for this type of installation. Available up to STAUFF Group 10S (DIN Group 8) only.

### Thread codes

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table.

Metric ISO thread	<b>M</b>
Unified coarse (UNC) thread	<b>U</b>

### Material codes

The below listed material codes describe the materials and surface finishings of metal parts that are most relevant for Heavy Series clamp assemblies. Individual combinations of alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

Metal parts made of Carbon Steel, untreated	<b>W1</b>
Metal parts made of Carbon Steel, phosphated	<b>W2</b>
Metal parts made of Carbon Steel, zinc/nickel-plated	<b>W3</b>
Metal parts made of Stainless Steel V2A: 1.4301 / 1.4305 (AISI 304 / 303)	<b>W4</b>
Metal parts made of Stainless Steel V4A: 1.4401 / 1.4571 (AISI 316 / 316 Ti)	<b>W5</b>
Weld Plate made of Carbon Steel, phosphated; Other metal parts made of Carbon Steel, zinc/nickel-plated	<b>W10</b>
Weld Plate and Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, untreated	<b>W12</b>
Mounting Rails Nut made of Carbon Steel, zinc/nickel-plated; Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, untreated	<b>W13</b>
Weld Plate and Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, zinc/nickel-plated	<b>W15</b>
Mounting Rail Nuts made of Carbon Steel, zinc/nickel-plated; Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, zinc/nickel-plated	<b>W16</b>
Safety Locking Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, zinc/nickel-plated	<b>W17</b>
Safety Locking Plate made of Carbon Steel, untreated; Bolts made of Carbon Steel, phosphated	<b>W18</b>
Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, untreated	<b>W19</b>

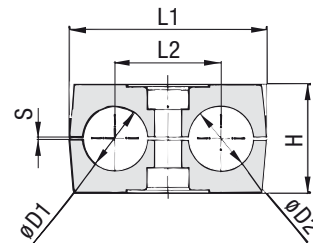
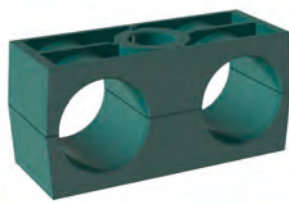
## Clamp Body ▀ Profiled Design

Profiled Inside Surface with Tension Clearance



## Clamp Body ▀ Type H

Smooth Inside Surface w/o Tension Clearance



### Order Codes

#### Clamp Body

**\*1\*06/06\*PP**

One clamp body is consisting of two clamp halves.

- \* 1<sup>st</sup> Part of STAUFF Group **1**
- \* Exact outside diameters Ø D1 / Ø D2 (mm) **06/06**
- \* Material code (see below) **PP**

### Designs & Standard Materials



#### Polypropylene ▀ Profiled Design

Profiled inside surface with tension clearance

Colour: Green  
Material code: **PP**



#### Polypropylene ▀ Type H

Smooth inside surface without tension clearance

Colour: Green  
Material code: **PPH**



#### Polyamide ▀ Profiled Design

Profiled inside surface with tension clearance

Colour: Black  
Material code: **PA**



#### Polyamide ▀ Type H

Smooth inside surface without tension clearance

Colour: Black  
Material code: **PAH**

See pages A88 / A89 for properties and technical information.

### Special Materials

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

See pages A90 / A91 for properties and technical information.

### Product Features

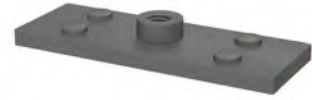
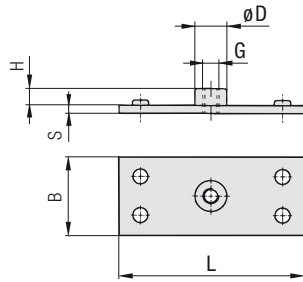
- Proven, tested and trusted product in various markets
- Profiled design recommended for the safe installation of rigid pipes and tubes; type H recommended for the safe installation of hoses and cables
- Available for all commonly used pipe and tube outside diameters
- Environmental protection due to vibration/noise reducing design
- Excellent weathering resistance, even under extreme conditions

Group	STAUFF	DIN	Outside Diameter		Nominal Bore		Order Codes (2 Clamp Halves) (*** = Material)	Dimensions (mm/in)								
			Pipe / Tube / Hose Ø D1 / Ø D2 (mm) (in)		Pipe (in)	Copper Tube ASTM B88 (in)		L1	L2	H	S min.	Type H H	Width			
1D	1	6					106/06 ***									
		6,4	1/4				106,4/06,4 ***									
		8	5/16				108/08 ***	36	20	27	0,6	26,5	30			
		9,5	3/8		1/4		109,5/09,5 ***	1.42	.79	1.06	.02	1.04	1.18			
		10		1/8			110/10 ***									
		12					112/12 ***									
2D	2	12,7	1/2		3/8		212,7/12,7 ***									
		13,5		1/4			213,5/13,5 ***									
		14					214/14 ***									
		15					215/15 ***	53	29	27	0,7	26	30			
		16	5/8		1/2		216/16 ***	2.09	1.14	1.06	.03	1.02	1.18			
		17,2		3/8			217,2/17,2 ***									
3D	3	18					218/18 ***									
		19	3/4				319/19 ***									
		20					320/20 ***									
		21,3		1/2			321,3/21,3 ***	67	36	37	0,7	36,5	30			
		22		3/4			322/22 ***	2.64	1.42	1.46	.03	1.44	1.18			
		25					325/25 ***									
4D	4	25,4	1				325,4/25,4 ***									
		26,9		3/4			426,9/26,9 ***									
		28					428/28 ***	80	45	40	0,7	38	30			
					430/30 ***	3.15	1.77	1.57	.03	1.46	1.18					
5D	5	30					532/32 ***									
		32	1-1/4				533,7/33,7 ***									
		33,7		1			535/35 ***	106	56	53	0,7	52	30			
		35			1-1/4		538/38 ***	4.17	2.20	2.09	.03	2.04	1.18			
		38	1-1/2				540/40 ***									
		40					542/42 ***									

Additional outside diameters and combinations of different outside diameters are available upon request. Please consult STAUFF for further information.



### Single Weld Plate Type SP



Group STAUFF	DIN	Dimensions (mm/in)					Thread G	Order Codes (Standard Options)
		L	B	S	H	ØD		
1D	1	37	30	3	6,5	12	M6	SP 1D M W2
		1.46	1.18	.12	.26	.47	1/4-20 UNC	SP 1D U W2
2D	2	55	30	5	6	14	M8	SP 2D M W2
		2.17	1.18	.20	.24	.55	5/16-18 UNC	SP 2D U W2
3D	3	70	30	5	6	14	M8	SP 3D M W2
		2.76	1.18	.20	.24	.55	5/16-18 UNC	SP 3D U W2
4D	4	85	30	5	6	14	M8	SP 4D M W2
		3.35	1.18	.20	.24	.55	5/16-18 UNC	SP 4D U W2
5D	5	110	30	5	6	14	M8	SP 5D M W2
		4.33	1.18	.20	.24	.55	5/16-18 UNC	SP 5D U W2

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

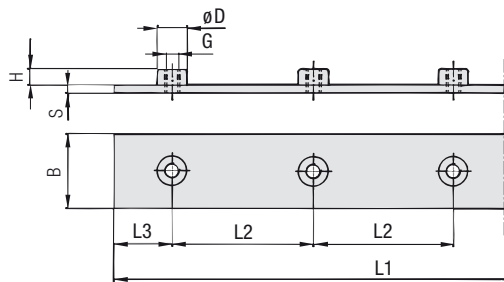
#### Order Codes

##### Weld Plate

**\*SP\*1D\*M\*W2**

* Single Weld Plate		<b>SP</b>
* STAUFF Group		<b>1D</b>
* Thread code	Metric ISO thread	<b>M</b>
	Unified coarse (UNC) thread	<b>U</b>
* Material code	Carbon Steel, untreated	<b>W1</b>
	Carbon Steel, phosphated	<b>W2</b>
	Carbon Steel, zinc/nickel-plated	<b>W3</b>
	Stainless Steel V2A	<b>W4</b>
	1.4301 / 1.4305 (AISI 304 / 303)	<b>W4</b>
	Stainless Steel V4A	<b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	<b>W5</b>

### Group Weld Plate Type RAP



Group STAUFF	DIN	Dimensions (mm/in)							Thread G	Order Codes (Standard Options)
		L1	L2	L3	B	S	H	ØD		
1D	1	196	40	18	30	3	6,5	12	M6	RAP 1D/40/5 M W1
		7.72	1.57	.71	1.18	.12	.26	.47	1/4-20 UNC	RAP 1D/40/5 U W1
2D	2	288	58	28	30	5	6	14	M8	RAP 2D/58/5 M W1
		11.34	2.28	1.10	1.18	.20	.24	.55	5/16-18 UNC	RAP 2D/58/5 U W1
3D	3	358	72	35	30	5	6	14	M8	RAP 3D/72/5 M W1
		14.09	2.83	1.37	1.18	.20	.24	.55	5/16-18 UNC	RAP 3D/72/5 U W1
4D	4	445	90	42	30	5	6	14	M8	RAP 4D/90/5 M W1
		17.52	3.54	1.65	1.18	.20	.24	.55	5/16-18 UNC	RAP 4D/90/5 U W1
5D	5	558	112	55	30	5	6	14	M8	RAP 5D/112/5 M W1
		21.97	4.41	2.16	1.18	.20	.24	.55	5/16-18 UNC	RAP 5D/112/5 U W1

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

#### Order Codes

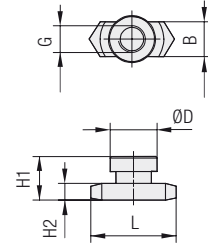
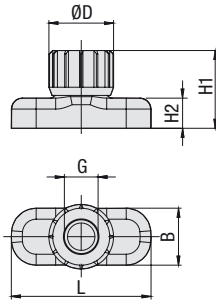
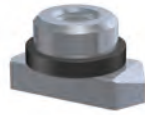
##### Weld Plate

**\*RAP\*1D/40/5\*M\*W1**

* Group Weld Plate		<b>RAP</b>
* STAUFF Group		<b>1D</b>
* Pipe Center Spacing L2 (mm)		<b>40</b>
* Number of Clamps		<b>5</b>
* Thread code	Metric ISO thread	<b>M</b>
	Unified coarse (UNC) thread	<b>U</b>
* Material code	Carbon Steel, untreated	<b>W1</b>
	Carbon Steel, phosphated	<b>W2</b>
	Carbon Steel, zinc/nickel-plated	<b>W3</b>
	Stainless Steel V2A	<b>W4</b>
	1.4301 / 1.4305 (AISI 304 / 303)	<b>W4</b>
	Stainless Steel V4A	<b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	<b>W5</b>

### Hexagon Rail Nut

Type SM / SMG (for Use with Mounting Rail TS)



STAUFF Group 1D

STAUFF Group 2D to 5D

STAUFF Group 1D

STAUFF Group 2D to 5D

#### Order Codes

Hexagon Rail Nut **\*SM\*1-8/1D\*M\*W3**

- \* Hexagon Rail Nut
  - Carbon Steel **SM**
  - Stainless Steel **SMG**
- \* STAUFF Group
  - 1D (DIN Group 1) **1-8/1D**
  - 2D to 5D (DIN Group 2 to 5) **2-5D**
- \* Thread code
  - Metric ISO thread **M**
  - Unified coarse (UNC) thread **U**
- \* Material code
  - Carbon Steel, zinc/nickel-plated **W3**
  - Stainless Steel V2A **W4**
  - 1.4301 / 1.4305 (AISI 304 / 303) **W4**
  - Stainless Steel V4A **W5**
  - 1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

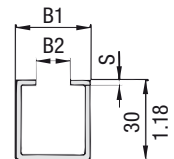
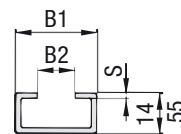
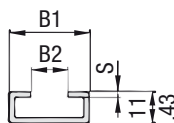
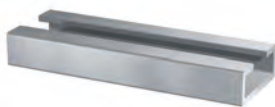
Group	STAUFF	DIN	Dimensions (mm/m)					Order Codes (Standard Options)	
			Thread G	L	B	H1	H2		ØD
1D	1		M6	25,5	10,4	14,2	5,5	12	SM 1-8/1D M W3
			1/4-20 UNC	1.00	.41	.56	.22	.47	SM 1-8/1D U W3
2D	2								
3D	3								
4D	4		M8	25,5	10,4	13	5	14	SM 2-5D M W3
			5/16-18 UNC	1.00	.41	.51	.20	.55	SM 2-5D U W3
5D	5								

The Hexagon Rail Nut, type SM 1-8/1D is also suitable for Standard Series, STAUFF Group 1 to 8.

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

### Mounting Rail

Type TS (for Use with Hexagon Rail Nut SM / SMG)



Mounting Rail TS 11

Mounting Rail TS 14

Mounting Rail TS 30

#### Order Codes

Mounting Rail **\*TS\*11\*-1\*W1**

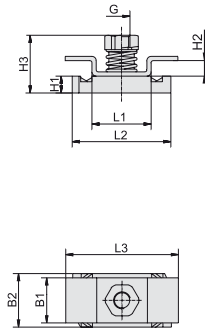
- \* Mounting Rail **TS**
- \* Height of rail
  - 11 mm / .43 in **11**
  - 14 mm / .55 in **14**
  - 30 mm / 1.18 in **30**
- \* Length of rail
  - 1 m / 3.28 ft **-1M**
  - 2 m / 6.56 ft **-2M**

Alternative lengths available upon request. Consult STAUFF for further information.
- \* Material code
  - Carbon Steel, untreated **W1**
  - Carbon Steel, zinc/nickel-plated **W3**
  - Stainless Steel V2A **W4**
  - 1.4301 / 1.4305 (AISI 304 / 303) **W4**
  - Stainless Steel V4A **W5**
  - 1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

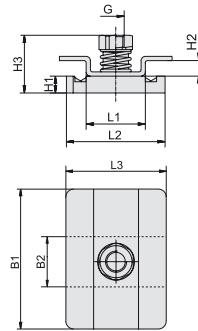
Group	STAUFF	DIN	Dimensions (mm/m)			Order Codes (Standard Options)	
			L	B	H1	Length of Rail: 1 m / 3.28 ft	Length of Rail: 2 m / 6.56 ft
1D	1					Height 11 mm / .43 in <b>TS 11-1M W1</b>	Height 11 mm / .43 in <b>TS 11-2M W1</b>
2D	2						
3D	3		28 1.10	11 .43	2 .08	Height 14 mm / .55 in <b>TS 14-1M W1</b>	Height 14 mm / .55 in <b>TS 14-2M W1</b>
4D	4						
5D	5					Height 30 mm / 1.18 in <b>TS 30-1M W1</b>	Height 30 mm / 1.18 in <b>TS 30-2M W1</b>

Mounting Rails, type TS 11/14/30 are suitable for all Twin Series and Standard Series group sizes.

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



STAUFF Group 1D



STAUFF Group 2-3D / 4-5D



## Channel Rail Adaptor (for Use with Various Channel Rails) Type CRA

Group STAUFF	DIN	Dimensions (mm/in)									Order Codes (Standard Options)
		Thread G	L1	L2	L3	B1	B2	H1	H2	H3	
1D	1	M6	21	35	40	16	19	6	5,5	20,5	CRA 1-8/1D M W3
		1/4-20 UNC	.83	1.38	1.57	.63	.75	.24	.22	.81	CRA 1-8/1D U W3
2D	2	M8	21	35	38	53	19	9	5,5	23,5	CRA 2-3D M W3
3D	3	5/16-18 UNC	.83	1.38	1.50	2.09	.75	.35	.22	.93	CRA 2-3D U W3
4D	4	M8	21	35	38	80	19	9	5,5	23,5	CRA 4-5D M W3
5D	5	5/16-18 UNC	.83	1.38	1.50	3.15	.75	.3	.22	.93	CRA 4-5D U W3

### Order Codes

#### Adaptor

**\*CRA\*1-8/1D\*M\*W3**

* Channel Rail Adaptor	CRA
* STAUFF Group	1D (DIN Group 1) <b>1-8/1D</b> 2D to 3D (DIN Group 2 to 3) <b>2-3D</b> 4D to 5D (DIN Group 4 to 5) <b>4-5D</b>
* Thread code	Metric ISO thread <b>M</b> Unified coarse (UNC) thread <b>U</b>
* Material code	Carbon Steel, zinc/nickel-plated <b>W3</b> Stainless Steel V4A <b>W5</b> 1.4401 / 1.4571 (AISI 316 / 316 Ti)

The Channel Rail Adaptor, type CRA 1-8/1D is also suitable for Standard Series, STAUFF Group 1 to 8.

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

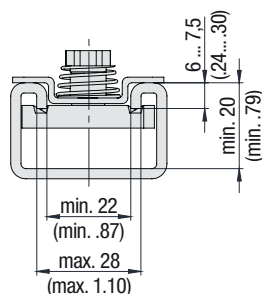


### Compatibility with Channel Rails

The STAUFF Channel Rail Adaptor, type CRA, is suitable for various channel rails, including the following types:

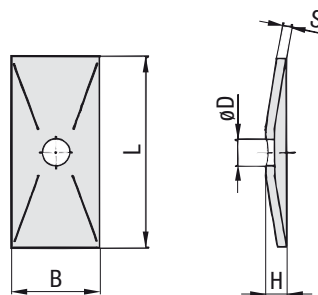
HALFEN	HILTI	UNISTRUT®	STAUFF (Cushion Clamp Series)
HM 41/41	MQ-21, MQ-41, MQ-52, MQ-72	P1000, P1000T, P1000V, P1000VT, P1001	SCS-048-1-PL, SCS-048-1-GR
HZA 41/22	MQ-21U, MQ-41U, MQ-72U	P2000, P2000T	SCS-120-1-PL, SCS-120-1-GR
HZM 41/41	MQ-21D, MQ-41D, MQ-52-72D	P3003, P3003T, P3300V, P3300VT, P3301	See page A83 for technical information.
HZM 41/22		P4000, P4000T	
HL 41/41, HL 41/B2		P5000, P5000T, P5001, P5500, P5500T, P5501	

Consult STAUFF to check compatibility with additional types of channel rails.



#### Basic dimensional requirements for channel rails to be used with STAUFF Channel Rail Adaptors, type CRA

## Cover Plate Type GD



### Order Codes

#### Cover Plate

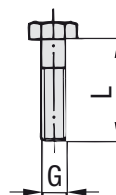
**\*GD\*1D\*W3**

* Cover Plate		<b>GD</b>
* STAUFF Group		<b>1D</b>
* Material code	Carbon Steel, zinc/nickel-plated	<b>W3</b>
	Stainless Steel V2A	<b>W4</b>
	1.4301 / 1.4305 (AISI 304 / 303)	<b>W4</b>
	Stainless Steel V4A	<b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	<b>W5</b>

Group STAUFF	DIN	Dimensions (mm/in)					Order Codes (Standard Options)
		L	B	H	S	ØD	
1D	1	34	30	7	3	7	GD 1D W3
		1.34	1.18	.28	.12	.28	
2D	2	52	30	7	3	9	GD 2D W3
		2.05	1.18	.28	.12	.35	
3D	3	65	30	7	3	9	GD 3D W3
		2.56	1.18	.28	.12	.35	
4D	4	79	30	7	3	9	GD 4D W3
		3.11	1.18	.28	.12	.35	
5D	5	102	30	7	3	9	GD 5D W3
		4.02	1.18	.28	.12	.35	

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

## Hexagon Head Bolt Type AS



### Hexagon Head Bolt AS

(according to DIN 931 / 933 or ANSI / ASME B18.2.1.)

Dimensions applicable only when used with Cover Plate GD

### Order Codes

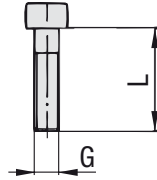
#### Hexagon Head Bolt

**\*AS\*1D\*M\*W3**

* Type of bolt	Hexagon Head Bolt (according to DIN 931 / 933 or ANSI / ASME B18.2.1.)	<b>AS</b>
* STAUFF Group		<b>1D</b>
* Thread code	Metric ISO thread	<b>M</b>
	Unified coarse (UNC) thread	<b>U</b>
* Material code	Carbon Steel, zinc/nickel-plated	<b>W3</b>
	Stainless Steel V2A	<b>W4</b>
	1.4301 / 1.4305 (AISI 304 / 303)	<b>W4</b>
	Stainless Steel V4A	<b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	<b>W5</b>

Group STAUFF	DIN	Dimensions (mm/in)		Order Codes (Standard Options)
		Thread	G x L	
1D	1	M6 x 35		AS 1D M W3
		1/4-20 UNC x 1-3/8		AS 1D U W3
2D	2	M8 x 35		AS 2D M W3
		5/16-18 UNC x 1-3/8		AS 2D U W3
3D	3	M8 x 45		AS 3D M W3
		5/16-18 UNC x 1-3/4		AS 3D U W3
4D	4	M8 x 50		AS 4D M W3
		5/16-18 UNC x 2		AS 4D U W3
5D	5	M8 x 60		AS 5D M W3
		5/16-18 UNC x 2-1/2		AS 5D U W3

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Socket Cap Screw  
Type IS**


**Socket Cap Screw IS**  
(according to ISO 4762 or ANSI / ASME B18.3)  
Dimensions applicable only when used with Cover Plate GD



Group STAUFF	DIN	Dimensions (mm/in) Thread G x L	Order Codes (Standard Options)
1D	1	M6 x 35	IS 1D M W3
		1/4-20 UNC x 1-3/8	IS 1D U W3
2D	2	M8 x 35	IS 2D M W3
		5/16-18 UNC x 1-3/8	IS 2D U W3
3D	3	M8 x 45	IS 3D M W3
		5/16-18 UNC x 1-3/4	IS 3D U W3
4D	4	M8 x 50	IS 4D M W3
		5/16-18 UNC x 2	IS 4D U W3
5D	5	M8 x 60	IS 5D M W3
		5/16-18 UNC x 2-1/2	IS 5D U W3

**Order Codes**
**Hexagon Head Bolt**
**\*IS\*1D\*M\*W3**

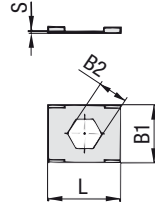
* Type of bolt	Socket Cap Screw (according to ISO 4762 or ANSI / ASME B18.3)	<b>IS</b>
* STAUFF Group		<b>1D</b>
* Thread code	Metric ISO thread Unified coarse (UNC) thread	<b>M</b> <b>U</b>
* Material code	Carbon Steel, zinc/nickel-plated Stainless Steel V2A 1.4301 / 1.4305 (AISI 304 / 303) Stainless Steel V4A 1.4401 / 1.4571 (AISI 316 / 316 Ti)	<b>W3</b> <b>W4</b> <b>W5</b>

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table.  
Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



## Safety Locking Plate

Type SI (for Use with Stacking Bolt AF)



Safety Locking Plate SI

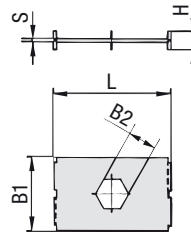
Order Codes	
<b>Safety Locking Plate</b>	<b>*SI*1D*W3</b>
* Safety Locking Plate	SI
* STAUFF Group	1D (DIN Group 1) 2D to 5D (DIN Group 2 to 5)
	1D 2-5D
* Material code	Carbon Steel, zinc/nickel-plated
	W3
	Stainless Steel V2A
	1.4301 / 1.4305 (AISI 304 / 303)
	W4
	Stainless Steel V4A
	1.4401 / 1.4571 (AISI 316 / 316 Ti)
	W5

Group	STAUFF	DIN	Dimensions (mm/in)				Order Codes (Standard Options)
			L	B1	B2	S	
1D	1		27	22	11,2	0,5	SI 1D W3
			1.06	.86	.44	.02	
2D	2						SI 2-5D W3
3D	3						
4D	4		27	22	12,2	0,5	
			1.06	.86	.48	.02	
5D	5						

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

## Safety Locking Plate

Type SIV (for Use with Stacking Bolt AF)



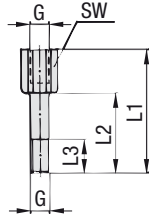
Safety Locking Plate SIV  
(Prevents Upper Clamp from Turning)

Order Codes	
<b>Safety Locking Plate</b>	<b>*SIV*1D*W3</b>
* Safety Locking Plate	SIV
* STAUFF Group	1D (DIN Group 1) 2D to 3D (DIN Group 2 to 3)
	1D 2-3D
* Material code	Carbon Steel, zinc/nickel-plated
	W3
	Stainless Steel V2A
	1.4301 / 1.4305 (AISI 304 / 303)
	W4
	Stainless Steel V4A
	1.4401 / 1.4571 (AISI 316 / 316 Ti)
	W5

Group	STAUFF	DIN	Dimensions (mm/in)					Order Codes (Standard Options)
			L	B1	B2	S	H	
1D	1		27	28	11,1	1	7	SIV 1D W3
			1.06	1.10	.44	.04	.27	
2D	2						SIV 2-3D W3	
3D	3							
			45	28	12,1	1	7	
			1.77	1.10	.48	.04	.27	

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Stacking Bolt**

 (for Use with Safety Locking Plates SI / SIV) **Type AF**


Group	STAUFF	DIN	Dimensions (mm/in)				Hex	Order Codes (Standard Options)
			Thread G	L1	L2	L3 min.		
1D	1	M6	34	20	12	11	AF 1D M W3	
		1/4-20 UNC	1.33	.78	.47	.43	AF 1D U W3	
2D	2	M8	33	20	12	12	AF 2D M W3	
		5/16-18 UNC	1.30	.78	.47	.47	AF 2D U W3	
3D	3	M8	44	29	12	12	AF 3D M W3	
		5/16-18 UNC	1.73	1.14	.47	.47	AF 3D U W3	
4D	4	M8	49	34	12	12	AF 4D M W3	
		5/16-18 UNC	1.92	1.33	.47	.47	AF 4D U W3	
5D	5	M8	61	46	12	12	AF 5D M W3	
		5/16-18 UNC	2.40	1.81	.47	.47	AF 5D U W3	

**Order Codes**
**Stacking Bolt**
**\*AF\*1D\*M\*W3**

* Stacking Bolt		AF
* STAUFF Group		1D
* Thread code	Metric ISO thread	M
	Unified coarse (UNC) thread	U
* Material code	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	W4
	1.4301 / 1.4305 (AISI 304 / 303)	W4
	Stainless Steel V4A	W5
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	W5

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



Please see page A49 with detailed order examples for some of the most popular Twin Series clamp assemblies.

## ① Type of Installation

Please select the type of installation (e.g. weld plates, rail nuts, etc.) and add the corresponding Code to position ① of the order code for your clamp assembly.


 **Without Installation Equipment**  
Code: **none**


### Installation on Weld Plate

 **Single Weld Plate**  
Code: **SP**

 **Group Weld Plate**  
Code: **RAP**

### Installation on Mounting / Channel Rail

 **Mounting Rail Nut**  
Code: **SM** (Carbon Steel)  
Code: **SMG** (Stainless Steel)

 **Channel Rail Adaptor**  
Code: **CRA**

## ② Group Size & Diameters

Please select the required group size and diameter and add the corresponding Code to position ② of the order code for your clamp assembly.

Group STAUFF (DIN)	Outside Diameter P / T / H (mm)	Availability of Clamp Body Materials & Designs		Code
		Profiled Design	Type H	
1D (1)	6	●	●	106/06
	6,4	●	●	106,4/06,4
	8	●	●	108/08
	9,5	●	●	109,5/09,5
	10	●	●	110/10
2D (2)	12	●	●	112/12
	12,7	●	●	212,7/12,7
	13,5	●	●	213,5/13,5
	14	●	●	214/14
	15	●	●	215/15
	16	●	●	216/16
3D (3)	17,2	●	●	217,2/17,2
	18	●	●	218/18
	19	●	●	319/19
	20	●	●	320/20
	21,3	●	●	321,3/21,3
4D (4)	22	●	●	322/22
	25	●	●	325/25
	25,4	●	●	325,4/25,4
	26,9	●	●	426,9/26,9
5D (5)	28	●	●	428/28
	30	●	●	430/30
	32	●	●	532/32
	33,7	●	●	533,7/33,7
	35	●	●	535/35
	38	●	●	538/38
	40	●	●	540/40
	42	●	●	542/42

## ③ Clamp Body Design & Material

Please select the design and material of your clamp body and add the corresponding Code to position ③ of the order code for your clamp assembly.

Please check the availability of the selected clamp body design and material according to the matrix table in ②.

### Profiled Design

 **Polypropylene**  
Code: **PP**

 **Polyamide**  
Code: **PA**

### Type H (Smooth)

 **Polypropylene**  
Code: **PPH**

 **Polyamide**  
Code: **PAH**

See pages A88 / A89 for material properties and technical information.

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

## ④ Mounting & Fitting Combination

Please select the mounting and fitting combination (e.g. Bolts, Cover Plates, etc.) and add the corresponding Code to position ④ of the order code for your clamp assembly.

### Installation with Cover Plate and Bolt

**Cover Plate GD with  
Hexagon Head Bolt AS**  
Code: **GD-AS**

**Cover Plate GD with  
Socket Cap Screw IS**  
Code: **GD-IS**

### Installation with Locking Plate and Bolt

**Safety Locking Plate SI with  
Stacking Bolt AF**  
Code: **SI-AF**

**Safety Locking Plate SIV with  
Stacking Bolt AF**  
Code: **SIV-AF** (for STAUFF Group 1D to 3D only)

● Standard Option

Additional outside diameters and combinations of different outside diameters are available upon request. Please consult STAUFF for further information.

## ⑤ Thread Type

Please select the required thread type and add the corresponding Code to position ⑤ of the order code for your clamp assembly.

**Metric ISO thread**  
Code: **M**

**Unified coarse (UNC) thread**  
Code: **U**

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table.

## ⑥ Material & Surface Finishing

Please select the required material & surface finishing of the metal parts and add the corresponding Code to position ⑥ of the order code for your clamp assembly.

Metal parts made of Carbon Steel, untreated **W1**

Metal parts made of Carbon Steel, phosphated **W2**

Metal parts made of Carbon Steel, zinc/nickel-plated **W3**

Metal parts made of Stainless Steel V2A  
1.4301 / 1.4305 (AISI 304 / 303) **W4**

Metal parts made of Stainless Steel V4A  
1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

Weld Plate made of Carbon Steel, phosphated; Other metal parts made of Carbon Steel, zinc/nickel-plated **W10**

Individual combinations of alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

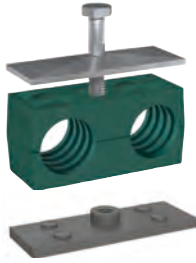
## ⑦ Assembling & Kitting

If required, please select an additional assembling and kitting option and add the corresponding Code to the last position of the order code for your clamp assembly.

**Components supplied separately**  
Code: **none** (standard option)

**Components assembled**  
Code: **#A** (special option)

**Components packed in kits**  
Code: **#K** (special option)



- 1x **Hexagon Head Bolt**  
Surface: W3  
Thread: Metric
- 1x **Cover Plate**  
Surface: W3
- 1x **Clamp Body** (two halves)  
STAUFF Group 1D (DIN 1)  
both O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Weld Plate**  
Surface: W2  
Thread: Metric

### Order Code

**SP 106/06 PP GD-AS M W10**

W10 is the standard option for this type of installation.



- 1x **Hexagon Head Bolt**  
Surface: W3  
Thread: Metric
- 1x **Cover Plate**  
Surface: W3
- 1x **Clamp Body** (two halves)  
STAUFF Group 1D (DIN 1)  
both O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance

### Order Code

**106/06 PP GD-AS M W3**

W3 is the standard option for this type of installation.

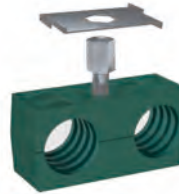


- 1x **Stacking Bolt**  
Surface: W3  
Thread: Metric
- 1x **Safety Locking Plate (Type SI)**  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 1D (DIN 1)  
both O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance

### Order Code

**106/06 PP SI-AF M W3**

W3 is the standard option for this type of installation.



- 1x **Stacking Bolt**  
Surface: W3  
Thread: Metric
- 1x **Safety Locking Plate (Type SIV)**  
Surface: W3  
Thread: Metric
- 1x **Clamp Body** (two halves)  
STAUFF Group 1D (DIN 1)  
both O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance

### Order Code

**106/06 PP SIV-AF M W3**

W3 is the standard option for this type of installation.  
This type of installation is available up to STAUFF Group 3D only.



- 1x **Hexagon Head Bolt**  
Surface: W3  
Thread: Metric
- 1x **Cover Plate**  
Surface: W3
- 1x **Clamp Body** (two halves)  
STAUFF Group 1D (DIN 1)  
both O.D. 6 mm / .24 in  
Material: Polypropylene  
Profiled inside surface  
with tension clearance
- 1x **Hexagon Rail Nut**  
Surface: W3  
Thread: Metric

### Order Code (Mounting Rail TS not included.)

**SM 106/06 PP GD-AS M W3**

W3 is the standard option for this type of installation.

### Thread Codes

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table.

Metric ISO thread	<b>M</b>
Unified coarse (UNC) thread	<b>U</b>

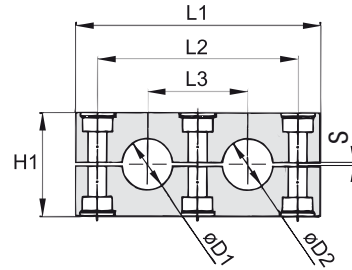
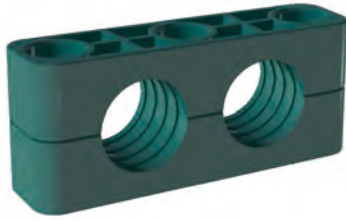
### Material Codes

The below listed material codes describe the materials and surface finishings of metal parts that are most relevant for Twin Series clamp assemblies. Individual combinations of alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

Metal parts made of Carbon Steel, untreated	<b>W1</b>
Metal parts made of Carbon Steel, phosphated	<b>W2</b>
Metal parts made of Carbon Steel, zinc/nickel-plated	<b>W3</b>
Metal parts made of Stainless Steel V2A: 1.4301 / 1.4305 (AISI 304 / 303)	<b>W4</b>
Metal parts made of Stainless Steel V4A: 1.4401 / 1.4571 (AISI 316 / 316 Ti)	<b>W5</b>
Weld Plate made of Carbon Steel, phosphated;	
Other metal parts made of Carbon Steel, zinc/nickel-plated	<b>W10</b>

**Clamp Body - Profiled Design**

Profiled Inside Surface with Tension Clearance



**Order Codes**

**Clamp Body \*4\*012,7/12,7\*PP**

One clamp body is consisting of two clamp halves.

- \* 1<sup>st</sup> part of STAUFF Group 4
- \* Exact outside diameters Ø D1 / Ø D2 (mm) **012,7/12,7**
- \* Material code (see below) **PP**

**Standard Materials**



**Polypropylene**  
Colour: Green  
Material code: **PP**



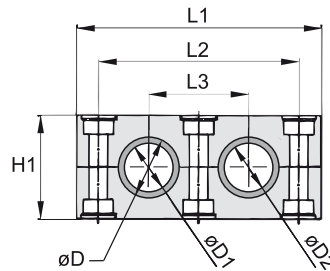
**Polyamide**  
Colour: Black  
Material code: **PA**

See pages A88 / A89 for material properties and technical information.

Group	Outside Diameter		Nominal Bore	Order Codes	Dimensions (mm/in)						
	Pipe / Tube	Pipe / Tube			Copper Tube	(2 Clamp Halves)					
STAUFF	Ø D1 / Ø D2	Ø D1 / Ø D2	Pipe	ASTM B88	(** = Material)	L1	L2	L3	H1	S	Width
4S-D	12,7	1/2		3/8	4012,7/12,7 **	115	90	45	48	1,2	30
	19	3/4			4019/19 **						
	20				4020/20 **						
	21,3		1/2		4021,3/21,3 **						
	22			3/4	4022/22 **						
	25,4	1			4025,4/25,4 **						
26,9		3/4		4026,9/26,9 **	145	120	60	60	2,0	30	
32	1-1/4			5032/32 **							
33,7		1		5033,7/33,7 **							
38	1-1/2			5038/38 **							
42		1-1/4		5042/42 **	5,71	4,72	2,36	2,36	,08	1,18	

Additional outside diameters and Clamp Bodies, type H (smooth inside surface without tension clearance) are available upon request. Please consult STAUFF for further information.

**Clamp Body with Rubber Inserts Type RI**



For use with Rubber Inserts of the Heavy Series, STAUFF Group 4S and 5S (see page A27 for details)

**Order Codes**

**Clamp Assembly \*4\*006/06\*PPR**

One assembly is consisting of one clamp body and two inserts.

- \* 1<sup>st</sup> part of STAUFF Group 4
- \* Exact outside diameters Ø D1 / Ø D2 (mm) **006/06**
- \* Material code (see below) **PPR**

**Standard Materials**



**Polypropylene**  
Colour: Black  
Material code: **PPR**



**Polyamide**  
Colour: Black  
Material code: **PAR**



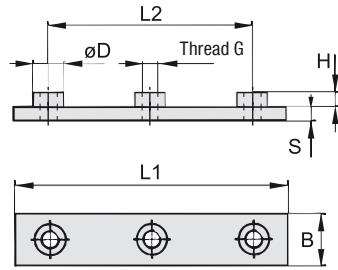
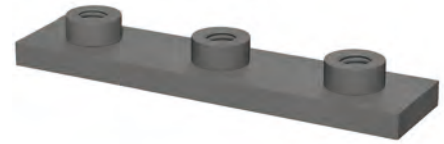
**Rubber Inserts**  
**Thermoplastic Elastomer (73 Shore-A)**  
Colour: Black

See pages A88 / A89 for properties and technical information.

Group	Outside Diameter		Order Codes	Dimensions					
	Pipe / Tube / Hose	Pipe / Tube / Hose		(Clamp Assembly)	(mm/in)				
STAUFF	Ø D1 / Ø D2	Ø D1 / Ø D2	(**R = Material)	Ø D	L1	L2	L3	H1	Width
4S-D	6		4006/06 **R	25	115	90	45	48	30
	8	5/16	4008/08 **R						
	10		4010/10 **R						
	12		4012/12 **R						
	12,7	1/2	4012,7/12,7 **R						
	14		4014/14 **R						
	15		4015/15 **R						
	16	5/8	4016/16 **R						
	17,2		4017,2/17,2 **R						
	18		4018/18 **R						
	19	3/4	4019/19 **R						
20		5020/20 **R							
21,3		5021,3/21,3 **R							
22	7/8	5022/22 **R							
25		5025/25 **R							
26,9		5026,9/26,9 **R							
28		5028/28 **R	38	145	120	60	60	30	
30		5030/30 **R							
32	1-1/4	5032/32 **R							

Additional outside diameters are available upon request. Please consult STAUFF for further information.




**Weld Plate  
Type SPAD**


Group STAUFF	Dimensions (mm/in)							Order Codes (Standard Options)
	L1	L2	B	S	H	Thread G	ØD	
4S-D	130	90	30	8	8,5	M10	18	SPAD 4S M W1
	5.12	3.54	1.18	.31	.33	3/8-16 UNC	.71	SPAD 4S U W2*
5S-D	160	120	30	8	8,5	M10	18	SPAD 5S M W1
	6.30	4.72	1.18	.31	.33	3/8-16 UNC	.71	SPAD 5S U W2*

All threaded parts are available with Metric ISO thread or unified Coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

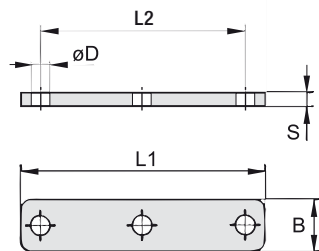
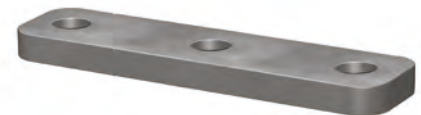
\* Standard finishing option in North America is W2 (Carbon Steel, phosphated).

### Order Codes

#### Weld Plate

**\*SPAD\*4S\*M\*W1**

* Weld Plate		SPAD
* STAUFF Group	4S-D	4S
	5S-D	5S
* Thread code	Metric ISO thread	M
	Unified coarse (UNC) thread	U
* Material code	Carbon Steel, untreated	W1
	Carbon Steel, phosphated	W2
	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	
	1.4301 / 1.4305 (AISI 304 / 303)	W4
	Stainless Steel V4A	
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	W5


**Cover Plate  
Type DPAD**


Group STAUFF	Dimensions (mm/in)					Order Codes (Standard Options)
	L1	L2	B	S	ØD	
4S	115	90	30	8	11	DPAD 4S W1*
	4.53	3.54	1.18	.31	.43	
5S	145	120	30	8	11	DPAD 5S W1*
	5.71	4.72	1.18	.31	.43	

All threaded parts are available with Metric ISO thread or unified Coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

\* Standard finishing option in North America is W3 (Carbon Steel, phosphated).

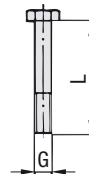
### Order Codes

#### Cover Plate

**\*DPAD\*4S\*W1**

* Cover Plate		DPAD
* STAUFF Group	4S-D	4S
	5S-D	5S
* Material code	Carbon Steel, untreated	W1
	Carbon Steel, phosphated	W2
	Carbon Steel, zinc/nickel-plated	W3
	Stainless Steel V2A	
	1.4301 / 1.4305 (AISI 304 / 303)	W4
	Stainless Steel V4A	
	1.4401 / 1.4571 (AISI 316 / 316 Ti)	W5

**Hexagon Head Bolt  
Type AS**



**Hexagon Head Bolt AS**

(according to DIN 931 / 933 or ANSI / ASME B18.2.1.)  
Dimensions applicable only when used with Cover Plate DPAD

Order Codes	
<b>Hexagon Head Bolt</b>	<b>*AS*4S*M*W1</b>
* Type of bolt	Hexagon Head Bolt (according to DIN 931 / 933 or ANSI / ASME B18.2.1.) <b>AS</b>
* STAUFF Group	4S-D <b>4S</b> 5S-D <b>5S</b>
* Thread code	Metric ISO thread <b>M</b> Unified coarse (UNC) thread <b>U</b>
* Material code	Carbon Steel, untreated <b>W1</b> Carbon Steel, zinc/nickel-plated <b>W3</b> Stainless Steel V2A <b>W4</b> 1.4301 / 1.4305 (AISI 304 / 303) <b>W4</b> Stainless Steel V4A <b>W5</b> 1.4401 / 1.4571 (AISI 316 / 316 Ti) <b>W5</b>

Group STAUFF	DIN	Dimensions (mm / in) Thread G x L	Order Codes (Standard Options)
4S	2	M10 x 60	AS 4S M W1
		3/8-16 UNC x 2-1/4	AS 4S U W3*
5S	3	M10 x 70	AS 5S M W1
		3/8-16 UNC x 2-3/4	AS 5S U W3*

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

If required, use Safety Washers, type SI as locking devices to prevent Hexagon Head Bolts, type AS from loosening. See page A34 for details.

\* Standard finishing option in North America is W3 (Carbon Steel, zinc/nickel-plated).

**Further Metal Hardware**

For Use with the Heavy Twin Series



**Mounting Rail Nut  
Type GMV**

Heavy Series, STAUFF Group 4S and 5S  
(See page A30 for details)



**Mounting Rail  
Type STSV**

Heavy Series  
(See page A30 for details)



**Channel Rail Adaptor  
Type CRA**

Heavy Series, STAUFF Group 4S and 5S  
(See page A31 for details)



**Socket Cap Screw  
Type IS**

Heavy Series, STAUFF Group 4S and 5S  
(See page A33 for details)



**Safety Locking Plate  
Type SIPD**

Heavy Twin Series, STAUFF Group 4S-D and 5S-D  
(Consult STAUFF for details)



**Stacking Bolt  
Type AF**

Heavy Series, STAUFF Group 4S and 5S  
(See page A35 for details)



## ① Type of Installation

Please select the type of installation (e.g. Weld Plates, Rail Nuts etc.) and add the corresponding Code to position ① of the order code for your clamp assembly.

**Without Installation Equipment**  
Code: **none**

### Installation on Weld Plate

**Single Weld Plate**  
Code: **SPAD**

### Installation on Mounting / Channel Rail

**Mounting Rail Nut**  
Code: **GMV**

**Channel Rail Adaptor**  
Code: **CRA**

## ② Group Size & Diameters

Please select the required group size and diameter and add the corresponding Code to position ② of the order code for your clamp assembly.

Group	Outside Diameter P / T / H (mm)	Availability of Clamp Body Materials & Designs		Code
		Profiled Design	Type RI	
4S-D	6	○	●	4006/06
	8	○	●	4008/08
	10	○	●	4010/10
	12	○	●	4012/12
	12,7	●	●	4012,7/12,7
	14	○	●	4014/14
	15	○	●	4015/15
	16	○	●	4016/16
	17,2	○	●	4017,2/17,2
	18	○	●	4018/18
	19	●	●	4019/19
	20	●	○	4020/20
	21,3	●	○	4021,3/21,3
	22	●	○	4022/22
25,4	●	○	4025,4/25,4	
26,9	●	○	4026,9/26,9	
5S-D	20	○	●	5020/20
	21,3	○	●	5021,3/21,3
	22	○	●	5022/22
	25	○	●	5025/25
	26,9	○	●	5026,9/26,9
	28	○	●	5028/28
	30	○	●	5030/30
	32	●	●	5032/32
	33,7	●	○	5033,7/33,7
	38	●	○	5038/38
42	●	○	5042/42	

● Standard Option

Additional outside diameters and combinations of different outside diameters are available upon request. Please consult STAUFF for further information.

## ③ Clamp Body Design & Material

Please select the design and material of your clamp body and add the corresponding Code to position ③ of the order code for your clamp assembly.

Please check the availability of the selected clamp body design and material according to the matrix table in ②.

### Profiled Design

**Polypropylene**  
Code: **PP**

**Polyamide**  
Code: **PA**

### Type RI (with Rubber Insert)

**Polypropylene**  
Code: **PPR**

**Polyamide**  
Code: **PAR**

Clamp Bodies, Type H (smooth Inside surface without tension clearance) are available upon request. Please consult STAUFF for further information.

## ④ Mounting & Fitting Combination

Please select the mounting and fitting combination (e.g. Bolts, Cover Plates etc.) and add the corresponding Code to position ④ of the order code for your clamp assembly.

### Installation with Cover Plate and Bolts

**Cover Plate DPAD with Hexagon Head Bolt AS**  
Code: **DPAD-AS**

### Installation with Locking Plate and Bolts

**Safety Locking Plate SIPD with Stacking Bolt AF**  
Code: **SIPD-AF**

## ⑤ Thread Type

Please select the required thread type and add the corresponding Code to position ⑤ of the order code for your clamp assembly.

**Metric ISO thread**  
Code: **M**

**Unified coarse (UNC) thread**  
Code: **U**

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table.

## ⑥ Material & Surface Finishing

Please select the required material & surface finishing of the metal parts and add the corresponding Code to position ⑥ of the order code for your clamp assembly.

Metal parts made of Carbon Steel, untreated **W1**

Metal parts made of Carbon Steel, phosphated **W2**

Metal parts made of Carbon Steel, zinc/nickel-plated **W3**

Metal parts made of Stainless Steel V2A 1.4301 / 1.4305 (AISI 304 / 303) **W4**

Metal parts made of Stainless Steel V4A 1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**

Weld Plate made of Carbon Steel, phosphated; Other metal parts made of Carbon Steel, zinc/nickel-plated **W10**

Weld Plate and Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, untreated **W12**

Mounting Rail Nuts made of Carbon Steel, zinc/nickel-plated; Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, untreated **W13**

Weld Plate / Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, zinc/nickel-plated **W15**

Mounting Rail Nuts made of Carbon Steel, zinc/nickel-plated; Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, zinc/nickel-plated **W16**

Safety Locking Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, zinc/nickel-plated **W17**

Safety Locking Plate made of Carbon Steel, untreated; Bolts made of Carbon Steel, phosphated **W18**

Cover Plate made of Carbon Steel, phosphated; Bolts made of Carbon Steel, untreated **W19**

Individual combinations of alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

## ⑦ Assembling & Kitting

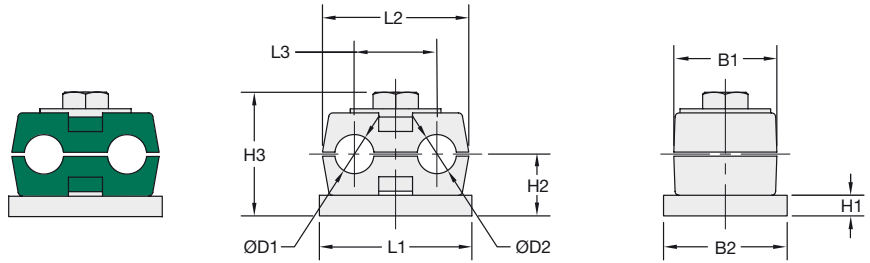
If required, please select an additional assembling and kitting option and add the corresponding Code to the last position of the order code for your clamp assembly.

**Components Supplied Separately**  
Code: **none** (Standard Option)

**Components Assembled**  
Code: **#A** (Special Option)

**Components Packed in Kits**  
Code: **#K** (Special Option)

### Compact Twin Series: Clamp Body Type DS



#### Order Codes

#### Clamp Body

**\*DS1\*06/06\*PP**

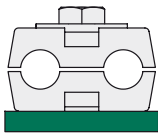
One clamp body is consisting of two clamp halves.

- \* Compact Twin Series, STAUFF Group 1 **DS 1**
- \* Exact outside diameters Ø D1 / Ø D2 (mm) **06/06**
- \* Clamp Body Material (Polypropylene) **PP**

Group	Outside Diameter		Nominal Bore		Order Codes (2 Clamp Halves)	Dimensions (mm/in)								
	Pipe / Tube Ø D1 / Ø D2 (mm) (in)		Pipe (in)	Copper Tube ASTM B88 (in)		L1	L2	L3	H1	H2	H3	B1	B2	
DS 1	6				DS106/06 PP									
	6,4	1/4			DS106,4/06,4 PP									
	8	5/16			DS108/08 PP									
	9,5	3/8		1/4	DS109,5/09,5 PP									
	10		1/8		DS110/10 PP	37	35,5	20	5	15	30	25	30	
					1.46	1.40	.79	.20	.59	1.18	.98	1.18		

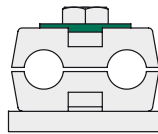
Additional outside diameters are available upon request. Please consult STAUFF for further information.

### Compact Twin Series: Metal Hardware



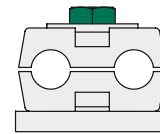
#### Weld Plate, Type SP DS1

**SP DS1 U W2** (unified coarse thread)  
Thread size: 1/4–20 UNC  
Made of Carbon Steel, phosphated



#### Cover Plate, Type US DS1

**US DS1 W3**  
Carbon Steel, zinc/nickel-plated

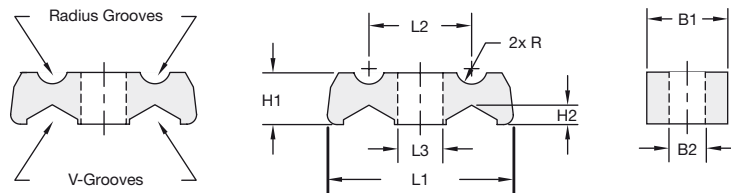


#### Hexagon Bolt, Type AS DS1

**AS DS1 U W3** (unified coarse thread)  
Bolt size: 1/4–20 UNC x 1  
Carbon Steel, zinc/nickel-plated

All threaded parts are only available with unified coarse (UNC) thread.  
Rail mount and stacking assemblies as well as alternative materials and surface finishings are available upon request.  
Consult STAUFF for further information.

### Agriculture Twin Series: Clamp Body Type AG



#### Order Codes

#### Clamp Body

**\*AG\*2**

- \* Agriculture Twin Series **AG 2**
- \* STAUFF Group **2**

Group	Min/Max Outside Diameters				Order Codes (1 Clamp Body)	Dimensions (mm/in)							
	Pipe / Tube using Radius Grooves (mm) (in)		using V-Grooves (mm) (in)			L1	L2	L3	H1	H2	B1	B2	R
2	3 ... 10	.12 ... .39	4 ... 15	.26 ... .59	AG 2	57,5	31,7	14,0	16,0	7,1	25,0	11,0	4,8
						2.26	1.25	.55	.63	.24	.98	.43	.19
3	4 ... 25	.16 ... .98	7 ... 20	.28 ... .79	AG 3	62,0	34,5	14,0	19,0	7,1	32,0	11,0	12,4
						2.48	1.36	.55	.75	.28	1.26	.43	.49

#### Standard Material



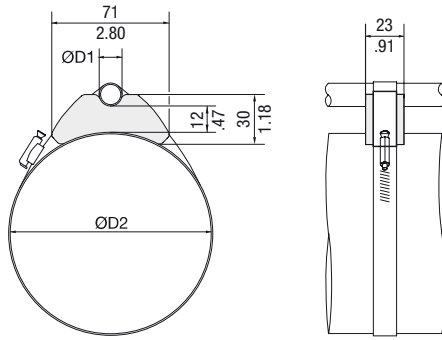
Polypropylene  
Colour: Black

See pages A88 / A89 for properties and technical information.

Additional outside diameters are available upon request. Please consult STAUFF for further information.

#### Product Features

- Flip the clamp body to choose between the radius grooved or the v-grooved design (suitable for a range of diameters)
- Use M10 or 3/8–16 UNC bolts or screws (preferably with washers) to fasten clamp bodies directly to the machine
- Clamp bodies can be stacked for multi-level assembly

**Saddle Clamp for Cylinder Supply Lines  
Type ZR 518**


Min/Max Outside Diameters *		Pipe / Tube		Steel Strap Dimensions (Not Included in Scope of Delivery)			
Ø D1		Ø D2		Length		Width	
(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)
10 ... 22	.39 ... .87	50 ... 70	1.96 ... 2.76	196 ... 254	7.71 ... 10.00	13	.51
		60 ... 80	2.36 ... 3.15	225 ... 284	8.86 ... 11.18		
		70 ... 90	2.76 ... 3.54	254 ... 314	10.00 ... 12.36		
		80 ... 105	3.15 ... 4.13	284 ... 359	11.18 ... 14.13		
		90 ... 120	3.54 ... 4.72	314 ... 404	12.36 ... 15.90		
		105 ... 140	4.13 ... 5.51	359 ... 464	14.13 ... 18.27		
		125 ... 160	4.92 ... 6.30	419 ... 525	16.50 ... 20.66		
		145 ... 180	5.71 ... 7.09	479 ... 586	18.86 ... 23.07		
165 ... 200	6.50 ... 7.87	540 ... 647	21.26 ... 25.47				

**Order Code**
**Saddle Clamp      ZR 518 Black 9005**
**Standard Material**

 Thermoplastic Elastomer (73 Shore-A)  
Colour: Black

See pages A88 / A89 for properties and technical information.

\* Ø D1 depending on Ø D2!

**Custom-Designed  
Plastic Saddle Clamps**

Custom-designed Plastic Saddle Clamps according to customer's specifications or based on STAUFF developments are available upon request.

Consult STAUFF for further information.





### Machined Versions

Custom-designed clamping systems for pipes, tubes, hoses, cables and other components according to customer's specifications or based on STAUFF developments, made of thermoplastics, metals and non-ferrous metals.

Accessories such as weld plates, cover plates, bolts as well as rubber inserts are available on request.



Injection Moulded Versions (Flexi Clamps)

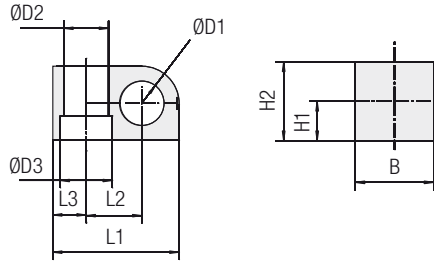
Custom-designed clamping systems for pipes, tubes, hoses, cables and other components according to customer's specifications or based on STAUFF developments, made of Polypropylene, Polyamide and other thermoplastics.

Accessories such as weld plates, cover plates, bolts as well as rubber inserts are available on request.

STAUFF  
Clamps  
A



Clamp Body - Single Design



Order Codes

Clamp Body \*LBBU\*1\*06\*SA\*M8-U5/16

- \* Light Series LBBU **LBBU**
- \* STAUFF Group **1**
- \* Exact outside diameter Ø D1 (mm) **06**
- \* Material code (see below) **SA**
- \* Thread code (suitable for bolts M8 and U5/16) **M8-U5/16**

Standard Materials



**Thermoplastic Elastomer** (87 Shore-A)  
 Colour: Black  
 Material code: **SA**

See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

Product Features

- Compact and light-weight design for applications in which space is limited
- Available in 3 different sizes and covering all standard metric and imperial diameters between 4 mm and 32 mm
- Vibration-damping and noise-reducing clamp body material with UV, ozone and weathering-resistant characteristics
- Advanced design with a film hinge allows the top part of the Plastic clamp body to open up and insert or replace the pipe, tube or hose without the use of force
- Embedded metal sleeve to ensure stability of the clamp assembly

Group	Outside Diameter		Nominal Bore Pipe (in)	Order Codes (1 Clamp Body)	Dimensions (mm/in)										
	Pipe / Tube / Hose Ø D1 (mm)	(in)			Ø D2	Ø D3	L1	L2	L3	H1	H2	B			
1	6			LBBU 106 SA M8-U5/16											
	6,4	1/4		LBBU 106,4 SA M8-U5/16											
	8	5/16		LBBU 108 SA M8-U5/16											
	9,5	3/8		LBBU 109,5 SA M8-U5/16	12	14	34	15	9	10	20	20			
	10		1/8	LBBU 110 SA M8-U5/16	.47	.55	1.34	.59	.35	.39	.79	.79			
	11			LBBU 111 SA M8-U5/16											
	12			LBBU 112 SA M8-U5/16											
	12,7	1/2		LBBU 112,7 SA M8-U5/16											
2	4			LBBU 204 SA M8-U5/16											
	6			LBBU 206 SA M8-U5/16											
	6,4	1/4		LBBU 206,4 SA M8-U5/16											
	8	5/16		LBBU 208 SA M8-U5/16											
	9,5	3/8		LBBU 209,5 SA M8-U5/16											
	10		1/8	LBBU 210 SA M8-U5/16											
	11			LBBU 211 SA M8-U5/16											
	12			LBBU 212 SA M8-U5/16	12	14	39	18	9	12	24	20			
	12,7	1/2		LBBU 212,7 SA M8-U5/16	.47	.55	1.54	.71	.35	.47	.94	.79			
	13,5		1/4	LBBU 213,5 SA M8-U5/16											
	14			LBBU 214 SA M8-U5/16											
	15			LBBU 215 SA M8-U5/16											
3	16	5/8		LBBU 216 SA M8-U5/16											
	17,2		3/8	LBBU 217,2 SA M8-U5/16											
	18			LBBU 218 SA M8-U5/16											
	19	3/4		LBBU 219 SA M8-U5/16											
	20			LBBU 220 SA M8-U5/16											
	21,3			LBBU 321,3 SA M8-U5/16											
	22	7/8		LBBU 322 SA M8-U5/16											
	23			LBBU 323 SA M8-U5/16											
25			LBBU 325 SA M8-U5/16	12	14	57,5	23,5	15	20	40	30				
25,4	1		LBBU 325,4 SA M8-U5/16	.47	.55	2.26	.93	.59	.79	1.57	1.18				
28			LBBU 328 SA M8-U5/16												
30			LBBU 330 SA M8-U5/16												
32	1-1/4		LBBU 332 SA M8-U5/16												

Additional outside diameters are available upon request. Please consult STAUFF for further information.

Light Series LBBU

Clamp Assemblies: Types of Mounting / Order Examples



**Type of Mounting SP**  
(with Weld Plate LBBU-SP)

Clamp assembly consisting of:

- 1 Hexagon Head Bolt AS
- 1 Cover Plate LBBU-DP
- 1 Sleeve LBBU-HUE
- 1 Clamp Body LBBU
- 1 Weld Plate LBBU-SP

Order Code

**LBBU-SP 216 SA DP-AS M8 W10**

**W10** (Weld Plate made of Carbon Steel, phosphated; Other metal parts made of Carbon Steel, zinc/nickel-plated) is the standard option for this type of installation. For UNC threads / bolts, please replace M8 by U5/16.



**Type of Mounting SM**  
(with Hexagon Rail Nut SM 2-5D)

Clamp assembly consisting of:

- 1 Hexagon Head Bolt AS
- 1 Cover Plate LBBU-DP
- 1 Sleeve LBBU-HUE
- 1 Clamp Body LBBU
- 1 Hexagon Rail Nut SM 2-5D (for use with Mounting Rail TS, see page A14 for details)

Order Code (Mounting Rail TS not included.)

**LBBU-SM 216 SA DP-AS M8 W3**

**W3** (Metal parts made of Carbon Steel, zinc/nickel-plated) is the standard option for this type of installation. For UNC threads / bolts, please replace M8 by U5/16.



**Type of Mounting PM**  
(for panel mounting without Weld Plate or Hexagon Rail Nut)

Clamp assembly consisting of:

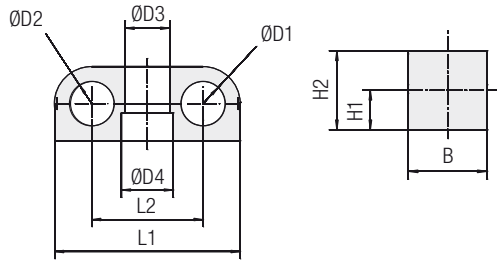
- 1 Hexagon Head Bolt AS
- 1 Cover Plate LBBU-DP
- 1 Sleeve LBBU-HUE
- 1 Clamp Body LBBU

Order Code

**LBBU-PM 216 SA DP-AS M8 W3**

**W3** (Metal parts made of Carbon Steel, zinc/nickel-plated) is the standard option for this type of installation. For UNC threads / bolts, please replace M8 by U5/16.

## Clamp Body - Twin Design



Group	Outside Diameters		Nominal Bore Pipe	Order Codes (1 Clamp Body)	Dimensions (mm/in)						
	Pipe / Tube / Hose Ø D1 / Ø D2				Ø D3	Ø D4	L1	L2	H1	H2	B
1D	4			LBBU 104/04 SA M8-U5/16	12	14	50	30	10	20	20
	6			LBBU 106/06 SA M8-U5/16							
	6,4	1/4		LBBU 106,4/06,4 SA M8-U5/16							
	8	5/16		LBBU 108/08 SA M8-U5/16							
	9,5	3/8		LBBU 109,5/09,5 SA M8-U5/16							
	10		1/8	LBBU 110/10 SA M8-U5/16							
	11			LBBU 111/11 SA M8-U5/16							
	12			LBBU 112/12 SA M8-U5/16							
	12,7	1/2		LBBU 112,7/12,7 SA M8-U5/16							
2D	4			LBBU 204/04 SA M8-U5/16	12	14	59	35	12	24	20
	6			LBBU 206/06 SA M8-U5/16							
	8	5/16		LBBU 208/08 SA M8-U5/16							
	9,5	3/8		LBBU 209,5/9,5 SA M8-U5/16							
	10		1/8	LBBU 210/10 SA M8-U5/16							
	11			LBBU 211/11 SA M8-U5/16							
	12			LBBU 212/12 SA M8-U5/16							
	12,7	1/2		LBBU 212,7/12,7 SA M8-U5/16							
	13,5		1/4	LBBU 213,5/13,5 SA M8-U5/16							
	14			LBBU 214/14 SA M8-U5/16							
	15			LBBU 215/15 SA M8-U5/16							
	16	5/8		LBBU 216/16 SA M8-U5/16							
	17,2		3/8	LBBU 217,2/17,2 SA M8-U5/16							
18			LBBU 218/18 SA M8-U5/16								
19	3/4		LBBU 219/19 SA M8-U5/16								
20			LBBU 220/20 SA M8-U5/16								
3D	21,3			LBBU 321,321,3 SA M8-U5/16	12	14	86	47	20	40	30
	22	7/8		LBBU 322/22 SA M8-U5/16							
	23			LBBU 323/23 SA M8-U5/16							
	25			LBBU 325/25 SA M8-U5/16							
	25,4	1		LBBU 325,4/25,4 SA M8-U5/16							
	28			LBBU 328/28 SA M8-U5/16							
	30			LBBU 330/30 SA M8-U5/16							
	32	1-1/4		LBBU 332/32 SA M8-U5/16							

## Order Codes

**Clamp Body** \*LBBU\*1\*06/06\*SA\*M8-U5/16

- \* Light Series LBBU **LBBU**
- \* 1st Part of STAUFF Group **1**
- \* Exact outside diameters Ø D1 / Ø D2 (mm) **06/06**
- \* Material code (see below) **SA**
- \* Thread code (suitable for bolts M8 and U5/16) **M8-U5/16**

## Standard Materials



**Thermoplastic Elastomer** (87 Shore-A)  
Colour: Black  
Material code: **SA**

See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

## Product Features

- Compact and light-weight design for applications in which space is limited
- Available in 3 different sizes and covering all standard metric and imperial diameters between 4 mm and 32 mm
- Vibration-damping and noise-reducing clamp body material with UV, ozone and weathering-resistant characteristics
- Advanced design with a film hinge allows the top part of the Plastic clamp body to open up and insert or replace the pipe, tube or hose without the use of force
- Embedded metal sleeve to ensure stability of the clamp assembly



Please also ask for the **Anti-Twist Feature** to prevent turning of the components. Consult STAUFF for further information.

Additional outside diameters and combinations of different outside diameters are available upon request. Please consult STAUFF for further information.

## Clamp Assemblies: Types of Mounting / Order Examples

## Light Series LBBU


**Type of Mounting SP**  
(with Weld Plate LBBU-SP)

## Clamp assembly consisting of:

- 1 Hexagon Head Bolt AS
- 1 Cover Plate LBBU-DP
- 1 Sleeve LBBU-HUE
- 1 Clamp Body LBBU
- 1 Weld Plate LBBU-SP

**Order Code**
**LBBU-SP 216/16 SA DP-AS M8 W10**

**W10** (Weld Plate made of Carbon Steel, phosphated; Other metal parts made of Carbon Steel, zinc/nickel-plated) is the standard option for this type of installation. For UNC threads / bolts, please replace M8 by U5/16.


**Type of Mounting SM**  
(with Hexagon Rail Nut SM 2-5D)

## Clamp assembly consisting of:

- 1 Hexagon Head Bolt AS
- 1 Cover Plate LBBU-DP
- 1 Sleeve LBBU-HUE
- 1 Clamp Body LBBU
- 1 Hexagon Rail Nut SM 2-5D (for use with Mounting Rail TS, see page A14 for details)

**Order Code** (Mounting Rail TS not included.)  
**LBBU-SM 216/16 SA DP-AS M8 W3**

**W3** (Metal parts made of Carbon Steel, zinc/nickel-plated) is the standard option for this type of installation. For UNC threads / bolts, please replace M8 by U5/16.


**Type of Mounting PM**  
(for panel mounting without Weld Plate or Hexagon Rail Nut)

## Clamp assembly consisting of:

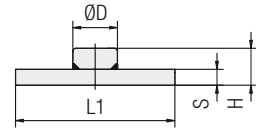
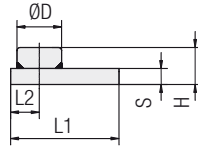
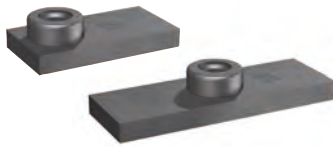
- 1 Hexagon Head Bolt AS
- 1 Cover Plate LBBU-DP
- 1 Sleeve LBBU-HUE
- 1 Clamp Body LBBU

**Order Code**
**LBBU-PM 216/16 SA DP-AS M8 W3**

**W3** (Metal parts made of Carbon Steel, zinc/nickel-plated) is the standard option for this type of installation. For UNC threads / bolts, please replace M8 by U5/16.



**Weld Plate**  
Type LBBU-SP



STAUFF Group 1 to 3

STAUFF Group 1D to 3D

**Order Codes**

**Weld Plate**

**\*LBBU-SP\*1D\*M8\*W2**

- \* Light Series LBBU LBBU
- \* Weld Plate -SP
- \* STAUFF Group 1D
- \* Thread code    Metric ISO thread: M8 M8  
                          UNC thread: 5/16-18 UNC U5/16
- \* Material code    Carbon Steel, phosphated W2

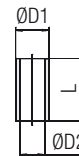
Group STAUFF	Dimensions (mm/in)						Thread G	Order Codes (Standard Options)
	Ø D	L1	L2	H	S			
1	14	34	9	10,3	5	M8	LBBU-SP 1 M8 W2	
	.55	1.34	.35	.41	.20	5/16-18 UNC	LBBU-SP 1 U5/16 W2	
2	14	39	9	10,3	5	M8	LBBU-SP 2 M8 W2	
	.55	1.54	.35	.41	.20	5/16-18 UNC	LBBU-SP 2 U5/16 W2	
3	14	57,5	15	10,3	5	M8	LBBU-SP 3 M8 W2	
	.55	2.26	.59	.41	.20	5/16-18 UNC	LBBU-SP 3 U5/16 W2	
1D	14	50	X	10,3	5	M8	LBBU-SP 1D M8 W2	
	.55	1.97		.41	.20	5/16-18 UNC	LBBU-SP 1D U5/16 W2	
2D	14	59		10,3	5	M8	LBBU-SP 2D M8 W2	
	.55	2.32		.41	.20	5/16-18 UNC	LBBU-SP 2D U5/16 W2	
3D	14	86		10,3	5	M8	LBBU-SP 3D M8 W2	
	.55	3.39		.41	.20	5/16-18 UNC	LBBU-SP 3D U5/16 W2	



Please also ask for the **Anti-Twist Feature** to prevent turning of the components. Consult STAUFF for further information.

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table. **Alternative sizes (e.g. for bolts M6 and 1/4-20 UNC), materials and surface finishings are available upon request.**

**Sleeve**  
Type LBBU-HUE



Dimensions applicable only when used with Weld Plate LBBU-SP (**Type of Mounting SP**)

Dimensions applicable only when used with Hexagon Rail Nut SM 2-5D (**Type of Mounting SM**)

Dimensions applicable only when used for panel mounting without Weld Plate or Hexagon Rail Nut (**Type of Mounting PM**)

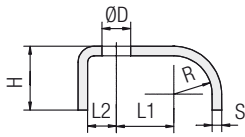
Group STAUFF	Dimensions (mm/in)			Order Codes (Standard Options)
	ØD1	ØD2	L	
1	12	9	13,5	LBBU-HUE 1/1D SP
	.47	.35	.53	M8-U5/16 W3
2	12	9	17,5	LBBU-HUE 2/2D SP
	.47	.35	.69	M8-U5/16 W3
3	12	9	33,5	LBBU-HUE 3/3D SP
	.47	.35	1.32	M8-U5/16 W3
1D	12	9	13,5	LBBU-HUE 1/1D SP
	.47	.35	.53	M8-U5/16 W3
2D	12	9	17,5	LBBU-HUE 2/2D SP
	.47	.35	.69	M8-U5/16 W3
3D	12	9	33,5	LBBU-HUE 3/3D SP
	.47	.35	1.32	M8-U5/16 W3

Group STAUFF	Dimensions (mm/in)			Order Codes (Standard Options)
	ØD1	ØD2	L	
1	12	9	12,8	LBBU-HUE 1/1D SM
	.47	.35	.50	M8-U5/16 W3
2	12	9	16,8	LBBU-HUE 2/2D SM
	.47	.35	.66	M8-U5/16 W3
3	12	9	32,8	LBBU-HUE 3/3D SM
	.47	.35	1.29	M8-U5/16 W3
1D	12	9	12,8	LBBU-HUE 1/1D SM
	.47	.35	.50	M8-U5/16 W3
2D	12	9	16,8	LBBU-HUE 2/2D SM
	.47	.35	.66	M8-U5/16 W3
3D	12	9	32,8	LBBU-HUE 3/3D SM
	.47	.35	1.29	M8-U5/16 W3

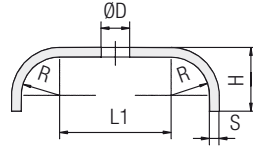
Group STAUFF	Dimensions (mm/in)			Order Codes (Standard Options)
	ØD1	ØD2	L	
1	12	9	18,8	LBBU-HUE 1/1D PM
	.47	.35	.74	M8-U5/16 W3
2	12	9	22,7	LBBU-HUE 2/2D PM
	.47	.35	.89	M8-U5/16 W3
3	12	9	38,8	LBBU-HUE 3/3D PM
	.47	.35	1.53	M8-U5/16 W3
1D	12	9	18,8	LBBU-HUE 1/1D PM
	.47	.35	.74	M8-U5/16 W3
2D	12	9	22,7	LBBU-HUE 2/2D PM
	.47	.35	.89	M8-U5/16 W3
3D	12	9	38,8	LBBU-HUE 3/3D PM
	.47	.35	1.53	M8-U5/16 W3

Alternative sizes (e.g. for bolts M6 and 1/4-20 UNC), materials and surface finishings are available upon request.



Cover Plate  
Type LBBU-DP


STAUFF Group 1 to 3



STAUFF Group 1D to 3D



Group STAUFF	Dimensions (mm/in)						Order Codes (Standard Options)
	Ø D	L1	L2	R	H	S	
1	9	15	9	10	16	3	LBBU-DP 1 M8-U5/16 W3
	.35	.59	.35	.39	.63	.12	
2	9	18	9	12	20	3	LBBU-DP 2 M8-U5/16 W3
	.35	.71	.35	.47	.79	.12	
3	9	23,5	15	19,5	28	3	LBBU-DP 3 M8-U5/16 W3
	.35	.93	.59	.77	1.10	.12	
1D	9	30	X	10	16	3	LBBU-DP 1D M8-U5/16 W3
	.35	1.18		.39	.63	.12	
2D	9	35		12	20	3	LBBU-DP 2D M8-U5/16 W3
	.35	1.38		.47	.79	.12	
3D	9	47	19,5	28	3	LBBU-DP 3D M8-U5/16 W3	
	.35	1.85	.77	.63	.12		

Alternative sizes (e.g. for bolts M6 and 1/4–20 UNC), materials and surface finishings are available upon request.

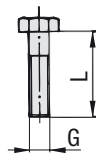


Please also ask for the **Anti-Twist Feature** to prevent turning of the components. Consult STAUFF for further information.

## Order Codes

Cover Plate \*LBBU-DP\*1D\*M8-U5/16\*W3

* Light Series LBBU	LBBU
* Cover Plate	-DP
* STAUFF Group	1D
* Thread code (suitable for bolts M8 and U5/16)	M8-U5/16
* Material code Carbon Steel, zinc/nickel-plated	W3

 Hexagon Head Bolt  
Type AS


## Hexagon Head Bolt AS

(according to DIN 931 / 933 or ANSI / ASME B18.2.1.)

Dimensions applicable only when used with  
Weld Plate LBBU-SP (Type of Mounting SP)  
or Hexagon Rail Nut SM 2-5D (Type of Mounting SM)

## Hexagon Head Bolt AS

(according to DIN 931 / 933 or ANSI / ASME B18.2.1.)

Dimensions applicable only when used for panel mounting  
without Weld Plate or Hexagon Rail Nut  
(Type of Mounting PM)



Group STAUFF	Dimensions (mm/in)		Order Codes (Standard Options)
	Thread	G x L	
1	M8 x 25		AS M8x25 W3
	5/16–18 UNC x 1		AS U5/16-18x1 W3
2	M8 x 28		AS M8x28 W3
	5/16–18 UNC x 1-1/8		AS U5/16-18x1-1/8 W3
3	M8 x 45		AS M8x45 W3
	5/16–18 UNC x 1-3/4		AS U5/16-18x1-3/4 W3
1D	M8 x 25		AS M8x25 W3
	5/16–18 UNC x 1		AS U5/16-18x1 W3
2D	M8 x 28		AS M8x28 W3
	5/16–18 UNC x 1-1/8		AS U5/16-18x1-1/8 W3
3D	M8 x 45		AS M8x45 W3
	5/16–18 UNC x 1-3/4		AS U5/16-18x1-3/4 W3

Group STAUFF	Dimensions (mm/in)		Order Codes (Standard Options)
	Thread	G x L	
1	M8 x 30		AS M8x30 W3
	5/16–18 UNC x 1-1/4		AS U5/16-18x1-1/4 W3
2	M8 x 35		AS M8x35 W3
	5/16–18 UNC x 1-3/8		AS U5/16-18x1-3/8 W3
3	M8 x 50		AS M8x50 W3
	5/16–18 UNC x 2		AS U5/16-18x2 W3
1D	M8 x 30		AS M8x30 W3
	5/16–18 UNC x 1-1/4		AS U5/16-18x1-1/4 W3
2D	M8 x 35		AS M8x35 W3
	5/16–18 UNC x 1-3/8		AS U5/16-18x1-3/8 W3
3D	M8 x 50		AS M8x50 W3
	5/16–18 UNC x 2		AS U5/16-18x2 W3

## Order Codes

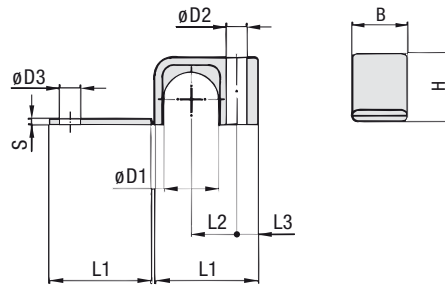
Hexagon Head Bolt \*AS\*M8x25\*W3

* Type of bolt	Hexagon Head Bolt (according to DIN 931 / 933 or ANSI / ASME B18.2.1.)	AS
* Thread code	Thread dimension according to dimension table	M8x25
* Material code	Carbon Steel, zinc/nickel-plated	W3

All threaded parts are available with Metric ISO thread or unified coarse (UNC) thread according to dimension table.

Alternative sizes (e.g. for bolts M6 and 1/4–20 UNC), materials and surface finishings are available upon request.

### Clamp Body - Single Design



#### Order Codes

#### Clamp Body

**\*LB\*1\*03,2\*PP**

- \* Light Series: Clamp Body / Single Design **LB**
- \* STAUFF Group **1**
- \* Exact outside diameter Ø D1 (mm) **03,2**
- \* Material code (see below) **PP**

#### Standard Materials



**Polypropylene**  
Colour: Black  
Material code: **PP**



**Polyamide**  
Colour: Yellow  
Material code: **PA**

See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

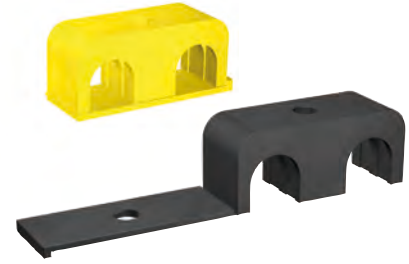
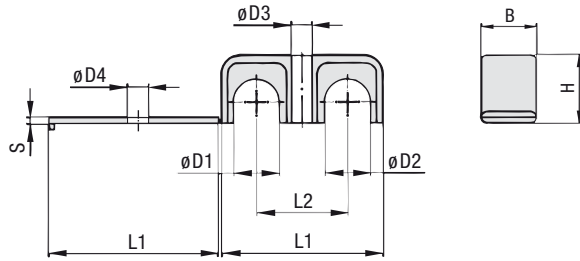
#### Applications

- Pneumatics, Instrumentation and Automotive Technology, Machine Tool Industry, Lubrication, Mechanical Engineering

Group	Outside Diameter		Nominal Bore Pipe	Order Codes (1 Clamp Body)	Dimensions (mm/in)									
	Pipe / Tube / Hose Ø D1				(mm)	(in)	(** = Material)	L1	L2	L3	B	H	S	Ø D2
1	3,2	1/8		LB 103,2 **										
	6			LB 106 **	22	9	6,5	12	10,5	2	6,8	7		
	6,4	1/4		LB 106,4 **	.87	.35	.26	.47	.41	.08	.27	.28		
	8			LB 108 **										
2	9,5	3/8		LB 209,5 **										
	10		1/8	LB 210 **	27	11	7	16	15	2	6,8	7		
	11,1			LB 211,1 **	1.06	.43	.28	.63	.59	.08	.27	.28		
	12			LB 212 **										
3	12,7	1/2		LB 312,7 **										
	13,5		1/4	LB 313,5 **										
	14			LB 314 **										
	15			LB 315 **	34	15	7	20	22,5	2	6,8	7		
	16	5/8		LB 316 **	1.34	.59	.28	.79	.89	.08	.27	.28		
	17,2		3/8	LB 317,2 **										
4	18			LB 318 **										
	19	3/4		LB 419 **										
	20			LB 420 **										
	21,3		1/2	LB 421,3 **	42	19	7	20	30	2	6,8	7		
	22			LB 422 **	1.65	.75	.28	.79	1.18	.08	.27	.28		
	25			LB 425 **										
	25,4	1		LB 425,4 **										

Additional outside diameters are available upon request. Please consult STAUFF for further information.

## Clamp Body - Twin Design



Group	Outside Diameters		Nominal Bore Pipe	Order Codes (1 Clamp Body)	Dimensions								
	Pipe / Tube / Hose Ø D1 / Ø D2				(mm)	(in)	(mm/in)	L1	L2	B	H	S	Ø D3
1	3,2	1/8		LBG 103,2/03,2 **									
	6			LBG 106/06 **	31	18	12	10,5	2	6,8	7		
	6,4	1/4		LBG 106,4/06,4 **	1.22	.71	.47	.41	.08	.27	.28		
	8			LBG 108/08 **									
2	9,5	3/8		LBG 209,5/09,5 **									
	10		1/8	LBG 210/10 **	39	22	16	15	2	6,8	7		
	11,1			LBG 211,1/11,1 **	1.54	.87	.63	.59	.08	.27	.28		
	12			LBG 212/12 **									
3	12,7	1/2		LBG 312,7/12,7 **									
	13,5		1/4	LBG 313,5/13,5 **									
	14			LBG 314/14 **									
	15			LBG 315/15 **	53	30	20	22,5	2	6,8	7		
	16	5/8		LBG 316/16 **	2.09	1.18	.79	.89	.08	.27	.28		
	17,2		3/8	LBG 317,2/17,2 **									
4	18			LBG 318/18 **									
	19	3/4		LBG 419/19 **									
	20			LBG 420/20 **									
	21,3		1/2	LBG 421,3/21,3 **	70	38	20	30	2	6,8	7		
	22			LBG 422/22 **	2.76	1.50	.79	1.18	.08	.27	.28		
	25			LBG 425/25 **									
	25,4	1		LBG 425,4/25,4 **									

Additional outside diameters and combinations of different outside diameters (Clamp Body, Type LBU) are available upon request. Please consult STAUFF for further information.

## Order Codes

Clamp Body \*LBG\*1\*03,2/03,2\*PP

- \* Light Series: Clamp Body / Twin Design with identical diameters **LBG**
- Clamp Body / Twin Design with different diameters **LBU**
- \* STAUFF Group **1**
- \* Exact outside diameters Ø D1 / Ø D2 (mm) **03,2/03,2**
- \* Material code (see below) **PP**

## Standard Materials

 **Polypropylene**  
Colour: Black  
Material code: **PP**

 **Polyamide**  
Colour: Yellow  
Material code: **PA**

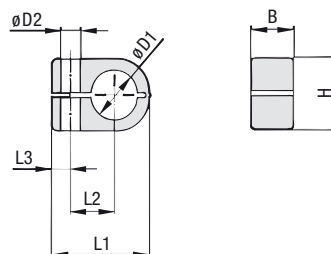
See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

## Applications

- Pneumatics, Instrumentation and Automotive Technology, Machine Tool Industry, Lubrication, Mechanical Engineering

Clamp Body - Single Design



Order Codes

Clamp Body

\*LN\*1\*06\*PP

- \* Light Series: Clamp Body / Single Design **LN**
- \* STAUFF Group **1**
- \* Exact outside diameter Ø D1 (mm) **06**
- \* Material code (see below) **PP**

Standard Materials



**Polypropylene**  
Colour: Green  
Material code: **PP**



**Polyamide**  
Colour: Black  
Material code: **PA**

See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

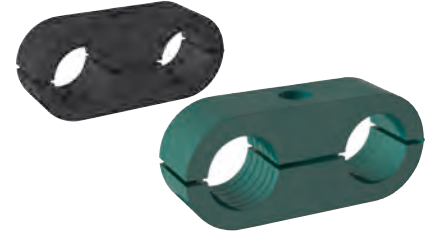
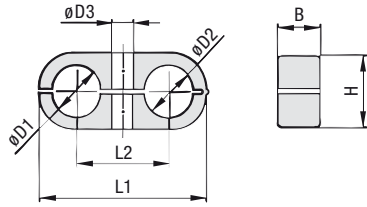
Applications

- Pneumatics, Instrumentation and Automotive Technology, Machine Tool Industry, Lubrication, Mechanical Engineering

Group	Outside Diameter Pipe / Tube / Hose Ø D1		Nominal Bore Pipe (in)	Order Codes (1 Clamp Body) (* = Material)	Dimensions (mm/in)					
	(mm)	(in)			L1	L2	L3	B	H	Ø D2
1	6			LN 106 **	22	9	7	14,5	13,5	6,8
	6,4	1/4		LN 106,4 **	.87	.35	.28	.57	.53	.27
	8			LN 108 **						
2	8			LN 208 **						
	9,5	3/8		LN 209,5 **	27	11	7	14,5	18,5	6,8
	10		1/8	LN 210 **	1.06	.43	.28	.57	.59	.27
	12			LN 212 **						
3	12,7	1/2		LN 212,7 **						
	10		1/8	LN 310 **						
	12			LN 312 **						
	12,7	1/2		LN 312,7 **						
	13,5		1/4	LN 313,5 **	33	15	7	14,5	23,5	6,8
	14			LN 314 **	1.30	.59	.28	.57	.93	.27
4	15			LN 315 **						
	16	5/8		LN 316 **						
	14			LN 414 **						
	15			LN 415 **						
	16	5/8		LN 416 **						
	17,2		3/8	LN 417,2 **	40	19	7	14,5	30,5	6,8
	18			LN 418 **	1.57	.75	.28	.57	1.20	.27
	19	3/4		LN 419 **						
20			LN 420 **							
21,3		1/2	LN 421,3 **							
22			LN 422 **							

Additional outside diameters are available upon request. Please consult STAUFF for further information.

## Clamp Body ▪ Twin Design



Group STAUFF	Outside Diameters Pipe / Tube / Hose Ø D1 / Ø D2		Nominal Bore Pipe (in)	Order Codes (1 Clamp Body) (** = Material)	Dimensions (mm/in)				
	(mm)	(in)			L1	L2	B	H	Ø D3
1	6			LNGF 106/06 **	32	18	14,5	13,5	6,8
	6,4	1/4		LNGF 106,4/06,4 **	1.26	.70	.57	.53	.27
	8			LNGF 108/08 **					
2	8			LNGF 208/08 **					
	9,5	3/8		LNGF 209,5/09,5 **	41	22	14,5	18,5	6,8
	10		1/8	LNGF 210/10 **	1.61	.86	.57	.73	.27
	12			LNGF 212/12 **					
3	12,7	1/2		LNGF 212,7/12,7 **					
	10		1/8	LNGF 310/10 **					
	12			LNGF 312/12 **					
	12,7	1/2		LNGF 312,7/12,7 **	54	30	14,5	23,5	6,8
	13,5		1/4	LNGF 313,5/13,5 **	2.13	1.18	.57	.93	.27
	14			LNGF 314/14 **					
4	15			LNGF 315/15 **					
	16	5/8		LNGF 316/16 **					
	14			LNGF 414/14 **					
	15			LNGF 415/15 **					
	16	5/8		LNGF 416/16 **					
	17,2		3/8	LNGF 417,2/17,2 **	70	38	14,5	30,5	6,8
	18			LNGF 418/18 **	2.76	1.50	.57	1.20	.27
	19	3/4		LNGF 419/19 **					
20			LNGF 420/20 **						
21,3		1/2	LNGF 421,3/21,3 **						
22			LNGF 422/22 **						

## Order Codes

## Clamp Body

**\*LNGF\*1\*06/06\*PP**

- \* Light Series: Clamp Body / Twin Design with identical diameters **LNGF**
- Clamp Body / Twin Design with different diameters **LNUF**
- \* STAUFF Group **1**
- \* Exact outside diameters Ø D1 / Ø D2 (mm) **06/06**
- \* Material code (see below) **PP**

## Standard Materials

**Polypropylene**  
Colour: Green  
Material code: **PP**

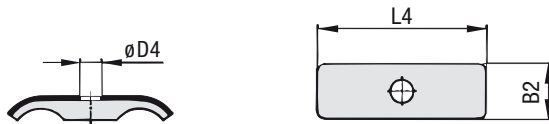
**Polyamide**  
Colour: Black  
Material code: **PA**

See pages A88 / A89 for material properties and technical information. Alternative materials are available upon request. Please consult STAUFF for further information.

## Applications

- Pneumatics, Instrumentation and Automotive Technology, Machine Tool Industry, Lubrication, Mechanical Engineering

Additional outside diameters and combinations of different outside diameters (Clamp Body, type LNUF) are available upon request. Please consult STAUFF for further information.

 Cover Plate  
Type DPL


Group STAUFF	Dimensions (mm/in)			Order Codes (Standard Options)
	L4	B2	Ø D4	
1	29,5	15,5	6,8	DPL 1 W3
	1.16	.61	.27	
2	40	15,5	6,8	DPL 2 W3
	1.57	.61	.27	
3	51	16	6,8	DPL 3 W3
	2.01	.63	.27	
4	63,5	16	6,8	DPL 4 W3
	2.50	.63	.27	

## Order Codes

## Cover Plate

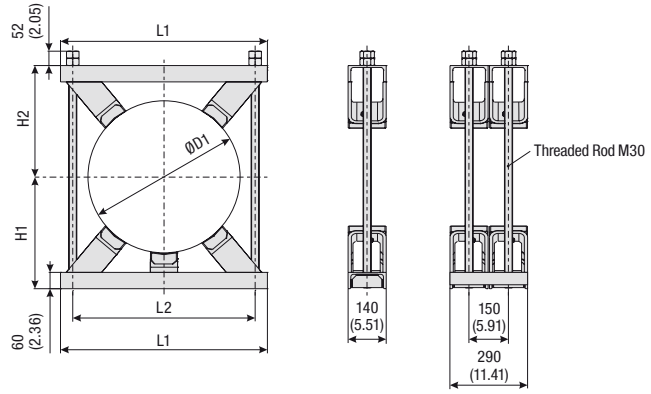
**\*DPL\*1\*W3**

- \* Cover Plate for Clamp Body / Twin Design **DPL**
- \* STAUFF Group **1**
- \* Material code Carbon Steel, zinc/nickel-plated **W3**

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information. Please note: The maximum tightening torque for bolts is 2,5 N·m (1.85 ft·lb).



Construction Series  
Types KS (Single Version) / DKS (Double Version)



Order Codes

Construction Series \*KS\*220\*W7\*PA

\* Version Single version **KS**  
Double version **DKS**

\* Exact outside diameter ØD1 (mm) **220**

\* Material Code Steel, prime coated **W7**  
Steel, hot-dip galvanised **W40**

\* Material of Plastic Pads (see below) **PA**

Please note: All items are supplied non-assembled.

Standard Materials for Plastic Pads

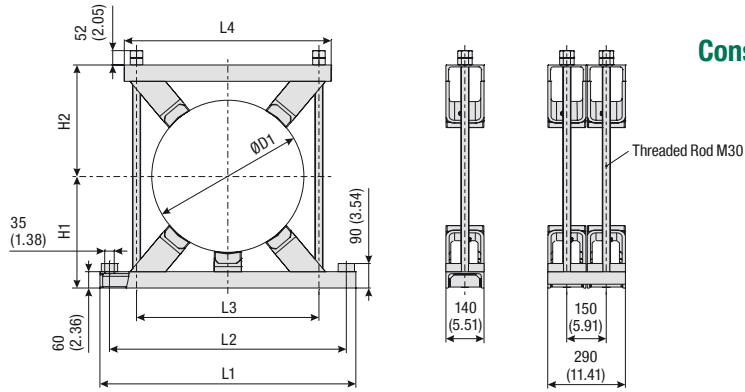


**Polyamide**  
Colour: Black  
Material Code: **PA**

See pages A88 / A89 for material properties and technical information.

Group STAUFF	Outside Diameter ØD1 Pipe / Tube Diameter Range		Standard Diameters		Dimensions (mm/in)				No. of Plastic Pads
	(mm)	(in)	(mm)	(in)	L1	L2	H1	H2	
1	220 ... 275	8.66 ... 10.85	220	8.66	420	330	220	220	4
			247	9.72					
			267	10.51					
			273	10.75					
2	276 ... 325	10.87 ... 12.80	280	11.02	460	370	240	240	4
			300	11.81					
			318	12.52					
			323,9	12.75					
3	326 ... 370	12.83 ... 14.57	355,6	14.00	510	420	260	260	4
			368	14.49					
4	371 ... 425	14.61 ... 16.73	390	15.35	570	480	290	290	4
			406,4	16.00					
5	426 ... 485	16.77 ... 19.09	457,2	18.00	620	530	305	305	4
			470	18.50					
6	486 ... 550	19.13 ... 21.65	490	19.29	680	590	370	370	4
			508	20.00					
			521	20.51					
			546	21.50					
7	551 ... 630	21.69 ... 24.80	558,8	22.00	760	670	410	410	5
			609,6	24.00					
8	631 ... 715	24.84 ... 28.15	711	28.00	845	755	452	452	5
					33.27	29.72	17.80	17.80	
9	716 ... 800	28.19 ... 31.50	762	30.00	940	850	495	495	5
					37.00	33.46	19.49	19.49	
10			813	32.00	990	900	500	500	5
					38.97	35.43	19.69	19.69	
11			1000	39.37	1200	1100	591,5	593	5
					47.24	43.30	23.29	23.34	
12			1016	40.00	1200	1100	602	602	5
					47.24	43.30	23.70	23.70	

Alternative outside diameters, materials and surface finishings are available upon request. Consult STAUFF for further information.


**Construction Series for Anchor Bolt Fastening  
Types KSV (Single) / DKSV (Double)**


Group STAUFF	Outside Diameter ØD1 Pipe / Tube Diameter Range		Standard Diameters		Dimensions (mm/in)						No. of Plastic Pads
	(mm)	(in)	(mm)	(in)	L1	L2	L3	L4	H1	H2	
1	220 ... 275	8.66 ... 10.85	220	8.66	580	330	490	420	220	220	4
			247	9.72							
			267	10.51							
			273	10.75							
2	276 ... 325	10.87 ... 12.80	280	11.02	620	370	530	460	240	240	4
			300	11.81							
			318	12.52							
			323,9	12.75							
3	326 ... 370	12.83 ... 14.57	355,6	14.00	670	420	580	510	260	260	4
			368	14.49							
4	371 ... 425	14.61 ... 16.73	390	15.35	750	480	640	570	290	290	4
			406,4	16.00							
5	426 ... 485	16.77 ... 19.09	457,2	18.00	800	530	730	620	305	305	4
			470	18.50							
6	486 ... 550	19.13 ... 21.65	490	19.29	860	590	790	680	370	370	4
			508	20.00							
			521	20.51							
			546	21.50							
7	551 ... 630	21.69 ... 24.80	558,8	22.00	940	670	870	760	410	410	5
			609,6	24.00							
8	631 ... 715	24.84 ... 28.15	711	28.00	1025	755	955	845	452	452	5
					40.31	29.72	37.60	33.27	17.80	17.80	
9	716 ... 800	28.19 ... 31.50	762	30.00	1120	850	1050	940	495	495	5
					44.09	33.46	41.33	37.00	19.49	19.49	
10			813	32.00	1170	900	1100	990	500	500	5
					46.06	35.43	43.30	38.97	19.69	19.69	
11			1000	39.37	1400	1100	1300	1200	591,5	593	5
					55.12	43.30	51.18	47.24	23.29	23.34	
12			1016	40.00	1400	1100	1300	1200	602	602	5
					55.12	43.30	51.18	47.24	23.70	23.70	

**Order Codes**
**Construction Series \*KSV\*220\*W7\*PA**

\* Version      Single version      **KSV**  
                          Double version      **DKSV**

\* Exact outside diameter ØD1 (mm)      **220**

\* Material Code      Steel, prime coated      **W7**  
    Steel, hot-dip galvanised      **W40**

\* Material of Plastic Pads (see below)      **PA**

Please note: All items are supplied non-assembled.

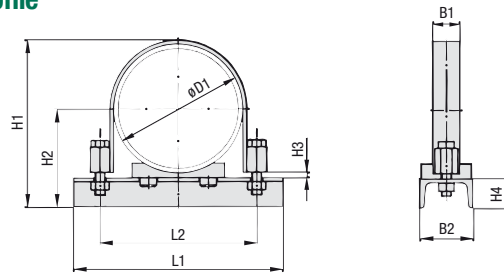
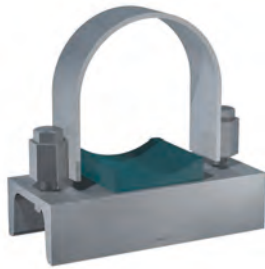
**Standard Materials for Plastic Pads**


**Polyamide**  
 Colour: Black  
 Material Code: **PA**

See pages A88 / A89 for material properties and technical information.

Alternative outside diameters, materials and surface finishings are available upon request. Consult STAUFF for further information.

**Flat Steel U-Bolt with Plastic Pipe Saddle (Short) and U-Profile**  
**Type FB+RUK (To be used as Fixed Point Clamps only)**



**Flat Steel U-Bolt (type FB) with Plastic Pipe Saddle (type RUK), U-Profile and Hexagon Head Bolts**

**Order Codes**

**Clamp Assembly \*FB+RUK\*PP\*48,3\*W1**

One clamp assembly is consisting of one Flat Steel U-Bolt (type FB), one Plastic Pipe Saddle (type RUK), one U-Profile (to DIN 1026) with two Nuts (to DIN EN ISO 4032) and two Hexagon Head Bolts (to DIN EN ISO 4014 / 4017).

- \* Clamp Assembly (as listed above) **FB+RUK**
- \* Material of Pipe Saddle (see below) **PP**
- \* Exact outside diameter Ø D1 (mm) **48,3**
- \* Material code Carbon Steel, untreated **W1**  
Carbon Steel, zinc-plated **W3**  
Stainless Steel V4A **W5**  
1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**  
Carbon Steel, Plastic coated **W6**

Please note: The U-Profile (to DIN 1026) is made of Carbon Steel, untreated. All items are supplied non-assembled.

**Standard Materials for Plastic Pipe Saddles**



**Polypropylene**  
 Colour: Green  
 Material code: **PP**



**Polyamide**  
 Colour: Black  
 Material code: **PA**

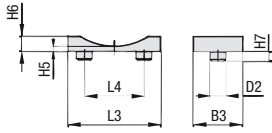
See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

Diameter Nominal DN	Outside Diameter Pipe / Tube Ø D1		Nominal Bore Pipe (in)	Dimensions (mm/in)						U-Profile (DIN 1026) B2 x H4
	(mm)	(in)		Flat Steel U-Bolt (Type FB)						
				L1	L2	H1	H2	H3	B1	
40	48,3	1.93	1-1/2	100	76	95	67	5	20 x 3	50 x 38
				3.94	2.99	3.74	2.64	.20	.78 x .12	1.97 x 1.50
50	57	2.28	2	115	85	103	71,5	5	20 x 3	50 x 38
				4.53	3.35	4.06	2.81	.20	.78 x .12	1.97 x 1.50
65	76,1	3.04	2-1/2	115	88	106	73,2	5	20 x 3	50 x 38
				4.53	3.46	4.17	2.88	.20	.78 x .12	1.97 x 1.50
80	88,9	3.56	3	132	104	122	81	5	20 x 3	50 x 38
				5.20	4.09	4.80	3.19	.20	.78 x .12	1.97 x 1.50
100	108	4.32	4	160	122	146	97,5	8	40 x 4	80 x 45
				6.30	4.80	5.75	3.84	.31	1.57 x .16	3.15 x 1.77
125	133	5.32	5	170	140	165	107	8	40 x 4	80 x 45
				6.69	5.51	6.50	4.21	.31	1.57 x .16	3.15 x 1.77
150	159	6.36	6	180	147	171	110	8	40 x 4	80 x 45
				7.09	5.79	6.73	4.33	.31	1.57 x .16	3.15 x 1.77
175	193,7	7.75	8	210	165	190	119,5	8	40 x 4	80 x 45
				8.27	6.50	7.48	4.70	.31	1.57 x .16	3.15 x 1.77
200	216	8.64	8	210	172	197	123	8	40 x 4	80 x 45
				8.27	6.77	7.76	4.84	.31	1.57 x .16	3.15 x 1.77
250	267	10.68	10	265	201	220	132,5	8	40 x 6	80 x 45
				1.43	7.91	8.66	5.22	.31	1.57 x .24	3.15 x 1.77
300	318	12.72	12	275	211	230	137	8	40 x 6	80 x 45
				1.83	8.31	9.06	5.39	.31	1.57 x .24	3.15 x 1.77
350	355,6	14.22	14	305	236	255	150	8	40 x 6	80 x 45
				12.01	9.29	1.04	5.91	.31	1.57 x .24	3.15 x 1.77
400	406,4	16.26	16	320	260	277	161	8	40 x 6	80 x 45
				12.60	1.24	1.91	6.34	.31	1.57 x .24	3.15 x 1.77
450	419	16.76	18	320	261	280	162,5	8	40 x 6	80 x 45
				12.60	1.28	11.02	6.40	.31	1.57 x .24	3.15 x 1.77
500	508	20.32	20	380	325	328	186,5	8	40 x 8	80 x 45
				14.96	12.80	12.91	7.34	.31	1.57 x .31	3.15 x 1.77
550	521	20.84	20	385	330	334	189,5	8	40 x 8	80 x 45
				15.16	12.99	13.15	7.46	.31	1.57 x .31	3.15 x 1.77
600	538	21.57	22	440	375	382	212	8	40 x 8	80 x 45
				17.32	14.76	15.04	8.35	.31	1.57 x .31	3.15 x 1.77
650	557	22.32	24	450	382	390	215	8	40 x 8	80 x 45
				17.72	15.04	15.35	8.46	.31	1.57 x .31	3.15 x 1.77
700	576	23.07	26	480	420	421	235	12	60 x 8	100 x 50
				18.90	16.54	16.57	9.25	.47	2.36 x .31	3.94 x 1.97
750	595	23.82	28	490	430	434	242	12	60 x 8	100 x 50
				19.29	16.93	17.09	9.53	.47	2.36 x .31	3.94 x 1.97
800	614	24.57	30	550	470	472	261	12	60 x 8	100 x 50
				21.65	18.50	18.58	1.28	.47	2.36 x .31	3.94 x 1.97
850	633	25.32	32	550	482	485	267,5	12	60 x 8	100 x 50
				21.65	18.98	19.09	1.53	.47	2.36 x .31	3.94 x 1.97
900	652	26.07	34	585	520	523	286,5	12	60 x 8	100 x 50
				23.03	2.47	2.59	11.28	.47	2.36 x .31	3.94 x 1.97
950	671	26.82	36	630	570	574	312	12	60 x 8	100 x 50
				24.80	22.44	22.60	12.28	.47	2.36 x .31	3.94 x 1.97
1000	690	27.57	38	640	585	587	319	12	60 x 8	100 x 50
				25.20	23.03	23.11	12.56	.47	2.36 x .31	3.94 x 1.97

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

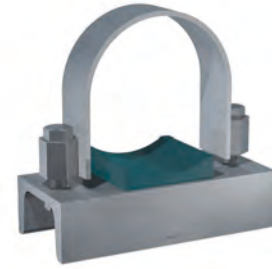
### Flat Steel U-Bolt with Plastic Pipe Saddle (Short) and U-Profile (To be used as Fixed Point Clamps only) Type FB+RUK


**Plastic Pipe Saddle (type RUK)**

(For size DN 40, dimension L4 is staggered by 90°)


**Hexagon Head Bolt AS**

(according to DIN EN ISO 4014 / 4017)



Diameter Nominal DN	Outside Diameter Pipe / Tube Ø D1		Nominal Bore Pipe (in)	Dimensions (mm/in)							Hexagon Head Bolt (DIN EN ISO 4014 / 4017) Thread G x L
	(mm)	(in)		Plastic Pipe Saddle (type RUK)							
				L3	L4	B3	D2	H5	H6	H7	
40	48,3	1.93	1-1/2	24	25	35	8	5	8	5	M10 x 40
				.94	.98	1.38	.31	.20	.31	.20	
50	57	2.28	2	38	25	50	10	5	10	6	M10 x 40
				1.50	.98	1.97	.39	.20	.39	.24	
65	76,1	3.04	2-1/2	38	25	50	10	5	10	6	M10 x 40
				1.50	.98	1.97	.39	.20	.39	.24	
80	88,9	3.56	3	75	40	70	15	8	17	10	M 12 x 55
				2.95	1.57	2.76	.59	.31	.67	.39	
100	108	4.32	4	75	40	70	15	8	17	10	M 12 x 55
				2.95	1.57	2.76	.59	.31	.67	.39	
125	133	5.32	5	75	40	70	15	8	17	10	M 12 x 55
				2.95	1.57	2.76	.59	.31	.67	.39	
150	159	6.36	6	140	90	75	25	8	26	10	M 16 x 75
				5.51	3.54	2.95	.98	.31	1.02	.39	
175	168,3	6.73	6	140	90	75	25	8	26	10	M 16 x 75
				5.51	3.54	2.95	.98	.31	1.02	.39	
200	216	8.64	8	140	90	75	25	8	26	10	M 16 x 75
				5.51	3.54	2.95	.98	.31	1.02	.39	
250	219,1	8.76	8	140	90	75	25	8	26	10	M 16 x 75
				5.51	3.54	2.95	.98	.31	1.02	.39	
250	267	10.68	10	140	90	75	25	8	26	10	M 20 x 80
				5.51	3.54	2.95	.98	.31	1.02	.39	
300	273	10.92	10	140	90	75	25	8	26	10	M 20 x 80
				5.51	3.54	2.95	.98	.31	1.02	.39	
300	318	12.72	12	220	150	75	30	8	32	10	M 20 x 80
				8.66	5.91	2.95	1.18	.31	1.26	.39	
350	323,9	12.96	12	220	150	75	30	8	32	10	M 20 x 80
				8.66	5.91	2.95	1.18	.31	1.26	.39	
350	355,6	14.22	14	220	150	75	30	8	32	10	M 24 x 100
				8.66	5.91	2.95	1.18	.31	1.26	.39	
400	368	14.72	16	220	150	75	30	8	32	10	M 24 x 100
				8.66	5.91	2.95	1.18	.31	1.26	.39	
400	406,4	16.26	16	220	150	75	30	8	32	10	M 24 x 100
				8.66	5.91	2.95	1.18	.31	1.26	.39	
400	419	16.76	18	220	150	75	30	8	32	10	M 24 x 100
				8.66	5.91	2.95	1.18	.31	1.26	.39	
500	457	18.28	20	220	150	75	30	8	32	10	M 24 x 100
				8.66	5.91	2.95	1.18	.31	1.26	.39	
500	508	20.32	20	220	150	75	30	8	32	10	M 24 x 100
				8.66	5.91	2.95	1.18	.31	1.26	.39	
500	521	20.84	20	220	150	75	30	8	32	10	M 24 x 100
				8.66	5.91	2.95	1.18	.31	1.26	.39	

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

#### Order Codes

##### only Flat Steel U-Bolt

**\*FB\*A=48,3\*W1**

- \* Flat Steel U-Bolt **FB**
- \* Exact outside diameter Ø D1 (mm) **A=48,3**
- \* Material code Carbon Steel, untreated **W1**
- Carbon Steel, zinc-plated **W3**
- Stainless Steel V4A 1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**
- Carbon Steel, Plastic coated **W6**

##### only Plastic Pipe Saddle

**\*RUK\*48,3\*PP**

- \* Plastic Pipe Saddle (Short) **RUK**
- \* Exact outside diameter Ø D1 (mm) **48,3**
- \* Material of Pipe Saddle (see below) **PP**

Please note: All items are supplied non-assembled.

#### Standard Materials for Plastic Pipe Saddles

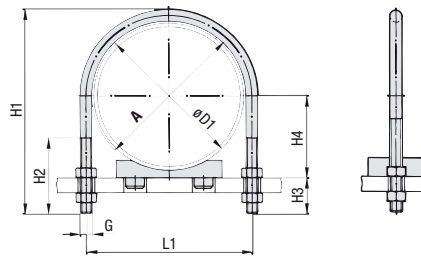

**Polypropylene**  
 Colour: Green  
 Material code: **PP**

**Polyamide**  
 Colour: Black  
 Material code: **PA**

See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

**Round Steel U-Bolt with Plastic Pipe Saddle (Short)  
Type RB+RUK**



Round Steel U-Bolt (type RB) with Plastic Pipe Saddle (type RUK)

**Order Codes**

**Clamp Assembly \*RB\*W1\*RUK\*PP\*48,3**

One clamp assembly is consisting of one Round Steel U-Bolt (type RB), one Plastic Pipe Saddle (type RUK) and four Nuts (to DIN EN ISO 4032).

- \* Round Steel U-Bolt **RB**
- \* Material code Carbon Steel, untreated **W1**  
Carbon Steel, zinc-plated **W3**  
  
Stainless Steel V4A **W5**  
1.4401 / 1.4571 (AISI 316 / 316 Ti)  
  
Carbon Steel, Plastic coated **W6**
- \* Plastic Pipe Saddle (Short) **RUK/**
- \* Material of Pipe Saddle (see below) **PP**
- \* Exact outside diameter Ø D1 (mm) **48,3**

Please note: All items are supplied non-assembled.

**Standard Materials for Plastic Pipe Saddles**

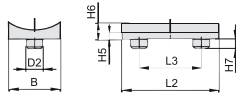
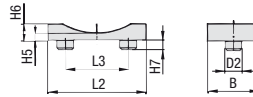
- Polypropylene**  
Colour: Green  
Material code: **PP**
- Polyamide**  
Colour: Black  
Material code: **PA**

See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

Diameter Nominal DN	Outside Diameter Pipe / Tube Ø D1		Nominal Bore Pipe (in)	Dimensions (mm/m)						
	(mm)	(in)		Round Steel U-Bolt (Type RB)						
				A	L1	H1	H2	H3	H4	Thread G
20	25	.98		30	40	73,5	41	30	17,5	M10
					1.57	2.89	1.61	1.18	.69	
	26,9	1.06	3/4	1.18	40	73,5	41	30	18,5	M10
					1.57	2.89	1.61	1.18	.73	
25	30	1.18		38	48	81	48	30	20	M10
					1.89	3.19	1.89	1.18	.79	
	33,7	1.33	1	1.50	48	81	48	30	22	M10
					1.89	3.19	1.89	1.18	.87	
32	38	1.50		46	56	89	48	30	24	M10
					2.20	3.50	1.89	1.18	.94	
	42,4	1.69	1-1/4	1.81	56	89	48	30	26,2	M10
					2.20	3.50	1.89	1.18	1.03	
40	44,5	1.76		52	62	100	55	35	27,2	M10
					2.44	3.94	2.17	1.38	1.07	
	48,3	1.90	1-1/2	2.05	62	100	55	35	29	M10
					2.44	3.94	2.17	1.38	1.14	
50	57	2.28		64	76	118	63	39	33,5	M12
					2.99	4.65	2.48	1.54	1.32	
	60,3	2.41	2	2.52	76	118	63	39	35,2	M12
					2.99	4.65	2.48	1.54	1.39	
65	76,1	3.04	2-1/2	82	94	135	77	39	43	M12
					3.23	3.70	5.31	3.03	1.69	
80	88,9	3.56	3	94	106	152	82	41	52,5	M12
					3.70	4.17	5.98	3.23	2.07	
100	108	4.32		120	136	190	105	49	62	M16
					4.72	5.35	7.48	4.13	2.44	
	114,3	4.57	4	4.72	136	190	105	49	65	M16
					5.35	7.48	4.13	1.93	2.56	
125	133	5.32		148	164	217	105	49	74,5	M16
					5.83	6.46	8.54	4.13	2.93	
	139,7	5.59	5	5.83	164	217	105	49	78	M16
					6.46	8.54	4.13	1.93	3.07	
150	159	6.36		176	192	247	105	51	87,5	M16
					7.56	9.72	4.13	2.01	3.44	
	168,3	6.73	6	6.93	192	217	105	51	92	M16
					7.56	8.54	4.13	2.01	3.62	
175	193,7	7.75		202	218	273	105	51	105	M16
					7.96	8.58	10.75	4.13	2.01	
200	216	8.64		228	248	311	125	59	116	M20
					8.98	9.76	12.24	4.92	2.32	
	219,1	8.76	8	8.98	248	311	125	59	117,5	M20
					9.76	12.24	4.92	2.32	4.63	
250	267	10.68		282	303	364	125	59	141,5	M20
					11.93	14.33	4.92	2.32	5.57	
	273	10.92	10	11.10	302	364	125	59	144,5	M20
					11.89	14.33	4.92	2.32	5.69	
300	318	12.72		332	352	418	125	62	167	M20
					13.86	16.46	4.92	2.44	6.57	
	323,9	12.96	12	13.07	352	418	125	62	170	M20
					13.86	16.46	4.92	2.44	6.69	
350	355,6	14.22	14	378	402	475	145	70	186	M24
					15.83	18.70	5.71	2.76	7.32	
	368	14.72		14.88	402	475	145	70	192	M24
					15.83	18.70	5.71	2.76	7.56	
400	406,4	16.26	16	428	452	526	145	70	211	M24
					17.80	20.71	5.71	2.76	8.31	
	419	16.76		16.85	452	526	145	70	217,5	M24
					17.80	20.71	5.71	2.76	8.56	
500	508	20.32	20	530	554	627	145	70	262	M24
					21.81	24.69	5.71	2.76	10.31	
	521	20.84		20.87	554	627	145	70	269	M24
					21.81	24.69	5.71	2.76	10.59	



Round Steel U-Bolt with Plastic Pipe Saddle (Short)  
 Type RB+RUK

 Plastic Pipe Saddle (type RUK)  
 (For sizes DN 20 to DN 40)

 Plastic Pipe Saddle (type RUK)  
 (From size DN 50 on)


Diameter Nominal DN	Outside Diameter Pipe / Tube Ø D1 (mm) (in)		Nominal Bore Pipe (in)	Dimensions (mm/in) Plastic Pipe Saddle (Type RUK)							
	A	L2		L3	B	H5	H6	H7	D2		
20	25	.98		30	35	25	24	5	8	5	8
	26,9	1.06	3/4	1.18	1.38	.98	.94	.20	.31	.20	.31
25	30	1.18		38	35	25	24	5	8	5	8
	33,7	1.33	1	1.50	1.38	.98	.94	.20	.31	.20	.31
32	38	1.50		46	35	25	24	5	8	5	8
	42,4	1.69	1-1/4	1.81	1.38	.98	.94	.20	.31	.20	.31
40	44,5	1.76		52	35	25	24	5	8	5	8
	48,3	1.90	1-1/2	2.05	1.38	.98	.94	.20	.31	.20	.31
50	57	2.28		64	35	25	24	5	8	5	8
	60,3	2.41	2	2.52	1.38	.98	.94	.20	.31	.20	.31
65	76,1	3.04	2-1/2	82	38	25	50	5	10	6	10
				3.23	1.50	.98	1.97	.20	.39	.24	.39
80	88,9	3.56	3	94	75	40	70	8	17	10	15
				3.70	2.95	1.57	2.76	.31	.67	.39	.59
100	108	4.32		120	75	40	70	8	17	10	15
	114,3	4.57	4	4.72	2.95	1.57	2.76	.31	.67	.39	.59
125	133	5.32		148	75	40	70	8	17	10	15
	139,7	5.59	5	5.83	2.95	1.57	2.76	.31	.67	.39	.59
150	159	6.36		176	140	90	75	8	26	10	25
	168,3	6.73	6	6.93	5.51	3.54	2.95	.31	1.02	.39	.98
175	193,7	7.75		202	140	90	75	8	26	10	25
				7.96	5.51	3.54	2.95	.31	1.02	.39	.98
200	216	8.64		228	140	90	75	8	26	10	25
	219,1	8.76	8	8.98	5.51	3.54	2.95	.31	1.02	.39	.98
250	267	1.68		282	140	90	75	8	26	10	25
	273	1.92	10	11.10	5.51	3.54	2.95	.31	1.02	.39	.98
300	318	12.72		332	220	150	75	8	32	10	30
	323,9	12.96	12	13.07	8.66	5.91	2.95	.31	1.26	.39	1.18
350	355,6	14.22	14	378	220	150	75	8	32	10	30
	368	14.72		14.88	8.66	5.91	2.95	.31	1.26	.39	1.18
400	406,4	16.26	16	428	220	150	75	8	32	10	30
	419	16.76		16.85	8.66	5.91	2.95	.31	1.26	.39	1.18
500	508	2.32	20	530	220	150	75	8	32	10	30
	521	2.84		2.87	8.66	5.91	2.95	.31	1.26	.39	1.18

## Order Codes

only Round Steel U-Bolt \*RB\*W3\*A 52\*KOMPL

One Round Steel U-Bolt (type RB) includes four Nuts (to DIN EN ISO 4032).

* Round Steel U-Bolt	RB
* Material code	Carbon Steel, untreated W1
	Carbon Steel, zinc-plated W3
	Stainless Steel V4A W5
	1.4401 / 1.4571 (AISI 316 / 316 Ti) W6
	Carbon Steel, Plastic coated W6
* Dimension A (mm)	A 52

only Plastic Pipe Saddle \*RUK\*48,3\*PP

* Plastic Pipe Saddle (Short)	RUK
* Exact outside diameter Ø D1 (mm)	48,3
* Material of Pipe Saddle (see below)	PP

## Standard Materials for Plastic Pipe Saddles

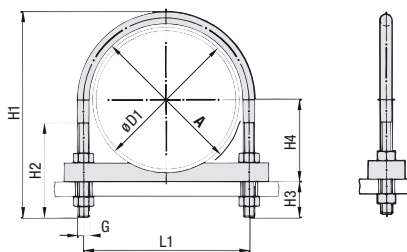

**Polypropylene**  
 Colour: Green  
 Material code: **PP**

**Polyamide**  
 Colour: Black  
 Material code: **PA**

See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

**Round Steel U-Bolt with Plastic Pipe Saddle (Long)  
Type RB+RUL**



Round Steel U-Bolt (type RB) with Plastic Pipe Saddle (type RUL)

**Order Codes**

**Clamp Assembly \*RB\*W1\*RUL\*PP\*48,3**

One clamp assembly is consisting of one Round Steel U-Bolt (type RB), one Plastic Pipe Saddle (type RUL) and four Nuts (to DIN EN ISO 4032).

- \* Round Steel U-Bolt **RB**
- \* Material code Carbon Steel, untreated **W1**
- Carbon Steel, zinc-plated **W3**
- Stainless Steel V4A 1.4401 / 1.4571 (AISI 316 / 316 Ti) **W5**
- Carbon Steel, Plastic coated **W6**
- \* Plastic Pipe Saddle (Long) **RUL/**
- \* Material of Pipe Saddle (see below) **PP**
- \* Exact outside diameter Ø D1 (mm) **48,3**

Please note: All items are supplied non-assembled.

**Standard Materials for Plastic Pipe Saddles**

**Polypropylene**  
Colour: Green  
Material code: **PP**

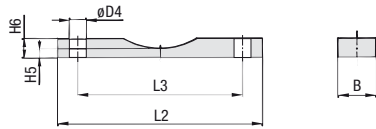
**Polyamide**  
Colour: Black  
Material code: **PA**

See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

Diameter Nominal DN	Outside Diameter Pipe / Tube Ø D1 (mm) (in)		Nominal Bore Pipe (in)	Dimensions (mm / in)						
	Round Steel U-Bolt (Type RB)			A	L1	H1	H2	H3	H4	Thread G
20	25	.98		30	40	73,5	41	30	17,5	M10
	26,9	1.06	3/4	1.18	1.57	2.89	1.61	1.18	.69	
25	30	1.18		38	48	81	48	30	20	M10
	33,7	1.33	1	1.50	1.89	3.19	1.89	1.18	.79	
32	38	1.50		46	56	89	48	30	24	M10
	42,4	1.69	1-1/4	1.81	2.20	3.50	1.89	1.18	.94	
40	44,5	1.76		52	62	100	55	35	27,2	M10
	48,3	1.90	1-1/2	2.05	2.44	3.94	2.17	1.38	1.07	
50	57	2.28		64	76	118	63	39	33,5	M12
	60,3	2.41	2	2.52	2.99	4.65	2.48	1.54	1.32	
65	76,1	3.04	2-1/2	82	94	135	77	39	43	M12
				3.23	3.70	5.31	3.03	1.54	1.69	
80	88,9	3.56	3	94	106	152	82	39	54,5	M12
				3.70	4.17	5.98	3.23	1.54	2.15	
100	108	4.32		120	136	190	105	47	64	M16
	114,3	4.57	4	4.72	5.35	7.48	4.13	1.85	2.52	
125	133	5.32		148	164	217	105	47	76,5	M16
	139,7	5.59	5	5.83	6.46	8.54	4.13	1.85	3.01	
150	159	6.36		176	192	247	105	47	91,5	M16
	168,3	6.73	6	6.93	7.56	9.72	4.13	1.85	3.60	
175	193,7	7.75		202	218	273	105	47	109	M16
				7.96	8.58	10.75	4.13	1.85	4.29	
200	216	8.64		228	248	311	125	55	120	M20
	219,1	8.76	8	8.98	9.76	12.24	4.92	2.17	4.72	
250	267	10.68		282	303	364	125	55	145,5	M20
	273	10.92	10	11.10	11.93	14.33	4.92	2.17	5.73	
300	318	12.72		332	352	418	125	55	174	M20
	323,9	12.96	12	13.07	13.86	16.46	4.92	2.17	6.85	
350	355,6	14.22	14	378	402	475	145	63	193	M24
	368	14.72		14.88	15.83	18.70	5.71	2.48	7.60	
400	406,4	16.26	16	428	452	526	145	63	218	M24
	419	16.76		16.85	17.80	20.71	5.71	2.48	8.58	
500	508	20.32	20	530	554	627	145	63	269	M24
	521	20.84		20.87	21.81	24.69	5.71	2.48	10.59	

## Round Steel U-Bolt with Plastic Pipe Saddle (Long) Type RB+RUL



Plastic Pipe Saddle (type RUL)

Diameter Nominal DN	Outside Diameter Pipe / Tube Ø D1		Nominal Bore Pipe (in)	Dimensions (mm/in)						
	(mm)	(in)		Plastic Pipe Saddle (Type RUL)			B	H5	H6	Ø D4
				A	L2	L3				
20	25	.98	3/4	30	75	40	30	5	12	11
	26,9	1.06			2.95	1.57	1.18	.20	.47	.43
25	30	1.18	1	38	80	48	30	5	12	11
	33,7	1.33			3.15	1.89	1.18	.20	.47	.43
32	38	1.50	1-1/4	46	90	56	30	5	12	11
	42,4	1.69			1.81	3.54	2.20	1.18	.20	.47
40	44,5	1.76	1-1/2	52	95	62	35	5	15	11
	48,3	1.90			2.05	3.74	2.44	1.38	.20	.59
50	57	2.28	2	64	110	76	35	5	15	14
	60,3	2.41			2.52	4.33	2.99	1.38	.20	.59
65	76,1	3.04	2-1/2	82	135	94	35	5	15	14
					3.23	5.31	3.70	1.38	.20	.59
80	88,9	3.56	3	94	145	106	40	10	20	14
					3.70	5.71	4.17	1.57	.39	.79
100	108	4.32	4	120	190	136	40	10	20	18
	114,3	4.57			4.72	7.48	5.35	1.57	.39	.79
125	133	5.32	5	148	220	164	40	10	20	18
	139,7	5.59			5.83	8.66	6.46	1.57	.39	.79
150	159	6.36	6	176	250	192	50	12	25	18
	168,3	6.73			6.93	9.84	7.56	1.97	.47	.98
175	193,7	7.75		202	270	218	50	12	25	18
					7.96	10.63	8.58	1.97	.47	.98
200	216	8.64	8	228	315	248	50	12	25	22
	219,1	8.76			8.98	12.40	9.76	1.97	.47	.98
250	267	10.68	10	282	370	302	50	12	25	22
	273	10.92			11.10	14.57	11.89	1.97	.47	.98
300	318	12.72	12	332	420	352	60	15	30	22
	323,9	12.96			13.07	16.54	13.86	2.36	.59	1.18
350	355,6	14.22	14	378	480	402	60	15	30	26
	368	14.72			14.88	18.90	15.83	2.36	.59	1.18
400	406,4	16.26	16	428	540	452	60	15	30	26
	419	16.76			16.85	21.26	17.80	2.36	.59	1.18
500	508	20.32	20	530	640	554	60	15	30	26
	521	20.84			20.87	25.20	21.81	2.36	.59	1.18

### Order Codes

#### only Round Steel U-Bolt \*RB\*W3\*A 52\*KOMPL

One Round Steel U-Bolt (type RB) includes four Nuts (to DIN EN ISO 4032).

* Round Steel U-Bolt	<b>RB</b>
* Material code	Carbon Steel, untreated <b>W1</b>
	Carbon Steel, zinc-plated <b>W3</b>
	Stainless Steel V4A <b>W5</b>
	1.4401 / 1.4571 (AISI 316 / 316 Ti)
	Carbon Steel, Plastic coated <b>W6</b>

\* Dimension A (mm) **A 52**

#### only Plastic Pipe Saddle \*RUL\*48,3\*PP

* Plastic Pipe Saddle (Long)	<b>RUL</b>
* Exact outside diameter Ø D1 (mm)	<b>48,3</b>
* Material of Pipe Saddle (see below)	<b>PP</b>

### Standard Materials for Plastic Pipe Saddles

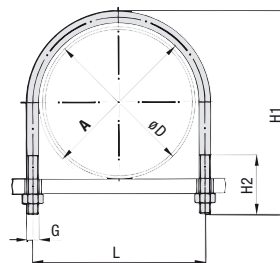
 **Polypropylene**  
Colour: Green  
Material code: **PP**

 **Polyamide**  
Colour: Black  
Material code: **PA**

See pages A88 / A89 for material properties and technical information.

Alternative materials are available upon request. Please consult STAUFF for further information.

**Round Steel U-Bolt (without Plastic Pipe Saddle)  
Type RBD (DIN 3570, Type A)**



Round Steel U-Bolt (type RBD)

**Order Codes**

**Clamp Assembly**

**\*RBD\*W3\*A 30\*KOMPL**

One clamp assembly is consisting of one Round Steel U-Bolt (type RBD according to DIN 3570, Type A) and two Nuts (to DIN EN ISO 4032).

\* Clamp Assembly (as listed above)

**RBD**

\* Material code Carbon Steel, untreated  
Carbon Steel, zinc-plated

**W1**

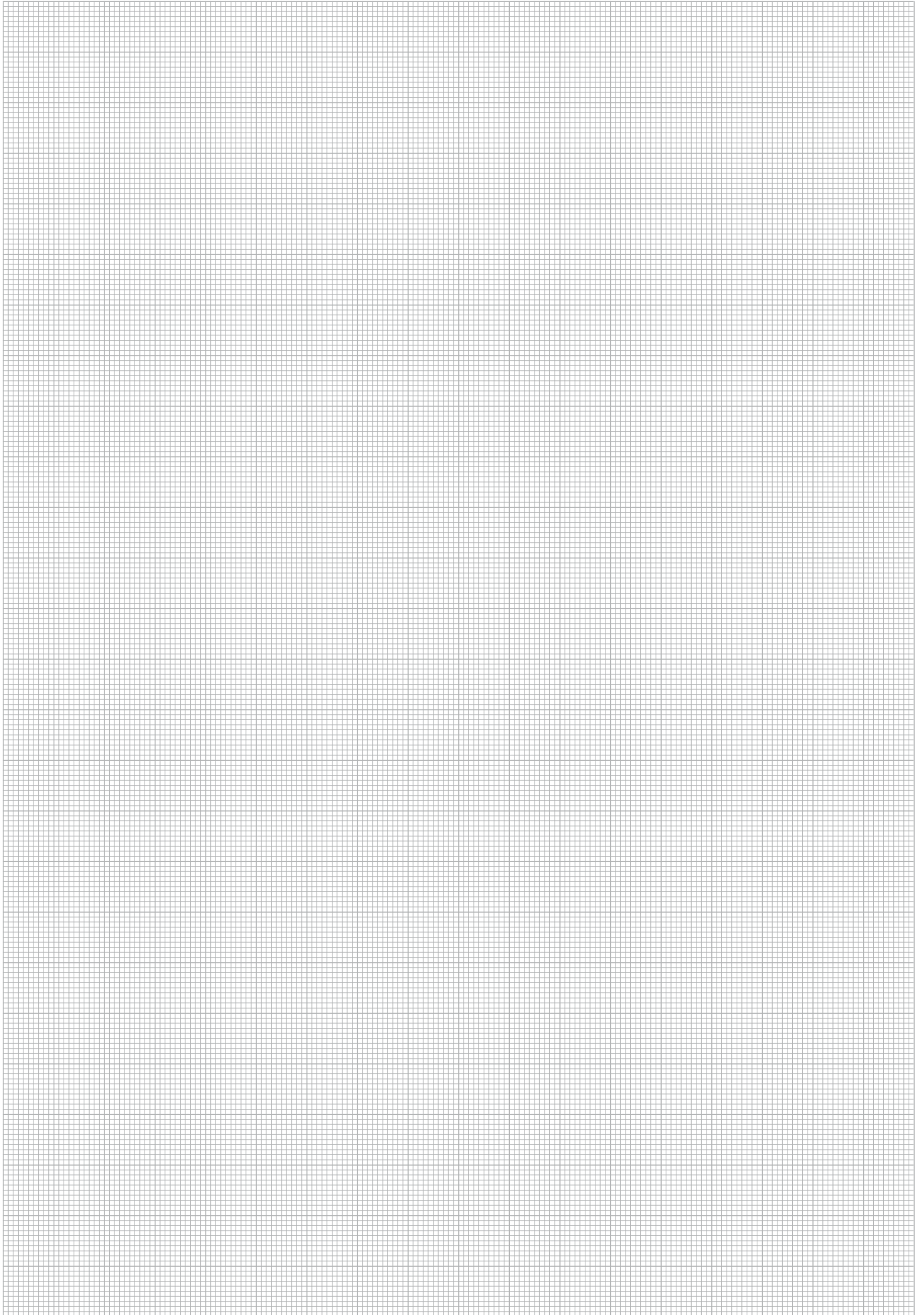
**W3**

\* Dimension A (mm)

**A 30**

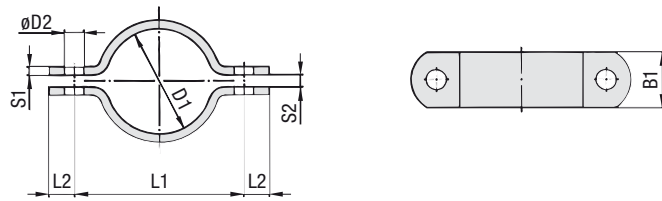
Please note: All items are supplied non-assembled.

Diameter Nominal DN	Outside Diameter Pipe / Tube Ø D1		Nominal Bore Pipe (in)	Dimensions (mm/in)				
	(mm)	(in)		Round Steel U-Bolt (Type RBD)				Thread G
20	25	.98	3/4	30	40	70	40	
	26,9	1.06			1.18	1.57	2.76	1.57
25	30	1.18	1	38	48	76	40	M10
	33,7	1.33			1.50	1.89	2.99	
32	38	1.50	1-1/4	46	56	86	50	M10
	42,4	1.69			1.81	2.20	3.39	
40	44,5	1.76	1-1/2	52	62	92	50	M10
	48,3	1.90			2.05	2.44	3.62	
50	57	2.28	2	64	76	109	50	M12
	60,3	2.41			2.52	2.99	4.29	
65	76,1	3.04	2-1/2	82	94	125	50	M12
80	88,9	3.56	3	94	106	138	50	M12
					3.70	4.17	5.43	
100	108	4.32	4	120	136	171	60	M16
	114,3	4.57			4.72	5.35	6.73	
125	133	5.32	5	148	164	191	60	M16
	139,7	5.59			5.83	6.46	7.52	
150	159	6.36	6	176	192	217	60	M16
	168,3	6.73			6.93	7.56	8.54	
175	193,7	7.75		202	218	249	60	M16
200	216	8.64	8	228	248	283	70	M20
	219,1	8.76			8.98	9.76	11.14	
250	267	10.68	10	282	303	334	70	M20
	273	10.92			11.10	11.89	13.15	
300	318	12.72	12	332	352	385	70	M20
	323,9	12.96			13.07	13.86	15.16	
350	355,6	14.22	14	378	402	435	70	M24
	368	14.72			14.88	15.83	17.13	
400	406,4	16.26	16	428	452	487	70	M24
	419	16.76			16.85	17.80	19.17	
500	508	20.32	20	530	554	589	70	M24
	521	20.84			20.87	21.81	23.19	
					21.81	23.19	2.76	M24





Metal Pipe Clamp with Rounded Ends



Order Codes

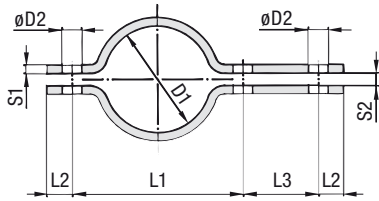
Clamp Assembly

\*DIN 3567 A\*-20\*W1

One clamp assembly is consisting of two clamp halves.  
Hexagon head bolts and nuts are not included.

- \* Clamp Assembly to DIN 3567, type A **DIN 3567 A**
- \* STAUFF Group (Ø D1) **-20**
- \* Material code Carbon Steel, untreated **W1**

STAUFF Group	Nominal Size	Dimensions (mm/in)							Accessories	
		Pipe (in)	L1	L2	S1	S2	D2	B1	Hexagon Head Bolts (Hexagon Head Nuts)	
20	15		57	15	5	7	11.5	30	M10 x 30 (M10) 3/8-16 UNC x 1-1/4 (3/8-16 UNC)	
			2.24	.59	.20	.28	.45	1.18		
22	15		59	15	5	7	11.5	30		
			2.32	.59	.20	.28	.45	1.18		
25	20		62	15	5	7	11.5	30		
			2.44	.59	.20	.28	.45	1.18		
27	20	3/4	66	15	5	7	11.5	30		
			2.60	.59	.20	.28	.45	1.18		
30	25		68	15	5	7	11.5	30		
			2.68	.59	.20	.28	.45	1.18		
34	25	1	72	15	5	7	11.5	30		
			2.83	.59	.20	.28	.45	1.18		
38	32		76	15	5	7	11.5	30		
			2.99	.59	.20	.28	.45	1.18		
43	32	1-1/4	82	15	5	7	11.5	30		
			3.23	.59	.20	.28	.45	1.18		
45	40		84	15	5	7	11.5	30		
			3.31	.59	.20	.28	.45	1.18		
49	40	1-1/2	88	15	5	7	11.5	30		
			3.46	.59	.20	.28	.45	1.18		
57	50		104	18	6	9	14	40	M12 x 35 (M12) 7/16-14 UNC x 1-3/8 (7/16-14 UNC)	
			4.09	.71	.24	.35	.55	1.57		
61	50	2	108	18	6	9	14	40		
			4.25	.71	.24	.35	.55	1.57		
77	65	2-1/2	122	18	6	9	14	40		
			4.80	.71	.24	.35	.55	1.57		
89	80	3	136	18	6	9	14	40		
			5.35	.71	.24	.35	.55	1.57		
108	100		172	24	8	11	18	50		
			6.77	.94	.31	.43	.71	1.97		
115	100	4	178	24	8	11	18	50		
			7.01	.94	.31	.43	.71	1.97		
133	125		196	24	8	11	18	50		M16 x 45 (M16) 5/8-11 UNC x 1-3/4 (5/8-11 UNC)
			7.72	.94	.31	.43	.71	1.97		
140	125		204	24	8	11	18	50		
			8.03	.94	.31	.43	.71	1.97		
159	150		222	24	8	11	18	50		
			8.74	.94	.31	.43	.71	1.97		
169	150		232	24	8	11	18	50		
			9.13	.94	.31	.43	.71	1.97		
194	175		258	24	8	11	18	50		
			10.16	.94	.31	.43	.71	1.97		
216	200		280	24	8	11	18	50		
			11.02	.94	.31	.43	.71	1.97		
220	200		284	24	8	11	18	50		
			11.18	.94	.31	.43	.71	1.97		
267	250		342	30	8	14	23	60	M20 x 50 (M20) 3/4-10 UNC x 2 (3/4-10 UNC)	
			13.46	1.18	.31	.55	.91	2.36		
273	250		348	30	8	14	23	60		
			13.70	1.18	.31	.55	.91	2.36		
318	300		392	30	8	14	23	60		
			15.43	1.18	.31	.55	.91	2.36		
324	300		398	30	8	14	23	60		
			15.67	1.18	.31	.55	.91	2.36		
368	350		444	30	8	14	23	60		
			17.48	1.18	.31	.55	.91	2.36		
407	400		498	36	10	18	27	70		M24 x 60 (M24) 7/8-9 UNC 2-3/8 (7/8-9 UNC)
			19.61	1.42	.39	.71	1.06	2.76		
419	400		510	36	10	18	27	70		
			10.08	1.42	.39	.71	1.06	2.76		
521	500		614	36	10	18	27	70		
			24.17	1.42	.39	.71	1.06	2.76		

**Metal Pipe Clamp with Rounded Ends and One-Side Elongated Shaft**


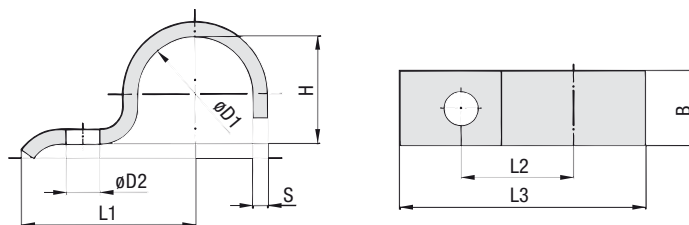
STAUFF Group	Nominal Size		Dimensions (mm/in)						Accessories		
	Ø D1	Pipe (in)	L1	L2	L3	S1	S2	D2	B1	Hexagon Head Bolts (Hexagon Head Nuts)	
20	15		57	15	46	5	7	11.5	30	M10 x 30 (M10) 3/8-16 UNC x 1-1/4 (3/8-16 UNC)	
			2.24	.59	1.81	.20	.28	.45	1.18		
22	15		59	15	46	5	7	11.5	30		
			2.32	.59	1.81	.20	.28	.45	1.18		
25	20		62	15	46	5	7	11.5	30		
			2.44	.59	1.81	.20	.28	.45	1.18		
27	20	3/4	66	15	46	5	7	11.5	30		
			2.60	.59	1.81	.20	.28	.45	1.18		
30	25		68	15	46	5	7	11.5	30		
			2.68	.59	1.81	.20	.28	.45	1.18		
34	25	1	72	15	46	5	7	11.5	30		
			2.83	.59	1.81	.20	.28	.45	1.18		
38	32		76	15	46	5	7	11.5	30		
			2.99	.59	1.81	.20	.28	.45	1.18		
43	32	1-1/4	82	15	46	5	7	11.5	30		
			3.23	.59	1.81	.20	.28	.45	1.18		
45	40		84	15	46	5	7	11.5	30		
			3.31	.59	1.81	.20	.28	.45	1.18		
49	40	1-1/2	88	15	46	5	7	11.5	30		
			3.46	.59	1.81	.20	.28	.45	1.18		
57	50		104	18	54	6	9	14	40	M12 x 35 (M12) 7/16-14 UNC x 1-3/8 (7/16-14 UNC)	
			4.09	.71	2.13	.24	.35	.55	1.57		
61	50	2	108	18	54	6	9	14	40		
			4.25	.71	2.13	.24	.35	.55	1.57		
77	65	2-1/2	122	18	54	6	9	14	40		
			4.80	.71	2.13	.24	.35	.55	1.57		
89	80	3	136	18	54	6	9	14	40		
			5.35	.71	2.13	.24	.35	.55	1.57		
108	100		172	24	70	8	11	18	50		
			6.77	.94	2.76	.31	.43	.71	1.97		
115	100	4	178	24	70	8	11	18	50		
			7.01	.94	2.76	.31	.43	.71	1.97		
133	125		196	24	70	8	11	18	50		
			7.72	.94	2.76	.31	.43	.71	1.97		
140	125		204	24	70	8	11	18	50		
			8.03	.94	2.76	.31	.43	.71	1.97		
159	150		222	24	70	8	11	18	50	M16 x 45 (M16) 5/8-11 UNC x 1-3/4 (5/8-11 UNC)	
			8.74	.94	2.76	.31	.43	.71	1.97		
169	150		232	24	70	8	11	18	50		
			9.13	.94	2.76	.31	.43	.71	1.97		
194	175		258	24	70	8	11	18	50		
			10.16	.94	2.76	.31	.43	.71	1.97		
216	200		280	24	70	8	11	18	50		
			11.02	.94	2.76	.31	.43	.71	1.97		
220	200		284	24	70	8	11	18	50		
			11.18	.94	2.76	.31	.43	.71	1.97		
267	250		342	30	86	8	14	23	60		
			13.46	1.18	3.39	.31	.55	.91	2.36		
273	250		348	30	86	8	14	23	60		
			13.70	1.18	3.39	.31	.55	.91	2.36		
318	300		392	30	86	8	14	23	60		M20 x 50 (M20) 3/4-10 UNC x 2 (3/4-10 UNC)
			15.43	1.18	3.39	.31	.55	.91	2.36		
324	300		398	30	86	8	14	23	60		
			15.67	1.18	3.39	.31	.55	.91	2.36		
368	350		444	30	86	8	14	23	60		
			17.48	1.18	3.39	.31	.55	.91	2.36		
407	400		498	36	104	10	18	27	70		
			19.61	1.42	4.09	.39	.71	1.06	2.76		
419	400		510	36	104	10	18	27	70		
			10.08	1.42	4.09	.39	.71	1.06	2.76		
521	500		614	36	104	10	18	27	70		
			24.17	1.42	4.09	.39	.71	1.06	2.76		

**Order Codes**
**Clamp Assembly**
**\*DIN 3567 B\*-20\*W1**

One clamp assembly is consisting of two clamp halves. Hexagon head bolts and nuts are not included.

- \* Clamp Assembly to DIN 3567, type B **DIN 3567 B**
- \* STAUFF Group (Ø D1) **-20**
- \* Material code Carbon Steel, untreated **W1**

Heavy Saddle ■ Single-Ended Design



Order Codes

Heavy Saddle

\*DIN 1592\*-7\*W66

\* Heavy Saddle to DIN 1592

DIN 1592

\* STAUFF Group (Ø D1)

-7

\* Material code Carbon Steel, untreated

W1

Carbon Steel, zinc-plated and thick-film passivated

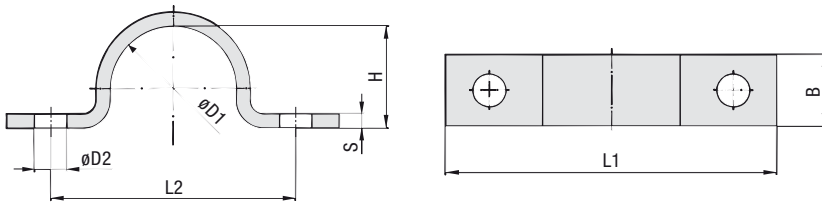
W66

STAUFF Group	Diameter Range		Dimensions (mm/in)						
	Ø D1 (mm)	(in)	L1	L2	L3	H	D2	B	S
7	5,5 ... 7	.22 ... .28	22	14	27,5	5	6,6	16	2
			.87	.55	1.08	.20	.26	.63	.08
9	7 ... 9	.28 ... .35	27	18	33,5	6	6,6	20	2
			1.06	.71	1.32	.24	.26	.79	.08
13	9,5 ... 13	.39 ... .51	40	25	49,5	9	11	25	3
			1.57	.98	1.95	.35	.43	.98	.12
15,5	13 ... 15,5	.51 ... .61	41	26	52	12	11	25	3
			1.61	1.02	2.05	.47	.43	.98	.12
19	15,5 ... 19	.61 ... .75	43	28	55,5	15	11	25	3
			1.69	1.10	2.19	.59	.43	.98	.12
23	20 ... 23	.79 ... .91	51	35	67	19	14	30	5
			2.01	1.38	2.64	.75	.55	1.18	.20
26	23 ... 26	.91 ... 1.02	52	36	70	22	14	30	5
			2.05	1.42	2.76	.87	.55	1.18	.20
28,5	26 ... 28,5	1.02 ... 1.12	53	37	73	24	14	30	5
			2.09	1.46	2.87	.94	.55	1.18	.20
31	28,5 ... 31	1.12 ... 1.22	55	39	75,5	27	14	30	5
			2.17	1.54	2.97	1.06	.55	1.18	.20
36	33 ... 36	1.30 ... 1.42	57	41	81	32	14	40	5
			2.24	1.61	3.19	1.26	.55	1.57	.20
39	36 ... 39	1.42 ... 1.54	59	43	83,5	34	14	40	5
			2.32	1.69	3.29	1.34	.55	1.57	.20
43	39 ... 43	1.54 ... 1.69	68	48	94,5	38	18	40	5
			2.68	1.89	3.72	1.50	.71	1.57	.20
46	43 ... 46	1.69 ... 1.81	70	50	98	41	18	40	5
			2.76	1.97	3.86	1.61	.71	1.57	.20
49	46 ... 49	1.81 ... 1.93	73	53	105,5	44	18	40	8
			2.87	2.09	4.15	1.73	.71	1.57	.31
52 *	49 ... 52	1.93 ... 2.05	76	56	110	47	18	40	8
			2.99	2.20	4.33	1.85	.71	1.57	.31
58	53 ... 58	2.09 ... 2.28	78	58	115	52	18	40	8
			3.07	2.28	4.53	2.05	.71	1.57	.31
61	58 ... 61	2.28 ... 2.40	80	60	118,5	57	18	40	8
			3.15	2.36	4.67	2.24	.71	1.57	.31

\* Similar to DIN 1592.

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

## Heavy Saddle ■ Double-Ended Design



STAUFF Group	Diameter Range		Dimensions (mm/in)						
	Ø D1	(mm)	(in)	L1	L2	H	D2	B	S
7	5,5 ... 7	.22 ... .28	44	28	5	6,6	16	2	
			1.73	1.10	.20	.26	.63	.08	
9	7 ... 9	.28 ... .35	48	32	6	6,6	20	2	
			1.89	1.26	.24	.26	.79	.08	
13	9,5 ... 13	.39 ... .51	52	36	9	6,6	20	2	
			2.05	1.42	.35	.26	.79	.08	
15,5	13 ... 15,5	.51 ... .61	56	40	12	6,6	20	2	
			2.20	1.57	.47	.26	.79	.08	
19	15,5 ... 19	.61 ... .75	60	44	15	6,6	20	2	
			2.36	1.73	.59	.26	.79	.08	
23	20 ... 23	.79 ... .91	82	56	19	11	25	3	
			3.23	2.20	.75	.43	.98	.12	
26	23 ... 26	.91 ... 1.02	84	58	22	11	25	3	
			3.31	2.28	.87	.43	.98	.12	
28,5	26 ... 28,5	1.02 ... 1.12	90	64	24	11	25	3	
			3.54	2.52	.94	.43	.98	.12	
31	28,5 ... 31	1.12 ... 1.22	90	64	27	11	25	3	
			3.54	2.52	1.06	.43	.98	.12	
36	33 ... 36	1.30 ... 1.42	106	80	32	11	30	5	
			4.17	3.15	1.26	.43	1.18	.20	
39	36 ... 39	1.42 ... 1.54	110	84	34	11	30	5	
			4.33	3.31	1.34	.43	1.18	.20	
43	39 ... 43	1.54 ... 1.69	120	88	38	14	30	5	
			4.72	3.46	1.50	.55	1.18	.20	
46	43 ... 46	1.69 ... 1.81	122	90	41	14	30	5	
			4.80	3.54	1.61	.55	1.18	.20	
49	46 ... 49	1.81 ... 1.93	122	90	44	14	30	5	
			4.80	3.54	1.73	.55	1.18	.20	
58	53 ... 58	2.09 ... 2.28	142	110	52	14	40	5	
			5.59	4.33	2.05	.55	1.57	.20	
61	58 ... 61	2.28 ... 2.40	142	110	57	14	40	5	
			5.59	4.33	2.24	.55	1.57	.20	
71	67 ... 71	2.64 ... 2.80	152	120	66	14	40	5	
			5.98	4.72	2.60	.55	1.57	.20	
77	73 ... 77	2.87 ... 3.03	176	136	72	18	40	5	
			6.93	5.35	2.83	.71	1.57	.20	
81	77 ... 81	3.03 ... 3.19	184	144	76	18	40	5	
			7.24	5.67	2.99	.71	1.57	.20	
91	88 ... 91	3.39 ... 3.58	198	158	85	18	40	8	
			7.80	6.22	3.35	.71	1.57	.31	
103	99 ... 103	3.90 ... 4.06	214	174	98	18	40	8	
			8.43	6.85	3.86	.71	1.57	.31	
109	105 ... 109	4.13 ... 4.29	220	180	104	18	40	8	
			8.66	7.09	4.09	.71	1.57	.31	
115	110 ... 115	4.33 ... 4.53	226	186	109	18	40	8	
			8.90	7.32	4.29	.71	1.57	.31	

## Order Codes

## Heavy Saddle

\*DIN 1593\*-7\*W66

\* Heavy Saddle to DIN 1593

DIN 1593

\* STAUFF Group (Ø D1)

-7

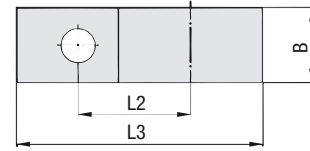
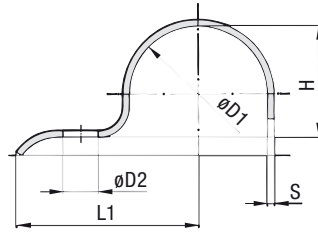
 \* Material code Carbon Steel, untreated  
Carbon Steel, zinc-plated  
and thick-film passivated

W1

W66

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

## Light Saddle ▪ Single-Ended Design



## Order Codes

## Light Saddle

\*DIN 1596\*-7\*W66

\* Light Saddle to DIN 1596

DIN 1596

\* STAUFF Group (Ø D1)

-7

\* Material code Carbon Steel, zinc-plated and thick-film passivated

W66

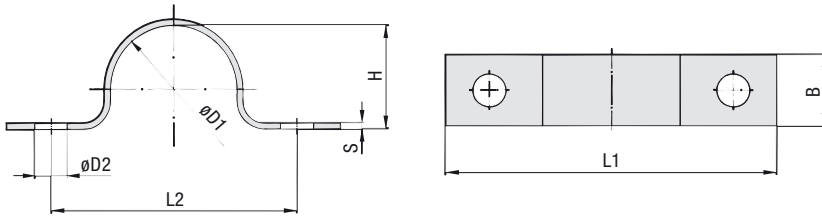
STAUFF Group	Diameter Range		Dimensions (mm/in)						
	Ø D1 (mm)	(in)	L1	L2	L3	H	D2	B	S
7	5,5 ... 7	.22 ... .28	26	14	31,5	5	6,6	16	2
			1.02	.55	1.24	.20	.26	.63	.08
9	7 ... 9	.28 ... .35	28	16	34,5	6	6,6	16	2
			1.10	.63	1.36	.24	.26	.63	.08
13	9,5 ... 13	.39 ... .51	30	18	38,5	9	6,6	20	2
			1.18	.71	1.52	.35	.26	.79	.08
15,5	13 ... 15,5	.51 ... .61	32	20	41,75	12	6,6	20	2
			1.26	.79	1.64	.47	.26	.79	.08
19	15,5 ... 19	.61 ... .75	34	22	45,5	15	6,6	20	2
			1.34	.87	1.79	.59	.26	.79	.08
23	20 ... 23	.79 ... .91	43	28	57,5	19	9	25	3
			1.69	1.10	2.26	.75	.35	.98	.12
26	23 ... 26	.91 ... 1.02	44	29	60	22	9	25	3
			1.73	1.14	2.36	.87	.35	.98	.12
28,5	26 ... 28,5	1.02 ... 1.12	47	32	64,25	24	9	25	3
			1.85	1.26	2.53	.94	.35	.98	.12
31	28,5 ... 31	1.12 ... 1.22	47	32	65,5	27	9	25	3
			1.85	1.26	2.58	1.06	.35	.98	.12
33 *	31 ... 33	1.22 ... 1.30	56	36	75,5	29	9	25	3
			2.20	1.42	2.97	1.14	.35	.98	.12
36	33 ... 36	1.30 ... 1.42	57	40	78	32	11	30	3
			2.24	1.57	3.07	1.26	.43	1.18	.12
39	36 ... 39	1.42 ... 1.54	59	42	81,5	34	11	30	3
			2.32	1.65	3.21	1.34	.43	1.18	.12
43	39 ... 43	1.54 ... 1.69	61	44	85,5	38	11	30	3
			2.40	1.73	3.37	1.50	.43	1.18	.12
46	43 ... 46	1.69 ... 1.81	62	45	88	41	11	30	3
			2.44	1.77	3.46	1.61	.43	1.18	.12
49	46 ... 49	1.81 ... 1.93	67	48	95,5	44	14	40	4
			2.64	1.89	3.76	1.73	.55	1.57	.16
52 *	49 ... 52	1.93 ... 2.05	72	53	102	47	14	40	4
			2.83	2.09	4.02	1.85	.55	1.57	.16
58	53 ... 58	2.09 ... 2.28	76	55	107	52	14	40	4
			2.99	2.17	4.21	2.05	.55	1.57	.16
61	58 ... 61	2.28 ... 2.40	77	58	111,5	56	14	40	4
			3.03	2.28	4.39	2.20	.55	1.57	.16

\* Similar to DIN 1596.

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



## Light Saddle ▪ Double-Ended Design



STAUFF Group	Diameter Range		Dimensions (mm/in)						
	Ø D1 (mm)	(in)	L1	L2	H	D2	B	S	
7	5,5 ... 7	.22 ... .28	44	28	5	5,5	16	1,5	
			1.73	1.10	.20	.22	.63	.06	
9	7 ... 9	.28 ... .35	48	32	6	5,5	16	1,5	
			1.89	1.26	.24	.22	.63	.06	
13	9,5 ... 13	.39 ... .51	52	36	9	5,5	16	1,5	
			2.05	1.42	.35	.22	.63	.06	
15,5	13 ... 15,5	.51 ... .61	56	40	12	5,5	16	1,5	
			2.20	1.57	.47	.22	.63	.06	
19	15,5 ... 19	.61 ... .75	60	44	15	5,5	16	.5	
			2.36	1.73	.59	.22	.63	.02	
23	20 ... 23	.79 ... .91	76	44	19	6,6	20	2	
			2.99	1.73	.75	.26	.79	.08	
26	23 ... 26	.91 ... 1.02	78	56	22	6,6	20	2	
			3.07	2.20	.87	.26	.79	.08	
28,5	26 ... 28,5	1.02 ... 1.12	84	58	24	6,6	20	2	
			3.31	2.28	.94	.26	.79	.08	
31	28,5 ... 31	1.12 ... 1.22	84	64	27	6,6	20	2	
			3.31	2.52	1.06	.26	.79	.08	
33 *	31 ... 33	1.22 ... 1.30	92	72	29	6,6	20	2	
			3.62	2.83	1.14	.26	.79	.08	
36	33 ... 36	1.30 ... 1.42	104	80	32	9	25	3	
			4.09	3.15	1.26	.35	.98	.12	
39	36 ... 39	1.42 ... 1.54	108	84	34	9	25	3	
			4.25	3.31	1.34	.35	.98	.12	
43	39 ... 43	1.54 ... 1.69	112	88	38	9	25	3	
			4.41	3.46	1.50	.35	.98	.12	
46	43 ... 46	1.69 ... 1.81	114	90	41	9	25	3	
			4.49	3.54	1.61	.35	.98	.12	
49	46 ... 49	1.81 ... 1.93	118	90	44	11	30	3	
			4.65	3.54	1.73	.43	1.18	.12	
52 *	49 ... 52	1.93 ... 2.05	134	106	47	11	30	3	
			5.28	4.17	1.85	.43	1.18	.12	
58	53 ... 58	2.09 ... 2.28	138	110	52	11	30	3	
			5.43	4.33	2.05	.43	1.18	.12	
61	58 ... 61	2.28 ... 2.40	138	110	56	11	30	3	
			5.43	4.33	2.20	.43	1.18	.12	

## Order Codes

## Light Saddle

\*DIN 1597\*-7\*W66

\* Light Saddle to DIN 1597

DIN 1597

\* STAUFF Group (Ø D1)

-7

\* Material code Carbon Steel, zinc-plated and thick-film passivated

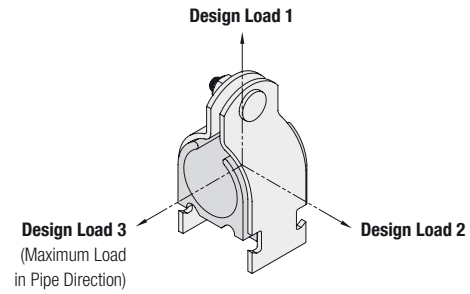
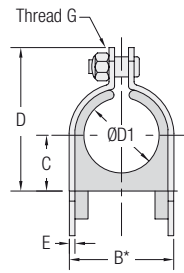
W66

\* Similar to DIN 1597.

Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.

**Clamp Assembly - Types STC / SPC**

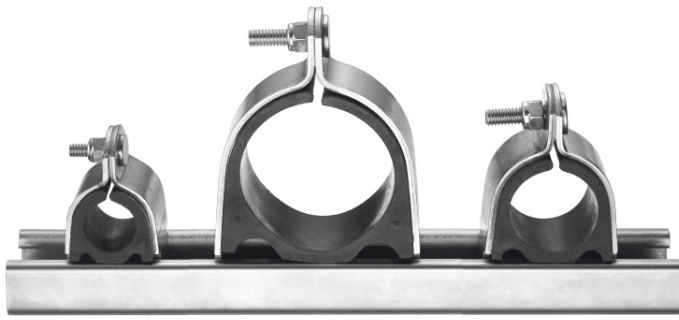
(for Use with Channel Rail SCS)



Outside Diameter Pipe / Tube / Hose Ø D1 (mm) (in)		Nominal Bore Pipe (in)	Order Codes (1 Clamp Assembly) (** = Material Code)	Dimensions (mm/in)					Thread G	Design Loads (kN/psi)		
B*	C	D	E					1	2	3		
6,4 .62	5,6 .22	28,2 1.11	2 .08	1/4-20 UNC	1,78 400	0,22 50	0,22 50					
8 .75	7,1 .28	31,5 1.24	2 .08	1/4-20 UNC	1,78 400	0,22 50	0,22 50					
12,7 .87	8,6 .34	34,5 1.36	2 .08	1/4-20 UNC	1,78 400	0,22 50	0,22 50					
13,5 .91	9,1 .36	35,8 1.41	2 .08	1/4-20 UNC	1,78 400	0,22 50	0,22 50					
16 1.00	10,4 .41	38,1 1.50	2 .08	1/4-20 UNC	1,78 400	0,22 50	0,22 50					
17,2 1.07	11,4 .45	40,4 1.59	2 .08	1/4-20 UNC	2,67 600	0,33 75	0,33 75					
19 1.33	13,5 .53	45,2 1.78	2 .08	1/4-20 UNC	2,67 600	0,33 75	0,33 75					
21,3 1.45	15,0 .59	48,5 1.91	2 .08	1/4-20 UNC	2,67 600	0,33 75	0,33 75					
22,2 1.45	14,7 .58	48,5 1.91	2 .08	1/4-20 UNC	2,67 600	0,33 75	0,33 75					
25,4 1.66	16,8 .66	51,6 2.03	2,8 .11	1/4-20 UNC	2,67 600	0,33 75	0,33 75					
26,9 1.79	18,3 .72	54,9 2.16	2,8 .11	1/4-20 UNC	2,67 600	0,33 75	0,33 75					
32 1.92	19,8 .78	58,4 2.30	2,8 .11	1/4-20 UNC	2,67 600	0,33 75	0,33 75					
33,7 2.22	23,1 .91	69,9 2.75	3 .12	5/16-18 UNC	2,67 600	0,33 75	0,33 75					
38 2.22	23,1 .91	69,9 2.75	3 .12	5/16-18 UNC	2,67 600	0,33 75	0,33 75					
42 2.47	26,2 1.03	77,0 3.03	3 .12	5/16-18 UNC	3,56 800	0,56 125	0,56 125					
48,3 2.47	29,5 1.16	83,3 3.28	3 .12	5/16-18 UNC	3,56 800	0,56 125	0,56 125					
50,8 2.72	29,5 1.16	83,3 3.28	3 .12	5/16-18 UNC	3,56 800	0,56 125	0,56 125					
60,3 3.22	35,8 1.41	96,0 3.78	3 .12	5/16-18 UNC	3,56 800	0,56 125	0,56 125					
63,5 3.47	38,9 1.53	102,4 4.03	3 .12	5/16-18 UNC	3,56 800	0,56 125	0,56 125					
66,7 3.47	38,9 1.53	102,4 4.03	3 .12	5/16-18 UNC	3,56 800	0,56 125	0,56 125					
73 3.72	42,2 1.66	108,5 4.27	3 .12	5/16-18 UNC	3,56 800	0,56 125	0,56 125					
76,2 3.97	45,2 1.78	114,8 4.52	3 .12	5/16-18 UNC	4,45 1 000	0,89 200	0,67 150					
88,9 4.36	50,0 1.97	124,7 4.91	3 .12	3/8-16 UNC	4,45 1 000	0,89 200	0,67 150					
102 4.97	57,9 2.28	140,5 5.53	3 .12	3/8-16 UNC	4,45 1 000	0,89 200	0,67 150					
114 5.47	64,3 2.53	153,2 6.03	3 .12	3/8-16 UNC	4,45 1 000	0,89 200	0,67 150					
140 6.47	77,0 3.03	178,6 7.03	3,6 .14	3/8-16 UNC	4,45 1 000	0,89 200	0,67 150					
168 7.47	89,7 3.53	204,0 8.03	3,6 .14	3/8-16 UNC	4,45 1 000	0,89 200	0,67 150					

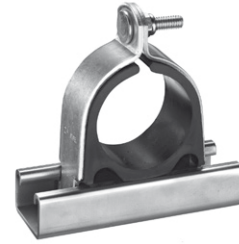
\* Minimum required for installation.

One clamp assembly is consisting of two carbon steel clamp halves (one with threaded stud), one thermoplastic cushion insert and one lock nut with Nylon insert. Channel rail not included. All threaded parts are only available with unified coarse (UNC) thread. Alternative materials and surface finishings are available upon request. Consult STAUFF for further information.



### Clamp Assembly ■ Types STC / SPC

(for Use with Channel Rail SCS)



#### Standard Materials



Cushion Insert  
**Thermoplastic Elastomer** (80 Shore-A)  
Colour: Black

The cushion material is compatible with most oils, chemicals and cleaning solvents and suitable for applications within a temperature range of -50 °C ... +125 °C (-58 °F ... +257 °F).

Alternative materials are available upon request.  
Please consult STAUFF for further information.

#### Product Features

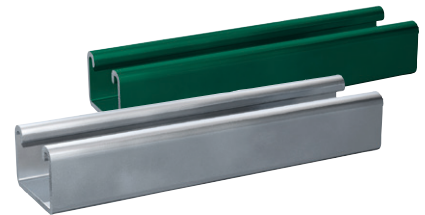
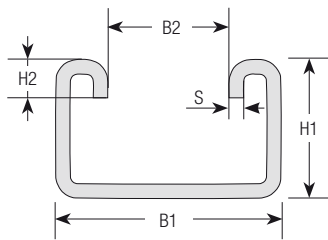
- Clamp assemblies designed to mount directly to 41,3 mm / 1-5/8 in wide strut channels, such as the STAUFF Channel Rail, type SCS
- Suitable for most Fluid Power applications ranging from mobile equipment to industrial machinery
- Reduced horizontal mounting space
- Easy installation and retro fit capability
- Reduces shock and vibration while preventing galvanic corrosion

#### Order Codes

##### Clamp Assembly **\*STC-\*125-\*W4-\*#K**

* Type of clamp	STC (Tube diameters) SPC (Pipe diameters)	<b>STC</b> <b>SPC</b>
* Pipe / Tube O.D. (according to dimension table)		<b>125</b>
* Material code	Carbon Steel, zinc-plated, trivalent blue chromated Stainless Steel V2A 1.4301 (AISI 304) Stainless Steel V4A 1.4401 (AISI 316)	<b>W3</b> <b>W4</b> <b>W5</b>
Assembling	Components packed in kits	<b>#K</b>

### Channel Rail ■ Type SCS



Dimensions (mm/in)				
B1	B2	H1	H2	S
41,3	22,2	25,4	7	2,7
1.63 (1-5/8)	.88 (7/8)	1.00	.28	.11

Alternative rail profiles, materials and surface finishings are available upon request. Consult STAUFF for further information.

#### Order Codes

##### Strut Channel **\*SCS-\*048-\*1-\*PL**

* Strut Channel		<b>SCS</b>
* Length of Rail	1,22 m / 4.00 ft / 48 in 3,05 m / 10.00 ft / 120 in	<b>048</b> <b>120</b>
* Height of Rail	25,4 mm / 1.00 in	<b>1</b>
* Material code	Carbon Steel, untreated Carbon Steel, green painted	<b>PL</b> <b>GR</b>

## The Issue: Pipework Corrosion

### Stainless Steel Pipework

Stainless steel pipework on offshore oil and gas platforms is used over a wide range of temperature, flow and pressure conditions, e.g. for process instrumentation and sensing, as well as for chemical inhibition, hydraulic or utility lines.

The typical tubing material selected for these particular applications is AISI 316 stainless steel, although in more recent times other tube materials have been utilized to try and counteract the offshore corrosion issue.

In all major offshore oil and gas regions – including the Gulf of Mexico, the North Sea, the Gulf of Guinea and the China Sea – corrosion of AISI 316 stainless steel pipework can be observed, and has been a researched and well documented problem as well as a costly and time consuming issue with regard to maintenance processes for many years.

### Pitting Corrosion

One of the most prevalent forms of localised corrosion is pitting corrosion: Under certain specific conditions – particularly involving chlorides (such as sodium chloride in seawater) and exacerbated by elevated temperatures – small pits can form in a stainless steel surface.

Dependent upon both the environment and the stainless steel itself, these pits may continue to grow and eventually lead to perforation of tubing walls and leaks, while the majority of the surface may still be totally unaffected.

Pitting corrosion is often quite easy to recognise: small individual pits and – in later stages – sometimes deeper and connected pits can be observed by visual inspection with the unaided eye.

### Crevice Corrosion

Another dominant type is crevice corrosion, which is a lot more difficult to observe: It usually tends to occur in shielded areas such as crevices, formed under gaskets, washers, fastener heads, insulating material, surface deposits, disbonded coatings, threads and lap joints.

Pipe clamps made of plastic in particular have also been prone to inducing crevice corrosion in the past, because the plastic deforms around the tubing and creates even tighter crevices.

Crevice corrosion is always initiated by changes in the local chemistry within the shielded area, usually associated with a stagnant solution on the micro-environmental level:

- Trapped seawater becomes stagnant
- Depletion of inhibitor and oxygen
- A shift to acid conditions
- Build-up of aggressive ion species (such as sodium chloride in seawater)
- Accelerated corrosion process

Crevice corrosion can have serious and adverse consequences eventually leading to perforation of tubing walls and the escape of highly flammable fluids and chemicals.

### Material Selection

Hence, the selection of proper materials and the use of robust design and safe construction practices are mandatory, even if crevices are sometimes difficult or even impossible to avoid in tubing installations when using regular types of tubing supports and clamps.

And this is where the STAUFF ACT Clamp comes into play ...



Crevice corrosion formed under a regular plastic clamp

## Development

Throughout their development, STAUFF ACT Clamps have been subject to stringent testing at the STAUFF in-house laboratories located in Werdohl, Germany.

In order to ensure credibility of the product, the development process has also involved independent testing.

To achieve this, the services of the Centre for Corrosion Technology at Sheffield Hallam University's Materials and Engineering Research Institute have been utilized, applying advanced techniques with equipment such as high resolution surface metrology and form measurement systems.

In a controlled laboratory environment, continuous hot salt spray tests according to ASTM B117 have been applied for periods of 2000 hours to various clamp configurations holding AISI 316 stainless steel tubing.

In addition to that, independent field test samples located on an oil rig in the Dutch sector of the North Sea have also been assessed at the Sheffield Hallam University facilities.

Both independent tests have recorded positive results in favour of the anti-corrosion attributes of the STAUFF ACT Clamp. Fully detailed test reports are available upon request.

## Conformity

Using flame-retardant PPVO plastic material for the clamp body and ACE anti-corrosion elastomer material for the rubber strips, STAUFF ACT Clamps have been constructed in compliance with section 7.3 (Tubing Installation) of the Norwegian offshore standard Norsok Z-010 (Revision 3, published in October 2000), API RP 552 and NACE SP 0108-2008 (section 13).



Field test in the Dutch sector of the North Sea

### Norsok Standard Z-010

The Norsok standard Z-010 (Revision 3, published in October 2000 on Electrical, instrumentation and telecommunication installation states the following in section 7.3:

"Tubing clamps shall be made of non-corrosive material, stainless steel AISI 316 and/or flame retardant plastic. Galvanic corrosion between tubing and tubing support system shall be avoided.

The tubing clamp shall, when installed, not allow for water / seawater to be accumulated between tubing and tubing clamp on wall, this is to avoid crevice corrosion."

## Corrosion Facts

Corrosion in general is a naturally occurring phenomenon commonly defined as the deterioration of a substance (usually a metal) or its properties because of a reaction with its environment. Like other natural hazards, corrosion can cause not only expensive but also dangerous damage to almost everything from automobiles, home appliances and drinking water systems to pipelines, bridges and public buildings.

Figures provided by the U.S. National Climatic Data Center underline that major weather related disasters the U.S. incurred total losses of averaging USD 17 billion annually (1980 – 2001). According to U.S. corrosion studies, the estimated direct cost of metallic corrosion in general was USD 276 billion on an annual basis in 1998. This represented 3,1% of the U.S. Gross Domestic Product.

Direct corrosion costs associated with the domestic oil and gas production activities in the U.S. were determined to be about USD 1,4 billion annually, with USD 0,6 billion attributed to surface piping and facility costs, USD 0,5 billion to downhole tubing, and USD 0,3 billion to capital expenditures related to corrosion.

The U.S. refineries represent approximately 23% of the world's petroleum production in 1996 supplying more than 18 million barrels of refined petroleum products per day, with a total corrosion related direct cost of USD 3,7 billion. Maintenance expenses make up USD 1,8 billion of this total, vessel expenses are USD 1,4 billion and fouling costs are approximately USD 0,5 billion annually.

Source of Information: Report No. FHWA-RD-01-156, September 2001 **Corrosion Costs and Preventive Strategies in the United States** Report by CC Technologies Laboratories, Inc. to Federal Highway Administration Office of Infrastructure Research and Development

The Solution: STAUFF ACT Clamps

Efficient Prevention of Crevice Corrosion under Pipe Clamps on Stainless Steel Pipework Middle- and Long-Term Cost Savings due to Extended Service and Maintenance Intervals

Construction based on STAUFF Clamps

Design based on Original STAUFF Clamps according to DIN 3015, Parts 1 and 3 (Standard Series and Twin Series), the tried and tested industry standard for several decades

Covering the most commonly used metric and imperial pipe diameters from 6 mm to 25,4 mm (from 1/4 inch to 1 inch)

Alternative configurations and pipe diameters on request

Installation time reduction (compared to alternative designs)

Independent Testing and Approval

Subject to stringent testing at the STAUFF in-house laboratories located in Werdohl (Germany)

Salt spray tests according to ASTM B117 applied in controlled laboratory environments

Long-term field tested on a rig in the Dutch sector of the North Sea

Tests results independently assessed by Centre for Corrosion Technolog at Sheffield Hallam University

Fully detailed, independent test reports available on request

Innovative Design and Materials

Material and design in compliance with section 7.3 (Tubing Installation) of the Norwegian offshore standard Norsok Z-010 (Revision 3, published in October 2000 ), API RP 552 and NACE SP 0108-2008 (section 13)

- 1 Clamp body made of flame-retardant PPV0 plastic material; tested and VO classified according to UL 94
- 2 Integrated ACE anti-corrosion elastomer strips avoid the accumulation of seawater between clamp body and pipe
- 3 Drainage channels aid the dispersal of seawater
- 4 ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling (only delivered in complete packaging units of 25 pieces per bag to avoid contamination during transport)

High UV stability of the clamp body material; resistant against seawater, rain and oil

Suitable for continuous exposure to temperatures from -25 °C to +80 °C (from -13 °F to +176 °F)

To be used in sub-sea and top-side environments; alleviating the requirement for two different products



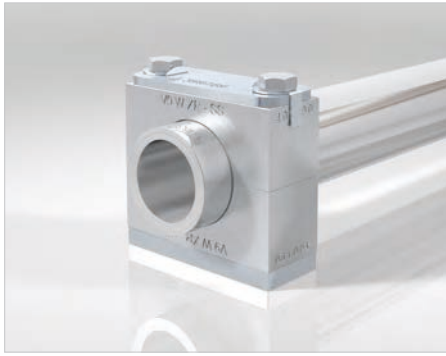
In case that you would like to receive further information on STAUFF ACT Clamps or want to get access to the latest technical literature, please do not hesitate to contact STAUFF by email to [act@stauff.com](mailto:act@stauff.com).

In order to keep up to date with all the latest related product information and innovations, feel free to visit our website dedicated product website at [www.stauff.com/act](http://www.stauff.com/act).





## Industry-Specific Solutions



### Power Plants

STAUFF offers a complete range of Plastic, Aluminium, Steel and Stainless Steel fastening elements for pipes, tubes and hoses in all temperature and pressure ranges, as well as for cables and other components in conventional power plants (lignite, hard coal, gas, water and others) and nuclear facilities.

With many years of experience and numerous references in equipping power plants and nuclear facilities both domestically and abroad, our portfolio ranges from the planning of individual fastening concepts, based on customer or industry-specific requirements, up to multi-stage logistics services.

- Fastening of pipes both as pipe slides, longitudinal guides or three-way stops
- Approvals and qualifications of KTA, RCC-M and ASME
- Suitability tested by the TÜV according to technical specifications and KTA 3205.3
- Identification of the products via a unique type-code
- Full tracing of all components and/or materials
- Provided with inspection documents 3.1 as per EN 10204



### Wind Power Stations

In addition to the well-known, tried and tested STAUFF clamps for fastening all kind of industrial lines, we also offer industry-specific solutions for the orderly vertical installation of cables in wind power stations. When fastening these lines, special requirements are placed on the components, because the high weight of the cables must be held securely.

With many years of experience and numerous references in equipping wind power stations both domestically and abroad, our portfolio ranges from the planning of individual fastening concepts, based on customer or industry-specific requirements, up to multi-stage logistics services.

- Triangular design of the internal contours of the basic clamp body
- Accommodation of three cables with only a single cable support
- Additional adaptors can be optionally used to the extent that only two cables or lines with smaller external diameters can be fastened
- Fully flexible by always using an identical basic clamp body
- Installation in multiple layers and combination with other components and profiles
- Made of high-quality Plastics, also available in various custom materials in order to comply with international fire protection standards (e.g. with UL 94)



### Rail Technology

In addition to the well-known, tried and tested STAUFF clamps for fastening all kind of industrial lines, we also offer industry-specific solutions for vibration and noise reducing and impact absorbing installations in rail technology related facilities.

With many years of experience and numerous references in the field of railway transportation system both domestically and abroad, our portfolio ranges from the planning of individual fastening concepts, based on customer or industry-specific requirements, up to multi-stage logistics services.

- Complete solution for all types of industrial lines
- Development in close collaboration with the customers
- Made of high-quality Plastics, also available in various custom materials in order to comply with international fire protection standards
- Amongst others, approvals based on several guidelines received, such as BS 6853, DIN 5510 - Part 2, NF F 16-101 or UL 94
- Depending on the quantities and the respective areas of application, mechanical or injection-moulded manufacturing
- Various fastening accessories made of steel and stainless steel

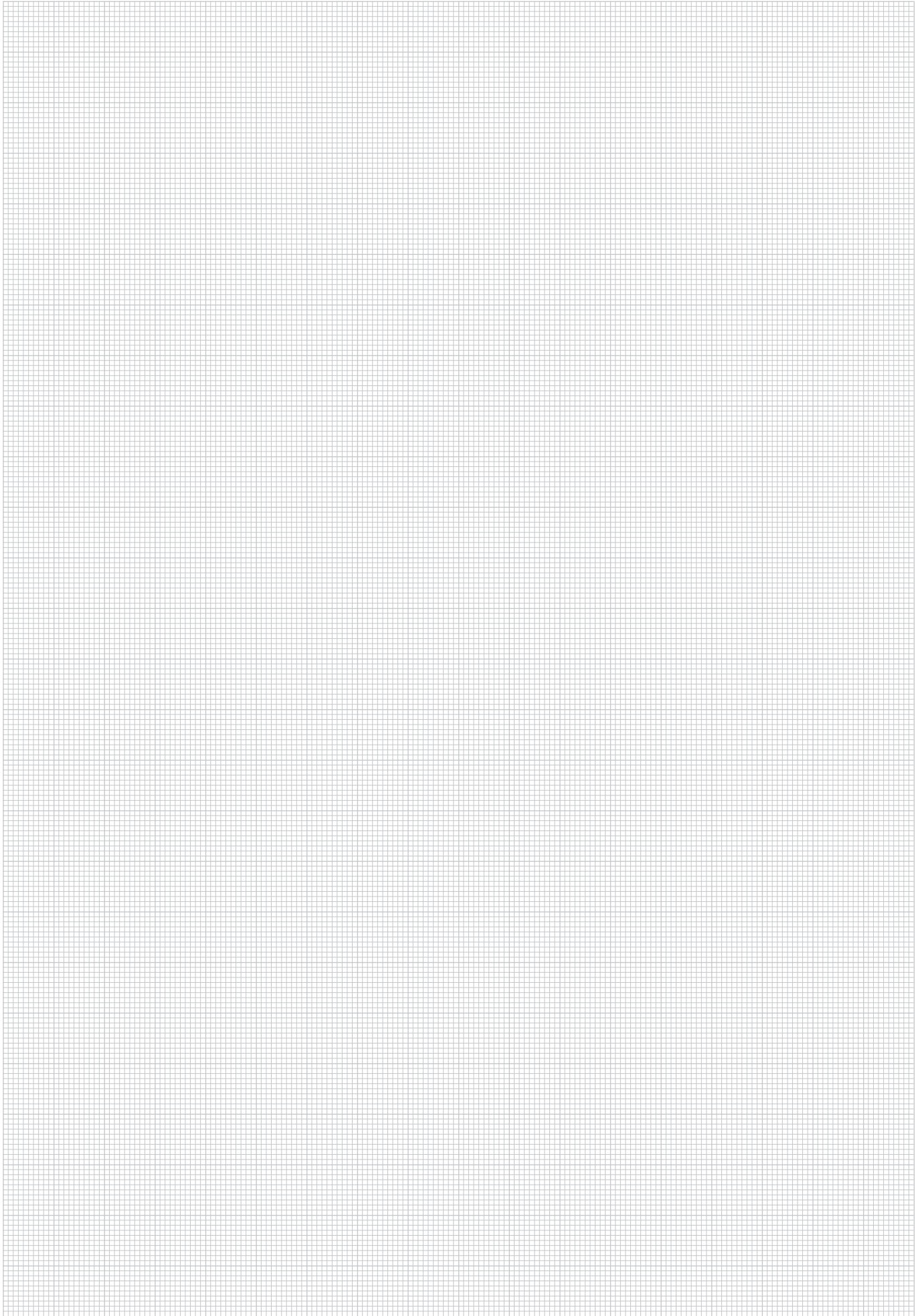


### Process Technology

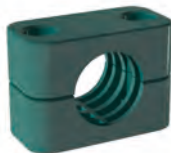
STAUFF Stainless Steel pipe clamps of the so-called Hi-Clean series were developed specifically for use in industrial clean rooms with the highest demands regarding hygiene and design. They are primarily used in the fields of process engineering and in the food, beverage and pharmaceuticals industry.

Our range of products for process technology applications is completed by the Hi-Clean pipe clamps of the Plastic series.

- Innovative, patent approved design
- Designed to comply with the specifications as defined by ASME-BPE, the American Society of Mechanical Engineers
- Suitable for pipes, tubes and other lines with outer diameters between 6,4 mm and 168,4 mm
- Rounded-off edges and corners to prevent dirt adhesion; no exposed threads or threads covered with acorn nuts
- All Plastic components comply with the specifications of the FDA (Food and Drug Administration of the United States)
- All metal components manufactured from corrosion-resistant stainless steel, upon request with electrolytically high-gloss polished material surfaces



## Standard Clamp Body Materials



Material Code	PP	PA	AL	SA
Basic Material	Copolymeric Polypropylene	Polyamide	Aluminium AISi12	Thermoplastic Elastomer
Standard Colour	Green	Black	Natural	Black

Mechanical Properties				
Tensile E-Module	1073 N/mm <sup>2</sup> (ISO 527)	> 1400 N/mm <sup>2</sup> (ISO 527)	> 65000 N/mm <sup>2</sup>	113 N/mm <sup>2</sup> at +23 °C / +73.4 °F (ASTM D412)
Notch Impact Strength	10 kJ/m <sup>2</sup> at +23 °C / +73.4 °F (acc. to Charpy / ISO 179 / 1eU)	> 15 kJ/m <sup>2</sup> at 23 °C / +73.4 °F (acc. to Charpy / ISO 179 / 1eU)		
Low Temperature Notch Impact Strength	3,8 kJ/m <sup>2</sup> at -20 °C / -4.0 °F (acc. to Charpy / ISO 179 / 1eU)	> 3 kJ/m <sup>2</sup> at -30 °C / -22.0 °F (acc. to Charpy / ISO 179 / 1eU)		
Tensile Strength at Yield (Tensile Strength)	26 MPa (ISO 527-2)	> 55 MPa (ISO 527)	> 240 MPa (ISO EN 10002)	15,9 MPa (ASTM D412)
Ball Indentation Hardness (Brinell Hardness)	45,4 MPa (ISO 2039-1)	> 65 MPa (ISO 2039-1)	> 70 HBS	
Shore Hardness				87 A (ISO 868) <small>Alternative hardnesses are available upon request! Consult STAUFF for details.</small>

Thermal Properties				
Temperature Resistance (Continuous Exposure, Min ... Max)	-30 °C ... +90 °C / -22 °F ... +194 °F	-40 °C ... +120 °C / -40 °F ... +248 °F <small>(Brief exposure up to +140 °C / +284 °F)</small>	up to +300 °C / up to +572 °F	-40 °C ... +125 °C / -40 °F ... +257 °F

Chemical Properties				
Weak Acids	conditionally consistent	conditionally consistent	conditionally consistent	consistent
Solvents	conditionally consistent	conditionally consistent	conditionally consistent	conditionally consistent
Benzine	conditionally consistent	consistent	consistent	conditionally consistent
Mineral Oils	conditionally consistent	consistent	consistent	conditionally consistent
Other Oils	consistent	consistent	consistent	consistent
Alcohols	consistent	consistent	consistent	consistent
Seawater	consistent	consistent	consistent	consistent



### Special Clamp Body Materials

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

See pages A90 / A91 for properties and technical information.

The information for the Polyamide material PA have been determined in a conditioned state according to ISO 1110. For Aluminium, the tensile strength (under reversed bending stress) and impact bending strength both rise constantly at decreasing temperatures whilst the value for breaking elongation decreases. STAUFF preserve the right to supply products made from different, but comparable materials with matching technical characteristics.

**Standard Clamp Insert Materials**

 STAUFF Group 4 and 6 (Standard Series)  
 STAUFF Group 4S to 6S (Heavy Series)


STAUFF Group 7S to 10S (Heavy Series)

SA	EPDM	Material Code
Thermoplastic Elastomer	Ethylene Propylene Diene Monomer	Basic Material
Black	Black	Standard Colour

Mechanical Properties		
16 N/mm <sup>2</sup> at +23 °C / +73.4 °F (ASTM D412)		Tensile E-Module
		Notch Impact Strength
		Low Temperature Notch Impact Strength
8,3 MPa (ASTM D412)	9,0 MPa (DIN 53504)	Tensile Strength at Yield (Tensile Strength)
		Ball Indentation Hardness (Brinell Hardness)
73 A (ISO 868)	70 A (DIN 53505)	Shore Hardness

Thermal Properties		
-40 °C ... +125 °C / -40 °F ... +257 °F	-50 °C ... +120 °C / -58 °F ... +248 °F	Temperature Resistance (Continuous Exposure, Min ... Max)

Chemical Properties		
consistent	consistent	Weak Acids
conditionally consistent	consistent	Solvents
conditionally consistent	conditionally consistent	Benzine
conditionally consistent	conditionally consistent	Mineral Oils
consistent	conditionally consistent	Other Oils
consistent	consistent	Alcohols
consistent	consistent	Seawater


**Special Clamp Insert Materials**

Please consult STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards.

See pages A90 / A91 for properties and technical information.

## Special Clamp Body Materials (Selection)

### Preventive Fire Protection



Material Code	PAVO	PA-FF	PPDA
Basic Material	Polyamide	Polyamide	Polypropylene
Standard Colour	Grey	Black	White

Mechanical Properties			
Tensile E-Module	1500 MPa (ISO 527-2)	1100 MPa (ISO 527-2)	1614 N/mm <sup>2</sup> (ISO 527) at +23 °C / +73.4 °F: 50 mm/min
Notch Impact Strength	35 kJ/m <sup>2</sup> at +23 °C / +73.4 °F (acc. to Charpy / ISO 179 / 1eU)	20 kJ/m <sup>2</sup> at +23 °C / +73.4 °F (acc. to Charpy / ISO 179 / 1eU)	13 kJ/m <sup>2</sup> at +23 °C / +73.4 °F (acc. to IZOD / ISO 179 / 1eA)
Low Temperature Notch Impact Strength			1,5 kJ/m <sup>2</sup> at -25 °C / -13.0 °F (acc. to IZOD / ISO 179 / 1eA)
Tensile Strength at Yield (Tensile Strength)	45 MPa (ISO 527-2)	50 MPa (ISO 527-2)	12,4 MPa (ISO 527) at +23 °C / +73.4 °F: 50 mm/min
Ball Indentation Hardness (Brinell Hardness)	100 N/mm <sup>2</sup> (ISO 2039-1)	100 N/mm <sup>2</sup> (ISO 2039-1)	
Shore Hardness			

Thermal Properties			
Temperature Resistance (Continuous Exposure, Min ... Max)	-30 °C ... +120 °C / -22 °F ... +248 °F	-30 °C ... +120 °C / -22 °F ... +248 °F	-25 °C ... +90 °C / -13 °F ... +194 °F

Features			
Approvals / Properties	<p><b>Tested and approved acc. to UL94</b> (material thickness: 3 mm)</p> <ul style="list-style-type: none"> <li>Classification: V-0 (Vertical Burning Test)</li> </ul> <p><b>Tested and approved acc. to DIN 5510, Part 2</b> (material thickness: 3 mm)</p> <ul style="list-style-type: none"> <li>Combustibility classification: S4</li> <li>Smoke development classification: SR2</li> <li>Dripping classification: ST2</li> </ul> <p><b>Tested and approved acc. to CEN/TS 45545-2</b> (material thickness: 3 mm)</p> <ul style="list-style-type: none"> <li>Requirement set: R23 HL1</li> <li>complies with requirement set R22 HL1 acc. to DIN EN 45545</li> </ul> <p><b>Tested and approved acc. to NF F 16-101</b> (material thickness: 3 mm)</p> <ul style="list-style-type: none"> <li>Classification: I3 / F2</li> </ul>	<p><b>Tested and approved acc. to DIN 5510, Part 2</b> (material thickness: 25 mm)</p> <ul style="list-style-type: none"> <li>Combustibility classification: S4</li> <li>Smoke development classification: SR2</li> <li>Dripping classification: ST2</li> </ul> <p><b>Tested and approved acc. to NF F 16-101</b> (material thickness: 3 mm)</p> <ul style="list-style-type: none"> <li>Einstufung: I4 / F1</li> </ul>	<p><b>Tested and approved acc. to UL94</b> (material thickness: 3 mm)</p> <ul style="list-style-type: none"> <li>Classification: V-0 (Vertical Burning Test)</li> </ul> <p><b>Tested and approved acc. to Def Stan 07-247</b></p> <ul style="list-style-type: none"> <li>Assessment: category B</li> </ul> <p><b>Approved by the UK Ministry of Defence (MoD)</b></p>



**Special Clamp Body Materials (Selection)**

Preventive Fire Protection



PP6853	PPVO	SAVO	Material Code
Polypropylene	Polypropylene	Thermoplastic Elastomer	Basic Material
White	Black	Natural	Standard Colour

			Mechanical Properties
1264 MPa (ICE 60811-1-1)		113 N/mm <sup>2</sup> at +23 °C / +73.4 °F (ASTM D412)	Tensile E-Module
17 kJ/m <sup>2</sup> at +23 °C / +73.4 °F (acc. to IZOD / ISO 179 / 1eA)	5 kJ/m <sup>2</sup> at +23 °C / +73.4 °F (acc. to ISO 180/A)		Notch Impact Strength
			Low Temperature Notch Impact Strength
25 MPa (ICE 60811-1-1)	24 MPa (ISO 527)	15,9 MPa (ASTM D412)	Tensile Strength at Yield (Tensile Strength)
			Ball Indentation Hardness (Brinell Hardness)
		86 A (ISO 868)	Shore Hardness

			Thermal Properties
-25 °C ... +90 °C / -13 °F ... +194 °F	-25 °C ... +90 °C / -13 °F ... +194 °F		Temperature Resistance (Continuous Exposure, Min ... Max)

			Features
<p><b>Tested and approved according to BS 6853</b> (Code of practice for fire precautions in the design / construction of passenger carrying trains)</p> <ul style="list-style-type: none"> <li>Assessment: category 1a</li> </ul> <p><b>Compliant to the requirements of London Underground / Metronet</b> (standard 2-01001-002: Fire Safety Performance of Materials)</p> <p><b>Tested and approved acc. to DIN 5510, Part 2</b> (material thickness: 25 mm)</p> <ul style="list-style-type: none"> <li>Combustibility classification: S4</li> <li>Smoke development classification: SR2</li> <li>Dripping classification: ST2</li> </ul> <p><b>Tested and approved according to Def Stan 07-247</b></p> <ul style="list-style-type: none"> <li>Assessment: category B</li> </ul>	<p><b>Tested and approved acc. to UL94</b> (material thickness: 3 mm)</p> <ul style="list-style-type: none"> <li>Classification: V-0 (Vertical Burning Test)</li> </ul>	<p><b>Tested and approved acc. to UL94</b> (material thickness: 3 mm)</p> <ul style="list-style-type: none"> <li>Classification: V-0 (Vertical Burning Test)</li> </ul>	Approvals / Properties

## Standard Clamp Body Designs



### Profiled Design

#### Profiled Inside Surface with Tension Clearance

- Available in the Standard, Heavy, Twin and Heavy Twin Series
- Recommended for the safe installation of rigid pipes or tubes
- Available for all commonly used outside diameters and nominal sizes
- Vibration/noise reducing and impact absorbing effect towards the direction of the line provided by the grooves on the inside of the clamp bodies
- To be used as fixed point clamp preventing the line from sliding (see page A95 for Maximum Loads in Pipe Direction)
- Clearance between the clamp halves provides tension of the tube or pipe



### Type H (Smooth)

#### Smooth Inside Surface w/o Tension Clearance

- Available in the Standard, Heavy and Twin Series
- Recommended for the safe installation of hoses or cables
- Available for all commonly used outside diameters and nominal sizes
- Smooth inside surface and chamfered edges avoid damaging of the hose or cable
- To be used as guide allowing the line to slide
- Choose internal diameter of the clamp body slightly smaller than the outside diameter of the hose or cable to use it as fixed point clamp preventing the line from sliding



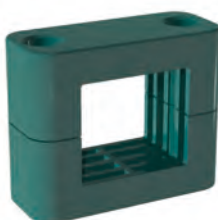
### Type RI (with Rubber Insert)

- Available in the Standard, Heavy and Heavy Twin Series
- Recommended for the extra-gentle installation of pipes, tubes, hoses or cables
- Available for all commonly used outside diameters and nominal sizes
- Rubber insert made of Thermoplastic Elastomer with a hardness of 73 Shore-A provides most effective reduction of vibration and noise caused by vibration



### Oval Design

- Available in the Standard and Heavy Series
- Recommended for the safe installation of electric cables with diameters between 20 mm (.79 in) and 72 mm (2.83 in)



### Rectangular Design ▪ Type VK

- Available in the Standard Series (STAUFF Group 5)
- Recommended for the safe installation of proximity switches according to DIN EN 60947-5-2 or similar, rectangular construction, with a square of 40 mm x 40 mm (1.57 in x 1.57 in) or 40 mm x 36 mm (1.57 in x 1.42 in)

## Materials and Surface Finishings of Metal Parts

### Materials

Unless otherwise stated, all metal parts (e.g. weld plates, cover plates, bolts, rail nuts etc.) are made of **Carbon Steel** (surface finishing according to material code).

Besides that, all metal parts are also available **ex stock** in two different stainless steel qualities:

#### Stainless Steel V2A

- 1.4301 / 1.4305 (AISI 304 / 303)
- Material code: W4



#### Stainless Steel V4A

- 1.4401 / 1.4571 (AISI 316 / 316 Ti)
- Material code: W5

Alternative materials are available upon request. Consult STAUFF for further information.

### Surface Finishings

Unless otherwise stated, all metal parts made of Carbon Steel are available with the following standard surface finishings:

#### Carbon Steel, untreated

- Material code: W1

#### Carbon Steel, phosphated

- Fe/Znph r 10 according to DIN EN 12476
- Material code: W2

#### Carbon Steel, zinc/nickel-plated

- Fe/ZnNi (12...16) 6+6//A//T2 according to DIN 50962
- More than 720 hours resistance against red rust / base metal corrosion in the salt spray test to DIN EN ISO 9227
- Free of hexavalent chromium Cr(VI)
- RoHS compliant according to 2002/95/EC (Restrictions of the Use of Hazardous Substances)
- ELV compliant according to 2000/53/EC (End of Life Vehicles Directive)
- Material code: W3

Alternative surface finishings are available upon request. Consult STAUFF for further information.



Original STAUFF Cover Plate with Zinc/Nickel-Coating: No signs of corrosion after **528 hours** in the salt spray chamber!



Original STAUFF Cover Plates with alternative surface finishings widely-used by competitors in the market (from left to right):

- Galvanisation and blue-chromating after **96 hours**
- Galvanisation and yellow-chromating after **192 hours**
- Zinc-coating, thick-film passivation and sealing after **192 hours**

In all three cases, signs of corrosion are quite clearly visible!

Consult STAUFF and ask for a detailed report.

## Thread Conversion Chart

### Metric ISO vs. Unified Coarse (UNC) Thread

Unless otherwise stated, all threaded parts available with Metric ISO thread or unified coarse (UNC) thread.

#### Standard Series (DIN 3015, Part 1)

Group STAUFF	DIN	Thread	
		Metric ISO	Unified Coarse
1 to 8	0 to 8	M6	1/4–20 UNC

#### Heavy Series (DIN 3015, Part 2)

Group STAUFF	DIN	Thread	
		Metric ISO	Unified Coarse
3S to 5S	1 to 3	M10	3/8–16 UNC
6S	4	M12	7/16–14 UNC
7S	5	M16	5/8–11 UNC
8S	6	M20	3/4–10 UNC
9S	7	M24	7/8–9 UNC
10S	8	M30	1-1/8–7 UNC
11S to 12S	9 to 10	M30	1-1/4–7 UNC

#### Twin Series (DIN 3015, Part 3)

Group STAUFF	DIN	Thread	
		Metric ISO	Unified Coarse
1D	1	M6	1/4–20 UNC
2D to 5D	2 to 5	M8	5/16–18 UNC

## Property Classes / Grades of Bolts and Screws


**Hexagon Head Bolt**

**Socket Cap Screw**

**Slotted Head Screw**

Bolt / Screw Type	Material Code	Property Class / Grade	
		Metric ISO Threaded Bolts / Screws	Unified Coarse Threaded Bolts / Screws
Hexagon Head Bolt Type AS	W1, W2, W3	8.8 (according to DIN EN ISO 898)	5 (according to SAE J429)
	W4	A2-70 (according to DIN EN ISO 3506)	AISI 304 / B8 (according to ASTM A193)
	W5	A4-70 (according to DIN EN ISO 3506)	AISI 316 / B8M (according to ASTM A193)
Socket Cap Screw Type IS	W1, W2, W3	8.8 (according to DIN EN ISO 898)	5 (according to SAE J429)
	W4	A2-70 (according to DIN EN ISO 3506)	AISI 304 / B8 (according to ASTM A193)
	W5	A4-70 (according to DIN EN ISO 3506)	AISI 316 / B8M (according to ASTM A193)
Slotted Head Screw Type LI	W1, W2, W3	4.8 (according to DIN EN ISO 898)	2 (according to SAE J429)
	W4	A2-70 (according to DIN EN ISO 3506)	AISI 304 / B8 (according to ASTM A193)
	W5	A4-70 (according to DIN EN ISO 3506)	AISI 316 / B8M (according to ASTM A193)

Unless otherwise stated, the above mentioned property classes / grades apply as standards for bolts and screws supplied by STAUFF. The information indicate the minimum requirements; higher property classes are available upon request. Consult STAUFF for details.

## Basic Installation Instructions



### Installation on Weld Plate

Different types of weld plates are available for all STAUFF Clamps according to DIN 3015 as well as for most of the other series and many custom-designed special clamps.

- Place weld plates in their designated positions. Please make sure these positions are suitable for the expected loads.
- Mark the locations of the weld plates to ensure best alignment.
- Weld the weld plates into position. Elongated weld plates can also be mounted to their positions by using screws or bolts.
- Push bottom clamp half onto weld plate.
- Insert pipe, tube, hose, cable or any other line type.
- Place second clamp half and cover plate (optional) on top and mount clamp assembly by using screws or bolts.

Unless otherwise stated, the bolt lengths indicated for clamps according to DIN 3015 refer to the installation on weld plates and mounting rails as well as multi-level (stacking) installation. For direct installation, different lengths may be required.



### Installation on Mounting Rail

STAUFF Mounting Rails are available in different heights. STAUFF Rail Nuts are available for all STAUFF Clamps according to DIN 3015 (Heavy Series up to STAUFF Group 6S only) as well as for many custom-designed special clamps.

- Place mounting rails in their designated positions. Please make sure these bases are suitable for the expected loads.
- Mark the locations of the mounting rails to ensure best alignment.
- Weld the mounting rails into position. Mounting rails can also be mounted to their positions by using side-mounting brackets with screws or bolts.
- Insert rail nuts into mounting rail and turn until stop to lock (Standard and Twin Series) or slide in rail nut (Heavy Series).
- Push bottom clamp half onto rail nuts.
- Insert pipe, tube, hose, cable or any other line type.
- Place second clamp half and cover plate (optional) on top and mount clamp assembly by using screws or bolts.

The exact positions of the clamp assemblies can still be adjusted before being firmly bolted.



### Multi-Level (Stacking) Installation

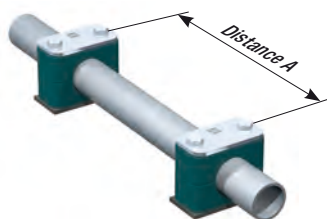
The multi-level installation of STAUFF Clamps permits easy stacking of several pipes, tubes, hoses, cables or any other line types, even with different outside diameters. The Twin Series also allows stacking of different group sizes (STAUFF Groups 2D to 5D).

The clamps are connected by stacking bolts. Safety locking plates inserted between the clamps prevent stacking bolts from turning.

- Push bottom clamp half onto weld plate or rail nuts.
- Insert pipe, tube, hose, cable or any other line type.
- Place second clamp half mount clamp assembly by using stacking bolts.
- Place safety locking plate on top of clamp assembly to prevent stacking bolts from turning.
- Proceed with next level as explained before.

STAUFF multi-level clamp assemblies can be mounted both to weld plates or to mounting rails.

## Recommended Distance between Clamps



Please note: The recommended distances between clamps stated below are standard values and valid for static loads only.

Outside Diameter (mm)	(in)	Distance A (m)	(ft)
6,0 ... 12,7	.23 ... .50	1,00	3,28
12,7 ... 22,0	.50 ... .86	1,20	3,94
22,0 ... 32,0	.86 ... 1.25	1,50	4,92
32,0 ... 38,0	1.25 ... 1.50	2,00	6,56
38,0 ... 57,0	1.5 ... 2.25	2,70	8,86
57,0 ... 75,0	2.25 ... 2.95	3,00	9,84
75,0 ... 76,1	2.95 ... 3.00	3,50	11,48
76,1 ... 88,9	3.00 ... 3.50	3,70	12,14
88,9 ... 102,0	3.50 ... 4.00	4,00	13,12
102,0 ... 114,0	4.00 ... 4.50	4,50	14,76

## Installation next to Pipe Bends, Connectors / Couplings and Valves



Please note the following information on the installation of STAUFF Clamps next to pipe bends, connectors / couplings and valves:

### Pipe Bends

Pipe bends should be supported by STAUFF Clamps as close to the bends as possible. Furthermore, it is recommended to design these clamps as fixed point clamps.

### Connections / Couplings

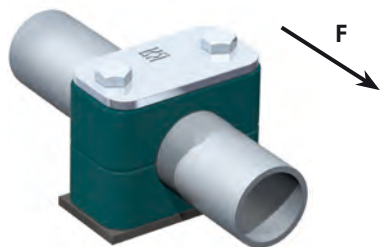
The first clamp should be placed directly next to the connector / coupling. This protects the connector / coupling from vibrations.

### Valves

If valves are incorporated in the pipelines, it is recommended that support is provided in front of and behind these valves.

Consult STAUFF for further information.

## Tightening Torques and Maximum Loads In Pipe Direction



All tightening torques and maximum loads in pipe direction refer to STAUFF Clamp Bodies (profiled inside surface with tension clearance) with Cover Plates and Hexagon Head Bolts according to DIN EN ISO 4014/4017 (DIN 931/933).

The max. load in pipe direction (according to DIN 3015, Part 10) is an average value, determined by three tests at +23 °C / +73.4 °F with a steel pipe according to DIN EN 10220, St37 – rolled surface – taking static friction into consideration.

### Standard Series (DIN 3015, Part 1)

Sliding starts when the shown values (F) are reached.

Group		Hexagon Head Bolt DIN EN ISO 4014/4017 (DIN 931/933)		Polypropylene				Polyamide				Aluminium			
STAUFF	DIN	Metric ISO Thread	Unified Coarse (UNC) Thread	Tightening Torque (N-m) (ft-lb)		Maximum Load in Pipe Direction F (kN) (lbf)		Tightening Torque (N-m) (ft-lb)		Maximum Load in Pipe Direction F (kN) (lbf)		Tightening Torque (N-m) (ft-lb)		Maximum Load in Pipe Direction F (kN) (lbf)	
1	0	M6	1/4-20 UNC	8	6	0,6	135	10	7	0,6	135	12	9	3,5	787
1A	1	M6	1/4-20 UNC	8	6	1,1	247	10	7	0,7	157	12	9	4,2	944
2	2	M6	1/4-20 UNC	8	6	1,3	292	10	7	0,8	180	12	9	4,3	967
3	3	M6	1/4-20 UNC	8	6	1,4	315	10	7	1,6	360	12	9	4,9	1101
4	4	M6	1/4-20 UNC	8	6	1,5	337	10	7	1,7	382	12	9	5,0	1124
5	5	M6	1/4-20 UNC	8	6	1,9	427	10	7	2,0	450	12	9	7,3	1641
6	6	M6	1/4-20 UNC	8	6	2,0	450	10	7	2,5	562	12	9	8,9	2000
7	7	M6	1/4-20 UNC	8	6	2,3	517	10	7	3,2	719	NOT AVAILABLE!			
8	8	M6	1/4-20 UNC	8	6	2,6	585	10	7	3,5	787				

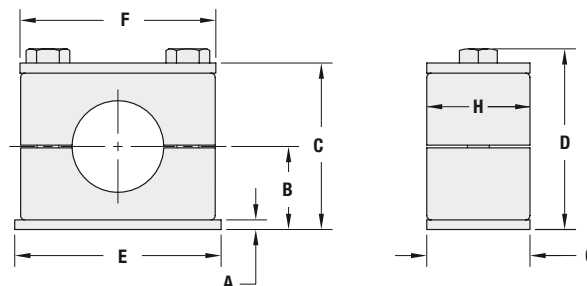
### Heavy Series (DIN 3015, Part 2)

Group		Hexagon Head Bolt DIN EN ISO 4014/4017 (DIN 931/933)		Polypropylene				Polyamide				Aluminium			
STAUFF	DIN	Metric ISO Thread	Unified Coarse (UNC) Thread	Tightening Torque (N-m) (ft-lb)		Maximum Load in Pipe Direction F (kN) (lbf)		Tightening Torque (N-m) (ft-lb)		Maximum Load in Pipe Direction F (kN) (lbf)		Tightening Torque (N-m) (ft-lb)		Maximum Load in Pipe Direction F (kN) (lbf)	
3S	1	M10	3/8-16 UNC	12	9	1,6	360	20	15	4,2	944	30	22	12,1	2720
4S	2	M10	3/8-16 UNC	12	9	2,9	652	20	15	4,5	1044	30	22	15,1	3395
5S	3	M10	3/8-16 UNC	15	11	3,3	742	25	18	5,1	1146	35	26	15,5	3485
6S	4	M12	7/16-14 UNC	30	22	8,2	1843	40	30	9,3	2090	55	41	29,5	6609
7S	5	M16	5/8-11 UNC	45	33	11,0	2472	55	41	15,8	3551	120	86	34,9	7845
8S	6	M20	3/4-10 UNC	80	59	14,0	3147	150	111	21,0	4720	220	162	50,0	11240
9S	7	M24	7/8-9 UNC	110	81	28,0	6300	200	148	32,0	7193	250	184	70,6	15871
10S	8	M30	1-1/8-7 UNC	180	133	40,0	8992	350	258	48,0	10790	500	369	84,5	18996
11S	9	M30	1-1/4-7 UNC	200	148	119,0	26752	370	273	125,0	27650	500	369	181,5	40802
12S	10	M30	1-1/4-7 UNC	270	199	168,0	37767	450	332	180,0	40465	600	443	244,5	54965

### Twin Series (DIN 3015, Part 3)

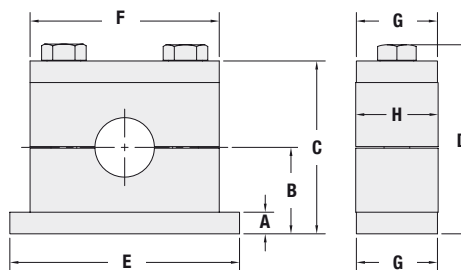
Group		Hexagon Head Bolt DIN EN ISO 4014/4017 (DIN 931/933)		Polypropylene				Polyamide			
STAUFF	DIN	Metric ISO Thread	Unified Coarse (UNC) Thread	Tightening Torque (N-m) (ft-lb)		Maximum Load in Pipe Direction F (kN) (lbf)		Tightening Torque (N-m) (ft-lb)		Maximum Load in Pipe Direction F (kN) (lbf)	
1D	1	M6	1/4-20 UNC	5	4	0,9	202	5	4	0,9	202
2D	2	M8	5/16-18 UNC	12	9	2,1	472	12	9	2,2	495
3D	3	M8	5/16-18 UNC	12	9	1,9	427	12	9	2,0	450
4D	4	M8	5/16-18 UNC	12	9	2,7	607	12	9	2,9	652
5D	5	M8	5/16-18 UNC	8	6	1,7	382	8	6	2,5	562

### Dimensions and Weights of Clamp Assemblies



#### Standard Series (DIN 3015, Part 1)

Group	STAUFF	DIN	Dimensions (mm/in)								Weight per 100 Pcs.				
			A	B		C		D		E	F	G	H	SP ** PP-DP-AS ***	(kg/lbs)
				Profilled Design	Type H (Smooth)	Profilled Design	Type H (Smooth)	Profilled Design	Type H (Smooth)						
1	0	3	16,5	16	33	32	37	36	31,5	28	30	30	6,20		
		.12	.65	.63	1.30	1.26	1.46	1.42	1.24	1.10	1.18	1.18	13,64		
1A	1	3	16,5	16	33	32	37	36	34	30	30	8,10			
		.12	.65	.63	1.30	1.26	1.46	1.42	1.41	1.33	1.18	1.18	17,82		
2	2	3	19,5	19	39	38	43	42	42	40,5	30	30	9,40		
		.12	.77	0.75	1.54	1.50	1.69	1.65	1.65	1.59	1.18	1.18	20,68		
3	3	3	21	20,75	42	41,5	46	45,5	50	48	30	30	11,20		
		.12	.83	.82	1.65	1.64	1.81	1.80	1.96	1.88	1.18	1.18	24,64		
4	4	3	24	23,75	48	47,5	52	51,5	60	57	30	30	13,70		
		.12	.94	.94	1.89	1.87	2.05	2.03	2.36	2.24	1.18	1.18	30,14		
5	5	3	32	31,25	64	62,5	68	66,5	71	70	30	30	17,10		
		.12	1.26	1.23	2.52	2.46	2.68	2.62	2.79	2.75	1.18	1.18	37,62		
6	6	3	36	35,25	72	70,5	76	74,5	88	86	30	30	21,30		
		.12	1.42	1.39	2.83	2.78	2.99	2.94	3.46	3.38	1.18	1.18	46,86		
7	7	5	51,5	51	103	102	107	106	122	118	30	30	42,10		
		.20	2.03	2.01	4.06	4.02	4.21	4.17	4.81	4.65	1.18	1.18	92,62		
8	8	5	64	63	128	126	132	130	148	144	30	30	44,00		
		.20	2.52	2.48	5.04	4.96	5.20	5.12	5.83	5.67	1.18	1.18	96,80		

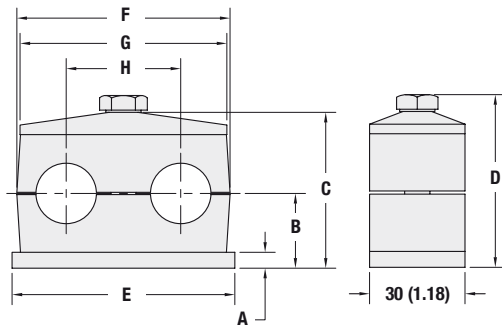


#### Heavy Series (DIN 3015, Part 2)

Group	STAUFF	DIN	Dimensions (mm/in)								Weight per 1 Pc.				
			A	B		C		D		F	AL	G	H	SPAL ** PP-DPAL-AS ***	(kg/lbs)
				Profilled Design	Type H (Smooth)	Profilled Design	Type H (Smooth)	Profilled Design	Type H (Smooth)						
3S	1	8	24	23,25	48	46,5	54,4	52,9	74	55	56	30	30,5	0,32	
		.31	.94	.92	1.89	1.83	2.14	2.09	2.91	2.16	2.20	1.18	1.20	.70	
4S	2	8	32	31,25	64	62,5	70,4	68,9	86	70	70	30	30,5	0,40	
		.31	1.26	1.23	2.52	2.46	2.77	2.72	3.39	2.76	2.76	1.18	1.20	.88	
5S	3	8	38	37	76	74	82,4	80,4	100	85	85	30	30,5	0,49	
		.31	1.50	1.46	2.99	2.91	3.24	3.17	3.94	3.35	3.35	1.18	1.20	1,08	
6S	4	10	54,5	53,5	109	107	116,5	114,5	140	115	120	45	45	1,21	
		.39	2.15	2.11	4.29	4.21	4.59	4.51	5.51	4.53	4.72	1.77	1.77	2,66	
7S	5	10	70		140		150		180	154	152	60	60	2,30	
		.39	2.76		5.51		5.91		7.09	6.06	5.98	2.36	2.36	5,06	
8S	6	15	99		198		210,5		226	206	208	80	80	5,56	
		.59	3.90		7.80		8.29		8.90	8.11	8.19	3.15	3.15	12,26	
9S	7	15	115		230		245		270	251	255	90	91	7,97	
		.59	4.53		9.06		9.65		10.63	9.88	10.04	3.54	3.58	17,58	
10S	8	25	160		320		338,7		340	336	326	120	120	22,16	
		.98	6.30		12.60		13.33		13.39	13.22	12.83	4.72	4.72	48,75	
11S	9	30	235		470		488,7		520	470	470	160	162	54,11	
		1.18	9.25		18.50		19.24		20.47	18.50	18.50	6.30	6.38	119,04	
12S	10	30	295		590		608,7		680	630	630	180	182	77,40	
		1.18	11.61		23.23		23.96		26.77	24.80	24.80	7.09	7.16	170,28	



## Dimensions &amp; Weights of Clamp Assemblies



## Twin Series (DIN 3015, Part 3)

Group	STAUFF	DIN	Dimensions (mm/in)								E	F	G	H	Weight per 100 Pcs. SP**/**PP-GD-AS** (kg/lbs)
			A	B		C		D							
				Profiled Design	Type H (Smooth)	Profiled Design	Type H (Smooth)	Profiled Design	Type H (Smooth)						
1D	1		3	16,5	16,25	37	36,5	41	40,5	37	36	34	20	7,60	
			.12	.65	.64	1.46	1.44	1.61	1.59	1.46	1.42	1.34	.79	16.72	
2D	2		5	18,5	18,25	39	38,5	44	43,5	55	53	52	29	13,50	
			.20	.73	.72	1.54	1.52	1.73	1.71	2.17	2.09	2.05	1.14	29.70	
3D	3		5	23,5	23,25	49	48,5	54	53,5	70	67	65	36	17,70	
			.20	.93	.92	1.93	1.91	2.13	2.11	2.76	2.64	2.56	1.42	38.94	
4D	4		5	25	24	52	50	57	55	85	80	79	45	20,40	
			.20	.98	.94	2.05	1.97	2.24	2.17	3.35	3.15	3.11	1.77	44.88	
5D	5		5	31,5	31	65	64	70	69	110	106	102	56	27,70	
			.20	1.24	1.22	2.56	2.52	2.76	2.72	4.33	4.17	4.02	2.20	60.94	

## Packaging Units (Selection)

## Standard Series (DIN 3015, Part 1)

## Clamp Bodies (Polypropylene / Polyamide)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
1 - 6	0 - 6		25
7 + 8	7 + 8		10

## Clamp Bodies (Aluminium)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
1 - 5	0 - 5		25
6	6		10

 Weld Plates (Type SP)  
Cover Plates (Type DP)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
1 - 6	0 - 6		25
7 + 8	7 + 8		10

 Hexagon Rail Nut (Type SM)  
Channel Rail Adaptor (Type CRA)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
1 - 8	0 - 8		50

## Heavy Series (DIN 3015, Part 2)

## Clamp Bodies (Polypropylene / Polyamide)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
3S - 6S	1 - 4		20
7S	5		10
8S - 12S	6 - 10		1

## Clamp Bodies (Aluminium)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
3S - 7S	1 - 5		10
8S - 12S	6 - 10		1

 Weld Plates (Type SPAL)  
Cover Plates (Type DPAL)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
3S - 6S	1 - 4		20
7S	5		10
8S - 12S	6 - 10		1

 Mounting Rail Nut (Type GMV)  
Channel Rail Adaptor (Type CRA)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
3S - 6S	1 - 4		40

## Twin Series (DIN 3015, Part 3)

## Clamp Bodies (Polypropylene / Polyamide)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
1D - 4D	1 - 4		25
5D	5		10

 Weld Plates (Type SP)  
Cover Plates (Type GD)

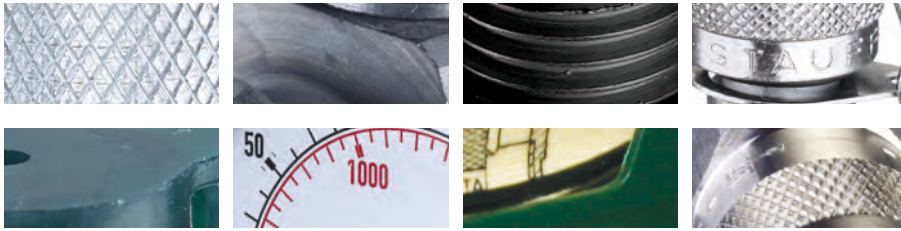
Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
1D - 4D	1 - 4		25
5D	5		10

 Hexagon Rail Nut (Type SM)  
Channel Rail Adaptor (Type CRA)

Group	STAUFF	DIN	Quantity per Bag (in Pcs.)
1D	1		50
2D - 5D	2 - 5		25

Consult STAUFF and ask for standard packaging units for further components or special packaging options.





STAUFF TEST has established a reputation for a comprehensive range of test points and accessories for hydraulic and pneumatic systems for many years now.

STAUFF TEST stands for a varied spectrum of screw-in test points and test couplings for tube fittings, which are oriented to international standards and therefore guaranteed to comply with the requirements of applications all over the world.

The extensive range of accessories, including measuring hoses and pressure gauges (mechanical and digital/electronic) means that the initial test points fitted onto machines and service kits with measuring instruments can be obtained from a single source.

All products are subject to our in-house quality management in accordance with EN ISO 9001:2008. This ensures a consistently high standard of quality.

Our company has also been certified in the fields of environmental protection acc. to DIN EN ISO 14001:2004 and occupational safety acc. to OHSAS 18001:2007.

Our well-stocked warehouse and flexible production line ensure prompt reactions and short delivery times. Furthermore, special versions that have been tailored to customer-specific requirements are available to order.

The following approvals are also available for special versions of the SKK test points:

- approved for military use as gas filling valve for nitrogen accumulators by the German Bundeswehr "Wehrtechnische Dienststelle für Pionier- und Truppengerät".
- DVGW registration as a test point for gas pressure control systems, issued by the German Association of Gas and Water Industries (DVGW).

Please contact STAUFF for further details.

[www.stauff.com](http://www.stauff.com)

## B STAUFF Test

Index	B2
Test 20 - Connection Thread M16 x 2	B4
Test 15 - Connection Thread M16 x 1,5	B16
Test 12 - Connection Thread S12,65 x 1,5	B22
Test 10 - Plug in system	B28
Adaptors	B32
Pressure Gauge Accessories	B34
Test Hoses / Hose Ends	B36
Technical Appendix	B46

**Test 20 - Connection Thread M16 x 2 - SMK20**

	<b>Introduction -</b> Test Coupling with Ball Check		<b>B4</b>
	<b>Test Coupling</b> with Port Connection	SMK20	<b>B5</b>
	<b>Test Coupling</b> complete with Straight Fitting	SMK20 Type G	<b>B6</b>
	<b>Test Coupling</b> for 24° Cone Fittings	SMK20 Type K	<b>B7</b>
	<b>Test Coupling</b> SMK-JIC Connection	SMK20-JIC Type K	<b>B8</b>
	<b>Test Coupling</b> SMK-JIC Connection	SMK20-JIC Type G	<b>B8</b>
	<b>Swivel Run Tee</b> with JIC Connection	SGV-JIC Type F/M	<b>B9</b>
	<b>Test Coupling</b> with ORFS Connection	SMK20 Type ORFS	<b>B9</b>
	<b>Bulkhead</b>	SSK20	<b>B10</b>
	<b>Adaptor</b>	SAD20	<b>B11</b>
	<b>Gauge Adaptor</b> Direct Gauge Adaptor	SMA20 SMD20	<b>B11</b>

**Test 20 - Connection Thread M16 x 2 - SKK20**

	<b>Introduction -</b> Test Coupling with Piston Valve		<b>B12</b>
	<b>Test Coupling</b> with Port Connection	SKK20	<b>B13</b>
	<b>Test Coupling</b> complete with Straight Fitting	SKK20 Type G	<b>B14</b>
	<b>Test Coupling</b> for 24° Cone Fittings	SKK20 Type K	<b>B15</b>











**Test 15 - Connection Thread M16 x 1,5 - SMK15**

	<b>Introduction -</b> Test Coupling with Ball Check		<b>B16</b>
	<b>Test Coupling</b> with Port Connection	SMK15	<b>B17</b>
	<b>Test Coupling</b> complete with Straight Fitting	SMK15 Type G	<b>B18</b>
	<b>Test Coupling</b> for 24° Cone Fittings	SMK15 Type K	<b>B19</b>
	<b>Bulkhead</b>	SSK15	<b>B20</b>
	<b>Swivel Run Tee</b> with JIC Connection	SGV-JIC Type F/M	<b>B20</b>
	<b>Adaptor</b>	SAD15	<b>B21</b>
	<b>Gauge Adaptor</b> Direct Gauge Adaptor	SMA15 SMD15	<b>B21</b>





**Test 12 - Connection Thread S12,65 x 1,5 - SKK12**

	<b>Introduction -</b> Test Coupling with Piston Valve		<b>B22</b>
	<b>Test Coupling</b> with Port Connection	SKK12	<b>B23</b>
	<b>Test Coupling</b> complete with Straight Fitting	SKK12 Type G	<b>B24</b>
	<b>Test Coupling</b> for 24° Cone Fittings	SKK12 Type K	<b>B25</b>
	<b>Bulkhead</b>	SSK12	<b>B26</b>
	<b>Swivel Run Tee</b> with JIC Connection	SGV-JIC Type F/M	<b>B26</b>
	<b>Adaptor</b>	SAD12	<b>B27</b>
	<b>Gauge Adaptor</b> Direct Gauge Adaptor	SMA12 SMD12	<b>B27</b>




**Test 10 - Plug In System - SMK10**
**Test Hoses**

	<b>Introduction - Test Coupling with Ball Check</b>		<b>B28</b>		<b>Technical Data for Test Hose</b>	SMS / SGS	<b>B36</b>
	<b>Test Coupling with Port Connection</b>	SMK10	<b>B29</b>		<b>Order Codes Test Hose / Hose End</b>	SMS / SGS and HE	<b>B37</b>
	<b>Gauge Adaptor</b>	SMA10	<b>B29</b>		<b>Hose End</b>	HE	<b>B38</b>
	<b>Test Coupling complete with Straight Fitting</b>	SMK10 Type G	<b>B30</b>		<b>Hose Connector</b>	SSV	<b>B44</b>
	<b>Test Coupling for 24° Cone Fittings</b>	SMK10 Type K	<b>B31</b>		<b>Sampling Hose Adaptor</b>	SHA	<b>B44</b>

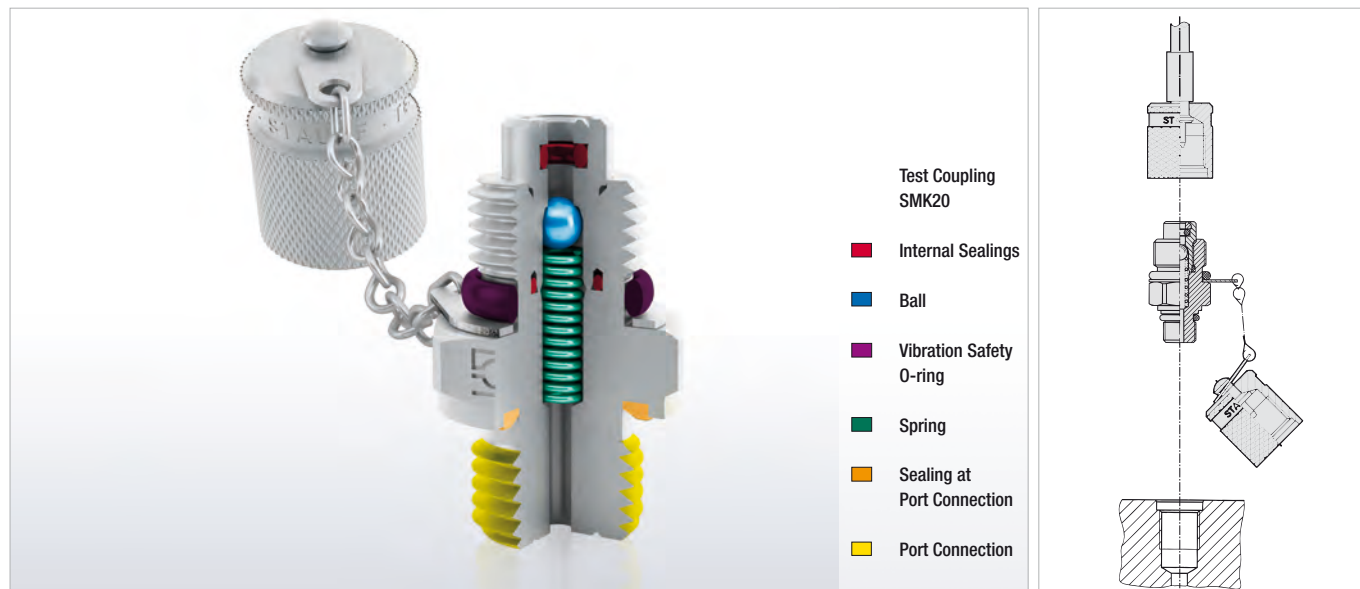
**Adaptors**
**Technical Appendix**

	<b>Thread Adaptor</b>	SRS20	<b>B32</b>		<b>Port Connections and Sealing Details</b>		<b>B46</b>
	<b>Thread Adaptor</b>	SRS15	<b>B33</b>				
	<b>Welding Adaptor</b>	SAS	<b>B33</b>				

**Pressure Gauge Accessories**

	<b>Pressure Gauge</b>	SPG	<b>B34</b>				
	<b>Adjustable Gauge Fitting</b>	EMV	<b>B34</b>				
	<b>Pressure Test Kit</b>	SMB	<b>B35</b>				

## Test Coupling with Ball Check



### Fast Coupling for

- Monitoring and control of pressure
- Venting
- Sampling in high- and low-pressure systems

### Advantages

- Test system at working pressure
- Leak proof connection before **ball check** is open
- Simple connection to measurement, control and switching devices
- Self locking metal protective cap

### Working Pressure

- Max. working pressure 630 bar / 9137 PSI  
For SMK Type G and K the recommended working pressure of fitting manufacturer should be noted.
- Connection under pressure up to 400 bar / 5801 PSI max.

### Materials

- **Metal Parts:**  
Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
Optional:  
Stainless Steel **V2A** (1.4305 / AISI 303) on request  
Stainless Steel **V4A** (1.4571 / AISI 316Ti) on request

For ordering "V2A" or "V4A" please replace "C6F" with "V2A" or "V4A".

- **Ball:** Stainless Steel

### Sealings:

**P = NBR (Buna-N®)**

(Temperature range -20 °C ... +100 °C / -4 °F ... +212 °F)

Note: Internal sealings made of FPM, even for standard NBR-type.

**V = FPM (Viton®)\***

(Temperature range -20 °C ... +200 °C / -4 °F ... +392 °F)

**\* Standard option for North America is FPM (Viton®)**

**E = EPDM Ethylene Propylene Diene Monomer Rubber**

(for Brake fluid,

Temperature range -40 °C ... +150 °C / -40 °F ... +302 °F)

For ordering FPM or EPDM sealings please replace "P" with "V" or "E".

Vibration safety O-ring made of NBR (Buna-N®) (standard).

### Media

- Suitable for hydraulic oils and other Mineral oil based fluids  
(Check compatibility of sealing material)
- For use with other liquid media please consult STAUFF

### Protection Cap

- The complete STAUFF-Test-20-type-SMK range is also available with a hexagonal protection cap made of steel or plastic protection cap.

For ordering the hexagonal protection cap version please add "-SK" to the order code.

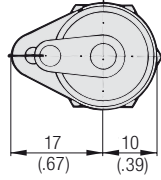
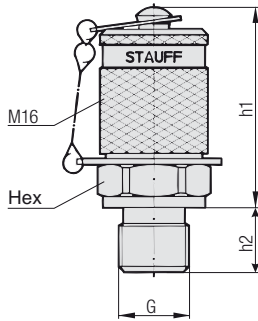
(e.g. SMK20-M10x1-PA-SK-C6F)

For ordering the plastic protection cap version please add "-KK" to the order code.

(e.g. SMK20-M10x1-PA-KK-C6F)

<b>SMK20</b> Test Coupling with Port Connection	<b>SMK20 Type G</b> Test Coupling complete with Straight Fitting	<b>SMK20 Type K</b> Test Coupling for 24° Cone Fittings	<b>SMK20-JIC</b> Test Coupling SMK-JIC Connection (to SAE J514)	<b>SSK20</b> Bulkhead
				





## Test Coupling with Port Connection SMK20



Thread G	Sealing	Working Pressure (bar/psi)	Dimensions (mm/in)			Order Codes	
			h1	h2	Hex	NBR	FPM* (Standard Option-North America)
M8 x 1	Type A	250	38	8,5	17	SMK20-M8x1-PA-C6F	SMK20-M8x1-VA-C6F
		3625	1.50	.33	.67		
M10 x 1	Type A	630	38	9,8	17	SMK20-M10x1-PA-C6F	SMK20-M10x1-VA-C6F
		9137	1.50	.39	.67		
M10 x 1	Type B	400	37	8	17	SMK20-M10x1-PB-C6F	SMK20-M10x1-VB-C6F
5801		1.46	.31	.67			
M12 x 1,5	Type B	630	37	12	17	SMK20-M12x1,5-PB-C6F	SMK20-M12x1,5-VB-C6F
		9137	1.46	.47	.67		
M14 x 1,5	Type B	630	37	12	19	SMK20-M14x1,5-PB-C6F	SMK20-M14x1,5-VB-C6F
		9137	1.46	.47	.75		
M16 x 1,5	Type B	630	37	12	22	SMK20-M16x1,5-PB-C6F	SMK20-M16x1,5-VB-C6F
		9137	1.46	.47	.87		
G1/8	Type B	400	39	8	17	SMK20-G1/8-PB-C6F	SMK20-G1/8-VB-C6F
		5801	1.54	.31	.67		
G1/4	Type B	630	37	12	19	SMK20-G1/4-PB-C6F	SMK20-G1/4-VB-C6F
		9137	1.46	.47	.75		
G3/8	Type B	630	37	12	22	SMK20-G3/8-PB-C6F	SMK20-G3/8-VB-C6F
		9137	1.46	.47	.87		
M10 x 1	Type C	400	39	8	17	SMK20-M10x1-PC-C6F	SMK20-M10x1-VC-C6F
		5801	1.54	.31	.67		
M12 x 1,5	Type C	630	37	12	17	SMK20-M12x1,5-PC-C6F	SMK20-M12x1,5-VC-C6F
		9137	1.46	.47	.67		
M14 x 1,5	Type C	630	37	12	19	SMK20-M14x1,5-PC-C6F	SMK20-M14x1,5-VC-C6F
		9137	1.46	.47	.75		
M16 x 1,5	Type C	630	37	12	22	SMK20-M16x1,5-PC-C6F	SMK20-M16x1,5-VC-C6F
		9137	1.46	.47	.87		
G1/8	Type C	400	39	8	17	SMK20-G1/8-PC-C6F	SMK20-G1/8-VC-C6F
		5801	1.54	.31	.67		
G1/4	Type C	630	37	12	19	SMK20-G1/4-PC-C6F	SMK20-G1/4-VC-C6F
		9137	1.46	.47	.75		
G3/8	Type C	630	37	12	22	SMK20-G3/8-PC-C6F	SMK20-G3/8-VC-C6F
		9137	1.46	.47	.87		
G1/2	Type C	630	39	14	27	SMK20-G1/2-PC-C6F	SMK20-G1/2-VC-C6F
		9137	1.54	.55	1.06		
R1/8 K	Type D	400	37	8	17	SMK20-R1/8K-PD-C6F	SMK20-R1/8K-VD-C6F
		5801	1.46	.31	.67		
R1/4 K	Type D	630	35	12	17	SMK20-R1/4K-PD-C6F	SMK20-R1/4K-VD-C6F
		9137	1.38	.47	.67		
1/8 NPT	Type D	400	36	10	17	SMK20-1/8NPT-PD-C6F	SMK20-1/8NPT-VD-C6F
		5801	1.42	.39	.67		
1/4 NPT	Type D	630	35	15	17	SMK20-1/4NPT-PD-C6F	SMK20-1/4NPT-VD-C6F
		9137	1.38	.59	.67		
5/16-24 UNF	Type E	400	38	7,5	17	SMK20-5/16UNF-PE-C6F	SMK20-5/16UNF-VE-C6F
		5.801	1.50	.30	.67		
7/16-20 UNF	Type E	630	38	9,1	17	SMK20-7/16UNF-PE-C6F	SMK20-7/16UNF-VE-C6F
		9137	1.50	.36	.67		
1/2-20 UNF	Type E	630	38	9,2	17	SMK20-1/2UNF-PE-C6F	SMK20-1/2UNF-VE-C6F
		9137	1.50	.36	.67		
9/16-18 UNF	Type E	630	37	10	19	SMK20-9/16UNF-PE-C6F	SMK20-9/16UNF-VE-C6F
		9137	1.46	.39	.75		
3/4-16 UNF	Type E	630	37	11,1	19	SMK20-3/4UNF-PE-C6F	SMK20-3/4UNF-VE-C6F
		9137	1.46	.44	.75		
M10 x 1	Type E	630	38	9,5	17	SMK20-M10x1-PE-C6F	SMK20-M10x1-VE-C6F
		9137	1.50	.37	.67		
M12 x 1,5	Type E	630	37	11	17	SMK20-M12x1,5-PE-C6F	SMK20-M12x1,5-VE-C6F
		9137	1.46	.43	.67		
M14 x 1,5	Type E	630	38	11	19	SMK20-M14x1,5-PE-C6F	SMK20-M14x1,5-VE-C6F
		9137	1.50	.43	.75		

### Metal Parts

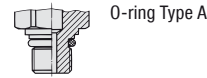
Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

### Sealing Details



O-ring Type A



Metal Joint Type B



Elastomeric Sealing Type C



Taper Type D  
(suitable sealant required)



O-ring Type E

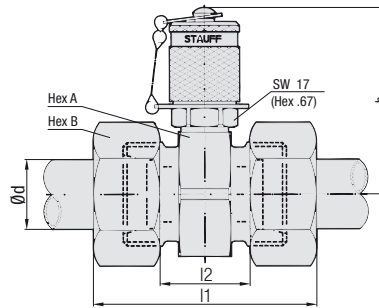
### Protection Cap

Standard material: Steel  
 For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SMK20-M10x1-PA-SK-C6F)  
 For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SMK20-M10x1-PA-KK-C6F)

For further information on materials, sealings or protection caps, please see page B4.

Other port connections and sealings on request.  
 Please consult STAUFF for further information.

**Test Coupling complete with Straight Fitting  
SMK20 Type G**



▪ Compression ring fittings acc. to ISO 8434-1 / DIN 2353

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

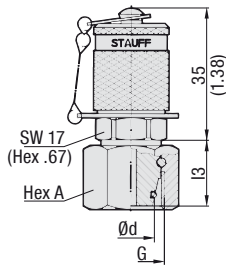
\* **Standard option for North America is FPM (Viton®).**

**Protection Cap**

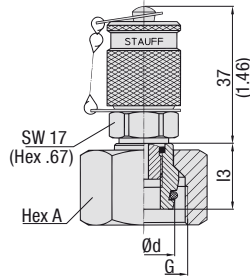
Standard material: Steel  
 For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SMK20-08L-PG-SK-C6F)  
 For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SMK20-08L-PG-KK-C6F)

For further information on materials, sealings or protection caps, please see page B4.

Series	PN ( <sup>mm</sup> / <sub>rs</sub> )	Pipe Ø d	Dimensions ( <sup>mm</sup> / <sub>m</sub> )					Order Codes	
			~l1	l2	h	Hex A	Hex B	NBR	FPM* (Standard Option-North America)
L	315 4568	6	51	21	49	24	14	SMK20-06L-PG-C6F	SMK20-06L-VG-C6F
			2.01	.83	1.93	.94	.55		
		8	51	21	49	24	17	SMK20-08L-PG-C6F	SMK20-08L-VG-C6F
			2.01	.83	1.93	.94	.67		
		10	53	23	49	24	19	SMK20-10L-PG-C6F	SMK20-10L-VG-C6F
			2.09	.91	1.93	.94	.75		
		12	53	23	50,5	27	22	SMK20-12L-PG-C6F	SMK20-12L-VG-C6F
	2.09		.91	1.99	1.06	.87			
	15	55	25	52	30	27	SMK20-15L-PG-C6F	SMK20-15L-VG-C6F	
		2.17	.98	2.05	1.18	1.06			
	18	57	24	53	32	32	SMK20-18L-PG-C6F	SMK20-18L-VG-C6F	
		2.24	.94	2.09	1.26	1.26			
	160 2320	22	61	28	55	36	36	SMK20-22L-PG-C6F	SMK20-22L-VG-C6F
			2.40	1.10	2.17	1.42	1.42		
28		61	28	57,5	41	41	SMK20-28L-PG-C6F	SMK20-28L-VG-C6F	
		2.40	1.10	2.26	1.61	1.61			
35		69	26	60	46	50	SMK20-35L-PG-C6F	SMK20-35L-VG-C6F	
	2.72	1.02	2.36	1.81	1.97				
42	71	25	64,5	55	60	SMK20-42L-PG-C6F	SMK20-42L-VG-C6F		
	2.80	.98	2.54	2.17	2.36				
S	630 9137	6	55	25	49	24	17	SMK20-06S-PG-C6F	SMK20-06S-VG-C6F
			2.17	.98	1.93	.94	.67		
		8	55	25	49	24	19	SMK20-08S-PG-C6F	SMK20-08S-VG-C6F
			2.17	.98	1.93	.94	.75		
		10	57	24	49	24	22	SMK20-10S-PG-C6F	SMK20-10S-VG-C6F
			2.24	.94	1.93	.94	.87		
		12	57	24	49	24	24	SMK20-12S-PG-C6F	SMK20-12S-VG-C6F
	2.24		.94	1.93	.94	.94			
	14	63	27	50,5	27	27	SMK20-14S-PG-C6F	SMK20-14S-VG-C6F	
		2.50	1.06	1.99	1.06	1.06			
	400 5801	16	63	26	52	30	30	SMK20-16S-PG-C6F	SMK20-16S-VG-C6F
			2.50	1.02	2.05	1.18	1.18		
		20	69	26	55	36	36	SMK20-20S-PG-C6F	SMK20-20S-VG-C6F
			2.72	1.02	2.17	1.42	1.42		
25		75	27	57,5	41	46	SMK20-25S-PG-C6F	SMK20-25S-VG-C6F	
	2.95	1.06	2.26	1.61	1.81				
30	81	28	60	46	50	SMK20-30S-PG-C6F	SMK20-30S-VG-C6F		
	3.19	1.10	2.36	1.81	1.97				
315 4568	38	91	29	64,5	55	60	SMK20-38S-PG-C6F	SMK20-38S-VG-C6F	
3.58		1.14	2.54	2.17	2.36				



Version A



Version B

## Test Coupling for 24° Cone Fittings SMK20 Type K



Series	PN (bar / psi)	Pipe Ø d	Dimensions (mm / in)		Thread G	Version	Order Codes		
			I3	Hex A			NBR	FPM* (Standard Option-North America)	
L	315 4568	6	15,5 .61	14 .55	M12 x 1,5	A	SMK20-06L-PK-C6F	SMK20-06L-VK-C6F	
		8	15,5 .61	17 .67	M14 x 1,5	A	SMK20-08L-PK-C6F	SMK20-08L-VK-C6F	
		10	16,5 .65	19 .75	M16 x 1,5	A	SMK20-10L-PK-C6F	SMK20-10L-VK-C6F	
		12	17,5 .69	22 .87	M18 x 1,5	A	SMK20-12L-PK-C6F	SMK20-12L-VK-C6F	
		15	21 .83	27 1.06	M22 x 1,5	B	SMK20-15L-PK-GS-C6F	SMK20-15L-VK-GS-C6F	
		18	19,5 .77	32 1.26	M26 x 1,5	B	SMK20-18L-PK-GS-C6F	SMK20-18L-VK-GS-C6F	
	160 2320	22	20,5 .81	36 1.42	M30 x 2	B	SMK20-22L-PK-GS-C6F	SMK20-22L-VK-GS-C6F	
		28	25 .98	41 1.61	M36 x 2	B	SMK20-28L-PK-GS-C6F	SMK20-28L-VK-GS-C6F	
		35	30 1.18	50 1.97	M45 x 2	B	SMK20-35L-PK-GS-C6F	SMK20-35L-VK-GS-C6F	
		42	31 1.22	60 2.36	M52 x 2	B	SMK20-42L-PK-GS-C6F	SMK20-42L-VK-GS-C6F	
	S	630 9137	6	14,5 .57	17 .67	M14 x 1,5	A	SMK20-06S-PK-C6F	SMK20-06S-VK-C6F
			8	16,5 .65	19 .75	M16 x 1,5	A	SMK20-08S-PK-C6F	SMK20-08S-VK-C6F
10			16,5 .65	22 .87	M18 x 1,5	A	SMK20-10S-PK-C6F	SMK20-10S-VK-C6F	
12			17,5 .69	24 .94	M20 x 1,5	A	SMK20-12S-PK-C6F	SMK20-12S-VK-C6F	
14			19,5 .77	27 1.06	M22 x 1,5	B	SMK20-14S-PK-GS-C6F	SMK20-14S-VK-GS-C6F	
400 5801		16	18 .71	30 1.18	M24 x 1,5	B	SMK20-16S-PK-GS-C6F	SMK20-16S-VK-GS-C6F	
		20	24 .94	36 1.42	M30 x 2	B	SMK20-20S-PK-GS-C6F	SMK20-20S-VK-GS-C6F	
		25	26 1.02	46 1.81	M36 x 2	B	SMK20-25S-PK-GS-C6F	SMK20-25S-VK-GS-C6F	
		30	30 1.18	50 1.97	M42 x 2	B	SMK20-30S-PK-GS-C6F	SMK20-30S-VK-GS-C6F	
		315 4568	38	34 1.34	60 2.36	M52 x 2	B	SMK20-38S-PK-GS-C6F	SMK20-38S-VK-GS-C6F

- For DKO connection
- According to ISO 8434-1 / DIN 2353
- Version A: one-piece design
- Version B: screwed design

### Metal Parts

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

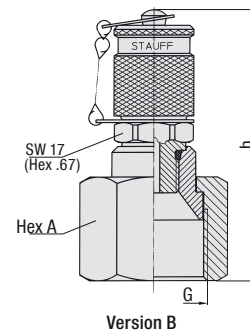
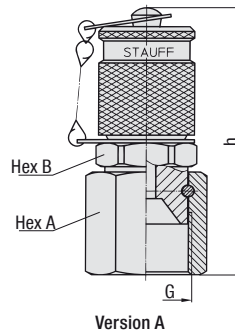
\* Standard option for North America is FPM (Viton®).

### Protection Cap

Standard material: Steel  
 For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SMK20-08L-PK-SK-C6F)  
 For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SMK20-08L-PK-KK-C6F)

For further information on materials, sealings or protection caps, please see page B4.

**Test Coupling SMK-JIC Connection (to SAE-J514)  
SMK20-JIC Type K**



- 37° JIC fittings acc. to SAE J514
- Version A: one-piece design
- Version B: screwed design

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

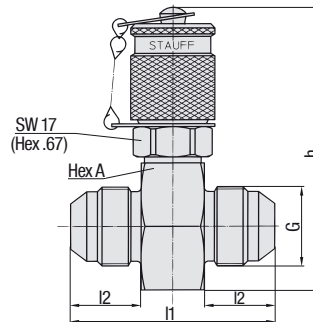
**Protection Cap**

Standard material: Steel  
 For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SMK20-JIC5/16-PK-SK-C6F)  
 For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SMK20-JIC5/16-PK-KK-C6F)

Pipe Ø d inch	JIC Size	Dimensions (mm/in)			Thread G	Version	Order Codes NBR	FPM* (Standard Option-North America)
		h	Hex A	Hex B				
1/4	-4	53	17	17	7/16-20 UNF	A	SMK20-JIC1/4-PK-C6F	SMK20-JIC1/4-VK-C6F
		2.09	.67	.67				
5/16	-5	53,5	17	17	1/2-20 UNF	A	SMK20-JIC5/16-PK-C6F	SMK20-JIC5/16-VK-C6F
		2.11	.67	.67				
3/8	-6	55,5	19	17	9/16-18 UNF	A	SMK20-JIC3/8-PK-C6F	SMK20-JIC3/8-VK-C6F
		2.19	.75	.67				
1/2	-8	56,5	22	19	3/4-16 UNF	A	SMK20-JIC1/2-PK-C6F	SMK20-JIC1/2-VK-C6F
		2.22	.87	.75				
5/8	-10	60	27	22	7/8-14 UNF	A	SMK20-JIC5/8-PK-C6F	SMK20-JIC5/8-VK-C6F
		2.36	1.06	.87				
3/4	-12	70,5	32	-	1-1/16-12 UN	B	SMK20-JIC3/4-PK-GS-C6F	SMK20-JIC3/4-VK-GS-C6F
		2.78	1.26	-				
1	-16	69	38	-	1-5/16-12 UN	B	SMK20-JIC1-PK-GS-C6F	SMK20-JIC1-VK-GS-C6F
		2.72	1.50	-				
1-1/4	-20	73,5	50	-	1-5/8-12 UN	B	SMK20-JIC1-1/4-PK-GS-C6F	SMK20-JIC1-1/4-VK-GS-C6F
		2.89	1.97	-				
1-1/2	-24	76	60	-	1-7/8-12 UN	B	SMK20-JIC1-1/2-PK-GS-C6F	SMK20-JIC1-1/2-VK-GS-C6F
		2.99	2.36	-				

For further information on materials, sealings or protection caps, please see page B4.

**Test Coupling SMK-JIC Connection (to SAE-J514)  
SMK20-JIC Type G**



- 37° JIC fittings acc. to SAE J514

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

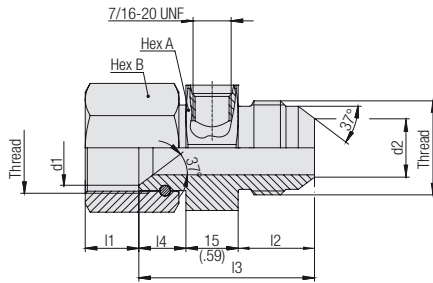
**Protection Cap**

Standard material: Steel  
 For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SMK20-JIC5/16-PG-SK-C6F)  
 For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SMK20-JIC5/16-PG-KK-C6F)

Pipe Ø d inch	JIC Size	Dimensions (mm/in)				Thread G	Order Codes NBR	FPM* (Standard Option-North America)
		I1	I2	h	Hex A			
1/4	-4	43	14	61	24	7/16-20 UNF	SMK20-JIC1/4-PG-C6F	SMK20-JIC1/4-VG-C6F
		1.69	.55	2.40	.94			
5/16	-5	43	14	61	24	1/2-20 UNF	SMK20-JIC5/16-PG-C6F	SMK20-JIC5/16-VG-C6F
		1.69	.55	2.40	.94			
3/8	-6	43	14	61	24	9/16-18 UNF	SMK20-JIC3/8-PG-C6F	SMK20-JIC3/8-VG-C6F
		1.69	.55	2.40	.94			
1/2	-8	48,5	16,5	67	30	3/4-16 UNF	SMK20-JIC1/2-PG-C6F	SMK20-JIC1/2-VG-C6F
		1.91	.65	2.64	1.18			
5/8	-10	53,5	19,5	67	30	7/8-14 UNF	SMK20-JIC5/8-PG-C6F	SMK20-JIC5/8-VG-C6F
		2.11	.77	2.64	1.18			
3/4	-12	59	22	73	36	1-1/16-12 UN	SMK20-JIC3/4-PG-C6F	SMK20-JIC3/4-VG-C6F
		2.32	.87	2.87	1.42			
1	-16	61	23	78	41	1-5/16-12 UN	SMK20-JIC1-PG-C6F	SMK20-JIC1-VG-C6F
		2.40	.91	3.07	1.61			
1-1/4	-20	65,5	24,5	83	46	1-5/8-12 UN	SMK20-JIC1-1/4-PG-C6F	SMK20-JIC1-1/4-VG-C6F
		2.58	.96	3.26	1.81			
1-1/2	-24	72	27,5	92	55	1-7/8-12 UN	SMK20-JIC1-1/2-PG-C6F	SMK20-JIC1-1/2-VG-C6F
		2.83	1.08	3.62	2.17			

For further information on materials, sealings or protection caps, please see page B4.

### Swivel Run Tee with JIC Connection SGV-JIC Type F/M



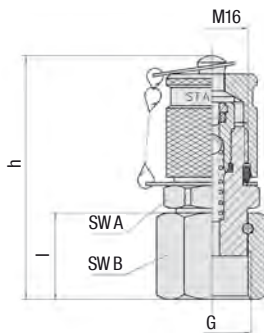
Thread inch	Dimensions (mm/in)								Order Codes
	Ø d1	Ø d2	l1	l2	l3	l4	Hex A	Hex B	
7/16-20 UNF	7,49	4,9	9	14	37	8	27	17	SGV-7/16UNF-04-JIC1/4-F/M-C6F
	.29	.19	.35	.55	1.46	.31	1.06	.67	
9/16-18 UNF	11,05	8,1	10,5	14	37,5	8,5	27	19	SGV-7/16UNF-06-JIC3/8-F/M-C6F
	.44	.32	.41	.55	1.48	.33	1.06	.75	
3/4-16 UNF	15,9	10,8	10,5	16,7	43,7	12	30	22	SGV-7/16UNF-08-JIC1/2-F/M-C6F
	.63	.43	.41	.66	1.72	.47	1.18	.87	
1-1/16-12 UN	21,6	16,9	15,4	21,9	50,4	13,5	36	32	SGV-7/16UNF-12-JIC3/4-F/M-C6F
	.85	.66	.61	.86	1.98	.53	1.42	1.26	
1-5/16-12 UN	27,9	23,2	17,3	23,1	53,1	15	41	41	SGV-7/16UNF-16-JIC1-F/M-C6F
	1.10	.91	.68	.91	2.09	.59	1.61	1.61	

#### Metal Parts

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

For further information please consult STAUFF.

### Test Coupling with ORFS Connection SMK20 Type ORFS



Thread G	Dimensions (mm/in)				Order Codes	
	h	l	Hex A	Hex B	NBR	FPM* (Standard Option-North America)
9/16-18 UNF	54	19	17	17	SMK20-04-ORFS-P-C6F	SMK20-04-ORFS-V-C6F
	2.1	.75	.67	.67		
11/16-16 UN	54	19	19	21	SMK20-06-ORFS-P-C6F	SMK20-06-ORFS-V-C6F
	2.1	.75	.75	.80		
13/16-16 UN	54	19	22	24	SMK20-08-ORFS-P-C6F	SMK20-08-ORFS-V-C6F
	2.1	.75	.87	.87		

#### Metal Parts

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

#### Sealings

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

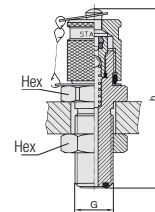
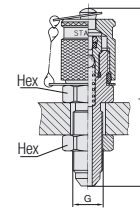
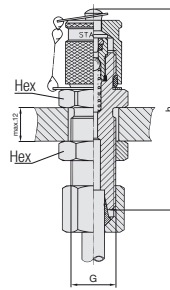
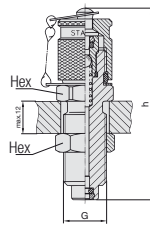
\* Standard option for North America is FPM (Viton®).

#### Protection Cap

Standard material: Steel  
 For ordering the hexagonal protection cap version please add  
 "-SK" to the order code. (e.g. SMK20-04-ORFS-P-SK-C6F)  
 For ordering the plastic protection cap version please add  
 "-KK" to the order code. (e.g. SMK20-04-ORFS-P-KK-C6F)

For further information on materials, sealings or protection caps, please see page B4.

**Bulkhead  
SSK20**



Version A

Version B

Version C

Version D

▪ Also available for gaseous media Type SSKK

**Threads**

\*1 Compression ring assembly 08L/ 08S/ 12L according to ISO 8434-1 / DIN 2353

\*2 JIC cone fitting according to SAE J514

\*3 O-ring face sealing according to SAE J1453

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**

For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".

For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

For ordering FPM sealings replace "P" with "V".

For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

**Protection Cap**

Standard material: Steel

For ordering the hexagonal protection cap version please add

"-SK" to the order code. (e.g. SKK20-P-SK-C6F)

For ordering the plastic protection cap version please add

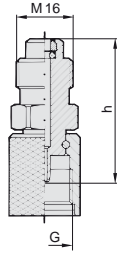
"-KK" to the order code. (e.g. SKK20-P-KK-C6F)

For further information on materials, sealings or protection caps, please see page B4.

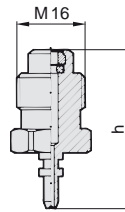
Note: Standard option version B without compression ring and nut.

Thread	Dimensions (mm/in)		Version	Order Codes NBR	FPM* (Standard Option-North America)
	G	h			
M16	72	19	A	SSK20-P-C6F	SSK20-V-C6F
	2.83	.75			
M14 x 1,5*1	72	19	B	SSK20/08L-P-C6F	SSK20/08L-V-C6F
	2.83	.75			
M16 x 1,5*1	72	22	B	SSK20/08S-P-C6F	SSK20/08S-V-C6F
	2.83	.87			
M18 x 1,5*1	72	22	B	SSK20/12L-P-C6F	SSK20/12L-V-C6F
	2.83	.87			
7/16-20 UNF*2	66	17	C	SSK20/J7/16UNF-MV-P-C6F	SSK20/J7/16UNF-MV-V-C6F
	2.60	.67			
9/16-18 UNF*3	67	22	D	SSK20-04-ORFS-P-C6F	SSK20-04-ORFS-V-C6F
	2.64	.87			
11/16-16 UNF*3	72	27	D	SSK20-06-ORFS-P-C6F	SSK20-06-ORFS-V-C6F
	2.83	1.06			
13/16-16 UNF*3	75	30	D	SSK20-08-ORFS-P-C6F	SSK20-08-ORFS-V-C6F
	2.95	1.18			



**Adaptor  
SAD20**


Version A



Version B



Thread	Dimensions (mm/in)		Version	Order Codes	
	G	h		NBR	FPM* (Standard Option-North America)
M16 x 1,5	39 1.54		A	SAD20/15-P-C6F	SAD20/15-V-C6F
S12*1	39 1.54		A	SAD20/12-P-C6F	SAD20/12-V-C6F
Plug in	37 1.46		B	SAD20/10-P-C6F	SAD20/10-V-C6F

**Threads**

\*1 Special thread: buttress thread S12.65 x1,5

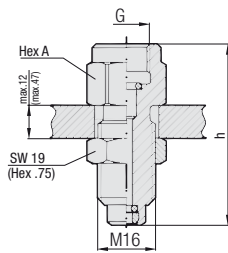
**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

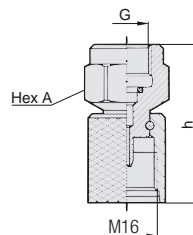
For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).



Through hole  
Ø 18 (.71)

Gauge Adaptor SMA20



Direct Gauge Adaptor SMD20

**Gauge Adaptor SMA20    Direct Gauge Adaptor SMD20**


Thread	Dimensions (mm/in)			Order Codes	
	G	h	Hex A	NBR	FPM* (Standard Option-North America)
G1/4	54 2.13	19 .75		SMA20-G1/4-P-OR-C6F	SMA20-G1/4-V-OR-C6F
G1/2	64 2.52	27 1.06		SMA20-G1/2-P-OR-C6F	SMA20-G1/2-V-OR-C6F
1/4 NPT	54 2.13	19 .75		SMA20-1/4NPT-P-C6F	SMA20-1/4NPT-V-C6F
1/2 NPT	64 2.52	27 1.06		SMA20-1/2NPT-P-C6F	SMA20-1/2NPT-V-C6F
7/16-20 UNF	54 2.16	19 .75		SMA20-7/16UNF-PC6F	SMA20-7/16UNF-V-C6F
9/16-18 UNF	57 2.24	19 .75		SMA20-9/16UNF-P-C6F	SMA20-9/16UNF-V-C6F
G1/4	41 1.61	19 .75		SMD20-G1/4-P-OR-C6F	SMD20-G1/4-V-OR-C6F
G1/2	51 2.01	27 1.06		SMD20-G1/2-P-OR-C6F	SMD20-G1/2-V-OR-C6F
1/4 NPT	41 1.61	19 .75		SMD20-1/4NPT-C6F	
1/2 NPT	51 2.01	27 1.06		SMD20-1/2NPT-C6F	
7/16-20 UNF	41 1.61	19 .75		SMD20-7/16UNF-C6F	
9/16-18 UNF	43 1.69	19 .75		SMD20-9/16UNF-C6F	

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

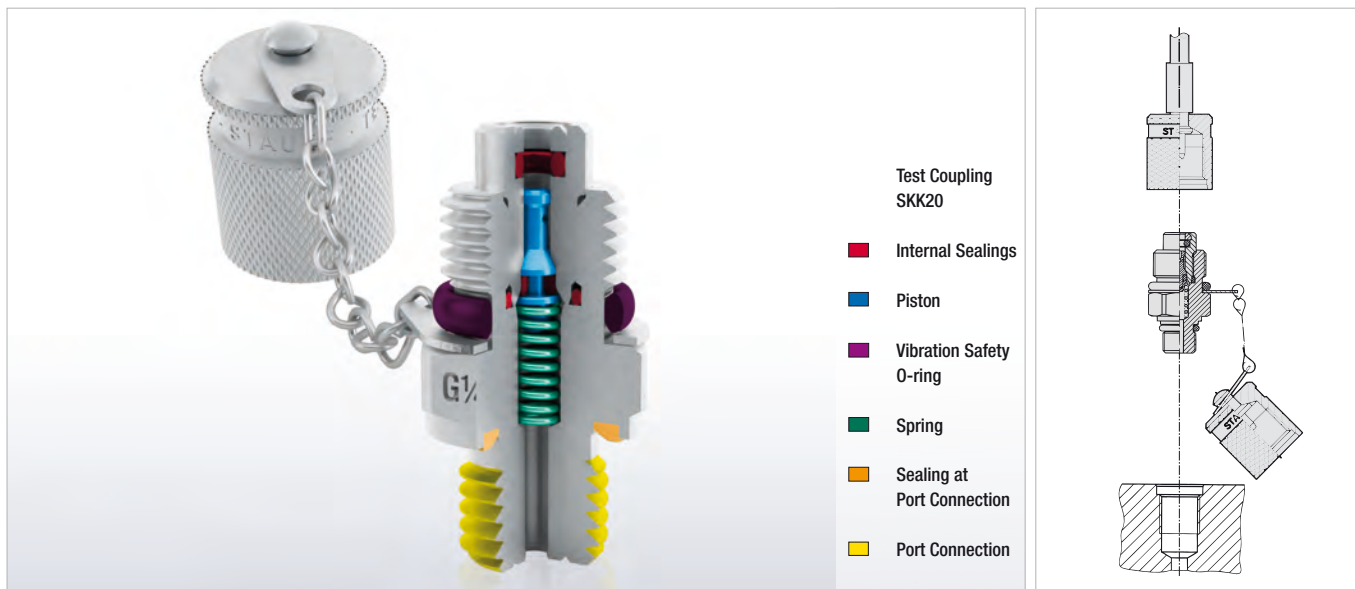
**Sealings**

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

Snubber on request.

## Test Coupling with Piston Valve



### Fast coupling for

- Monitoring and control of pressure
- Venting
- Sampling in high- and low-pressure systems
- Filling of accumulators (special filling-version)

### Advantages

- Test system at working pressure
- Leakproof connection before **piston valve** is open
- Simple connection to measurement, control and switching devices
- Self locking metal protective cap

### Working Pressure

- Max. working pressure 630 bar / 9137 PSI  
For SKK Type G and K the recommended working pressure of fitting manufacturer should be noted.
- Connection under pressure up to 400 bar / 5801 PSI max.

### DVGW

- DVGW registration as test coupling for gas pressure control systems with the Deutsche Vereinigung des Gas- und Wasserfaches e.V.
- The DVGW approval relates solely to the SKK12 and SKK20 series with connection types:
  - M8x1-VA-DVGW
  - M10x1-VA-DVGW
  - 1/8NPT-VD-DVGW
  - 1/4NPT-VD-DVGW

### Media

- Suitable for hydraulic oils and other Mineral oil based fluids (Check compatibility of sealing material)
- For use with other liquid media please consult STAUFF
- In case of ultimate tightness requirements for gaseous media, a special Gas-type is available

### Materials

- **Metal Parts:**  
Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
Optional:  
Stainless Steel **V2A** (1.4305 / AISI 303) on request  
Stainless Steel **V4A** (1.4571 / AISI 316Ti) on request

For ordering "V2A" or "V4A" please replace "C6F" with "V2A" or "V4A".

- **Sealings:**  
**P = NBR (Buna-N®)**  
(Temperature range -20 °C ... +100 °C / -4 °F ... +212 °F)  
Note: Internal sealings made of FPM, even for standard NBR-type.

**V = FPM (Viton®)\***  
(Temperature range -20 °C ... +200 °C / -4 °F ... +392 °F)

**\* Standard option for North America is FPM (Viton®)**

**E = EPDM Ethylene Propylene Diene Monomer Rubber**  
(for Brake fluid,  
Temperature range -40 °C ... +150 °C / -40 °F ... +302 °F)

For ordering FPM or EPDM sealings please replace "P" with "V" or "E".

Vibration safety O-ring made of NBR (Buna-N®) (standard).

### Protection Cap

- The complete STAUFF-Test-20-Type-SKK range is also available with a hexagonal protection cap made of steel or plastic protection cap.

For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SKK20-M10x1-PA-SK-C6F)  
For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SKK20-M10x1-PA-KK-C6F)

**SKK20**  
Test Coupling  
with Port Connection



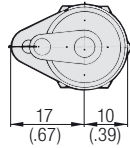
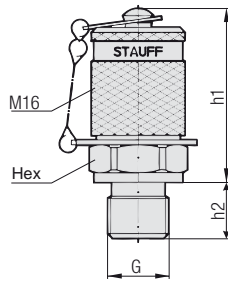
**SKK20 Type G**  
Test Coupling complete  
with Straight Fitting



**SKK20 Type K**  
Test Coupling for  
24° Cone Fittings



## Test Coupling with Port Connection SKK20



Thread G	Sealing	Working Pressure (bar / psi)	Dimensions (mm / in)			Order Codes	
			h1	h2	Hex	NBR	FPM* (Standard Option-North America)
M8 x 1	Type A	250	38	8,5	17	SKK20-M8x1-PA-C6F	SKK20-M8x1-VA-C6F
		3625	1.50	.33	.67		
		630	38	9,8	17		
M10 x 1	Type A	9137	1.50	.39	.67	SKK20-M10x1-PA-C6F	SKK20-M10x1-VA-C6F
		630	37	12	17	SKK20-M12x1,5-PB-C6F	SKK20-M12x1,5-VB-C6F
M12 x 1,5	Type B	9137	1.46	.47	.67	SKK20-M14x1,5-PB-C6F	SKK20-M14x1,5-VB-C6F
		630	37	12	19	SKK20-M16x1,5-PB-C6F	SKK20-M16x1,5-VB-C6F
M14 x 1,5	Type B	9137	1.46	.47	.75	SKK20-M16x1,5-PB-C6F	SKK20-M16x1,5-VB-C6F
		630	37	12	22	SKK20-G1/4-PB-C6F	SKK20-G1/4-VB-C6F
M16 x 1,5	Type B	9137	1.46	.47	.87	SKK20-M12x1,5-PC-C6F	SKK20-M12x1,5-VC-C6F
		630	37	12	19	SKK20-M14x1,5-PC-C6F	SKK20-M14x1,5-VC-C6F
G1/4	Type C	9137	1.46	.47	.75	SKK20-M16x1,5-PC-C6F	SKK20-M16x1,5-VC-C6F
		630	37	12	22	SKK20-G1/8-PC-C6F	SKK20-G1/8-VC-C6F
G3/8	Type C	9137	1.46	.47	.87	SKK20-G1/4-PC-C6F	SKK20-G1/4-VC-C6F
		630	37	12	17	SKK20-G3/8-PC-C6F	SKK20-G3/8-VC-C6F
M10 x 1	Type C	5801	1.54	.31	.67	SKK20-G3/8-PC-C6F	SKK20-G3/8-VC-C6F
		630	37	12	17	SKK20-G1/2-PC-C6F	SKK20-G1/2-VC-C6F
M12 x 1,5	Type C	9137	1.46	.47	.67	SKK20-G1/2-PC-C6F	SKK20-G1/2-VC-C6F
		630	37	12	19	SKK20-R1/8K-PD-C6F	SKK20-R1/8K-VD-C6F
M14 x 1,5	Type C	9137	1.46	.47	.75	SKK20-R1/4K-PD-C6F	SKK20-R1/4K-VD-C6F
		630	37	12	19	SKK20-1/8NPT-PD-C6F	SKK20-1/8NPT-VD-C6F
M16 x 1,5	Type C	5801	1.54	.31	.67	SKK20-1/4NPT-PD-C6F	SKK20-1/4NPT-VD-C6F
		630	37	12	22	SKK20-5/16UNF-PE-C6F	SKK20-5/16UNF-VE-C6F
G1/8	Type D	9137	1.46	.47	.75	SKK20-7/16UNF-PE-C6F	SKK20-7/16UNF-VE-C6F
		630	37	12	19	SKK20-1/2UNF-PE-C6F	SKK20-1/2UNF-VE-C6F
G1/4	Type D	9137	1.46	.47	.75	SKK20-9/16UNF-PE-C6F	SKK20-9/16UNF-VE-C6F
		630	37	10	19	SKK20-M12x1,5-PE-C6F	SKK20-M12x1,5-VE-C6F
G3/8	Type D	9137	1.46	.47	.87	SKK20-M14x1,5-PE-C6F	SKK20-M14x1,5-VE-C6F
		630	37	11	17	SKK20-M14x1,5-PE-C6F	SKK20-M14x1,5-VE-C6F
G1/2	Type E	9137	1.54	.55	1.06		
		630	38	11	19		
R1/8 K	Type E	5801	1.46	.31	.67		
		630	38	11	19		
R1/4 K	Type E	9137	1.46	.39	.75		
		630	38	11	19		
1/8 NPT	Type E	9137	1.38	.59	.67		
		630	38	11	19		
1/4 NPT	Type E	9137	1.38	.59	.67		
		630	38	11	19		
5/16-24 UNF	Type E	5801	1.50	.36	.67		
		630	38	9,1	17		
7/16-20 UNF	Type E	9137	1.50	.36	.67		
		630	38	9,2	17		
1/2-20 UNF	Type E	9137	1.50	.36	.67		
		630	38	10	19		
9/16-18 UNF	Type E	9137	1.46	.39	.75		
		630	37	11	17		
M12 x 1,5	Type E	9137	1.46	.43	.67		
		630	38	11	19		
M14 x 1,5	Type E	9137	1.50	.43	.75		
		630	38	11	19		

### Metal Parts

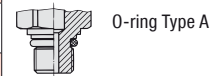
Standard material: Steel, zinc/nickel-plated = C6F (CrVI-free)  
For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

### Sealing Details



O-ring Type A



Metal Joint Type B



Elastomeric Sealing Type C



Taper Type D  
(suitable sealant required)



O-ring Type E

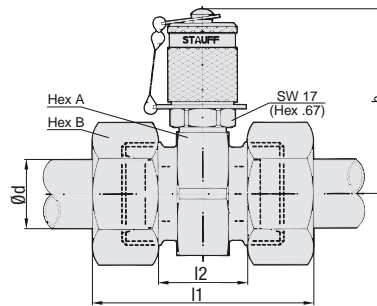
### Protection Cap

Standard material: Steel  
For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SKK20-M10x1-PA-SK-C6F)  
For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SKK20-M10x1-PA-KK-C6F)

For further information on materials, sealings or protection caps, please see page B12.

Other port connections and sealings on request.  
Please consult STAUFF for further information.

**Test Coupling complete with Straight Fitting  
SKK20 Type G**



▪ Compression ring fittings acc. to ISO 8434-1 / DIN 2353

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

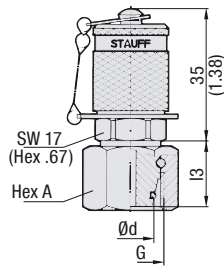
\* **Standard option for North America is FPM (Viton®).**

**Protection Cap**

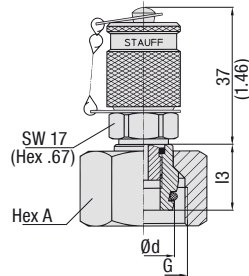
Standard material: Steel  
 For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SKK20-08L-PG-SK-C6F)  
 For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SKK20-08L-PG-KK-C6F)

For further information on materials, sealings or protection caps, please see page B12.

Series	PN ( <sup>mm</sup> /ps)	Pipe Ød	Dimensions (mm /in)					Order Codes	
			~I1	I2	h	Hex A	Hex B	NBR	FPM* (Standard Option-North America)
L	315 4568	6	51	21	49	24	14	SKK20-06L-PG-C6F	SKK20-06L-VG-C6F
			2.01	.83	1.93	.94	.55		
		8	51	21	49	24	17	SKK20-08L-PG-C6F	SKK20-08L-VG-C6F
			2.01	.83	1.93	.94	.67		
		10	53	23	49	24	19	SKK20-10L-PG-C6F	SKK20-10L-VG-C6F
			2.09	.91	1.93	.94	.75		
	12	53	23	50,5	27	22	SKK20-12L-PG-C6F	SKK20-12L-VG-C6F	
		2.09	.91	1.99	1.06	.87			
	15	55	25	52	30	27	SKK20-15L-PG-C6F	SKK20-15L-VG-C6F	
		2.17	.98	2.05	1.18	1.06			
	18	57	24	53	32	32	SKK20-18L-PG-C6F	SKK20-18L-VG-C6F	
		2.24	.94	2.09	1.26	1.26			
160 2320	22	61	28	55	36	36	SKK20-22L-PG-C6F	SKK20-22L-VG-C6F	
		2.40	1.10	2.17	1.42	1.42			
	28	61	28	57,5	41	41	SKK20-28L-PG-C6F	SKK20-28L-VG-C6F	
		2.40	1.10	2.26	1.61	1.61			
35	69	26	60	46	50	SKK20-35L-PG-C6F	SKK20-35L-VG-C6F		
	2.72	1.02	2.36	1.81	1.97				
42	71	25	64,5	55	60	SKK20-42L-PG-C6F	SKK20-42L-VG-C6F		
	2.80	.98	2.54	2.17	2.36				
S	630 9137	6	55	25	49	24	17	SKK20-06S-PG-C6F	SKK20-06S-VG-C6F
			2.17	.98	1.93	.94	.67		
		8	55	25	49	24	19	SKK20-08S-PG-C6F	SKK20-08S-VG-C6F
			2.17	.98	1.93	.94	.75		
		10	57	24	49	24	22	SKK20-10S-PG-C6F	SKK20-10S-VG-C6F
			2.24	.94	1.93	.94	.87		
	12	57	24	49	24	24	SKK20-12S-PG-C6F	SKK20-12S-VG-C6F	
		2.24	.94	1.93	.94	.94			
	14	63	27	50,5	27	27	SKK20-14S-PG-C6F	SKK20-14S-VG-C6F	
		2.50	1.06	1.99	1.06	1.06			
	400 5801	16	63	26	52	30	30	SKK20-16S-PG-C6F	SKK20-16S-VG-C6F
			2.50	1.02	2.05	1.18	1.18		
		20	69	26	55	36	36	SKK20-20S-PG-C6F	SKK20-20S-VG-C6F
			2.72	1.02	2.17	1.42	1.42		
		25	75	27	57,5	41	46	SKK20-25S-PG-C6F	SKK20-25S-VG-C6F
	2.95		1.06	2.26	1.61	1.81			
	30	81	28	60	46	50	SKK20-30S-PG-C6F	SKK20-30S-VG-C6F	
		3.19	1.10	2.36	1.81	1.97			
315 4568	38	91	29	64,5	55	60	SKK20-38S-PG-C6F	SKK20-38S-VG-C6F	
			3.58	1.14	2.54	2.17	2.36		



Version A



Version B

## Test Coupling for 24° Cone Fittings SKK20 Type K



Series	PN (bar / psi)	Pipe Ød	Dimensions (mm / in)		Thread	Version	Order Codes	
			I3	Hex A			NBR	FPM* (Standard Option-North America)
L	315 4568	6	15,5	14	M12 x 1,5	A	SKK20-06L-PK-C6F	SKK20-06L-VK-C6F
			.61	.55				
		8	15,5	17	M14 x 1,5	A	SKK20-08L-PK-C6F	SKK20-08L-VK-C6F
			.61	.67				
		10	16,5	19	M16 x 1,5	A	SKK20-10L-PK-C6F	SKK20-10L-VK-C6F
			.65	.75				
	12	17,5	22	M18 x 1,5	A	SKK20-12L-PK-C6F	SKK20-12L-VK-C6F	
		.69	.87					
	15	21	27	M22 x 1,5	B	SKK20-15L-PK-GS-C6F	SKK20-15L-VK-GS-C6F	
		.83	1.06					
	18	19,5	32	M26 x 1,5	B	SKK20-18L-PK-GS-C6F	SKK20-18L-VK-GS-C6F	
		.77	1.26					
160 2320	22	20,5	36	M30 x 2	B	SKK20-22L-PK-GS-C6F	SKK20-22L-VK-GS-C6F	
		.81	1.42					
	28	25	41	M36 x 2	B	SKK20-28L-PK-GS-C6F	SKK20-28L-VK-GS-C6F	
		.98	1.61					
35	30	50	M45 x 2	B	SKK20-35L-PK-GS-C6F	SKK20-35L-VK-GS-C6F		
	1.18	1.97						
42	31	60	M52 x 2	B	SKK20-42L-PK-GS-C6F	SKK20-42L-VK-GS-C6F		
	1.22	2.36						
S	630 9137	6	14,5	17	M14 x 1,5	A	SKK20-06S-PK-C6F	SKK20-06S-VK-C6F
			.57	.67				
		8	16,5	19	M16 x 1,5	A	SKK20-08S-PK-C6F	SKK20-08S-VK-C6F
			.65	.75				
		10	16,5	22	M18 x 1,5	A	SKK20-10S-PK-C6F	SKK20-10S-VK-C6F
	.65		.87					
	12	17,5	24	M20 x 1,5	A	SKK20-12S-PK-C6F	SKK20-12S-VK-C6F	
		.69	.94					
	14	19,5	27	M22 x 1,5	B	SKK20-14S-PK-GS-C6F	SKK20-14S-VK-GS-C6F	
		.77	1.06					
	400 5801	16	18	30	M24 x 1,5	B	SKK20-16S-PK-GS-C6F	SKK20-16S-VK-GS-C6F
			.71	1.18				
		20	24	36	M30 x 2	B	SKK20-20S-PK-GS-C6F	SKK20-20S-VK-GS-C6F
			.94	1.42				
	25	26	46	M36 x 2	B	SKK20-25S-PK-GS-C6F	SKK20-25S-VK-GS-C6F	
1.02		1.81						
30	30	50	M42 x 2	B	SKK20-30S-PK-GS-C6F	SKK20-30S-VK-GS-C6F		
	1.18	1.97						
315 4568	38	34	60	M52 x 2	B	SKK20-38S-PK-GS-C6F	SKK20-38S-VK-GS-C6F	
		1.34	2.36					

- For DKO connection
- According to ISO 8434-1 / DIN 2353
- Version A: one-piece design
- Version B: screwed design

### Metal Parts

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

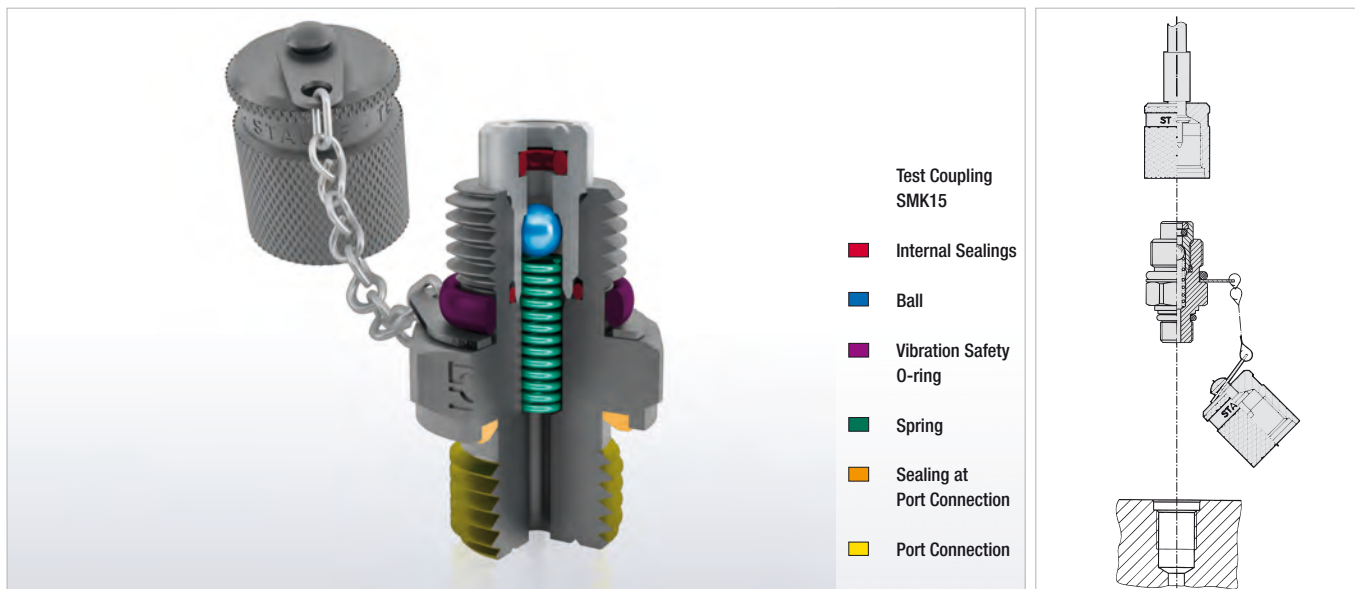
\* Standard option for North America is FPM (Viton®).

### Protection Cap

Standard material: Steel  
 For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SKK20-08L-PK-SK-C6F)  
 For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SKK20-08L-PK-KK-C6F)

For further information on materials, sealings or protection caps, please see page B12.

## Test Coupling with Ball Check



### Fast coupling for

- Monitoring and control of pressure
- Venting
- Sampling in high- and low-pressure systems

### Advantages

- Test system at working pressure
- Leak proof connection before **ball check** is open
- Simple connection to measurement, control and switching devices
- Self locking metal protective cap

### Working Pressure

- Max. working pressure 630 bar / 9137 PSI  
For SMK Type G and K the recommended working pressure of fitting manufacturer should be noted.
- Connection under pressure up to 630 bar / 9137 PSI max.

### Materials

- **Metal parts:**  
Standard material: Steel, black zinc/nickel-plated = **C6F\*** (CrVI-free)  
Optional:  
Stainless Steel **V2A** (1.4305 / AISI 303) on request  
Stainless Steel **V4A** (1.4571 / AISI 316Ti) on request

For ordering V2A or V4A please replace "C6F" with "V2A" or "V4A".

\* Note: The changeover of our standard surface finishing "zinc plated" to the chromium (VI) free surface finishing "black zinc/nickel-plated" will proceed gradually.

- **Ball:** Stainless Steel

### Sealings:

**P = NBR (Buna-N®)**  
(Temperature range -20 °C ... +100 °C / -4 °F ... +212 °F)

Note: Internal sealings made of FPM, even for standard NBR-type.

**V = FPM (Viton®)\***  
(Temperature range -20 °C ... +200 °C / -4 °F ... +392 °F)

\* Standard option for North America is FPM (Viton®)

**E = EPDM Ethylene Propylene Diene Monomer Rubber**  
(for Brake fluid,  
Temperature range -40 °C ... +150 °C / -40 °F ... +302 °F)

For ordering FPM or EPDM sealings please replace "P" with "V" or "E".

Vibration safety O-ring made of NBR (Buna-N®) (standard).

### Media

- Suitable for hydraulic oils and other Mineral oil based fluid  
(Check compatibility of seal material)
- For use with other liquid media please consult STAUFF

### Protection Cap

- The complete STAUFF-Test-15-Type-SMK range is also available with a hexagonal protection cap made of steel.

For ordering the hexagonal protection cap version please add "-SK" to the order code.  
(e.g. SMK15-M10x1-PA-SK-C6F)

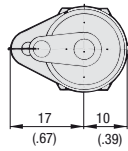
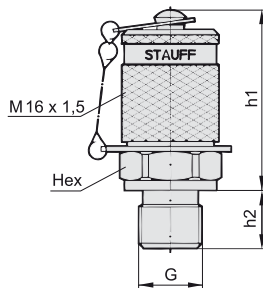
### Note

- On request TEST 15 is also available as SKK-type including "Gas"- and "Filling"-versions.

SMK15 Test Coupling with Port Connection	SMK15 Type G Test Coupling complete with Straight Fitting	SMK15 Type K Test Coupling for 24° Cone Fittings	SSK15 Bulkhead



## Test Coupling with Port Connection SMK15



Thread G	Sealing	Working Pressure ( <sup>bar</sup> / <sub>psi</sub> )	Dimensions ( <sup>mm</sup> / <sub>in</sub> )			Order Codes	
			h1	h2	Hex	NBR	FPM* (Standard Option-North America)
M10 x 1	Type A	630	38	9,8	17	SMK15-M10x1-PA-C6F	SMK15-M10x1-VA-C6F
		9137	1.50	.39	.67		
M14 x 1,5		630	37	12	19	SMK15-M14x1,5-PB-C6F	SMK15-M14x1,5-VB-C6F
		9137	1.46	.47	.75		
M16 x 1,5		630	37	12	22	SMK15-M16x1,5-PB-C6F	SMK15-M16x1,5-VB-C6F
		9137	1.46	.47	.87		
G1/8	Type B	400	39	8	17	SMK15-G1/8-PB-C6F	SMK15-G1/8-VB-C6F
		5801	1.54	.31	.67		
G1/4		630	37	12	19	SMK15-G1/4-PB-C6F	SMK15-G1/4-VB-C6F
		9137	1.46	.47	.75		
G3/8		630	37	12	22	SMK15-G3/8-PB-C6F	SMK15-G3/8-VB-C6F
		9137	1.46	.47	.87		
M12 x 1,5		630	37	12	17	SMK15-M12x1,5-PC-C6F	SMK15-M12x1,5-VC-C6F
		9137	1.46	.47	.67		
M14 x 1,5		630	37	12	19	SMK15-M14x1,5-PC-C6F	SMK15-M14x1,5-VC-C6F
		9137	1.46	.47	.75		
M16 x 1,5	Type C	630	37	12	22	SMK15-M16x1,5-PC-C6F	SMK15-M16x1,5-VC-C6F
		9137	1.46	.47	.87		
G1/8		400	39	8	17	SMK15-G1/8-PC-C6F	SMK15-G1/8-VC-C6F
		5801	1.54	.31	.67		
G1/4		630	37	12	19	SMK15-G1/4-PC-C6F	SMK15-G1/4-VC-C6F
		9137	1.46	.47	.75		
R1/4 K		630	35	12	17	SMK15-R1/4K-PD-C6F	SMK15-R1/4K-VD-C6F
		9137	1.38	.47	.67		
1/8 NPT	Type D	400	36	10	17	SMK15-1/8NPT-PD-C6F	SMK15-1/8NPT-VD-C6F
		5801	1.42	.39	.67		
1/4 NPT		630	35	15	17	SMK15-1/4NPT-PD-C6F	SMK15-1/4NPT-VD-C6F
		9137	1.38	.59	.67		
7/16-20 UNF		630	38	9,1	17	SMK15-7/16UNF-PE-C6F	SMK15-7/16UNF-VE-C6F
		9137	1.50	.36	.67		
9/16-18 UNF	Type E	630	37	10	19	SMK15-9/16UNF-PE-C6F	SMK15-9/16UNF-VE-C6F
		9137	1.46	.39	.75		
M14 x 1,5		630	38	11	19	SMK15-M14x1,5-PE-C6F	SMK15-M14x1,5-VE-C6F
		9137	1.50	.43	.75		

### Metal Parts

Standard material:

Steel, black zinc/nickel-plated = **C6F (CrVI-free)**

For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".

For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".

For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

### Sealing Details



O-ring Type A



Metal Joint Type B



Elastomeric Sealing Type C



Taper Type D  
(suitable sealant required)



O-ring Type E

### Protection Cap

Standard material: Steel

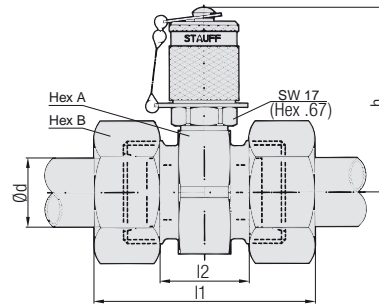
For ordering the hexagonal protection cap version please add

"-SK" to the order code. (e.g. SMK15-M10x1-PA-SK-C6F)

For further information on materials, seals or protection caps, please see page B16.

Other port connections and seals on request.  
Please consult STAUFF for further information.

**Test Coupling complete with Straight Fitting  
SMK15 Type G**



▪ Compression ring fittings acc. to ISO 8434-1 / DIN 2353

**Metal Parts**

Standard material:

- Test coupling: Steel, black zinc/nickel-plated = **C6F (CrVI-free)**
  - Straight fitting: Steel, zinc/nickel-plated = **C6F (CrVI-free)**
- For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

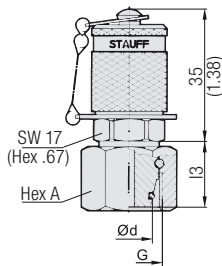
\* **Standard option for North America is FPM (Viton®).**

**Protection Cap**

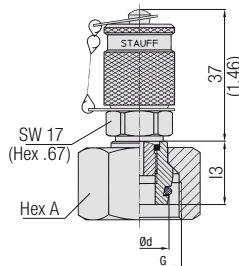
Standard material: Steel  
For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SMK15-08L-PG-SK-C6F)

For further information on materials, sealings or protection caps, please see page B16.

Series	PN (bar/psi)	Pipe Ød	Dimensions (mm/in)					Order Codes NBR	FPM* (Standard Option-North America)
			~l1	l2	h	Hex A	Hex B		
L	315 4568	6	51	21	49	24	14	SMK15-06L-PG-C6F	SMK15-06L-VG-C6F
			2.01	.83	1.93	.94	.55		
		8	51	21	49	24	17	SMK15-08L-PG-C6F	SMK15-08L-VG-C6F
			2.01	.83	1.93	.94	.67		
		10	53	23	49	24	19	SMK15-10L-PG-C6F	SMK15-10L-VG-C6F
			2.09	.91	1.93	.94	.75		
	12	53	23	50,5	27	22	SMK15-12L-PG-C6F	SMK15-12L-VG-C6F	
		2.09	.91	1.99	1.06	.87			
	15	55	25	52	30	27	SMK15-15L-PG-C6F	SMK15-15L-VG-C6F	
		2.17	.98	2.05	1.18	1.06			
	18	57	24	53	32	32	SMK15-18L-PG-C6F	SMK15-18L-VG-C6F	
		2.24	.94	2.09	1.26	1.26			
160 2320	22	61	28	55	36	36	SMK15-22L-PG-C6F	SMK15-22L-VG-C6F	
		2.40	1.10	2.17	1.42	1.42			
	28	61	28	57,5	41	41	SMK15-28L-PG-C6F	SMK15-28L-VG-C6F	
		2.40	1.10	2.26	1.61	1.61			
	35	69	26	60	46	50	SMK15-35L-PG-C6F	SMK15-35L-VG-C6F	
2.72		1.02	2.36	1.81	1.97				
42	71	25	64,5	55	60	SMK15-42L-PG-C6F	SMK15-42L-VG-C6F		
		2.80	.98	2.54	2.17	2.36			
S	630 9137	6	55	25	49	24	17	SMK15-06S-PG-C6F	SMK15-06S-VG-C6F
			2.17	.98	1.93	.94	.67		
		8	55	25	49	24	19	SMK15-08S-PG-C6F	SMK15-08S-VG-C6F
			2.17	.98	1.93	.94	.75		
		10	57	24	49	24	22	SMK15-10S-PG-C6F	SMK15-10S-VG-C6F
			2.24	.94	1.93	.94	.87		
	12	57	24	49	24	24	SMK15-12S-PG-C6F	SMK15-12S-VG-C6F	
		2.24	.94	1.93	.94	.94			
	14	63	27	50,5	27	27	SMK15-14S-PG-C6F	SMK15-14S-VG-C6F	
		2.50	1.06	1.99	1.06	1.06			
	400 5801	16	63	26	52	30	30	SMK15-16S-PG-C6F	SMK15-16S-VG-C6F
			2.50	1.02	2.05	1.18	1.18		
20		69	26	55	36	36	SMK15-20S-PG-C6F	SMK15-20S-VG-C6F	
		2.72	1.02	2.17	1.42	1.42			
25		75	27	57,5	41	46	SMK15-25S-PG-C6F	SMK15-25S-VG-C6F	
	2.95	1.06	2.26	1.61	1.81				
30	81	28	60	46	50	SMK15-30S-PG-C6F	SMK15-30S-VG-C6F		
		3.19	1.10	2.36	1.81	1.97			
315 4568	38	91	29	64,5	55	60	SMK15-38S-PG-C6F	SMK15-38S-VG-C6F	
		3.58	1.14	2.54	2.17	2.36			



Version A



Version B

## Test Coupling for 24° Cone Fittings SMK15 Type K



Series	PN (bar/psi)	Pipe Ød	Dimensions (mm/in)		Thread G	Version	Order Codes	
			I3	Hex A			NBR	FPM* (Standard Option-North America)
L	315 4568	6	15,5 .61	14 .55	M12 x 1,5	A	SMK15-06L-PK-C6F	SMK15-06L-VK-C6F
		8	15,5 .61	17 .67	M14 x 1,5	A	SMK15-08L-PK-C6F	SMK15-08L-VK-C6F
		10	16,5 .65	19 .75	M16 x 1,5	A	SMK15-10L-PK-C6F	SMK15-10L-VK-C6F
		12	17,5 .69	22 .87	M18 x 1,5	A	SMK15-12L-PK-C6F	SMK15-12L-VK-C6F
		15	21 .83	27 1.06	M22 x 1,5	B	SMK15-15L-PK-GS-C6F	SMK15-15L-VK-GS-C6F
		18	19,5 .77	32 1.26	M26 x 1,5	B	SMK15-18L-PK-GS-C6F	SMK15-18L-VK-GS-C6F
	160 2320	22	20,5 .81	36 1.42	M30 x 2	B	SMK15-22L-PK-GS-C6F	SMK15-22L-VK-GS-C6F
		28	25 .98	41 1.61	M36 x 2	B	SMK15-28L-PK-GS-C6F	SMK15-28L-VK-GS-C6F
		35	30 1.18	50 1.97	M45 x 2	B	SMK15-35L-PK-GS-C6F	SMK15-35L-VK-GS-C6F
		42	31 1.22	60 2.36	M52 x 2	B	SMK15-42L-PK-GS-C6F	SMK15-42L-VK-GS-C6F
S	630 9137	6	14,5 .57	17 .67	M14 x 1,5	A	SMK15-06S-PK-C6F	SMK15-06S-VK-C6F
		8	16,5 .65	19 .75	M16 x 1,5	A	SMK15-08S-PK-C6F	SMK15-08S-VK-C6F
		10	16,5 .65	22 .87	M18 x 1,5	A	SMK15-10S-PK-C6F	SMK15-10S-VK-C6F
		12	17,5 .69	24 .94	M20 x 1,5	A	SMK15-12S-PK-C6F	SMK15-12S-VK-C6F
		14	19,5 .77	27 1.06	M22 x 1,5	B	SMK15-14S-PK-GS-C6F	SMK15-14S-VK-GS-C6F
	400 5801	16	18 .71	30 1.18	M24 x 1,5	B	SMK15-16S-PK-GS-C6F	SMK15-16S-VK-GS-C6F
		20	24 .94	36 1.42	M30 x 2	B	SMK15-20S-PK-GS-C6F	SMK15-20S-VK-GS-C6F
		25	26 1.02	46 1.81	M36 x 2	B	SMK15-25S-PK-GS-C6F	SMK15-25S-VK-GS-C6F
		30	30 1.18	50 1.97	M42 x 2	B	SMK15-30S-PK-GS-C6F	SMK15-30S-VK-GS-C6F
		315 4568	38	34 1.34	60 2.36	M52 x 2	B	SMK15-38S-PK-GS-C6F

- For DKO connection
- According to ISO 8434-1 / DIN 2353
- Version A: one-piece design
- Version B: screwed design

### Metal Parts

Standard material:

- Test coupling: Steel, black zinc/nickel-plated = C6F (CrVI-free)
  - 24° cone fittings: Steel, zinc/nickel-plated = C6F (CrVI-free)
- For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

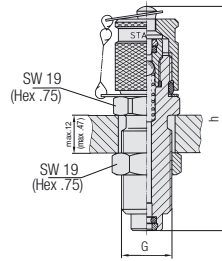
\* Standard option for North America is FPM (Viton®).

### Protection Cap

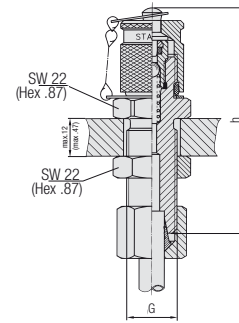
Standard material: Steel  
For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SMK15-08L-PK-SK-C6F)

For further information on materials, sealings or protection caps, please see page B16.

**Bulkhead  
SSK15**



Version A



Version B

▪ Also available for gaseous media type SSKK

**Threads**

\*1 Compression ring assembly 08S according to ISO 8434-1 / DIN 2353

Thread	Dimensions (mm/in)	Version	Order Codes	
			NBR	FPM* (Standard Option-North America)
M16 x 1,5	72	A	SSK15-P-C6F	SSK15-V-C6F
	2.83			
M16 x 1,5 *1	72	B	SSK15/08S-P-C6F	SSK15/08S-V-C6F
	2.83			

**Metal Parts**

Standard material version A:

- Test coupling: Steel, **black zinc/nickel-plated = C6F (CrVI-free)**

Standard material version B:

- Test coupling: Steel, **black zinc/nickel-plated = C6F (CrVI-free)**
- Hex nut: Steel, zinc/nickel-plated = **C6F (CrVI-free)**

For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

**Protection Cap**

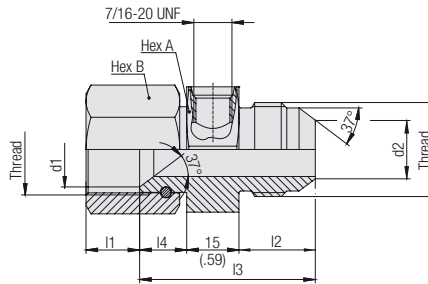
Standard material: Steel

For ordering the hexagonal protection cap version please add "-SK" to the order code. (e.g. SSK15-P-SK-C6F)

For further information on materials, sealings or protection caps, please see page B16.

Note: Standard option version B without compression ring and nut.

**Swivel Run Tee with JIC Connection  
SGV-JIC Type F/M**



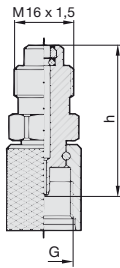
**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**

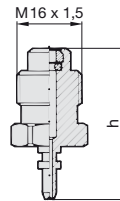
For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

For further information please consult STAUFF.

Thread	Dimensions (mm/in)								Order Codes
inch	Ø d1	Ø d2	l1	l2	l3	l4	Hex A	Hex B	
7/16-20 UNF	7,49	4,9	9	14	37	8	27	17	SGV-7/16UNF-04-JIC1/4-F/M-C6F
	.29	.19	.35	.55	1.46	.31	1.06	.67	
9/16-18 UNF	11,05	8,1	10,5	14	37,5	8,5	27	19	SGV-7/16UNF-06-JIC3/8-F/M-C6F
	.44	.32	.41	.55	1.48	.33	1.06	.75	
3/4-16 UNF	15,9	10,8	10,5	16,7	43,7	12	30	22	SGV-7/16UNF-08-JIC1/2-F/M-C6F
	.63	.43	.41	.66	1.72	.47	1.18	.87	
1-1/16-12 UN	21,6	16,9	15,4	21,9	50,4	13,5	36	32	SGV-7/16UNF-12-JIC3/4-F/M-C6F
	.85	.66	.61	.86	1.98	.53	1.42	1.26	
1-5/16-12 UN	27,9	23,2	17,3	23,1	53,1	15	41	41	SGV-7/16UNF-16-JIC1-F/M-C6F
	1.10	.91	.68	.91	2.09	.59	1.61	1.61	

**Adaptor  
SAD15**


Version A



Version B



Thread	Dimensions (mm/in)	Version	Order Codes	
			NBR	FPM* (Standard Option-North America)
G	h			
M16 x 2	39 1.54	A	SAD15/20-P-C6F	SAD15/20-V-C6F
S12 *1	39 1.54	A	SAD15/12-P-C6F	SAD15/12-V-C6F
Plug in	37 1.46	B	SAD15/10-P-C6F	SAD15/10-V-C6F

**Threads**

\*1 Special thread: buttress thread S12.65 x1,5

**Metal Parts**

Standard material version A:

- Threaded nipple: Steel, black zinc/nickel-plated = **C6F (CrVI-free)**
- Swivel nut: Steel, zinc/nickel-plated = **C6F (CrVI-free)**

Standard material version B:

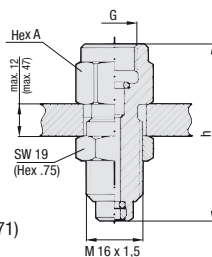
Steel, black zinc/nickel-plated = **C6F (CrVI-free)**

For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

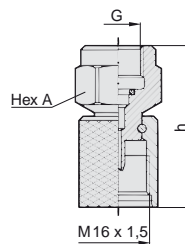
**Sealings**

For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).



Gauge Adaptor SMA15



Direct Gauge Adaptor SMD15

Thread	Dimensions (mm/in)		Order Codes	
	G	Hex A	NBR	FPM* (Standard Option-North America)
G1/4	54 2.13	19 .75	SMA15-G1/4-P-OR-C6F	SMA15-G1/4-V-OR-C6F
G1/2	64 2.52	27 1.06	SMA15-G1/2-P-OR-C6F	SMA15-G1/2-V-OR-C6F
1/4 NPT	54 2.13	19 .75	SMA15-1/4NPT-P-C6F	SMA15-1/4NPT-V-C6F
1/2 NPT	64 2.52	27 1.06	SMA15-1/2NPT-P-C6F	SMA15-1/2NPT-V-C6F
G1/4	41 1.61	19 .75	SMD15-G1/4-P-OR-C6F	SMD15-G1/4-V-OR-C6F
G1/2	51 2.01	27 1.06	SMD15-G1/2-P-OR-C6F	SMD15-G1/2-V-OR-C6F
1/4 NPT	41 1.61	19 .75	SMD15-1/4NPT-C6F	
1/2 NPT	51 2.01	27 1.06	SMD15-1/2NPT-C6F	

**Gauge Adaptor  
SMA15**
**Direct Gauge Adaptor  
SMD15**

**Metal Parts**

Standard material SMA15:

Steel, black zinc/nickel-plated = **C6F (CrVI-free)**

Standard material SMD15:

▪ Gauge adaptor: Steel, zinc/nickel-plated = **C6F (CrVI-free)**

▪ Swivel nut: Steel, black zinc/nickel-plated = **C6F (CrVI-free)**

For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

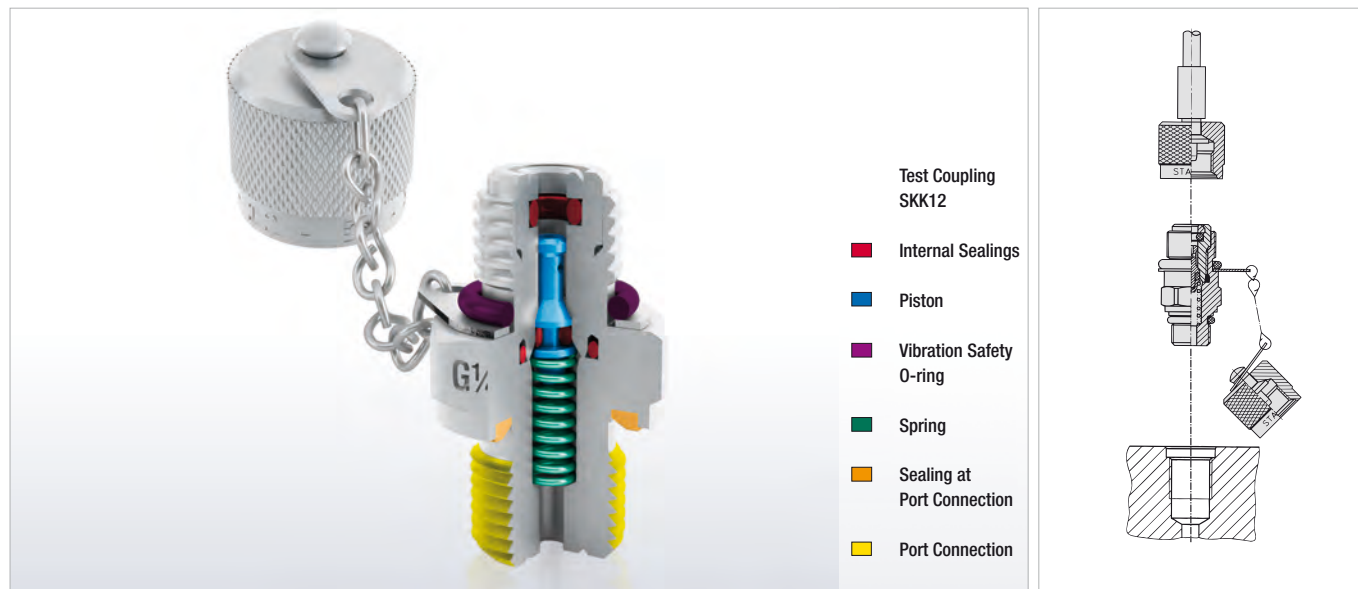
**Sealings**

For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

Snubber on request.

## Test Coupling with Piston Valve



### Fast Coupling for

- Monitoring and control of pressure
- Venting
- Sampling in high- and low-pressure systems
- Filling of accumulators (special filling-version)

### Advantages

- Test system at working pressure
- Leak proof connection before **piston valve** is open
- Simple connection to measurement, control and switching devices
- Self locking metal protective cap

### Working Pressure

- Max. working pressure 630 bar/ 9137 PSI  
For SKK Type G and K the recommended working pressure of fitting manufacturer should be noted.
- Connection under pressure up to 400 bar / 5801 PSI max.

### DVGW

- DVGW registration as test coupling for gas pressure control systems with the Deutsche Vereinigung des Gas- und Wasserfaches e.V.
- The DVGW approval relates solely to the SKK12 and SKK20 series with connection types:
  - M8x1-VA-DVGW
  - M10x1-VA-DVGW
  - 1/8NPT-VD-DVGW
  - 1/4NPT-VD-DVGW

### Materials

- Metal Parts:**  
Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
Optional:  
Stainless Steel **V2A** (1.4305 / AISI 303) on request  
Stainless Steel **V4A** (1.4571 / AISI 316Ti) on request

For ordering "V2A" or "V4A" please replace "C6F" with "V2A" or "V4A".

### Sealings:

**P = NBR (Buna-N®)**  
(Temperature range -20 °C ... +100°C / -4 °F ... +212 °F)

Note: Internal sealings made of FPM, even for standard NBR-type.

**V = FPM (Viton®)\***  
(Temperature range -20 °C ... +200 °C / -4 °F ... +392 °F)

**\* Standard option for North America is FPM (Viton®)**

**E = EPDM Ethylene Propylene Diene Monomer Rubber**  
(for Brake fluid,  
Temperature range -40 °C ... +150 °C / -40 °F ... +302 °F)

For ordering FPM or EPDM sealings please replace "P" with "V" or "E".

Vibration safety O-ring made of NBR (Buna-N®) (standard).

### Media

- Suitable for hydraulic oils and other Mineral oil based fluids  
(Check compatibility of seal material)
- For use with other liquid media please consult STAUFF
- In case of ultimate tightness requirements for gaseous media, a special Gas-type is available

### Protection Cap

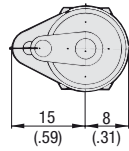
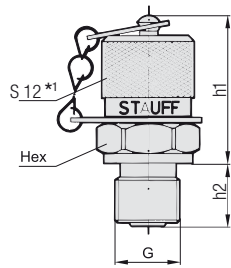
- The complete STAUFF-Test-12-type-SKK range is also available with a plastic protection cap.

For ordering the plastic protection cap version please add "-KK" to the order code.  
(e.g. SKK12-M10x1-PA-KK-C6F)

SKK12 Test Coupling with Port Connection	SKK12 Type G Test Coupling complete with Straight Fitting	SKK12 Type K Test Coupling for 24° Cone Fittings	SSKK12 Bulkhead
			



## Test Coupling with Port Connection SKK12



Thread G	Sealing	Working Pressure (bar / psi)	Dimensions (mm / in)			Order Codes	
			h1	h2	Hex	NBR	FPM* (Standard Option-North America)
M8 x 1	Type A	250	38	8,5	14	SKK12-M8x1-PA-C6F	SKK12-M8x1-VA-C6F
		3625	1.50	.33	.55		
		630	35	9,8	14		
M10 x 1	Type A	9137	1.38	.39	.67	SKK12-M10x1-PA-C6F	SKK12-M10x1-VA-C6F
		630	31	12	17	SKK12-M12x1,5-PB-C6F	SKK12-M12x1,5-VB-C6F
M12 x 1,5	Type B	9137	1.22	.47	.67		
		630	31	12	19		
M14 x 1,5	Type B	9137	1.22	.47	.75	SKK12-M16x1,5-PB-C6F	SKK12-M16x1,5-VB-C6F
		630	31	12	22		
M16 x 1,5	Type B	9137	1.22	.47	.87	SKK12-G1/4-PB-C6F	SKK12-G1/4-VB-C6F
		630	30	12	19		
G1/4	Type B	9137	1.18	.47	.75	SKK12-G3/8-PB-C6F	SKK12-G3/8-VB-C6F
		630	31	12	22		
G3/8	Type B	9137	1.22	.47	.87	SKK12-M12x1,5-PC-C6F	SKK12-M12x1,5-VC-C6F
		630	31	12	17		
M12 x 1,5	Type C	9137	1.22	.47	.67	SKK12-G1/8-PC-C6F	SKK12-G1/8-VC-C6F
		400	40	8	14		
G1/8	Type C	5801	1.57	.31	.55	SKK12-G1/4-PC-C6F	SKK12-G1/4-VC-C6F
		630	31	12	19		
G1/4	Type C	9137	1.22	.47	.75	SKK12-R1/8K-PD-C6F	SKK12-R1/8K-VD-C6F
		400	33	8	17		
R1/8 K	Type D	5801	1.30	.31	.55	SKK12-R1/4K-PD-C6F	SKK12-R1/4K-VD-C6F
		630	30	12	17		
R1/4 K	Type D	9137	1.18	.47	.55	SKK12-1/8NPT-PD-C6F	SKK12-1/8NPT-VD-C6F
		400	33	10	14		
1/8 NPT	Type D	5801	1.30	.39	.55	SKK12-1/4NPT-PD-C6F	SKK12-1/4NPT-VD-C6F
		630	28	15	14		
1/4 NPT	Type D	9137	1.10	.59	.55	SKK12-5/16UNF-PE-C6F	SKK12-5/16UNF-VE-C6F
		400	38	7,5	14		
5/16-24 UNF	Type E	5801	1.50	.30	.55	SKK12-7/16UNF-PE-C6F	SKK12-7/16UNF-VE-C6F
		630	33	9,1	17		
7/16-20 UNF	Type E	9137	1.30	.36	.67	SKK12-1/2UNF-PE-C6F	SKK12-1/2UNF-VE-C6F
		630	32	9,2	17		
1/2-20 UNF	Type E	9137	1.26	.36	.67	SKK12-9/16UNF-PE-C6F	SKK12-9/16UNF-VE-C6F
		630	31	10	19		
9/16-18 UNF	Type E	9137	1.22	.39	.75	SKK12-M12x1,5-PE-C6F	SKK12-M12x1,5-VE-C6F
		630	32	11	17		
M12 x 1,5	Type E	9137	1.26	.43	.67		

### Threads

\*1 Special thread: buttress thread S12,65 x 1,5

### Metal Parts

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

### Sealing Details



O-ring Type A



Metal Joint Type B



Elastomeric Sealing Type C



Taper Type D  
(suitable sealant required)



O-ring Type E

### Protection Cap

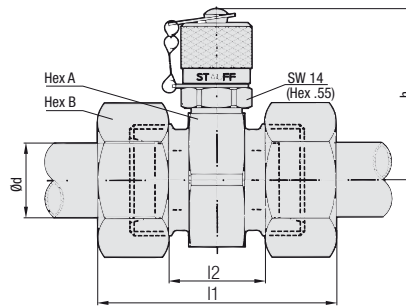
Standard material: Steel

For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SKK12-M10x1-PA-KK-C6F)

For further information on materials, sealings or protection caps, please see page B22.

Other port connections and sealings on request.  
 Please consult STAUFF for further information.

**Test Coupling complete with Straight Fitting  
SKK12 Type G**



▪ Compression ring fittings acc. to ISO 8434-1 / DIN 2353

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

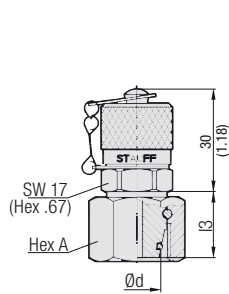
\* **Standard option for North America is FPM (Viton®).**

**Protection Cap**

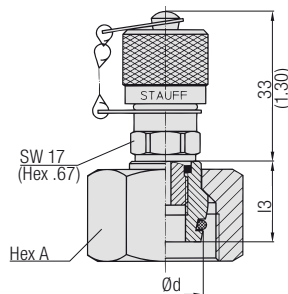
Standard material: Steel  
 For ordering the plastic protection cap version please add  
 "-KK" to the order code. (e.g. SKK12-06L-PG-KK-C6F)

For further information on materials, sealings or protection caps, please see page B22.

Series	PN ( <sup>mm</sup> /ps)	Pipe Ød	Dimensions ( <sup>mm</sup> /in)					Order Codes	
			~I1	I2	h	Hex A	Hex B	NBR	FPM* (Standard Option-North America)
L	315 4568	6	51	21	46	24	14	SKK12-06L-PG-C6F	SKK12-06L-VG-C6F
			2.01	.83	1.81	.94	.55		
		8	51	21	46	24	17	SKK12-08L-PG-C6F	SKK12-08L-VG-C6F
			2.01	.83	1.81	.94	.67		
		10	53	23	46	24	19	SKK12-10L-PG-C6F	SKK12-10L-VG-C6F
			2.09	.91	1.81	.94	.75		
	12	53	23	47,5	27	22	SKK12-12L-PG-C6F	SKK12-12L-VG-C6F	
		2.09	.91	1.87	1.06	.87			
	15	55	25	49	30	27	SKK12-15L-PG-C6F	SKK12-15L-VG-C6F	
		2.17	.98	1.92	1.18	1.06			
	18	57	24	50	32	32	SKK12-18L-PG-C6F	SKK12-18L-VG-C6F	
		2.24	.94	1.97	1.26	1.26			
160 2320	22	61	28	52	36	36	SKK12-22L-PG-C6F	SKK12-22L-VG-C6F	
		2.40	1.10	2.05	1.42	1.42			
	28	61	28	54,5	41	41	SKK12-28L-PG-C6F	SKK12-28L-VG-C6F	
		2.40	1.10	2.15	1.61	1.61			
35	69	26	57	46	50	SKK12-35L-PG-C6F	SKK12-35L-VG-C6F		
	2.72	1.02	2.24	1.81	1.97				
42	71	25	61,5	55	60	SKK12-42L-PG-C6F	SKK12-42L-VG-C6F		
	2.80	.98	2.42	2.17	2.36				
S	630 9137	6	55	25	46	24	17	SKK12-06S-PG-C6F	SKK12-06S-VG-C6F
			2.17	.98	1.81	.94	.67		
		8	55	25	46	24	19	SKK12-08S-PG-C6F	SKK12-08S-VG-C6F
			2.17	.98	1.81	.94	.75		
		10	57	24	46	24	22	SKK12-10S-PG-C6F	SKK12-10S-VG-C6F
			2.24	.94	1.81	.94	.87		
	12	57	24	46	24	24	SKK12-12S-PG-C6F	SKK12-12S-VG-C6F	
		2.24	.94	1.81	.94	.94			
	14	63	27	47,5	27	27	SKK12-14S-PG-C6F	SKK12-14S-VG-C6F	
		2.50	1.06	1.87	1.06	1.06			
	400 5801	16	63	26	49	30	30	SKK12-16S-PG-C6F	SKK12-16S-VG-C6F
			2.50	1.02	1.93	1.18	1.18		
		20	69	26	52	36	36	SKK12-20S-PG-C6F	SKK12-20S-VG-C6F
			2.72	1.02	2.05	1.42	1.42		
		25	75	27	54,5	41	46	SKK12-25S-PG-C6F	SKK12-25S-VG-C6F
			2.95	1.06	2.15	1.61	1.81		
	30	81	28	57	46	50	SKK12-30S-PG-C6F	SKK12-30S-VG-C6F	
		3.19	1.10	2.24	1.81	1.97			
315 4568	38	91	29	61,5	55	60	SKK12-38S-PG-C6F	SKK12-38S-VG-C6F	
		3.58	1.14	2.42	2.17	2.36			



Version A



Version B

### Test Coupling for 24° Cone Fittings SKK12 Type K



Series	PN ( <sup>bar</sup> /psi)	Pipe Ød	Dimensions (mm/in)		Thread G	Version	Order Codes	
			I3	Hex A			NBR	FPM* (Standard Option-North America)
L	315 4568	6	15,5	14	M12 x 1,5	A	SKK12-06L-PK-C6F	SKK12-06L-VK-C6F
			.61	.55				
		8	15,5	17	M14 x 1,5	A	SKK12-08L-PK-C6F	SKK12-08L-VK-C6F
			.61	.67				
		10	16,5	19	M16 x 1,5	A	SKK12-10L-PK-C6F	SKK12-10L-VK-C6F
			.65	.75				
	12	17,5	22	M18 x 1,5	A	SKK12-12L-PK-C6F	SKK12-12L-VK-C6F	
		.69	.87					
	160 2320	15	21	27	M22 x 1,5	B	SKK12-15L-PK-GS-C6F	SKK12-15L-VK-GS-C6F
			.83	1.06				
		18	19,5	32	M26 x 1,5	B	SKK12-18L-PK-GS-C6F	SKK12-18L-VK-GS-C6F
			.77	1.26				
22		20,5	36	M30 x 2	B	SKK12-22L-PK-GS-C6F	SKK12-22L-VK-GS-C6F	
		.81	1.42					
28	25	41	M36 x 2	B	SKK12-28L-PK-GS-C6F	SKK12-28L-VK-GS-C6F		
	.98	1.61						
35	30	50	M45 x 2	B	SKK12-35L-PK-GS-C6F	SKK12-35L-VK-GS-C6F		
	1.18	1.97						
42	31	60	M52 x 2	B	SKK12-42L-PK-GS-C6F	SKK12-42L-VK-GS-C6F		
	1.22	2.36						
S	630 9137	6	14,5	17	M14 x 1,5	A	SKK12-06S-PK-C6F	SKK12-06S-VK-C6F
			.57	.67				
		8	16,5	19	M16 x 1,5	A	SKK12-08S-PK-C6F	SKK12-08S-VK-C6F
			.65	.75				
		10	16,5	22	M18 x 1,5	A	SKK12-10S-PK-C6F	SKK12-10S-VK-C6F
	.65		.87					
	12	17,5	24	M20 x 1,5	A	SKK12-12S-PK-C6F	SKK12-12S-VK-C6F	
		.69	.94					
	400 5801	14	19,5	27	M22 x 1,5	B	SKK12-14S-PK-GS-C6F	SKK12-14S-VK-GS-C6F
			.77	1.06				
		16	18	30	M24 x 1,5	B	SKK12-16S-PK-GS-C6F	SKK12-16S-VK-GS-C6F
	.71		1.18					
	315 4568	20	24	36	M30 x 2	B	SKK12-20S-PK-GS-C6F	SKK12-20S-VK-GS-C6F
			.94	1.42				
		25	26	46	M36 x 2	B	SKK12-25S-PK-GS-C6F	SKK12-25S-VK-GS-C6F
1.02	1.81							
30	30	50	M42 x 2	B	SKK12-30S-PK-GS-C6F	SKK12-30S-VK-GS-C6F		
	1.18	1.97						
38	34	60	M52 x 2	B	SKK12-38S-PK-GS-C6F	SKK12-38S-VK-GS-C6F		
	1.34	2.36						

- For DKO connection
- According to ISO 8434-1 / DIN 2353
- Version A: one-piece design
- Version B: screwed design

#### Metal Parts

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

#### Sealings

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

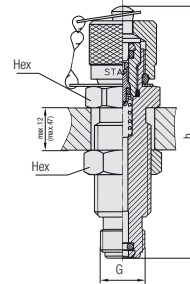
\* Standard option for North America is FPM (Viton®).

#### Protection Cap

Standard material: Steel  
 For ordering the plastic protection cap version please add  
 "-KK" to the order code. (e.g. SKK12-06L-PK-KK-C6F)

For further information on materials, sealings or protection caps, please see page B22.

**Bulkhead  
SSKK12**



**Threads**

\*1 Special thread: buttress thread S12,65 x 1,5

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

**Sealings**

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

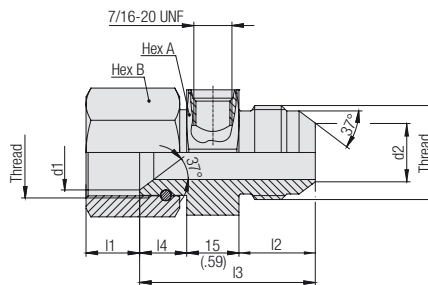
**Protection Cap**

Standard material: Steel  
 For ordering the plastic protection cap version please add "-KK" to the order code. (e.g. SSKK12-P-KK-C6F)

For further information on materials, sealings or protection caps, please see page B22.

Thread	Dimensions (mm/in)		Order Codes NBR	FPM* (Standard Option-North America)
	G	Hex		
S12*1	63	19	SSKK12-P-C6F	SSKK12-V-C6F
	2.48	0.75		

**Swivel Run Tee with JIC Connection  
SGV-JIC Type F/M**

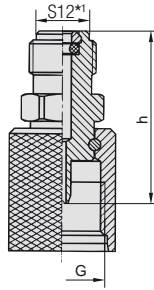


**Metal Parts**

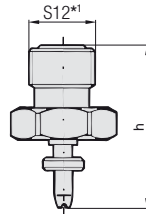
Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

For further information please consult STAUFF.

Thread	Dimensions (mm/in)								Order Codes
	inch	Ø d1	Ø d2	l1	l2	l3	l4	Hex A	
7/16-20 UNF	7,49	4,9	9	14	37	8	27	17	SGV-7/16UNF-04-JIC1/4-F/M-C6F
	.29	.19	.35	.55	1.46	.31	1.06	.67	
9/16-18 UNF	11,05	8,1	10,5	14	37,5	8,5	27	19	SGV-7/16UNF-06-JIC3/8-F/M-C6F
	.44	.32	.41	.55	1.48	.33	1.06	.75	
3/4-16 UNF	15,9	10,8	10,5	16,7	43,7	12	30	22	SGV-7/16UNF-08-JIC1/2-F/M-C6F
	.63	.43	.41	.66	1.72	.47	1.18	.87	
1-1/16-12 UN	21,6	16,9	15,4	21,9	50,4	13,5	36	32	SGV-7/16UNF-12-JIC3/4-F/M-C6F
	.85	.66	.61	.86	1.98	.53	1.42	1.26	
1-5/16-12 UN	27,9	23,2	17,3	23,1	53,1	15	41	41	SGV-7/16UNF-16-JIC1-F/M-C6F
	1.10	.91	.68	.91	2.09	.59	1.61	1.61	

**Adaptor  
SAD12**


Version A



Version B



Thread	Dimensions (mm/in)	Version	Order Codes	
			NBR	FPM* (Standard Option-North America)
M16 x 2	33	A	SAD12/20-P-C6F	SAD12/20-V-C6F
	1.30			
M16 x 1,5	33	A	SAD12/15-P-C6F	SAD12/15-V-C6F
	1.30			
Plug in	31	B	SAD12/10-P-C6F	SAD12/10-V-C6F
	1.22			

**Threads**

\*1 Special thread: buttress thread S12,65 x1,5

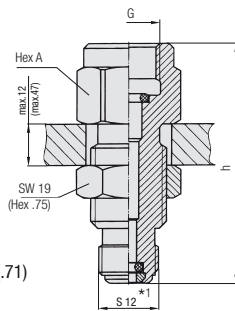
**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

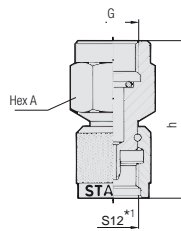
**Sealings**

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).



Gauge Adaptor SMA12



Direct Gauge Adaptor SMD12

**Gauge Adaptor  
SMA12**
**Direct Gauge Adaptor  
SMD12**


Thread	Dimensions (mm/in)		Order Codes	
	h	Hex A	NBR	FPM* (Standard Option-North America)
G1/4	51	19	SMA12-G1/4-P-OR-C6F	SMA12-G1/4-V-OR-C6F
	2.01	.75		
G1/2	61	27	SMA12-G1/2-P-OR-C6F	SMA12-G1/2-V-OR-C6F
	2.40	1.06		
1/4 NPT	51	19	SMA12-1/4NPT-P-C6F	SMA12-1/4NPT-V-C6F
	2.01	.75		
1/2 NPT	61	27	SMA12-1/2NPT-P-C6F	SMA12-1/2NPT-V-C6F
	2.40	1.06		
G1/4	35	19	SMD12-G1/4-P-OR-C6F	SMD12-G1/4-V-OR-C6F
	1.38	.75		
G1/2	45	27	SMD12-G1/2-P-OR-C6F	SMD12-G1/2-V-OR-C6F
	1.77	1.06		
1/4 NPT	35	19	SMD12-1/4NPT-C6F	
	1.38	.75		
1/2 NPT	45	27	SMD12-1/2NPT-C6F	
	1.77	1.06		

**Threads**

\*1 Special thread: buttress thread S12,65 x1,5

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

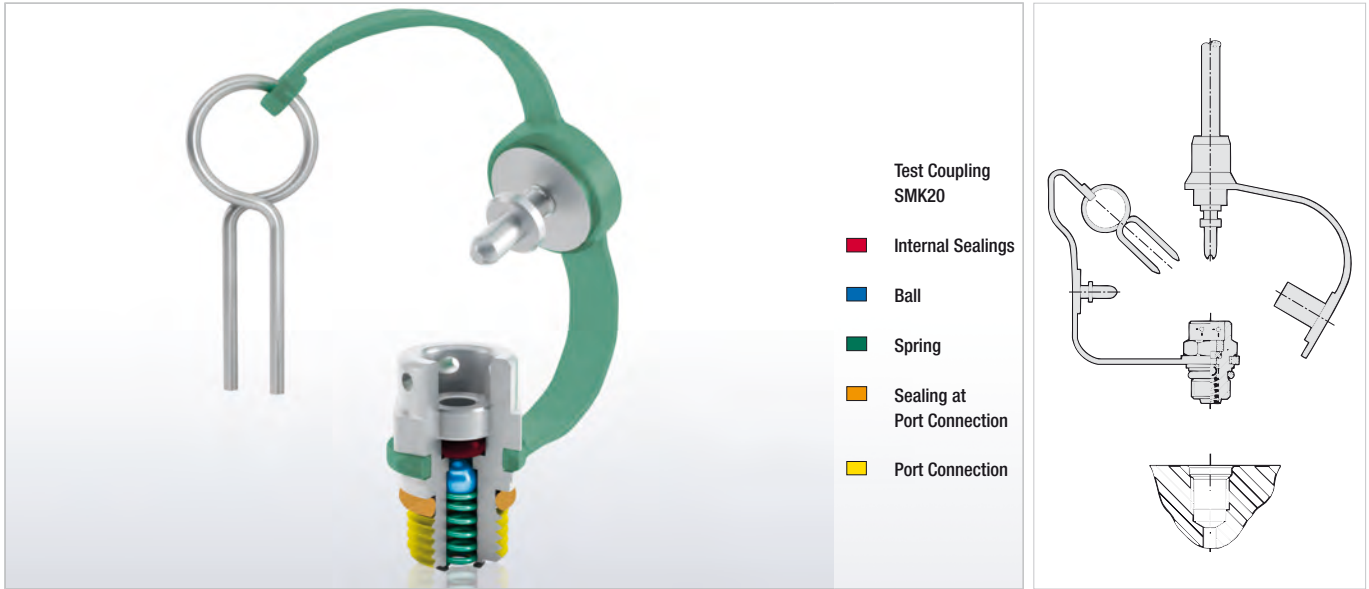
**Sealings**

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

Snubber on request.

## Test Coupling with Ball Check



### Fast coupling for

- Monitoring and control of pressure
- Venting
- Sampling in high- and low-pressure systems

### Advantages

- Test system at working pressure
- Leak proof connection before **ball check** is open
- Simple connection to measurement, control and switching devices

### Working Pressure

- Max. working pressure 400 bar / 5801 PSI  
For SMK Type G and K the recommended working pressure of fitting manufacturer should be noted.

### Materials

- **Metal Parts:**  
Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**
- **Ball:** Stainless Steel

### Sealings:

**P = NBR (Buna-N®)**

(Temperature range -20 °C ... +100 °C / -4 °F ... +212 °F)

Note: Internal sealings made of FPM, even for standard NBR-type.

**V = FPM (Viton®)\***

(Temperature range -20 °C ... +200 °C / -4 °F ... +392 °F)

**\* Standard option for North America is FPM (Viton®)**

**E = EPDM Ethylene Propylene Diene Monomer Rubber**

(for Brake fluid,

Temperature range -40 °C ... +150 °C / -40 °F ... +302 °F)

For ordering FPM or EPDM sealings please replace "P" with "V" or "E".

### Media

- Suitable for hydraulic oils and other Mineral oil based fluids (Check compatibility of seal material)
- For use with other liquid media please consult STAUFF

**SMK10**  
Test Coupling  
with Port Connection



**SMK10 Type G**  
Test Coupling complete  
with Straight Fitting

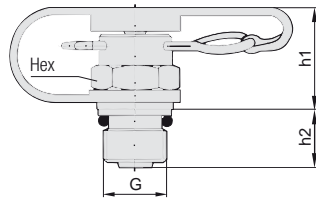


**SMK10 Type K**  
Test Coupling for  
24° Cone Fittings





## Test Coupling with Port Connection SMK10



Thread	Sealing	Working Pressure (bar / psi)	Dimensions (mm / in)			Order Codes	
			h1	h2	Hex	NBR	FPM* (Standard Option-North America)
M8 x 1	Type A	250	17,5	8,5	12	SMK10-M8x1-PA-C6F	SMK10-M8x1-VA-C6F
		3625	.69	.33	.47		
M10 x 1		400	17,5	9,8	12	SMK10-M10x1-PA-C6F	SMK10-M10x1-VA-C6F
		5801	.69	.39	.47		
R1/8 K	Type D	400	17,5	8	12	SMK10-R1/8K-PD-C6F	SMK10-R1/8K-VD-C6F
		5801	.69	.31	.47		

For further information on materials or seals, please see page B28.  
Further thread versions possible with use of thread adaptors SRS20, please see page B32.

### Metal Parts

Standard material: Steel, zinc/nickel-plated = C6F (CrVI-free)

### Sealings

For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

### Sealing Details

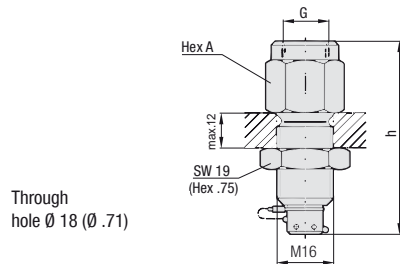


O-ring Type A



Taper Type D  
(suitable sealant required)

## Gauge Adaptor SMA10



Thread	Dimensions (mm / in)		Order Codes	
	h	Hex A	NBR	FPM* (Standard Option-North America)
G1/4	57	19	SMA10-G1/4-P-OR-C6F	SMA10-G1/4-V-OR-C6F
	2.24	.75		
G1/2	67	27	SMA10-G1/2-P-OR-C6F	SMA10-G1/2-V-OR-C6F
	2.64	1.06		
1/4 NPT	57	19	SMA10-1/4NPT-P-C6F	SMA10-1/4NPT-V-C6F
	2.24	.75		
1/2 NPT	67	27	SMA10-1/2NPT-P-C6F	SMA10-1/2NPT-V-C6F
	2.64	1.06		

### Metal Parts

Standard material: Steel, zinc/nickel-plated = C6F (CrVI-free)

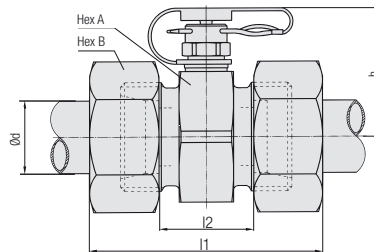
### Sealings

For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

Snubber on request.

**Test Coupling complete with Straight Fitting  
SMK10 Type G**



▪ Compression ring fittings acc. to ISO 8434-1 / DIN 2353

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**

**Sealings**

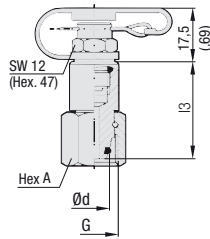
For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

\* **Standard option for North America is FPM (Viton®).**

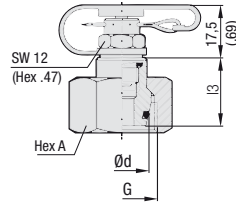
For further information on materials or sealings, please see page B28.

Series	PN ( <sup>bar</sup> /PSI)	Pipe Ød	Dimensions (mm /in)					Order Codes	
			~l1	l2	h	Hex A	Hex B	NBR	FPM* (Standard Option-North America)
L	315 4568	6	51	21	29,5	24	14	SMK10-06L-PG-C6F	SMK10-06L-VG-C6F
			2.01	.83	1.16	.94	.55		
		8	51	21	29,5	24	17	SMK10-08L-PG-C6F	SMK10-08L-VG-C6F
			2.01	.83	1.16	.94	.67		
		10	53	23	29,5	24	19	SMK10-10L-PG-C6F	SMK10-10L-VG-C6F
			2.09	.91	1.16	.94	.75		
	12	53	23	31	27	22	SMK10-12L-PG-C6F	SMK10-12L-VG-C6F	
		2.09	.91	1.22	1.06	.87			
	15	55	25	32,5	30	27	SMK10-15L-PG-C6F	SMK10-15L-VG-C6F	
		2.17	.98	1.28	1.18	1.06			
	18	57	24	33,5	32	32	SMK10-18L-PG-C6F	SMK10-18L-VG-C6F	
		2.24	.94	1.32	1.26	1.26			
	160 2320	22	61	28	33,5	36	36	SMK10-22L-PG-C6F	SMK10-22L-VG-C6F
			2.40	1.10	1.32	1.42	1.42		
28		61	28	38	41	41	SMK10-28L-PG-C6F	SMK10-28L-VG-C6F	
		2.40	1.10	1.50	1.61	1.61			
35		69	26	40,5	46	50	SMK10-35L-PG-C6F	SMK10-35L-VG-C6F	
	2.72	1.02	1.59	1.81	1.97				
42	71	25	45	55	60	SMK10-42L-PG-C6F	SMK10-42L-VG-C6F		
S	400 5801	6	55	25	29,5	24	17	SMK10-06S-PG-C6F	SMK10-06S-VG-C6F
			2.17	.98	1.16	.94	.67		
		8	55	25	29,5	24	19	SMK10-08S-PG-C6F	SMK10-08S-VG-C6F
			2.17	.98	1.16	.94	.75		
		10	57	24	29,5	24	22	SMK10-10S-PG-C6F	SMK10-10S-VG-C6F
			2.24	.94	1.16	.94	.87		
		12	57	24	29,5	24	24	SMK10-12S-PG-C6F	SMK10-12S-VG-C6F
			2.24	.94	1.16	.94	.94		
		14	63	27	31	27	27	SMK10-14S-PG-C6F	SMK10-14S-VG-C6F
			2.50	1.06	1.22	1.06	1.06		
		16	63	26	32,5	30	30	SMK10-16S-PG-C6F	SMK10-16S-VG-C6F
			2.50	1.02	1.28	1.18	1.18		
		20	69	26	35,5	36	36	SMK10-20S-PG-C6F	SMK10-20S-VG-C6F
			2.72	1.02	1.40	1.42	1.42		
25	75	27	38	41	46	SMK10-25S-PG-C6F	SMK10-25S-VG-C6F		
	2.95	1.06	1.50	1.61	1.81				
30	81	28	40,5	46	50	SMK10-30S-PG-C6F	SMK10-30S-VG-C6F		
	3.19	1.10	1.59	1.81	1.97				
315 4568	38	91	29	45	55	60	SMK10-38S-PG-C6F	SMK10-38S-VG-C6F	
			3.58	1.14	1.77	2.17	2.36		

### Test Coupling for 24° Cone Fittings SMK10 Type K



Version A



Version B



Series	PN ( <sup>bar</sup> /PSI)	Pipe Ød	Dimensions (mm/in)		Thread G	Version	Order Codes		
			I3	Hex A			NBR	FPM* (Standard Option-North America)	
L	315 4568	6	15,5 .61	14 .55	M12 x 1,5	A	SMK10-06L-PK-GS-C6F	SMK10-06L-VK-GS-C6F	
		8	15,5 .61	17 .67	M14 x 1,5	A	SMK10-08L-PK-GS-C6F	SMK10-08L-VK-GS-C6F	
		10	16,5 .65	19 .75	M16 x 1,5	A	SMK10-10L-PK-GS-C6F	SMK10-10L-VK-GS-C6F	
		12	17,5 .69	22 .87	M18 x 1,5	A	SMK10-12L-PK-GS-C6F	SMK10-12L-VK-GS-C6F	
		15	21 .83	27 1.06	M22 x 1,5	B	SMK10-15L-PK-GS-C6F	SMK10-15L-VK-GS-C6F	
		18	19,5 .77	32 1.26	M26 x 1,5	B	SMK10-18L-PK-GS-C6F	SMK10-18L-VK-GS-C6F	
	160 2320	22	20,5 .81	36 1.42	M30 x 2	B	SMK10-22L-PK-GS-C6F	SMK10-22L-VK-GS-C6F	
		28	25 .98	41 1.61	M36 x 2	B	SMK10-28L-PK-GS-C6F	SMK10-28L-VK-GS-C6F	
		35	30 1.18	50 1.97	M45 x 2	B	SMK10-35L-PK-GS-C6F	SMK10-35L-VK-GS-C6F	
		42	31 1.22	60 2.36	M52 x 2	B	SMK10-42L-PK-GS-C6F	SMK10-42L-VK-GS-C6F	
	S	400 5801	6	14,5 .57	17 .67	M14 x 1,5	A	SMK10-06S-PK-GS-C6F	SMK10-06S-VK-GS-C6F
			8	16,5 .65	19 .75	M16 x 1,5	A	SMK10-08S-PK-GS-C6F	SMK10-08S-VK-GS-C6F
10			16,5 .65	22 .87	M18 x 1,5	A	SMK10-10S-PK-GS-C6F	SMK10-10S-VK-GS-C6F	
12			17,5 .69	24 .94	M20 x 1,5	A	SMK10-12S-PK-GS-C6F	SMK10-12S-VK-GS-C6F	
14			19,5 .77	27 1.06	M22 x 1,5	B	SMK10-14S-PK-GS-C6F	SMK10-14S-VK-GS-C6F	
16			18 .71	30 1.18	M24 x 1,5	B	SMK10-16S-PK-GS-C6F	SMK10-16S-VK-GS-C6F	
20			24 .94	36 1.42	M30 x 2	B	SMK10-20S-PK-GS-C6F	SMK10-20S-VK-GS-C6F	
25			26 1.02	46 1.81	M36 x 2	B	SMK10-25S-PK-GS-C6F	SMK10-25S-VK-GS-C6F	
30			30 1.18	50 1.97	M42 x 2	B	SMK10-30S-PK-GS-C6F	SMK10-30S-VK-GS-C6F	
315 4568			38	34 1.34	60 2.36	M52 x 2	B	SMK10-38S-PK-GS-C6F	SMK10-38S-VK-GS-C6F

- For DKO connection
- According to ISO 8434-1 / DIN 2353

#### Metal Parts

Standard material: Steel, zinc/nickel-plated = C6F (CrVI-free)

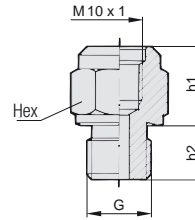
#### Sealings

For ordering FPM sealings replace "P" with "V".  
For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

For further information on materials or sealings, please see page B28.

## Thread Adaptor SRS20



### Metal Parts

Standard Material SRS20:

Steel, zinc/nickel-plated = **C6F (CrVI-free)**

For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".

For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".

For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

### Sealing Details



Metal Joint Type B



Elastomeric Sealing Type C



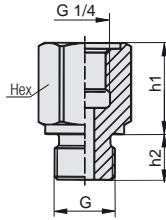
Taper Type D  
(suitable sealant required)



O-ring Type E

Thread	Sealing	Dimensions (mm/in)			Order Codes
		h1	h2	Hex	
G		h1	h2	Hex	
M10 x 1		15,5	8,5	17	SRS20-M10x1-B-C6F
		.61	.33	.67	
M12 x 1,5		15	12	19	SRS20-M12x1,5-B-C6F
		.59	.47	.75	
M14 x 1,5		15	12	19	SRS20-M14x1,5-B-C6F
		.59	.47	.75	
M16 x 1,5		8	12	22	SRS20-M16x1,5-B-C6F
		.31	.47	.87	
M18 x 1,5	Type B	15	12	24	SRS20-M18x1,5-B-C6F
		.59	.47	.94	
M22 x 1,5		10,5	14	27	SRS20-M22x1,5-B-C6F
		.41	.55	1.06	
G1/8		15,5	8	17	SRS20-G1/8-B-C6F
		.61	.31	.67	
G1/4		15	12	19	SRS20-G1/4-B-C6F
		.59	.47	.75	
G3/8		10,5	12	22	SRS20-G3/8-B-C6F
		.41	.47	.87	
G1/2		10,5	14	27	SRS20-G1/2-B-C6F
		.41	.55	1.06	
M12 x 1,5		15	12	19	SRS20-M12x1,5-PC-C6F
		.59	.47	.75	
M14 x 1,5		15	12	19	SRS20-M14x1,5-PC-C6F
		.59	.47	.75	
M18 x 1,5		15	12	24	SRS20-M18x1,5-PC-C6F
		.59	.47	.94	
G1/8	Type C	16	8	17	SRS20-G1/8-PC-C6F
		.63	.31	.67	
G1/4		15	12	19	SRS20-G1/4-PC-C6F
		.59	.47	.75	
G3/8		10,5	12	22	SRS20-G3/8-PC-C6F
		.41	.47	.87	
G1/2		10,5	14	27	SRS20-G1/2-PC-C6F
		.41	.55	1.06	
R1/4 K		13	12	17	SRS20-R1/4K-D-C6F
		.51	.47	.67	
R3/8 K		13	14	19	SRS20-R3/8K-D-C6F
		.51	.55	.75	
R1/2 K	Type D	8	19	22	SRS20-R1/2K-D-C6F
		.31	.75	.87	
1/4 NPT		10	15	17	SRS20-1/4NPT-D-C6F
		.39	.59	.67	
1/2 NPT		8	20	22	SRS20-1/2NPT-D-C6F
		.31	.79	.87	
7/16-20 UNF		9	9,1	17	SRS20-7/16UNF-PE-C6F
		.35	.36	.67	
1/2-20 UNF		15	9,2	17	SRS20-1/2UNF-PE-C6F
		.59	.36	.67	
9/16-18 UNF		15,5	10	19	SRS20-9/16UNF-PE-C6F
		.61	.39	.75	
7/8-14 UNF		11	16	27	SRS20-7/8UNF-PE-C6F
		.43	.63	1.06	
M14 x 1,5	Type E	14,5	11	19	SRS20-M14x1,5-PE-C6F
		.57	.43	.75	
M16 x 1,5		8,5	12,5	22	SRS20-M16x1,5-PE-C6F
		.33	.49	.87	
M22 x 1,5		10	15	27	SRS20-M22x1,5-PE-C6F
		.39	.59	1.06	
M27 x 2		10	18,5	32	SRS20-M27x2-PE-C6F
		.39	.73	1.26	

## Thread Adaptor SRS15



Thread	Sealing	Dimensions (mm/in)			Order Codes
		h1	h2	Hex	
<b>G</b>					
M14 x 1,5	Type B	24	12	19	SRS15-M14x1,5-B-C6F
		.95	.47	.75	
M16 x 1,5		24	12	22	SRS15-M16x1,5-B-C6F
		.95	.47	.87	
M18 x 1,5		24	12	24	SRS15-M18x1,5-B-C6F
		.95	.47	.95	
M20 x 1,5		10,5	14	27	SRS15-M20x1,5-B-C6F
		.41	.55	1.06	
G3/8		24	12	22	SRS15-G3/8-B-C6F
		.95	.47	.87	
G1/2	10,5	14	27	SRS15-G1/2-B-C6F	
	.41	.55	1.06		
M14 x 1,5	Type C	24	12	19	SRS15-M14x1,5-PC-C6F
		.95	.47	.75	
M16 x 1,5		24	12	22	SRS15-M16x1,5-PC-C6F
		.95	.47	.87	
M18 x 1,5		24	12	24	SRS15-M18x1,5-PC-C6F
		.95	.47	.95	
G3/8		24	12	22	SRS15-G3/8-PC-C6F
			.95	.47	

### Metal Parts

Standard material SRS15:

Steel, zinc/nickel-plated = **C6F (CrVI-free)**

For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".

For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".

For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

### Sealing Details

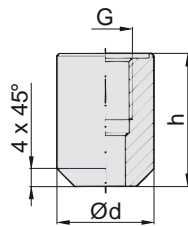


Metal Joint Type B



Elastomeric Sealing Type C

## Welding Adaptor SAS



Thread	Port Connection	Dimensions (mm/in)		Order Codes
		h	Ød	
<b>G</b>				
M10 x 1	Type A	25	20	SAS-M10x1
		.98	.79	
G1/8	Type B/C	25	20	SAS-G1/8
		.98	.79	
G1/4		30	22	SAS-G1/4
		1.18	.87	
G3/8		30	25	SAS-G3/8
		1.18	.98	
1/4 NPT	Type D	25	20	SAS-1/4NPT
		.98	.79	
1/2-20 UNF	Type E	25	20	SAS-1/2UNF
		.98	.79	

### Metal Parts

Standard material: **S235 (St 37), phosphated**

## Pressure Gauge SPG

Further information on these products please see Diagtronics section on:

- Page D6 / D7 for Pressure Gauge (analogue) SPG
- Page D10 for Pressure Gauge (digital) SPG-DIGI

Further information on these products please see STAUFF Test section on:

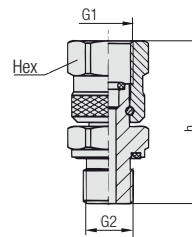
- Page B11, B21, B27 and B29 for Gauge Adaptor SMA
- Page B11, B27 and B27 for Direct Gauge Adaptor SMD
- Page B36 for Test Hose - Gauge Adaptor
- Page B34 for Adjustable Gauge Fitting EMV

Further information on these products please see Valve section on:

- Page F90 for Single Station Gauge Isolater Valve
- Page F90 for Multi Station Gauge Isolater Valve
- Page F91 for Gauge Isolater Valve Needle Valve



## Adjustable Gauge Fitting EMV



### Metal Parts

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**  
 For ordering V2A (1.4305 / AISI 303) replace "C6F" with "V2A".  
 For ordering V4A (1.4571 / AISI 316Ti) replace "C6F" with "V4A".

### Sealings

For ordering FPM sealings replace "P" with "V".  
 For ordering EPDM sealings replace "P" with "E".

\* Standard option for North America is FPM (Viton®).

Dimensions (mm/in)				Order Codes NBR	FPM* (Standard Option-North America)
G1	G2	h	Hex		
G1/4	G1/4	42	19	EMV-G1/4-P-OR-PC-C6F	EMV-G1/4-V-OR-VC-C6F
		1.65	.75		
G1/4	G1/2	47	19	EMV-G1/4G1/2-P-OR-PC-C6F	EMV-G1/4G1/2-V-OR-VC-C6F
		1.85	.75		
G1/2	G1/4	51	27	EMV-G1/2G1/4-P-OR-PC-C6F	EMV-G1/2G1/4-V-OR-VC-C6F
		2.01	1.06		
G1/2	G1/2	55,5	27	EMV-G1/2-P-OR-PC-C6F	EMV-G1/2-V-OR-VC-C6F
		2.19	1.06		



## Pressure Test Kit SMB



SMB20-1-xxx/xxx-C6F or SMB15-1-xxx/xxx-C6F



SMB20-2-xxx/xxx-C6F or SMB15-2-xxx/xxx-C6F



SMB20-3-xxx/xxx-C6F or SMB15-3-xxx/xxx-C6F



SMB20/100-1-xxx-C6F or SMB15/100-1-xxx-C6F



SMB-DIGI

In addition to the individual SPG gauges, the STAUFF Pressure Gauges are also available as a part of a Pressure Test Kit SMB.

The SMB Pressure Test Kits are assembled in various versions, in accordance with customer wishes.

All Pressure Test Kits are supplied in a handy case with custom-designed foam inserts.

Further information on these products and components please see Diagtronics section on:

- Page D8 / D9 for Pressure Test Kit (analogue) SMB20

Note: All test kits are available as SMB15 version.

## Pressure Test Kit (Digital) SMB-DIGI

In addition to the individual SPG-DIGI devices, the STAUFF Digital Pressure Gauges are also available as a part of a Pressure Test Kit SMB-DIGI.

The SMB-DIGI Pressure Test Kits are assembled in various versions, in accordance with customer wishes.

All Pressure Test Kits are supplied in a handy case with custom-designed foam inserts.

Further information on these products and components please see Diagtronics section on:

- Page D11 for Pressure Test Kit (digital) SMB-DIGI

**Technical Data for Test Hose**



		A	B	C	D
Nominal Bore (DN)	(mm)	<b>DN 2</b>		<b>DN 4</b>	
Max. Working Pressure (PN)	(bar / PSI)	400 / 5801	630 / 9135	340 / 4931	630 / 9135
Min. Burst Pressure	(bar / PSI)	1100 / 15954	1900 / 27557	850 / 12328	1900 / 27557
Testing Pressure	(bar / PSI)	600 / 8702	950 / 13778	570 / 8267	950 / 13779
Pressure Rating in bar / PSI at Indicated Temperature	at 0 °C / 32 °F (122 %)	488 / 7077	768 / 11139	415 / 6016	768 / 11139
	at 30 °C / 86 °F (110 %)	440 / 6381	693 / 10051	374 / 5424	693 / 10051
	at 50 °C / 122 °F (100 %)	400 / 5801	630 / 9137	340 / 4931	630 / 9137
	at 80 °C / 176 °F (86 %)	344 / 4989	542 / 7861	292 / 4241	542 / 7861
	at 100 °C / 212 °F (77 %)	308 / 4467	485 / 7034	262 / 3797	485 / 7034
Working Temperature	(°C / °F)	-35 °C ... +100 °C / -31 °F ... +212 °F (momentary +120 °C / +248 °F)			
Inside Diameter	(mm / in)	2 / .08		4 / .16	
Outside Diameter	(mm / in)	5 / .20		8,6 / .34	
Bending Radius	at working pressure	20 / .79		40 / 1.57	
	at -20 °C / 4 °F	30 / 1.18		60 / 2.36	
Max. Coil Length	(m / ft)	100 / 328			
Weight / m	(g / oz)	16 / .50		42 / 1.35	
Inner / Outer Tube		PA			
Reinforcement		Synthetic Fibre			
Standard hose end material is Steel 11 S Mn Pb 30 (1.0718), zinc/ nickel-plated (Type 15: Steel, black zinc/nickel-plated)					
Stainless Steel: V2A (1.4305/AISI 303), V4A (1.4571/AISI 316Ti) on request					

**STAUFF Test Hoses (Selection)**

STAUFF-Test 20/20

STAUFF-Test 15/15

STAUFF-Test 12/12\*2

STAUFF-Test 10/10

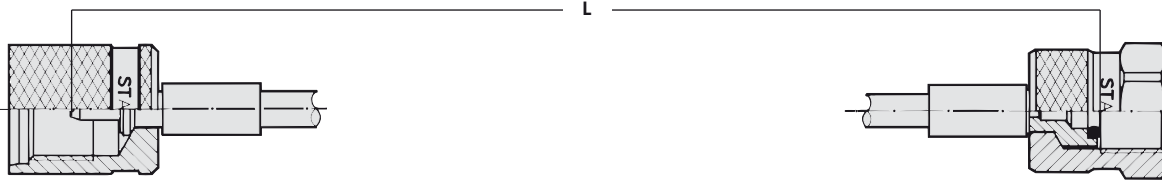
Gauge Adaptor



\*2 Special thread: buttress thread S12,65 x 1,5



## Order Code STAUFF Test Hose

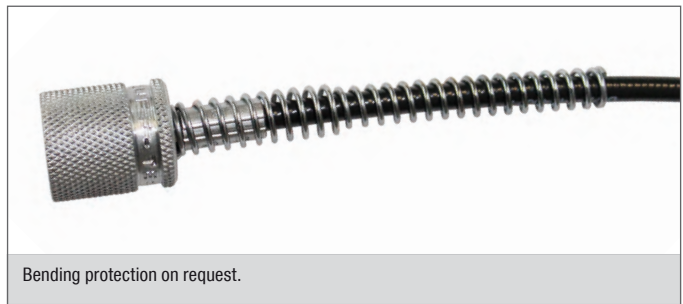


SMS *1	20	/ M . . . .	3000	A	C6F
--------	----	-------------	------	---	-----

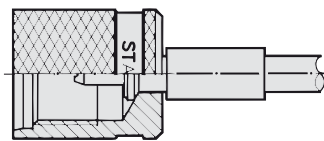
Hose End 1 (see pages B38 - B43)	Hose End 2 (see pages B38 - B43)		Length	DN / Hose Size	Material Hose End
20 A . . . . J . . . .	only specify when 2 different hose ends are required		Length in mm (see L above)	A = DN 2 400 bar / 5802 PSI	Standard hose end material is Steel 11 S Mn Pb 30 (1.0718), zinc/nickel-plated = C6F Type 15: Steel, black zinc/nickel-plated = C6F Stainless Steel: V2A (1.4305/AISI 303), V4A (1.4571/AISI 316Ti) on request
15 S . . . . D . . . .				B*2 = DN 2 630 bar / 9137 PSI	
12 K . . . . B . . . .				C*3 = DN 4 340 bar / 4931 PSI	
10 L . . . . U . . . .				D*3 = DN 4 630 bar / 9137 PSI	
M . . . . G . . . . P . . . .			Standard Lengths see table below.		
N . . . . F . . . . etc.					
W . . . . C . . . .					

\*1 for gaseous media type SGS - Test hoses are perforated  
 \*2 Standard test hose option for North America is version B.  
 \*3 Type C and D - are perforated

Standard Length L*	
in mm	in in
200	7.87
400	15.75
630	24.80
800	31.50
1000	39.37
1500	59.06
2000	78.74
2500	98.43
3200	125.98
4000	157.48


 STAUFF  
Test  
B

## Order Code STAUFF Hose End



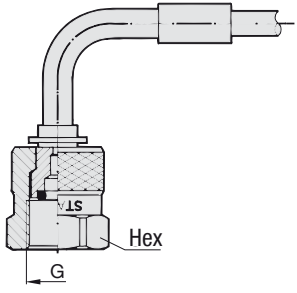
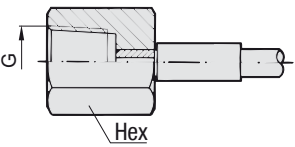
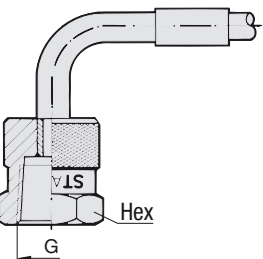
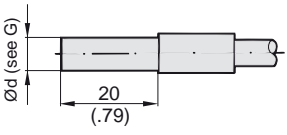
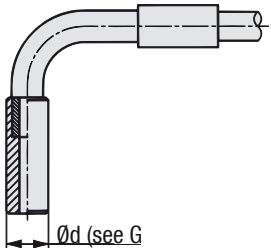
HE	20	A	C6F
----	----	---	-----

Hose End (see pages B38 - B43)			DN / Hose Size	Material Hose End
20 A . . . . J . . . .			A = DN 2	Standard hose end material is Steel 11 S Mn Pb 30 (1.0718), zinc/nickel-plated = C6F Type 15: Steel, black zinc/nickel-plated = C6F Stainless Steel: V2A (1.4305/AISI 303), V4A (1.4571/AISI 316Ti) on request
15 S . . . . D . . . .			C = DN 4	
12 K . . . . B . . . .				
10 L . . . . U . . . .				
M . . . . G . . . . P . . . .				
N . . . . F . . . . etc.				
W . . . . C . . . .				

STAUFF Hose End

Hose End	Description	Type	G	Hex (mm/in)	DN Hose Size	
	STAUFF-Test Screw-type  suitable for test points		20	M16 x 2	2 and 4	
			15	M16 x 1,5		
			12	S12,65 x 1,5		
	STAUFF-Test Screw-type 90° elbow  suitable for test points	0	20	M16 x 2	2	
			15	M16 x 1,5		
			12	S12,65 x 1,5		
	STAUFF-Test Screw-type 90° elbow  suitable for test points  (short wire version)	OX	20	M16 x 2	17 .67 2	
			15	M16 x 1,5		
			12	S12,65 x 1,5		
	STAUFF-Test Plug in-type		10	Plug in system	2	
	Gauge adaptor BSP-thread  for G3/8, G1/2, M14 x 1,5 and M20 x 1,5 swivel nut like type N	M	1/4	G1/4	19 .75	2 and 4
			1/2	G1/2	27 1.06	
			3/8	G3/8	22 .87	2
			14	M14 x 1,5	19 .75	
			20	M20 x 1,5	27 1.06	

## STAUFF Hose End

Hose End	Description	Type	G	Hex (mm/in)	DN Hose Size
	90° elbow gauge adaptor BSP-thread  for G1/2 swivel nut like type N	W	1/4	G1/4	19 .75
			1/2	G1/2	27 1.06
	Gauge adaptor NPT-thread  for 1/4 NPT swivel nut like type M	N	1/4	1/4 NPT	19 .75
			1/2	1/2 NPT	27 1.06
	90° elbow gauge adaptor NPT-thread  for 1/2 NPT swivel nut like type N	A	1/4	1/4 NPT	19 .75
			1/2	1/2 NPT	27 1.06
	Standpipe for compression ring fittings according to ISO 8434-1 / DIN 2353  Note: Standpipe version is not in accordance with the state of the art. Use at own risk. We recommend the use of the series K, R or L.	S	4	4 LL	2
			6	6 L - 6 S	2 and 4
			8	8 L - 8 S	
			10	10 L - 10 S	2
			12	12 L - 12 S	2 and 4
	Standpipe for compression ring fittings according to ISO 8434-1 / DIN 2353 90° elbow  Note: Standpipe version is not in accordance with the state of the art. Use at own risk. We recommend the use of the series K, R or L.	SG	6	6 L - 6 S	2 and 4
			8	8 L - 8 S	

STAUFF Hose End

Hose End	Description	Type	G	Hex (mm/in)	DN Hose Size	
	Seal with O-ring for 24° cone fitting according to ISO 8434-1 / DIN 2353 c/w swivel nut	K	6 L	M12 x 1,5	14 .55	2 and 4
			8 L	M14 x 1,5	17 .67	
			10 L	M16 x 1,5	19 .75	
			12 L	M18 x 1,5	22 .87	
			6 S	M14 x 1,5	17 .67	
			8 S	M16 x 1,5	19 .75	
			10 S	M18 x 1,5	22 .87	
			12 S	M20 x 1,5	24 .94	
	Seal with O-ring for 24° cone fitting according to ISO 8434-1 / DIN 2353 c/w swivel nut 45° elbow	R	6 L	M12 x 1,5	14 .55	2 and 4
			6 S	M14 x 1,5	14 .67	
	Seal with O-ring for 24° cone fitting according to ISO 8434-1 / DIN 2353 c/w swivel nut 90° elbow	L	6 L	M12 x 1,5	14 .55	2 and 4
			8 L	M14 x 1,5	17 .67	
			10 L	M16 x 1,5	19 .75	
			6 S	M14 x 1,5	17 .67	
			8 S	M16 x 1,5	19 .75	
			10 S	M18 x 1,5	24 .94	
	Male thread according to DIN 3852-B	G	12	M12 x 1,5	17 .67	2 and 4
			1/8	G1/8	14 .55	
			1/4	G1/4	19 .75	
			1/2	G1/2	27 1.06	
	Male thread NPT according to ANSI-standard	F	1/8	1/8 NPT	13 .51	2 and 4
			1/4	1/4 NPT	17 .67	



## STAUFF Hose End

Hose End	Description	Type	G	Hex (mm/in)		DN Hose Size	
	Male thread for 24° cone fitting according to ISO 8434-1 / DIN 2353	C	6 L	M12 x 1,5	14	.55	2 and 4
			8 L	M14 x 1,5	17	.67	
			6 S	M14 x 1,5	17	.67	
			8 S	M16 x 1,5	17	.67	
	Male thread according to SAE J 514	J	1/4	7/16-20 UNF	14	.55	2 and 4
			5/16	1/2-20 UNF	14	.55	
			3/8	9/16-18 UNF	17	.67	
	Universal sealing head with swivel nut for 24° cone fitting according to ISO 8434-1 / DIN 2353	D	6 L	M12 x 1,5	14	.55	2 and 4
			8 L	M14 x 1,5	17	.67	
			10 L	M16 x 1,5	19	.75	
			12 L	M18 x 1,5	22	.87	
			6 S	M14 x 1,5	17	.67	
			8 S	M16 x 1,5	19	.75	
			10 S	M18 x 1,5	22	.87	
	Universal sealing head with swivel nut for 24° cone fitting according to ISO 8434-1 / DIN 2353 90° elbow	Q	10 L	M16 x 1,5	19	.75	2 and 4
			10 S	M18 x 1,5	22	.87	
	Sealing head with swivel nut for cone fitting according to DIN EN 560	B	1/8	G1/8	12	.47	2
			1/4	G1/4	17	.67	2 and 4

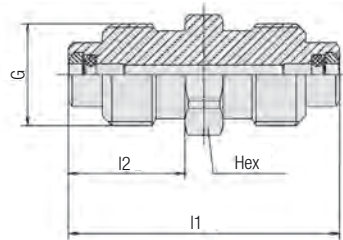
STAUFF Hose End

Hose End	Description	Type	G	Hex (mm/in)		DN Hose Size	
	Sealing head with swivel nut according to SAE J 514 37° cone	U	1/4	7/16-20 UNF	14	.55	2 and 4
			5/16	1/2-20 UNF	17	.67	
			3/8	9/16-18 UNF	19	.75	
	Sealing head with swivel nut according to SAE J 516 45° cone	UR	1/4	7/16-20 UNF	14	.55	2
	Sealing head with swivel nut according to SAE J 516 37° cone 90° elbow	E	1/4	7/16-20 UNF	14	.55	2 and 4
	Sealing head with swivel nut according to SAE J 516 45° cone 90° elbow	ER	1/4	7/16-20 UNF	14	.55	2
	Test hose for air brake systems	P	2	M16 x 1,5	19	.75	2

## STAUFF Hose End

Hose End	Description	Type		G	Hex (mm/in)		DN Hose Size
	Sealing head with swivel nut 60° cone	H	1/4	G1/4	17	.67	2 and 4
	Screw-type ORFS according to SAE J 1453	T	9/16	9/16-18 UNF	17	.67	2
			11/16	11/16-16 UN	21	.83	
	Screw-type ORFS according to SAE J 1453 90° elbow	V	11/16	11/16-16 UN	21	.83	2 and 4
	Hose end with integrated check valve	RV	20	M16 x 2			2
			15	M16 x 1,5			

**Hose Connector  
SSV**



**Sealings**

Internal sealings made of FPM (Viton®).

**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**

Standard material SSV15:

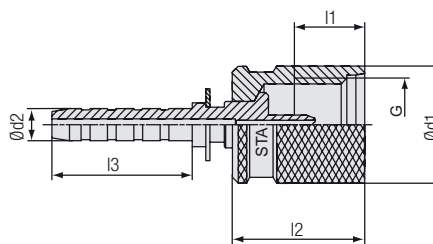
Steel, black zinc/nickel-plated = **C6F (CrVI-free)**

For ordering **V2A (1.4305 / AISI 303)** replace "C6F" with "V2A".

For ordering **V4A (1.4571 / AISI 316Ti)** replace "C6F" with "V4A".

Thread	Dimensions (mm/in)			Order Codes
	l1	l2	Hex	
M16 x 2	42,5	18,5	17	SSV20-C6F
	1.67	.73	.67	
M16 x 1,5	42,5	18,5	17	SSV15-C6F
	1.67	.73	.67	
S12,65 x 1,5	31	12,5	14	SSV12-C6F
	1.22	.49	.55	

**Sampling Hose Adaptor  
SHA**

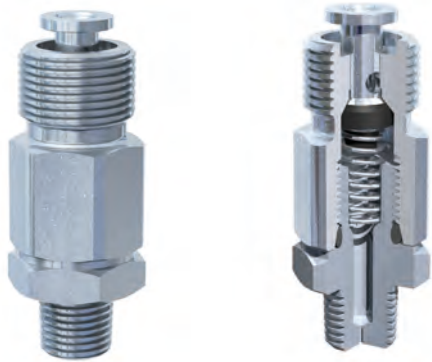


**Metal Parts**

Standard material: Steel, zinc/nickel-plated = **C6F (CrVI-free)**

Dimensions (mm/in)						Order Code
$\varnothing d1$	$\varnothing d2$	l1	l2	l3	G	
22	5,5	13	23	24	18	SHA20-5,5MM-C6F
.87	.22	.51	.91	.94	.71	

**Special Test Coupling Solutions  
STAUFF Test**



**Pressure Test Connection for Compressed-Air Pneumatic Braking Equipment (according to ISO 3583)**



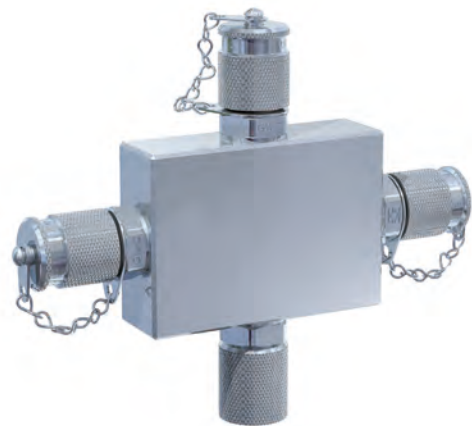
**Test Coupling with Female Connection Port**



**Gauge Adaptor with Test Coupling**



**Banjo Fitting with Test Coupling**



**Triple Manifold Block with Test Couplings**

Custom-designed test coupling solutions in addition to the Original-STAUFF-Test range according to customers specifications or based on STAUFF developments.

If you have similar requirements please consult STAUFF.

Port Connections and Sealing Details

<p><b>Type A</b></p>	<p>Type A - Threaded port according to factory standard Sealing: O-ring Type A</p>			
	Thread	Dimensions (mm/in)		
G	d1 +0,1	t1 min.	t2 min	
M8 x 1	9,5 .37	11 .43	15,5 .61	
M10 x 1	11,5 .45	12 .47	16,5 .64	

<p><b>Type B and C</b></p>	<p>Type B and C - Threaded port type X acc. to DIN 3852 Part 1 and 2; ISO 9974-1 (metric); ISO 1179-1 (inch) Sealing: Metal joint Type B / Elastomeric sealing Type C</p>				
	Thread	Dimensions (mm/in)			
G	d1 min.	t1 min.	t2 min.	a max.	
M10 x 1	15 .59	8 .31	10 .39	1 .04	
M12 x 1,5	18 .71	12 .47	15 .59	1,5 .06	
M14 x 1,5	20 .79	12 .47	15 .59	1,5 .06	
M16 x 1,5	23 .91	12 .47	15 .59	1,5 .06	
M18 x 1,5	25 .98	12 .47	15 .59	2 .08	
M20 x 1,5	27 1.06	14 .55	17 .67	2 .08	
M22 x 1,5	28 1.10	14 .55	17 .67	2,5 .10	
G1/8	15 .59	8,5 .33	10,5 .41	1 .04	
G1/4	20 .79	12,5 .49	15,5 .61	1,5 .06	
G3/8	23 .91	12,5 .49	15,5 .61	2 .08	
G1/2	28 1.10	14,5 .57	18,5 .73	2,5 .10	

<p><b>Type D</b></p>	<p>Type D - Parallel threaded port type Z according to DIN 3852 Part 2 (inch) Sealing: Taper Type D suitable sealant required</p>		
	Thread	Dimensions (mm/in)	
G	t1 min.	t2 min.	
Rp1/8	5,5 .22	9,5 .37	
Rp1/4	8,5 .33	13,5 .53	
Rp3/8	8,5 .33	13,5 .53	
Rp1/2	10,5 .41	16,5 .65	



## Port Connections and Sealing Details

Type D	Type D - Taper threaded port according to ANSI/ASME B1.20.1-1983 (NPT) Sealing: Taper Type D suitable sealant required		
	Thread	Dimensions ( <sup>mm</sup> / <sub>in</sub> )	
	<b>G</b>	<b>t1 min.</b>	<b>t2 min.</b>
	1/8-27 NPT	6,9 .27	11,6 .46
	1/4-18 NPT	10 .39	16,4 .65
	1/2-14 NPT	13,6 .54	22,6 .89

Type E	Type E - Threaded port according to ISO 6149-1 (metric); ISO 11926-1 (UNF) Sealing: O-ring Type E							
	Thread	Dimensions ( <sup>mm</sup> / <sub>in</sub> )						
	<b>G</b>	<b>d1 +0,1</b>	<b>d2 min.</b>	<b>t1 min.</b>	<b>t2 min.</b>	<b>a +0,4</b>	<b>b max.</b>	<b>z° ±1°</b>
	M10 x 1	11,1 .44	16 .63	10 .39	11,5 .45	1,6 .06	1 .04	12°
	M12 x 1,5	13,8 .54	19 .75	11,5 .45	14 .55	2,4 .09	1,5 .06	15°
	M14 x 1,5	15,8 .62	21 .83	11,5 .45	14 .55	2,4 .09	1,5 .06	15°
	M16 x 1,5	17,8 .70	24 .94	13 .51	15,5 .61	2,4 .09	1,5 .06	15°
	M22 x 1,5	23,8 .94	29 1.14	15,5 .61	18 .71	2,4 .09	2 .08	15°
	M27 x 2	29,4 1.16	34 1.34	19 .75	22 .87	3,1 .91	2 .08	15°
	5/16-24 UNF	9,1 .36	17 .67	10 .39	12 .47	1,9 .07	1,6 .06	12°
	7/16-24 UNF	12,4 .49	21 .83	11,5 .45	14 .55	2,4 .09	1,6 .06	12°
	1/2-20 UNF	14 .55	23 .91	11,5 .45	14 .55	2,4 .09	1,6 .06	12°
	9/16-18 UNF	15,65 .62	25 .98	12,7 .50	15,5 .61	2,5 .10	1,6 .06	12°
	7/8-14 UNF	23,95 .94	34 1.34	16,7 .66	20 .79	2,5 .10	2,4 .09	15°





STAUFF Filtration Technology offers a complete range of filtration products and services. This will provide the system designer or user with the highest level of contamination control demanded by today's most sophisticated applications.

STAUFF Filtration Technology Products include Pressure Filters, Return Line Filters, Replacement Filter Elements and Spin-On Filters for various hydraulic and lubrication oils.

STAUFF manufactures more than 10000 different elements and has the technical expertise to provide superior filter element designs for the STAUFF original filter housings and also for the interchange element market, while maintaining or surpassing the original performance.

A well-stocked warehouse guarantees the possibility of short-term arrangements without their own storage. Therefore, we can react flexible for your specific needs.

Please do not hesitate to contact STAUFF for further details.

[www.stauff.com](http://www.stauff.com)

# C

## Filtration Technology

Index	C2
Filtration Guideline	C6
Pressure Filters	C18
Return Line Filters	C51
Spin-On Filters	C122
Offline- and Bypass Filters	C149
Mobile Filter Systems	C178
Replacement Filter Elements	C180

**Filtration Guideline**

Introduction  
 Filtration - Why?  
 Contamination  
 STAUFF Filter Components  
 Test Standards and Oil Purity  
 Short & Curt: Filter Rating  
 β-Value and Separations Efficiency  
 Filtration Terminology  
 Choice of Filters / Examples of Calculation  
 Filter Selection Software  
 STAUFF Contamination Control Programm (SCCP)

**Filter Elements**

STAUFF Replacement Filter Elements

**Pressure Filters**

<b>C6</b>	<b>Overview High Pressure Filters</b>		<b>C18</b>
<b>C7</b>	Types SF / SF-TM / SF-SM / SFA / SFZ		
<b>C7</b>			
<b>C9</b>			
<b>C10</b>	<b>High Pressure Filters (Inline)</b>	SF	
<b>C11</b>	<i>Max. 420 bar / 6000 PSI</i>		
<b>C11</b>	<i>Max. 1135 l/min / 300 US GPM</i>		
<b>C11</b>	Technical Data / Dimensions		<b>C19</b>
<b>C12</b>	Order Code - High Pressure Filter	SF	<b>C22</b>
<b>C14</b>	Order Code - Filter Elements	SE	<b>C22</b>
<b>C15</b>			
<b>C15</b>			
	<b>High Pressure Filters (Top-mounted)</b>	SF-TM	
	<i>Max. 315 bar / 4560 PSI</i>		
	<i>Max. 1135 l/min / 300 US GPM</i>		
	Technical Data / Dimensions		<b>C23</b>
	Order Code - High Pressure Filter	SF-TM	<b>C26</b>
	Order Code - Filter Elements	SE	<b>C26</b>
<b>C16</b>	<b>High Pressure Filters (Side-mounted)</b>	SF-SM	
	<i>Max. 315 bar / 4560 PSI</i>		
	<i>Max. 1135 l/min / 300 US GPM</i>		
	Technical Data / Dimensions		<b>C27</b>
	Order Code - High Pressure Filter	SF-SM	<b>C30</b>
	Order Code - Filter Elements	SE	<b>C30</b>
	<b>High Pressure Filters (Sandwich)</b>	SFZ	
	<i>Max. 315 bar / 4560 PSI</i>		
	<i>Max. 30 l/min / 8 US GPM</i>		
	Technical Data / Dimensions		<b>C31</b>
	Order Code - High Pressure Filter	SFZ	<b>C34</b>
	Order Code - Filter Elements	SE	<b>C34</b>
	<b>Medium Pressure Filters (Inline)</b>	SFA	
	<i>Max. 160 bar / 2320 PSI</i>		
	<i>Max. 240 l/min / 70 US GPM</i>		
	Technical Data / Dimensions		<b>C35</b>
	Order Code - Medium Pressure Filter	SFA	<b>C38</b>
	Order Code - Filter Elements	SE	<b>C38</b>
	<b>Valves</b>	HV	<b>C39</b>
	Technical Data		
	Order Code		
	<b>Clogging Indicators</b>	HI	<b>C40</b>
	Technical Data		
	Order Code		
	Dimensions		
	<b>Filter Elements</b>	SE	<b>C41</b>
	Technical Data		
	Order Code		
	<b>Flow Characteristics</b>	SF / SF-TM / SF-SM / SFA	<b>C42</b>
	Types		
	<b>Medium Pressure Filters (Inline)</b>	SMPF	
	<i>Max. 110 bar / 1600 PSI</i>		
	<i>Max. 90 l/min / 25 US GPM</i>		
	Technical Data / Dimensions		<b>C45</b>
	Order Code - Medium Pressure Filter	SMPF	<b>C48</b>
	Order Code - Filter Elements	SME	<b>C48</b>
	<b>Clogging Indicators</b>		<b>C49</b>
	Visual Clogging Indicator	HIM-V	
	Visual-Electrical Clogging Indicator	HIM-VE	
	Order Code		
	<b>Flow Characteristics</b>		<b>C50</b>
	Type	SMPF	

**Inline Line Filters**

	<b>Inline Line Filters</b> Max. 14 bar / 200 PSI Max. 7000 l/min / 1850 US GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements	SRFL-S / SRFL-D	<b>C51</b> <b>C62</b> <b>C62</b>
	<b>Filter Elements</b> Description Order Code	RE	<b>C63</b>
	<b>Differential Pressure Switch with Visual Gauge Indicator</b>		<b>C63</b>
	<b>Flow Characteristics</b> Type	SRFL-S / D	<b>C64</b>
	<b>Inline Line Filters</b> Max. 16 bar / 232 PSI Max. 13330 l/min / 3521 US GPM Technical Data / Dimensions Order Code - Return Line Filters Order Code - Filter Elements	SRFL-SW	<b>C65</b> <b>C68</b> <b>C68</b>
	Filter Elements Order Code - Description	REL	<b>C69</b>
	<b>Differential Pressure Switch with Visual Gauge Indicator</b>		<b>C69</b>

**Return Line Filters**






















	<b>Return Line Filters</b> Max. 16 bar / 232 PSI Max. 500 l/min / 130 US GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements	RF	<b>C71</b> <b>C74</b> <b>C74</b>
	<b>Options - Clogging Indicators</b> Visual Clogging Indicator Electrical Clogging Switch Filter Bowl with Threaded Connection Leakage Oil Connection Filter Bowl with Threaded Connection and Diffuser		<b>C75</b>
	<b>Flow Characteristics</b> Type	RF	<b>C76</b>
	<b>Return Line Filters</b> Max. 25 bar / 365 PSI Max. 110 l/min / 30 US GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements	RFA	<b>C79</b> <b>C82</b> <b>C82</b>
	<b>Options - Clogging Indicators</b> Visual Clogging Indicator Electrical Clogging Switch Filter Bowl with Threaded Connection Leakage Oil Connection Filter Bowl with Threaded Connection and Diffuser	RFA RE	<b>C83</b>
	<b>Flow Characteristics</b> Type	RFA	<b>C84</b>

**Return Line Filter**

	<b>Return Line Filters</b> Max. 10 bar / 145 PSI Max. 185 l/min / 52 US GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements Order Code - Air Filter Elements	RFB	<b>C85</b> <b>C88</b> <b>C88</b> <b>C88</b>
	<b>Options - Clogging Indicators</b> Visual Clogging Indicator Electrical Clogging Switch Air Filter Element Filter Bowl with Threaded Connection		<b>C89</b>
	<b>Flow Characteristics</b> Type	RFB	<b>C90</b>
	<b>Return Line Filter</b> Max. 25 bar / 365 PSI Max. 1135 l/min / 300 US GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements	RFS	<b>C91</b> <b>C94</b> <b>C94</b>
	<b>Options - Clogging Indicators</b> Visual Clogging Indicator Electrical Clogging Switch		<b>C95</b>
	<b>Replacement Filter Elements</b> Description Order Code	RE	<b>C95</b>
	<b>Flow Characteristics</b> Type	RFS	<b>C96</b>
	<b>Return Line Filters</b> Max. 6,9 bar / 100 PSI Max. 95 l/min / 25 US GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements	RTF10/25	<b>C99</b> <b>C102</b> <b>C102</b>
	<b>Return Line Filters</b> Max. 6,9 bar / 100 PSI Max. 115 l/min / 30 US GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements	RTF20	<b>C103</b> <b>C106</b> <b>C106</b>
	<b>Return Line Filters</b> Max. 6,9 bar / 100 PSI Max. 378 l/min / 100 US GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements	RTF40	<b>C107</b> <b>C110</b> <b>C110</b>
	<b>Return Line Filters</b> Max. 6,9 bar / 100 PSI Max. 379 l/min / 100 US GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements	RTF50	<b>C111</b> <b>C114</b> <b>C114</b>
	<b>Return Line Filters</b> Max. 10 bar / 145 PSI Max. 500 l/min / 132 GPM Technical Data / Dimensions Order Code - Return Line Filter Order Code - Filter Elements	RTF-N	<b>C115</b> <b>C118</b> <b>C118</b>
	<b>Flow Characteristics</b> Type	RTF	<b>C119</b>
	<b>Clogging Indicators</b> Technical Data	SIM / CI SIE / EPS	<b>C121</b>

Spin-On Filters

Spin-On-Filters

<b>Introduction</b> Technical Data Private Labelling		<b>C122</b>		<b>Tank Top Spin-On Filter Heads</b> Max. 7 bar / 100 PSI Max. 75 l/min / 20 US GPM Technical Data / Dimensions Order Code	SSFT-12B	<b>C135</b>
<b>Quick Reference Guide</b> Spin-On Filter Heads Spin-On Filter Elements		<b>C123</b>				
 <b>Spin-On Filter Heads</b> Max. 14 bar / 200 PSI Max. 26 l/min / 7 US GPM Technical Data / Dimensions Order Code	SLF-02 / 03 / 04	<b>C124</b>		<b>Tank Top Spin-On Filter Heads</b> Max. 7 bar / 100 PSI Max. 75 l/min / 20 US GPM Technical Data / Dimensions Order Code	SSFT-12	<b>C136</b>
 <b>Spin-On Filter Heads</b> Max. 14 bar / 200 PSI Max. 90 l/min / 25 US GPM Technical Data / Dimensions Order Code	SAF-05 / 06 / 07 / 11	<b>C125</b>		<b>Tank Top Spin-On Filter Heads</b> Max. 7 bar / 100 PSI Max. 200 l/min / 53 US GPM Technical Data / Dimensions Order Code	SSFT-20B	<b>C137</b>
 <b>Spin-On Filter Heads</b> Max. 14 bar / 200 PSI Max. 128 l/min / 34 US GPM Technical Data / Dimensions Order Code	SAF-10 / 13	<b>C126</b>		<b>Tank Top Spin-On Filter Heads</b> Max. 7 bar / 100 PSI Max. 200 l/min / 53 US GPM Technical Data / Dimensions Order Code	SSFT-20	<b>C138</b>
 <b>Spin-On Filter Heads</b> Max. 12 bar / 174 PSI Max. 90 l/min / 25 US GPM Technical Data / Dimensions Order Code	SSF-12	<b>C127</b>		<b>Spin-On Filter Elements</b> Technical Data Dimensions	SFC-35 / 36 SFCT-35 / 36	<b>C139</b>
 <b>Spin-On Filter Heads</b> Max. 12 bar / 174 PSI Max. 225 l/min / 60 US GPM Technical Data / Dimensions Order Code	SSF-20L	<b>C128</b>		<b>Spin-On Filter Elements</b> Technical Data Dimensions	SFC-57 / 58 SFCT-57 / 58	<b>C140</b>
 <b>Spin-On Filter Heads</b> Max. 14 bar / 200 PSI Max. 225 l/min / 60 US GPM Technical Data / Dimensions Order Code	SSF-100 / 120 / 120L / 130 / 160	<b>C129</b>		<b>Spin-On Filter Elements</b> Technical Data Dimensions	SF63	<b>C141</b>
 <b>Spin-On Filter Heads</b> Max. 14 bar / 200 PSI Max. 300 l/min / 80 US GPM Technical Data / Dimensions Order Code	SSF-150 / 180	<b>C130</b>		<b>Spin-On Filter Elements</b> Technical Data Dimensions	SF65	<b>C142</b>
 <b>Double Spin-On Filter Heads</b> Max. 12 bar / 174 PSI Max. 454 l/min / 120 US GPM Technical Data / Dimensions Order Code	SSF-24B	<b>C131</b>		<b>Spin-On Filter Elements</b> Technical Data Dimensions	SF67	<b>C143</b>
 <b>Double Spin-On Filter Heads</b> Max. 12 bar / 174 PSI Max. 454 l/min / 120 US GPM Technical Data / Dimensions Order Code	SSF-24N / 24S	<b>C132</b>		<b>Flow Characteristics</b> SFC/SFCT-35 / 36 SFC/SFCT-57 / 58 SF63		<b>C144</b>
 <b>Double Spin-On Filter Heads</b> Max. 12 bar / 174 PSI Max. 454 l/min / 120 US GPM Technical Data / Dimensions Order Code	SSF-25B	<b>C133</b>		<b>Flow Characteristics</b> SF65		<b>C145</b>
 <b>Double Spin-On Filter Heads</b> Max. 12 bar / 174 PSI Max. 454 l/min / 120 US GPM Technical Data / Dimensions Order Code	SSF-25	<b>C134</b>		<b>Flow Characteristics</b> SF67		<b>C146</b>
				<b>Clogging Indicators</b> Technical Data	SIS / GV / SIM / CI SIE-NO/NC / EPS/EVS	<b>C147</b>



## Filter Systems

<b>Overview</b>		<b>C149</b>
Description		
Technical Data		
<b>STAUFF System</b>		<b>C150</b>
<b>Offline Filters</b>	OLS	
Overview		<b>C151</b>
Dimensions		<b>C152</b>
Technical Data		
Order Code - Offline Filter	OLS	<b>C156</b>
Order Code - Filter Elements	SRM	
<b>Water Absorbing Offline Filters</b>	OLSW	
Overview		<b>C157</b>
Dimensions		<b>C158</b>
Technical Data		
Order Code - Water Absorbing Offline Filter	OLSW	<b>C162</b>
Order Code - Filter Elements	SRM	
Order Code - Pre-Filter Elements	SF	
<b>Heated Offline Filters</b>	OLSH	
Overview		<b>C163</b>
Dimensions		<b>C164</b>
Technical Data		
Order Code - Heated Offline Filter	OLSH	<b>C166</b>
Order Code - Filter Elements	SRM	
<b>Bypass Filters</b>	BPS	
Overview		<b>C167</b>
Dimensions		<b>C168</b>
Technical Data		
Order Code - Bypass Filter	BPS	<b>C169</b>
Order Code - Filter Elements	SRM	
Mounting Options		<b>C170</b>
Hydraulic Symbols / Flow Characteristics		<b>C171</b>
<b>Bypass Lube-Oil Filter</b>	BPLS	
Overview		<b>C172</b>
Dimensions		
Technical Data		
Order Code - Bypass Lube-Oil Filter	BPLS	<b>C173</b>
Order Code - Filter Elements	SRM	
<b>Mini Water Vac</b>	SMWV	
Overview		<b>C174</b>
Dimensions		
Technical Data		
Order Code - Mini Water Vac	SMWV	<b>C175</b>
<b>Replacement Filter Elements</b>	SRM	
Description		<b>C176</b>
Technical Data		<b>C177</b>

## Mobile Filter Systems



**Mobile Filter Systems**  
Overview

SMFS / SCFC / SPFC

**C178**

## Replacement Filter Elements



**Replacement Filter Elements**  
for Single, Double and Automatic Filters

**C180**







Selection of STAUFF Replacement Filter Elements

## Filtration - Why?

Good hydraulic filtration is gaining more and more importance in the use of hydraulic systems.

Reducing contamination in the hydraulic system will reduce the wear of the components and thus extend the service life of the machine. This will prevent production downtime and lower the overall production costs.

Right from the beginning, there is contamination in a new hydraulic system, which reduces the service life of the system and its components such as valves and cylinders without any or with inadequate filtration.

This built-in dirt is created during the manufacturing of the components and mainly consists of coarse particles.

In addition to the contamination that arises during operation of the system, e.g. abrasive wear, dirt particles can also get into the system when it is filled with hydraulic oil. This is called ingress contamination.

Choosing the right filter contributes significantly to prevent the dangers mentioned above thereby ensuring efficient operation even after many years.

### Reduction of Contamination

- Extension of service life
- Extension of maintenance intervals
- Reduction of machine downtime
- Reduction of environmental pollution

### ► Cost savings for the user

## Contamination

### Particle Sizes (Selection)

- 100 µm table salt, fine sand
- 75 µm diameter of a human hair
- 60 µm flower pollen
- 50 µm fog
- **30 µm (from approx.) resolution of the human eye**
- 15 µm fine particles
- 7 µm red blood cells
- 2 µm bacteria
- 1 µm layer of lubricating film (for comparison)

### Type of Contamination

The most frequent ones are:

- Solid particles
- Free and dissolved water
- Non-dissolved air

A majority of the contamination can be removed with filtration.

### Origin of Contamination

The main cause of failures and downtimes is dirt in the hydraulic system.

Failure analysis indicate that 70% of the failures are caused by faults in the hydraulic system. 90% of them are caused by impurities in the hydraulic oil.

### Sources of External Contamination

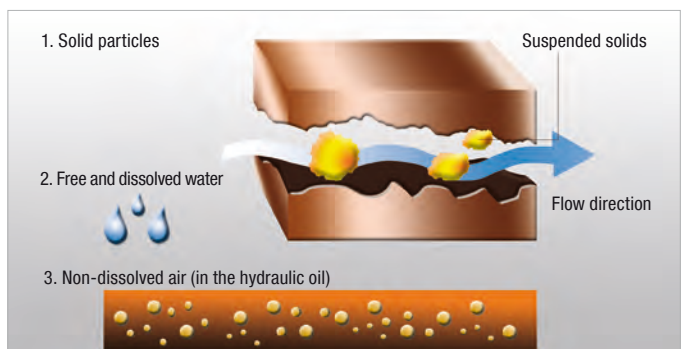
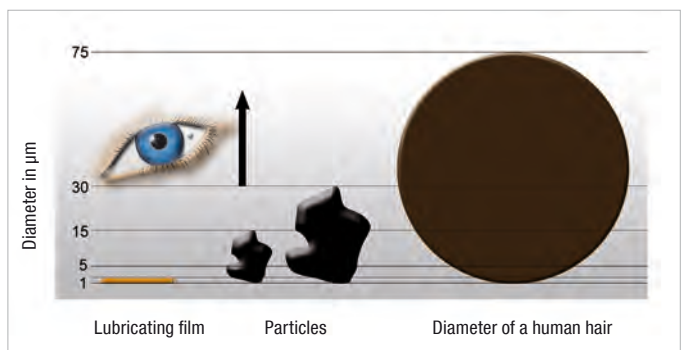
- Filling and refilling the hydraulic tank
- Inadequately dimensioned breathers
- Damaged tank seals
- Replacement of hydraulic lines and components (pumps, cylinders)
- Impurities in the air

### Types of Internal Contamination

- Contamination on/in the components caused by the manufacturing process (e.g. chips)
- Contamination on the components caused by the installation of the components

### Sources of Internal Contamination

- Disintegration of particles from high pressure changes and tension on the surface of hydraulic components (e.g. cavitation)
- Material erosion that occurs at places in the hydraulic units due to the impact of pressurised liquid at high speeds (erosion wear)

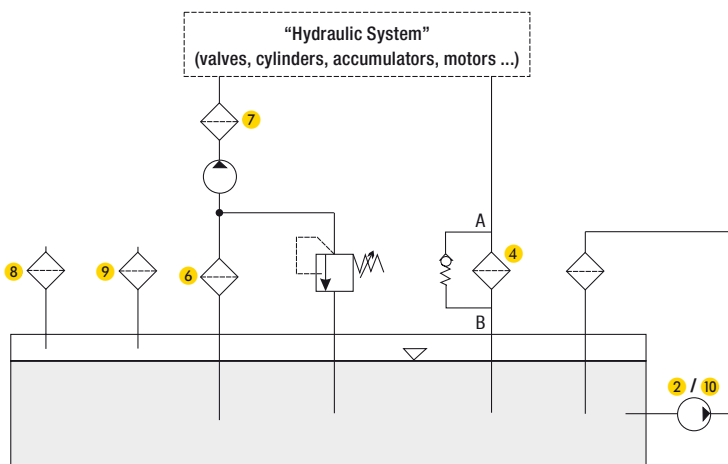
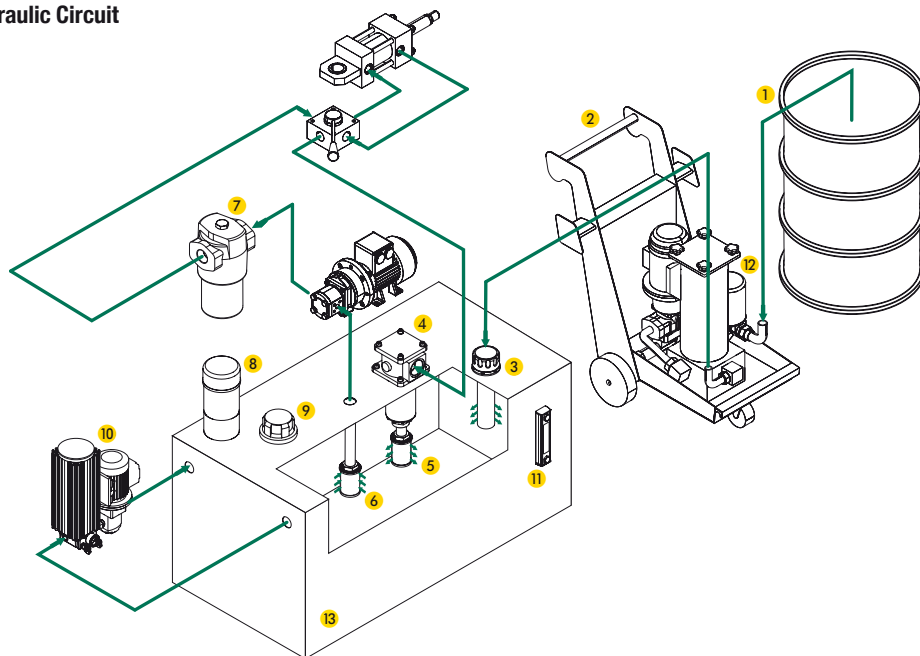




STAUFF Laser Particle Counter LasPaC-II and Bottle Sampler

**Selection of Components within the Hydraulic Circuit**

- 1 Oil drum
- 2 STAUFF Mobile Filter System **SMFS-U**
- 3 STAUFF Metal Filler Breather **SMBB**
- 4 STAUFF Return Line Filter **RF**
- 5 STAUFF Diffusor **SRV**
- 6 STAUFF Suction Strainer **SUS**
- 7 STAUFF Pressure Filter **SF**
- 8 STAUFF Desiccant Air Breather **SDB**
- 9 STAUFF Plastic Filler Breather **SPB**
- 10 STAUFF Offline Filter **OLS**
- 11 STAUFF Level Gauge **SNA**
- 12 STAUFF Spin-On Filter **SSF**
- 13 Oil tank





**STAUFF Filter Components**

**High Pressure Filters Series SF / SF-TM / SF-SM / SFZ / SFA** (see page C18)

**Pressure Filters 7** are placed behind the pump and clean the hydraulic oil before it flows through down-stream components like valves, cylinders and so on. The main reason for pressure filtration is the protection of downstream, sensitive components.

Eroded particles from the pump are immediately filtered out of the hydraulic oil. Besides working as a protection filter, pressure filters also help to maintain the required purity class.

Because it is placed right behind the pump, a Pressure Filter has to withstand the maximum system pressure. The filter element in the pressure filter also has to withstand the loads and is more intricately constructed, for example as a Return Line Filters element.


**Return Line Filters Series RF / RFA / RFB / RFS / RTF** (see page C71)

**Return Line Filters 4** are installed in the return line, on top of or within the oil tank. They filter the hydraulic oil before it flows back into the reservoir. This ensures that contamination arising in the components does not get into the tank. Return Line Filters maintain the targeted purity class like pressure filters. However, because of their arrangement, they do not fulfil the additional function of a protection filter. In contrast to a pressure filter, it only has to withstand low pressure levels.

**Diffusers 5** are used in combination with Return Line Filters and ensure that the returning oil flow is settled before it reaches the oil tank thereby preventing foaming and re-suspension of deposited dirt.

The job of **Suction Strainers 6** is mainly to provide functional protection of the downstream pumps in the circulation. Suction Strainers always have to be provided if the risk of pump damage from coarse impurities is particularly high. This risk exists if impurities are collected in the tank and if they can't be filtered out afterwards. Suction Strainers are coarse filter elements with a micron rating that is usually bigger than 100 µm.


**Diffusers / Suction Strainers / Filler Breathers / Desiccant Air Breathers**  
(see Hydraulic Accessories chapter)

**Filler Breathers 3 / 9** are mounted on the oil tank and prevent the entry of dirt from the surroundings during tank breathing. They should be chosen with a filter unit that is similar to the working filter (Pressure Filter, Return Line Filter).

The replacement cycles of filter inserts is highly dependent on the surrounding conditions of the hydraulic system.

Another variant of the breather is the **Desiccant Air Breather 8**. The additional function of this filter is dehumidification of the inflowing air with a special silicate gel.


**Offline and Bypass Filters / Mobile Filter Units**  
(see page C149 and C178)

**Offline / Bypass Filters 10** are not part of the main hydraulic system. They are supplementary to achieve the best possible filtration results. Because of the high efficiency of the Offline / Bypass Filters, purity levels are reached that cannot be achieved with conventional main filter systems.

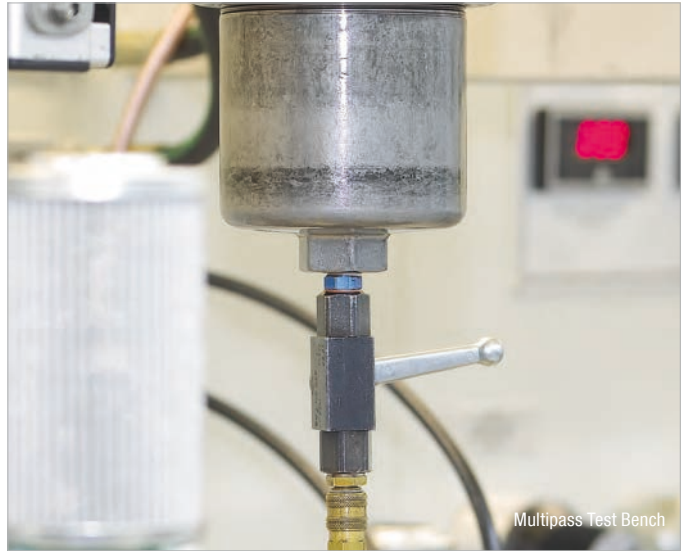
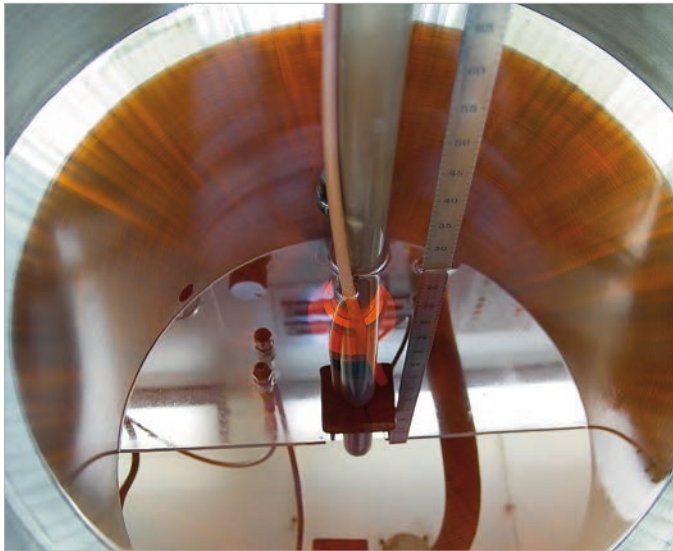
**Offline Filters** work with an integrated motor/pump unit that draws in the fluid from the system, filters it and then feeds it back into the tank. Because the offline filter is independent from the hydraulic main circuit, i.e. it can still be operated if the hydraulic system is switched off, it is used in practice for continuous cleaning of the tank.

**Bypass Filters** on the other hand use the existing system pressure to draw a small volumetric flow out of the hydraulic system for filtration. They are only active while the unit is in operation.

Another mobile variant of the bypass filter is the **Mobile Filter System 2**.


**Spin-On Filters** (see page C122)

STAUFF provides a complete range of **Spin-On Filters 12** which can be used either as suction filters or as return line filters for low pressure applications.



Multipass Test Bench

## Test Standards and Oil Purity

### Definition of the Required Micron Rating

Essentially, the components found in the hydraulic system determine the micron rating of the filtration system.

To guarantee a reliable mode of operation over the years, it is mandatory to maintain the optimum oil purity class for specific components.

The most sensitive component determines the choice of filter material and micron rating.

To determine the oil purity according to ISO 4406 (1999), a laser particle counter is used to count particles that are  $>4 \mu\text{m}_{(c)}$ ,  $>6 \mu\text{m}_{(c)}$  and  $>14 \mu\text{m}_{(c)}$  in 100 ml of hydraulic oil. The number of particles is then assigned a classification number (e.g. 14/11/8) that then corresponds to the ISO purity class. Please note here that the number of particles doubles for the next higher class. The cleanliness level that has to be achieved is an important criterion for choosing the right filtration system.

### STAUFF Filter Elements are Subject to the Following Test Methods

- ISO 2941 Collapse and burst resistance
- ISO 2942 Verification of fabrication integrity (bubble point test)
- ISO 2943 Compatibility with hydraulic media
- ISO 3723 End load test
- ISO 3724 Flow fatigue characteristics
- ISO 3968 Flow characteristics
- ISO 16889 Filtration performance test (multi-pass method)

Number of particles in 100 ml fluid		Classification numbers ISO 4406 (1999)		
More than	Less than	$> 4 \mu\text{m}_{(c)}$	$> 6 \mu\text{m}_{(c)}$	$> 14 \mu\text{m}_{(c)}$
16000000	32000000	25	25	25
8000000	16000000	24	24	24
4000000	8000000	23	23	23
2000000	4000000	22	22	22
1000000	2000000	21	21	21
500000	1000000	20	20	20
250000	500000	19	19	19
130000	250000	18	18	18
64000	130000	17	17	17
32000	64000	16	16	16
16000	32000	15	15	15
8000	16000	<b>14</b>	14	14
4000	8000	13	13	13
2000	4000	12	12	12
1000	2000	11	<b>11</b>	11
500	1000	10	10	10
250	500	9	9	9
130	250	8	8	<b>8</b>
64	130	7	7	7
32	64	6	6	6
16	32	5	5	5





STAUFF Laser Particle Counter LasPaC-II and Bottle Sampler

**Short & Curt: Filter Rating**

(For exact recommendation see SSCP - STAUFF Contamination Control Program see page C15.)

Type	Component	ISO 4406 Code	Recommended Filter Rating
Pump	Piston Pump (Slow Speed, Inline)	22/20/16	20 µm
	Gear Pump	19/17/15	20 µm
	Vane Pump	18/16/14	5 µm
	Piston Pump (High Speed, Variable)	17/15/13	5 µm
Motor	Gear Motor	20/18/15	20 µm
	Vane Motor	19/17/14	10 µm
	Radial Piston Motor	19/17/13	10 µm
	Axial Piston Motor	18/16/13	5 µm
Valve	Directional Valves (Solenoid)	20/18/15	20 µm
	Check Valves	20/18/15	20 µm
	Logic Valves	20/18/15	20 µm
	Cartridge Valves	20/18/15	20 µm
	Pressure Control Valves (Modulating)	19/17/14	10 µm
	Flow Control Valves	19/17/14	10 µm
	Standard Hydraulic <100 bar / <1450 PSI	19/17/14	10 µm
	Proportional Valves	18/16/13	5 µm
	Servo Valves <210 bar / <3045 PSI	16/14/11	3 µm
Servo Valves >210 bar / >3045 PSI	15/13/10	3 µm	
Actuator	Cylinder	20/18/15	20 µm

**β-Value and Separations Efficiency**

To select filtration that meet the requirements, performance characteristics like the filter fineness, the filtration efficiency, the dirt-hold capacity and the pressure loss has to be observed.

 The β-value as per ISO 16889 is the relevant characteristic value for filtration efficiency. The β-value is the ratio of particles before ( $N_{up,x}$ ) and after ( $N_{down,x}$ ) the filter related to a specific particle size  $x$ .

$$\beta_x = \frac{N_{up,x}}{N_{down,x}}$$

 $\beta_{10} > 200$  means that of 1000 particles that are 10 µm in size, only five particles can pass through the filter. 995 particles will be trapped by the filter element.

Popular filters with inorganic glass fibre medium have to achieve a β-value of at least 200 in order to meet the demands placed on hydraulic filtration today.

The filtration efficiency, also called the retention rate, is directly related to the β-value and is calculated as follows:

$$E = \frac{(\beta_x - 1)}{\beta_x}$$

 $\beta_{10} > 200$  corresponds to filtration efficiency of 99,5%.

**Comparison of the β-Value and Efficiency E (each related to a defined Particle Size)**

β-value	Filtration Efficiency E
1	0,00 %
2	50,00 %
10	90,00 %
25	96,00 %
50	98,00 %
75	98,67 %
100	99,00 %
200	99,50 %
1000	99,90 %
9999	99,99 %

 The **dirt-hold capacity** (DHC) shows how much solid dirt a filter element can hold before it has to be replaced. The dirt-hold capacity is therefore the most important parameter in the filter service life.

 The **differential pressure** ( $\Delta p$ ) is another important criterion for the configuration of the filter. Ensure that the size of the filter element is chosen according to the calculation guideline by STAUFF.

 To guarantee optimum filtration, the β-value, the dirt-hold capacity (DHC) and the differential pressure ( $\Delta p$ ) must be carefully matched.

## Filtration Terminology

### β-value

The β-value as per ISO 16889 is the relevant characteristic value for filtration efficiency. The β-value is the ratio of particles before ( $N_{up,x}$ ) and after ( $N_{down,x}$ ) the filter related to a specific particle size x.

$$\beta_x = \frac{N_{up,x}}{N_{down,x}} \quad (\text{see page C11})$$

### Cavitation Damage

Cavitation is defined to be the cavity formation in liquids. Cavitation occurs if the local static pressure of a liquid drops below a critical value. This critical value usually corresponds to the vapour pressure of the liquid. Critical effects of cavitation are:

- Cavitation wear
- Undissolved gas in the hydraulic system
- Loud high-frequency noises
- Local high temperatures in the liquid
- Changes to the resistance characteristics of the hydraulic resistance

### Cleanliness Level

The cleanliness level of a hydraulic fluid is defined by the number of solid particles per ml of fluid. The number of particles is usually measured with an automatic particle counter. The cleanliness level is determined by a class code created by counting the number of particles of different sizes.

Particle counting as well as the coding of the cleanliness class for hydraulic oils are described in the ISO 4406 (1999) standard. Beside the ISO 4406 (1999), NAS 1638 (1964) and SAE AS4059 Rev. D (2001) are also still common.

### Clogging Indicator

The clogging indicator signals a specific pressure level where the soiled filter element should be replaced. They work with differential pressure ( $\Delta p$ ) or back pressure. Clogging indicators are available in visual, electrical and visual/electrical versions. While it is the responsibility of the installation or maintenance personnel to check the degree of clogging of the filter element with visual clogging indicators, a signal contact (switch) can be connected to the machine controller with an electrical or visual/electrical clogging indicator.

### Collapse Pressure

The permissible collapse pressure according to ISO 2941 is understood to be the pressure difference that a filter element can withstand with the stipulated direction of flow. Exceeding the collapse pressure results in the destruction of the filter element.

### Depth Filter

Impurities penetrate into the filter fabric and are retained by the structure of the filter fabric. Mainly cellulose and inorganic glass fibre media are used in hydraulic filters. For special applications, plastic media (high-strength) and metal fibre media are also used. The design of the depth filter combines the highest micron rating with a high dirt retention capacity. Due to the fleece-like structure of depth filters, particles are not only separated on the surface of the filter material, but they can penetrate into the filter material, which leads to a considerable increase of the effective filter area. In contrast to sieves, there are no holes in fleece, rather they practically consist of labyrinths in which the particles are trapped. Hence, there is no sharply defined screening, rather a wide range of particles are trapped.

### Differential Pressure

The differential pressure ( $\Delta p$ ) is defined as the pressure difference between the filter inlet and the filter outlet, or alternatively in front of and behind the filter element.

Exceeding the maximum permissible pressure differential leads to the destruction of the filter element.

A bypass valve integrated in the filter prevents destruction of the filter element by opening if the differential pressure ( $\Delta p$ ) is too high. Then the oil is passed unfiltered into the hydraulic circuit. For applications in which no unfiltered oil is allowed to pass into the hydraulic circuit, there is the possibility of using filters without bypass valves with filter elements that can withstand a high differential pressure ( $\Delta p$ ). The filter elements must be designed such that they can withstand the maximum expected differential pressure ( $\Delta p$ ).

### Dirt-Hold Capacity (DHC)

The dirt-hold capacity (DHC) shows how much solid dirt a filter element can hold. It is measured in the multipass test according to ISO 16889

### EPDM

Ethylene-Propylene-Diene-Monomer-rubber (EPDM) is used as a material for O-rings because of its chemical resistance.

### Filter

A filter (hydraulic filter) has the job of keeping solids out of a liquid (oil). A filter is usually made of a filter housing and a filter element.

### Filter Area

The filter area is the size of the theoretically spread-out filter element. The larger the filter area, the lower the flow resistance of the filter element. Simultaneously, the dirt-hold capacity (DHC) increases. The following applies in general: the larger the filter area, the longer the service life of the element. Basically the filter area can be enlarged by the number of pleats.

### Filter Cake

A filter cake is made up of the particles trapped on the surface of a filter medium.

### Filter Design

Essentially depends on the following factors: specific flow rate, cleanliness level, amount of contamination, the maximum pressure setting and the required filter service life.

### Filter Element

The filter element is located in the filter housing and performs the actual filtering task.

### Filtration Efficiency

Filtration efficiency  $\eta$  is a measure of the effectiveness of a filter element for separating solid particles. It is given in percent (see page C11).

### Filter Housing

Depending on the application, the filter housing is built into the pressure or return line and must be designed for the specific operating or system pressure and the flow rate. The filter element is located in the filter housing. Depending on the application, the filter housing may be equipped with a bypass valve, a reversing valve, a clogging indicator and other options.

### Filter Material

The choice of the right filter material is dependent on different criteria. Amongst others, this includes the type of application, the filter function, degree of contamination or alternatively the required dirt-hold capacity (DHC) as well as requirements of chemical or physical resistance. The following list gives you an overview of how these filter materials differ with regard to specific properties:

#### Inorganic Glass Fibre

Inorganic Glass Fibre media are among the most important materials in modern filtration. During production, selected fibres (1 mm ... 5 mm long and with a diameter of 3  $\mu\text{m}$  ... 10  $\mu\text{m}$ ) are processed into a specific mix. The manufacturing process is very similar to paper production. The fibres are bound with a resin and impregnated. The benefit compared to cellulose paper is a fibre structure that is considerably more homogenous and consequently has larger open porous surfaces. As a result, lower flow resistance is achieved.

- Based on Glass Fibres with acrylic or epoxy resin binding
- High retention and dirt-hold capacity (DHC)
- Excellent separation efficiency of the finest particles due to the three-dimensional labyrinth structure with depth filtration
- Outstanding price/performance ratio

**Filter Material (Continuation)**
**Polyester**

- 100% Polyester Fibres with thermal bonding
- High pressure differential resistance
- Good chemical resistance
- High separation efficiency of the finest particles
- Tear-proof structure
- No static charging

**Cellulose**

- Filter material made of Cellulose Fibres with special impregnation
- Variants with the lowest price with good dirt retention capacity
- Not suitable for water based media

**Metal Fibre**

- Sintered Metal Fibres with three-dimensional labyrinth structure for depth filtration
- Low flow resistance with high dirt-hold capacity
- Excellent chemical and thermal resistance

**Stainless Steel Wire Mesh**

Filter elements with a Metal Wire Mesh are often used as a conditionally reusable solution in protection filters, suction filters or return line filters. Depending on the requirements (micron rating, pressure, dynamics) different types of mesh are used like twill, linen, or also Dutch weave.

- Wire mesh fabric made of material 1.4301 for surface filtration (other material on request)
- Low flow resistance due to large-pored screening surface
- Excellent chemical and thermal resistance
- Cleanable

**Flow Rate**

This is the amount of fluid that flows past a specific cross-section per unit time. It is given in litres per minute (l/min) or gallons per minute (US GPM).

**FPM (Viton®)**

Fluorinated rubber is used as a material for O-rings and is characterised by its outstanding resistance to high temperatures, mineral oils, synthetic hydraulic fluids, fuels and chemicals.

**Hydraulic Fluid**

A pressure liquid is defined to be a fluid used in hydraulic and lubrication systems. According to ISO 6743, the fluids are divided into mineral oil based, flame resistant and biodegradable liquids.

**Micron Rating**

Regarding micron rating, we must differentiate between the filter materials that are used. To define the micron rating for Inorganic Glass Fibre filter elements, the  $\beta$ -value as per ISO 16889 is commonly used.

**Multipass Test**

The Multipass Test evaluates the performance of a filter element. Standardised in ISO 16889-2008, this test allows comparable and repeatable results of the elements performance. If a normal filter element life is between a few weeks up to several months, this test reduces this life down to 90 minutes. The element is subjected to a fluid that a large amount of a special test dust ISO MTD contains. Results are given for the  $\beta$ -ratio, dirt-hold capacity (DHC) and differential pressure. It is used for designing hydraulic circuits, developing new filter materials and comparison of different filter elements.

See also page C10 and page C11 to get more information about the outcome data. In former time this test was also known as the Multipass Test ISO 4572.

**NBR (Buna-N®)**

Nitrile rubber is the most commonly used elastomer for O-rings and other sealing devices. Also known as Buna, Nitrile is a copolymer of Butadiene and Acrylonitrile (ACN). The name Buna N is derived from Butadiene and Natrium (the Latin name for Sodium, the catalyst used in polymerizing Butadiene). The "N" stands for Acrylonitrile.

**Nominal Flow Rate**

The nominal flow rate describes the flow rate or the volumetric flow rate for which the respective filter has been designed. It is usually given in litres per minute (l/min) or US Gallons per minute (US GPM) and is an important parameter in the filter design.

**Nominal Pressure**

Pressure for which the filter is designed and which it can be identified with.

**Operating Pressure / System Pressure**

Maximum pressure with which the filter may be used.

**Surface Filter**

Impurities are separated on the surface of the filter element. Surface filters are designed to have uniform pores (gaps), therefore they can almost completely retain specific particle sizes. Surface filters are made of Metal Wire Mesh or Cellulose materials.

Other surface filters are metal-edge filters.

**Valve**
**Bypass Valve**

A bypass valve is a valve that is integrated in a filter or filter element and allows the oil to bypass the contaminated filter element if a defined pressure differential is exceeded. Bypass valves are used to protect the filter element.

**Non-Return Valve**

It prevents the continuation line from draining while the filter element is changed.

**Reverse Flow Valve**

It is used to bypass the filter element for reversible oil flow so that the fluid does not pass through the filter element in the reverse direction.

**Multi-Function Valve**

A combination of bypass, reverse flow and non-return valve.

**Viscosity**

The viscosity of a fluid describes the flow behavior of a liquid. There are the kinematic viscosity  $\nu$  with the unit "m<sup>2</sup>/s" and the dynamic viscosity  $\eta$  with the unit "Ns/m<sup>2</sup>". In the field of filtration, in the design of filters the kinematic viscosity is required for calculating. The kinematic viscosity  $\nu$  can also be calculated with the dynamic viscosity  $\eta$  and density  $\rho$ :

$$\nu = \frac{\eta}{\rho}$$

The kinematic viscosity unit is "mm<sup>2</sup>/s", before it was called centistokes or Stokes (1 cSt = 1 mm<sup>2</sup>/s = 10<sup>-6</sup> m<sup>2</sup>/s). The unit of dynamic viscosity is "Ns/m<sup>2</sup>", it was previously reported in Poise (10 P = 1 Ns/m<sup>2</sup> = 1 Pa s).

## Choice of Filters

### Choice of a Suitable Micron Rating

Generally, the type of components incorporated in the hydraulic system will determine the micron rating required. It has been clearly demonstrated that system components will operate reliably for years if a specific minimum oil cleanliness grade is maintained. Frequently the choice will be determined by the most sensitive component in the system.

#### a) Operating Filter

To get a rough, first rating of what filter is needed to assure a certain oil cleanliness grade please have a look at page C11.

Apart from the specific flow rate (l/min per cm<sup>2</sup> of filter area), other factors such as operating environment and condition of seals and breathers can have an effect on the cleanliness grade which can actually be achieved.

#### b) Protective Filter

Occasionally, protective filters are fitted downstream of major components, e.g. the pump, to collect the debris in case of a catastrophic failure. This avoids total stripping and flushing of the system. For economic reasons, protective filters are normally one grade coarser than the operating filters since they do not significantly contribute to the cleaning of the system and this extends filter service intervals.

### Choice of the Optimum Filter

In selecting the filter, the following information must be considered:

- Maximum flow volume ( $Q_{max}$ ) through the filter including surge flows
- Kinematic viscosity ( $\nu$ ) of the fluid in mm<sup>2</sup>/s (cSt) at cold start temperature and operating temperature
- Density  $\rho$  of the fluid
- Micron rating ( $\mu$ m): see table on page C11
- Filter material

The aim is to choose a filter whose total differential pressure ( $\Delta p$ ) is not higher than  $\Delta p_{max} = 1,0$  bar (for pressure filters) or  $\Delta p_{max} = 0,5$  bar (for return line filters), in a clean state at the normal operating temperature. These values have been proven in practice to give the optimum service life for the element.

The nominal flow volume of the filter is the obvious reference value for pre-selection and this should be larger than the flow to be filtered.

$$Q_{nom} > Q_{max}$$

Calculations based on the filter data will verify whether the pre-selected filter meets the requirements, at operating temperatures:

$$\begin{aligned} \Delta p_{max} &\leq 1,0 \text{ bar (for pressure filter)} \\ \Delta p_{max} &\leq 0,5 \text{ bar (for return line filter)} \end{aligned}$$

The total differential pressure of the assembly  $\Delta p_{Assy}$  is calculated by adding the differential pressure of the housing  $\Delta p_{Hous}$  and that of the element  $\Delta p_{Elem}$ . Both the kinematic viscosity and density of the operating medium should be considered for the selection, as the flow curves on the pages following have been determined with a kinematic viscosity of  $\nu = 30$  cSt and a density of  $\rho = 0,86$  kg/dm<sup>3</sup>. The values of the pressure drops for the  $\Delta p_{Hous}$  and the  $\Delta p_{Elem}$  can be read from the flow curves on the pages following. The values for the kinematic viscosity in cSt and the density in kg/dm<sup>3</sup> should be inserted into the following formula:

$$\Delta p_{Assy} = \frac{\rho}{0,86} \cdot \Delta p_{Hous} + \frac{\rho}{0,86} \cdot \frac{\nu}{30} \cdot \Delta p_{Elem}$$

The filter size is suitable if the  $\Delta p_{Assy} < \Delta p_{max}$ .

If the calculated  $\Delta p_{Assy}$  is higher than  $\Delta p_{max}$  select the next larger filter size and re-calculate until a satisfactory solution is found.

The following two examples explain and help to understand the procedure of calculating a filter. For daily business, it is much easier to use a tool like the "STAUFF Filter Selection" Software. (See page C15)

## Examples of Calculation

### Example 1: Selection Pressure Filter

System Information: A pressure filter with an Inorganic Glass Fibre element is required immediately after the pump. The system has standard components and is operating at pressures up to 200 bar. The filter shall be fitted with a bypass valve and a visual clogging indicator.

For better understanding only the calculation at the upper temperature is carried out.

Data given:	$Q_{max}$ :	100 l/min
	Oil type:	ISO 68
	Temperature max.:	+50°C
	Viscosity $\nu_{operating}$ :	44 mm <sup>2</sup> /s
	Density $\rho$ :	0,882 kg/dm <sup>3</sup>
	Micron rating:	10 $\mu$ m (see table on page C11)

#### First Step

Pre-selection of the size: SF 045,  $Q_{nominal} = 160$  l/min  $> Q_{max}$

Pressure drop values (at viscosity of 30 mm<sup>2</sup>/s) from the flow characteristics:

$$\begin{aligned} \Delta p_{Hous} &= 0,15 \text{ bar} && \text{(SF 045 ..., see page C38)} \\ \Delta p_{Elem} &= 0,77 \text{ bar} && \text{(SE-045 G 10 B, see page C40)} \end{aligned}$$

Determination of the correction factor:

$$\Delta p_{Assy} = \frac{0,882}{0,86} \cdot 0,15 \text{ bar} + \frac{0,882}{0,86} \cdot \frac{44}{30} \cdot 0,77 \text{ bar}$$

$$\Delta p_{Assy} = 1,31 \text{ bar} \geq \Delta p_{max} = 1,0 \text{ bar}$$

Since the actual pressure drop is larger than the allowed pressure drop, a larger filter has to be chosen.

#### Second Step

Selection of the next larger filter size: SF 070,  $Q_{nominal} = 240$  l/min  $> Q_{max}$

$$\begin{aligned} \Delta p_{Hous} &= 0,15 \text{ bar} && \text{(SF 070 ..., see page C38)} \\ \Delta p_{Elem} &= 0,45 \text{ bar} && \text{(SE-070 G 10 B, see page C40)} \end{aligned}$$

$$\Delta p_{Assy} = \frac{0,882}{0,86} \cdot 0,15 \text{ bar} + \frac{0,882}{0,86} \cdot \frac{44}{30} \cdot 0,45 \text{ bar}$$

$$\Delta p_{Assy} = 0,83 \text{ bar} \leq \Delta p_{max} = 1,0 \text{ bar}$$

In a clean state, this filter fulfills the requirements and is suitable for the application. The correct filter designation would be **SF070G10B-TB/B/V**.

**Example 2: Selection Return Line Filter**

System Information: A return line filter with a Cellulose element with a micron rating of 10 µm is required to clean the oil. No clogging indicator is required.

Please note: If the system incorporates either accumulators or cylinders, the return flow can dramatically exceed pump flow and the maximum surge flow should be the flow used to calculate the pressure drop through the filter.

Data given:  $Q_{max}$ : 100 l/min  
 Oil type: ISO 68  
 Temperature max.: +60°C  
 Viscosity  $\nu_{operating}$ : 29 mm<sup>2</sup>/s  
 Density  $\rho$ : 0,882 kg/dm<sup>3</sup>  
 Micron rating: 10 µm (see table on page C11)

**First Step**

Pre-selection of the size: RF 030,  $Q_{nominal} = 110 \text{ l/min} > Q_{max}$

Pressure drop values (at viscosity of 30 mm<sup>2</sup>/s) from the flow characteristics:

$\Delta p_{Hous} = 0,30 \text{ bar}$  (RF 030 ..., see page C76)  
 $\Delta p_{Elem} = 0,067 \text{ bar}$  (RE-030 N 10 B, see page C76)

Determination of the correction factor (see page C14):

$$\Delta p_{Assy} = \frac{0,882}{0,86} \cdot 0,30 \text{ bar} + \frac{0,882}{0,86} \cdot \frac{29}{30} \cdot 0,067 \text{ bar}$$

$\Delta p_{Assy} = 0,37 \text{ bar} \leq \Delta p_{max} = 0,5 \text{ bar}$

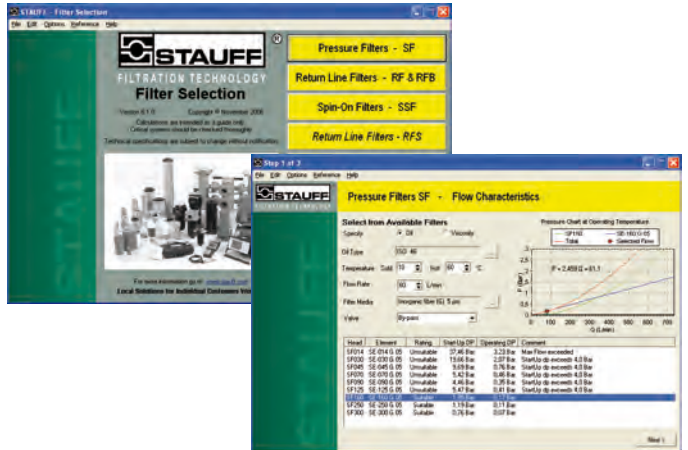
In a clean state, this filter fulfills the requirements and is suitable for the application. No further calculation is necessary. The correct filter designation would be **RF030N10B/B**.

**Filter Selection Software**

For daily business, it is much easier to use a software tool for the calculation of filters.

The STAUFF Filter Selection Software gives outstanding support in calculating and choosing a well-dimensioned filter. The tool assists in calculating the right size and creates a technical and order data sheet.

Please contact STAUFF or your distributor for a free copy of the STAUFF Filter Selection Software.



**STAUFF Contamination Control Program (SCCP)**



The STAUFF Contamination Control Program provides you with a proactive system to control the contamination levels in your hydraulic system.

We offer a Contamination Control Seminar, which includes a PowerPoint presentation and printed literature (English language only).

Topics covered include:

- Failures in hydraulic systems
- Contamination types and sources
- Damage caused by contamination
- Fluid cleanliness levels
- Target cleanliness levels
- Contamination control basics
- Filter efficiency
- Measuring fluid level cleanliness
- Practical applications of filtration

To arrange for a presentation contact STAUFF or your distributor.

Besides that, STAUFF has also a wide range of training tools and filtration software to support the proper application of filter systems and products. Software includes filter sizing programs as well as training presentations.

Contact STAUFF for more information.





**The new STAUFF 4PRO Glass Fibre Elements**

The PLUS for customers:

- Longer operating times through higher dirt holding capacity
- Improved energy efficiency through lower pressure differential
- Excellent  $\beta$  values and outstanding  $\beta$  stability



**4PRO**

The 4Pro stands for 4 pros that characterise STAUFF glass fibre materials:

- **proACTIVE**
- **proFESSIONAL**
- **proGRESSIVE**
- **proTECTION**

Or simply: **Fo(u)r Protection**

In terms of the  $\beta$  value, STAUFF elements have always exhibited excellent performance. For those who take filtration seriously, there's no other valid approach – the measured values must hold up under any inspection. The elements cannot afford any vulnerabilities. The new generation of elements also have excellent dirt holding capacities. Values that users have been looking for. Values that make it possible for the user to extend operating times thereby providing significant reductions to purchasing costs for elements as well maintenance costs.

**Protecting Filter Elements Against Direct Flow Impact**

The sensitive filter bellows on filter elements are frequently prone to damage during transportation, storage and filter replacement work. In addition, large particles in the flow of fluid may harm the filter material.

STAUFF offers a solution: SE and RE series filter elements with protective sheath (only available for glass fibre elements). This is a thin, perforated plastic sheet that completely encases the pleats of the filter from the outside as well as making the element more stable. A further positive effect is that the volume of flow is distributed more evenly by the protective sheath, thus ensuring an efficient flow rate.

In its standard version, the foil is printed with the STAUFF 4PRO logo, eliminating any mix-up with other brands. Larger quantities can also be produced with a customised imprint on the sheath.

**$\beta$  value**

Key evaluation criteria for filter elements using glass fibre technology are the retention rate (micron rating) the  $\beta$  value, the  $\beta$  stability, the dirt holding capacity and the initial pressure differential. These values are determined using the multipass test established by ISO 16889.

The designation for STAUFF elements typically includes a rating based on filter fineness.

Filter designation $\beta$ value > 200 according to ISO 4406	$\beta_{(c)} > 200$ ISO 11171	$\beta_{(c)} > 1000$ ISO 11171
03	4,0 $\mu\text{m}_{(c)}$	4,5 $\mu\text{m}_{(c)}$
05	5,0 $\mu\text{m}_{(c)}$	6,0 $\mu\text{m}_{(c)}$
10	8,8 $\mu\text{m}_{(c)}$	11,0 $\mu\text{m}_{(c)}$
20	21,0 $\mu\text{m}_{(c)}$	23,0 $\mu\text{m}_{(c)}$

STAUFF impresses in particular with its:

- Innovative research, design and development
- Modern production lines with complete monitoring of production
- Certified work processes in accordance with:
  - ISO 9001: 2008 Quality management
  - ISO 14001: 2004 Environment protection
  - OHSAS 18001: 2007 Occupational health and safety
- Comprehensive stocks and quick delivery
- Customised products in accordance with customer drawings or on the basis of STAUFF designs
- Comprehensive worldwide network of wholly-owned subsidiaries and sales partners

The development and manufacture of STAUFF filter elements are subject to strict testing in accordance with:

- ISO 2941 Collapse and burst resistance
- ISO 2942 Verification of fabrication integrity (bubble point test)
- ISO 2943 Compatibility with hydraulic media
- ISO 3723 End load test
- ISO 3724 Flow fatigue characteristics
- ISO 3968 Flow characteristics
- ISO 16889 Filtration performance test (multi-pass method)



## Interchanging STAUFF Filter Elements

As well as original Filter Elements for our own filter housings, STAUFF also provides access to a comprehensive range of Replacement Filter Elements. They match the quality and can be installed in the products of for example:

- Argo-Hytos
- Donaldson
- Eppensteiner
- Fairey Arlon
- Hydac
- Mahle
- Internormen
- Pall
- Parker
- Other types are available on request

STAUFF offers many options for filter conversion, design and calculation and in so doing supports interested parties and customers with the design of efficient solutions:

- Printed conversion catalogue, available in a five-language version
- Online filter search with more than 65000 data sets under [www.filterinterchange.com](http://www.filterinterchange.com)
- Offline filter database with deposited measurements, filter surfaces and drawings
- Filter selection software for easy filter design and calculation

Thanks to their excellent dirt-hold capacity, all of the filter products supplied by STAUFF have an impressive long service life and high  $\beta$  value stability:

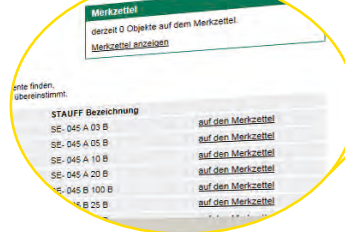
- Inorganic glass fibre, filter paper, stainless fibre (micron ratings between 3  $\mu\text{m}$  and 20  $\mu\text{m}$  respectively) as well as stainless mesh (micron ratings between 10  $\mu\text{m}$  and 500  $\mu\text{m}$ )
- Maximum differential pressure depending on filter media and application for the options 16 bar / 232 PSI, 30 bar / 435 PSI or 210 bar / 3000 PSI.

Your local STAUFF Distributor will assist you interchanging to STAUFF elements.

## Know-how in pocket format

You can use the STAUFF online Interchange database for replacement filter elements on your Smartphone as well!

Simply **scan the QR code** displayed underneath or activate the browser on your Smartphone, enter **[www.filterinterchange.com](http://www.filterinterchange.com)** and save the website under favorites or place into your home screen.



[www.filterinterchange.com](http://www.filterinterchange.com)



## Replacement Filter Elements for Applications involving Hydraulic and Lubrication Oils

**RE - 045 G 20 B - 1650 / 4**

1 2 3 4 5 6 7

### 1 Type

Series	Filter Element
Argo-Hytos High Pressure Filter Element	SD
Argo-Hytos Medium Pressure Filter Element	MD
Argo-Hytos Return-Line Filter Element	RD
Eppensteiner High Pressure Filter Element	SS
Eppensteiner Return-Line Filter Element	RS
Fairey Arlon High Pressure Filter Element	SA
Fairey Arlon Return-Line Filter Element	RA
Hydac High Pressure Filter Element	SE
Hydac Return-Line Filter Element	RE
Mahle High Pressure Filter Element	SL
Mahle Return-Line Filter Element	RL
Internormen High Pressure Filter Element	SN
Internormen Return-Line Filter Element	RN
Pall High Pressure Filter Element	SP
Pall Return-Line Filter Element	RP
Medium Pressure Filter Element according to standard	NL
Return-Line Filter Element according to standard	NR
Special Element STAUFF	SXX

Note: Other series on request

### 2 Nominal Size

Depending on the nominal flow or element length

### 3 Filter Material and Pressure Setting

Metal fibre, high collapse pressure	A, M
Stainless wire mesh, low collapse pressure	B, S
Polyester fibre, high collapse pressure	C, Q
Filter paper, low collapse pressure	D, K, L, N
Inorganic glass fibre, low collapse pressure	E, G
Inorganic glass fibre, high collapse pressure	F, H
Stainless wire mesh, high collapse pressure	R, T, W

### 4 Micron Rating

Stainless wire mesh	
10 $\mu\text{m}$	10
25 $\mu\text{m}$	25
40 $\mu\text{m}$	40
50 $\mu\text{m}$	50
60 $\mu\text{m}$	60
80 $\mu\text{m}$	80
100 $\mu\text{m}$	100
125 $\mu\text{m}$	125
150 $\mu\text{m}$	150
200 $\mu\text{m}$	200
250 $\mu\text{m}$	250
500 $\mu\text{m}$	500
Stainless metal fibre	
3 $\mu\text{m}$	03
5 $\mu\text{m}$	05
10 $\mu\text{m}$	10
20 $\mu\text{m}$	20
Filter paper	
10 $\mu\text{m}$	10
20 $\mu\text{m}$	20
Inorganic glass fibre	
3 $\mu\text{m}$	03
5 $\mu\text{m}$	05
10 $\mu\text{m}$	10
15 $\mu\text{m}$	15
20 $\mu\text{m}$	20
Polyester fibre	
3 $\mu\text{m}$	03
5 $\mu\text{m}$	05
10 $\mu\text{m}$	10
20 $\mu\text{m}$	20

Note: Other micron ratings on request

### 5 Sealing Material

NBR / Perbunan	B
FPM (Viton®)	V
EPDM	E

Note: Other sealing materials on request.

### 6 STAUFF Special Number

If element varies from the standard type	X
--	---

### 7 Design Code

Only for information	X
----------------------	---

## Pressure Filters ■ Types SF / SF-TM / SF-SM / SFZ / SFA



SF



SF-TM



SF-SM



SFZ



SFA

### Product Description

STAUFF Pressure Filters are designed for in-line hydraulic applications or manifold mounting, with a maximum operating pressure up to 420 bar / 6000 PSI. Used together with STAUFF SE series Filter Elements, a high efficiency of contaminant removal is assured. The high dirt-hold capacity of the elements ensures long service life and, as a result, reduced maintenance costs.

### Technical Data

#### Construction

- SF: Designed for in-line assembly, with threaded mounting holes on top of the head.
- SF-TM: Designed for manifold mounting, with mounting holes and fluid ports on top of the head.
- SF-SM: Designed for manifold mounting, with mounting holes and fluid ports on side of the head.
- SFZ: Designed for sandwich plate mounting
- SFA: Designed for in-line assembly, with threaded mounting holes on top of the head.

#### Materials

- Filter head: Spheroidal Graphite Cast Iron  
Free Cutting Steel (only SF-TM014-070 and SFZ)  
SFA: Aluminium
- Filter bowl: Cold Drawn Steel  
SFA: Aluminium
- O-rings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene-Propylene-Diene-Monomer-Rubber)
- Support ring: PTFE (Polytetrafluoroethylene)

#### Operating Pressure

- SF: max. 420 bar / 6000 PSI
- SF-TM: max. 315 bar / 4560 PSI
- SF-SM: max. 315 bar / 4560 PSI
- SFZ: max. 315 bar / 4560 PSI
- SFA: max. 160 bar / 2320 PSI

#### Temperature Range

- -10 °C ... +100 °C / +14 °F ... +212 °F

#### Filter Elements

- Specifications see page C41

#### Media Compatibility

- Mineral oils, other fluids on request

### Options and Accessories

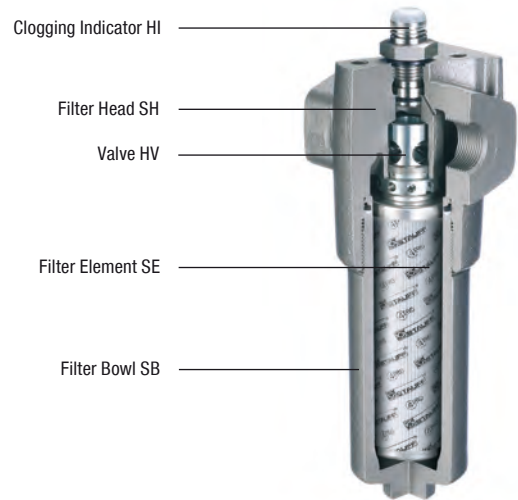
#### Valve (not available for SFZ)

- Bypass valve: Allows unfiltered oil to bypass the contaminated element once the opening pressure has been reached, a differential pressure of  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  $\Delta p$  is the standard setting. Other settings available upon request.
- Reverse flow valve: Allows reverse flow through the filter head without backflushing the element.
- Non-return valve: Prevents draining of the delivery line during element change.
- Multi-function valve: Opening pressure  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  
Bypass, reverse flow capability and non-return valve combined in one valve.

#### Clogging Indicator

- Standard actuating pressure:  $5^{-0.5}$  bar /  $72.5^{-7.25}$  PSI  $\Delta p$   
Other actuating pressure settings are available upon request.
- Available indicators: Visual  
Electrical  
Visual-electrical (24 V DC, 110 V AC, 230 V AC versions)

## High Pressure Filters ■ Type SF


**Product Description**

STAUFF SF series High Pressure Filters are designed for in-line hydraulic applications, with a maximum operating pressure of 420 bar / 6000 PSI. Used together with STAUFF SE series Filter Elements, a high efficiency of contaminant removal is assured. The high dirt-hold capacity of the elements ensures long service life and, as a result, reduced maintenance costs.

**Technical Data**
**Construction**

- Designed for in-line assembly, with threaded mounting holes on top of the head.

**Materials**

- Filter head: Spheroidal Graphite Cast Iron
- Filter bowl: Cold Drawn Steel
- O-rings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene-Propylene-Diene-Monomer-Rubber)
- Support ring: PTFE (Polytetrafluoroethylene)

**Port Connections**

- BSP
- NPT
- SAE O-ring thread
- SAE Code 61 flange
- SAE Code 62 flange

Other port connections available on request.

**Operating Pressure**

- Max. 420 bar / 6000 PSI

**Burst Pressure**

- Min. 1260 bar / 18275 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C22 / C41

**Media Compatibility**

- Mineral oils, other fluids on request

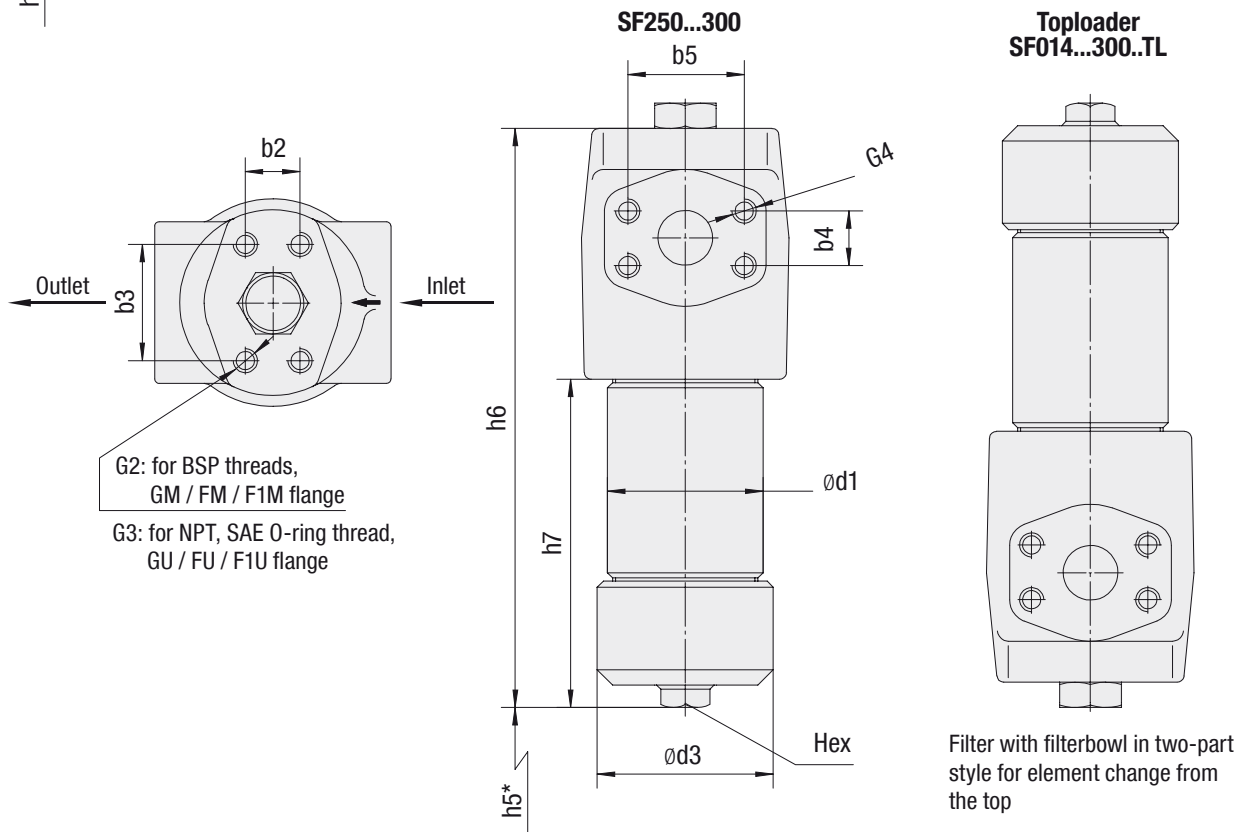
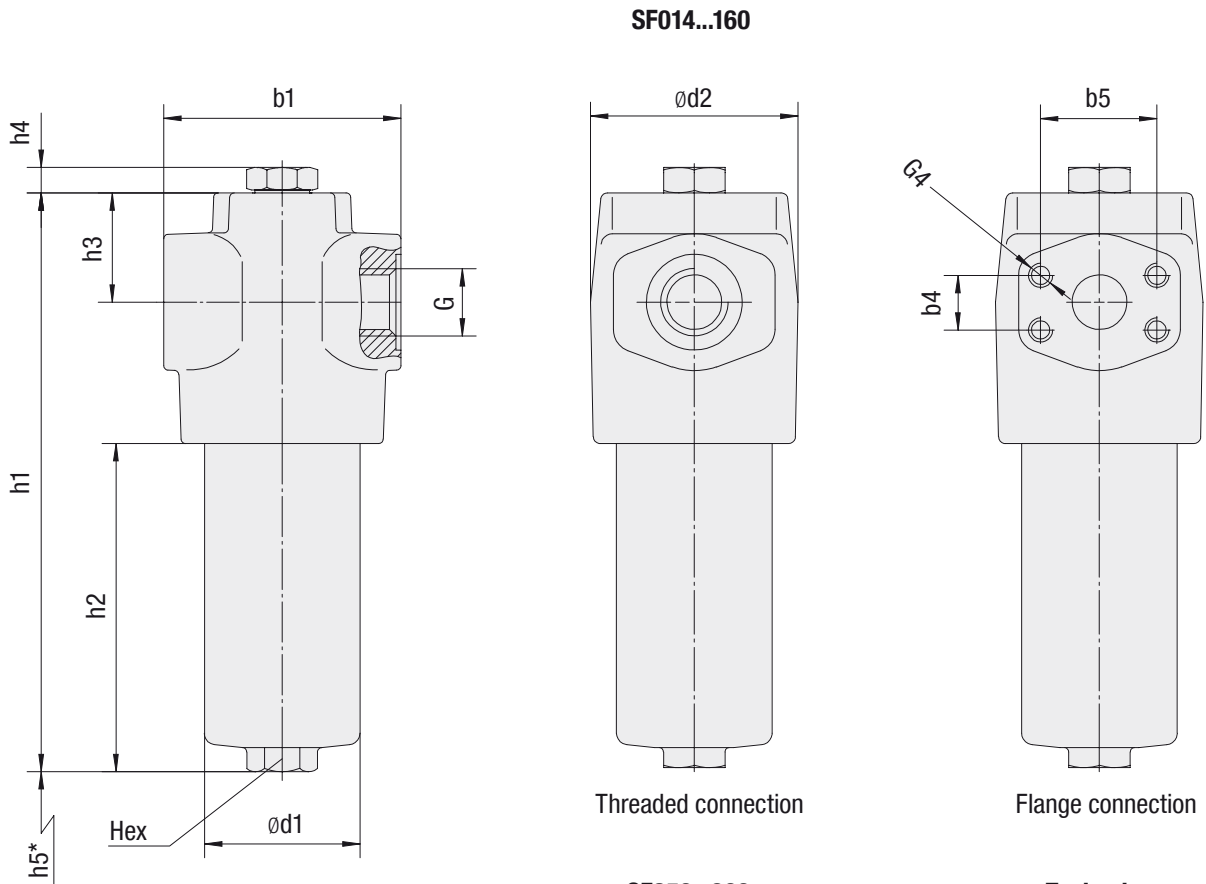
**Options and Accessories**
**Valve**

- Bypass valve: Allows unfiltered oil to bypass the contaminated element once the opening pressure has been reached, a differential pressure of  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  $\Delta p$  is the standard setting. Other settings available upon request.
- Reverse flow valve: Allows reverse flow through the filter head without backflushing the element.
- Non-return valve: Prevents draining of the delivery line during element change.
- Multi-function valve: Opening pressure  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  
Bypass, reverse flow capability and non-return valve combined in one valve.

**Clogging Indicator**

- Standard actuating pressure:  $5_{-0.5}$  bar /  $72.5_{-7.25}$  PSI  $\Delta p$   
Other actuating pressure settings are available upon request.
- Available indicators: Visual  
Electrical  
Visual-electrical (24 V DC, 110 V AC, 230 V AC versions)

High Pressure Filters ■ Type SF



## High Pressure Filters ■ Type SF

Thread Connection G	Filter Size SF									
	014	030	045	070	125	090	160	250	300	
BSP	3/4	3/4	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	
NPT	3/4	3/4	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	
SAE O-ring Thread	1-1/16-12	1-1/16-12	1-5/8-12	1-5/8-12	1-5/8-12	1-7/8-12	1-7/8-12	1-7/8-12	1-7/8-12	
SAE Flange 3000 PSI	3/4	3/4	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	
SAE Flange 6000 PSI	3/4	3/4	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	
Weight (kg/lbs) incl. Elements with Filter Bowl in One-Part Style	5,3	6,2	10,3	12	16,3	27	35,5	-	-	
	11,7	13,7	22,7	26,5	35,9	59,9	78,3	-	-	
Weight (kg/lbs) incl. Elements with Filter Bowl in Two-Part Style	5,9	6,9	12,2	13,7	20	32	39,3	49	57,3	
	13	15,2	26,9	30,2	44,1	70,5	86,5	108	126,3	

Dimensions (mm/in)		Filter Size SF										
		014	030	045	070	125	090	160	250	300		
b1		104	104	128	128	128	178	178	178	178		
		4.10	4.10	5.04	5.04	5.04	7.01	7.01	7.01	7.01		
d2		91	91	116	116	116	159	159	159	159		
		3.58	3.58	4.57	4.57	4.57	6.26	6.26	6.26	6.26		
h3		48	48	49,5	49,5	49,5	72	72	72	72		
		1.89	1.89	1.95	1.95	1.95	2.84	2.84	2.84	2.84		
h4		12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5		
		.49	.49	.49	.49	.49	.49	.49	.49	.49		
with Filter Bowl in One-Part Style Type SF	d1		68	68	95	95	95	130	130	130	130	
			2.68	2.68	3.74	3.74	3.74	5.12	5.12	5.12	5.12	
	h1		188	254	239	298	483	323	494	-	-	
			7.40	10.00	9.41	11.73	19.11	12.72	19.45	-	-	
	h2		78	144	103	161	343	148	319	-	-	
			3.07	5.67	4.06	6.34	13.5	5.83	12.56	-	-	
	h5	rec.*	100	170	140	200	380	190	360	-	-	
		min.*	3.94	6.69	5.51	7.87	14.96	7.48	14.17	-	-	
	Hex		85	85	120	120	120	150	150	-	-	
			3.35	3.35	4.72	4.72	4.72	5.91	5.91	-	-	
	with Filter Bowl in Two-Part Style Type SF...TL	d1		70	70	101,6	101,6	101,6	133	133	133	133
				2.76	2.76	4	4	4	5.24	5.24	5.24	5.24
d3			84	84	115	115	115	155	155	155	155	
			3.31	3.31	4.53	4.53	4.53	6.10	6.10	6.10	6.10	
h5			65	130	100	160	340	120	290	425	590	
			2.56	5.12	3.94	6.30	13.39	4.72	11.42	16.73	23.23	
h6			190	256	241	300	485	329,5	500,5	656,5	821,5	
			7.48	10.08	9.49	11.81	19.10	12.97	19.71	25.85	32.34	
h7			80	146	103	163	344	154,5	325,5	481,5	646,5	
			3.15	5.75	4.06	6.42	13.54	6.08	12.82	18.96	25.45	
Hex			27	27	32	32	32	36	36	36	36	
			1.06	1.06	1.26	1.26	1.26	1.42	1.42	1.42	1.42	
Dimensions SAE Flange 3000 PSI	b4		22,2	22,2	30,2	30,2	30,2	35,7	35,7	35,7	35,7	
			.87	.87	1.87	1.87	1.87	1.41	1.41	1.41	1.41	
	b5		47,6	47,6	58,7	58,7	58,7	70	70	70	70	
		1.19	1.19	2.32	2.32	2.32	2.76	2.76	2.76	2.76		
G4		M10 x 15	M10 x 15	M14 x 20			M12 x 20					
		3/8-16 UNC	3/8-16 UNC	7/16-14 UNC			1/2-13 UNC					
Dimensions SAE Flange 6000 PSI	b4		23,8	23,8	31,6	31,6	31,6	36,7	36,7	36,7	36,7	
			.94	.94	1.24	1.24	1.24	1.45	1.45	1.45	1.45	
	b5		50,8	50,8	66,7	66,7	66,7	79,4	79,4	79,4	79,4	
		2.00	2.00	2.63	2.63	2.63	3.13	3.13	3.13	3.13		
G4		M10 x 15		M14 x 17		M16 x 20						
		3/8-16 UNC		1/2-13 UNC		5/8-11 UNC						

Reference: rec.\*: Recommended | min.\*: Minimum

Dimensions (mm/in)		Filter Size SF									
		014	030	045	070	125	090	160	250	300	
T	b2		23,8	23,8	31,6	31,6	31,6	36,7	36,7	36,7	36,7
			.94	.94	1.24	1.24	1.24	1.45	1.45	1.45	1.45
	b3		50,8	50,8	66,7	66,7	66,7	79,4	79,4	79,4	79,4
			2.00	2.00	2.63	2.63	2.63	3.13	3.13	3.13	3.13
TH (optional)	G2		M10 x 15			M14 x 20			M16 x 20		
			3/8-16 UNC x .59			1/2-13 UNC x .79			5/8-11 UNC x .79		
	b2		32	32	35	35	35	60	60	60	60
			1.26	1.26	1.38	1.38	1.38	2.36	2.36	2.36	2.36
	b3		56	56	85	85	85	115	115	115	115
			2.20	2.20	3.35	3.35	3.35	4.53	4.53	4.53	4.53
G3		M6 x 9			M10 x 15			M12 x 20			
		1/2-28 UNF x .35			3/8-24 UNF x .59			1/2-20 UNF x .79			

High Pressure Filter Housings / Complete Filters ■ Type SF

SF
014
...
...
B
/
T
B
/
B
/
P
T
230
/
TL
/
X

1
2
3
4
5
6
7
8
9
10
11
12
13

**1 Type**

High Pressure Filter **SF**

**2 Group**

Flow	Size
60 l/min / 14 US GPM	<b>014</b>
110 l/min / 30 US GPM	<b>030</b>
160 l/min / 45 US GPM	<b>045</b>
240 l/min / 70 US GPM	<b>070</b>
330 l/min / 90 US GPM	<b>090</b>
475 l/min / 125 US GPM	<b>125</b>
660 l/min / 160 US GPM	<b>160</b>
990 l/min / 250 US GPM	<b>250</b>
1135 l/min / 300 US GPM	<b>300</b>

Note: Exact flow will depend on filter element selected. Consult technical data on pages C43 / C44.

**3 Filter Material**

Material	max. Δp*collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorg. glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>A</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	B, S

Note: \* Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

**6 Connecting Flange**

Type T	<b>T</b>
Type TH (optional)	<b>TH</b>

**7 Connection Style**

Connection Style	Group									Thread Style	Code
	014	030	045	070	125	090	160	250	300		
BSP	3/4		1-1/4			1-1/2				metric	<b>B</b>
BSP	1		1-1/2			-				metric	B1
NPT	3/4		1-1/4			1-1/2				UNC	<b>N</b>
SAE O-ring Thread	1-1/16-12		1-5/8-12			1-7/8-12				UNC	<b>U</b>
SAE Flange 6000 PSI	3/4		1-1/4			1-1/2				metric	GM
SAE Flange 6000 PSI	3/4		1-1/4			1-1/2				UNC	<b>GU</b>
SAE Flange 3000 PSI	3/4		1-1/4			1-1/2				metric	FM
SAE Flange 3000 PSI	3/4		1-1/4			1-1/2				UNC	FU
SAE Flange 3000 PSI	1		-			2				metric	F1M
SAE Flange 3000 PSI	1		-			2				UNC	F1U

Note: Other port connections on request. Bold types identify preferred connection styles.

**8 Valve**

Without valve	<b>0</b>
Bypass valve	<b>B</b>
Reverse flow valve	<b>R</b>
Non-return valve	<b>N</b>
Multi-function valve	<b>M</b>

**9 Clogging Indicator**

Without clogging indicator	<b>0</b>
Visual, with automatic reset	<b>A</b>
Visual, with manual reset	<b>V</b>
Electrical	<b>E</b>
Electrical, Deutsch plug	<b>ED</b>
Visual-electrical	<b>P</b>

**10 Thermostop**

Without thermostop	<b>none</b>
With thermostop	<b>T</b>

**11 Voltage** (only for Code P)

24 V DC	<b>024</b>
110 V AC	<b>110</b>
230 V AC	<b>230</b>

**12 Style Filter Bowl**

With bowl in one-part style	<b>none</b>
Toploader, with bowl in two-part style	<b>TL</b>

Note: Group size SF250 and SF300 only available in TL-version. With drain plug available on request.

**13 Design Code**

Only for information	<b>X</b>
----------------------	----------

Filter Elements ■ Type SE

SE
-
014
G
10
B
/
X

1
2
3
4
5
6

**1 Type**

Filter Element Series **SE**

**2 Group**

According to filter housing

**3 Filter Material**

Material	max. Δp*collapse	Micron ratings available	Code
Inorganic glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorganic glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>A</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	B, S

Note: \* Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

**6 Design Code**

Only for information	<b>X</b>
----------------------	----------



## High Pressure Filters ■ Type SF-TM


**Product Description**

STAUFF SF-TM series High Pressure Filters are designed for manifold block mounting hydraulic applications, with a maximum operating pressure of 315 bar / 4560 PSI. Used together with STAUFF SE series Filter Elements, a high efficiency of contaminant removal is assured. The high dirt-hold capacity of the elements ensures long service life and, as a result, reduced maintenance costs.

**Technical Data**
**Construction**

- Designed for manifold mounting, with mounting holes and fluid ports on top of the head.

**Materials**

- Filter head: SF-TM-014-070 Free Cutting Steel
- Filter bowl: SF-TM-090-300 Spheroidal Graphite Cast Iron
- Filter bowl: Cold Drawn Steel
- O-rings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene-Propylene-Diene-Monomer-Rubber)
- Support ring: PTFE (Polytetrafluoroethylene)

**Operating Pressure**

- Max. 315 bar / 4560 PSI

**Burst Pressure**

- Min. 945 bar / 13705 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C26 / C41

**Media Compatibility**

- Mineral oils, other fluids on request

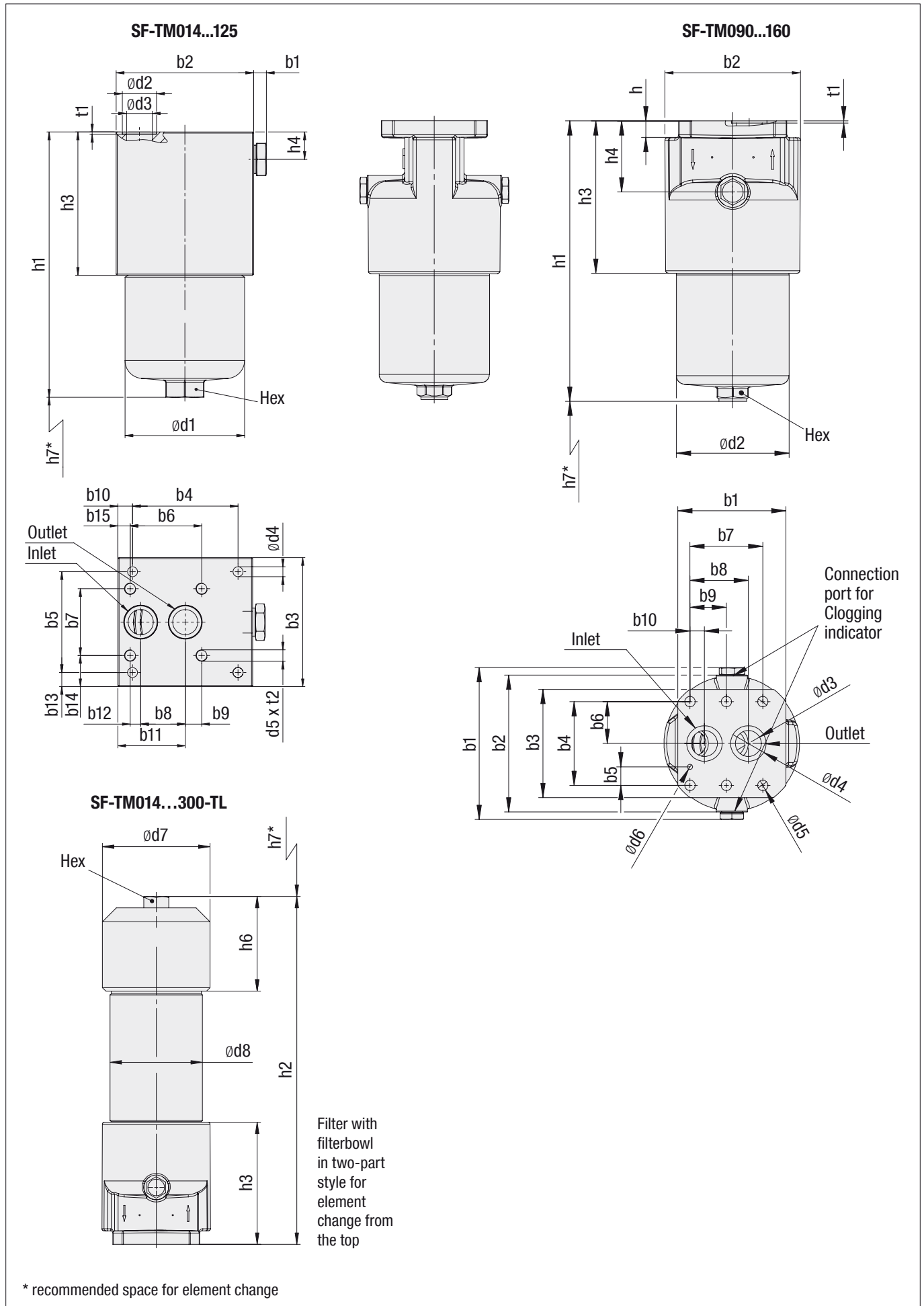
**Options and Accessories**
**Valve**

- Bypass valve: Allows unfiltered oil to bypass the contaminated element once the opening pressure has been reached, a differential pressure of  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  $\Delta p$  is the standard setting. Other settings available upon request.
- Reverse flow valve: Allows reverse flow through the filter head without backflushing the element.
- Non-return valve: Prevents draining of the delivery line during element change.
- Multi-function valve: Opening pressure  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  
Bypass, reverse flow capability and non-return valve combined in one valve.

**Clogging Indicator**

- Standard actuating pressure:  $5_{-0.5}$  bar /  $72.5_{-7.25}$  PSI  $\Delta p$   
Other actuating pressure settings are available upon request.
- Available indicators: Visual  
Electrical  
Visual-electrical (24 V DC, 110 V AC, 230 V AC versions)

High Pressure Filters ■ Type SF-TM



\* recommended space for element change

## High Pressure Filters - Type SF-TM

Dimensions (mm/in)		Filter Size SF - TM									
		014	030	045	070	125	090	160	250	300	
b1		6	6	6	6	6	175,6	175,6	175,6	175,6	
		.24	.24	.24	.24	.24	6.91	6.91	6.91	6.91	
b2		104	104	115	115	115	158	158	158	158	
		4.09	4.09	4.53	4.53	4.53	6.22	6.22	6.22	6.22	
b3		80	80	110	110	110	125	125	125	125	
		3.35	3.35	4.33	4.33	4.33	4.92	4.92	4.92	4.92	
b4		89	89	90	90	90	96,8	96,8	96,8	96,8	
		3.50	3.50	3.54	3.54	3.54	3.81	3.81	3.81	3.81	
b5		31,8	31,8	86	86	86	21,4	21,4	21,4	21,4	
		1.25	1.25	3.39	3.39	3.39	.84	.84	.84	.84	
b6		-	-	61	61	61	48,4	48,4	48,4	48,4	
		-	-	2.40	2.40	2.40	1.91	1.91	1.91	1.91	
b7		-	-	57	57	57	84,1	84,1	84,1	84,1	
		-	-	2.24	2.24	2.24	3.31	3.31	3.31	3.31	
b8		31,6	31,6	38	38	38	67,4	67,4	67,4	67,4	
		1.24	1.24	1.50	1.50	1.50	2.65	2.65	2.65	2.65	
b9		-	-	14	14	14	42,05	42,05	42,05	42,05	
		-	-	.55	.55	.55	1.66	1.66	1.66	1.66	
b10		7,5	7,5	12,5	12,5	12,5	16,7	16,7	16,7	16,7	
		.30	.30	.49	.49	.49	.66	.66	.66	.66	
b11		55,9	55,9	57,5	57,5	57,5	-	-	-	-	
		2.20	2.20	2.26	2.26	2.26	-	-	-	-	
b12		-	-	9	9	9	-	-	-	-	
		-	-	.35	.35	.35	-	-	-	-	
b13		24,1	24,1	12	12	12	-	-	-	-	
		.95	.95	.47	.47	.47	-	-	-	-	
b14		-	-	26,5	26,5	26,5	-	-	-	-	
		-	-	1.04	1.04	1.04	-	-	-	-	
b15		-	-	10,5	10,5	10,5	-	-	-	-	
		-	-	.41	.41	.41	-	-	-	-	
d1		68,2	68,2	95,2	95,2	95,2	156	156	156	156	
		2.69	2.69	3.75	3.75	3.75	6.14	6.14	6.14	6.14	
d2		25,3	25,3	28,6	28,6	28,6	130,2	130,2	130,2	130,2	
		1.00	1.00	1.13	1.13	1.13	5.13	5.13	5.13	5.13	
d3		17,5	17,5	21,4	21,4	21,4	30	30	30	30	
		.69	.69	.84	.84	.84	1.18	1.18	1.18	1.18	
d4		8,5	8,5	9	9	9	41	41	41	41	
		.33	.33	.35	.35	.35	1.61	1.61	1.61	1.61	
d5		-	-	7/16-14 UNC	7/16-14 UNC	7/16-14 UNC	12	12	12	12	
		-	-	-	-	-	.47	.47	.47	.47	
d6		-	-	-	-	-	6	6	6	6	
		-	-	-	-	-	.24	.24	.24	.24	
d7		84	84	115	115	115	155	155	155	155	
		3.31	3.31	4.53	4.53	4.53	6.10	6.10	6.10	6.10	
d8		70	70	101,6	101,6	101,6	133	133	133	133	
		2.76	2.76	4.00	4.00	4.00	5.24	5.24	5.24	5.24	
h1		162	228	206	264	446	324	495	-	-	
		6.38	8.97	8.11	10.39	17.56	12.76	19.49	-	-	
h2		164	230	206	266	447	330,5	501,5	657,5	822,5	
		6.46	9.06	8.11	10.47	17.60	13.01	19.74	25.89	32.38	
h3		76	76	93	93	93	178	178	178	178	
		2.99	2.99	3.66	3.66	3.66	7.01	7.01	7.01	7.01	
h4		25	25	25	25	25	82	82	82	82	
		.98	.98	.98	.98	.98	3.23	3.23	3.23	3.23	
h5		-	-	-	-	-	19,1	19,1	19,1	19,1	
		-	-	-	-	-	.75	.75	.75	.75	
h6		64	64	82,5	82,5	82,5	136	136	136	136	
		2.52	2.52	3.25	3.25	3.25	5.35	5.35	5.35	5.35	
h7	One-Part Style	rec.*	100	170	140	200	380	190	360	-	-
		min.*	3.94	6.69	5.51	7.87	14.96	7.48	14.17	-	-
	Two-Part Style	85	85	120	120	120	150	150	-	-	
		3.35	3.35	4.72	4.72	4.72	5.91	5.91	-	-	
Weight (kg/lbs)	One-Part Style	65	130	100	160	340	120	290	425	590	
		2.56	5.12	3.94	6.30	13.39	4.72	11.42	16.73	23.23	
t1		2	2	2	2	2	3	3	3	3	
		.08	.08	.08	.08	.08	.12	.12	.12	.12	
t2		-	-	13	13	13	-	-	-	-	
		-	-	.51	.51	.51	-	-	-	-	
Hex		27	27	32	32	32	36	36	36	36	
		1.06	1.06	1.26	1.26	1.26	1.42	1.42	1.42	1.42	
Weight (kg/lbs)	One-Part Style	5,7	6,3	11	12,5	17	21,6	28,8	-	-	
		12.5	13.9	24.2	27.8	37.8	48.0	64.0	-	-	
	Two-Part Style	6,6	7,3	13,1	14,6	21	26,5	33,8	43,2	54,6	
		14.7	16.2	29.1	32.4	46.7	58.9	75.1	96	121.3	

Reference: rec.\*: Recommended | min.\*: Minimum

High Pressure Filter Housings / Complete Filters ■ Type SF-TM

SF-TM
014
...
...
B / 
 B / 
 B / 
 P
T
230 / 
 TL / 
 X

1
2
3
4
5
6
7
8
9
10
11
12

**1 Type**

High Pressure Filter Top Mounted **SF-TM**

**2 Group**

Flow	Size
60 l/min / 14 US GPM	<b>014</b>
110 l/min / 30 US GPM	<b>030</b>
160 l/min / 45 US GPM	<b>045</b>
240 l/min / 70 US GPM	<b>070</b>
330 l/min / 90 US GPM	<b>090</b>
475 l/min / 125 US GPM	<b>125</b>
660 l/min / 160 US GPM	<b>160</b>
990 l/min / 250 US GPM	<b>250</b>
1135 l/min / 300 US GPM	<b>300</b>

Note: Exact flow will depend on filter element selected. Consult technical data on pages C43 / C44.

**3 Filter Material**

Material	max. Δp*collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorg. glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>A</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	B, S

Note: \* Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

**6 Connection Size**

Connection Size	Group								Code	
	014	030	045	070	125	090	160	250		300
BSP	1/2 (Ø17,5mm / Ø.69in)		1-1/4 (Ø21,4mm / Ø.85in)			1-1/2 (Ø30mm / Ø1.18in)				<b>B</b>

**7 Valve**

Without valve	<b>0</b>
Bypass valve	<b>B</b>
Reverse flow valve	<b>R</b>
Non-return valve	<b>N</b>
Multi-function valve	<b>M</b>

**8 Clogging Indicator**

Without clogging indicator	<b>0</b>
Visual, with automatic reset	<b>A</b>
Visual, with manual reset	<b>V</b>
Electrical	<b>E</b>
Electrical, Deutsch plug	<b>ED</b>
Visual-electrical	<b>P</b>

**9 Thermostop**

Without thermostop	<b>none</b>
With thermostop	<b>T</b>

**10 Voltage (only for Code P)**

24 V DC	<b>024</b>
110 V AC	<b>110</b>
230 V AC	<b>230</b>

**11 Style Filter Bowl**

With bowl in one-part style	<b>none</b>
Toploader, with bowl in two-part style	<b>TL</b>

Note: Group size SF-TM-250 and SF-TM-300 only available in TL-version.

**12 Design Code**

Only for information	<b>X</b>
----------------------	----------

Filter Elements ■ Type SE

SE - 
 014
G
10
B / 
 X

1
2
3
4
5
6

**1 Type**

Filter Element Series **SE**

**2 Group**

According to filter housing

**3 Filter Material**

Material	max. Δp*collapse	Micron ratings available	Code
Inorganic glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorganic glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>A</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	B, S

Note: \* Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request

**6 Design Code**

Only for information	<b>X</b>
----------------------	----------

## High Pressure Filters ■ Type SF-SM


**Product Description**

STAUFF SF-SM series High Pressure Filters are designed for manifold block mounting hydraulic applications, with a maximum operating pressure of 315 bar / 4560 PSI. Used together with STAUFF SE series Filter Elements, a high efficiency of contaminant removal is assured. The high dirt-hold capacity of the elements ensures long service life and, as a result, reduced maintenance costs.

**Technical Data**
**Construction**

- Designed for manifold mounting, with mounting holes and fluid ports on side of the head.

**Materials**

- Filter head: Spheroidal Graphite Cast Iron
- Filter bowl: Cold Drawn Steel
- O-rings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene-Propylene-Diene-Monomer-Rubber)
- Support ring: PTFE (Polytetrafluoroethylene)

**Operating Pressure**

- Max. 315 bar / 4560 PSI

**Burst Pressure**

- Min. 945 bar / 13705 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C30 / C41

**Media Compatibility**

- Mineral oils, other fluids on request

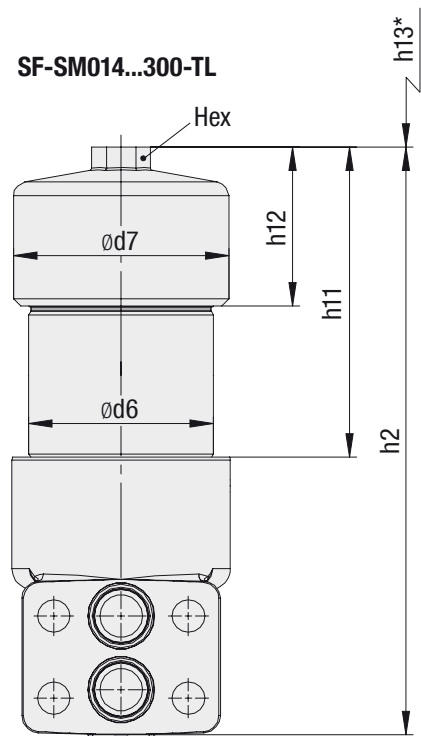
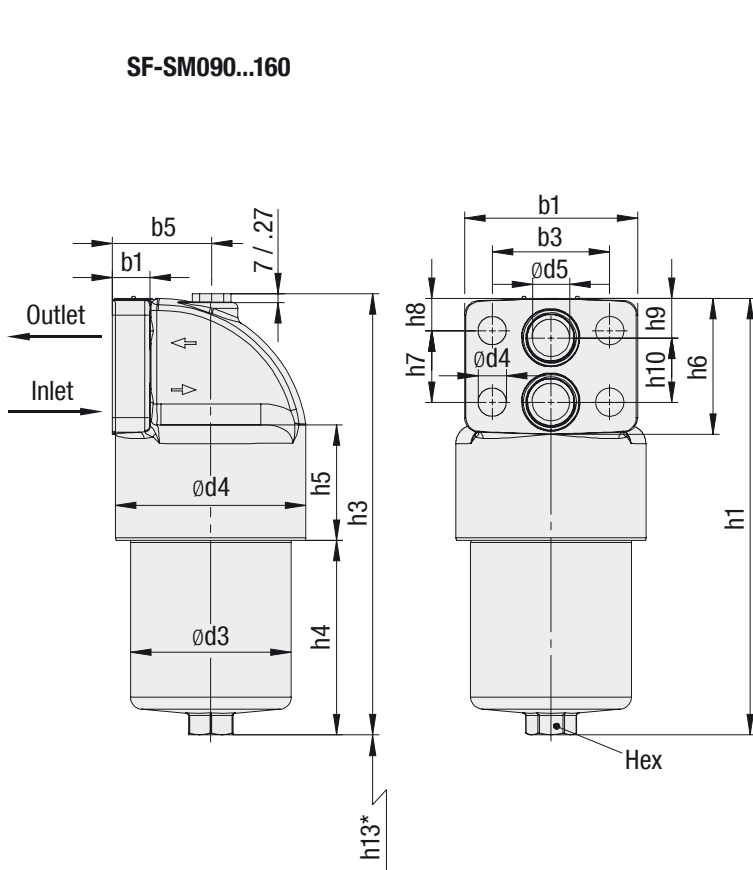
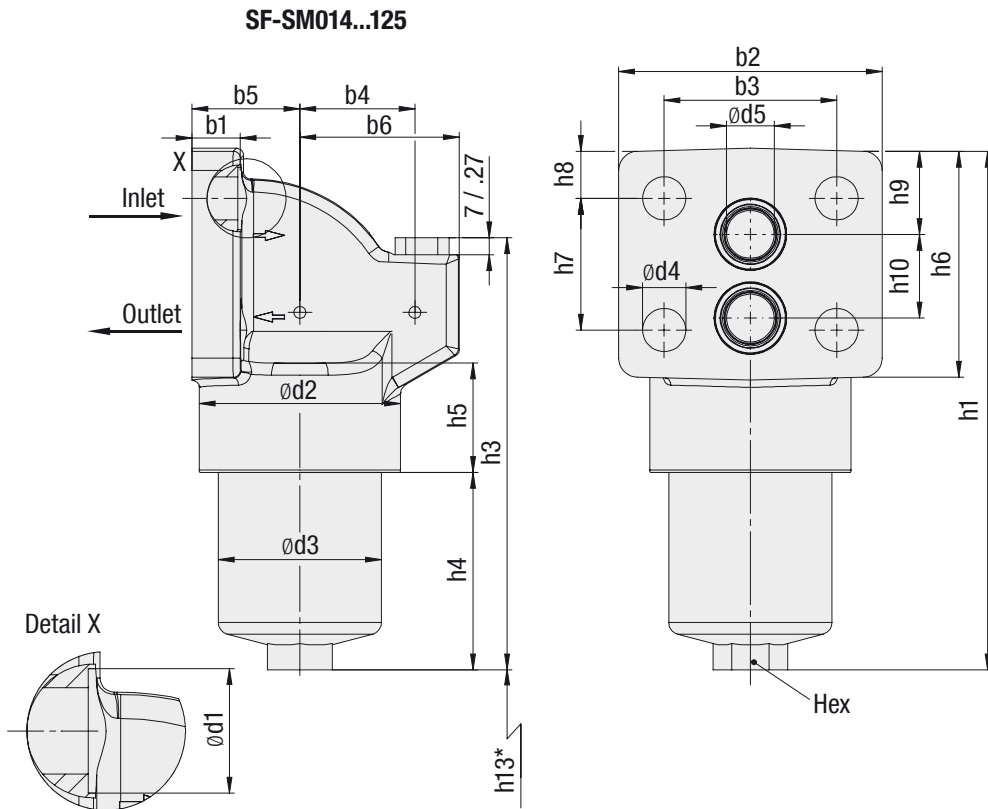
**Options and Accessories**
**Valve**

- Bypass valve: Allows unfiltered oil to bypass the contaminated element once the opening pressure has been reached, a differential pressure of  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  $\Delta p$  is the standard setting. Other settings available upon request.
- Reverse flow valve: Allows reverse flow through the filter head without backflushing the element.
- Non-return valve: Prevents draining of the delivery line during element change.
- Multi-function valve: Opening pressure  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  
Bypass, reverse flow capability and non-return valve combined in one valve.

**Clogging Indicator**

- Standard actuating pressure:  $5_{-0.5}$  bar /  $72.5_{-7.25}$  PSI  $\Delta p$   
Other actuating pressure settings are available upon request.
- Available indicators: Visual  
Electrical  
Visual-electrical (24 V DC, 110 V AC, 230 V AC versions)

High Pressure Filters ■ Type SF-SM



Filter with filterbowl in two-part style for element change from the top

\* recommended space for element change



## High Pressure Filters ■ Type SF-SM

Dimensions (mm/in)		Filter Size SF - SM												
		014	030	045	045 OAI	070	070 OAI	125	125 OAI	090	160	250	300	
b1		20	20	30	30	30	30	30	30	30	30	30	30	
		.79	.79	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	
b2		110	110	140	140	140	140	140	140	140	140	140	140	
		4.33	4.33	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	
b3		72	72	95	95	95	95	95	95	95	95	95	95	
		2.83	2.83	3.74	3.74	3.74	3.74	3.74	3.74	3.74	3.74	3.74	3.74	
b4		66	66	89	89	89	89	89	89	-	-	-	-	
		2.60	2.60	3.50	3.50	3.50	3.50	3.50	3.50	-	-	-	-	
b5		45	45	59	59	59	59	59	59	79,5	79,5	79,5	79,5	
		1.77	1.77	2.32	2.32	2.32	2.32	2.32	2.32	3.13	3.13	3.13	3.13	
b6		48	48	69	69	69	69	69	69	-	-	-	-	
		1.89	1.89	2.72	2.72	2.72	2.72	2.72	2.72	-	-	-	-	
d1		26	26	32	32	32	32	32	32	32	32	32	32	
		1.02	1.02	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	
d2		84	84	116	116	116	116	116	116	154	154	154	154	
		3.31	3.31	4.57	4.57	4.57	4.57	4.57	4.57	6.06	6.06	6.06	6.06	
d3		68	68	95	95	95	95	95	95	130	130	130	130	
		2.68	2.68	3.74	3.74	3.74	3.74	3.74	3.74	5.12	5.12	5.12	5.12	
d4		18	18	22	22	22	22	22	22	23	23	23	23	
		.71	.71	.87	.87	.87	.87	.87	.87	.91	.91	.91	.91	
d5		20	20	32	32	32	32	32	32	30	30	30	30	
		.79	.79	1.26	1.26	1.26	1.26	1.26	1.26	1.18	1.18	1.18	1.18	
d6		70	70	101,5	101,5	101,5	101,5	101,5	101,5	133	133	133	133	
		2.76	2.76	4.00	4.00	4.00	4.00	4.00	4.00	5.24	5.24	5.24	5.24	
d7		84	84	115	115	115	115	115	115	155	155	155	155	
		3.31	3.31	4.53	4.53	4.53	4.53	4.53	4.53	6.10	6.10	6.10	6.10	
h1		217	284	280	284	340	344	506	508	353	523	673	839	
		8.54	11.18	11.02	11.18	13.39	13.54	19.92	20.00	13.90	20.59	26.50	33.03	
h2		219	286	282	286	342	346	507	507	355	525	675	841	
		8.62	11.26	11.10	11.26	13.46	13.62	19.96	19.96	13.98	20.67	26.57	33.11	
h3		181	248	222	239	282	299	464	481	357	527	677	843	
		7.13	9.76	8.74	9.41	11.10	11.77	18.27	18.94	14.06	20.75	26.65	33.19	
h4		83	150	117	119	177	179	343	345	157	329	477	643	
		3.27	5.91	4.61	4.69	6.97	7.05	13.50	13.58	6.18	12.95	18.78	25.31	
h5		45,5	45,5	61	61	61	61	61	61	94	94	94	94	
		1.79	1.79	2.40	2.40	2.40	2.40	2.40	2.40	3.70	3.70	3.70	3.70	
h6		94	94	110	110	110	110	110	110	110	110	110	110	
		3.70	3.70	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	
h7		55	55	60	60	60	60	60	60	58	58	58	58	
		2.17	2.17	2.36	2.36	2.36	2.36	2.36	2.36	2.28	2.28	2.28	2.28	
h8		19,5	19,5	25	25	25	25	25	25	26	26	26	26	
		.77	.77	.98	.98	.98	.98	.98	.98	1.02	1.02	1.02	1.02	
h9		34,5	34,5	31	31	31	31	31	31	32	32	32	32	
		1.36	1.36	1.22	1.22	1.22	1.22	1.22	1.22	1.26	1.26	1.26	1.26	
h10		35	35	52	52	52	52	52	52	52	52	52	52	
		1.38	1.38	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	
h11		80	146	103	103	163	163	344	344	154,5	325,5	481,5	646,5	
		3.15	5.75	4.06	4.06	6.42	6.42	13.64	13.64	6.08	12.81	18.96	25.45	
h12		64	64	82,5	82,5	82,5	82,5	82,5	82,5	136	136	136	136	
		2.52	2.52	3.25	3.25	3.25	3.25	3.25	3.25	5.35	5.35	5.35	5.35	
h13	One-Part Style	rec.*	100	170	140	140	200	200	380	380	190	360	-	-
		min.*	3.94	6.69	5.51	5.51	7.87	7.87	14.96	14.96	7.48	14.17	-	-
	Two-Part Style		85	85	120	120	120	120	120	120	150	150	-	-
			3.35	3.35	4.72	4.72	4.72	4.72	4.72	4.72	5.91	5.91	-	-
O-ring		24 x 3	24 x 3	40 x 3,5	40 x 3,5	40 x 3,5	40 x 3,5	40 x 3,5	40 x 3,5	40 x 3,5	40 x 3,5	40 x 3,5	40 x 3,5	
		.95 x .14	.95 x .14	1.57 x .14	1.57 x .14	1.57 x .14	1.57 x .14	1.57 x .14	1.57 x .14	1.57 x .14	1.57 x .14	1.57 x .14	1.57 x .14	
Hex		27	27	32	32	32	32	32	32	36	36	36	36	
		1.06	1.06	1.26	1.26	1.26	1.26	1.26	1.26	1.42	1.42	1.42	1.42	
Weight (kg/lbs)	One-Part Style		5,2	6,1	9,6	10,7	11,6	12,7	15	17	22,9	30,9	-	-
			11,4	13,4	21,1	23,5	25,5	27,9	33,0	37,4	50,4	68,0	-	-
	Two-Part Style		6,1	7,2	11,5	12,6	15,4	16,5	18,8	20,8	27,9	35,9	42,1	50,3
		13,4	15,8	25,3	27,7	33,9	36,3	41,4	45,7	61,4	79,0	92,6	110,6	

Reference: rec.\*: Recommended | min.\*: Minimum

High Pressure Filter Housings / Complete Filters ■ Type SF-SM

SF-SM
014
...
...
B / 
 B / 
 P
T
230 / 
 TL / 
 OAI / 
 X

1
2
3
4
5
6
7
8
9
10
11
12

**1 Type**

High Pressure Filter Side Mounted **SF-SM**

**2 Group**

Flow	Size
60 l/min / 14 US GPM	<b>014</b>
110 l/min / 30 US GPM	<b>030</b>
160 l/min / 45 US GPM	<b>045</b>
240 l/min / 70 US GPM	<b>070</b>
330 l/min / 90 US GPM	<b>090</b>
475 l/min / 125 US GPM	<b>125</b>
660 l/min / 160 US GPM	<b>160</b>
990 l/min / 250 US GPM	<b>250</b>
1135 l/min / 300 US GPM	<b>300</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C43 / C44.

**3 Filter Material**

Material	max. Δp*collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorg. glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>A</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	B, <b>S</b>

Note: \* Collapse/burst resistance as per ISO 2941.  
Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Seal Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

**6 Valve**

Without valve	<b>0</b>
Bypass valve	<b>B</b>
Reverse flow valve	<b>R</b>
Non-return valve	<b>N</b>
Multi-function valve	<b>M</b>

**7 Clogging Indicator**

Without clogging indicator	<b>0</b>
Visual, with automatic reset	<b>A</b>
Visual, with manual reset	<b>V</b>
Electrical	<b>E</b>
Electrical, Deutsch plug	<b>ED</b>
Visual-electrical	<b>P</b>

**8 Thermostop**

Without thermostop	<b>none</b>
With thermostop	<b>T</b>

**9 Voltage (only for Code P)**

24 V DC	<b>024</b>
110 V AC	<b>110</b>
230 V AC	<b>230</b>

**10 Style Filterbowl**

With bowl in one-part style	<b>none</b>
Toploader, with bowl in two-part style	<b>TL</b>

Note: Group size SF-SM-250 and SF-SM-300 only available in TL-version.

**11 Port Connection Location**

Inlet above outlet	<b>IAO</b>
Outlet above inlet	<b>OAI</b>

Note: IAO only for SF-SM-014/030/045/070/125  
OAI not available for SF-SM-014/030

**12 Design Code**

Only for information	<b>X</b>
----------------------	----------

Filter Elements ■ Type SE

SE - 
 014
G
10
B / 
 X

1
2
3
4
5
6

**1 Type**

Filter Element Series **SE**

**2 Group**

According to filter housing

**3 Filter Material**

Material	max. Δp*collapse	Micron ratings available	Code
Inorganic glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorganic glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>A</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	B, <b>S</b>

Note: \* Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request

**6 Design Code**

Only for information	<b>X</b>
----------------------	----------

## High Pressure Filters ■ Type SFZ


**Product Description**

STAUFF SFZ series High Pressure Filters are designed for sandwich plate mounting in manifold block mounting hydraulic applications, with a maximum operating pressure of 315 bar / 4560 PSI. Used together with STAUFF SE series Filter Elements, a high efficiency of contaminant removal is assured. The high dirt-hold capacity of the elements ensures long service life and, as a result, reduced maintenance costs.

**Technical Data**
**Construction**

- Designed for sandwich plate mounting

**Materials**

- Filter head: Free Cutting Steel
- Filter bowl: Cold Drawn Steel
- O-rings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene-Propylene-Diene-Monomer-Rubber)
- Support ring (bowl): PTFE (Polytetrafluoroethylene)

**Connecting Port**

- According to ISO 4401-03-02-0-05 NG6 / DIN24340-A6 / Cetop R 35 H (Ref.: NFPA/ANSI D03)

**Operating Pressure**

- Max. 315 bar / 4560 PSI

**Burst Pressure**

- Min. 945 bar / 13705 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C38 / C41

**Media Compatibility**

- Mineral oils, other fluids on request

**O-ring for connection ports**

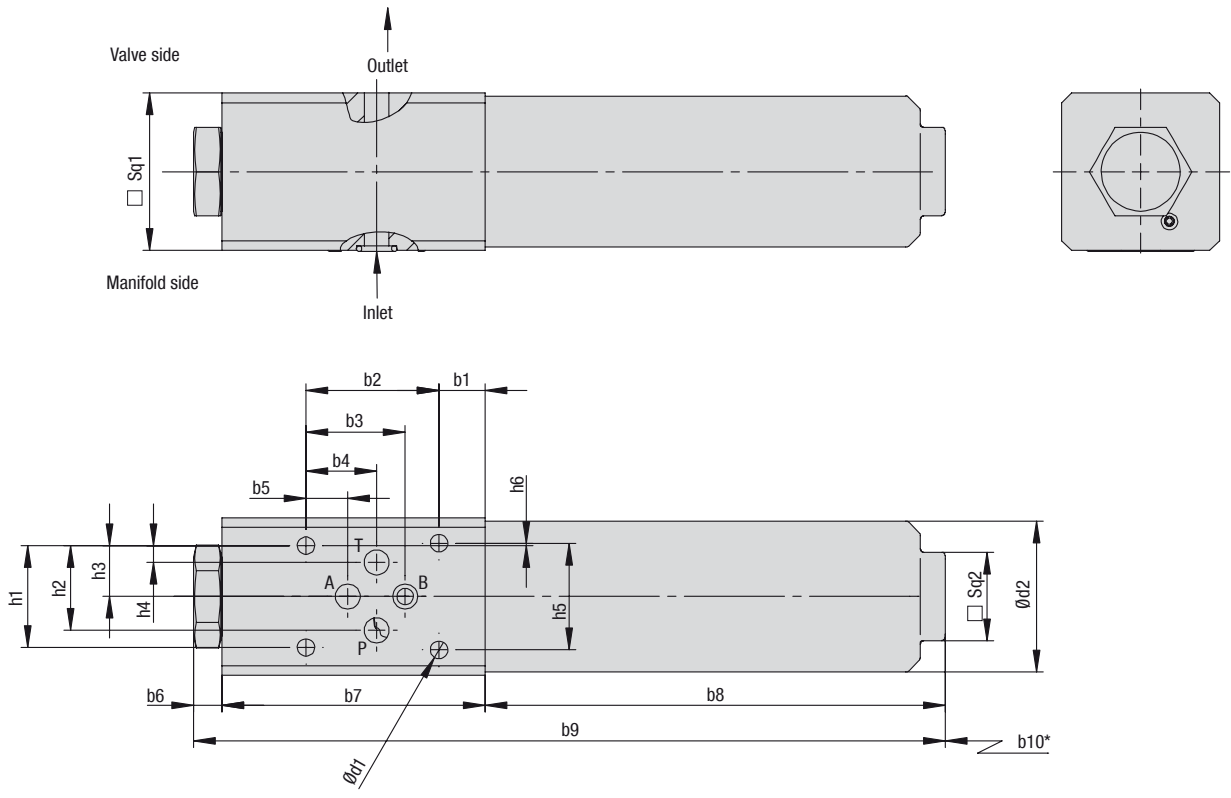
- 9x1,7 (4x included in delivery)

**Options and Accessories**
**Clogging Indicator**

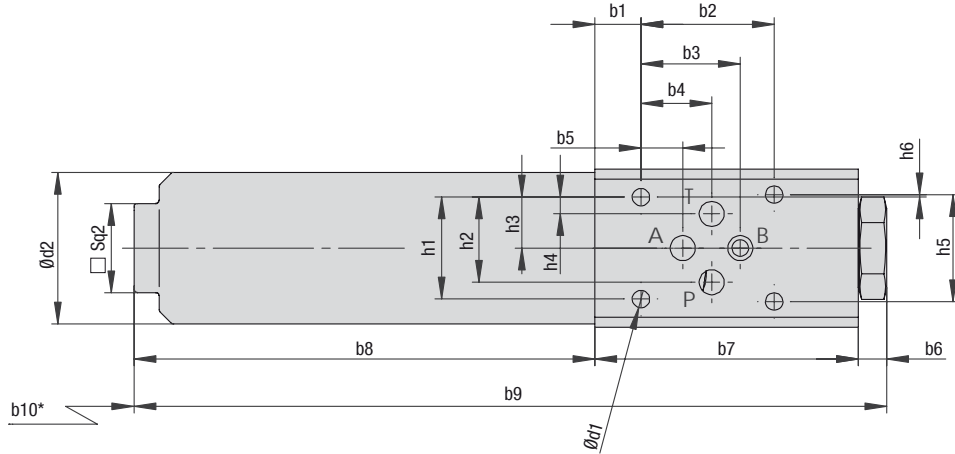
- Standard actuating pressure: 5<sub>-0,5</sub> bar / 72.5<sub>-7,25</sub> PSI Δp  
8<sub>-0,5</sub> bar / 116<sub>-7,25</sub> PSI Δp  
Other actuating pressure settings are available upon request.
- Available indicators: Visual  
Electrical  
Visual-electrical (24 V DC, 110 V AC, 230 V AC versions)

High Pressure Filters - Type SFZ

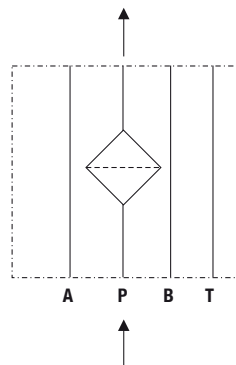
Version - right



Version - left



Symbol for hydraulic systems  
SFZ008



\* recommended space for element change

## High Pressure Filters ▪ Type SFZ

Dimensions (mm/in)	Filter Size SFZ
	SFZ008
b1	14
	.55
b2	40,5
	1.59
b3	30,2
	1.19
b4	21,5
	.85
b5	12,7
	.50
b6	9
	.35
b7	80
	3.15
b8	140
	5.51
b9	229
	9.02
b10	50
	1.97
d1	5,3
	.21
d2	46
	1.81
h1	31
	1.22
h2	25,8
	1.02
h3	15,5
	.61
h4	5,1
	.20
h5	32,5
	1.28
h6	0,75
	.03
Sq1	48
	1.89
Sq2	27
	1.06

High Pressure Filter Housings / Complete Filters ■ Type SFZ

SFZ
008
...
...
B / 
 B / 
 P
T
230
 - 
 5,0 / 
 R / 
 X

1
2
3
4
5
6
7
8
9
10
11
12

**1 Type**

High Pressure Filter for sandwich plate mounting **SFZ**

**2 Group**

Flow **Size**  
30 l/min / 8 US GPM **008**

Note: Exact flow will depend on filter element selected.

**3 Filter Material**

Please note that the filter element is not protected by an internal bypass. Please be sure that the hydraulic systems is designed with the sufficient means to protect the element.

Material	max. Δp*collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorg. glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>M</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	S

Note: \* Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

**6 Connection Size**

Connection Size	Group	Code
	<b>008</b>	
Nominal Bore	NG6* (Ref.: D03)	<b>B</b>

\* ISO 4401-03-02-0-05 / DIN 24340-A6 / Cetop R 35 H

**7 Clogging Indicator**

Without clogging indicator	<b>0</b>
Visual, with automatic reset	<b>A</b>
Visual, with manual reset	<b>V</b>
Electrical	<b>E</b>
Electrical, Deutsch plug	<b>ED</b>
Visual-electrical	<b>P</b>

**8 Thermostop**

Without thermostop	<b>none</b>
With thermostop	<b>T</b>

**9 Voltage (only for Code P)**

24 V DC	<b>024</b>
110 V AC	<b>110</b>
230 V AC	<b>230</b>

**10 Actuating Pressure Clogging Indicator**

5,0 bar / 72,5 PSI	<b>5,0</b>
8,0 bar / 116 PSI	<b>8,0</b>

**11 Design**

Version right	<b>R</b>
Version left	<b>L</b>

**12 Design Code**

Only for information	<b>X</b>
----------------------	----------

Filter Elements ■ Type SE

SE - 
 008
G
10
B / 
 X

1
2
3
4
5
6

**1 Type**

Filter Element Series **SE**

**2 Group**

According to filter housing

**3 Filter Material**

Please note that the filter element is not protected by an internal bypass. Please be sure that the hydraulic systems is designed with the sufficient means to protect the element.

Material	max. Δp*collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorg. glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>M</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	S

\* Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

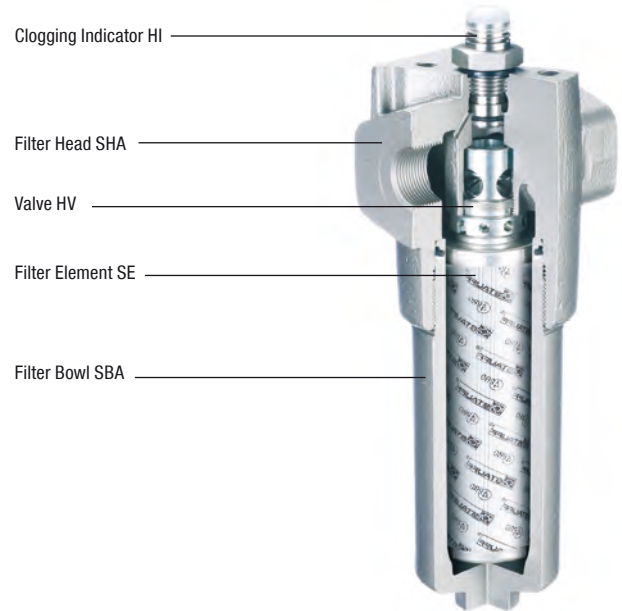
Note: Other sealing materials on request.

**6 Design Code**

Only for information	<b>X</b>
----------------------	----------



## Medium Pressure Filters ■ Type SFA


**Product Description**

STAUFF SFA series Medium Pressure Filters are designed for in-line hydraulic applications with a maximum operating pressure of 160 bar / 2320 PSI. Used together with STAUFF SE series Filter Elements, a high efficiency of contamination removal is assured. The dirt-hold capacity of the elements ensures long service life, and as a result, reduced maintenance costs.

**Technical Data**
**Construction**

- Designed for in-line assembly, with threaded mounting holes on top of the head.

**Materials**

- Filter head: Cast Aluminum
- Filter bowl: Aluminium
- O-rings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene-Propylene-Diene-Monomer-Rubber)
- Support ring: PTFE (Polytetrafluoroethylene)

**Port Connections**

- BSP
- NPT
- SAE O-ring thread
- SAE Code 61 Flange

**Operating Pressure**

- SFA014/030: Max. 160 bar / 2320 PSI  
Max. 190 bar / 2755 PSI (according to ANSI T2.6.1. R2-2001)
- SFA045/070: Max. 150 bar / 2175 PSI  
Max. 171 bar / 2480 PSI (according to ANSI T2.6.1. R2-2001)

**Burst Pressure**

- Min. 480 bar / 6960 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C38 / C41

**Media Compatibility**

- Mineral oils, other fluids on request

**Options and Accessories**
**Valve**

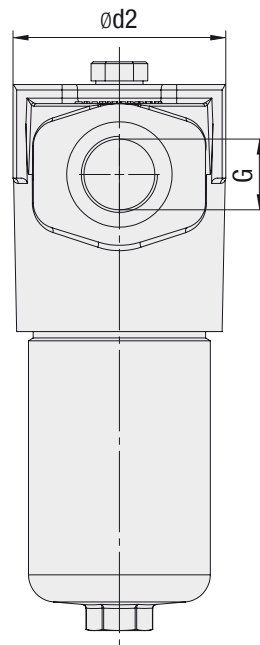
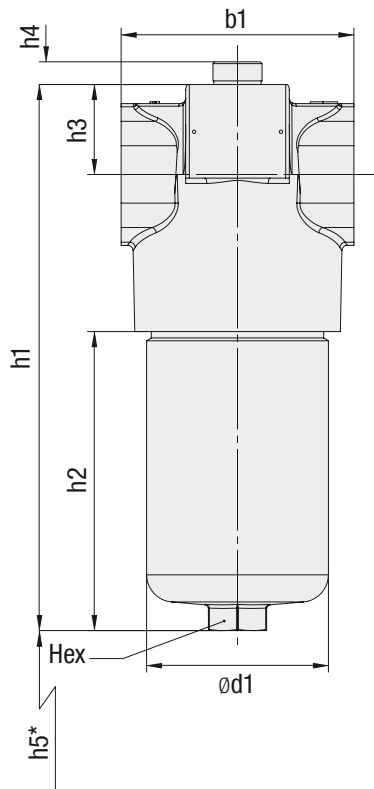
- Bypass valve: Allows unfiltered oil to bypass the contaminated element once the opening pressure has been reached, a differential pressure of  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  $\Delta p$  is the standard setting. Other settings available upon request.
- Reverse flow valve: Allows reverse flow through the filter head without backflushing the element.
- Non-return valve: Prevents draining of the delivery line during element change.
- Multi-function valve: Opening pressure  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  
Bypass, reverse flow capability and non-return valve combined in one valve.

**Clogging Indicator**

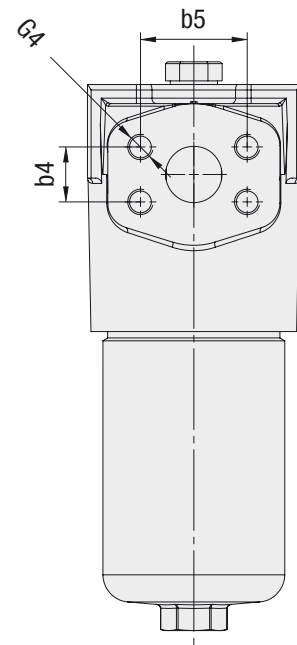
- Standard actuating pressure:  $5_{-0.5}$  bar /  $72.5_{-7.25}$  PSI  $\Delta p$   
Other actuating pressure settings are available upon request.
- Available indicators: Visual  
Electrical  
Visual-electrical (24 V DC, 110 V AC, 230 V AC versions)

Medium Pressure Filters ■ Type SFA

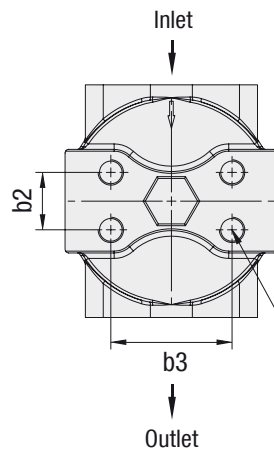
SFA014...070



Threaded connection



Flange connection



G2: for BSP threads, FM/F1M flange  
 G3: for NPT, SAE O-ring thread, FU/F1U flange

\* recommended space for element change

## Medium Pressure Filters ■ Type SFA

Thread Connection G	Filter Size SFA			
	014	030	045	070
BSP	3/4	3/4	1-1/4	1-1/4
NPT	3/4	3/4	1-1/4	1-1/4
SAE O-ring Thread	1-1/6-12	1-1/6-12	1-5/8-12	1-5/8-12
SAE Flange 3000 PSI	3/4	3/4	1-1/4	1-1/4
Weight (kg/lbs)	2,1	2,54	4,6	5,3
	4,7	5,6	10,2	11,8

Dimensions (mm/in)	Filter Size SFA				
	014	030	045	070	
b1	92	92	128	128	
	3.62	3.62	5.04	5.04	
d1	72	72	100	100	
	2.83	2.83	3.93	3.93	
d2	86	86	117	117	
	3.39	3.39	4.61	4.61	
h1	187,5	255	241,5	301	
	7.38	10.04	9.51	11.85	
h2	78	145,5	105	164,5	
	3.07	5.73	4.13	6.46	
h3	40	40	49,5	49,5	
	1.58	1.58	1.95	1.95	
h4	12,5	12,5	12,5	12,5	
	.49	.49	.49	.49	
h5	rec.* 100	170	140	200	
	3.94	6.69	5.51	7.87	
	min.* 85	85	120	120	
	3.35	3.35	4.72	4.72	
Hex	27	27	32	32	
	1.05	1.05	1.25	1.25	
Dimensions SAE Flange 3000 PSI	b4	22,2	22,2	47,6	47,6
		.87	.87	1.87	1.87
	b5	30,2	30,2	58,7	58,7
		1.19	1.19	2.32	2.32
	G4	M10 x 15 or	M10 x 15 or	M14 x 17 or	M14 x 17 or
		3/8-16 UNC	3/8-16 UNC	7/8-14 UNC	7/8-14 UNC

Reference: rec.\*: Recommended | min.\*: Minimum

Dimensions (mm/in)	Filter Size SFA				
	014	030	045	070	
I	b2	23,8	23,8	31,6	31,6
		.94	.94	1.24	1.24
	b3	50,8	50,8	66,7	66,7
		2.00	2.00	2.63	2.63
G2	M10 x 15	M10 x 15	M14 x 20	M14 x 20	
	G3	3/8-16 UNC x .59	3/8-16 UNC x .59	1/2-13 UNC x .59	1/2-13 UNC x .59

Medium Pressure Filter Housings / Complete Filters ■ Type SFA

SFA
014
...
...
V / 
 T
B / 
 B / 
 P
T
230 / 
 X

1
2
3
4
5
6
7
8
9
10
11
12

**1 Type**

Medium Pressure Filter **SFA**

**2 Group**

Flow	Size
60 l/min / 14 US GPM	<b>014</b>
110 l/min / 30 US GPM	<b>030</b>
160 l/min / 45 US GPM	<b>045</b>
240 l/min / 70 US GPM	<b>070</b>

Note: Exact flow will depend on filter element selected. Consult technical data on pages C43 / C44.

**3 Filter Material**

Material	max. Δp*collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorg. glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>A</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>B, S</b>

Note: \* Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

**6 Connection Flange**

Type T	<b>T</b>
--------	----------

**7 Connection Style**

Connection Style	Group				Thread Style	Code
	014	030	045	070		
BSP	3/4		1-1/4		metric	<b>B</b>
BSP	1		1-1/2		metric	B1
NPT	3/4		1-1/4		UNC	N
SAE O-ring Thread	1-1/16-12		1-5/8-12		UNC	U
SAE Flange 3000 PSI	3/4		1-1/4		metric	FM
SAE Flange 3000 PSI	3/4		1-1/4		UNC	FU
SAE Flange 3000 PSI	1		-		metric	F1M
SAE Flange 3000 PSI	1		-		UNC	F1U

Note: Other port connections on request. Bold types identify preferred connection styles.

**8 Valve**

Without valve	<b>O</b>
Bypass valve	<b>B</b>
Reverse flow valve	<b>R</b>
Non-return valve	<b>N</b>
Multi-function valve	<b>M</b>

**9 Clogging Indicator**

Without clogging indicator	<b>O</b>
Visual, with automatic reset	<b>A</b>
Visual, with manual reset	<b>V</b>
Electrical	<b>E</b>
Electrical, Deutsch plug	<b>ED</b>
Visual-electrical	<b>P</b>

**10 Thermostop**

Without thermostop	<b>none</b>
With thermostop	<b>T</b>

**11 Voltage (only for Code P)**

24 V DC	<b>024</b>
110 V AC	<b>110</b>
230 V AC	<b>230</b>

**12 Design Code**

Only for information	<b>X</b>
----------------------	----------

Filter Elements ■ Type SE

SE - 
 014
G
10
B / 
 X

1
2
3
4
5
6

**1 Type**

Filter Element Series **SE**

**2 Group**

According to filter housing

**3 Filter Material**

Material	max. Δp*collapse	Micron ratings available	Code
Inorganic glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorganic glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>A</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>B, S</b>

Note: Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

**6 Design Code**

Only for information	<b>X</b>
----------------------	----------

**Product Description** (not available for SFZ)

The optional valves are fitted as an insert in the filter head and incorporate the spigot on which the element seals. The valve is selected to suit the filter application.

**HV-O** **Non-bypass standard insert** without any valve function.  
Element collapse rating should be higher than the system pressure

**HV-B** **Bypass valve** which allows oil to bypass the element when the differential pressure across the element reaches  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI. (Other pressure settings available on request). The opening pressure should be higher than the  $\Delta p$  setting of an optional clogging indicator. Low collapse 30 bar / 435 PSI  $\Delta p$  elements are normally used with this valve.

**HV-R** **Reverse flow valve** is used in systems where there is flow in reverse through the filter. It allows reverse flow without backflushing the element but does not filter in the reverse direction. Element collapse rating should be higher than the system pressure.

**HV-N** **Non-return valve**  
This valve prevents the oil in the delivery line from draining out while the filter is being serviced. Because there is no bypass, the element collapse rating should be higher than system pressure.

**HV-M** **Multi-function valve**  
This valve combines the bypass, the reverse flow and the non-return functions in one unit. The by-pass opening pressure is  $6^{+0.5}$  bar /  $87^{+7.25}$  PSI  $\Delta p$  with other opening pressures available on request. The opening pressure should be higher than the  $\Delta p$  setting of an optional clogging indicator. Low collapse 30 bar / 435 PSI  $\Delta p$  elements are normally used with this valve.

**Order Code**

**HV - M 014 / 030 / X**

1      2      3      4

**1 Type**

Valve for Pressure Filters	<b>HV</b>
----------------------------	-----------

**2 Valve Type**

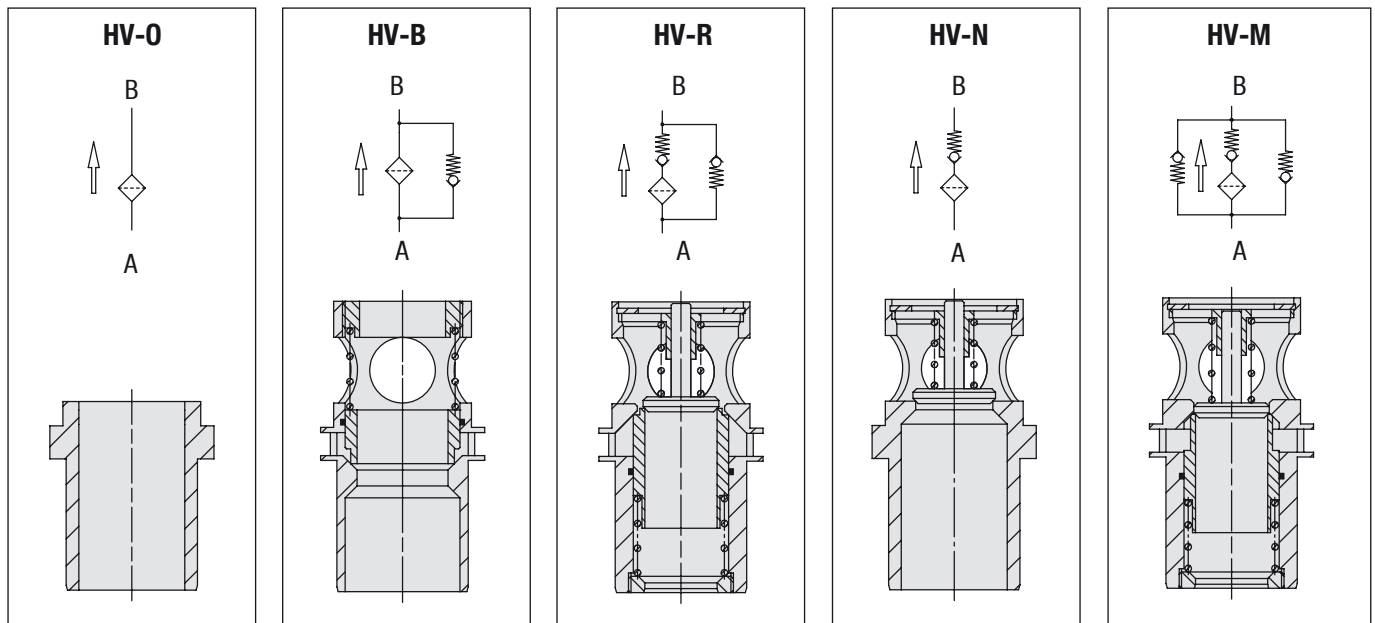
Non-bypass standard insert without any valve	<b>O</b>
Bypass valve	<b>B</b>
Reverse flow valve	<b>R</b>
Non-return valve	<b>N</b>
Multi-function valve	<b>M</b>

**3 Filter Group**

For filter size 014/030	<b>014/030</b>
For filter size 045/070/125	<b>045/070</b>
For filter size 090/160/250/300	<b>090/160</b>

**4 Design Code**

Only for information	<b>X</b>
----------------------	----------



Flow characteristics of the valves see page C42.

## Clogging Indicators

### Product Description

STAUFF Pressure Filters have a wide range of clogging indicators available. If no indicator is specified, the port is sealed by a plug (HI-0). The clogging indicators are actuated by the differential pressure ( $\Delta p$ ) across the element. The special piston design minimizes the effects of peak pressures in the system. An optional thermal lockout (thermo-stop) is available to prevent false indication under cold start conditions. Fluid temperature have to be at least +20 °C / +68 °F for the indicator to function.

### Technical Data

#### Materials

- Body: Stainless Steel
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene-Propylene-Diene-Monomer-Rubber)

#### Thread

- G 1/2

#### Differential Pressure

- 5<sub>-0,5</sub> bar / 72.5<sub>-7,25</sub> PSI pressure setting (other settings on request)

#### Electrical

- Plug according to DIN-EN 175301-803 A (DIN 43650-A).
- Screwed cable gland PG11
- Protection rating (DIN 40050) IP65
- Both NO and NC contacts are available in the switch, rated capacity: see chart below
- Deutsch plug

The visual clogging indicators are available in the following configurations:

- Manual reset: The indicator continues to display the clogged signal even through the  $\Delta p$  may have fallen. Pressing the plastic cover down will reset the indicator.
- Automatic reset: The clogged signal will disappear when the  $\Delta p$  drops below the setting for the indicator.

Electrical and visual-electrical clogging indicators are only available with automatic reset.

Note: The customer / user carries the responsibility for the electrical connection.

### Order Code

HI - P T 230 B 2,5B / X

1    2    3    4    5    6    7

#### 1 Type

Clogging Indicator for Pressure Filters **HI**

#### 2 Indicator Type

Plug **O**  
 Visual, automatic reset **A**  
 Visual, manual reset **V**  
 Electrical **E**  
 Electrical, Deutsch plug **ED**  
 Visual-electrical **P**

#### 3 Thermostop

Without thermostop **none**  
 With thermostop **T**

#### 4 Voltage (only for Code P)

24 V DC **024**  
 110 V AC **110**  
 230 V AC **230**

#### 5 Sealing Material

NBR (Buna-N®) **B**  
 FPM (Viton®) **V**  
 EPDM **E**

#### 6 Differential Pressure Setting

1,72 bar / 25 PSI **25P**  
 2,0 bar / 29 PSI **2,0B**  
 2,5 bar / 36.3 PSI **2,5B**  
 3,0 bar / 43.5 PSI **3,0B**  
 5,0 bar / 72.5 PSI (standard option) **5,0B**  
 7,0 bar / 101.5 PSI **7,0B**

#### 7 Design Code

Only for information **X**

#### Rated Capacity HI-E and HI-P

Voltage V	Resistive Load A	Inductive Load A
110 V AC	5A	3A
230 V AC	3A	2A
24 V DC	4A	3A

High voltage peaks occur when inductive loads are switched off. Protective circuitry should be employed to reduce contact burnout.

### Dimensions

**HI-0**

**HI-A**  
**HI-V**

**HI-E**

**HI-ED**

**HI-P**

**HI-P 024**



## Replacement Filter Elements ■ Type SE



## Product Description

STAUFF SE series Replacement Filter Elements for SF / SF-TM / SF-SM / SFZ / SFA series filter housings are manufactured in the common filter materials such as Stainless Fibre, Stainless Mesh and Inorganic Glass Fibre. As standard, all Replacement Elements SE series have tin-plated steel parts for use with aggressive media such as water glycol, other materials available on request. All STAUFF Replacement Elements comply with quality specifications in accordance with international standards.

## Order Code

**SE - 014 G 10 B / X**

1      2      3      4      5      6

**1 Type**

 Filter Element Series **SE**
**2 Group**

According to filter housing

**3 Filter Material**

Material	max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorganic glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Inorganic glass fibre	210 bar / 3045 PSI		<b>H</b>
Stainless fibre	210 bar / 3045 PSI		<b>A</b>
Stainless mesh	30 bar / 435 PSI		B, <b>S</b>

Note: \* Collapse/burst resistance as per ISO 2941. Bold types identify preferred materials, other materials on request.

**4 Micron Rating**

3 $\mu m$	<b>03</b>
5 $\mu m$	<b>05</b>
10 $\mu m$	<b>10</b>
20 $\mu m$	<b>20</b>
25 $\mu m$	<b>25</b>
50 $\mu m$	<b>50</b>
100 $\mu m$	<b>100</b>
200 $\mu m$	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna-N®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

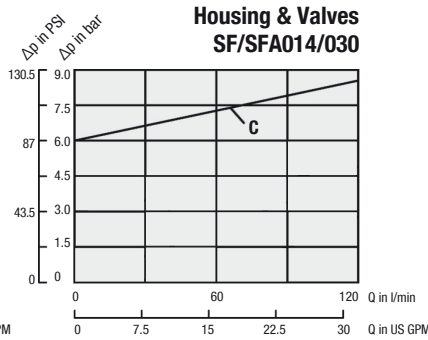
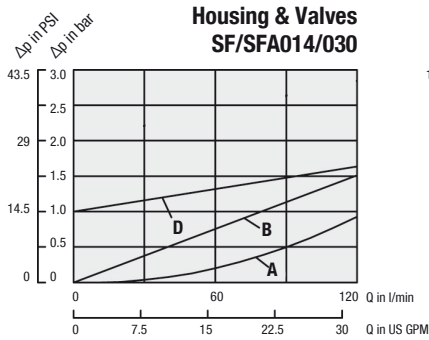
Note: Other sealing materials on request.

**6 Design Code**

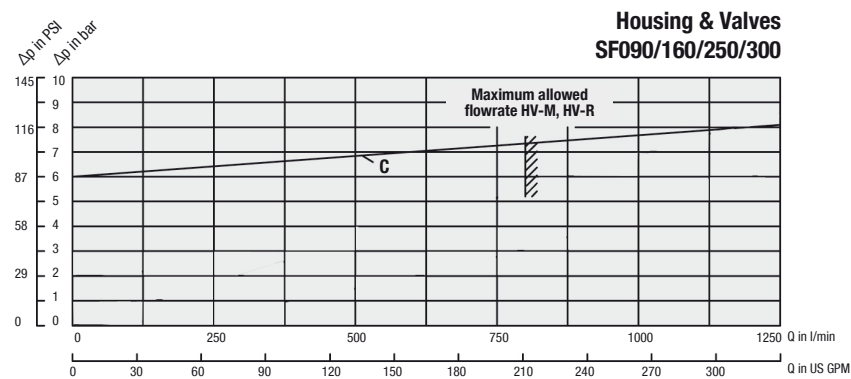
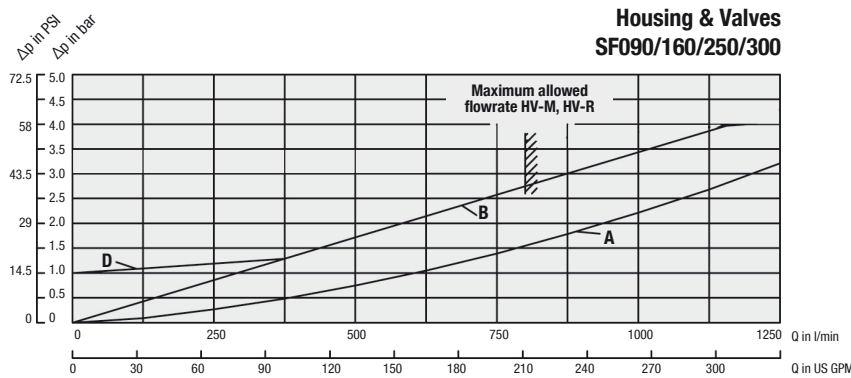
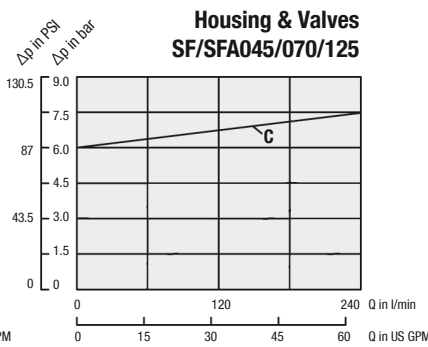
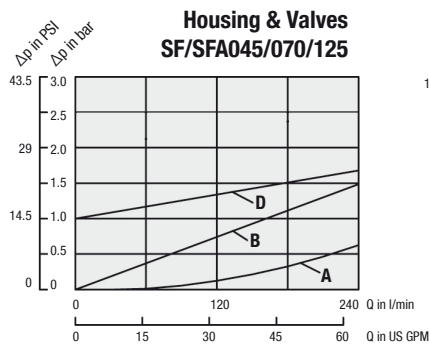
Only for information	<b>X</b>
----------------------	----------

High and Medium Pressure Filters - Type SF / SF-TM / SF-SM / SFZ / SFA

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30 cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. Consult STAUFF for details.

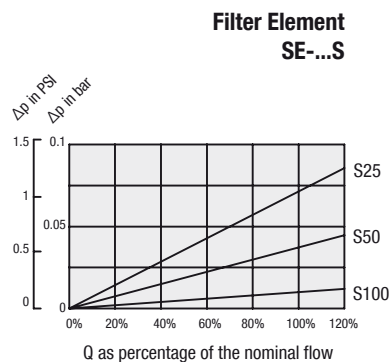
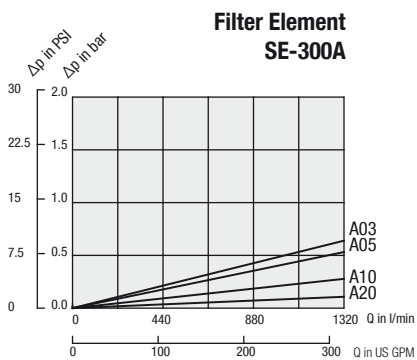
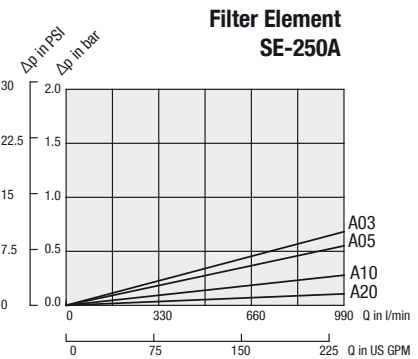
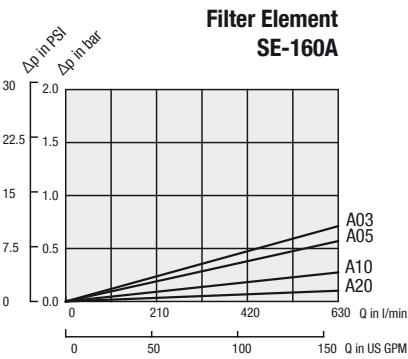
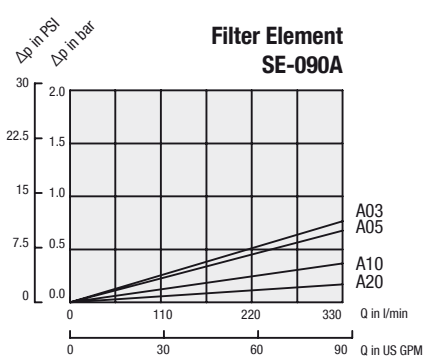
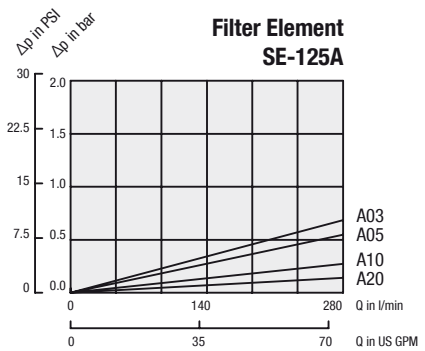
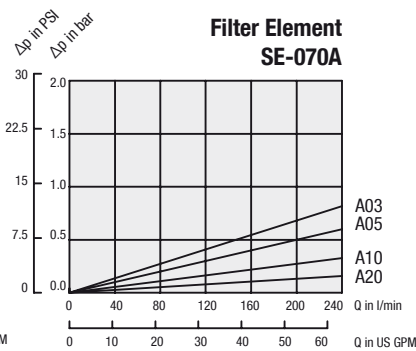
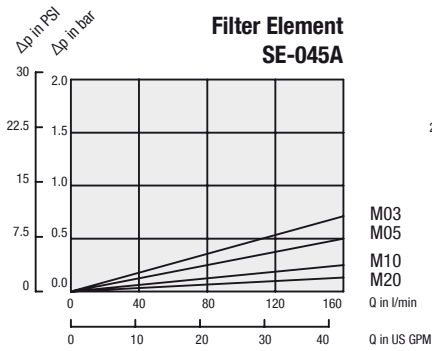
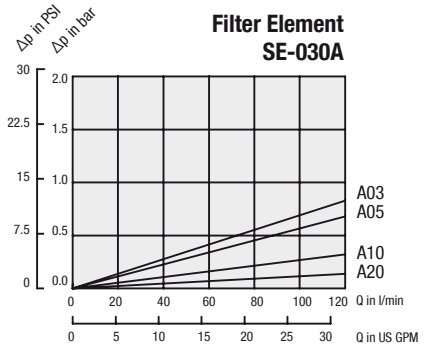
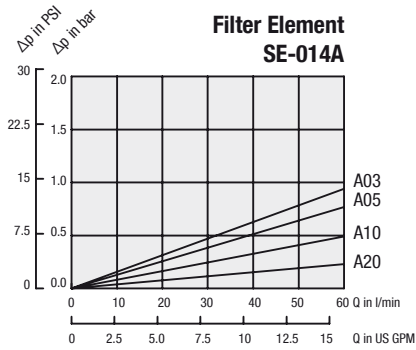
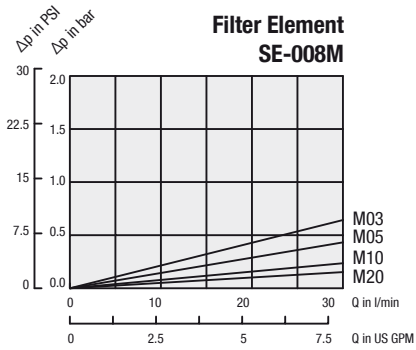


Valve Configuration	Flow direction	Curve
Housing with HV-O or HV-B	Inlet → Outlet	A
HVM, HV-R, HV-N	Inlet → Outlet	B
HV-M, HV-B ▪ Element 100% blocked Bypass only ▪ In reality always mixed mode	Inlet → Outlet	C
HV-M, HV-R Reverse mode	Outlet → Inlet	D



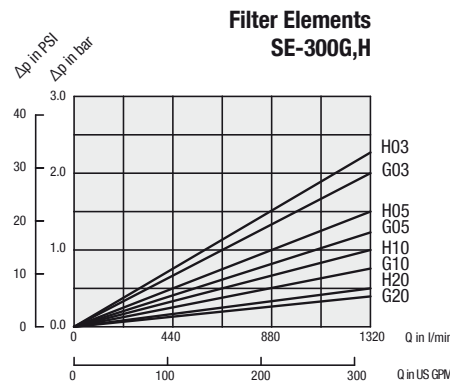
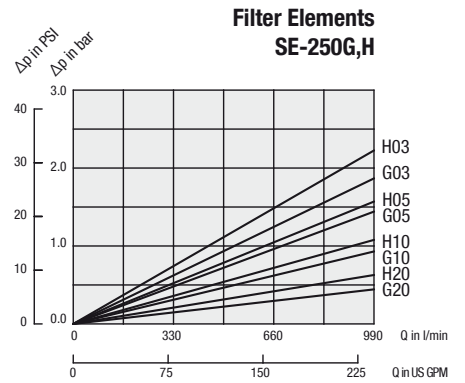
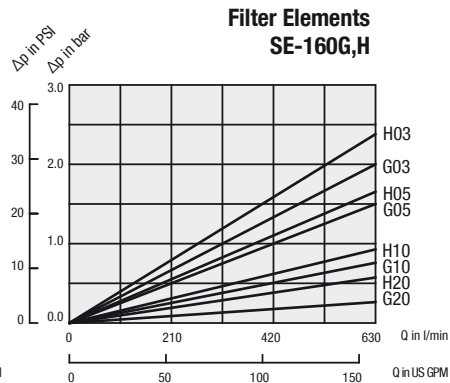
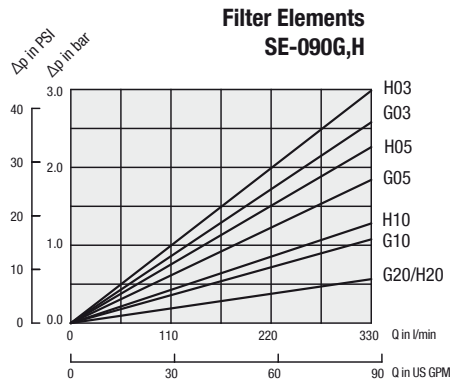
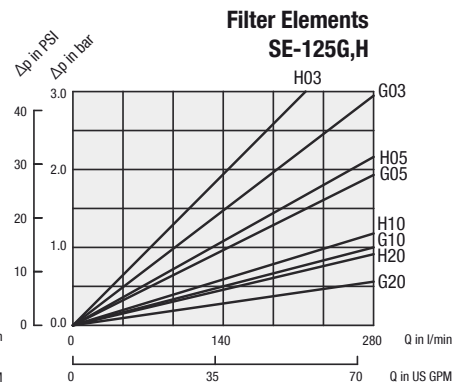
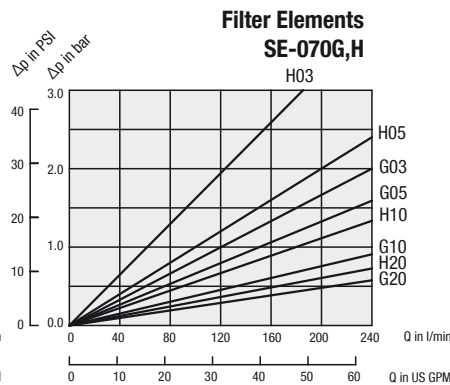
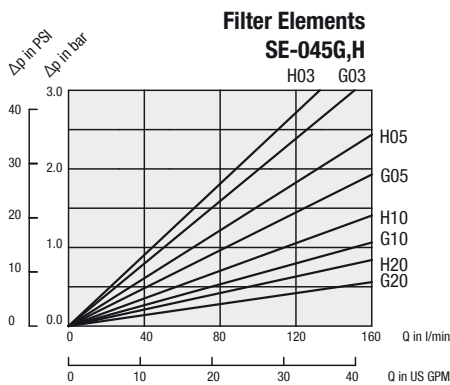
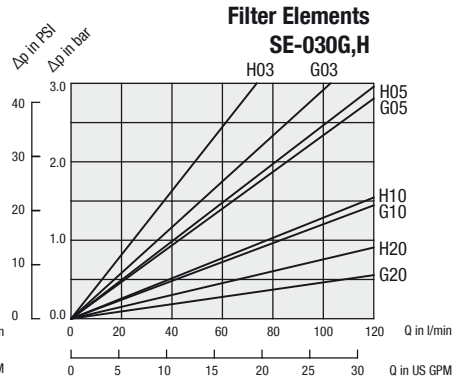
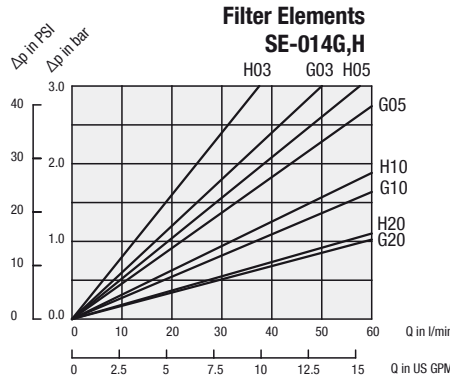
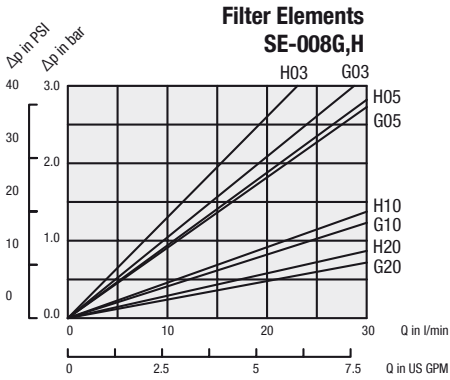
## High and Medium Pressure Filters ■ Type SF / SF-TM / SF-SM / SFZ / SFA

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30 cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. Consult STAUFF for details.



High and Medium Pressure Filters - Type SF / SF-TM / SF-SM / SFZ / SFA

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30 cst). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. Consult STAUFF for details.



## Medium Pressure Filters ■ Type SMPF


**Product Description**

STAUFF SMPF Medium Pressure Filters are designed for in-line hydraulic applications with a maximum operating pressure of 110 bar / 1600 PSI. Used together with STAUFF Filter Elements, a high efficiency of contamination removal is assured.

**Technical Data**
**Construction**

- In-line assembly

**Materials**

- Filter head: Aluminium Alloy
- Filter bowl: Aluminium Alloy
- Sealings: NBR (Buna-N®)

**Port Connections**

- BSP
- SAE O-ring thread

**Flow Rating**

- Up to 90 l/min / 25 US GPM

**Operating Pressure**

- Max. 110 bar / 1600 PSI

**Burst Pressure**

- 300 bar / 4350 PSI

**Temperature Range**

- -25 °C ... +110 °C / -13 °F ... +230 °F

**Filter Elements**

- Specifications see page C48

**Media Compatibility**

- Mineral oils, other fluids on request

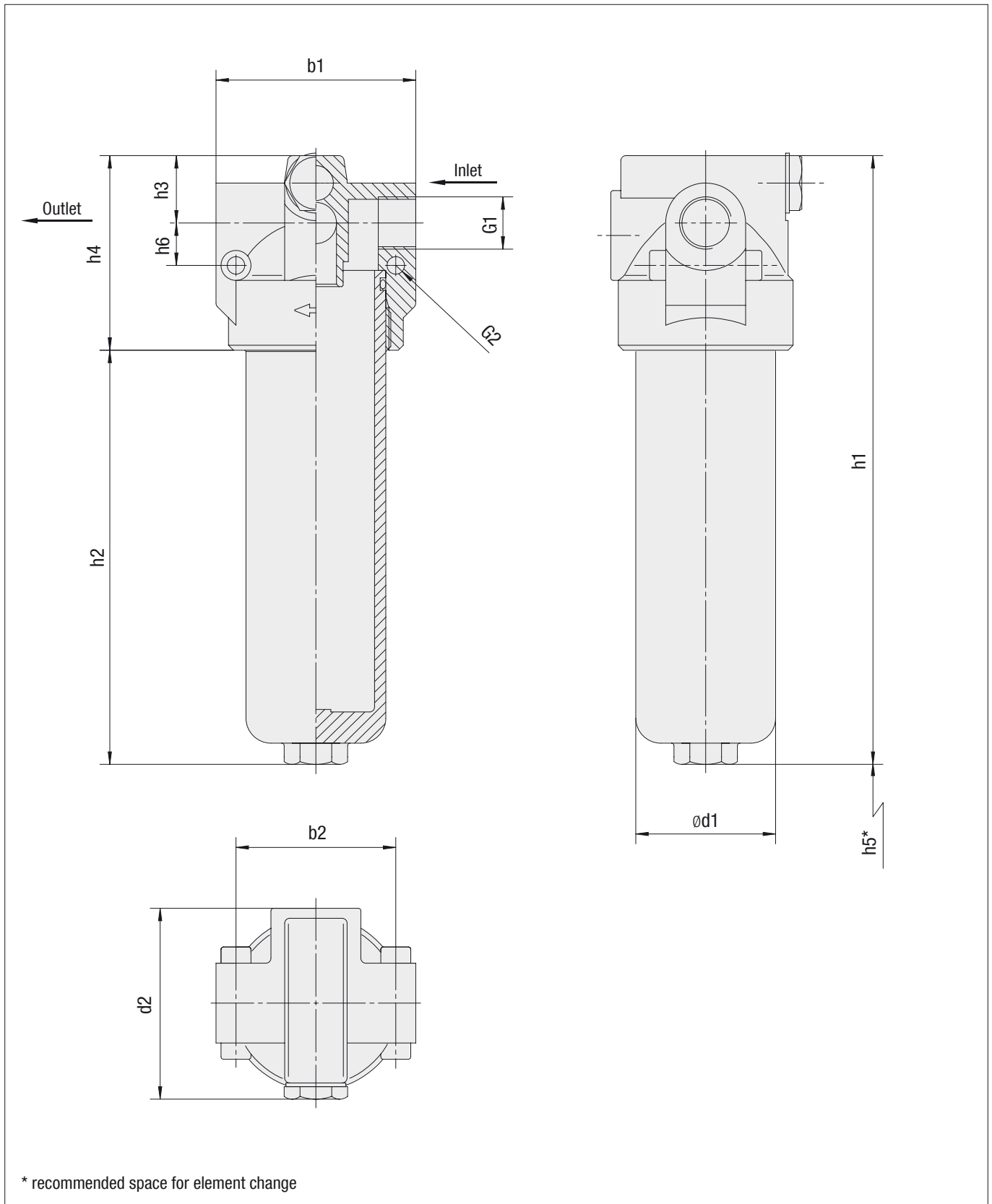
**Options and Accessories**
**Valve**

- Bypass valve: Allows unfiltered oil to bypass the contaminated element once the opening pressure has been reached  
6 bar / 87 PSI ±10% is the standard actuating pressure

**Clogging Indicators**

- Standard actuating pressure: 5 bar / 72.5 PSI ±10%
- Available indicators: Visual  
Visual-electrical

Medium Pressure Filters ■ Type SMPF





## Medium Pressure Filters ■ Type SMPF

Thread Connection G1	Filter Size SMPF	
	015	025
Nominal Flow (l/min / US GPM)	60	90
	15	25
BSP	1/2	1/2
SAE O-ring thread	3/4-16	3/4-16
Weight (kg/lb)	0,95	1,25
	2,09	2,76

Dimensions (mm/in)	Filter Size SMPF	
	015	025
b1	80	80
	3.15	3.15
b2	64	64
	2.52	2.52
d1	56	56
	2.20	2.20
d2	76,5	76,5
	3.01	3.01
h1	157	244
	6.18	9.61
h2	79	166
	3.11	6.54
h3	27	27
	1.06	1.06
h4	78	78
	3.07	3.07
h5	60	60
	2.36	2.36
h6	17	17
	.67	.67
G2	7	7
	.28	.28

Medium Pressure Filter Housings / Complete Filters ▪ Type SMPF

**SMPF 015 ... .. B / T B / B / VE / X**

1      2      3      4      5      6      7      8      9      10

**1 Type**  
Medium Pressure Filter **SMPF**

**2 Group**  
Flow Size  
60 l/min / 15 US GPM **015**  
90 l/min / 25 US GPM **025**  
Note: Exact flow will depend on filter element selected  
Consult technical data on page C50.

**3 Filter Material**

Material	Max. Δp*collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	20 bar / 290 PSI	03, 10, 20	<b>E</b>
Stainless mesh	20 bar / 290 PSI	60	<b>S</b>

\* Note: Collapse/burst resistance as per ISO 2941.  
Other materials on request.

**4 Micron Rating**  
3 μm **03**  
10 μm **10**  
20 μm **20**  
60 μm **60**  
Note: Other micron ratings on request.

**5 Sealing Material**  
NBR (Buna®) **B**  
Note: Other sealing materials on request.

**6 Mounting Style**  
In-line **T**

**7 Connection Style**  
BSP 1/2 **B**  
SAE O-ring thread 3/4-16 **U**

**8 Valve**  
Without valve **0**  
Bypass valve **B**

**9 Clogging Indicator**  
Without Clogging Indicator **0**  
Visual **V**  
Visual-electrical **VE**

**10 Design Code**  
Only for information **X**

Filter Elements ▪ Type SME

**SME - 015 E 03 B / X**

1      2      3      4      5      6

**1 Type**  
Filter Element Series **SME**

**2 Group**  
According to filter housing

**3 Filter Material**

Material	Max. Δp*collapse	Micron ratings available	Code
Inorg. glass fibre	20 bar / 290 PSI	03, 10, 20	<b>E</b>
Stainless mesh	20 bar / 290 PSI	60	<b>S</b>

\* Note: Collapse/burst resistance as per ISO 2941.  
Other materials on request.

**4 Micron Rating**  
3 μm **03**  
10 μm **10**  
20 μm **20**  
60 μm **60**  
Note: Other micron ratings on request.

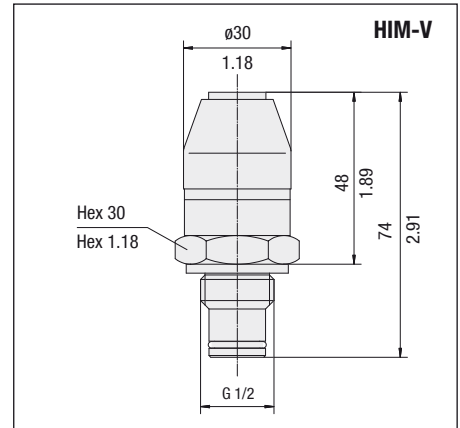
**5 Sealing Material**  
NBR (Buna®) **B**  
Note: Other sealing materials on request.

**6 Design Code**  
Only for information **X**

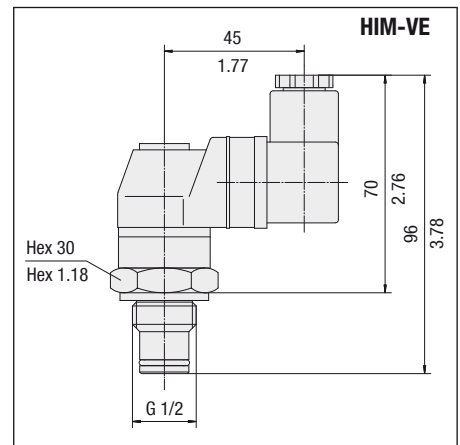
## Medium Pressure Filters ■ Type SMPF

**Visual Clogging Indicator**

Part number HIM-V is a clogging indicator actuated by the differential pressure across the filter element. The actuating pressure of 5 bar / 72.5 PSI allows the dirty element to be changed before the bypass setting of 6 bar / 87 PSI is reached.


**Visual-Electrical Clogging Indicator**

Part number HIM-VE is used when an electrical signal is needed to indicate when the element needs changing. It is actuated by the differential pressure across the filter element. The actuating pressure of 5 bar / 72.5 PSI allows the dirty element to be changed before the bypass setting of 6 bar / 87 PSI is reached.

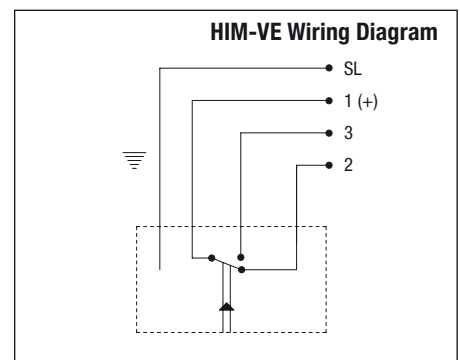


Dimensions in mm / in

**HIM-VE Rated Capacity**

Voltage V	Resistive Load A	Inductive Load A
125 V AC	5	5
250 V AC	5	5
15 V AC	10	10
30 V DC	5	5
50 V DC	1	1
125 V DC	0.50	0.06

Note: The customer / user carries the responsibility for the electrical connection.


**Order Code**

HIM - V B - 5,0B / X

1   
 2   
 3   
 4   
 5

**1 Type**

Clogging Indicator SMPF Series

**HIM**
**3 Sealing Material**

NBR (Buna®)

**B**
**5 Design Code**

Only for information

**X**
**2 Indicator Type**

Visual

**V**

Visual-electrical

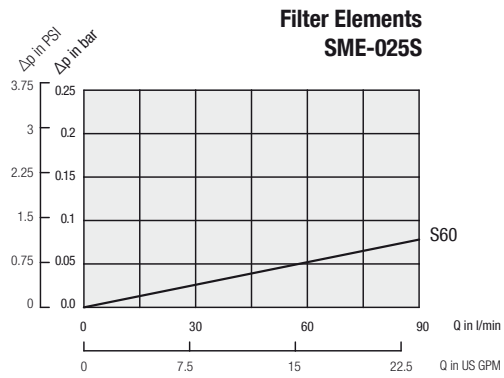
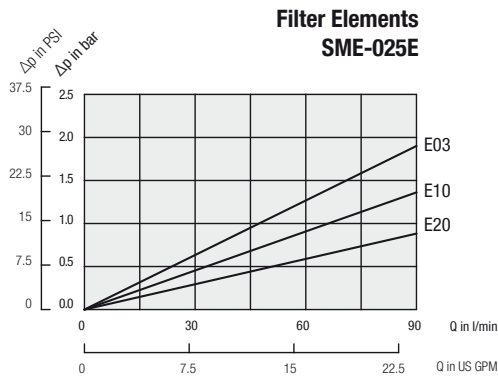
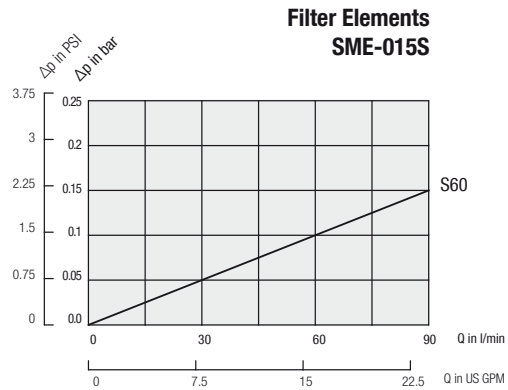
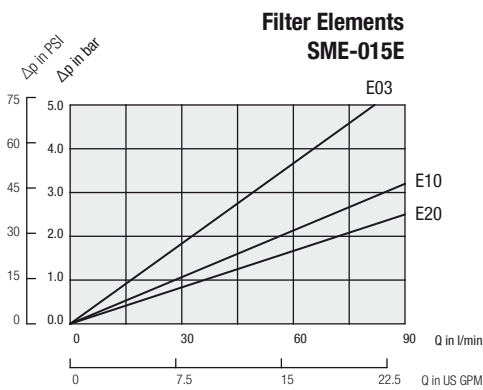
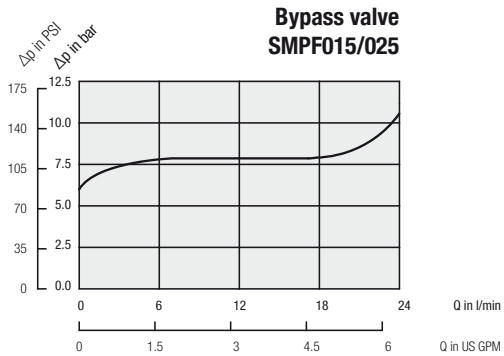
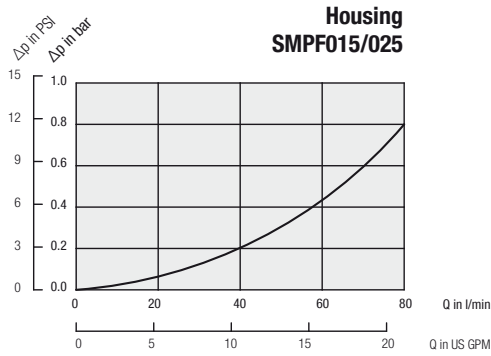
**VE**
**4 Differential Pressure Setting**

5,0 bar / 72.5 PSI

**5,0B**

### Medium Pressure Filters - Type SMPF Flow Characteristics

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30 cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. Consult STAUFF for details.



## Return Line Filters ■ Type SRFL-S / D


**Product Description**

STAUFF Return Line Simplex Filters SRFL-S and Duplex Filters SRFL-D are designed for in-line hydraulic applications. With its compact construction and the easy to maintain assembly the SRFL-S and SRFL-D Filters are suitable for flow rates up to 7000 l/min / 1850 US GPM. The two housings of the Duplex Filter SRFL-D are connected with a special gate valve that is operated with a level or hand wheel. Therefore the filter may be serviced without shutting down the hydraulic system. A high efficiency of contaminant removal is assured by using STAUFF RE series Replacement Filter Elements. The high dirt-hold capacity of STAUFF Elements ensures a long service life and, as a result, reduced maintenance costs.

**Technical Data**
**Construction**

- In-line assembly, base mounted

**Materials**

- Filter housing: Carbon Steel  
Stainless Steel (on request)
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
Other sealing materials on request

**Port Connection**

- DIN flange
- ANSI flange
- SAE flange

**Operating Pressure**

- Max. 14 bar / 200 PSI

**Flow Rating**

- Up to 7000 l/min / 1850 US GPM

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C63

**Media Compatibility**

- Mineral oils, lubrication oils, other fluids on request

**Options and Accessories**
**Valve**

- Bypass valve: Opening pressure 3 bar ± 0,3 bar / 43.5 PSI ± 4.35 PSI  
(integrated in the filter element)  
Other settings available on request

**Clogging Indicators**

- Differential pressure switch, setting 1,6 bar / 23 PSI  
Other clogging indicators available on request

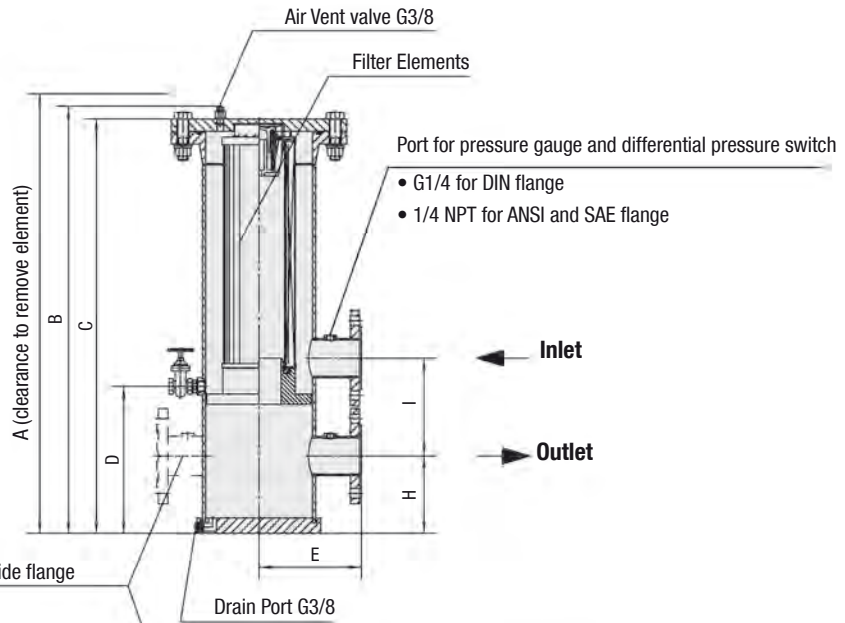
Filter Size	Flow l/min/ US GPM	Flange			Filter Element quantity		Arrangement of filter elements	Page
		DIN 2501	ANSI B 16.5	SAE 3000 PSI	SRFL-S	SRFL-D		
SRFL-S/D-160	900/240	DN 40	1-1/2	1-1/2	1x RE-160	2x RE-160		C52/C56
SRFL-S/D-200	900/240	DN 50	2	2	1x RE-200	2x RE-200		
SRFL-S/D-300	1400/370	DN 65	2-1/2	2-1/2	1x RE-300	2x RE-300		
SRFL-S/D-600	1400/370	DN 80	3	3	1x RE-600	2x RE-600		
SRFL-S/D-1200	4000/1050	DN 100	4	4	2x RE-600	4x RE-600		C54/C58
SRFL-S/D-1800	4000/1050	DN 125	5	5	3x RE-600	6x RE-600		
SRFL-S/D-2400	6000/1580	DN 150	6	6	4x RE-600	8x RE-600		
SRFL-S/D-3600	7000/1850	DN 200	8	8	6x RE-600	12x RE-600		C54/C60

Return Line Filters ▪ Type SRFL-S 160 / 200 / 300 / 600

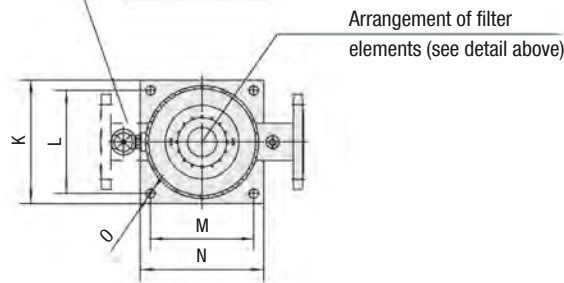
Detail arrangement of filter elements



SRFL-S 160 / 200 / 300 / 600

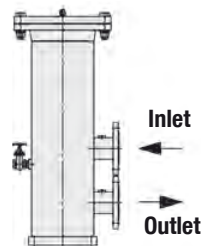


Option: Opposite side flange  
see detail

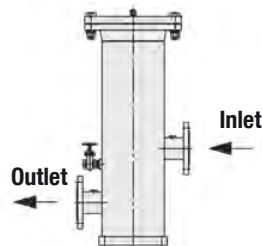


Option: Connection location

S (same side)



O (opposite side)





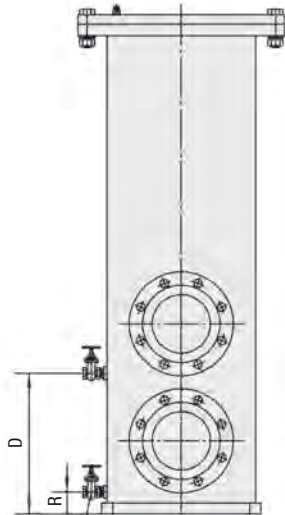
## Return Line Filters ■ Type SRFL-S 160 / 200 / 300 / 600

Flange Connection	Filter Size SRFL-S			
	160	200	300	600
DIN	DN 40	DN 50	DN 65	DN 80
ANSI	1-1/2	2	2-1/2	3
SAE	1-1/2	2	2-1/2	3

Dimensions (mm/in)	Filter Size SRFL-S			
	160	200	300	600
A	885,8	1045,8	1248,7	2126,7
	34.87	41.17	49.16	83.73
B	607,6	688,7	828,6	1267,6
	23.92	27.12	32.63	49.91
C	584	664	803,9	1242,9
	22.99	26.14	31.65	48.93
D	214	214	285	285
	8.43	8.43	11.22	11.22
E	148	148	198	198
	5.83	5.83	7.80	7.80
H	130	140	150	160
	5.12	5.51	5.91	6.30
I	155	190	190	220
	6.10	7.48	7.48	8.66
K	150	150	240	240
	5.91	5.91	9.45	9.45
L	125	125	200	200
	4.92	4.92	7.87	7.87
M	125	125	200	200
	4.92	4.92	7.87	7.87
N	150	150	240	240
	5.91	5.91	9.45	9.45
O	11	11	18	18
	.43	.43	.71	.71
Total Oil Capacity (l/gal)	6,0	7,1	22,2	37,1
	1.59	1.86	5.87	9.80
Weight (kg/lbs)	14,5	15,9	29	34,5
	32	35	64	76
Filter Elements	Designation	RE-160 ...	RE-200 ...	RE-300 ...
	Quantity	1 x 1	1 x 1	1 x 1

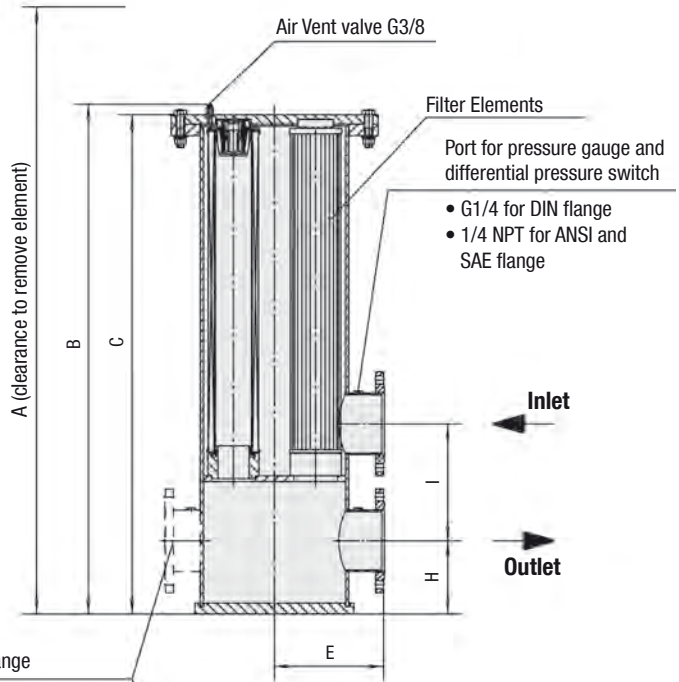
Return Line Filters - Type SRFL-S 1200 / 1800 / 2400 / 3600

Detail arrangement of filter elements



Drain Valve G1/2

Option: Opposite side flange see detail



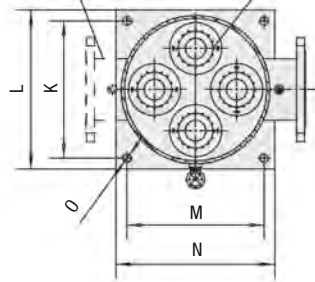
Port for pressure gauge and differential pressure switch

- G1/4 for DIN flange
- 1/4 NPT for ANSI and SAE flange

Inlet

Outlet

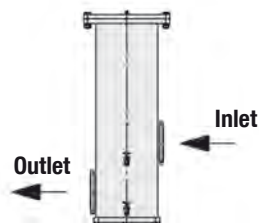
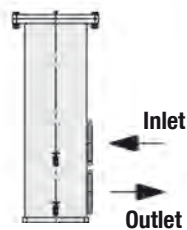
Arrangement of filter elements (see detail above)



Option: Connection location

S (same side)

O (opposite side)



## Return Line Filters ■ Type SRFL-S 1200 / 1800 / 2400 / 3600

Flange Connection	Filter Size SRFL-S			
	1200	1800	2400	3600
DIN	DN 100	DN 125	DN 150	DN 200
ANSI	4	5	6	8
SAE	4	5	6	8

Dimensions (mm/in)	Filter Size SRFL-S			
	1200	1800	2400	3600
A	2176,7	2176,7	2249,1	2249,1
	85.70	85.70	88.55	88.55
B	1319,6	1323,6	1394,8	1392,8
	51.96	52.11	54.92	54.84
C	1294,6	1294,9	1366,1	1368,1
	50.98	50.98	53.78	53.86
D	275	275	325	325
	10.83	10.83	12.80	12.80
E	273	273	298	398
	10.75	10.75	11.73	15.67
H	190	190	200	252
	7.48	7.48	7.87	9.92
I	250	280	320	425
	9.84	11.02	12.6	16.73
K	385	385	435	540
	15.16	15.16	17.13	21.26
L	325	325	375	480
	12.80	12.80	14.76	18.90
M	325	325	375	480
	12.80	12.80	14.76	18.90
N	385	385	435	540
	15.16	15.16	17.13	21.26
O	23	23	23	23
	.91	.91	.91	.91
R	60	60	60	60
	2.36	2.36	2.36	2.36
Total Oil Capacity (l/gal)	103	103	149	232
	27.21	27.21	39.37	61.30
Weight (kg/lbs)	86,2	90,7	105,2	154,2
	190	200	232	340
Filter Elements	Designation	RE-600 ...	RE-600 ...	RE-600 ...
	Quantity	1 x 2	1 x 3	1 x 4

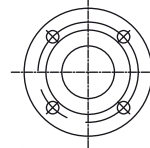
Return Line Filters - Type SRFL-D 160 / 200 / 300 / 600

Detail arrangement of filter elements

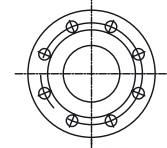


SRFL-D 160 / 200 / 300 / 600

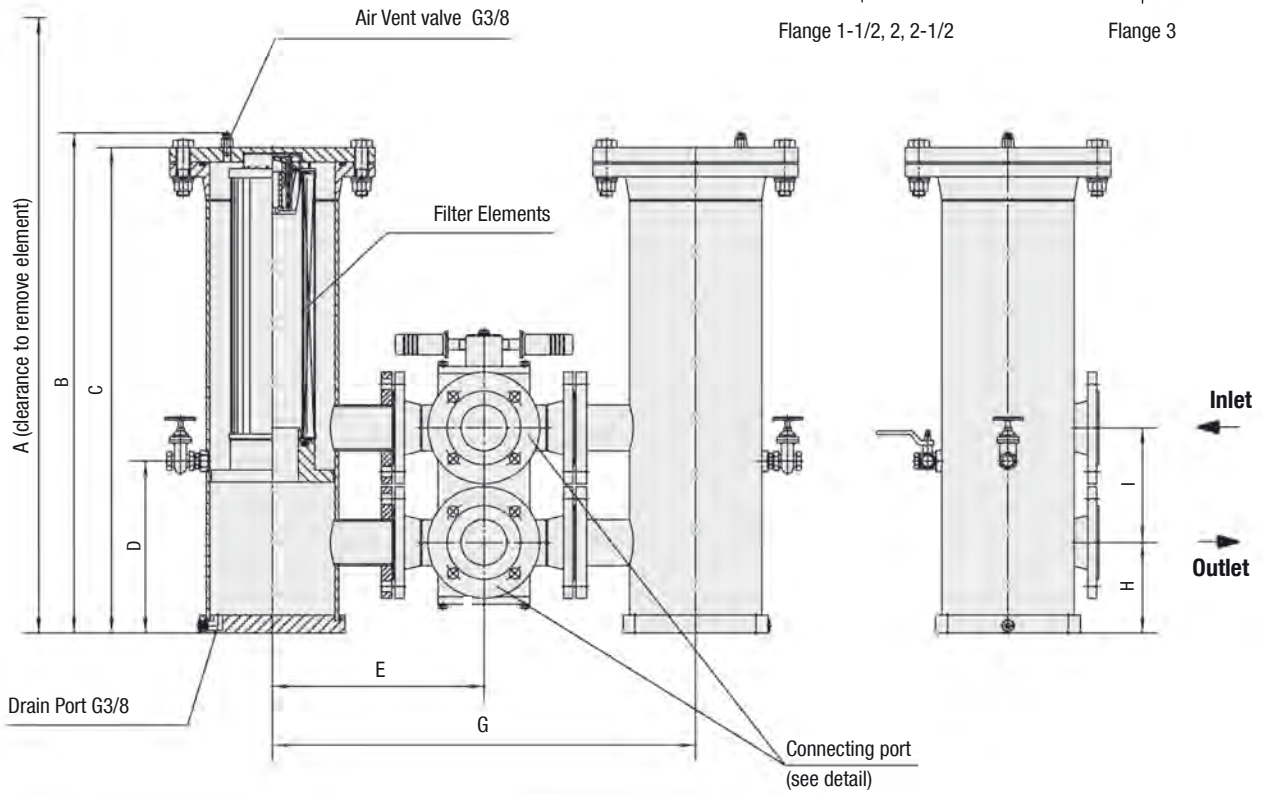
Detail connecting ports



Flange 1-1/2, 2, 2-1/2

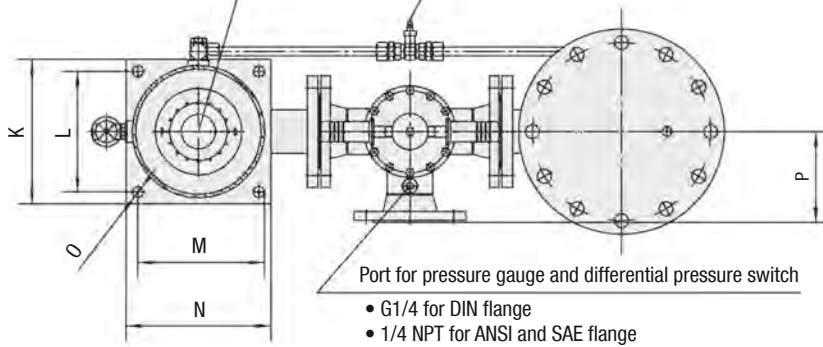


Flange 3



Arrangement of filter elements (see detail above)

Pressure tap  
Balance line 1/2"



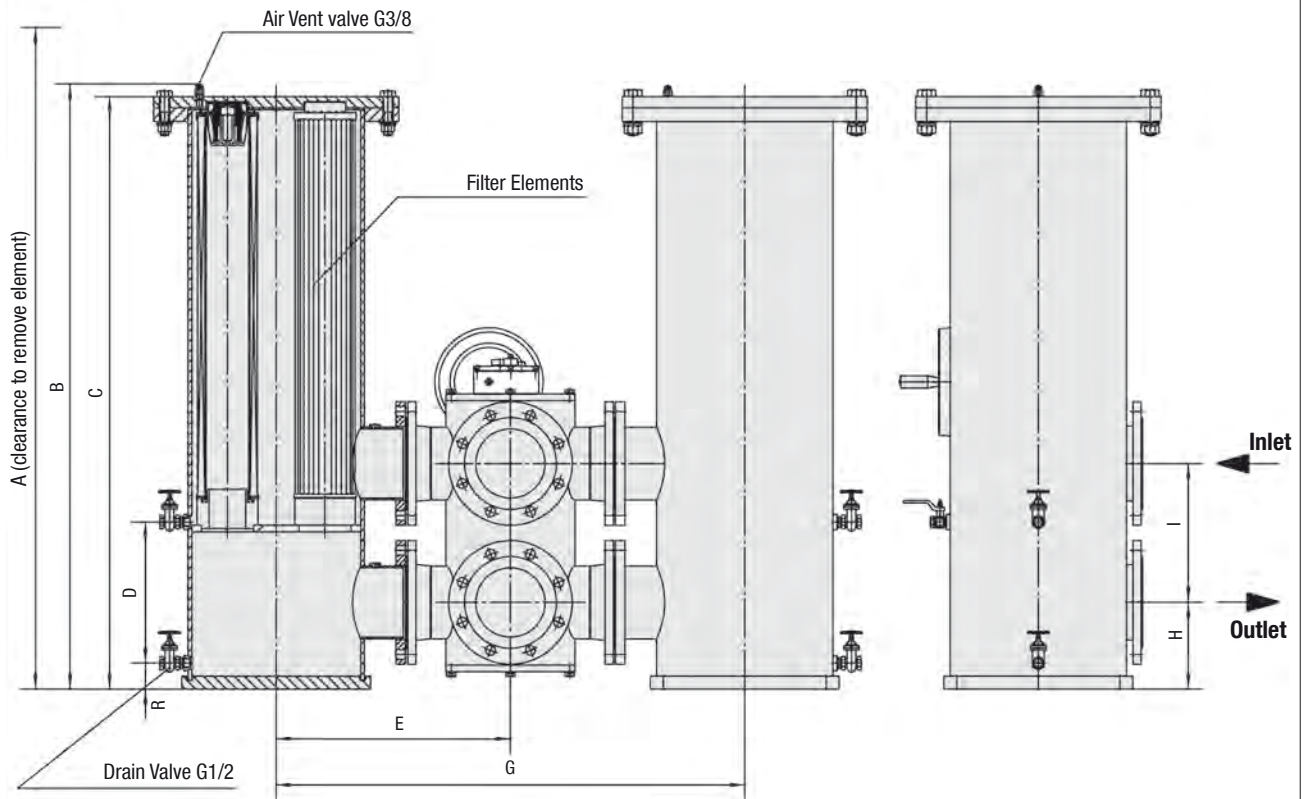
## Return Line Filters ■ Type SRFL-D 160 / 200 / 300 / 600

Flange Connection	Filter Size SRFL-D			
	160	200	300	600
DIN	DN 40	DN 50	DN 65	DN 80
ANSI	1-1/2	2	2-1/2	3

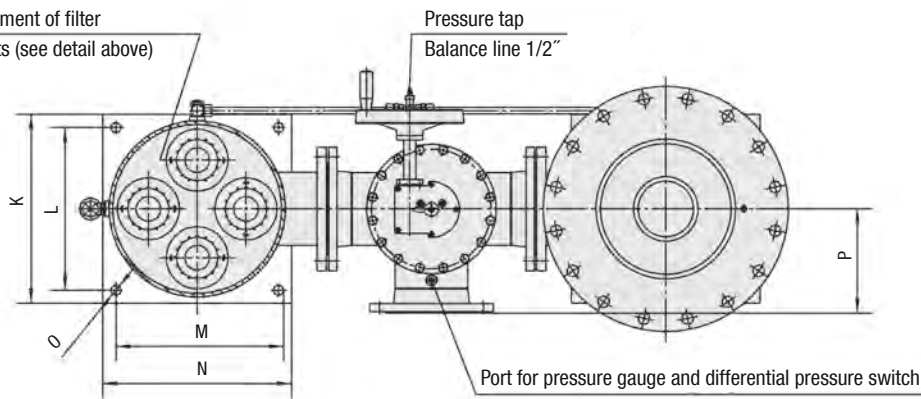
Dimensions (mm/in)	Filter Size SRFL-D				
	160	200	300	600	
A	885,8	1045,8	1248,7	2126,7	
	34.87	41.17	49.16	83.73	
B	607,6	688,7	828,6	1267,6	
	23.92	27.12	32.63	49.91	
C	584	642	803,9	1242,9	
	22.99	25.28	31.65	48.93	
D	214	214	285	285	
	8.43	8.43	11.22	11.22	
E	260	300	350	375	
	10.24	11.81	13.78	14.76	
G	520	600	700	750	
	20.47	23.62	27.56	29.53	
H	130	140	150	160	
	5.12	5.51	5.91	6.30	
I	155	190	190	220	
	6.10	7.48	7.48	8.66	
K	150	150	240	240	
	5.91	5.91	9.45	9.45	
L	125	125	200	200	
	4.92	4.92	7.87	7.87	
M	125	125	200	200	
	4.92	4.92	7.87	7.87	
N	150	150	240	240	
	5.91	5.91	9.45	9.45	
O	11	11	18	18	
	.43	.43	.71	.71	
P	110	150	150	175	
	4.33	5.91	5.91	6.89	
Total Oil Capacity (l/gal)	6	7,1	22,2	37,1	
	1.59	1.86	5.87	9.80	
Weight (kg/lbs)	43	56,7	84	104	
	95	125	185	230	
Filter Elements	Designation	RE-160 ...	RE-200 ...	RE-300 ...	RE-600 ...
	Quantity	2 x 1	2 x 1	2 x 1	2 x 1

Return Line Filters - Type SRFL-D 1200 / 1800 / 2400

Detail arrangement of filter elements



Arrangement of filter elements (see detail above)



- G1/4 for DIN flange
- 1/4 NPT for ANSI and SAE flange



## Return Line Filters ■ Type SRFL-D 1200 / 1800 / 2400

Flange Connection	Filter Size SRFL-D		
	1200	1800	2400
DIN	DN 100	DN 125	DN 150
ANSI	4	5	6

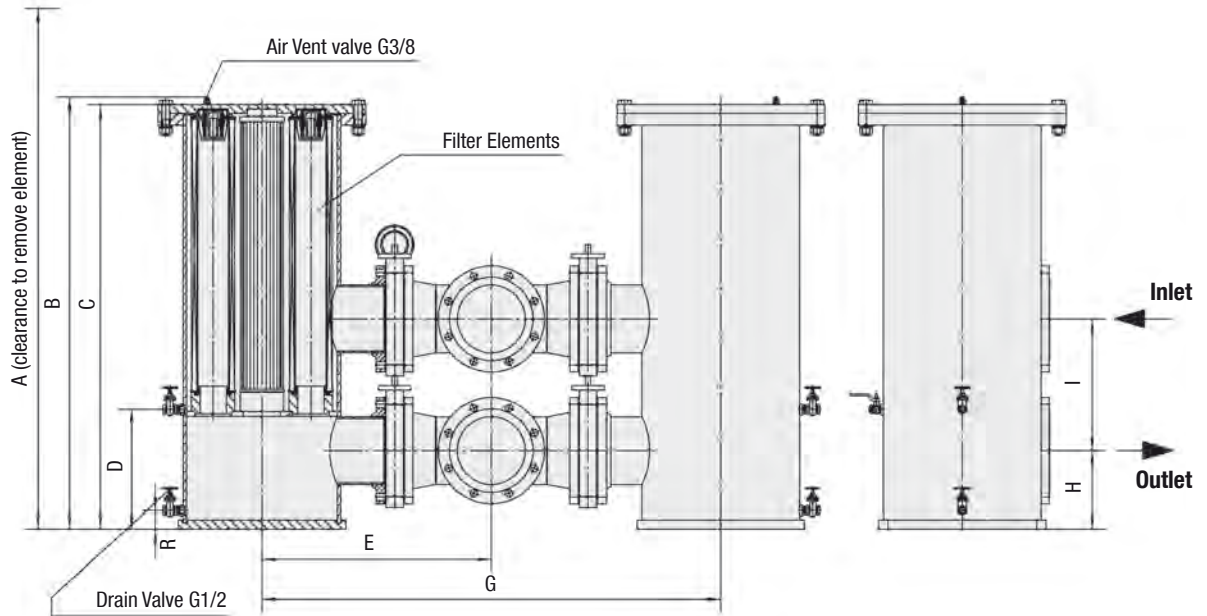
Dimensions (mm/in)	Filter Size SRFL-D		
	1200	1800	2400
A	2176,7	2176,7	2249,1
	85.70	85.70	88.55
B	1319,6	1323,6	1394,8
	51.96	52.11	54.92
C	1294,9	1294,9	1366,1
	50.98	50.98	53.78
D	275	275	325
	10.83	10.83	12.80
E	475	500	540
	18.70	19.69	21.26
G	950	1000	1080
	37.40	39.37	42.52
H	190	190	200
	7.48	7.48	7.87
I	250	280	320
	9.84	11.02	12.60
K	385	385	435
	15.16	15.16	17.13
L	325	325	375
	12.80	12.80	14.76
M	325	325	375
	12.80	12.80	14.76
N	385	385	435
	15.16	15.16	17.13
O	23	23	23
	.91	.91	.91
P	200	225	240
	7.87	8.86	9.45
R	60	60	60
	2.36	2.36	2.36
Total Oil Capacity (l/gal)	103	103	149
	27.20	27.20	39.30
Weight (kg/lbs)	215	233	263
	475	515	580
Filter Elements	Designation	RE-600 ...	RE-600 ...
	Quantity	2 x 2	2 x 3

Return Line Filters ▪ Type SRFL-D 3600

Detail arrangement of filter elements

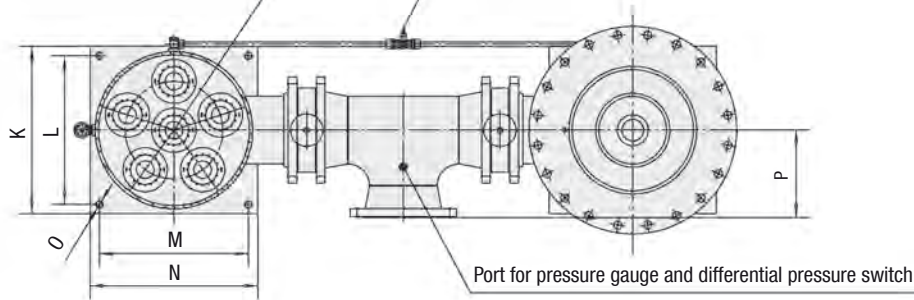


SRFL-D 3600



Arrangement of filter elements (see detail above)

Pressure tap  
Balance line 1/2"



Port for pressure gauge and differential pressure switch

- G1/4 for DIN flange
- 1/4 NPT for ANSI and SAE flange

## Return Line Filters ▪ Type SRFL-D 3600

Flange Connection	Filter Size SRFL-D
	<b>3600</b>
DIN	DN 200
ANSI	8

Dimensions (mm/in)	Filter Size SRFL-D	
	<b>3600</b>	
A	2249,1 88.55	
B	1392,8 54.84	
C	1368,1 53.86	
D	325 12.80	
E	739 29.11	
G	1479 58.22	
H	252 9.92	
I	425 16.73	
K	540 21.26	
L	480 18.90	
M	480 18.90	
N	540 21.26	
O	23 .91	
P	281,4 11.08	
R	60 2.36	
Total Oil Capacity (l/gal)	233 61.3	
Weight (kg/lbs)	390 860	
Filter Elements	Designation	RE-600 ...
	Quantity	2 x 6

## Return Line Filter Housings / Complete Filters ■ Type SRFL-S / D

**SRFL - D - 160 ... .. B / A / 0 / CS / D / X**
**1 2 3 4 5 6 7 8 9 10**
**1 Type**

Return Line Simplex Housing	<b>SRFL-S</b>
Return Line Duplex Housing	<b>SRFL-D</b>

**2 Group**

Flow	Size
900 l/min / 240 US GPM	<b>160</b>
900 l/min / 240 US GPM	<b>200</b>
1400 l/min / 370 US GPM	<b>300</b>
1400 l/min / 370 US GPM	<b>600</b>
4000 l/min / 1050 US GPM	<b>1200</b>
4000 l/min / 1050 US GPM	<b>1800</b>
6000 l/min / 1580 US GPM	<b>2400</b>
7000 l/min / 1850 US GPM	<b>3600</b>

**3 Filter Material**

Material	Max. Δp*collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

\* Note: Collapse/burst resistance as per ISO 2941.  
Other materials on request.

**4 Micron Rating**

3 μm	<b>03</b>
5 μm	<b>05</b>
10 μm	<b>10</b>
20 μm	<b>20</b>
25 μm	<b>25</b>
50 μm	<b>50</b>
100 μm	<b>100</b>
200 μm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>

Note: Other sealing materials on request.

**6 Connection Style**

Connection Style	Group								Code
	160	200	300	600	1200	1800	2400	3600	
DIN Flange	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	<b>D</b>
ANSI Flange	1-1/2	2	2-1/2	3	4	5	6	8	<b>A</b>
SAE Flange	1-1/2	2	2-1/2	3	4	5	6	8	<b>S</b>

Note: SAE flange is not available for SRFL-D.

**7 Connection Location**

Opposite side*	<b>0</b>
Same side	<b>S</b>

\* Note: Omit for SRFL-D series

**8 Housing Material**

Carbon Steel	<b>CS</b>
Stainless Steel	<b>SS</b>

**9 Clogging Indicator**

Without Clogging Indicator	<b>0</b>
Differential Pressure Switch with Visual Gauge Indicator	<b>D</b>

Note: Other indicators on request.

**10 Design Code**

Only for information	<b>X</b>
----------------------	----------

## Filter Elements ■ Type RE

**RE - 160 G 10 B / X**
**1 2 3 4 5 6**
**1 Type**

Filter Element Series	<b>RE</b>
-----------------------	-----------

**2 Group**

Designation	Filter Element Quantity		Size
	SRFL-S	SRFL-D	
RE-160	1x1	2x1	<b>160</b>
RE-200	1x1	2x1	<b>200</b>
RE-300	1x1	2x1	<b>300</b>
RE-600	1x1	2x1	<b>600</b>
RE-600	1x2	2x2	<b>1200</b>
RE-600	1x3	2x3	<b>1800</b>
RE-600	1x4	2x4	<b>2400</b>
RE-600	1x6	2x6	<b>3600</b>

**3 Filter Material**

Material	Max. Δp*collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

\* Note: Collapse/burst resistance as per ISO 2941.  
Other materials on request.

**4 Micron Rating**

3 μm	<b>03</b>
5 μm	<b>05</b>
10 μm	<b>10</b>
20 μm	<b>20</b>
25 μm	<b>25</b>
50 μm	<b>50</b>
100 μm	<b>100</b>
200 μm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>

Note: Other sealing materials on request

**6 Design Code**

Only for information	<b>X</b>
----------------------	----------

**Return Line Filters - Type SRFL-S / D**

Filter Elements and Clogging Indicator

**Product Description**

STAUFF Replacement Filter Elements for SRFL-S and SRFL-D Series Filters are manufactured in the common filter materials such as Stainless Fibre, Stainless Mesh, Cellulose and Inorganic Glass Fibre. As standard all Replacement Elements series RE have tin plated steel parts for use with aggressive media such as water glycol, upon request you also can get other materials. All Replacement Elements made by STAUFF comply with quality specifications in accordance with international standards.


**Order Code**
**RE - 160 G 10 B / X**

1      2      3      4      5      6

**1 Type**

 Filter Element Series **RE**
**2 Group**

 According to filter housing  
 Note: See order code page C62.

**3 Filter Material**

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

\* Note: Collapse/burst resistance as per ISO 2941.  
 Other materials on request.

**4 Micron Rating**

3 $\mu m$	<b>03</b>
5 $\mu m$	<b>05</b>
10 $\mu m$	<b>10</b>
20 $\mu m$	<b>20</b>
25 $\mu m$	<b>25</b>
50 $\mu m$	<b>50</b>
100 $\mu m$	<b>100</b>
200 $\mu m$	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

 NBR (Buna®) **B**  
 FPM (Viton®) **V**  
 Note: Other sealing materials on request.

**6 Design Code**

 Only for information **X**
**Differential Pressure Switch with Visual Gauge Indicator**

The switch is used to indicate when the elements need changing. The switch can turn on a light, shut down the machine or any further function controlled by an electrical signal. The gauge visually indicates the differential pressure across the filter elements.


**Diameter**

- 100 mm / 3.94 in

**Scale**

- 0 ... 1,6 kg/cm<sup>2</sup>

**Connection Thread**

- G1/4

**Operating Pressure**

- Max. 200 bar / 2900 PSI

**Temperature Range**

- 20 °C ... +80 °C / -4 °F ... +176 °F

**Materials**

- Body: Aluminium
- Lens: Glass
- Sealing Material: NBR (Buna-N®)  
FPM (Viton®)

**Protection Rating**

- IP 65: Dust tight and protected against water jets.

**Switch Voltage**

- Max. 28 V AC/DC

**Current On Contact**

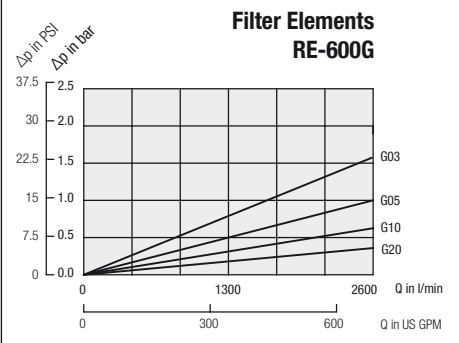
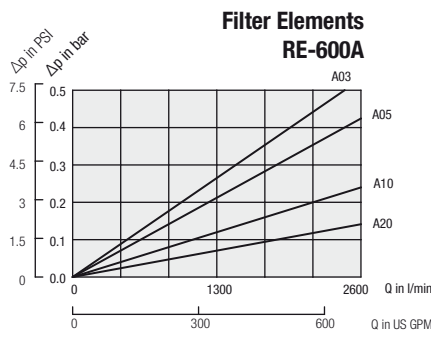
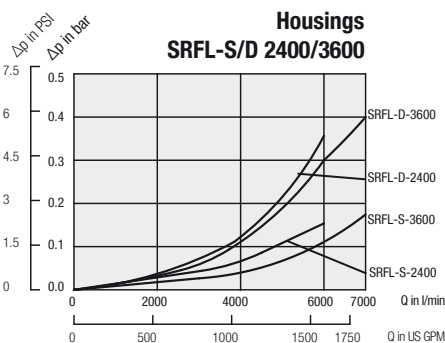
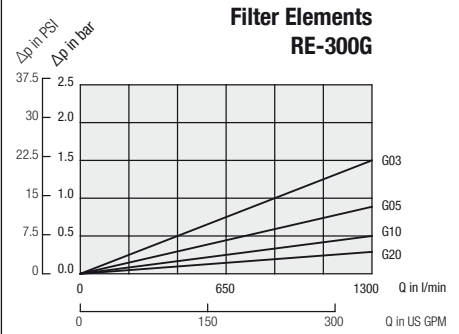
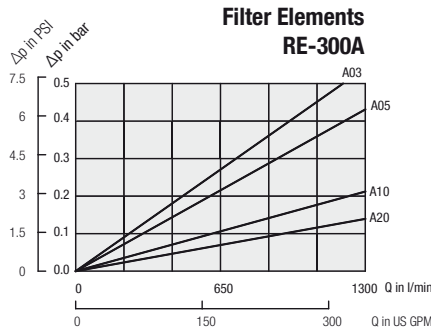
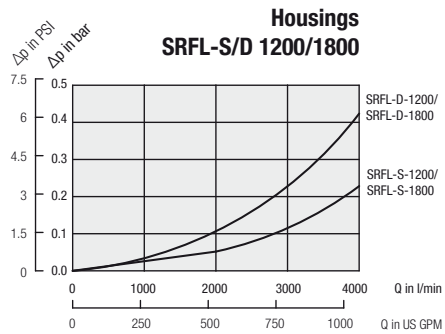
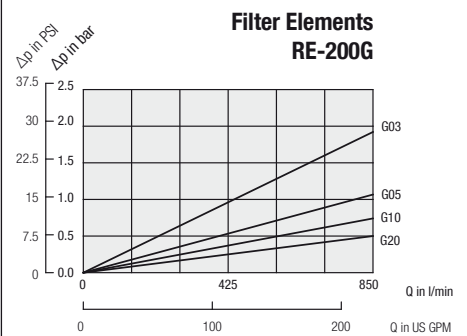
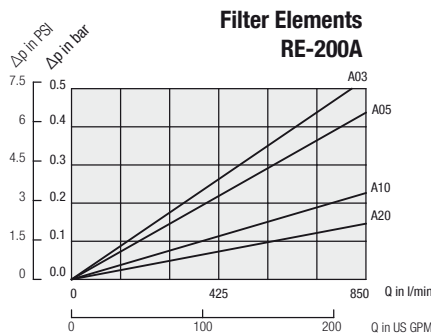
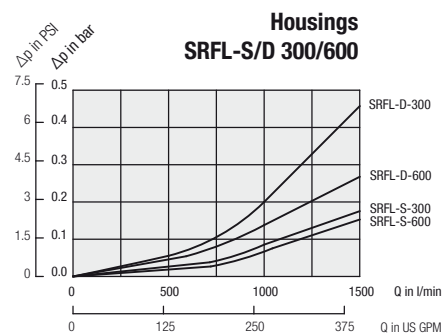
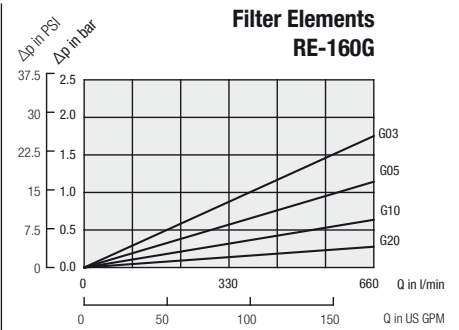
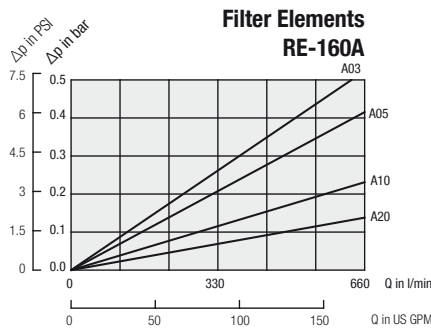
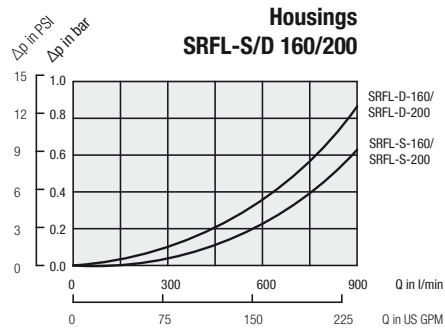
- Max. 0,25 A

**Contact Rating**

- 5 VA AC/DC

**Return Line Filters - Type SRFL-S / D Flow Characteristics**

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.



**Pressure drop of housing including filter elements**

General:  $\Delta p_{total} = \Delta p_{housing} + \Delta p_{Element} \times (\text{operating viscosity [mm}^2\text{/s]} / 30\text{mm}^2\text{/s})$

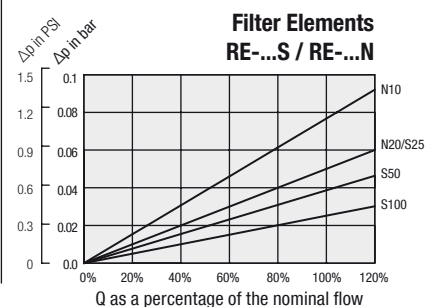
with  $\Delta p_{housing}$  = See diagrams above

$\Delta p_{Element}$  = pressure drop of element at a flow Q/n (at a viscosity of 30 mm<sup>2</sup>/s and n = numbers of elements as listed in ordering code filter elements see page C62 and diagrams above.)

**Example**

Data given  $Q_{max}$  = 6000 l/min / 1585 US GPM, SRFL-D-2400 with filter elements RE-600S25B;  
operating viscosity = 100 mm<sup>2</sup>/s  
 $Q_{max}$  = 6000 l/min; n=4 elements (SRFL-D-2400)  $Q/n$ =1500 l/min / 396 gal  
 $\Delta p_{housing}$  = 0,35 bar / 5.07 PSI,  $\Delta p_{Element}$ =0,03 bar / 0.44 PSI

Pressure drop:  $\Delta p_{total} = 0,35 \text{ bar} + 0,03 \text{ bar} \times (100 \text{ mm}^2\text{/s} / 30\text{mm}^2\text{/s})$   
= 0,45 bar / 6.53 PSI





## Return Line Filters ▪ Type SRFL-SW


**Product Description**

STAUFF Return Line Filters SRFL-SW are specially developed for direct installation into the pipelines of industrial water cycles. Depending on their size, SRFL-SW filter housings are suitable for nominal flow rates up to 13330 l/min / 3521 US GPM at a maximum operating pressure of 16 bar / 232 PSI. The SRFL-SW have been designed to be used in the steel industry for pre-filtering or coarse filtering in descaling plants. For use with demineralised water we recommend the Return Line Filters SRFL-SW in Stainless Steel. The filter element construction as a Stainless Steel basket screen filter ensures a long service life.

**Technical Data**
**Construction**

- Designed for direct installation into pipelines
- Simplex version

**Materials**

- Filter housing: Carbon Steel  
Stainless Steel (on request)
- Sealing: PTFE / NBR (Buna-N®)  
PTFE / FKM (Viton®)

**Port Connection**

- ANSI or DIN flange

**Operating Pressure**

- Max. 16 bar / 232 PSI

**Flow Rating**

- Max. 13330 l/min / 3521 US GPM

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Media Compatibility**

- Water
- Coolant
- Others on request

**Options and Accessories**
**Filter Elements**

Stainless Steel basket screen filters from STAUFF's REL product line are used as filter elements, which are designed for flow from the inside to the outside. The filter elements are available in micron ratings between 50 µm and 200 µm. Solid particles collected in the basket are prevented from reaching the clean side of the water cycle when being replaced.

**Clogging Indicator**

- Differential Pressure Gauge

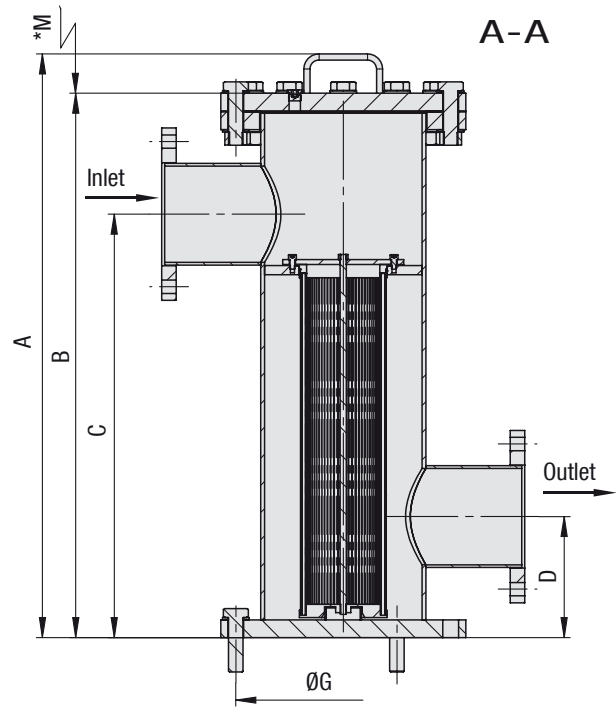
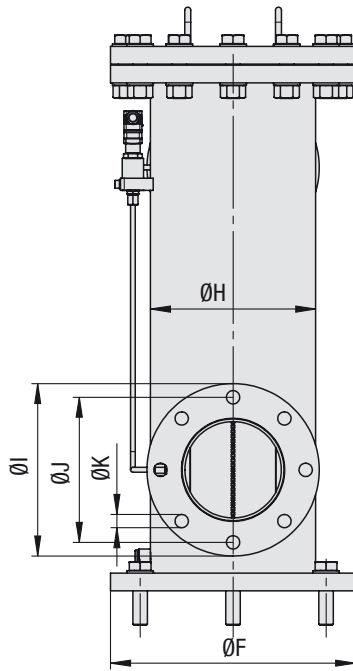
**Drain Valve**

- Available as an option: Integrated into the filter housing

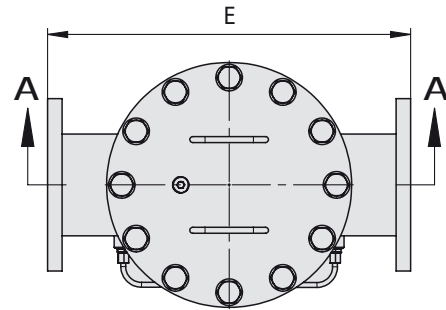
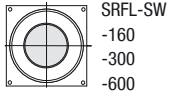
Return Line Filters ▪ Type SRFL-SW-160 /-300 /-600

Version with handle

\* recommended space for element change



Detail arrangement of filter elements



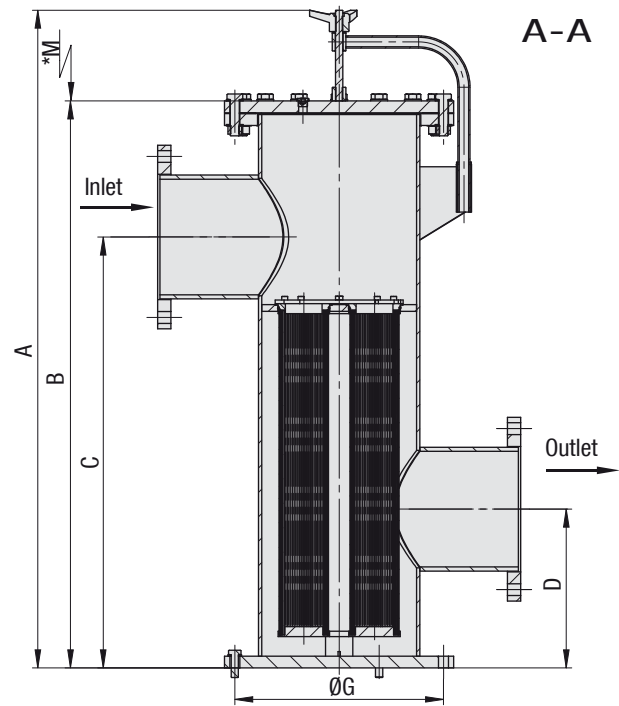
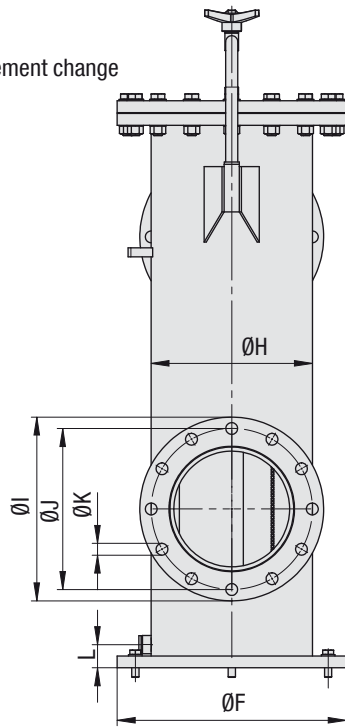
Flange Connection	Filter Size SRFL-SW		
	160	300	600
DIN	DN80 DN50	DN100 DN125	DN150 -
ANSI	2 3	4 5	6 -

Dimensions (mm/in)	Filter Size SRFL-SW		
	160	300	600
Filter Housing Material	CS/SS	CS/SS	CS/SS
A	840 33.07	965 38.00	965 38.00
B	775 30.51	900 35.43	900 35.43
C	600 23.62	700 27.56	700 27.56
D	250 9.84	200 7.87	200 7.87
E	440 17.32	500 19.69	600 23.62
ØF	340 13.39	340 13.39	405 15.94
ØG	295 11.61	295 11.61	355 13.98
ØH	219,1 8.63	219,1 8.63	273 10.75
ØI	200 7.87	220 8.66	285 11.22
ØJ	160 6.30	180 7.09	240 9.45
ØK	18 .71	18 .71	22 .87
M	400 15.75	650 25.60	650 25.60
Housing Capacity (l / US gal)	26,2 6.9	31,3 8.3	52,9 14
Filter Elements	Designation	REL-100	REL-150
	Quantity	1	1

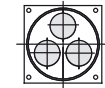
## Return Line Filters ■ Type SRFL-SW-850 /-1000 /-1250

## Version with lifting device

\* recommended space for element change



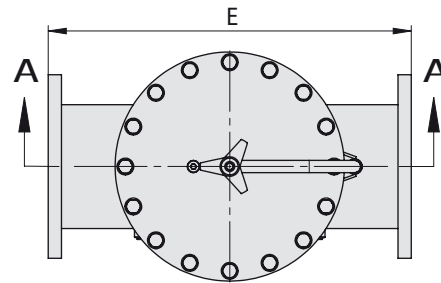
## Detail arrangement for filter elements



SRFL-SW-850

SRFL-SW-1000

SRFL-SW-1250



Flange Connection	Filter Size SRFL-SW		
	850	1000	1250
DIN	DN200 DN150	DN250 -	DN300 -
ANSI	8 -	10 -	12 -

Dimensions (mm/in)	Filter Size SRFL-SW				
	850		1000		1250
Filter Housing Material	CS	SS	CS	SS	
A	1154	1150	1442	1450	1950
	45.43	45.28	56.77	57.09	76.77
B	962	950	1250	1250	1740
	37.87	37.40	49.21	49.21	68.50
C	750	750	950	950	1400
	29.53	29.53	37.40	37.40	55.12
D	300	300	350	350	400
	11.81	11.81	13.78	13.78	15.75
E	700	700	800	800	1100
	27.56	27.56	31.50	31.50	43.31
ØF	520	505	520	505	640
	20.47	19.88	20.47	19.88	25.20
ØG	470	460	470	460	585
	18.50	18.11	18.50	18.11	23.03
ØH	355,6	355,6	355,6	355,6	508
	14.00	14.00	14.00	14.00	20.00
ØI	340	340	405	405	460
	13.39	13.39	15.94	15.94	18.11
ØJ	295	295	355	355	410
	11.61	11.61	13.98	13.98	16.14
ØK	22	22	26	26	26
	.87	.87	1.02	1.02	1.02
M	650	650	850	850	850
	25.59	25.59	33.46	33.46	33.46
L	55	51	55	51	82
	2.17	2.01	2.17	2.01	3.23
Housing Capacity (l / US gal)	96,5	96,5	138,6	138,6	392
	25,5	25,5	36,6	36,6	103,6
Filter Elements	Designation	REL-150	REL-150	REL-250	REL-250
	Quantity	2	2	3	3

## Return Line Filter Housing / Complete Filters ■ Type SRFL-SW

**SRFL-SW** - **300** ... .. **B** / **A** / **0** / **CS** / **0** / **B** / **X**

1 2 3 4 5 6 7 8 9 10 11

## 1 Type

Return Line Filter Simplex Water **SRFL-SW**

## 2 Group

Flow	Size
650 l/min / 160 US GPM	<b>160</b>
1200 l/min / 300 US GPM	<b>300</b>
2500 l/min / 600 US GPM	<b>600</b>
6000 l/min / 1500 US GPM	<b>850</b>
8300 l/min / 2000 US GPM	<b>1000</b>
13330 l/min / 3300 US GPM	<b>1250</b>

## 3 Filter Material

Material	Micron Ratings Available	Code
Without filter element	-	...
Stainless mesh	50, 80, 100, 125, 200	<b>B</b>

## 4 Micron Rating

50 µm	<b>50</b>
80 µm	<b>80</b>
100 µm	<b>100</b>
125 µm	<b>125</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

## 5 Sealing Material

PTFE / NBR (Buna®) **B**  
 PTFE / FPM (Viton®) **V**

Note: Other sealing materials on request.

## 6 Connection Style

Connection Style	Group						Code
	160	300	600	850	1000	1250	
DIN flange	DN80	DN100	DN150	DN200	DN250	DN300	<b>D</b>
	DN50	DN125	-	DN150	-	-	<b>D1</b>
ANSI flange	2"	4"	6"	8"	10"	12"	<b>A</b>
	3"	5"	-	-	-	-	<b>A1</b>

## 7 Connection Location

Opposite side **0**

## 8 Housing Material

Carbon Steel **CS**  
 Stainless Steel **SS**

## 9 Clogging Indicator

Without Clogging Indicator **0**  
 Differential Pressure Gauge **M**

Note: Other clogging indicators on request.

## 10 Drain Valve

Closed **0**  
 Ball Valve **B**

## 11 Design Code

Only for information **X**

## Filter Elements ■ Type REL

**REL** - **150** **B** **200** **B** / **X**

1 2 3 4 5 6

## 1 Type

Filter Element Series **REL**

## 2 Group

Designation	Number of Filter Elements	Size
<b>REL-100</b>	1	160
<b>REL-150</b>	1	300
<b>REL-150</b>	1	600
<b>REL-150</b>	2	850
<b>REL-250</b>	3	1000
<b>REL-250</b>	5	1250

## 3 Filter Material

Material	Max. Δp*Collapse	Micron Ratings Available	Code
Stainless mesh	10 bar / 145 PSI	50, 80, 100, 125, 200	<b>B</b>

## 4 Micron Rating

50 µm	<b>50</b>
80 µm	<b>80</b>
100 µm	<b>100</b>
125 µm	<b>125</b>
200 µm	<b>200</b>

## 5 Sealing Material

NBR (Buna®) **B**  
 FPM (Viton®) **V**

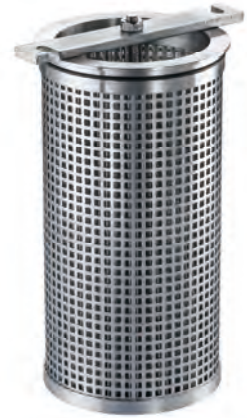
## 6 Design Code

Only for information **X**

## Replacement Filter Elements - Type REL

## Product Description

Stainless Steel basket screen filters from STAUFF's REL product line are used as filter elements, which are designed for flow from the inside to the outside. Micron ratings ranging from 50 µm to 200 µm are available. Solid particles collected in the basket are prevented from reaching the clean side of the water cycle when being replaced. The filter element construction as a Stainless Steel basket screen filter ensures a long service life.



## Order Code

**REL - 150 B 200 B / X**

1      2      3      4      5      6

**1 Type**

 Filter Element Series **REL**
**2 Group**

Designation	Number of Filter Elements	Size
REL-100	1	160
REL-150	1	300
REL-150	1	600
REL-150	2	850
REL-250	3	1000
REL-250	5	1250

**3 Filter Material**

Material	Max. $\Delta p^*$ Collapse	Micron Ratings Available	Code
Stainless mesh	10 bar / 145 PSI	50, 80, 100, 125, 200	<b>B</b>

**4 Micron Rating**

50 µm	<b>50</b>
80 µm	<b>80</b>
100 µm	<b>100</b>
125 µm	<b>125</b>
200 µm	<b>200</b>

**5 Sealing Material**

 NBR (Buna®) **B**  
 FPM (Viton®) **V**
**6 Design Code**

 Only for information **X**

## Differential Pressure Gauge

A visual clogging indicator, the function of which is based on the differential pressure between the contaminated and clean side of the filter elements, is available as an option, and enable a convenient determination of the condition of the basket filter.

**Nominal Size**

▪ 80 mm / 3.15 in

**Range of Scale**

▪ 0 ... 1 bar / 0 ... 14.5 PSI

**Operating Pressure**

▪ Max. 100 bar / 1450 PSI

**Permissible Temperatures**

 ▪ Ambient: 0 ... +60 °C / 0 ... +140 °F  
 ▪ Media: up to +100 °C / +212 °F

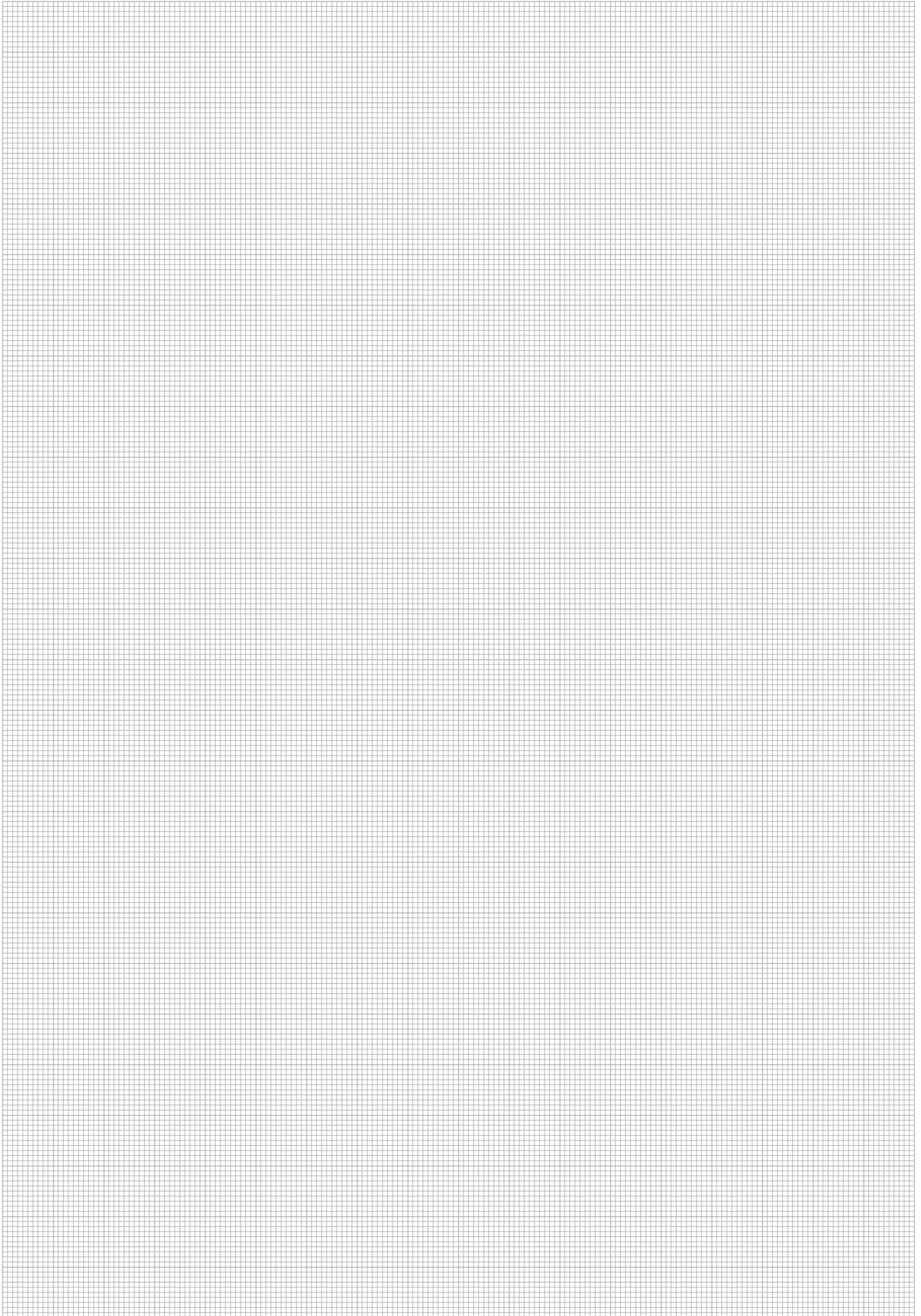
**Material**

 ▪ Housing: Die-cast Aluminum, black  
 ▪ Sight glass: Acrylic  
 ▪ Indicator: Aluminum, black

**Protection Rating**

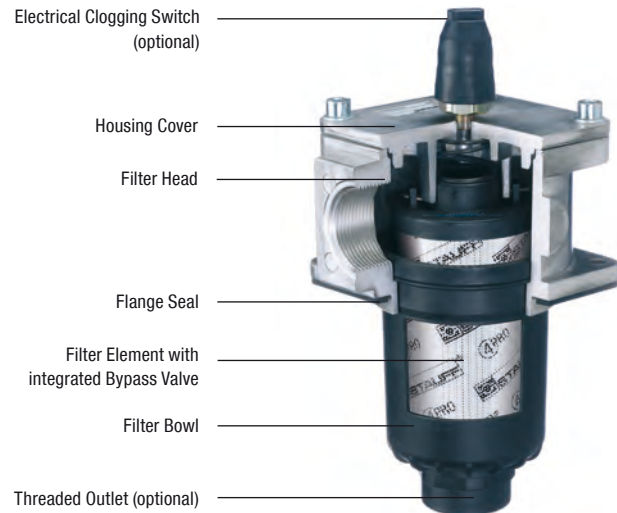
▪ IP 54 protection rating: Dust protected and protected against splashing water







## Return Line Filters ■ Type RF


**Product Description**

STAUFF RF Return Line Filters are designed as tank top filters. They are mounted directly on the tank top and when 100% of the system's oil is filtered they provide the optimum removal of contaminant from the system. This provides the pump with clean oil thus reducing contaminant generated wear. The filter bowl is designed to return the oil beneath the surface thus preventing the entrainment of air by the returning oil. A high efficiency of contaminant removal is assured by using STAUFF RE Replacement Filter Elements. The high dirt-hold capacity of STAUFF Elements ensures a long service life and as a result reduced maintenance costs.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminium
- Filter bowl: Glass Fibre reinforced Polyamide
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene-Propylene-Diene-Monomer-Rubber)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread
- SAE flange 3000 PSI

**Operating Pressure**

- Max. 16 bar / 232 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C74

**Media Compatibility**

- Mineral oils, other fluids on request

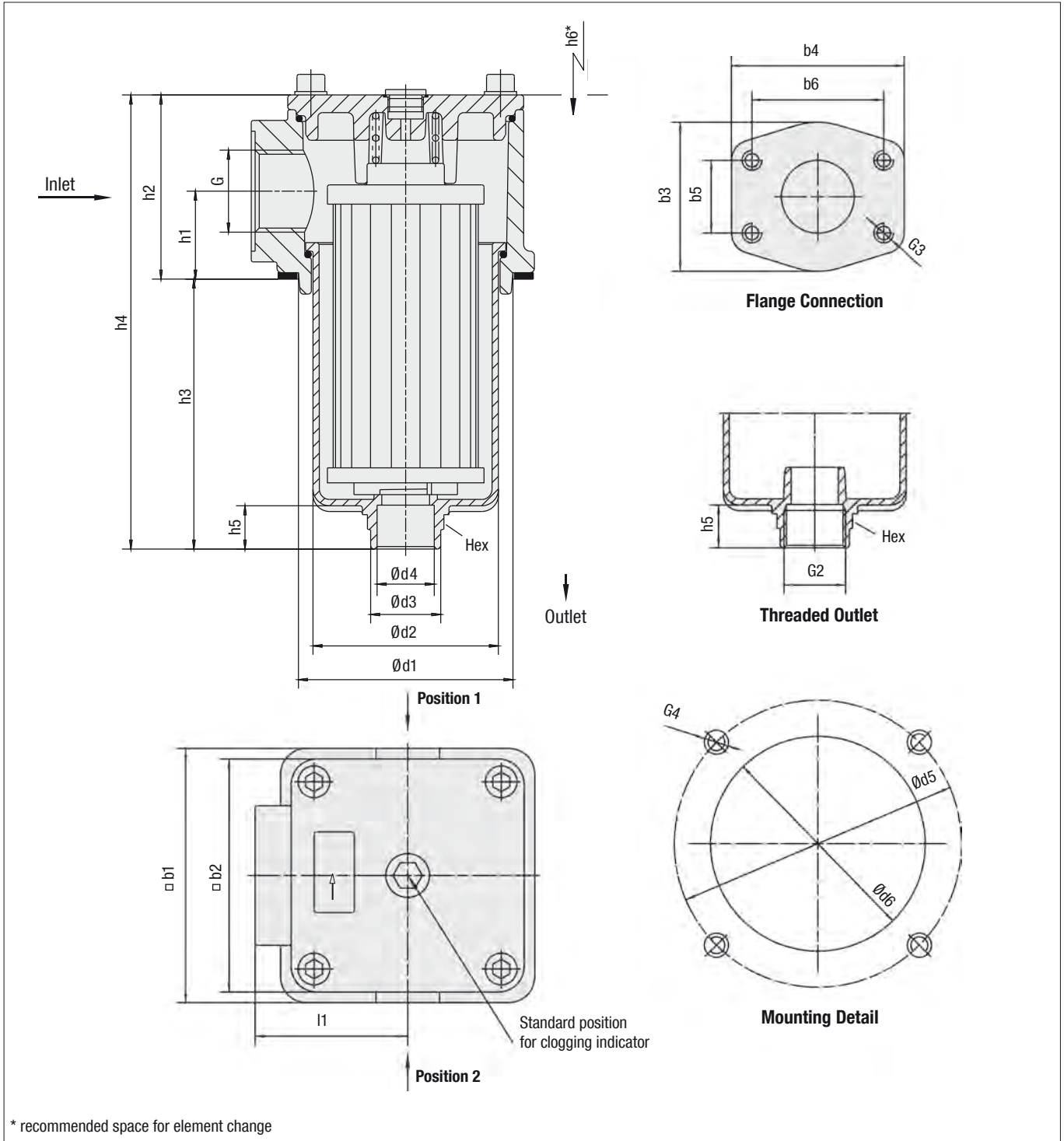
**Options and Accessories**
**Valve**

- Bypass valve (integrated in the filter element) Opening pressure 3 bar ± 0,3 bar / 43.5 PSI ± 4.35 PSI  
Other settings available on request

**Clogging Indicators**

- Visual clogging indicator 0 ... 4 bar / 0 ... 58 PSI coloured segments
- Electrical clogging switch, setting 2,5 bar / 36.25 PSI  
Other clogging indicators available on request

Return Line Filters - Type RF



## Return Line Filters ■ Type RF

Thread Connection G	Filter Size RF					
	014	030	045	070	090	130
BSP	3/4	1	1-1/4	1-1/2	2	2
NPT	3/4	1	1-1/4	1-1/2	2	2
SAE O-ring Thread	1-1/16-12	1-5/16-12	1-5/8-12	1-7/8-12	1-7/8-12	1-7/8-12
SAE Flange 3000 PSI	-	-	-	-	2	2

Dimensions (mm/in)	Filter Size RF					
	014	030	045	070	090	130
b1	89	89	120	120	150	150
	3.50	3.50	4.72	4.72	5.91	5.91
b2	80	80	110	110	135	135
	3.15	3.15	4.33	4.33	5.31	5.31
b3	-	-	-	-	88	88
					3.47	3.47
b4	-	-	-	-	102	102
					4.02	4.02
b5	-	-	-	-	42,9	42,9
					1.69	1.69
b6	-	-	-	-	77,8	77,8
					3.06	3.06
d1	73	73	100	100	126	126
	2.87	2.87	3.94	3.94	4.96	4.96
d2	57,5	57,5	84	84	112,5	112,5
	2.26	2.26	3.31	3.31	4.43	4.43
d3	36	36	48	48	54,5	54,5
	1.42	1.42	1.89	1.89	2.15	2.15
d4	17	17	28	28	37,5	37,5
	.67	.67	1.1	1.1	1.48	1.48
d5	100	100	135	135	170	170
	3.94	3.94	5.31	5.31	6.69	6.69
d6	78	78	105	105	131	131
	3.07	3.07	4.13	4.13	5.16	5.16
h1	33	33	41	41	47	47
	1.30	1.30	1.61	1.61	1.85	1.85
h2	66	66	86	86	98	98
	2.60	2.60	3.39	3.39	3.86	3.86
h3	91,5	159,5	119	180	172,5	252,5
	3.60	6.28	4.69	7.09	6.79	9.94
h4	157,5	225,5	206	267	273,5	353,5
	6.20	8.88	8.11	10.51	10.77	13.91
h5	23,5	23,5	24	24	27	27
	.93	.93	.95	.95	1.06	1.06
h6	140	210	180	240	235	315
	5.51	8.27	7.09	9.45	9.25	12.40
I1	48	48	66	66	85	85
	1.89	1.89	2.60	2.60	3.35	3.35
G2	G1 or 1 NPT	G1 or 1 NPT	G1-1/4 or 1-1/4 NPT	G1-1/4 or 1-1/4 NPT	G1-1/2 or 1-1/2 NPT	G1-1/2 or 1-1/2 NPT
G3	-	-	-	-	1/2 UNC x 15	1/2 UNC x 15
					1/2 UNC x .59	1/2 UNC x .59
G4	M6 or 1/4-20 UNC	M6 or 1/4-20 UNC	M8 or 5/16-18 UNC	M8 or 5/16-18 UNC	M10 or 3/8-16 UNC	M10 or 3/8-16 UNC
	36	36	50	50	55	55
Hex	1.42	1.42	1.97	1.97	2.16	2.16

## Return Line Filter Housings / Complete Filters ■ Type RF

RF 070 ... B / B / G42NC / D / G / L1 / X

1 2 3 4 5 6 7 8 9 10 11

## 1 Type

Return Line Filter **RF**

## 2 Group

Flow	Size
60 l/min / 14 US GPM	<b>014</b>
110 l/min / 30 US GPM	<b>030</b>
160 l/min / 45 US GPM	<b>045</b>
240 l/min / 70 US GPM	<b>070</b>
330 l/min / 90 US GPM	<b>090</b>
500 l/min / 130 US GPM	<b>130</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C76 / C77.

## 3 Filter Material

Material	max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941. Other materials on request.

## 4 Micron Rating

3 $\mu$ m	<b>03</b>
5 $\mu$ m	<b>05</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>
25 $\mu$ m	<b>25</b>
50 $\mu$ m	<b>50</b>
100 $\mu$ m	<b>100</b>
200 $\mu$ m	<b>200</b>

Note: Other micron ratings on request.

## 5 Sealing Materials

NBR (Buna®) **B**  
 FPM (Viton®) **V**  
 EPDM **E**

Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Group						Thread Style	Code
	014	030	045	070	090	130		
BSP	3/4	1	1-1/4	1-1/2	2	2	-	<b>B</b>
BSP	1/2	1/2	1-1/2	1-1/4	1-1/4	1-1/4	-	B1
BSP	1	3/4	-	-	1-1/2	1-1/2	-	B2
NPT	3/4	1	1-1/4	1-1/2	2	2	-	<b>N</b>
NPT	1	3/4	1-1/2	1-1/4	1-1/2	1-1/2	-	N1
SAE O-ring Thread	1-1/16	1-5/16	1-5/8	1-7/8	1-7/8	1-7/8	-	<b>U</b>
SAE O-ring Thread	1-5/16	1-1/16	1-7/8	1-5/8	1-5/8	1-5/8	-	U1
SAE Flange 3000 PSI	-	-	-	-	2	2	metric	<b>FM</b>
SAE Flange 3000 PSI	-	-	-	-	2	2	UNC	<b>FU</b>

Note: Bold types identify preferred connection styles.

## 7 Clogging Indicator

	Position*	
Without Clogging Indicator	-	<b>O</b>
Visual Clogging Indicator		<b>M</b>
Electrical Clogging Switch 42 V, NO		<b>G42NO</b>
Electrical Clogging Switch 42 V, NC		<b>G42NC</b>
Electrical Clogging Switch 110 V, two-way contact	1 2	<b>G110</b>
Electrical Clogging Switch 230 V, two-way contact		<b>G230</b>

Note: \*Position of clogging indicator see page C72.

Without any code: assembly in the middle of the filter cover.

## 8 Option Clogging Indicator G42NO and G42NC

Plug connector and rubber cap **none**  
 Deutsch plug **D**  
 AMP plug **A**  
 M12 x 1,5 **M12**

## 9 Outlet Style

Standard outlet (without thread) **O**  
 Filter bowl with threaded outlet **G**

## 10 Additional Features

	Position*	
Without leakage oil connection	-	<b>none</b>
Leakage oil connection	1 2	<b>L</b>

Note: \*Position of the leakage oil connection see page C72.

Without any code: assembly in the middle of the filter cover.

## 11 Design Code

Only for information **X**

## Filter Elements ■ Type RE

RE - 014 G 10 B / X

1 2 3 4 5 6

## 1 Type

Filter Element Series **RE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941. Other materials on request.

## 4 Micron Rating

3 $\mu$ m	<b>03</b>
5 $\mu$ m	<b>05</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>
25 $\mu$ m	<b>25</b>
50 $\mu$ m	<b>50</b>
100 $\mu$ m	<b>100</b>
200 $\mu$ m	<b>200</b>

Note: Other micron ratings on request.

## 5 Sealing Materials

NBR (Buna®) **B**  
 FPM (Viton®) **V**  
 EPDM **E**

Note: Other sealing materials on request.

## 6 Design Code

Only for information **X**

## Return Line Filters ■ Type RF

**Visual Clogging Indicator**

The gauge visually displays the degree of contamination of the element.  
The colored segments allow quick visual checking.

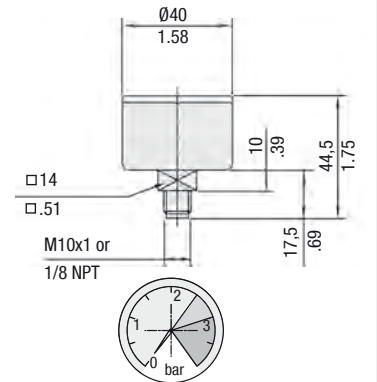
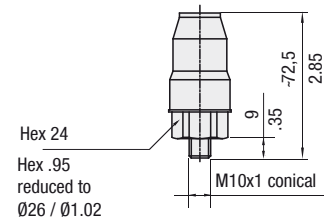
green	0 ... 2,5 bar / 0 ... 36.25 PSI	Element has service life left
yellow	2,5 ... 3,0 bar / 36.25 ... 43.5 PSI	Element is contaminated and should be changed
red	>3,0 bar / >43.5 PSI	Bypass valve open, unfiltered oil passing to tank

**Electrical Clogging Switch**

The switch is used where an electrical signal is needed to indicate when the element needs changing. The switch can turn on a light, or shut the machine down, or any further function controlled by an electric signal. The switching pressure is 2,5 bar / 36.25 PSI and this allows the element to be changed before the bypass setting of 3 bar / 43.5 PSI is reached.

Standard type with plug connector and rubber cap. Available with DEUTSCH DT04-2P plug (industrial standard), AMP Junior Timer plug (industrial standard) and five-pin circular connector M12, A-coded, according to IEC 61076-2-101.

Maximum Voltage	Switch Type	
42 V (normally open)	G42NO	
42 V (normally closed)	G42NC	
110 V (two-way contact)	G110	Note: The customer / user carries the responsibility for the electrical connection.
230 V (two-way contact)	G230	

**Visual Clogging Indicator**

**Electrical Clogging Switch**


Dimensions in mm/in

**Filter Bowl with Threaded Connection**

Under some circumstances such as a tall reservoir or one with oil levels which vary greatly during operation, it is necessary to extend the filter bowl so that the returning oil returns beneath the surface and does not entrain air in the process. The optional bowl with a female thread allows an extension to be fitted quite simply. The one piece design also allows for inline applications.

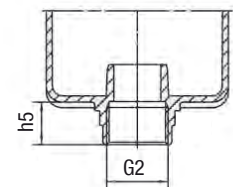
**Leakage Oil Connection**

Seal or case drain lines can be connected to the filter through either of the clogging indicator ports providing that the leakage oil can accept a pressure of 3 bar / 43.5 PSI. It ensures that no unfiltered oil can return to the reservoir.

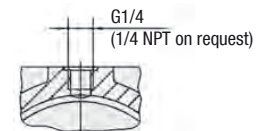
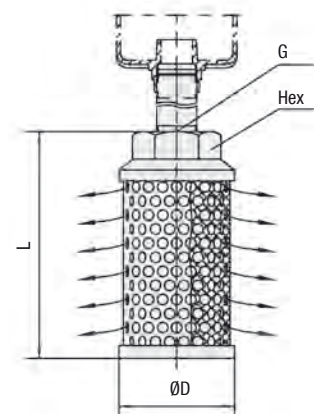
**Filter Bowl with Threaded Connection and Diffuser**

Diffusers mounted to the filter bowl minimise foaming and reduce noise of high return line flows. For further details on STAUFF Diffusers please refer to the "Hydraulic Accessories" section on page E36.  
Attention: Connection pipe not included in scope of delivery!

Size SRV	for Return Line Filter Size	Dimensions (mm/in)			
		øD	L	Thread G	Hex
SRV-114-B16	RF 014/030	60	139	G1	46
SRV-114-N16		2.36	5.47	1 NPT	1.81
SRV-200-B20	RF 045/070	82	139	G1-1/4	60
SRV-200-N20		3.23	5.47	1-1/4 NPT	2.36
SRV-227-B24	RF 090/130	82	200	G1-1/2	60
SRV-227-N24		3.23	7.87	1-1/2 NPT	2.36

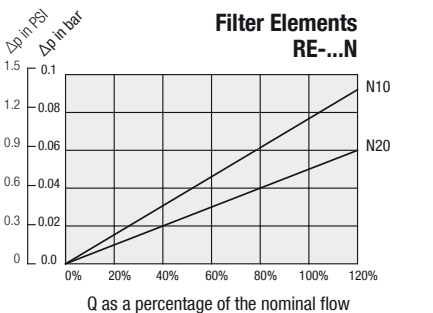
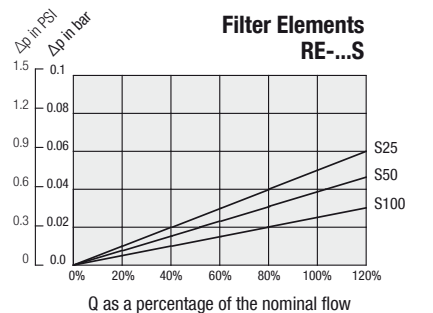
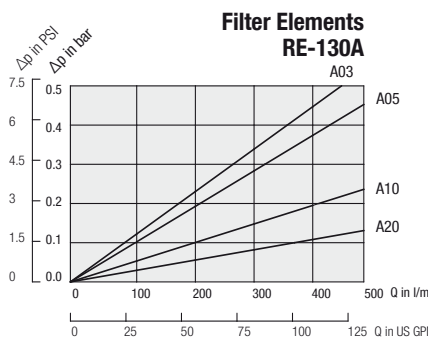
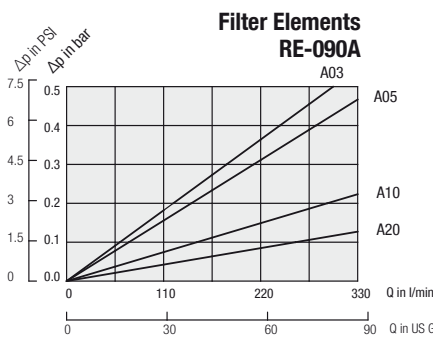
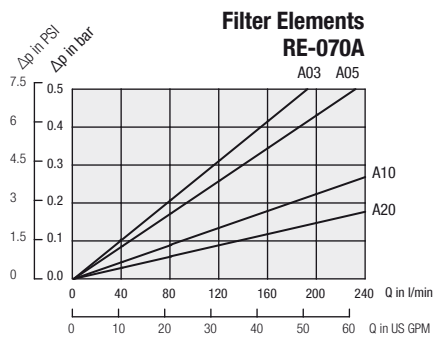
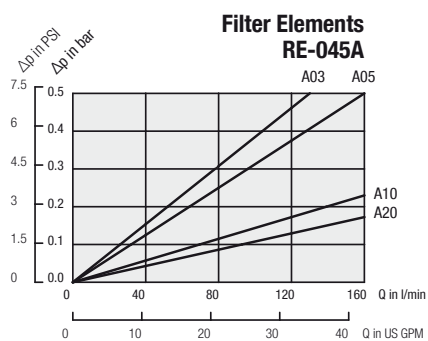
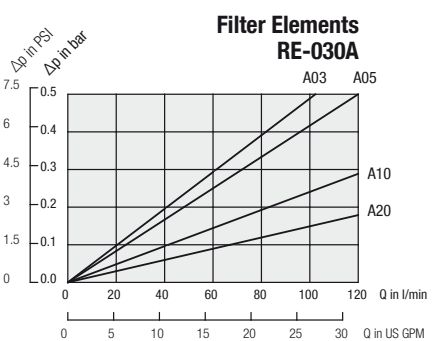
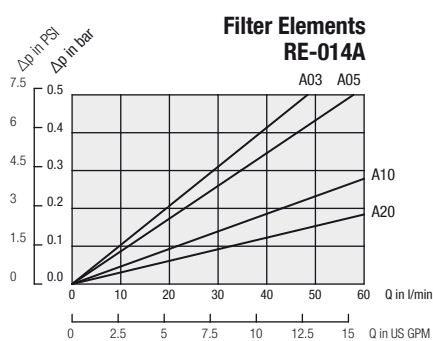
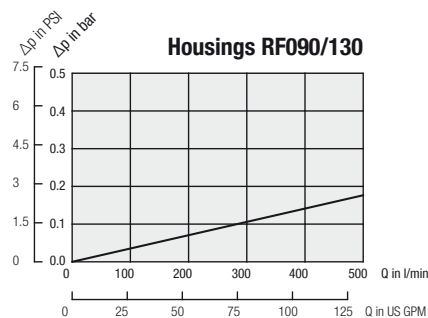
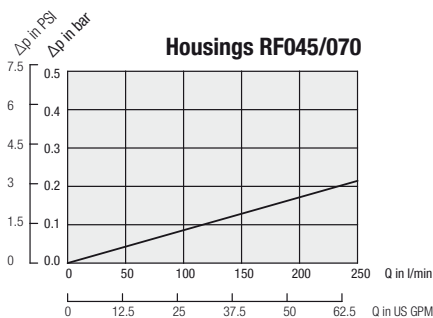
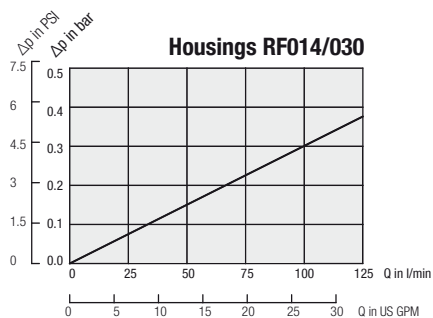
**Threaded Outlet**


Dimensions see table page C73

**Leakage Oil Connection**

**Threaded Outlet with SRV**


**Return Line Filters ■ Type RF Flow Characteristics**

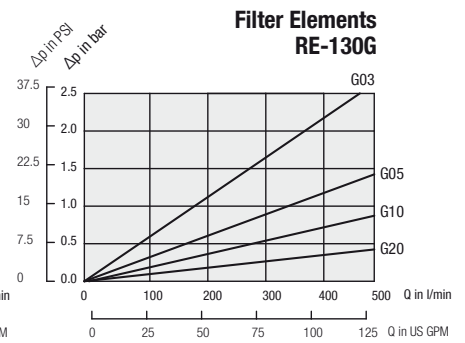
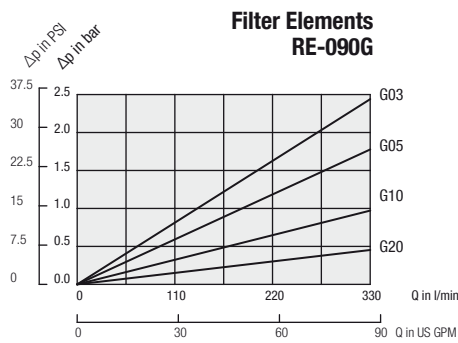
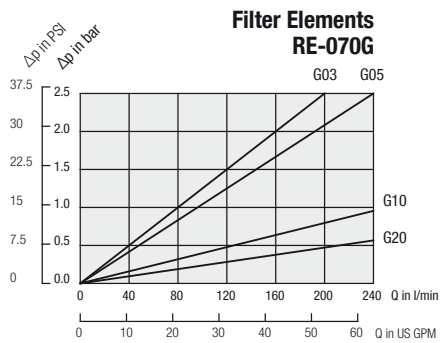
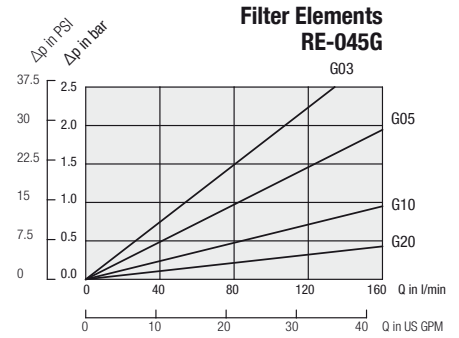
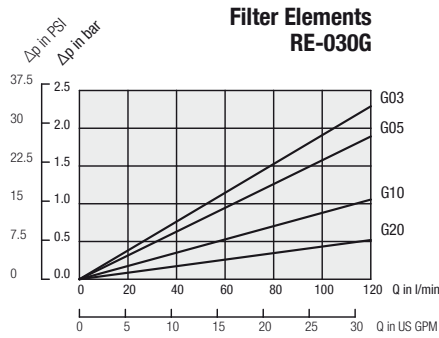
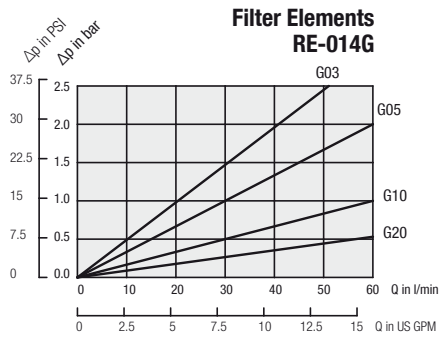
The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.

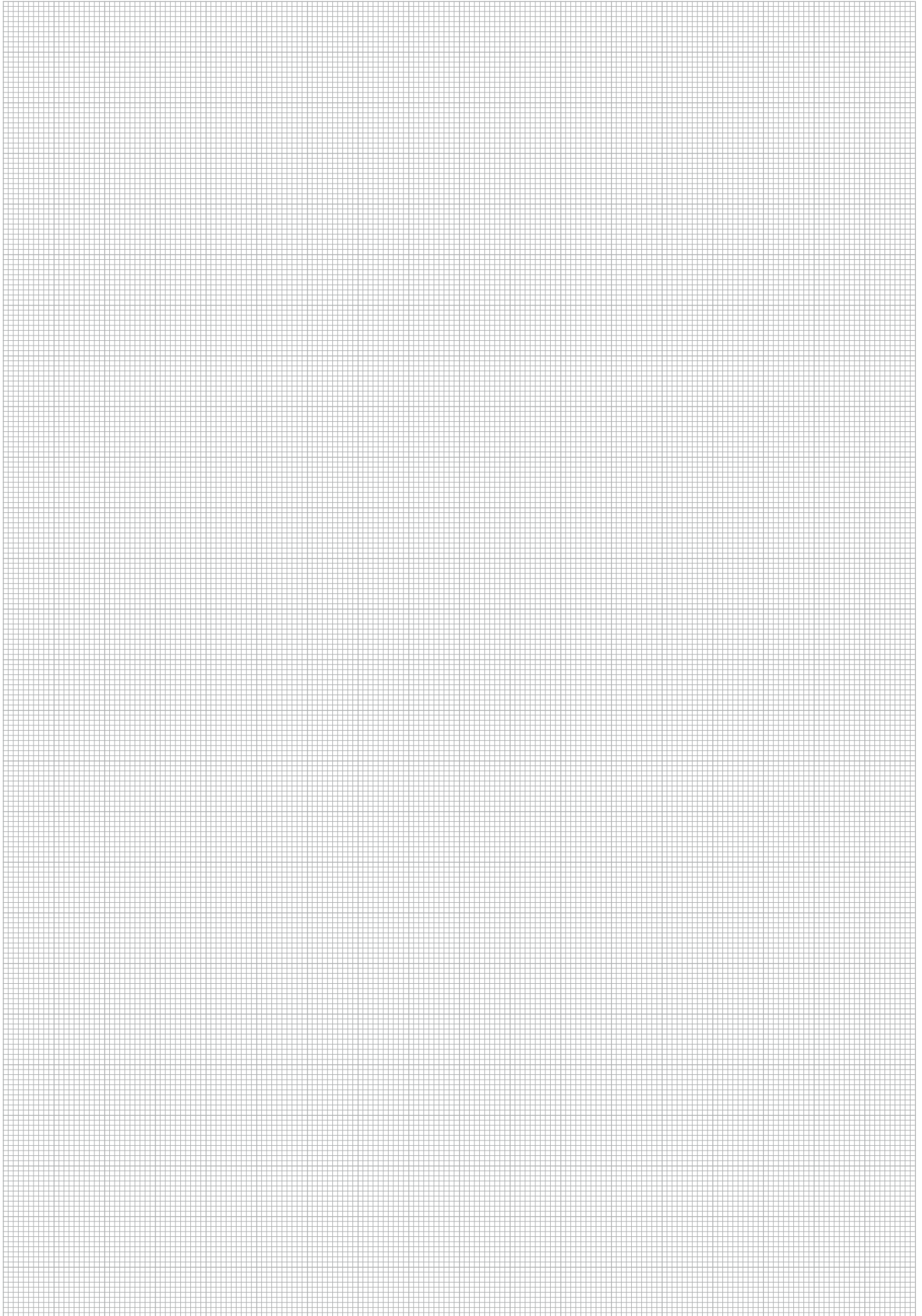




## Return Line Filters ■ Type RF Flow Characteristics

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.





## Return Line Filters ▪ Type RFA


**Product Description**

STAUFF RFA Return Line Filters are a one piece design and can be used as a tank top or an in-line filter. They are mounted in the return line and if 100% of the system oil is filtered, provide the optimum removal of contaminant for the systems. This provides the pump with clean oil, thus reducing contaminant generated wear. A high efficiency of contaminant removal is assured by using STAUFF RE Replacement Filter Elements. The high dirt-hold capacity of STAUFF Elements ensures a long service life and as a result reduced maintenance costs.

**Technical Data**
**Construction**

- Tank Top or in-line mounting

**Materials**

- Filter housing: Aluminium
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene Propylene Diene Monomer Rubber)  
Other sealing materials on request

**Port Connection**

- SAE O-ring thread
- BSP

**Operating Pressure**

- Max. 25 bar / 365 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C82

**Media Compatibility**

- Mineral oils, other fluids on request

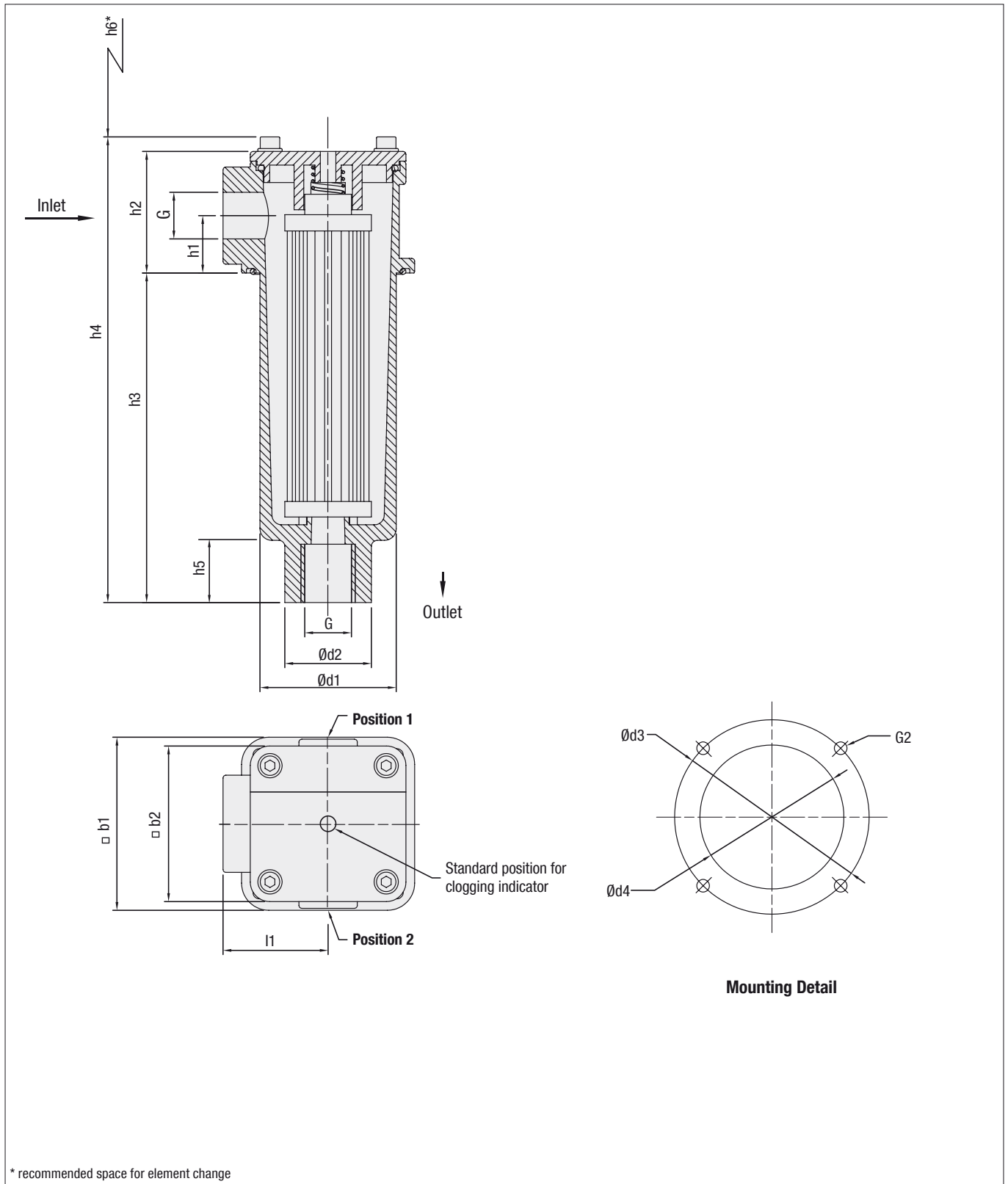
**Options and Accessories**
**Valve**

- Bypass valve (integrated in the filter element)      Opening pressure 3 bar ± 0,3 bar / 43.5 PSI ± 4.35 PSI  
Other settings available on request

**Clogging Indicators**

- Visual clogging indicator 0 ... 4 bar / 0 ... 58 PSI coloured segments
- Electrical clogging switch, setting 2,5 bar / 36.25 PSI  
Other clogging indicators available on request

## Return Line Filters - Type RFA



## Return Line Filters ▪ Type RFA

Thread Connection G	Filter Size RFA030
SAE O-ring Thread U	1-1/16-12
SAE O-ring Thread U1	3/4-16
BSP B	1/2
BSP B1	3/4

Dimensions (mm/in)	Filter Size RFA030
h1	25,5
	1.16
h2	62,5
	2.46
h3	169,5
	6.67
h4	239,5
	9.43
h5	32
	1.26
h6	210
	8.27
b1	89
	3.50
b2	80
	3.15
d1	70
	2.76
d2	44,5
	1.75
d3	100
	3.94
d4	74
	2.91
l1	54
	2.16
G2	M6 or 1/4 UNC

## Return Line Filter Housings / Complete Filters ▪ Type RFA

**RFA** **030** **...** **...** **B** / **U** / **G42NC** / **D** / **G** / **L1** / **X**

1 2 3 4 5 6 7 8 9 10 11

## 1 Type

Return Line Filter **RFA**

## 2 Group

Flow	Size
110 l/min / 30 US GPM	<b>030</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C84.

## 3 Filter Material

Material	Max. $\Delta p$ *collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI	10, 20	<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Other materials on request.

## 4 Micron Rating

3 $\mu$ m	<b>03</b>
5 $\mu$ m	<b>05</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>
25 $\mu$ m	<b>25</b>
50 $\mu$ m	<b>50</b>
100 $\mu$ m	<b>100</b>
200 $\mu$ m	<b>200</b>

Note: Other micron ratings on request.

## 5 Sealing Material

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Thread	Code
SAE-O-ring Thread	1-1/16-12	<b>U</b>
SAE-O-ring Thread	3/4-16	<b>U1</b>
BSP	1/2	<b>B</b>
BSP	3/4	<b>B1</b>

## 7 Clogging Indicator

	Position*	Code
Without Clogging Indicator	-	<b>0</b>
Visual Clogging Indicator		<b>M</b>
Electrical Clogging Switch 42 V, NO	1 2	<b>G42NO</b>
Electrical Clogging Switch 42 V, NC		<b>G42NC</b>
Electrical Clogging Switch 110 V, two-way contact		<b>G110</b>
Electrical Clogging Switch 230 V, two-way contact		<b>G230</b>

Note: \*Position of clogging indicator see page C80.  
Without any code: assembly in the middle of the filter cover.

## 8 Option Clogging Indicator G42NO and G42NC

Plug connector and rubber cap	<b>none</b>
Deutsch plug	<b>D</b>
AMP plug	<b>A</b>
M12 x 1,5	<b>M12</b>

## 9 Outlet Style

Standard outlet (without thread)	<b>0</b>
Filter bowl with threaded outlet	<b>G</b>

## 10 Additional Features

	Position*	
Without leakage oil connection	-	<b>none</b>
Leakage oil connection	1 2	<b>L1</b>

Note: \*Position of the leakage oil connection see page C80.  
Without any code: assembly in the middle of the filter cover.

## 11 Design Code

Only for information	<b>X</b>
----------------------	----------

## Filter Elements ▪ Type RE

**RE** - **030** **G** **10** **B** / **X**

1 2 3 4 5 6

## 1 Type

Filter Element Series **RE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p$ *collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI	10, 20	<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>B, S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Bold types identify preferred material.  
Other materials on request.

## 4 Micron Rating

3 $\mu$ m	<b>03</b>
5 $\mu$ m	<b>05</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>
25 $\mu$ m	<b>25</b>
50 $\mu$ m	<b>50</b>
100 $\mu$ m	<b>100</b>
200 $\mu$ m	<b>200</b>

Note: Other micron ratings on request.

## 5 Sealing Material

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

## 6 Design Code

Only for information	<b>X</b>
----------------------	----------

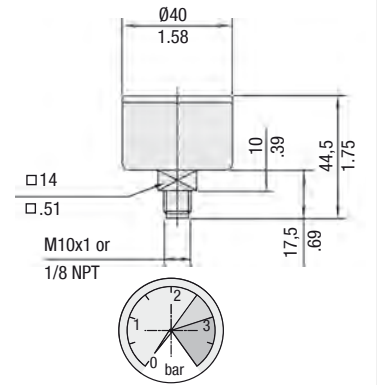


## Return Line Filters ▪ Type RFA

**Visual Clogging Indicator**

The gauge visually displays the degree of contamination of the element.  
The colored segments allow quick visual checking.

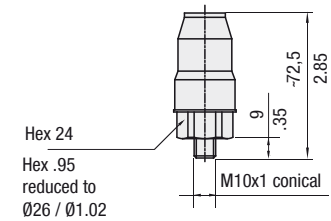
green	0 ... 2,5 bar / 0 ... 36.25 PSI	Element has service life left
yellow	2,5 ... 3,0 bar / 36.25 ... 43.5 PSI	Element is contaminated and should be changed
red	>3,0 bar / >43.5 PSI	Bypass valve open, unfiltered oil passing to tank

**Visual Clogging Indicator**

**Electrical Clogging Switch**

The switch is used where an electrical signal is needed to indicate when the element needs changing. The switch can turn on a light, or shut the machine down, or any further function controlled by an electric signal. The switching pressure is 2,5 bar / 36.25 PSI and this allows the element to be changed before the bypass setting of 3 bar / 43.5 PSI is reached.

Standard type with plug connector and rubber cap. Available with DEUTSCH DT04-2P plug (industrial standard), AMP Junior Timer plug (industrial standard) and five-pin circular connector M12, A-coded, according to IEC 61076-2-101.

Maximum Voltage	Switch Type	Note: The customer / user carries the responsibility for the electrical connection.
42 V (normally open)	G42NO	
42 V (normally closed)	G42NC	
110 V (two-way contact)	G110	
230 V (two-way contact)	G230	

**Electrical Clogging Switch**


Dimensions in mm/in

**Filter Bowl with Threaded Connection**

Under some circumstances such as a tall reservoir or one with oil levels which vary greatly during operation, it is necessary to extend the filter bowl so that the returning oil returns beneath the surface and does not entrain air in the process. The optional bowl with a female thread allows an extension to be fitted quite simply. The one piece design also allows for inline applications.

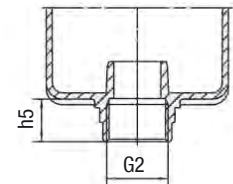
**Leakage Oil Connection**

Seal or case drain lines can be connected to the filter through either of the clogging indicator ports providing that the leakage oil can accept a pressure of 3 bar / 43.5 PSI. It ensures that no unfiltered oil can return to the reservoir.

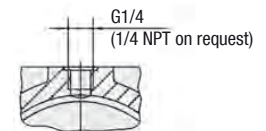
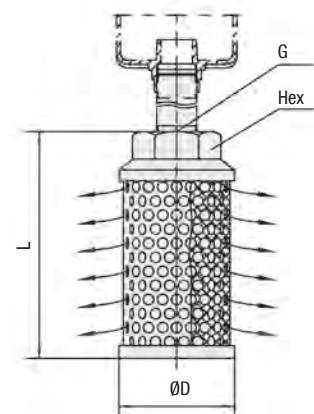
**Filter Bowl with Threaded Connection and Diffuser**

Diffusers mounted to the filter bowl minimise foaming and reduce noise of high return line flows. For further details on STAUFF Diffusers please refer to the "Hydraulic Accessories" section on page E36.  
Attention: Connection pipe not included in scope of delivery!

Size SRV	for Return Line Filter Size	Dimensions (mm/in)			
		øD	L	Thread G	Hex
SRV-114-B16	RFA030	60	139	G1	46
SRV-114-N16		2.36	5.47	1 NPT	1.81

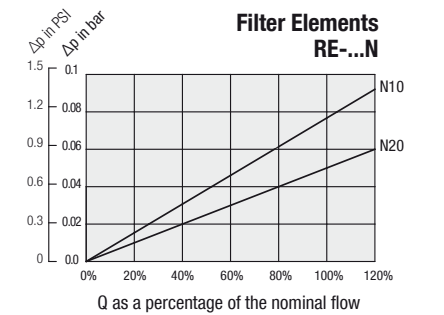
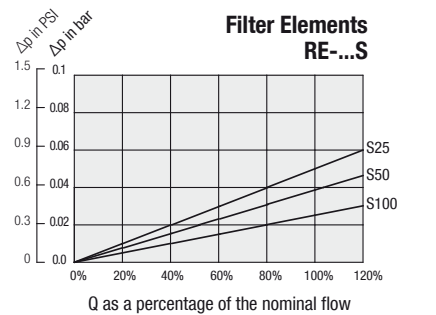
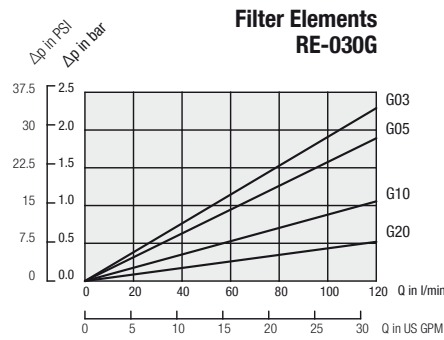
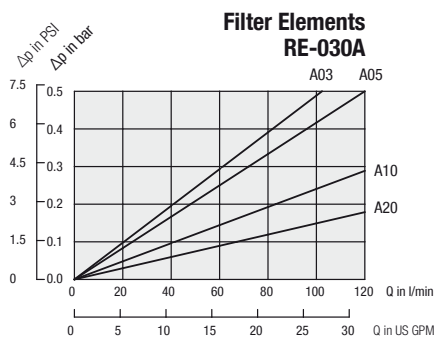
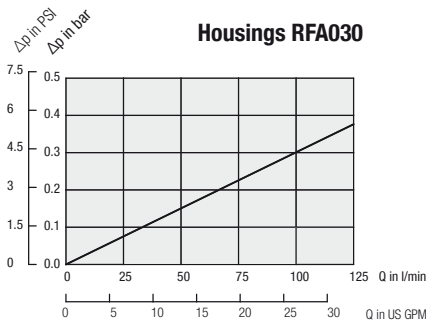
**Threaded Outlet**


Dimensions see table page C81

**Leakage Oil Connection**

**Threaded Outlet with SRV**


### Return Line Filters - Type RFA Flow Characteristics

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.



## Return Line Filters ▪ Type RFB


**Product Description**

STAUFF RFB Return Line Filters are designed as tank top filters. They are mounted directly on the tank top and if 100% of the system oil is filtered they provide the optimum removal of contaminant from the system. This provides the pump with clean oil thus reducing contaminant generated wear. Because of its low weight and compact design, the STAUFF RFB Filters are ideally suited for mobile hydraulic applications. A high efficiency of contaminant removal is assured by using STAUFF RE Replacement Filter Elements. The high dirt-hold capacity of STAUFF Elements ensures a long service life and as a result reduced maintenance costs.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminium
- Filter bowl & cap: Glass Fibre Reinforced Polyamide
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene Propylene Diene Monomer Rubber)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread

**Operating Pressure**

- Max. 10 bar / 145 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C88

**Media Compatibility**

- Mineral oils, other fluids on request

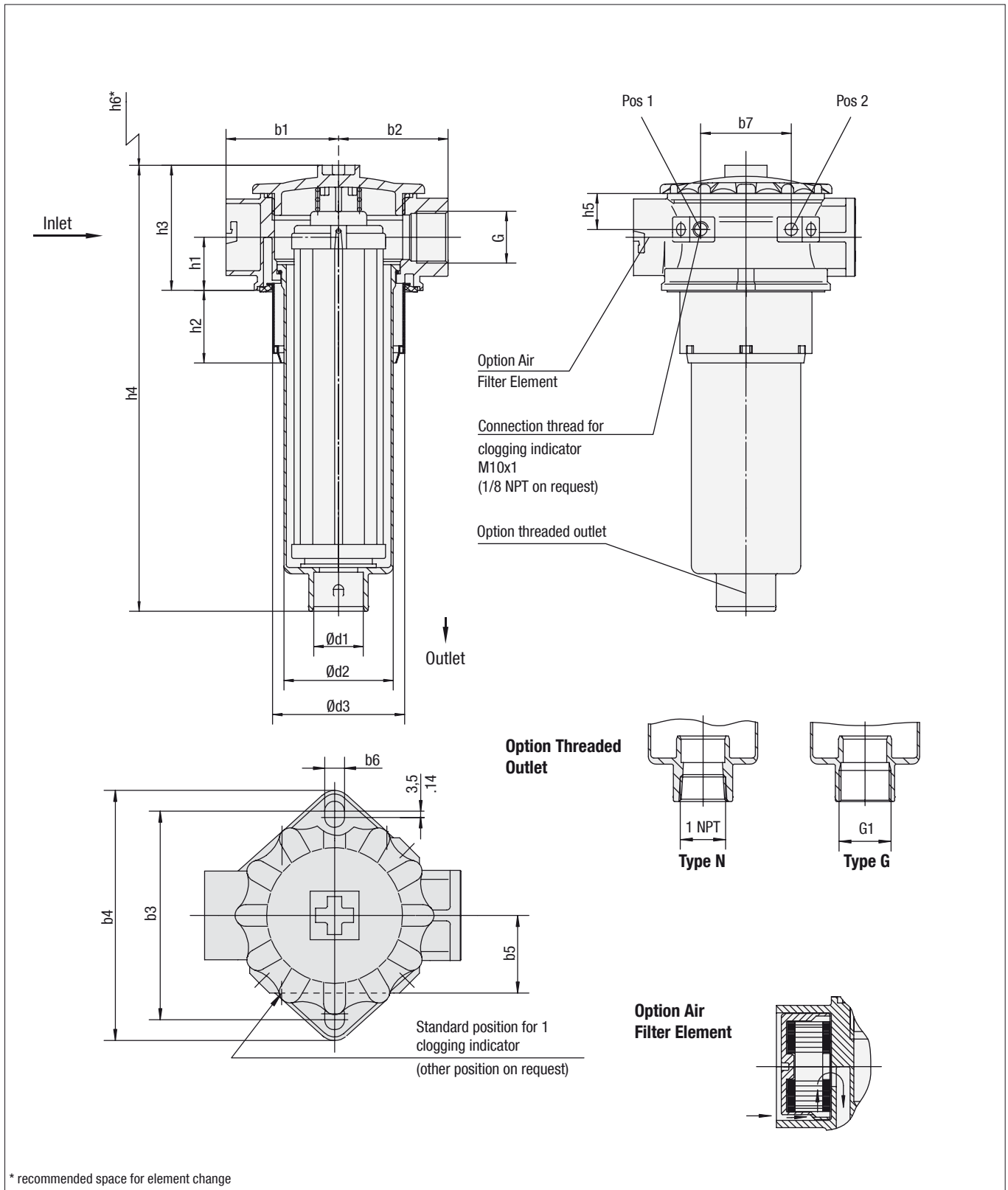
**Options and Accessories**
**Valve**

- Bypass valve (integrated in the filter element) Opening pressure 3 bar ± 0,3 bar / 43.5 PSI ± 4.35 PSI  
Other settings available on request

**Clogging Indicators**

- Visual clogging indicator 0 ... 4 bar / 0 ... 58 PSI coloured segments
- Electrical clogging switch, setting 2,5 bar / 36.25 PSI  
Other clogging indicators available on request

Return Line Filters - Type RFB



## Return Line Filters ■ Type RFB

Thread Connection G	Filter Size RFB					
	022		046		052	
BSP	3/4	1	3/4	1	3/4	1
NPT	3/4	1	3/4	1	3/4	1
SAE O-ring Thread	1-5/16-12					

Dimensions (mm/in)	Filter Size RFB					
	022		046		052	
h1	34		34		34	
	1.34		1.34		1.34	
h2	46,5		46,5		46,5	
	1.83		1.83		1.83	
h3	80		80		80	
	3.15		3.15		3.15	
h4	205,5		285,5		351,5	
	8.09		11.24		13.84	
h5	23		23		23	
	.91		.91		.91	
h6	154		239		305	
	6.26		9.41		12.01	
d1	32		32		32	
	1.26		1.26		1.26	
d2	70		70		70	
	2.76		2.76		2.76	
d3	84,5		84,5		84,5	
	3.33		3.33		3.33	
b1	72		72		72	
	2.84		2.84		2.84	
b2	70		70		70	
	2.76		2.76		2.76	
b3	115,5		115,5		115,5	
	4.55		4.55		4.55	
b4	138,5		138,5		138,5	
	5.45		5.45		5.45	
b5	43		43		43	
	1.69		1.69		1.69	
b6	11		11		11	
	.43		.43		.43	
b7	58		58		58	
	2.28		2.28		2.28	

## Return Line Filter Housings / Complete Filters ■ Type RFB

**RFB** **022** ... .. **B** / **B** / **G42NC** / **D** / **G** / **L10** / **X**

1 2 3 4 5 6 7 8 9 10 11

## 1 Type

Return Line Filter **RFB**

## 2 Group

Flow	Size
75 l/min / 22 US GPM	<b>022</b>
165 l/min / 46 US GPM	<b>046</b>
185 l/min / 52 US GPM	<b>052</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C90.

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI	3, 5, 10, 20	<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	10, 25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Other materials on request.

## 4 Micron Rating

3 $\mu$ m	<b>03</b>
5 $\mu$ m	<b>05</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>
25 $\mu$ m	<b>25</b>
50 $\mu$ m	<b>50</b>
100 $\mu$ m	<b>100</b>
200 $\mu$ m	<b>200</b>

Note: Other micron ratings on request.

## 5 Sealing Material

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

## 6 Connection Style

Connection Style	Group			Code
	022	046	052	
BSP	1			<b>B</b>
BSP	3/4			B1
NPT	1			<b>N</b>
NPT	3/4			N1
SAE-O-ring Thread	1-5/16-12			<b>U</b>

Note: Bold types identify preferred connection style.

## 7 Clogging Indicator

	Position*		Code
Without Clogging Indicator	-		<b>O</b>
Visual Clogging Indicator			<b>M</b>
Electrical Clogging Switch 42 V, NO	1	2	<b>G42NO</b>
Electrical Clogging Switch 42 V, NC			<b>G42NC</b>
Electrical Clogging Switch 110 V, two-way contact			<b>G110</b>
Electrical Clogging Switch 230 V, two-way contact			<b>G230</b>

Note: \*Position of clogging indicator see page C86.

Without any code: assembly in the middle of the filter cover.

## 8 Option Clogging Indicator G42NO and G42NC

Plug connector and rubber cap	<b>none</b>
Deutsch plug	<b>D</b>
AMP plug	<b>A</b>
M12 x 1,5	<b>M12</b>

## 9 Outlet Style

With thread G1 (Standard option)	<b>G</b>
With thread 1 NPT	<b>N</b>

## 10 Air Filter Element

Without Air Filter Element	<b>O</b>
Filter paper 10 micron	<b>L10</b>

Note: Other materials and micron ratings on request.

## 11 Design Code

Only for information	<b>X</b>
----------------------	----------

## Filter Elements ■ Type RE

**RE** - **022** **G** **10** **B** / **X**

1 2 3 4 5 6

## 1 Type

Filter Element Series **RE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI	3, 5, 10, 20	<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Other materials on request.

## 4 Micron Rating

3 $\mu$ m	<b>03</b>
5 $\mu$ m	<b>05</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>
25 $\mu$ m	<b>25</b>
50 $\mu$ m	<b>50</b>
100 $\mu$ m	<b>100</b>
200 $\mu$ m	<b>200</b>

Note: Other micron ratings on request.

## 5 Sealing Material

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing material on request.

## 6 Design Code

Only for information	<b>X</b>
----------------------	----------

## Air Filter Elements ■ Type REA

**REA** - **046** **L** **10** **B** / **X**

1 2 3 4 5 6

## 1 Type

Air Filter Element **REA**

## 2 Group

Air filter for RFB 022/046/052 **046**

## 3 Filter Material

Filter Paper	<b>L</b>
--------------	----------

Note: Other materials on request.

## 4 Micron Rating

10 $\mu$ m	<b>10</b>
------------	-----------

Note: Other micron ratings on request.

## 5 Sealing Material

NBR (Buna®)	<b>B</b>
-------------	----------

Note: Other sealing materials on request.

## 6 Design Code

Only for information	<b>X</b>
----------------------	----------



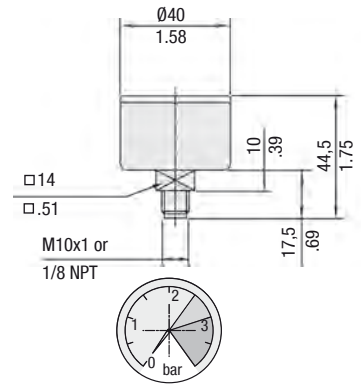
Return Line Filters ■ Type RFB

**Visual Clogging Indicator**

The gauge visually displays the degree of contamination of the element.  
The colored segments allow quick visual checking.

green	0 ... 2,5 bar / 0 ... 36.25 PSI	Element has service life left
yellow	2,5 ... 3,0 bar / 36.25 ... 43.5 PSI	Element is contaminated and should be changed
red	>3,0 bar / >43.5 PSI	Bypass valve open, unfiltered oil passing to tank

**Visual Clogging Indicator**



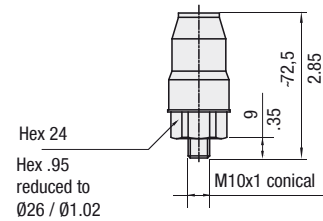
**Electrical Clogging Switch**

The switch is used where an electrical signal is needed to indicate when the element needs changing. The switch can turn on a light, or shut the machine down, or any further function controlled by an electric signal. The switching pressure is 2,5 bar / 36.25 PSI and this allows the element to be changed before the bypass setting of 3 bar / 43.5 PSI is reached.

Standard type with plug connector and rubber cap. Available with DEUTSCH DT04-2P plug (industrial standard), AMP Junior Timer plug (industrial standard) and five-pin circular connector M12, A-coded, according to IEC 61076-2-101.

Maximum Voltage	Switch Type	Note: The customer / user carries the responsibility for the electrical connection.
42 V (normally open)	G42NO	
42 V (normally closed)	G42NC	
110 V (two-way contact)	G110	
230 V (two-way contact)	G230	

**Electrical Clogging Switch**

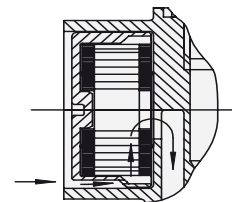


Dimensions in mm/in

**Air Filter Element**

Allows an effective filtration of the incoming air which avoids the infiltration of dirt particles into the hydraulic system. The standard air filter element is a 10 micron cellulose; other materials and micron ratings on request.

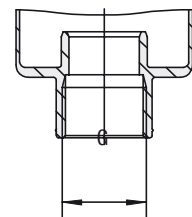
**Air Filter**



**Filter Bowl with Threaded Connection**

Under some circumstances such as a tall reservoir or one with oil levels which vary greatly during operation, it is necessary to extend the filter bowl so that the returning oil returns beneath the surface and does not entrain air in the process. The optional bowl with a female thread allows an extension to be fitted quite simply.

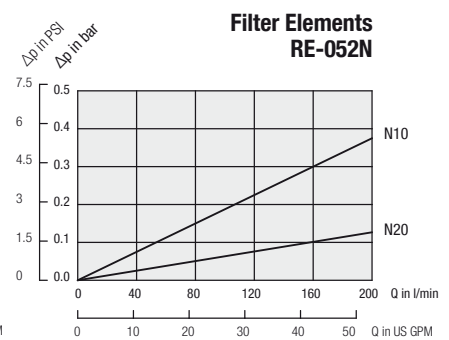
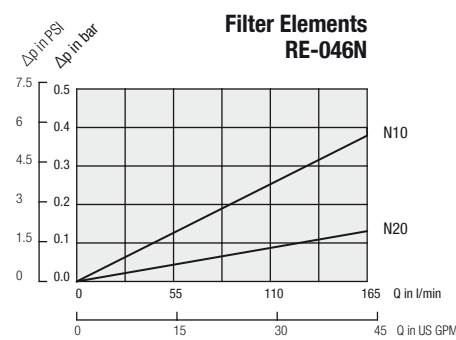
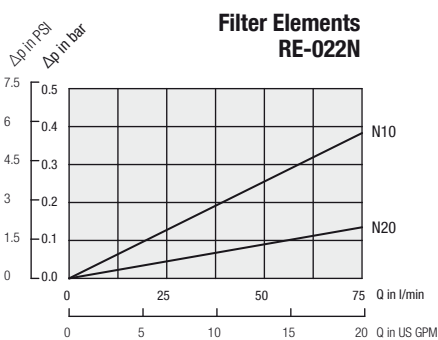
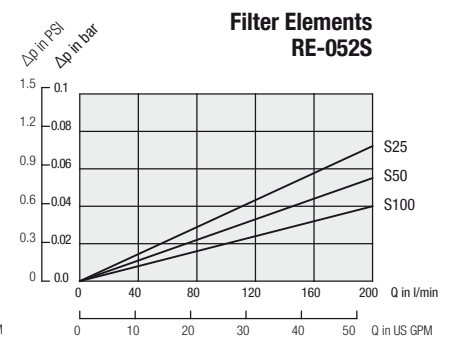
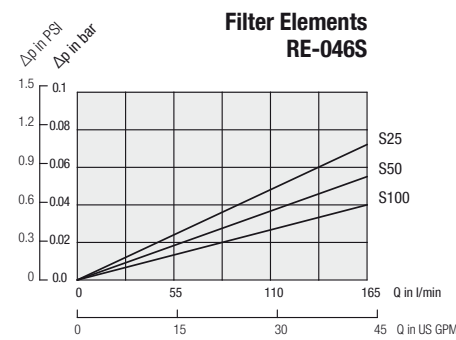
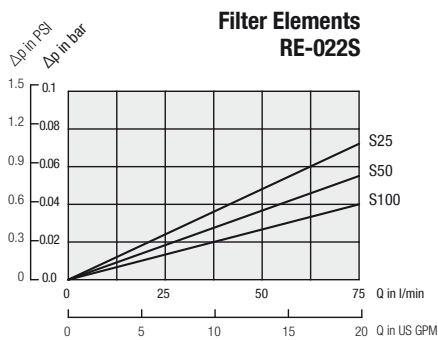
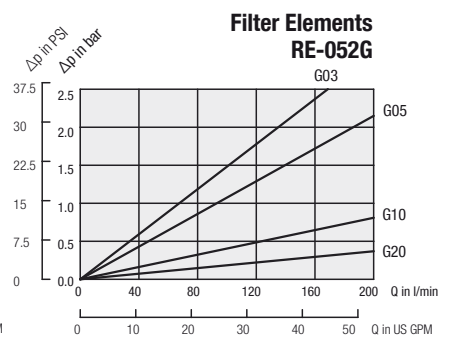
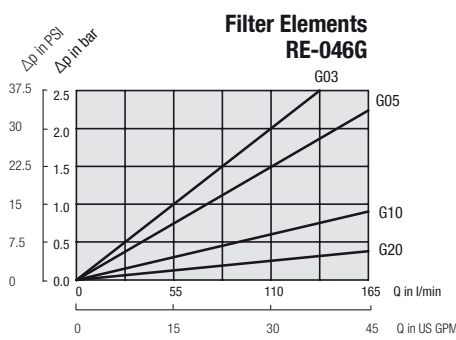
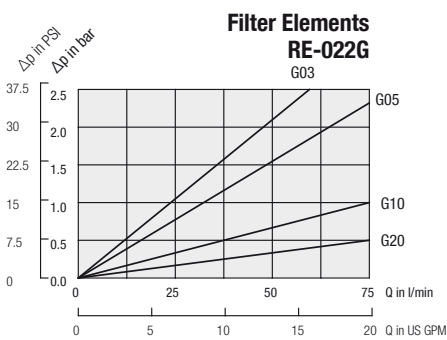
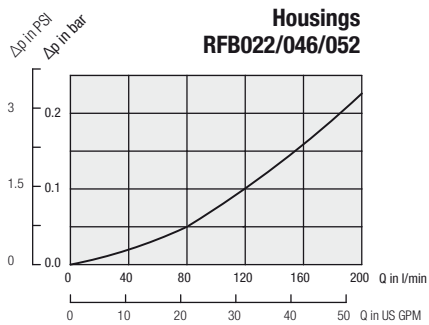
**Threaded Outlet**



Dimension see page C86

**Return Line Filters ■ Type RFB Flow Characteristics**

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.



## Return Line Filters ▪ Type RFS


**Product Description**

STAUFF RFS Carbon Steel Return Line Filters are designed as tank top or in-line filters. They are mounted directly on the tank top and if 100% of the system oil is filtered, they provide the optimum removal of contaminants from the system. This provides the pump with clean oil thus reducing contaminant generated wear. The filter bowl is designed with a connection, threaded or flanged, for extending the return oil beneath the surface thus preventing the entrainment of air. A high efficiency of contaminant removal is assured by using STAUFF RE Replacement Filter Elements. The high dirt-hold capacity of STAUFF Elements ensures a long service life and as a result reduced maintenance costs.

**Technical Data**
**Construction**

- Tank Top mounting or in-line mounting

**Materials**

- Filter Housing: Carbon Steel
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene Propylene Diene Monomer Rubber)  
Other sealing materials on request

**Port Connection**

- BSP
- SAE flange 3000 PSI

**Flow Rating**

- Up to 1135 l/min / 300 US GPM

**Operating Pressure**

- Max. 25 bar / 365 PSI

**Proof Pressure**

- Min. 37,5 bar / 545 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C94

**Media Compatibility**

- Mineral oils, other fluids on request

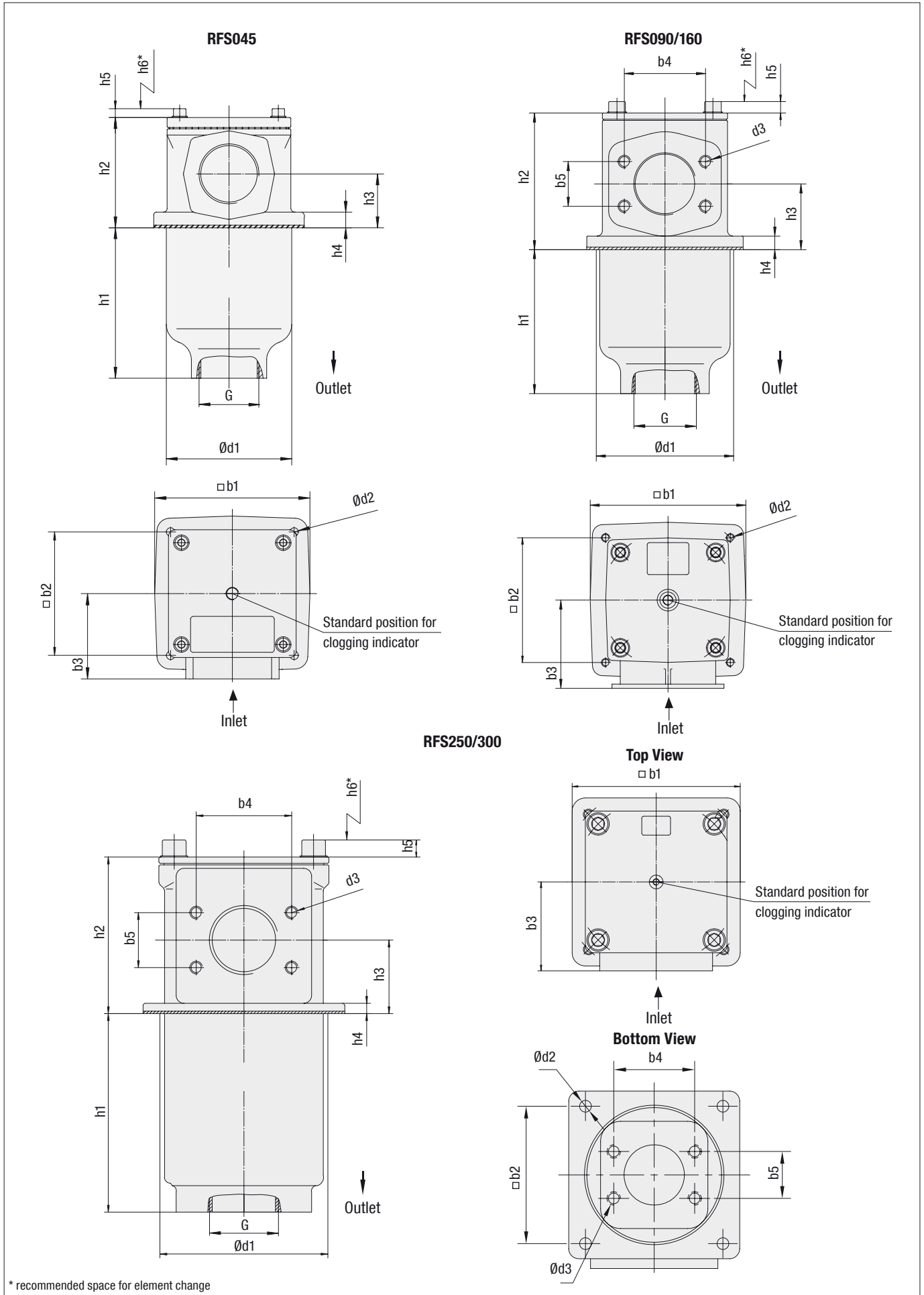
**Options and Accessories**
**Valves**

- Bypass valve (integrated in the filter element) Opening pressure 3 bar ± 0,3 bar / 43.5 PSI ± 4.35 PSI  
Other settings available on request

**Clogging Indicators**

- Visual clogging indicator 0...4 bar / 0...58 PSI coloured segments
- Electrical clogging switch, setting 2,5 bar / 36.25 PSI  
Other clogging indicators available on request

Return Line Filters - Type RFS



\* recommended space for element change

## Return Line Filters ■ Type RFS

Thread Connection		Filter Size RFS				
		045	090	160	250	300
Inlet	BSP	1-1/2	2	-	-	-
	SAE Flange	-	2	3	3-1/2	4
Outlet G	BSP	1-1/2	2	3	-	-
	SAE Flange	-	-	-	3-1/2	4

Dimensions (mm/in)	Filter Size RFS				
	045	090	160	250	300
b1	120	150	196	255	255
	4.72	5.91	7.72	10.04	10.04
b2	95,5	120	155,5	205	205
	3.76	4.72	6.12	8.07	8.07
b3	66	85	110	135	145
	2.60	3.35	4.33	5.32	5.71
b4	-	77,8	106,4	120,7	130,2
	-	3.06	4.19	4.75	5.13
b5	-	42,9	61,9	69,5	77,8
	-	1.69	2.44	2.74	3.06
d1	100	135	180	208	208
	3.94	5.32	7.09	8.19	8.19
d2	6,5	9	13,5	17,5	17,5
	.26	.35	.53	.69	.69
d3	-	M12	M16	M16	M16
	-	1/2-UNC	5/8-UNC	5/8 UNC	5/8 UNC
h1	120	138	243	251	332
	4.72	5.43	9.57	9.88	13.07
h2	88	131	167	198	241
	3.47	5.16	6.57	7.80	9.49
h3	43	63	84	93	121
	1.69	2.48	3.31	3.66	4.76
h4	13	13	13	13	13
	.51	.51	.51	.51	.51
h5	7	12	12	12	12
	.28	.47	.47	.47	.47
h6	130	180	320	350	460
	5.11	7.09	12.60	13.78	18.11

## Return Line Filter Housings / Complete Filters ▪ Type RFS

<b>RFS</b>	<b>250</b>	...	...	<b>B</b>	/	<b>F</b>	/	<b>G42NC</b>	/	<b>D</b>	/	<b>F</b>	/	<b>X</b>
1	2	3	4	5		6		7		8		9		10

**1 Type**  
Carbon Steel Return Line Filter **RFS**

**2 Group**  
**Flow** **Size**  
170 l/min / 45 US GPM **045**  
340 l/min / 90 US GPM **090**  
600 l/min / 160 US GPM **160**  
945 l/min / 250 US GPM **250**  
1135 l/min / 300 US GPM **300**  
Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C96 / C97.

**3 Filter Material**

Material	Max. Δp*collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**  
NBR (Buna®) **B**  
FPM (Viton®) **V**  
EPDM **E**  
Note: Other sealing materials on request.

**6 Connection Style**

Connection Style	Group					Thread Style	Code
	045	090	160	250	300		
BSP	1-1/2	2	3	-	-	-	<b>G</b>
SAE Flange 3000 PSI	-	-	-	3-1/2	4	metric	<b>FM</b>
SAE Flange 3000 PSI	-	-	-	3-1/2	4	UNC	<b>FU</b>

**7 Clogging Indicator**

	Position*	Code
Without Clogging Indicator	-	<b>0</b>
Visual Clogging Indicator		<b>M</b>
Electrical Clogging Switch 42 V, NO	1    2	<b>G42NO</b>
Electrical Clogging Switch 42 V, NC		<b>G42NC</b>
Electrical Clogging Switch 110 V, two-way contact		<b>G110</b>
Electrical Clogging Switch 230 V, two-way contact		<b>G230</b>

Note: \*Position of clogging indicator see page C92.  
Without any code: assembly in the middle of the filter cover.

**8 Option Clogging Indicator G42NO and G42NC**

Plug connector and rubber cap	<b>none</b>
Deutsch plug	<b>D</b>
AMP plug	<b>A</b>
M12 x 1,5	<b>M12</b>

**9 Outlet Style**

Connection Style	Group					Thread Style	Code
	045	090	160	250	300		
BSP	1-1/2	2	3	-	-	-	<b>G</b>
SAE Flange 3000 PSI	-	-	-	3-1/2	4	metric	<b>FM</b>
SAE Flange 3000 PSI	-	-	-	3-1/2	4	UNC	<b>FU</b>

**10 Design Code**  
Only for information **X**

## Filter Elements ▪ Type RE

<b>RE</b>	-	<b>250</b>	<b>G</b>	<b>10</b>	<b>B</b>	/	<b>X</b>
1		2	3	4	5		6

**1 Type**  
Filter Element Series **RE**

**2 Group**  
According to filter housing

**3 Filter Material**

Material	Max. Δp*collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**  
NBR (Buna®) **B**  
FPM (Viton®) **V**  
EPDM **E**  
Note: Other sealing materials on request.

**6 Design Code**  
Only for information **X**

## Return Line Filters ■ Type RFS

**Visual Clogging Indicator**

The gauge visually displays the degree of contamination of the element.  
The colored segments allow quick visual checking.

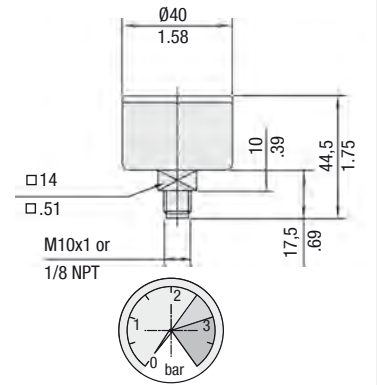
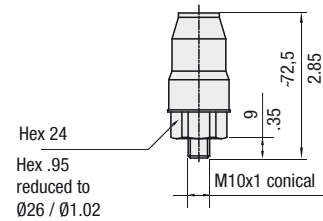
green	0 ... 2,5 bar / 0 ... 36.25 PSI	Element has service life left
yellow	2,5 ... 3,0 bar / 36.25 ... 43.5 PSI	Element is contaminated and should be changed
red	>3,0 bar / >43.5 PSI	Bypass valve open, unfiltered oil passing to tank

**Electrical Clogging Switch**

The switch is used where an electrical signal is needed to indicate when the element needs changing. The switch can turn on a light, or shut the machine down, or any further function controlled by an electric signal. The switching pressure is 2,5 bar / 36.25 PSI and this allows the element to be changed before the bypass setting of 3 bar / 43.5 PSI is reached.

Standard type with plug connector and rubber cap. Available with DEUTSCH DT04-2P plug (industrial standard), AMP Junior Timer plug (industrial standard) and five-pin circular connector M12, A-coded, according to IEC 61076-2-101.

Maximum Voltage	Switch Type	Note: The customer / user carries the responsibility for the electrical connection.
42 V (normally open)	G42NO	
42 V (normally closed)	G42NC	
110 V (two-way contact)	G110	
230 V (two-way contact)	G230	

**Visual Clogging Indicator**

**Electrical Clogging Switch**


Dimensions in mm/in

**Replacement Filter Elements ■ Type RE**
**Product Description**

STAUFF RE Replacement Filter Elements are manufactured in the common filter materials such as Stainless Fibre, Stainless Mesh, Cellulose and Inorganic Glass Fibre. As standard all Replacement Elements RE have tin plated steel parts for use with aggressive media such as water glycol, upon request you also can get other materials. All Replacement Elements made by STAUFF comply with quality specifications in accordance with international standards.


**Order Code**

**RE - 250 G 10 B / X**

1 2 3 4 5 6

**1 Type**

Filter Element Series	<b>RE</b>
-----------------------	-----------

**2 Group**

According to filter housing  
Note: See order code page C94.

**3 Filter Material**

Material	Max. Δp*collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Other materials on request.

**4 Micron Rating**

3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

**5 Sealing Material**

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

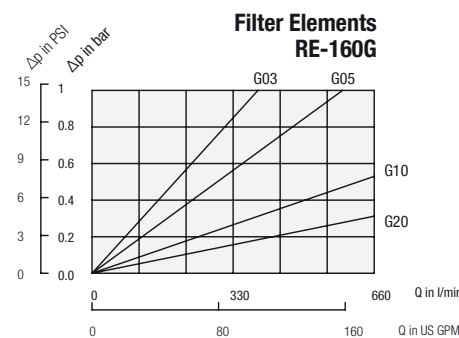
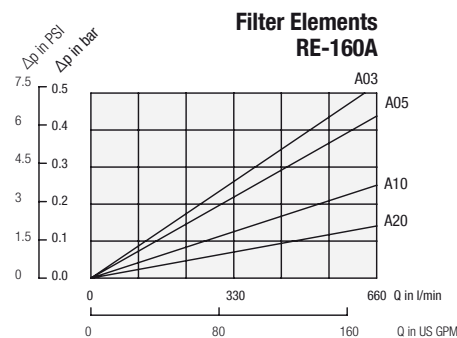
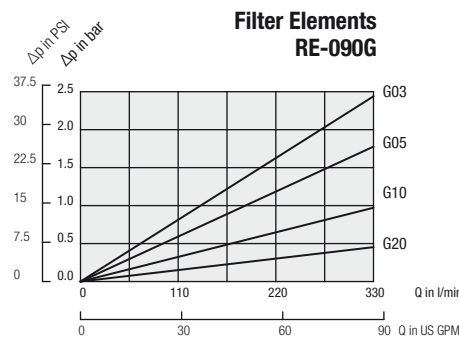
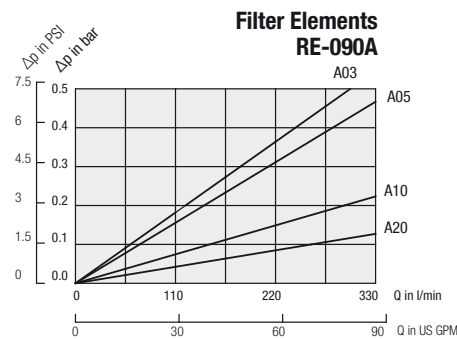
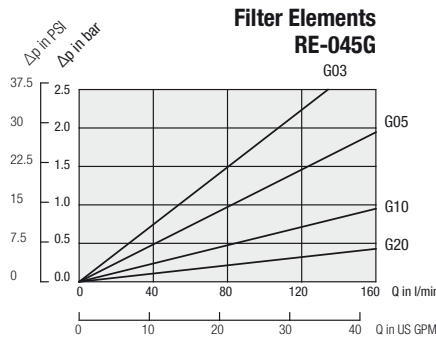
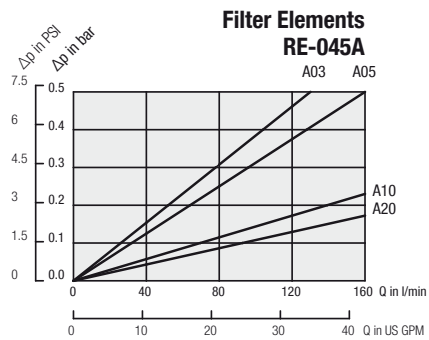
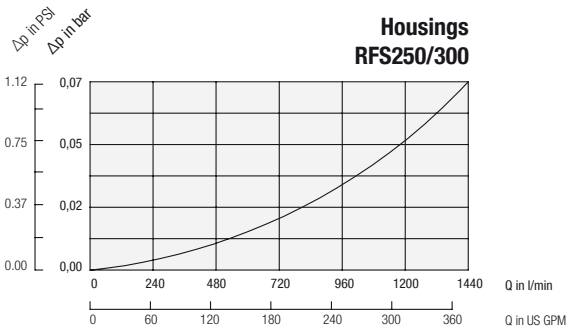
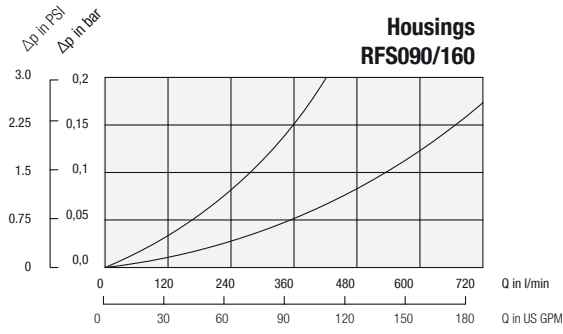
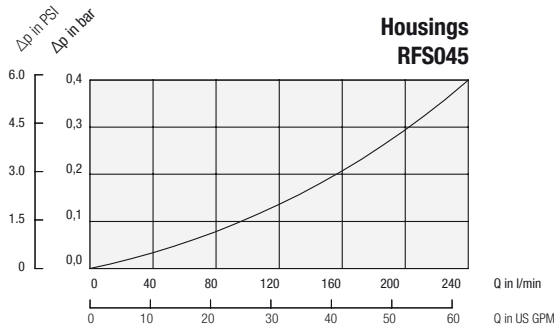
**6 Design Code**

Only for information	<b>X</b>
----------------------	----------



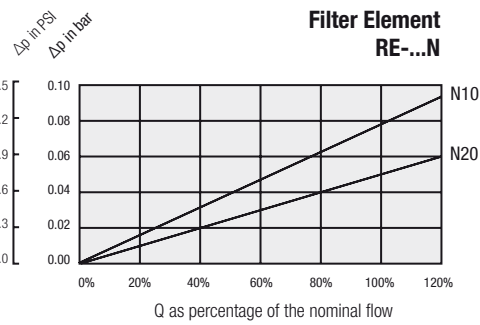
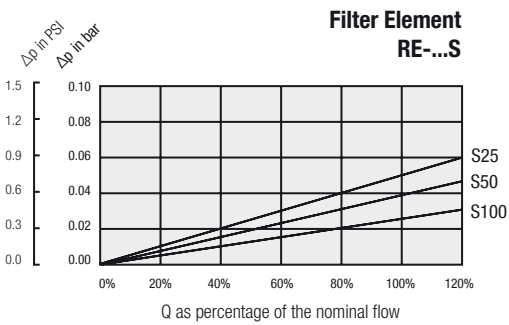
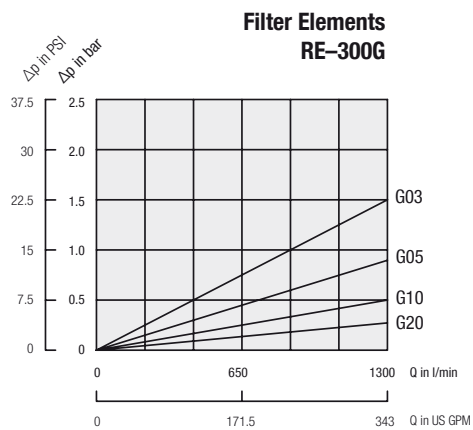
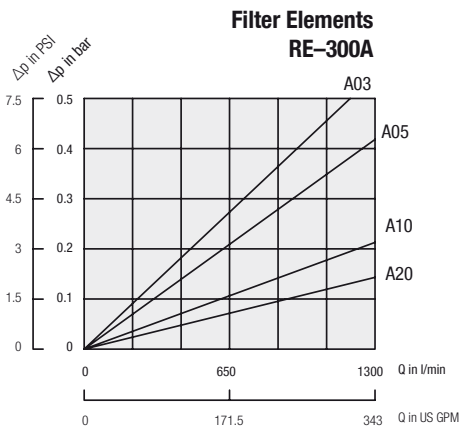
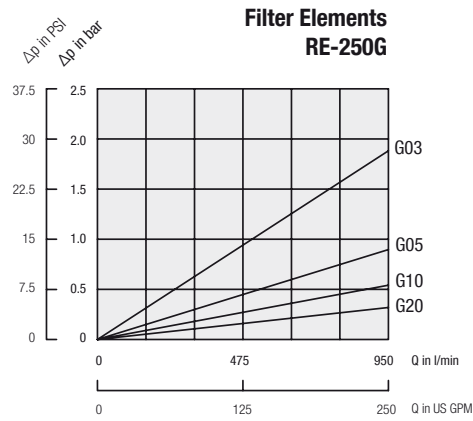
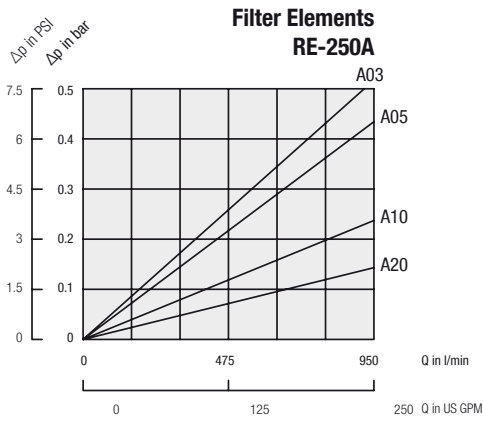
**Return Line Filters - Type RFS Flow Characteristics**

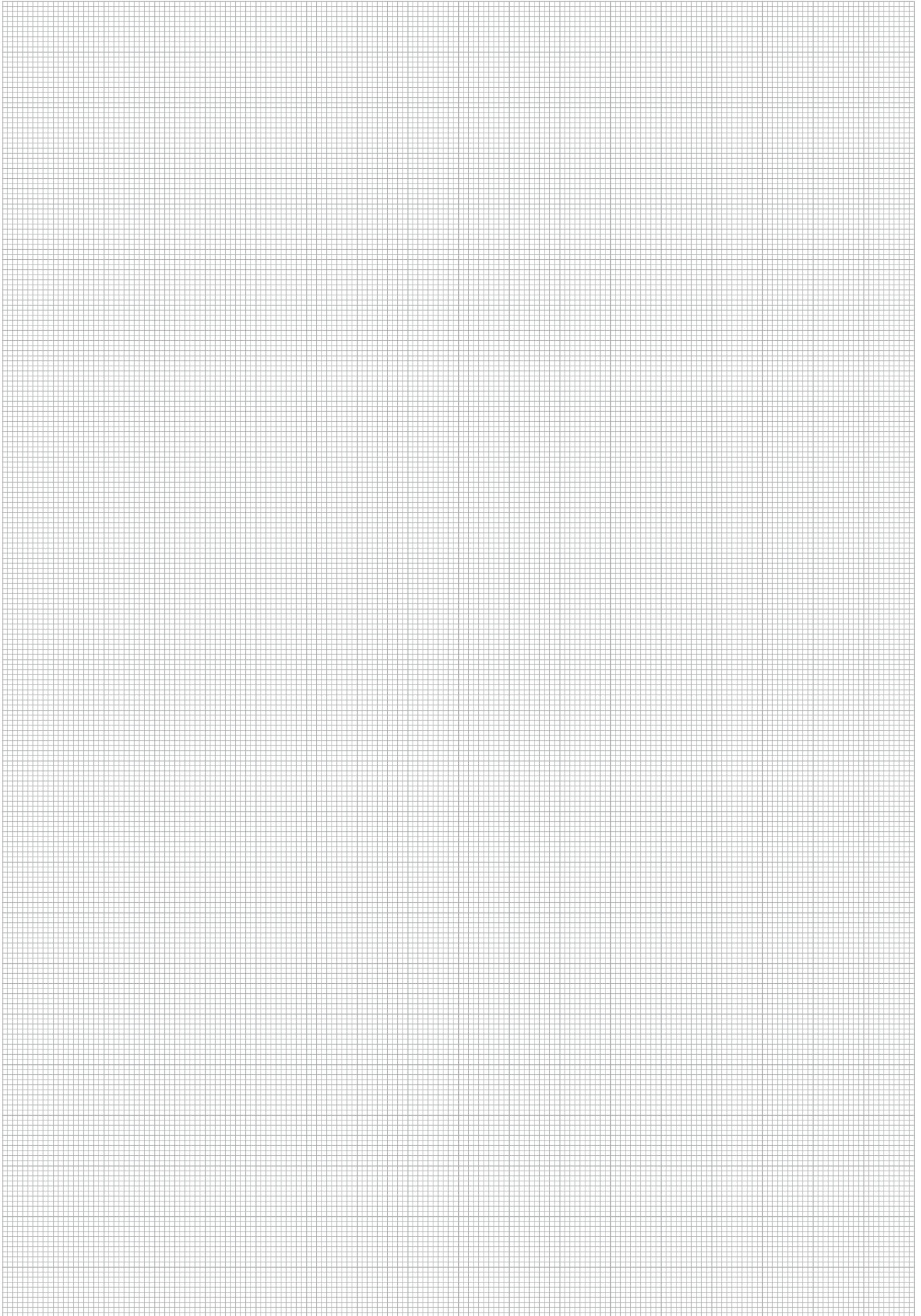
The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.



**Return Line Filters ■ Type RFS Flow Characteristics**

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.





## Return Line Filters ▪ Type RTF10/25


**Product Description**

STAUFF RTF10/25 Return Line Filters are designed as tank top filters with a maximum operating pressure of 3,4 bar / 49 PSI.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminum
- Filter bowl: Polyamide
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread

**Flow Rating**

- Up to 95 l/min / 25 US GPM

**Operating Pressure**

- Max. 3,4 bar / 49 PSI

**Burst Pressure**

- Min. 10 bar / 145 PSI

**Temperature Range**

- -25 °C ... +95 °C / -13 °F ... +203 °F

**Filter Elements**

- Specifications see page C102

**Media Compatibility**

- Mineral oils, other fluids on request

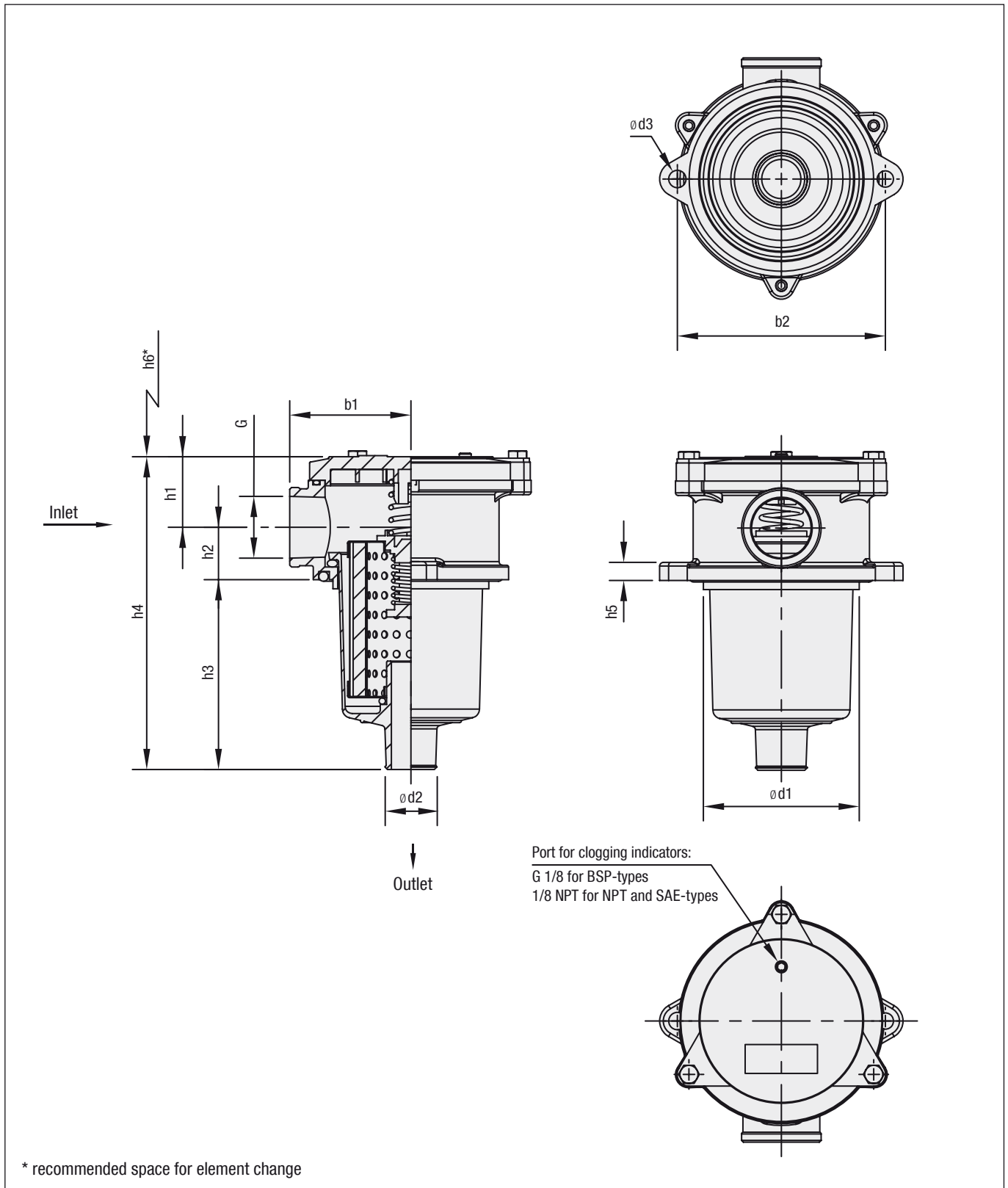
**Options and Accessories**
**Valve**

- Bypass valve: Opening pressure 1,7 bar / 25 PSI  
(integrated in the filter element) Other settings available on request

**Clogging Indicators**

- Visual clogging indicator, coloured segments
- Electrical clogging switch, adjustable  
Other clogging indicators available on request

## Return Line Filters ■ Type RTF10/25



## Return Line Filters ■ Type RTF10/25

Thread Connection G	Filter Size RTF		
	10S1	25S1	25S2
BSP	1/2	1	1
NPT	1/2	1	1
SAE O-ring	-	1-5/16-12	1-5/16-12

Dimensions (mm/in)	Filter Size RTF		
	10S1	25S1	25S2
h1	26	34	34
	1.02	1.34	1.34
h2	21	29	29
	.83	1.14	1.14
h3	88	103	151
	3.46	4.05	5.95
h4	136	166	212
	5.35	6.53	8.35
h5	8	10	10
	.32	.39	.39
h6	110	130	175
	4.33	5.12	6.89
b1	50	67	67
	1.97	2.64	2.64
b2	90	115	115
	3.54	4.52	4.52
d1	66	86	86
	2.60	3.39	3.39
d2	24	28	28
	.94	1.10	1.10
d3	7	9	9
	.28	.35	.35
Weight (kg/lbs)	0,45	0,9	1
	1	2	2.2

## Return Line Filter Housings / Complete Filters ■ Type RTF10/25

RTF 25 ... B / N / S2 / V / X

1 2 3 4 5 6 7 8 9

## 1 Type

Return Line Filter **RTF**

## 2 Group

Flow	Size
38 l/min / 10 US GPM	<b>10</b>
95 l/min / 25 US GPM	<b>25</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C119.

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	3 bar / 43.5 PSI	10, 25	<b>G</b>
Filter paper	3 bar / 43.5 PSI	10, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

10 $\mu\text{m}$	<b>10</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
 FPM (Viton®) **V**  
 Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Group		Code
	10	25	
BSP	1/2	1	<b>B</b>
NPT	1/2	1	<b>N</b>
SAE O-ring Thread	-	1-5/16-12	<b>S</b>

## 7 Length

Bowl Length 1	<b>S1</b>
Bowl Length 2	<b>S2</b>

Note: RTF 10 size available in bowl length 1 only.

## 8 Clogging Indicator

Without clogging indicator **none**  
 Visual clogging indicator **V**  
 Electrical clogging indicator **E**  
 Note: See pages C100 and C121 for more details on indicator ports and types.

## 9 Design Code

Only for information **X**

## Filter Elements ■ Type RTE

RTE - 25 D 10 B / S2 / X

1 2 3 4 5 6 7

## 1 Type

Filter Element Series **RTE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	3 bar / 43.5 PSI	10, 25	<b>G</b>
Filter paper	3 bar / 43.5 PSI	10, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

10 $\mu\text{m}$	<b>10</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
 FPM (Viton®) **V**  
 Note: Other sealing materials on request

## 6 Length

Bowl Length 1	<b>S1</b>
Bowl Length 2	<b>S2</b>

Note: RTF 10 size available in bowl length 1 only.

## 7 Design Code

Only for information **X**



## Return Line Filters ■ Type RTF20


**Product Description**

STAUFF RTF20 Return Line Filters are designed as tank top filters with a maximum operating pressure of 10 bar / 145 PSI and flow rates up to 115 l/min / 30 US GPM. The filter bowl is designed to return the oil beneath the surface thus preventing entrainment of air. RTF20 series compact design and integral breather make them ideal for mobile hydraulic applications.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminum
- Filter bowl & cap: Polyamide
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread

**Flow Rating**

- Up to 115 l/min / 30 US GPM

**Operating Pressure**

- Max. 10 bar / 145 PSI

**Burst Pressure**

- Min. 30 bar / 435 PSI

**Temperature Range**

- -25 °C ... +95 °C / -13 °F ... +203 °F

**Integrated Breather**

- Filter paper 10 µm
- Filter paper 40 µm

**Filter Elements**

- Specifications see page C106

**Media Compatibility**

- Mineral oils, other fluids on request

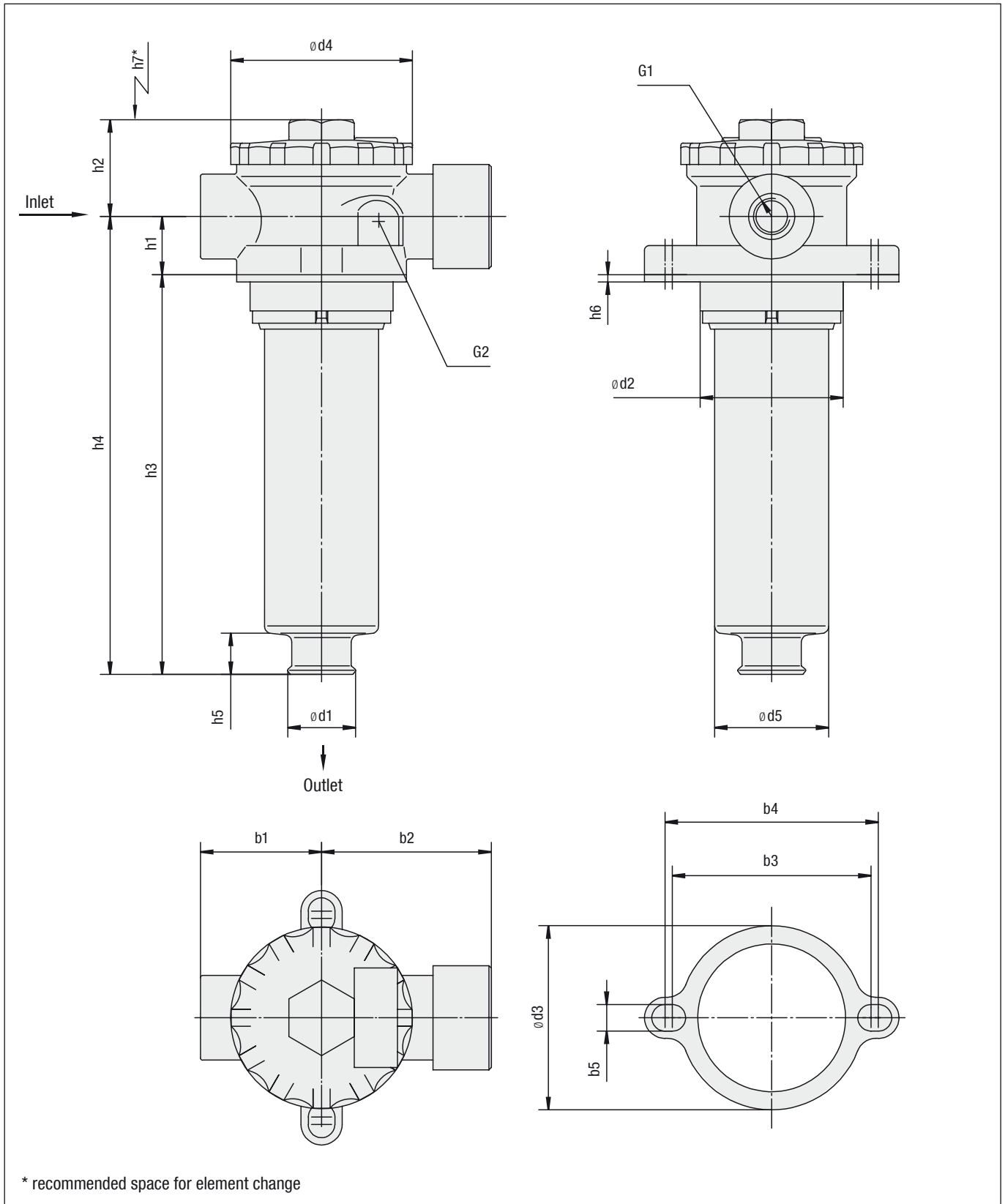
**Options and Accessories**
**Valve**

- Bypass valve: Opening pressure 1,7 bar / 25 PSI  
(integrated in the filter element) Other settings available on request

**Clogging Indicators**

- Visual clogging indicator, coloured segments
- Electrical clogging switch, adjustable  
Other clogging indicators available on request

## Return Line Filters ■ Type RTF20



\* recommended space for element change

## Return Line Filters ■ Type RTF20

Thread Connection G1	Filter Size RTF	
	020	
BSP	1/2	3/4
NPT	1/2	3/4
SAE Thread	3/4-16	1-1/16

Dimensions (mm/in)	Filter Size RTF	
	020	
b1	50	
	1.97	
b2	70	
	2.76	
b3	82	
	3.23	
b4	88	
	3.46	
b5	11	
	.43	
d1	28	
	1.10	
d2*	Min. 60 / Max. 63	
	Min. 2.36 / Max. 2.48	
d3	77	
	3.03	
d4	75	
	2.95	
d5	48	
	1.89	
h1	24	
	.94	
h2	37,5	
	1.48	
h3	178	
	7.01	
h4	202	
	7.95	
h5	16	
	.63	
h6	2	
	.07	
h7	210	
	8.27	
G2	G1/8 or	
	1/8 NPT	

\* recommended diameter for mounting hole

## Return Line Filter Housings / Complete Filters ▪ Type RTF20

**RTF** **20** **D** **10** **B** / **N1** / **V** / **L10** / **D** / **X**

1 2 3 4 5 6 7 8 9 10

## 1 Type

Return Line Filter **RTF20**

## 2 Group

**Flow** **Size**  
115 l/min / 30 US GPM **20**  
Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C119 / C120.

## 3 Filter Material

Material	Max. Δp*collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	6, 10, 20	<b>G</b>
Filter paper	10 bar / 145 PSI	10	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

6 μm **06**  
10 μm **10**  
20 μm **20**

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
FPM (Viton®) **V**

Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Thread	Code
BSP	1/2	<b>B1</b>
BSP	3/4	<b>B2</b>
NPT	1/2	<b>N1</b>
NPT	3/4	<b>N2</b>
SAE O-ring Thread	3/4-16	<b>S1</b>
SAE O-ring Thread	1-1/16-12	<b>S2</b>

## 7 Clogging Indicator

No clogging indicator **0**  
Visual clogging indicator **V**  
Electrical clogging indicator **E**

Note: See pages C104 and C121 for more details on indicator ports and types.

## 9 Dipstick

Without dipstick **none**  
With dipstick **D**

## 10 Design Code

Only for information **X**

## Filter Elements ▪ Type RTE

**RTE** - **20** **D** **10** **B** / **X**

1 2 3 4 5 6

## 1 Type

Filter Element Series **RTE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. Δp*collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	6, 10, 20	<b>G</b>
Filter paper	10 bar / 145 PSI	10	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

6 μm **06**  
10 μm **10**  
20 μm **20**

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
FPM (Viton®) **V**

Note: Other sealing materials on request

## 6 Design Code

Only for information **X**

## Air Filter Elements ▪ Type RTEA

**RTEA** - **020** **L** **10** **B** / **X**

1 2 3 4 5 6

## 1 Type

Air Filter Element Series **RTEA**

## 2 Group

Air filter for RTF20

## 3 Filter Material

Filter Paper **L**  
Note: Other materials on request

## 4 MicronRating

10 μm **10**  
Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
Note: Other sealing materials on request

## 6 Design Code

Only for information **X**

## Return Line Filters ■ Type RTF40


**Product Description**

STAUFF RTF40 Return Line Filters are designed as tank top filters with a maximum operating pressure of 6,9 bar / 100 PSI. The filter bowl is designed to return the oil beneath the surface thus preventing entrainment of air.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminum
- Filter bowl: Bowl length 1: Polyamide  
Bowl length 2: Steel
- Sealings: NBR (Buna-N®)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread
- SAE flange

**Flow Rating**

- Up to 378 l/min / 100 US GPM

**Operating Pressure**

- Max. 6,9 bar / 100 PSI

**Temperature Range**

- -25 °C ...+95 °C / -13 °F ... +203 °F

**Filter Elements**

- RTE-47 with integrated bypass valve, single stack length
- RTE-48 bypass valve integrated in the filter head, equivalent to the HF-4 elements, single and double stack lengths
- RTE-49 bypass valve integrated in the filter head, single and double stack lengths
- Specifications see page C110

**Media Compatibility**

- Mineral oils, other fluids on request

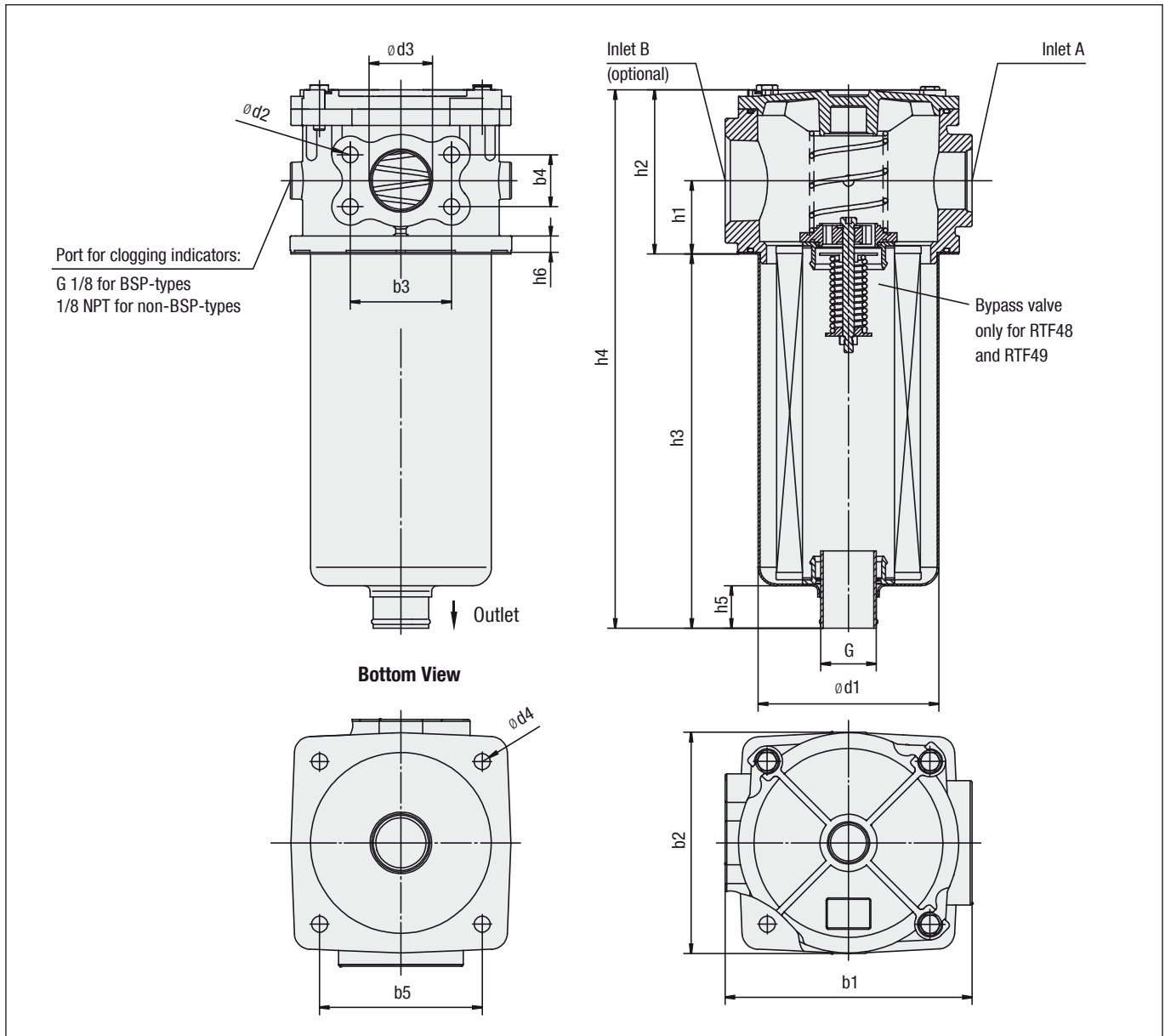
**Options and Accessories**
**Valve**

- Bypass valve: Opening pressures 1 bar / 14.5 PSI  $\pm$ 10 % or  
1,7 bar / 25 PSI  $\pm$ 10 %  
RTF47: Bypass intergrated in the filter element  
RTF48/49: Bypass integrated in the filter head

**Clogging Indicators**

- Visual clogging indicator, coloured segments
- Electrical clogging switch, adjustable  
Other clogging indicators available on request

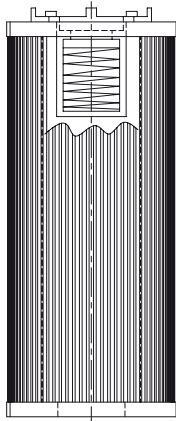
## Return Line Filters ■ Type RTF40



## Filter Elements ■ Types RTE-47 / RTE-48 / RTE-49

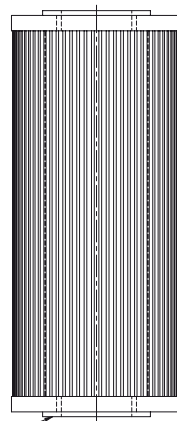
## RTE-47

- with integrated bypass valve
- single stack length



## RTE-48

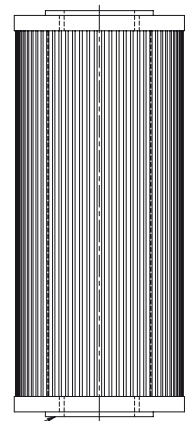
- bypass valve integrated in the filter head
- equivalent to the HF-4 elements
- single and double stack lengths



Seal: NBR (Buna®)

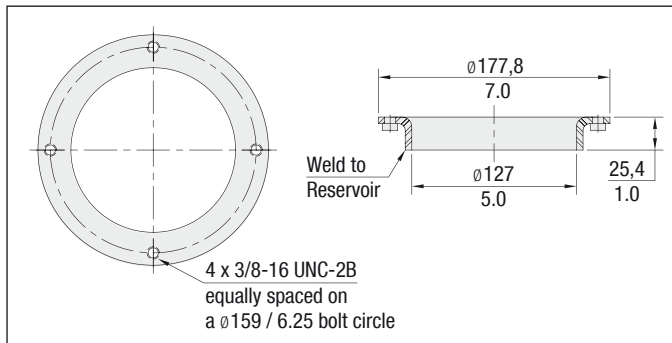
## RTE-49

- bypass valve integrated in the filter head
- single and double stack lengths



Seal: NBR (Buna®)

## Return Line Filters - Type RTF40


**RTF40 Series Weld Ring WR-40**

The WR-40 weld ring is welded directly to the hydraulic reservoir, eliminating the need for drilling and tapping mounting holes in the reservoir.

Material: Carbon Steel

Thread Connection Combinations	Filter Size RTF			
	4...S1		4...S2	
	Inlet A	Inlet B	Inlet A	Inlet B
BSP (B)	1-1/4 and 1-1/2 SAE Flange	None	1-1/4 and 1-1/2 SAE Flange	None
BSP (BB)	1-1/4 and 1-1/2 SAE Flange	1-1/4	1-1/4 and 1-1/2 SAE Flange	1-1/4
NPT (N)	1-1/4 and 1-1/2 SAE Flange	None	1-1/4 and 1-1/2 SAE Flange	None
NPT (NN)	1-1/4 and 1-1/2 SAE Flange	1-1/4	1-1/4 and 1-1/2 SAE Flange	1-1/4
NPT (M)	1-1/2	None	1-1/2	None
NPT (MN)	1-1/2	1-1/4	1-1/2	1-1/4
NPT (MM)	1-1/2	1-1/2	1-1/2	1-1/2
SAE (S)	1-5/8-12	None	1-5/8-12	None
SAE (SS)	1-5/8-12	1-5/8-12	1-5/8-12	1-5/8-12
SAE (ST)	1-5/8-12	1-7/8-12	1-5/8-12	1-7/8-12
SAE (SU)	1-5/8-12	2-1/2-12	1-5/8-12	2-1/2-12
SAE (TT)	1-7/8-12	1-7/8-12	1-7/8-12	1-7/8-12
Combination SAE & NPT (SO)	1-5/8-12	2	1-5/8-12	2

Dimensions (mm/in)	Filter Size RTF	
	4...S1	4...S2
h1	50	50
	1.97	1.97
h2	112	112
	4.41	4.41
h3	263	475
	10.35	18.70
h4	385	587
	15.16	23.11
h5	21	38
	.83	1.50
h6	11	11
	.43	.43
b1	170	170
	6.70	6.70
b2	152	152
	5.98	5.98
b3	69.9	69.9
	2.75	2.75
b4	35.6	35.6
	1.40	1.40
b5	112	112
	4.41	4.41
d1	122	126
	4.80	4.96
d2	M12 or 1/2-13 UN	M12 or 1/2-13 UN
d3	38,1	38,1
	1,50	1,50
d4	11	11
	.43	.43
G	G1-1/2 or 1-1/2 NPT	G1-1/2 or 1-1/2 NPT



## Return Line Filter Housings / Complete Filters ■ Type RTF40

**RTF** **48** **...** **...** **B** / **N** / **25** / **S2** / **V** / **X**

1 2 3 4 5 6 7 8 9 10

## 1 Type

Return Line Filter **RTF**

## 2 Group

Flow	Size
190 l/min / 50 US GPM	<b>47</b>
190 l/min / 50 US GPM	<b>48</b>
190 l/min / 50 US GPM	<b>49</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C119 / C120.  
For element length 2 (only RTF48 / RTF49) please double relating flow values.

## 3 Filter Material

Material	Max. $\Delta p$ *collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 25	<b>G</b>
Filter paper	10 bar / 145 PSI	3, 10, 20, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Group		Code
	Port A	Port B	
BSP	1-1/4 and 1-1/2 SAE Flange	None	<b>B</b>
BSP	1-1/4 and 1-1/2 SAE Flange	1-1/4	<b>BB</b>
NPT	1-1/4 and 1-1/2 SAE Flange	None	<b>N</b>
NPT	1-1/4 and 1-1/2 SAE Flange	1-1/4	<b>NN</b>
NPT	1-1/2	None	<b>M</b>
NPT	1-1/2	1-1/4	<b>MN</b>
NPT	1-1/2	1-1/2	<b>MM</b>
SAE	1-5/8-12	None	<b>S</b>
SAE	1-5/8-12	1-5/8-12	<b>SS</b>
SAE	1-5/8-12	1-7/8-12	<b>ST</b>
SAE	1-5/8-12	2-1/2-12	<b>SU</b>
SAE	1-7/8-12	1-7/8-12	<b>TT</b>
Combination NPT & SAE	1-5/8-12	2	<b>SO</b>

## 7 Valve

No bypass	<b>00</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 24.6 PSI	<b>25</b>

## 8 Length

Bowl Length 1 (1 element)	<b>S1</b>
Bowl Length 2 (2 elements)	<b>S2</b>

Note: RTF 47 size available in S1 bowl length only.

## 9 Clogging Indicator

No clogging indicator	<b>ohne</b>
Visual clogging indicator	<b>V</b>
Electrical clogging indicator	<b>E</b>

Note: See pages C108 and C121 for more details on indicator ports and options.

## 10 Design Code

Only for information	<b>X</b>
----------------------	----------

## Filter Elements ■ Type RTE

**RTE** - **48** **D** **10** **B** / **X**

1 2 3 4 5 6

## 1 Type

Filter Element Series **RTE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p$ *collapse	Micron ratings available	Code
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 25	<b>G</b>
Filter paper	10 bar / 145 PSI	3, 10, 20, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
Note: Other sealing materials on request

## 6 Design Code

Only for information **X**

## Return Line Filters ▪ Type RTF50


**Product Description**

STAUFF RTF50 Return Line Filters are designed for tank top applications with a maximum pressure of 6,9 bar / 100 PSI. The filter bowl is designed to return the oil beneath the surface thus preventing entrainment of air. The RTF58 elements interchange with the popular "K" series and RTF59 elements interchange with the "RE-409" series elements.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminum
- Filter bowl: Bowl length 1: Polyamide  
Bowl length 2: Steel
- Sealings: NBR (Buna-N®)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread

**Flow Rating**

- Up to 379 l/min / 100 US GPM

**Operating Pressure**

- Max. 6,9 bar / 100 PSI

**Temperature Range**

- -25 °C ...+95 °C / -13 °F ... +203 °F

**Filter Elements**

- Specifications see page C114

**Media Compatibility**

- Mineral oils, other fluids on request

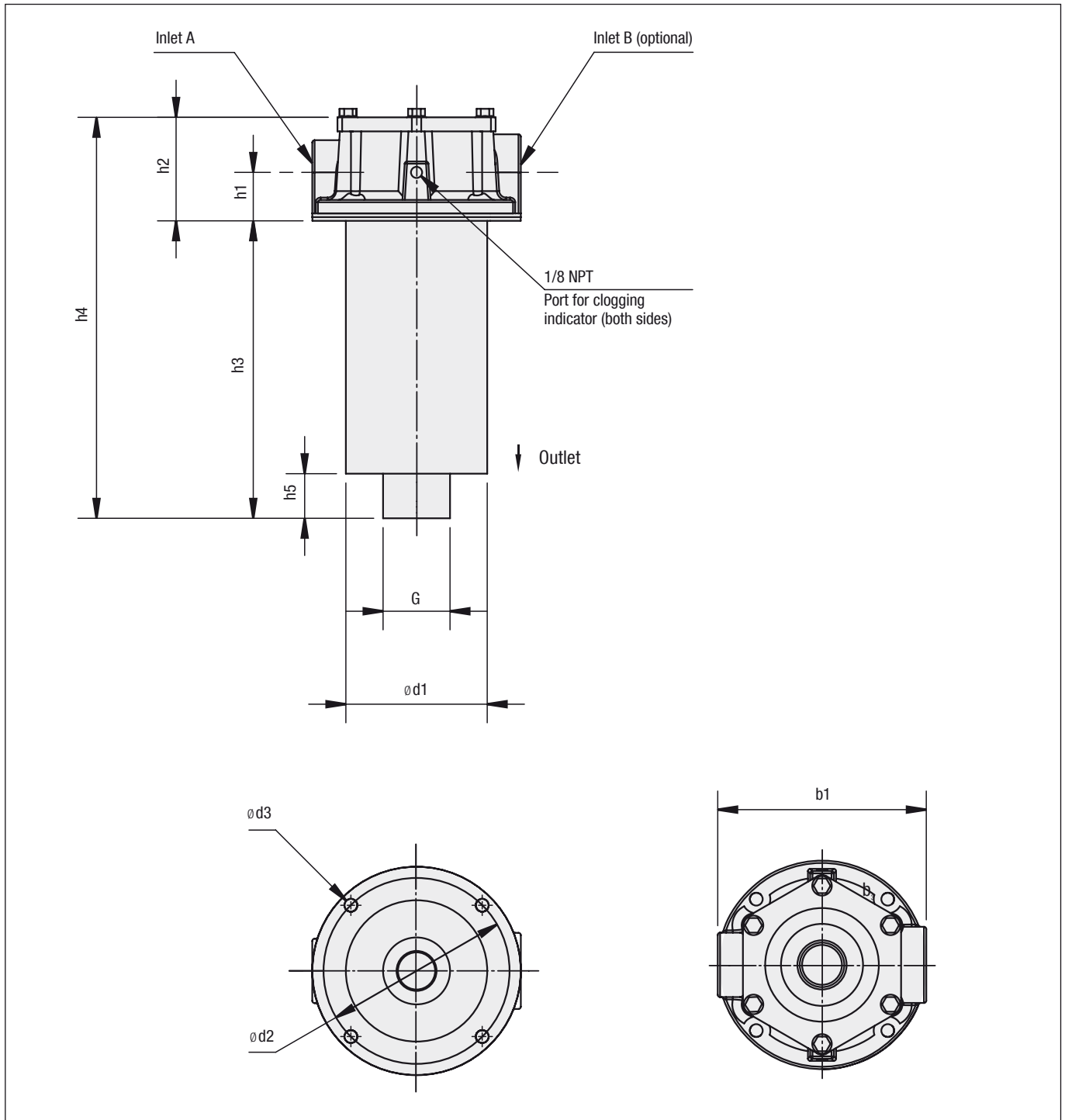
**Options and Accessories**
**Valve**

- Bypass valve: Opening pressures 1 bar / 14.5 PSI  $\pm$ 10 % or 1,7 bar / 25 PSI  $\pm$ 10 %  
Other settings available on request

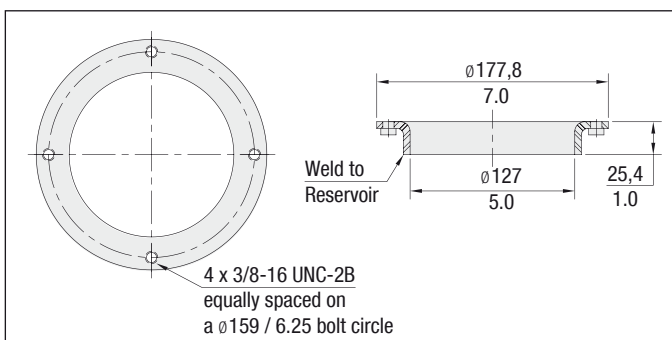
**Clogging Indicators**

- Visual clogging indicator, coloured segments
- Electrical clogging switch, adjustable  
Other clogging indicators available on request

Return Line Filters - Type RTF50



Return Line Filters - Type RTF Accessories



RTF50 Series Weld Ring WR-40

The WR-40 weld ring is welded directly to the hydraulic reservoir, eliminating the need for drilling and tapping mounting holes in the reservoir.

Material: Carbon Steel

Dimensions in mm / in

## Return Line Filters ■ Type RTF50

Thread Connection Combinations	Filter Size RTF			
	5...S1		5...S2	
	Inlet A	Inlet B	Inlet A	Inlet B
NPT (N)	1-1/4	None	1-1/4	None
NPT (NM)	1-1/4	1-1/2	1-1/4	1-1/2
NPT (M)	None	1-1/2	None	1-1/2
Combination SAE & NPT (SM)	1-5/8-12	1-1/2	1-5/8-12	1-1/2
SAE (S)	1-5/8-12	None	1-5/8-12	None
SAE (T)	None	1-7/8-12	None	1-7/8-12
SAE (ST)	1-5/8-12	1-7/8-12	1-5/8-12	1-7/8-12
Combination NPT & SAE (NT)	1-1/4	1-7/8-12	1-1/4	1-7/8-12

Dimensions (mm/in)	Filter Size RTF	
	5...S1	5...S2
h1	49,3	42,3
	1,94	1,67
h2	95,5	88,5
	3,78	3,48
h3	241,3	485,9
	9,50	19,13
h4	336,8	574,9
	13,26	22,61
h5	29,5	38,1
	1,16	1,50
b1	177,8	177,8
	7,00	7,00
d1	124,8	126
	4,91	4,96
d2	158,7	158,7
	6,25	6,25
d3	11,2	11,2
	.44	.44
G	1-1/2 NPT	1-1/2 NPT

## Return Line Filter Housings / Complete Filters ■ Type RTF50

**RTF** **58** **...** **...** **B** / **N** / **25** / **S2** / **V** / **X**

1 2 3 4 5 6 7 8 9 10

## 1 Type

Return Line Filter **RTF**

## 2 Group

Flow	Size
Group size 58	<b>58</b>
Group size 59	<b>59</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on page C120.

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 25	<b>G</b>
Filter paper	5 bar / 72.5 PSI	3, 10, 20, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Group		Code
	Port A	Port B	
NPT	1-1/4	None	<b>N</b>
NPT	1-1/4	1-1/2	<b>NM</b>
NPT	None	1-1/2	<b>M</b>
Combination SAE & NPT	1-5/8-12	1-1/2	<b>SM</b>
SAE	1-5/8-12	None	<b>S</b>
SAE	None	1-7/8-12	<b>T</b>
SAE	1-5/8-12	1-7/8-12	<b>ST</b>
Combination NPT & SAE	1-1/4	1-7/8-12	<b>NT</b>

## 7 Valve

No bypass	<b>00</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 24.6 PSI	<b>25</b>

## 8 Length

Bowl Length 1 (1 element)	<b>S1</b>
Bowl Length 2 (2 elements)	<b>S2</b>

## 9 Clogging Indicator

No clogging indicator	<b>N</b>
Visual clogging indicator	<b>V</b>
Electrical clogging indicator	<b>E</b>

Note: See pages C112 and C121 for more details on indicator ports and types.

## 10 Design Code

Only for information **X**

## Filter Elements ■ Type RTE

**RTE** - **58** **D** **10** **B** / **X**

1 2 3 4 5 6

## 1 Type

Filter Element Series **RTE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 25	<b>G</b>
Filter paper	5 bar / 72.5 PSI	3, 10, 20, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
Note: Other sealing materials on request

## 6 Design Code

Only for information **X**

## Return Line Filters ■ Type RTF-N


**Product Description**

STAUFF RTF-N Return Line Insert Filters allow for a choice of installation configurations which permits custom reservoir design with an in tank filtering system. The filters are installed semi-immersed or totally immersed into a reservoir. The filtration flow is from inside to the outside of the element which ensures that all the contaminant is collected inside the element itself avoiding contact with the reservoir fluid during element change. The combination of magnetic pre-filtration and high filtration efficiency results in a cost effective and versatile filtration system.

**Technical Data**
**Construction**

- Insert filter

**Materials**

- Flange plate: Aluminum
- Magnet rod: Steel
- Bypass: Steel
- Diffuser: Steel
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
Other sealing materials on request

**Flow Rating**

- Up to 500 l/min / 132 US GPM

**Operating Pressure**

- Max. 10 bar / 145 PSI

**Temperature Range**

- -29 °C ... +107 °C / -20 °F ... +225 °F

**Filter Elements**

- Specifications see page C118

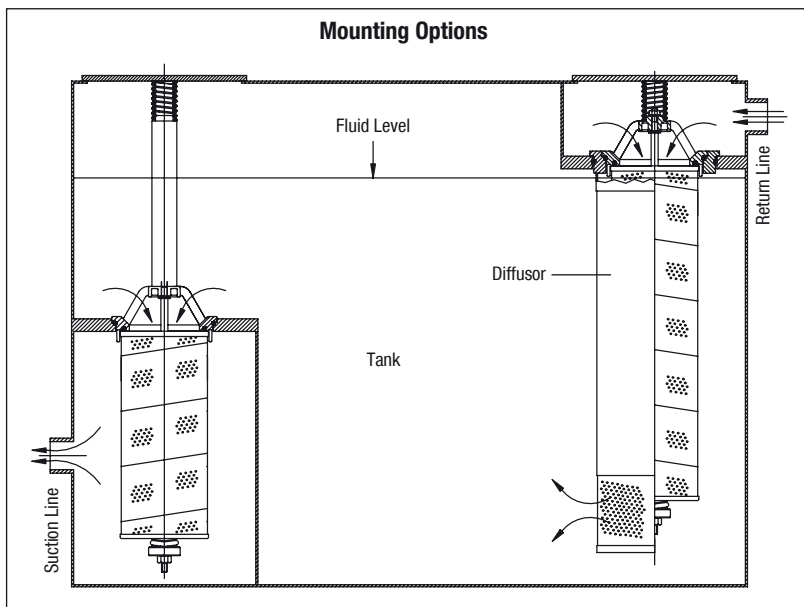
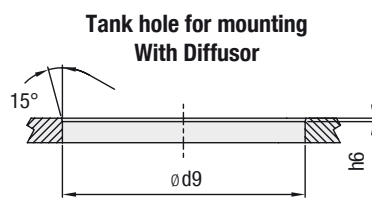
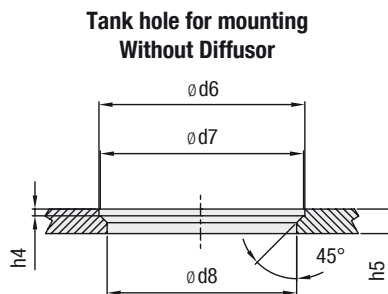
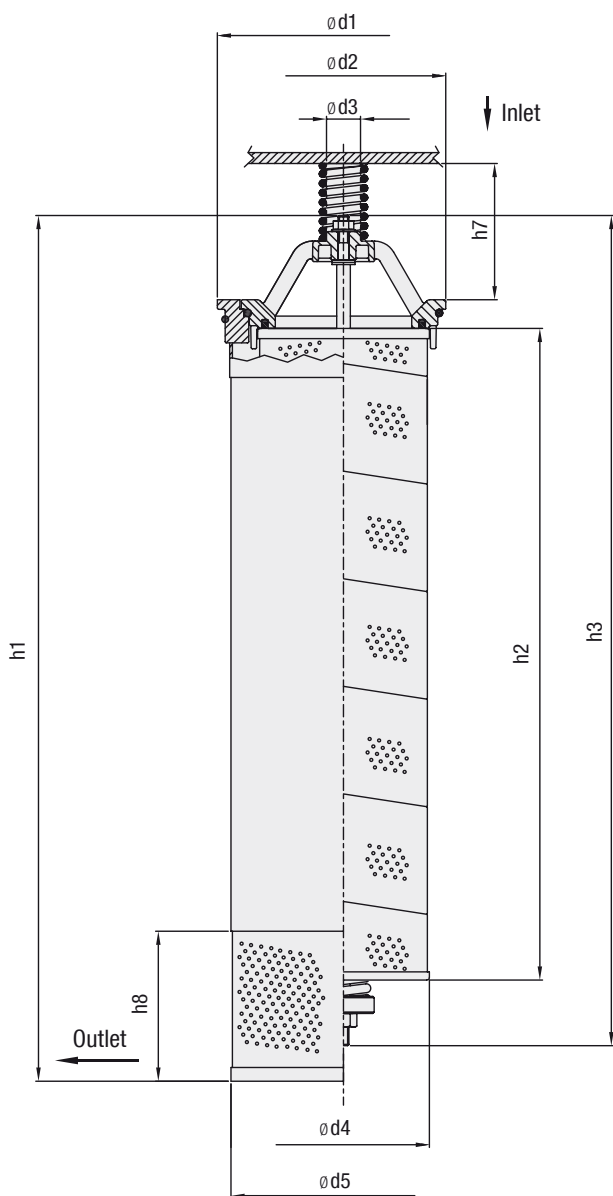
**Media Compatibility**

- Mineral oils, other fluids on request

**Options and Accessories**
**Valve**

- Bypass valve: Opening pressure 1,5 bar / 22 PSI  
(integrated in the filter element) Other settings available on request

Return Line Filters - Type RTF-N





## Return Line Filters ▀ Type RTF-N

Dimensions (mm/in)	Filter Size RTF-N	
	390	500
h1	445	635
	17.52	25.00
h2	290	478
	11.42	18.82
h3	421	609
	16.57	23.98
h4	5	5
	.20	.20
h5	18	18
	.71	.71
h6	2,5	2,5
	.10	.10
h7	100	100
	3.94	3.94
h8	110	110
	4.33	4.33
d1	185	185
	7.28	7.28
d2	150	150
	5.91	5.91
d3	25	25
	.98	.98
d4	126	126
	4.95	4.95
d5	165	165
	6.50	6.50
d6	151	151
	5.94	5.94
d7	149	149
	5.87	5.87
d8	139	139
	5.47	5.47
d9	178	178
	7.01	7.01

## Return Line Filter Housings / Complete Filters ■ Type RTF-N

**RTF-N** **500** **...** **...** / **B** / **22** / **D** / **X**
**1** **2** **3** **4** **5** **6** **7** **8**
**1** TypeReturn Line Insert Filter **RTF-N****2** Group

Flow	Size
390 l/min / 103 US GPM	<b>390</b>
500 l/min / 132 US GPM	<b>500</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on page C120.

**3** Filter Material

Material	Max. $\Delta p$ *collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 20	<b>E</b>
Filter paper	10 bar / 145 PSI	10	<b>L</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

**4** Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>

Note: Other micron ratings on request

**5** Sealing Material

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>

Note: Other sealing materials on request

**6** Bypass Setting

1,5 bar / 22 PSI	<b>22</b>
------------------	-----------

**7** Options

Without diffusor	<b>none</b>
With diffusor	<b>D</b>

**8** Design Code

Only for information	<b>X</b>
----------------------	----------

## Filter Elements ■ Type RA

**RA** - **500** **E** **10** / **B** / **X**
**1** **2** **3** **4** **5** **6**
**1** TypeElement for Insert Filter **RA****2** Group

According to filter housing

**3** Filter Material

Material	Max. $\Delta p$ *collapse	Micron ratings available	Code
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 20	<b>E</b>
Filter paper	10 bar / 145 PSI	10	<b>L</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

**4** Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>

Note: Other micron ratings on request

**5** Sealing Material

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>

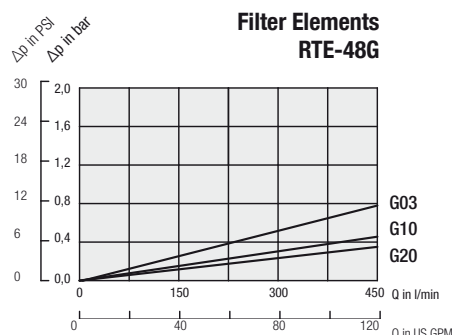
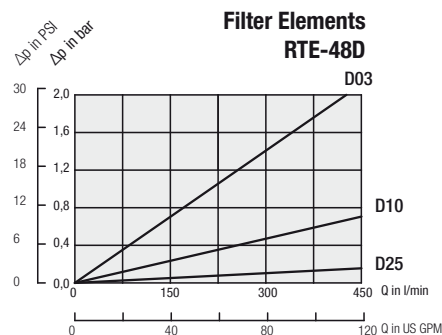
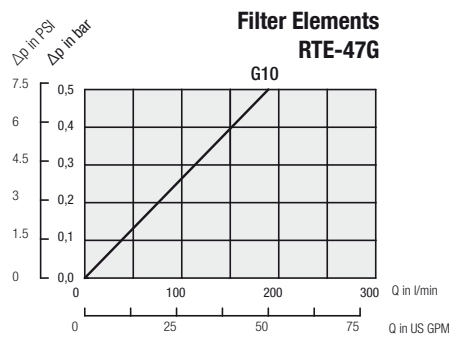
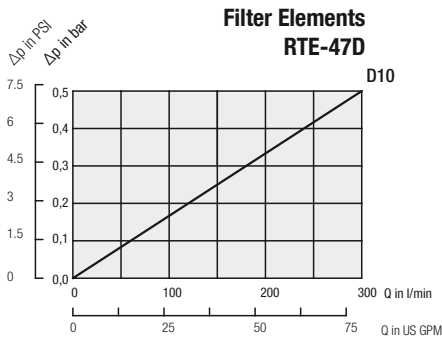
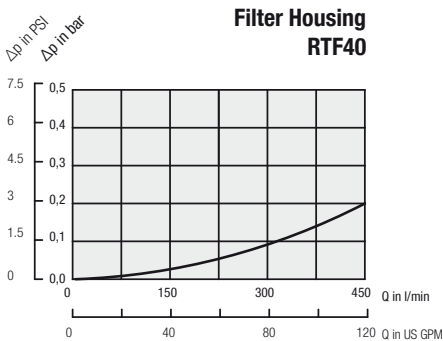
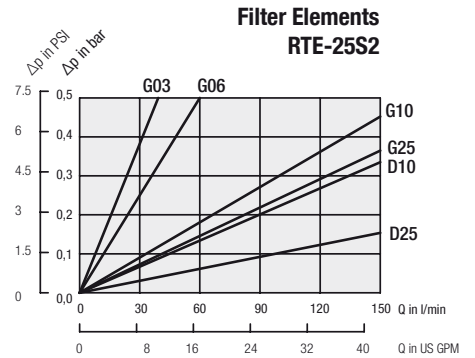
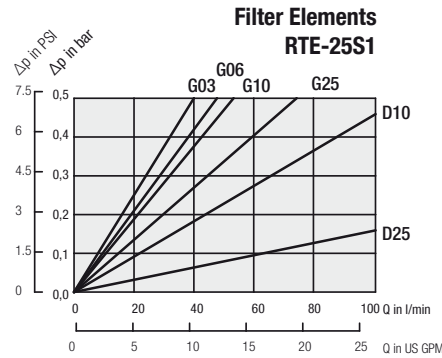
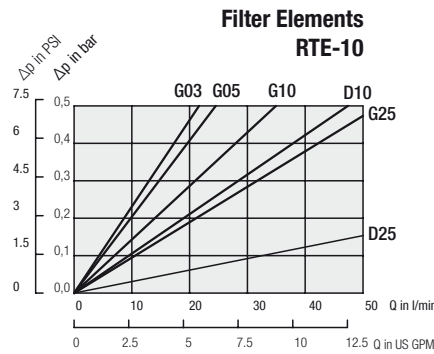
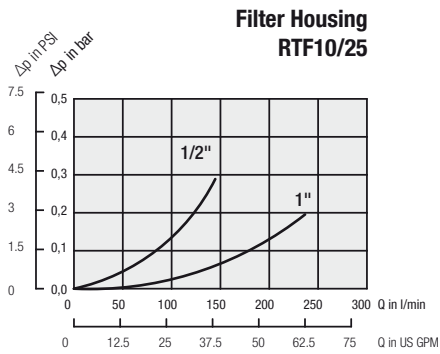
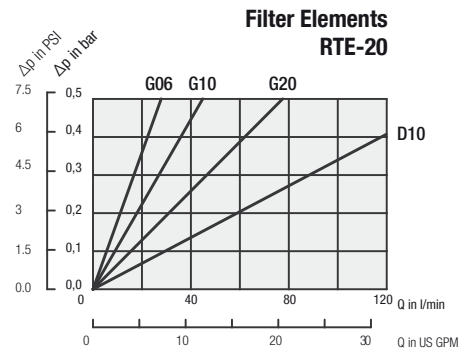
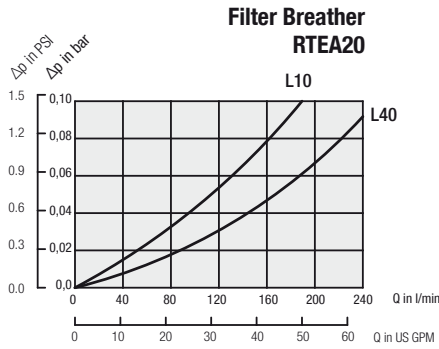
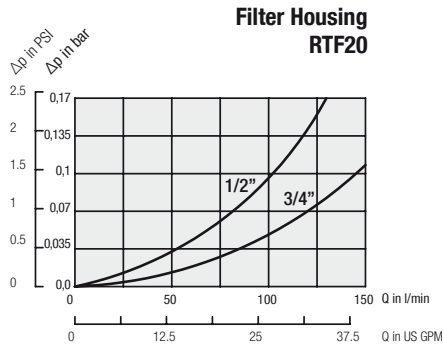
Note: Other sealing materials on request

**6** Design Code

Only for information	<b>X</b>
----------------------	----------

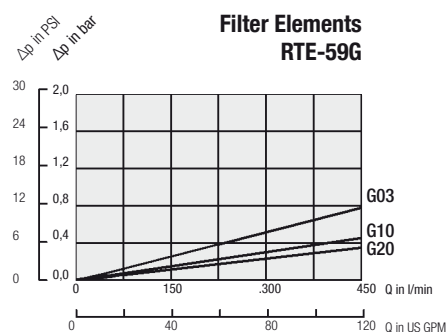
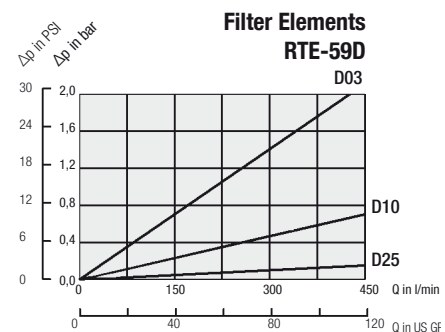
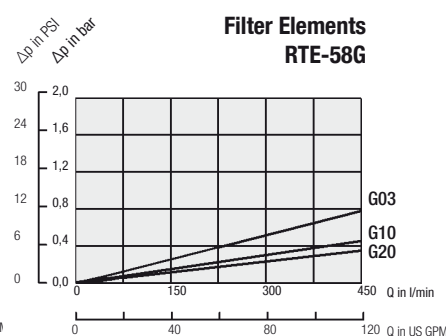
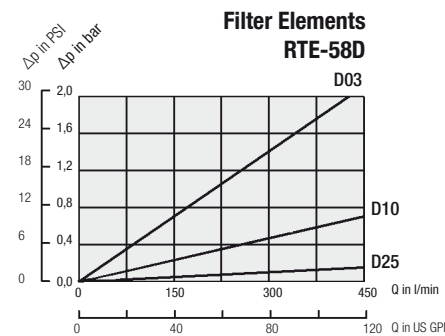
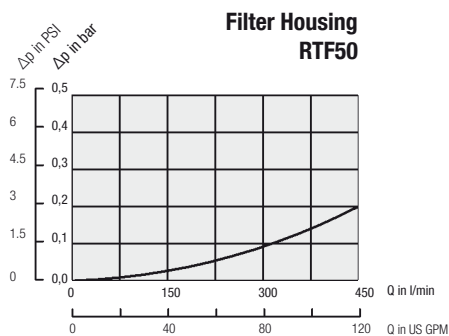
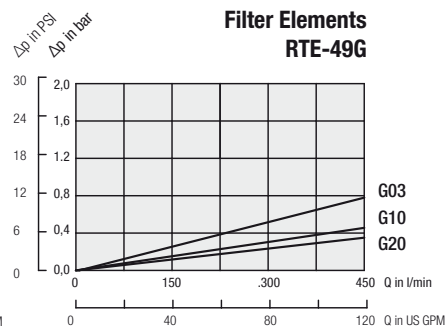
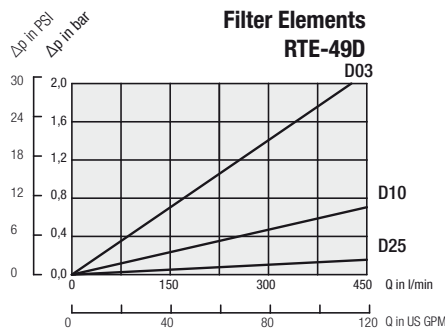
## Return Line Filters - Type RTF Flow Characteristics

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.

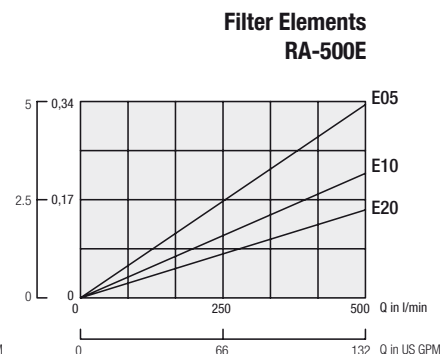
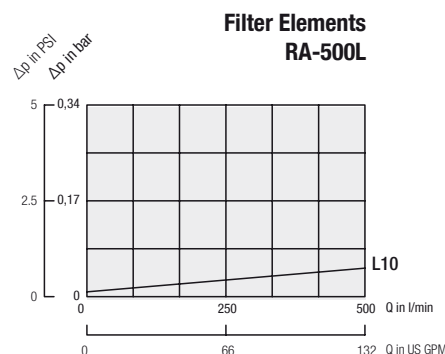
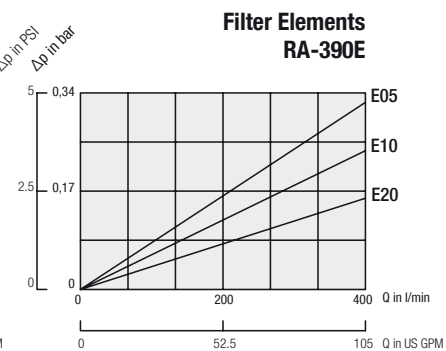
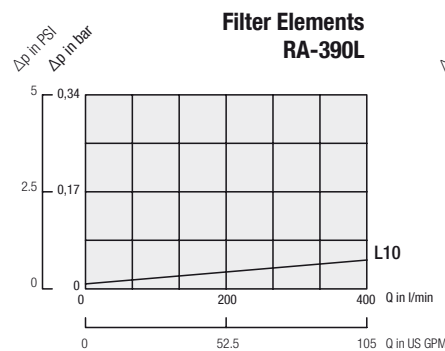
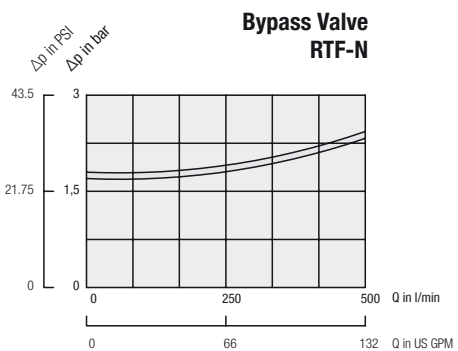


**Return Line Filters - Type RTF Flow Characteristics**

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.



Note: Element pressure drop curves are for "S1" single elements. For "S2" double elements use 50% of the "S1" Value.



## RTF Filter Indicators

## Visual Indicators



SIM

CI

Visual Pressure Clogging Indicators							
	Type	Thread Connection G	Unit of scale	Range of scale	Coloured Segments		
					Green	Yellow	Red
BSP	SIM-02	1/8	bar	0 ... 2,5	0 ... 1,2	1,2 ... 1,5	1,5 ... 2,5
	SIM-04	1/8	bar	0 ... 4	0 ... 2,5	2,5 ... 3	3 ... 4
	SIM-12	1/8	bar	0 ... 12	without coloured segments		
NPT	CI-12	1/8	PSI	0 ... 100	0 ... 13	13 ... 15	15 ... 100
	CI-20	1/8	PSI	0 ... 100	0 ... 21	21 ... 25	25 ... 100

## Electrical Indicators



SIE-NO/NC

EPS

Electrical Clogging Indicators					
	Type	Thread Connection G	Unit of scale	Adjustable range / Actuating pressure	Max. over pressure
BSP	SIE-NO	1/8	bar	1,3 (normally open)	80 bar / 1160 PSI
	SIE-NC	1/8	bar	1,3 (normally closed)	80 bar / 1160 PSI
	EPS-1B	1/8	bar	0,35 ... 2,5	25 bar / 362 PSI
NPT	EPS-1	1/8	PSI	5 ... 35	24 bar / 350 PSI

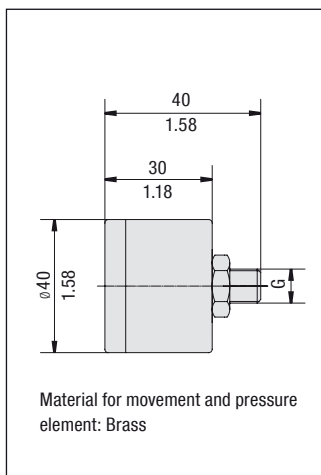
## Technical Data SIE / EPS

	Type EPS-1 / 1B
Electrical data	6 Amp 125/250 V AC
Protection	DIN 43650 IP65
Temperature Range	-5 °C ... +90 °C / +23 °F ... +194 °F (ambient and media)
Diaphragm Material	NBR
Housing Material	Brass
Adjustable Range	0,35 bar ... 2,0 bar / 5 ... 30 PSI
Dead Band	20% F.S.
Weight	0,1 kg / .22 lbs
Repeatability	± 2 %
Hirschmann Connector With Strain Relief	

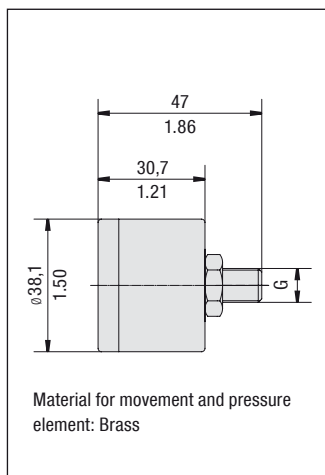
	Type SIE (electrical switch)
Electrical data	48V
Protection	DIN 43650 IP54
Temperature Range	-5 °C ... +60 °C / +23 °F ... +140 °F (ambient and media)
Diaphragm Material	NBR
Housing Material	Brass
Actuating Pressure	1,3 bar / 19 PSI
Max. current (res.)	0,5 A
Max. current (ind.)	0,2 A
Available as "normally open" (closes contact at actuating pressure) and as "normally closed" (opens contact at actuating pressure)	

## Dimensions

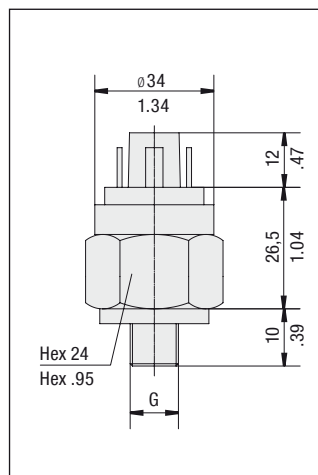
## Type SIM



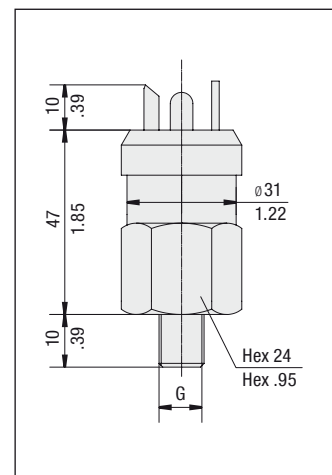
## Type CI



## Type SIE



## Type EPS



Note: The customer / user carries the responsibility for the electrical connection.

## Spin-On Filters ■ Introduction



### Product Description

STAUFF provides a complete range of Spin-On filters which can be used either as suction filters or as return line filters for low pressure applications. The various ranges meet international standards. The corresponding STAUFF Filter Elements are available from stock.

### Technical Data

#### Material

- Filter head: Aluminium
- Sealings: NBR (Buna-N®)

#### Port Connection

- BSP
- NPT
- SAE Flange
- SAE O-ring thread
- Other port connections on request

#### Operating Pressure

- Up to 14 bar / 200 PSI

#### Nominal Flow Rate

- Up to 460 l/min / 120 US GPM

### Options and Accessories

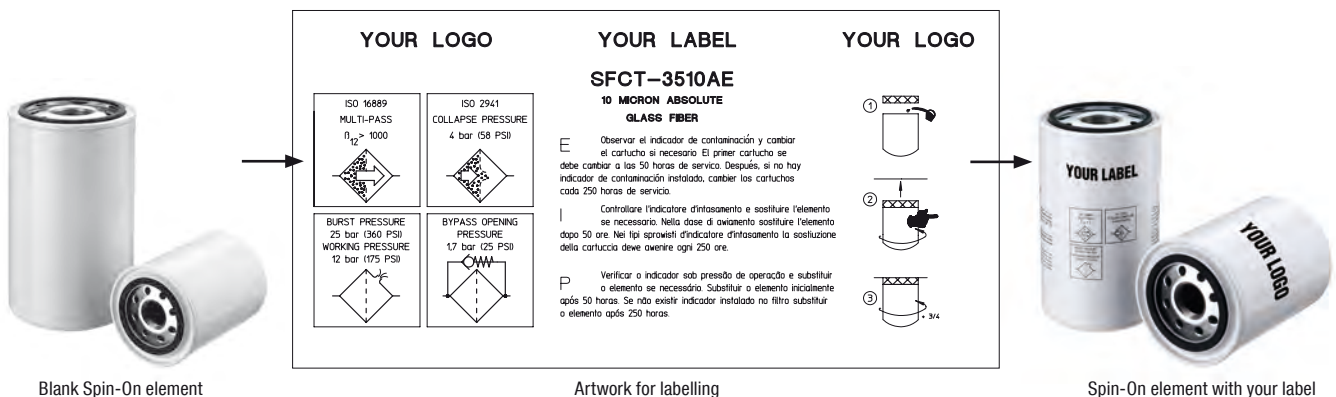
#### Clogging Indicators

- Visual clogging indicator with coloured segments
- Electrical clogging switch
- Other types available on request

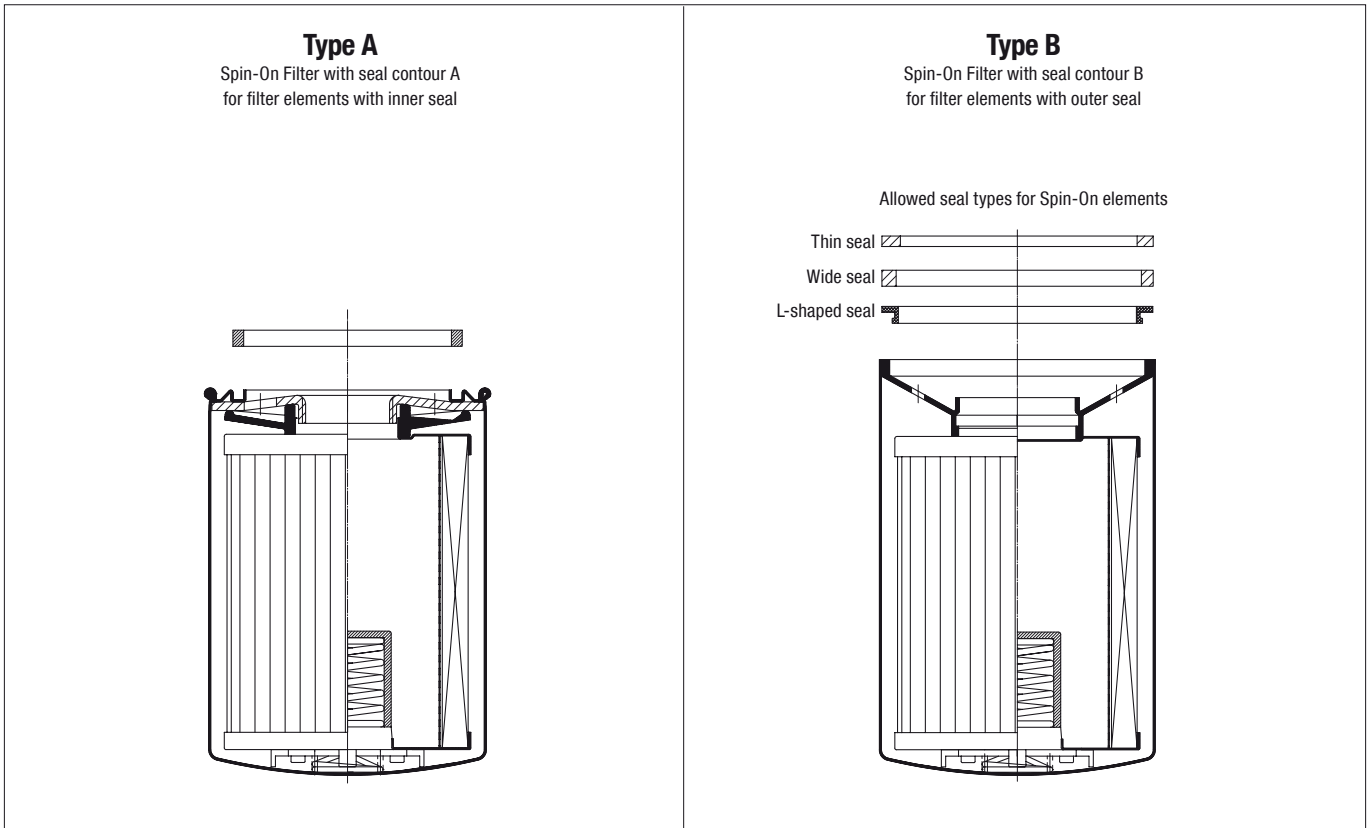
#### Private Labelling

- On request, the filter elements can be printed with a private label

### Private Labeling



## Spin-On Filters ■ Quick Reference Guide



## Spin on Filters Quick Reference Guide

Spin-On Filter Heads								Spin-On Filter Elements (see page ...)							
Series	Size	Port	Spigot	Max. Flow Rate*		Catalog Page	Seal Contour		SF63	SF65	SF67	SFC-35 SFC-36	SFC-57 SFC-58	SFCT-35 SFCT-36	SFCT-57 SFCT-58
				l/min	US GPM		Type A	Type B							
SLF	02	1/4 NPT	3/4-16 UNF	19	5	C124	x		C141						
SLF	03	3/8 NPT	3/4-16 UNF	19	5	C124	x		C141						
SLF	04	9/16-18 UN	3/4-16 UNF	26	7	C124	x		C141						
SAF	05	1/2 NPT	1-12 UNF	57	15	C125	x			C142					
SAF	06	3/4-16 UN	1-12 UNF	57	15	C125	x			C142					
SAF	07	3/4 NPT	1-12 UNF	90	25	C125	x			C142					
SAF	11	1-1/16-12 UN	1-12 UNF	90	25	C125	x			C142					
SAF	10	1 NPT	1-12 UNF	128	34	C126	x			C142					
SAF	13	1-5/16-12 UN	1-12 UNF	128	34	C126	x			C142					
SSF	12	G3/4	G3/4	90	25	C127	x					C139			
SSF	20L	G1-1/4	G1-1/4 + 1-1/2-16 UN	225	60	C128	x	x			C143		C140		
SSF	100	1 NPT	G1-1/4 + 1-1/2-16 UN	170	45	C129	x	x			C143		C140		
SSF	120L	1-1/4 NPT	G1-1/4 + 1-1/2-16 UN	225	60	C129	x	x			C143		C140		
SSF	120	1-1/4 NPT	G1-1/4 + 1-1/2-16 UN	225	60	C129	x	x			C143		C140		
SSF	130	1-5/16-12 UN	G1-1/4 + 1-1/2-16 UN	225	60	C129	x	x			C143		C140		
SSF	160	1-5/8-12 UN	G1-1/4 + 1-1/2-16 UN	225	60	C129	x	x			C143		C140		
SSF	150	1-1/2 NPT	1-1/2-16 UN	300	80	C130		x			C143				
SSF	180	1-7/8-12 UN	1-1/2-16 UN	300	80	C130		x			C143				
SSF	24B	G1-1/2	G1-1/4 + 1-1/2-16 UN	454	120	C131	x	x			C143		C140		
SSF	24N	1-1/2 NPT	G1-1/4 + 1-1/2-16 UN	454	120	C132	x	x			C143		C140		
SSF	24S	1-7/8-12 UN	G1-1/4 + 1-1/2-16 UN	454	120	C132	x	x			C143		C140		
SSF	25B	G1-1/2 and 1-1/2 SAE Flange	G1-1/4 + 1-1/2-16 UN	454	120	C133	x	x			C143		C140		
SSF	25	1-1/2 NPT and 2 SAE Flange	G1-1/4 + 1-1/2-16 UN	454	120	C134	x	x			C143		C140		
SSFT	12B	G3/4	G3/4	75	20	C135	x	x						C139	
SSFT	12	3/4 NPT	G3/4	75	20	C136	x	x						C139	
SSFT	20B	G1-1/2	G1-1/4 + 1-1/2-16 UN	200	53	C137	x								C140
SSFT	20	1-1/2 NPT	G1-1/4 + 1-1/2-16 UN	200	53	C138	x								C140

\* Note: Reflects nominal flow rate for return line application. Actual flow rate will depend on selected element and the viscosity of the fluid.



## Spin-On Filter Heads ■ SLF-02 / 03 / 04

## Dimensions



## Technical Data

## Construction

- In-line Spin-On filter head

## Material

- Aluminium

## Port Connection

- NPT
- SAE O-ring thread

## Flow Rate

- 26 l/min / 7 US GPM for return line application
- 7 l/min / 2 US GPM for suction line application

## Operating Pressure

- Max. 14 bar / 200 PSI
- Max. 5,5 bar / 80 PSI differential pressure (for any application with no bypass valve)

## Temperature Range

- -32 °C ... +100 °C / -25 °F ... +212 °F

## Media Compatibility

- Mineral oils, other fluids on request

## Options and Accessories

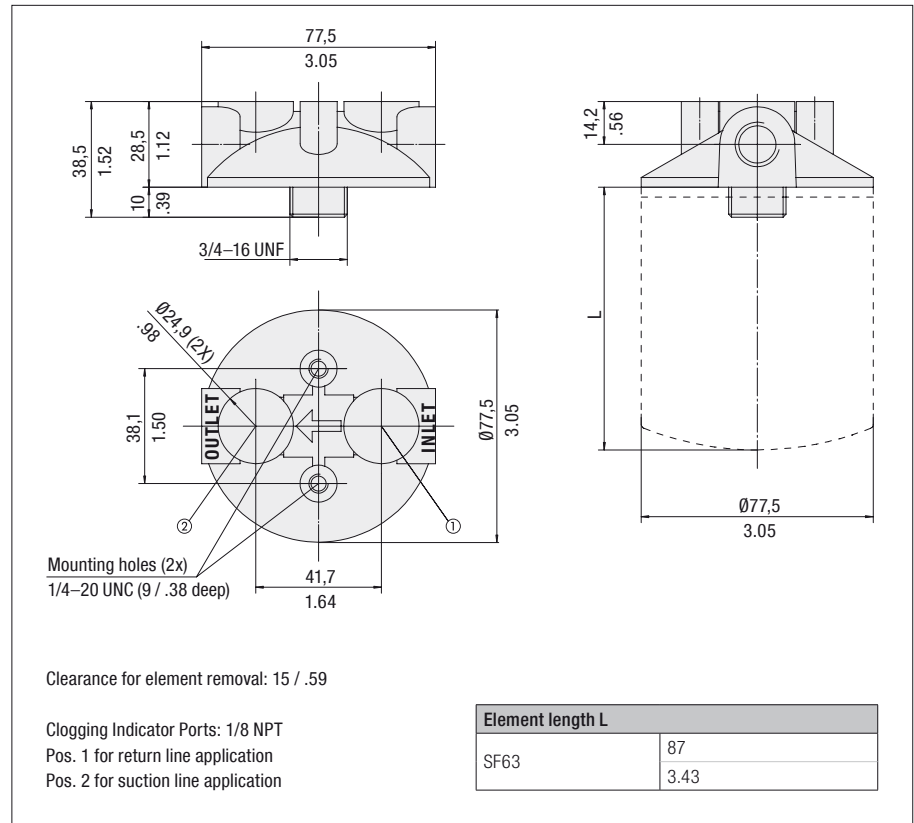


## Filter Elements

- For use with SF63 series elements
- For element types with seal contour type A
- For element types and flow characteristics see page C141
- The element is not part of the scope of delivery

## Clogging Indicators

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147



Dimensions in mm / in

## Order Code

SLF - 02 - 0

1

2

3

## 1 Type

Spin-On Filter Head **SLF**

## 2 Connection Style

Connection	Thread	Code
NPT	1/4	<b>02</b>
NPT	3/8	<b>03</b>
SAE	9/16-18	<b>04</b>

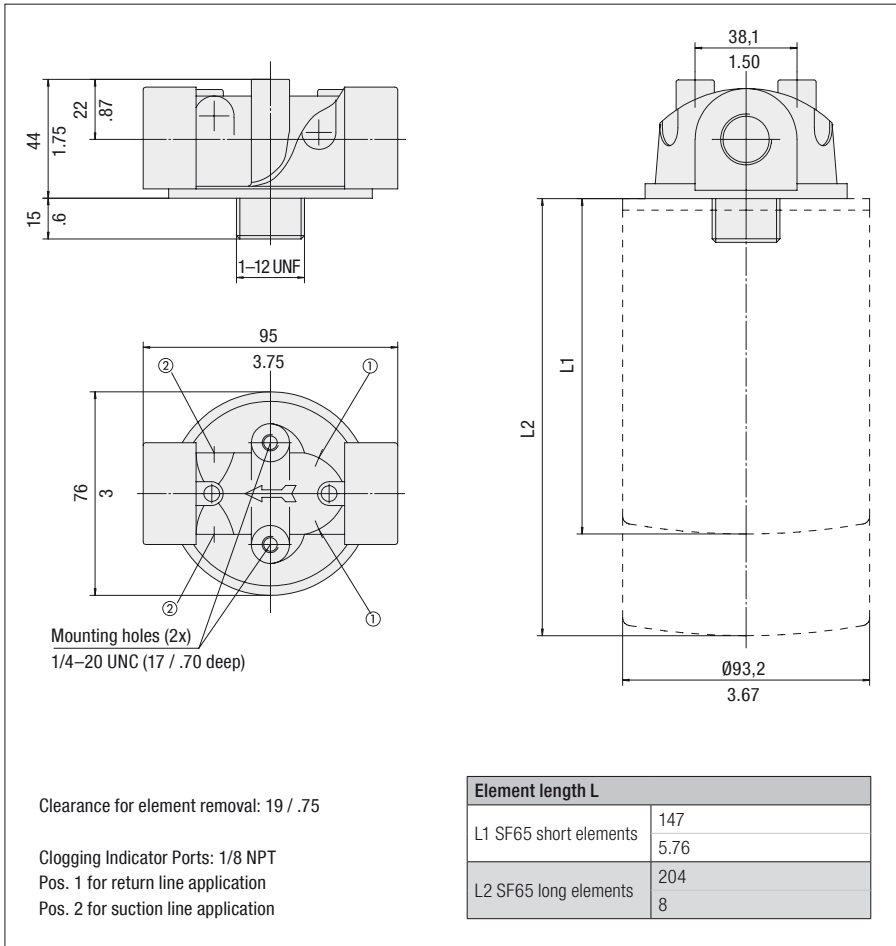
## 3 Clogging Indicator Port Options

No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Clogging indicator port drilled for suction line application	<b>2</b>
All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port is 1/8 NPT.

## Spin-On Filter Heads ■ SAF-05 / 06 / 07 / 11

## Dimensions



Dimensions in mm / in



## Technical Data

**Construction**

- In-line Spin-On filter head

**Material**

- Aluminium

**Port Connection**

- NPT
- SAE O-ring thread

**Flow Rate**

- 90 l/min / 25 US GPM for return line application
- 23 l/min / 6 US GPM for suction line application

**Operating Pressure**

- Max. 14 bar / 200 PSI
- Max. 5,5 bar / 80 PSI differential pressure (for any application with no bypass valve)

**Temperature Range**

- -32 °C ... +100 °C / -25 °F ... +212 °F

**Media Compatibility**

- Mineral oils, other fluids on request

## Options and Accessories


**Filter Elements**

- For use with SF65 series elements
- For element types with seal contour type A
- For element types and flow characteristics see page C142
- The element is not part of the scope of delivery

**Valve**

- Bypass valve (integrated in the head): Optional

**Clogging Indicators**

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147

## Order Code

**SAF - 07 - 25 - 0**

1 2 3 4

**1 Type**

 Spin-On Filter Head **SAF**
**2 Connection Style**

Connection	Thread	Code
NPT	1/2	<b>05</b>
SAE	3/4-16	<b>06</b>
NPT	3/4	<b>07</b>
SAE	1-1/16-12	<b>11</b>

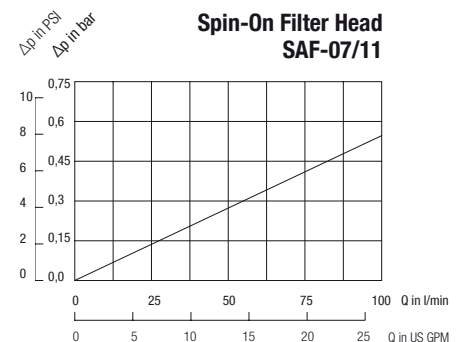
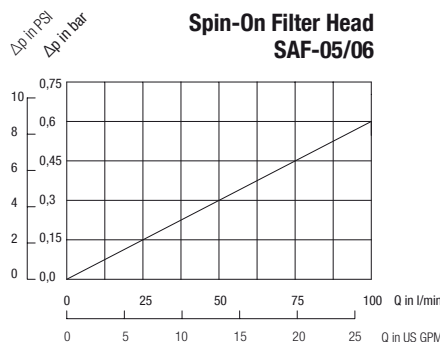
**3 Bypass Options**

No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
0,35 bar / 5 PSI	<b>05</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 25 PSI	<b>25</b>

**4 Clogging Indicator Port Options**

No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Clogging indicator port drilled for suction line application	<b>2</b>
All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port is 1/8 NPT.



Spin-On Filter Heads ■ SAF-10 / 13



Technical Data

Construction

- In-line Spin-On filter head

Material

- Aluminium

Port Connection

- NPT
- SAE O-ring thread

Flow Rate

- 128 l/min / 34 US GPM for return line application
- 30 l/min / 8 US GPM for suction line application

Operating Pressure

- Max. 14 bar / 200 PSI
- Max. 5,5 bar / 80 PSI differential pressure (for any applicaton with no bypass valve)

Temperature Range

- -32 °C ... +100 °C / -25 °F ... +212 °F

Media Compatibility

- Mineral oils, other fluids on request

Options and Accessories



Filter Elements

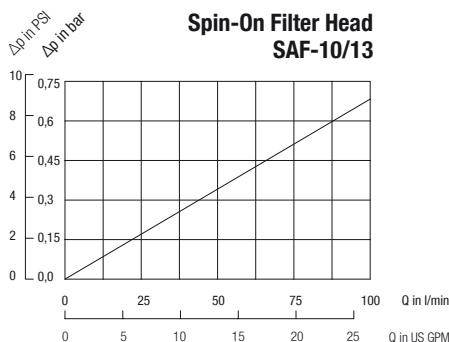
- For use with SF65 series elements
- For element types with seal contour type A
- For element types and flow characteristics see page C142
- The element is not part of the scope of delivery

Valve

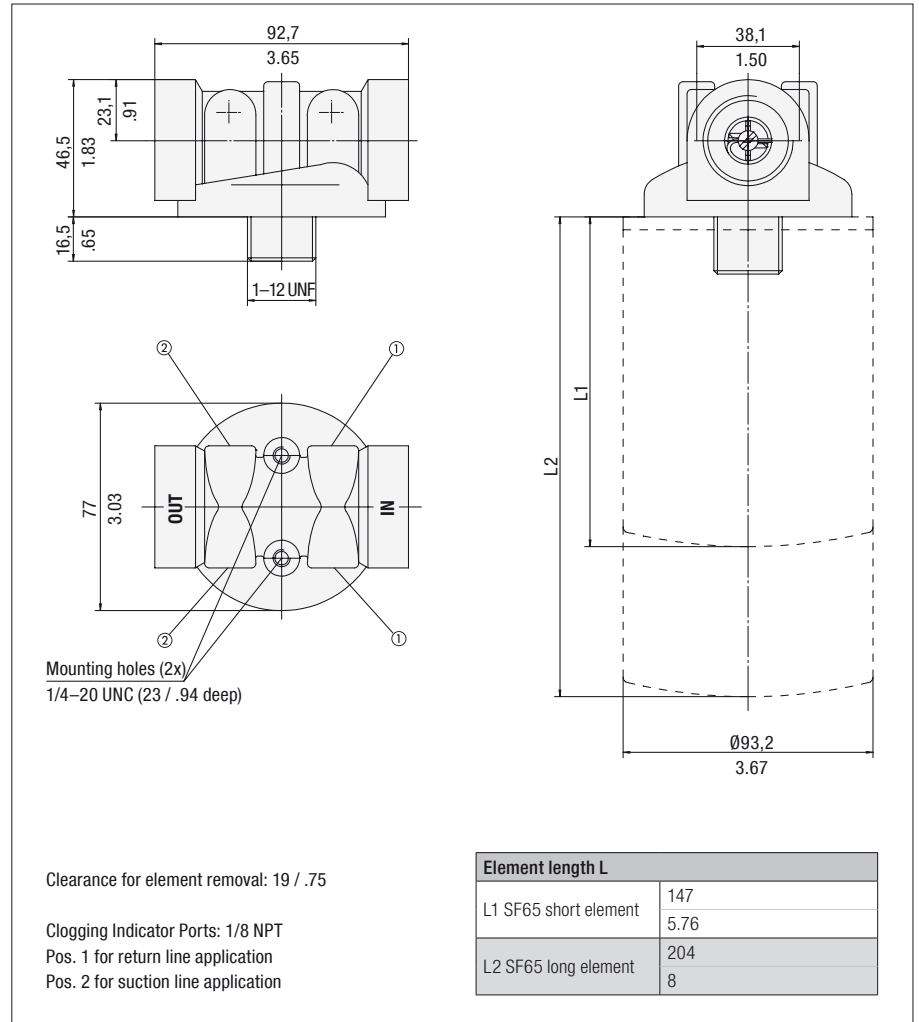
- Bypass valve (integrated in the filter head): Optional

Clogging Indicators

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147



Dimensions



Dimensions in mm / in

Order Code

**SAF - 10 - 25 - 0**

1 2 3 4

1 Type

Spin-On Filter Head **SAF**

2 Connection Style

Connection	Thread	Code
NPT	1	<b>10</b>
SAE	1-5/16-12	<b>13</b>

3 Bypass Options

No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
0,35 bar / 5 PSI	<b>05</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 25 PSI	<b>25</b>

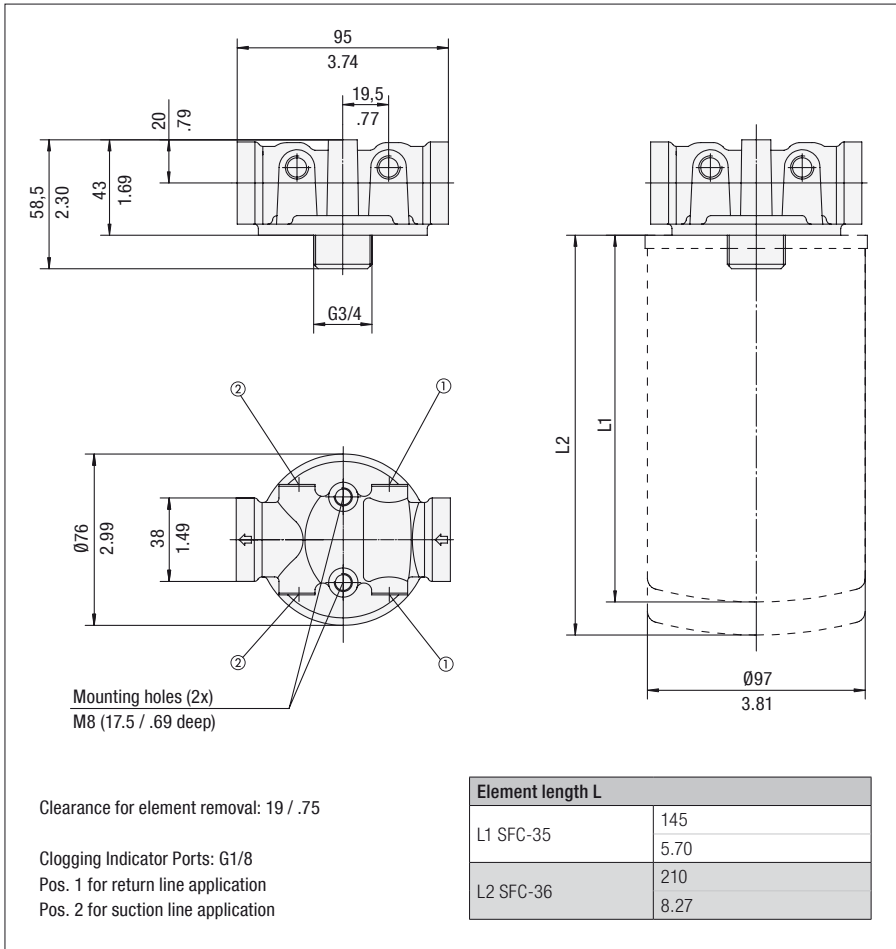
4 Clogging Indicator Port Options

No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Clogging indicator port drilled for suction line application	<b>2</b>
All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port is 1/8 NPT.

## Spin-On Filter Heads ■ SSF-12

## Dimensions



## Technical Data

**Construction**

- In-line Spin-On filter head

**Material**

- Aluminium

**Port Connection**

- BSP

**Flow Rate**

- 90 l/min / 25 US GPM for return line application
- 23 l/min / 6 US GPM for suction line application

**Operating Pressure**

- Max. 12 bar / 174 PSI
- Max. 5 bar / 72.5 PSI differential pressure (for any application with no bypass valve)

**Temperature Range**

- -32 °C ... +100 °C / -25 °F ... +212 °F

**Media Compatibility**

- Mineral oils, other fluids on request

## Options and Accessories


**Filter Elements**

- For use with SFC-35/36 series elements
- For element types with seal contour type A
- For element types and flow characteristics see page C139
- The element is not part of the scope of delivery

**Valve**

- Bypass valve (integrated in the filter head): Optional

**Clogging Indicators**

- Visual clogging indicator with coloured segments
- Electrical clogging switch 1,3 bar / 19 PSI adjustable
- For clogging indicator types see page C147

## Order Code

**SSF - 12 - 25 - 4**

1 2 3 4

**1 Type**

 Spin-On Filter Head **SSF**
**2 Connection Style**

Connection	Thread	Code
BSP	3/4	<b>12</b>

**3 Bypass Options**

No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
1,7 bar / 25 PSI	<b>25</b>

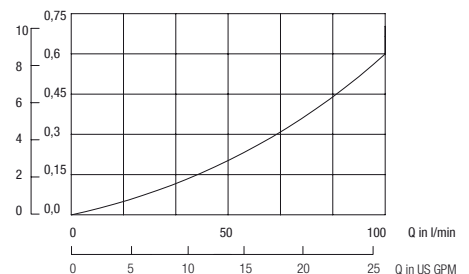
Note: Other settings available on request.

**4 Clogging Indicator Port Options**

All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port is G1/8.

Spin-On Filter Head SSF-12



Spin-On Filter Heads ■ SSF-20L



Technical Data

Construction

- In-line Spin-On filter head

Material

- Aluminium

Port Connection

- BSP

Flow Rate

- 225 l/min / 60 US GPM for return line application
- 46 l/min / 12 US GPM for suction line application

Operating Pressure

- Max. 12 bar / 174 PSI
- Max. 5 bar / 72.5 PSI differential pressure (for any application with no bypass valve)

Temperature Range

- -32 °C ... +100 °C / -25 °F ... +212 °F

Media Compatibility

- Mineral oils, other fluids on request

Options and Accessories



Filter Elements

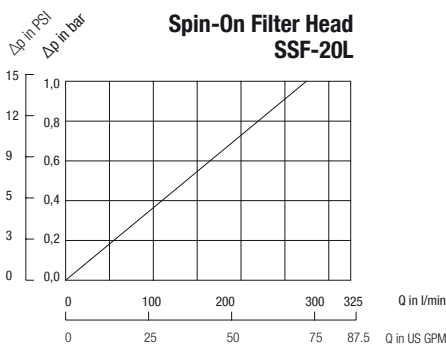
- For use with SF67 and SFC-57/58 series elements
- For element types with seal contour type A and B
- For element types and flow characteristics see page C143 for SF67 and page C140 for SFC-57/58.
- The element is not part of the scope of delivery

Valve

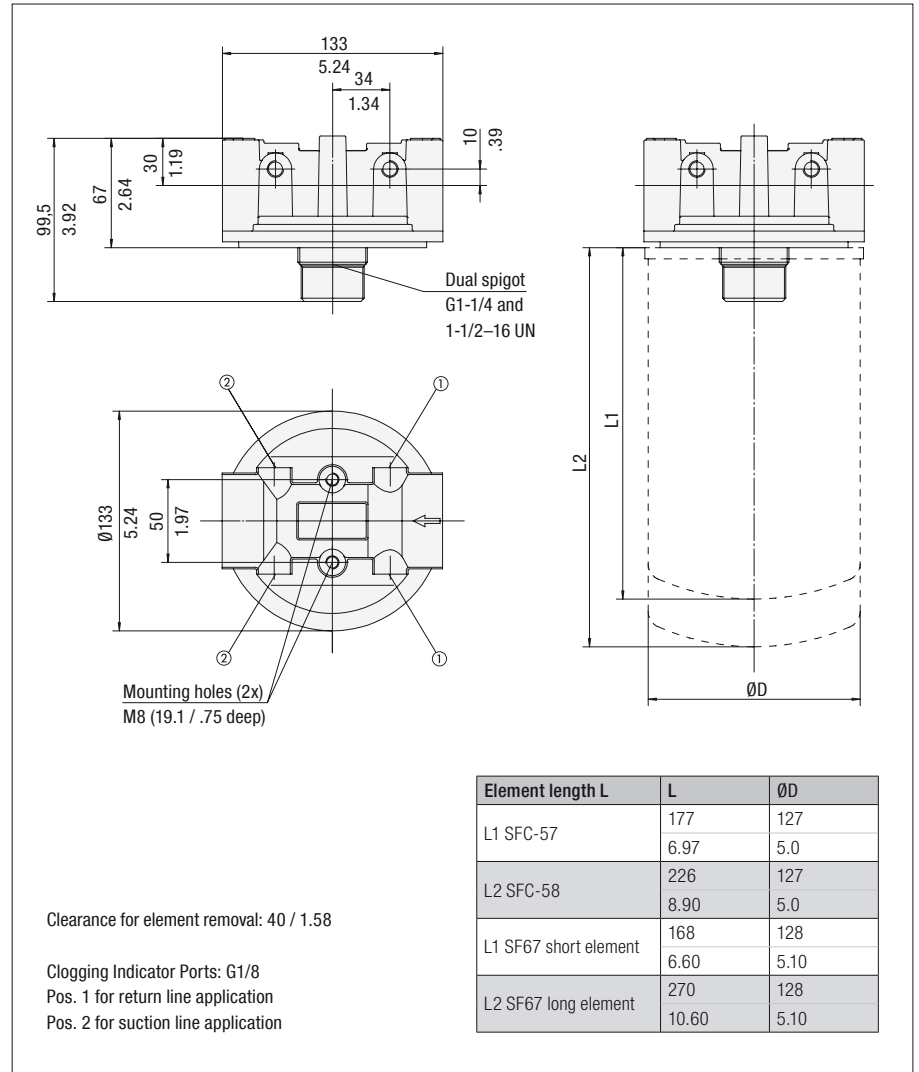
- Bypass valve (integrated in the filter head): Optional

Clogging Indicators

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147



Dimensions



Order Code

**SSF - 20L - 25 - 4**

1 2 3 4

1 Type

Spin-On Filter Head **SSF**

2 Connection Style

Connection	Thread	Code
BSP	1-1/4	<b>20L</b>

3 Bypass Options

No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
1,7 bar / 25 PSI	<b>25</b>

Note: Other settings available on request.

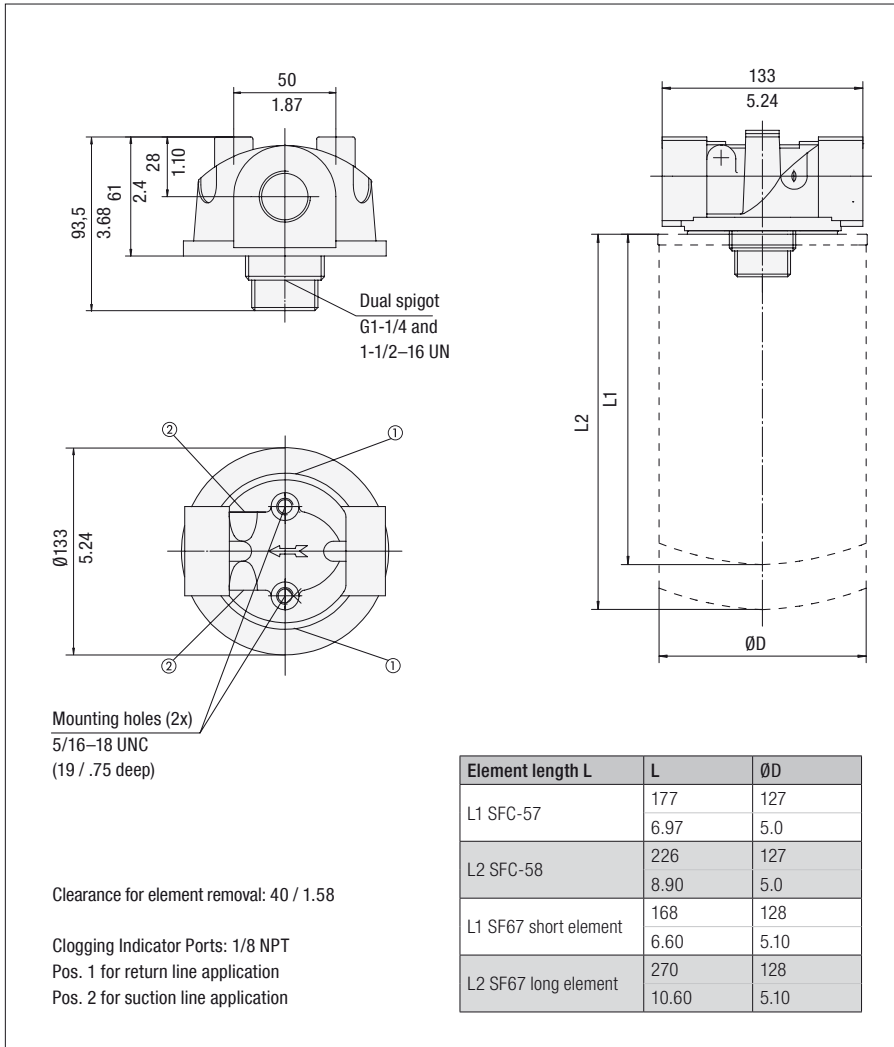
4 Clogging Indicator Port Options

All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port for is G1/8.

## Spin-On Filter Heads ■ SSF-100 / 120 / 120L / 130 / 160

## Dimensions



## Technical Data

**Construction**

- In-line Spin-On filter head

**Material**

- Aluminium

**Port Connection**

- NPT
- SAE O-ring thread

**Flow Rate**

- 225 l/min / 60 US GPM for return line application
- 46 l/min / 12 US GPM for suction line application

**Operating Pressure**

- Max. 12 bar / 174 PSI
- Max. 5 bar / 72.5 PSI differential pressure (for any application with no bypass valve)

**Temperature Range**

- -32 °C ... +100 °C / -25 °F ... +212 °F

**Media Compatibility**

- Mineral oils, other fluids on request

**Options and Accessories**

**Filter Elements**

- For use with SF67 and SFC-57/58 series elements
- For element types with seal contour type A and B
- For element types and flow characteristics see page C143 for SF67 and page C140 for SFC-57/58.
- The element is not part of the scope of delivery

**Valve**

- Bypass valve (integrated in the filter head): Optional

**Clogging Indicators**

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147

## Order Code

**SSF - 120 - 25 - 0**

**1 Type**

 Spin-On Filter Head **SSF**
**2 Connection Style**

Connection	Thread	Code
NPT	1	<b>100</b>
NPT	1-1/4	<b>120L</b>
NPT	1-1/2	<b>120</b>
SAE	1-5/16-12	<b>130</b>
SAE	1-5/8-12	<b>160</b>

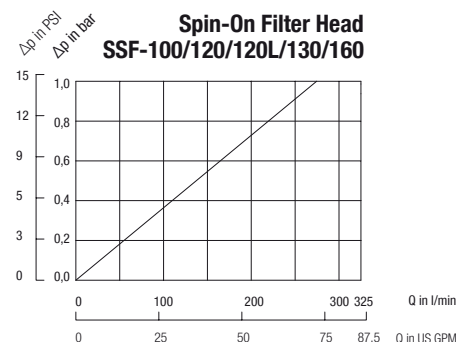
**3 Bypass Options**

No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
0,35 bar / 5 PSI	<b>05</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 25 PSI	<b>25</b>

**4 Clogging Indicator Port Options**

No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Clogging indicator port drilled for suction line application	<b>2</b>
All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

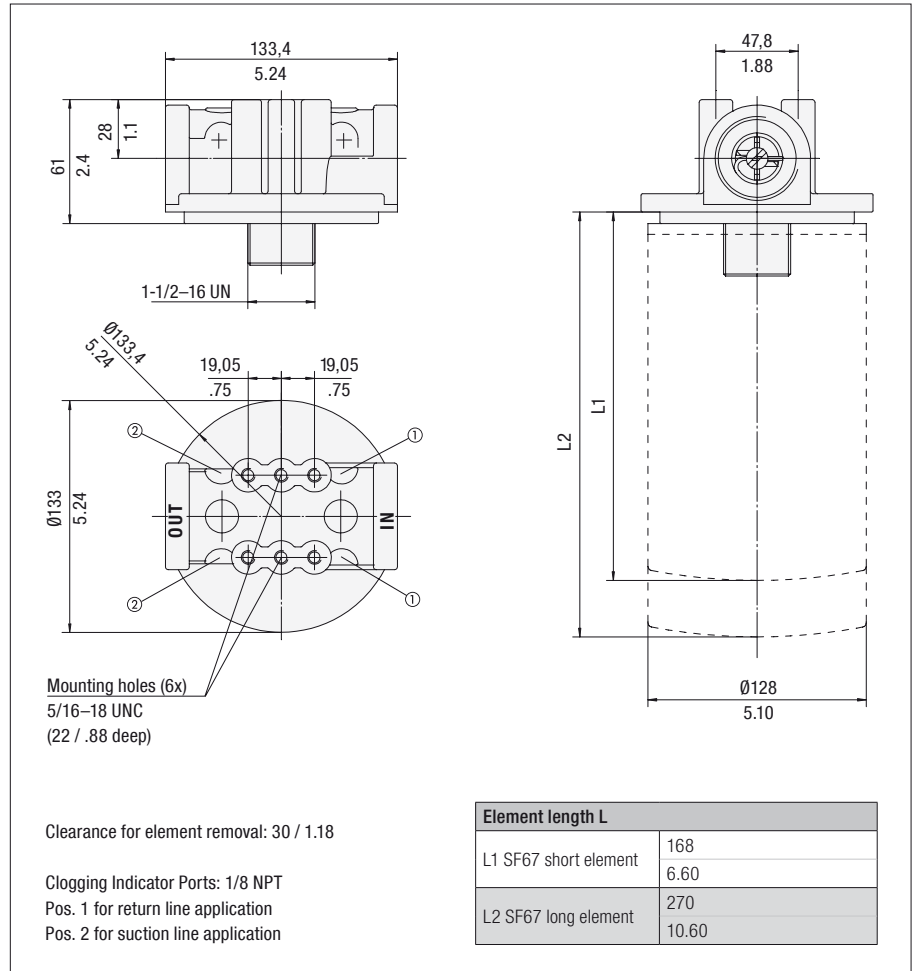
Note: Standard clogging indicator port is 1/8 NPT.

**Spin-On Filter Head**  
**SSF-100/120/120L/130/160**


Spin-On Filter Heads ■ SSF-150 / 180



Dimensions



Technical Data

Construction

- In-line Spin-On filter head

Material

- Aluminium

Port Connection

- NPT
- SAE O-ring thread

Flow Rate

- 300 l/min / 80 US GPM for return line application
- 113 l/min / 30 US GPM for suction line application

Operating Pressure

- Max. 14 bar / 200 PSI
- Max. 5,5 bar / 80 PSI differential pressure (for any applicaton with no bypass valve)

Temperature Range

- -32 °C ... +100 °C / -25 °F ... +212 °F

Media Compatibility

- Mineral oils, other fluids on request

Options and Accessories



Filter Elements

- For use with SF67 series elements
- For element types with seal contour type B
- For element types and flow characteristics see page C143
- The element is not part of the scope of delivery

Valve

- Bypass valve (integrated in the filter head): Optional

Clogging Indicators

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147

Order Code

**SSF - 150 - 25 - 0**

1
2
3
4

1 Type

Spin-On Filter Head **SSF**

2 Connection Style

Connection	Thread	Code
NPT	1-1/2	<b>150</b>
SAE	1-7/8-12	<b>180</b>

3 Bypass Options

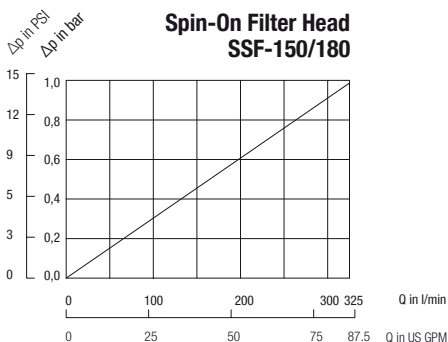
No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
0,35 bar / 5 PSI	<b>05</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 25 PSI	<b>25</b>

4 Clogging Indicator Port Options

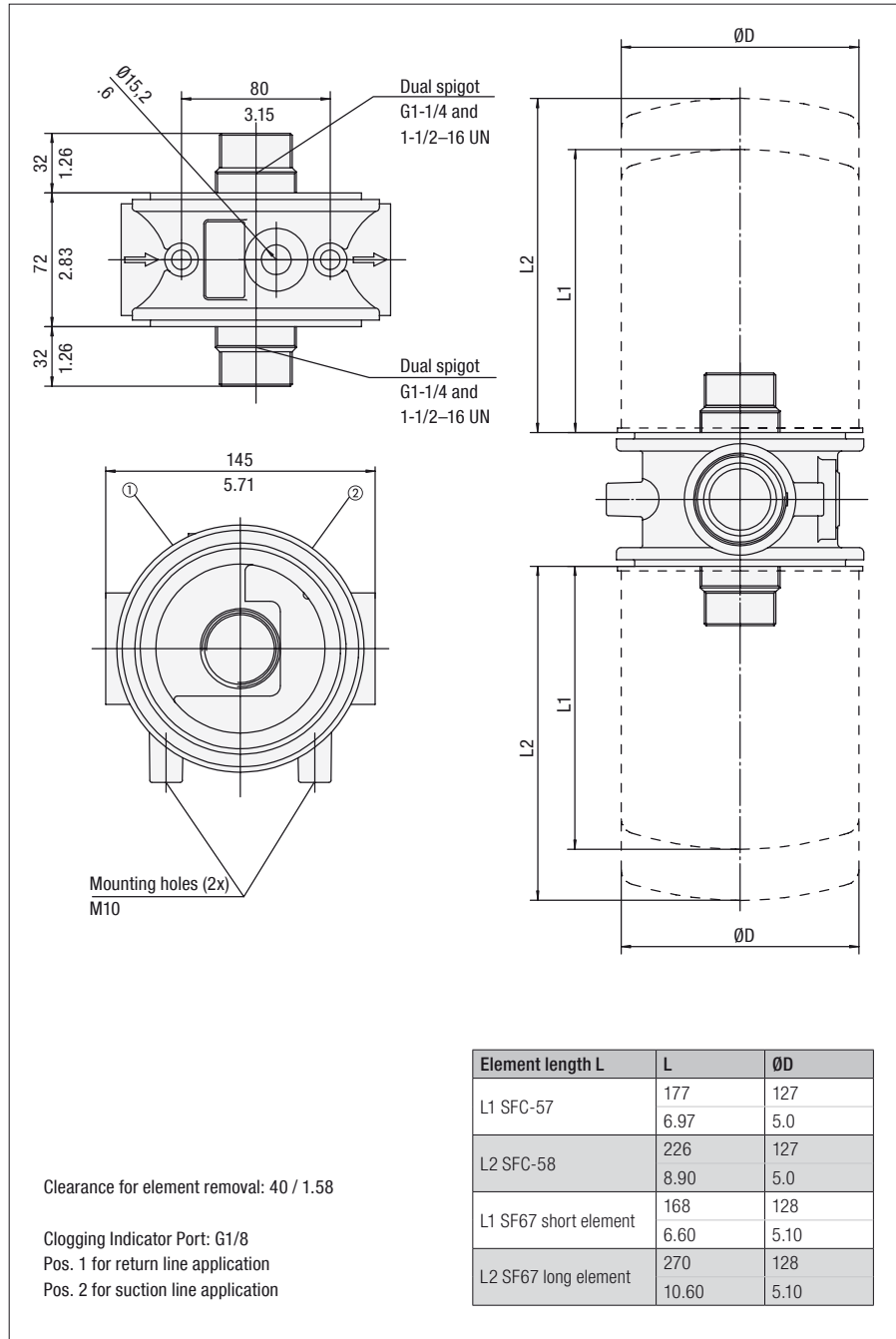
No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Clogging indicator port drilled for suction line application	<b>2</b>
All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port is 1/8 NPT.

Dimensions in mm / in





**Double Spin-On Filter Heads ■ SSF-24B**
**Dimensions**


Dimensions in mm / in


**Technical Data**
**Construction**

- In-line Double Spin-On filter head

**Material**

- Aluminium

**Port Connection**

- BSP

**Flow Rate**

- 454 l/min / 120 US GPM for return line application
- 132 l/min / 35 US GPM for suction line application

**Operating Pressure**

- Max. 12 bar / 174 PSI
- Max. 5 bar / 72.5 PSI differential pressure (for any application with no bypass valve)

**Temperature Range**

- -30 °C ... +100 °C / -22 °F ... +212 °F

**Media Compatibility**

- Mineral oils, other fluids on request

**Options and Accessories**

**Filter Elements**

- For use with SF67 and SFC-57/58 series elements
- For element types with seal contour type A and B
- For element types and flow characteristics see page C143 for SF67 and page C140 for SFC-57/58
- The element is not part of the scope of delivery

**Valve**

- Bypass valve (integrated in the head): Optional

**Clogging Indicators**

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147

**Order Code**
**SSF - 24B - 25 - 4**

1 2 3 4

**1 Type**

 Double Spin-On Filter Head **SSF**
**2 Connection Style**

Connection	Thread	Code
BSP	1-1/2	<b>24B</b>

**3 Bypass Options**

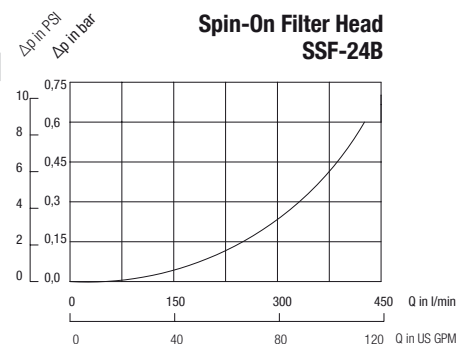
No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
1,7 bar / 25 PSI	<b>25</b>

Note: Other settings available on request.

**4 Clogging Indicator Port Options**

All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port is G1/8.



## Double Spin-On Filter Heads ■ SSF-24N / 24S

### Dimensions



### Technical Data

#### Construction

- In-line Double Spin-On filter head

#### Material

- Aluminium

#### Port Connection

- NPT
- SAE flange
- SAE O-ring thread

#### Flow Rate

- 454 l/min / 120 US GPM for return line application
- 132 l/min / 35 US GPM for suction line application

#### Operating Pressure

- Max. 12 bar / 174 PSI
- Max. 5 bar / 72.5 PSI differential pressure (for any applicaton with no bypass valve)

#### Temperature Range

- -30 °C ... +100 °C / -22 °F ... +212 °F

#### Media Compatibility

- Mineral oils, other fluids on request

### Options and Accessories



#### Filter Elements

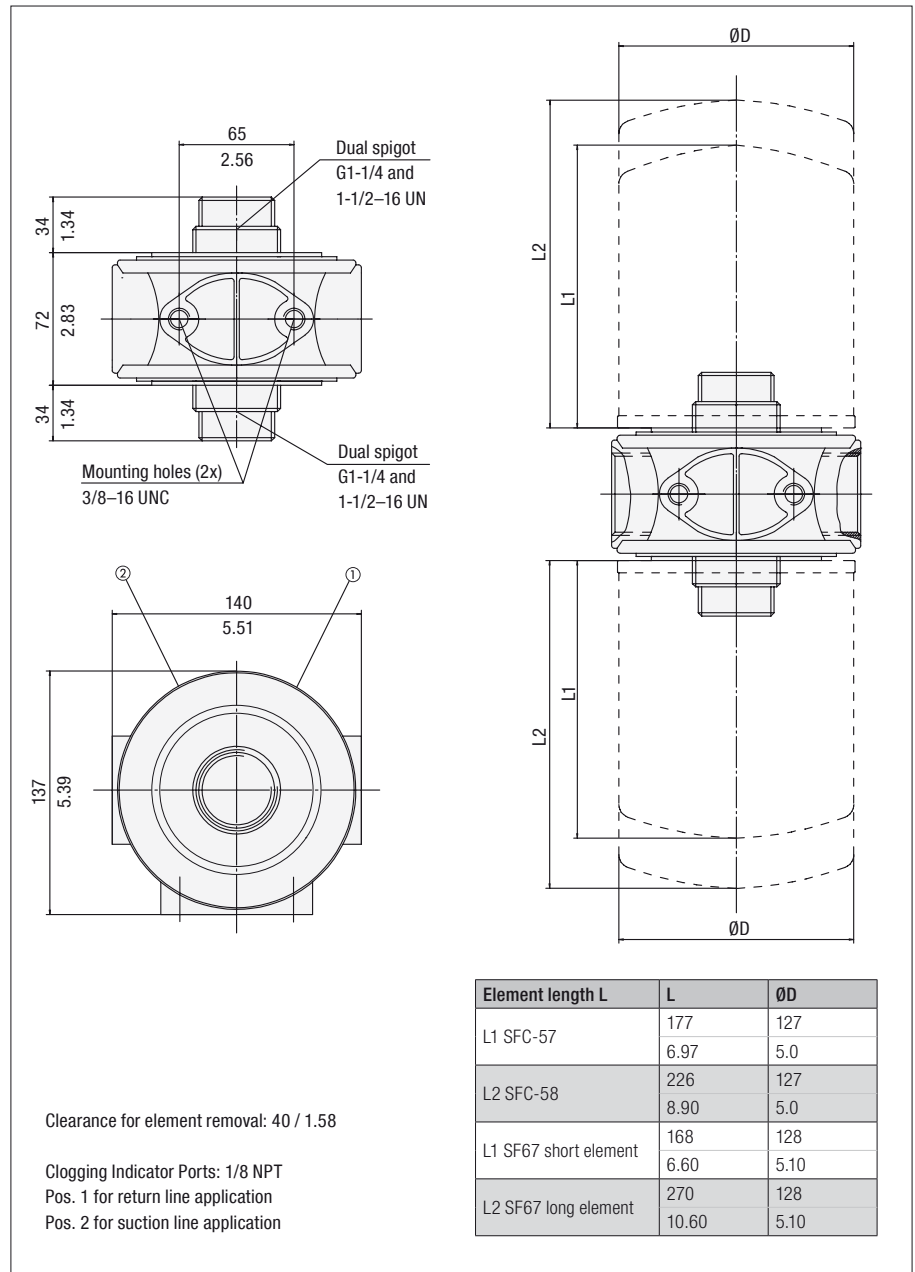
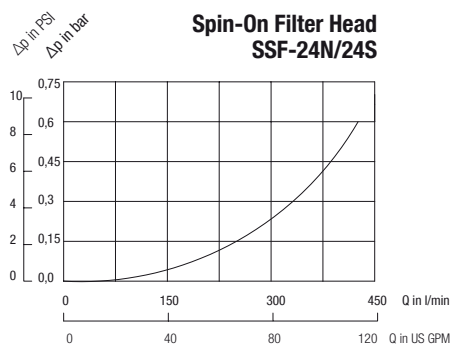
- For use with SF67 and SFC-57/58 series elements
- For element types with seal contour type A and B
- For element types and flow characteristics see page C143 for SF67 and page C140 for SFC-57/58
- The element is not part of the scope of delivery

#### Valve

- Bypass valve (integrated in the head): Optional

#### Clogging Indicators

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147



Dimensions in mm / in

### Order Code

**SSF - 24N - 25 - 0**

① ② ③ ④

#### 1 Type

Double Spin-On Filter Head **SSF**

#### 2 Connection Style

Connection	Thread	Code
NPT	1-1/2	<b>24N</b>
SAE	1-7/8-12	<b>24S</b>

#### 3 Bypass Options

No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
0,35 bar / 5 PSI	<b>05</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 25 PSI	<b>25</b>

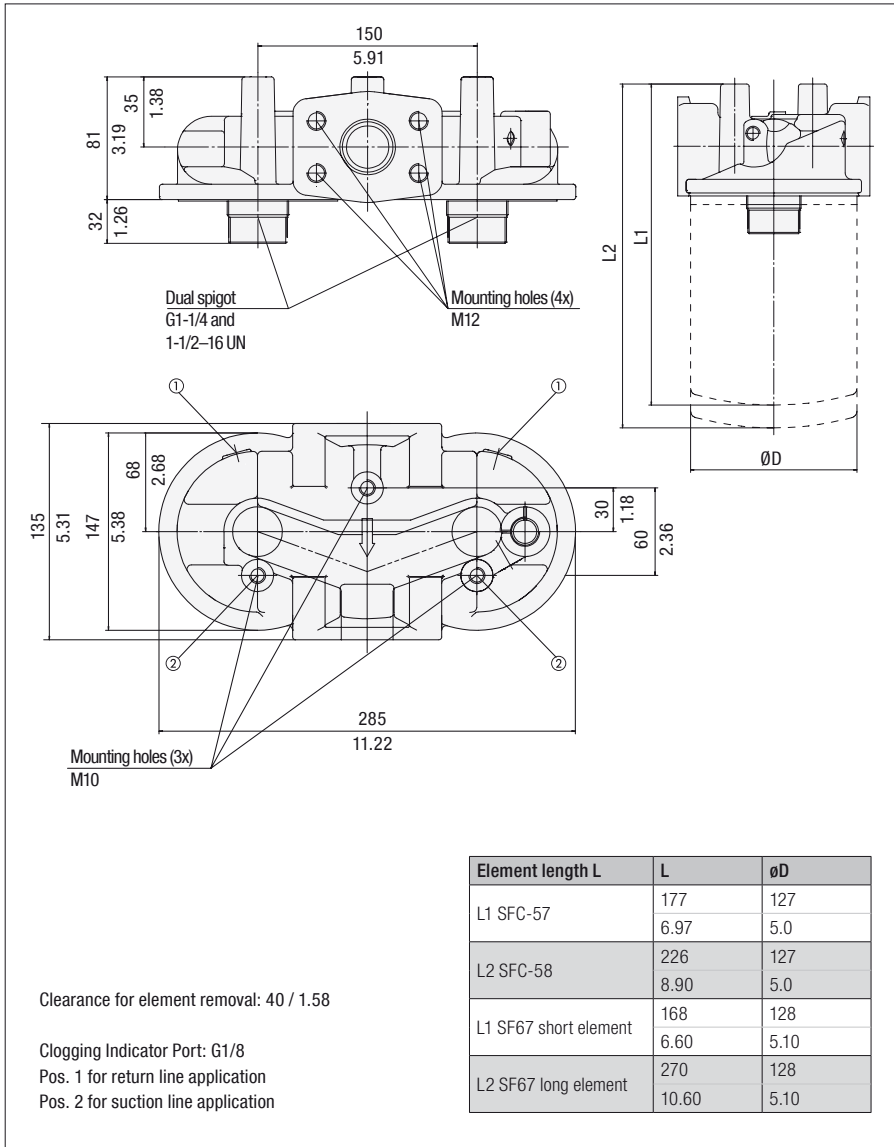
#### 4 Clogging Indicator Port Options

No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Clogging indicator port drilled for suction line application	<b>2</b>
All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port is 1/8 NPT.

## Double Spin-On Filter Heads ■ SSF-25B

## Dimensions



Dimensions in mm / in

## Order Code

**SSF - 25B - 25 - 4**

1 2 3 4

**1 Type**

 Double Spin-On Filter Head **SSF**
**2 Connection Style**

Connection	Thread	Code
BSP and SAE Flange	1-1/2 and 1-1/2 SAE Code 61 Flange	<b>25B</b>

**3 Bypass Options**

No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
1,7 bar / 25 PSI	<b>25</b>

Note: Other settings available on request.

**4 Clogging Indicator Port Options**

All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port is G1/8.



## Technical Data

**Construction**

- In-line Double Spin-On filter head

**Material**

- Aluminium

**Port Connection**

- BSP
- SAE flange

**Flow Rate**

- 454 l/min / 120 US GPM for return line application
- 132 l/min / 35 US GPM for suction line application

**Operating Pressure**

- Max. 12 bar / 174 PSI
- Max. 5 bar / 72.5 PSI differential pressure (for any application with no bypass valve)

**Temperature Range**

- -30 °C ... +100 °C / -22 °F ... +212 °F

**Media Compatibility**

- Mineral oils, other fluids on request

**Options and Accessories**

**Filter Elements**

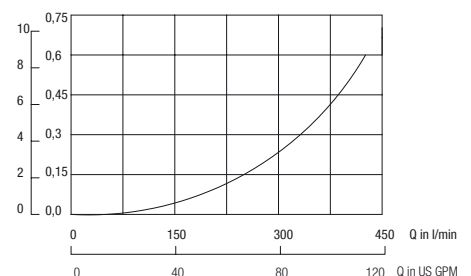
- For use with SF67 and SFC-57/58 series elements
- For element types with seal contour type A and B
- For element types and flow characteristics see page C143 for SF67 and page C140 for SFC-57/58
- The element is not part of the scope of delivery

**Valve**

- Bypass valve (integrated in the head): Optional

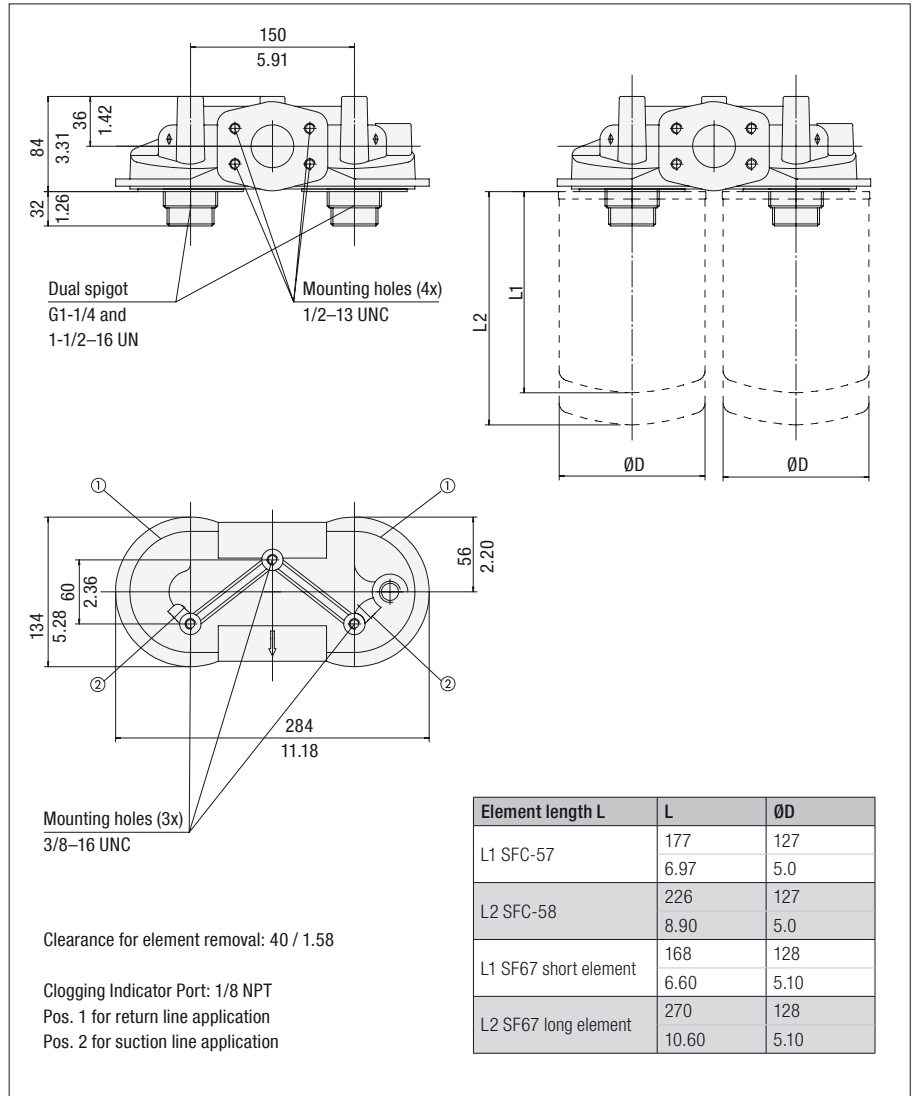
**Clogging Indicators**

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147

**Spin-On Filter Head SSF-25B**


**Double Spin-On Filter Heads ■ SSF-25**

**Dimensions**



**Technical Data**

**Construction**

- In-line Double Spin-On filter head

**Material**

- Aluminium

**Port Connection**

- NPT
- SAE flange

**Flow Rate**

- 454 l/min / 120 US GPM for return line application
- 132 l/min / 35 US GPM for suction line application

**Operating Pressure**

- Max. 12 bar / 174 PSI
- Max. 5 bar / 72.5 PSI differential pressure (for any application with no bypass valve)

**Temperature Range**

- -30 °C ... +100 °C / -22 °F ... +212 °F

**Media Compatibility**

- Mineral oils, other fluids on request

**Options and Accessories**



**Filter Elements**

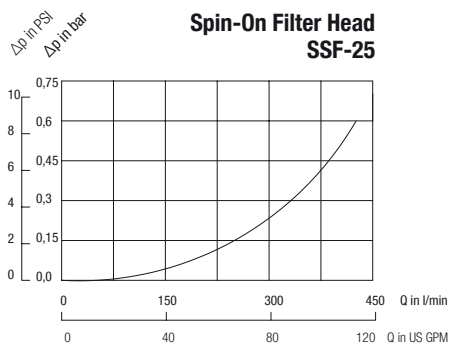
- For use with SF67 and SFC-57/58 series elements
- For element types with seal contour type A and B
- For element types and flow characteristics see page C143 for SF67 and page C140 for SFC-57/58
- The element is not part of the scope of delivery

**Valve**

- Bypass valve (integrated in the head): Optional

**Clogging Indicators**

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147



**Order Code**

**SSF - 25 - 25 - 0**

1      2      3      4

**1 Type**

Double Spin-On Filter Head **SSF**

**2 Connection Style**

Connection	Thread	Code
NPT and SAE Flange	1-1/2 and 2 SAE Code 61 Flange	<b>25</b>

**3 Bypass Options**

No bypass	<b>00</b>
0,2 bar / 3 PSI	<b>03</b>
0,35 bar / 5 PSI	<b>05</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 25 PSI	<b>25</b>

**4 Clogging Indicator Port Options**

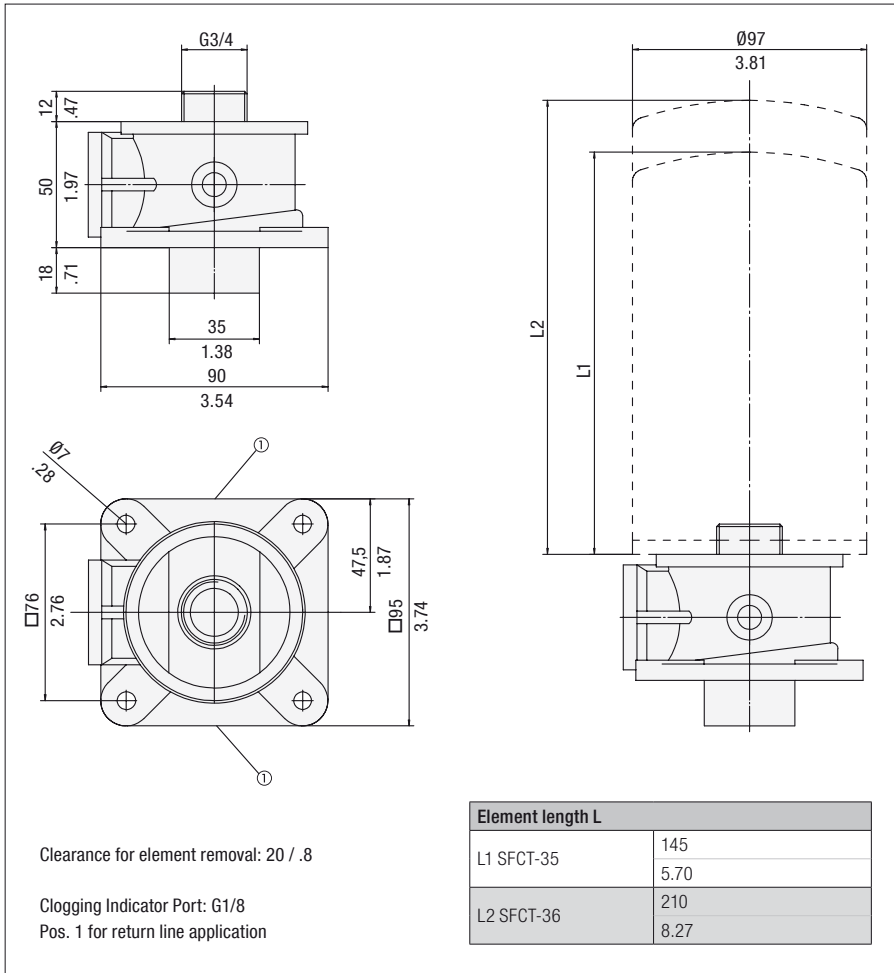
No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Clogging indicator port drilled for suction line application	<b>2</b>
All clogging indicator ports drilled	<b>4</b>
Special	<b>9</b>

Note: Standard clogging indicator port is 1/8 NPT.

Dimensions in mm / in

## Tank Top Spin-On Filter Heads ■ SSFT-12B

## Dimensions



## Technical Data

**Construction**

- Tank Top Spin-On filter head

**Material**

- Aluminium

**Port Connection**

- BSP

**Flow Rate**

- 75 l/min / 20 US GPM

**Operating Pressure**

- Max. 7 bar / 100 PSI

**Temperature Range**

- -30 °C ... +100 °C / -22 °F ... +212 °F

**Media Compatibility**

- Mineral oils, other fluids on request

## Options and Accessories


**Filter Elements**

- For use with SFCT-35/36 series elements
- For element types with seal contour type A and B
- For element types and flow characteristics see page C139.
- The element is not part of the scope of delivery

**Valve**

- Bypass valve 1,7 bar / 25 PSI integrated in the filter element

**Clogging Indicators**

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147

## Order Code

**SSFT - 12B - 1**

1      2      3

**1 Type**

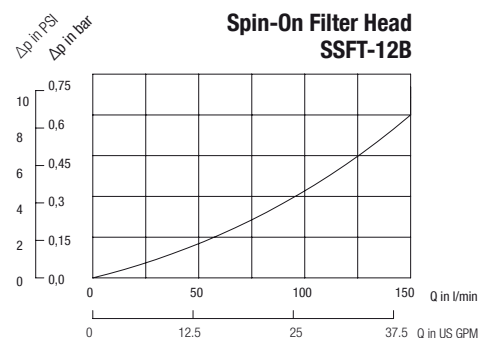
 Spin-On Filter Head      **SSFT**
**2 Connection Style**

Connection	Thread	Code
BSP	3/4	<b>12B</b>

**3 Clogging Indicator Port Options**

No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Special	<b>9</b>

Note: Standard clogging indicator port is G1/8.



## Tank Top Spin-On Filter Heads ■ SSFT-12

## Dimensions



## Technical Data

## Construction

- Tank Top Spin-On filter head

## Material

- Aluminium

## Port Connection

- NPT

## Flow Rate

- 75 l/min / 20 US GPM

## Operating Pressure

- Max. 7 bar / 100 PSI

## Temperature Range

- -30 °C ... +100 °C / -22 °F ... +212 °F

## Media Compatibility

- Mineral oils, other fluids on request

## Options and Accessories



## Filter Elements

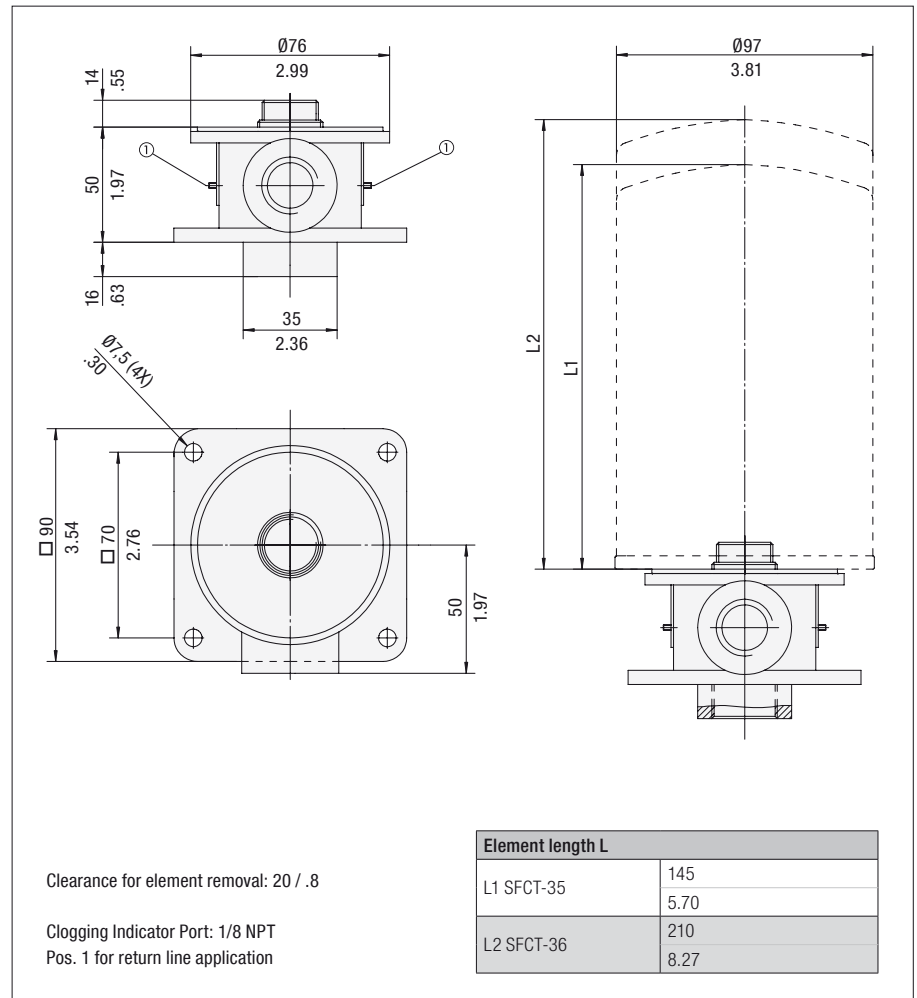
- For use with SFCT-35/36 series elements
- For element types with seal contour type A and B
- For element types and flow characteristics see page C139
- The element is not part of the scope of delivery

## Valve

- Bypass valve 1,7 bar / 25 PSI integrated in the filter element

## Clogging Indicators

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147



Dimensions in mm / in

## Order Code

SSFT - 12 - 1

1      2      3

## 1 Type

Spin-On Filter Head **SSFT**

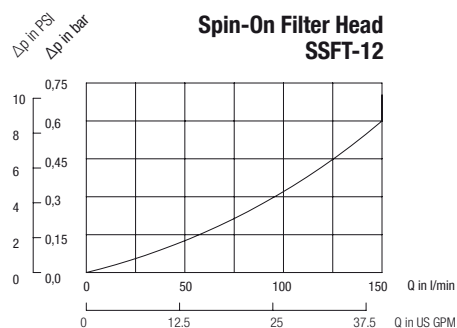
## 2 Connection Style

Connection	Thread	Code
NPT	3/4	<b>12</b>

## 3 Clogging Indicator Port Options

No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Special	<b>9</b>

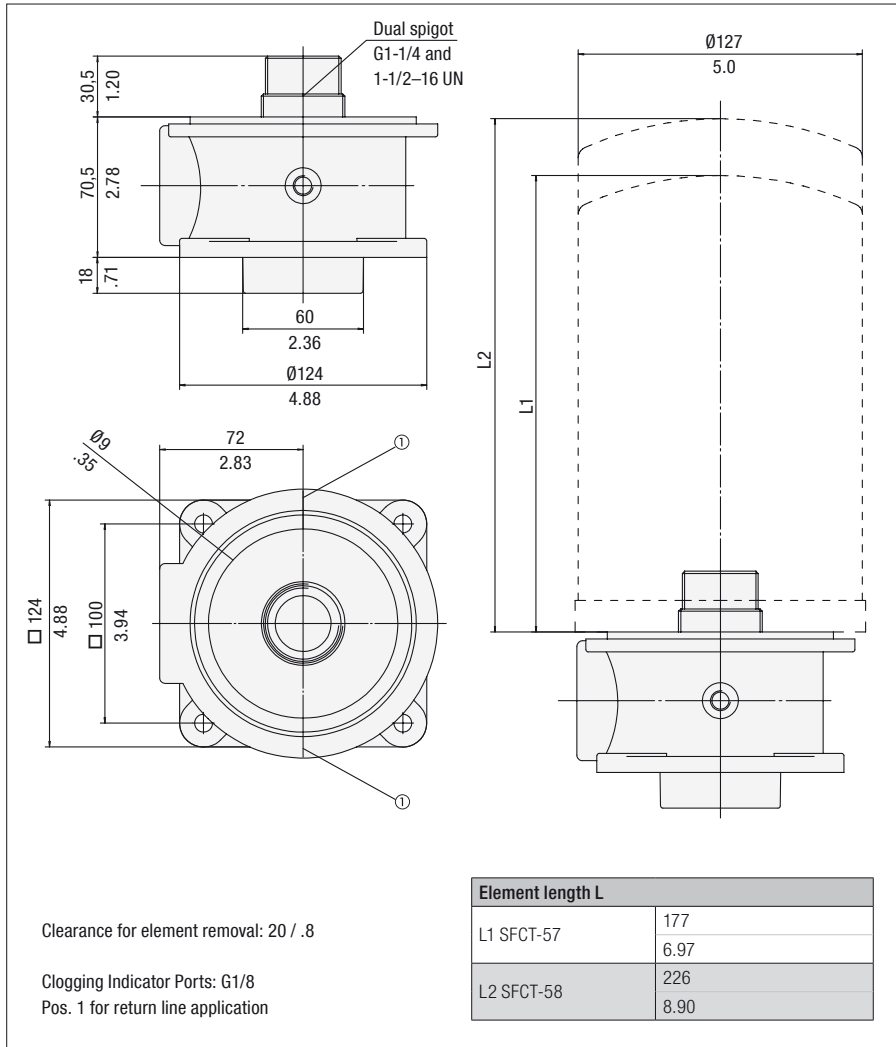
Note: Standard clogging indicator port is 1/8 NPT.





## Tank Top Spin-On Filter Heads ■ SSFT-20B

## Dimensions



Dimensions in mm / in



## Technical Data

**Construction**

- Tank Top Spin-On filter head

**Material**

- Aluminium

**Port Connection**

- BSP

**Flow Rate**

- 200 l/min / 53 US GPM

**Operating Pressure**

- Max. 7 bar / 100 PSI

**Temperature Range**

- -30 °C ... +100 °C / -22 °F ... +212 °F

**Media Compatibility**

- Mineral oils, other fluids on request

## Options and Accessories


**Filter Elements**

- For use with SFCT-57/58 series elements
- For element types with seal contour type A
- For element types and flow characteristics see page C140
- The element is not part of the scope of delivery

**Valve**

- Bypass valve 1,7 bar / 25 PSI integrated in the filter element

**Clogging Indicators**

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147

## Order Code

**SSFT - 20B - 1**

1      2      3

**1 Type**

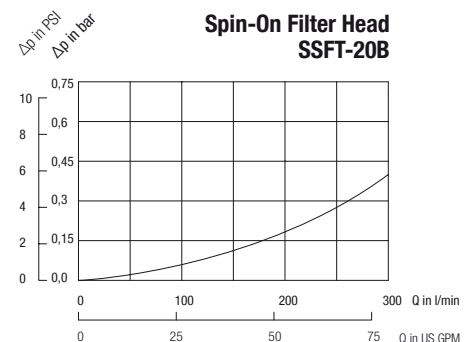
 Spin-On Filter Head      **SSFT**
**2 Connection Style**

Connection	Thread	Code
BSP	1-1/2	<b>20B</b>

**3 Clogging Indicator Port Options**

Clogging indicator port drilled for return line application	<b>1</b>
Special	<b>9</b>

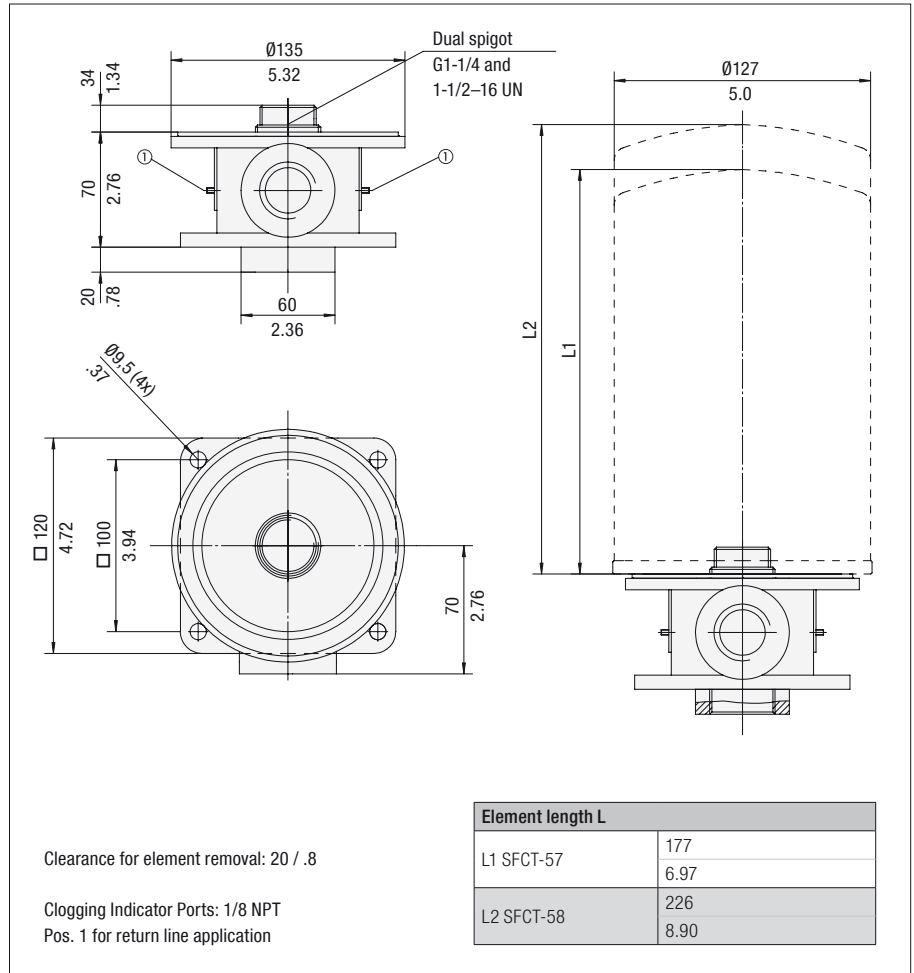
Note: Standard clogging indicator port is G1/8.





Tank Top Spin-On Filter Heads ■ SSFT-20

Dimensions



Dimensions in mm / in

Technical Data

Construction

- Tank Top Spin-On filter head

Material

- Aluminium

Port Connection

- NPT

Flow Rate

- 200 l/min / 53 US GPM

Operating Pressure

- Max. 7 bar / 100 PSI

Temperature Range

- -30 °C ... +100 °C / -22 °F ... +212 °F

Media Compatibility

- Mineral oils, other fluids on request

Options and Accessories



Filter Elements

- For use with SFCT-57/58 series elements
- For element types with seal contour type A
- For element types and flow characteristics see page C140
- The element is not part of the scope of delivery

Valve

- Bypass valve 1,7 bar / 25 PSI integrated in the filter element

Clogging Indicators

- Visual clogging indicator with coloured segments
- Electrical clogging switch 0,35 ... 2,5 bar / 5 ... 35 PSI adjustable
- For clogging indicator types see page C147

Order Code

**SSFT - 20 - 1**

1 2 3

1 Type

Spin-On Filter Head **SSFT**

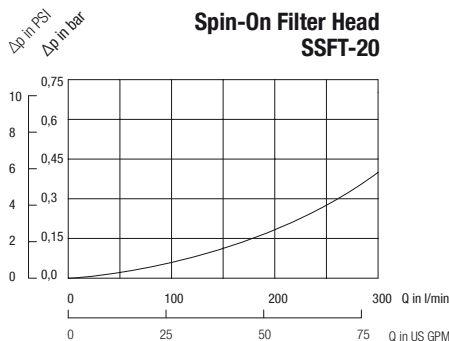
2 Connection Style

Connection	Thread	Code
NPT	1-1/2	<b>20</b>

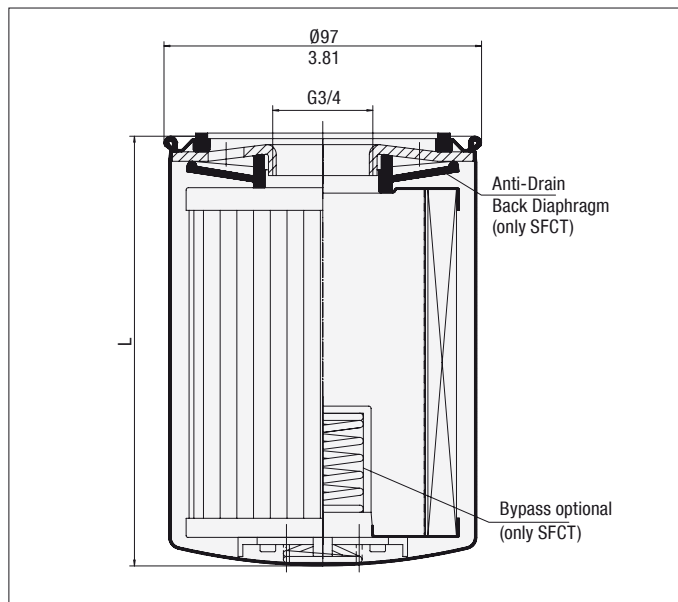
3 Clogging Indicator Port Options

No clogging indicator port	<b>0</b>
Clogging indicator port drilled for return line application	<b>1</b>
Special	<b>9</b>

Note: Standard clogging indicator port is 1/8 NPT.



## Spin-On Elements ▪ Type SFC-35 / 36 and SFCT-35 / 36



Dimensions in mm / in



## Product Description

STAUFF SFC-35/36 series Spin-On Elements are used with the STAUFF SSF-12 Spin-On Filters with G3/4 threaded ports.

STAUFF SFCT-35/36 series Spin-On Elements have an internal 1,7 bar / 25 PSI bypass and anti-drain back diaphragm for use with STAUFF SSF-12 Tank Top Spin-On Filters.

## Technical Data

## Connection Thread

- G3/4

## Operating Pressure

- Max. 12 bar / 174 PSI

## Burst Pressure

- Min. 20 bar / 290 PSI

## Temperature Range

- -32 °C ... +100 °C / -25 °F ... +212 °F

## Seal Contour

- Type A (see page C123)

## Differential Pressure

- Paper: Max. 5 bar / 72.5 PSI  
Glass Fibre / Wire Mesh: Max. 10 bar / 145 PSI  
(for any application with no bypass valve)

## Bypass Pressure

- 1,7 bar / 25 PSI (only SFCT-series)

## Media Compatibility

- Mineral oils, other fluids on request

## Sealing Material

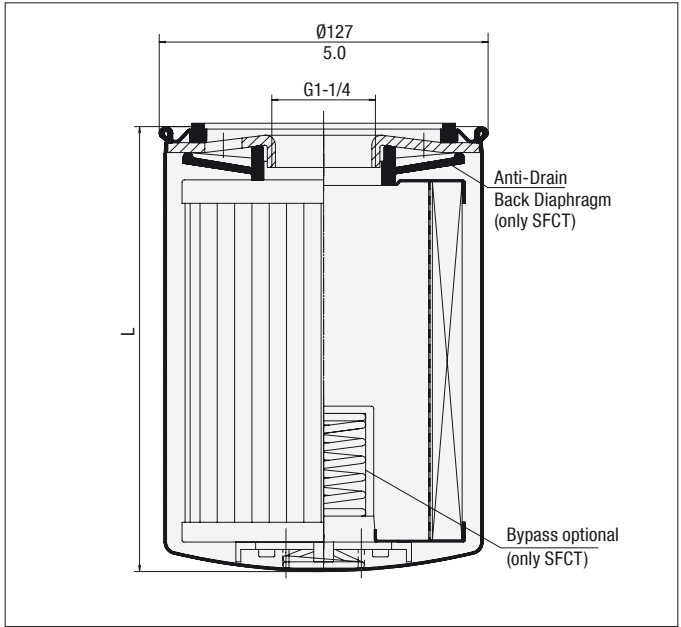
- NBR (Buna-N®)

## Dimensions

Order Code	Filter Paper				Inorganic Glass Fibre					
	SFC-3510E SFCT-3510E	SFC-3610E SFCT-3610E	SFC-3525E SFCT-3525E	SFC-3625E SFCT-3625E	SFC-3503AE	SFC-3603AE	SFC-3510AE SFCT-3510AE	SFC-3610AE SFCT-3610AE	SFC-3525AE SFCT-3525AE	SFC-3625AE SFCT-3625AE
Element without bypass valve Element with bypass valve										
Length L (mm/in)	145 5.7	210 8.27	145 5.7	210 8.27	145 5.7	210 8.27	145 5.7	210 8.27	145 5.7	210 8.27
β-Ratio	$\beta_{10} \geq 2$	$\beta_{10} \geq 2$	$\beta_{25} \geq 2$	$\beta_{25} \geq 2$	$\beta_3 \geq 200$	$\beta_3 \geq 200$	$\beta_{10} \geq 200$	$\beta_{10} \geq 200$	$\beta_{25} \geq 200$	$\beta_{25} \geq 200$
Carton Quantity	1	1	1	1	1	1	1	1	1	1
Carton Weight (kg/lbs)	0,9 2	1,3 2,6	0,9 2	1,3 2,6	0,9 2	1,3 2,6	0,9 2	1,3 2,6	0,9 2	1,3 2,6

Order Code	Wire Mesh		Brass Mesh	
	SFC-3560E SFCT-3560E	SFC-3660E SFCT-3660E	SFC-35125E SFCT-35125E	SFC-36125E SFCT-36125E
Element without bypass valve Element with bypass valve				
Length L (mm/in)	145 5.7	210 8.27	145 5.7	210 8.27
β-Ratio	n/a	n/a	n/a	n/a
Carton Quantity	1	1	1	1
Carton Weight (kg/lbs)	0,9 2	1,3 2,6	0,9 2	1,3 2,6

**Spin-On Elements ▪ Type SFC-57 / 58 and SFCT-57 / 58**



Dimensions in mm / in

**Product Description**

STAUFF Spin-On Filter Elements of the SFC-/SFCT-57/58 series are used with the STAUFF SSF-20/24/25/100/120/130 and 160 series Spin-On Filters with G1-1/4 threaded ports.

STAUFF SFCT-57/58 series Spin-On Elements have an internal, 1,7 bar / 25 PSI bypass and anti-drain back diaphragm for use with STAUFF SSFT-20 Tank Top Spin-On Filters.

**Technical Data**

**Connection Thread**

- G1-1/4

**Operating Pressure**

- Max. 12 bar / 174 PSI

**Burst Pressure**

- Min. 17 bar / 247 PSI

**Temperature Range**

- -32 °C ...+100 °C / -25 °F ... +212 °F

**Seal Contour**

- Type A (see page C123)

**Differential Pressure**

- Paper: Max. 5 bar / 72.5 PSI  
Glass Fibre / Wire Mesh: Max. 10 bar / 145 PSI  
(for any application with no bypass valve)

**Bypass Pressure**

- 1,7 bar / 25 PSI  
(only SFCT-series)

**Media Compatibility**

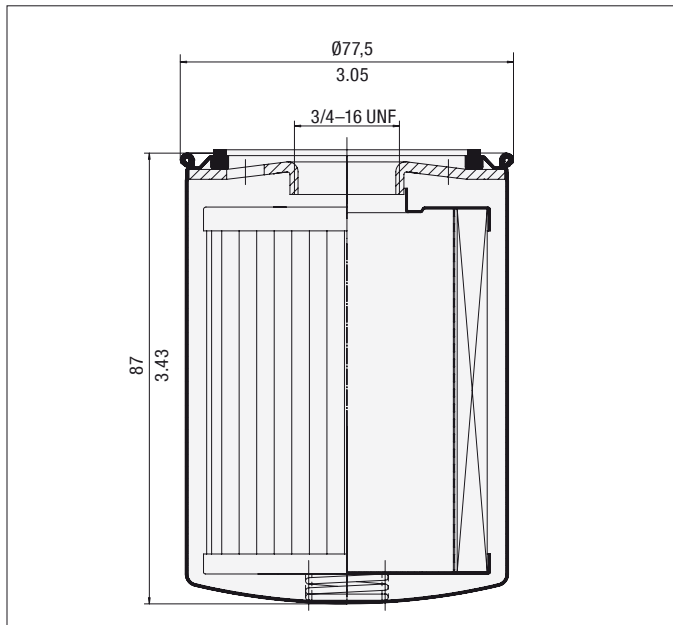
- Mineral oils, other fluids on request

**Dimensions**

Order Code	Filter Paper				Inorganic Glass Fibre					
	Element without bypass valve	SFC-5710E	SFC-5810E	SFC-5725E	SFC-5825E	SFC-5703AE	SFC-5803AE	SFC-5710AE	SFC-5810AE	SFC-5725AE
Element with bypass valve	SFCT-5710E	SFCT-5810E	SFCT-5725E	SFCT-5825E	SFCT-5703AE	SFCT-5803AE	SFCT-5710AE	SFCT-5810AE	SFCT-5725AE	SFCT-5825AE
Length L (mm/in)	177 6.97	226 8.9	177 6.97	226 8.9	177 6.97	226 8.9	177 6.97	226 8.9	177 6.97	226 8.9
β-Ratio	$\beta_{10} \geq 2$	$\beta_{10} \geq 2$	$\beta_{25} \geq 2$	$\beta_{25} \geq 2$	$\beta_3 \geq 200$	$\beta_3 \geq 200$	$\beta_{10} \geq 200$	$\beta_{10} \geq 200$	$\beta_{25} \geq 200$	$\beta_{25} \geq 200$
Carton Quantity	1	1	1	1	1	1	1	1	1	1
Carton Weight (kg/lbs)	1,4 3	1,85 4	1,4 3	1,85 4	1,4 3	1,85 4	1,4 3	1,85 4	1,4 3	1,85 4

Order Code	Wire Mesh		Brass Mesh	
	Element without bypass valve	SFC-5760E	SFC-5860E	SFC-57125E
Element with bypass valve	SFCT-5760E	SFCT-5860E	SFCT-57125E	SFCT-58125E
Length L (mm/in)	177 6.97	226 8.9	177 6.97	226 8.9
β-Ratio	n/a	n/a	n/a	n/a
Carton Quantity	1	1	1	1
Carton Weight (kg/lbs)	0,9 2	1,3 2,6	0,9 2	1,3 2,6

## Spin-On Elements ▪ Type SF63



Dimensions in mm / in



## Product Description

STAUFF SF63-series Spin-On Elements are used with the STAUFF SLF Spin-On Filters.

## Technical Data

## Connection Thread

- 3/4-16 UNF

## Seal Contour

- Type A (see page C123)

## Sealing Material

- NBR (Buna-N®)

## Operating Pressure

- Max. 14 bar / 200 PSI

## Differential Pressure

- Max. 5,5 bar / 80 PSI  
(for any application with no bypass valve)

## Burst Pressure

- Min. 20 bar / 290 PSI

## Bypass Pressure

- SF6310-18 1,24 bar / 18 PSI
- SF6325-10 0,70 bar / 10 PSI

## Temperature Range

- -32 °C ... +100 °C / -25 °F ... +212 °F

## Media Compatibility

- Mineral oils, other fluids on request

## Dimensions

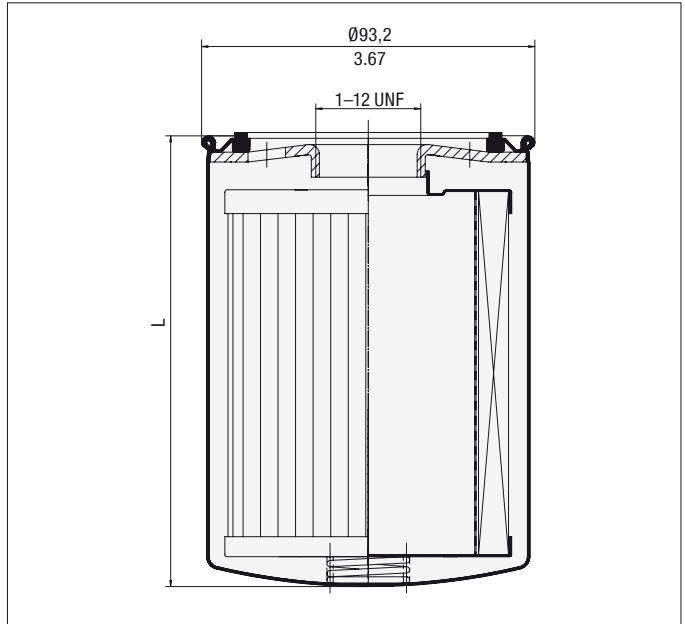
Order Code	Filter Paper	
	SF6310-18	SF6325-10
β-Ratio	$\beta_{10} \geq 2$	$\beta_{25} \geq 2$
Dirt Holding Capacity (g)	6	6
Carton Quantity	12	12
Carton Weight (kg/lbs)	3,6	3,6
	8	8

## Spin-On Elements ▪ Type SF65



## Product Description

STAUFF SF65-series Spin-On Elements are used with the STAUFF SAF series Spin-On Filters.



Dimensions in mm / in

## Technical Data

## Connection Thread

- 1-12 UNF

## Seal Contour

- Type A (see page C123)

## Sealing Material

- NBR (Buna-N®)

## Operating Pressure

- Max. 14 bar / 200 PSI
- SF6520-W: Max. 7 bar / 101.5 PSI

## Differential Pressure

- Max. 5,5 bar / 80 PSI  
(for any application with no bypass valve)

## Burst Pressure

- Min. 20 bar / 290 PSI

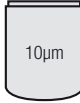
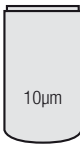


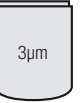
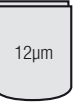
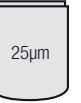

## Temperature Range

- -32 °C ... +100 °C / -25 °F ... +212 °F

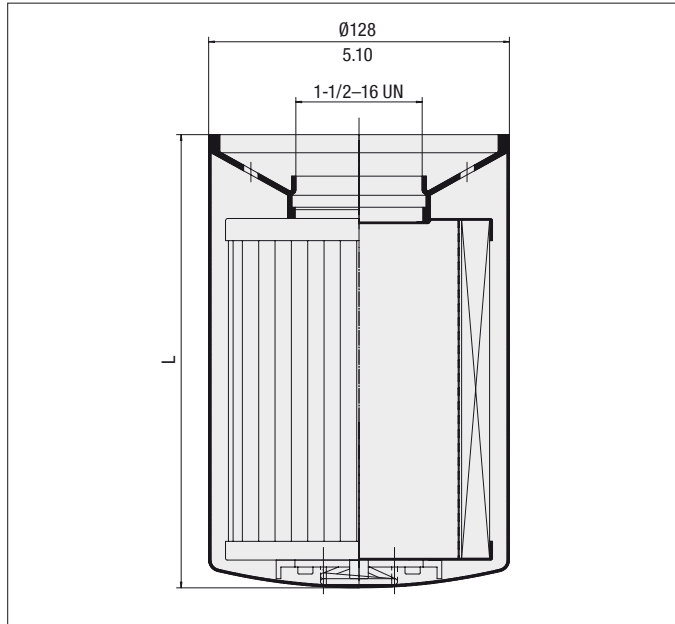
## Media Compatibility

- Mineral oils, other fluids on request

## Dimensions

Order Code	Filter Paper				Inorganic Glass Fibre			Water Absorbing
	SF6520	SF6521	SF6510	SF6511	SF6549	SF6505	SF6504	SF6520-W
								
Length L (mm/in)	147 5.76	204 8.00	147 5.76	204 8.00	147 5.76	147 5.76	147 5.76	133 5.25
β-Ratio	$\beta_{10} \geq 2$	$\beta_{10} \geq 2$	$\beta_{25} \geq 2$	$\beta_{25} \geq 2$	$\beta_3 \geq 200$	$\beta_{12} \geq 200$	$\beta_{25} \geq 200$	$\beta_{10} \geq 2$
Dirt Holding Capacity ACFTD (g)	14.4	22	20.4	31.2	19	11	26	Water holding capacity 162 ml 5.5 oz
Carton Quantity	12	12	12	12	12	12	12	12
Carton Weight (kg/lbs)	6,3	8,4	6,4	8,8	8,6	8,6	8,6	8,6
	13.9	18.5	14.2	19.4	19	19	19	19

## Spin-On Elements ■ Type SF67



Dimensions in mm / in


**Product Description**

STAUFF SF67-series Spin-On Elements are used with the STAUFF SSF20/24/25/100/120/130/160/150 and 180 Spin-On Filters.

**Technical Data**
**Connection Thread**

- 1-1/2-16 UN

**Sealing Material**

- NBR (Buna-N®)

**Differential Pressure**

- Max. 5,5 bar / 80 PSI  
(for any application with no bypass valve)

**Temperature Range**

- -32 °C ... +100 °C / -25 °F ... +212 °F

**Seal Contour**

- Type B (see page C123)

**Operating Pressure**

- Max. 14 bar / 200 PSI
- SF6721-W: Max. 7 bar / 101.5 PSI

**Burst Pressure**

- Min. 20 bar / 290 PSI

**Media Compatibility**

- Mineral oils, other fluids on request

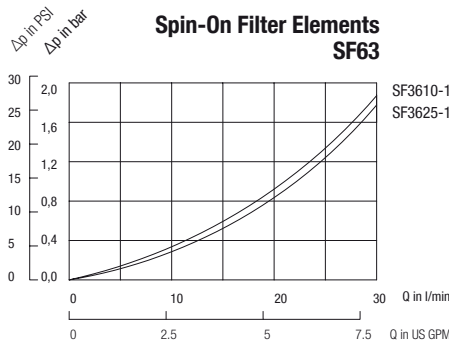
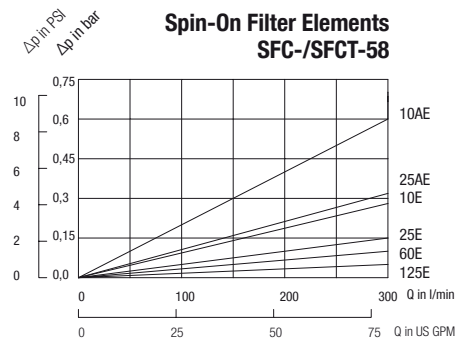
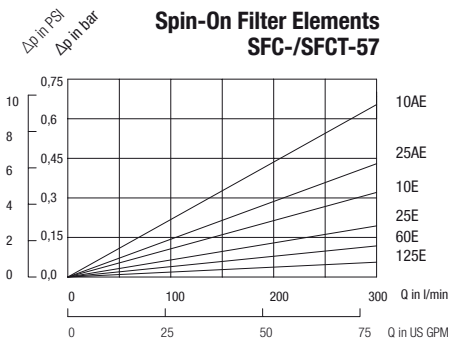
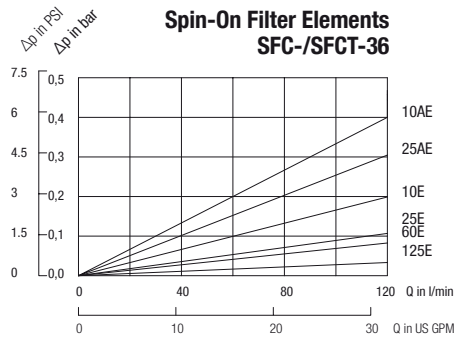
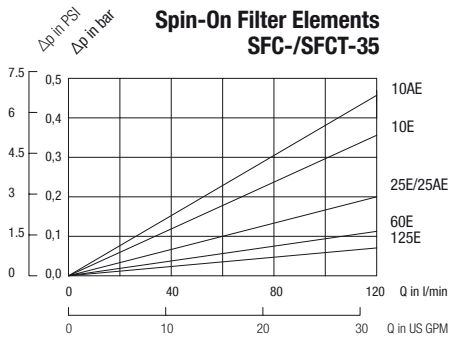
**Dimensions**

Order Code	Inorganic Glass Fibre								
	SF6702-MG	SF6703-MG	SF6704-MG	SF6706-MG	SF6707-MG	SF6730-MG	SF6731-MG	SF6728-MG	SF6726-MG
Length L (mm/in)	270 10.6	168 6.6	270 10.6	168 6.6	270 10.6	168 6.6	270 10.6	168 6.6	270 10.6
β-Ratio	$\beta_1 \geq 200$	$\beta_3 \geq 200$	$\beta_3 \geq 200$	$\beta_6 \geq 200$	$\beta_6 \geq 200$	$\beta_{12} \geq 200$	$\beta_{12} \geq 200$	$\beta_{25} \geq 200$	$\beta_{25} \geq 200$
Dirt Holding Capacity ACFTD (g)	30	31	47	35	54	38	59	50	76
Carton Quantity	6	6	6	6	6	6	6	6	6
Carton Weight (kg/lbs)	11,8 26.1	8,2 18	11,8 26.1	8,2 18	11,8 26.1	8,2 18	11,8 26.1	8,2 18	11,8 26.1

Order Code	Filter Paper				Stainless Wire Mesh		Water Absorbing
	SF6720	SF6721	SF6710	SF6711	SF6790	SF6791	SF6721-W
Length L (mm/in)	168 6.6	270 10.6	168 6.6	270 10.6	168 6.6	270 10.6	270 10.6
β-Ratio	$\beta_{10} \geq 2$	$\beta_{10} \geq 2$	$\beta_{25} \geq 2$	$\beta_{25} \geq 2$	n/a	n/a	$\beta_{10} \geq 2$
Dirt Holding Capacity ACFTD (g)	34	62	34	62	n/a	n/a	Water holding capacity 444 ml / 15 oz
Carton Quantity	6	6	6	6	6	6	6
Carton Weight (kg/lbs)	6,6 14.6	7,9 17.5	6,7 14.9	9,3 20.6	8,2 18	11,8 26.1	11,8 26.1

**Spin-On Elements - Type SFC/SFCT-35/36, SFC/SFCT-57/58 and SF63**

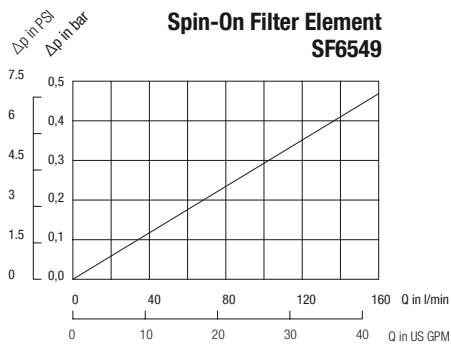
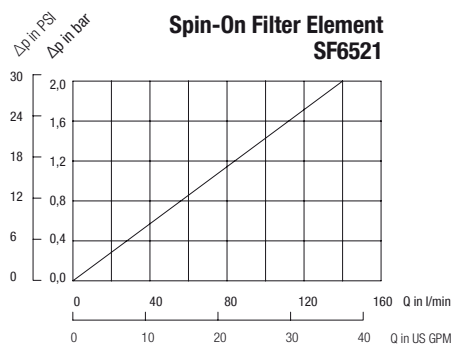
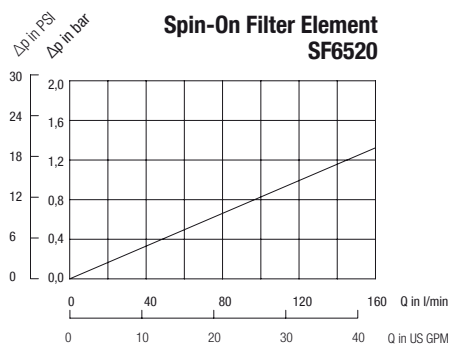
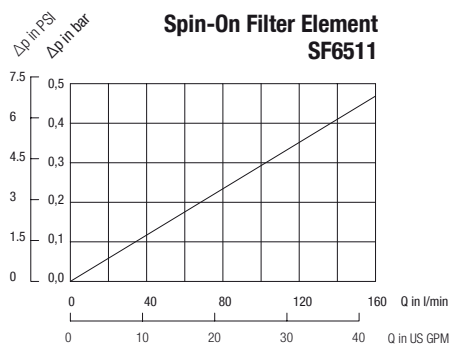
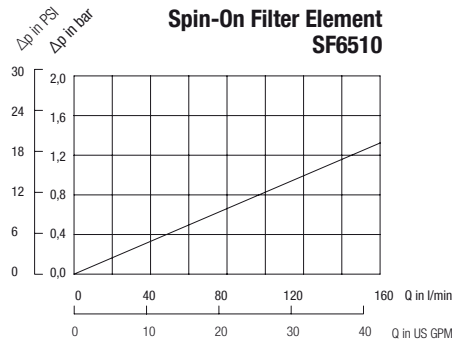
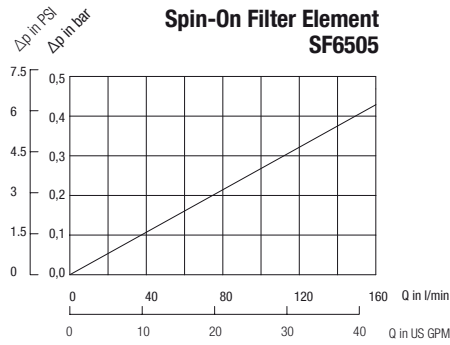
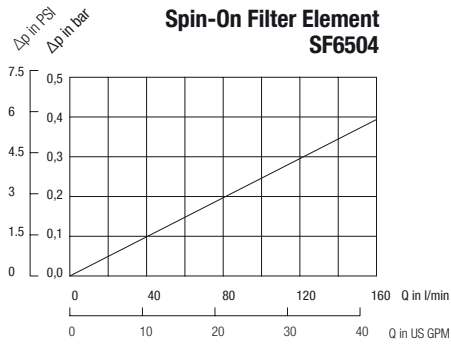
The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30 cSt). The characteristics have been determined in accordance to ISO 3968. SFC-35/36 series Spin-On Elements are used with STAUFF SSF-12 Spin-On Filters, SFCT-35/36 series Spin-On Elements are used with STAUFF SSFT-12 Spin-On Filters, SFC-57/58 series Spin-On Elements are used with STAUFF SSF-20/24/25/100/120/130/160 Spin-On Filters, SFCT-57/58 series Spin-On Elements are used with STAUFF SSFT-20 Spin-On Filters and SF63 series Spin-On Elements are used with STAUFF SLF-02/03/04 Spin-On Filters.





## Spin-On Elements ■ Type SF65

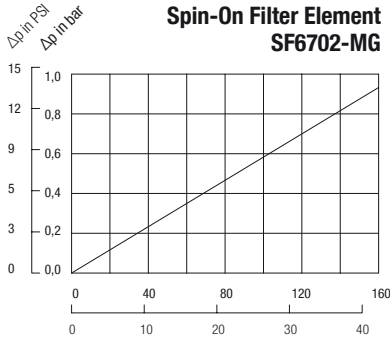
The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30 cSt). The characteristics have been determined in accordance to ISO 3968. SF65 Spin-On Elements are used with the STAUFF SAF-05/06/07/10/11/13 Spin-On Filters.



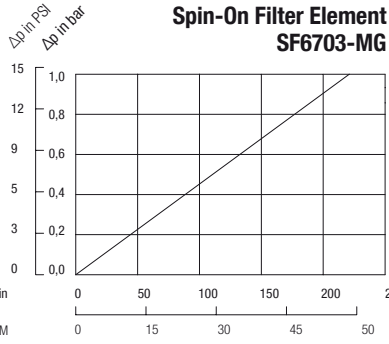
Spin-On Elements - Type SF67

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30 cSt). The characteristics have been determined in accordance to ISO 3968. SF67 Spin-On Elements are used with the STAUFF SSF-20/24/25/100/120/130/160/150/180 Spin-On Filters.

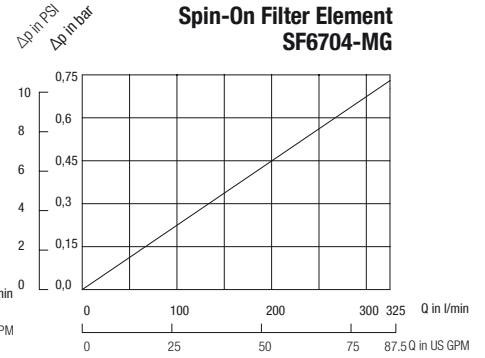
**Spin-On Filter Element SF6702-MG**



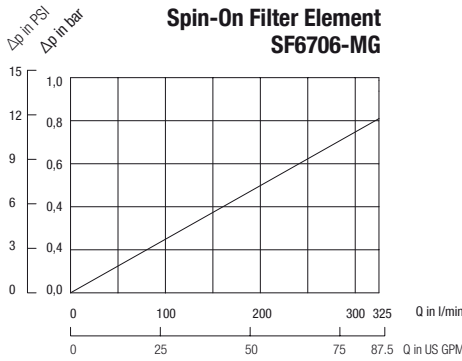
**Spin-On Filter Element SF6703-MG**



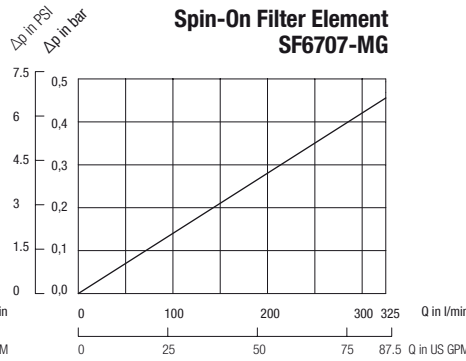
**Spin-On Filter Element SF6704-MG**



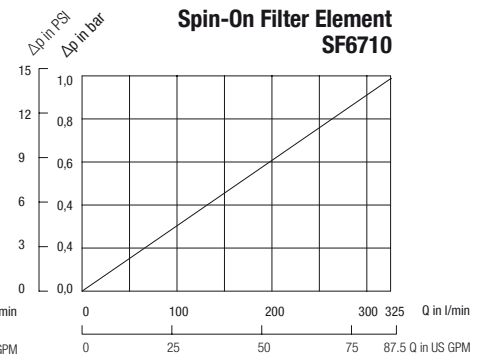
**Spin-On Filter Element SF6706-MG**



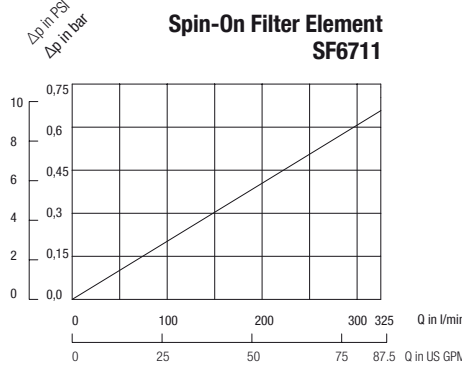
**Spin-On Filter Element SF6707-MG**



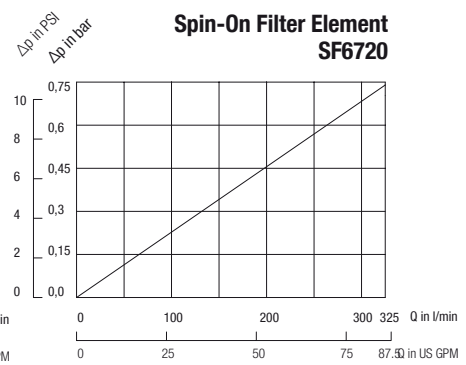
**Spin-On Filter Element SF6710**



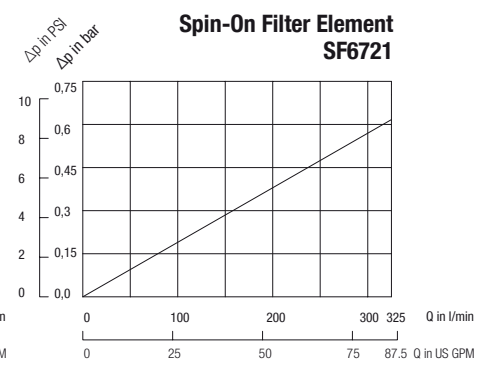
**Spin-On Filter Element SF6711**



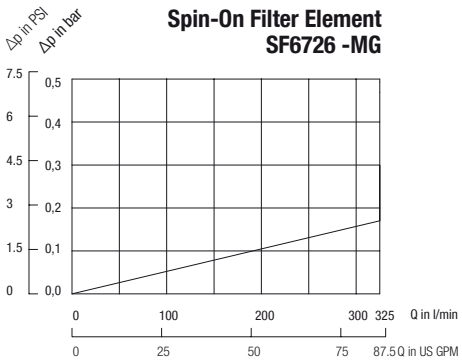
**Spin-On Filter Element SF6720**



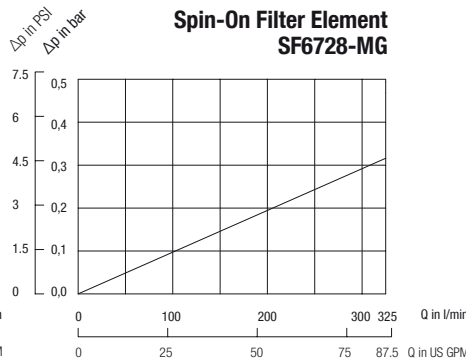
**Spin-On Filter Element SF6721**



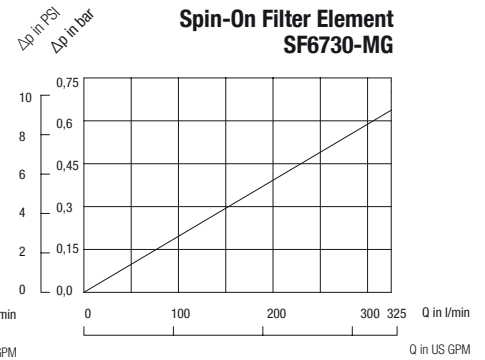
**Spin-On Filter Element SF6726 -MG**



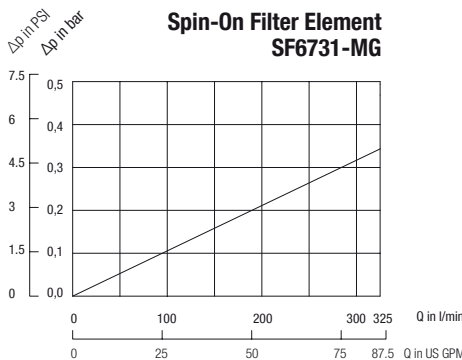
**Spin-On Filter Element SF6728-MG**



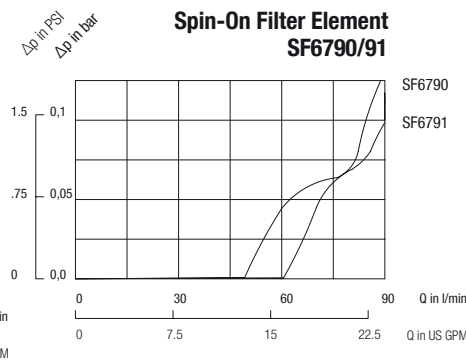
**Spin-On Filter Element SF6730-MG**



**Spin-On Filter Element SF6731-MG**



**Spin-On Filter Element SF6790/91**



## Clogging Indicators

## Visual Clogging Indicators



SIS



GV

Visual Vacuum Clogging Indicators (for Spin-On Filter in suction line applications)

	Type	Thread Connection G	Unit of scale	Range of scale	Coloured Segments			Valve setting Spin-On Filter
					Green	Yellow	Red	
BSP	SIS	1/8	cm Hg	-76 ... 0	-13 ... 0	-18 ... -13	-76 ... -18	0,2 bar/ 3 PSI
	GV-5	1/8	in Hg	-30 ... 0	-4 ... 0	-6 ... -4	-30 ... -6	0,2 bar/ 3 PSI
NPT	GV-10	1/8	in Hg	-30 ... 0	-9 ... 0	-11 ... -9	-30 ... -11	0,35 bar/ 5 PSI



SIM



CI

Visual Pressure Clogging Indicators (for Spin-On Filter in return line applications)

	Type	Thread Connection G	Unit of scale	Range of scale	Coloured Segments			Valve setting Spin-On Filter
					Green	Yellow	Red	
BSP	SIM-02	1/8	bar	0 ... 2,5	0 ... 1,2	1,2 ... 1,5	1,5 ... 2,5	1,7 bar / 25 PSI
	SIM-04	1/8	bar	0 ... 4	0 ... 2,5	2,5 ... 3	3 ... 4	1,7 bar / 25 PSI
	SIM-12	1/8	bar	0 ... 12	without coloured segments			1,7 bar / 25 PSI
NPT	CI-12	1/8	PSI	0 ... 100	0 ... 13	13 ... 15	15 ... 100	1 bar / 15 PSI
	CI-20	1/8	PSI	0 ... 100	0 ... 21	21 ... 25	25 ... 100	1,7 bar / 25 PSI

## Electrical Clogging Indicators



SIE-NO/NC



EPS/EVS

Electrical Clogging Indicators (for Spin-On Filter in return line or suction line applications)

	Type	Thread Connection G	Unit of scale	Adjustable range / Actuating pressure	Max. over pressure	Spin-On filter application	Valve setting Spin-On Filter
BSP	SIE-NO	1/8	bar	1,3 (normally open)	80 bar / 1160 PSI	Return line application	1,7 bar / 25 PSI
	SIE-NC	1/8	bar	1,3 (normally closed)	80 bar / 1160 PSI	Return line application	1,7 bar / 25 PSI
	EPS-1B	1/8	bar	0,35 ... 2,5	25 bar / 362 PSI	Return line application	1,7 bar / 25 PSI
	EVS-1B	1/8	mbar	-1000 ... -150	25 bar / 362 PSI	Suction line application	0,2 bar / 3 PSI
NPT	EPS-1	1/8	PSI	5 ... 35	24 bar / 350 PSI	Return line application	1,7 bar / 25 PSI
	EVS-1	1/8	in Hg	-30 ... -5	24 bar / 350 PSI	Suction line application	0,2 bar / 3 PSI

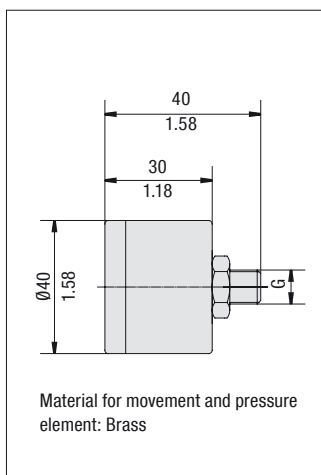
## Technical Data SIE / EPS / EVS

	Type EPS-1 / 1B	Type EVS-1 / 1B
Electrical data	6 Amp 125/250 V AC	
Protection	DIN 43650 IP65	
Temperature Range	-5 °C ... +90 °C / +23 °F ... +194 °F (ambient and media)	
Diaphragm Material	NBR (Buna-N®)	NBR (Buna-N®)
Housing Material	Brass	Steel
Adjustable Range	0,35 bar ... 2,0 bar / 5 ... 30 PSI	150 ... 1000 mbar / 5 ... 30 in Hg
Dead Band	20% F.S.	25% F.S.
Weight	0,1 kg / .22 lbs	0,1 kg / .22 lbs
Repeatability	± 2%	
Hirschmann Connector With Strain Relief		

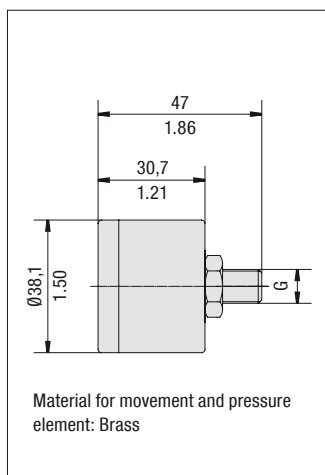
	Type SIE (electrical switch)
Electrical data	48V
Protection	DIN 43650 IP54
Temperature Range	-5 °C ... +60 °C / +23 °F ... +140 °F (ambient and media)
Diaphragm Material	NBR (Buna-N®)
Housing Material	Brass
Actuating Pressure	1,3 bar / 19 PSI
Max. current (res.)	0,5 A
Max. current (ind.)	0,2 A
Available as "normally open" (closes contact at actuating pressure) and as "normally closed" (opens contact at actuating pressure)	

## Dimensions

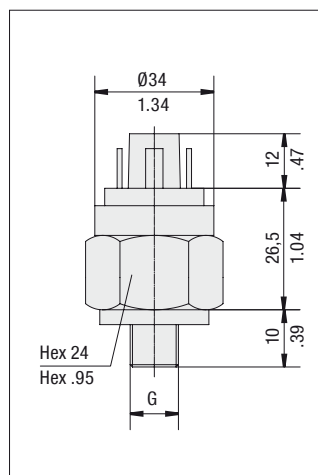
## Type SIM / SIS



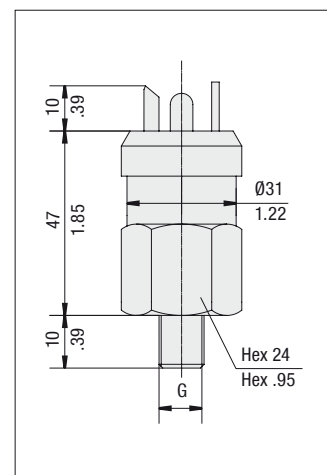
## Type GV / CI



## Type SIE

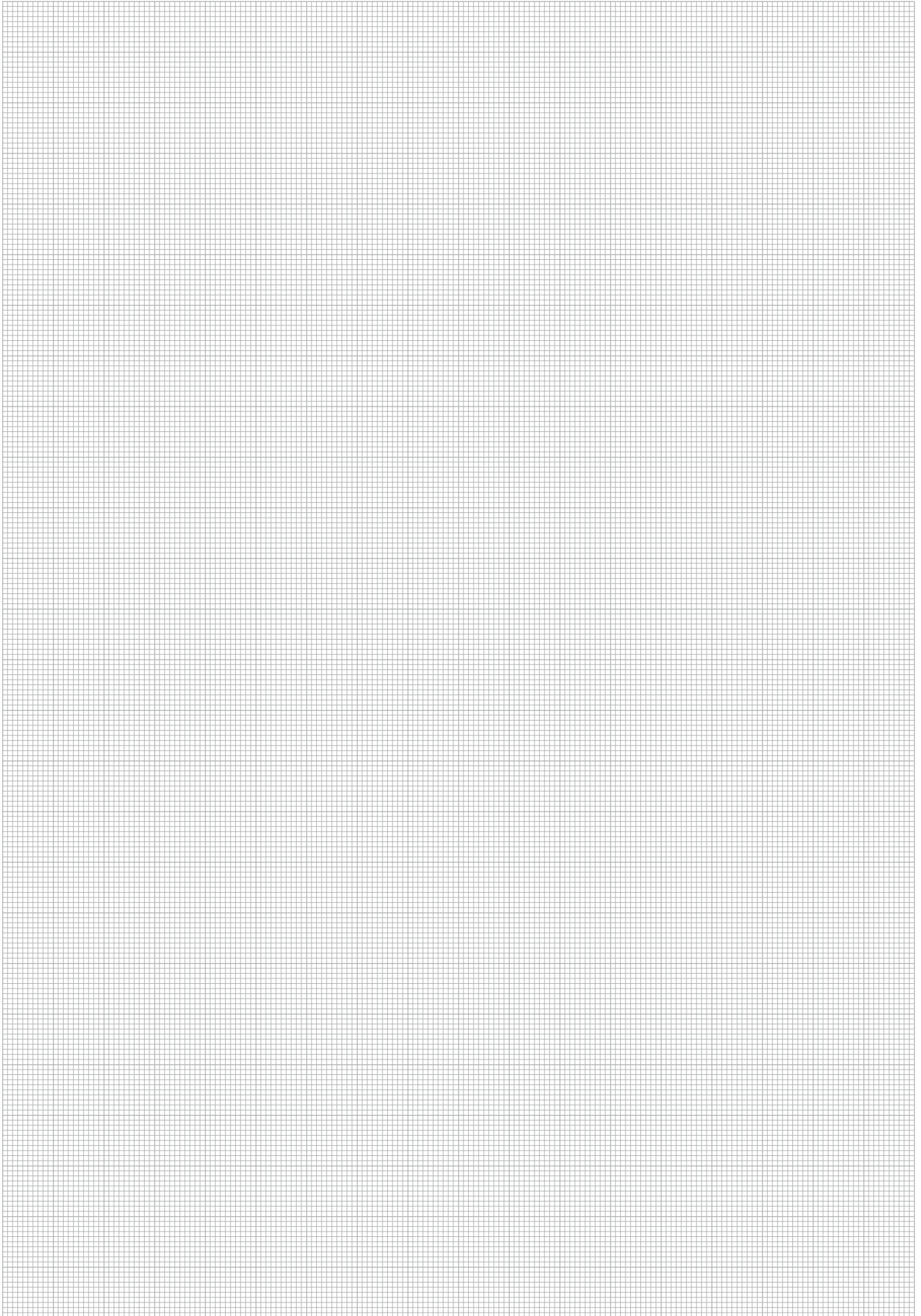


## Type EPS / EVS



Note: The customer / user carries the responsibility for the electrical connection.

Dimensional drawings: All dimensions in mm (in).



## Product Description

STAUFF Offline and Bypass Filter Systems are designed to keep hydraulic and lubrication systems free of particles and water contamination. STAUFF OLS and BPS Units utilize the STAUFF Systems concept for the removal of contamination from hydraulic and lubrication systems. Desiccant Air Breathers, which clean and dry the air entering the reservoir, are also part of this contamination removal system.

STAUFF Systems will provide optimal system cleanliness for today's sophisticated hydraulic and lubrication systems.



## Technical Data

### Construction

- OLS: Offline Filter System with integrated motor / pump unit
- BPS: Bypass Filter System

### Materials

- Housing: Anodized Aluminium
- Sealings: NBR (Buna-N®)

### Port Connection

- OLS: G3/8, G1/2, G3/4 and 18 L
- BPS: G1/4 and G1/2

### Differential Pressure

- Max. 6,2 bar / 90 PSI

### Nominal Flow

- 2,1 ... 17 l/min / .55 ... 4.5 US GPM

### Max. System Volume

- Up to 10800 l / 2853 gal

### Temperature Range

- Max. +80 °C / +176 °F media temperature

### Media Compatibility

- Mineral and lubrication oils, other fluids on request

## Options and Accessories

### Valve

- Bypass valve: Setting 6,2 bar / 90 PSI integrated in filter head

### Clogging Indicator

- Visual clogging indicator

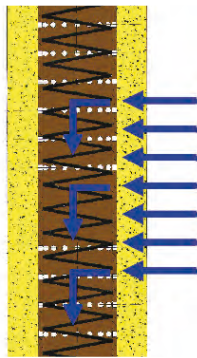
### Motor Types (only OLS)

- Several motor types available for more information please have a look at page C156

## The STAUFF System



Filter Element SRM-30



Filter Element Design



Air Conditioners SDB / SVDB

### System Contamination

In today's hydraulic market it is an accepted fact that contamination causes 70 % of all mechanical failures. This contamination results from the presence of solid particles such as metal, sand and rubber.

Changes in temperature cause water vapour to condense, resulting in unwanted water in the oil, the presence of this water accelerates the deterioration of the oil.

Mainstream filters are incapable of removing particles, smaller than 2 micron (better known as silt). Fluctuations in pressure and flow result in changing conditions preventing these filters from carrying out fine filtration; most of the silt remains in the system affecting the chemical composition of the oil.

All these problems lead to reduced oil life and increased component wear, maintenance costs and machine down time.

Removing silt and preventing the formation of free water will combat these problems.

### Micro Filtration

At the heart of the STAUFF Offline and Bypass Filter Unit is the unique microfilter element. This filter is designed with a radial flow path.

The element is constructed with 0,5 micron media and is therefore able to remove the smallest particles (silt) from the oil.

The filter material is composed primarily of cellulose, which is applied by a special wrapping method. Glass fibre and water absorbing elements are available on request.

The cellulose material is capable of retaining solid particles and absorbing water. This helps to prevent chemical deterioration of the oil and the formation of various acids and sludge.

Hydraulic cylinder extension for example, can draw air, solid contamination particles and water vapour into the oil reservoir.

The water vapour condenses due to temperature changes and causes not only oxidation of the oil, but can also lead to serious mechanical wear in the system.

### Air Conditioning

Standard air filters remove a certain amount of solid particle contamination from the air but allow water vapour, to pass through.

The STAUFF "Air conditioners" type SDB and SVDB ensure that incoming air is first dried and then filtered. The SDB and SVDB units should be used in conjunction with the OLS / BPS Systems in order to provide a more complete filtering system. See Hydraulic Accessories section of this catalog, pages E30 to E33 for more details.

### Advantages

- Less malfunction
- Protection of expensive main stream filters
- Less frequent oil changes
- Extended Usable life of the oil
- Less machine downtimes

### Characteristics

- A filter fineness of 0,5 micron  $B_{0,5} \geq 200$ ,  $B_2 \geq 2330$
- Large particle collection capacity
- High filtration capacity due to depth effect
- Large water adsorption capacity
- Do not adversely affect viscosity or additives
- Do not remove additives
- Reduce the oxidation process
- Reduce the forming of acids
- With two measuring points for particle counter or oil sampling
- Save Cost

### Applications

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>▪ Mining</li> <li>▪ Harvesting</li> <li>▪ Forestry</li> <li>▪ Agricultural</li> <li>▪ Off-road</li> <li>▪ Fishing</li> <li>▪ Road construction</li> <li>▪ Cranes</li> <li>▪ Airport equipment</li> <li>▪ Flight simulators</li> <li>▪ Pulp and paper</li> <li>▪ Food processing</li> </ul> | <ul style="list-style-type: none"> <li>▪ Presses</li> <li>▪ Automotive industry</li> <li>▪ Timber plants</li> <li>▪ Plastic and rubber</li> <li>▪ Metal industry</li> <li>▪ Cement and concrete</li> <li>▪ Material handling</li> <li>▪ Bridges/Hydraulic locks/Water works</li> <li>▪ Petrochemical industry</li> <li>▪ Power stations</li> <li>▪ Marine</li> <li>▪ Steel</li> </ul> |
|---|---|



**Offline Filters ■ Type OLS**
**Product Description**

STAUFF Offline Filter Units can be applied to every imaginable industrial application where hydraulic or lubrication systems are present.

An integrated motor/pump unit draws fluid out of the tank, filters it and pumps clean oil back into the system. Offline Filter Units can continue to work even when the main system is not in use. The standard range offers filter units for reservoirs with a capacity of up to 10800 l / 2853 gal.

Over the years, STAUFF Systems have developed considerable experience in the hydraulic and lubrication market cleaning systems to levels not previously possible with conventional methods.

With its integrated motor/pump unit STAUFF OLS Filter Systems are specially designed for Offline filtration of a hydraulic main system. This allows continuous filtration of the fluid even when the main system has been shut down.

The OLS is available with one, two or four filter housings and in two different lengths. The maximum flow for the Offline Unit goes from 2,1 ... 17 l/min / .55 ... 4.5 US GPM at a viscosity between 20 ... 160 cSt. For the OLS you can choose several different motor/pump units, for more information please see page C156 (Order code).

**All Offline Filter Systems are available with air driven motors.  
These units are ideal for areas where electric power is unavailable  
or for hazardous locations.**

**Single Length** (see page C152 / C153)

**OLS - 1A - 30 - H - B**

**OLS - 2A - 30 - H - B**

**OLS - 4A - 30 - H - B**

**Double Length** (see page C154 / C155)

**OLS - 1B - 30 - H - B**

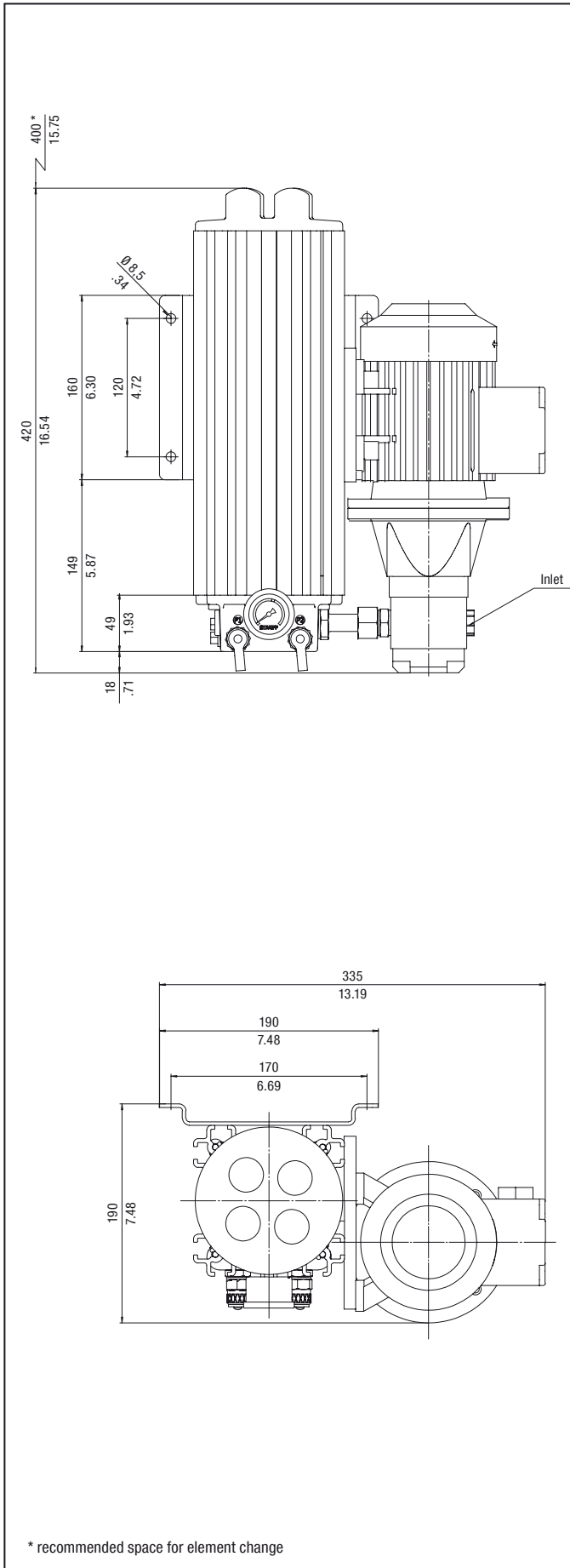
**OLS - 2B - 30 - H - B**

**OLS - 4B - 30 - H - B**

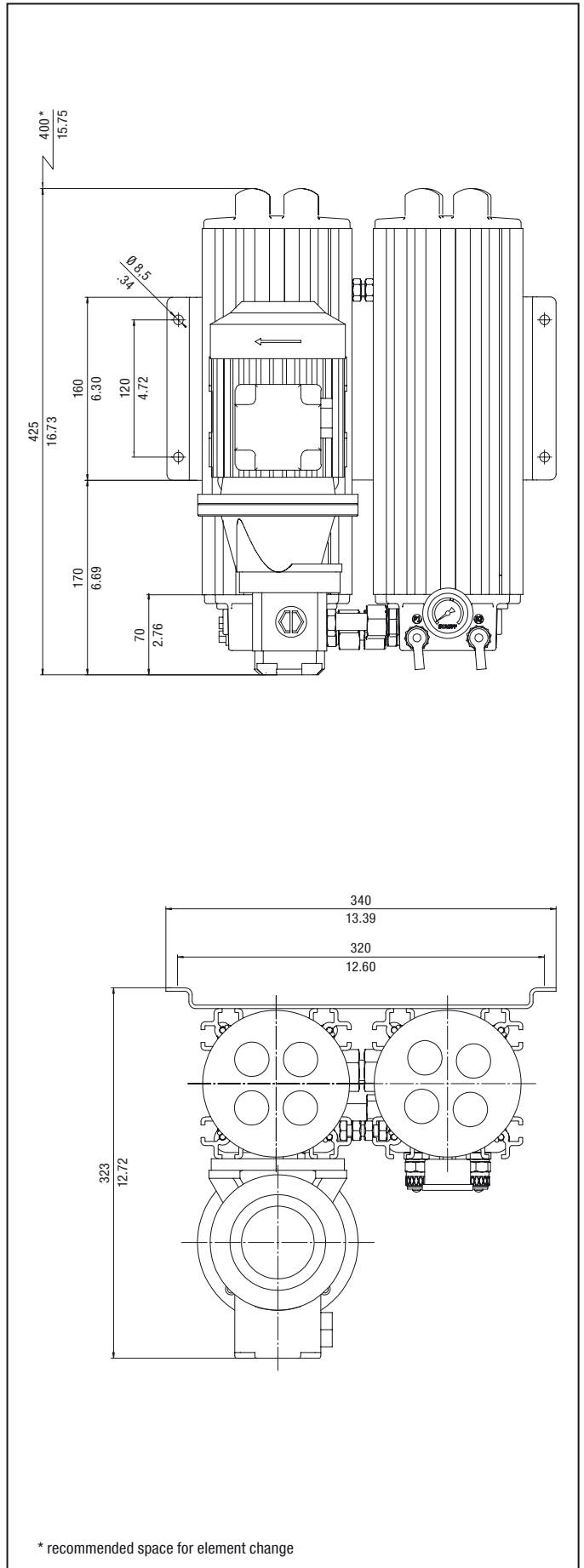



Offline Filters ■ Type OLS

Dimensions OLS - 1A - 30 - H - B

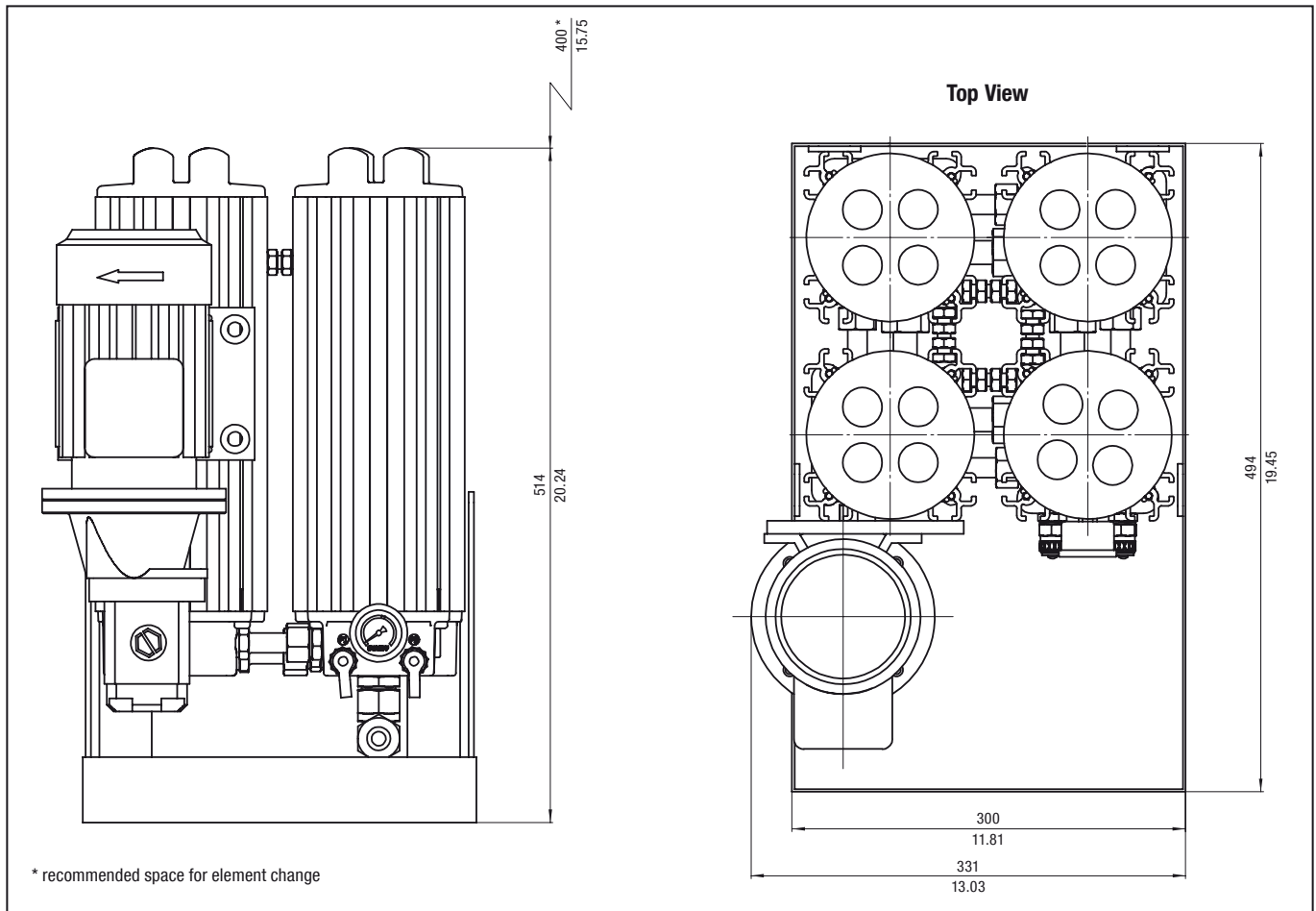


Dimensions OLS - 2A - 30 - H - B



All dimensions in mm / in

## Dimensions OLS - 4A - 30 - H - B



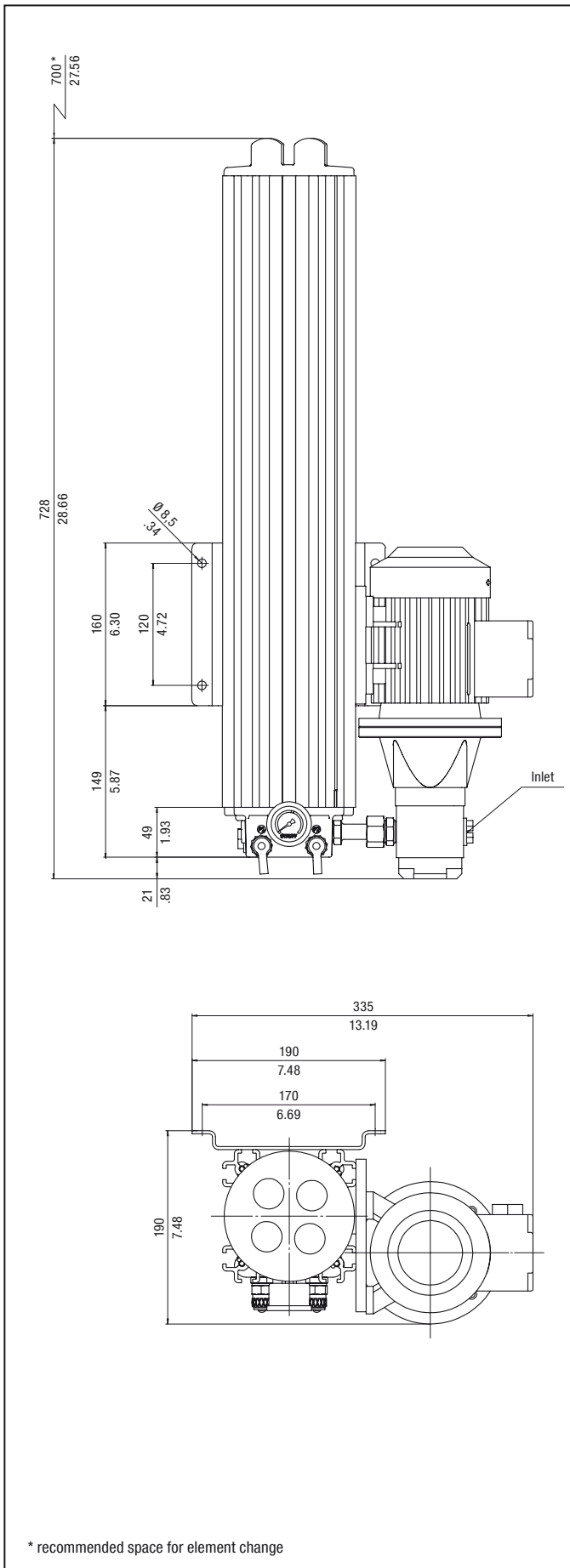
All dimensions in mm / in

## Technical Data

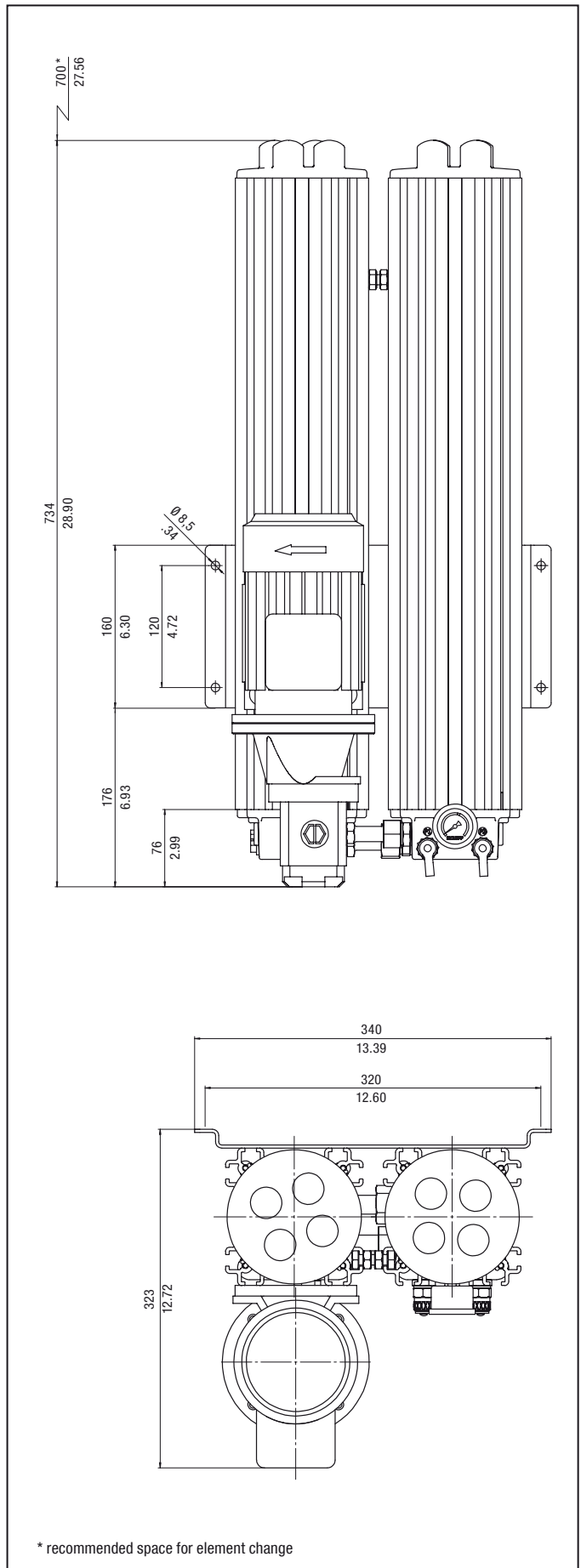
	OLS-1A-30-H-B	OLS-2A-30-H-B	OLS-4A-30-H-B
Number of Filter Housings	1	2	4
Nominal Flow	2,1 l/min .55 US GPM	4,2 l/min 1.1 US GPM	8,4 l/min 2.22 US GPM
Max. Differential Pressure	Max. 6,2 bar 90 PSI over the filter element without backpressure		
Max. Fluid Temperature	+80 °C +176 °F		
Max. Housing Pressure	20 bar 290 PSI		
Viscosity Range	20 ... 160 cSt 100 ... 750 SUS		
Connection Suction Side	G3/8	G1/2	
Connection Return Line Side	G1/2		EW 18L-3/4
Hose Diameter	1/2 in (inner diameter) flexible hose		3/4 in (inner diameter) flexible hose
Weight (Including Element)	14 kg 30.9 lbs	21 kg 46.3 lbs	39 kg 86 lbs
Max. System Volume	1350 l 356 gal	2700 l 713 gal	5400 l 1426 gal
Dimensions HxWxD	420 x 335 x 190 mm 16.54 x 13.19 x 7.48 in	425 x 340 x 323 mm 16.73 x 13.39 x 12.72 in	514 x 494 x 331 mm 20.24 x 19.45 x 13.03 in
Connection for Online Particle Counter	STAUFF Test (M16 x 2)		
Pump	Gear pump		
Motor	See page C156 for electric motor details		

Offline Filters ■ Type OLS

Dimensions OLS - 1B - 30 - H - B

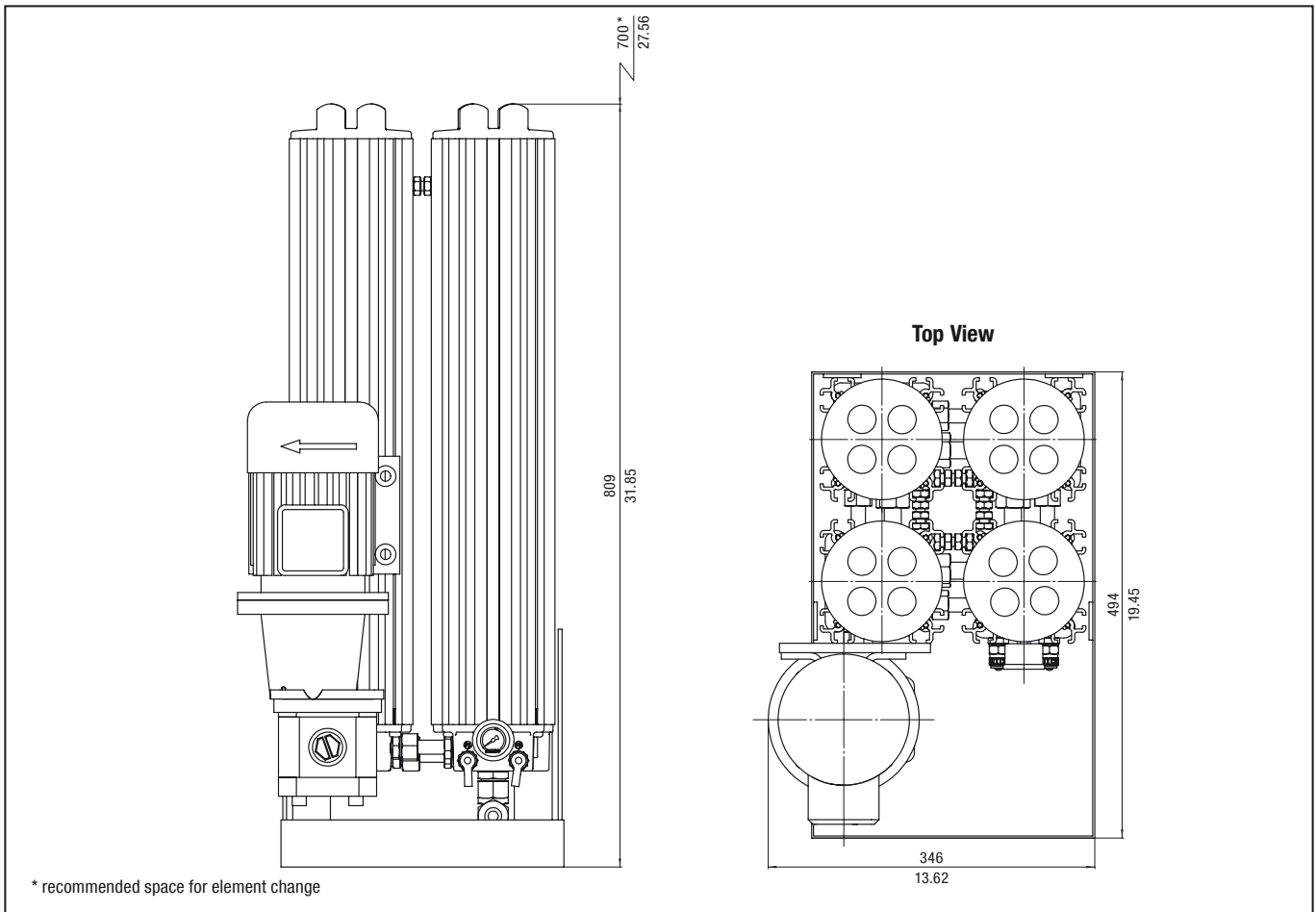


Dimensions OLS - 2B - 30 - H - B



All dimensions in mm / in

## Dimensions OLS - 4B - 30 - H - B



All dimensions in mm / in

## Technical Data

	OLS-1B-30-H-B	OLS-2B-30-H-B	OLS-4B-30-H-B
Number of Filter Housings	1	2	4
Nominal Flow	4,2 l/min 1.1 US GPM	8,4 l/min 2.22 US GPM	17 l/min 4.5 US GPM
Max. Differential Pressure	Max. 6,2 bar 90 PSI over the filter element without backpressure		
Max. Fluid Temperature	+80 °C +176 °F		
Max. Housing Pressure	20 bar 290 PSI		
Viscosity Range	20 ... 160 cSt 100 ... 750 SUS		
Connection Suction Side	G1/2	G1/2	G3/4
Connection Return Line Side	G1/2		EW 18L-3/4 in
Hose Diameter	1/2 in (inner diameter) flexible hose		3/4 in (inner diameter) flexible hose
Weight (Including Element)	18 kg 39.7 lbs	30 kg 66.1 lbs	61 kg 134.5 lbs
Max. System Volume	2700 l 713 gal	5400 l 1426 gal	10800 l 2853 gal
Dimensions	728 x 335 x 190 mm	734 x 340 x 323 mm	809 x 494 x 346 mm
HxWxD	28.66 x 13.19 x 7.48 in	28.90 x 13.39 x 12.72 in	31.85 x 19.45 x 13.62 in
Connection for Online Particle Counter	STAUFF Test (M16 x 2)		
Pump	Gear pump		
Motor	See page C156 for electric motor details		

Offline Filter Housings / Complete Filters ▪ Type OLS

**OLS - 1A - 30 - H - B - 0 - 01 - 0 - 0**

1 2 3 4 5 6 7 8 9

1 Type

Offline Filter Unit **OLS**  
(for industrial applications)

2 Housing Configuration

Single Length	Max. Reservoir Size	Quantity of Elements	Code
Single housing	1350 l / 356 gal	1x1	<b>1A</b>
Twin housing	2700 l / 713 gal	2x1	<b>2A</b>
Quadruple housing	5400 l / 1426 gal	4x1	<b>4A</b>

Double Length	Max. Reservoir Size	Quantity of Elements	Code
Single housing	2700 l / 713 gal	1x2	<b>1B</b>
Twin housing	5400 l / 1426 gal	2x2	<b>2B</b>
Quadruple housing	10800 l / 2853 gal	4x2	<b>4B</b>

3 Filter Element Length

300 mm / 11.81 in **30**

4 Filter Material and Micron Rating

Material	Micron rating µm	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

5 Sealing Material

NBR (Buna-N®) (standard) **B**  
FPM (Viton®) **V**

6 E-motor Options

Motor Type	Code
230/400 V AC, 50 Hz, three phases, 1360 r/min 255/460 V AC, 60 Hz, three phases, 1630 r/min (50 Hz and 60 Hz standard)	<b>0</b>
230 V AC, 50 Hz, single phase, 1360 r/min	<b>A</b>
24 V DC	<b>B</b>
110 V AC, 50 Hz, single phase	<b>C</b>
110 V AC, 60 Hz, single phase	<b>D</b>
230 V AC, 60 Hz, single phase, 1630 r/min	<b>F</b>

Note: Special motors on request.

7 Pump Options

50 Hz Motor	Standard in	Code
1,6 cc/rev.	OLS-1A	<b>00</b>
3,15 cc/rev.	OLS-2A/1B	<b>10</b>
6,1 cc/rev.	OLS-4A/2B	<b>20</b>
8,2 cc/rev.		<b>30</b>
11,3 cc/rev.	OLS-4B	<b>40</b>
0,8 cc/rev.		<b>50</b>

60 Hz motor	Standard in	Code
1,25 cc/rev.	OLS-1A	<b>01</b>
2,5 cc/rev.	OLS-2A/1B	<b>11</b>
5,0 cc/rev.	OLS-4A/2B	<b>21</b>
6,3 cc/rev.		<b>31</b>
10 cc/rev.	OLS-4B	<b>41</b>

8 Clogging Indicator

Visual clogging indicator **0**

9 Mounting Options

No options (standard) **0**  
Motor / pump right side mounted **1**  
Motor / pump left side mounted **2**  
Motor / pump horizontal front **3**

Filter Elements ▪ Type SRM

**SRM - 30 - H - B - 1**

1 2 3 4 5

1 Type

Filter Element Series **SRM**

2 Filter Element Length

300 mm / 11.81 in **30**

3 Filter Material and Micron Rating

Material	Micron rating µm	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

4 Sealing Material

NBR (Buna-N®) (standard) **B**  
FPM (Viton®) **V**

5 Quantity

One piece filter element **1**  
Box with 15 pieces filter element **15**

Technical Data on Electric Motors used for OLS Filters (For air driven motors contact STAUFF)

E-motor	Standard Configuration	Description	Power in kW	Power in HP	Voltage 50 Hz	Amp 50 Hz	RPM 50 Hz	Voltage 60 Hz	Amp 60 Hz	RPM 60 Hz
C, D	OLS-1A OLS-2A OLS-1B	M63 B3/B5 4P 110V MULTIVOLT	0,18	0.24	110 V AC	3,30		110 V AC	2,70	
A, F	OLS-1A OLS-2A OLS-1B	M63 B3/B5 4P 230 MULTIVOLT	0,18	0.24	230 V AC	1,57		230 V AC	1,34	
0	OLS-1A OLS-2A OLS-1B	M63 B3/B5 4P 3PH MULTIVOLT	0,18	0.24	230/400 V AC	1,03 / 0,60		254/440 V AC	0,90 / 0,52	
0	OLS-2B OLS-4A	M63 B3/B5 4P 3PH MULTIVOLT	0,29	0.39	230/400 V AC	1,65 / 0,95	1460	254/440 V AC	1,47 / 0,85	1740
C, D	OLS-2B OLS-4A OLS-4B	M71 B3/B5 4P 110V MULTIVOLT	0,37	0.50	110 V AC	6,10		110 V AC	5,20	
A, F	OLS-2B OLS-4A OLS-4B	M71 B3/B5 4P 230V MULTIVOLT	0,37	0.50	230 V AC	3,00		230 V AC	2,65	
0	OLS-4B	M71 B3/B5 4P 3PH MULTIVOLT	0,37	0.50	230/400 V AC	1,90 / 1,10		254/440 V AC	1,60 / 0,93	

## Water Absorbing Offline Filter ■ Type OLSW

### Product Description

STAUFF Systems Units are characterized by their extremely efficient filter elements which are rated to 0,5 micron. Specially designed for industrial hydraulic installations the STAUFF Offline Filters are available in single or double length configurations. The Offline Filter Units can easily be mounted to new and existing hydraulic installations. By means of an integrated motor/pump unit and an Offline Filter, the oil is pumped from the reservoir through the filter unit and after filtering the oil is then returned to the tank.

### Economical

The hydraulic market accepts that 70 % of mechanical failures are caused by contamination in the system. The STAUFF Water Absorbing Offline Filters attack this contamination at source and in addition to solid particles, these filters are also capable of removing large quantities of water from the oil. This prevents the catalytic reaction of water and solid particle contamination, resulting in extended useable oil life.

The application of STAUFF Filters results in lower component failure rates, less down time and less system maintenance.

### Water Absorbing

STAUFF Water Absorbing Filters are Offline Units that use special water absorbing Spin-On Filter Elements as a pre-filter. The fluid is pumped through the pre-filter which removes most water and larger solid contamination, in the second stage the fluid passes through the STAUFF Micro Filter where final water removal takes place as well as solid removal down to 0,5 micron.

In recent years STAUFF Systems have developed a great deal of experience in cleaning and drying hydraulic and lubrication systems in the following markets:

- Steel industry
- Maritime industry
- Petrochemical industry
- Paper industry

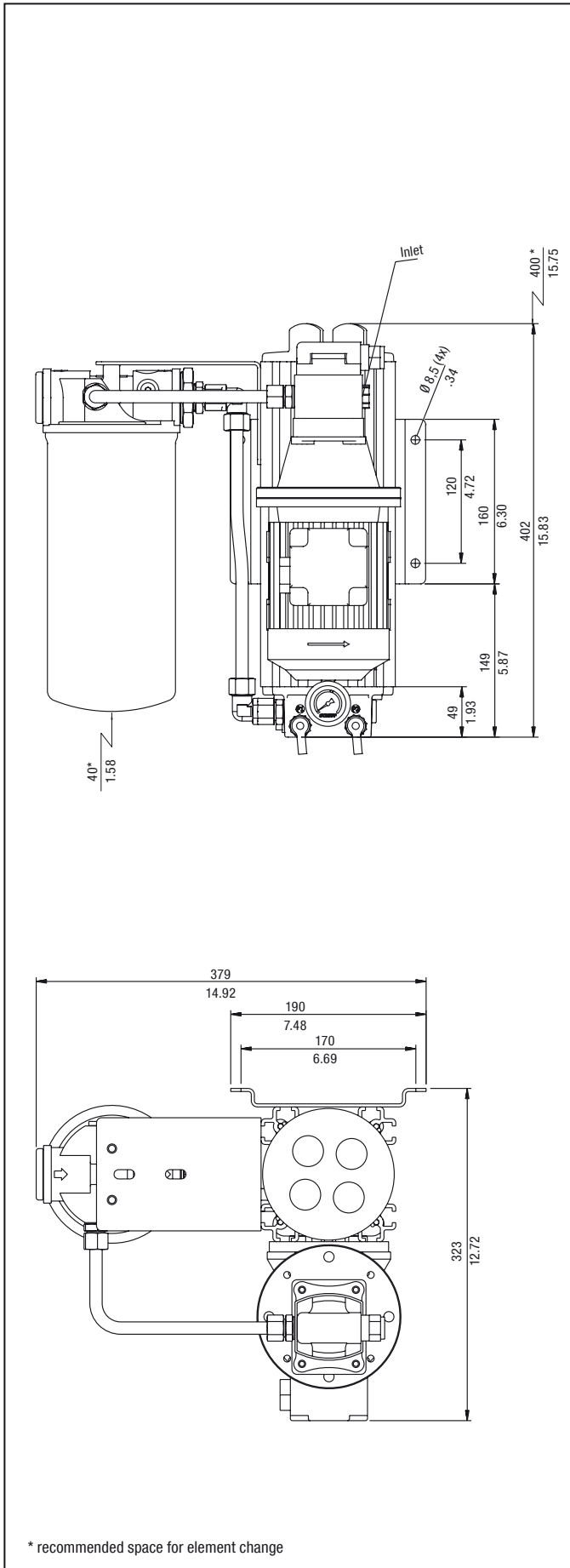
### Advantages

- Extremely clean oil due to the high filtration efficiency  $\beta_2 > 2330$
- Prevention of channel forming by radial filtration direction
- Increased flow capacity
- Increased dirt-hold capacity
- Large water holding capacity
- Compact and easy-maintenance design
- Longer usage life for oil and components

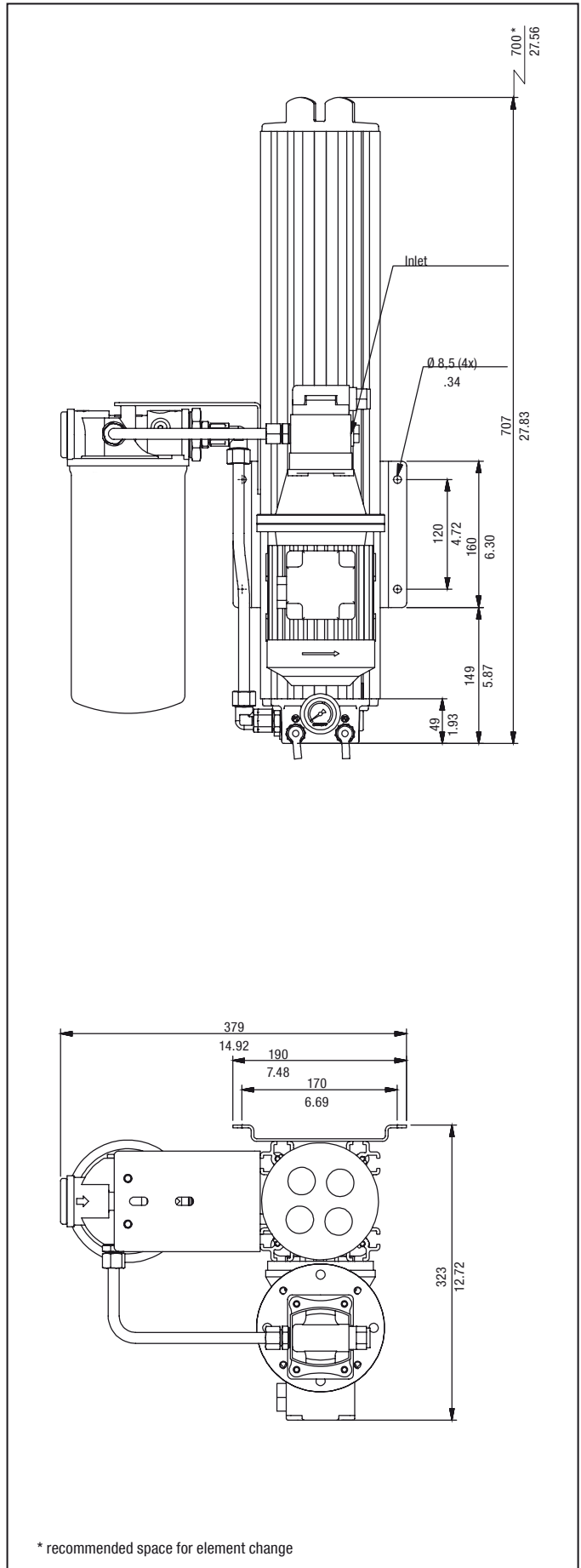


Water Absorbing Offline Filter - Type OLSW

Dimensions OLSW - 1A - 30



Dimensions OLSW - 1B - 30

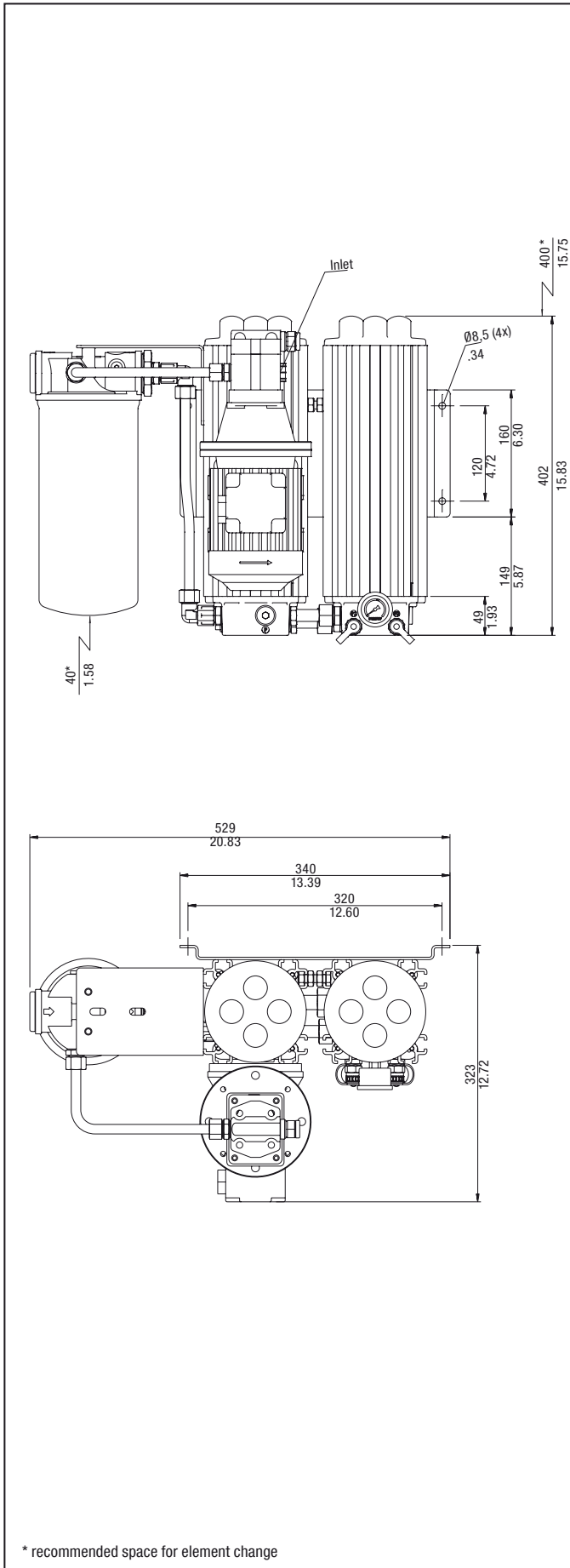


All dimensions in mm / in

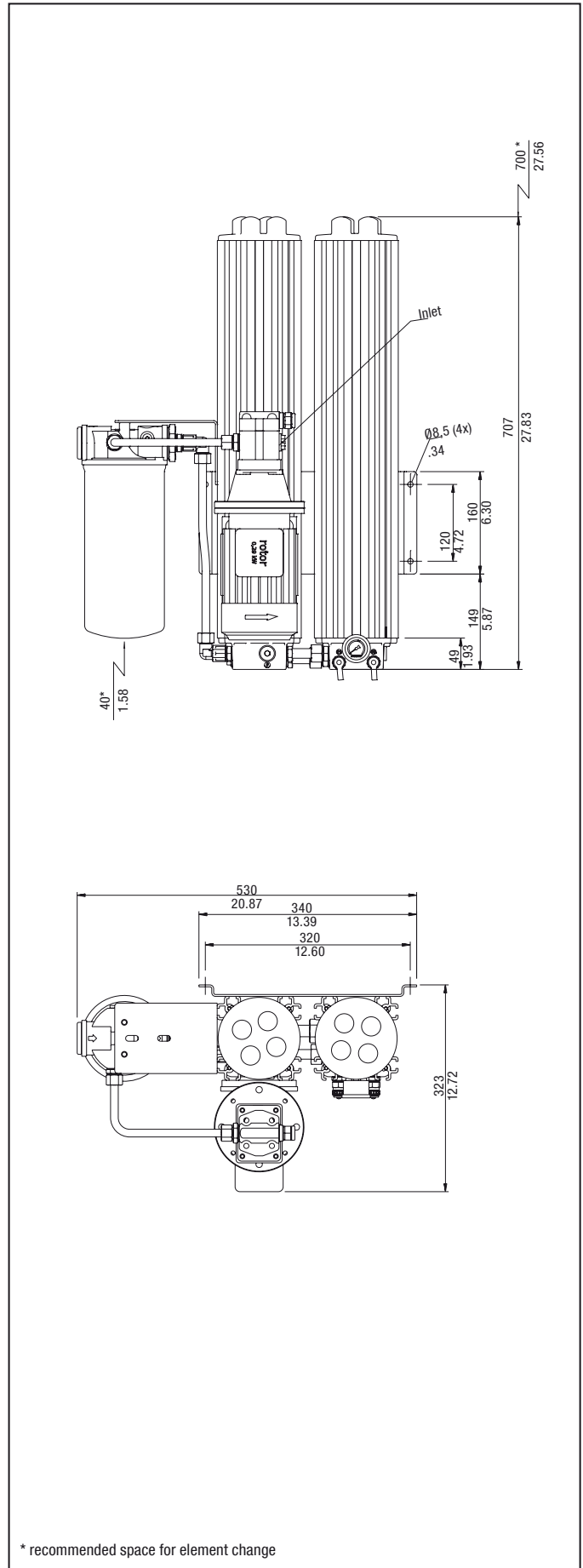


Water Absorbing Offline Filter ■ Type OLSW

Dimensions OLSW - 2A - 30



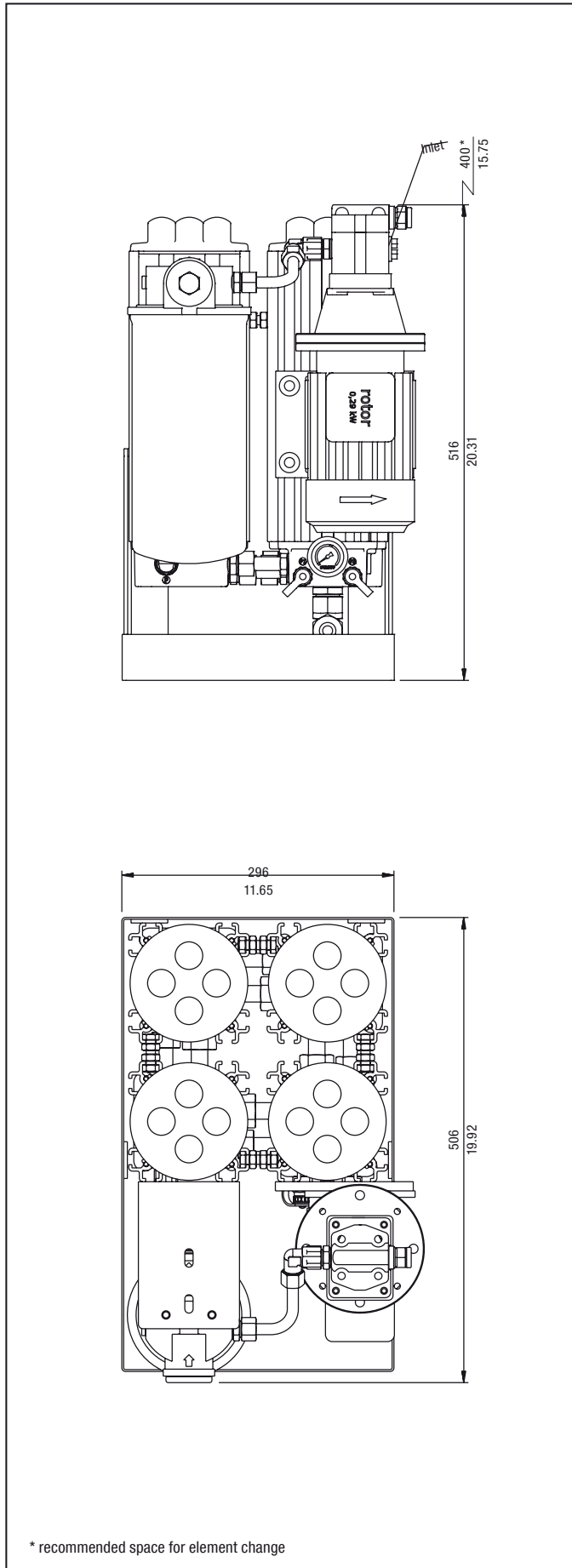
Dimensions OLSW - 2B - 30



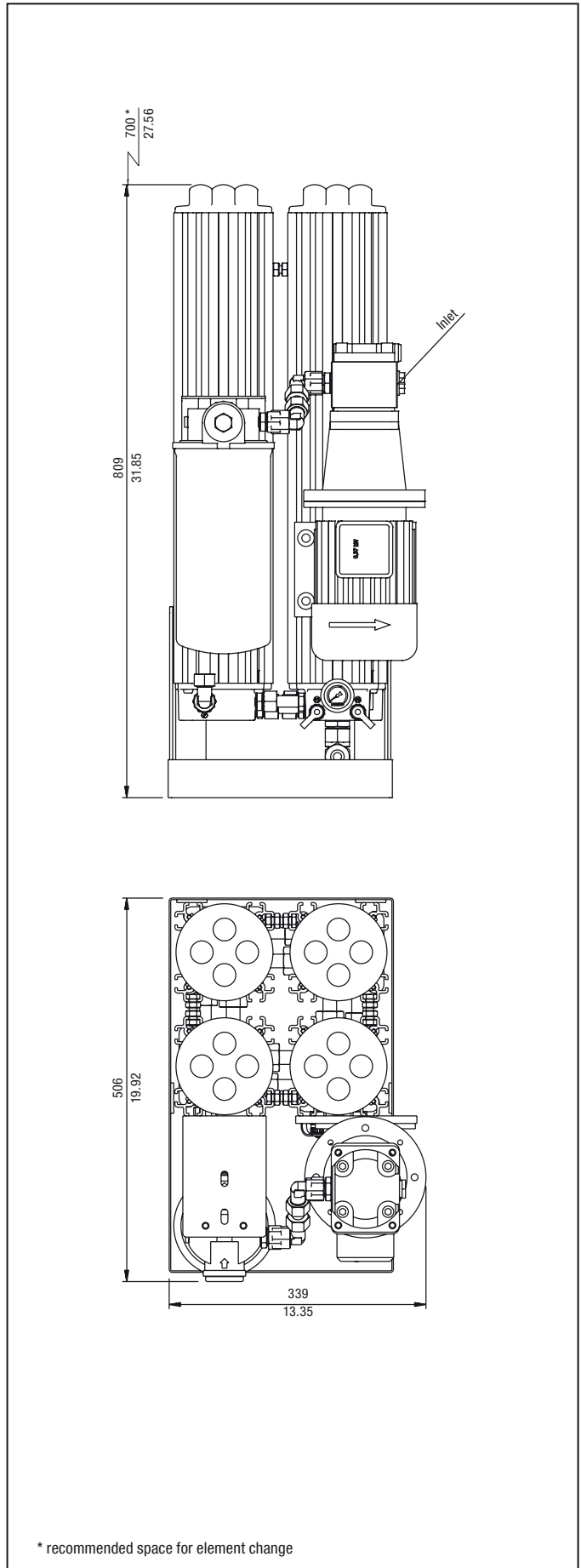
All dimensions in mm / in

Water Absorbing Offline Filter - Type OLSW

Dimensions OLSW - 4A - 30



Dimensions OLSW - 4B - 30



All dimensions in mm / in

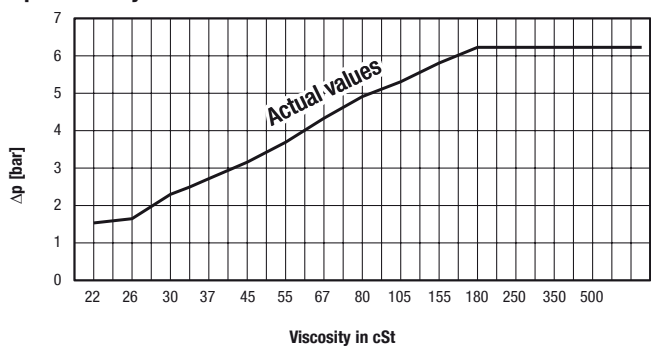
## Water Absorbing Offline Filter ■ Type OLSW

## Technical Data OLSW

Type Filter	OLSW - 1A - 30 - H - B	OLSW - 1B - 30 - H - B	OLSW - 2A - 30 - H - B	OLSW - 2B - 30 - H - B	OLSW - 4A - 30 - H - B	OLSW - 4B - 30 - H - B
Number of Filter Housings	1	1	2	2	4	4
Material Filter Housings	Anodized Aluminum					
Sealing Material	NBR (Buna-N®, standard)					
Nominal Flow	2,1 l/min .6 US GPM	4,2 l/min 1.1 US GPM	4,2 l/min 1.1 US GPM	8,4 l/min 2.2 US GPM	8,4 l/min 2.2 US GPM	16,8 l/min 4.4 US GPM
Bypass Opening Pressure (over the filter element without backpressure)	6,2 bar 90 PSI					
Number of Standard Filter Elements	1	2	2	4	4	8
Number of Pre-Filter Elements	1	1	1	1	1	1
Water Absorbing Capacity	690 ml 23 oz.	840 ml 28 oz.	840 ml 28 oz.	840 ml 28 oz.	840 ml 28 oz.	1740 ml 58 oz.
Max. Pressure Filter Housing	20 bar 290 PSI					
Max. Oil Temperature	+80 °C +176 °F					
Max. Viscosity	20 ... 160 cSt 100 ... 750 SUS					
Indicator Type	Visual clogging indicator					
Connection Pump Suction	G1/2 female					G3/4 female
Diameter Hose Suction Side	1/2 in					3/4 in
Filter Return Connection	G1/2 female				EW 18L - 3/4 in	
Diameter Hose Return Side	1/2 in					
Dimensions	402 x 379 x 323 mm	707 x 379 x 323 mm	402 x 529 x 323 mm	707 x 530 x 323 mm	518 x 296 x 506 mm	809 x 339 x 506 mm
H x B x L	15.83 x 14.92 x 12.72 in	27.84 x 14.29 x 12.72 in	15.83 x 20.83 x 12.72 in	27.83 x 20.87 x 12.72 in	20.39 x 11.65 x 19.92 in	31.85 x 13.35 x 19.92 in
Pump type	Gear pump					
Power Supply E-Motor	Various electrical power supplies possible					
Weight (including Element)	18 kg 39.7 lbs	22 kg 48.5 lbs	25 kg 55.1 lbs	34 kg 75.0 lbs	43 kg 94.8 lbs	65 kg 143.3 lbs
Max. System Volume	1350 l 356 gal	2700 l 713 gal	2700 l 713 gal	5400 l 1427 gal	5400 l 1427 gal	10,800 l 2853 gal
Standard Units for larger system volumes are also available						
Connection Oil-Analysis: P1 filter inlet side P2 filter outlet side	Test connector (M16 x 2) Red Test connector (M16 x 2) Red					

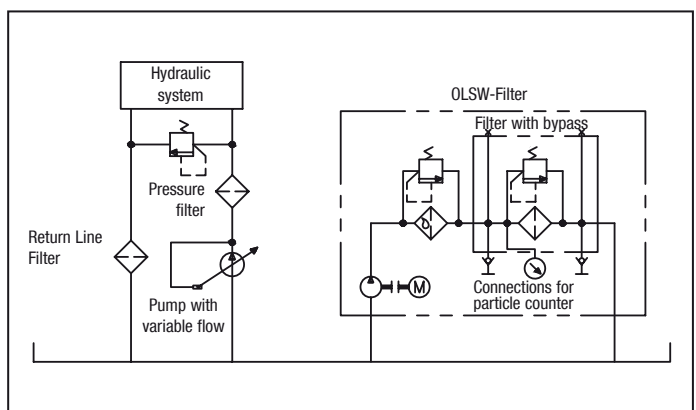


Water absorbing spin-on filter element

 $\Delta p$  / Viscosity for OLSW-Filter


## System Example

## Schematic Offline Filtration incl. Water Absorption



Water Absorbing Offline Filter Housings / Complete Filters ▪ Type OLSW

**OLSW - 1A - 30 - H - B - 0 - 01 - 0 - 0 - A**

1 2 3 4 5 6 7 8 9 10

**1 Type**

Offline Filter Unit incl. water absorption **OLSW**  
(for industrial applications)

**2 Housing Configuration**

Length	Suitable for Reservoir Size	Quantity of Elements Standard	Pre-filter	Code
Single housing Single length	1350 l / 356 gal	1	1	<b>1A</b>
Single housing Double length	2700 l / 713 gal	2	1	<b>1B</b>
Double housing Single length	2700 l / 713 gal	2	1	<b>2A</b>
Double housing Double length	5400 l / 1427 gal	4	1	<b>2B</b>
Quadruple housing Single length	5400 l / 1427 gal	4	1	<b>4A</b>
Quadruple housing Double length	10800 l / 2853 gal	8	1	<b>4B</b>

**3 Filter Element Length**

300 mm / 11.81 in **30**

**4 Filter Material and Micron Rating**

Material	Micron rating µm	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

**5 Sealing Material**

NBR (Buna-N®) (standard) **B**  
FPM (Viton®) **V**

**6 E-motor Options**

Motor Type	Code
230/400 V AC, 50 Hz, three phases, 1360 r/min 255/460 V AC, 60 Hz, three phases, 1630 r/min (50 Hz and 60 Hz standard)	<b>0</b>
230 V AC, 50 Hz, single phase, 1360 r/min	<b>A</b>
24 V DC	<b>B</b>
110 V AC, 50 Hz, single phase	<b>C</b>
110 V AC, 60 Hz, single phase	<b>D</b>

Note: Other motors on request, technical data see page C156.

**7 Pump Options**

50 Hz Motor	Standard in	Code
1,6 cc/rev.	OLSW-1A	<b>00</b>
3,15 cc/rev.	OLSW-1B/2A	<b>10</b>
6,1 cc/rev.	OLSW-2B/4A	<b>20</b>
11,3 cc/rev.	OLSW-4B	<b>40</b>

60 Hz Motor	Standard in	Code
1,25 cc/rev.	OLSW-1A	<b>01</b>
2,5 cc/rev.	OLSW-1B/2A	<b>11</b>
5,0 cc/rev.	OLSW-2B/4A	<b>21</b>
10 cc/rev.	OLSW-4B	<b>41</b>

**8 Clogging Indicator**

Visual clogging indicator **0**

**9 Mounting Options**

No options (standard) **0**

**10 Pre-Filter Elements**

Water absorption element	
SF6721-W (10 micron water absorbing, capacity 540 ml water)	<b>A</b>
Pre-filter elements (particles)	
without pre-filter element	<b>0</b>
SF6702-MG (inorganic glass fiber, 1 micron)	<b>B</b>
SF6704-MG (inorganic glass fibre, 3 micron)	<b>C</b>
SF6707-MG (inorganic glass fibre, 6 micron)	<b>D</b>
SF6731-MG (inorganic glass fibre, 12 micron)	<b>E</b>
SF6726-MG (inorganic glass fibre, 25 micron)	<b>F</b>
SF6721 (filter paper, 10 micron)	<b>G</b>
SF6711 (filter paper, 25 micron)	<b>H</b>
SF6791 (wire mesh, 125 micron)	<b>J</b>

Filter Elements ▪ Type SRM

**SRM - 30 - H - B - 1**

1 2 3 4 5

**1 Type**

Filter Element Series **SRM**

**2 Filter Element Length**

300 mm / 11.81 in **30**

**3 Filter Material and Micron Rating**

Material	Micron rating µm	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

**4 Sealing Material**

NBR (Buna-N®) (standard) **B**  
FPM (Viton®) **V**

**5 Quantity**

One piece filter element **1**  
Box with 15 pieces filter element **15**

Pre-Filter Elements ▪ Type SF67

**SF6721 - W**

1

**1 Pre-Filter Elements**

SF6721-W	Spin-on filter element, water absorbing, 10 micron
SF6702-MG	Spin-on filter element, inorganic glass fibre, 1 micron
SF6704-MG	Spin-on filter element, inorganic glass fibre, 3 micron
SF6707-MG	Spin-on filter element, inorganic glass fibre, 6 micron
SF6731-MG	Spin-on filter element, inorganic glass fibre, 12 micron
SF6726-MG	Spin-on filter element, inorganic glass fibre, 25 micron
SF6721	Spin-on filter element, filter paper, 10 micron
SF6711	Spin-on filter element, filter paper, 25 micron
SF6791	Spin-on filter element, wire mesh, 125 micron

## Heated Offline Filters ▪ Type OLSH

### Product Description

STAUFF System Units are characterized by their pre-heating unit and extremely efficient filter elements with a fineness of 0,5 micron.

Specially designed for industrial hydraulic installations, the STAUFF Offline Filters are available in single or multiple housing configurations. The Offline Filter Units can easily be mounted to new and existing hydraulic installations.

By means of an integrated motor/pump unit and an Offline Filter, the oil is pumped from the reservoir through the filter unit and after filtering the oil is then returned to the tank.

### Economical

The hydraulic market accepts that 70 % of the mechanical failures are caused by contamination in the system. The STAUFF Offline Filters attack this contamination at the source. In addition to solid particles, these filters are also capable of removing water from the oil. This prevents the catalytic reaction of water and solid particle contamination, resulting in extended usable life.

The application of STAUFF Filters results in lower component failure rates, less down time and less system maintenance.

In recent years STAUFF Systems have developed a great deal of experience in cleaning and drying hydraulic and lubrication systems in the following markets:

- Steel industry
- Maritime industry
- Petrochemical industry
- Paper industry

### Heated Offline Filters

The electric pre-heating ensures that the cold and/or high viscosity fluid is brought to a temperature with a suitable filtration viscosity. Offline Filters with pre-heating can be applied to new or existing installations. The integrated pump-motor combination draws fluid from the reservoir, pumps it through a heating element, filters the fluid and returns it to the reservoir.

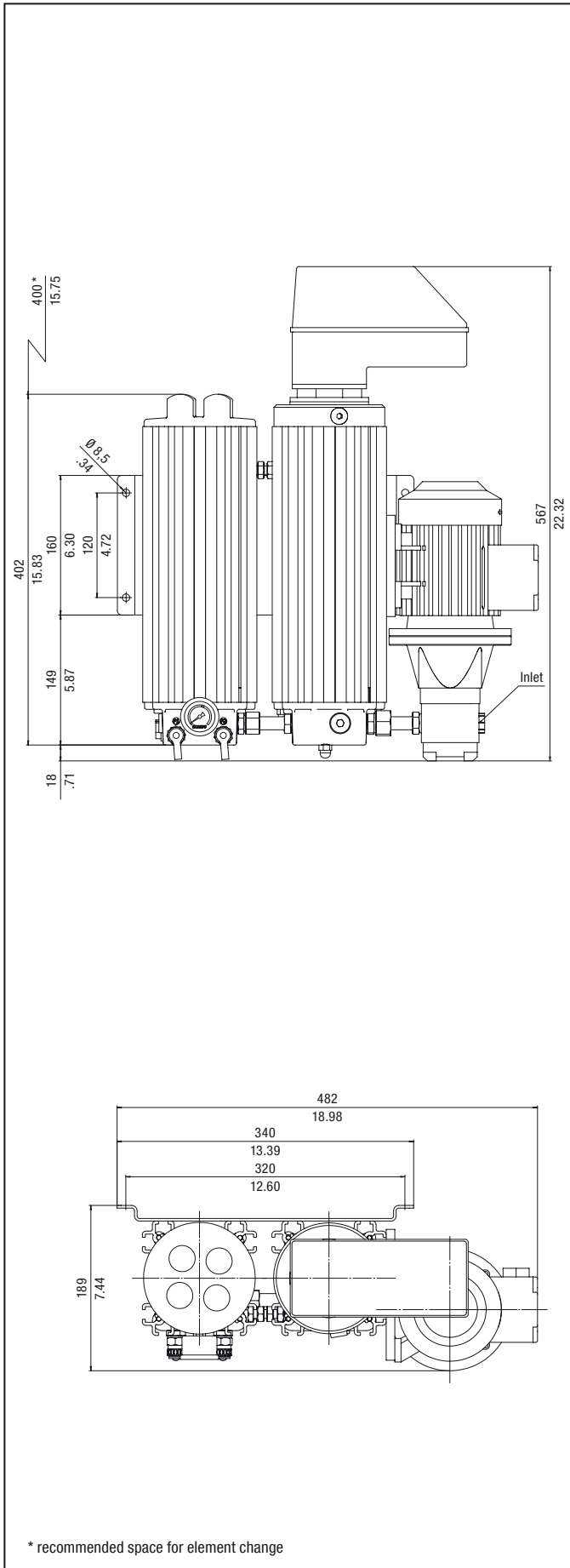
### Advantages

- Extremely clean oil due to the high filtration efficiency  $\beta_{0,5} \geq 200$ ,  $\beta_2 \geq 2330$
- Prevention of channel forming by radial filtration direction
- Increased flow capacity
- Increased dirt holding capacity
- Large water holding capacity
- Compact and easy maintenance design
- Longer usage life for oil and components

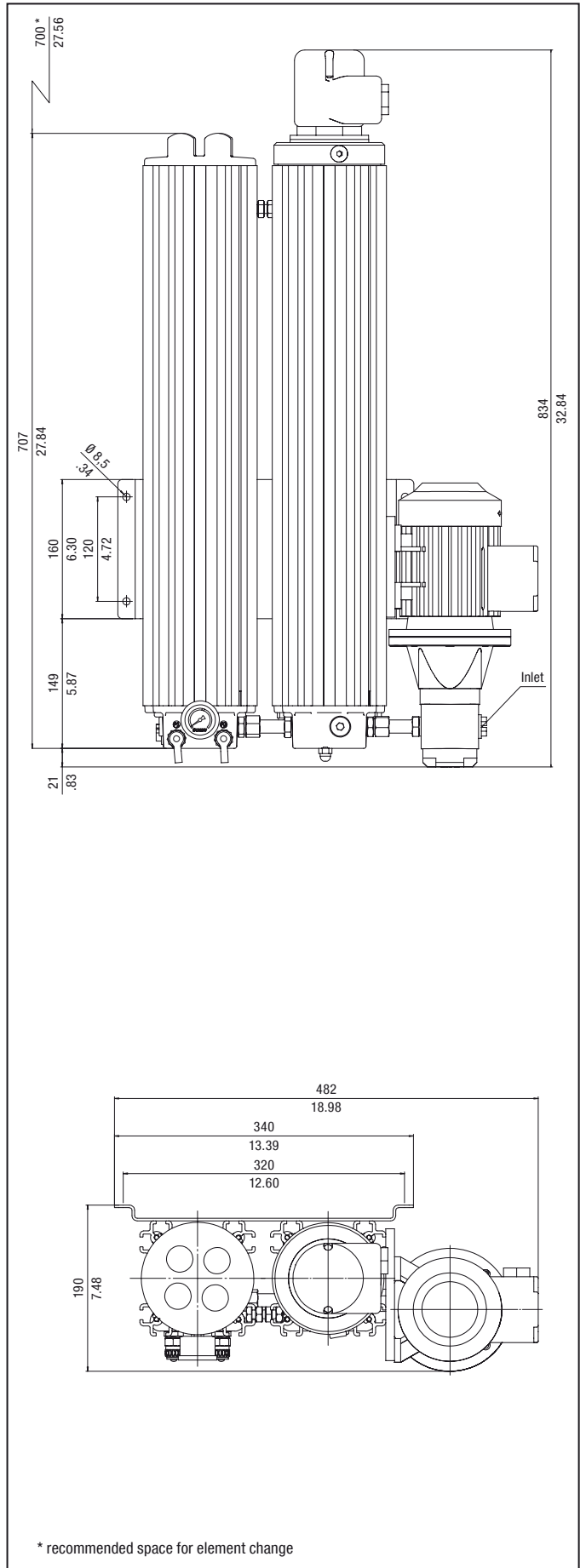


Heated Offline Filters - Type OLSH

Dimensions OLSH - 1A



Dimensions OLSH - 1B



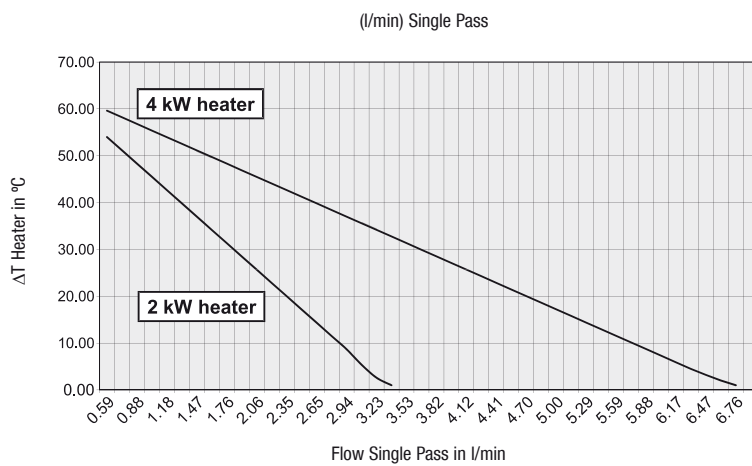
All dimensions in mm / in

## Heated Offline Filters ■ Type OLSH

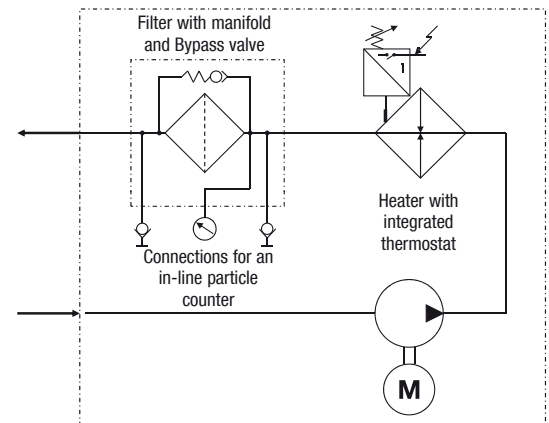
## Technical Data Heated Offline Filters

	OLSH - 1A - 30	OLSH - 1B - 30
Number of Filter Housings	1	1
Nominal Flow Rate	2,1 l/min .6 US GPM	4,2 l/min 1.2 US GPM
Max. Differential Pressure	Max. 6,2 290 PSI over the filter element without back pressure	
Max. Fluid Temperature	+80 °C +176 °F	
Max. Housing Pressure	20 bar 290 PSI	
Heater Capacity	2 kW	
Connection Suction Side	G3/8	
Connection Return Side	G1/2	
Hose Diameter	1/2 in ... 3/4 in (inner diameter) flexible hose	
Weight (including Element)	24 kg 44 lbs	28 kg 62 lbs
Max. System Volume	1350 l 356 gal	2700 l 713 gal
Dimensions H x W x D	567 x 482 x 189 mm 22.32 x 18.98 x 7.44 in	834 x 482 x 190 mm 32.84 x 18.98 x 7.48 in
Connection for On-Line Particle Counter	STAUFF Test (M16 x 2)	STAUFF Test (M16 x 2)
Pump	Gear Pump	
Motor	See page C164 for electric motor details	

## STAUFF Heating Efficiency Curve



## Heated Unit Hydraulic Schematic





Heated Offline Filter Housings / Complete Filters ▪ Type OLSH

**OLSH - 1A - 30 - H - B - 0 - 00 - 0 - 0**

1 2 3 4 5 6 7 8 9

**1 Type**

Heated Offline Filter Unit **OLSH**  
(for industrial applications)

**2 Housing Configuration**

Length	Suitable for Reservoir Size	Quantity of Elements	Code
Single housing Single length	1350 l / 356 gal	1 pcs	<b>1A</b>
Single housing Double length	2700 l / 713 gal	2 pcs	<b>1B</b>

**3 Filter Element Length**

300 mm / 11.81 in **30**

**4 Filter Material**

Material	Micron Rating µm	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

**5 Sealing Material**

NBR (Buna-N®) (standard) **B**  
FPM (Viton®) **V**

**6 E-Motor Options**

Type	Code
230/400 V AC, 50 Hz, three phases, 1360 r/min 255/460 V AC, 60 Hz, three phases, 1630 r/min (50 Hz and 60 Hz standard)	<b>0</b>
230 V AC, 50 Hz, single phase	<b>A</b>
230/400 V AC, 50 Hz, three phases, IP65	<b>E</b>
230 V AC, 60 Hz, single phase, 1630 r/min	<b>F</b>

Note: Other motors on request, technical data see page C156.

**7 Pump Options**

Standard for 50 Hz Motor	Standard for	Code
1,6 cc/rev.	OLSH-1A	<b>00</b>
3,15 cc/rev.	OLSH-1B	<b>10</b>
1.0 cc / rev.		<b>60</b>

60 Hz Motor	Standard in	Code
1,25 cc / rev.	OLSH-1A	<b>01</b>
2,5 cc / rev.	OLSH-1B	<b>11</b>

**8 Clogging Indicator**

Visual clogging indicator **0**  
With water sensor **1**

**9 Mounting Options**

No options (standard) **0**

Filter Elements ▪ Type SRM

**SRM - 30 - H - B - 1**

1 2 3 4 5

**1 Type**

Filter Element Series **SRM**

**2 Filter Element Length**

300 mm / 11.81 in **30**

**3 Filter Material and Micron Rating**

Material	Micron rating µm	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

**4 Sealing Material**

NBR (Buna-N®) (standard) **B**  
FPM (Viton®) **V**

**5 Quantity**

One piece filter element **1**  
Box with 15 pieces filter element **15**

## Bypass Filters ▪ Type BPS

**Product Description**

STAUFF BPS Bypass Filter can be used for OEM first fit applications as well as for retro-fitting. The filtration is done in a bypass configuration from the main hydraulic system. The STAUFF BPS Filter Systems are available with one filter housing (BPS-1A, maximum flow 2,1 l/min / .6 US GPM) or with two filter housings (BPS-2A, maximum flow 4,2 l/min / 1.1 US GPM) at a viscosity between 20 ... 160 cSt / 100 ... 750 SUS.

The STAUFF Filter Systems are especially designed for mobile applications in hydraulic and/or transmission systems.

In the absence of a pumped system, the oil is drawn from the main system by means of a specially designed and integrated flow valve. The amount of oil extracted at any one time is insignificant therefore ensuring that it will not affect the working of the main system.

Most commonly used biodegradable oils in the mobile sector are suitable for filtration with STAUFF Filter Elements.

STAUFF Systems have been applied on a wide range of mobile hydraulic machinery, cleaning fluids to levels not previously possible with conventional filtration methods, resulting in dramatic increases in component life.

Successful applications include:

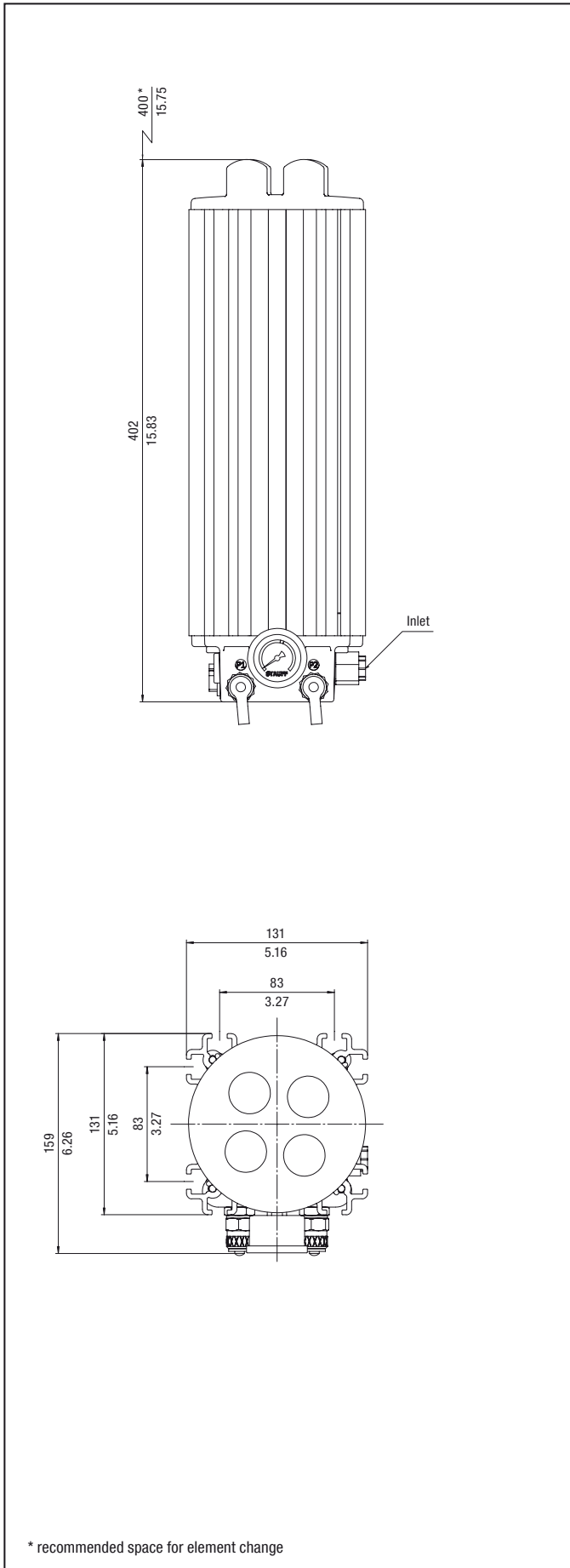
- Excavators
- Wheel loaders
- Forestry machines
- Asphaltting machines
- Cement mixers
- Aircraft ground support machinery
- Agricultural machines


**BPS - 1A - 30 - H - B**

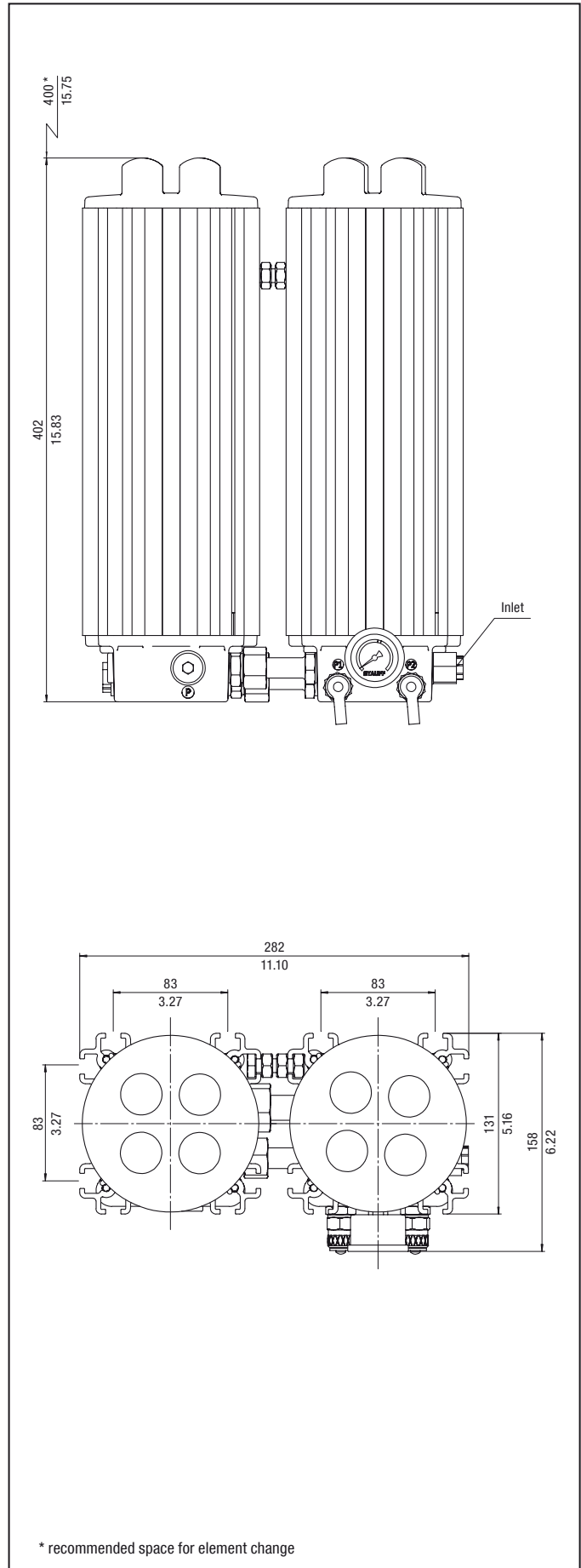
**BPS - 2A - 30 - H - B**

Bypass Filters - Type BPS

Dimensions BPS - 1A - 30 - H - B



Dimensions BPS - 2A - 30 - H - B



All dimensions in mm / in

## Bypass Filters ■ Type BPS

## Technical Data BPS

	BPS - 1A - 30 - H - B	BPS - 2A - 30 - H - B
Number of Filter Housings	1	2
Nominal Flow	2,1 l/min .6 US GPM	4,2 l/min 1.1 US GPM
Max. Differential Pressure	Max. 6,2 90 PSI over the filter element without back pressure	
Max. Fluid Temperature	+80 °C +176 °F	
Max. Housing Pressure	20 bar 290 PSI	
Range of Viscosity	20 ... 160 cSt 100 ... 750 SUS	
Connection Pressure Side	G1/4	
Connection Return Line Side	G1/2	
Hose Diameter	3/8 ... 1/2 in (inner diameter) flexible hose	
Weight	6 kg 13.2 lbs	13 kg 28.7 lbs
Max. Volume of Tank	750 l 200 gal	1500 l 400 gal
Dimensions H x W x D	402 x 131 x 159 mm 15.83 x 5.16 x 6.26 in	402 x 282 x 158 mm 15.83 x 11.10 x 6.22 in
Connection for On-Line Particle Counter	STAUFF Test (M16 x 2)	
Pressure Range	12 ... 420 bar 180 ... 6200 PSI	

## Bypass Filter Housings / Complete Filters ■ Type BPS

BPS - 1A - 30 - H - B - 0 - 0 - 0

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8

**1 Type**

Bypass Filter Unit (for mobile applications)	<b>BPS</b>
---	------------

**2 Housing Configuration**

Length	Suitable for Reservoir Size	Number of Elements	Code
Single housing	750 l / 198 gal	1x1 pcs	<b>1A</b>
Twin housing	1500 l / 396 gal	2x1 pcs	<b>2A</b>

**3 Filter Element Length**

300 mm / 11.81 in	<b>30</b>
-------------------	-----------

**4 Filter Material and Micron Rating**

Material	Micron Rating µm	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

**5 Sealing Material**

NBR (Buna-N®) (standard)	<b>B</b>
FPM (Viton®)	<b>V</b>

**6 Clogging Indicator**

Visual clogging indicator	<b>0</b>
---------------------------	----------

**7 Valve Options**

With flow control valve (standard)	<b>0</b>
Without flow control valve	<b>1</b>

**8 Mounting Options**

No bracket (standard)	<b>0</b>
With standard foot / bulk head mounting bracket	<b>1</b>
With "bulk head mounting only" bracket	<b>2</b>
With standard 'OLS' wall mounting bracket	<b>3</b>

Note: For details see page C170

## Filter Elements ■ Type SRM

SRM - 30 - H - B - 1

1  
 2  
 3  
 4  
 5

**1 Type**

Filter Element Series	<b>SRM</b>
-----------------------	------------

**2 Filter Element Length**

300 mm / 11.81 in	<b>30</b>
-------------------	-----------

**3 Filter Material and Micron Rating**

Material	Micron Rating µm	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

**4 Sealing Material**

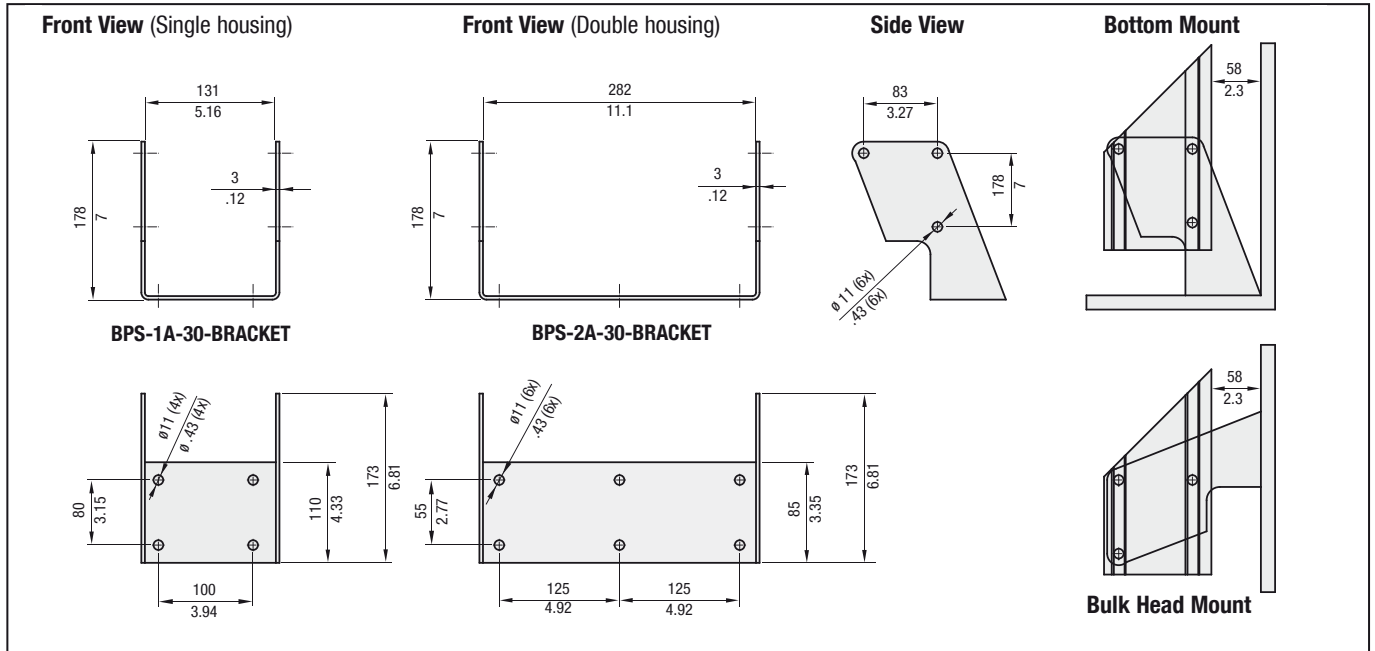
NBR (Buna-N®) (standard)	<b>B</b>
FPM (Viton®)	<b>V</b>

**5 Quantity**

One piece filter element	<b>1</b>
Box with 15 pieces filter element	<b>15</b>

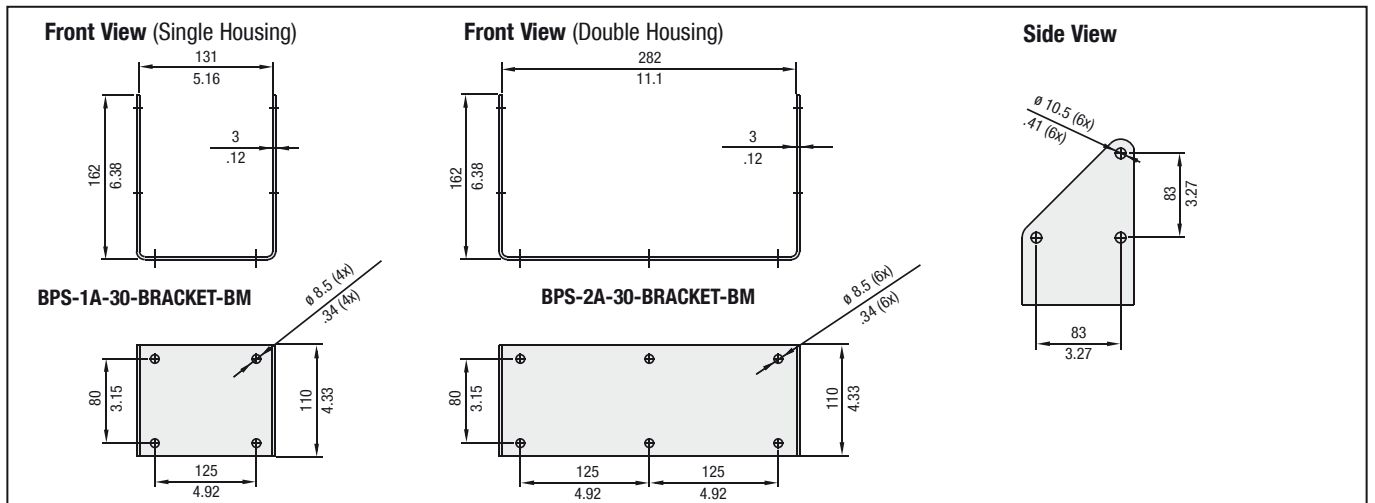
**Bypass Filters - Type BPS**

**With Standard Foot / Bulk Head Mounting Bracket (Code 1)**



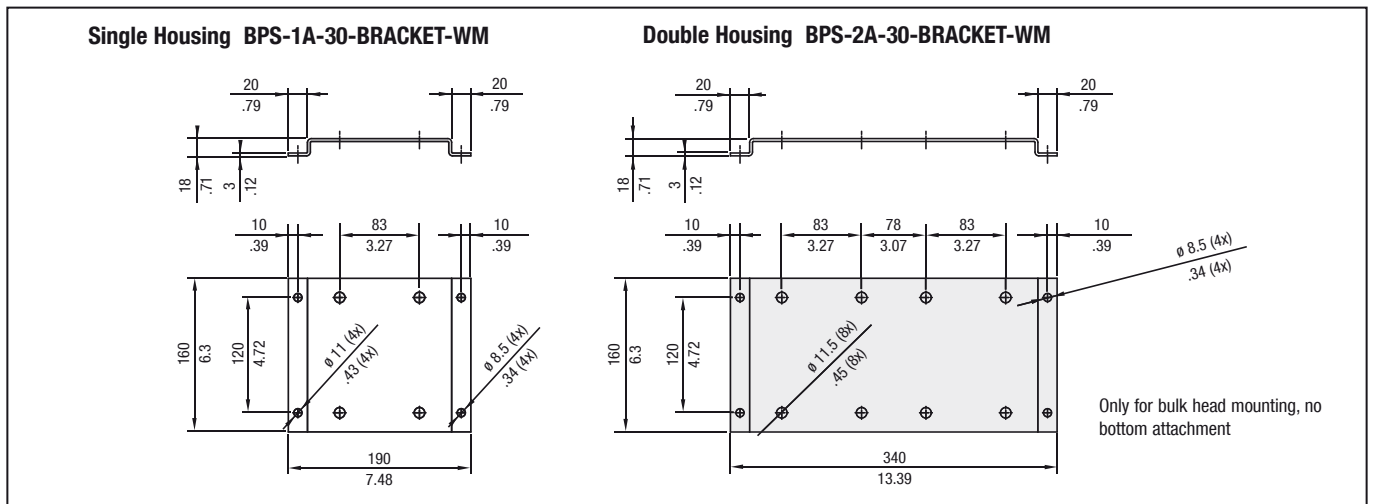
All dimensions in mm / in

**With "Bulk Head Mounting Only" Bracket (Code 2)**



All dimensions in mm / in

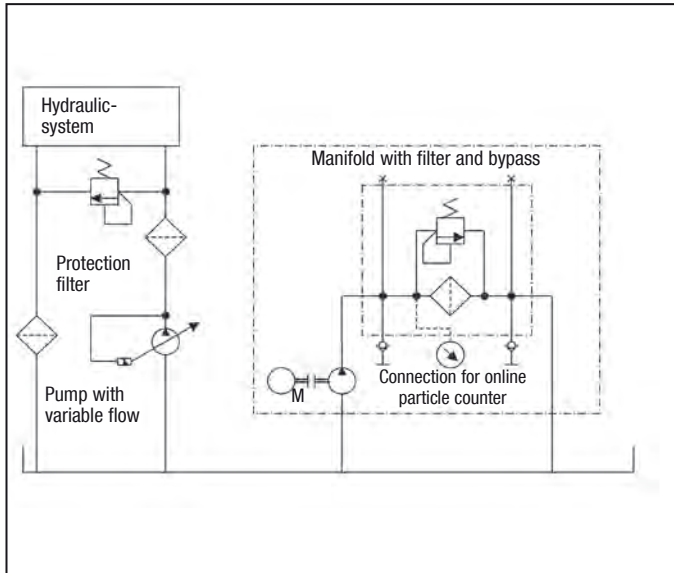
**Standard "OLS" Wall Mounting Bracket (Code 3)**



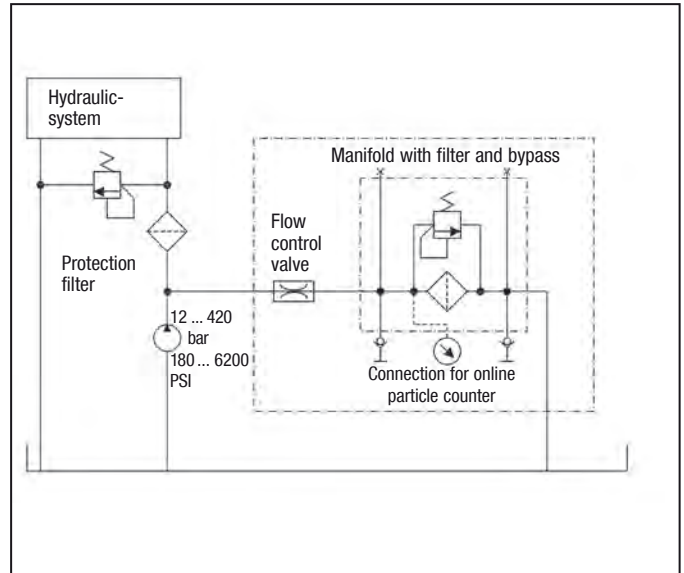
All dimensions in mm / in

## Bypass and Offline Filters ■ Type OLS / BPS

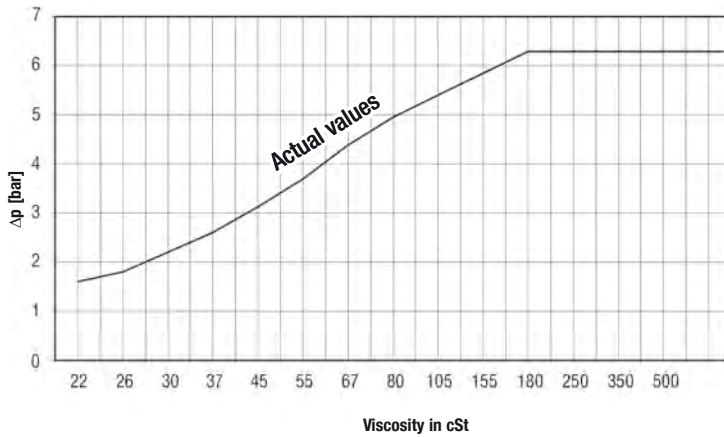
Offline Filter OLS Hydraulic Symbol



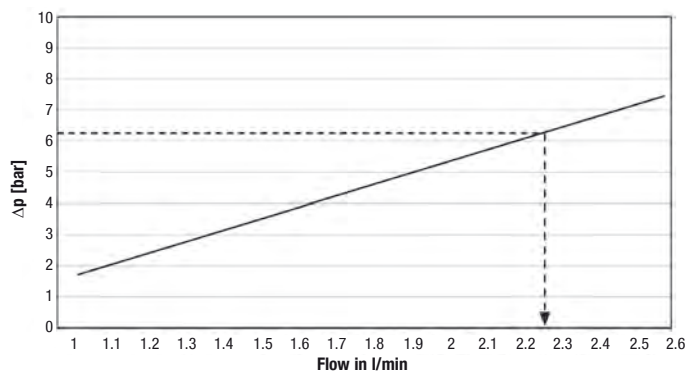
Bypass Filter BPS Hydraulic Symbol


 Filter Element SRM-30HB  $\Delta p$  / viscosity - graph

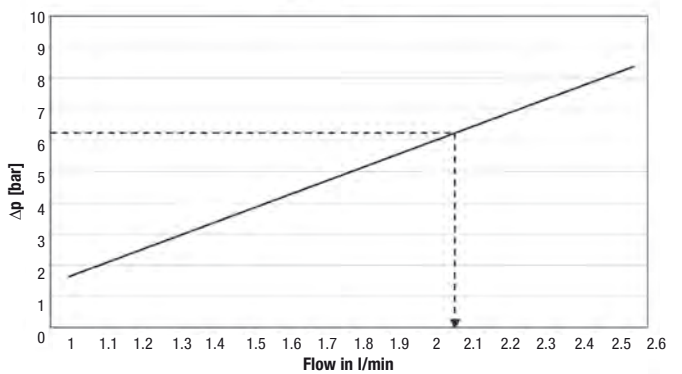
(at a flow of 2,1 l/min / .6 US GPM per element)



Flow Characteristics Offline Filter OLS with Filter Element SRM-30HB (at maximum viscosity)



Flow Characteristics Bypass Filter BPS with Filter Element SRM-30HB (at maximum viscosity)



## Bypass Lube-Oil Filter ■ Type BPLS



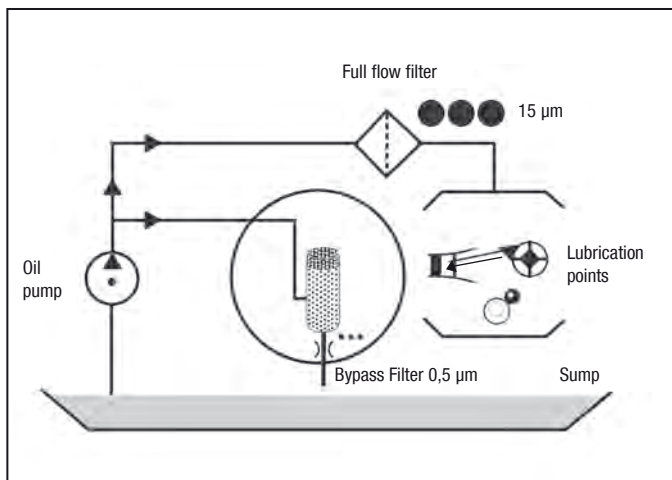
### Product Description

Maintenance is essential for the efficient functioning of engine equipment. However, it is always a critical decision between the quality of the maintenance and the costs involved. Optimal maintenance efficiency combines maximum achievement of the maintenance goal (protection and prolonged usage life of the object) with minimal use of means (costs). The STAUFF Bypass Filter is unique in that it not only achieves the goal, but saves on costs.

The STAUFF Bypass Filter keeps the oil clean, resulting in significant technical, environmental and financial benefits thanks to reduced wear and tear on equipment and machines and prolonged oil life time.

STAUFF Systems BPLS Bypass Filters are used as an additional micro filter connected in bypass to the conventional main stream filters on engines (and automatic transmissions.) Most contamination is much smaller than 15 micron in size, but full flow filters generally do not filter below this level. This results in a lot of harmful contamination passing through these filters and remaining in the system. STAUFF Systems Bypass Filters are capable of filtering down as low as 0,5 micron without detriment to the lubrication circuit. (see schematic)

Whatever the application, the benefits of the STAUFF Systems Bypass Filters are all based on maintaining a higher quality and cleanliness level of the oil and thereby avoiding the multiple problems that can be caused by fluid contamination.



The benefits are many, and can be broken into three categories :

### Technical benefits

- Less malfunctioning
- Greater reliability of operation
- Prolonged oil usage life
- Reduced down time
- Reduced wear on cylinder linings and pistons
- Less bore polishing
- Less formation of black sludge
- Improved engine compression
- Increased equipment life time

### Environmental benefits

- Less oil consumption
- Therefore less waste oil
- Increased life time of additives
- Reduction of harmful emissions

### Financial benefits

- Savings in labour and materials (oil changes)
- Reduced costs for repairs and downtime
- Reduced waste processing costs

### Applications

- Construction equipment
- Agricultural equipment
- Forestry equipment
- Diesel driven welding machines/generators
- Port equipment

### Technical Data

#### Construction

- BPLS: Bypass Lube-Oil Filter

#### Materials

- Filter housing: Aluminium
- Sealings: NBR (Buna-N®)  
FPM (Viton®)

#### Port Connection

- Inlet: G1/4
- Outlet: G1/4

#### Maximum Sump Size

- 35 l / 9.25 gal

#### Housing Volume

- 2,2 liter / .58 gal

#### Burst Pressure Housing

- > 20 bar / >290 PSI

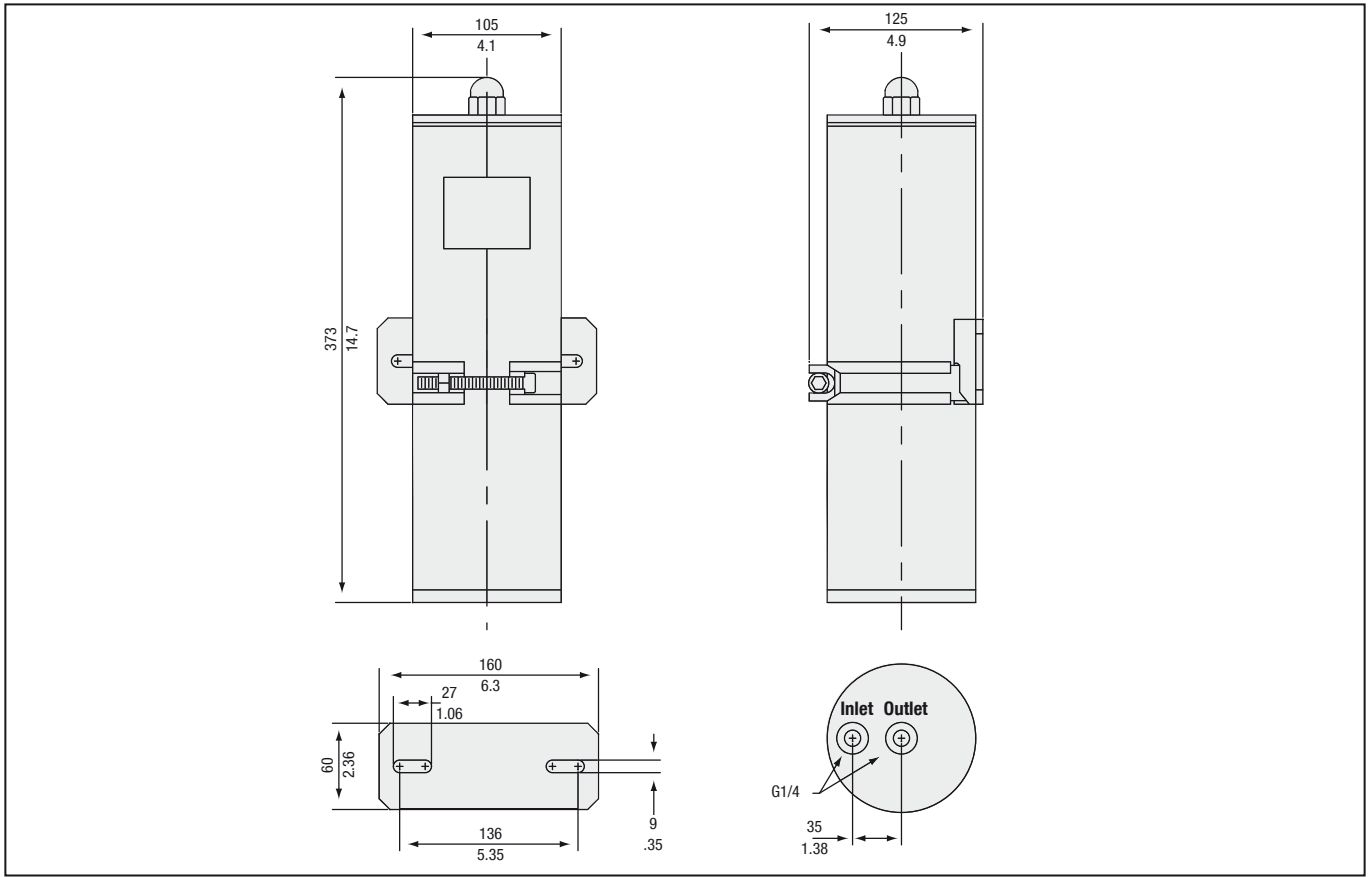
#### Filter Element

- 0,5 micron cellulose element
- Glass fibre elements (pleated)
- Water absorbing elements



## Bypass Lube Oil Filter - Type BPLS

## BPLS-Filter Dimensions



All dimensions in mm / in

## Bypass Lube Oil Filter housings / Complete Filters - Type BPLS

**BPLS - 1A - 26 - H - B - 0 - 0 - 0**

1 2 3 4 5 6 7 8

**1 Type**

 Bypass Lube-Oil Filter **BPLS**  
 (for engines and transmission systems)

**2 Housing Configuration**

Length	Quantity of elements	Code
Single housing	1 pcs element - (281 mm)	<b>1A</b>

**3 Filter Element Length**

 281 mm / 11.06 in **26**
**4 Filter Material and Micron Rating**

Material	Micron Rating $\mu\text{m}$	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

**5 Sealing Material**

 NBR (Buna-N®) (standard) **B**  
 FPM (Viton®) **V**
**6 Housing Material**

 Aluminium (standard) **0**
**7 Options**

 No options **0**
**8 Bracket Options**

 No mounting bracket **0**  
 Standard mounting bracket (bulkhead) **1**

## Filter Elements - Type SRM

**SRM - 26 - H - B - 1**

1 2 3 4 5

**1 Type**

 Filter Element Series **SRM**
**2 Filter Element Length**

 281 mm / 11.06 in **26**
**3 Filter Material and Micron Rating**

Material	Micron rating $\mu\text{m}$	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

**4 Sealing Material**

 NBR (Buna-N®) (standard) **B**  
 FPM (Viton®) **V**
**5 Quantity**

 One piece filter element **1**  
 Box with 12 pieces filter element **12**

## Mini Water Vac ▪ Type SMWV



### Product Description

The Mini Water Vac is a designated oil purification unit which can be applied directly to various types of machine reservoirs. It dehydrates and cleans most types of oils such as lubricating, hydraulic, transformer, and switch oils. The Mini Water Vac is a self-regulating filtration unit which removes particles, gas, and water. The purified oil satisfies the most stringent quality requirements.

The Mini Water Vac neither removes or alters oil additives. The water removal process is based on pure vacuum evaporation inside a vacuum chamber at a maximum temperature of +65 °C / +149 °F. Solid particle removal is achieved through a well proven STAUFF Systems Micro Filter.

### Simple Operation

The Mini Water Vac does not require continuous supervision while operating. Once the unit is connected and commissioned, oil purification is a semi-automatic process. Desired oil temperature can be selected via the integrated heater thermostat. The dehydration and filtering process is fully automatic and is controlled via the PLC. The only manual action required is the emptying the pre-condenser bowl and the waste water container which are equipped with float switches to prevent overflow.

### Water, Gas and Particle Removal

The Mini Water Vac removes liquid, gas, and solid particle contamination, which are corrosive and contribute to the reduction of machine life. Contamination greatly increases maintenance costs and contribute to breakdowns and total machine failures. The Mini Water Vac offers protection against malfunctions, breakdowns or total failures. The Mini Water Vac also protects the environment by reducing oil consumption and oil disposal.

### Benefits

- Efficient water, gas and particle removal
- Extension of fluid life
- Reduces fluid disposal
- Minimizes corrosion
- Reduced failures and downtime
- Reduce operating costs

### Technical Data

#### Construction

- SMWV-1A-30: Mini Water Vac Vacuum Dehydration Unit one filter housing

#### Materials

- Filter housing Eloxated Aluminium
- Vacuum chamber Eloxated Aluminium
- Heater chamber Eloxated Aluminium

#### Port Connection

- Inlet G1
- Outlet G1/2
- Online particle counter STAUFF Test (M16x2)

#### Max. System Volume

- 3000 l / 795 gal

#### Recirculating Flow Rate

- 90 l/h / 23.8 gal/hr

#### Max. Backpressure

- 1 bar / 14.5 PSI

#### Max. Heater Temperature

- +65 °C / +149 °F

#### Filter Element

- 1 micron inorganic glass fibre element  $\beta_1 > 200$

#### Media Compatibility

- Viscosity between 20 ... 500 cSt
- Max. attainable water content 100 ppm

#### Removals

- 100% of free water, >80% of dissolved water
- 100% of free gases, >80% of dissolved gases

#### Dimensions

- 1200 x 740 x 450 mm / 47.3 x 29.1 x 17.7 in

#### Weight

- 130 kg / 287 lbs

#### Electrical Data

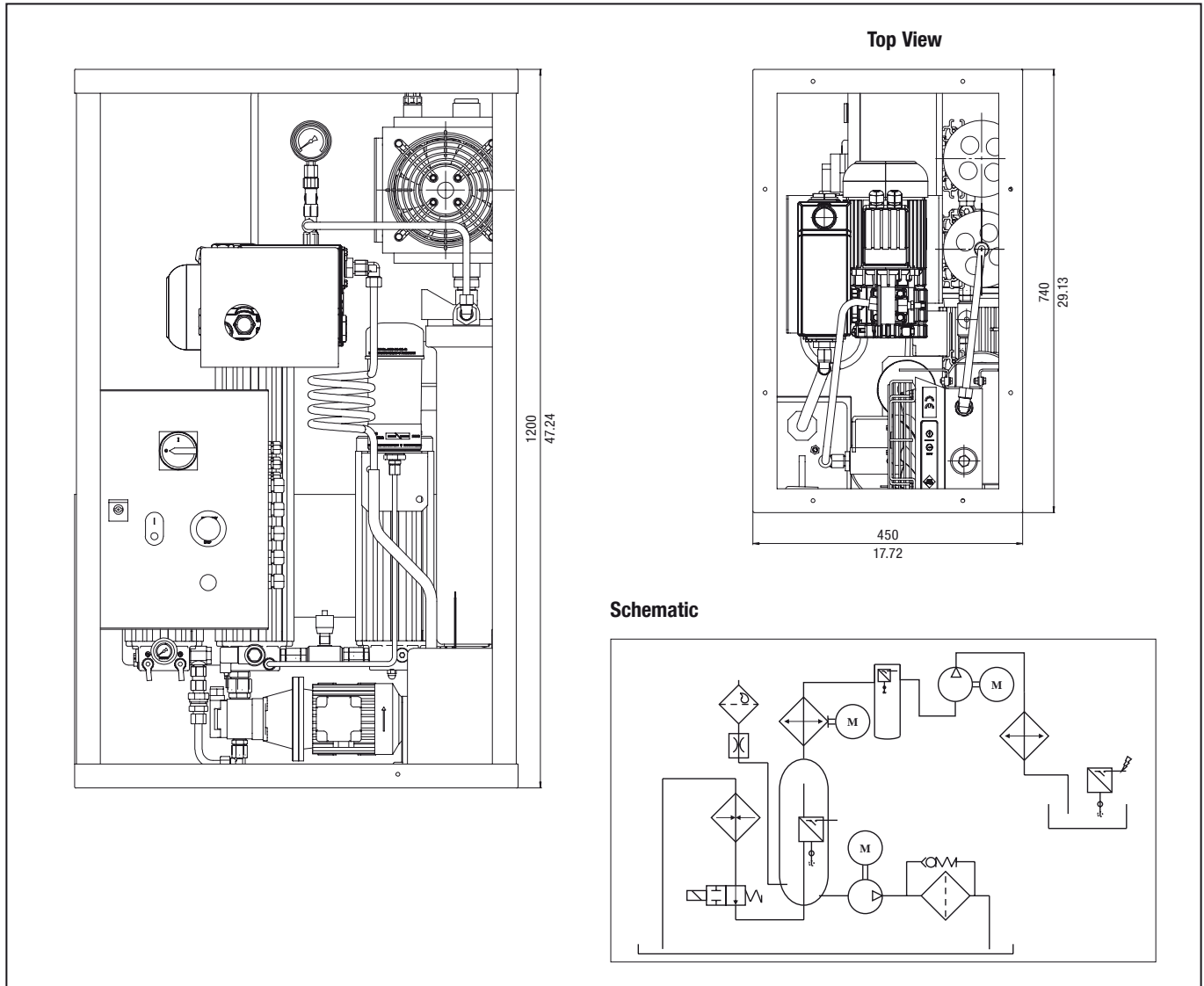
- Voltage 230/400 V AC, 50 Hz  
255/460 V AC, 50 Hz
- Power supply 3 phases
- Heater section 2 kW
- Vacuum section 0,037 kW vacuum pump
- Max. current 3 Amps

#### Process Control

- PLC unit

## Mini Water Vac ■ Type SMWV

## Dimensions SMWV-1A



## Mini Water Vac ■ Type SMWV

All dimensions in mm / in

**SMWV - 1A - 30 - H - B - 0 - 60 - 0 - 0 - 0**

1 2 3 4 5 6 7 8 9 10

**1 Type**

 Mini Water Vac Oil Purifier (for industrial applications) **SMWV**
**2 Housing Configuration**

Length	Suitable for Reservoir Size	Quantity of Elements	Code
Single housing Single length	3000 l / 795 gal	1 pcs	<b>1A</b>

**3 Filter Element Length**

 300 mm / 11.81 in **30**
**4 Filter Material and Micron Rating**

Material	Micron Rating $\mu\text{m}$	Code
Cellulose (standard)	0,5	<b>H</b>
Inorg. glass fibre	1	<b>E01</b>
Inorg. glass fibre	3	<b>E03</b>
Inorg. glass fibre	5	<b>E05</b>
Inorg. glass fibre	10	<b>E10</b>
Inorg. glass fibre	20	<b>E20</b>
Inorg. glass fibre and polymer (water absorption)	5	<b>WA</b>

**5 Sealing Material**

NBR (Buna-N®)(standard)	<b>B</b>
FPM (Viton®)	<b>V</b>

**6 E-motor Options**

Type	Code
230/400 V AC, 50 Hz, three phases, 1360 r/min 255/460 V AC, 60 Hz, three phases, 1630 r/min	<b>0</b>

**7 Pump Options**

 1 cc / rev **60**
**8 Heating Element**

 2000 Watt (standard) **0**
**9 Extra Functions**

 Without **0**  
 With water sensor **1**
**10 Options**

 None **0**

## Filter Elements ■ Type SRM



### Product Description

STAUFF Systems distinguish themselves by their high efficiency filter elements which are capable of filtering silt particles down to 0,5 microns.

Two types of STAUFF Systems are available. The OLS Series uses an integral motor/pump combination to draw the hydraulic or lubrication fluid from the reservoir, filters it, and returns it to the reservoir. The other type of STAUFF System is the BPS Series which uses system pressure to draw a small oil flow from the system which is then filtered and returned to the reservoir.

The success of the STAUFF Offline Filtration System is due to the design of the element and housing. The element is constructed of 0,5 micron cellulose media applied with a special wrapping method, providing several hundred layers of filter media. The cellulose fibres also absorb and retain water, which slows down the oxidation process of the fluid. The construction of the housing allows only radial flow through the filter element. This design feature prevents channel forming and subsequent shortcircuiting of the media. The Offline design maintains a constant flow and pressure through the filter, which does not allow any particle unloading. These design characteristics enable the STAUFF Filtration System to maintain a rated filtration efficiency of  $B_2 > 2330$ . This allows the user to maintain fluid cleanliness levels which cannot be reached with conventional full flow filtration methods.

### The unique STAUFF Filter

The principle of the STAUFF System is based on the unique original filter elements. With a filter fineness of 0,5 micron they have the capacity to remove even the smallest of dirt particles from the oil.

The micro filter works as a fine filter through which oil passes radially, from the outside to the inside. The filter elements are made entirely of cellulose and are specially designed for hydraulic and lubrication systems.

The use of cellulose as the filtration material has the added benefit that water can be absorbed. Water in oil creates a chemical reaction, which seriously deteriorates the oil.

### Original Elements

The use of original STAUFF Systems filter elements will result in extreme fluid cleanliness and low water contamination levels in the fluid.

Through a carefully monitored quality control process excellent pressure drop curves, filter efficiency and dirt-hold capacity are ensured.

### Cellulose Elements

The STAUFF Systems cellulose filter elements are unique in their design. They consist of several hundred layers of long fiber cellulose which are wound on a perforated center tube. The micro filter element works as a fine filter through which oil passes radially, from the outside to the inside, trapping solid particles throughout all the layers of cellulose. The long fiber cellulose is also capable of absorbing water, adding the benefit of moisture removal from the oil. STAUFF Systems cellulose elements are extremely efficient and have a large dirt-hold capacity.

The cellulose elements are produced in various sizes to suit all STAUFF Systems filter housings. The STAUFF Systems cellulose elements compatible with most commonly used hydraulic and lubricating fluids, including biodegradable fluids.

### Glass fibre Elements

STAUFF Systems offers a range of glass fibre filter elements in a fineness of 1, 3, 5, 10 or 20 micron. The micro filter element works as a fine filter through which oil passes radially, from the outside to the inside. STAUFF Systems glass fibre filter elements (conventional pleated construction) are extremely efficient and have a large dirt-hold capacity.

The glass fiber elements are suited for all STAUFF Systems filter housing (except the size 20 housing) and are compatible with most commonly used hydraulic and lubricating fluids, including biodegradable fluids. The glass fibre elements are particularly suited for gearbox applications where high viscosity fluids limit the use of the cellulose elements.

### Water Sorb Filter Inserts

STAUFF Systems offers a specifically designed water sorb combination filter element: water absorbing and particle retention. This pleated filter element with a fineness of 5 micron has layers of polymers in between layers of glass fibre, creating a unique media to remove both water and solid particles from the fluid.

### Characteristics

- Continuous quality with stable flow/ $\Delta p$  performance
- Extremely fine filters (0.5 micron)
- Large filtration surface
- High water absorption capacity
- Additives are not removed
- Large dirt collection capacity
- Extends oil usage life
- Extends life cycle main stream filters

### Applications

The original filter elements are used in combination with STAUFF Systems filter housings in an endless range of industries.

Some Examples are:

- Plastic industry
- Steel industry
- Concrete and cement industry
- Petrochemical industry
- Maritime industry
- Paper industry
- Forestry industry

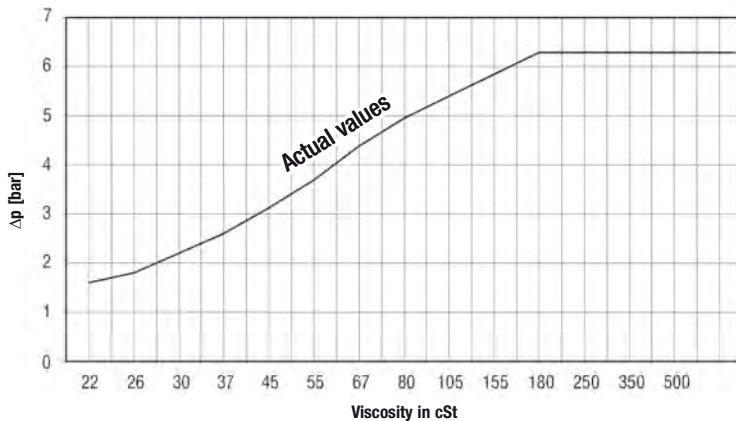
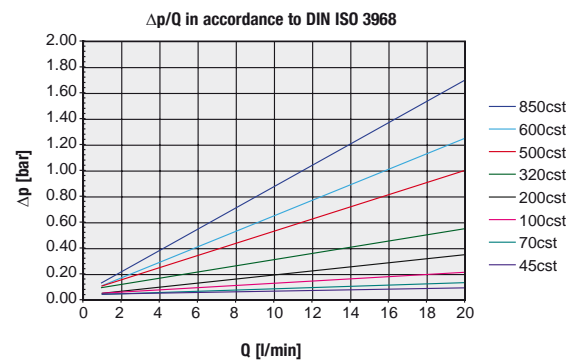
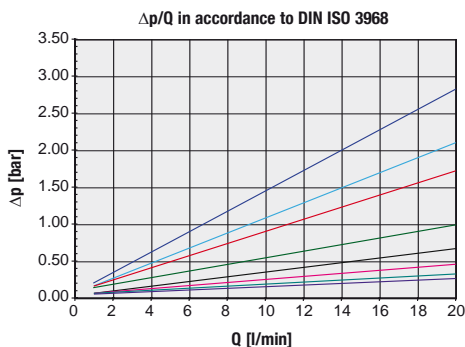
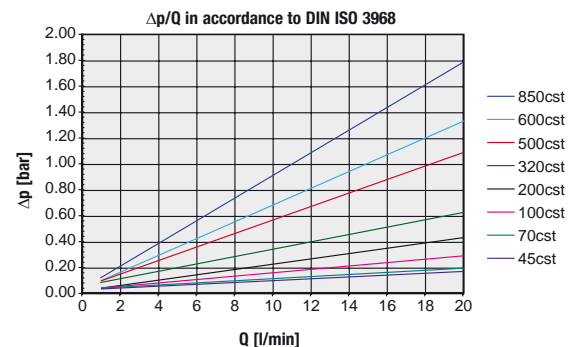
## Offline and Bypass Filters Replacement Elements - Type SRM

## Filter Element Technical Data

Element Model	SRM-30HB	SRM-30E01B	SRM-30E03B	SRM-30WAB
Filter Material	Cellulose	Glass fibre	Glass fibre	Glass fibre and Polymer
Filtration Efficiency	$\beta_5 \geq 200 / \beta_2 \geq 2331$	$\beta_1 \geq 200$	$\beta_3 \geq 200$	$\beta_5 \geq 200$
Water Absorption Capacity	150 ml 5 oz	N/A	N/A	350 ml 11.8 oz
Nominal Flow per Element	2,1 l/min .6 GPM	2,1 l/min .6 GPM	2,1 l/min .6 GPM	2,1 l/min .6 GPM
Max. Viscosity at Nominal Flow Rate	180 cSt	800 cSt		
Max. Oil Temperature	+80 °C +176 °F			
Length of Element	300 mm 11.8 in			
Sealing Material (Standard)	NBR (Buna-N®) and Silicone Rubber	NBR (Buna-N®)	NBR (Buna-N®)	NBR (Buna-N®)
Other Sealing Material	Consult STAUFF			
Fluid Compatibility:				
--Mineral Oils				
H, HI, HLP, HVLP	OK	OK	OK	OK
-- Biodegradable Oils				
HEPG Polyethyleneglycol	Consult STAUFF			
HEES Synthetic ester	OK	OK	OK	OK
HETG Vegetable seed oil	Consult STAUFF			
-- Fire Inhibiting Fluids				
HFA emulsions	NO	OK	OK	NO
HFC glycol/water solution	NO	OK	OK	NO
HFD fluids no water content	Consult STAUFF			
Approximate Weight	0,8 kg 1.8 lb	1,25 kg 2.8 lb	1,25 kg 2.8 lb	1,25 kg 2.8 lb

 Filter Element SRM-30HB  $\Delta p$  / viscosity - graph

(at a flow of 2,1 l/min / .6 US GPM per element)


 Filter Element SRM-30E03B  $\Delta p$  / Viscosity-Graph

 Filter Element SRM-30E01B  $\Delta p$  / Viscosity-Graph

 Filter Element SRM-30WAB  $\Delta p$  / Viscosity-Graph




**STAUFF Mobile Filter Systems**



**Product Description**

Mobile Filter Systems from STAUFF already covered a wide spectrum of use: On the one hand compact and versatile, on the other hand designed for long-lasting use and highest nominal flow rates, they support the preventive maintenance of hydraulic and lubrication systems, thus providing extended maintenance intervals and helping to reduce operating costs within shortest payback periods. To cover region specific requirements STAUFF has a large range of different Mobile Filter Systems.

**STAUFF Europe: STAUFF Mobile Filter System SMFS-P-015**



- Mobile Filter System - hand-held unit
- High-quality gear pump
- Nominal flow rate up to 15 l/min / 4 US GPM
- 2 motor versions: 230 V 50 Hz or 400 V 50 Hz
- Micron rating available from 3 ... 125 µm
- Weight: approx. 23 kg / 51 lbs

**STAUFF America: STAUFF Portable Filter Cart SCFC-05 / 10**



- High-quality gear pump
- Nominal flow rate up to 38 l/min / 10 US GPM
- 3 motor versions: 110 V / 230 V / 400 V
- Micron rating available from 3 ... 144 µm
- Weight: approx. 53 kg / 117 lbs

**STAUFF Europe: STAUFF Mobile Filter System SMFS-U-030**



- Mobile Filter System - portable unit
- High-quality gear pump
- Nominal flow rate up to 30 l/min / 8 US GPM
- 2 motor versions: 230 V 50 Hz or 400 V 50 Hz
- Micron rating available from 3 ... 125 µm
- Weight: approx. 46 kg / 101 lbs

**STAUFF America: STAUFF Portable Filter Cart SPFC-10**



- High-quality gear pump
- Nominal flow rate up to 38 l/min / 10 US GPM
- 3 motor versions: 110 V / 230 V / 400 V
- Micron rating available from 3 ... 144 µm
- Weight: approx. 86 kg / 189 lbs

**STAUFF Europe: STAUFF Mobile Filter System SMFS-U-060 / 110**

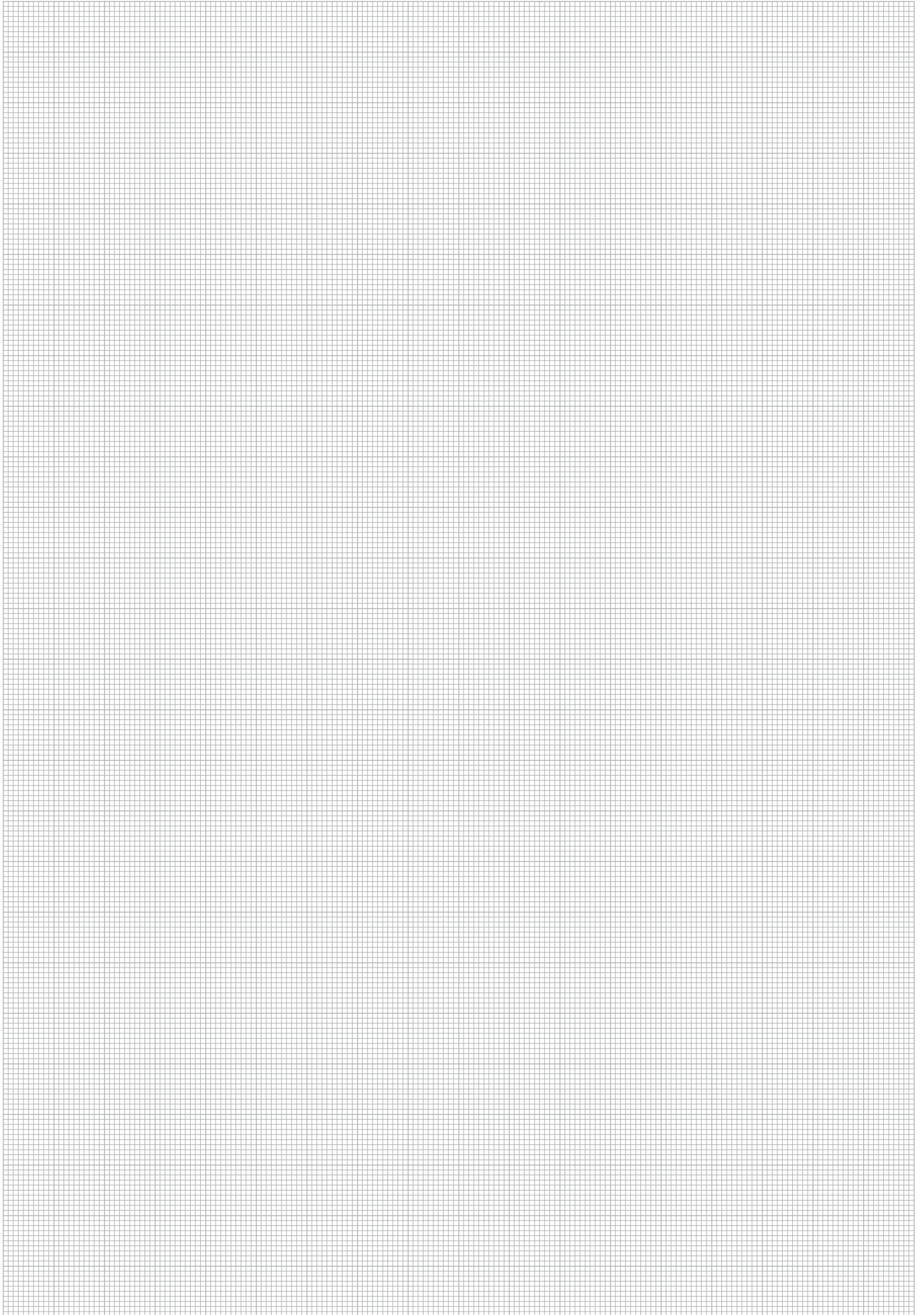


- Mobile Filter System - portable unit
- High-quality gear pump
- Nominal flow rate up to 60 l/min / 15 US GPM or 110 l/min / 30 US GPM
- Micron rating available from 3 ... 25 µm
- Weight: approx. 87 kg / 192 lbs (SMFS-U-060)  
approx. 130 kg / 287 lbs (SMFS-U-110)

**STAUFF Australia: STAUFF Portable Filter Cart SPFC**



- High-quality gear pump
- Nominal flow rate up to 23 l/min / 6 US GPM
- Magnetic core pre-filtration
- Micron rating 10 µm
- Weight: approx. 53 kg / 117 lbs





for Single, Double and Automatic Filters



**Introduction**

We are an internationally leading developer, manufacturer and supplier of pipework components, measuring equipment and hydraulic accessories.

In the field of Filtration Technology, we supply replacement filter elements for single, double and automatic filters which are qualified for various type of fluids such as lubricating oils, heavy fuels, water, chemicals and cooling lubricants.

- Chemical industry
- Oil and gas industry
- Power plant engineering and turbine technology
- Pulp and paper industry (Figure: Voith Paper GmbH & Co. KG)
- Shipyards, shipping companies (Figure: ThyssenKrupp Marine Systems AG)
- Steel and heavy-metal industry

Thanks to state-of-the-art manufacturing technologies and numerous approvals and certifications for several international organisations and institutes, we can ensure the highest technical standard and best quality. Our clients include leading international companies.

For more than ten years, we have been providing shipping companies as well as ship chandlers and traders with hydraulic filters and replacement filter elements for filter housings of other manufacturers.



Figure: Voith Papier GmbH & Co. KG



Figure: ThyssenKrupp Marine Systems AG

**for Single, Double and Automatic Filters**
**Screw-In and Plug-In Elements**

We produce high-quality Screw-In and Plug-In Elements in Stainless Steel design or in Plastic design. They fit into the most common single, double and automatic filters.

**Design**

- Stainless Steel
- Plastic – Stainless Steel

**Filter media**

- Stainless Steel, high quality made in Germany

**End cap**

- Stainless Steel / Plastic

**Micron rating**

- 10 ... 200 µm (alternative micron ratings on request)

**Length**

- 220 ... 750 mm

**Application**

- lubricating oils, heavy fuels, water, chemicals, cooling lubricants


**Star-Pleated Elements, Basket and Ring Sieves**

We deliver high-quality Star-Pleated Elements, Basket and Ring Sieves in Stainless Steel design with particularly pleated filter media which offer a very good filtrate quality and a long durability.

**Design**

- Stainless Steel

**Filter media**

- Stainless Steel, high quality made in Germany

**Micron rating**

- 10 ... 200 µm (alternative micron ratings on request)

**Length**

- according to housing, respectively adapted for every single, double and automatic filter

**Application**

- lubricating oils, heavy fuels, water, chemicals, cooling lubricants


**Heavy Fuel Elements**

STAUFF Heavy Fuel Elements separate particles from the fluid flow as the last filtration step before direct injection to the engine room / combustor.

**Micron rating**

- 6 µm or 10 µm (alternative micron ratings on request)

**Length**

- 439 mm (alternative lengths on request)

**Diameter**

- 49 mm (alternative diameters on request)

Because of the pleated design with support cloth, STAUFF Heavy Fuel Elements offer a large filter area associated with a long durability and an excellent separation rate.





for Single, Double and Automatic Filters



**Paper, Fibreglass and Polyester Elements**

Due to the pleated design of STAUFF Paper Elements, they can offer a large filter area in a small place and with a long durability. The cover made of Polyester allows a safe treatment during the installation and the demounting without damaging the filter media.

**Design**

- pleated elements

**Micron rating**

- 10 µm or 50 µm (alternative micron ratings on request)

**Length:**

- 254 mm, 500 mm, 750 mm (alternative lengths on request)

**Application**

- bypass and flushing filter for automatic filters and double filters in the field of lubricating oil



**Plastic Elements**

STAUFF Plastic Elements have a special cloth and a special format which ensure the safety and the optimal protection of the motors.

The molded end caps allow a quick installation and demounting as they can be easily connected.

**Length:**

- 320 mm (alternative lengths on request)

**Design**

- Plastic

**Micron rating**

on request

**Application**

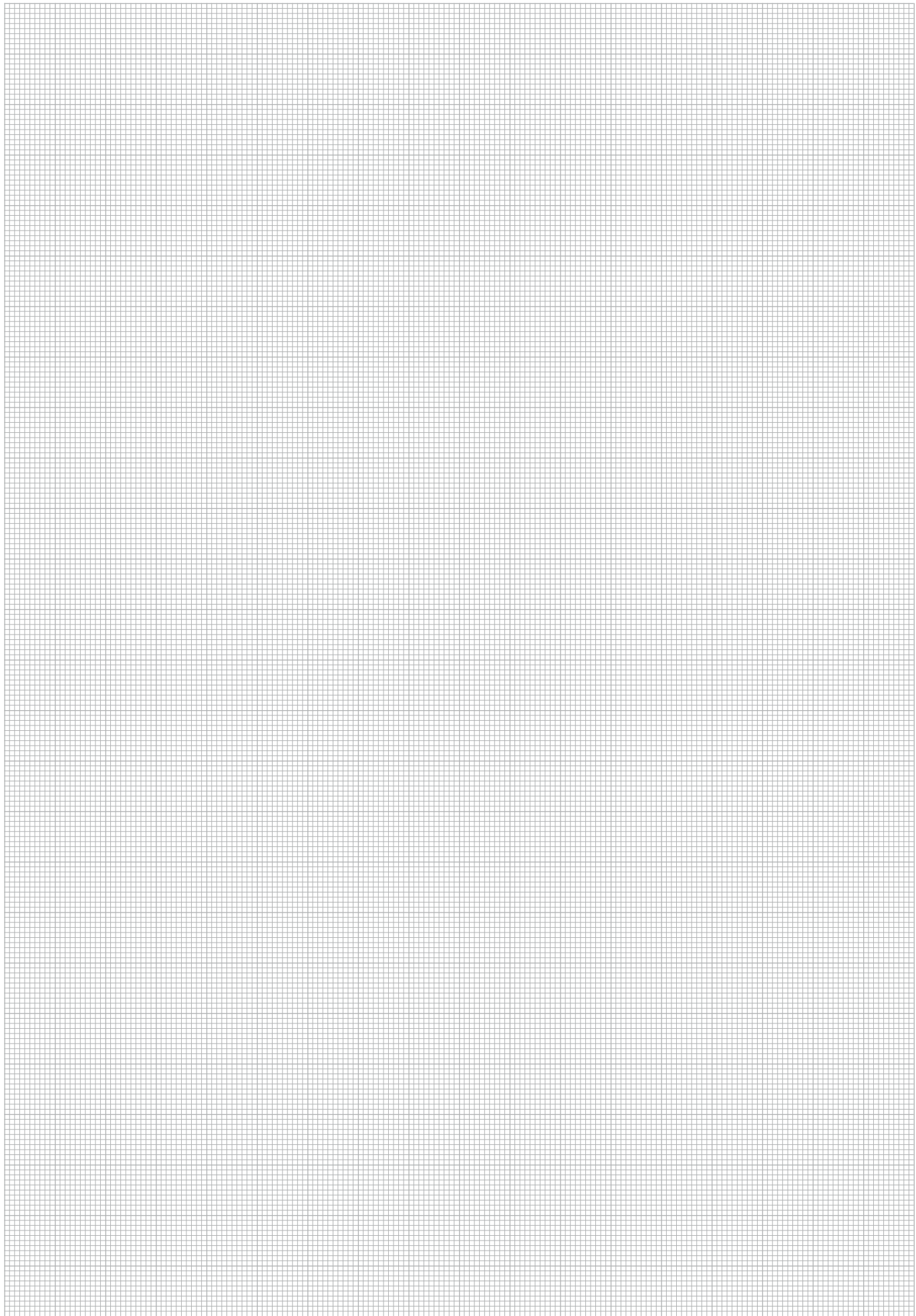
- pre-filter of motors



**Multimantle Elements**

Multimantle Elements in different types and sizes complete the STAUFF exchange program.

In addition, we produce replacement elements according to models or drawings from existing and older series.







The STAUFF Diagtronics programme provides components and services for monitoring and analysing hydraulic fluids in mobile and industrial hydraulic systems.

The range includes analogue and digital pressure gauges and hydraulic testers to high-precision laser particle counters.

A versatile range is essential for different customer needs. The innovative STAUFF Diagtronics programme addresses these decisive factors in the market and offers a wide range of state-of-the-art products with the highest quality.

Competent and fast service is a matter of course in our company. Due to the extensive inventory, both customized special parts and special product combinations are available.

Monitoring the essential parameters in mobile and industrial hydraulics:

- Pressure
- Differential pressure
- Temperature
- Flow
- Fluid level
- Contamination
- and much more





Please contact STAUFF for further details.

[www.stauff.com](http://www.stauff.com)











## D Diagtronics

Index	D2
Pressure Gauges (analogue/digital) and Accessories	D4
Hydraulic Testers of the PPC Series	D13
Laser Particle Counters and Accessories	D40
Sensors and Switches	D58

## Pressure Gauges (analogue / digital) and Accessories

	<b>Introduction</b>		<b>D4</b>
	<b>Information on the Pressure Equipment Directive</b>		<b>D5</b>
	<b>Accessories for Pressure Gauges</b>		<b>D5</b>
	<b>Pressure Gauge (analogue)</b>	SPG	<b>D6</b>
	<b>Pressure Test Kit (analogue)</b>	SMB20 SMB15	<b>D8</b>
	<b>Digital Pressure Gauge</b>	SPG-DIGI	<b>D10</b>
	<b>Pressure Test Kit (digital)</b>	SMB-DIGI	<b>D11</b>







## Hydraulic Testers of the PPC Series

















	<b>Introduction</b>		<b>D13</b>
	<b>Overview</b>		<b>D14</b>
	<b>Functional Block Diagrams</b>		<b>D15</b>
	<b>Hydraulic Tester</b>	PPC-04-plus PPC-04-plus-CAN	<b>D16</b>
	<b>Hydraulic Tester</b>	PPC-06/08-plus	<b>D17</b>
	<b>Hydraulic Tester</b>	PPC-Pad	<b>D18</b>
	<b>Pressure Sensor</b>	PPC-04/12-P PPC-CAN-P	<b>D22</b> <b>D23</b>
	<b>Temperature Sensor</b>	PPC-04/12-T PPC-CAN-T	<b>D24</b> <b>D25</b>
	<b>Pressure / Temperature Sensor</b>	PPC-04/12-PT PPC-CAN-PT	<b>D26</b> <b>D27</b>
	<b>Flow Turbine</b>	PPC-04/12-SFM PPC-CAN-SFM	<b>D28</b> <b>D29</b>
	<b>Rotational Speed Sensor</b>	PPC-04/12-SDS-CAB	<b>D30</b>
	<b>Current / Voltage Adaptor</b>	PPC-06/12-A/V-A	<b>D31</b>
	<b>Accessories</b> <b>CAN Accessories</b>		<b>D32</b> <b>D33</b>
	<b>CAN Frequency Converter</b>	PPC-CAN-FR	<b>D33</b>
	<b>Complete Systems</b>	PPC-04/06/08-plus	<b>D34</b>
	<b>Complete Systems</b>	PPC-04-CAN-SET	<b>D35</b>
	<b>Complete Systems</b>	PPC-Pad-SET	<b>D36</b>
	<b>Ordering Table for Hydraulic Testers (analogue)</b>		<b>D38</b>
	<b>Ordering Table for Hydraulic Testers (CAN)</b>		<b>D39</b>



**Laser Particle Counters and Accessories**

**Sensors and Switches**

	<b>Introduction</b>	<b>D40</b>
	<b>Overview</b>	<b>D40</b>
	<b>Features &amp; Options</b>	<b>D41</b>
	<b>Laser Particle Counter (Portable)</b>	<b>D42</b>
	LasPaC II-P	
	<b>Laser Particle Counter (Mobile)</b>	<b>D44</b>
	LasPaC II-M	
	<b>Laser Particle Counter (Inline)</b>	<b>D46</b>
	LasPaC II-I	
	<b>Laser Particle Counter (Inline) - ATEX2</b>	<b>D48</b>
	LasPaC II-I-ATEX2	
	<b>Bottle Sampler Unit</b>	<b>D49</b>
	LasPaC II-Bottle Sampler	
	<b>Accessories</b>	<b>D50</b>
	<b>Particle Monitor</b>	<b>D52</b>
	LPM II	
	<b>Particle Monitor Interface Modules with USB / Ethernet Interface</b>	<b>D53</b>
	LPM II-USB / ETH INTERFACE	
	<b>Particle Monitor Remote Display Unit</b>	<b>D53</b>
	LPM II-REMOTE DISPLAY	
	<b>Particle Monitor Flow Control Valve</b>	<b>D54</b>
	LPM II-DAV	
	<b>Particle Monitor - ATEX2</b>	<b>D55</b>
	LPM II-ATEX2	
	<b>Oil Sampling Kit</b>	<b>D56</b>
	SFSK-1/ -2	

	<b>Introduction</b>	<b>D58</b>
	<b>Level-Temperature Switch</b>	<b>D59</b>
	SLTS	
	<b>Level-Temperature Switch Aluminium</b>	<b>D60</b>
	SLTSA	
	<b>Level-Temperature Switch Display</b>	<b>D61</b>
	SLTSD	
	<b>Pressure Switch</b>	<b>D62</b>
	SPW	
	<b>Pressure Switch</b>	<b>D63</b>
	SPW-SD	
	<b>Pressure Transmitters</b>	<b>D64</b>
	SPT	
	<b>Pressure Transmitters</b>	<b>D68</b>
	PT	
	<b>Pressure Switch and Transmitter</b>	<b>D72</b>
	SPWF	
	<b>Temperature Switch and Transmitter</b>	<b>D76</b>
	STWE	
	<b>Temperature Transmitter</b>	<b>D78</b>
	STC	
	<b>Temperature Switch</b>	<b>D80</b>
	STW	
	<b>Flowtell Inline Flow Meter</b>	<b>D81</b>
	SFF	
	<b>Flow Indicator</b>	<b>D82</b>
	SDM SDMKR	
	<b>Flow Monitoring Unit Overview</b>	<b>D84</b>
	SGF SGFE STD	
	<b>Flow Monitoring Unit</b>	<b>D85</b>
	SGF	
	<b>Flow Monitoring Unit</b>	<b>D90</b>
	SGFE	
	<b>Flow Rate Display</b>	<b>D93</b>
	STD 1 / 2 / 3 / 4	

## Pressure Gauges (analogue/digital) and Accessories



Measuring pressure on equipment is indispensable for monitoring and ensuring the smooth functioning and operating safety of these systems.

STAUFF offers a variety of simple pressure measuring devices for liquid and gaseous media. These pressure gauges can be used as both stationary or portable devices. STAUFF addresses the very extensive width of possible system pressures and the strict requirements for precision with a variety of pressure gauge types with different measuring ranges.

The glycerine filled gauge range is available with various connection ports to fit many different installation needs. The pressure gauges can be purchased alone or in a test kit. The kits can be supplied with gauges with different pressure ranges and adaptors to satisfy any requirement.

The analog pressure gauges are primarily designed for permanent installations. STAUFF also offers a digital line for analytical troubleshooting.

These digital pressure gauges are also available as a pressure test kit and also make it possible to perform the many different measurement tasks with the help of adaptors and the measuring hose. An important advantage is the possibility to measure pressure peaks with the device, to save them short term and to display them in the display as MIN and MAX values.

In addition to the individual products, the STAUFF measuring devices are also available as kit.

## Information on the Pressure Equipment Directive (PED) 97/23/EC Pressure Equipment Directive (PED)

Our pressure gauges (SPG) conform to the European Standard EN 837-1 and are manufactured and tested according to appropriate requirements. Pressure gauges with a full scale value between 0,5 bar and 200 bar / 7.25 PSI and 2900 PSI come under „Good Engineering Practice“ and must not carry a CE mark (section 3, paragraph 3).

Pressure gauges (SPG) with a full scale value of less than 0,5 bar / 7.25 PSI and loose diaphragm sealings do not come under the PED and must not carry a CE mark. Our pressure gauges (SPG) with a full scale value of > 200 bar / 2900 PSI receive a CE mark according to the conformity procedure.

The CE mark is attached to the outside of the housing (type designation plate).  
We are not authorised to CE mark pressure gauges without a company name or a company logo.



### Pressure Gauges ▀ Accessories



**Single Station Gauge Isolator Valve**  
(see on page F90, Valves section)



**Multi Station Gauge Isolator Valve**  
(see on page F90, Valves section)



**Gauge Isolator Needle Valves**  
(see on page F91, see Valves section)



**Test Hoses - Gauge Adaptor**  
(see pages B36 ff., STAUFF Test section)



**Gauge Adaptor**  
(see pages B11/B21/B27/B29, STAUFF Test section)



**Direct Gauge Adaptor**  
(see on pages B11/B21/B27, STAUFF Test section)



**Adjustable Gauge Fitting**  
(see on page B34, STAUFF Test section)

## Pressure Gauge (analogue) - Type SPG



Pressure Gauge (Analogue) Type SPG (Stem Mounting)



Pressure Gauge (Analogue) Type SPG (Panel Mounting)

### Product Description

#### Area of Application

- Mechanical pressure measurement

#### Features

- Suitable for hydraulic oil and gaseous media compatible with copper based alloys
- Available in nominal sizes 63 and 100 mm / 2.5 and 4 in
- Thread form: for BSP (G1/4 and G1/2), NPT (1/4 NPT and 1/2 NPT), SAE (7/16–20 UNF)
- Stainless Steel (1.4301) housing
- Acrylic sight glass
- Glycerine filled
- Standard dual scales with pressure indication in bar and PSI
- U-bolt or flange mounting kit on request

Note: Please consult STAUFF before you use SPG with other media.

#### Options

- Protective rubber cap
- Additional scale readings including personalisation
- U-bolt and flange mounting kits are available separately as spare parts

#### Technical Data

- Pressure gauge according to EN 837-1
- Subject to technical modifications

#### Accuracies

SPG-063:	1.6 (± 1.6 % FS* as per EN 837-1)
SPG-100:	1.0 (± 1.0 % FS* as per EN 837-1)

#### Permissible Temperatures

- Ambient: -20 °C ... +60 °C / -4 °F ... +140 °F
- Media: max. +60 °C / max. +140 °F

#### Protection Ratings

- IP 65: for all manometer SPG 100 and SPG 063 > 16 bar / 232 PSI  
IP 65 protection rating: Dust tight and protected against water jets for all manometer SPG 063 ≤ 16 bar / 232 PSI due to pressure compensation opening
- IP 54: IP 54 protection rating: Dust protected and protected against splashing water

### Order Codes



#### ① Series and Type

Stainless Steel Pressure Gauge	<b>SPG</b>
--------------------------------	------------

#### ② Size

Ø 63 mm, with G1/4 or 1/4 NPT connection	<b>063</b>
Ø 100 mm, with G1/2 or 1/2 NPT connection	<b>100</b>

#### ③ Pressure Ranges (only for type 01 - bar/PSI)

-1 ... 1,5 bar / -14.5 ... 21 PSI	<b>(-1)-(1,5)</b>
-1 ... 3 bar / -14.5 ... 43 PSI	<b>(-1)-00003</b>
0 ... 10 bar / 0 ... 145 PSI	<b>00010</b>
0 ... 16 bar / 0 ... 232 PSI	<b>00016</b>
0 ... 25 bar / 0 ... 362 PSI	<b>00025</b>
0 ... 40 bar / 0 ... 580 PSI	<b>00040</b>
0 ... 60 bar / 0 ... 870 PSI	<b>00060</b>
0 ... 100 bar / 0 ... 1450 PSI	<b>00100</b>
0 ... 160 bar / 0 ... 2320 PSI	<b>00160</b>
0 ... 250 bar / 0 ... 3625 PSI	<b>00250</b>
0 ... 400 bar / 0 ... 5801 PSI	<b>00400</b>
0 ... 600 bar / 0 ... 8702 PSI	<b>00600</b>
0 ... 680 bar / 0 ... 9862 PSI	<b>00680</b>
0 ... 700 bar / 0 ... 10152 PSI	<b>00700</b>
0 ... 1000 bar / 0 ... 14503 PSI	<b>01000</b>

Note: Others on request. Information always refer to the pressure setting of the outside scale.

#### ④ Styles of Scales

bar / PSI (bar outside/PSI inside - standard option)	<b>01</b>
bar	<b>02</b>
PSI	<b>03</b>
PSI / bar (PSI outside/ bar inside)	<b>05</b>
kPa / PSI (kPa outside/ PSI inside)	<b>10</b>

Note: Others on request.

#### ⑤ Adaption

Stem mounting	<b>S</b>
Panel mounting	<b>P</b>

#### ⑥ Process Connection

G1/4 (only SPG 063)	<b>B04</b>
G1/2 (only SPG 100)	<b>B08</b>
1/4 NPT (only SPG 063)	<b>N04</b>
1/2 NPT (only SPG 100)	<b>N08</b>
7/16–20 UNF (only SPG 063)	<b>U04</b>

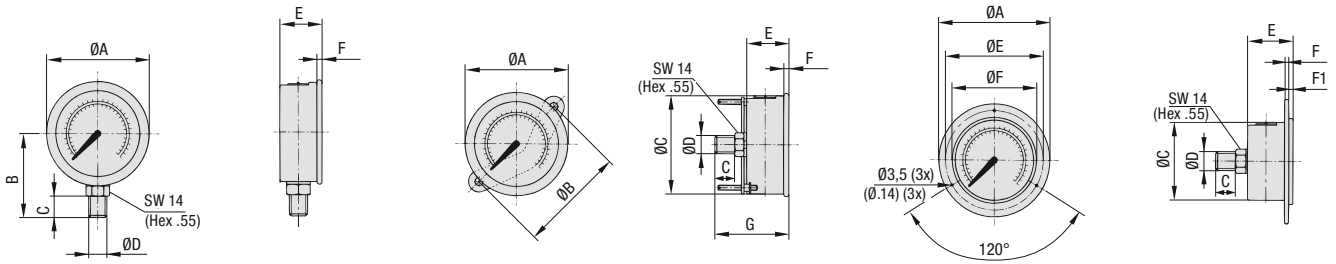
Note: Others on request.

#### ⑦ Accessories

No accessory	<b>(none)</b>
U-bolt assembly	<b>U</b>
Front flange assembly (for panel mount only)	<b>F</b>
Rear flange assembly	<b>R</b>
U-bolt and front flange assembly (for panel mount only)	<b>UF</b>
Protective rubber cap (for stem mount only)	<b>G</b>

For further information on page B34, STAUFF Test section.

## Pressure Gauge (analogue) - Type SPG



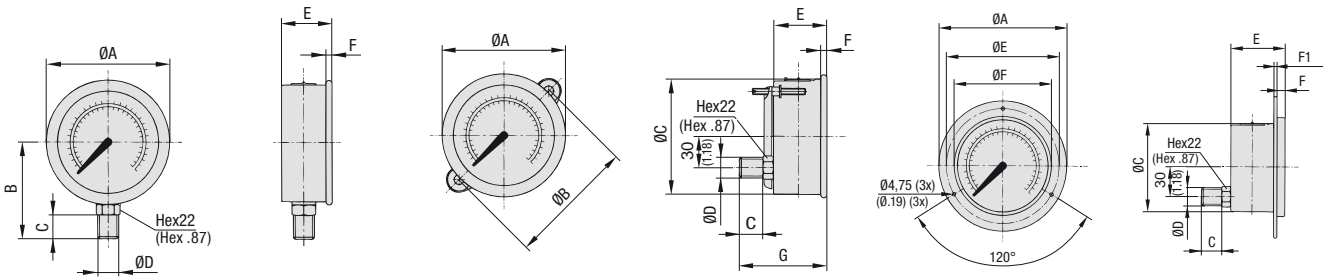
SPG 063 ... S ...

SPG 063 ... P ... U

SPG 063 ... P ... F

## Dimensions SPG 063

Version Pressure Gauge	Dimension (mm/in)											
	ØA	ØB	ØC	ØD	ØE	ØF	B	C	E	F	F1	G
SPG-063	69	-	-	G1/4	-	-	54	15	32	6,5	-	-
	2.72	-	-	1/4 NPT	-	-	2.13	.59	1.26	.26	-	-
				7/16-20 UNF								
SPG-063 ... U	69	72	62	G1/4	-	-	-	15	32	6,5	-	56
	2.72	2.83	2.44	1/4 NPT	-	-	-	.59	1.26	.26	-	2.20
				7/16-20 UNF								
SPG-063 ... F	85	-	62	G1/4	75	68	-	15	32	2	2	-
	3.35	-	2.44	1/4 NPT	2.95	2.68	-	.59	1.26	.008	.008	-
				7/16-20 UNF								



SPG 100 ... S ...

SPG 100 ... P ... U

SPG 100 ... P ... F

## Dimensions SPG 100

Version Pressure Gauge	Dimension (mm/in)											
	ØA	ØB	ØC	ØD	ØE	ØF	B	C	E	F	F1	G
SPG-100	107	-	-	G1/2	-	-	87	23	48	8	-	-
	4.21	-	-	1/2 NPT	-	-	3.43	.91	1.89	.31	-	-
SPG-100 ... U	107	107	100	G1/2	-	-	-	23	48	8	-	81,5
	4.21	4.21	3.94	1/2 NPT	-	-	-	.91	1.89	.31	-	3.21
SPG-100 ... F	132	-	100	G1/2	116	107	-	23	48	8	1,25	-
	5.20	-	3.94	1/2 NPT	4.57	4.21	-	.91	1.89	.31	.05	-

\* FS = Full Scale

Dimensional drawings: All dimensions in mm (in).

**Pressure Test Kit (analogue) - Type SMB20 / SMB15**



Pressure test kit (analogue) with SPG 063 (1x)    Pressure test kit (analogue) with SPG 063 (2x)    Pressure test kit (analogue) with SPG 063 (3x)    Pressure test kit (analogue) with SPG 100 (1x)

**Product Description**

In addition to the individual SPG gauges, the STAUFF Pressure Gauges are also available as part of a pressure test kit.

The SMB Pressure Test Kits are assembled in various versions, in accordance with customer wishes. All pressure test kits are supplied in a handy case with custom-designed foam inserts.

Please see on page D9 for standard options.

**Order Codes**



**① Series and Type**

Pressure Test Kit, analogue (STAUFF Test 20)	<b>SMB20</b>
Pressure Test Kit, analogue (STAUFF Test 15)	<b>SMB15</b>

**② Number of Pressure Gauges**

1 pressure gauge SPG 063	<b>1</b>
2 pressure gauges SPG 063	<b>2</b>
3 pressure gauges SPG 063	<b>3</b>
1 pressure gauge SPG 100	<b>/100-1</b>

**③ Pressure Ranges**

-1 ... 3 bar / -14.5 ... 43 PSI	<b>(-1)0003</b>
0 ... 10 bar / 0 ... 145 PSI	<b>010</b>
0 ... 16 bar / 0 ... 232 PSI	<b>016</b>
0 ... 25 bar / 0 ... 362 PSI	<b>025</b>
0 ... 40 bar / 0 ... 580 PSI	<b>040</b>
0 ... 60 bar / 0 ... 870 PSI	<b>060</b>
0 ... 100 bar / 0 ... 1450 PSI	<b>100</b>
0 ... 160 bar / 0 ... 2320 PSI	<b>160</b>
0 ... 250 bar / 0 ... 3625 PSI	<b>250</b>
0 ... 400 bar / 0 ... 5801 PSI	<b>400</b>

Note: Please indicate pressure ranges in bar.  
 For one pressure gauge please replace xxx.  
 For two pressure gauges please replace xxx/xxx.  
 For three pressure gauges please replace xxx/xxx/xxx.

**④ Material Surface**

Steel, zinc/nickel plated	<b>C6F</b>
---------------------------	------------

For further information on page B35, STAUFF Test section.



## Standard Option for Pressure Test Kits (analogue) ▀ Type SMB20 / SMB15

Series	Components	Order Codes	Series	Components	Order Codes
SMB20-1-xxx-C6F	1x Test hose (2000 mm length)	SMS-20-2000-B-C6F	SMB15-1-xxx-C6F	1x Test hose (2000 mm length)	SMS-15-2000-B-C6F
	1x Pressure gauge Ø 63 mm	SPG 063-xxx-...		1x Pressure gauge Ø 63 mm	SPG 063-xxx-...
	1x Gauge adaptor G1/4	SMA20-G1/4-P-OR-C6F		1x Gauge adaptor G1/4	SMA15-G1/4-P-OR-C6F
	1x Direct gauge adaptor G1/4	SMD20-G1/4-P-OR-C6F		1x Direct gauge adaptor G1/4	SMD15-G1/4-P-OR-C6F
	1x Test coupling G1/4	SMK20-G1/4-PC-C6F		1x Test coupling G1/4	SMK15-G1/4-PB-C6F
	1x Test coupling M10 x 1	SMK20-M10x1-PA-C6F		1x Test coupling M14 x 1,5	SMK15-M14x1,5-PB-C6F
	1x Thread adaptor G3/8	SRS20-G3/8-B-C6F		1x Thread adaptor G3/8	SRS15-G3/8-B-C6F
	1x Thread adaptor G1/2	SRS20-G1/2-B-C6F		1x Thread adaptor G1/2	SRS15-G1/2-B-C6F
1x Dust cloth	-		1x Dust cloth	-	

xxx/xxx/xxx = pressure ranges see on page D8 (please indicate pressure ranges in bar)  
 Custom kits available upon request. Please consult STAUFF.

Series	Components	Order Codes	Series	Components	Order Codes
SMB20-2-xxx/xxx-C6F	1x Test hose (2000 mm length)	SMS-20-2000-B-C6F	SMB15-2-xxx/xxx-C6F	1x Test hose (2000 mm length)	SMS-15-2000-B-C6F
	2x Pressure gauges Ø 63 mm	SPG 063-xxx-...		2x Pressure gauges Ø 63 mm	SPG 063-xxx-...
	1x Gauge adaptor G1/4	SMA20-G1/4-P-OR-C6F		1x Gauge adaptor G1/4	SMA15-G1/4-P-OR-C6F
	1x Direct gauge adaptor G1/4	SMD20-G1/4-P-OR-C6F		1x Direct gauge adaptor G1/4	SMD15-G1/4-P-OR-C6F
	1x Test coupling G1/4	SMK20-G1/4-PC-C6F		1x Test coupling G1/4	SMK15-G1/4-PB-C6F
	1x Test coupling M10 x 1	SMK20-M10x1-PA-C6F		1x Test coupling M14 x 1,5	SMK15-M14x1,5-PB-C6F
	1x Thread adaptor G3/8	SRS20-G3/8-B-C6F		1x Thread adaptor G3/8	SRS15-G3/8-B-C6F
	1x Thread adaptor G1/2	SRS20-G1/2-B-C6F		1x Thread adaptor G1/2	SRS15-G1/2-B-C6F
1x Dust cloth	-		1x Dust cloth	-	

xxx/xxx/xxx = pressure ranges see on page D8 (please indicate pressure ranges in bar)  
 Custom kits available upon request. Please consult STAUFF.

Series	Components	Order Codes	Series	Components	Order Codes
SMB20-3-xxx/xxx/xxx-C6F	2x Test hoses (2000 mm length)	SMS-20-2000-B-C6F	SMB15-3-xxx/xxx/xxx-C6F	2x Test hoses (2000 mm length)	SMS-15-2000-B-C6F
	3x Pressure gauges Ø 63 mm	SPG 063-xxx-...		3x Pressure gauges Ø 63 mm	SPG 063-xxx-...
	1x Gauge adaptor G1/4	SMA20-G1/4-P-OR-C6F		1x Gauge adaptor G1/4	SMA15-G1/4-P-OR-C6F
	2x Direct gauge adaptors G1/4	SMD20-G1/4-P-OR-C6F		2x Direct gauge adaptors G1/4	SMD15-G1/4-P-OR-C6F
	3x Test couplings G1/4	SMK20-G1/4-PC-C6F		3x Test couplings G1/4	SMK15-G1/4-PB-C6F
	3x Test couplings M10 x 1	SMK20-M10x1-PA-C6F		3x Test couplings M14 x 1,5	SMK15-M14x1,5-PB-C6F
	1x Thread adaptor G3/8	SRS20-G3/8-B-C6F		1x Thread adaptor G3/8	SRS15-G3/8-B-C6F
	1x Thread adaptor G1/2	SRS20-G1/2-B-C6F		1x Thread adaptor G1/2	SRS15-G1/2-B-C6F
1x Dust cloth	-		1x Dust cloth	-	

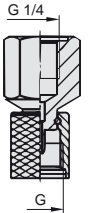
xxx/xxx/xxx = pressure ranges see on page D8 (please indicate pressure ranges in bar)  
 Custom kits available upon request. Please consult STAUFF.

Series	Components	Order Codes	Series	Components	Order Codes
SMB20/100-1-xxx-C6F	1x Test hose (2000 mm length)	SMS-20-2000-B-C6F	SMB15/100-1-xxx-C6F	1x Test hose (2000 mm length)	SMS-15-2000-B-C6F
	1x Pressure gauge Ø 100 mm	SPG 100-xxx-...		1x Pressure gauge Ø 100 mm	SPG 100-xxx-...
	1x Gauge adaptor G1/4	SMA20-G1/4-P-OR-C6F		1x Gauge adaptor G1/4	SMA15-G1/4-P-OR-C6F
	1x Direct gauge adaptor G1/4	SMD20-G1/4-P-OR-C6F		1x Direct gauge adaptor G1/4	SMD15-G1/4-P-OR-C6F
	1x Test coupling G1/4	SMK20-G1/4-PC-C6F		1x Test coupling G1/4	SMK15-G1/4-PB-C6F
	1x Test coupling M10 x 1	SMK20-M10x1-PA-C6F		1x Test coupling M14 x 1,5	SMK15-M14x1,5-PB-C6F
	1x Thread adaptor G3/8	SRS20-G3/8-B-C6F		1x Thread adaptor G3/8	SRS15-G3/8-B-C6F
	1x Thread adaptor G1/2	SRS20-G1/2-B-C6F		1x Thread adaptor G1/2	SRS15-G1/2-B-C6F
1x Dust cloth	-		1x Dust cloth	-	


xxx/xxx/xxx = pressure ranges see on page D8 (please indicate pressure ranges in bar)  
 Custom kits available upon request. Please consult STAUFF.

## Accessories (Connection Adaptors)

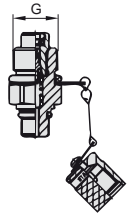
Adaptor	Adaption from	to Dimension G
SDA20-G1/4-C6F	G1/4	M16 x 2
SDA15-G1/4-C6F	G1/4	M16 x 1,5
SDA12-G1/4-C6F	G1/4	S12,65 x 1,5
SAD20/15-P-C6F	M16 x 2	M16 x 1,5
SAD20/12-P-C6F	M16 x 2	S12,65 x 1,5
SAD20/10-P-C6F	M16 x 2	Plug-in system



SDA adaptor  
Connects the pressure gauge to a test coupling



SAD adaptor  
Only in conjunction with the SDA20-G1/4-C6F adaptor, connects to other test coupling sizes



Test coupling  
STAUFF Test or comparable

Other adaptors are available.



## Digital Pressure Gauge - Type SPG-DIGI



### Product Description

The SPG-DIGI Digital Pressure Gauges are intended to measure and display pressures in hydraulic systems, particularly for oils, lubricants and water. They can display the current measured values, as well as minimum and maximum values, with an accuracy of 0,5 % of full scale.

The SPG-DIGI Digital Pressure Gauges are available individually, or as part of a complete pressure test kit. They are very sturdy, reliable, easy to use and come with the CE mark (evidence of conformity compliance).

### Features

- Bar graph display (drag indicator)
- Background lighting
- Zero correction
- Battery charge display

### Order Codes



#### ① Series and Type

Digital Pressure Gauge **SPG-DIGI**

#### ② Pressure Ranges

-1 ... 16 bar / -14.5 ... 232 PSI	<b>B0016</b>
0 ... 100 bar / 0 ... 1450 PSI	<b>B0100</b>
0 ... 400 bar / 0 ... 5801 PSI	<b>B0400</b>
0 ... 600 bar / 0 ... 8702 PSI	<b>B0600</b>

#### ③ Process Connection

G1/4	<b>B</b>
7/16–20 UNF	<b>U</b>

#### ④ Calibration

Without calibration certificate	<b>(none)</b>
With calibration certificate	<b>CAL</b>

### Pressure Ranges

Version	Pressure Range (bar/PSI)	Maximum Pressure (bar/PSI)	Burst Pressure (bar/PSI)
<b>B0016</b>	-1 ... 16	40	50
	-14.5 ... 232	580	725
<b>B0100</b>	0 ... 100	200	800
	0 ... 1450	2900	11603
<b>B0400</b>	0 ... 400	800	1700
	0 ... 5801	11603	24656
<b>B0600</b>	0 ... 600	1200	2200
	0 ... 8702	17404	31908

### Technical Data

#### Materials

- Housing made of die-cast Zinc with TPE rubber protective covering
- Wetted parts: Stainless Steel 1.4404, NBR, ceramic
- Gaskets: NBR (Buna-N®)  
FPM (Viton®) or EPDM upon request

#### Dimensions and Weight

- Diameter: 79 mm / 3.11 in
- Depth: 33 mm / 1.30 in
- Weight: 540 g / 1.19 lbs

#### Display

- Text display 4 1/2-digit
- Size: 50 x 34 mm / 1.97 x 1.34 in
- Actual value display: 15 mm / .59 in
- MIN-/MAX or FS\* display: 8 mm / .31 in
- Units: bar, PSI, Mpa, kPa, mbar
- Peak pressure measurement with 10 ms sampling rate
- Lighted measured value display

#### Accuracy

- ±0,25 % FS\* typ. / ±0,5 % FS\* max.
- Resolution: 4096 steps

#### Permissible Temperatures

- Ambient: -10 °C ... +50 °C / +14 °F ... +122 °F
- Media: -20 °C ... +80 °C / -4 °F ... +176 °F
- Storage: -20 °C ... +60 °C / -4 °F ... +140 °F

- Relative humidity: < 85 %
- Battery life: max. 1500 hours  
(operating without lighting, 2 x 1,5 V DC AA (LR6-AA) Alkaline Mignon)

#### Process Connections

- G1/4 or 7/16–20 UNF made of 1.4404 Stainless Steel

- Vibration: IEC 60068-2-6 / 10 ... 500 Hz / 5 g
- Shock: IEC 60068-2-27 / 11 ms / 25 g
- Load cycles (10<sup>6</sup>): 100

#### Protection Rating

- IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time

## Pressure Test Kit (digital) ▪ Type SMB-DIGI



Pressure Test Kit (Digital) Type SMB-DIGI

## Order Codes



## ① Series and Type

 Pressure Test Kit, digital pressure gauge **SMB-DIGI**

## ② Adaptor Version

 Adapts to STAUFF Test 20 (M16 x 2) **20**

## ③ Pressure Ranges

-1 ... 16 bar / -14.5 ... 232 PSI	<b>B0016</b>
0 ... 100 bar / 0 ... 1450 PSI	<b>B0100</b>
0 ... 400 bar / 0 ... 5801 PSI	<b>B0400</b>
0 ... 600 bar / 0 ... 8702 PSI	<b>B0600</b>

## ④ Process Connection

G1/4	<b>B</b>
7/16-20 UNF	<b>U</b>

## ⑤ Calibration

Without calibration certificate	<b>(none)</b>
With calibration certificate	<b>CAL</b>

## Product Description

In addition to the individual SPG-DIGI devices, the STAUFF Digital Pressure Gauges are also available as part of a pressure test kit.

The SMB-DIGI pressure test kits are assembled in various versions, in accordance with customer wishes. All pressure test kits are supplied in a handy case with custom-designed foam inserts.

## Components

## Standard Option SMB-DIGI-20

- Digital Pressure Gauge SPG-DIGI
- Test Hose (2 m / 6.56 ft), M16 x 2, pressure-resistant 600 bar (8702 PSI) SMS-20-2000-B-C6F
- Adaptor SDA (G1/4 to M16 x 2) SDA-20-G1/4-C6F
- Hose Connector SSV20-C6F
- Test Coupling SMK20-G1/4-PC-C6F
- Test Coupling SMK20-M10x1-PA-C6F
- Thread Adaptor SRS20-G3/8-B-C6F
- Thread Adaptor SRS20-G1/2-B-C6F
- Operating manual (multilingual) on CD
- Dust cloth

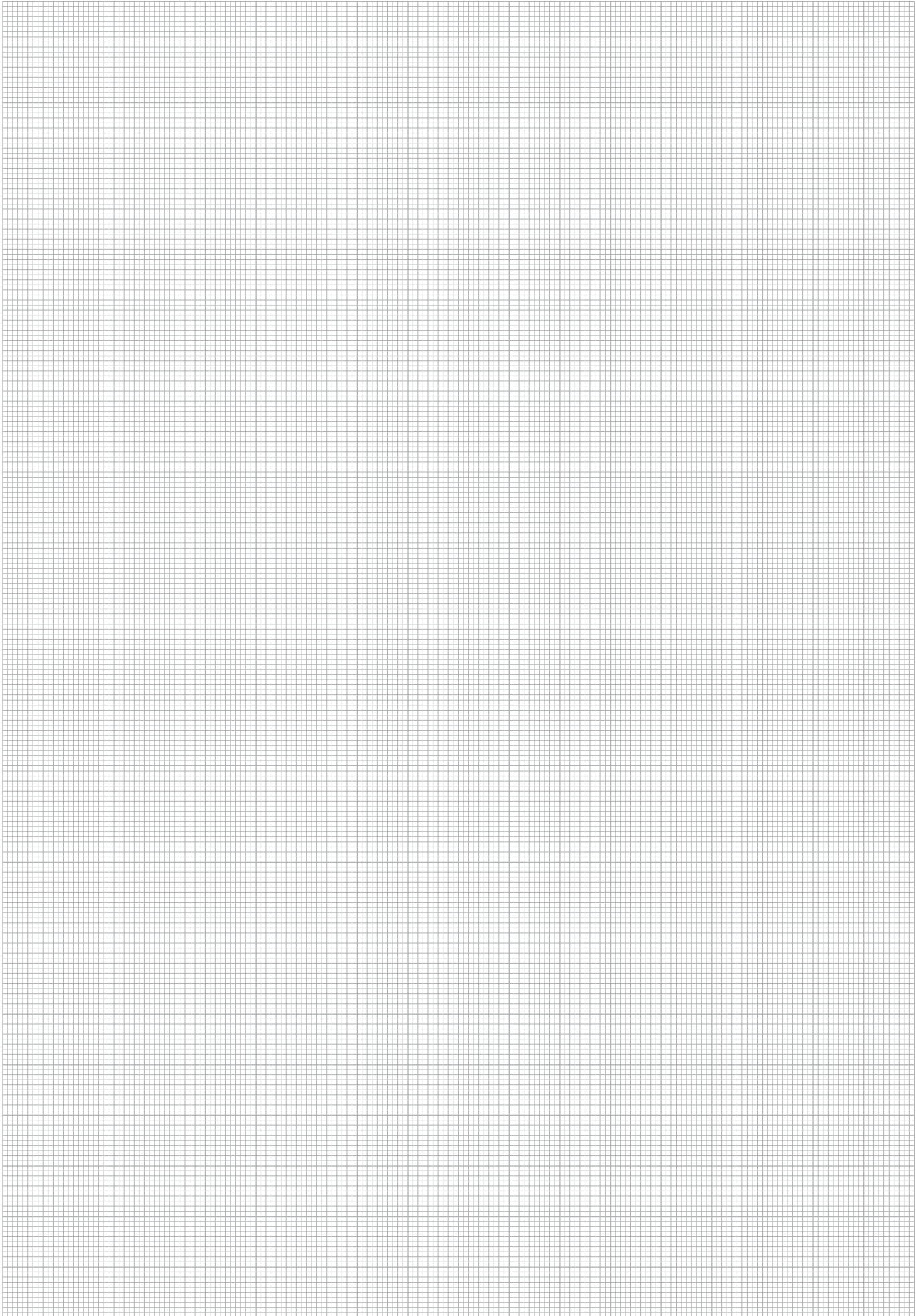
## Pressure Ranges

Version	Pressure Range ( <sup>bar</sup> / <sub>PSI</sub> )	Maximum Pressure ( <sup>bar</sup> / <sub>PSI</sub> )	Burst Pressure ( <sup>bar</sup> / <sub>PSI</sub> )
<b>B0016</b>	-1 ... 16 -14.5 ... 232	40 580	50 725
<b>B0100</b>	0 ... 100 0 ... 1450	200 2900	800 11603
<b>B0400</b>	0 ... 400 0 ... 5801	800 11603	1700 24656
<b>B0600</b>	0 ... 600 0 ... 8702	1200 17404	2200 31908

## Accessories (Connection Adaptors)

Adaptor	Adaption from	to Dimension G
SDA20-G1/4-C6F	G1/4	M16 x 2
SDA15-G1/4-C6F	G1/4	M16 x 1,5
SDA12-G1/4-C6F	G1/4	S12,65 x 1,5
SAD20/15-P-C6F	M16 x 2	M16 x 1,5
SAD20/12-P-C6F	M16 x 2	S12,65 x 1,5
SAD20/10-P-C6F	M16 x 2	Plug-in system

Other adaptors are available.



## Hydraulic Testers of the PPC Series



The STAUFF measuring and test equipment of the PPC series are perfectly suited for measuring all relevant parameters in fluid power systems, including pressure, differential pressure, temperature, flow and rotational speed.

Depending on the type, they allow evaluation, storage and further processing in PCs or notebooks. They have been especially developed for the growing needs of system monitoring, troubleshooting and determining measured values in hydraulic and pneumatic systems.

The application areas are broad:

- Industrial hydraulics
- Mobile, agricultural and forestry hydraulics
- Marine and offshore hydraulics
- Chemical and petrochemical industries
- Energy and air conditioning industries
- Heating and sanitary industries

Among other things, the latest generation of Hydraulic Tester PPC-04-plus is characterised by a simple operation. Even in low-light situations, measured values can be read quickly and reliably from the multi-line, backlit LCD display. The new Hydraulic Tester is available in two versions, either with two inputs for analogue sensors or with a CAN interface for connecting up to three digital sensors. Both versions are equipped with an internal data memory and an USB port. They are driven by an internal power supply (Lithium-Ion pack).

The Hydraulic Testers of the PPC-06/08-plus series, depending on the type, provide the potential of connecting three or four analogue sensors. Even older sensors of the STAUFF Diagtronics product program or third-party sensors can be used with these units without any problems. Both Hydraulic Testers are equipped with a large data memory and an integrated USB port, they can be used for several hours in battery operation. The included PC software allows to show the measured values as numerical values or as curve graphs on PCs or notebooks.

The PPC Pad is the highest-performance unit of the PPC series. This portable multi-function hand-held measuring instrument has been especially developed for the increasing fluid technology requirements. STAUFF's CAN bus sensors take advantage of the bus system's automatic sensor recognition to provide an easy-to-install Plug & Play solution. The measured values can be displayed in various presentation styles and make effective solutions-orientated analysis possible.

The Hydraulic Testers of the PPC series and their corresponding sensors are also available as calibrated version, they are delivered with a calibration certificate. A subsequent calibration can be ordered by using a special order code.

Hydraulic Testers of the PPC Series - Product Overview

Hydraulic Testers					
Options	PPC-04-plus	PPC-04-plus-CAN	PPC-06-plus	PPC-08-plus	PPC-Pad

Rechargeable Battery	●	●	●	●	●
Number of Sensor Inputs	2 (max. 2 analogue sensors)	1x CAN (max. 3 CAN sensors)	3	4	max. 6 + 2 x CAN (each 8 sensors)
PC Interface	USB	USB	USB	USB	USB / Ethernet
Online Function	●	●	●	●	●
Internal Memory	●	●	●	●	●
Programming of Automatic Measuring Tasks	–	–	●	●	●
Internal Trigger Function	–	–	●	●	●
Data Display	●	●	●	●	●
Display Lightning	●	●	●	●	●
Curve Printout on Display	–	–	–	–	●
PC Software Kit	●	●	●	●	●

Pressure Measurement	●	●	●	●	●
Temperature Measurement	●	●	●	●	●
Flow Measurement	●	●	●	●	●
Rotational Speed Measurement	●	–	●	●	●
Frequency Measurement	●	●	●	●	●
Third-Party Sensors	●	●	●	●	●
Current / Voltage Adaptor	●	●	●	●	●
STAUFF CAN Sensor	–	●	–	–	●

● = standard, – = not available

## Hydraulic Testers of the PPC Series

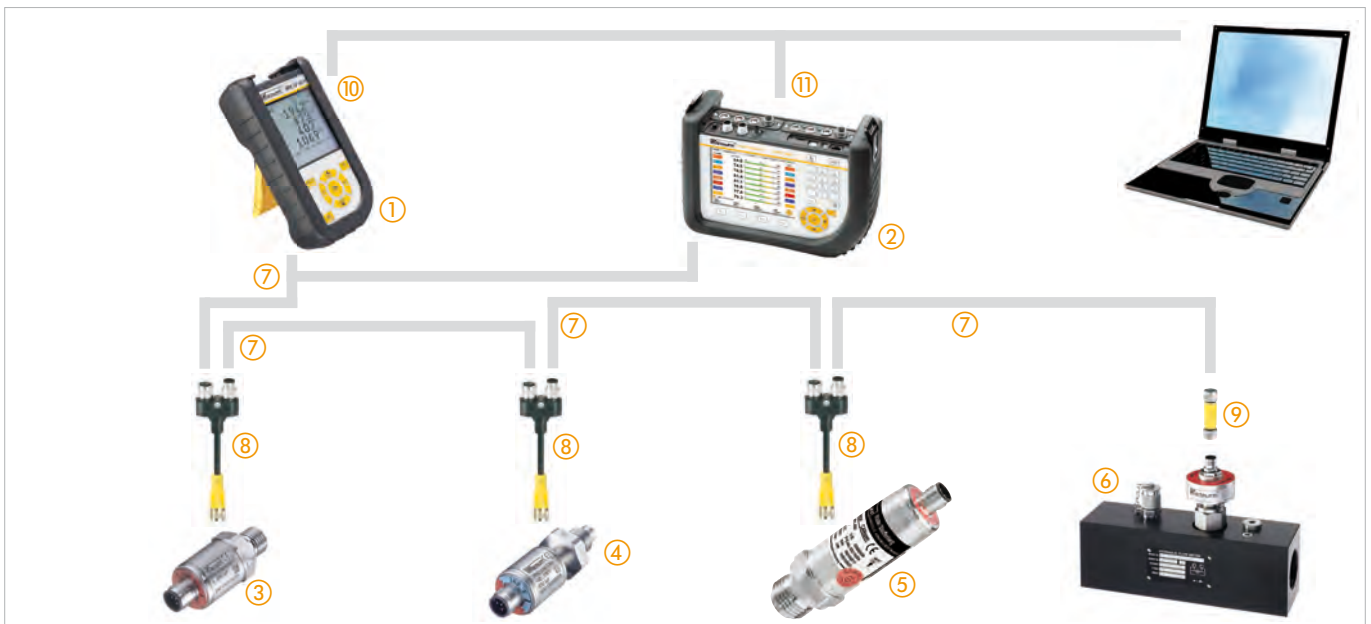


- ① Hydraulic Tester **PPC-04-plus**  
max. two analogue sensors can be connected at the same time
- ② Hydraulic Tester **PPC-06-plus**  
max. three analogue sensors can be connected at the same time
- ③ Hydraulic Tester **PPC-08-plus**  
max. four analogue sensors can be connected at the same time
- ④ Hydraulic Tester **PPC-Pad**  
max. six analogue sensors can be connected at the same time

- ⑤ Pressure Sensor **PPC-04/12-P**
- ⑥ Pressure / Temperature Sensor **PPC-04/12-PT**
- ⑦ Rotational Speed Sensor **PPC-04/12-SDS-CAB** with integrated connection cable, optionally with Contact Adaptor **PPC-04/12-SKA-Contact** or Focusing Adaptor **PPC-04/12-SKA-Focus**
- ⑧ Screw-in Temperature Sensor **PPC-04/12-T / Manual Temperature Sensor PPC-04/12-TSH**
- ⑨ Flow Turbine **PPC-04/12-SFM** with integrated signal converter, for connecting pressure and temperature sensor

- ⑩ 5-pin Connection Cable for sensors **PPC-04/12-CAB3** (3 m / 9.84 ft), optionally with Extension Cable **PPC-04/12-CAB5-EXT** (5 m / 16.40 ft)
- ⑪ PPC Connection Cable as a component of the PC Sets **PC-SET-06/08-plus-SW-CAB** (USB)
- ⑫ PPC Connection Cable as a component of the PC Sets **PC-SET-04-plus-SW-CAB** (USB)
- ⑬ PPC Connection Cable as a component of the PC Sets **LAN- or USB 2.0-Kabel**

## Hydraulic Testers PPC Series (CAN Version)



- ① Hydraulic Tester **PPC-04-plus-CAN** with CAN interface (1x)
- ② Hydraulic Tester **PPC-Pad** with two CAN interfaces
- ③ CAN Pressure Sensor **PPC-CAN-P**
- ④ CAN Temperature Sensor **PPC-CAN-T**

- ⑤ CAN Pressure / Temperature Sensor **PPC-CAN-PT**
- ⑥ CAN Flow Turbine **PPC-CAN-SFM** with integrated signal converter, for connecting pressure and temperature sensors
- ⑦ CAN Connection Cable **PPC-CAN-CABX**
- ⑧ CAN Y-Splitter Cable **PPC-CAN-CAB-Y**

- ⑨ CAN Terminating Resistor **PPC-CAN-R**
- ⑩ PPC Connection Cable as a component of the PC Sets **PC-SET-04-plus-SW-CAB** (USB)
- ⑪ PPC Connection Cable as a component of the PC Sets **LAN- or USB 2.0-Kabel**



Hydraulic Testers ■ Type PPC-04-plus / PPC-04-plus-CAN



PPC-04-plus with 2 sensor inputs for max. 2 analogue sensors



PPC-04-plus-CAN with CAN interface for max. 3 sensors (max. 50 m / 164 ft cable length)

Product Description

The PPC-04-plus and PPC-04-plus-CAN Hydraulic Testers have been developed for the growing demands in mobile and industrial hydraulic systems. They are perfectly suited for the precise determination of pressure, temperature, volume flow and rotational speed.

- Multi-line, backlit LCD display
- Max. two analogue sensors can be connected at the same time
- With CAN interface, max. three digital sensors can be connected at the same time
- Integrated data memory for 15000 data records
- External storage by using a USB memory stick
- Max. CAN bus length: 50 m / 164 ft (CAN version)

The Hydraulic Testers are available in two versions. The PPC-04-plus, analogue version, comes with two inputs for connecting up to two analogue sensors at the same time. The PPC-04-plus-CAN comes with an CAN interface for connecting up to three digital sensors at the same time. Both versions provide automatic sensor recognition, thus making the tedious and often time-consuming parameterization of sensors redundant. The units can be easily operated via the keyboard and the individual device configurations can be viewed and managed.

Due to its extremely robust construction and oil-resistant rubber coating, the Hydraulic Testers can withstand impacts, vibrations, dust and moisture (protection class up to IP 67) and is designed for use in particularly harsh conditions.

The internal battery (Lithium Ion pack) can be charged via a micro USB connection, this connection can be also used to transfer the internally stored datas to a PC or notebook. Furthermore, this connection is also provided for real-time presentation of the measured values on the PC.

The PPC-04-plus devices can store up to 15000 data records and 270000 measured values. The included PPC software is compatible with popular PC operating systems (Windows 95®, Windows 98®, Windows 2000®, Windows NT®, Windows XP®, Windows Vista® and Windows 7®) and permits various evaluation methods.

It is also possible to connect the Pressure Sensors under load, with the equipment switched on. The temperature and volume flow sensors are to be installed in the pipelines. The Rotational Speed Sensor is a non-contacting sensor and uses an optical mark on the rotating parts. Measuring the differential pressure requires two Pressure Sensors with identical measuring ranges.

The units are also available as a complete set. See pages D34 / D35 for further information.

Order Codes



① Series and Type

Hydraulic Tester **PPC-04-plus**

② Version

Analogue version **(none)**  
CAN version **CAN**

③ Calibration

Without calibration certificate **(none)**  
With calibration certificate **CAL**

Note:  
Calibration certificate is only available for the analogue Hydraulic Tester PPC-04-plus.

Technical Data

Materials

- Housing made of ABS in a rubber protective

Dimensions and Weight

- W x H x D: 96 x 172 x 54 mm / 3.78 x 6.77 x 2.13 in
- Weight: ca. 540 g / 1.19 lbs

Measurements / Display

- Pressure: in bar, PSI, mbar, kPa, MPa
- Temperature: in °C und °F
- Volume flow: in l/min and US GPM
- Rotational speed: in 1/min and RPM
- Display: FSTN-LCD, graphic, LED backlit
- Visible area: 62 x 62 mm / 2.44 x 2.44 in
- Resolution: 130 x 130 Pixel

Power Supply

- External: Micro USB socket, type B +5V DC, max. 1000 mA
- Battery: Lithium Ion pack  
3,7 V DC / 2250 mAh or  
3,7 V DC / 4500 mAh CAN version
- Operating time with the rechargeable battery: approx. 8 hours

Sensor Inputs

- Push-in connection: 5-pol., push-pull or 5-pol., M12x1, SPEEDCON, connector (CAN version)
- Automatic sensor recognition
- Sampling rate: 1 ms
- Accuracy: <math>\pm 0,2\% FS^\* \pm 1 \text{ Digit}</math>

Permissible Temperatures

- Ambient: 0°C ... +50 °C / +32 °F ... +122 °F
- Storage: -25 °C ... +60 °C / -13 °F ... +140 °F

- Relative humidity: < 80 %
- CE certified

Interfaces

- USB device: Online transmission between unit and PC via PPC-Soft-plus (software)  
Measured value transmission: ACT/MIN/MAX, min. 5 ms  
USB standard: 2.0, fullspeed  
Push-in connection: Micro USB socket, shielded, type A  
Connection for USB stick, max. 4 GB  
USB standard: 2.0, fullspeed, max. 100 mA  
Push-on connection: Micro USB socket, shielded, type B
- USB host:

Protection Rating

- IP 54 protection rating: Dust protected and protected against splashing water
- (CAN version)  
IP 67 protection rating: Dust tight and protected against splashing water

Software

A PC set, consisting of a USB connection lead, length 1 m / 3.28 ft and the corresponding PC software, is included in the scope of delivery. The measured data and curves can be easily transferred and processed by using PPC-Soft-plus software as well as exported to Microsoft Excel®.



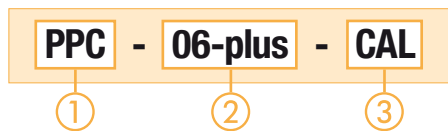
## Hydraulic Testers ■ Type PPC-06-plus / PPC-08-plus



PPC-08-plus with 4 sensor inputs



## Order Codes



## ① Series and Type

 Hydraulic Tester **PPC**

## ② Version

 With 3 sensor inputs **06-plus**  
 With 4 sensor inputs **08-plus**

## ③ Calibration

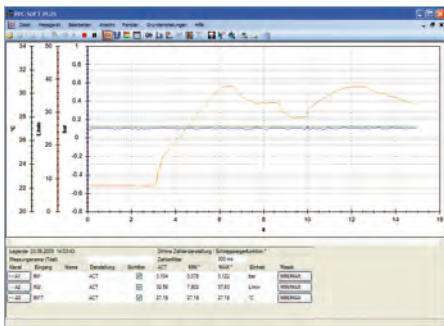
 Without calibration certificate **(none)**  
 With calibration certificate **CAL**

Version	No. Sensor Inputs	Integrated Data Memory for Measured Value Points	Memory Curves
06-plus	3	1000000 Points	240000 Points
08-plus	4		

## Software

A PC set, consisting of a USB connection lead, length 1,5 m / 4.9 ft and the corresponding PC software, is included in the scope of delivery.

The measured data and curves can be easily transferred and processed by using PPC-Soft-plus software as well as exported to Microsoft Excel®.



## Technical Data

## Material

- Housing made of fibreglass-reinforced PA

## Dimensions and Weight

- W x H x D: 106 x 235 x 53 mm / 4.17 x 9.25 x 2.09 in
- Weight: 530 g / 1.17 lbs

## Measurements / Display

- Pressure: in bar, PSI, mbar, kPa, MPa
- Temperature: in °C and °F
- Volumen flow: in l/min and US GPM
- Rotational speed: in 1/min and RPM
- Digital LCD display: 128 x 64 Pixel
- Visible area: 72 x 40 mm / 2.84 x 1.58 in
- Automatic numeral height adjustment  
Numeral height: 6 mm / .24 in with eight-line display
- Data output for connection to neotebook or PC
- 12-key membrane keyboard
- Electromagnetic compatibility (EMC):  
Emitted interference: DIN EN 50081, Part 1  
Interference immunity: DIN EN 50082, Part 2
- Auto power off (after 20 minutes)
- Battery charge display

## Measured Data Memory

- Variable memory interval (1 ms ... 10 s) or variable memory time (2 s ... 100 h)
- Manual and automatic triggering

## Power Supply

- Power supply: 110/230 V AC (50/60 Hz)
- Rechargeable battery charging unit
- Internal nickel metal hydride (NiMH) battery 7,2 V / 700 mAh
- Operating time with the rechargeable battery: approx. 8 hours

## Sensor Inputs (5-Pin)

- Automatic sensor detection
- Input signal: 0 ... 3 V DC (R = 470 kΩ)
- Frequency range: 0,5 Hz ... 30 kHz
- Sampling rate: 1 ms
- Accuracy: <math>\pm 0,25\% \text{ FS}</math>

## Data Output

- Integrated USB port (USB 2.0)
- Online data transmission to a PC  
Speed individually eligible (5 ms ... 60 s)

## Permissible Temperature

- Ambient: 0 °C ... +50 °C / +32 °F ... +122 °F
- Storage: -25 °C ... +60 °C / -13 °F ... +140 °F
- Temperature error: <math>< 0,02\% \text{ / } ^\circ\text{C}</math>

- Relative humidity: <math>< 80\%</math>
- CE certified
- IP 54 protection rating: Dust protected and protected against splashing water

## Product Description

The PPC-06/08-plus Hydraulic Testers have been especially developed for the growing demands of system monitoring and troubleshooting in hydraulic and pneumatic systems.

- Automatic sensor recognition
- Larger data memory
- Possible to record MIN-/MAX values over long periods
- Internal trigger function
- External trigger function
- Online data transmission
- Display lighting
- Programming by PC and notebook
- Integrated USB interface

The ergonomically designed housing and the LCD display, which sets automatically to the appropriate line size, now allows problem free use even under difficult environmental conditions.

The individual PPC-06-plus and PPC-08-plus Hydraulic Testers differ in the number of sensor inputs (3-channel or 4-channel technology).

Both Hydraulic Testers can measure, store and process all relevant hydraulic parameters such as pressure, differential pressure, temperature, rotational speed and flow.

The comprehensive programmer options, and the internal memory capacity in particular, allow for diverse measurements, trigger functions or measuring data from third-party sensors.

The PPC-06/08-plus devices can store up to 1000000 measuring value points and 240000 curve memory points. The stored values can be transferred using the built-in USB interface to a PC or notebook. The included PPC software is compatible with popular PC operating systems (Windows 95®, Windows 98®, Windows 2000®, Windows NT®, Windows XP®, Windows Vista® and Windows 7®) and permits various evaluation methods.

The automatic sensor recognition feature makes the PPC-06-plus and the PPC-08-plus Hydraulic Testers easy to operate, and the testers can be individually configured to meet customer requirements without a great programming effort. Both Hydraulic Testers allow the data from third-party sensors to be measured and processed.

The units are also available as a complete set. See page D34 for further information.

\* FS = Full Scale

## Hydraulic Tester ▀ Type PPC Pad



### Product Description

The application possibilities for hydraulics have recently increased throughout all areas of drive and control systems. This trend has been particularly noticeable in the sectors of machine, plant and automotive construction. At the same time, hydraulics and electronics have become increasingly intertwined.

STAUFF's hand-held measuring instrument PPC Pad helps you to deal with these new trends. It has never been so easy to follow the complex processes in these sectors with measurement, display and analysis. Potential uses include preventative maintenance, commissioning, troubleshooting and machine optimization.

The expanded requirements of these modern applications (such as the increased number of measurement points, longer cable lengths and high noise immunity) have driven further development of the CAN bus.

STAUFF's CAN bus sensors now take advantage of the bus system's automatic sensor recognition to provide an easy-to-install Plug & Play solution (max. CAN bus length 100 m / 328 ft). Compatibility with existing diagnostic sensors is also provided.

Our proven storage strategy is focused on MIN and MAX value measurements. Combined with a wide variety of value presentation styles, these features make effective solutions oriented analysis possible.

The PPC-Soft-plus PC software offers additional methods for analysis, control and remote maintenance using LAN and USB connections. Together with this software, the PPC Pad is a truly user-friendly measuring instrument that can be used for any type of diagnostics application.

### Features

- Portable multi-function hand-held measuring instrument
- Pressure, temperature, flow and speed can be measured, monitored and analysed
- Measurement and display of over 50 channels
- Measured value display: numerical, bar graph, pointer, curve graph
- Project templates can be saved and loaded
- Interfaces: CAN, LAN, USB
- Total memory with up to 1 billion measured values
- Measured data can be (automatically) recorded, saved and analysed with the PPC-Soft-plus PC software and a LAN or USB connection
- Max. CAN bus length: 100 m / 328 ft

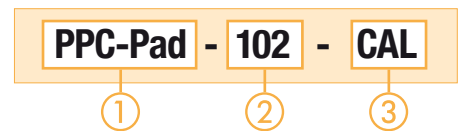
### Scope of Delivery

- Hydraulic Tester PPC Pad
- Installed handle
- 24 V DC / 2,5 A Power Supply incl. country-specific Adaptor
- M8 x 1 / 4-pin (digital in/out)
- USB 2.0 cable (2 m / 6.56 ft)
- LAN cable (5 m / 16.40 ft)
- Operating instructions
- PC software
- MicroSD memory card
- M12 cable socket for 4 ... 20 mA / 0 ... 10 V aux. sensors

### Technical Data

See page D19 for technical information.

### Order Codes



#### ① Series and Type

Hydraulic Tester	PPC-Pad
------------------	---------

#### ② Version

PPC-Pad-101	101
PPC-Pad-102	102
PPC-Pad-103	103

#### ③ Calibration (only -102 / -103)

Without calibration certificate	(none)
With calibration certificate	CAL

### Hydraulic Tester Version

Version	CAN Sensor Inputs	Sensor Inputs with Sensor Recognition STAUFF (Analogue)	Aux. Sensor Input (Analogue)
PPC-Pad-101	2 networks	-	-
PPC-Pad-102	each with 8	3	2
PPC-Pad-103	sensors max.	6	4

## Hydraulic Tester ■ Type PPC Pad


**Technical Data (General)**
**Materials**

- Housing: ABS/PC (Thermoplastic)
- Protective Sleeve: TPE (Thermoplastic Elastomer)

**Dimensions and Weight**

- W x H x D: 257 x 181 x 75 mm / 10.12 x 7.13 x 2.95 in
- Weight: 1550 g / 3.4 lbs (basic model)

**Inputs / Outputs**

CAN sensor inputs: 2 CAN bus networks each with 8 sensors and max. 16 channels (for STAUFF CAN bus sensors)  
 Scanning rate: 1 ms = 1000 measured values/sec.  
 M12x1 push-in connector, 5-pin with SPEEDCON

- 1 digital trigger input: Scanning rate: 1 ms  
 Input impedance: 1 kΩ  
 Active high: >+7 ... +24 V DC  
 Active low: <1 V DC isolated

- 1 digital trigger output: Scanning rate: 1 ms  
 Max. switching signal: +24 V DC/max. 20 mA isolated

- Push-in connector for digital input and output: M8 x 1 / 4-pin, push-in connector

**Module Slots**

- 2, for input module, flexible placement possible
- Slot 1 = IN1, IN2, IN3, IN4/5
- Slot 2 = IN6, IN7, IN8, IN9/10 (expandable only by STAUFF)

**Display**

- FT-LCD colour graphic display
- Visible area: 115 x 86 mm / 4.53 x 3.39 in
- Resolution: 640 x 480 Pixel

**Interface**

- USB device: Online data transmission between unit and PC via PPC-Soft-plus  
 Measured value transmission: ACT/MIN/MAX  
 USB standard: 2.0, fullspeed  
 Push-in connection: USB socket, shielded, type B

- USB host: Connection for mass storage devices such as USB memory stick or removable hard disc  
 standard: 2.0, fullspeed, 100 mA max.  
 Push-in connection: USB socket, shielded, type A

- Ethernet: Online data transmission between unit and PC via PPC-Soft-plus and remote control  
 Measured value transmission: ACT/MIN/MAX  
 standard: 10, 100 Mbit/s, IEEE 802.3 (10/100 base T)  
 Push-in connection: RJ45, socket, shielded

**Functions**

- Measurement: ACT/MIN/MAX values
- Measured value display: Numerical, bar graph, pointer, curve graph
- Measuring functions: Start/stop, points, trigger
- Trigger: Slope, manual, level, window, time, logic (interconnection of up to two events for the measurement start and stop)
- Pre-trigger

- Remote operation via the Ethernet
- Acoustic notification at any incident

**Measured Data Memory**

- For storing measured values, project data and screenshots
- Memory capacity: ≤4 million measured values per measurement  
 Total measured value memory >1 billion measured values
- Memory format: ACT/MIN/MAX
- Memory interval: 1 ms to 24 h
- Memory duration: 1 ms to 300 h (trigger measurement)
- Internal: 64 MB (approx. 32 million measured values)
- External SD memory: MicroSD memory card incl. in standard shipment  
 Slot: MicroSD memory card
- External USB mass memory device: up to 40 GB

**Ambient Conditions**

- Operating temperature: 0 °C ... +50 °C / +32 °F ... +122 °F
- Storage temperature: -25 °C ... +60 °C / -13 °F ... +140 °F
- Relative humidity: < 80 %
- Environmental test: IEC60068-2-32 (1 m, free fall)

**Power Supply**

- Internal: Lithium Ion pack, +7.4 V DC / 4500 mAh  
 Battery charging circuit/operating time with 3 CAN sensors: > 8 h

**Protection Rating**

- IP 64 protection rating: Dust tight and protected against splashing water

**Technical Data (for PPC-Pad-102 and 103)**
**Input with Sensor Recognition**

- 3 or 6 sensor inputs (up to 6 or 12 analogue measurement channels) with sensor recognition (p/T/Q/n) for PPC sensors
- Push-in connection: 5-pin, push-pull, combination panel plug/socket
- Scanning rate: 1 ms = 1000 measured values/sec.
- For the PPC-04/12-PT combined Pressure/Temperature Sensor, there is an additional temperature channel for each sensor input
- Temperature scanning: 1 s

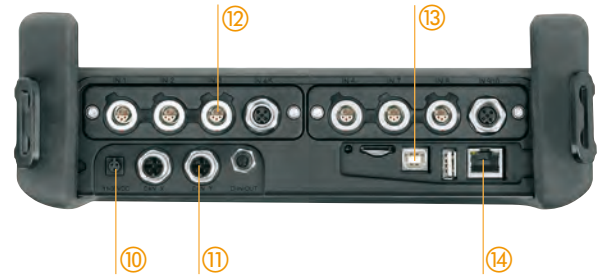
**Inputs for Auxiliary Sensors**

- 2 analogue sensor inputs: for measuring current and voltage  
 Scanning rate: 1 ms = 1000 measured values/sec.  
 Voltage measuring range: -10 ... +10 V DC (freely configurable)  
 Current measuring range: 0/4 ... 20 mA  
 Supply external sensors: +18 ... +24 V DC/max. 100 mA  
 Push-in connection: M12x1, 5-pin socket
- FAST mode: Scanning rate: 0.1 ms = 10000 measured values/sec. only one auxiliary sensor input is useable

**Accuracy**

- +0,02 % per °C

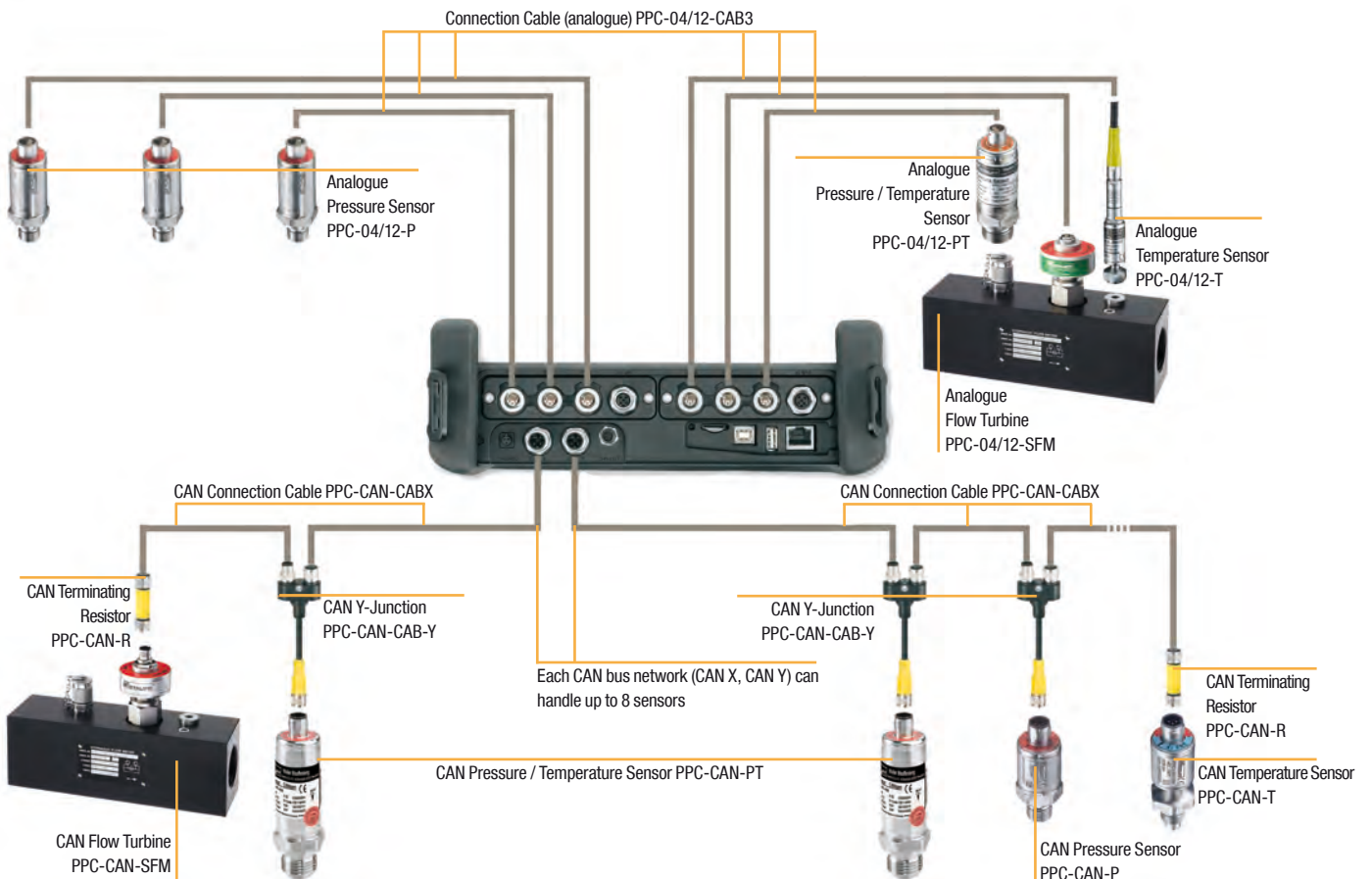
Hydraulic Tester - Type PPC Pad



Functional Description

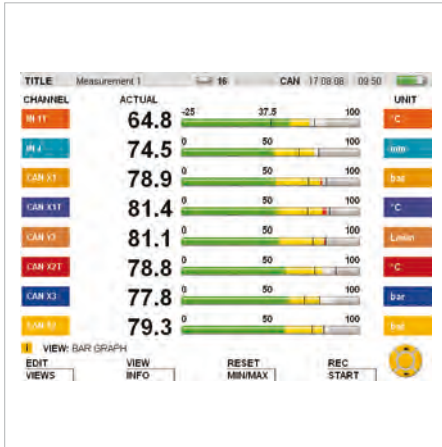
- ① High protection from moisture and dirt due to cover caps and a rubber protective sleeve, protection class IP 64
- ② Illuminated display for good readability in any situation
- ③ Protection of the housing, affording usage in tough environments and absorption of shocks
- ④ Big 5.7 in colour display for clearly viewing the extensive information
- ⑤ Intuitive operation due to clear-cut control elements and function-oriented keys
- ⑥ Ergonomic housing shape ensures convenient portability and long operating times
- ⑦ Large keyboard and fonts for easy operation and readability
- ⑧ Portable multi-function hand-held measuring instrument - strong in design and tough in operation
- ⑨ Easy to carry and hang up with carrying strip
- ⑩ 110 / 240 V AC power supply, battery life 8 hours, recharging time 3 hours
- ⑪ 2 x CAN bus networks with each 16 channels
- ⑫ Modular design for up to 6 analogue sensors or 2 highspeed channels (0,1 ms) automatic sensor recognition
- ⑬ PC interface (USB 2.0); ACT/MIN/MAX measured value transmission to the PPC-Soft-plus software, terminal for USB mass storage devices
- ⑭ LAN interface for remote monitoring, MicroSD memory card for storage enlargement

Connection of Analogue Sensors / CAN Sensors



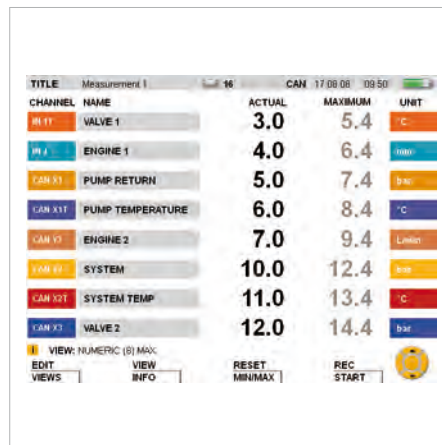
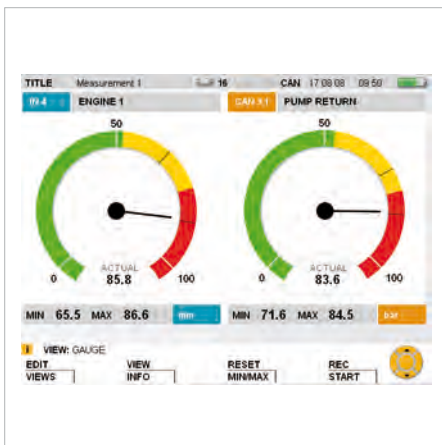


## Hydraulic Tester ■ PPC Pad Display



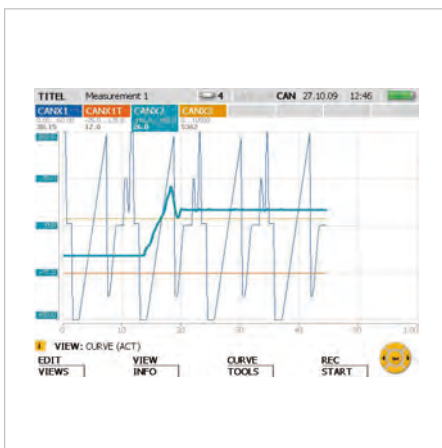
- Display of measured values as figures and bars
- Fixing of alarm ranges in green, yellow and red
- Trailing pointer function with MIN and MAX values

- Up to 4 channels in one large-format display
- Simultaneous display of ACT, MIN and MAX values
- Information lines of current settings, events and views
- Individual measurement channel identifier



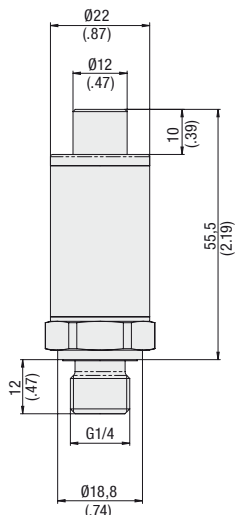
- Large-area pointer display of measured values
- Trailing pointer for MIN and MAX values
- Alarm range in green, yellow and red
- Further channels can be called up with the arrow keys

- Up to 8 channels in one display
- Colour allocation of the individual channels
- Uniform headings with measurement titles, sensors connected, interfaces, date, time and battery condition indicator
- Display can be changed between MIN and MAX values and full scale

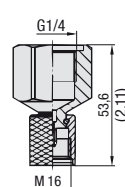


- Up to 8 channels in one graph display
- Fine, precise graph image thanks to high definition display
- Choice between ACT and MIN/MAX value display
- Automatic and manual scaling of the time axis for optimum measured value display

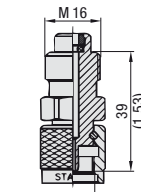
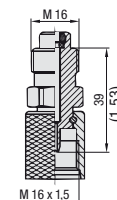
Pressure Sensor ■ Type PPC-04/12-P



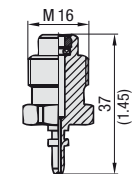
SDA20-G1/4-C6F



SAD20/15-P-C6F



SDA20/12-P-C6F



SAD20/10-P-C6F

Product Description

The Pressure Sensors PPC-04/12-P can be used with all analogue Hydraulic Testers of the PPC series, due to their 5-pin connection.

Due their sturdy Stainless Steel design, the quick response times (< 1 ms) and the high accuracy ( $\pm 0,25\%$  FS\* typ.) with automatic sensor recognition, the Pressure Sensors are a reliable and flexible solution for the Hydraulic Testers of the PPC series.

Note: A Connection Cable PPC-04/12-CAB3 (3 m / 9.84 ft) is needed to connect the Pressure Sensor PPC-04/12-P to the current Hydraulic Testers. An Extension Cable PPC-04/12-CAB5-EXT (5 m / 16.40 ft) is also available as an option. See page D32 for further information.

PPC-04/12-P	
Pressure Measurement	yes
Temperature Measurement	no
Process Connection	G1/4
Type	analogue 5-pin connection

Technical Data

- Sturdy Stainless Steel housing (1.4301)
- FPM (Viton®) gasket
- Weight: 85 g / .19 lbs
- Suitable for gases and liquids (in the case of aggressive media, only after consultation)
- 5-pin connection
- Pressure connection G1/4 (without adaptor)

Ambient Conditions

- Media temperature: -25 °C ... +105 °C / -13 °F ... +221 °F
- Ambient temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Storage temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Load cycles (10<sup>6</sup>): 100

Electrical Data

- Input voltage: 9 ... 36 V DC
- Output signal: 0 ... 3 V DC
- Response time: 1 ms
- Long-term stability: < 0,2 % FS\* /a
- Vibration loading: acc. to IEC 60068-2-6 (20 g)
- Shock loading: acc. to IEC 60068-2-27 (50 g)

Order Codes

**PPC-04/12-P - 015 - CAL**

①

②

③

① Series and Type

Pressure Sensor **PPC-04/12-P**

② Version

See table

③ Calibration

Without calibration certificate **(none)**  
With calibration certificate **CAL**

Pressure Range and Accuracies

Version	Pressure Range and Accuracies					
Sensor	Pressure Measuring Range (bar/Psi)	Type of Measurement	Maximum Pressure (bar/Psi)	Burst Pressure (bar/Psi)	Accuracy ( $\pm\%$ FS*) typ.	Accuracy ( $\pm\%$ FS*) max.
PPC-04/12-P-	-1 ... 15	Relative pressure	30	150	0,25	0,5
	-14,5 ... 217		435	2175		
015	0 ... 60	Absolute pressure	120	500	0,25	0,5
	0 ... 870		1740	7251		
060	0 ... 150	Absolute pressure	300	900	0,25	0,5
	0 ... 2175		4351	13053		
150	0 ... 400	Absolute pressure	800	1200	0,25	0,5
	0 ... 5801		11603	17404		
400	0 ... 600	Absolute pressure	1200	1800	0,25	0,5
	0 ... 8702		17404	26106		
600	0 ... 600 **	Absolute pressure	1200	2500	0,25	0,5
	0 ... 8702		17404	36259		

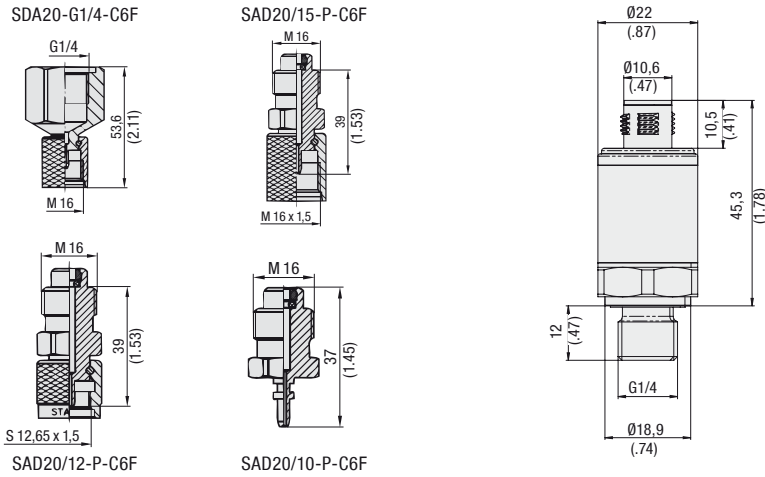
\* FS = Full Scale

\*\* Pressure peaks up to 1000 bar / 14503 PSI

Connection Adaptors for PPC Sensors

In addition to the Pressure Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 (SDA20-G1/4-C6F), but also to the Test Couplings

of the STAUFF Test 15/12/10 series (SAD20/15-P-C6F, SAD20/12-P-C6F, SAD20/10-P-C6F). For further information please see STAUFF Test section.

**CAN Pressure Sensor ■ Type PPC-CAN-P**

**Order Codes**
**PPC-CAN-P - 016 - CAL**

①                      ②                      ③

**① Series and Type**

 CAN Pressure Sensor                      **PPC-CAN-P**
**② Version**

See table

**③ Calibration**

 Without calibration certificate                      **(none)**  
 With calibration certificate    **CAL**
**Pressure Range and Accuracies**

Version	Pressure Range and Accuracies					
Sensor	Pressure Measuring Range	Type of Measurement	Maximum Pressure	Burst Pressure	Accuracy	Accuracy
PPC-CAN-P-	(bar/PSI)		(bar/PSI)	(bar/PSI)	(±% FS*) typ.	(±% FS*) max.
<b>016</b>	-1 ... 16	Relative pressure	32	150	0,25	0,5
	-14.5 ... 232		464	2175		
<b>060</b>	0 ... 60	Absolute pressure	120	500	0,25	0,5
	0 ... 870		1740	7251		
<b>160</b>	0 ... 160	Absolute pressure	320	900	0,25	0,5
	0 ... 2320		4641	13053		
<b>400</b>	0 ... 400	Absolute pressure	800	1200	0,25	0,5
	0 ... 5801		11603	17404		
<b>600</b>	0 ... 600	Absolute pressure	1200	1800	0,25	0,5
	0 ... 8702		17404	26106		
<b>601</b>	0 ... 600 **	Absolute pressure	1200	2500	0,25	0,5
	0 ... 8702		17404	36259		

\* FS = Full Scale

\*\*Pressure peaks up to 1000 bar / 14503 PSI

**Connection Adaptors for PPC Sensors**

In addition to the CAN Pressure Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 (SDA20-G1/4-C6F), but also to the Test

Couplings of the STAUFF Test 15/12/10 series (SAD20/15-P-C6F, SAD20/12-P-C6F, SAD20/10-P-C6F). For further information please see STAUFF Test section.

**Product Description**

The CAN Pressure Sensors PPC-CAN-P are specially designed for use with the CAN Hydraulic Testers. These sensors are using the CANopen protocol to transfer the measurement values to the CAN Hydraulic Testers. Most technical details are the same as with the Pressure Sensors.

Due their sturdy Stainless Steel design, the quick response times (< 1 ms) and the high accuracy (±0,25% FS\* typ.) with automatic sensor recognition, the CAN Pressure Sensors are a reliable and flexible solution for the CAN Hydraulic Tester. The status of the sensor is indicated via LED.

Connecting the CAN Pressure Sensor to the CAN Hydraulic Tester a CAN Connection Cable and a CAN Terminating Resistor is needed. See page D33 for further information.

PPC-CAN-P	
Pressure Measurement	yes
Temperature Measurement	no
Process Connection	G1/4
Type	CAN connection 5-pin, M12x1

**Technical Data**

- Sturdy Stainless Steel housing (1.4301)
- FPM (Viton®) gasket
- Sensor identification LED
- Weight: 85 g / .19 lbs
- Suitable for gases and liquids (in the case of aggressive media, only after consultation)
- 5-pin SPEEDCON connection plug
- Pressure connection G1/4 (without adaptor)

**Ambient Conditions**

- Media temperature: -25 °C ... +105 °C / -13 °F ... +221 °F
- Ambient temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Storage temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Load cycles (10<sup>6</sup>): 100

**CANopen Interface**

- CANopen protocol profile DS406 v3.2 with manufacturer-specific additions
- LSS service DS305 v2.0

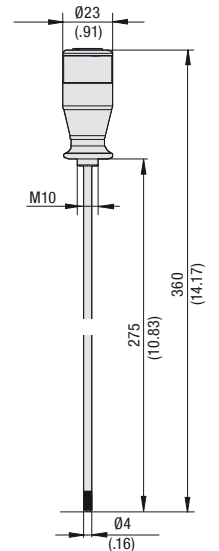
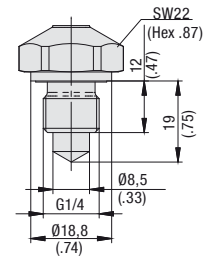
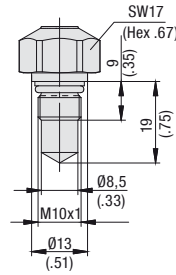
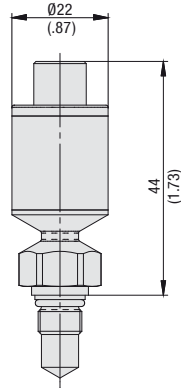
**Electrical Data**

- Response time: 1 ms
- Long-term stability: < 0,2 % FS\* /a
- Vibration loading: acc. to IEC 60068-2-6 (20 g)
- Shock loading: acc. to IEC 60068-2-27 (50 g)





Temperature Sensor - Type PPC-04/12-T



Screw-in Temperature Sensor (T) Process Connection M10x1 Process Connection G1/4 Rod-type Temperature Sensor (TSH)

Product Description

The Screw-in Temperature Sensors PPC-04/12-T measure current temperature directly in the pipeline and are compatible with the Flow Turbine PPC-04/12-SFM and the Straight Threaded Joint SGV-16S-G-C6F (only process connection M10x1, see figure below). See product information of Flow Turbine on page D28.

The Rod-type Temperature Sensor PPC-04/12-TSH is especially designed to determine the media temperatures in tanks and containers.

Note: A Connection Cable PPC-04/12-CAB3 (3 m / 9.84 ft) is needed to connect the Temperature Sensor PPC-04/12-T or -TSH to the current Hydraulic Testers. An Extension Cable PPC-04/12-CAB5-EXT (5 m / 16.40 ft) is also available as an option. See page D32 for further information.

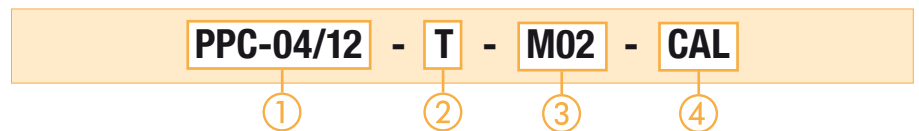
PPC-04/12-T	
Pressure Measurement	no
Temperature Measurement	yes
Process Connection	M10x1 or G1/4
Type	analogue 5-pin connection

PPC-04/12-T-M02 with SGV-16S-G-C6F

For further information please see STAUFF Test section.



Order Codes



① Series and Type	Temperature Sensor	PPC-04/12
② Version	Screw-in	T
	Rod-type	TSH
③ Process Connection (only for Version T)	M10x1	M02
	G1/4	B04
④ Calibration	Without calibration certificate	(none)
	With calibration certificate	CAL

Technical Data

- Suitable for liquids (in the case of aggressive media only after consultation)
- 5-pin connection

Materials

- Housing (T): Stainless Steel
- Gaskets (T): FPM (Viton®)
- Rod (TSH): Stainless Steel 1.4304
- Handle (TSH): Delrin

Weight

- Screw-in (T)
  - M02 (M10x1): 70 g / .15 lbs
  - B04 (G1/4): 55 g / .12 lbs
- Rod-type (TSH): 120 g / .26 lbs

Connection

- STAUFF Test connection SGV-16S-G-C6F in the pipeline (only M10x1)
- Screw-in thread (T): M10x1 or G1/4 (see figure)
- Screw-in thread (TSH): M10

Ambient Conditions (Screw-in Temperature Sensor)

- Media temperature: -40°C ... +150°C / -40°F ... +302°F
- Ambient temperature: -40°C ... +85°C / -40°F ... +185°F
- Storage temperature: -40°C ... +85°C / -40°F ... +185°F

Ambient Conditions (Rod-type Temperature Sensor)

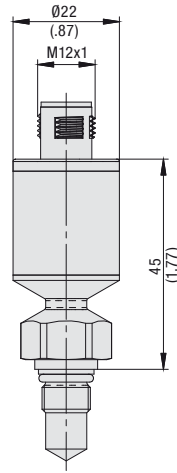
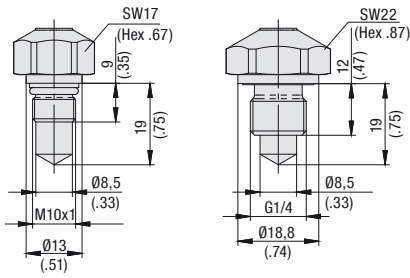
- Media temperature: -25°C ... +125°C / -13°F ... +257°F
- Ambient temperature: -25°C ... +70°C / -13°F ... +158°F
- Storage temperature: -25°C ... +80°C / -13°F ... +176°F

Measuring Range

- Measuring range (T): -40°C ... +150°C / -40°F ... +302°F
- Measuring range (TSH): -25°C ... +125°C / -13°F ... +257°F
- Operating pressure (T): 630 bar / 9137 PSI
- Maximum pressure (T): 800 bar / 11603 PSI
- Burst pressure (T): 2150 bar / 31183 PSI
- Accuracy: ±1 % FS

Electrical Data

- Input signal: 7 ...12 V DC
- Output signal: 0 ...3 V DC
- Response time (T)
  - M02 (M10x1): T<sub>90</sub> ≤ 4 s, T<sub>95</sub> ≤ 14 s
  - B04 (G1/4): T<sub>90</sub> ≤ 4 s, T<sub>95</sub> ≤ 12 s
- Response time (TSH): T<sub>90</sub> ≤ 9,1 s
- Long-term stability: ±0,01 % FS\* a/Span
- Vibration loading: acc. to IEC 60068-2-6 (20 g)
- Shock loading: acc. to IEC 60068-2-27 (50 g)

**CAN Temperature Sensor ■ Type PPC-CAN-T**


Process Connection M10x1

Process Connection G1/4

**Order Codes**
**PPC-CAN - T - M02 - CAL**

**① Series and Type**

 CAN Temperature Sensor **PPC-CAN**
**② Version**

 Screw-in **T**
**③ Process Connection (only for Version T)**

 M10x1 **M02**  
 G1/4 **B04**
**④ Calibration**

 Without calibration certificate **(none)**  
 With calibration certificate **CAL**
**Technical Data**

- Suitable for liquids (in the case of aggressive media only after consultation)
- 5-pin SPEEDCON connection plug
- Sensor identification LED

**Materials**

- Housing: Stainless Steel
- Gaskets: FPM (Viton®)

**Weight**

- M02 (M10x1): 70 g / .15 lbs
- B04 (G1/4): 55 g / .12 lbs

**Ambient Conditions**

- Media temperature: -40 °C ... +150 °C / -40 °F ... +302 °F
- Ambient temperature: -40 °C ... +85 °C / -40 °F ... +185 °F
- Storage temperature: -40 °C ... +85 °C / -40 °F ... +185 °F

**Measuring Range**

- Measuring range: -40 °C ... +150 °C / -40 °F ... +302 °F
- Operating pressure: 630 bar / 9137 PSI
- Maximum pressure: 800 bar / 11603 PSI
- Burst pressure: 2150 bar / 31183 PSI
- Accuracy: ±0,66 % FS

**CANopen Interface**

- CANopen protocol profile DS301, Typ 2.0A with manufacturer-specific additions
- LSS service DS305 v2.0

**Electrical Data**

- Output signal: CAN bus
- Response time:
  - M02 (M10x1):  $T_{90} \leq 4 \text{ s}, T_{95} \leq 12 \text{ s}$
  - B04 (G1/4):  $T_{90} \leq 4 \text{ s}, T_{95} \leq 14 \text{ s}$
- Long-term stability: ±0,01 % FS\* a/Span
- Vibration loading: acc. to IEC 60068-2-6 (20 g)
- Shock loading: acc. to IEC 60068-2-27 (50 g)

**Product Description**

The CAN Temperature Sensor PPC-CAN-T are specially designed for use with the CAN Hydraulic Testers. This sensor is using the CANopen protocol to transfer the measurement values to the CAN Hydraulic Testers. The PPC-CAN-T is compatible with the CAN Flow Turbine PPC-CAN-SFM and the Straight Threaded Joint SGV-16S-G-G6F (only process connection M10x1, see figure below). See product information of CAN Flow Turbine on page D29.

Most technical details are the same as with the Temperature Sensor PPC-04/12-T.

Due their sturdy Stainless Steel design with automatic sensor recognition, the CAN Temperature Sensor is a reliable and flexible solution for the CAN Hydraulic Tester. The status of the sensor is indicated via LED.

Connecting the CAN Temperature Sensor to the CAN Hydraulic Tester a CAN Connection Cable and a CAN Terminating Resistor is needed. See page D33 for further information.

PPC-CAN-T	
Pressure Measurement	no
Temperature Measurement	yes
Process Connection	M10x1 or G1/4
Type	CAN connection 5-Pin, M12x1

**PPC-CAN-T-M02 with SGV-16S-G-G6F**

For further information please see STAUFF Test section.

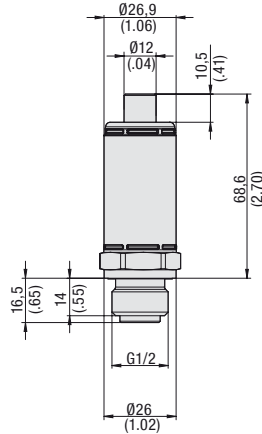


\* FS = Full Scale

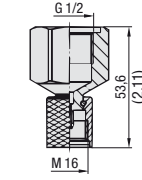
SPEEDCON is a trademark of PHOENIX CONTACT GmbH &amp; Co. KG

Dimensional drawings: All dimensions in mm (in).

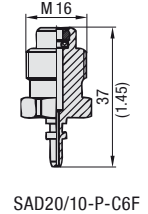
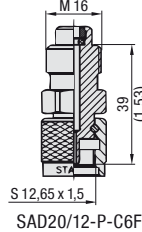
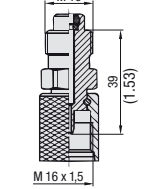
Pressure / Temperature Sensor - Type PPC-04/12-PT



SDA20-G1/2-C6F



SAD20/15-P-C6F



Product Description

The Pressure / Temperature Sensor PPC-04/12-PT can be used with all Hydraulic Testers of the PPC series, due to the 5-pin connection. This sensor is able to measure and display temperatures on the Hydraulic Testers.

Due to the sturdy Stainless Steel design, the quick response time (< 1 ms) and the high accuracy ( $\pm 0,25\%$  FS\* typ.) with automatic sensor recognition, the Pressure / Temperature Sensor is a reliable and flexible solution for the Hydraulic Testers of the PPC series.

Note: A Connection Cable PPC-04/12-CAB3 (3 m / 9.84 ft) is needed to connect the Pressure / Temperature Sensor to the current Hydraulic Testers. An Extension Cable PPC-04/12-CAB5-EXT (5 m / 16.40 ft) is also available as an option. See page D32 for further information.

PPC-04/12-PT-	
Pressure Measurement	yes
Temperature Measurement	yes
Process Connection	G1/2
Type	analogue 5-pin connection

Technical Data

- Sturdy Stainless Steel housing (1.4301)
- FPM (Viton®) gasket
- Weight: 200 g / .44 lbs
- Suitable for gases and liquids (in the case of aggressive media, only after consultation)
- 5-Pin connection
- Pressure connection G1/2 (without adaptor)

Ambient Conditions

- Media temperature: -25 °C ... +105 °C / -13 °F ... +221 °F
- Ambient temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Storage temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Compensated range: 0 °C ... +85 °C / +32 °F ... +285 °F
- Load cycles (10<sup>6</sup>): 100

Electrical Data

- Input voltage: 7 ... 12 V DC
- Output signal: 0 ... 3 V DC
- Response time: 1 ms
- Long-term stability: < 0,2% FS\* /a
- Vibration loading: acc. to IEC 60068-2-6 (20g)
- Shock loading: acc. to IEC 60068-2-27 (50g)

Order Codes

**PPC-04/12-PT - 015 - CAL - /2**

①

②

③

① Series and Type

Pressure / Temperature Sensor **PPC-04/12-PT**

② Version

See table

③ Calibration

Without calibration certificate **(none)**  
With calibration certificate **CAL**

Pressure Range and Accuracies

Version	Pressure Range and Accuracies							
Sensor	Pressure Measuring Range (bar/PSI)	Type of Measurement	Maximum Pressure (bar/PSI)	Burst Pressure (bar/PSI)	Accuracy (±% FS*) typ.	Accuracy (±% FS*) max.	Temperature Measuring Range (°C/°F)	Accuracy (±% FS*)
015 /2	-1 ... 15	Relative pressure	30	150	0,25	0,5	-25 ... 105	1,5
	-14,5 ... 217		435	2175				
060 /2	0 ... 60	Absolute pressure	120	500	0,25	0,5	-25 ... 105	1,5
	0 ... 870		1740	7251				
150 /2	0 ... 150	Absolute pressure	300	900	0,25	0,5	-25 ... 105	1,5
	0 ... 2175		4351	13053				
400 /2	0 ... 400	Absolute pressure	800	1200	0,25	0,5	-25 ... 105	1,5
	0 ... 5801		11603	17404				
600 /2	0 ... 600	Absolute pressure	1200	1800	0,25	0,5	-25 ... 105	1,5
	0 ... 8702		17404	26106				
601 /2	0 ... 600 **	Absolute pressure	1200	2500	0,25	0,5	-25 ... 105	1,5
	0 ... 8702		17404	36259				

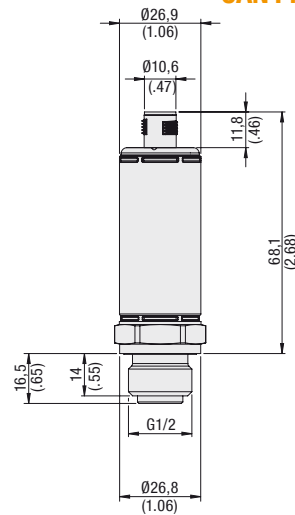
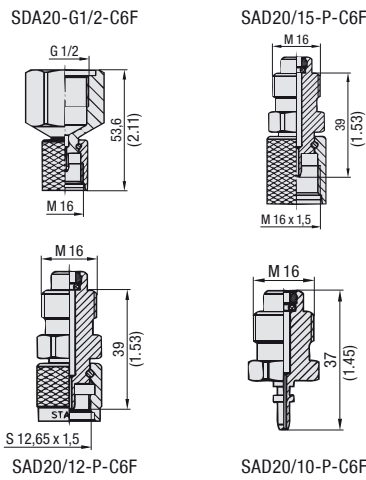
\* FS = Full Scale

\*\* Pressure peaks up to 1000 bar / 14503 PSI

Connection Adaptors for PPC Sensors

In addition to the Pressure / Temperature Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 (SDA20-G1/2-C6F), but also to the

Test Couplings of the STAUFF Test 15/12/10 series (SAD20/15-P-C6F, SAD20/12-P-C6F, SAD20/10-P-C6F). For further information please see STAUFF Test section.

**CAN Pressure / Temperature Sensor ■ Typ PPC-CAN-PT**

**Order Codes**
**PPC-CAN-PT - 016 - CAL**

①                      ②                      ③

**① Series and Type**

 CAN Pressure / Temperature Sensor **PPC-CAN-PT**
**② Version**

See table

**③ Calibration**

 Without calibration certificate **(none)**  
 With calibration certificate **CAL**
**Pressure Range and Accuracies**

Version	Pressure Range and Accuracies							
Sensor PPC-CAN-PT-	Pressure Measuring Range (bar/Psi)	Type of Measurement	Maximum Pressure (bar/Psi)	Burst Pressure (bar/Psi)	Accuracy (±% FS*) typ.	Accuracy (±% FS*) max.	Temperature Measuring Range (°C/°F)	Accuracy (±% FS*)
016	-1 ... 16	Relative pressure	32	150	0,25	0,5	-25 ... 105	±2K typ./ ±3K max.
	-14.5 ... 232		464	2175			-13 ... 221	
060	0 ... 60	Absolute pressure	120	500	0,25	0,5	-25 ... 105	±2K typ./ ±3K max.
	0 ... 870		1740	7251			-13 ... 221	
160	0 ... 160	Absolute pressure	320	900	0,25	0,5	-25 ... 105	±2K typ./ ±3K max.
	0 ... 2320		4641	13053			-13 ... 221	
400	0 ... 400	Absolute pressure	800	1200	0,25	0,5	-25 ... 105	±2K typ./ ±3K max.
	0 ... 5801		11603	17404			-13 ... 221	
600	0 ... 600	Absolute pressure	1200	1800	0,25	0,5	-25 ... 105	±2K typ./ ±3K max.
	0 ... 8702		17404	26106			-13 ... 221	
601	0 ... 600 **	Absolute pressure	1200	2500	0,25	0,5	-25 ... 105	±2K typ./ ±3K max.
	0 ... 8702		17404	36259			-13 ... 221	

\* FS = Full Scale

\*\* Pressure peaks up to 1000 bar / 14503 PSI

**Connection Adaptors for PPC Sensors**

In addition to the CAN Pressure / Temperature Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 (SDA20-G1/2-C6F), but also to the Test Couplings of the STAUFF Test 15/12/10 series

(SAD20/15-P-C6F, SAD20/12-P-C6F, SAD20/10-P-C6F). For further information please see the STAUFF Test section in our general product catalogue STAUFF ONE.

**Product Description**

The CAN Pressure / Temperature Sensors PPC-CAN-PT are specially designed for use with the CAN Hydraulic Testers. This sensor is using the CANopen protocol to transfer the measurement values to the CAN Hydraulic Testers. Most technical details are the same as with the Pressure / Temperature Sensor PPC-04/12-PT. The CAN sensor is able to measure and display temperatures on the CAN Hydraulic Testers.

Due to the sturdy Stainless Steel design, the quick response time (< 1 ms) and the high accuracy (±0,25% FS\* typ.) with automatic sensor recognition, the pressure / temperature sensor is a reliable and flexible solution for the CAN Hydraulic Tester. The status of the sensor is indicated via LED.

Connecting the CAN Pressure / Temperature Sensor to the CAN Hydraulic Tester a CAN Connection Cable and a CAN Terminating Resistor is needed. See page D33 for further information.

PPC-CAN-PT	
Pressure Measurement	yes
Temperature Measurement	yes
Process Connection	G1/2
Type	CAN connection 5-pin, M12x1

**Technical Data**

- Sturdy Stainless Steel housing (1.4301)
- FPM (Viton®) gasket
- Sensor identification LED
- Weight: 200 g / .44 lbs
- Suitable for gases and liquids (in the case of aggressive media, only after consultation)
- 5-pin SPEEDCON connection plug
- Pressure connection G1/2 (without adaptor)

**Ambient Conditions**

- Media temperature: -25 °C ... +105 °C / -13 °F ... +221 °F
- Ambient temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Storage temperature: -25 °C ... +85 °C / -13 °F ... +185 °F
- Compensated range: 0 °C ... +85 °C / +32 °F ... +185 °F
- Load cycles (10<sup>6</sup>): 100

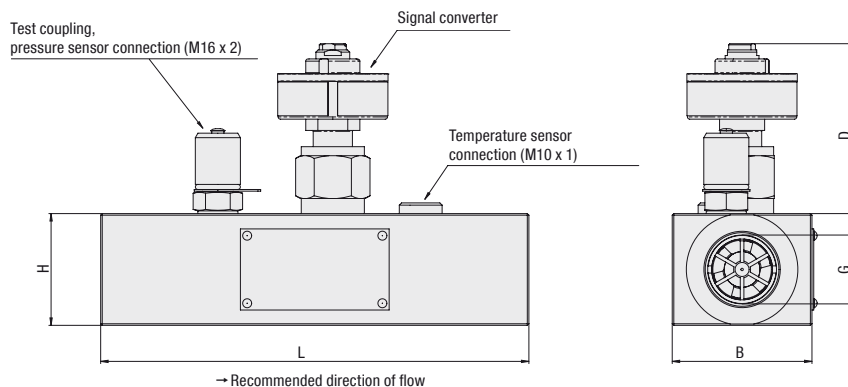
**CANopen Interfaces**

- CANopen protocol profile DS406 v3.2 with manufacturer-specific additions
- LSS service DS305 v2.0

**Electrical Data**

- Response time: 1 ms
- Vibration loading: acc. to IEC 60068-2-6 (20g)
- Shock loading: acc. to IEC 60068-2-27 (50g)

## Flow Turbine ■ Type PPC-04/12-SFM



### Product Description

The PPC-04/12-SFM Flow Turbine is permanently installed in the pipeline. The oil flow rotates the internal axial turbine. The frequencies generated are processed by digital electronics (a signal converter). Interferences caused by flow effects are compensated by this process. The signal converter is now directly integrated into the Flow Turbine. This allows even simpler operation and supports permanent coupling of the turbine and signal converter components that are matched to one another.

The Flow Turbine also improves the response time (from previously 400 ms to 50 ms) and increases the measuring accuracy.

The PPC-04/12-SFM is available in five versions for various flow speeds. A Pressure Sensor PPC-04/12-P (see page D22) can be connected in parallel to the Flow Turbine by way of the integrated test coupling. In addition, the oil temperature can also be measured using the connection of the Temperature Sensor PPC-04/12-T (see page D24).

In general, the Flow Turbine can handle flows in either direction. The specified technical data and the calibration (available as an option) apply only when the flow through the Flow Turbine matches the recommended flow direction. A double-headed arrow is shown on the nameplate of the PPC-04/12-SFM. The thicker end of the double-headed arrow specifies the recommended direction of flow.

Note: A Connection Cable PPC-04/12-CAB3 (3 m / 9.84 ft) is needed to connect the Flow Turbine to the current Hydraulic Testers.

An Extension Cable PPC-04/12-CAB5-EXT (5 m / 16.40 ft) is also available as an option. See page D32 for further information.

### Technical Data

- Materials**
  - Housing: Aluminium (black anodised)
  - Gaskets: FPM (Viton®)
  - 5-pin connection
  - Pressure measurement connection: SMK20 (M16 x 2)
  - Temperature measurement connection: M10 x 1 (standard screw plug)
- Ambient Conditions**
  - Media temperature: -20 °C ... +90 °C / -4 °F ... +194 °F
  - Ambient temperature: -10 °C ... +50 °C / +14 °F ... +122 °F
  - Storage temperature: -20 °C ... +80 °C / -4 °F ... +176 °F
  - Permissible particle size: <10 Micron for SFM-015, <25 Micron for others
  - Viscosity range: 10 ... 100 cSt

- Electrical Data**
  - Response time: 50 ms

- Process Connection**
  - Please see table below

### Order Codes



- Series and Type**  
Flow Turbine **PPC-04/12**
- Version**

1 ... 15 l/min / .27 ... 3.90 US GPM	<b>SFM-015</b>
3 ... 60 l/min / .79 ... 15.90 US GPM	<b>SFM-060</b>
5 ... 150 l/min / 1.32 ... 39.60 US GPM	<b>SFM-150</b>
8 ... 300 l/min / 2.11 ... 79.00 US GPM	<b>SFM-300</b>
15 ... 600 l/min / 3.96 ... 158.00 US GPM	<b>SFM-600</b>
- Calibration**

Without calibration certificate	<b>(none)</b>
With calibration certificate	<b>CAL</b>

**UNF version available on request.**

### Dimensions and Measuring Range

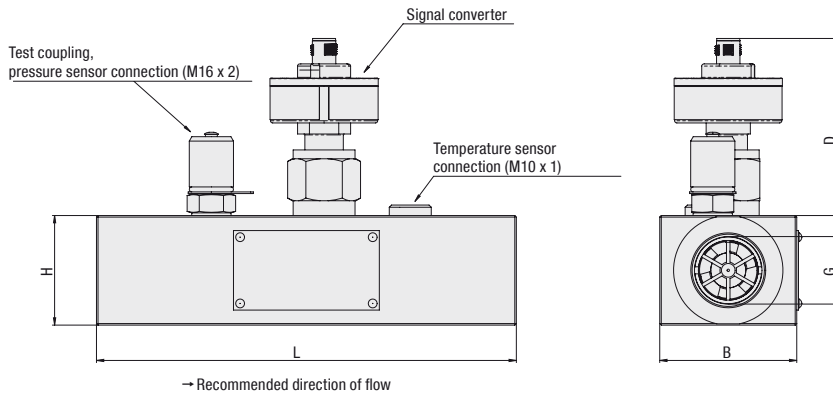
Version	Measuring Range						Dimensions (mm/in)						Weight (kg/lbs)
	Flow Turbine PPC-04/12-	Measuring Range (l/min / US GPM)	Max. Flow (l/min / US GPM)	Operating Pressure (bar / PSI)	Max. Pressure (bar / PSI)	Accuracy (at 21 cSt)	Max. Pressure Drop (at FS*) (bar / PSI)	G ** (BSP)	G (UNF)	B	D	L	
SFM-015	1 ... 15	16.5	350	420	±1 (% FS*)	1.5	G1/2	3/4-16	37	71	136	37	650
	.27 ... 3.90	4.4	5076	6091		21.8			1.46	2.80	5.35	1.46	1.4
SFM-060	3 ... 60	66	350	420	±1 (% of the displayed value)	1.5	G3/4	1-1/16-16	62	72	190	50	750
	.79 ... 15.90	17.4	5076	6091		21.8			2.44	2.83	7.48	1.97	1.6
SFM-150	5 ... 150	165	350	420	±1 (% of the displayed value)	1.5	G3/4	1-1/16-16	62	72	190	50	750
	1.32 ... 39.60	43.6	5076	6091		21.8			2.44	2.83	7.48	1.97	1.6
SFM-300	8 ... 300	330	350	420	±1 (% of the displayed value)	4	G1	1-5/16-16	62	76	190	50	1200
	2.11 ... 79.00	87.2	5076	6091		58			2.44	2.99	7.48	1.97	2.6
SFM-600	15 ... 600	660	290	348	±1 (% of the displayed value)	5	G1-1/4	1-5/8-12	62	66	212	75	1800
	3.96 ... 158.00	174.4	4206	5047		72.5			2.44	2.60	8.35	2.95	4

\* FS = Full Scale  
\*\* Standard option

Dimensional drawings: All dimensions in mm (in).



## CAN Flow Turbine ■ Type PPC-CAN-SFM



## Order Codes



## ① Series and Type

 CAN Flow Turbine **PPC-CAN**

## ② Version

1 ... 15 l/min / .27 ... 3.90 US GPM	<b>SFM-015</b>
3 ... 60 l/min / .79 ... 15.90 US GPM	<b>SFM-060</b>
5 ... 150 l/min / 1.32 ... 39.60 US GPM	<b>SFM-150</b>
8 ... 300 l/min / 2.11 ... 79.00 US GPM	<b>SFM-300</b>
15 ... 600 l/min / 3.96 ... 158.00 US GPM	<b>SFM-600</b>

## ③ Calibration

Without calibration certificate	<b>(none)</b>
With calibration certificate	<b>CAL</b>

UNF version available on request.

## Technical Data

## Materials

- Housing: Aluminium (black anodised)
- Gaskets: FPM (Viton®)
- 5-pin SPEEDCON connection plug
- Pressure measurement connection: SMK20 (M16 x 2)
- Temperature measurement connection: M10 x 1 (standard screw plug)

## Ambient Conditions

- Media temperature: -20 °C ... +90 °C / -4 °F ... +176 °F
- Ambient temperature: -10 °C ... +50 °C / +14 °F ... +122 °F
- Storage temperature: -20 °C ... +80 °C / -4 °F ... +176 °F
- Permissible particle size: <10 Micron for SFM-015 (CAN), <25 Micron for others
- Viscosity range: 10 ... 100 cSt

## Electrical Data

- Response time: 50 ms

## Process Connection

- Please see table below

## Product Description

The CAN Flow Turbine PPC-CAN-SFM is specially designed for the use with the CAN Hydraulic Testers and has to be installed permanently in the pipeline where the oil flow rotates the internal axial turbine. The generated frequencies are processed by digital electronics (a signal converter). Interferences caused by flow effects are compensated by this process. The signal converter is now directly integrated into the CAN Flow Turbine. This allows even simpler operation and supports permanent coupling of the turbine and signal converter components that are matched to one another.

The CAN Flow Turbine also improves the response times/ reaction times (from a previous 400 ms to 50 ms) and increases measurement accuracy.

The CAN Flow Turbine is available in five versions for various flow speeds. A CAN Pressure Sensor PPC-CAN-P (see page D23) can be connected parallel to the CAN Flow Turbine by the way of the integrated test coupling. In addition, the oil temperature can also be measured using the connection of the Temperature Sensor PPC-CAN-T (see page D25).

In general, the CAN Flow Turbine can handle flows in either direction. The specified technical data and the calibration (available as an option) apply only when the flow through the CAN Flow Turbine matched the recommended flow direction. A double-headed arrow is shown on the nameplate of the PPC-CAN-SFM. The thicker end of the double-headed arrow specifies the recommended direction of the flow.

Connecting the CAN Flow Turbine to the CAN Hydraulic Tester a CAN Connection Cable and a CAN Terminating Resistor is needed. See page D33 for further information.

## Dimensions and Measuring Range

Version	Measuring Range						Dimensions (mm/in)						
	Measuring Range (l/min / US GPM)		Max. Flow (l/min / US GPM)	Operating Pressure (bar / PSI)	Max. Pressure (bar / PSI)	Accuracy (at 21 cSt)	Max. Pressure Drop (at FS*) (bar / PSI)	G ** (BSP)	G (UNF)	B	D	L	H
SFM-015	1 ... 15	16,5	350	420	±1 (% FS*)	1,5	G1/2	3/4-16	37	78,8	136	37	650
	.26 ... 3.90	4.4	5076	6091		21.8			1.46	3.10	5.35	1.46	
SFM-060	3 ... 60	66	350	420	±1 (% of the displayed value)	1,5	G3/4	1-1/16-16	62	79,4	190	50	750
	.79 ... 15.90	17.4	5076	6091		21.8			2.44	3.13	7.48	1.97	
SFM-150	5 ... 150	165	350	420	±1 (% of the displayed value)	1,5	G3/4	1-1/16-16	62	79,4	190	50	750
	1.32 ... 39.60	43.6	5076	6091		21.8			2.44	3.13	7.48	1.97	
SFM-300	8 ... 300	330	350	420	±1 (% of the displayed value)	4	G1	1-5/16-16	62	81,3	190	50	1200
	2.11 ... 79.00	87.2	5076	6091		58			2.44	3.20	7.48	1.97	
SFM-600	15 ... 600	660	290	348	±1 (% of the displayed value)	5	G1-1/4	1-5/8-12	62	76,2	212	75	1800
	3.96 ... 158.00	174.4	4206	5047		72.5			2.44	3	8.35	2.95	

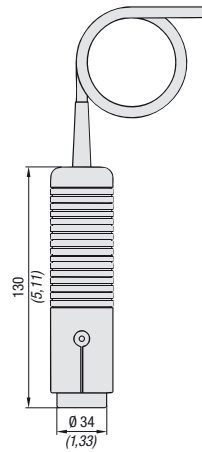
\* FS = Full Scale

\*\* Standard option

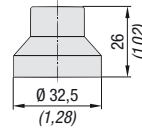
SPEEDCON is a trademark of PHOENIX CONTACT GmbH &amp; Co. KG

Dimensional drawings: All dimensions in mm (in).

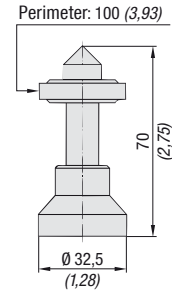
**Rotational Speed Sensor ▀ Type PPC-04/12-SDS-CAB**



PPC-04/12-SDS-CAB



PPC-04/12-SFA-Focus Adaptor



PPC-04/12-SKA-Contact Adaptor

**Product Description**

The PPC-04/12-SDS-CAB Rotational Speed Sensor allows non-contact speed measurement of rotating components. The sensor is based on an opto-electrical measurement principle that determines the rotational speed with high-accuracy using a reflecting strip on the shaft.

The contact rotational speed measurement is obtained by using a Contact Adaptor that is mounted to the sensor, and which makes contact with the rotating component during measurement.

This also produces high-accuracy measurement results. In the case of especially small areas, using the focusing adaptor facilitates measurement.

Note: The analogue Rotational Speed Sensor PPC-04/12-SDS-CAB can only be used with analogue Hydraulic Testers.

**Technical Data**

- Material: ABS
- Weight: 230 g / .51 lbs
- 5-pin connection
- Both contacting and non-contacting measurement possible
- Type of measurement: optical, red LED

**Ambient Conditions**

- Ambien temperature: 0°C ... +70 °C / +32 °F ... +158 °F

**Measuring Range**

- Measuring range: 20 ... 10000 1/min
- Measuring distance: 25 ... 500 mm (1 ... 20 in)
- Measuring angle: ±45 °C
- Accuracy: ≤ ±0,5 % FS\*
- Resolution: ±5 1/min

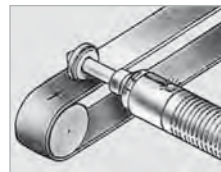
**Electrical Data**

- Output signal: 0 ... 3 V DC
- Input signal: 7 ...12 V DC

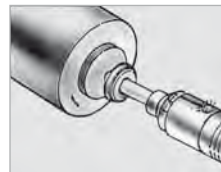
Note: We recommend not extending the 2 m / 6.56 ft permanent cable connection provided on the sensor!

**Applications Examples**

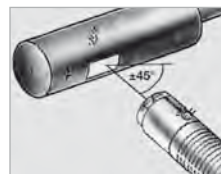
**Fig. 1 -** Contacting rotational speed measurement with the contact adaptor



**Fig. 2 -** End face rotational speed measurement with the contact adaptor



**Fig. 3 -** Rotating shaft / non-contacting rotational speed measurement using the focusing adaptor and marking strip



**Order Codes**

**PPC-04/12-SDS-CAB - CAL**

①

②

① **Series and Type**

Rotational Speed Sensor **PPC-04/12-SDS-CAB**

② **Calibration**

Without calibration certificate (none)  
With calibration certificate **CAL**

**Order Codes**

**Focus Adaptor**

**PPC-04/12-SFA-focus adaptor**

①

① **Series and Type**

Focus Adaptor **PPC-04/12-SFA-focus adaptor**

**Contact Adaptor**

**PPC-04/12-SKA-contact adaptor**

①

① **Series and Type**

Contact Adaptor **PPC-04/12-SKA-contact adaptor**



**Current / Voltage Adaptor - Type PPC-06/12-A/V-A**

**Order Code**

**PPC - 06/12 - A/V- A adaptor**

①

**① Series and Type**

Current / Voltage Adaptor **PPC-06/12-A/V-A adaptor**

**Product Description**

In addition to pressure, temperature, rotational speed and flow measurements, the Hydraulic Testers can measure and evaluate different signals from other or third-party sensors.

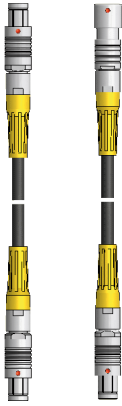
**Measuring electrical signals from third-party sensor (e.g. 4 ... 20 mA, 0 ... 10 V, ...)** with the PPC-06/12-A/V-A Adaptor.

The PPC-06/12-A/V-A Current/ Voltage Adaptor is used, for example, for measuring current at proportional valves or for determining the switching states of motors or pumps and to evaluate and process measurements from third-party sensors. Typical applications are the generation and measurement of a force-distance graph or torque-flow characteristics curves. The following input signals can be processed by this adaptor:

- Electrical currents up to 4 A DC
- Electrical voltages up to 48 V DC

The measured data are transmitted directly to the Hydraulic Testers by a permanent cable connection.

### Connection and Extension Cables (analogue)



Connection Cable PPC-04/12-CAB3  
Extension Cable PPC-04/12-CAB5-EXT



PC Connection Cable as a component of the PPC-SET PPC-04-plus-SW-CAB



PC Connection Cable as a component of the PPC-SET PPC-06/08-plus-SW-CAB

### Product Description

Different Connection and Extension Cables for all Hydraulic Testers of the PPC series are available. These cables on the one hand, connect the sensors to the Hydraulic Testers and on the other hand connect the Hydraulic Testers with a PC or laptop. The following items are available:

#### Connection and Extension Cables

A PPC-04/12-CAB3 Connection Cable is required to connect the sensors to the current Hydraulic Testers PPC-04/06/08-plus or PPC Pad. The cable comes with a 5-pin push/pull connection at each end and has a length of 3 m / 9.84 ft.

Note: This cable cannot be used with older Hydraulic Testers and/or sensors (with 4-pin connection)!

The PPC-04/12-CAB5-EXT Extension Cable has a length of 5 m/16 ft.

Note: Please keep in mind that it is generally recommended not to exceed a total cable length of 8 m / 26.25 ft!

#### PC Connection Cable and PC Software

A PC set, consisting of a USB connecting lead (1 m / 3.28 ft) and the corresponding PC software.

Note: The appropriate PC set is included when purchasing a PPC-04-plus and /or PPC-04-plus-CAN Hydraulic Tester.

#### PC Connection Cable and PC Software

A PC set, consisting of a USB connecting lead (1,5 m / 4.92 ft) and the corresponding PC software.

Note: The appropriate PC set is included when purchasing a PPC-06/08-plus and/or PPC-Pad Hydraulic Testers.

#### Order Codes

**PPC-04/12-CAB3**

①

#### ① Series and Type

Standard Connection Cable for Sensors	<b>PPC-04/12-CAB3</b>
Extension Cable	<b>PPC-04/12-CAB5-EXT</b>

#### Order Code

**PC-SET PPC-04-plus-SW-CAB**

①

#### ① Series and Type

PC Set	<b>PC-SET PPC-04-plus-SW-CAB</b>
--------	----------------------------------

#### Order Code

**PC-SET PPC-06/08-plus-SW-CAB**

①

#### ① Series and Type

PC Set	<b>PPC-SET PPC-06/08-plus-SW-CAB</b>
--------	--------------------------------------



CAN Connection Cable PPC-CAN-CAB



CAN Y-Splitter Cable PPC-CAN-CAB-Y



CAN Terminating Resistor PPC-CAN-R

### Product Description

To connect the CAN bus sensors to the CAN Hydraulic Testers are different cable lengths are available, depending on customers requirements. The CAN sensors work on a bus system as displayed in the connection overview on page D20. All connections are 5-pin SPEEDCON connection plugs. The following items are available:

#### CAN Connection Cable

The CAN Connection Cable is available in different lengths between 0,5 m / 1.64 ft and 20 m / 65.65 ft.

#### CAN Y-Splitter Cable

To connect a new sensor to the CAN bus, a CAN Y-Splitter Cable is necessary.

#### CAN Terminating Resistor

Each sensor on the end of a CAN bus has to be closed with a CAN Terminating Resistor. The resistor is also necessary when only one sensor is used.

#### Order Codes

**PPC-CAN - CAB2**

①

②

##### ① Series and Type

 CAN Connection Cable **PPC-CAN**

##### ② Length

0,5 m / 1.64 ft	<b>CAB0.5</b>
2 m / 6.65 ft	<b>CAB2</b>
5 m / 16.40 ft	<b>CAB5</b>
10 m / 32.81 ft	<b>CAB10</b>
20 m / 65.62 ft	<b>CAB20</b>

#### Order Code

**PPC-CAN-CAB-Y**

①

##### ① Series and Type

 CAN Y-Splitter Cable 0,3 m / .98 ft **PPC-CAN-CAB-Y**

#### Order Code

**PPC-CAN-R**

①

##### ① Series and Type

 CAN Terminating Resistor **PPC-CAN-R**

### Product Description

#### Measuring Frequency with PPC-CAN-FR

The PPC-CAN-FR can be used to connect frequency signals (e.g. from turbines, flow counters or tachometers) to the PPC-Pad or PPC-04-plus-CAN. The instruments can process sinus and rectangle signals from 1 Hz to 5 KHz with signal amplitude from 20 mV to 10 V. Configuration is possible via USB and PC software.

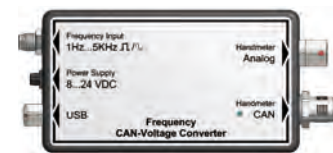
#### Power Supply for External Sensors

An external sensor can be supplied with 24 V using the PPC-CAN-FR.

#### Analogue or CAN Output

The PPC-CAN-FR can be connected either to an analogue input or CAN input.

### CAN Frequency Converter



CAN Frequency Converter PPC-CAN-FR

#### Order Code

**PPC-CAN-FR**

①

##### ① Series and Type

 CAN Frequency Converter **PPC-CAN-FR**

#### Technical Data

##### Dimensions

▪ 114 x 64 x 26 mm / 4.49 x 2.52 x 1.02 in

##### Ambient Conditions

- Operating temperature: 0 °C ... +60 °C / +32 °F ... +140 °F
- Storage temperature: -25 °C ... +70 °C / -13 °F ... +158 °F
- Relative humidity: < 80 %

##### Electrical Data

- Measuring range: 1 Hz ... 5 KHz  
Sinus and rectangle signals  
40 m V pp ... 10 V pp
- Sensor power supply: 24 V DC ± 0,5 V DC
- $I_{Out(Max)}$  without power supply: 50 mA

- $I_{Out(Max)}$  power supply at 24 V DC: 100 mA
- Accuracy: ±1 % FS\* ± 0,05 % / °C

##### Power Supply

- Power supply (external): 8 ... 24 V DC

##### Electrical Connection

- Sensor: 4-pin, M8, plug  
(Female with screw-in connections included with standard option)
- External power supply: 3-pin, female
- USB: 4-pin, female
- Analogue: 5-pin, female
- CAN: 5-pin, M12

\* FS = Full Scale

SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG

Complete Systems for analogue Hydraulic Testers PPC-04/06/08-plus



Complete Systems PPC-06/08-plus



Complete Systems PPC-04-plus

Product Description

Complete systems for analogue Hydraulic Testers are assembled in different versions according to customer wishes. The complete systems are supplied in a handy case with individually designed pockets/sections and have space for the components listed below.

Components

Standard Options for Complete Systems PPC-04-plus

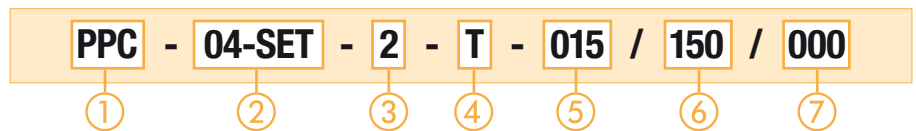
- 1x Hydraulic Tester PPC-04-plus
- 1x Power supply incl. country-specific adaptor
- Up to 3 Pressure Sensors PPC-04/12-P with installed adaptors for STAUFF Test 20 (M16 x 2)
- Up to 2 Connection Cables (3 m / 9.84 ft)
- 1x Temperature Sensor PPC-04/12-T-M02 with installed SGV-16S-G-C6F (optional)
- 3x Adaptors SAD for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- 1x Operating instructions (multilingual) on CD
- 1x PC software for PPC-04-plus
- 1x PC connection cable

Standard Options for Complete Systems PPC-06/08-plus

- 1x Hydraulic Tester PPC-06-plus or PPC-08-plus
- 1x Power supply incl. country-specific adaptor
- Up to 3 Pressure Sensors with installed adaptors STAUFF Test 20 (M16 x 2)
- Up to 3 Connection Cables (3 m / 9.84 ft)
- 1x Temperature Sensor PPC-04/12-T-M02 with installed SGV-16S-G-C6F (optional)
- 3x Adaptors SAD for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- 1x Printed operating instructions (German and English)
- 1x Operating instructions (multilingual) on CD
- 1x PC software for PPC-06/08-plus
- 1x PC connection cable

Note: Please consult STAUFF for calibrated version.

Order Codes



① Series and Type

Hydraulic Tester	PPC
------------------	-----

② Version

2 sensor inputs, incl. PC software and PC connection cable	04-SET
3 sensor inputs, incl. PC software and PC connection cable	06-SET
4 sensor inputs, incl. PC software and PC connection cable	08-SET

③ Number of Pressure Sensors

With 1 Pressure Sensor	1
With 2 Pressure Sensors	2
With 3 Pressure Sensors	3

④ Temperature Sensor

Without Temperature Sensor T and SGV	(none)
With Temperature Sensor T and SGV	T

⑤ Pressure Range and Pressure Sensor

1. Pressure Sensor	see table
--------------------	-----------

⑥ Pressure Range and Pressure Sensor

2. Pressure Sensor	see table
--------------------	-----------

⑦ Pressure Range and Pressure Sensor

3. Pressure Sensor	see table
--------------------	-----------

Pressure Range and Pressure Sensor

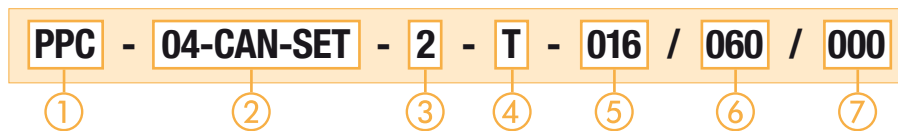
Pressure Range	Pressure Sensor		
000	When ordering a complete system with one or two pressure sensors, specify „000“ for the pressure range of the 2. and / or 3. pressure sensors.		
015	Pressure Range 1. Pressure Sensor	Pressure Range 2. Pressure Sensor	Pressure Range 3. Pressure Sensor
060			
150			
400			
600			
601			
e.g.	015 (15 bar)	060 (60 bar)	000 (0 bar)
Please keep in mind that two pressure sensors with identical measuring ranges are necessary for differential pressure measurements.			

## Complete Systems ■ Type PPC-04-CAN-SET



Complete Systems PPC-04-CAN-SET

## Order Codes



## ① Series and Type

Hydraulic Tester	<b>PPC</b>
------------------	------------

## ② Version

CAN version with CAN interface	<b>04-CAN-SET</b>
--------------------------------	-------------------

## ③ Number of CAN Pressure Sensors

With one CAN Pressure Sensor	<b>1</b>
With two CAN Pressure Sensors	<b>2</b>
With three CAN Pressure Sensors	<b>3</b>

## ④ CAN-Temperature Sensor

Without CAN-Temperature Sensor T and SGV	<b>(none)</b>
With CAN-Temperature Sensor T and SGV	<b>T</b>

## ④ Pressure Range and Pressure Sensors

1. CAN Pressure Sensor	<b>see table</b>
------------------------	------------------

## ⑤ Pressure Range and Pressure Sensors

2. CAN Pressure Sensor	<b>see table</b>
------------------------	------------------

## ⑥ Pressure Range and Pressure Sensors

3. CAN Pressure Sensor	<b>see table</b>
------------------------	------------------

## Pressure Range and CAN Pressure Sensor

Pressure Range	CAN Pressure Sensor		
<b>000</b>	When ordering a complete system with one or two CAN pressure sensors, specify „000“ for the pressure range of the 2. and / or 3. CAN pressure sensors.		
<b>016</b>			
<b>060</b>			
<b>160</b>	Pressure Range	Pressure Range	Pressure Range
<b>400</b>	1. CAN Pressure Sensor	2. CAN Pressure Sensor	3. CAN Pressure Sensor
<b>600</b>			
<b>601</b>			
<b>e.g.</b>	<b>016 (16 bar)</b>	<b>060 (60 bar)</b>	<b>000 (0 bar)</b>
Please keep in mind that two CAN pressure sensors with identical measuring ranges are necessary for differential pressure measurements.			

## Product Description

Complete Systems for Hydraulic Testers PPC-04-plus-CAN are assembled in different versions according to customer wishes. The complete systems are supplied in a handy case with individually designed pockets/sections and have space for the components listed below.

## Components

**Standard Options for Complete Systems PPC-04-plus-CAN**

- 1x Hydraulic Tester PPC-04-plus-CAN
- 1x Power Supply incl. country-specific Adaptor
- Up to 3 CAN Pressure Sensors PPC-CAN-P with installed Adaptors for STAUFF Test 20 (M16 x 2)
- 1x CAN Temperature Sensor PPC-CAN-T-M02 with installed SGV-16S-G-C6F (optional)
- 3x Adaptors SAD for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- Up to 3 CAN Connecting Cables
- Up to 2 CAN Y-Splitter Cables
- 1x CAN Terminating Resistor
- 1x Operating instructions (multilingual) on CD
- 1x PC software
- 1x PC connection cable

Note: Please consult STAUFF for calibrated version.

Complete Systems ■ Type PPC-Pad-SET



Complete Systems PPC-Pad-SET

Product Description

The PPC Pad is also available in a special designed case to store your unit and your accessories. The case is robust, lightweight and can be carried directly to your machine.

It has individually designed inserts that can hold up to 4 Pressure Sensors, 1 CAN Flow Turbine, 1 Flow Turbine, 1 Frequency- and 1 Aux.-Adaptor. Cable and additional equipment also have their own place inside.

PPC Pad case is the best way to store and protect your equipment.

Standard PPC-Pad-SET kits have been put together to equip an user with the basic equipment needed for basic measurement.

Components

Standard Options for Complete Systems PPC-Pad-SET

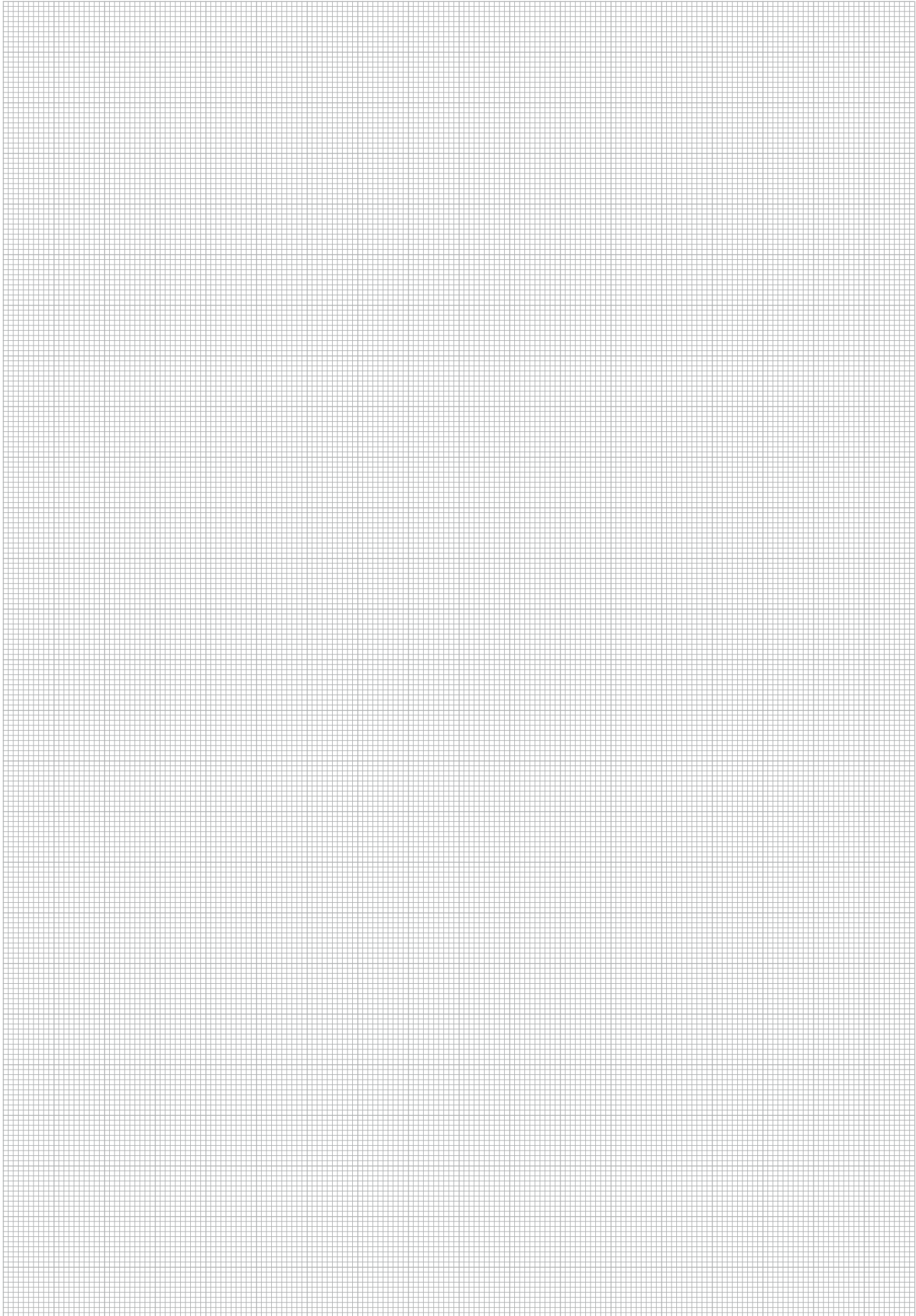
- Hydraulic Tester PPC Pad
- Installed Handle
- 24 V DC / 2,5 A Power supply incl. country-specific adaptor
- M8 x 1 / 4-pin (digital in/out)
- USB 2.0 cable (2 m / 6.56 ft)
- LAN cable (5 m / 16.40 ft)
- Operating Instructions
- PC software
- MicroSD memory card
- Equipment case
- Neck strap
- CAN Connection Cable (5 m / 16.40 ft)
- 2x CAN Terminating Resistor
- Analogue Connection Cable (3 m / 9.84 ft)
- M12 cable socket Aux. output

Order Codes

<b>PPC-Pad</b>	<b>- SET-101</b>	<b>- CAL</b>						
①	②	③						
<p>① <b>Series and Type</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Hydraulic Tester</td> <td style="text-align: right;"><b>PPC-Pad</b></td> </tr> </table>			Hydraulic Tester	<b>PPC-Pad</b>				
Hydraulic Tester	<b>PPC-Pad</b>							
<p>② <b>Version</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">PPC-Pad-SET-101</td> <td style="text-align: right;"><b>SET-101</b></td> </tr> <tr> <td>PPC-Pad-SET-102</td> <td style="text-align: right;"><b>SET-102</b></td> </tr> <tr> <td>PPC-Pad-SET-103</td> <td style="text-align: right;"><b>SET-103</b></td> </tr> </table>			PPC-Pad-SET-101	<b>SET-101</b>	PPC-Pad-SET-102	<b>SET-102</b>	PPC-Pad-SET-103	<b>SET-103</b>
PPC-Pad-SET-101	<b>SET-101</b>							
PPC-Pad-SET-102	<b>SET-102</b>							
PPC-Pad-SET-103	<b>SET-103</b>							
<p>③ <b>Calibration (only -102 / -103)</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Without calibration certificate</td> <td style="text-align: right;"><b>(none)</b></td> </tr> <tr> <td>With calibration certificate</td> <td style="text-align: right;"><b>CAL</b></td> </tr> </table>			Without calibration certificate	<b>(none)</b>	With calibration certificate	<b>CAL</b>		
Without calibration certificate	<b>(none)</b>							
With calibration certificate	<b>CAL</b>							

Version PPC-Pad-Set

Version	Hydraulic Tester	CAN Sensor Inputs	Sensor Inputs with Sensor Recognition STAUFF (Analogue)	Aux. Sensor Inputs (Analogue)	Case	Neck Strap	CAN Connection Cable 5m / 16.40 ft	CAN Terminating Resistor	Analogue Connection Cable 3m / 9.84 ft	Aux. Sensor Inputs - Cable Adaptor
PPC-Pad-SET-101	PPC-Pad-101	2 networks each with max. 8 sensors	-	-	1	1	2	2	-	-
PPC-Pad-SET-102	PPC-Pad-102		3	2	1	1	2	2	2	1
PPC-Pad-SET-103	PPC-Pad-103		6	4	1	1	2	2	3	2





### Ordering Table for analogue Hydraulic Test Equipment

All available individual components for analogue Hydraulic Testers PPC-04-plus, PPC-06-plus and PPC-08-plus, with their order codes, are listed below. They can be configured by the customer using this form.

In the list, the components are sorted according to application areas/tasks to provide a better overview. For custom kits, please contact STAUFF.

\* Pressure peaks up to 1000 bar / 14500 PSI

All hydraulic testers and sensors are available in calibrated version. Please add -CAL to the order code.

Series	Descriptions	Order Codes	Pages
1. Hydraulic Testers	Hydraulic Tester PPC-04-plus with 2 sensor inputs, incl. accessories	PPC-04-plus	D16
	Hydraulic Tester PPC-06-plus with 3 sensor inputs, incl. accessories	PPC-06-plus	D17
	Hydraulic Tester PPC-08-plus with 4 sensor inputs, incl. accessories	PPC-08-plus	
2. Pressure Measurement	<b>Pressure Sensors G1/4 (without Adaptor)</b>		
	Pressure range from -1 ... 15 bar / -14.5 ... 217 PSI relative pressure	PPC-04/12-P-015	D22
	Pressure range from 0 ... 60 bar / 0 ... 870 PSI absolute pressure	PPC-04/12-P-060	
	Pressure range from 0 ... 150 bar / 0 ... 2175 PSI absolute pressure	PPC-04/12-P-150	
	Pressure range from 0 ... 400 bar / 0 ... 5801 PSI absolute pressure	PPC-04/12-P-400	
	Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure	PPC-04/12-P-600	
Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure *	PPC-04/12-P-601		
3. Temperature Measurement	<b>Temperature Sensors (-40 °C ... +150 °C / -40 °F ... +302 °F)</b>		
	Screw-in Temperature Sensor for pipeline installation (M10x1)	PPC-04/12-T-M02	D24
	Screw-in Temperature Sensor for pipeline installation (G1/4)	PPC-04/12-T-B02	
	Rod-type Temperature Sensor for tank / container measurements	PPC-04/12-TSH	
	Straight threaded Adaptor with M10 x 1 connection (for PPC-04/12-T-M02)	SGV-16S-G-C6F	
<b>Pressure/ Temperature Sensors G1/2 (without Adaptor)</b>			
4. Pressure/ Temperature Measurement	Pressure range from -1 ... 15 bar / -14.5 ... 217 PSI relative pressure	PPC-04/12-PT-015	D26
	Pressure range from 0 ... 60 bar / 0 ... 870 PSI absolute pressure	PPC-04/12-PT-060	
	Pressure range from 0 ... 150 bar / 0 ... 2175 PSI absolute pressure	PPC-04/12-PT-150	
	Pressure range from 0 ... 400 bar / 0 ... 5801 PSI absolute pressure	PPC-04/12-PT-400	
	Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure	PPC-04/12-PT-600	
	Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure *	PPC-04/12-PT-601	
5. Connection Adaptors for PPC Sensors	<b>Connection Adaptors</b>		
	Adaptor G1/4 to M16 x 2 (STAUFF Test 20)	SDA20-G1/4-C6F	D22 / D26
	Adaptor G1/2 to M16 x 2 (STAUFF Test 20)	SDA20-G1/2-C6F	
	Adaptor M16 x 2 to M16 x 1,5 (STAUFF Test 20 to STAUFF Test 15)	SAD20/15-P-C6F	
	Adaptor M16 x 2 to S12,65 x 1,5 (STAUFF Test 20 to STAUFF Test 12)	SAD20/12-P-C6F	
Adaptor M16 x 2 to plug-in (STAUFF Test 20 to STAUFF Test 10)	SAD20/10-P-C6F		
6. Flow Measurement	<b>Flow Turbines with integrated Signal Converter</b>		
	Measuring range from 1 ... 15 l/min / .3 ... 3.9 US GPM	PPC-04/12-SFM-015	D28
	Measuring range from 4 ... 60 l/min / 1 ... 15.9 US GPM	PPC-04/12-SFM-060	
	Measuring range from 6 ... 150 l/min / 1.6 ... 39.6 US GPM	PPC-04/12-SFM-150	
	Measuring range from 10 ... 300 l/min / 2.7 ... 79 US GPM	PPC-04/12-SFM-300	
Measuring range from 20 ... 600 l/min / 5.3 ... 158 US GPM	PPC-04/12-SFM-600		
7. Rotational Speed Measurement	Rotational Speed Sensor with integrated Connection Cable 2 m / 6.56 ft	PPC-04/12-SDS-CAB	D30
	Contact Adaptor	PPC-04/12-SKA-contact adaptor	
	Focus Adaptor	PPC-04/12-SFA-focus adaptor	
8. Current / Voltage Adaptor / Third-party Sensors	Current / Voltage Adaptor / Third-party Sensor (up to 4 A DC / 48 V DC)	PPC-06/12-A/V-A adaptor	D31
9. Accessories (Connection / Extension Cables and Software)	Connection Cable 3 m / 9.84 ft (5-pin push/pull connection on both sides)	PPC-04/12-CAB3	D32
	Extension Cable 5 m / 16.40 ft 5-pin push/pull connection on both sides)	PPC-04/12-CAB5-EXT	
	PC Connection Cable and PC Software for PPC-04-plus	PC-SET PPC-04-plus-SW-CAB	
	PC Connection Cable and PC Software for PPC-06/08-plus	PC-SET PPC-06/08-plus-SW-CAB	
10. Ersatzteile / Komplettsysteme	Case PPC-04-plus (with foam insert)	PPC-04-plus case	D34
	Case PPC-06/08-plus (with foam insert)	PPC-06/12 case	
	Power Supply (110/230 V AC) for PPC-04-plus with USB connections, incl. country-specific adaptor	PPC-04-plus-110V/230V-USB	
	Power Supply (110/230 V AC) for PPC-06/08-plus, incl. country-specific adaptor	PPC-04/12-110V/230V	
	Complete Systems for Analogue Hydraulic Testers PPC-04/06/08-plus, Order Codes on page D34		

## Ordering Table for CAN Hydraulic Test Equipment

Series	Descriptions	Order Codes	Pages
1. CAN Hydraulic Testers	CAN Hydraulic Tester PPC-04-plus-CAN with CAN interface, incl. accessories	PPC-04-plus-CAN	D16
	CAN Hydraulic Tester PPC-Pad-101 with 2 CAN networks, incl. accessories	PPC-Pad-101	D18
	CAN Hydraulic Tester PPC-Pad-102 with 2 CAN networks and 3 analogue sensor inputs, incl. accessories	PPC-Pad-102	
	CAN Hydraulic Tester PPC-Pad-103 with 2 CAN networks and 6 analogue sensor inputs, incl. accessories	PPC-Pad-103	
2. Pressure Measurement	CAN Pressure Sensors G1/4 (without Adaptor)		
	Pressure range from -1 ... 16 bar / -14.5 ... 232 PSI relative pressure	PPC-CAN-P-016	D23
	Pressure range from 0 ... 60 bar / 0 ... 870 PSI absolute pressure	PPC-CAN-P-060	
	Pressure range from 0 ... 160 bar / 0 ... 2321 PSI absolute pressure	PPC-CAN-P-160	
	Pressure range from 0 ... 400 bar / 0 ... 5801 PSI absolute pressure	PPC-CAN-P-400	
	Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure	PPC-CAN-P-600	
Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure *	PPC-CAN-P-601		
3. Temperature Measurement	CAN-Temperature Sensors (-40 °C ... +150 °C / -40 °F ... +302 °F)		
	Screw-in Temperature Sensor for pipeline installation (M10x1)	PPC-CAN-T-M02	D25
	Screw-in Temperature Sensor for pipeline installation (G1/4)	PPC-CAN-T-B02	
Straight threaded Adaptor with M10 x 1 connection (for PPC-CAN-T-M02)	SGV-16S-G-C6F		
4. Pressure/ Temperature Measurement	CAN Pressure/ Temperature Sensors G1/2 (without Adaptor)		
	Pressure range from -1 ... 16 bar / -14.5 ... 232 PSI relative pressure	PPC-CAN-PT-016	D27
	Pressure range from 0 ... 60 bar / 0 ... 870 PSI absolute pressure	PPC-CAN-PT-060	
	Pressure range from 0 ... 160 bar / 0 ... 2321 PSI absolute pressure	PPC-CAN-PT-160	
	Pressure range from 0 ... 400 bar / 0 ... 5801 PSI absolute pressure	PPC-CAN-PT-400	
	Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure	PPC-CAN-PT-600	
Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure *	PPC-CAN-PT-601		
5. Connection Adaptors for PPC Sensors	Connection Adaptors		
	Adaptor G1/4 to M16 x 2 (STAUFF Test 20)	SDA20-G1/4-C6F	D23 / D27
	Adaptor G1/2 to M16 x 2 (STAUFF Test 20)	SDA20-G1/2-C6F	
	Adaptor M16 x 2 to M16 x 1,5 (STAUFF Test 20 to STAUFF Test 15)	SAD20/15-P-C6F	
	Adaptor M16 x 2 to S12,65 x 1,5 (STAUFF Test 20 to STAUFF Test 12)	SAD20/12-P-C6F	
Adaptor M16 x 2 to plug-in (STAUFF Test 20 to STAUFF Test 10)	SAD20/10-P-C6F		
6. Flow Measurement	CAN Flow Turbines with integrated Signal Converter		
	Measuring range from 1 ... 15 l/min / .3 ... 3.9 US GPM	PPC-CAN-SFM-015	D29
	Measuring range from 4 ... 60 l/min / 1 ... 15.9 US GPM	PPC-CAN-SFM-060	
	Measuring range from 6 ... 150 l/min / 1.6 ... 39.6 US GPM	PPC-CAN-SFM-150	
	Measuring range from 10 ... 300 l/min / 2.7 ... 79 US GPM	PPC-CAN-SFM-300	
Measuring range from 20 ... 600 l/min / 5.3 ... 158 US GPM	PPC-CAN-SFM-600		
7. CAN Accessories	CAN Connection Cable 0,5 m / 1.64 ft	PPC-CAN-CAB0.5	D33
	CAN Connection Cable 2 m / 6.65 ft	PPC-CAN-CAB2	
	CAN Connection Cable 5 m / 16.40 ft	PPC-CAN-CAB5	
	CAN Connection Cable 10 m / 32.81 ft	PPC-CAN-CAB10	
	CAN Connection Cable 10 m / 65.62 ft	PPC-CAN-CAB20	
	CAN Y-Splitter Cable 0,3 m / .98 ft	PPC-CAN-CAB-Y	
	CAN Terminating Resistor	PPC-CAN-R	
8. Connection Cable and Accessories	PC Connection Cable and PC Software for PPC-04-plus-CAN	PC-SET PPC-04-plus-SW-CAB	D32
9. CAN Frequency Converter	CAN Frequency Converter	PPC-CAN-FR	D33
10. Spare Parts and Complete Systems	Complete Systems for CAN Hydraulic Tester PPC-04-plus-CAN, Order Codes on page D35		
	Case PPC-04-plus-CAN (with foam insert)	PPC-04-plus case	D35
	Power Supply (110/230 V AC) for PPC-04-plus-CAN with USB connection, incl. country-specific Adaptor	PPC-04-plus-110V/230V-USB	
	Case PPC-Pad Koffer (with foam insert)	PPC-Pad case	D36
	Complete System PPC-Pad-SET-101 with 2 CAN networks, incl. accessories, case, CAN Connection Cable	PPC-Pad-SET-101	
	Complete System PPC-Pad-102 with 2 CAN networks and 3 analogue sensor inputs, incl. accessories, case, CAN Connection Cable	PPC-Pad-SET-102	
Complete System PPC-Pad-SET-103 with 2 CAN networks and 6 analogue sensor inputs, incl. accessories, case, CAN Connection Cable	PPC-Pad-SET-103		

All available components for CAN Hydraulic Testers, with their order codes, are listed below. They can be configured by the customer using this form.

In the list, the components are sorted according to application areas/tasks to provide a better overview.

For custom kits, please contact STAUFF.

\* Pressure peaks up to 1000 bar / 14500 PSI

**All CAN Hydraulic Testers (except PPC-04-plus-CAN and PPC-Pad-101) and sensors are available as calibrated versions. Please add -CAL to the order code.**

## Laser Particle Counter - Type LasPaC II



Fluid analysis is a crucial component of any oil management program. Early detection of potential problems can prevent costly repairs and downtime. The LasPaC II makes it possible to detect the ISO Cleanness levels of the hydraulic media.

### Characteristics

The LasPaC II devices feature a twin laser system and eight channels for different particle sizes in order to guarantee high accuracy and repeatability. These compact units are easy to handle for mobile and inline applications for systems with pressures up to 400 bar / 5801 PSI.

The LasPaC II is available in three different versions:

#### LasPaC II-P: Portable Laser Particle Counter

The LasPaC II-P is a fully equipped portable laser particle counter.

The LasPaC II-P features a complete QWERTY keyboard, an integrated thermal printer, an internal rechargeable battery and a large LCD display.

#### LasPaC II-M: Mobile Laser Particle Counter

The LasPaC II-M is a highly accurate laser particle counter. With a competitive price, the LasPaC II-M is the best compromise between lower cost and brilliant accuracy/reliability.

#### LasPaC II-I: Inline Laser Particle Counter

The LasPaC II-I is a laser particle counter, which is suitable for all applications where continuous monitoring is required.

All LasPaC II devices have an internal data memory and are available within the accompanying Windows® based software package for reports and data downloads.

### Overview

Options	LasPaC II-P (Portable)	LasPaC II-M (Mobile)	LasPaC II-I (Inline)	Bottle Sampler 110	Bottle Sampler 500
Laser Type	Twin-Laser	Twin-Laser	Twin-Laser	-	-
Analysis Range	8 channels (4,6,14,21,25,38,50,68 µm <sub>eq</sub> )	8 channels (4,6,14,21,25,38,50,68 µm <sub>eq</sub> )	8 channels (4,6,14,21,25,38,50,68 µm <sub>eq</sub> )	-	-
Power Supply	External	External	External	-	-
Battery Option	Internal	Internal (optional)	-	-	-
Display	Integrated (large)	Integrated (small)	External (optional)	-	-
Keyboard	Integrated	-	-	-	-
Printer	Integrated	-	-	-	-
Data Storage	Internal (for approximately 600 tests)	Internal (for approximately 600 tests)	Internal (for approximately 600 tests)	-	-
Computer Interface	RS-232	RS-232	RS-232 (RS 485 on request)	-	-
Fluid Preparation	-	-	-	Integrated vacuum/pressure pump	Integrated vacuum/pressure pump
Maximal Bottle Size	-	-	-	110 ml	500 ml
Compatible with	-	-	-	Mineral oil and petroleum based fluids	Mineral oil and petroleum based fluids or phosphate ester
Sample-taking Equipment	-	-	-	Fluid sample pump with hoses	-

## Features & Options: LasPaC II (General)

### Mobile - Compact and Convenient

The LasPaC II-P (Portable), the LasPaC II-M (Mobile) and all its accessories are supplied in a light-weight rugged industrial case.

This user-friendly portable case is waterproof and resistant against all common fluids.

### Accuracy - Twin-laser, 100% Coverage

In all STAUFF laser particle counting devices, the fluid passes through the measuring cell and through a laser beam. The light from the laser is evaluated by a photo diode.

As the fluid passes through the laser beam the amount of light changes. These changes are directly proportional to size of the particles, and the total volume of particles. In many other particle counters only part of the measuring cell is lighted by the laser, thus only a part of the total amount of particles are registered, and the result is projected.

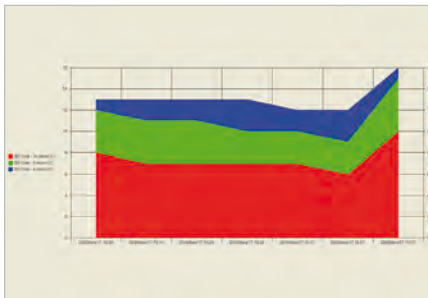
In contrast, the measuring cell of the LasPaC II is completely examined, and all particles are registered. In addition to this, a second laser is used to analyze all particles sizes smaller than  $6 \mu\text{m}_{10}$ .

Additionally, the integrated booster cylinder allows very precisely dosage of the test fluids. This ensures a very high accuracy with excellent repeatability.

### Functional - Calibration to ISO 11 171

The LasPaC II devices are calibrated with ISO Medium Test Dust (MTD) based on the ISO 11 171:1999 calibration standard.

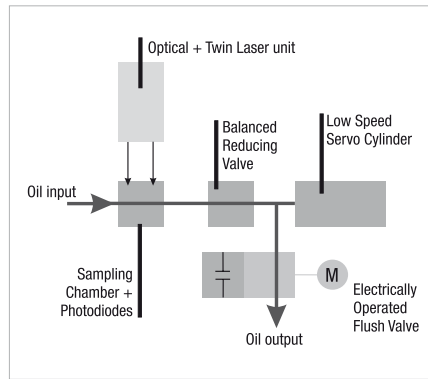
STAUFF particle counters meet the new ISO 4406 cleanliness classification codes and provide results in the NAS 1638 and the SAE 4059 codes.



### For any Type of Application - Large Pressure Range

A big advantage of the LasPaC II devices is the wide pressure range: Low pressure measurements starting with 2 bar / 29 PSI and high pressure tests up to 400 bar / 5801 PSI result in reliable readings. Many other products available today require special add-on devices or pressure cartridges which need to be recharged for this.

The test hoses, which are provided with the device, allow an easy connection to common test couplings M16 x 2 (STAUFF TEST 20 or comparable).



### Global Use - Variable Voltage Supply

The external power supply unit provides most variable voltage ranges of 110 ... 240 V AC. European, UK and US plug adaptors ensure a worldwide applicability of the LasPaC II.

### Always Secure - External Alarms

The LasPaC II-P and LasPaC II-I devices offer the opportunity to define different alarm levels.

It is possible to configure two separate contamination alarm levels (e.g. clean alarm level and dirt alarm level). When set, an alarm indicator is given to external devices (e.g. indicator light, offline-filter) if the alarm level is reached.

### Making the Connection -

#### Downloading with RS-232 Interface and USB Adaptor

The measured data can be downloaded onto any PC or laptop computer via the RS-232 interface or alternatively via a USB adaptor.

The LasPaC II software supports an easy download for data processing of the recorded measurements.

Several diagrams are available and are automatically generated to offer a very clear arrangement of all data for analysis. Data can also be easily exported to Microsoft Excel®.

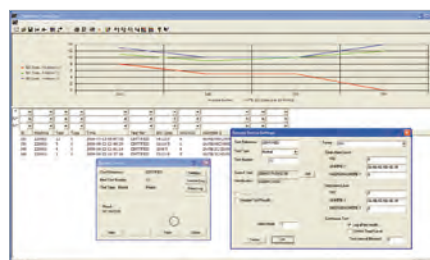
### Always up-to-date - Integrated Clock

An integrated rechargeable battery-operated clock provides the exact date and time which are shown on every printout.

In addition, every download of measured data is marked with date and time as well. The precise time of measurement is documented on all printouts and for all data stored.

### Adaptable - Software Updates

The RS-232 (or USB) interface ensures flexibility for future developments in terms of calibration, evaluation and output. Software updates can easily be installed onto the LasPaC II devices.



## Laser Particle Counter - Type LasPaC II

### Cleanliness - High-Speed Flush Valve

To ensure an accurate measurement is taken, the sensor must be cleaned before each test.

The LasPaC II achieves this by means of an electric operated flush valve. This valve can be opened on demand and between tests by simply depressing the flushing valve push button. The optimized design of the flush valve reduces the rinsing process to the minimum requirement, and ensures a quick restart of the next measurement.

### For all Applications - High Compatibility

The LasPaC II units are compatible with all Mineral Oil and Petroleum based fluids. Phosphate Ester (e.g. Skydrol®) and Water Glycol compatible devices are available upon request. Please contact STAUFF for details.

### More Oil Information - The Moisture/ Temperature Sensor

The LasPaC II also offers the option of adding an integral moisture / temperature sensor.

This sensor measures the moisture content of the test fluids (displayed as relative humidity in RH %) and also indicates the current fluid temperature (in °C).

Please note that the moisture/ temperature sensor is not compatible with Phosphate Ester (e.g. Skydrol®) and Water Glycol fluids.

For further information please see on page D50.

### Optional - Bottle Sampling Unit

Highly aerated fluids may lead to inaccurate results.

Therefore a de-aeration facility has been incorporated into the optional bottle sampling units.

Both sizes (110 ml and 500 ml) of the bottle sampling unit are delivered with an external power supply, and allow the user to properly condition the sample fluid prior to any measurements taken. For further information please see on page D49.

Please note that the moisture/ temperature sensor as mentioned above does not work in conjunction with the bottle sampling unit.

## Scope of Delivery

Each kit of a laser particle counter STAUFF LasPaC II includes:

- 1x Laser particle counter STAUFF LasPaC II
- 1x LasPaC II-M / LasPaC II-P: Waste hose 2 m / 3.65 ft  
LasPaC II-I: Waste hose 1,5 m / 2.67 ft
- 1x Pressure hose: 1,5 m / 2.67 ft
- 1x Waste bottle (not with LasPaC II-I)
- 1x External power supply including cable with European, UK and USA plug adaptors
- 1x RS-232 connecting cable, 1 m / 1.78 ft including RS-232 to USB converter
- 1x Software CD "LasPaC II View"
- 1x User guide LasPaC II
- 1x User guide LasPaC II View
- 3x Thermal printer paper (only with LasPaC II-P)



**Laser Particle Counter - Type LasPaC II-P (Portable)**



Light-Weight Rugged Industrial Case



Integrated Printer

**Product Description**

The LasPaC II-P (Portable) is the most complete way to measure the contamination level of your system. With the LasPaC II-P you have the ability to measure, analyze and document your results immediately without the need of any additional equipment.

**Features**

**Quick Results - Fast Results and Easy Operation**  
The integrated complete QWERTY keyboard, a large LCD display and intuitive handling all lead to the easy and quick operation of the LasPaC II Portable. The optimized flushing process of the LasPaC II-P is quick and effective, and allows for continuously accurate measurements.

**Black and White - Integrated Printer**  
The integrated printer in the LasPaC II-P supports print-outs in the field, thus providing immediate documentation. Every printout confirms date and time of your measurement.

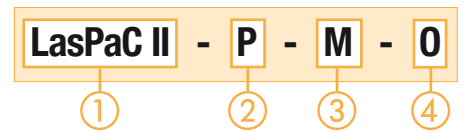
**Independent Use - Rechargeable Battery Mode**  
The integrated rechargeable battery of the LasPaC II-P allows the use of on site measurements, even in the event where access of an external power source is not available. The measurement data is stored in the internal memory of the unit and can be transferred to a computer when required.

Once charged the LasPaC II-P can run approximately 100 tests before recharging is needed again.

**Options**

- **Moisture / Temperature Sensor**  
This sensor measures the moisture content of the test fluids (displayed as relative humidity in RH %) and also indicates the current fluid temperature (in °C). For further information please see on page D50.
- **Phosphate Ester (e.g. Skydrol®) or specific Water Glycol fluids units on request**

**Order Codes**



① **Series and Types**

Laser Particle Counter	LasPaC II
------------------------	-----------

② **Version**

Portable	P
----------	---

③ **Fluid Compatibility**

Mineral Oil, Petroleum based fluids (standard option)	M
Phosphate Ester (e.g. Skydrol®)	E
Specific Water Glycol fluids	G

④ **Moisture/ Temperature Sensor**

Without moisture/ temperature sensor	O
With moisture/ temperature sensor	W

Please note: The moisture/ temperature sensor is not suitable for Phosphate Ester (e.g. Skydrol®) and Water Glycol fluids.

## Laser Particle Counter ■ Type LasPaC II-P (Portable)



Highspeed Flush Valve



Computer Interfaces of the LasPaC II-P



Easy Connection to common Test Couplings

## Technical Data

**Dimensions and Weight**

- L/W/H: 551 x 358 x 226 mm / 21.69 x 14.09 x 8.90 in
- Weight: 13 kg / 28.66 lbs

**Keyboard / Printer**

- Keyboard: QWERTY keyboard
- Printer: Integrated thermal printer (384 dots per line)

**Power Supply**

- Voltage range: 110 ... 240 V AC  
12 ... 24 V DC
- European, UK and US power plug adaptors included
- Number of tests before recharging is required: 100

**Calibration**

- Calibration: ISO Medium Test Dust (MTD) according to ISO 11 171:1999
- Analysis range: ISO 8-24, ISO 4406 Code, NAS 1638 Code 2-12, SAE AS 4059 Code 2-12

**Pressure / Viscosity**

- Pressure range: 2 ... 400 bar / 29 ... 5801 PSI
- Viscosity range: 1 ... 400 cSt

**Laser Sensors**

- High accuracy laser: 4 ... 6  $\mu\text{m}_{(e)}$
- Standard accuracy laser: 6 ... 68  $\mu\text{m}_{(e)}$
- Measured channels: 4, 6, 14, 21, 25, 38, 50, 68  $\mu\text{m}_{(e)}$
- The orifice of the sensor has a cross section of 0,9 x 0,9 mm / .04 x .04 in
- The maximum concentration is ISO 4406 Code 24 (160.000 p/ml)

**Accessories**

- Bottle Sampling Unit 110 ml (for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml (for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml (Version E) (for Phosphate Ester (e.g. Skydrol®) available on request) For further information please see on page D49.
- Screen filter: 500  $\mu\text{m}$  (see on page D50)

**Hose Connections**

- Test coupling STAUFF Test 20 or comparable (M16 x 2)

**Sample Volume**

- 8 ml (short)
- 15 ml (normal)
- 30 ml (dynamic)
- 24 ml (bottle sampler)
- 15 ml (continuous)

**Permissible Temperature**

- Operating: +5 °C ... +80 °C / +41 °F ... +176 °F

**Data Output**

- Cumulative particle counts, as well as cleanliness classes according to ISO 4406 (1999) / SAE AS 4059 Rev.D (2001) and ISO 4406 (1191) / NAS 1638 (1964)

**Max. Concentration**

- ISO 24

**Accumulator**

- Internal rechargeable battery

**Data Storage**

- 600 tests

**Fluid Compatibility**

- Mineral Oil, Petroleum based fluids
- Phosphate Ester and Water Glycol compatible devices on request

**Computer Interface**

- RS-232 communication port as standard
- USB adaptors included

**External Alarm**

- External alarm socket with switching outputs max. 24 V DC/AC, 1 A

**Software**

- Downloading and storage of the data with included "LasPaC II View" software. Further processing with Microsoft Excel® possible.

**Laser Particle Counter - Type LasPaC II-M (Mobile)**



LasPaC II-M with integrated battery (standard option)



LasPaC II-M also available without integrated battery

**Product Description**

The LasPaC II-M is a highly accurate laser particle counter. With a competitive price, the LasPaC II-M is the best compromise between lower cost and brilliant accuracy/reliability.

**Features**

**Versatile - Lightweight and Convenient**

The LasPaC II-M (Mobile) is designed for applications where it is necessary to have a small, light and robust service unit.

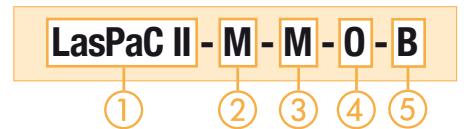
**Low Cost - Same Functions for a Budget Price**

Without losing the quality in measurement accuracy, reliability and repeatability the LasPaC II-M is a cost effective alternative to the fully equipped LasPaC II-P.

**Options**

- **Moisture / Temperature Sensor**  
This sensor measures the moisture content of the test fluids (displayed as relative humidity in RH %) and also indicates the current fluid temperature (in °C).  
For further information please see on page D50.
- **Phosphate Ester (e.g. Skydrol®) or specific Water Glycol fluids units on request**
- LasPaC II-M also available without integrated battery

**Order Codes**



**① Type and Series**

Laser Particle Counter	LasPaC II
------------------------	-----------

**② Version**

Mobile	M
--------	---

**③ Fluid Compability**

Mineral Oil, Petroleum based fluids (standard option)	M
Phosphate Ester (e.g. Skydrol®)	E
Specific Water Glycol fluids	G

**④ Moisture/ Temperature Sensor**

Without moisture/ temperature sensor	O
With moisture/ temperature sensor	W

Please note: The moisture/ temperature sensor is not suitable for Phosphate Ester (e.g. Skydrol®) and Water Glycol fluids.

**⑤ Battery**

With internal rechargeable battery (standard option)	B
Without internal rechargeable battery	0



## Laser Particle Counter - Type LasPaC II-M (Mobile)



LasPaC II-M with small Bottle Sampler



Display and Buttons

## Technical Data

**Dimensions and Weight**

- L/W/H: 340 x 295 x 152 mm /  
13.40 x 11.61 x 5.98 in
- Weight: 4,75 kg / 10.47 lbs

**Power Supply**

- Voltage range: 110 ... 240 V AC  
12 ... 24 V DC
- European, UK and US power plug adaptors included
- Number of tests before recharging is required: 60

**Calibration**

- Calibration: ISO Medium Test Dust (MTD)  
according to ISO 11 171:1999
- Analysis range: ISO 8-24, ISO 4406 Code,  
NAS 1638 Code 2-12,  
SAE AS 4059 Code 2-12

**Pressure / Viscosity**

- Pressure range: 2 ... 400 bar / 29 ... 5801 PSI
- Viscosity range: 1 ... 400 cSt

**Laser Sensors**

- High accuracy laser: 4 ... 6  $\mu\text{m}_{(c)}$
- Standard accuracy laser: 6 ... 68  $\mu\text{m}_{(c)}$
- Measured channels: 4, 6, 14, 21, 25, 38, 50, 68  $\mu\text{m}_{(c)}$
- The orifice of the sensor has a cross section of  
0,9 x 0,9 mm / .04 x .04 in
- The maximum concentration is ISO 4406 Code 24  
(160.000 p/ml)

**Accessories**

- Bottle Sampling Unit 110 ml  
(for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml  
(for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml (Version E)  
(for Phosphate Ester (e.g. Skydrol®) available on request)  
For further information please see on page D49.
- Screen filter: 500  $\mu\text{m}$  (see on page D50)

**Hose Connections**

- Test coupling STAUFF Test 20 or comparable (M16 x 2)

**Sample Volume**

- 8 ml (short)
- 15 ml (normal)
- 30 ml (dynamic)
- 24 ml (bottle sampler)
- 15 ml (continuous)

**Permissible Temperature**

- Operating: +5 °C ... +80 °C / +41 °F ... +176 °F

**Data Output**

- Cumulative particle counts, as well as cleanliness classes  
according to ISO 4406 (1999) / SAE AS 4059 Rev.D (2001)  
and ISO 4406 (1191) / NAS 1638 (1964)

**Max. Concentration**

- ISO 24

**Data Storage**

- 600 tests

**Fluid Compability**

- Mineral Oil, Petroleum based fluids
- Phosphate Ester and Water Glycol compatible devices on  
request

**Computer Interface**

- RS-232 communication port as standard
- USB adaptors included

**Software**

- Downloading and storage of the data with included "LasPaC  
II View" software. Further processing with Microsoft Excel®  
possible.

**Internal Rechargeable Battery**

- Standard option with internal rechargeable battery

## Laser Particle Counter - Type LasPaC II-I (Inline)



Front / Bottom View of the STAUFF LasPaC II-I

### Product Description

The LasPaC II-I (Inline) unit is designed for hydraulic applications, where continuous monitoring is essential. It is installed permanently in a hydraulic system.

Please note that the LasPaC II-I needs a minimum working pressure of 2 bar / 29 PSI for reliable particle counting.

The LasPaC II-I does not have the QWERTY keyboard, the LCD display, and an internal rechargeable battery.

All test results are saved in the integrated memory and can be downloaded to a PC or laptop computer with the RS-232 interface or USB adaptor.

Also, the configuration of the LasPaC II-I has to be done with a PC or laptop computer.

### Features

#### Accessory - Remote Display

For a direct display of the measured data an optional remote display is available for the LasPaC II-I.

This device also offers the opportunity to flush the LasPaC II-I and to start and stop the measurement by use of the three push buttons.

The standard cable length of the remote display is 2 m / 6.56 ft.

A cable with a length of 5 m / 16.40 ft is available on request.

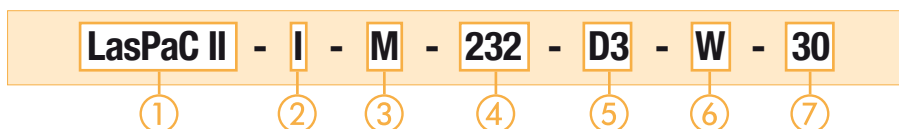
#### Hazard Conditions - Rugged Aluminium Case

The LasPaC II-I inline unit has a rugged, powder coated Aluminum case which can be easily installed, even in hazardous conditions.

### Options

- Moisture / Temperature Sensor  
This sensor measures the moisture content of the test fluids (displayed as relative humidity in RH %) and also indicates the current fluid temperature (in °C).  
For further information please see on page D50.
- Phosphate Ester (e.g. Skydrol®) or specific Water Glycol fluids units on request
- ATEX (Zone II Category 3G rating) is available.  
For further information please see on page D48 or contact STAUFF.

### Order Codes



#### ① Series and Type

Laser Particle Counter	<b>LasPaC II</b>
------------------------	------------------

#### ② Version

Inline	<b>I</b>
--------	----------

#### ③ Fluid Compatibility

Mineral Oil, Petroleum based fluids (standard option)	<b>M</b>
Phosphate Ester (e.g. Skydrol®)	<b>E</b>
Specific Water Glycol fluids	<b>G</b>

#### ④ Computer Interface

RS-232 computer interface (standard option)	<b>232</b>
RS-485 computer interface	<b>485</b>

#### ⑤ Display Mode

PC driven (standard option)	<b>D3</b>
Remote module + PC driven	<b>D2</b>
Remote visual indicator (red/green) + PC driven	<b>D5</b>
Customer-specific display (e.g. Modbus)	<b>X</b>

#### ⑥ Moisture/ Temperature Sensor

Without moisture/ temperature sensor	<b>0</b>
With moisture/ temperature sensor	<b>W</b>

Please note: The moisture/ temperature sensor is not suitable for Phosphate Ester (e.g. Skydrol®) and Water Glycol fluids.

#### ⑦ Design Code

Inlet pressure: 2 ... 400 bar / 29 ... 5801 PSI	
Drain reservoir/system: Atmospheric, zero back pressure	<b>30</b>
Inlet pressure: 10 ... 400 bar / 145 ... 5801 PSI	
Drain reservoir/system: Back pressure not exceeding 1 bar / 14 PSI	<b>31</b>

**Laser Particle Counter ■ Type LasPaC II-I (Inline)**


Rear / Top View of the STAUFF LasPaC II-I



Remote Display for the STAUFF LasPaC II-I

**Technical Data**
**Dimensions and Weight**

- LxWxH: 120 x 275 x 250 mm /  
4.72 x 10.83 x 9.84 in
- Weight: 4,80 kg / 10.58 lbs

**Power Supply**

- Voltage range: 110 ... 240 V AC  
12 ... 24 V DC
- European, UK and US power plug adaptors included

**Calibration**

- Calibration: ISO Medium Test Dust (MTD) according to ISO 11 171:1999
- Analysis range: ISO 8-24, ISO 4406 Code, NAS 1638 Code 2-12, SAE AS 4059 Code 2-12

**Pressure / Viscosity**

- Pressure range: Series 30: 2 ... 400 bar/  
29 ... 5801 PSI  
Series 31: 10 ... 400 bar/  
145 ... 5801 PSI
- Viscosity range: 1 ... 400 cSt

**Laser Sensors**

- High accuracy laser: 4 ... 6  $\mu\text{m}_{(0)}$
- Standard accuracy laser: 6 ... 68  $\mu\text{m}_{(0)}$
- Measured channels: 4, 6, 14, 21, 25, 38, 50, 68  $\mu\text{m}_{(0)}$
- The orifice of the sensor has a cross section of 0,9 x 0,9 mm / .04 x .04 in
- The maximum concentration is ISO 4406 Code 24 (160.000 p/ml)

**Accessories**

- Bottle Sampling Unit 110 ml (for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml (for Mineral Oil and Petroleum based fluids)
- Bottle Sampling Unit 500 ml (Version E) (for Phosphate Ester (e.g. Skydrol®) available on request) For further information please see on page D49.
- Screen filter: 500  $\mu\text{m}$  (see on page D50)

**Hose Connections**

- Test coupling STAUFF Test 20 or comparable (M16 x 2)

**Sample Volume**

- 8 ml (short)
- 15 ml (normal)
- 30 ml (dynamic)
- 24 ml (bottle sampler)
- 15 ml (continuous)

**Permissible Temperature**

- Operating: +5 °C ... +80 °C / +41 °F ... +176 °F

**Data Output**

- Cumulative particle counts, as well as cleanliness classes according to ISO 4406 (1999) / SAE AS 4059 Rev.D (2001) and ISO 4406 (1191) / NAS 1638 (1964)

**Max. Concentration**

- ISO 24

**Data Storage**

- 600 tests

**Fluid Compability**

- Mineral Oil / Petroleum based fluids
- Phosphate Ester and Water Glycol compatible devices on request

**Computer Interface**

- RS-232 communication port as standard
- RS-485 on request
- USB adaptors included

**Software**

- Downloading and storage of the data with included "LasPaC II View" software. Further processing with Microsoft Excel® possible.

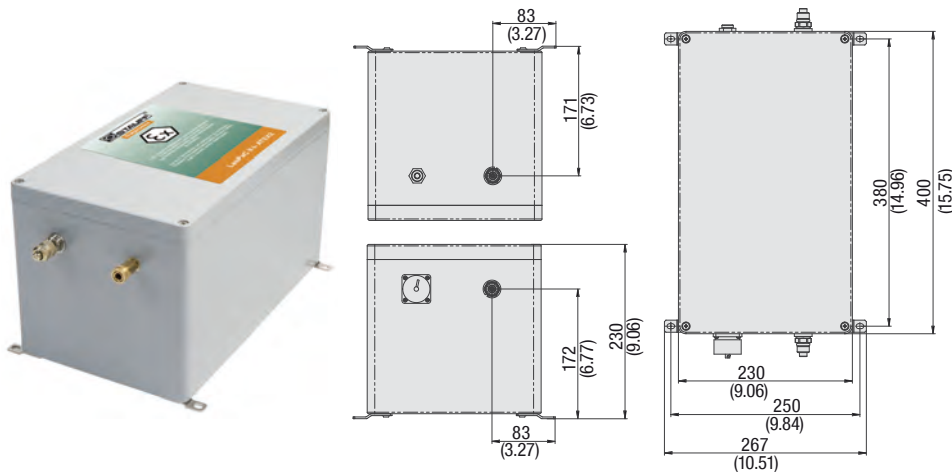
**External Alarm**

- separate wires in connector cable ( max. 24 V DC/AC, 1A)

**Protection Rating**

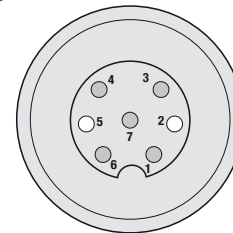
- IP 55 protection rating: Dust protected and protected against water jets

## Laser Particle Counter - Type LasPaC II-I-ATEX2



### Wiring Diagram

Note: Please note that an ATEX approved connecting cable is not included in the scope of delivery of LasPaC II-I...-ATEX2. A corresponding ATEX plug is included.



- 1 Power 0V
- 3 Data-
- 4 Data+
- 6 Power +24V DC
- 7 Screen of cable

### Product Description

The ATEX version of the Laser Particle Counter LasPaC II-I is approved for use in hazardous areas (zone 2 / category 3G). The device thus meets the conditions to be used in e.g. oil and gas industry or chemical and process industry.

### Product Features

- Determines contamination level of measured fluids in 8 size channels
- Precise and complete determination of particle sizes in accordance with international standards
- Integrated data storage for up to 600 measuring results
- Integrated Modbus interface can be used to connect the device to existing machine control, and data acquisition systems
- Option to specify different alarm thresholds
- Software on CD (included)
- ATEX certified (Zone 2 / Category 3G)

### Order Codes



#### ① Series and Type

Laser Particle Counter **LasPaC II**

#### ② Version

Inline **I**

#### ③ Fluid Compatibility

Fluids based on Mineral Oil and Petroleum (standard) **M**  
 Phosphate Ester (e.g. Skydrol®) **E**  
 Specific Water Glycols **G**

#### ④ Computer Interface

RS-232 interface (standard) **232**  
 RS-485 interface (Modbus) **485**

#### ⑤ Display Mode

PC driven (standard) **D3**

#### ⑥ Moisture Sensor / Temperature Sensor

Without moisture sensor / temperature sensor **0**  
 With moisture sensor / temperature sensor **W**

Please note: The moisture/ temperature sensor is not suitable for Phosphate Ester (e.g. Skydrol®) and Water Glycol fluids.

#### ⑦ Design Code

Inlet pressure: 2 ... 400 bar / 29 ... 5801 PSI  
 Drain reservoir/system: atmospheric, zero back pressure **30**

#### ⑧ Version according to ATEX 94/9/EG

ATEX certification (Zone 2 / Cat. 3) **ATEX2**

### Technical Data

#### Channels

- >4, 6, 14, 21, 25, 38, 50, 70 µm(c) acc. to ISO 4406:1999

#### Measuring Range / Purity Classes

- ISO 4406:1999 code (NAS 1638 code 2 to 12) (SAE AS 4059 code 2 to 12)

#### Calibration

- Each device is individually calibrated using ISO Medium Test Dust (MTD) in accordance with ISO 11171 (1999)

#### Viscosity Range

- 1 ... 400 cSt

#### Temperature Range

- Media: +5 °C ... +80 °C / +41 °F ... +176 °F
- Ambient: +5 °C ... +80 °C / +41 °F ... +176 °F

#### Weight

- 14 kg / 30.87 lbs

#### Fluid Compatibility

- M: suitable for Synthetic and Mineral Oil based fluids, Diesel and Petroleum
- G: Austenitic Stainless Steel, FPM (Viton®): suitable for offshore and aqueous fluids
- E: Austenitic Stainless Steel, Perfluorinated Rubber (FFKM): suitable for Phosphate Ester and aggressive media

#### Max. Permissible Operating Pressure

- 2 bar ... 400 bar / 29 PSI ... 5801 PSI

#### Moisture Sensor / Temperature Sensor

- % RH (relative humidity) ±3 %
- ±3 °C / ±32 °F

#### Hose Connections

- Test coupling STAUFF Test 20 or comparable (M16 x 2)

#### Data Storage

- Max. 600 measuring results

#### Interfaces

- RS485, RS232, Modbus

#### Power Supply

- 24 V DC

#### Current Consumption

- Max. 1 Amp

#### Power

- Max. 24 W

#### Housing Surface Treatment

- Polyester vinyl (light grey)

#### Wetted Parts

- M: Steel, 303 St.St, Aluminium Alloy, Brass, Sapphire, NBR (Buna-N®), Nylon
- G: 303 St.St, NBR (Buna-N®), Sapphire, Brass, Aluminium Alloy, Nylon
- E: 303 St.St, Perfluorinated Rubber, Brass, Sapphire, Aluminium Alloy

### ATEX Directive 94/9/EG

Harmonises legal provisions of memberstates for devices and protection systems for designated use in potentially explosive areas.

#### ATEX Classification

- CE II 3G Ex nR IIB T6 X

#### ATEX Rating

- Zone 2 / Cat. 3G



## Bottle Sampling Unit - Typ LasPaC II-Bottle Sampler



Bottle Sampling Unit 110 ml and Accessories



Bottle Sampling Unit 110 ml



Bottle Sampling Unit 500 ml

### Order Codes

## LasPaC II - Bottle Sampler 110

①

②

### ① Type and Series

Laser Particle Counter

**LasPaC II**

### ② Bottle Sampling Unit

110 ml Bottle Sampling Unit suitable for Mineral Oil and Petroleum based fluids only

500 ml Bottle Sampling Unit suitable for Mineral Oil and Petroleum based fluids only

500 ml Bottle Sampling Unit suitable Phosphate Ester (e.g. Skydrol®)

**Bottle Sampler 110**
**Bottle Sampler 500**
**Bottle Sampler 500-E**

### Product Description

#### Analysis Everywhere - Bottle Sampling Unit

If a direct particle count on your system is not possible, the LasPaC II bottle sampler units allow you to take measurement samples for analysis at a later time.

#### Conditioning - The De-aeration Facility

A highly aerated fluid may lead to inaccurate results; therefore a de-aeration process has been incorporated into the bottle sampling units.

By evacuating the air from the sampling chamber, aeration within the fluid is removed, and the fluid is properly conditioned prior to sampling.

#### Your Choice - 110 ml or 500 ml Size

STAUFF offers two sizes of bottle sampling units for the LasPaC II devices: the 110 ml and the 500 ml units.

The 110 ml unit is supplied in an extra case including various accessories such as power supply, sampling hoses, pressure hoses, bottles (sample and waste) and adaptors. It is designed for mobile applications and is only compatible with Mineral Oil and Petroleum based fluids.

The standard version of the 500 ml unit is compatible with Mineral Oil and Petroleum based fluids; a Phosphate Ester (e.g. Skydrol®) compatible version of the 500 ml unit is available on request. Please contact STAUFF for details.

The 500 ml bottle sampling unit is delivered with the required power supply.

Please note that the moisture / temperature sensor does not work in combination with bottle sampler devices.

## Moisture / Temperature Sensor

### Product Description

#### More Oil Analysis - Oil Saturation and Temperature

In Mineral Oils and non-aqueous fire resistant fluids, water is undesirable. Once the water exceeds a saturation level (about 500 ppm for Mineral Oils) the fluid starts to appear hazy. Above this level there is a danger of free water accumulating in the system. This can lead to corrosion and accelerated wear.

As an option, all LasPaC II devices provide accurate and repeatable measurement of the saturation level of water in oil with the moisture / temperature sensor. The sensor is located internally in a specially designed housing and is positioned in the low pressure constant flow line.

#### Additional Information - Oil Temperature Readings

Beside the saturation level the optional moisture / temperature sensor of the LasPaC II units has the ability to measure the fluid temperature. This allows to provide a reference temperature for the RH (relative humidity / % saturation of water in oil) readings.

Both results, RH % and °C, are displayed on the main / test progress screen and on the printed analysis.

Please note: Due to the temperature gradient existing between the system tapping point and the RH / temperature module, the temperature reading can be 5° to 10° less than the actual system temperature, depending on operating conditions. The moisture / temperature sensor is not suitable for bottle sampling.

#### Saturation Levels

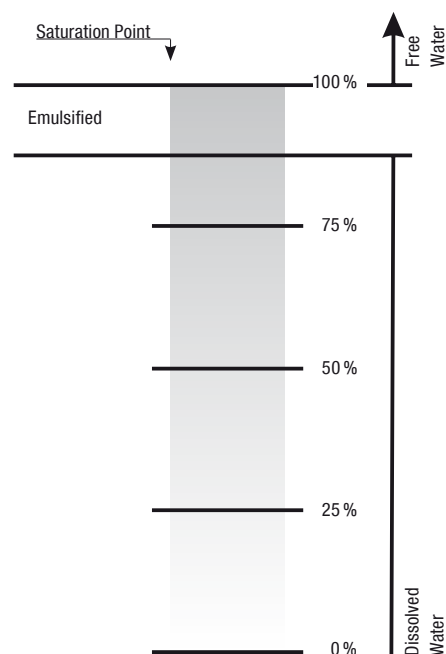
Since the effects of free (also emulsified) water are more harmful than those of dissolved water, water levels should remain always well below the saturation point.

However, even water in solution can cause damage, and therefore every reasonable effort should be made to keep saturation levels as low as possible.

There is no such thing as too little water. As a guideline, we recommend maintaining saturation levels below 50 % in all equipment.

Different oils have different saturation levels, and % saturation is the best and most practical measurement.

These results can be converted to ppm (parts per million), if the oil type saturation / temperature characteristic is known.



## Laser Particle Counter - Accessories



### Product Description: Screen Filter

An optional Screen Filter is available for heavily contaminated systems. The filter device is assembled directly to the supply line and allows particle counts in ambient conditions where normally the contamination is too high for a reliable test.

The Stainless Steel Filter has a mesh of 500 µm and is cleanable.

### Order Codes

## Accessories / Spare Parts

①

### ① Type of Accessories / Spare Parts

Waste hose 2 m / 6.56 ft	LasPaC II - Waste hose 2m
Pressure hose 1,5 m / 4.92 ft	SMS-20-1500-A-C6F
100 ml certified clean bottle (5 pieces)	LasPaC II - Bottle 100-C Set
250 ml certified clean bottle (5 pieces)	LasPaC II - Bottle 250-C Set
500 ml certified clean bottle (5 pieces)	LasPaC II - Bottle 500-C Set
100 ml glass sample bottle (5 pieces)	LasPaC II - Bottle 100 Set
250 ml glass sample bottle (5 pieces)	LasPaC II - Bottle 250 Set
500 ml glass sample bottle (5 pieces)	LasPaC II - Bottle 500 Set
Printer paper LasPaC II-P (5 pieces)	LasPaC II - P-Printer Paper Set
RS 232 to USB converter	Adaptor PPC-04/12-RS232-to-USB-CAB
Screen filter	LasPaC II - Screen Filter

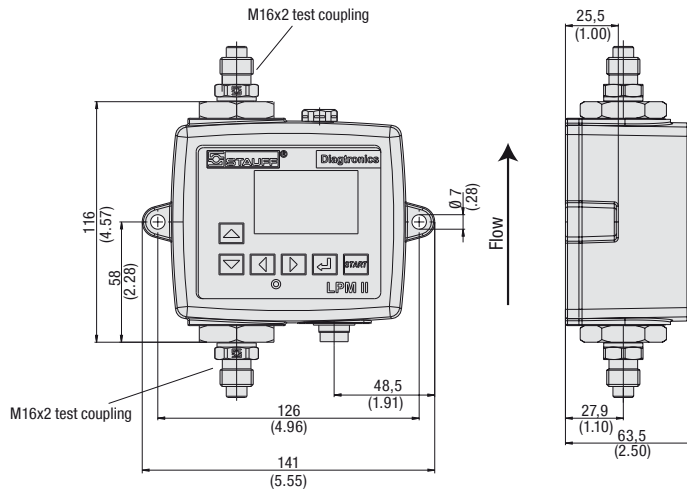


## Laser Particle Counter - Technical Data

Type	LasPaC II-P (Portable)	LasPaC II-M (Mobile)	LasPaC II-I (Inline)
Dimensions (mm/in) (W x D x H)	551 x 358 x 226	340 x 295 x 152	120 x 275 x 250
	21.69 x 14.09 x 8.90	13.40 x 11.61 x 5.98	4.72 x 10.83 x 9.84
Weight (kg/lbs)	13	4,75	4,80
	28.66	10.47	10.58
Keyboard	QWERTY keyboard integrated	-	-
Printer	Thermal printer integrated (384 dots per line)	-	-
Viscosity Range	1 ... 400 cSt	1 ... 400 cSt	1 ... 400 cSt
Calibration	MTD, ISO 11 171:1999	MTD, ISO 11 171:1999	MTD, ISO 11 171:1999
Analysis Range	ISO 8-24, ISO 4406 Code, NAS 1638 Code 2-12, SAE AS 4059 Code 2-12	ISO 8-24, ISO 4406 Code, NAS 1638 Code 2-12, SAE AS 4059 Code 2-12	ISO 8-24, ISO 4406 Code, NAS 1638 Code 2-12, SAE AS 4059 Code 2-12
Sensitivity	4, 6, 14, 21, 25, 38, 50, 68 $\mu\text{m}_{(c)}$	4, 6, 14, 21, 25, 38, 50, 68 $\mu\text{m}_{(c)}$	4, 6, 14, 21, 25, 38, 50, 68 $\mu\text{m}_{(c)}$
Sample Volume	8 ml (short)	8 ml (short)	8 ml (short)
	15 ml (normal)	15 ml (normal)	15 ml (normal)
	30 ml (dynamic)	30 ml (dynamic)	30 ml (dynamic)
	24 ml (bottle sampler)	24 ml (bottle sampler)	24 ml (bottle sampler)
	15 ml (continuous)	15 ml (continuous)	15 ml (continuous)
Pressure Range (bar/psi)	2 ... 400	2 ... 400	Series 30: 2 ... 400 29 ... 5801
	29 ... 5801	29 ... 5801	Series 31: 10 ... 400 145 ... 5801
Operating Temperature (°C/°F)	+5 ... +80	+5 ... +80	+5 ... +80
	+41 ... +176	+41 ... +176	+41 ... +176
Max. Concentration	ISO 24	ISO 24	ISO 24
Power Supply	110 ... 240 V AC 12 ... 24 V DC	110 ... 240 V AC 12 ... 24 V DC	110 ... 240 V AC 12 ... 24 V DC
Accumulator	Internal rechargeable battery	Internal rechargeable battery	-
Data Storage	600 tests	600 tests	600 tests
Fluid Compatibility	Mineral Oil / Petroleum based fluids; Phosphate Ester and water glycol compatible devices on request	Mineral Oil / Petroleum based fluids; Phosphate Ester and Water Glycol compatible devices on request	Mineral Oil / Petroleum based fluids; Phosphate Ester and Water Glycol compatible devices on request
Computer Interface	RS-232	RS-232	RS-232
External Alarm	External alarm socket	-	Signal in connector cable
Hose Connections	Test coupling STAUFF Test 20 or comparable (M16 x 2)	Test coupling STAUFF Test 20 or comparable (M16 x 2)	Test coupling STAUFF Test 20 or comparable (M16 x 2)
Accessories	Moisture/temperature sensor	Moisture/temperature sensor	Moisture/temperature sensor
	Bottle sampling unit (110 ml / 500 ml)	Bottle sampling unit (110 ml / 500 ml)	Bottle sampling unit (110 ml / 500 ml)
	Screen filter (500 $\mu\text{m}$ )	Screen filter (500 $\mu\text{m}$ )	Screen filter (500 $\mu\text{m}$ )



Particle Monitor - LPM II



Product Description

The LPM II Particle Monitor determines the contamination level of the measured fluid on eight size channels and offers precise and complete determination of particle sizes in accordance with international standards.

The LPM II is an automatic, optical particle counter with high-performance LEDs that work on the light obscuration principle. STAUFF recommends recalibrating the measuring equipment at regular intervals.

Options

- Moisture sensor / temperature sensor: RH in % (relative humidity) and temperatures in °C
- Phosphate Ester- (e.g. Skydrol®) and Water Glycol-compatible devices are available on request

Technical Data

Channels

- >4, 6, 14, 21, 25, 38, 50, 70 µm(c) according to ISO 4406:1999

Measuring Range / Purity Classes

- ISO 4406:1999 Code 0 to 25, NAS 1638 Class 00 to 12, AS4059 Rev. E. Tables 1 and 2 Sizes A-F: Classes 000 to 12, ISO 11218 Classes 00 to 12 (lower codes or classes are test time-dependent)

Precision

- ±1/2 Code for 4, 6, 14 µm(c)
- ±1 Code for larger particles

Calibration

- Each device is individually calibrated using ISO Medium Test Dust (MTD) in accordance with ISO 11171 (1999);

Flow

- 20 ... 400 ml/min / 0.005 ... 0.11 US GPM

Viscosity Range

- ≤ 1000 mm<sup>2</sup>/s

Medium Temperature

- 25 °C ... +80 °C / -13 °F ... +176 °F \*pressure-dependent

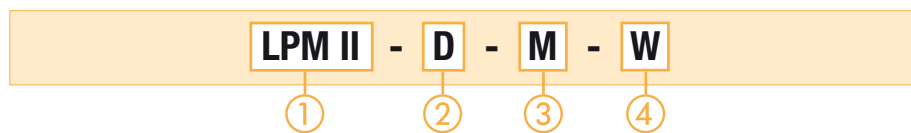
Ambient Temperature

- LMP II-0: -25 °C ... +80 °C / -13 °F ... +176 °F
- LMP II-D: -25 °C ... +55 °C / -13 °F ... +131 °F

Weight

- 1.15 kg / 2.53 lbs

Order Codes



① Series and Type

Particle Monitor (Incl. LPM II-CAB-P-FL-3 connecting cable)	LPM II
--	--------

② Version

With display and keypad	D
Without display and keypad	0

③ Fluid Compatibility

Fluids based on Mineral Oil and Petroleum (standard)	M
Phosphate Ester (e.g. Skydrol®)	E
Specific Water Glycols	G

Note: If you have any queries on fluid compatibility, please contact STAUFF.

Fluid Compatibility

- M: suitable for Synthetic and Mineral Oil based fluids, Diesel and Petroleum
- G: Austenitic Stainless Steel, FPM (Viton®): suitable for offshore and aqueous fluids
- E: Austenitic Stainless Steel, Perfluorinated Rubber (FFKM): suitable for Phosphate Ester and aggressive media

Max. Permissible Operating Pressure

- 400 bar / 5801 PSI static \*temperature-dependent (Note: In systems with extreme pressure peaks, please contact STAUFF)

Test Duration

- Settable between 10 ... 3600 sec., set ex-works to 120 sec.
- As standard with start delay and freely programmable test intervals

Moisture Sensor / Temperature Sensor

- % RH (relative humidity) ±3 %
- ±3 °C / ±32 °F

Volumetric Flow Measurement

- As display only

Hose Connections

- Test coupling STAUFF Test 20 or comparable (M16 x 2)

Data Storage

- Max. 4000 measuring results

④ Moisture Sensor / Temperature Sensor

Without moisture sensor / temperature sensor	0
With moisture sensor / temperature sensor	W

Note: In the case applications with extreme pressure peaks, please contact STAUFF.

Note: Versions "E" and "G" can only be supplied without moisture sensor / temperature sensor

Note: You need an interface module with either a USB or an Ethernet interface for exporting and programming.

Interfaces

- RS485, RS232, Modbus, CAN Bus

International Protection Rating

- IP 65: Dust-proof and protected from spray
- Impact resistance rating IK04

Power Supply

- 9 ... 36 V DC

Current Consumption

- 12 V: 70 mA (LPM II-0), 150 mA (LPM II-D)
- 24 V: 40 mA (LPM II-0), 80 mA (LPM II-D)
- 36 V: 30 mA (LPM II-0), 60 mA (LPM II-D)

Power

- <2.2 W

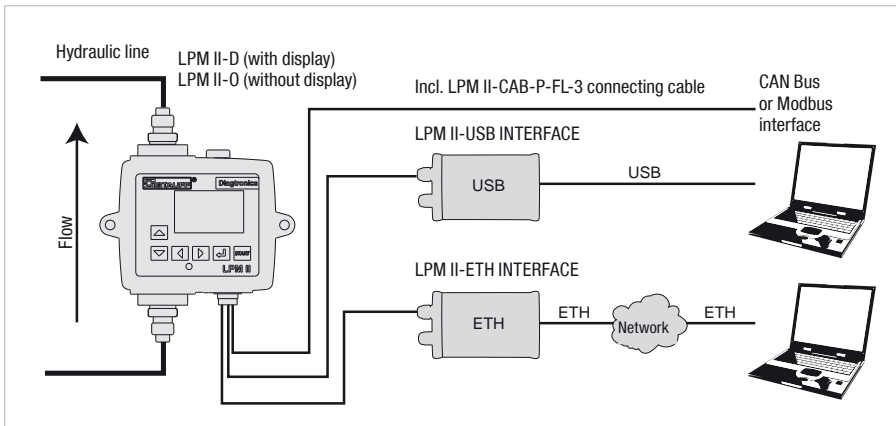
Housing Surface Treatment

- Painted, Polyurethane based paint, according to BSX34 colour BS381-638 (dark grey)
- Tested according to: BS2X34A and BS2X34B, MMO114 and SP-J-513-083 Part II. Cl. A
- The unit meets: MIL-PRF-85285

Wetted parts

- M: C46400 Cu Alloy, 316 Stainless Steel, FPM (Viton®), FR4, Sapphire
- G: 316 Stainless Steel, FPM (Viton®), Sapphire
- E: 316 Stainless Steel, Perfluorinated Rubber (FFKM), Sapphire, EPDM

## Interface Module with USB or Ethernet Interface - LPM II-USB/ETH INTERFACE



Connection diagram: PC connection of the LPM II Particle Monitor

### Order Code

## LPM II - USB INTERFACE

①

#### ① Series and Type

Interface module with  
USB interface

**LPM II-USB INTERFACE**

#### Scope of supply:

- Power supply unit
- Interface module with USB interface
- Connecting cable (3 m / 9.84 ft)
- USB cable

### Order Code

## LPM II - ETH INTERFACE

①

#### ① Series and Type

Interface module with  
Ethernet interface

**LPM II-ETH INTERFACE**

#### Scope of supply:

- Power supply unit
  - Interface module with Ethernet interface
  - Connecting cable (3 m / 9.84 ft)
- Note: An Ethernet cable is not supplied.

### Product Description

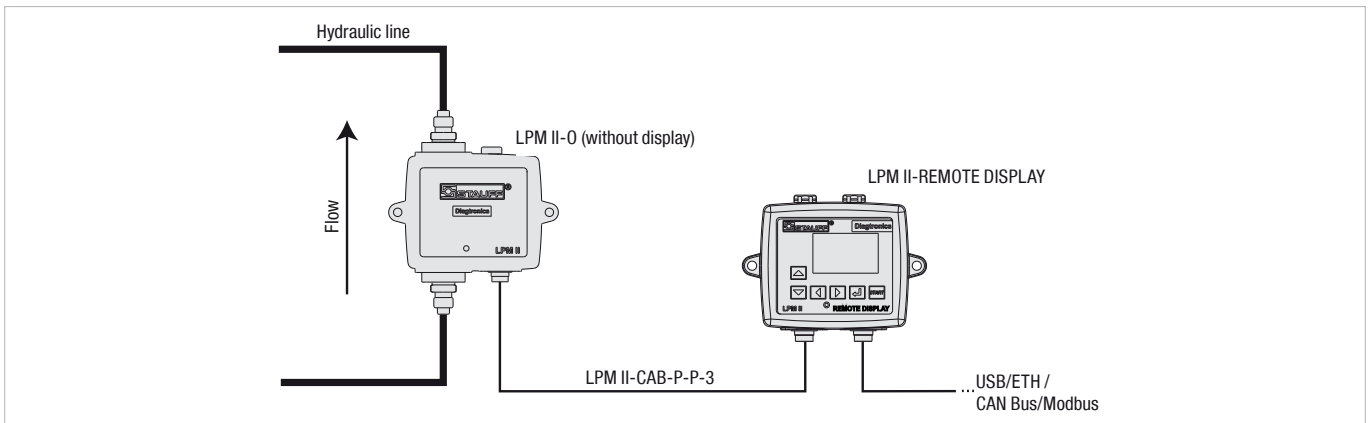
The LPM II is connected to an EDP system or a laptop/PC using an interface module with a USB or an Ethernet interface.

Either interface module is connected to the LPM II using a connecting cable (3 m / 9.84 ft). With the power supply unit connected, the LPM II is supplied with current via the connecting cable.

The interface modules allow you to evaluate the measured data and to carry out programming using the supplied software.

In USB operation, the LPM II can be supplied with current via the USB cable too.

## Remote Display Unit - LPM II-REMOTE DISPLAY



Connection diagram: Remote display

### Order Code

## LPM II-REMOTE DISPLAY

①

#### ① Series and Type

**LPM II-REMOTE DISPLAY**

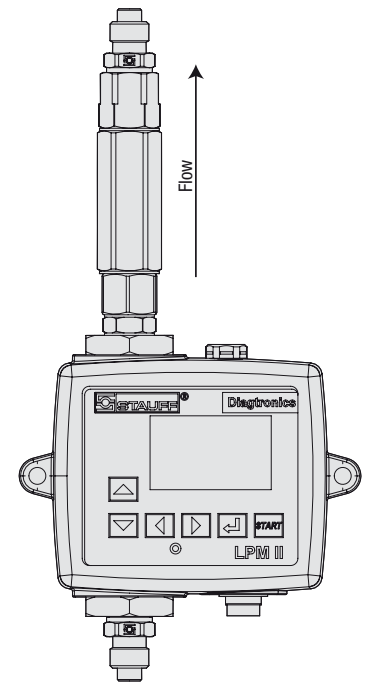
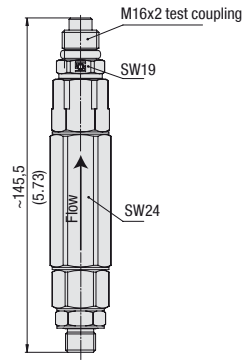
#### Scope of supply:

- Remote Display
- LPM II-CAB-P-P-3 connecting cable

### Product Description

In the case of applications outside the operator's field of view or in locations that are difficult to access, it is possible to display via a remote display the values that the LPM II measured.

**Flow Control Valve - LPM II-DAV**



**Product Description**

In systems in which the volumetric flow or the pressure is too high, the optimum flow is achieved with the use of a flow control valve. It can process pressures from 4 bar ... 400 bar / 58 PSI ... 5801 PSI.

The LPM II-DAV, flow control valve is connected to the hydraulic outlet of the LPM II via the connection fittings.

**Max. Permissible Operating Pressure**

- 400 bar / 5801 PSI
- (Note: Note that a minimum operating pressure of 4 bar / 58 PSI must be maintained for the proper function of the flow control valve.)

**Order Code**



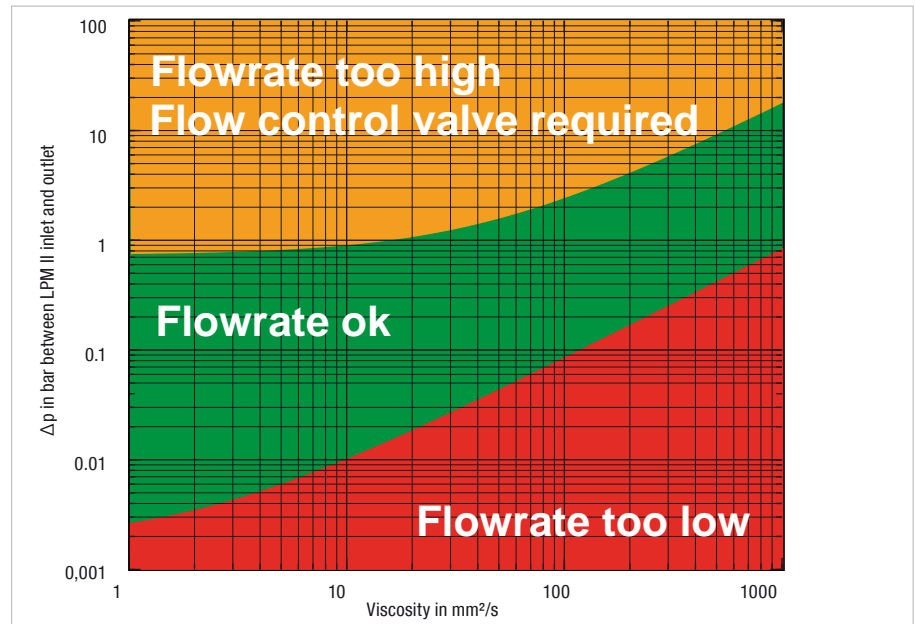
① **Series and Type**

Flow Control Valve **LPM II-DAV**

② **Fluid Compatibility**

Fluids based on Mineral Oil and Petroleum (standard)	<b>M</b>
Phosphate Ester (e.g. Skydrol®)	<b>E</b>
Specific Water Glycols	<b>G</b>

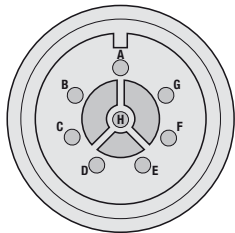
LPM II with flow control valve LPM II-DAV



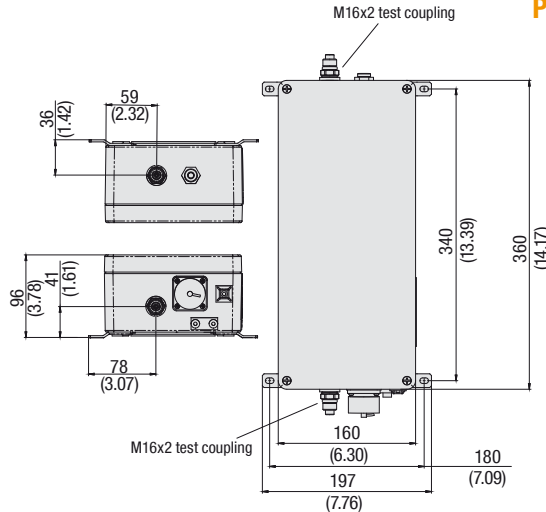
## Particle Monitor ■ LPM II-...-ATEX2

## Wiring Diagram

Note: Please note that an ATEX approved connecting cable is not included in the scope of delivery of LPM II-0-...-ATEX2. A corresponding ATEX plug is included.



- A Data+
- B Test start
- C Data-
- D Output
- E I/C Common
- F Output 2
- G Power 0V
- H Power +12-24V DC



## Order Codes

**LPM II - 0 - M - 0 - ATEX2**

- ① ② ③ ④ ⑤

## Product Description

The ATEX version of the Particle Monitor LPM II is approved for use in hazardous areas (zone 2 / category 3G). The device thus meets the conditions to be used in e.g. oil and gas industry or chemical and process industry.

## Product Features

- Determines contamination level of measured fluids in 8 size channels
- Precise and complete determination of particle sizes in accordance with international standards
- Integrated data storage for up to 4000 measuring results
- Integrated Modbus and CAN Bus interfaces can be used to connect the device to existing machine control, and data acquisition systems
- Option to specify different alarm thresholds
- Software on CD (included)
- ATEX certificated (Zone 2 / Category 3G)

## ① Series and Type

Particle Monitor **LPM II**

## ② Version

Without display and keypad **0**

## ③ Fluid Compatibility

Fluids based on Mineral Oil and Petroleum (standard) **M**  
 Phosphate Ester (e.g. Skydrol®) **E**  
 Specific Water Glycols **G**

Note: If you have any queries on fluid compatibility, please contact STAUFF.

## ④ Moisture Sensor / Temperature Sensor

Without moisture sensor / temperature sensor **0**  
 With moisture sensor / temperature sensor **W**

## ⑤ Version according to ATEX 94/9/EG

ATEX certification (Zone 2 / Cat. 3) **ATEX2**

Note: Versions „E“ and „G“ can not be supplied with moisture sensor / temperature sensor.

Note: You need an interface module with either USB or an ethernet interface for exporting and programming.

## Technical Data

## Channels

- >4, 6, 14, 21, 25, 38, 50, 70 µm(c) acc. to ISO 4406:1999

## Measuring Range / Purity Classes

- ISO 4406:1999 Code 0 to 25, NAS 1638 Klasse 00 to 12, AS4059 Rev. E. tables 1 and 2 sizes A-F: classes 000 to 12, ISO 11218 classes 00 to 12 (lower codes or classes are test time-dependent)

## Accuracy

- ±1/2 code for 4, 6, 14 µm(c)
- ±1 code for larger particles

## Calibration

- Each device is individually calibrated using ISO Medium Test Dust (MTD) in accordance with ISO 11171 (1999)

## Flow

- 20 ... 400 ml/min / .005 ... .11 US GPM

## Viscosity Range

- ≤ 1000 mm<sup>2</sup>/s

## Temperature Range

- Media: -25 °C ... + 80 °C / -13 °F ... +176 °F
- Ambient: -5 °C ... +80 °C / +23 °F ... +176 °F

## Weight

- 5,5 kg / 12.16 lbs

## Power Supply

- 9 ... 36 V DC

## Fluid Compatibility

- M: suitable for Synthetic and Mineral Oil based fluids, Diesel and Petroleum
- G: Austenitic Stainless Steel, FPM (Viton®): suitable for offshore and aqueous fluids
- E: Austenitic Stainless Steel, Perfluorinated Rubber (FFKM): suitable for Phosphate Ester and aggressive media

## Max. Permissible Operating Pressure

- 400 bar / 5801 PSI (Note: In systems with extreme pressure peaks, please contact STAUFF)

## Test Duration

- Settable between 10 ... 3600 sec., set ex-works to 120 sec.
- As standard with start delay and freely programmable test intervals

## Moisture Sensor / Temperature Sensor

- % RH (relative humidity) ±3 %
- ±3 °C / ±32 °F

## Volumetric Flow Measurement

- As display only

## Hose Connections

- Test coupling STAUFF Test 20 or comparable (M16 x 2)

## Data Storage

- Max. 4000 measuring results

## Interfaces

- RS485, RS232, Modbus, CAN Bus

## Current Consumption

- 12 V: 70 mA
- 24 V: 40 mA
- 36 V: 30 mA

## Power

- <2,2 W

## Housing Surface Treatment

- Polyester vinyl paint (light grey)

## Wetted Parts

- M: C46400 Cu Alloy, 316 Stainless Steel, FPM (Viton®), FR4, Sapphire
- G: 316 Stainless Steel, FPM (Viton®), Sapphire
- E: 316 Stainless Steel, Perfluorinated Rubber (FFKM), Sapphire, EPDM

## ATEX Directive 94/9/EG

Harmonises legal provisions of memberstates for devices and protection systems for designated use in potentially explosive areas.

## ATEX Classification

- CE II 3G Ex nR IIB T6 X

## ATEX Rating

- Zone 2 / Cat. 3G



## Oil Sampling Kit ■ Type SFSK-1/ -2



### Product Description

Fluid analysis is a crucial component of any oil management program. Early detection of potential problems can prevent costly repairs and downtime. STAUFF SFSK oil analysis kits provide the tools to take a sample from a STAUFF test coupling or directly from a reservoir or sump.

For this the supplied hose is directly connected to the test coupling with an adaptor and the fluid is filled into the supplied vials.

But there is also the possibility to draw up the sample directly from a tank with the hand pump and fill it into the vial.

This sample set is available in two versions with BSP and NPT test couplings.

### Scope of Delivery

- Contains vacuum pump for drawing samples of oil equipment
- 1 m / 3.28 ft hose for insertion into tank
- Two sample bottles
- STAUFF test points and adaptor allows oil sample to be taken from STAUFF Test 20 test points

### Components

#### SFSK-1

- 1x Fluid Sample Pump FSP-38
- 1x Hose adaptor SHA-20-5,5mm
- 1 m / 3.28 ft Push on 1/4" hose
- 1x SMK20-1/4NPT-VD-C6F
- 1x SMK20-7/16UNF-VE-C6F
- Sample bottles

#### SFSK-2

- 1x Fluid Sample Pump FSP-38
- 1x Hose adaptor SHA-20-5,5mm
- 1 m / 3.28 ft Push on 1/4" hose
- 1x SMK20-G1/4-PC-C6F
- 1x SMK20-M10x1-PA-C6F
- Sample bottles

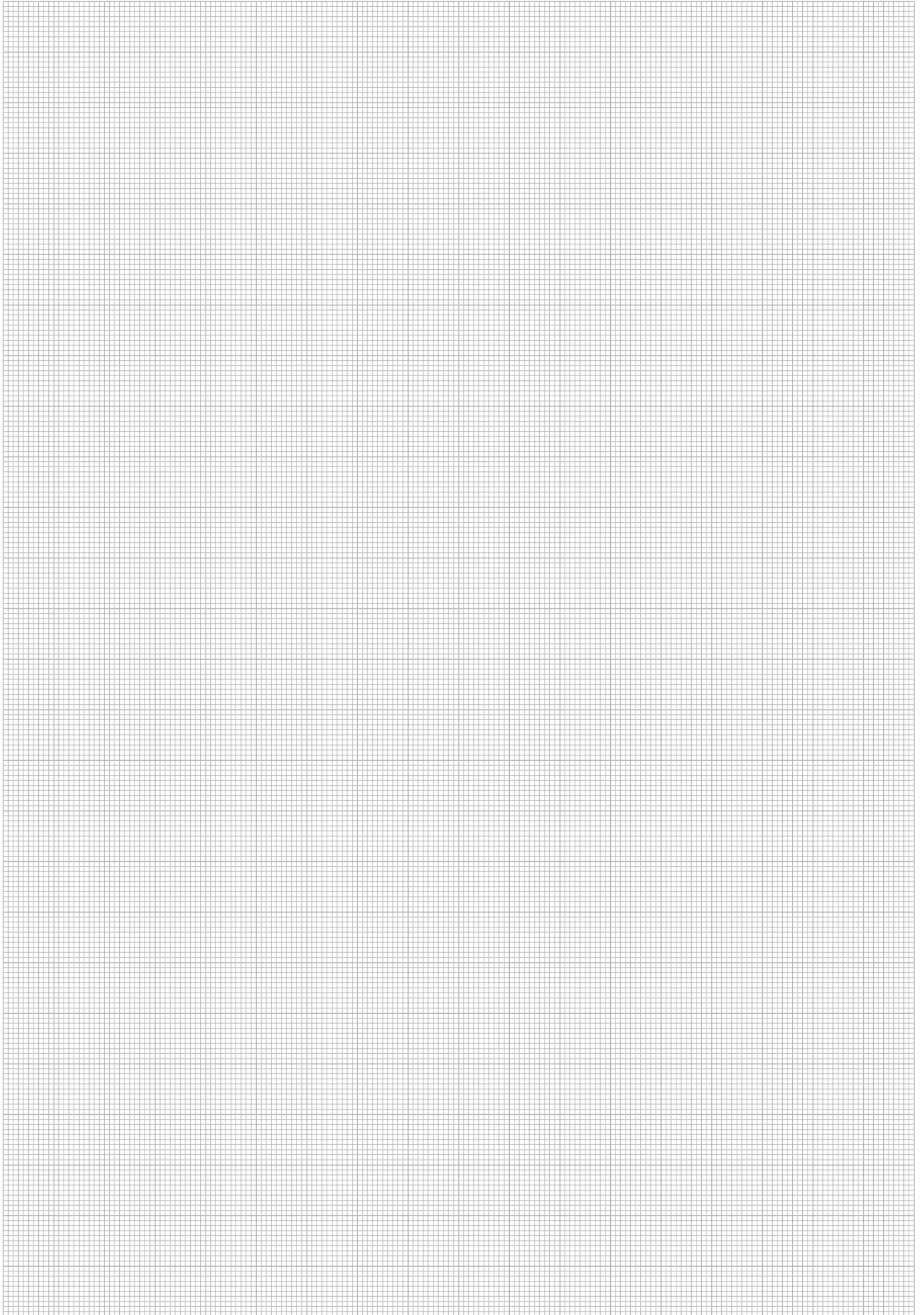
### Order Codes

**SFSK-1**

①

#### ① Series and Type

NPT type	<b>SFSK-1</b>
BSP type	<b>SFSK-2</b>



## Sensors and Switches



The continuous monitoring of critical hydraulic systems has become normal in today's market. The automatic and timely detection of problems in hydraulic systems can predict component failure and thereby eliminate catastrophic system failures. The advent of automated processes systems have made continuous monitoring and control components indispensable.

With the STAUFF line of industrial and mobile sensor, it is possible to continuously monitor and control your machine and process.

The wide range of STAUFF transmitters and switches available, enables proper fit to any application need.

The STAUFF line of simple pressure and temperature switches are factory set, or adjustable via a screw. The switches can be ordered normally open, normally closed, or SPDT.

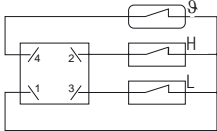
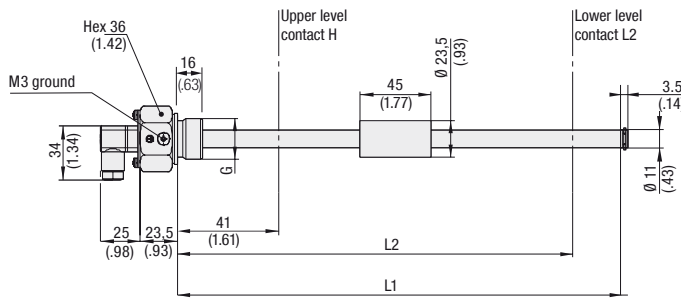
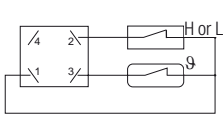
The STAUFF transmitters are available in many pressure and temperature ranges. Output signals are available in 4 ... 20 mA and 0 ... 10 V. Other signals are available on many items. The process connections are available in NPT, SAE, BSP for international use.

All sensors can be ordered with flying leads, DIN connectors or other options to fit the environment.



## Level-Temperature Switch - Type SLTS

## Wiring Scheme

 two level contacts  
one temperature contact

 one level contact  
one temperature contact


## Order Codes

**SLTS 12 - 0 - H41 - L251 - B12 - G048 - M12**


## ① Series and Type

 Level-Temperature Switch **SLTS**

## ② Stem Length

 L1: 305 mm / 12 in L2: 251 mm / 9.88 in **12**  
 L1: 457 mm / 18 in L2: 403 mm / 15.87 in **18**

## ③ Switching Temperature

 Without temperature switch **0**  
 +60 °C / +140 °F **140**  
 +70 °C / +158 °F **158**

## ④ H (Upper Level Contact)

 Without upper level contact **0**  
 41 mm / 1.61 in **H41**

## ⑤ L2 (Lower Level Contact)

 Without lower level contact **0**  
 251 mm / 9.88 in (SLTS 12 only) **L251**  
 403 mm / 15.87 in (SLTS 18 only) **L403**

## ⑥ Process Connection

 G3/4 (standard option) **B12**  
 1 NPT **N16**

Note: Others on request

## ⑦ Voltage (Volt AC/DC)

 48 Volt max. (standard option) **G048**  
 115 Volt max. (for thread N16 only) **G115**

## ⑧ Electrical Connection

 similar DIN VDE 0627 / IEC 61984 **CB**  
 M12 pin terminal **M12**

## Product Description

The STAUFF Level-Temperature Switches (SLTS Series) are unique in their design and modularity. One of the greatest advantages is the ability of the end-user to adjust the switching level. The internal support wire carrying the level and temperature switches makes it a simple and quick job to change the level switch position.

**Level contact positions (L2, H) are set as given in the order code. They can be adjusted individually later on. Please consider a minimum distance of 40 mm / 1.57 in between the switching points.**

## Features

- Suitable for Mineral Oil and HFC fluids, other fluids on request
- Either 1 or 2 level contacts available
- 1 integrated temperature sensor (optional)
- Standard electrical function:
  - Level contacts: Normally closed, opens with falling level
  - Temperature contacts: Normally closed, opens with rising temperature

**STAUFF Level-Temperature Switches SLTS are available with other electrical functions on request.**

## Options

- 1 NPT and others available on request
- max. 115 Volt switching (for thread N16 only)

## Technical Data

## Materials

- Stem: Brass
- Float/Sealing: NBR (Buna-N®)

- Max. operating temp.: +80 °C / +176 °F

## Electrical Data and Output

- Max. current level contact: 0.5 A
- Max. current temp. contact: 2.0 A
- Contact load level contact: 10 VA
- Max. operating voltage: (See ordering code)

- Specific gravity of fluid:  $\geq 0,8 \text{ kg/dm}^3$
- Hysteresis: +18 °C / +64.4 °F

## Protection Rating

- IP 65 protection rating: Dust tight and protected against water jets

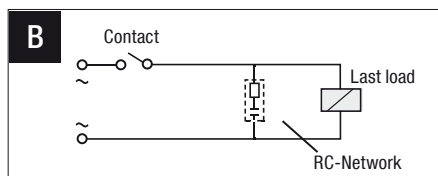
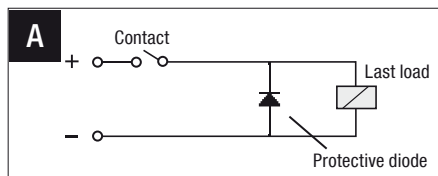
## Contact Life Time

Due to their design Reed contacts have a very high life expectancy. However, it is worthwhile to note the following information.

## Contact Protection

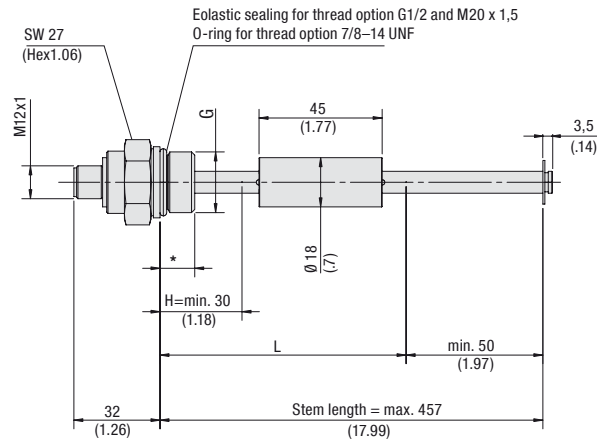
To reduce the high reverse voltage produced when a reed switch opens, the following contact protection can be applied.

- DC voltage: a diode parallel to the load, see figure A
- AC voltage: a RC-network parallel to the load, see figure B and table below



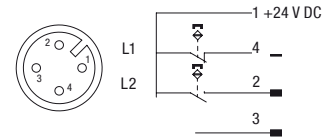
Open contact voltage V	10 VA		25 VA		50 VA		75 VA		100 VA	
	R (Ω)	C (μF)	R (Ω)	C (μF)	R (Ω)	C (μF)	R (Ω)	C (μF)	R (Ω)	C (μF)
24	22	0,022	1	0,1	1	0,47	1	1	1	1
48	120	0,0047	22	0,022	1	0,1	1	0,47	1	0,47
110	470	0,001	120	0,0047	22	22	22	0,047	22	0,1

## Level-Temperature Switch Aluminium ▪ Type SLTSA



\* 14 (.55) for thread option G1/2 and M20 x 1,5  
13 (.51) for thread option 7/8-14 UNF

### Wiring Scheme



### Product Description

Efficient and inexpensive indication of level and temperature.

Level contact positions (L2, H) are set as given in the order code. They can be adjusted individually later on. Please consider a minimum distance of 50 mm / 1.97 in between the switching points.

### Features

- Threads: G1/2, 7/8-14 UNF, M20 x 1,5
- Stem length available from 140 ... 457 mm / 5.5 ... 18.00 in
- Electrical connection M12 / 4-Pin terminal

### Technical Data

#### Materials

- Connector: Anodized Aluminium
- Stem: Brass
- Float: Polyurethane
- Sealing: NBR (Buna-N®)

#### Electrical Connection

- Connector type: M12 x 1 / 4-Pin

- Max. operating pressure: 1 bar / 14.5 PSI

#### Permissible Temperature

- Operating: -20 °C ... +80 °C / -4 °F ... +176 °F

- Specific gravity of fluid:  $\geq 0,8 \text{ kg/dm}^3$

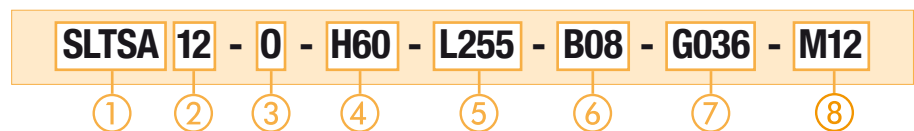
#### Electrical Data and Output

- Level contact type: K40
- Max. operating voltage: 36 V
- Max. current: 0.5 A
- Contact load: 5 VA

#### Protection Rating

- IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time

### Order Codes



#### ① Series and Type

Level-Temperature Switch Aluminium **SLTSA**

#### ② Stem Lengths

140 mm / 5.51 in	<b>55</b>
170 mm / 6.69 in	<b>67</b>
215 mm / 8.46 in	<b>85</b>
280 mm / 11.02 in	<b>11</b>
305 mm / 12.01 in	<b>12</b>
370 mm / 14.57 in	<b>146</b>
457 mm / 18.00 in	<b>18</b>

#### ③ Switching Temperature

Without temperature switch **0**

#### ④ H (Upper Level Contact)

30 mm / 1.18 in (only for stem length code 55)	<b>H30</b>
50 mm / 1.97 in (only for stem length code 67)	<b>H50</b>
60 mm / 2.36 in (only for stem length codes 55, 12, 18)	<b>H60</b>
85 mm / 3.35 in (only for stem length code 85)	<b>H85</b>
90 mm / 3.54 in (only for stem length codes 67, 12, 18)	<b>H90</b>
135 mm / 5.31 in (only for stem length code 85)	<b>H135</b>
200 mm / 7.87 in (only for stem length code 11)	<b>H200</b>
290 mm / 11.42 in (only for stem length code 146)	<b>H290</b>

#### ⑤ L (Lower Level Contact)

90 mm / 3.54 in (only for stem length code 55)	<b>L90</b>
120 mm / 4.72 in (only for stem length code 67)	<b>L120</b>
165 mm / 6.50 in (only for stem length code 85)	<b>L165</b>
230 mm / 9.06 in (only for stem length code 11)	<b>L230</b>
255 mm / 10.04 in (only for stem length code 12)	<b>L255</b>
320 mm / 12.60 in (only for stem length code 146)	<b>L320</b>
407 mm / 16.02 in (only for stem length code 18)	<b>L407</b>

#### ⑥ Process Connection

G1/2 (standard option)	<b>B08</b>
7/8-14 UNF	<b>U10</b>
M20 x 1,5	<b>M20</b>

#### ⑦ Voltage

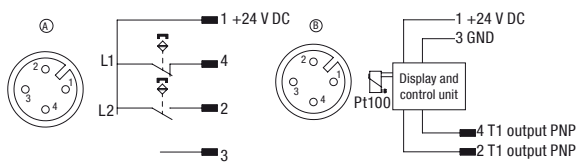
36 Volt max.	<b>G036</b>
--------------	-------------

#### ⑧ Electrical Connection

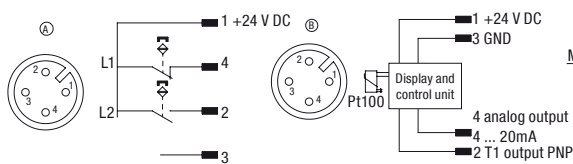
M12 / 4-Pin terminal	<b>M12</b>
----------------------	------------

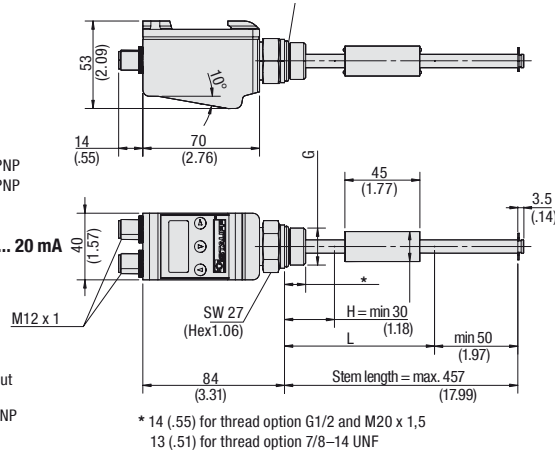
**Wiring Scheme**

for SLTSD...-1-... :

**2 Level contacts + 2 temperature PNP switch outputs**


for SLTSD...-2-... :

**2 Level contacts + 1 temperature PNP switch output + 1 Analog Output 4 ... 20 mA**

**Level-Temperature Switch Display - Type SLTSD**

 Elastic sealing for thread option G1/2 and M20 x 1,5  
 O-ring for thread option 7/8-14 UNF

**Order Codes**

**1 Series and Type**

 Level-Temperature Switch Display **SLTSD**
**2 Stem Length**

140 mm / 5.51 in	<b>55</b>
170 mm / 6.69 in	<b>67</b>
215 mm / 8.46 in	<b>85</b>
280 mm / 11.02 in	<b>11</b>
305 mm / 12.01 in	<b>12</b>
370 mm / 14.57 in	<b>146</b>
457 mm / 18.00 in	<b>18</b>

**3 Temperature Output Options**

2x PNP switch outputs	<b>1</b>
1x PNP switch outputs + 1x analog 4 ... 20mA	<b>2</b>

**4 H (Upper Level Contact)**

30 mm / 1.18 in (only for stem length code 55)	<b>H30</b>
50 mm / 1.97 in (only for stem length code 67)	<b>H50</b>
60 mm / 2.36 in (only for stem length codes 55, 12, 18)	<b>H60</b>
85 mm / 3.35 in (only for stem length code 85)	<b>H85</b>
90 mm / 3.54 in (only for stem length codes 67, 12, 18)	<b>H90</b>
135 mm / 5.31 in (only for stem length code 85)	<b>H135</b>
200 mm / 7.87 in (only for stem length code 11)	<b>H200</b>
290 mm / 11.42 in (only for stem length code 146)	<b>H290</b>

**5 L (Lower Level Contact)**

90 mm / 3.54 in (only for stem length code 55)	<b>L90</b>
120 mm / 4.72 in (only for stem length code 67)	<b>L120</b>
165 mm / 6.50 in (only for stem length code 85)	<b>L165</b>
230 mm / 9.06 in (only for stem length code 11)	<b>L230</b>
255 mm / 10.04 in (only for stem length code 12)	<b>L255</b>
320 mm / 12.60 in (only for stem length code 146)	<b>L320</b>
407 mm / 16.02 in (only for stem length code 18)	<b>L407</b>

**6 Process Connection**

G1/2 (standard option)	<b>B08</b>
7/8-14 UNF	<b>U10</b>
M20 x 1,5	<b>M20</b>

**7 Voltage**

36 Volt max.	<b>G036</b>
--------------	-------------

**8 Electrical Connection**

M12 / 4-Pin terminal	<b>M12</b>
----------------------	------------

**Product Description**

Combination of a temperature controller with level indication in a small inexpensive package.

**Level contact positions (L2, H) are set as given in the order code. They can be adjusted individually later on. Please consider a minimum distance of 50 mm / 1.97 in between the switching points.**
**Features**

- Threads: G1/2, 7/8-14 UNF, M20 x 1,5
- Stem length available from 140 ... 457 mm / 5.5 ... 18.00 in
- Electrical connection M12 / 4-Pin terminal

**Technical Data**
**Materials**

- Housing: Polyamide
- Connector: Anodized Aluminium
- Stem: Brass
- Float: Polyurethane

**Electrical Connection**

- Connector type: M12 x 1 / 4-Pin

- Max. operating pressure: 1 bar / 14.5 PSI

**Permissible Temperature**

- Operating: -20°C ... +80°C / -4°F ... +176°F
- Specific gravity of fluid: ≥0,8 kg/dm<sup>3</sup>

**Level Contacts (Connector A)**

- Level contact type: K40
- Max. operating voltage: 36 V
- Max. current: 0.5 A
- Contact load: 5 VA

**Temperature Outputs (Connector B)**

- Output option 1: Two PNP programmable switching outputs
- Output option 2: One PNP switching output and one 4 ... 20 mA analog output (0 ... 10 V, 2 ... 10 V, 0 ... 5 V or 4 ... 20 mA settable via display)
- Max. current: 0.5 A
- Load resistance: 500 Ω

**Display**

- Display temp. range: -20°C ... +120°C / -4°F ... +248°F
- Alarm indication range: 0°C ... +100°C / +32°F ... +212°F
- LED display: 4 digit, 7 segment
- Resolution: 0,5°C / 1°F
- Current consumption at power up: 100 mA for 100ms
- Current consumption at operating: 50 mA
- Supply voltage: 10 ... 32 V DC
- Ambient temperature: -20°C ... +70°C / -4°F ... +158°F
- Accuracy: ±1 % FS\*
- Sensor type: Temperature: PT100

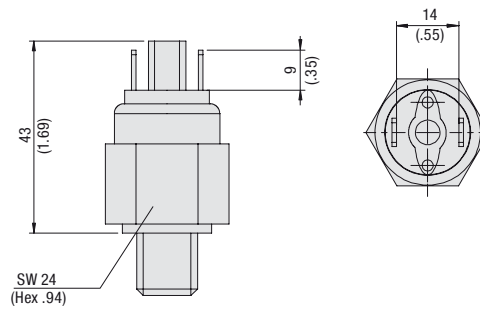
**Protection Rating**

- IP 65 protection rating: Dust tight and protected against water jets (IP 67 with accordant connection plug)

\*FS = Full Scale

Dimensional drawings: All dimensions in mm (in).

## Pressure Switch ▪ Type SPW-...-NC/NO



### Wiring Scheme

#### Wiring diagram normally open



#### Wiring diagram normally closed



### Product Description

The SPW Mechanical Pressure Switch is available in a variety of pressure ranges. This durable unit has an adjustable set point that is easily changed by using the adjustment screw which is located under the protective cap.

### Features

- Normally open, normally closed
- Pressure ranges available up to 206 bar / 3000 PSI
- G1/4 and 1/4 NPT process connection
- NBR (Buna-N®) sealings
- Steel, zinc plated
- Spade terminal connection

### Options

- G1/8, 1/8 NPT and 7/16–20 UNF process connections
- FPM (Viton®) and EPDM sealings on request
- Flying leads with shrink tubing, flying leads, rubber boot, Deutsch connector, weather pack connector female/male and IP option on request
- 316 Stainless Steel

### Technical Data

#### Materials

- Body: Steel, zinc plated or 316 Stainless Steel
- Connector: Polyamide

#### Electrical Data and Output

- Switching function: Normally open (NO), normally closed (NC)
- Cycle rate: 30 CPM
- Mechanical life: 2000000 operations
- Max. electrical rating: 100 VA

#### Permissible Temperatures

- NBR (Buna-N®): -9 °C ... +110 °C / +15 °F ... +230 °F
- FPM (Viton®): -18 °C ... +110 °C / 0 °F ... +230 °F
- EPDM: -40 °C ... +110 °C / -40 °F ... +230 °F

#### Process Connection

- G1/8, G1/4, 1/8 NPT, 1/4 NPT and 7/16–20UNF

#### Electrical Connection

- Spade terminals

#### Protection Rating

- IP 00 protection rating

### Order Codes



#### ① Series and Type

Mechanical Pressure Switch **SPW**

#### ② Version

1 ... 4 bar / 14.5 ... 60 PSI	<b>B0004</b>
3 ... 10 bar / 40 ... 150 PSI	<b>B0010</b>
6 ... 18 bar / 75 ... 275 PSI	<b>B0018</b>
11 ... 34 bar / 150 ... 500 PSI (standard option)	<b>B0034</b>
19 ... 55 bar / 275 ... 800 PSI	<b>B0055</b>
28 ... 75 bar / 400 ... 1100 PSI (standard option)	<b>B0075</b>
69 ... 206 bar / 1000 ... 3000 PSI (standard option)	<b>B0206</b>

#### ③ Process Connection

G1/8	<b>B02</b>
G1/4 (standard option)	<b>B04</b>
1/8 NPT	<b>N02</b>
1/4 NPT (standard option)	<b>N04</b>
7/16–20 UNF	<b>U04</b>

#### ④ Switching Outputs

Normally open (standard option)	<b>NO</b>
Normally closed	<b>NC</b>

#### ⑤ Electrical Connection

Spade terminals (standard option)	<b>SP</b>
Flying leads	<b>F</b>
Flying leads with shrink tubing	<b>FL</b>
Deutsch DT04-3P / 3-Pin	<b>D</b>
Rubber boot	<b>RB</b>
Weather pack connector female	<b>WF</b>
Weather pack connector male	<b>WM</b>
IP Option (IP 66)	<b>IP</b>

Note: IP Option requires a fixed set point indicate at the end of part number.

#### ⑥ Body Material

Steel, zinc plated (standard option)	<b>(none)</b>
316 Stainless Steel	<b>W5</b>

### Pressure Ranges

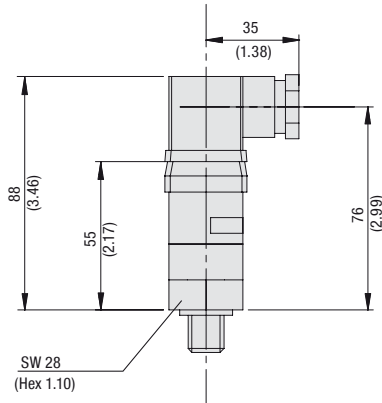
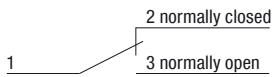
Version	Pressure Range (bar/psi)	Maximum Pressure (bar/psi)	Burst Pressure (bar/psi)	Repeatability	Average Deadband
<b>B0004</b>	1 ... 4	410	600	±0,10 bar + 3 % of setting	0,21 bar + 5 % of setting
	14.5 ... 60	6000	9000	±1.5 PSI + 3 % of setting	3 PSI + 5 % of setting
<b>B0010</b>	3 ... 10	410	600	±0,17 bar + 3 % of setting	0,35 bar + 6 % of setting
	40 ... 150	6000	9000	±2.5 PSI + 3 % of setting	5 PSI + 6 % of setting
<b>B0018</b>	6 ... 18	410	600	±0,26 bar + 3 % of setting	0,48 bar + 8 % of setting
	75 ... 275	6000	9000	±3.75 PSI + 3 % of setting	7 PSI + 8 % of setting
<b>B0034*</b>	11 ... 34	410	600	±0,34 bar + 3 % of setting	0,69 bar + 10 % of setting
	150 ... 500	6000	9000	±5 PSI + 3 % of setting	10 PSI + 10 % of setting
<b>B0055</b>	19 ... 55	410	600	±0,55 bar + 3 % of setting	10,3 bar + 11 % of setting
	275 ... 800	6000	9000	±8 PSI + 3 % of setting	15 PSI + 11 % of setting
<b>B0075*</b>	28 ... 75	410	600	±0,90 bar + 3 % of setting	2,07 bar + 12 % of setting
	400 ... 1100	6000	9000	±13 PSI + 3 % of setting	30 PSI + 12 % of setting
<b>B0206*</b>	69 ... 206	410	600	±2,41 bar + 3 % of setting	4,83 bar + 14 % of setting
	1000 ... 3000	6000	9000	±35 PSI + 3 % of setting	70 PSI + 14 % of setting

\* Standard option

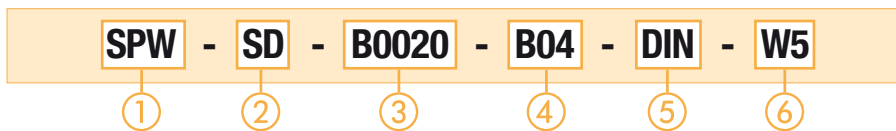
Dimensional drawings: All dimensions in mm (in).

## Pressure Switch ▪ Type SPW-SD

## Wiring Scheme



## Order Codes



## ① Series and Type

 Mechanical Pressure Switch **SPW**

## ② Switching Function

 SPDT **SD**

## ③ Version

0,7 ... 2 bar / 10 ... 30 PSI	<b>B0002</b>
1,7 ... 5,2 bar / 25 ... 75 PSI	<b>B0005</b>
4,5 ... 20,7 bar / 65 ... 300 PSI (standard option)	<b>B0020</b>
17,2 ... 69 bar / 250 ... 1000 PSI (standard option)	<b>B0069</b>
69 ... 206 bar / 1000 ... 3000 PSI (standard option)	<b>B0206</b>
173 ... 344 bar / 2500 ... 5000 PSI	<b>B0344</b>

## ④ Process Connection

G1/8	<b>B02</b>
G1/4 (standard option)	<b>B04</b>
1/8 NPT	<b>N02</b>
1/4 NPT (standard option)	<b>N04</b>
7/16–20 UNF	<b>U04</b>

## ⑤ Electrical Connection

Flying leads	<b>F</b>
Flying leads with shrink tubing	<b>FL</b>
DIN EN 175301-803A (DIN 43650-A) (standard option)	<b>DIN</b>
Deutsch DT04-3P / 3-Pin	<b>D</b>
Weather pack connector female	<b>WF</b>
Weather pack connector male	<b>WM</b>
IP Option (IP 66)	<b>IP</b>

## ⑥ Body Material

Steel, zinc plated (standard option)	<b>(none)</b>
316 Stainless Steel	<b>W5</b>

## Product Description

The SPW-SD Mechanical SPDT Pressure Switch is available in a variety of pressure ranges. This durable unit has an adjustable set point that is easily changed by using the adjustment screw which is located under the protective cap.

## Features

- SPDT switching function
- Pressure ranges available up to 344 bar / 5000 PSI
- G1/4 and 1/4 NPT process connection
- NBR (Buna-N®) sealings
- Steel, zinc plated
- Spade terminal connection

## Options

- G1/8, 1/8 NPT and 7/16–20 UNF process connections
- FPM (Viton®) and EPDM sealings on request
- Flying leads with shrink tubing, flying leads, Deutsch connector, weather pack connector female/male and IP option on request
- 316 Stainless Steel

## Technical Data

## Materials

- Body: Steel, zinc plated or 316 Stainless Steel
- Connector: Polyamide

## Electrical Data and Output

- Switching function: SPDT
- Cycle rate: 20 CPM
- Mechanical life: 2000000 operations
- Max. electrical rating: 5 A at 125/250 V AC, 5 A resistive / 3 A inductive at 28 V DC

## Permissible Temperatures

- NBR (Buna-N®): -9°C ... +85°C / +15°F ... +185°F
- FPM (Viton®): -18°C ... +85°C / 0°F ... +185°F
- EPDM: -23°C ... +85°C / -10°F ... +185°F

## Process Connections

- G1/8, G1/4, 1/8 NPT, 1/4 NPT and 7/16–20UNF

## Electrical Connection

- DIN EN 175301-803 form A (DIN 43650-A)

## Protection Rating

- IP 65 protection rating: Dust tight and protected against water jets

## Pressure Ranges

Version	Pressure Range (bar/psi)	Maximum Pressure (bar/psi)	Burst Pressure (bar/psi)	Repeatability	Average Deadband
B0002	0,7 ... 2	410	600	±0,10 bar + 2 % of setting	0,24 bar + 11 % of setting
	10 ... 30	6000	9000	±1.5 PSI + 2 % of setting	3.5 PSI + 11 % of setting
B0005	1,7 ... 5,2	410	600	±0,17 bar + 2 % of setting	0,24 bar + 11 % of setting
	25 ... 75	6000	9000	±2.5 PSI + 2 % of setting	3.5 PSI + 11 % of setting
B0020*	4,5 ... 20,7	410	600	±0,34 bar + 2 % of setting	1,38 bar + 11 % of setting
	65 ... 300	6000	9000	±5 PSI + 2 % of setting	20 PSI + 11 % of setting
B0069*	17,2 ... 69	410	600	±1,03 bar + 2 % of setting	3,10 bar + 12 % of setting
	250 ... 1000	6000	9000	±15 PSI + 2 % of setting	45 PSI + 12 % of setting
B0206*	69 ... 206	410	600	±2,07 bar + 2 % of setting	4,83 bar + 12 % of setting
	1000... 3000	6000	9000	±30 PSI + 2 % of setting	70 PSI + 12 % of setting
B0344	173 ... 344	410	600	±3,45 bar + 2 % of setting	9,65 bar + 13 % of setting
	2500 ... 5000	6000	9000	±50 PSI + 2 % of setting	140 PSI + 13 % of setting

\* Standard option

Dimensional drawings: All dimensions in mm (in).

## Pressure Transmitters - Type SPT



### Product Description

The SPT Pressure Transmitter is designed for many industrial and OEM pressure measurement applications. The SPT pressure transmitters convert applied pressure from 1 bar up to 600 bar / 14.5 PSI up to 8702 PSI into the corresponding output signals. The SPT Series provides resistance to vibration, shock, wide temperature variations and many other extreme environmental conditions that are typical of industrial and OEM applications.

### Features

- Stainless Steel housing construction
- L-plug DIN EN 175301-803A (DIN 43650-A) electrical connection
- Pressure ranges up to 600 bar / 8702 PSI
- G1/4 or 1/4 NPT process connection
- Output signal 4 ... 20 mA
- Non-linearity  $\leq \pm 0.5\%$  BFSL
- Environmental protection of IP 65 (IP 65 protection rating: Dust tight and protected against water jets)
- Protection against incorrect polarity, short circuits and over-voltage
- Temperature compensated
- Long term stability

### Options

- Mini L-plug DIN EN 175301-803C, M12 x 1 and flying lead electrical connections
- 1/2 NPT and 7/16-20 UNF process connections
- Output signals 0 ... 5 V, 0 ... 10 V, 1 ... 5 V and 0,5 ... 4,5 V ratiometric on request
- Non-linearity  $\leq \pm 0.25\%$  BFSL
- Environmental protection of IP 67 (IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time)
- Extended temperature option on request -30 °C ... +100 °C / -22 °F ... +212 °F

### Order Codes

①	②	③	④	⑤
<b>SPT - B0400 - B04 - 420A - DIN</b>				
① <b>Series and Type</b> Pressure Transmitter	<b>SPT</b>	③ <b>Process Connection</b> G1/4 (standard option) <b>B04</b> 1/4 NPT (standard option) <b>N04</b> 1/2 NPT <b>N08</b> 7/16-20 UNF <b>U04</b>	④ <b>Signal Output</b> 4 ... 20 mA, 2-wire (standard option) <b>420A</b> 0 ... 10 V, 3-wire <b>010V</b> 0 ... 5 V, 3-wire <b>05V</b> 1 ... 5 V, 3-wire <b>15V</b> 0,5 ... 4,5 V, ratiometric <b>0545V</b>	⑤ <b>Electrical Connection</b> DIN EN 175301-803A (DIN 43650-A) (standard option) <b>DIN</b> DIN EN 175301-803C <b>MD</b> M12 x 1 / 4-Pin <b>M12</b> Flying leads with shrink tubing <b>FL</b>
② <b>Version</b>	0 ... 1 bar / 0 ... 14.5 PSI <b>B0001</b> 0 ... 1,6 bar / 0 ... 23 PSI <b>B001.6</b> 0 ... 2,5 bar / 0 ... 36 PSI <b>B002.5</b> 0 ... 4 bar / 0 ... 58 PSI <b>B0004</b> 0 ... 6 bar / 0 ... 87 PSI <b>B0006</b> 0 ... 10 bar / 0 ... 145 PSI <b>B0010</b> 0 ... 16 bar / 0 ... 232 PSI (standard option) <b>B0016</b> 0 ... 25 bar / 0 ... 362 PSI <b>B0025</b> 0 ... 40 bar / 0 ... 580 PSI (standard option) <b>B0040</b> 0 ... 60 bar / 0 ... 870 PSI <b>B0060</b> 0 ... 100 bar / 0 ... 1450 PSI (standard option) <b>B0100</b> 0 ... 160 bar / 0 ... 2320 PSI (standard option) <b>B0160</b> 0 ... 250 bar / 0 ... 3625 PSI <b>B0250</b> 0 ... 400 bar / 0 ... 5801 PSI (standard option) <b>B0400</b> 0 ... 500 bar / 0 ... 7251 PSI <b>B0500</b> 0 ... 600 bar / 0 ... 8702 PSI (standard option) <b>B0600</b>			



## Pressure Transmitters ▪ Type SPT



## Technical Data

**Materials**

- Body: 316 L Stainless Steel

**Internal Transmission Fluid**

- Silicone Oil (only pressure ranges up to 0 ... 10 bar / 0 ... 100 PSIG and 0 ... 25 bar / 0 ... 300 PSI absolute)

**Fatigue Life**

- 10 million load cycles maximum

**Signal Output and Maximum Load**

- Signal 4 ... 20 mA, 2-wire:  
Power supply 8 ... 30 V DC  
Ra <= ( UB-10 V) / 0,02A

- Signal 0 ... 10 V, 3-wire:  
Power supply 14 ... 30 V DC  
Ra > 10kΩ

- Signal 0 ... 5 V, 3-wire:  
Power supply 8 ... 30 V DC  
Ra > 5kΩ

- Signal 1 ... 5 V, 3-wire:  
Power supply 8 ... 30 V DC  
Ra > 5kΩ

- Signal 0,5 ... 4,5 V, ratiometric:  
Power supply 8 ... 30 V DC  
Ra > 4,5kΩ

**Isolation Voltage**

- 500 V DC

**Response Time**

- < 4 ms

**Current Consumption**

- Signal current:  
(max. 25 mA) for current output,  
(max. 8 mA) for voltage output

**Non-linearity**

- $\leq \pm 0,5 \%$  (BFSL) or optional  $\leq \pm 0,25 \%$  (BFSL)

**Accuracy**

- $\leq \pm 1,0 \%$  FS\* (with non-linearity 0,5 %) \*
- $\leq \pm 0,5 \%$  FS\* (with non-linearity 0,25 %) \*
- $\leq \pm 0,6 \%$  FS\* (with non-linearity 0,25 % and signal output 0 ... 5 V) \*
- \* (Includes non-linearity, hysteresis, zero point and full scale error)

**Zero Offset**

- $\leq 0,15$  typ. % FS\*;  $\leq 0,4$  max. % of span (non-linearity 0,25 %)
- $\leq 0,5$  typ. % FS\*;  $\leq 0,8$  max. % of span (non-linearity 0,25 %)

**Hysteresis**

- $\leq 0,16 \%$  FS\*

**Non-repeatability**

- $\leq 0,1 \%$  FS\*

**Long Term Drift**

- $\leq 0,1 \%$  FS\*

**Signal Noise**

- $\leq 0,3 \%$  FS\*

**Permissible Temperatures (Standard)**

- Media: 0 °C ... +80 °C / +32 °F ... +176 °F
- Ambient: 0 °C ... +80 °C / +32 °F ... +176 °F
- Storage: -20 °C ... +80 °C / -4 °F ... +176 °F
- Operating temp. range: 0 °C ... +80 °C / +32 °F ... +176 °F

**Permissible Temperatures (Extended Temperature Option)**

- Media: -30 °C ... +100 °C / -22 °F ... +212 °F
- Ambient: -30 °C ... +100 °C / -22 °F ... +212 °F
- Storage: -30 °C ... +100 °C / -22 °F ... +212 °F

**Electrical Connection**

- DIN EN 175301-803A (DIN 43650-A), DIN EN 175301-803C  
M12 x 1 / 4-Pin, flying leads

**Process Connection**

- G1/4, 1/4 NPT, 1/2 NPT, 7/16-20 UNF

**Temperature Error within Compensated Temperature Range**

- $\leq 1,0$  typ. % FS\*  $\leq 2,5$  max. % FS\*

**CE Conformity**
**Pressure Equipment Directive**

- 97/23/EC

**EMC Directive**

- 89/336/EWG emission (class B) and immunity according to EN 61 326

**Shock Resistance**

- 500g according to IEC 60068-2-27 (mechanical shock)

**Vibration Resistance**

- 10g according to IEC 60068-2-6 (vibration under resonance)

**Wiring Protection**

- Overvoltage protection: 32 V DC; 36 V DC with 4 ... 20 mA
- Short circuit protection: Sig+ to UB-
- Reverse polarity protection: UB+ to UB-

**Test Reference Conditions**

- Relative humidity: 45 ... 75 %
- Temperature: +15 °C ... +25 °C / +59 °F ... +77 °F
- Atmospheric pressure: 86 ... 106 kPa / 25.4 ... 31.3 inh

**RoHS-conformity**

- Yes

**Weight**

- Approximately 80g / 2.8 oz

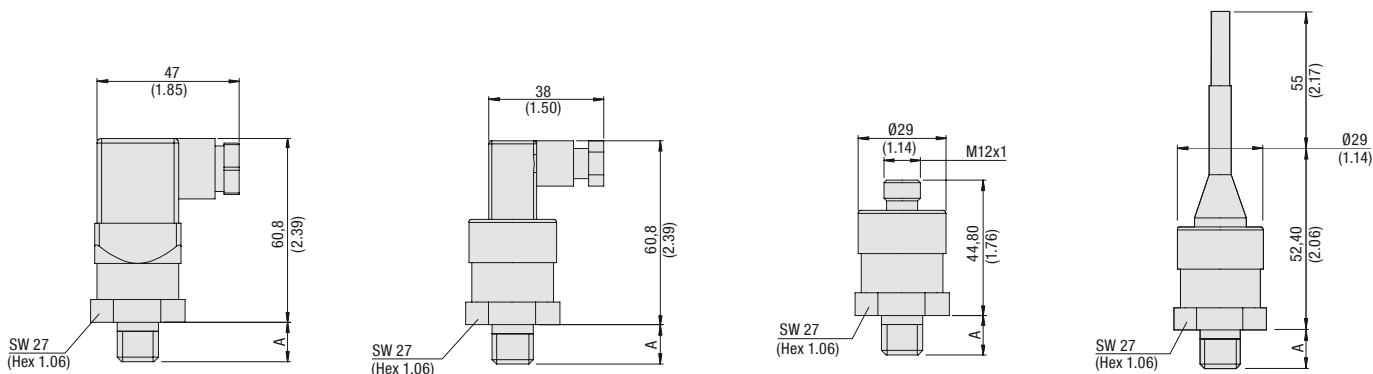
**Protection Rating**

- DIN EN 175301-803A: IP 65 protection rating: Dust tight and protected against water jets
- DIN EN 175301-803C: IP 65 protection rating: Dust tight and protected against water jets  
IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time
- M 12 x 1:  
IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time
- Flying leads:  
IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time

\* FS = Full Scale



## Pressure Transmitters - Type SPT



DIN 175301-803A (DIN 43650-A)

DIN 175301-803C

M12x1 / 4-Pin

Flying leads with shrink tubing

### Dimensions

Version	A (mm/in)	Process Connection
B04	14,0	G1/4
	.55	
N04	13,0	1/4 NPT
	.51	
N08	19,0	1/2 NPT
	.75	
U04	9,1	7/16-20 UNF
	.36	

### Pressure Ranges

Version	Pressure Range (bar/psi)	Maximum Pressure ** (bar/psi)	Burst Pressure *** (bar/psi)
B0001	0 ... 1	2	5
	0 ... 14.5	29	72
B001.6	0 ... 1,6	3,2	10
	0 ... 23	46	145
B002.5	0 ... 2,5	5	10
	0 ... 36	72	145
B0004	0 ... 4	8	17
	0 ... 58	116	246
B0006	0 ... 6	12	34
	0 ... 87	174	493
B0010	0 ... 10	20	34
	0 ... 145	290	493
B0016*	0 ... 16	32	100
	0 ... 232	464	1450
B0025	0 ... 25	50	100
	0 ... 362	725	1450
B0040*	0 ... 40	80	400
	0 ... 580	1160	5801
B0060	0 ... 60	120	550
	0 ... 870	1740	7977
B0100*	0 ... 100	200	800
	0 ... 1450	2900	11603
B0160*	0 ... 160	320	1000
	0 ... 2320	4641	14503
B0250	0 ... 250	500	1200
	0 ... 3625	7251	17404
B0400*	0 ... 400	800	1700
	0 ... 5801	11603	24656
B0500	0 ... 500	1200	2400
	0 ... 7251	17404	34809
B0600*	0 ... 600	1200	2400
	0 ... 8702	17404	34809

Note:

- Absolut pressure: 0 ... 1 bar up to 0 ... 25 bar  
0 ... 14.5 PSI up to 0 ... 362 PSI

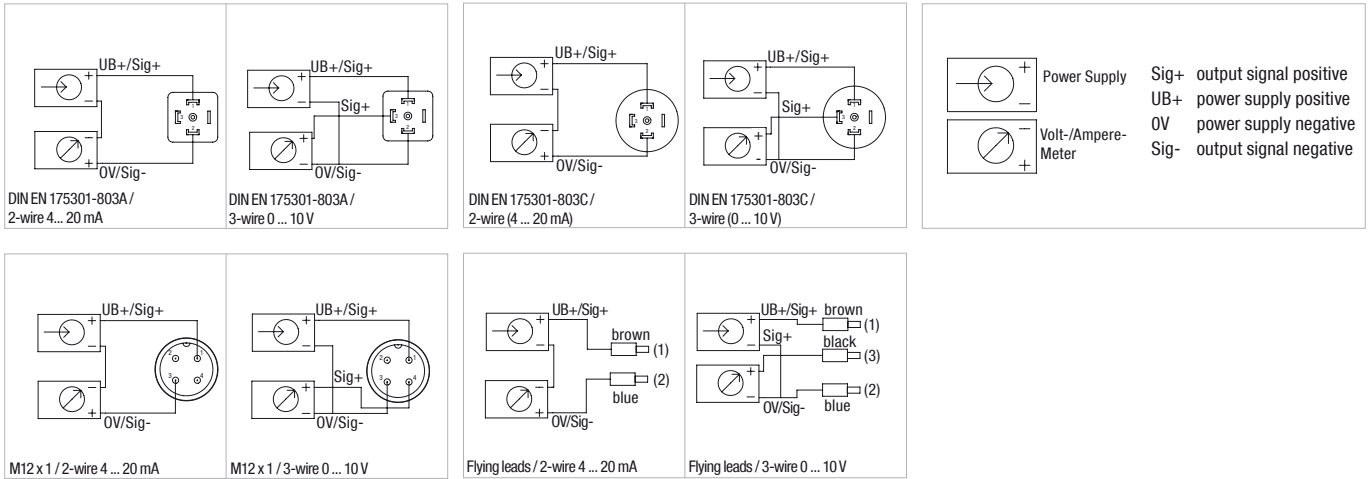
\* Standard option

\*\* Maximum pressure, causing no perminate changes in specifications but may lead to zero point and span shifts

\*\*\* Burst pressure, leading to perminate changes in specifications or destruction of the transmitter

## Pressure Transmitters ▪ Type SPT

## Electrical Connections



## Pressure Transmitters ▪ Type PT



### Product Description

The PT Pressure Transmitters features a durable fibre-glass reinforced PBT case, an internal metal sleeve for excellent EMI protection and an all welded thin film measuring cell for exceptional long term stability. This product is available with a flying lead option which is rated to IP69K for resistance to high pressure steam wash down. Produced on a high volume fully automated assembly line, the PT Pressure Transmitter is especially focused to provide a high number of transmitters to the end user while maintaining a consistent quality.

### Features

- IP69K rated safety class (flying leads)
- Pressure ranges up to 600 bar / 8702 PSI
- G1/4, 7/16–20 UNF process connection
- Output signal 4 ... 20 mA
- Rugged PBT housing
- Internal metal sleeve
- Stainless Steel connection
- Protect against incorrect polarity, short circuits and overvoltage
- M12 x 1, Deutsch 3-Pin and flying leads with shrink tubing electrical connections

### Options

- 0 ... 10 V, 1 ... 5 V, 0.5 ... 4.5 V ratiometric available outputs on request
- 1/4 NPT process connection on request

### Order Codes



#### ① Type

Pressure Transmitter	<b>PT</b>
----------------------	-----------

#### ② Version

0 ... 16 bar / 0 ... 232 PSI	<b>B0016</b>
0 ... 25 bar / 0 ... 362 PSI	<b>B0025</b>
0 ... 40 bar / 0 ... 580 PSI	<b>B0040</b>
0 ... 60 bar / 0 ... 870 PSI	<b>B0060</b>
0 ... 100 bar / 0 ... 1450 PSI	<b>B0100</b>
0 ... 160 bar / 0 ... 2320 PSI	<b>B0160</b>
0 ... 250 bar / 0 ... 3625 PSI	<b>B0250</b>
0 ... 400 bar / 0 ... 5801 PSI	<b>B0400</b>
0 ... 500 bar / 0 ... 7251 PSI	<b>B0500</b>
0 ... 600 bar / 0 ... 8702 PSI	<b>B0600</b>

#### ③ Process Connection

G1/4 (standard option)	<b>B04</b>
1/4 NPT	<b>N04</b>
7/16–20 UNF (standard option)	<b>U04</b>

#### ④ Signal Output

4 ... 20 mA, 2-wire (standard option)	<b>420A</b>
0 ... 10 V, 3-wire	<b>010V</b>
1 ... 5 V, 3-wire	<b>15V</b>
0,5 ... 4,5 V, ratiometric	<b>0545V</b>

#### ⑤ Electrical Connection

M12 x 1 / 4-Pin	<b>M12</b>
Flying leads with shrink tubing	<b>FL</b>
Deutsch DT04-3P / 3-Pin	<b>D</b>

## Pressure Transmitters ▪ Type PT


**Technical Data**
**Materials**

- Body: Stainless Steel
- Connector: Fiberglass-reinforced Polybutylene Terephthalate (PBT)

**Signal Outputs and Maximum Load**

- Signal 4 ... 20 mA, 2-wire:  
Power supply 10 ... 36 V DC  
Ra ≤ ( UB-10 V) / 0,02A
- Signal 0 ... 10 V, 3-wire:  
Power supply 14 ... 36 V DC  
Ra > 5kΩ
- Signal 1 ... 5 V, 3-wire:  
Power supply 8 ... 36 V DC  
Ra > 2,5kΩ
- Signal 0,5 ... 4,5 V, ratiometric:  
Power supply 5 ... 30 V DC  
Ra > 4,5kΩ

**Response Time (10-90%)**

- ≤ 2 ms

**Isolation Voltage**

- 500 V DC

**Accuracy**

- ≤ ±0.5 % FS\*
- ≤ ±1.0 % FS\*  
\*(limit point calibration) (Includes linearity, hysteresis and repeatability)

**Repeatability**

- ≤ 0.2 % FS\*

**One Year Stability**

- ≤ 0.3 % FS\* (at reference conditions)

**Permissible Temperatures**

- Media\*: -40 °C ... +125 °C / -40 °F ... +257 °F
- Ambient\*: -40 °C ... +100 °C / -40 °F ... +212 °F
- Storage\*: -40 °C ... +120 °C / -40 °F ... +248 °F
- \* Also complies with EN 50178, Tab. 7,  
Operation (C) 4K4H, Storage (D) 1K4, Transport (E) 2K3
- Compensated temp. range: 0 °C ... +80 °C / +32 °F ... +176 °F

**Temperature Coefficients (TC) within Compensated Temperature Range**

- Mean TC of zero: ≤ 0,15 / 10k (special pressure ranges may have increased zero TC % FS\*
- Mean TC of range: ≤ 0.15 / 10k % FS\*

**CE Conformity**

- 89/336/EWG interference emission and immunity see EN 61 326 interference emission limit class A and B 97/23/EG pressure equipment directive

**Shock Resistance**

- 500 g according to IEC 60068-2-27 (mechanical shock)

**Vibration Resistance**

- 20 g according to IEC 60068-2-6 (vibration under resonance)

**Wiring Protection**

- Protected against short circuiting signal+ to UB- / 0V
- Protected against reverse polarity except ratiometric output signals

**Weight**

- Approximately 59,53 g / 2.10 oz

**Electrical Connection**

- Flying leads with shrink tubing, Deutsch DT04-3P, M12 x 1 / 4-Pin

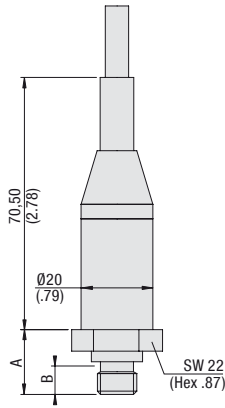
**Process Connection**

- G1/4, 1/4 NPT, 7/16–20 UNF

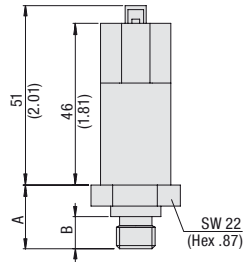
**Protection Rating**

- Flying leads: IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time
- M 12 x 1: IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time
- Deutsch DT04-3P: IP 69K protection rating: Dust tight, for high-pressure, high-temperature wash down applications

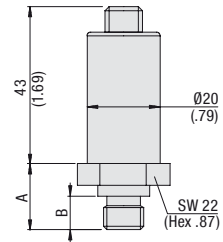
## Pressure Transmitters - Type PT



Flying Leads with shrink tubing



Deutsch DT04-3P / 3-Pin



M12 x 1 / 4-Pin

### Dimensions

Version	A (mm/in)	B (mm/in)	Process Connection
B04	20,2	12,0	G1/4
	.80	.47	
N04	19,2	18,0	1/4 NPT
	.76	.71	
U04	17,6	9,14	7/16-20 UNF
	.69	.36	

### Pressure Ranges

Version	Pressure Range (bar/psi)	Maximum Pressure * (bar/psi)	Burst Pressure ** (bar/psi)
B0016	0 ... 16	32	160
	0 ... 232	464	2320
B0025	0 ... 25	50	250
	0 ... 362	725	3625
B0040	0 ... 40	80	400
	0 ... 580	1160	5801
B0060	0 ... 60	120	550
	0 ... 870	1740	7977
B0100	0 ... 100	200	800
	0 ... 1450	2900	11603
B0160	0 ... 160	320	1000
	0 ... 2320	4641	14503
B0250	0 ... 250	500	1200
	0 ... 3625	7251	17404
B0400	0 ... 400	800	1700
	0 ... 5801	11603	24656
B0500	0 ... 500	1200	2400
	0 ... 7251	17404	34809
B0600	0 ... 600	1200	2400
	0 ... 8702	17404	34809

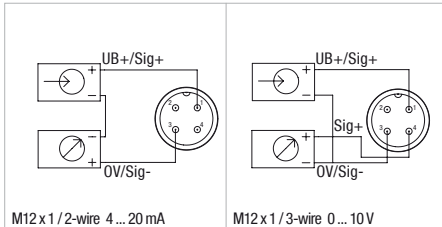
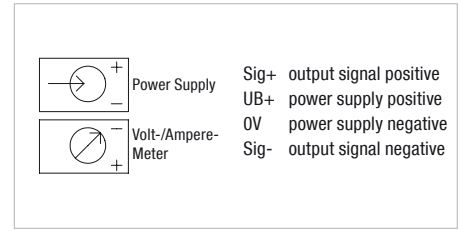
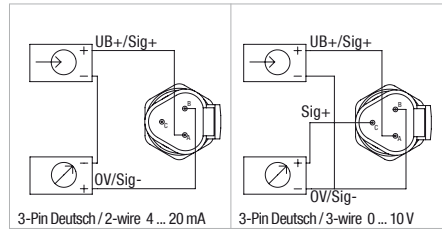
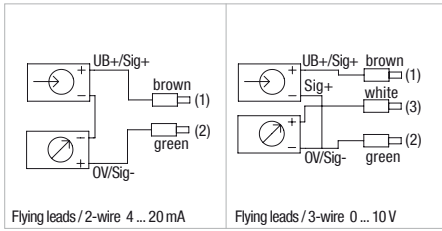
Note:

\* Pressure applied up to the maximum rating will cause no permanent change in specifications but may lead to zero and span shifts.

\*\* Exceeding the burst pressure may result in destruction of the transmitter and possible loss of media.

## Pressure Transmitters - Type PT

## Electrical Connections



## Pressure Switch and Transmitter ▪ Type SPWF



### Product Description

The SPWF Pressure Switch and Transmitter features a LED display to provide continuous pressure monitoring and allows the operator to program the set points without having to pressurize the unit. The display can be rotated up to 330° to offer the best possible viewing position in any application.

### Features

- Stainless Steel construction
- LED display and easy programming of set points
- Two switching outputs
- Adjustment ranges of: -1 ... 700 bar / -14.5 ... 10152 PSI
- G1/4 and 1/4 NPT process connections
- LED display rotates up to 330°

### Options

- G1/2 and 1/2 NPT available process connections
- One switching output and one analog output
- Two switching outputs and one analog output

### Order Codes



#### ① Series and Type

Pressure Switch and Transmitter **SPWF**

#### ② Version

-1 ... 2 bar / -14.5 ... 29 PSI	<b>BN0002</b>
-1 ... 3 bar / -14.5 ... 43 PSI	<b>BN0003</b>
-1 ... 5 bar / -14.5 ... 72 PSI	<b>BN0005</b>
-1 ... 10 bar / -14.5 ... 145 PSI	<b>BN0010</b>
0 ... 2 bar / 0 ... 29 PSI	<b>B0002</b>
0 ... 5 bar / 0 ... 72 PSI	<b>B0005</b>
0 ... 10 bar / 0 ... 145 PSI	<b>B0010</b>
0 ... 20 bar / 0 ... 290 PSI	<b>B0020</b>
0 ... 50 bar / 0 ... 725 PSI (standard option)	<b>B0050</b>
0 ... 100 bar / 0 ... 1450 PSI (standard option)	<b>B0100</b>
0 ... 160 bar / 0 ... 2320 PSI (standard option)	<b>B0160</b>
0 ... 250 bar / 0 ... 3625 PSI (standard option)	<b>B0250</b>
0 ... 400 bar / 0 ... 5801 PSI (standard option)	<b>B0400</b>
0 ... 600 bar / 0 ... 8702 PSI (standard option)	<b>B0600</b>
0 ... 700 bar / 0 ... 10152 PSI	<b>B0700</b>

#### ③ Process Connection

G1/4 (standard option)	<b>B04</b>
G1/2	<b>B08</b>
1/4 NPT (standard option)	<b>N04</b>
1/2 NPT	<b>N08</b>

#### ④ Signal Output

Two switching outputs (standard option)	<b>1</b>
One switching output, one 4 ... 20 mA output	<b>2</b>
One switching output, one 0 ... 10 V output	<b>3</b>
Two switching outputs, one 4 ... 20 mA output	<b>4</b>



## Pressure Switch and Transmitter ■ Type SPWF


**Technical Data**
**Materials**

- Measuring Element: Stainless Steel for pressures above 103,42 bar / 1500 PSI, Ceramic for below 103,42 bar / 1500 PSI
- Housing: Stainless Steel
- Process Connection: Stainless Steel

**Supply Voltage**

- 12 ... 30 V DC, protection from reverse polarity and overload

**Power Consumption**

- ≤ 50 mA, without load current

**Switching Outputs**

- Switching function: Normally Closed (NC) or normally Open (NO)
- Damping (option): 0 ... 2000 ms
- Delay (option): 0 ... 99,99 s
- Power rating: 0,5 A max.

**Adjustment**

- Set point: 1 ... 100 % FS\*
- Reset point: 0 ... 99 % FS\*

**Analog Outputs**

- Standard: 4 ... 20 mA, 3-wire
- Option: 0 ... 10 V, 3-wire
- Scaling: 20 ... 100 % FS\*
- Load resistance: Current output <500, Voltage output >10 k
- Hysteresis: 0,3 % FS\*
- Response time: ≤2 ms within 10 ... 90 % of FS\*

**Accuracy**

- ±1 % FS\* +1 digit

**Repeatability**

- ≤0.2 % FS\*

**Electrical Connection**

- M12 x 1 / 4-Pin or M12 x 1 / 5-Pin

**Process Connection**

- G1/4, G1/2, 1/4 NPT, 1/2 NPT

**Permissible Temperatures**

- Media: -20 °C ... +80 °C / -4 °F ... +176 °F
- Ambient: -20 °C ... +70 °C / -4 °F ... +158 °F
- Storage: -30 °C ... +80 °C / -22 °F ... +176 °F
- Tk: 0.3 % per 10K

**Display**

- 7 segments, LED display, red, 7,6 mm / .30 in high
- 4 digits (-999 ... 9999)

**Load Capacity**

- Shock resistance: 50 g according to IEC 60068-2-27
- Vibration resistance: 10 g according to IEC 60068-2-6

**Weight**

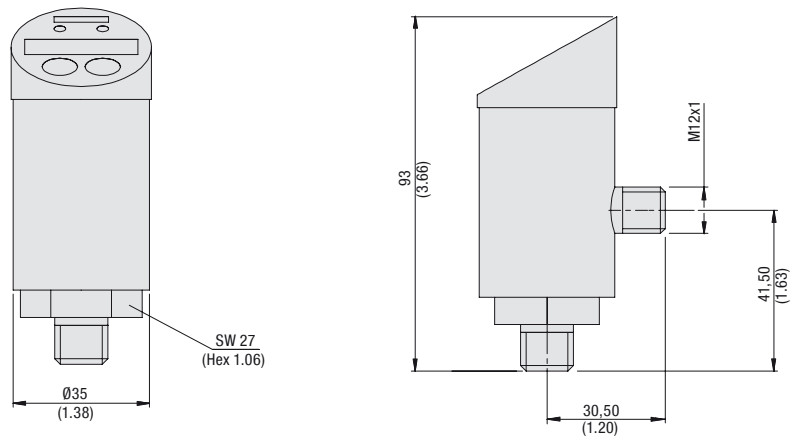
- Approximately 0.30 kg / .70 lbs

**Protection Rating**

- IP 65 protection rating: Dust tight and protected against water jets

\* FS = Full Scale

## Pressure Switch and Transmitter ▀ Type SPWF



### Pressure Ranges

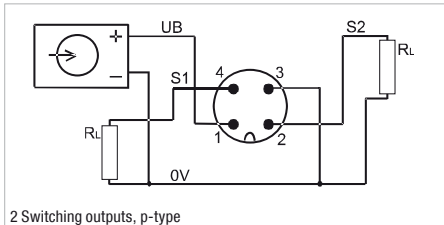
Version	Pressure Range (bar/psi)	Maximum Pressure (bar/psi)	Burst Pressure (bar/psi)
BN0002	-1 ... 2	5	6
	-14.5 ... 29	72	87
BN0003	-1 ... 3	5	6
	-14.5 ... 43	72	87
BN0005	-1 ... 5	10	12
	-14.5 ... 72	145	174
BN0010	-1 ... 10	20	25
	-14.5 ... 145	290	362
B0002	0 ... 2	5	6
	0 ... 29	72	87
B0005	0 ... 5	10	12
	0 ... 72	145	174
B0010	0 ... 10	20	25
	0 ... 145	290	362
B0020	0 ... 20	40	50
	0 ... 290	580	725
B0050*	0 ... 50	100	120
	0 ... 725	1450	1740
B0100*	0 ... 100	200	800
	0 ... 1450	2900	11603
B0160*	0 ... 160	320	1000
	0 ... 2320	4641	14503
B0250*	0 ... 250	500	1200
	0 ... 3625	7251	17404
B0400*	0 ... 400	800	1700
	0 ... 5801	11603	24656
B0600*	0 ... 600	1200	2400
	0 ... 8702	17404	34809
B0700	0 ... 700	1200	2400
	0 ... 10152	17404	34809

Note:

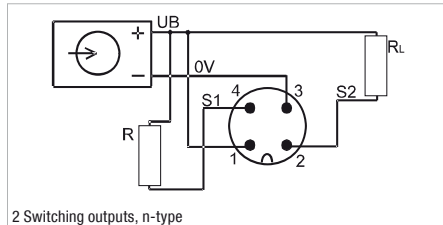
\* Standard option

**Pressure Switch and Transmitter ▪ Type SPWF**

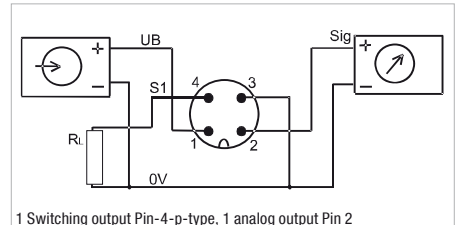
**Electrical Connections**



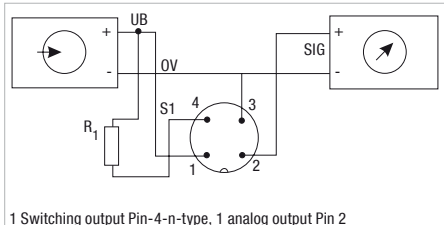
2 Switching outputs, p-type



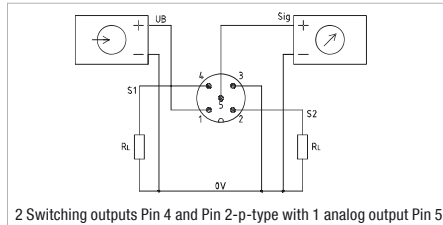
2 Switching outputs, n-type



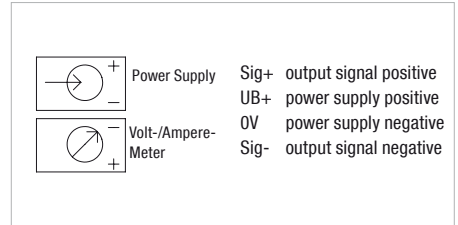
1 Switching output Pin-4-p-type, 1 analog output Pin 2



1 Switching output Pin-4-n-type, 1 analog output Pin 2



2 Switching outputs Pin 4 and Pin 2-p-type with 1 analog output Pin 5



## Temperature Switch and Transmitter - Type STWE



### Product Description

The STWE Temperature Switch and Transmitter features LED display to provide continuous temperature monitoring and allows the operator to easily adjust set and reset points by using the two programming buttons located on the display face on the unit. The display face can be rotated up to 330° to offer the best possible viewing position in any application.

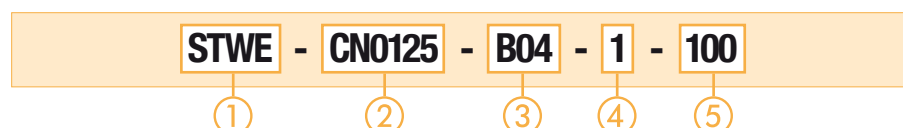
### Features

- Stainless Steel construction
- LED display and easy programming of set points
- Two switching outputs
- Temperature range: -50 °C ... +125 °C / -58 °F ... +257 °F
- G1/4 and 1/4 NPT process connections
- Different stem lengths
- LED display rotates up to 330°

### Options

- G1/2 and 1/2 NPT available process connections
- Temperature range available from -200 °C ... +600 °C / -328 °F ... +1112 °F
- One switching output and one analog output

### Order Codes



#### ① Series and Type

Temperature Switch and Transmitter	<b>STWE</b>
------------------------------------	-------------

#### ② Temperature Ranges

-50 °C ... +125 °C / -58 °F ... +257 °F (standard option)	<b>CN0125</b>
-50 °C ... +200 °C / -58 °F ... +392 °F	<b>CN0200</b>
-200 °C ... +600 °C / -328 °F ... +1112 °F	<b>CN0600</b>
0 °C ... +400 °C / +32 °F ... +752 °F	<b>C0400</b>
0 °C ... +600 °C / +32 °F ... +1112 °F (standard option)	<b>C0600</b>

#### ③ Process Connection

G1/4 (standard option)	<b>B04</b>
G1/2	<b>B08</b>
1/4 NPT (standard option)	<b>N04</b>
1/2 NPT	<b>N08</b>

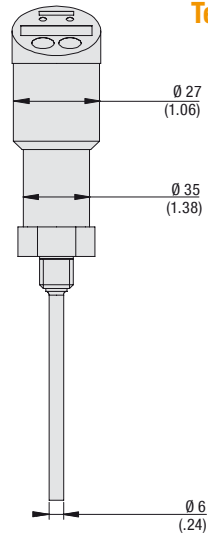
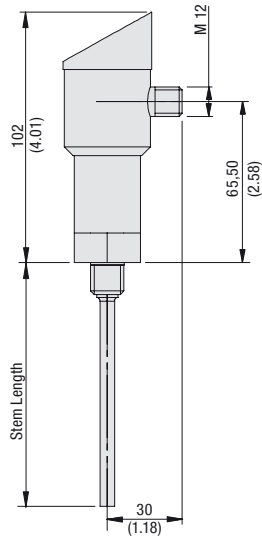
#### ④ Signal Output

Two switching outputs (standard option)	<b>1</b>
One switching output, one 4 ... 20 mA Output	<b>2</b>

#### ⑤ Stem Lengths

50 mm / 1.97 in	<b>50</b>
75 mm / 2.95 in	<b>75</b>
100 mm / 3.94 in	<b>100</b>
160 mm / 6.30 in	<b>160</b>
200 mm / 7.87 in	<b>200</b>
300 mm / 11.81 in	<b>300</b>

## Temperature Switch and Transmitter ■ Type STWE



## Technical Data

**Materials**

- Housing: Stainless Steel
- Process connection: Stainless Steel

**Supply Voltage**

- 12...30 V DC, protection from reverse polarity and overload

**Power Consumption**

- ≤50 mA, without load current

**Switching Outputs**

- Switching function: Normally open (NO) or normally closed (NC)
- Power rating: 100 mA per switch output

**Adjustment**

- Setpoint 0.1 ° steps within temperature range
- Resetpoint 0.1 ° steps within temperature range up to (Setpoint -0.1°)

**Analog Output**

- Signal 4 ... 20 mA, 3-wire
- Load resistance  $R_a = U_s - 7 \text{ V} / 0.022 \text{ A}$

**Accuracy**

- Accuracy of PT100 sensing element ±0.1 % of temperature range

**Repeatability**

- 0.05 %

**Stem Length and Working Pressure (standard option)**

- Ø 6 x 50 mm / .24 x 1.97 in stem length, up to 40 bar / 580 PSI
- Additional stem lengths available upon request

**Process Connection**

- G1/4, G1/2, 1/4 NPT, 1/2 NPT

**Electrical Connection**

- M12 x 1 / 4-Pin

**Permissible Temperatures**

- Ambient: -30 °C ... +80 °C / -22 °F ... +176 °F
- Storage: -25 °C ... +70 °C / -13 °F ... +158 °F
- Tk: 0,1 % of measuring range per 10K

**EMC to IEC / EN 61326**

- IEC 61000/4/2 ESD: B
- IEC 61000/4/3 HF Radiated: A
- IEC 61000/4/4 Burst: A
- IEC 61000/4/5 Surge: A
- IEC 61000/4/6 HF Mains Borne: A

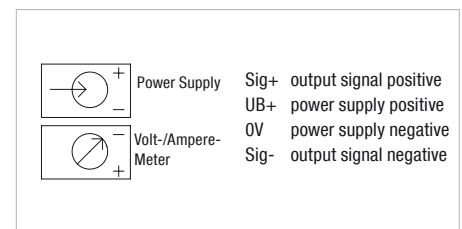
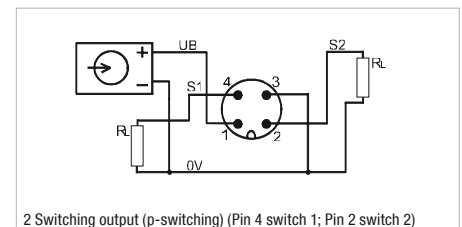
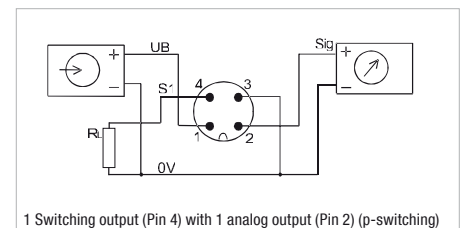
**EMC to IEC / EN 61326**

- Approx 0.30 kg / .70 lbs (dependent on stem length)

**Protection Rating**

- IP 65 protection rating: Dust tight and protected against water jets

## Electrical Connections



## Temperature Transmitter ▪ Type STC



### Product Description

The STC Temperature Transmitters is designed for process temperature measurement in low pressures. This unit features an all stainless steel construction up to 300 mm / 11.81 in stem length with G1/4 and 1/4 NPT process connection and a 4 ... 20 mA output. The user can select the exact temperature range they require at time of order.

### Features

- Stainless Steel construction
- 4 ... 20 mA output
- 0 °C ... 50 °C, 0 °C ... 100 °C and 0 °C ... 120 °C measuring ranges available
- L-Plug DIN EN 175301-803A (DIN 43650-A) electrical connection
- G1/4 or 1/4 NPT process connection
- 50 and 100 mm stem lengths

### Options

- 0 ... 10 V available output
- M12 x 1 electrical connection available
- G1/2 and 1/2 NPT available process connections
- 75, 160, 200 and 300 mm stem lengths available
- Available with an adjustable compression ring version for variable stem length

### Order Codes

<b>STC</b>	-	<b>C0050</b>	-	<b>B04</b>	-	<b>420A</b>	-	<b>1</b>	-	<b>50</b>	<b>F</b>
①		②		③		④		⑤		⑥	⑦

#### ① Series and Type

Temperature Transmitter	<b>STC</b>
-------------------------	------------

#### ② Temperature Ranges

0 °C ... +50 °C / +32 °F ... +122 °F	<b>C0050</b>
0 °C ... +100 °C / +32 °F ... +212 °F	<b>C0100</b>
0 °C ... +120 °C / +32 °F ... +248 °F	<b>C0120</b>

Note: Please consult STAUFF for alternative temperature ranges.

#### ③ Process Connection

G1/4	<b>B04</b>
G1/2 *	<b>B08</b>
1/4 NPT *	<b>N04</b>
1/2 NPT *	<b>N08</b>

\* Threads only available with adjustable compression ring fitting.

#### ④ Signal Output

4 ... 20 mA (standard option)	<b>420A</b>
0 ... 10 V	<b>010V</b>

#### ⑤ Electrical Connection

L-Plug DIN EN 175301-803A (DIN 43650-A) (standard option)	<b>1</b>
M12 x 1 / 4-Pin	<b>2</b>

#### ⑥ Stem Lengths

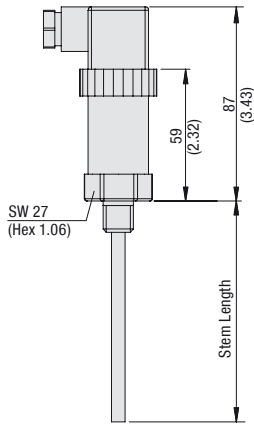
50 mm / 1.97 in (standard option) *	<b>50</b>
75 mm / 2.95 in *	<b>75</b>
100 mm / 3.94 in (standard option)	<b>100</b>
160 mm / 6.30 in	<b>160</b>
200 mm / 7.87 in	<b>200</b>
300 mm / 11.81 in	<b>300</b>

\* Length only available with a fixed thread.

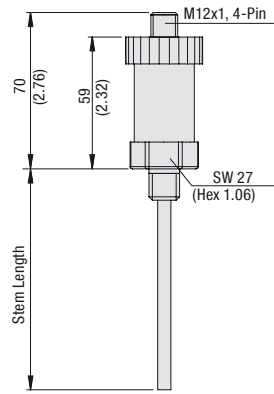
#### ⑦ Style

Fixed thread (standard option)	<b>F</b>
Adjustable compression fitting	<b>A</b>

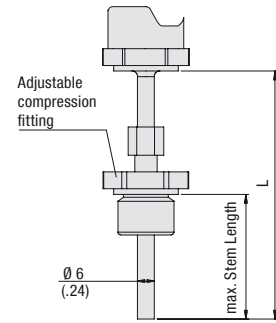
## Temperature Transmitter ■ Type STC



L-Plug DIN 175301-803A (DIN 43650-A)



M12 x 1 / 4-Pin



Adjustable Compression Fitting

## Technical Data

## Materials

- Housing: Stainless Steel 1.4571 (316 Ti)
- Process connection: Stainless Steel 1.4571 (316 Ti)
- Stem: Stainless Steel 1.4571 (316 Ti)

## Signal Outputs and Supply Voltage

- 4 ... 20 mA, 2-wire, 10 ... 30 V DC, ripple <10%
- 0 ... 10 V, 3-wire, 12 ... 30 V DC, ripple <10%

## Error Signals

- 23 mA sensor burnout
- 3.3 mA sensor short circuit

## Accuracy

- $\leq \pm 5\%$  of FS\*

## Temperature Range

- $-50\text{ }^{\circ}\text{C} \dots +200\text{ }^{\circ}\text{C} / -58\text{ }^{\circ}\text{F} \dots +392\text{ }^{\circ}\text{F}$

## Measuring Range

- Minimum range: 50 K
- Maximum range: 250 K

## Process Connection

- G1/4, G1/2, 1/4 NPT, 1/2 NPT

## Electrical Connection

- L-Plug according to DIN EN 175301-803A (DIN 43650-A)
- M12 x 1 / 4-Pin

## Stem Length and Pressure Ranges

- 50 ... 500 mm / 1.97 x 19.67 in: up to 40 bar / 580 PSI (Pressure ranges refer to static pressure.)

## Permissible Temperatures

- Ambient: max.  $+85\text{ }^{\circ}\text{C} / +185\text{ }^{\circ}\text{F}$
- Storage:  $-40\text{ }^{\circ}\text{C} \dots +85\text{ }^{\circ}\text{C} / -40\text{ }^{\circ}\text{F} \dots +185\text{ }^{\circ}\text{F}$

## EMC-Resistance

- Emitted interference acc. to DIN EN 61326
- Breakdown effect acc. to DIN EN 61326

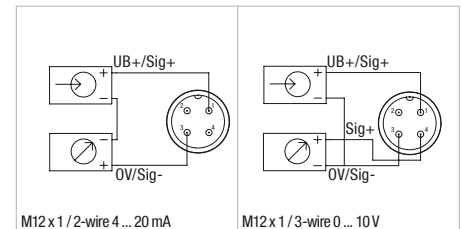
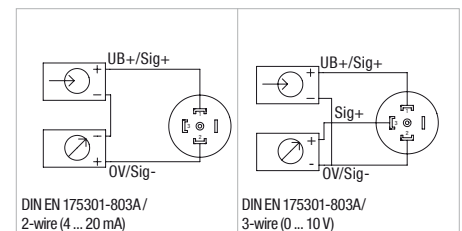
## Weight

- Approx. 0.14 kg / .31 lbs (dependant on stem length)

## Protection Rating

- L-Plug connection: IP 65 protection rating: Dust tight and protected against water jets
- M12 x 1 connection: IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time

## Wiring Scheme

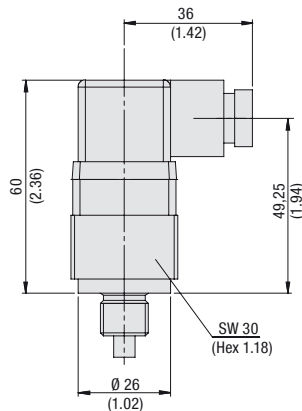


\* FS = Full Scale

Dimensional drawings: All dimensions in mm (in).



## Temperature Switch - Type STW



### Wiring Scheme

Wiring diagram normally open



Wiring diagram normally closed



### Product Description

The STW mechanical Temperature Switch is available in a variety of temperature ranges. This unit features a bimetallic fixed set point. The electrical connector of the SPW is designed to rotate in order to face the cable clamp into whatever position desired after installation.

### Features

- Normally open and normally closed switching function
- Fixed set points from +60 °C ... +80 °C / +140 °F ... +176 °F
- G1/4 and 1/4 NPT process connections
- Brass body

### Options

- Fixed set points from +30 °C ... +105 °C / +86 °F ... +221 °F
- G1/2 and 1/8 NPT process connections

### Technical Data

#### Materials

- Body: Brass
- Connector: Polyamide

#### Signal Outputs

- Normally open (NO) or normally closed (NC)

#### Maximal Switching Values

- Maximal voltage: 250 V AC
- Maximal current: 10 A at 240 V AC  
5 A at 24 V AC  
10 A at 12 V AC

#### Accuracy

- ±5 °C / ±9 °F

#### Hysteresis

- max. +16 °C / +28.8 °F

#### Maximum Ratings

- Temperature: +130 °C / +266 °F
- Pressure: 150 bar / 2175 PSI

#### Electrical Connection

- DIN EN 175301-803 form A-PG09 (DIN 43650-A)

#### Process Connection

- G1/4, G1/2, 1/8 NPT, 1/4 NPT

#### Protection Rating

- IP 65 protection rating: Dust tight and protected against water jets

### Order Codes



#### ① Series and Type

Pressure Switch **STW**

#### ② Temperature Ranges (Fixed Set Point)

+30 °C / +86 °F	<b>C0030</b>
+40 °C / +104 °F	<b>C0040</b>
+50 °C / +122 °F	<b>C0050</b>
+60 °C / +140 °F (standard option)	<b>C0060</b>
+70 °C / +158 °F (standard option)	<b>C0070</b>
+80 °C / +176 °F (standard option)	<b>C0080</b>
+90 °C / +194 °F	<b>C0090</b>
+100 °C / +212 °F	<b>C0100</b>
+105 °C / +221 °F	<b>C0105</b>

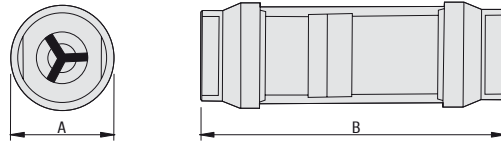
#### ③ Process Connection

G1/4	<b>B04</b>
G1/2 (standard option)	<b>B08</b>
1/8 NPT	<b>N02</b>
1/4 NPT (standard option)	<b>N04</b>

#### ④ Contacts

Normally open (standard option)	<b>NO</b>
Normally closed	<b>NC</b>

## Flowtell Inline Flow Meter - Type SFF



## Order Codes

**SFF - L00005 - B08**

①

②

③

## ① Series and Type

 Flowtell Inline Flow Meter **SFF**

## ② Flow Ranges

2 ... 18 l/min / 0.5 ... 5 US GPM	<b>L00005</b>
12 ... 113 l/min / 3 ... 30 US GPM	<b>L00030</b>
31 ... 283 l/min / 8 ... 75 US GPM	<b>L00075</b>

## ③ Process Connection

G1/2 (only L00005)	<b>B08</b>
G3/4 (only L00030)	<b>B09</b>
G1-1/4 (only L00075)	<b>B20</b>
1/2 NPT (only L00005)	<b>N08</b>
3/4 NPT (only L00030)	<b>N09</b>
1-1/4 NPT (only L00075)	<b>N20</b>

## Product Description

The STAUFF Flowtell Inline Flow Meter is ideal for monitor case drain flows, pump performance and media flows through hydraulic circuits and sub-circuits. It allows the designer to install it in any orientation (horizontal, vertical or inverted) and is weather-tight for use outdoors and/or on systems where wash downs are required. It is also a reliable service tool that provides years of maintenance-free performance. Flows can be measured up to a value of 283 l/min / 75 GPM.

## Features

- G1/2, G3/4, G1-1/4, 1/2 NPT, 3/4 NPT and 1-1/4 NPT process connection
- Flow ranges up to 283 l/min / 75 US GPM

## Options

- Other process connection on request

## Technical Data

**Materials**

- Aluminium end caps
- Polycarbonate Windows Tube
- NBR (Buna-N®) and Teflon sealings
- Suitable for Mineral-Based Hydraulic Fluid

**Accuracy**

- ±2.5 % of full scale in mid-third of flow range
- ±4.0 % over entire flow range

**Repeatability**

- ±1 % of full sale

**Max. Operating Pressure**

- 240 bar / 3500 PSI

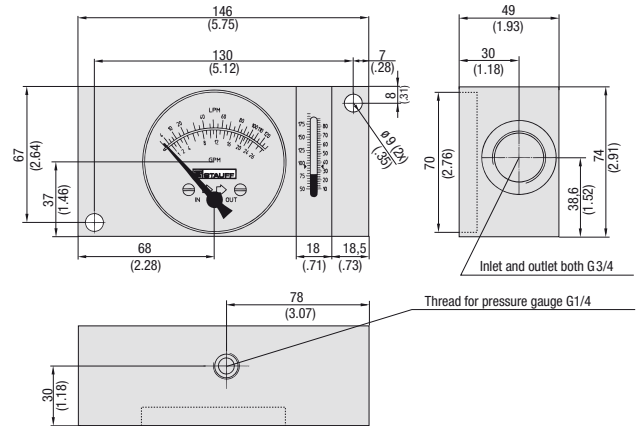
**Max. Operating Temperature**

- +116 °C / +240 °F

## Dimensions

Codes	A (mm/in)	B (mm/in)
SFF-L00005-B08	48	167
	1.88	6.56
SFF-L00030-B09	60	182
	2.38	7.16
SFF-L00075-B20	90	258
	3.5	10.13
SFF-L00005-N08	48	167
	1.88	6.56
SFF-L00030-N09	60	182
	2.38	7.16
SFF-L00075-N20	90	258
	3.5	10.13

## Flow Indicator - Types SDM / SDMKR



Dimensions SDM-750

### Product Description

Analogue flow indicators for measuring the flow rate of fluids in mobile and industrial hydraulics.

The SDMKR is designed with a loading valve for the strain test of the hydraulic system to facilitate precise control of the operating pressure. In addition, this product can also be subjected to a reverse flow direction (without flow rate determination).

### Features

- Suitable for Mineral Oil (Aluminium), HFC Fluids and Water (Brass)
- Designed for in-line installation
- Mechanical flow measurement
- Controlling working pressure with a pressure control valve (only SDMKR)
- Flow indication in l/min and GPM for Aluminium units, Brass units have flow indication for Water and Oil both in l/min
- Aluminium unit: Dual scale
- Brass unit: Single scale
- Thread to connect with pressure gauge (only SDM)

### Technical Data

#### Accuracy

(at a kinematic viscosity of 28cSt):

- Flow:  $\pm 4\%$  FSD
- Temperature:  $\pm 2,5\text{ }^\circ\text{C} / \pm 5\text{ }^\circ\text{F}$
- Pressure (only SDMKR):  $\pm 1,6\%$  FS\*
- Temp. measuring range:  $+20\text{ }^\circ\text{C} \dots +110\text{ }^\circ\text{C} / +55\text{ }^\circ\text{F} \dots +245\text{ }^\circ\text{F}$
- Media temperature
  - permanent:  $+80\text{ }^\circ\text{C} / +176\text{ }^\circ\text{F}$
  - temporary (<10 min.):  $+110\text{ }^\circ\text{C} / +245\text{ }^\circ\text{F}$

Note: Other thread versions available on request.

### Order Codes

**SDM - 750 - A - 016 - T**

①      ②      ③      ④      ⑤

#### ① Series and Type

Flow Indicator Type SDM	<b>SDM</b>
Flow Indicator Type SDMKR	<b>SDMKR</b>

#### ② Size

750	<b>750</b>
1500 (only SDM)	<b>1500</b>

#### ③ Housing Material

Aluminium	<b>A</b>
Brass (only SDM)	<b>B</b>

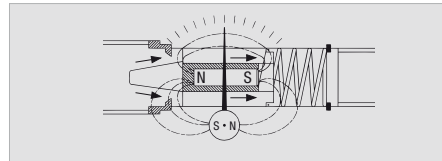
#### ④ Flow Ranges

See table on page D83

#### ⑤ Thermometer

With integrated thermometer (standard option) **T**

### Functional Principal Flow Measuring



The flow indicators SDM and SDMKR have a sharp-edged orifice and a tapered metering piston, which moves in proportion to changes of flow against a spring. In no flow condition the piston closes the opening and the pointer indicates zero.

With increasing flow and differential pressure the piston moves against the calibrated spring. The piston movement is directly proportional to the flow rate and is magnetically coupled to the rotary pointer. During this function the sharp-edged orifice minimises the effects of viscosity. The flow is shown on a calibrated scale in l/min and gal/min.

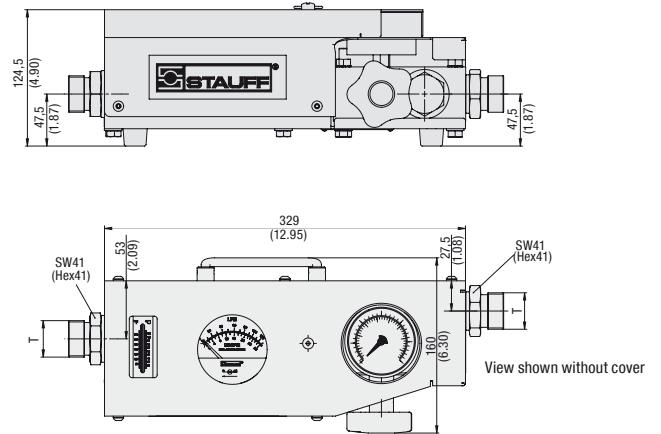
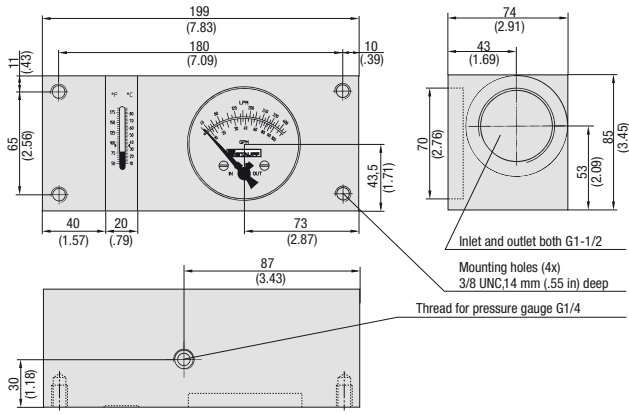
### Controlling Working Pressure with SDMKR

The pressure control valve of the SDMKR is directly connected to a flow-block and together with the integrated pressure gauge it allows an exact control of the working pressure in the maximum range.

For protection the SDMKR has two rupture disks. At a pressure >420 bar the disks burst and the fluid is by-passed around the valve. The rupture disks (other pressure ranges on request) can be replaced easily.

The SDMKR also permits flow in the reverse direction (without flow rate determination).

## Flow Indicators - Types SDM / SDMKR

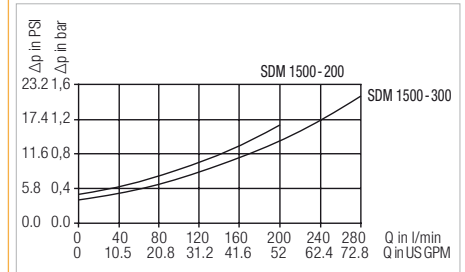
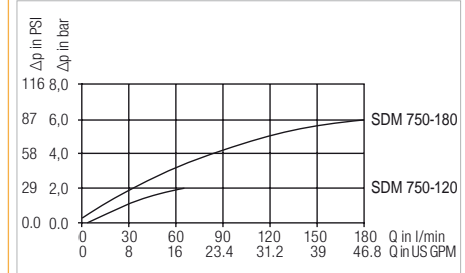
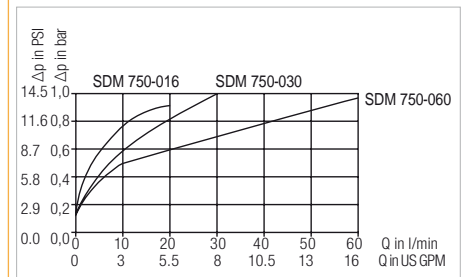


## Technical Data

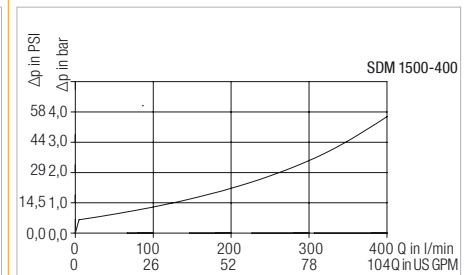
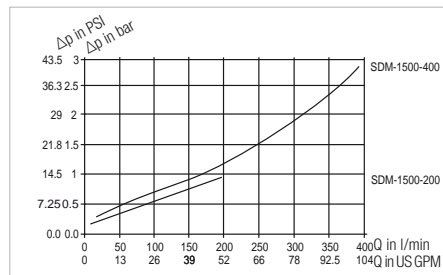
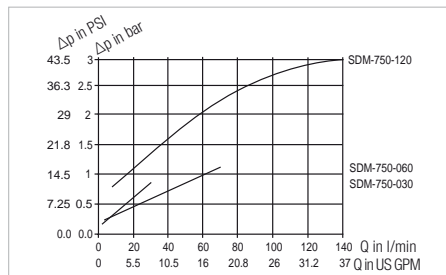
Order Codes	Max. Working Pressure (bar/PSI)	Flow Range (l/min/US GPM) Aluminum Units	Flow Range Brass Units (only SDM) *	Weight (kg/lbs)	Connection T
SDM-750-A-016-T	420 6091	2 - 16 0.5 - 4	- -	1,36 3.0	G3/4
SDM-750-A-030-T	420 6091	2 - 30 0.5 - 8	- -	1,36 3.0	G3/4
SDM-750-A-060-T	420 6091	2 - 60 0.5 - 16	- -	1,36 3.0	G3/4
SDM-750-A-120-T	420 6091	4 - 120 1 - 32	- -	1,36 3.0	G3/4
SDM-750-A-180-T	420 6091	10 - 180 4 - 48	- -	1,36 3.0	G3/4
SDM-750-B-030-T	420 6091	- -	2 - 30 l/min in oil 2 - 30 l/min in water	3,80 8.40	G3/4
SDM-750-B-060-T	420 6091	- -	3 - 60 l/min in oil 3 - 70 l/min in water	3,80 8.40	G3/4
SDM-750-B-120-T	420 6091	- -	4 - 120 l/min in oil 4 - 140 l/min in water	3,80 8.40	G3/4
SDM-1500-A-200-T	350 5075	10 - 200 5 - 50	- -	3,0 6.61	G1-1/2
SDM-1500-A-300-T	350 5075	20 - 300 4 - 80	- -	3,0 6.61	G1-1/2
SDM-1500-A-400-T	350 5075	20 - 400 5 - 100	- -	3,0 6.61	G1-1/2
SDM-1500-B-200-T	350 5075	- -	10 - 200 l/min in oil 10 - 200 l/min in water	8,0 17.64	G1-1/2
SDM-1500-B-400-T	350 5075	- -	20 - 400 l/min in oil 20 - 400 l/min in water	8,0 17.64	G1-1/2
SDMKR-750-A-030-T	420 6091	2 - 30 0.5 - 8	- -	6,6 14.55	G3/4
SDMKR-750-A-060-T	420 6091	5 - 60 1.3 - 16	- -	6,6 14.55	G3/4
SDMKR-750-A-120-T	420 6091	5 - 120 1.3 - 32	- -	6,6 14.55	G1
SDMKR-750-A-200-T	420 6091	10 - 200 4 - 53	- -	6,6 14.55	G1

## Flow Curves - Aluminium Version (Oil)

(Curves refer to kinematic viscosity of 25cSt):



## Flow Curves - Brass Version (Water)



\* The Brass units have a scale for water and oil – in l/min.  
Dimensional drawings: All dimensions in mm (in).

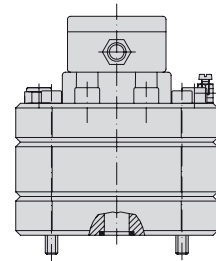
## Flow Monitoring Unit - Type SGF

### Product Description

With the SGF flow monitoring unit STAUFF offers two different solutions for high accuracy and high pressure flow monitoring.

The SFG monitoring unit can be integrated into manifolds or supplied with two types of mounting plates.

Please see page D85 for details.



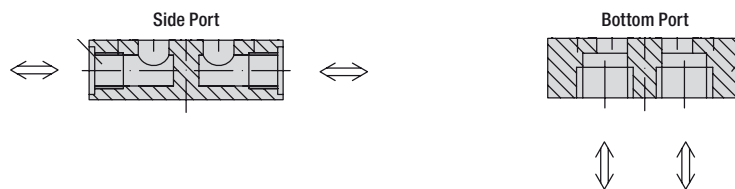
### Mounting Plates - Types SGFM

The connection plate SGFM is available in two versions.

- Side port version
- Bottom port version

They are only to be used with the SGF.

Please see page D88 for details.

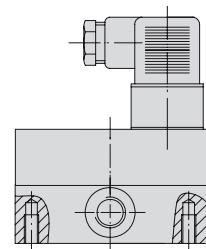


## Flow Monitoring Unit - Type SGFE

### Product Description

The SGFE Aluminum Ecoflow based on the same measuring principal like the SGF, but is the economical alternative. This product only featured side port connection.

Please see page D90 for details.



## Flow Rate Displays - Types STD 1 / STD 2 / STD 3 / STD 4

### Product Description

The Flow Rate Display allows to visualize the values of both flow monitoring units (SGF and SGFE).

STAUFF offers four versions of flow rate displays.

Please see page D93 / D94 for details.



STD 1

STD 2

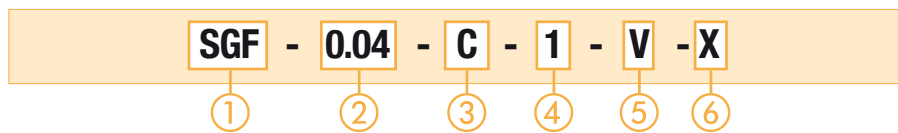
STD 3

STD 4

## Flow Monitoring Unit - Type SGF



## Order Codes



## ① Series and Type

Flow Monitoring Unit	<b>SGF</b>
----------------------	------------

## ② Version

0,002 ... 2 l/min / 0.0005 ... 0.53 US GPM	<b>0.02</b>
0,004 ... 4 l/min / 0.0011 ... 1.06 US GPM	<b>0.04</b>
0,01 ... 10 l/min / 0.0026 ... 2.64 US GPM	<b>0.1</b>
0,02 ... 18 l/min / 0.0053 ... 4.76 US GPM	<b>0.2</b>
0,03 ... 40 l/min / 0.0079 ... 10.57 US GPM	<b>0.4</b>
0,05 ... 80 l/min / 0.0132 ... 21.13 US GPM	<b>1</b>
0,1 ... 120 l/min / 0.0264 ... 31.70 US GPM	<b>2</b>
1,0 ... 250 l/min / 0.2642 ... 66.00 US GPM	<b>4</b>

## ③ Material

Cast Iron	<b>C</b>
Stainless Steel 1.4305	<b>S</b>

## ④ Bearing Type

Ball bearing	<b>1</b>
Spindle - bearing	<b>2</b>

\* Special bearing typ for special application on request

## ⑤ Sealings

FPM (Viton®) (standard option)	<b>V</b>
NBR (Buna-N®)	<b>B</b>
PTFE	<b>T</b>
EPDM	<b>E</b>

## ⑥ Special Options

Contact STAUFF for details
----------------------------

Note: Further technical details of connection plates SGFM please see on pages D88 / D89.

## Product Description

The STAUFF SGF positive displacement Flow Meter offers a comprehensive solution for high accuracy and high pressure flow monitoring. The units are available for flow ranges from 0,002 l/min to 250 l/min / 0.0005 to 66.00 US GPM and are suitable for pressures up to 450 bar / 6500 PSI. It is possible to integrate the units direct into the hydraulic circuit. Furthermore a special digital display to visualize the flow is available.

Media specific models are available for applications such as: Hydraulic test stand, Grease, Ink, Lubrication Systems, Diesel Fuel, Kerosene and Brake Fluid.

## Technical Data

## Materials

- Body: EN-GJS-400-15 (EN 1563) / Stainless Steel 1.4305
- Bearings: Ball, Spindle
- Sealings: FPM (Viton®), NBR (Buna-N®), PTFE, EPDM

## Accuracy

- ± 0.3 % of measured value at 20 cSt

## Repeatability

- ± 0.05 % of measured value at 20 cSt

## Power Supply

- 10 ... 28 V DC

## Max. Operating Pressure

- Cast Iron housing: 315 bar / 4568 PSI
- Stainless Steel housing: 450 bar / 6526 PSI

## Medium Temperature

- -40 °C ... +120 °C / -40 °F ... +248 °F

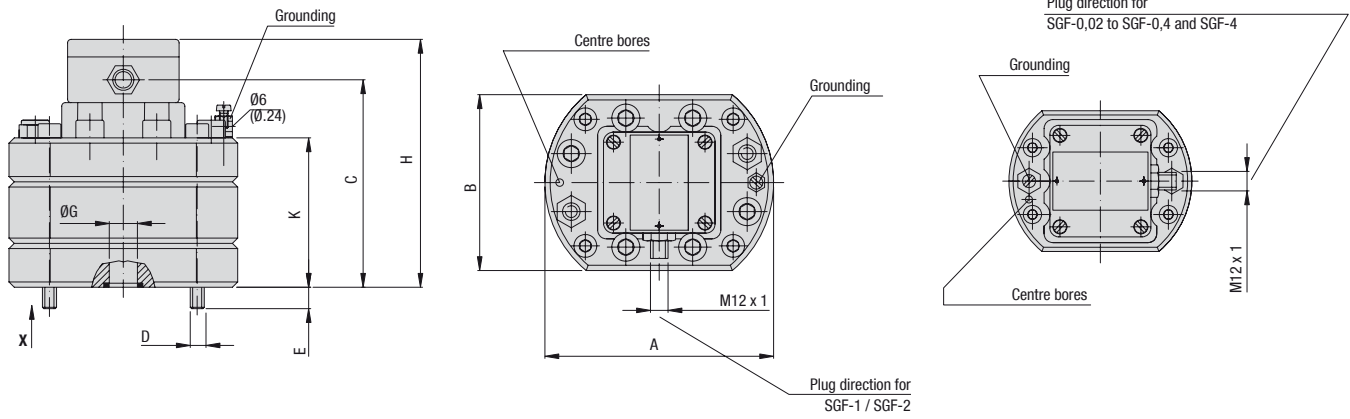
## Viscosity Range

- Up to 100000 cSt (depends on type)

## Available Ranges

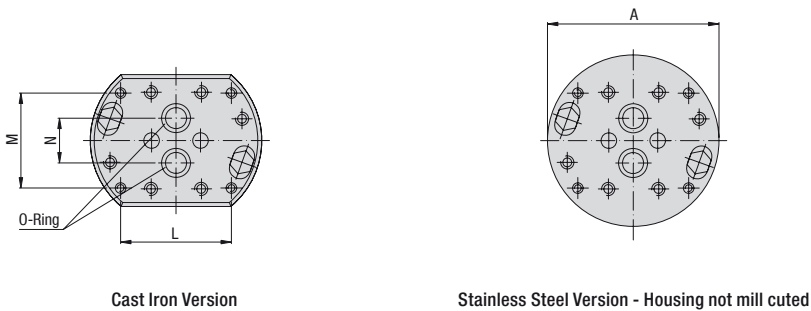
Version	Geometric Tooth Volume cm <sup>3</sup>	Measuring Range (l/min / US GPM)	K-Factor (lmp/Liter / lmp/Gal)
0.02	0,02	0,002 ... 2	50000
		0,005 ... 0.53	189272
0.04	0,04	0,004 ... 4	25000
		0,0011 ... 1.06	94636
0.1	0,1	0,01 ... 10	10000
		0,0026 ... 2.64	37854.4
0.2	0,2	0,02 ... 18	5000
		0,0053 ... 4.76	18927.2
0.4	0,4	0,03 ... 40	2500
		0,0079 ... 10.57	9463.6
1	1	0,05 ... 80	1000
		0,0132 ... 21.13	3785.44
2	2	0,1 ... 120	500
		0,0264 ... 31.70	1892.72
4	4	1 ... 250	250
		0,2642 ... 66.00	946.36

## Flow Monitoring Unit - Type SGF



Cast Iron Version - Housing curve mill cuted

## Connection Drawing (View X)



Cast Iron Version

Stainless Steel Version - Housing not mill cuted

## Dimensions

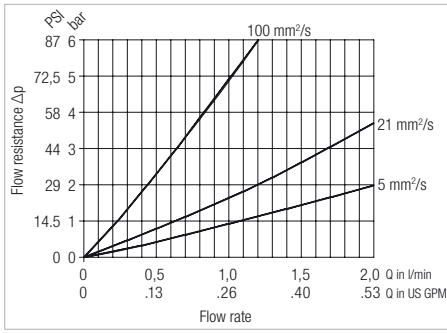
Version	A (mm/in)	B (mm/in)	C (mm/in)	D	E (mm/in)	ØG (mm/in)	H (mm/in)	K (mm/in)	L (mm/in)	M (mm/in)	N (mm/in)	O-Ring	Weight (kg/lbs)	
													Cast Iron *	Stainless Steel **
0.02	100,0	80,0	91,0	M6	12,5	9	114,0	58,0	70,0	40,0	20,0	11 x 2	2,8	3,4
	3.94	3.15	3.58		.49	.35	4.49	2.28	2.76	1.57	.79		6.17	7.50
0.04	100,0	80,0	91,5	M6	11,5	9	114,5	58,5	70,0	40,0	20,0	11 x 2	2,8	3,4
	3.94	3.15	3.60		.45	.35	4.51	2.30	2.76	1.57	.79		6.17	7.50
0.1	100,0	80,0	94,0	M6	9,0	9	117,0	61,0	70,0	40,0	20,0	11 x 2	2,8	3,4
	3.94	3.15	3.70		.35	.35	4.61	2.40	2.76	1.57	.79		6.17	7.50
0.2	100,0	80,0	93,5	M6	9,5	9	116,5	60,5	70,0	40,0	20,0	11 x 2	3,0	3,7
	3.94	3.15	3.68		.37	.35	4.59	2.38	2.76	1.57	.79		6.61	8.16
0.4	115,0	90,0	96,5	M8	11,5	16	119,5	63,5	80,0	38,0	34,0	17,96 x 2,62	4,0	5,0
	4.53	3.54	3.80		.45	.63	4.70	2.50	3.15	1.50	1.34		8.82	11.02
1	130,0	100,0	101,0	M8	12,0	16	124,0	68,0	84,0	72,0	34,0	17,96 x 2,62	5,3	6,8
	5.12	3.94	3.98		.47	.63	4.88	2.68	3.31	2.83	1.34		11.68	15.00
2	130,0	100,0	118,0	M8	15,0	16	141,0	85,0	84,0	72,0	34,0	17,96 x 2,62	6,7	8,4
	5.12	3.94	4.65		.59	.63	5.55	3.35	3.31	2.83	1.34		14.78	18.52
4	180,0	140,0	143,0	M12	20,0	30	166,0	110,0	46,0	95,0	45,0	17,96 x 2,62	14,7	18,4
	7.09	5.51	5.63		.79	1.18	6.54	4.33	1.81	3.74	1.77		32.41	40.57

\* Cast Iron EN-GJS-400-15 (EN 1563)

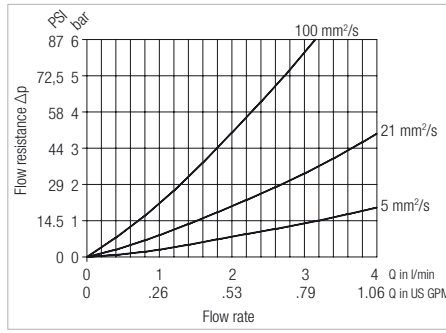
\*\* Stainless Steel 1.4305



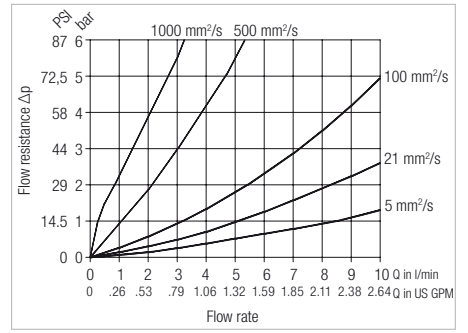
Flow Monitoring Unit - Type SGF



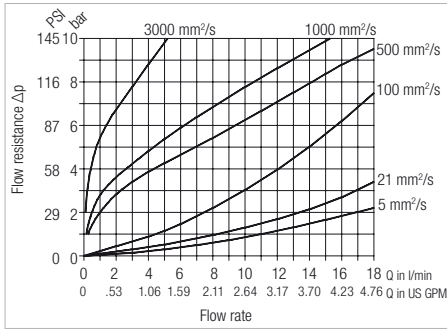
SGF-0.02



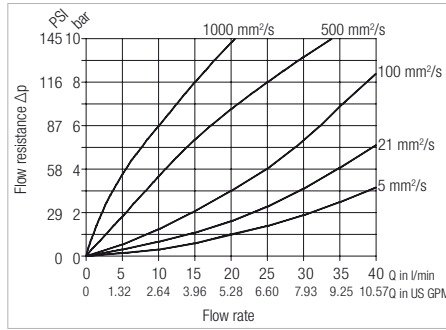
SGF-0.04



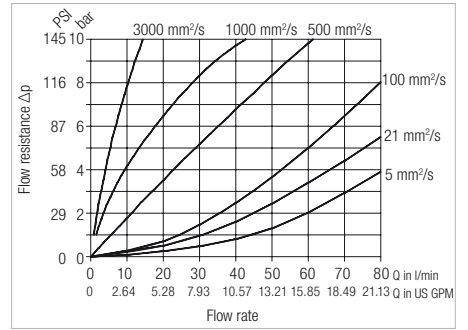
SGF-0.1



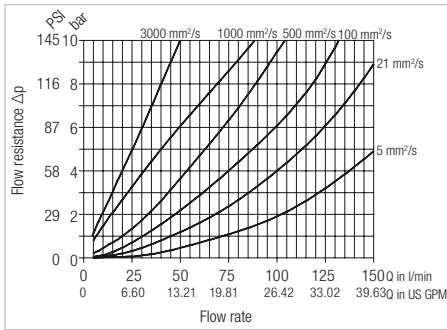
SGF-0.2



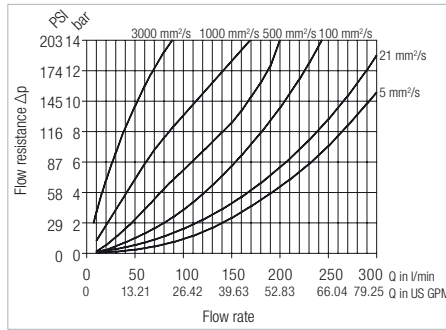
SGF-0.4



SGF-1

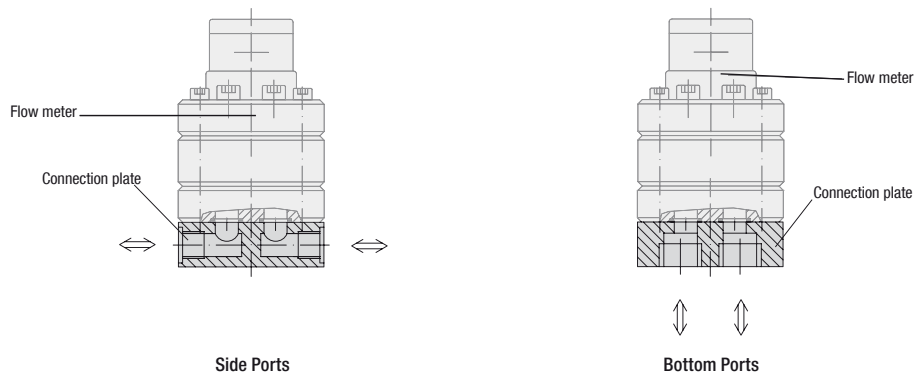


SGF-2



SGF-4

## Connection Plate for use with SGF - Type SGFM



### Product Description

STAUFF offers different connections plates to connect your SGF flow monitoring unit to your application. They allow a side port or bottom port connection and are available in different thread sizes.

### Order Codes



#### ① Series and Type

Connection Plate	<b>SGFM</b>
------------------	-------------

#### ② Size

Manifold Size	Available Thread Connections	Code
SGF-0.02 ... SGF-0.2	SAE -4, -6, -8, -12	<b>0.2</b>
	NPT 1/4 NPT, 3/8 NPT, 1/2 NPT, 3/4 NPT	
	BSPP G1/4, G3/8, G1/2, G3/4	
SGF-0.4	SAE -8, -12, -16	<b>0.4</b>
	NPT 1/2 NPT, 3/4 NPT, 1 NPT	
	BSPP G1/2, G3/4, G1	
SGF-1 ... 2	SAE -8, -12, -16	<b>1</b>
	NPT 1/2 NPT, 3/4 NPT, 1 NPT, 1-1/4 NPT	
	BSPP G1/2, G3/4, G1	
SGF-4	SAE -12, -16, -20	<b>4</b>
	NPT 3/4 NPT, 1 NPT, 1-1/4 NPT BSPP G3/4, G1, G1-1/4, G1-1/2	
SGF-10	SAE 1-1/2, 2	<b>10</b>
	Flange BSPP G1-1/2, G2	

#### ③ Connection Type

Side Port Connection	<b>S</b>
Bottom Port Connection	<b>B</b>

#### ④ Material

Cast Iron	<b>C</b>
Stainless Steel 1.4305	<b>S</b>

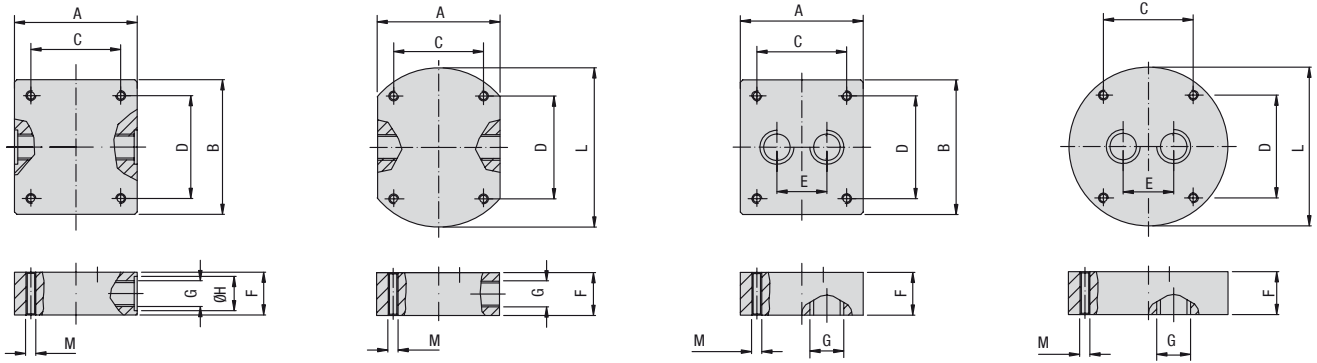
#### ⑤ Connection Thread

G1/4	<b>1</b>
G3/8	<b>2</b>
G1/2	<b>3</b>
G3/4	<b>4</b>
G1	<b>5</b>
G1-1/4	<b>6</b>
G1-1/2	<b>7</b>
1/4 NPT	<b>8</b>
3/8 NPT	<b>9</b>
1/2 NPT	<b>10</b>
3/4 NPT	<b>11</b>
1 NPT	<b>12</b>
1-1/4 NPT	<b>13</b>
1-1/2 NPT	<b>14</b>
-8 SAE	<b>15</b>
-12 SAE	<b>16</b>
-16 SAE	<b>17</b>
-20 SAE	<b>18</b>
-24 SAE	<b>19</b>
-32 SAE	<b>20</b>
Others on request	

#### ⑥ Special Options

Contact STAUFF for details

## Connection Plate ■ Type SGFM



Side Port - Cast Iron

Side Port - Stainless Steel

Bottom Port \* - Cast Iron

Bottom Port \* - Stainless Steel

## Dimensions

Affiliated Size	Size SGF	G Pipe Thread Classification	G	F (mm/in)	ØH (mm/in)	E** (mm/in)
	0.02 / 0.04 0.1 / 0.2		G1/4	35 1.38	20 .79	26 1.02
0.02 / 0.04 0.1 / 0.2	G3/8	35 1.38	23 .91	30 1.18		
0.02 / 0.04 0.1 / 0.2	G1/2	35 1.38	28 1.10	38 1.50		
0.4 / 1 / 2	G1/2	35 1.38	28 1.10	46 1.81		
0.4 / 1 / 2	G3/4	40 1.57	33 1.30	52 2.05		
1 / 2	G1	55 2.17	41 1.61	55 2.17		
4	G1-1/4	70 2.76	51 2.01	60 2.36		
4	G1-1/2	AP..U=70 AP..U= 2.76	56 2.20	72 2.83		
4	G1-1/2	AP..S=80 AP..S=3.15	56 2.20	72 2.83		

Size SGF	A (mm/in)	B (mm/in)	C (mm/in)	D (mm/in)	L*** (mm/in)	Depth M	Weight (kg/lbs)
0.02 / 0.04 0.1 / 0.2	80 3.15	90 3.54	40 1.57	70 2.76	100 3.94	M6/12	1,8 3.97
0.4	90 3.54	100 3.94	38 1.50	80 3.15	115 4.53	M8/15	2,7 5.95
1 / 2	100 3.94	110 4.33	72 2.83	84 3.31	130 5.12	M8/15	3,6 7.94
4	120 4.72	130 5.12	100 3.94	110 4.33	-	M8/15	7,4 16.31
	140 5.51	120 4.72	120 4.72	100 3.94	-	M8/15	7,4 16.31
	140 5.51	-	100 3.94	110 4.33	180 7.09	M8/15	12 26.46

\* Both bottom ports (G) for sizes 4 have a displacement of 90° to the shown drawings.

\*\* Only for bottom port connections

\*\*\* Only for Stainless Steel versions

Dimensional drawings: All dimensions in mm (in).

## Flow Monitoring Unit - Type SGFE



### Product Description

Based upon the same positive displacement gear principle as the STAUFF SGF series, the SGFE Aluminum Ecoflow is an economical alternative for applications that require lower accuracy, temperature, and pressure.

### Features

- In-line connection on the side
- An integrated pick up with PNP or NPN switching output produces one impulse per tooth volume.

### Options

- LCD flow display with analog output and set limit switches mounted directly to the flow meter

### Technical Data

#### Materials

- Body: Aluminium
- Bearings: Stainless Steel, Bronze, DU
- Sealings: FPM (Viton®), NBR (Buna-N®), PTFE, EPDM

#### Accuracy

- ± 2 % of measured value at 20 cSt

#### Power Supply

- 10 ... 30 V DC

#### Max. Operating Pressure

- 200 bar / 2900 PSI

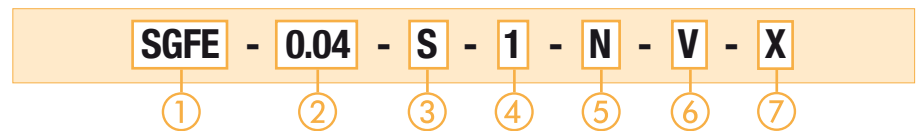
#### Medium Temperature

- 0 °C ... +80 °C / 32 °F ... +176 °F

#### Viscosity Range

- Up to 100000 cSt (depends on type)

### Order Codes



#### ① Series and Type

Flow Monitoring Unit	SGFE
----------------------	------

#### ② Version

0,05 ... 4 l/min / 0.013 ... 1.06 US GPM	0.04
0,1 ... 10 l/min / 0.026 ... 2.64 US GPM	0.1
0,2 ... 30 l/min / 0.053 ... 7.93 US GPM	0.4
0,5 ... 70 l/min / 0.132 ... 18.49 US GPM	2
3,0 ... 150 l/min / 0.79 ... 39.63 US GPM	4

#### ③ Connection Type

Connection plate and location on side	S
---------------------------------------	---

#### ④ Bearing Type

Stainless Steel - ball bearing	1
Bronze - sleeve bearing	2
DU - sleeve bearing	3

#### ⑤ Pulse Output

NPN	N
PNP	P

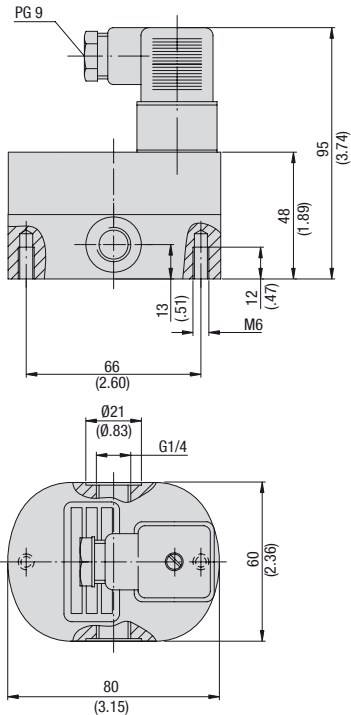
#### ⑥ Sealings

FPM (Viton®) (standard option)	V
NBR (Buna-N®)	B
PTFE	T
EPDM	E

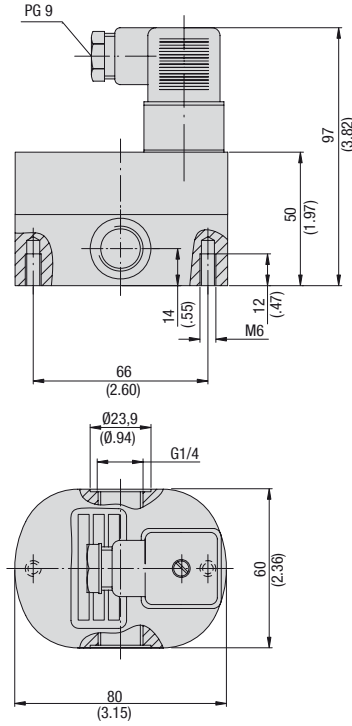
#### ⑦ Special Options

Contact STAUFF for details
----------------------------

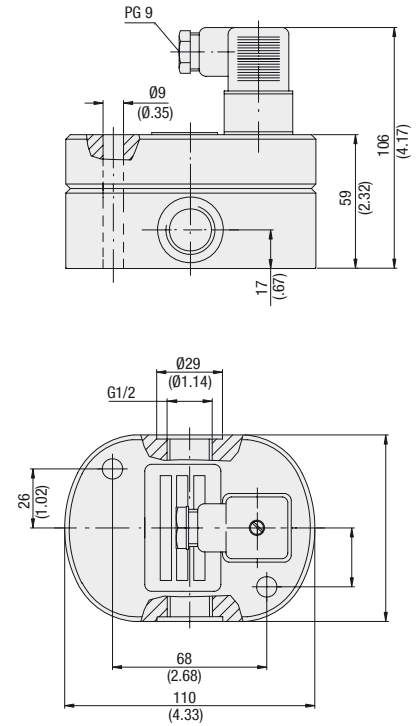
Flow Monitoring Unit - Type SGFE



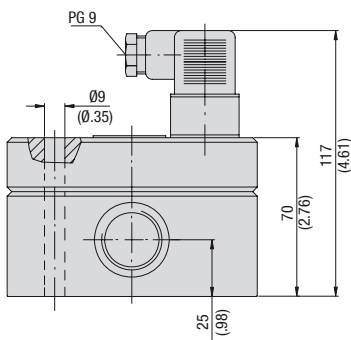
SGFE-0.04



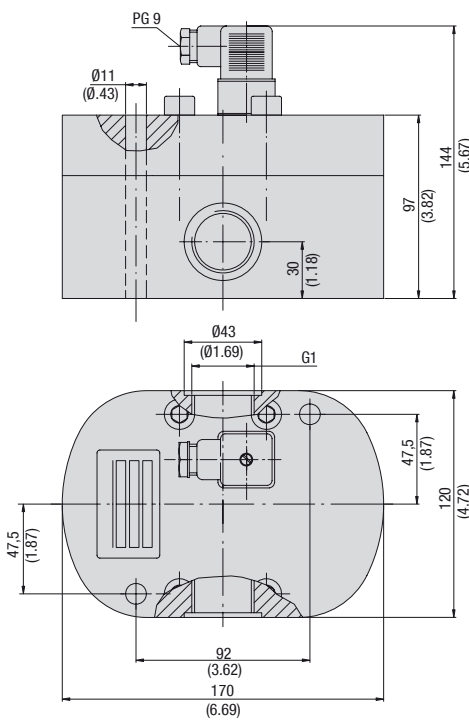
SGFE-0.1



SGFE-0.4

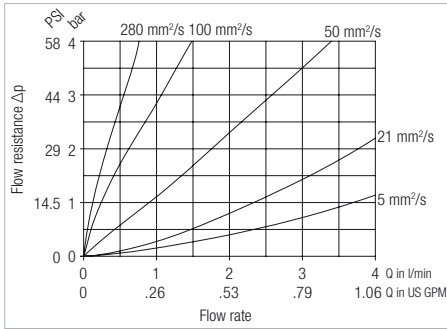


SGFE-2

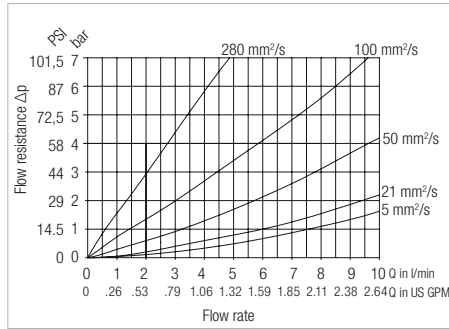


SGFE-4

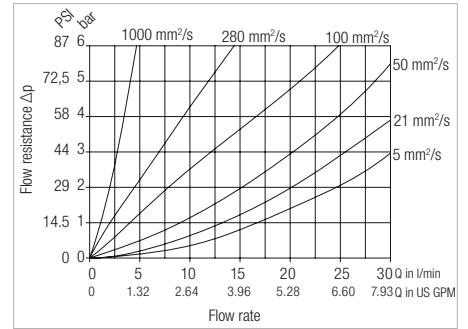
## Flow Monitoring System ■ Type SGFE



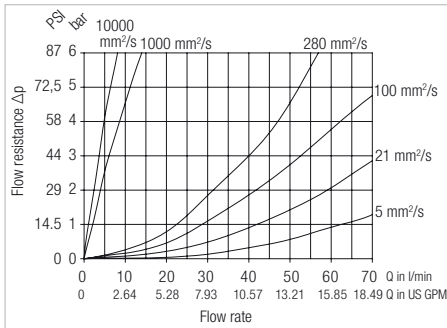
SGFE-0.04



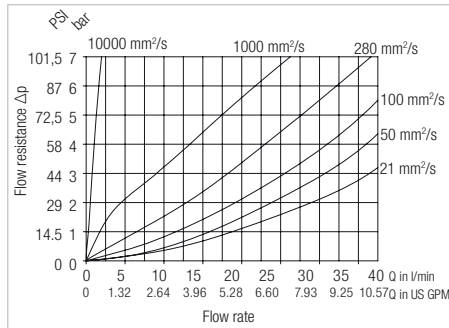
SGFE-0.1



SGFE-0.4



SGFE-2



SGFE-4

**Note:**

For trouble-free and safe operation of the flow monitoring units the correct selection of type and size is critical. Due to the great number of different applications and flow monitoring unit versions the technical data in the catalogue are of general character.

Certain characteristics of the devices depend on type, size and measuring range as well as on the medium to be measured.

For exact flowmeter select please contact STAUFF.

## Flow Rate Display ■ Type STD 1



## Order Codes

**STD 1 - 420A - 24 - 1**

①

②

③

④

Only flow rate display

## ① Series and Type

 Flow rate display **STD 1**

## ② Output Signal

without analog output	<b>0</b>
0 ... 20 mA analog output	<b>020A</b>
4 ... 20 mA analog output	<b>420A</b>
0 ... 10 V analog output	<b>010V</b>
±0 ... 20 mA analog output	<b>N020A</b>
±0 ... 10 V analog output	<b>N010V</b>

## ③ Power Supply

Power supply 12 V DC	<b>12</b>
Power supply 24 V DC	<b>24</b>
Power supply 115 V AC	<b>115</b>
Power supply 230 V AC	<b>230</b>

## ④ Design

Panel Mount Design	<b>1</b>
19" Push in Design	<b>2</b>
Desktop Design	<b>3</b>

## Product Description

Flow rate instrument to display and process signals of the STAUFF flow monitoring units SGF and SGFE.

- Flow direction indication with switching outputs
- Desktop housing design, panel mounting 96 x 48 mm or 19" push in design
- Analog output: 0 ... ± 10 V, 0 ... ± 20 mA or 4 ... 20 mA flow rate direction dependent voltage-/current-polarity is available
- Integrated power supply for flow sensor 24 V DC / 50 mA
- Maximum input frequency 2000 Hz
- Refresh time 50 ms

## Order Codes

**STD 2 - V - N020A - 24 - 1**

①

②

③

④

⑤

## ① Series and Type

 Flow rate- or volume display **STD 2**

## ② Version

Volume display	<b>V</b>
Flow rate display	<b>F</b>

## ③ Output Signal

±0 ... 20 mA analog output	<b>N020A</b>
±0 ... 10 V analog output	<b>N010V</b>
4 ... 20 mA analog output	<b>420A</b>

## ④ Power Supply

Power supply 24 V DC *	<b>24</b>
Power supply 230 V AC	<b>230</b>

\* 24 V DC supply only for STD 2

## ⑤ Design

Panel Mount Design	<b>1</b>
Desktop Design	<b>2</b>

## Flow Rate or Volume Display ■ Type STD 2



Programmable display with switching outputs

## Product Description

Flow rate or volume display device to display and process signals of the STAUFF flow monitoring units SGF and SGFE.

- Flow meter type selectable by menu
- Flow meter direction indicator
- Desktop housing design or panel mount design
  - 96 x 48 x 150 mm / 3.78 x 1.89 x 5.91 (12 V, 30 mA for sensor with 230 V AC power supply) or
  - 96 x 96 x 150 mm / 3.78 x 3.78 x 5.91 (24 V, 100 mA for sensor with 24 V DC power supply)
- 16-bit analog output 0 ... ± 10 V, 0 ... ± 20 mA or 0 / 4 ... 20 mA
- 2 limit value outputs
- Semiconductor
- SGF and SGFE preprogrammed parameters
- Power supply for flow sensor integrated 24 V DC / 100 mA and 12 V DC / 30 mA
- Maximum input frequency 45000 Hz
- Refresh time 20 ... 9999 ms adjustable



## Flow Rate and Volume Display ▀ Type STD 3



Programmable display with switching outputs

### Product Description

Selectable flow rate or volume display in once device to display and process signals of the STAUFF flow monitoring units SGF and SGFE.

- Flow meter and volume meter type programmable
- Desktop housing design or panel mount design
- 12-bit analog output 0 ... 10 V, 0 ... 20 mA or 4 ... 20 mA
- Switching outputs available
- Power supply for flow sensor integrated 12 V / 100 mA
- Maximum input frequency 6000 Hz
- Refresh time 100 ... 9999 ms
- Power supply 24 V (11-36 V DC) or 110 / 230 V (85-250 V AC)

### Order Codes

**STD 3** - **N020A** - **24** - **0** - **1**

①                      ②                      ③                      ④                      ⑤

#### ① Series and Type

Flow rate- and volume display      **STD 3**

#### ② Output Signal

Without	<b>0</b>
0 ... 10 V	<b>010V</b>
0 ... 20 mA	<b>020A</b>
4 ... 20 mA	<b>420A</b>

#### ③ Power Supply

Power supply 24 V DC (11-36 V DC)	<b>24VDC</b>
Power supply 110/230 V AC (85-2501 V AC)	<b>230VAC</b>

#### ④ Switching Output

Without switching output	<b>0</b>
With switching output	<b>W</b>

#### ⑤ Design

Panel Mount Design	<b>1</b>
Desktop Design	<b>2</b>

## Signal Converter ▀ Type STD 4



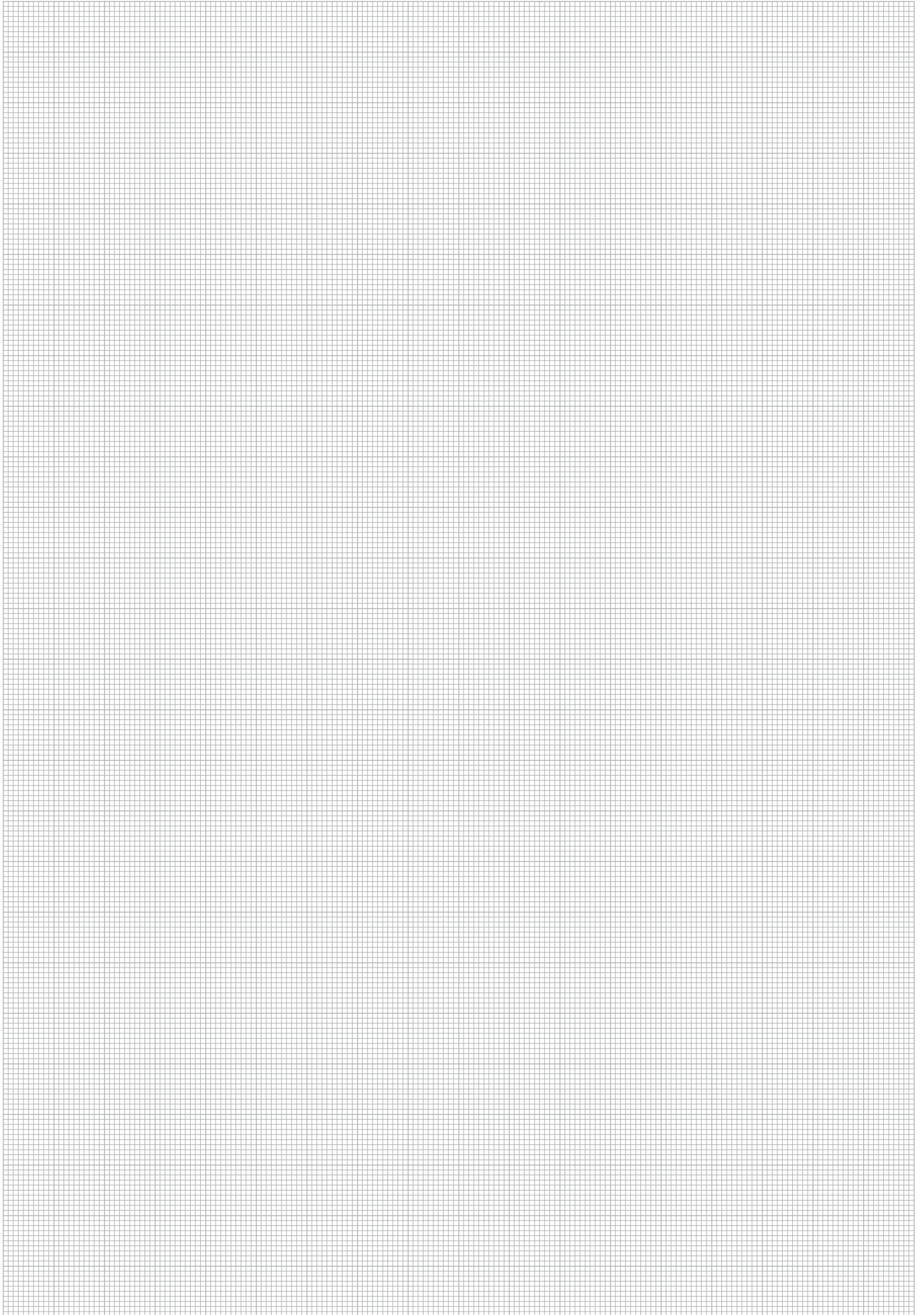
### Product Description

STD 4 is a small and inexpensive, but very powerful converter for industrial applications where frequencies of the STAUFF flow monitoring units SGF and SGFE will be converted into an analog signal or a serial data stream. The unit is housed in a compact housing for DIN rail mounting and is equipped with 12 screw terminal connections and a 9-pin Sub-D socket.

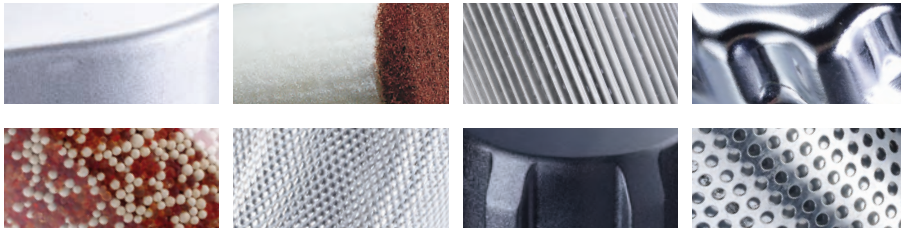
- Input frequency for scale in the range of 0.1 Hz to 1 MHz adjustable
- Extremely fast conversion time of only 1 ms ( $f > 3$  kHz)
- Analog outputs  $\pm 10$  V, 0 ...  $\pm 20$  mA and 4 ... 20 mA
- Polarity of the output signal depends on the direction of rotation
- Converts also sum, difference, product or ratio of two frequencies
- RS 232 and RS 485 interface for serial readout of the sensor frequency
- Power supply 18 ... 30 V DC
- Programmable digital filter and default option for any linearization curves
- Maximum frequency 1 MHz (200 kHz with SGF / SGFE)
- Can also handle asymmetric TTL pulse

### Order Code

**STD 4**







The STAUFF Hydraulic Accessories programme has been carefully designed to offer a constantly growing range of sophisticated components suited to the demands of designing and building tanks, reservoirs, power packs and gear boxes in most industrial and mobile hydraulic applications.

Whether you require visual or visual/electrical fluid level and temperature indicators, tank filler breathers made of plastic or metal, or air breathers to protect your reservoir from contamination and moisture: STAUFF Hydraulic Accessories will provide you with the product you need! The programme is rounded off by suction strainers and diffusers that are positioned within the reservoir and connected directly to the suction and return lines.

STAUFF guarantees prompt service, even for special constructions according to customer's specifications or based on STAUFF developments, such as the range of extra-compact equipment that has particularly been designed for applications in which space is limited.

Please do not hesitate to contact STAUFF for further details.

[www.stauff.com](http://www.stauff.com)

# E

## Hydraulic Accessories

Index	E2
Fluid Level / Temperature Indicators	E4
Tank Filler Breathers	E12
Giant Air Breathers	E28
Desiccant Air Breathers	E30
Suction Line Accessories	E34
Return Line Accessories	E36
Pipe, Tube and Hose Cleaning	E38

## Please Note

In the past, the Hydraulic Accessories section of our product catalogue included a lot more products than this edition does. These products are still available at STAUFF and part of this product catalogue, but have been moved to other sections in order to summarise similar and/or related products and simplify working with this catalogue. Thank you very much for your understanding.

## C Filtration Technology



**Spin-On Filters**

C122

## D Diagtronics



**Pressure Gauge**

SPG

D6



**Level-Temperature Switch**

SLTS

D59



**Flow Indicator**

SDM  
SDMKR

D82

## F Valves



**Throttle and Flow Control Valve  
(In-Line Mounting)**

DV  
DRV

F80



**Throttle and Flow Control Valve  
(Manifold Mounting)**

DVP  
DRVP

F82



**Throttle and Flow Control Valve  
(Cartridge Assembly)**

DVE

F84



**Check Valve**

RV

F86



**Gauge Isolator Valve  
(Single Station)**

SWS-S1

F90



**Gauge Isolator Valve  
(Multi Station)**

SWS-M

F90

## Fluid Level / Temperature Indicators



**Level Gauge**

SNA

E4



**Level Gauge  
(Special Options)**

SNA/SNK

E5



**Level Gauge**

SNK

E6



**Level Gauge  
(Compact Design)**

SNKK

E7



**Thermo Switch**

for use with Level Gauge

TS-SNA/SNK

E8



**Dial Thermometer with Probe**

for use with Level Gauge

T1 / T2

E8



**Temperature Sensor**

for use with Level Gauge

TS-SNA/SNK-PT100

E9



**Temperature Sensor  
with Direct Installation Set**

TS-SNA/SNK-PT100-T

E9



**Display / Evaluation Unit**

for use with Temperature Sensor

TS-SNA/SNK-PT100-D

E10



**Signal Converter**

for use with Temperature Sensor

TS-SNA/SNK-PT100-C

E10



**Anti-Drain Valve**

for use with Level Gauge

SDV-SNA/SNK

E11

### Tank Filler Breathers

### Giant Air Breathers

**Plastic Filler Breather**  
(Screw-In Version) SPB 1 SPB 2 SPB 3 **E12**

**Plastic Filler Breather**  
(Flange Version) SPB 4 SPB 5 **E13**

**Accessories / Options** (Dipsticks / Baskets / Pressurisation)  
**Pressure Drop Flow Curves** **E14**

**Plastic Filler Breather**  
(Compact Design; Screw-In Version) SPBN **E16**

**Plastic Filler Breather**  
(Compact Design; Bayonet Version) SPBN **E16**

**Accessories / Options** (Dipsticks / Baskets / Pressurisation)  
**Pressure Drop Flow Curves** **E17**

**Metal Filler Breather**  
(Screw-In Version) SMBT-47 **E18**

**Metal Filler Breather**  
(Bayonet Version) SMBB-47 **E19**

**Metal Filler Breather**  
(Screw-In Version) SMBT-80 **E20**

**Metal Filler Breather**  
(Bayonet Version) SMBB-80 **E21**

**Metal Breather**  
(Push-On Version) SMBP-80 **E22**

**Lockable Metal Filler Breather**  
(Clamping, Threaded and Push-On Version) SMBL **E23**

**Side Mount Bracket (Polyamide)**  
for use with Filler Breather ASMB-1 **E24**

**Side Mount Bracket (Aluminium)**  
for use with Filler Breather ASMB-2 **E24**

**Extended Bayonet Flange**  
for use with Filler Breather EBF-1 **E25**

**Extended Bayonet Flange**  
for use with Filler Breather EBF-2 **E25**

**Weld Riser**  
for use with Filler Breather WR **E25**

**Plastic Filler Breather**  
(Screw-In Version) SES-1 **E26**

**Plastic Filler Breather**  
(Welded Version) SES-2 **E26**

**Giant Air Breather** SGB **E28**

**Breather Adaptor** TBA **E29**

### Desiccant Air Breathers

**Desiccant Air Breather** SDB **E30**

**Desiccant Air Breather**  
(Economy Version) SVDB **E31**

**Desiccant Air Breather**  
with Check Valves SDB-CV **E32**

**Adaptor Plate**  
for use with Desiccant Air Breather AP **E33**

**Visual Contamination Indicator**  
for use with Adaptor Plate FM **E33**

**Oil Demister**  
for use with Desiccant Air Breather TBA-OD **E33**

### Suction Line Accessories

**Suction Strainer**  
(Polyamide End Cap) SUS **E34**

**Suction Strainer**  
(Aluminium End Cap) SUS **E35**

### Return Line Accessories

**Diffuser** SRV **E36**

**Return Line Bushing** SRF **E37**

### STAUFF Clean

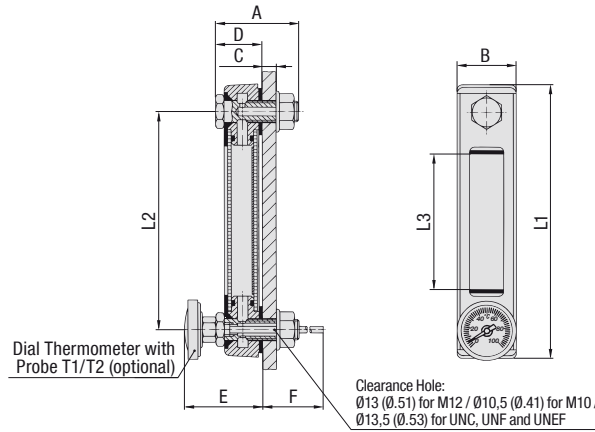
**Pipe, Tube and Hose Cleaning System** **E38**

**Launchers / Launcher Kits** **E38**

**Nozzles / Nozzle Sets** **E38**

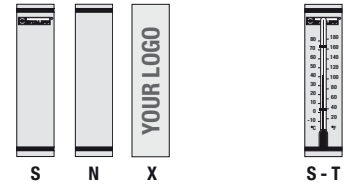
**Projectiles** **E39**

Level Gauge ■ Type SNA



Design of Scale Plates Thermometer Options

Capillary Tube Thermometer with a dual Celsius / Fahrenheit scale up to +80 °C / +180 °F



Characteristics

Visual fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 2 bar / 29 PSI

Nominal Sizes and Designs

- 6 nominal sizes from 76 mm / 2.99 in to 305 mm / 12.00 in
- Display either undivided (SNA 076 ... 176) or subdivided by strut(s) into 2 (SNA 254) or 3 sections (SNA 305)

Please see page E5 for alternative nominal sizes and designs.

Media Compatibility

- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

Materials

- Housing made of Steel St 12, black powder-coated
- Sight tube and plugs made of Polyamide (PA)
- Sealings made of NBR (Buna-N®)
- Scale plate made of PVC

Special sight tube materials for improved UV or chemical resistance and use with special media (such as bio-degradable fluids, diesel oils, gasolines, etc.) as well as special sealing materials, e.g. FPM (Viton®), and scale plate materials, e.g. Aluminium, are available on request.

Please see page E5 for alternative housing materials.

Technical Data

- IP 65 protection rating: Dust tight and protected against water jets (IP 67 on request)
- Operating temperature range: -30 °C ... +80 °C / -22 °F ... +176 °F
- Recommended tightening torque: 8 N·m / 5.9 ft·lb

Accessories / Options

- Red / blue capillary tube thermometers with a dual Celsius / Fahrenheit scale and a temperature display range of up to +80 °C / +180 °F
- Dial thermometers with probe and a Celsius or a dual Celsius / Fahrenheit scale with a temperature display range of up to +100 °C / +200 °F
- Thermo Switches
- Temperature Sensors

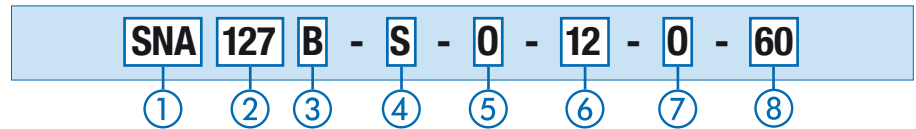
Please see pages E8 and E9 for details.

Dimensions

Maximum admissible tolerance for the bolt center spacing (dimension L2) according to DIN ISO 2768-f: ±0,20 mm / .008 in for all nominal sizes.

Nominal Size	Dimensions (mm/in)									
	A	B	C (Max.)	D	E	F (with T1)	F (with T2)	L1	L2	L3
SNA 076	45	34,5	8	28	43,5	165,5	265,5	108	76	31
	1.77	1.36	.32	1.10	1.71	6.52	10.45	4.25	2.99	1.22
SNA 127	45	34,5	8	28	43,5	165,5	265,5	159	127	76
	1.77	1.36	.32	1.10	1.71	6.52	10.45	6.26	5.00	2.99
SNA 150	45	34,5	8	28	43,5	165,5	265,5	182	150	99
	1.77	1.36	.32	1.10	1.71	6.52	10.45	7.17	5.91	3.90
SNA 176	45	34,5	8	28	43,5	165,5	265,5	208	176	124
	1.77	1.36	.32	1.10	1.71	6.52	10.45	8.19	6.93	4.88
SNA 254	45	34,5	8	28	43,5	165,5	265,5	285	254	192
	1.77	1.36	.32	1.10	1.71	6.52	10.45	11.22	10.00	7.56
SNA 305	45	34,5	8	28	43,5	165,5	265,5	336	305	244
	1.77	1.36	.32	1.10	1.71	6.52	10.45	13.23	12.00	9.61

Order Codes



① Type

Level Gauge with visual fluid level indication **SNA**

② Nominal Size

SNA 076 (nominal size of 76 mm / 2.99 in) **076**  
 SNA 127 (nominal size of 127 mm / 5.00 in) **127**  
 SNA 150 (nominal size of 150 mm / 5.91 in) **150**  
 SNA 176 (nominal size of 176 mm / 6.93 in) **176**  
 SNA 254 (nominal size of 254 mm / 10.00 in) **254**  
 SNA 305 (nominal size of 305 mm / 12.00 in) **305**

Please see page E5 for alternative nominal sizes.

③ Sealing Material

NBR (Buna-N®) (standard option) **B**  
 FPM (Viton®) **V**

④ Design of Scale Plate

With STAUFF logo (standard option) **S**  
 Neutral design without any logo **N**  
 Custom-designed scale plate (please specify) **X**

⑤ Thermometer Option

Supplied without thermometer **0**  
 Red Capillary Tube thermometer on scale plate **T**  
 Blue Capillary Tube thermometer on scale plate **TB**  
 Dial thermometer with probe (200 mm / 7.87 in) and a Celsius scale up to 100 °C **T1C**  
 Dial thermometer with probe (300 mm / 11.81 in) and a Celsius scale up to 100 °C **T2C**  
 Dial thermometer with probe (200 mm / 7.87 in) and a dual scale up to 100 °C / 200 °F **T1CF**  
 Dial thermometer with probe (300 mm / 11.81 in) and a dual scale up to 100 °C / 200 °F **T2CF**

⑥ Banjo Bolt Size

Metric ISO thread M12 (standard option) **12**  
 Metric ISO thread M10 **10**  
 Unified coarse thread 1/2–13 UNC **U1**  
 Unified fine thread 1/2–20 UNF **U2**  
 Unified extra-fine thread 1/2–28 UNEF **U3**

⑦ Thermo Switch / Temperature Sensor Option

Supplied without Thermo Switch / Temperature Sensor -  
 Thermo Switch TS-SNA/SNK; Break contact (normally closed); Equipped with standard connector **0**  
 Thermo Switch TS-SNA/SNK; Break contact (normally closed); Equipped with connector M12 **0D**  
 Thermo Switch TS-SNA/SNK; Make contact (normally open); Equipped with standard connector **C**  
 Thermo Switch TS-SNA/SNK; Make contact (normally open); Equipped with connector M12 **CD**  
 Temperature Sensor TS-SNA/SNK-PT100; Equipped with connector M12 **PT100**

Thermo Switches / Temperature Sensors only available for banjo bolt size M12. Please see pages E8 and E9 for details.

⑧ Switching Temperature

Contact switches at +60 °C / +140 °F **60**  
 Contact switches at +70 °C / +158 °F **70**  
 Contact switches at +80 °C / +176 °F **80**  
 Contact switches at +90 °C / +194 °F **90**

Only to be indicated when using a Thermo Switch.

Options T1C/CF and T2C/CF are not available for banjo bolt size M10 and not be used in conjunction with Thermo Switches or Temperature Sensors. Please see page E8 for details.



## Level Gauge (Special Options) - Type SNA/SNK

**Characteristics**

Visual fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 2 bar / 29PSI; ideal for custom applications in terms of reservoir capacities and dimensions

**Nominal Sizes**

- Special sizes beyond the normal of 305 mm / 12 in up to a maximum nominal size of 950 mm / 37.4 in – even for small and medium quantities
- High-precision manufacturing within 1 mm tolerance to customer requirements

**Design**

- Robust design thanks to one or more struts that subdivide the display into 2 or more sections
- Positioning of the strut(s) based on engineering considerations and/or according to particular customer requirements
- Precise visual indication of the fluid level by use of scale plates (only available for nominal sizes smaller than 670 mm / 26.4 in) or by use of a coloured floating element (recommended option for nominal sizes larger than 670 mm / 26.4 in)
- Plastic dampening clips to reduce vibration of the sight tube are used for nominal sizes larger than 450 mm / 17.7 in

**Materials**

- Housing made of Steel, Aluminium or Stainless Steel
- Sight tube and plugs made of Polyamide (PA)
- Sealings made of NBR (Buna-N®)
- Scale plate made of PVC
- Floating element made of Polyamide (PA)

Special sight tube materials for improved UV or chemical resistance and use with special media (such as bio-degradable fluids, diesel oils, gasolines, etc.) as well as special sealing materials, e.g. FPM (Viton®), and scale plate materials, e.g. Aluminium, are available on request.

Please also ask for our special low-temperature versions, suitable for extreme temperatures down to -50 °C / -58 °F.

**Accessories / Options**

- Capillary tube thermometers with a dual Celsius / Fahrenheit scale and a temperature display range of up to +80 °C / +180 °F
- Dial thermometers with probe and a Celsius or a dual Celsius / Fahrenheit scale with a temperature display range of up to +100 °C / +200 °F
- Thermo switches
- Temperature sensors

Please see pages E8 and E9 for details.

**Inquiry Checklist**

In case that you require a special property or custom-designed level gauge, please use this checklist to provide us with details. If necessary, please also include further details, like the type of fluid in use, its temperature and viscosity.

**Nominal Size**
 Bolt centre distance (in mm)

**Housing Material**
 Aluminium  Steel  Stainless Steel

**Housing Design**
 Regular housing design with positioning of strut(s) based on engineering considerations

Please provide additional details / drawing for custom housing designs.

**Banjo Bolt Size**
 M12  M10  1/2–13 UNC

 1/2–20 UNF  1/2–28 UNEF

**Banjo Bolt Material**
 Steel  Stainless Steel

**Sealing Material**
 NBR (Buna-N®)  FPM (Viton®)  EPDM

Alternative sealing materials to be defined separately.

**Level Indication**
 Scale plate (only for nominal sizes smaller than 670 mm / 26.4 in)

- Scale plate made of PVC
- Scale plate made of Aluminium
- Without thermometer on scale plate
- Capillary tube thermometer with dual Celsius / Fahrenheit scale up to +80 °C / +180 °F
- With STAUFF logo
- Neutral design without any logo
- Custom-design (please specify)

- Floating element (recommended option for nominal sizes larger than 670 mm / 26.4 in)

Other types of level indication (magnetic floats, etc.) to be defined separately.

**Options**
 Dial thermometer with probe

- Celsius scale up to +100 °C
- Dual scale up to +100 °C / +200 °F
- Length of probe: 200 mm / 7.87 in
- Length of probe: 300 mm / 11.81 in

 Thermo Switch TS-SNA/SNK

- Break contact; Standard connector
- Break contact; Connector M12
- Make contact; Standard connector
- Make contact; Connector M12
- Contact switches at +60 °C / +140 °F
- Contact switches at +70 °C / +158 °F
- Contact switches at +80 °C / +176 °F
- Contact switches at +90 °C / +194 °F

 Temperature Sensor TS-SNA/SNK-PT100

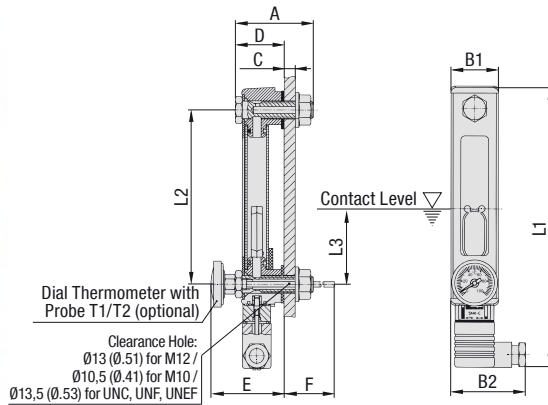

Also available:

**Level Gauges - Type SNK in Special Lengths**

Visual / electrical fluid level indication in hydraulic reservoirs with level gauges up to a maximum nominal size of 950 mm / 37.4 in.

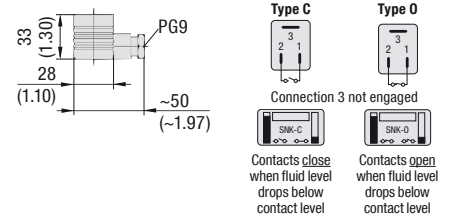
Please do not hesitate to contact STAUFF for further details.

Level Gauge ■ Type SNK

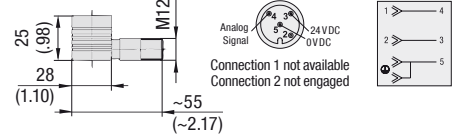


Connection Details and Electrical Functions

Types C and O: Industrial standard connector (contact gap: 11 mm / .43in), similar to DIN EN 175301-803-B / ISO 6952



Types CD and OD: Five-pin circular connector M12, A-coded, according to IEC 61076-2-101



Characteristics

Visual / electrical fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 1 bar / 14.5PSI

Nominal Sizes and Designs

- 5 nominal sizes from 127 mm / 5.00 in to 305 mm / 12.00 in
- Display either undivided (SNK 127 ... 176) or subdivided by strut(s) into 2 (SNK 254) or 3 sections (SNK 305)

Media Compatibility

- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

Materials

- Housing made of Aluminium, black powder-coated
- Sight tube and plugs made of Polyamide (PA)
- Float made of Polyamide (PA)
- Sealings made of FPM (Viton®)

Special sight tube materials for improved UV or chemical resistance and use with special media (such as bio-degradable fluids, diesel oils, gasolines, etc.) as well as special sealing materials are available on request.

Electrical Specifications

- Magnetic float activates switch when fluid level drops below contact level within 60 mm / 2.36 in of lower banjo bolt
- Available as a break contact (normally closed) or make contact (normally open)
- Either equipped with industrial standard connector (types C / O) or five-pin circular connector M12 (types CD / OD)
- Direction of the electrical contact box (right / left) can be chosen when assembling the electrical contacts (types C / D) or is right by default (types CD / OD)
- Contact ratings: max. 10W (types C / CD) or 5W (types O / OD)
- Switching voltage: max. 50VAC/DC
- Switching current: max. 0,25 A

Technical Data

- IP 65 protection rating: Dust tight and protected against water jets (IP 67 on request)
- Operating temperature range: -30°C ... +80°C / -22°F ... +176°F
- Recommended tightening torque: 8 N·m / 5.9 ft·lb
- Minimum lateral distance to other magnetic components and cables: 10 mm / .39 in

Accessories / Options

- Dial thermometers with probe and a Celsius or a dual Celsius / Fahrenheit scale with a temperature display range of up to +100°C / +200°F
- Thermo Switches
- Temperature Sensors

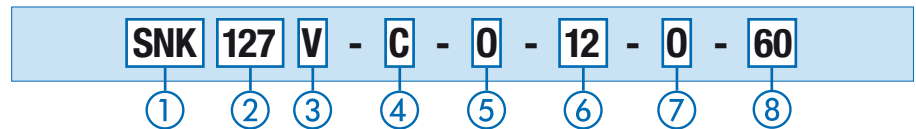
Please see pages E8 and E9 for details.

Dimensions

Table shows dimension L1 for the version with industrial standard connector (types C and O) only. Maximum admissible tolerance for the bolt center spacing (dimension L2) according to DIN ISO 2768-f: ±0,20 mm / .008 in for all nominal sizes.

Nominal Size	Dimensions (mm/in)										
	A	B1	B2	C (Max.)	D	E	F (with T1)	F (with T2)	L1	L2	L3
SNK 127	56	34,5	~50	8	35,1	51,5	157,5	257,5	205	127	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	8.07	5.00	~2.36
SNK 150	56	34,5	~50	8	35,1	51,5	157,5	257,5	228	150	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	8.98	5.91	~2.36
SNK 176	56	34,5	~50	8	35,1	51,5	157,5	257,5	254	176	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	10.00	6.93	~2.36
SNK 254	56	34,5	~50	8	35,1	51,5	157,5	257,5	332	254	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	13.07	10.00	~2.36
SNK 305	56	34,5	~50	8	35,1	51,5	157,5	257,5	383	305	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	15.08	12.00	~2.36

Order Codes



① Type

Level Gauge with visual / electrical fluid level indication **SNK**

② Nominal Size

SNK 127 (nominal size of 127 mm / 5.00 in) **127**  
 SNK 150 (nominal size of 150 mm / 5.91 in) **150**  
 SNK 176 (nominal size of 176 mm / 6.93 in) **176**  
 SNK 254 (nominal size of 254 mm / 10.00 in) **254**  
 SNK 305 (nominal size of 305 mm / 12.00 in) **305**

Consult STAUFF for alternative nominal sizes and designs.

③ Sealing Material

FPM (Viton®) **V**

④ Electrical Function

Break contact, opens at contact level (normally closed); Equipped with standard connector **O**  
 Break contact, opens at contact level (normally closed); Equipped with connector M12 **OD**  
 Make contact, closes at contact level (normally open); Equipped with standard connector **C**  
 Make contact, closes at contact level (normally open); Equipped with connector M12 **CD**

⑤ Thermometer Option

Supplied without thermometer **O**  
 Dial thermometer with probe (200 mm / 7.87 in) and a Celsius scale up to 100°C **T1C**  
 Dial thermometer with probe (300 mm / 11.81 in) and a Celsius scale up to 100°C **T2C**  
 Dial thermometer with probe (200 mm / 7.87 in) and a dual scale up to 100°C / 200°F **T1CF**  
 Dial thermometer with probe (300 mm / 11.81 in) and a dual scale up to 100°C / 200°F **T2CF**

⑥ Banjo Bolt Size

Metric ISO thread M12 (standard option) **12**  
 Metric ISO thread M10 **10**  
 Unified coarse thread 1/2-13 UNC **U1**  
 Unified fine thread 1/2-20 UNF **U2**  
 Unified extra-fine thread 1/2-28 UNEF **U3**

⑦ Thermo Switch / Temperature Sensor Option

Supplied without Thermo Switch / Temperature Sensor -  
 Thermo Switch TS-SNA/SNK; Break contact (normally closed); Equipped with standard connector **O**  
 Thermo Switch TS-SNA/SNK; Break contact (normally closed); Equipped with connector M12 **OD**  
 Thermo Switch TS-SNA/SNK; Make contact (normally open); Equipped with standard connector **C**  
 Thermo Switch TS-SNA/SNK; Make contact (normally open); Equipped with connector M12 **CD**  
 Temperature Sensor TS-SNA/SNK-PT100; Equipped with connector M12 **PT100**

Thermo Switches / Temperature Sensors only available for banjo bolt size M12. Please see pages E8 and E9 for details.

⑧ Switching Temperature

Contact switches at +60°C / +140°F **60**  
 Contact switches at +70°C / +158°F **70**  
 Contact switches at +80°C / +176°F **80**  
 Contact switches at +90°C / +194°F **90**

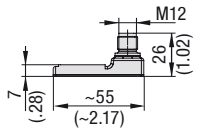
Only to be indicated when using a Thermo Switch.

Options T1C/CF and T2C/CF are not available for banjo bolt size M10 and not be used in conjunction with Thermo Switches or Temperature Sensors. Please see page E8 for details.

## Level Gauge (Compact Design) ■ Type SNKK

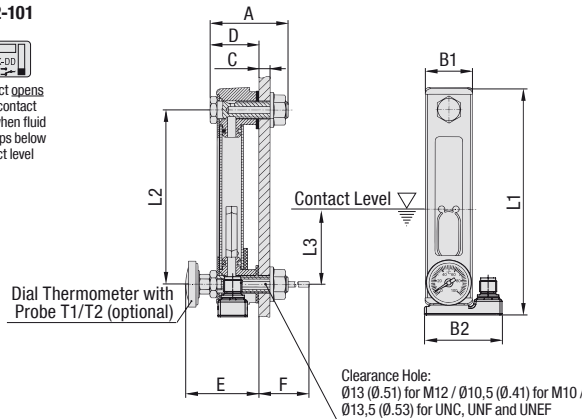
## Connection Details and Electrical Functions

Type DD: Five-pin circular connector M12, A-coded, according to IEC 61076-2-101



1 Contact opens and 1 contact closes when fluid level drops below contact level

Pin assignment at empty reservoir (default setting at point of delivery)



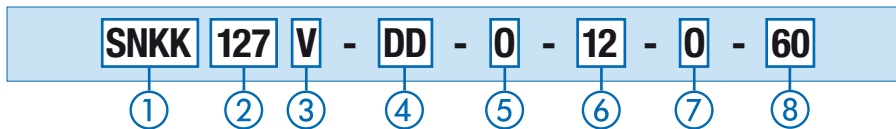
~40mm / ~1.57in in comparison with Level Gauges SNK

## Dimensions

Maximum admissible tolerance for the bolt center spacing (dimension L2) according to DIN ISO 2768-f: ±0,20mm / .008in for all nominal sizes.

Nominal Size	Dimensions (mm/in)										
	A	B1	B2	C (Max.)	D	E	F (with T1)	F (with T2)	L1	L2	L3
SNKK 127	56	34,5	~55	8	35,1	51,5	157,5	257,5	165	127	~60
	2.20	1.36	~2.17	.32	1.26	2.03	6.20	10.14	6.50	5.00	~2.36
SNKK 150	56	34,5	~50	8	35,1	51,5	157,5	257,5	188	150	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	8.98	5.91	~2.36
SNKK 176	56	34,5	~55	8	35,1	51,5	157,5	257,5	214	176	~60
	2.20	1.36	~2.17	.32	1.26	2.03	6.20	10.14	8.43	6.93	~2.36
SNKK 254	56	34,5	~55	8	35,1	51,5	157,5	257,5	292	254	~60
	2.20	1.36	~2.17	.32	1.26	2.03	6.20	10.14	11.50	10.00	~2.36
SNKK 305	56	34,5	~55	8	35,1	51,5	157,5	257,5	343	305	~60
	2.20	1.36	~2.17	.32	1.26	2.03	6.20	10.14	13.50	12.00	~2.36

## Order Codes



## ① Type

Level Gauge with visual / electrical fluid level indication (compact design) **SNKK**

## ② Nominal Size

SNKK 127 (nominal size of 127 mm / 5.00 in) **127**  
 SNKK 150 (nominal size of 150 mm / 5.91 in) **150**  
 SNKK 176 (nominal size of 176 mm / 6.93 in) **176**  
 SNKK 254 (nominal size of 254 mm / 10.00 in) **254**  
 SNKK 305 (nominal size of 305 mm / 12.00 in) **305**

Consult STAUFF for alternative nominal sizes and designs.

## ③ Sealing Material

FPM (Viton®) **V**

## ④ Electrical Function

SPDT (Single Pole Double Throw) contacts, 1 contact opens and 1 contact closes at contact level; Equipped with connector M12 **DD**

## ⑤ Thermometer Option

Supplied without thermometer **0**  
 Dial thermometer with probe (200 mm / 7.87 in) and a Celsius scale up to 100 °C **T1C**  
 Dial thermometer with probe (300 mm / 11.81 in) and a Celsius scale up to 100 °C **T2C**  
 Dial thermometer with probe (200 mm / 7.87 in) and a dual scale up to 100 °C / 200 °F **T1CF**  
 Dial thermometer with probe (300 mm / 11.81 in) and a dual scale up to 100 °C / 200 °F **T2CF**

## ⑥ Banjo Bolt Size

Metric ISO thread M12 (standard option) **12**  
 Metric ISO thread M10 **10**  
 Unified coarse thread 1/2–13 UNC **U1**  
 Unified fine thread 1/2–20 UNF **U2**  
 Unified extra-fine thread 1/2–28 UNEF **U3**

## ⑦ Thermo Switch / Temperature Sensor Option

Supplied without Thermo Switch / Temperature Sensor - Break Contact, opens at contact level (normally closed); Equipped with standard connector **0**  
 Break Contact, opens at contact level (normally closed); Equipped with connector M12 **0D**  
 Make Contact, closes at contact level (normally open); Equipped with standard connector **C**  
 Make Contact, closes at contact level (normally open); Equipped with connector M12 **CD**  
 Temperature Sensor TS-SNA/SNK-PT100; Equipped with connector M12 **PT100**

Thermo Switches / Temperature Sensors only available for banjo bolt size M12. Please see pages E8 and E9 for details.

## ⑧ Switching Temperature

Contact switches at +60 °C / +140 °F **60**  
 Contact switches at +70 °C / +158 °F **70**  
 Contact switches at +80 °C / +176 °F **80**  
 Contact switches at +90 °C / +194 °F **90**

Only to be indicated when using a Thermo Switch.

Options T1C/CF and T2C/CF are not available for banjo bolt size M10 and not be used in conjunction with Thermo Switches or Temperature Sensors. Please see page E8 for details.

## Characteristics

Visual / electrical fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 1 bar / 14.5PSI; ideal for applications in which space is limited

## Nominal Sizes and Designs

- 5 nominal sizes from 127 mm / 5.00 in to 305 mm / 12.00 in
- Compact design allows space-saving installation: Always 40 mm / 1.57 in shorter than Level Gauges SNK of the comparable nominal size
- Display either undivided (SNKK 127 ... 176) or subdivided by strut(s) into 2 (SNKK 254) or 3 sections (SNKK 305)

## Media Compatibility

- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

## Materials

- Housing made of Aluminium, black powder-coated
- Sight tube and plugs made of Polyamide (PA)
- Float made of Polyamide (PA)
- Sealings made of FPM (Viton®)

Special sight tube materials for improved UV or chemical resistance and use with special media (such as bio-degradable fluids, diesel oils, gasolines, etc.) as well as special sealing materials are available on request.

## Electrical Specifications

- Magnetic float activates switch when fluid level drops below contact level within 60 mm / 2.36 in of lower banjo bolt
- Available as a SPDT (Single Pole Double Throw) contact
- Equipped with five-pin circular connector M12
- Direction of the electrical contact box is right to top by default

## Technical Data

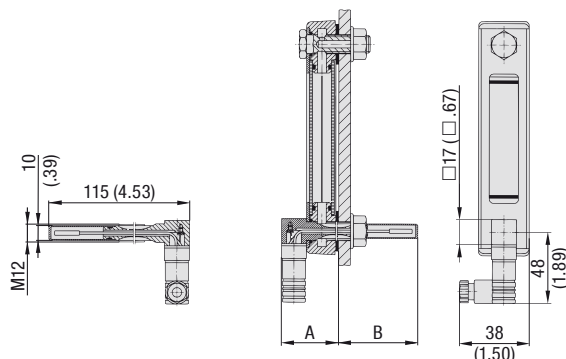
- IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time (IP 69K on request)
- Operating temperature range: -30 °C ... +80 °C / -22 °F ... +176 °F
- Recommended tightening torque: 8N·m / 5.9 ft·lb
- Minimum lateral distance to other magnetic components and cables: 10 mm / .39 in

## Accessories / Options

- Dial thermometers with probe and a Celsius or a dual Celsius / Fahrenheit scale with a temperature display range of up to +100 °C / +200 °F
- Thermo Switches
- Temperature Sensors

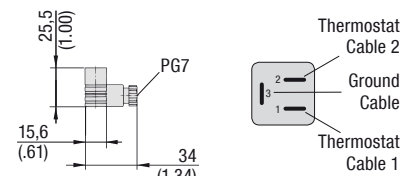
Please see pages E8 and E9 for details.

## Thermo Switch - Type TS

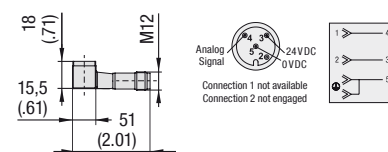


### Connection Details and Electrical Functions

**Types C and O:** Industrial standard connector (contact gap: 9,4 mm / .37 in), similar to DIN EN 175301-803-C / ISO 6952



**Types CD and OD:** Five-pin circular connector M12, A-coded, according to IEC 61076-2-101



### Characteristics

Fluid temperature measurement in conjunction with STAUFF Level Gauges SNA, SNK and SNKK

#### Installation

- Replaces the lower banjo bolt of the Level Gauge
- Available for bolt size M12 only
- Clearance hole:  $\varnothing 13$  mm /  $\varnothing .51$  in

#### Materials

- Metal parts made of Steel (1.0718)
- Plastic parts made of glass-fibre reinforced Polyamide (PA)

#### Electrical Specifications (General)

- Thermo switch is activated when the fluid temperature reaches the respective switching temperature
- Available with switching temperatures of  $+60$  °C /  $+140$  °F,  $+70$  °C /  $+158$  °F,  $+80$  °C /  $+176$  °F or  $+90$  °C /  $+194$  °F (with a switching tolerance of  $\pm 5$  °C /  $\pm 9$  °F and a hysteresis of  $35$  °C /  $63$  °F)
- Available as a break contact (normally closed) or make contact (normally open)
- Either equipped with industrial standard connector (types C / O) or five-pin circular connector M12 (types CD / OD)
- Thermo switch can be rotated by  $360^\circ$  to its final direction

### Dimensions

	Dimensions (mm/in)	
	A	B
In conjunction with Level Gauge SNA	39	76
	1.54	2.99
In conjunction with Level Gauge SNK	47	68
	1.85	2.68
In conjunction with Level Gauge SNKK	47	68
	1.85	2.68

#### Electrical Specifications (Alternating Current)

- Maximum voltage: 250 V, 2,5 (1,6) A, 50 Hz
- Maximum current at 2000 operations: 4,0 A at  $\cos \varphi = 4,45 / 250$  V, 135 °C
- Maximum current at 10000 operations: 2,5 A at  $\cos \varphi = 1,00 / 250$  V, 150 °C
- Minimum current: 20 mA

#### Electrical Specifications (Direct Current)

- Maximum voltage: 42 V

### Order Codes



#### ① Type

Thermo Switch TS for use with Level Gauges SNA, SNK and SNKK **TS-SNA/SNK**

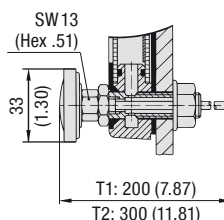
#### ② Electrical Function

- Break contact, opens at switching temperature (normally closed); Equipped with standard connector **O**
- Break contact, opens at switching temperature (normally closed); Equipped with connector M12 **OD**
- Make contact, closes at switching temperature (normally open); Equipped with standard connector **C**
- Make contact, closes at switching temperature (normally open); Equipped with connector M12 **CD**

#### ③ Switching Temperature

- Contact switches at  $+60$  °C /  $+140$  °F **60**
- Contact switches at  $+70$  °C /  $+158$  °F **70**
- Contact switches at  $+80$  °C /  $+176$  °F **80**
- Contact switches at  $+90$  °C /  $+194$  °F **90**

## Dial Thermometer with Probe - Types T1/T2



### Characteristics

Visual fluid temperature measurement in conjunction with STAUFF Level Gauges SNA, SNK and SNKK

#### Nominal Sizes and Designs

- Probe lengths of 200 mm / 7.87 in or 300 mm / 11.81 in
- Scale diameter of 33 mm / 1.30 in

Please consult STAUFF for special versions.

#### Scale Options

- Celsius scale of  $0^\circ\text{C} \dots +100^\circ\text{C}$
- Dual Celsius / Fahrenheit scale of up to  $+100^\circ\text{C} / +200^\circ\text{F}$

#### Materials

- Probe made of Stainless Steel V4A (1.4571)

#### Technical Data

- IP 65 protection rating: Dust tight and protected against water jets

#### Installation

- Requires a special banjo bolt (with internal M8 port for the dial thermometer with probe) to replace the lower standard banjo bolt of the Level Gauge
- Use suitable wrench SW 13 (Hex .51) to fasten; turning on the body itself may damage the product

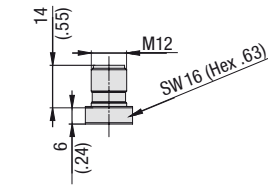
Please note that Dial Thermometers with Probe can only be ordered in conjunction with Level Gauges SNA, SNK and SNKK. Please see page E4 to E7 for details.



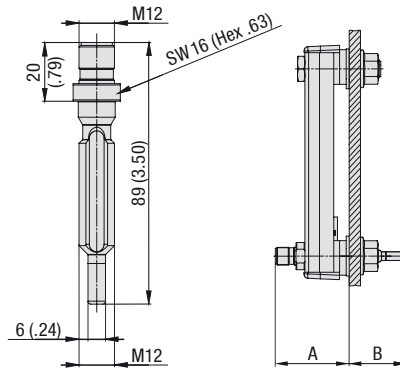
## Temperature Sensor ■ Type TS-SNA/SNK-PT100

## Connection Details and Electrical Functions

Four-pin circular connector M12,  
A-coded, according to IEC 61076-2-101



Pin Assignment



## Order Codes

**TS-SNA/SNK-PT100**

①

## ① Type

Temperature Sensor PT100 **TS-SNA/SNK-PT100**

## Dimensions

	Dimensions (mm/in)	
	A	B
In conjunction with Level Gauge SNA	43,5 1.71	45,5 1.79
In conjunction with Level Gauge SNK	51 2.01	38 1.50
In conjunction with Level Gauge SNKK	51 2.01	38 1.50

## Characteristics

Fluid temperature measurement in conjunction with STAUFF Level Gauges SNA, SNK and SNKK; Analysis of signals with TS-SNA/SNK-PT100-D Display / Evaluation Unit, TS-SNA/SNK-PT100-C Signal Converter or system-sided amplifier or transducer

## Installation

- Replaces the lower banjo bolt of the Level Gauge
- Available for bolt size M12 only
- Clearance hole:  $\varnothing 13$  mm /  $\varnothing .51$  in

## Materials

- Metal parts (including all fluid-affected parts) made of Stainless Steel V2A (1.4305)

## Electrical Specifications

- Measuring temperature range:  $-40^{\circ}\text{C} \dots +150^{\circ}\text{C}$  /  $-40^{\circ}\text{F} \dots +302^{\circ}\text{F}$
- Platinum measuring element PT100 according to DIN EN 60751, class A
- Accuracy:  $\pm(0,15 \text{ K} + 0,002 \times |t|)$
- Max. contact current: 2,0 mA
- Equipped with four-pin circular connector M12 with gold-plated contacts

## Technical Data

- Operating temperature range (for the connector area):  $-25^{\circ}\text{C} \dots +80^{\circ}\text{C}$  /  $-13^{\circ}\text{F} \dots +176^{\circ}\text{F}$
- IP 68 protection rating: Dust tight and protected against powerful water jets; even immersion (beyond 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time

## Order Codes

**TS-SNA/SNK-PT100-T-B**

①

②

③

## ① Type

Temperature Sensor PT100 **TS-SNA/SNK-PT100**

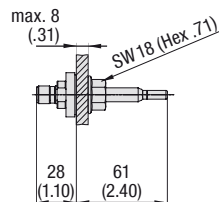
## ② Direct Adaptor

Direct installation set including M12 screw nut, gasket, front ring and O-ring **T**

## ③ Sealing Material

NBR (Buna-N®) (standard option) **B**  
FPM (Viton®) **V**  
EPDM **E**

The direct installation set can also be used in conjunction with Thermo Switches TS (see page E8). Please consult STAUFF for further information.


 Temperature Sensor with Direct Installation Set  
Type TS-SNA/SNK-PT100-T

## Characteristics

Direct fluid temperature measurement without STAUFF Level Gauges SNA, SNK and SNKK; Analysis of signals with TS-SNA/SNK-PT100-D Display / Evaluation Unit, TS-SNA/SNK-PT100-C Signal Converter or system-sided amplifier or transducer

## Installation

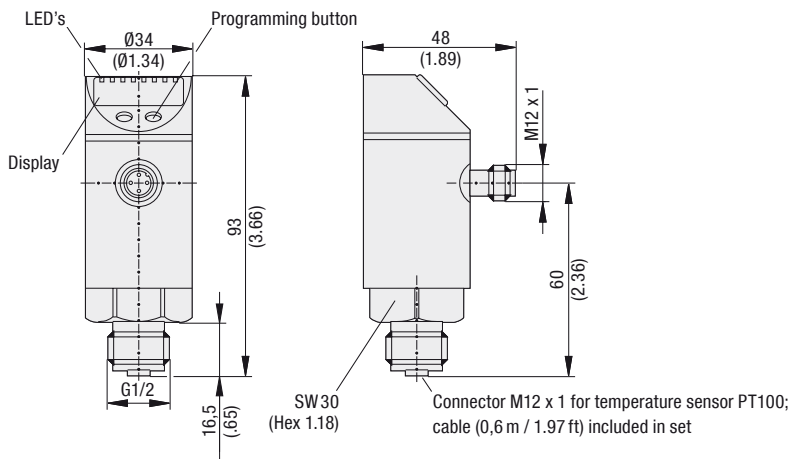
- Direct installation to the outer wall of the hydraulic reservoir or gearbox
- Compact design and easy installation
- Clearance hole:  $\varnothing 13$  mm /  $\varnothing .51$  in

## Materials

- Fluid-affected parts made of Stainless Steel V2A (1.4305)
- M12 screw nut made of Steel, zinc-plated
- Front ring made of Stainless Steel V2A (1.4305)
- O-ring and gasket made of NBR (Buna-N®) (standard option), FPM (Viton®) or EPDM

Please see top of this page for Technical Details and Electrical Specifications for the Temperature Sensor.

Display / Evaluation Unit - Type TS-SNA/SNK-PT100-D



Characteristics

Mobile or stationary fluid temperature indication and evaluation in conjunction with STAUFF Temperature Sensor TS-SNA/SNK-PT100

Features

- Connection of temperature sensor as 4-wire sensor
- Display of the current system temperature in °C or °F with 4-digit alpha-numeric display
- Measuring temperature range: -40 °C ... +300 °C / -40 °F ... +572 °F (may be limited by connected sensor)
- Generation of 2 output signals according to parameter setting:  
 Switching output - normally open / closed (programmable)  
 Analog output - 4 ... 20 mA or 0 ... 10 V (scaleable)
- Provision of process data via IO-Link 1.0 (38.4 kBaud)
- Designed for bi-directional connection

Electrical Specifications

- Operating voltage: 18 ... 32 VDC
- Current rating: 250 mA
- Voltage drop: <2 mA
- Response time of switching output: 130 ms
- Analog output: 4 ... 20 mA or 0 ... 10 V (scaleable)
- Accuracy of switching output: ±0,3 °C / ±.54 °F
- Accuracy of analog output: ±0,3 °C / ±.54 °F
- Resolution of switching output: 0,1 °C / .18 °F
- Resolution of analog output: 0,1 °C / .18 °F
- Resolution of display: 0,1 °C / .18 °F
- Temperature coefficient (of the span per 10 K): 0,1 %
- Short-circuit protection (pulsed)
- Protection against reverse polarity and overload
- Equipped with four-pin circular connector M12 with gold-plated contacts

Technical Data

- IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time
- Operating temperature range: -25 °C ... +70 °C / -13 °F ... +158 °F

Order Codes

**SET-TS-SNA/SNK-PT100-D**

1

① Type

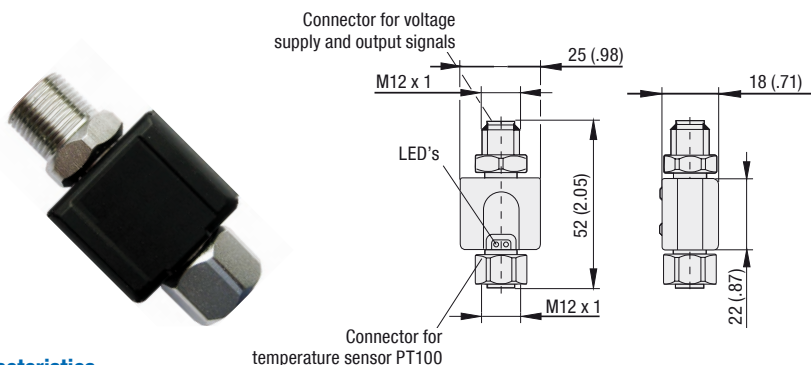
Complete set of Display / Evaluation Unit for use with Temperature Sensor **SET-TS-SNA/SNK-PT100-D** TS-SNA/SNK-PT100

Complete sets include the following components:

- Display / Evaluation Unit TS-SNA/SNK-PT100-D
- Cable with M12 plug / M12 socket (0,6 m / 1.97 ft)
- External power supply unit 100 ... 240 V AC (50 ... 60 Hz) / 200 mA
- User manual (CD-ROM)

All components included in the complete set are also available as single parts. Consult STAUFF for further information.

Signal Converter - Type TS-SNA/SNK-PT100-C



Characteristics

Signal converter for use with STAUFF Temperature Sensor TS-SNA/SNK-PT100

Features

- Converts the measured signal into a proportional analog signal: Analog output - 4 ... 20 mA (scaleable)
- Measuring temperature range (factory setting): -50 °C ... +150 °C / -58 °F ... +302 °F
- Provision of process data via IO-Link 1.0 (38.4 kBaud)
- Designed for bi-directional connection

Electrical Specifications

- Operating voltage: 20 ... 32 VDC
- Analog output: 4 ... 20 mA (scaleable)
- Maximum load: 300 Ω
- Rise time analog output: 400 ms
- Accuracy of analog output: ±0,3 °C / ±.54 °F + (±0,1 % of measuring span)
- Resolution: ≤0,1 °C / ≤.18 °F
- Temperature coefficient (of the span per 10 K): 0,1 %
- Short-circuit protection (pulsed)
- Protection against reverse polarity and overload
- Equipped with four-pin circular connector M12 with gold-plated contacts

Order Codes

**TS - SNA/SNK - PT100-C**

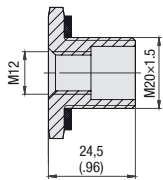
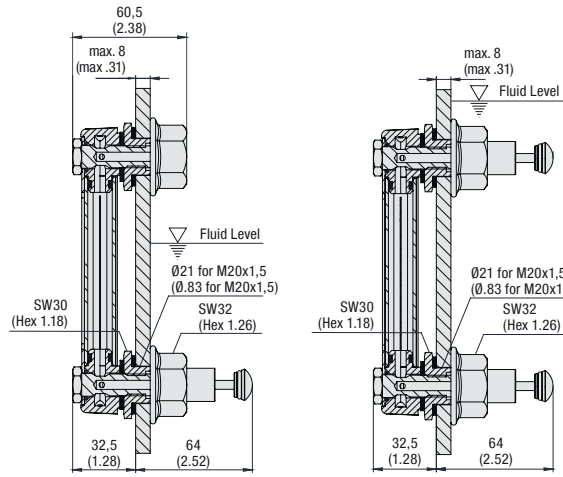
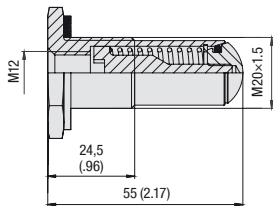
1

① Type

Signal Converter for use with Temperature Sensor **TS-SNA/SNK-PT100-C** TS-SNA/SNK-PT100

Technical Data

- IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time
- Operating temperature range: -25 °C ... +70 °C / -13 °F ... +158 °F

**Anti-Drain Valve - Type SDV-SNA/SNK**
**Distance Adaptor**

**Anti-Drain Valve**

**Set A**

(Max. fluid level of the hydraulic reservoir between the banjo bolts)

**Set B**

(Max. fluid level of the hydraulic reservoir above the banjo bolts)


**Order Codes**
**SDV-SNA/SNK - M12 - B - SS - A SET**

①

②

③

④

⑤

**① Type**

Anti-Drain Valve for use with Level Gauges SNA, SNK and SNKK

**SDV-SNA/SNK**
**② Banjo Bolt Size**

Metric ISO thread M12

**M12**
**③ Sealing Material**

NBR (Buna-N®)

**B**
**④ Housing Material**

Stainless Steel V2A (1.4301)

**SS**
**⑤ Set Type**

Set A consisting of 1 anti-drain valve to be used with the lower banjo bolt and 1 distance adaptor to be used with the upper banjo bolt

**A SET**

Set B consisting of 2 anti-drain valves to be used with both banjo bolts

**B SET**
**Characteristics**

Anti-drain valve to be used in conjunction with banjo bolts of level gauges, allowing these to be removed and replaced quickly and easily without spillage of fluid from the hydraulic reservoir

**Features**

- Used in conjunction with either the lower or both the lower and the upper banjo bolts of the Level Gauge
- Distance adaptor for the upper banjo bolt available when the check valve is used with the lower banjo bolt only
- Available for bolt size M12 only

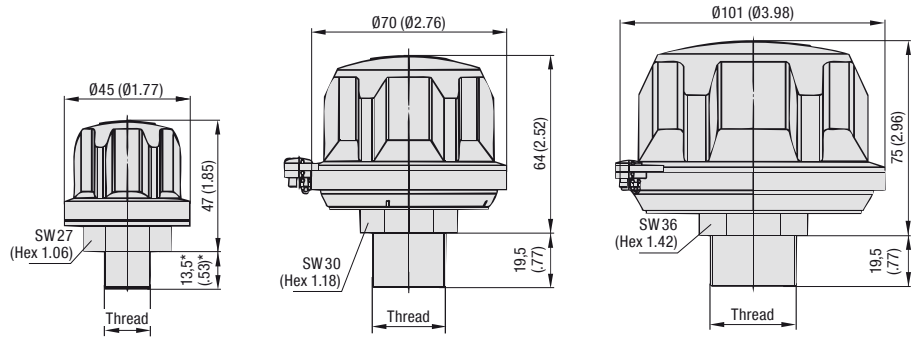
**Materials**

- Housing made of Stainless Steel V2A (1.4301)
- Hexagon head nuts made of Steel, zinc/nickel-plated (Fe/Zn Ni 6)
- Sealings made of NBR (Buna-N®)

Consult STAUFF for alternative materials.



**Plastic Filler Breather - Types SPB 1 / 2 / 3 (Screw-In Version)**



**SPB 1**  
\* for thread type N12: 16,0 (.63)

**SPB 2**  
(See page E16 for compact version SPBN)

**SPB 3**

**Characteristics**

Designed to be used as filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments

**Features**

- Available with 3 different cap diameters
- Screw-in version, equipped with male BSP thread (ISO 228) or male NPT thread (ANSI B1.20.1)
- Operating temperature range: -40 °C ... +120 °C / -40 °F ... +248 °F

**Materials**

- Made of non-corrosive materials
- Body and cap made of glass-fibre reinforced Polyamide (PA)
- Sealings made of NBR (Buna-N®)

Consult STAUFF for alternative materials.

**Accessories / Options**

- Pressurisation up to 0,7 bar / 10 PSI (not available for SPB 1)
- Air filter element
- Anti-splash feature
- Plastic dipstick with integrated anti-splash feature

Please see page E14 for details.

**Maximum Air Flow Rate**

- 0,15 m³/min / 5.30 cfm for SPB 1
- 0,40 m³/min / 14.13 cfm for SPB 2
- 1,00 m³/min / 35.31 cfm for SPB 3

Please see page E15 for detailed air flow curves.

**Oil Displacement**

- 150 l/min / 40 USGPM for SPB 1
- 400 l/min / 106 USGPM for SPB 2
- 1000 l/min / 264 USGPM for SPB 3

**Installation**

- Recommended mounting spaces: Ø48 mm / Ø1.89 in for SPB 1, Ø90 mm / Ø3.54 in for SPB 2, and Ø122 mm / Ø4.80 in for SPB 3

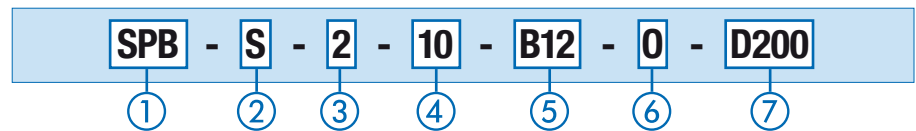
**Thread Options**

Thread	SPB 1	SPB 2	SPB 3	Code
Male BSP Thread (ISO 228)				
G1/4	●	○	○	B04
G3/8	●	●	○	B06
G1/2	●	●	●	B08
G3/4	○	●	●	B12
G1	○	○	●	B16

Thread	SPB 1	SPB 2	SPB 3	Code
Male NPT Thread (ANSI B1.20.1)				
1/4	●	○	○	N04
3/8	●	○	○	N06
1/2	●	○	○	N08
3/4	●	●	●	N12
1	○	○	●	N16

● Standard Option

**Order Codes**



**1 Type**

Plastic Filler Breather **SPB**

**2 Pressurisation**

Without pressurisation **S**  
 Pressurised at 0,2 bar / 3 PSI **P1**  
 Pressurised at 0,35 bar / 5 PSI **P2**  
 Pressurised at 0,7 bar / 10 PSI **P3**

Type SPB 1 is only available without pressurisation. Please see page E14 for details.

**3 Version**

Screw-in version; Cap diameter Ø45 mm (Ø1.77 in) **1**  
 Screw-in version; Cap diameter Ø70 mm (Ø2.76 in) **2**  
 Screw-in version; Cap diameter Ø101 mm (Ø3.98 in) **3**

**4 Air Filter Element (Material / Micron Rating)**

Without air filter element **00**  
 10 µm Foam / PUR (standard option) **10**  
 40 µm Foam / PUR **40**  
 3 µm Inorganic Glass-Fibre, pleated **E03**  
 10 µm Filter Paper, pleated **L10**

Options E03 and L10 are only available for type SPB 3. Consult STAUFF for alternative materials / micron ratings.

**5 Connection Thread (Male)**

G1/4 (for SPB 1 only) **B04**  
 G3/8 (for SPB 1 and 2 only) **B06**  
 G1/2 (for SPB 1, 2 and 3) **B08**  
 G3/4 (for SPB 2 and 3 only) **B12**  
 G1 (for SPB 3 only) **B16**  
 1/4 NPT (for SPB 1 only) **N04**  
 3/8 NPT (for SPB 1 only) **N06**  
 1/2 NPT (for SPB 1 only) **N08**  
 3/4 NPT (for SPB 1, 2 and 3) **N12**  
 1 NPT (for SPB 3 only) **N16**

**6 Anti-Splash Feature**

With anti-splash feature (standard option) **A**  
 Without anti-splash feature **0**

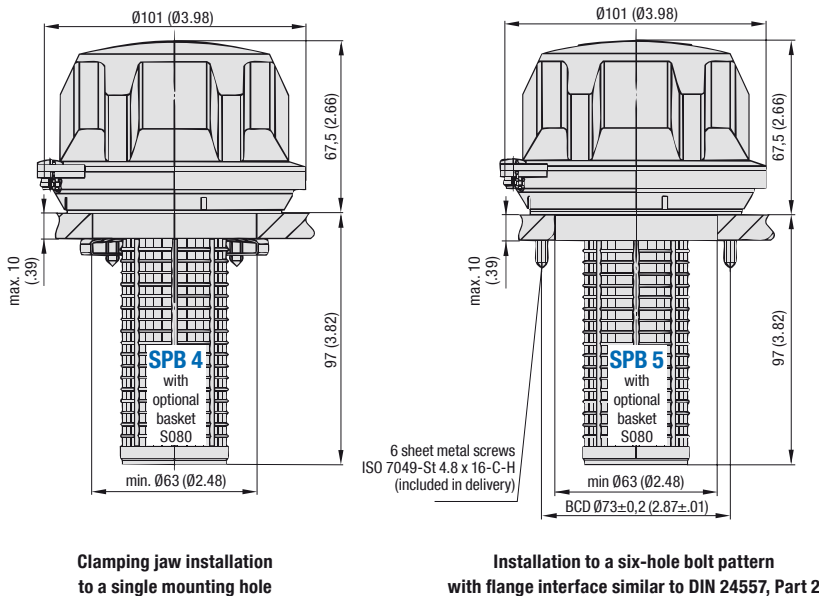
The anti-splash feature for the SPB 1, can only be achieved in conjunction with a dipstick, but is not available for the SPB 1 with connection sizes B04 and N04. Please see page E14 for details.

**7 Dipstick**

Plastic dipstick (200 mm / 7.88 in) with integrated anti-splash feature **D200**  
 Plastic dipstick (300 mm / 11.81 in) with integrated anti-splash feature **D300**  
 Without dipstick **-**

A shorter dipstick length can be achieved by simply cutting down the total length according to individual requirements. Please see page E14 for details.

## Plastic Filler Breather - Types SPB 4 / 5 (Flange Version)



Clamping jaw installation  
to a single mounting hole

Installation to a six-hole bolt pattern  
with flange interface similar to DIN 24557, Part 2



### Characteristics

Designed to be used as filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments

### Features

- Cap diameter of Ø101 mm / Ø3.98 in
- Either for clamping installation (with 3 clamping jaws and cross-drive screws) or with a six-hole bolt pattern
- Operating temperature range:  
-40 °C ... +120 °C / -40 °F ... +248 °F

### Materials

- Made of non-corrosive materials
- Body and cap made of glass-fibre reinforced Polyamide (PA)
- Sealings made of NBR (Buna-N®)

Consult STAUFF for alternative materials.

### Accessories / Options

- Plastic basket (800 µm)
- Pressurisation up to 0,7 bar / 10 PSI
- Air filter element
- Anti-splash feature
- Plastic dipstick with integrated anti-splash feature

Please see page E14 for details.

### Maximum Air Flow Rate

- 1,00 m³/min / 35.31 cfm for SPB 4+5

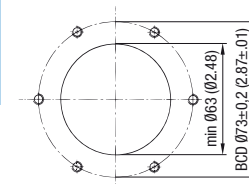
Please see page E15 for detailed air flow curves.

### Oil Displacement

- 1000 l/min / 264 US GPM for SPB 4+5

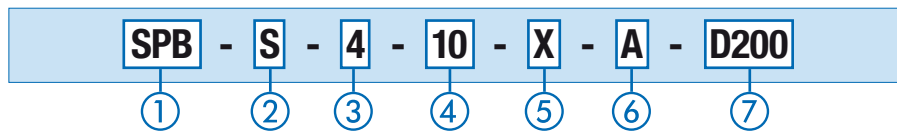
### Installation

- Recommended mounting space: Ø122 mm / Ø4.80 in
- Six-hole bolt pattern for flange interfaces similar to DIN 24557, part 2 (type SPB 5):



- 6 sheet metal screws (ISO 7049-St 4.8 x 16-C-H) are included in delivery (type SPB 5); can be replaced by regular M5 socket cap screws (ISO 4762), if required
- Recommended diameters of the screw holes, depending on the sheet thickness of the reservoir (type SPB 5):  
Ø4,0 mm / Ø.16 in at a thickness of 1,20 mm / .05 in,  
Ø4,1 mm / Ø.16 in at a thickness of 2,00 mm / .08 in,  
Ø4,3 mm / Ø.17 in at a thickness of 4,00 mm / .16 in, and  
Ø4,4 mm / Ø.17 in at a thickness of 5,00 mm / .20 in

### Order Codes



#### ① Type

Plastic Filler Breather **SPB**

#### ② Pressurisation

Without pressurisation **S**  
 Pressurised at 0,2 bar / 3 PSI **P1**  
 Pressurised at 0,35 bar / 5 PSI **P2**  
 Pressurised at 0,7 bar / 10 PSI **P3**

Please see page E14 for details.

#### ③ Version

Bayonet version for clamping jaw installation to a single mounting hole; Cap diameter Ø101 mm (Ø3.98 in) **4**  
 Bayonet Version with six-hole bolt pattern for flange interfaces similar to DIN 24557, part 2; Cap diameter Ø101 mm (Ø3.98 in) **5**

#### ④ Air Filter Element (Material / Micron Rating)

Without air filter element **00**  
 10 µm Foam / PUR (standard option) **10**  
 40 µm Foam / PUR **40**  
 3 µm Inorganic Glass-Fibre, pleated **E03**  
 10 µm Filter Paper, pleated **L10**

Consult STAUFF for alternative materials / micron ratings.

#### ⑤ Basket Option

Plastic basket (105 mm / 4.13 in) **S080**  
 Telescopic plastic basket **S200**  
 (max. 205 mm / max. 8.07 in)  
 Plastic basket with flange interface similar to DIN 24557, part 2 **S095P**  
 (95 mm / 3.74 in)  
 Without basket **X**

Option S095P is only available for type SPB 5.  
 Please see page E14 for details.

#### ⑥ Anti-Splash Feature

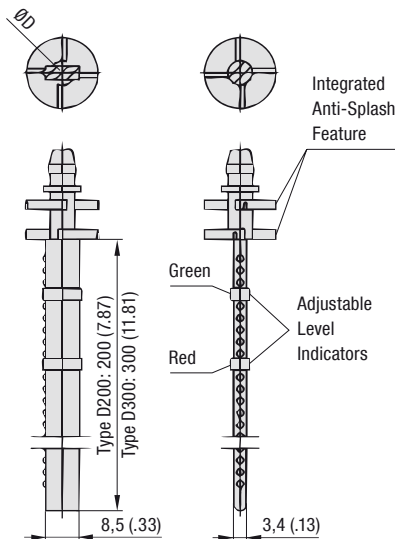
With anti-splash feature (standard option) **A**  
 Without anti-splash feature **0**

#### ⑦ Dipstick

Plastic dipstick (200 mm / 7.88 in) with integrated anti-splash feature **D200**  
 Plastic dipstick (300 mm / 11.81 in) with integrated anti-splash feature **D300**  
 Without dipstick **-**

A shorter dipstick length can be achieved by simply cutting down the total length according to individual requirements. When choosing a combination of a basket and a dipstick, the dipstick has to be at least 15 mm / .59 in shorter than the basket.  
 Please see page E14 for details.

### Plastic Dipstick - Types DS 1 / 2 / 3 Anti-Splash Feature



Connection	Code	For Type	Suitable Dipstick*	ØD (mm/in)
Male BSP Thread (ISO 228)	G1/4	B04	SPB 1	Dipstick Option Not Available
	G3/8	B06	SPB 1+2	DS-1
	G1/2	B08	SPB 1-3	DS-2
	G3/4	B12	SPB 1+2	DS-3
Male NPT Thread (ANSI B1.20.1)	G1	B16	SPB 3	DS-3
	1/4	N04	SPB 1	Dipstick Option Not Available
	3/8	N06	SPB 1	DS-1
	1/2	N08	SPB 1	DS-2
Plastic Basket	S080	SPB 4+5	DS-3	18 / .71
	S095-P	SPB 5	DS-3	18 / .71
	S200	SPB 4+5	DS-3	18 / .71
w/o Basket	X	SPB 4+5	DS-3	18 / .71

\* When ordered separately, please add the length of the dipstick (in mm) to the ordering code (e.g. DS-2-300).

For all Plastic Filler Breathers (except type SPB 1 with connection sizes B04 and N04), dipsticks made of Polyamide are available as an option. These dipsticks are available in 2 standard lengths of 200 mm / 7.87 in and 300 mm / 11.81 in and equipped with 2 adjustable level indicators in green and red colour.

A shorter dipstick length can be achieved by simply cutting down the total length according to individual requirements.

All dipsticks have an integrated anti-splash feature protecting the SPB from backspilling fluid and avoiding an early breakdown of the air filter element.

For Plastic Filler Breathers without dipstick, the anti-splash function can be achieved by an integrated concave baffle. The anti-splash feature for the SPB 1 (except the type SPB 1 with connection sizes B04 and N04), can only be achieved in conjunction with a dipstick.

Please note: When choosing a combination of a dipstick and a basket (see below), the dipstick has to be at least 15 mm / .59 in shorter than the basket.

**Special designs and alternative materials available on request. Please consult STAUFF for further details.**

### Plastic Basket - Types S080 / S095-P / S200

For the Plastic Filler Breathers SPB 4 and SPB 5, different types of baskets are available as an option. All baskets have a reinforced 0,8 x 3,5 mm / .03 x .14 in mesh (800 µm), so that rough dirt particles are filtered out of the medium and a smooth flow into the tank is being ensured.

The **Plastic Basket S080** (length of 105 mm / 4.13 in) snaps into the breather housing and suitable for the SPB 4 and SPB 5.

The **Plastic Basket S095-P** (length of 95 mm / 3.74 in) is equipped with a six-hole bolt pattern with flange interface similar to DIN 24557, part 2. It is suitable for the SPB 5 only and is installed between the breather housing of the SPB 5 and the reservoir.

The **Telescopic Plastic Basket S200** (maximum length of 205 mm / 8.07 in) is ideal to further improve the straining ability and oil flow-through and allowing longer dipstick lengths, where reservoir depth allows. It also snaps into the breather housing and is suitable for the SPB 4 and SPB 5.

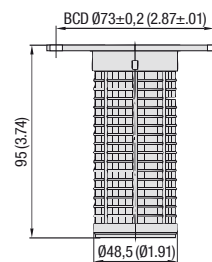
Please note: When choosing a combination of a dipstick (see above) and a basket, the dipstick has to be at least 15 mm / .59 in shorter than the basket.

**Special designs and alternative materials available on request. Please consult STAUFF for further details.**

**Plastic Basket S080** (for SPB 4+5)  
Material: Polypropylene (PP)

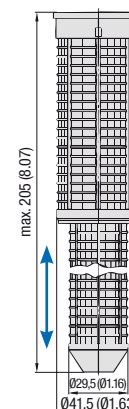


**Plastic Basket S095-P** (only for SPB 5)  
Material: Polyamide (PA)



Six-hole bolt pattern with flange interface according to DIN 24557, part 2

**Telescopic Plastic Basket S200** (for SPB 4+5)  
Material: Polypropylene (PP)



### Pressurisation

All Plastic Filler Breathers (except the type SPB 1) are also available as pressurised versions with pressure settings of 0,7 bar / 10PSI, 0,35 bar / 5 PSI or 0,2 bar / 3 PSI. In order to achieve an air flow, the actual tank pressure has to exceed the chosen pressure setting of the Plastic Filler Breather.

When the fluid level inside the reservoir rises, no air is expelled from the reservoir until the pressurisation level is reached.

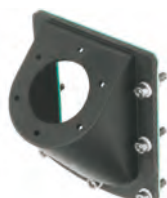
When the fluid level inside the reservoir falls, the tank pressure drops and air is drawn into the reservoir.

Due to less breathing, the service life of a filler breather and the oil can be increased by using the pressurisation feature. It also minimizes foaming and cavitation, and provides additional protection from moisture entering the reservoir which causes erosion and oil degradation.

### Further Accessories / Options



**Weld Riser - Type WR**  
Suitable for SPB 5  
(See page E25 for details)

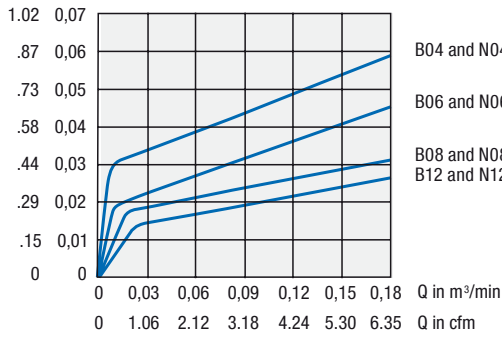


**Side Mount Bracket (Polyamide) - Type ASMB-1**  
Suitable for SPB 5  
(See page E24 for details)



**Side Mount Bracket (Aluminium) - Type ASMB-2**  
Suitable for SPB 5  
(See page E24 for details)

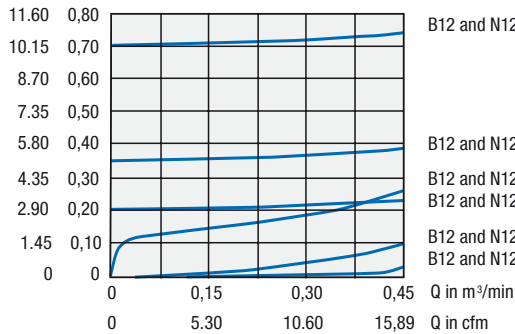
Dimensional drawings: All dimensions in mm (in).

**Pressure Drop Flow Curves  
Plastic Filler Breathers**
 $\Delta p$  in PSI    $\Delta p$  in bar

**Type SPB 1 (into / out of the tank)**

B04 and N04 (into / out of the tank)

B06 and N06 (into / out of the tank)

 B08 and N08 (into / out of the tank)  
 B12 and N12 (into / out of the tank)

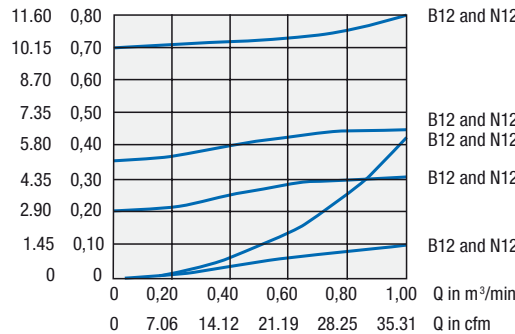
 $\Delta p$  in PSI    $\Delta p$  in bar

**Type SPB 2 (into / out of the tank)**

B12 and N12 (out of the tank; pressurised at 0,7 bar / 10 PSI)

B12 and N12 (out of the tank; pressurised at 0,35 bar / 5 PSI)

 B12 and N12 (into the tank; pressurised at 0,7 bar / 10 PSI, 0,35 bar / 5 PSI or 0,2 bar / 3 PSI)  
 B12 and N12 (out of the tank; pressurised at 0,2 bar / 3 PSI)

 B12 and N12 (out of the tank; without pressurisation)  
 B12 and N12 (into the tank; without pressurisation)

 $\Delta p$  in PSI    $\Delta p$  in bar

**Type SPB 3 (into / out of the tank)**

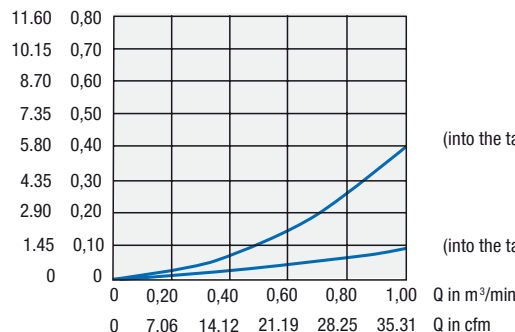
B12 and N12 (out of the tank; pressurised at 0,7 bar / 10 PSI)

B12 and N12 (out of the tank; pressurised at 0,35 bar / 5 PSI)

B12 and N12 (into the tank; pressurised at 0,7 bar / 10 PSI, 0,35 bar / 5 PSI or 0,2 bar / 3 PSI)

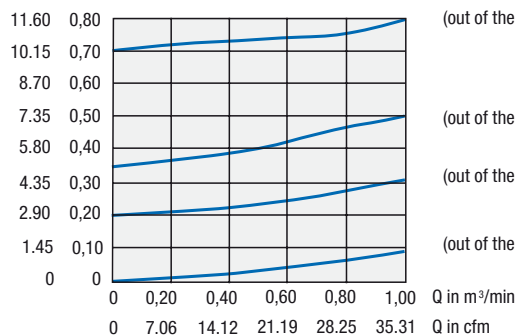
B12 and N12 (out of the tank; pressurised at 0,2 bar / 3 PSI)

B12 and N12 (into / out of the tank; without pressurisation)

 $\Delta p$  in PSI    $\Delta p$  in bar

**Type SPB 4+5 (into the tank)**

(into the tank; pressurised at 0,7 bar / 10 PSI, 0,35 bar / 5 PSI or 0,2 bar / 3 PSI)

(into the tank; without pressurisation)

 $\Delta p$  in PSI    $\Delta p$  in bar

**Type SPB 4+5 (out of the tank)**

(out of the tank; pressurised at 0,7 bar / 10 PSI)

(out of the tank; pressurised at 0,35 bar / 5 PSI)

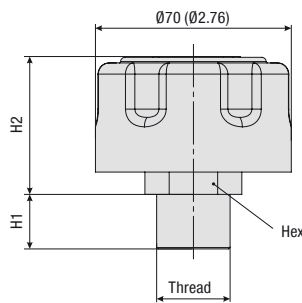
(out of the tank; pressurised at 0,2 bar / 3 PSI)

(out of the tank; without pressurisation)

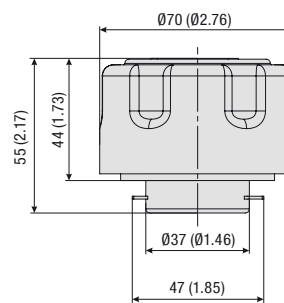
**Plastic Filler Breather - Type SPBN**  
(Compact Design; Screw-In or Bayonet Version)



Height above tank  
- 15 mm / -.59 in  
in comparison with  
SPB 2



**SPBN**  
Screw-In Version



**SPBN**  
Bayonet Version

**Characteristics**

Designed to be used as filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments; ideal for applications in which space is limited

**Features**

- Cap diameter of 070 mm / 02.76 in
- Screw-in version, equipped with male BSP thread (ISO 228) or male NPT thread (ANSI B1.20.1)
- Bayonet version with a six-hole bolt pattern for flange interfaces similar to DIN 24557, part 2
- Operating temperature range:  
-40 °C ... +120 °C / -40 °F ... +248 °F

**Materials**

- Body and cap made of glass-fibre reinforced Polyamide (PA)
- Socket made of Steel, zinc-plated
- Bayonet flange made of Steel, zinc-plated
- Basket made of Steel, zinc-plated or Polyamide (PA)
- Sealings made of NBR (Buna-N®)

Consult STAUFF for alternative materials.

**Accessories / Options**

- Mounting set including bayonet flange, steel or plastic basket (800 µm), gaskets and bolts
- Pressurisation up to 0,7 bar / 10 PSI
- Air filter element
- Anti-splash feature (for screw-in version only)
- Plastic dipstick with integrated anti-splash feature

Please see page E17 for details.

**Maximum Air Flow Rate**

- 0,40 m³/min / 14.13 cfm

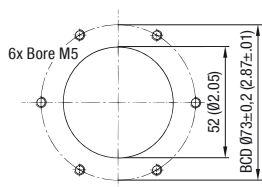
Please see page E17 for detailed air flow curves.

**Oil Displacement**

- 400 l/min / 106 US GPM

**Installation**

- Six-hole bolt pattern for flange interfaces similar to DIN 24557, part 2 (bayonet version with mounting set):



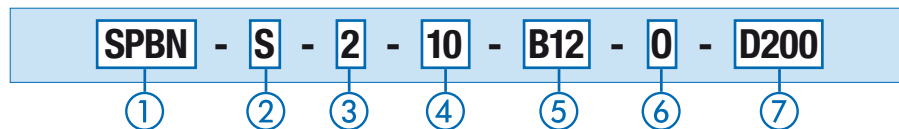
- 6 slotted pan head screws (ISO 1580 M5 x 12-5.8) are included in delivery of the bayonet version with mounting set

**Dimensions (Screw-In Version)**

Thread	Dimensions (mm/in)		
	H1	H2	Hex
Male G3/4 BSP (ISO 228)	19,5 .77	49,5 1.95	30 1.18
Male G1 BSP (ISO 228)	24 .95	49,5 1.95	36 1.42

Thread	Dimensions (mm/in)		
	H1	H2	Hex
Male 3/4 NPT (ANSI B1.20.1)	19,5 .77	49,5 1.95	30 1.18
Male 1 NPT (ANSI B1.20.1)	24 .95	49,5 1.95	36 1.42

**Order Codes**



**1 Type**

Plastic Filler Breather (Compact Design) **SPBN**

**2 Pressurisation**

Without pressurisation	<b>S</b>
Pressurised at 0,2 bar / 3 PSI	<b>P1</b>
Pressurised at 0,35 bar / 5 PSI	<b>P2</b>
Pressurised at 0,7 bar / 10 PSI	<b>P3</b>

Please see page E17 for details.

**3 Version**

Cap diameter 070 mm (02.76 in) **2**

**4 Air Filter Element (Material / Micron Rating)**

Without air filter element	<b>00</b>
10 µm Foam / PUR (standard option)	<b>10</b>
40 µm Foam / PUR	<b>40</b>

Consult STAUFF for alternative materials / micron ratings.

**5 Connection**

Screw-in version; Male G3/4 thread	<b>B12</b>
Screw-in version; Male G1 thread	<b>B16</b>
Screw-in version; Male 3/4 NPT thread	<b>N12</b>
Screw-in version; Male 1 NPT thread	<b>N16</b>
Bayonet version; Breather only	<b>BS</b>
Bayonet version; Breather including mounting set (with bayonet flange, gaskets and bolts)	<b>BM</b>
Bayonet version; Option BS and metal basket with flange interface (80 mm / 3.15 in)	<b>S080</b>
Bayonet version; Option BS and metal basket with flange interface (100 mm / 3.94 in)	<b>S100</b>
Bayonet version; Option BS and metal basket with flange interface (150 mm / 5.91 in)	<b>S150</b>
Bayonet version; Option BS and metal basket with flange interface (200 mm / 7.87 in)	<b>S200</b>
Bayonet version; Option BS and plastic basket with flange interface (95 mm / 3.74 in)	<b>S095P</b>

**6 Anti-Splash Feature**

With anti-splash feature (standard option)	<b>A</b>
Without anti-splash feature	<b>0</b>

Please see page E17 for details.

**7 Dipstick**

Plastic dipstick (200 mm / 7.88 in) with integrated anti-splash feature	<b>D200</b>
Plastic dipstick (300 mm / 11.81 in) with integrated anti-splash feature	<b>D300</b>
Without dipstick	<b>-</b>

A shorter dipstick length can be achieved by simply cutting down the total length according to individual requirements. Please see page E17 for details.



## Plastic Dipstick Anti-Splash Feature

For all Plastic Filler Breathers SPBN, dipsticks made of Polyamide are available as an option. These dipsticks are available in 2 standard lengths of 200 mm / 7.87 in and 300 mm / 11.81 in and equipped with 2 adjustable level indicators in green and red colour. A shorter dipstick length can be achieved by simply cutting down the total length according to individual requirements.

All dipsticks have an integrated anti-splash feature protecting the SPBN from backspilling fluid and avoiding an early breakdown of the air filter element. For Plastic Filler Breathers without dipstick, the anti-splash function can be achieved by an integrated concave baffle.

Please note: When choosing a combination of a dipstick and a basket, the dipstick has to be at least 15 mm / .59 in shorter than the basket.

**Special designs and alternative materials available on request.  
Please consult STAUFF for further details.**

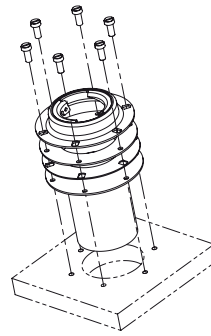
## Pressurisation

All Plastic Filler Breathers are also available as pressurised versions with pressure settings of 0,7 bar / 10 PSI, 0,35 bar / 5 PSI or 0,2 bar / 3 PSI. In order to achieve an air flow, the actual tank pressure has to exceed the chosen pressure setting of the Plastic Filler Breather.

When the fluid level inside the reservoir rises, no air is expelled from the reservoir until the pressurisation level is reached. When the fluid level inside the reservoir falls, the tank pressure drops and air is drawn into the reservoir.

Due to less breathing, the service life of a filler breather and the oil can be increased by using the pressurisation feature. It also minimizes foaming and cavitation, and provides additional protection from moisture entering the reservoir and which causes erosion and oil degradation.

## Mounting Set for Baskets (including Bayonet Flange, Gaskets and Bolts)



### Scope of Delivery / Order Codes

Mounting sets for baskets include the following components:

- 6 slotted pan head screws made of steel, zinc-plated (ISO 1580 M5 x 12-5.8)
- Bayonet flange made of steel, zinc-plated, with six-hole bolt pattern acc. to DIN 24557, part 2
- 2 gaskets made of NBR (Buna-N®) - one for underneath and one for on top of the basket
- Metal or plastic basket (only if required):
 

Metal basket (80 mm / 3.15 in):	<b>S-080-M-F-SPBN-BS-NBR</b>
Metal basket (100 mm / 3.94 in):	<b>S-100-M-F-SPBN-BS-NBR</b>
Metal basket (150 mm / 5.91 in):	<b>S-150-M-F-SPBN-BS-NBR</b>
Metal basket (200 mm / 7.87 in):	<b>S-200-M-F-SPBN-BS-NBR</b>
Plastic basket (95 mm / 3.74 in):	<b>S-095-P-F-SPBN-BS-NBR</b>
Without basket:	<b>Adapter-SPBN-BM-NBR</b>

Mounting sets can also be ordered as part of a complete breather assembly. Please see page E16 for details.

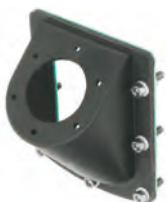
## Further Accessories / Options



**Extended Bayonet Flange - Type EBF**  
Suitable for SPBN; Bayonet Version BM  
(See page E25 for details)



**Weld Riser - Type WR**  
Suitable for SPBN; Bayonet Version BM  
(See page E25 for details)

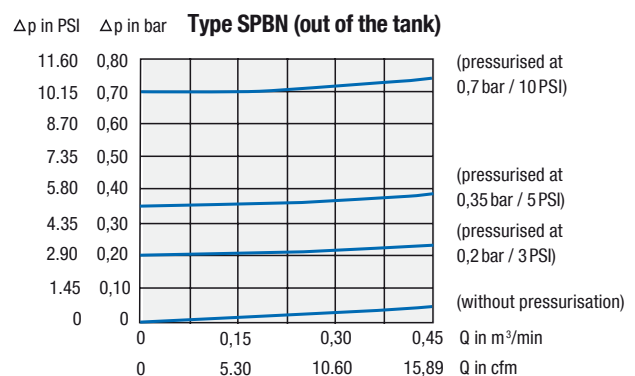
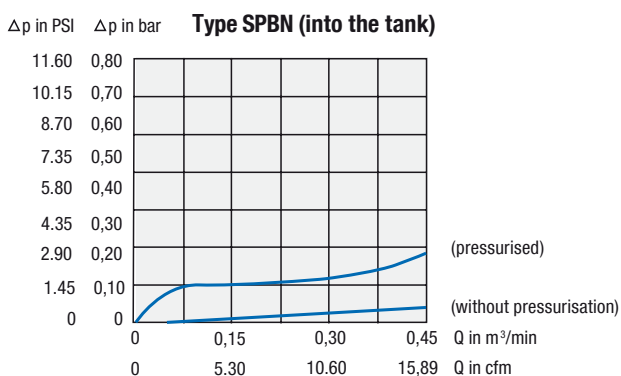


**Side Mount Bracket (Polyamide) - Type ASMB-1**  
Suitable for SPBN; Bayonet Version BM BM BM  
(See page E24 for details)

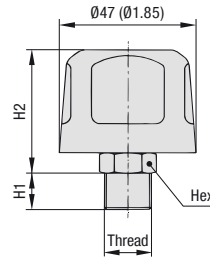


**Side Mount Bracket (Aluminium) - Type ASMB-2**  
Suitable for SPBN; Bayonet Version BM  
(See page E24e for details)

## Pressure Drop Flow Curves Plastic Filler Breathers



**Metal Filler Breather - Type SMBT-47 (Screw-In Version)**



**Characteristics**

Designed to be used as filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments

**Features**

- Cap diameter of Ø47 mm / Ø1.85 in
- Screw-in version, equipped with male BSP thread (ISO 228) or male NPT thread (ANSI B1.20.1)
- Operating temperature range: -30 °C ... +120 °C / -22 °F ... +248 °F

**Materials**

- Breather cap made of Steel, zinc/nickel-plated (Fe/Zn Ni 6) and free of hexavalent chromium CrVI (standard option); chrome-plated and epoxy-coated versions available
- Threaded socket made of Steel, zinc-plated

Consult STAUFF for alternative materials.

**Accessories / Options**

- Air filter element

**Maximum Air Flow Rate**

- 0,40 m³/min / 14.13 cfm

Consult STAUFF for detailed air flow curves.

**Oil Displacement**

- 400 l/min / 106 US GPM

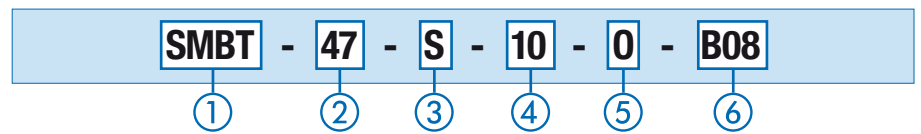
**Dimensions**

Thread	Dimensions (mm/in)		
	H1	H2	Hex
Male G1/4 BSP (ISO 228)	10 .39	41 2.38	17 .67
Male G3/8 BSP (ISO 228)	13 .51	41 2.38	19 .74
Male G1/2 BSP (ISO 228)	14 .55	41 2.38	22 .88

Thread	Dimensions (mm/in)		
	H1	H2	Hex
Male 1/4 NPT (ANSI B1.20.1)	13 .51	41 2.38	17 .67
Male 3/8 NPT (ANSI B1.20.1)	15 .59	41 2.38	19 .74

Consult STAUFF for alternative threads.

**Order Codes**



**① Type / Version**

Metal Filler Breather; Screw-in version **SMBT**

**② Cap Diameter / Material / Surface Finishing**

Cap diameter Ø47 mm (Ø1.85 in); Breather cap made of Steel, zinc/nickel-plated (standard option)	<b>47</b>
Cap diameter Ø47 mm (Ø1.85 in); Breather cap made of Steel, chrome-plated	<b>47C</b>
Cap diameter Ø47 mm (Ø1.85 in); Breather cap made of Steel, epoxy-coated	<b>47E</b>

**③ Label**

With STAUFF logo (standard option)	<b>S</b>
Neutral design without any logo	<b>N</b>

**④ Air Filter Element (Material / Micron Rating)**

Without air filter element	<b>00</b>
3 µm Filter Paper	<b>03</b>
10 µm Foam / PUR (standard option)	<b>10</b>
40 µm Foam / PUR	<b>40</b>

Consult STAUFF for alternative materials / micron ratings.

**⑤ Pressurisation**

Without pressurisation (standard option) **0**

No pressurisation available for this cap diameter.

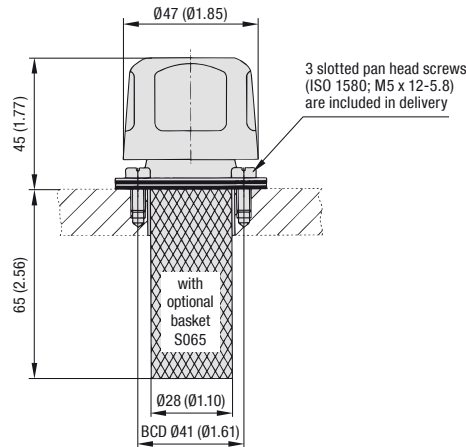
**⑥ Connection Thread (Male)**

G1/4	<b>B04</b>
G3/8	<b>B06</b>
G1/2	<b>B08</b>
1/4 NPT	<b>N04</b>
3/8 NPT	<b>N06</b>

Consult STAUFF for alternative threads.



## Metal Filler Breather - Type SMBB-47 (Bayonet Version)



### Characteristics

Designed to be used as filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments

### Features

- Cap diameter of Ø47 mm / Ø1.85 in
- Bayonet version with a three-hole bolt pattern

### Materials

- Breather cap made of Steel, zinc/nickel-plated (Fe/Zn Ni 6) and free of hexavalent chromium CrVI (standard option); chrome-plated and epoxy-coated versions available
- Bayonet flange made of Steel, zinc-plated
- Basket made of Steel, zinc-plated
- Sealings made of Cork

Consult STAUFF for alternative materials.

### Accessories / Options

- Metal basket (800 µm)
- Air filter element

### Maximum Air Flow Rate

- 0,40 m<sup>3</sup>/min / 14.13 cfm

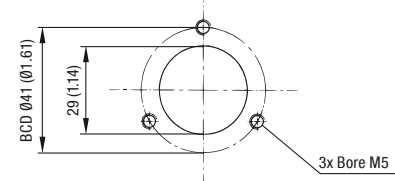
Consult STAUFF for detailed air flow curves.

### Oil Displacement

- 400 l/min / 106 US GPM

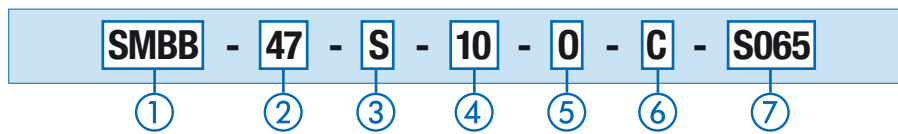
### Installation

- Three-hole bolt pattern for flange interfaces:



- 3 slotted pan head screws (ISO 1580 M5 x 12-5.8) are included in delivery; can be replaced by regular M5 bolts, if required

### Order Codes



#### ① Type / Version

Metal Filler Breather; Bayonet version **SMBB**

#### ② Cap Diameter / Material / Surface Finishing

Cap diameter Ø47 mm (Ø1.85 in); Breather cap made of Steel, zinc/nickel-plated (standard option) **47**

Cap diameter Ø47 mm (Ø1.85 in); Breather cap made of Steel, chrome-plated **47C**

Cap diameter Ø47 mm (Ø1.85 in); Breather cap made of Steel, epoxy-coated **47E**

#### ③ Label

With STAUFF logo (standard option) **S**

Neutral design without any logo **N**

#### ④ Air Filter Element (Material / Micron Rating)

Without air filter element **00**

3 µm Filter Paper **03**

10 µm Foam / PUR (standard option) **10**

40 µm Foam / PUR **40**

Consult STAUFF for alternative materials / micron ratings.

#### ⑤ Pressurisation

Without pressurisation (standard option) **0**

No pressurisation available for this cap diameter.

#### ⑥ Sealing Material

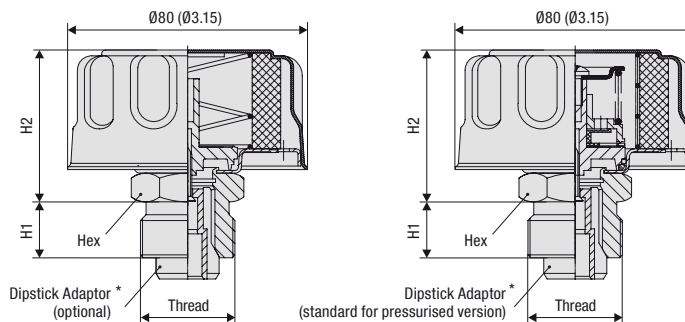
Cork (standard option) **C**

#### ⑦ Basket Option

Metal basket (65 mm / 2.56 in) **S065**

Without basket **0**

**Metal Filler Breather - Type SMBT-80 (Screw-In Version)**



**Without Pressurisation**

**Pressurised**

\* Please note: The dipstick adaptor is not available for connection threads G1/2 and 1/2 NPT.

**Characteristics**

Designed to be used as filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments

**Features**

- Cap diameter of Ø80 mm / Ø3.15 in
- Screw-in version, equipped with male BSP thread (ISO 228) or male NPT thread (ANSI B1.20.1)
- Operating temperature range: -30 °C ... +120 °C / -22 °F ... +248 °F

**Materials**

- Breather cap made of Steel, zinc/nickel-plated (Fe/Zn Ni 6) and free of hexavalent chromium CrVI (standard option); chrome-plated and epoxy-coated versions available
- Threaded socket made of Steel, zinc-plated
- Dipstick adaptor made of Polyamide (PA)

Consult STAUFF for alternative materials.

**Accessories / Options**

- Pressurisation up to 0,7 bar / 10 PSI
- Air filter element
- Dipstick adaptor suitable for plastic dipstick DS-1 (not for connection threads G1/2 and 1/2 NPT)
- Plastic dipstick DS-1 with integrated anti-splash feature (not for connection threads G1/2 and 1/2 NPT)

**Maximum Air Flow Rate**

- 0,45 m³/min / 15.89 cfm

Consult STAUFF for detailed air flow curves.

**Oil Displacement**

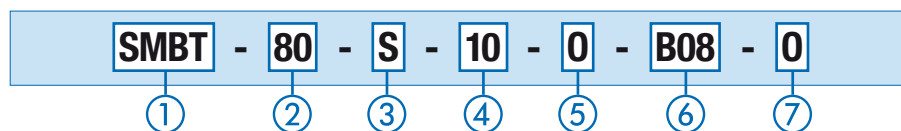
- 450 l/min / 119 US GPM

**Dimensions**

Thread	Dimensions (mm/in)		
	H1	H2	Hex
Male G1/2 BSP (ISO 228)	14 .55	54 2.13	24 .94
Male G3/4 BSP (ISO 228)	16 .63	54 2.13	30 1.18
Male G1 BSP (ISO 228)	19 .75	54 2.13	36 1.42

Thread	Dimensions (mm/in)		
	H1	H2	Hex
Male 1/2 NPT (ANSI B1.20.1)	14 .51	52,5 2.07	24 .94
Male 3/4 NPT (ANSI B1.20.1)	16 .59	52,5 2.07	30 1.18
Male G1 NPT (ANSI B1.20.1)	19 .75	52,5 2.07	36 1.42

**Order Codes**



**① Type / Version**

Metal Filler Breather; Screw-in version **SMBT**

**② Cap Diameter / Material / Surface Finishing**

Cap diameter Ø80 mm (Ø3.15 in); Breather cap made of Steel, zinc/nickel-plated (standard option) **80**  
 Cap diameter Ø80 mm (Ø3.15 in); Breather cap made of Steel, chrome-plated **80C**  
 Cap diameter Ø80 mm (Ø3.15 in); Breather cap made of Steel, epoxy-coated **80E**

**③ Label**

With STAUFF logo (standard option) **S**  
 Neutral design without any logo **N**

**④ Air Filter Element (Material / Micron Rating)**

Without air filter element **00**  
 3 µm Filter Paper **03**  
 10 µm Foam / PUR (standard option) **10**  
 40 µm Foam / PUR **40**

Consult STAUFF for alternative materials / micron ratings.

**⑤ Pressurisation**

Without pressurisation (standard option) **0**  
 Pressurised at 0,35 bar / 5 PSI **P2**  
 Pressurised at 0,7 bar / 10 PSI **P3**

**⑥ Connection Thread (Male)**

G1/2 **B08**  
 G3/4 **B12**  
 G1 **B16**  
 1/2 NPT **N08**  
 3/4 NPT **N12**  
 1 NPT **N16**

Consult STAUFF for alternative threads.

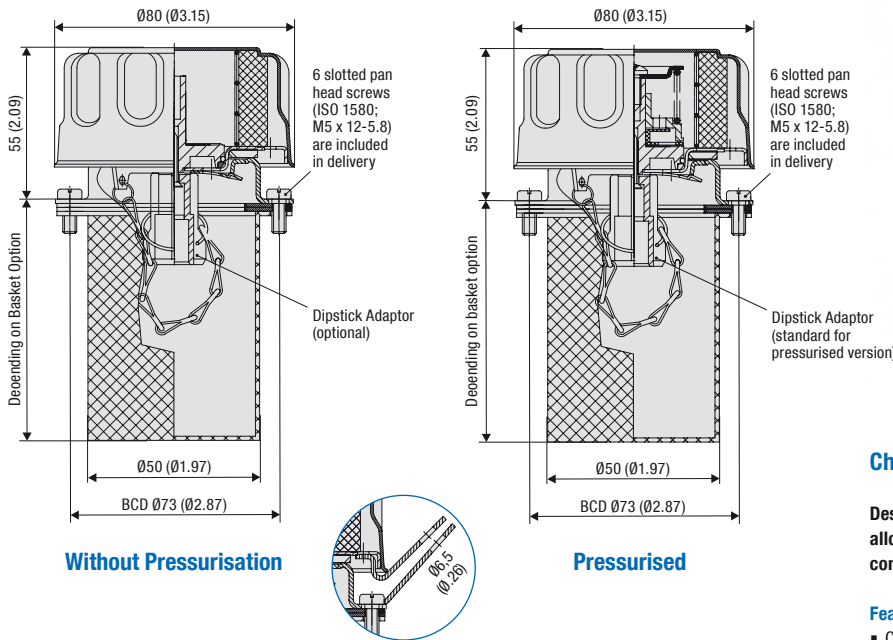
**⑦ Dipstick**

Without dipstick (standard option) **0**  
 With dipstick adaptor suitable for dipstick DS-1 (not for connection threads G1/2 and 1/2 NPT) **A**  
 With dipstick adaptor and plastic dipstick DS-1 (300 mm / 11.81 in) with integrated anti-splash feature (not for connection threads G1/2 and 1/2 NPT) **D300**

A shorter dipstick length can be achieved by simply cutting down the total length according to individual requirements.

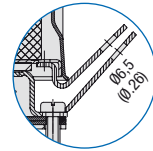
Please note: The dipstick adaptor is required for the subsequent installation of plastic dipsticks DS-1 (see page E14 for details), and is included in delivery when ordering a pressurised version. The dipstick adaptor is not available for connection threads G1/2 and 1/2 NPT.

## Metal Filler Breather - Type SMBB-80 (Bayonet Version)



Without Pressurisation

Pressurised



### Locking Feature

(Recommended mounting space: Ø126 mm / Ø4.96 in)



### Characteristics

Designed to be used as filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments

### Features

- Cap diameter of Ø80 mm / Ø3.15 in
- Bayonet version with a six-hole bolt pattern for flange interfaces similar to DIN 24557, part 2

### Materials

- Breather cap made of Steel, zinc/nickel-plated (Fe/Zn Ni 6) and free of hexavalent chromium CrVI (standard option); chrome-plated and epoxy-coated versions available
- Bayonet flange made of Steel, zinc-plated
- Basket made of Steel, zinc-plated or Polyamide (PA)
- Dipstick adaptor made of Polyamide (PA)
- Sealings made of Cork (for filler breathers without pressurisation) or NBR (Buna-N®) (for pressurised filler breathers)

Consult STAUFF for alternative materials.

### Accessories / Options

- Metal or plastic basket (800 µm)
- Pressurisation up to 0,7 bar / 10 PSI
- Air filter element
- Locking feature
- Dipstick adaptor (suitable for plastic dipstick DS-1)
- Plastic dipstick with integrated anti-splash feature

### Maximum Air Flow Rate

- 0,45 m<sup>3</sup>/min / 15.89 cfm

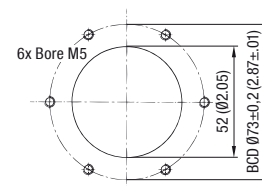
Consult STAUFF for detailed air flow curves.

### Oil Displacement

- 450 l/min / 119 USGPM

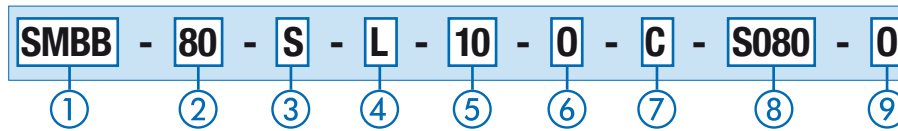
### Installation

- Six-hole bolt pattern for flange interfaces similar to DIN 24557, part 2:



- 6 slotted pan head screws (ISO 1580 M5 x 12-5.8) are included in delivery; can be replaced by regular M5 bolts, if required

### Order Codes



#### 1 Type / Version

 Metal Filler Breather; Bayonet version **SMBB**

#### 2 Cap Diameter / Material / Surface Finishing

Cap diameter Ø80 mm (Ø3.15 in); Breather cap made of Steel, zinc/nickel-plated (standard option)	<b>80</b>
Cap diameter Ø80 mm (Ø3.15 in); Breather cap made of Steel, chrome-plated	<b>80C</b>
Cap diameter Ø80 mm (Ø3.15 in); Breather cap made of Steel, epoxy-coated	<b>80E</b>

#### 3 Label

With STAUFF logo (standard option)	<b>S</b>
Neutral design without any logo	<b>N</b>

#### 4 Locking Feature

Without locking feature (standard option)	<b>O</b>
With locking feature (see drawing above)	<b>L</b>

#### 5 Air Filter Element (Material / Micron Rating)

Without air filter element	<b>00</b>
3 µm Filter Paper	<b>03</b>
10 µm Foam / PUR (standard option)	<b>10</b>
40 µm Foam / PUR	<b>40</b>

Consult STAUFF for alternative materials / micron ratings.

#### 6 Pressurisation

Without pressurisation (standard option)	<b>O</b>
Pressurised at 0,35 bar / 5 PSI	<b>P2</b>
Pressurised at 0,7 bar / 10 PSI	<b>P3</b>

#### 7 Sealing Material

Cork (for filler breathers without pressurisation)	<b>C</b>
NBR (Buna-N®) (for pressurised filler breathers)	<b>B</b>

#### 8 Basket Option

Without basket	<b>O</b>
Plastic basket (95 mm / 3.74 in) (standard option)	<b>S095P</b>
Metal basket (80 mm / 3.15 in)	<b>S080</b>
Metal basket (100 mm / 3.94 in)	<b>S100</b>
Metal basket (150 mm / 5.91 in)	<b>S150</b>
Metal basket (200 mm / 7.87 in)	<b>S200</b>
Heavy duty metal basket (200 mm / 7.87 in)	<b>S200HD</b>

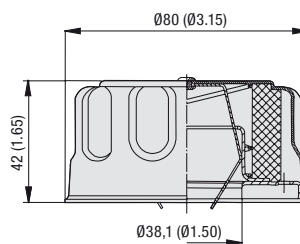
#### 9 Dipstick

Without dipstick (standard option)	<b>O</b>
Dipstick adaptor (suitable for dipstick DS-1)	<b>A</b>
With dipstick adaptor and plastic dipstick DS-1 (300 mm / 11.81 in) with integrated anti-splash feature	<b>D300</b>

A shorter dipstick length can be achieved by simply cutting down the total length according to individual requirements.

Please note: The dipstick adaptor is required for the subsequent installation of plastic dipsticks DS-1 (see page E14 for details), and is content of delivery when ordering a pressurised version.

**Metal Breather ■ Type SMBP-80 (Push-On Version)**



**Characteristics**

Designed to be used as filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments

**Features**

- Cap diameter of Ø80 mm / Ø3.15 in
- Push-on version, suitable for pipe diameters up to 38 mm/ 1.50 in
- Operating temperature range: -30 °C ... +120 °C / -22 °F ... +248 °F

**Materials**

- Breather cap made of Steel, zinc/nickel-plated (Fe/Zn Ni 6) and free of hexavalent chromium CrVI (standard option); chrome-plated and epoxy-coated versions available

Consult STAUFF for alternative materials.

**Accessories / Options**

- Air filter element

**Maximum Air Flow Rate**

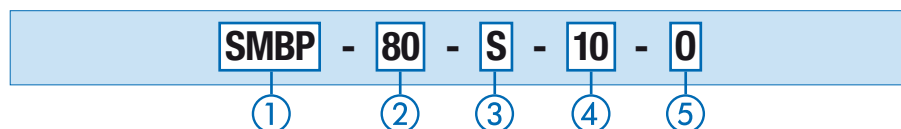
- 0,45 m³/min / 15.89 cfm

Consult STAUFF for detailed air flow curves.

**Oil Displacement**

- 450l/min / 119USGPM

**Order Codes**



① **Type / Version**

Metal Breather; Push-on version **SMBP**

② **Cap Diameter / Material / Surface Finishing**

Cap diameter Ø80 mm (Ø3.15 in); Breather cap made of Steel, zinc/nickel-plated (standard option) **80**

Cap diameter Ø80 (Ø3.15 in); Breather cap made of Steel, chrome-plated **80C**

Cap diameter Ø80 (Ø3.15 in); Breather cap made of Steel, epoxy-coated **80E**

③ **Label**

With STAUFF logo (standard option) **S**

Neutral design without any logo **N**

④ **Air Filter Element (Material / Micron Rating)**

Without air filter element **00**

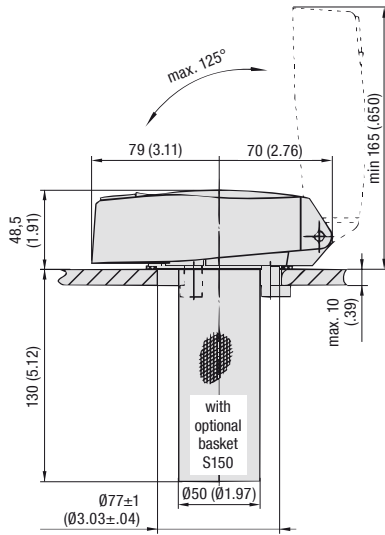
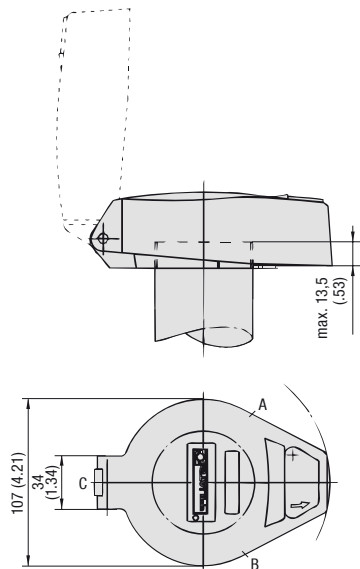
10 µm Foam / PUR (standard option) **10**

40 µm Foam / PUR **40**

Consult STAUFF for alternative materials / micron ratings.

⑤ **Dipstick**

Without dipstick (standard option) **0**

**Lockable Metal Filler Breather ▀ Type SMBL  
(Clamping, Threaded and Push-On Version)**

**Clamping Version**

**Threaded Version**

Recommended mounting space:  $\varnothing 162$  mm /  $\varnothing 6.38$  in  
2 locking screws M6 x 6 (DIN 916) at positions A and B

**Push-On Version**

3 locking screws M6 x 6 (DIN 916) at positions A, B and C



Clamping version  
with metal basket  
(150 mm / 5.91 in)

**Characteristics**

Designed to be used as lockable filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments

**Features**

- Available as clamping version (with 3 clamping jaws), as threaded version (with female BSP thread) or push-on version, suitable for stand pipe mounting with pipe diameters up to 77,5 mm / 3.05 in (secured by 3 locking screws)
- Key-lockable cap (2 keys included)
- Lock protected by rotating flap
- Operating temperature range: -30 °C ... +100 °C / -22 °F ... +212 °F
- Air flow in both directions, one direction only or no direction

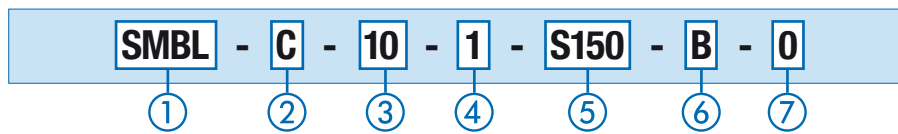
**Materials**

- Breather cap made of Aluminium, lacquered (light-grey, RAL 9022)
- Breather body made of Aluminium, zinc-plated
- Basket made of Steel, zinc-plated or Polypropylene (PP)
- Sealings made of NBR (Buna-N®) (standard option); FPM (Viton®) sealed version available

Consult STAUFF for alternative materials.

**Accessories / Options**

- Metal or (telescopic) plastic basket (800 µm)
- Air filter element

**Order Codes**

**① Type**

Lockable Metal Filler Breather **SMBL**

**② Version**

Clamping version with 3 clamping jaws; Installation to a tank mounting hole of  $\varnothing 77 \pm 1$  mm /  $\varnothing 3.03 \pm .04$  in **C**  
Threaded version with female G2 BSP thread **B32**  
Threaded version with female G2-1/2 BSP thread **B40**  
Push-on version for stand pipe mounting **P**

**③ Air Filter Element (Material / Micron Rating)**

Without air filter element **00**  
10 µm Foam / PUR (standard option) **10**  
40 µm Foam / PUR **40**

Consult STAUFF for alternative materials / micron ratings.

**④ Air Flow**

Air flow in both directions (standard option) **1**  
No air flow **2**  
Air flow only into the tank **3**

**⑤ Basket Option**

Without basket **0**  
Metal basket (150 mm / 5.91 in) **S150**  
Plastic basket (80 mm / 3.15 in) **S080**  
Telescopic plastic basket (max. 205 mm / max. 8.07 in) **S200**

The baskets of the SMBB 47/80 series cannot be used in conjunction with the SMBL series.

**⑥ Sealing Material**

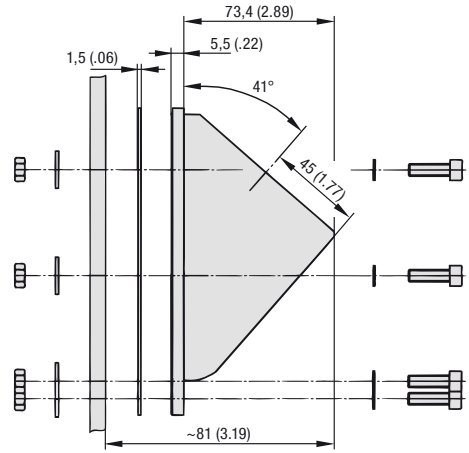
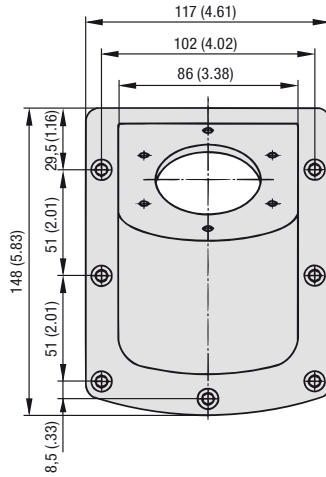
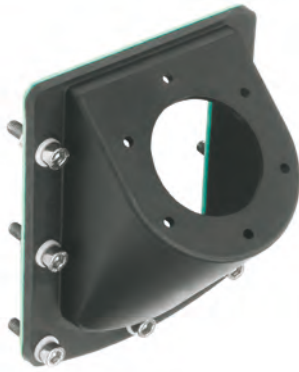
NBR (Buna-N®) (standard option) **B**  
FPM (Viton®) **V**

**⑦ Cap Design**

Breather cap made of Aluminium, lacquered (light-grey, RAL 9022) **0**



### Side Mount Bracket - Type ASMB-1 (Polyamide Version)



#### Characteristics

Lateral fastening of filler breathers with a six-hole flange connection similar to DIN 24557, part 2 to vertical or sloped walls of hydraulic reservoirs; ideal for applications in which space is limited

#### Suitability

- Suitable for Plastic Filler Breathers SPB 5 and SPBN (bayonet version) and Metal Filler Breathers SMBB 80

#### Materials

- Mounting bracket made of Polyamide (PA)
- Seal plate made of Klingerit
- Screws and hex nuts made of Steel, zinc-plated
- Washers made of Steel, zinc-plated
- Plastic spacers made of Polyamide (PA)

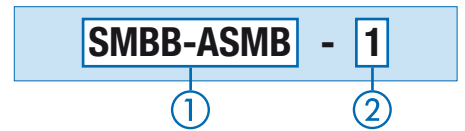
#### Scope of Delivery

- 1 mounting bracket
- 1 seal plate
- 7 socket cap screws M6 x 25 (ISO 4762)
- 7 plastic spacers 6,4 (DIN 125)
- 7 hex nuts M6 (ISO 4032)
- 7 washers 6,4 (DIN 9021)
- 6 sheet metal screws 4,8x13 (ISO 7049)

#### Installation

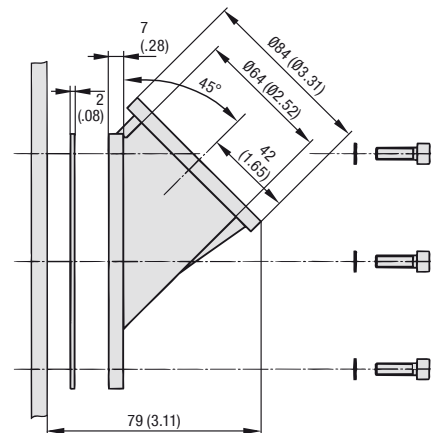
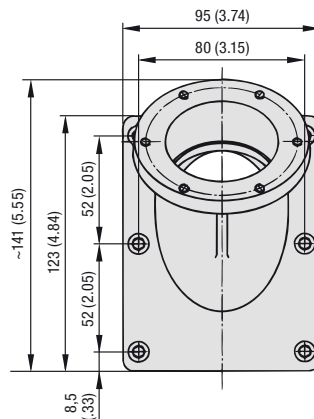
- Bolted to the side of the reservoir
- Bayonet flange of filler breather is placed on top
- Flange interface similar to DIN 24557, part 2 with 6 equally spaced mounting bores Ø4,5 mm / Ø.18 in (BCD Ø71±0,2 mm / Ø2.80±.01 in)

#### Order Codes



① Type	Side Mount Bracket	SMBB-ASMB
② Housing Material	Polyamide (PA)	1

### Side Mount Bracket - Type ASMB-2 (Aluminium Version)



#### Characteristics

Lateral fastening of filler breathers with a six-hole flange connection similar to DIN 24557, part 2 to vertical or sloped walls of hydraulic reservoirs; ideal for applications in which space is limited

#### Suitability

- Suitable for Plastic Filler Breathers SPB 5 and SPBN (bayonet version) and Metal Filler Breathers SMBB 80

#### Materials

- Mounting bracket made of Aluminium
- Seal plate made of Flexoid
- Screws made of Steel, zinc-plated
- Plastic spacers made of Klingerit

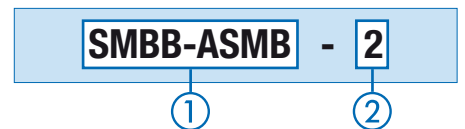
#### Scope of Delivery

- 1 mounting bracket
- 1 seal plate
- 6 socket cap screws M6 x 20 (ISO 4762)
- 6 plastic spacers 6,4 (DIN 125)

#### Installation

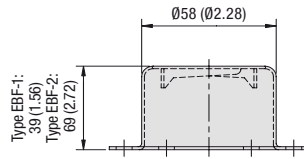
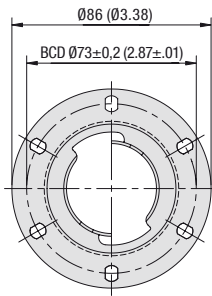
- Bolted to the side of the reservoir
- Bayonet flange of filler breather is placed on top
- Flange interface similar to DIN 24557, part 2 with 6 equally spaced bores M5 (BCD Ø73±0,2 mm / Ø2.87±.01 in)

#### Order Codes

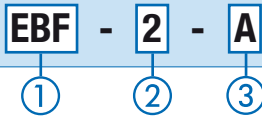


① Type	Side Mount Bracket	SMBB-ASMB
② Housing Material	Aluminium	2

## Extended Bayonet Flange ■ Type EBF



## Order Codes



## ① Type

 Extended Bayonet Flange **EBF**

## ② Size

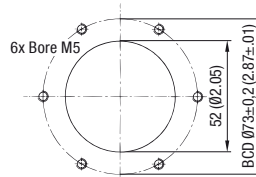
 Total height of 39 mm (1.56 in) **1**  
 Total height of 69 mm (2.72 in) **2**

## ③ Anti-Splash Feature

 Without anti-splash feature (standard option) **-**  
 With anti-splash feature **A**

## Installation

- Six-hole bolt pattern for flange interfaces similar to DIN 24557, part 2:



- Supplied without gaskets and bolts

## Characteristics

Designed to raise filler breathers either 39 mm / 1.56 in or 69 mm / 2.72 in above the actual mounting surface of the reservoir to prevent contamination from blocking the filter element

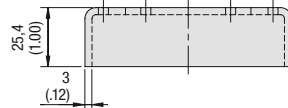
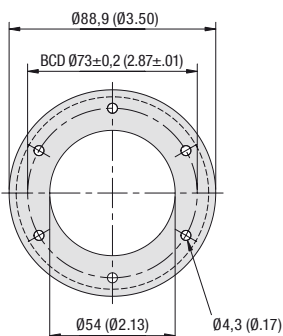
## Suitability

- Suitable for Metal Filler Breathers SMBB 80 and Plastic Filler Breathers SPBN (bayonet version)
- Replaces the existing bayonet flanges of these breathers

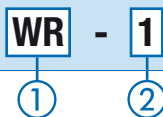
## Materials

- Bayonet flange made of Steel, zinc-plated

## Weld Riser ■ Type WR



## Order Codes



## ① Type

 Weld Riser **WR**

## ② Size

 Total height of 25,4 mm (1.00 in) **1**

## Materials

- Weld riser made of Steel, untreated

## Installation

- Welded to the top of the reservoir
- No requirement to drill and tap on the reservoir
- Bayonet flange of filler breather is placed on top

## Characteristics

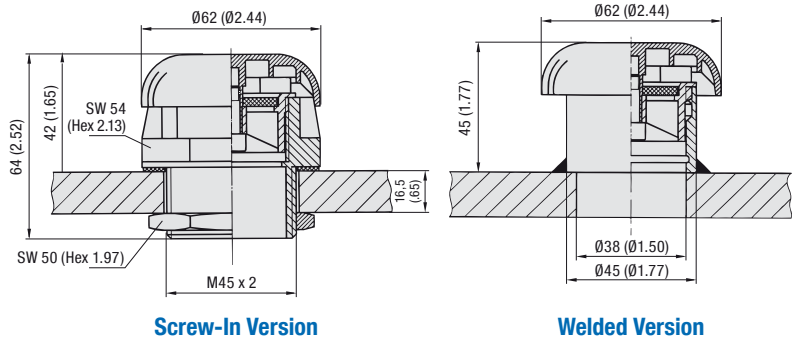
Designed to raise filler breathers 25,4 mm / 1.00 in above the actual mounting surface of the reservoir to prevent contamination from blocking the filter element whilst eliminating the requirement to drill and tap on the reservoir

## Suitability

- Suitable for Metal Filler Breathers SMBB 80 as well as Plastic Filler Breathers SPB 5 and SPBN (bayonet version) and all components with a six-hole flange connection similar to DIN 24557, part 2



**Plastic Filler Breather - Type SES (Screw-In or Welded Versions)**



**Characteristics**

Designed to be used as filler ports for hydraulic reservoirs, allowing the reservoir to breathe whilst protecting it from contamination found in harsh environments

**Features**

- Cap diameter of 62 mm / 2.44 in
- Screw-in version, equipped with male Metric ISO thread M45 x 2 and lock nut, or welded version with welding socket made of Steel (1.0718), untreated
- Supplied with 45 µm air filter element

**Materials**

- Breather cap made of Polyamide (PA)
- Breather body / stud made of Polyamide (PA)
- Nut (type SES 1) made of Steel (1.0718); Polyamide (PA) available on request
- Welding socket (type SES 2) made of Steel (1.0718), untreated; Stainless Steel (V2A) available on request
- Air filter element made of Sintered Bronze
- Basket made of Polyamide (PA)
- Dipstick made of Steel (1.0718)
- Sealings made of NBR (Buna-N®)

Consult STAUFF for alternative materials.

**Accessories / Options**

- Plastic basket (300 µm)
- Metal dipstick

**Maximum Air Flow Rate**

- 0,30 m³/min / 10.60 cfm

Consult STAUFF for detailed air flow curves.

**Oil Displacement**

- 300l/min / 79USGPM

**Order Codes**



**① Type**

Plastic Filler Breather **SES**

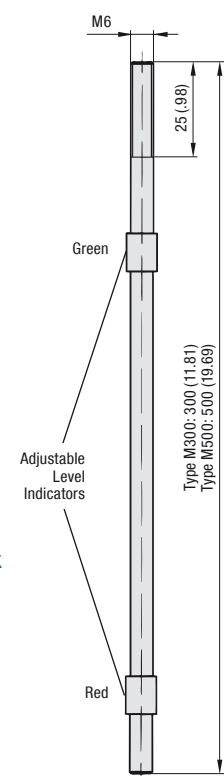
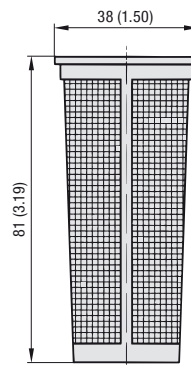
**② Version**

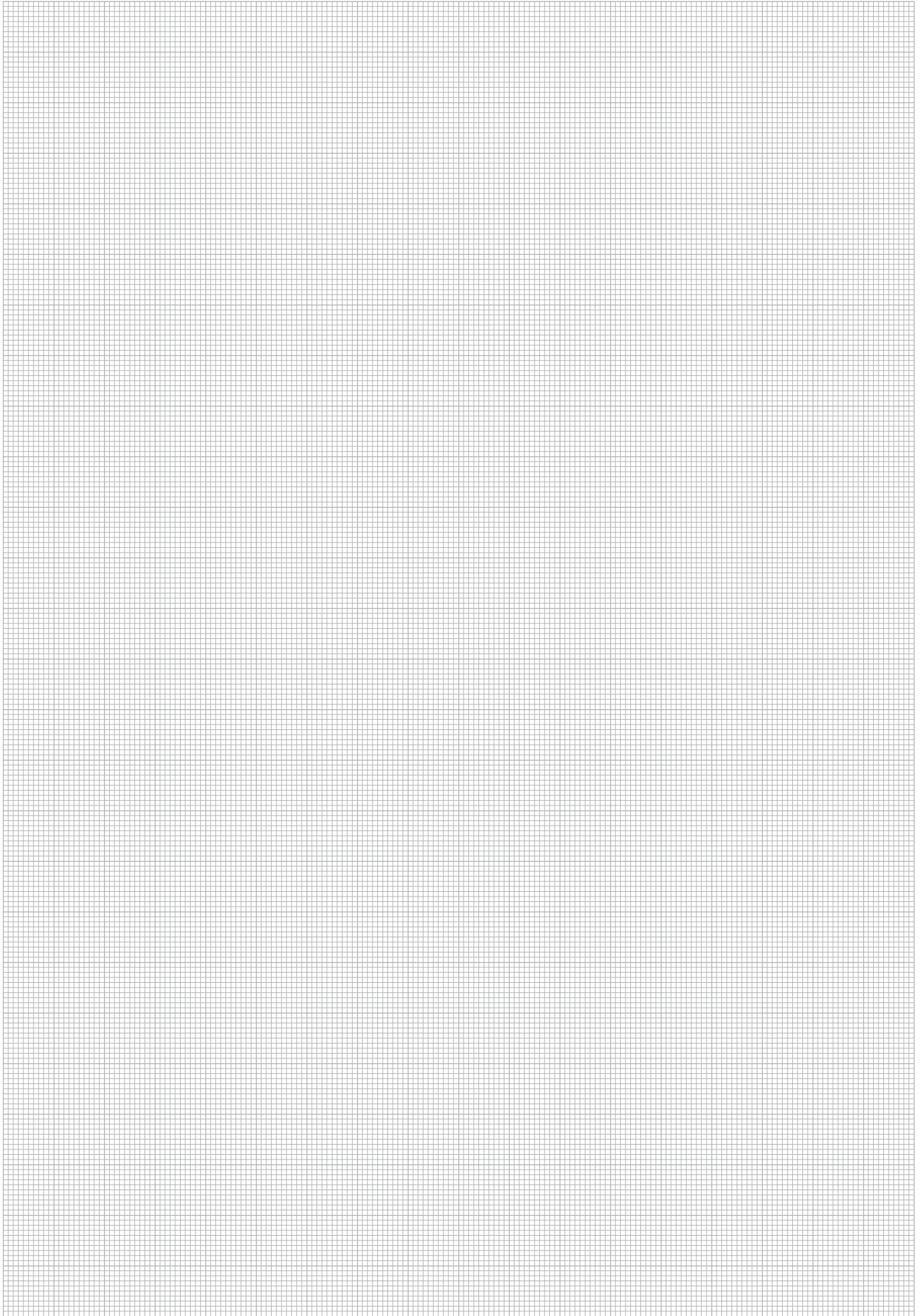
Screw-in version **1**  
Welded version **2**

**③ Basket / Dipstick Option**

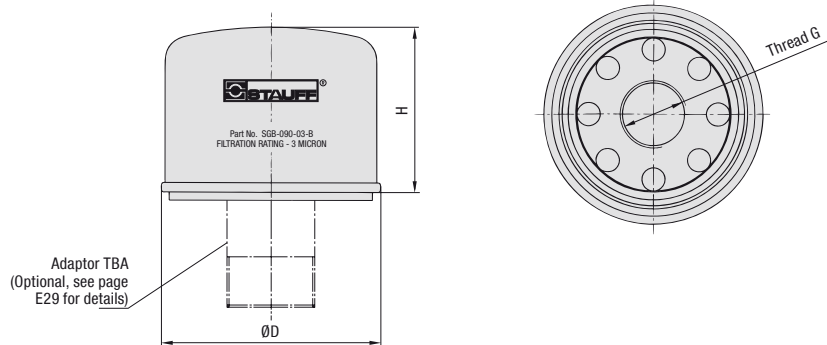
Plastic basket (81 mm / 3.19 in)	<b>S</b>
Metal dipstick (300 mm / 11.81 in)	<b>M300</b>
Metal dipstick (500 mm / 19.69 in)	<b>M500</b>
Without basket / dipstick	-

**Accessories**





## Giant Air Breather ▀ Type SGB



## Characteristics

Originally designed to be used as replaceable air filter elements for STAUFF Desiccant Breathers, they can also be used as separate air filters for hydraulic reservoirs

## Features

- Diameter of Ø68 mm / Ø2.68 in (SGB-060), Ø100 mm / Ø3.94 in (SGB-090) or Ø130 mm / Ø5.12 in (SGB-120)
- Equipped with female BSP thread (ISO 228)
- Including sealing made of NBR (Buna-N®)

## Accessories / Options

- Adaptors (for direct installation on top of hydraulic reservoirs)

Please see page E29 for a selection of adaptors available, and consult STAUFF for further information.

## Air Flow

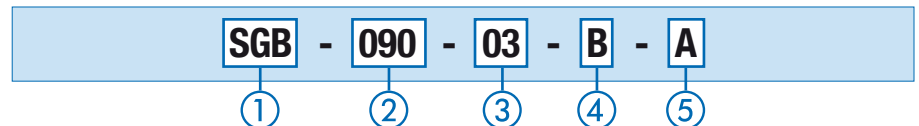
- Maximum air flow rates:  
0,05 m<sup>3</sup>/min / 1.77 cfm for SGB-060,  
0,70 m<sup>3</sup>/min / 24.71 cfm for SGB-090, and  
1,50 m<sup>3</sup>/min / 52.97 cfm for SGB-120

## Dimensions and Filter Specifications

Type	Thread G*	Dimensions (mm/in)		Filter Material	Micron Rating	Filter Surface	Max. Air Flow Rate
		ØD	H				
SGB-060-03-B	Female M20 x 1,5 (ISO 13-2)	68	60	Synthetic Fibre	3 µm	415 cm <sup>2</sup>	0,05 m <sup>3</sup> /min
		2.68	2.36			63 in <sup>2</sup>	1.77 cfm
SGB-090-03-B	Female G3/4 BSP (ISO 228)	100	64	Synthetic Fibre	3 µm	752 cm <sup>2</sup>	0,70 m <sup>3</sup> /min
		3.94	2.52			115 in <sup>2</sup>	24.71 cfm
SGB-120-03-B	Female G1-1/4 BSP (ISO 228)	130	100	Synthetic Fibre	3 µm	2095 cm <sup>2</sup>	1,50 m <sup>3</sup> /min
		5.12	3.94			320 in <sup>2</sup>	52.97 cfm

\* Use adaptors TBA to change female BSP thread into male BSP or male NPT thread. Please see page E29 for details.

## Order Codes



## ① Type

Giant Air Breather **SGB**

## ② Size

Diameter of Ø68 mm (Ø2.68 in) **060**  
Diameter of Ø100 mm (Ø3.94 in) **090**  
Diameter of Ø130 mm (Ø5.12 in) **120**

## ③ Filter Material / Micron Rating

3 µm Synthetic Fibre **03**

Consult STAUFF for alternative materials / micron ratings.

## ④ Connection Thread

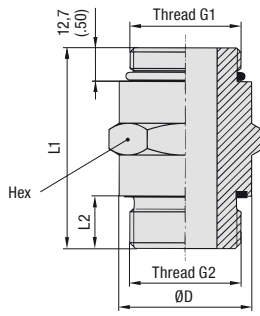
Female BSP thread **B**  
(according to dimension table)

## ⑤ Adaptor Option

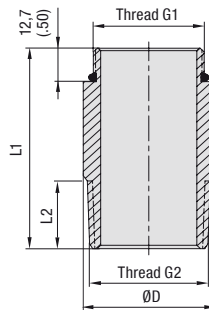
Without adaptor **-**  
With adaptor TBA-075-B **A**  
(for SGB-090-03-B) or  
TBA-125-B (for SGB-120-03-B)

If required, Giant Air Breathers SGB can also be supplied in combination with a wide range of further adaptors. Please see page E29 for a selection of adaptors available, and consult STAUFF for further information.

## Breather Adaptor - Type TBA



**TBA-038-B**  
**TBA-075-B**  
**TBA-125-B**



**TBA-075**  
**TBA-120**  
**TBA-125**



## Order Codes and Dimensions

Order Code	Thread G1	Thread G2	Dimensions (mm/in)				For Use with ...*
			L1	L2	ØD	Hex	
TBA-038-B	Male G3/8 BSP (ISO 228)	Male G3/8 BSP (ISO 228)	43	11	21,9	22	Desiccant Air Breathers SDB-061-CV
			1.69	.43	.86	.86	
TBA-075	Male 1-12 UNF (ANSI B1.1)	Male 3/4 NPT (ANSI B1.20.1)	51	20	27	Spin-On Series SF 65	
			2.00	.79	1.05		
TBA-075-B	Male G3/4 BSP (ISO 228)	Male G3/4 BSP (ISO 228)	57	16	32	32	Giant Air Breathers SGB-090 Desiccant Air Breathers SVDB-093 Desiccant Air Breathers SVDB-096 Spin-On Series SF 35 Spin-On Series SF 36
			2.24	.63	1.26	1.26	
TBA-120	Male G1-1/4 BSP (ISO 228)	Male 1-1/4 NPT (ANSI B1.20.1)	76	22	42	Giant Air Breathers SGB-120 Spin-On Series SF 57 Spin-On Series SF 58	
			3.00	.88	1.65		
TBA-125	Male 1-1/2-16 UN (ANSI B1.1)	Male 1-1/4 NPT (ANSI B1.20.1)	76	26	45	Spin-On Series SF 67	
			3.00	1.01	1.77		
TBA-125-B	Male G1-1/4 BSP (ISO 228)	Male G1-1/4 BSP (ISO 228)	76	20	50	50	Giant Air Breathers SGB-120 Spin-On Series SF 57 Spin-On Series SF 58
			3.00	.79	1.97	1.97	

\* Please see Filtration Technology section from page C122 on for technical details on Spin-On filter elements.

## Characteristics

Adopts from female threaded Giant Air Breather or Spin-On Filter Element to a male thread, and thus allows for direct installation on top of hydraulic reservoirs

## Features

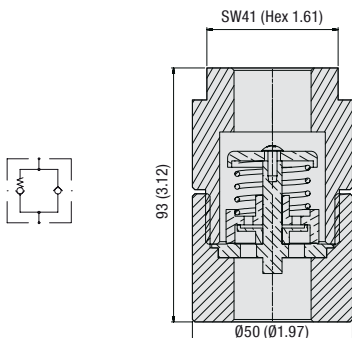
- Several thread combinations available to suit most common Spin-On filter elements
- Versions with male BSP threads on both ends are equipped with hex to simplify installation
- Sealings included in delivery

## Materials

- Adaptor made of Steel, zinc-plated
- Sealings made of NBR (Buna-N®)

Consult STAUFF for alternative materials.

## Pressurised Breather Adaptor - Type TBA-075-P2



## Characteristics

Increasing the service life and reducing maintenance intervals of tank filler breathers and desiccant breathers due to less breathing

## Features

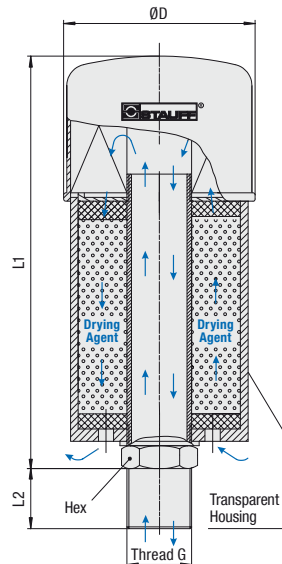
- Connections: Female G3/4 BSP threads (ISO 228)
- Pressurisation of 0,35 bar / 5 PSI (no air is expelled from the reservoir until the pressurisation level is reached)
- Suitable for use with various types of Desiccant Air Breathers including SDB-096/2, SDB-093/2, SVDB-096, SVDB-093 and SDB-096-CV as well as Tank Filler Breathers including SPB-2, SPB-3 and SMBT-80

## Materials

- Housing made of Aluminium



Desiccant Air Breather - Type SDB



**Drying Agent**  
Capable in changing colours with increasing moisture



This product does not contain any dangerous substances according to EC Council directives 99/45/EC and 2001/60/EC.

Dimensions and Technical Data

Type	Thread G	Dimensions (mm/in)				Weight (g/lbs)		Volume (cm³/in³) Drying Agent	Max. Water Absorption (g/lbs)	Air Filter Elements				
		ØD	L1	L2	Hex	Complete Unit	Drying Agent			Type	Filter Material	Micron Rating	Filter Surface	Max. Air Flow Rate
SDB-093/2	Male G3/4 BSP (ISO 228)	100	160	20	32	1200	225	300	86	SGB-090-03-B	Synthetic Fibre	3µm	752 cm²	0,70 m³/min
		3.94	6.30	.79	1.26	2.65	.50	18.3	.19				115 in²	24.71 cfm
SDB-096/2	Male G3/4 BSP (ISO 228)	100	220	20	32	1500	450	600	172	SGB-090-03-B	Synthetic Fibre	3µm	752 cm²	0,70 m³/min
		3.94	8.66	.79	1.26	3.31	.99	36.6	.38				115 in²	24.71 cfm
SDB-121/2	Male G1-1/4 BSP (ISO 228)	130	256	>25	50	2700	750	1000	288	SGB-120-03-B	Synthetic Fibre	3µm	2095 cm²	1,50 m³/min
		5.12	10.08	>.98	1.98	5.92	1.65	61.0	.63				320 in²	52.97 cfm
SDB-122/2	Male G1-1/4 BSP (ISO 228)	130	366	>25	50	4000	1500	2000	576	SGB-120-03-B	Synthetic Fibre	3µm	2095 cm²	1,50 m³/min
		5.12	14.41	>.98	1.98	8.82	3.31	122.0	1.27				320 in²	52.97 cfm

Characteristics

Combination of air breather and water removal filter

When a reservoir or gearbox breathes, air containing water vapor is ingested into the system. Temperature fluctuations will cause this water vapor to condense which can speed up the oxidation of the fluid and lead to damage in the system.

While inhaling, Desiccant Air Breathers SDB first dry the air as it passes through the drying agent. The air then passes through a 3µm air filter element to remove any solid contamination particles.

As moisture is absorbed, the drying agent will gradually change from red to orange. When it is orange, replace the drying agent. If required, an optional visual indicator gives an indication of the status of the air breather. With the moisture absorbed, the oxidation process can be decreased and the lifetime of the oil and the entire machinery will be extended.

Desiccant Air Breathers SDB can also be re-fitted with a layer of active carbon (1/3) and a layer of regular drying agent (2/3) for vapor filtration.

Features

- Available in 4 different sizes
- Diameter of Ø100 mm / Ø3.94 in or Ø130 mm / Ø5.12 in
- Refillable with drying agent (non-toxic ZR gel grain) or a mix of drying agent and active carbon
- Replaceable air filter element SGB
- Connection: Male BSP thread (ISO 228) on Stainless Steel tube
- Available with adaptor plate to simplify installation and to enable the use of a visual contamination indicator

Accessories / Spare Parts

Adaptor plate

- for SDB-093/2 and SDB-096/2: AP-1
- for SDB-121/2 and SDB-122/2: AP-2

Visual contamination indicator

- for all sizes (in conjunction with adaptor plate only): FM

Drying agent refilling material (supplied in air tight container)

- for SDB-093/2 (300 cm³ / 18.3 in³): RD-093
- for SDB-096/2 (600 cm³ / 26.6 in³): RD-096
- for SDB-121/2 (1000 cm³ / 61.0 in³): RD-121
- for SDB-122/2 (2000 cm³ / 122.0 in³): RD-122

Active carbon refilling material (supplied in air tight container)

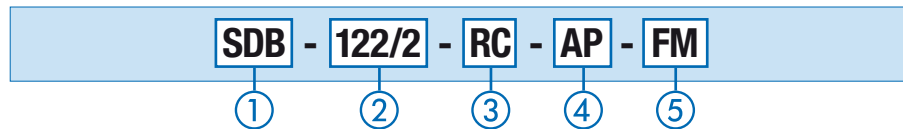
- for SDB-093/2, SDB-096/2 and SDB-121/2 (300 cm³ / 18.3 in³): RC-093/096/121
- for SDB-122/2 (600 cm³ / 18.3 in³): RC-122

Please note: Use one layer of active carbon (1/3) and one layer of regular drying agent (2/3).

Replacement air filter element (sealing included)

- for SDB-093/2 and SDB-096/2: SGB-090-03-B
- for SDB-121/2 and SDB-122/2: SGB-120-03-B

Order Codes



① Type

Desiccant Air Breather **SDB**

② Max. Water Absorption and Size

86 g / .19 lbs at Ø100 mm / Ø3.94 in	<b>093/2</b>
172 g / .38 lbs at Ø100 mm / Ø3.94 in	<b>096/2</b>
288 g / .63 lbs at Ø130mm / Ø5.12 in	<b>121/2</b>
576 g / 1.27 lbs at Ø130mm / Ø5.12 in	<b>122/2</b>

Please see table above for further technical details.

③ Drying Agent Material

Regular drying agent (standard option)	-
One layer of active carbon (1/3) and one layer of regular drying agent (2/3) for vapor filtration	<b>RC</b>

④ Adaptor Plate

Without adaptor plate	-
With adaptor plate	<b>AP</b>

⑤ Contamination Indicator

Without contamination indicator	-
With visual contamination indicator FM (in conjunction with adaptor plate AP only)	<b>FM</b>

Please see page E33 for details.

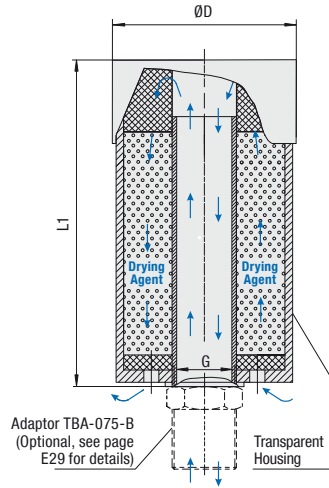
## Desiccant Air Breather (Economy Version) - Type SVDB

**Drying Agent**

Capable in changing colours with increasing moisture



This product does not contain any dangerous substances according to EC Council directives 99/45/EC and 2001/60/EC.


**Dimensions and Technical Data**

Type	Thread G	Dimensions (mm/in)			Weight (g/lbs)		Volume (cm <sup>3</sup> /in <sup>3</sup> ) Drying Agent	Max. Water Absorption (g/lbs)	Max. Air Flow Rate
		ØD	L1	L2	Complete Unit	Drying Agent			
SVDB-093	Female G3/4 BSP (ISO 228)	94	109	18	400	225	300	86	0,70 m <sup>3</sup> /min
		3.70	4.68	.71	.88	.50	18.3	.19	24.71 cfm
SVDB-096	Female G3/4 BSP (ISO 228)	94	179	18	700	450	600	172	0,70 m <sup>3</sup> /min
		3.70	7.05	.71	1.54	.99	36.9	.38	24.71 cfm

**Characteristics**
**Combination of air breather and water removal filter**

When a reservoir or gearbox breathes, air containing water vapor is ingested into the system. Temperature fluctuations will cause this water vapor to condense which can speed up the oxidation of the fluid and lead to damage in the system.

Desiccant Air Breathers SVDB are the light-weight alternative to the proven SDB series, offering an almost identical filtration and absorption performance.

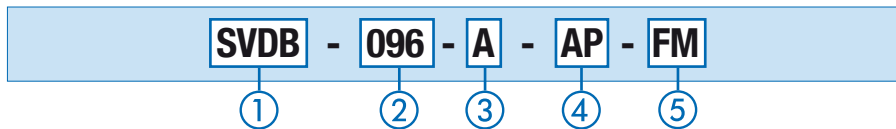
While inhaling, Desiccant Air Breathers SVDB also first dry the air as it passes through the drying agent. The air then passes through a 10 µm coarse filter to remove any solid contamination particles.

As moisture is absorbed, the drying agent will gradually change from red to orange. When it is orange, replace the entire unit. If required, an optional visual indicator gives an indication of the status of the air breather. With the moisture absorbed, the oxidation process can be decreased and the lifetime of the oil and the entire machinery will be extended.

**Features**

- Light-weight alternative to the SDB series
- Available in 2 different sizes
- Diameter of Ø94 mm / Ø3.70 in
- Filled with drying agent (non-toxic ZR gel grain)
- Connection: Female BSP thread (ISO 228) in Plastic housing

Please note that neither the air filter element nor the drying agent can be replaced when saturated.

**Order Codes**

**① Type**

 Desiccant Air Breather (Economy Version) **SVDB**
**② Max. Water Absorption and Size**

 86 g / .19 lbs at Ø94 mm / Ø3.70 **093**  
 172 g / .38 lbs at Ø94 mm / Ø3.70 **096**

Please see table above for further technical details.

**③ Connection Adaptor**

 Without connection adaptor **-**  
 With connection adaptor TBA-075-B **A**

 Please see page E29 for details.  
 Consult STAUFF for alternative adaptors.

**④ Adaptor Plate**

 Without adaptor plate **-**  
 With adaptor plate (in conjunction with connection adaptor A only) **AP**
**⑤ Contamination Indicator**

 Without contamination indicator **-**  
 With visual contamination indicator FM (in conjunction with adaptor plate AP only) **FM**

Please see page E33 for details.

**Accessories / Spare Parts**
**Connection adaptor** (see page E29 for details)

- for all sizes: **TBA-075-B**

**Adaptor plate**

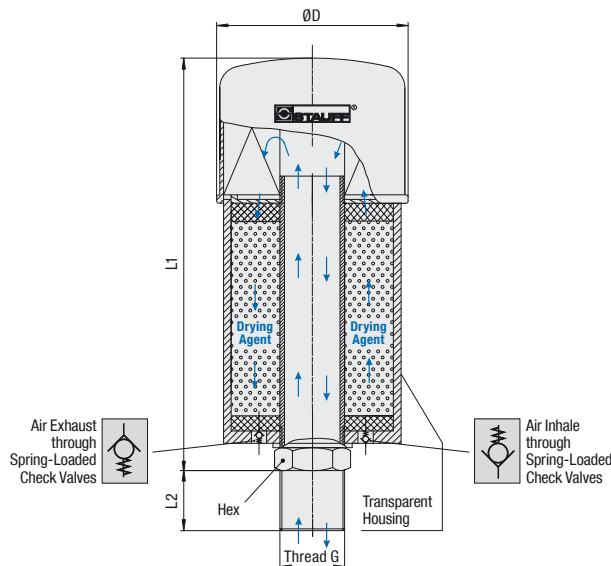
- for all sizes (in conjunction with adaptor plate only): **AP-1**

**Visual contamination indicator**

- for all sizes (in conjunction with adaptor plate only): **FM**



**Desiccant Air Breather with Check Valves - Type SDB-CV**



**Drying Agent**  
Capable in changing colours with increasing moisture



This product does not contain any dangerous substances according to EC Council directives 99/45/EC and 2001/60/EC.

**Dimensions and Technical Data**

Type	Thread G	Dimensions (mm/in)				Weight (g/lbs)		Volume (cm³/in³)		Max. Water Absorption (g/lbs)	Air Filter Elements			
		ØD	L1	L2	Hex	Complete Unit	Drying Agent	Drying Agent	Drying Agent		Type	Filter 67	Micron Rating	Filter Surface
SDB-061-CV	Female G3/8 BSP (ISO 228)	68	143	14	22	350	75	100	29	SGB-060-03-B	Synthetic Fibre	3µm	415 cm²	0,05 m³/min
		2.68	5.63	.55	.87	.77	.17	6.1	.06				63 in²	1.77 cfm
SDB-096-CV	Male G3/4 BSP (ISO 228)	100	220	20	32	1500	450	600	172	SGB-090-03-B	Synthetic Fibre	3µm	752 cm²	0,70 m³/min
		3.94	8.66	.79	1.26	3.31	.99	36.6	.38				115 in²	24.71 cfm
SDB-121-CV	Male G1-1/4 BSP (ISO 228)	130	256	>25	50	2700	750	1000	288	SGB-120-03-B	Synthetic Fibre	3µm	2095 cm²	1,50 m³/min
		5.12	10.08	>.98	1.98	5.92	1.65	61.0	.63				320 in²	52.97 cfm
SDB-122-CV	Male G1-1/4 BSP (ISO 228)	130	366	>25	50	4000	1500	2000	576	SGB-120-03-B	Synthetic Fibre	3µm	2095 cm²	1,50 m³/min
		5.12	14.41	>.98	1.98	8.82	3.31	122.0	1.27				320 in²	52.97 cfm

**Characteristics**

**Combination of air breather and water removal filter with integrated check valves to increase the lifetime of the desiccant material; particularly suited for gearbox applications**

When a reservoir or gearbox breathes, air containing water vapor is ingested into the system. Temperature fluctuations will cause this water vapor to condense which can speed up the oxidation of the fluid and lead to damage in the system.

While inhaling, Desiccant Air Breathers SDB-CV first dry the air as it passes through the drying agent. The air then passes through a 3µm air filter element to remove any solid contamination particles.

Thanks to the spring-loaded check valves with an opening pressure of 0,01 bar / .15PSI, the drying agent will be isolated from the atmosphere unless inhaling or exhaling, which increases the lifetime of the Desiccant Air Breather SDB-CV as well

As moisture is absorbed, the drying agent will gradually change from red to orange. When it is orange, replace the drying agent. If required, an optional visual indicator (not for the SDB-061-CV) gives an indication of the status of the air breather. With the moisture absorbed, the oxidation process can be decreased and the lifetime of the oil and the entire machinery will be extended. Desiccant Air Breathers SDB-CV can also be re-fitted with a layer of active carbon (1/3) and a layer of regular drying agent (2/3) for vapor filtration.

**Features**

- Available in 4 different sizes with diameter of Ø68 mm / Ø2.68 in, Ø100 mm / Ø3.94 in or Ø130 mm / Ø5.12 in
- Equipped with spring-loaded check valves in opposing directions with an opening pressure of 0,01 bar / .15PSI
- Refillable with drying agent (non-toxic ZR gel grain) or a mix of drying agent and active carbon
- Replaceable air filter element SGB
- Connection: BSP thread (ISO 228)

Please note: Using an Desiccant Air Breather with integrated spring-loaded check valves may cause an under or over pressure of 0,01 bar / .15PSI inside the system, which does not cause any problems for the majority of gearboxes and reservoirs. In case of doubt, please consult your equipment supplier.

**Accessories / Spare Parts**

**Adaptor plate**

- for SDB-096-CV: **AP-1**
- for SDB-121-CV and SDB-122-CV: **AP-2**

**Visual contamination indicator**

- for SDB-096-CV, SDB-121-CV and SDB-122-CV (in conjunction with adaptor plate only): **FM**

**Drying agent refilling material** (supplied in air tight container)

- for SDB-061-CV (100 cm³ / 6.1 in³): **RD-061**
- for SDB-096-CV (600 cm³ / 26.6 in³): **RD-096**
- for SDB-121-CV and SDB-122-CV (1000 cm³ / 61.0 in³): **RD-121**
- for SDB-122-CV (2000 cm³ / 122.0 in³): **RD-122**

**Active carbon refilling material** (supplied in air tight container)

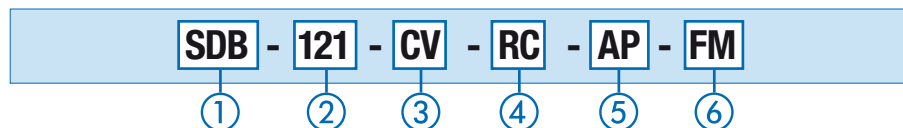
- for SDB-096-CV and SDB-121-CV (300 cm³ / 18.3 in³): **RC-093/096/121**
- for SDB-122-CV (600 cm³ / 18.3 in³): **RC-122**

Please note: Use one layer of active carbon (1/3) and one layer of regular drying agent (2/3).

**Replacement air filter element** (sealing included)

- for SDB-061-CV: **SGB-060-03-B**
- for SDB-096-CV: **SGB-090-03-B**
- for SDB-121-CV and SDB-122-CV: **SGB-120-03-B**

**Order Codes**



**1 Type**

Desiccant Air Breather **SDB**

**2 Max. Water Absorption and Size**

29 g / .06 lbs at Ø68 mm / Ø2.68 in	<b>061</b>
172 g / .38 lbs at Ø100 mm / Ø3.94 in	<b>096</b>
288 g / .63 lbs at Ø130 mm / Ø5.12 in	<b>121</b>
576 g / 1.27 lbs at Ø130 mm / Ø5.12 in	<b>122</b>

Please see table above for further technical details.

**3 Check Valves**

With integrated spring-loaded check valves (0,01 bar / .15PSI) **CV**

**4 Drying Agent 67**

Regular drying agent (standard option) -  
One layer of active carbon (1/3) and one layer of regular drying agent (2/3) for vapor filtration **RC**

**5 Adaptor Plate**

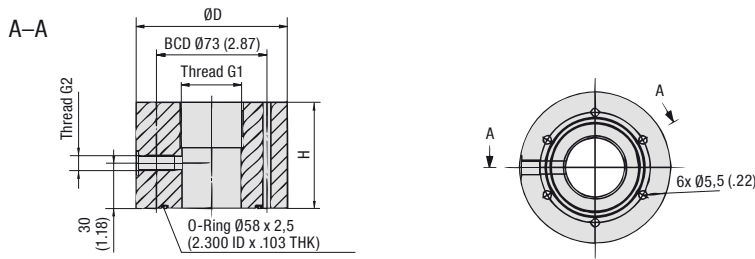
Without adaptor -  
With adaptor plate (not for SDB-061-CV) **AP**

**6 Contamination Indicator**

Without contamination indicator -  
With visual contamination indicator FM (in conjunction with adaptor plate AP only) **FM**

Please see page E33 for details.



**Adaptor Plate - Type AP**


Desiccant Air Breather SDB with Adaptor Plate AP


**Characteristics**

Designed to simplify the installation of Desiccant Air Breathers and enable the use of a visual contamination indicator

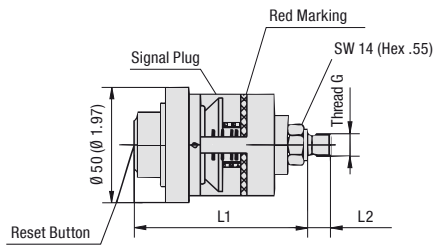
With Adaptor Plates AP, desiccant air breathers can be directly mounted to existing connections with a six-hole bolt pattern for flange interfaces similar to DIN 24557, part 2.

They are also equipped with a female G1/8 BSP thread (ISO 228) to connect with the Visual Contamination Indicator FM.

Adaptor Plates AP are made of Polyamide (PA). A blind plug, O-ring made of NBR (Buna-N®) and 6 socket cap screws (ISO 4762) are supplied with AP as a standard.

**Order Code and Dimensions**

Order Code	Thread G1 (Breather Port)	Thread G2 (Indicator Port)	Dimensions (mm/in)		Socket Cap Screws included	For Use with Desiccant Air Breathers
			H	ØD		
AP-1	Female G3/4 BSP (ISO 228)	Female G1/8 BSP (ISO 228)	50	88	M5 x 60 - 8.8 (Steel, zinc-plated)	SDB-096/2 SDB-093/2 SVDB-096 SVDB-093 SDB-096-CV
			1.98	3.46		
AP-2	Female G1-1/4 BSP (ISO 228)	Female G1/8 BSP (ISO 228)	70	100	M5 x 80 - 8.8 (Steel, zinc-plated)	SDB-121/2 SDB-122/2 SDB-121-CV SDB-122-CV
			2.76	3.94		

**Visual Contamination Indicator - Type FM**


Desiccant Air Breather SDB with Adaptor Plate AP and Visual Contamination Indicator FM


**Characteristics**

Designed to indicate the status of air filter elements

Visual Contamination Indicators FM – the so-called Filter Minders® – are connected to the female G1/8 BSP thread (ISO 228) of the Adaptor Plate AP and give a visual indication of the contamination level of the air filter element SGB. A red marking indicates when the air filter element has to be replaced.

Visual Contamination Indicators FM can be reset afterwards.

**Order Code and Dimensions**

Order Code	Thread G	Dimensions (mm/in)	
		L1	L2
FM	Male G1/8 BSP (ISO 228)	75	10
		2.54	.39

**Materials**

- Housing made of Polycarbonate

**Technical Data**

- Operating temperature range: -40 °C ... +121 °F (-40 °F ... +250 °F)
- Accuracy: ±10% at red marking



Consult STAUFF for alternative types of monitoring devices (such as Graduated Switch Indicators FME, etc.).

**Order Code and Dimensions**

Order Code	Dimensions (mm/in)	
	Length	Diameter
TBA-075-B-OD-140	140	60
	5.51	2.36
TBA-075-B-OD-210	210	60
	8.27	2.36

**Characteristics**

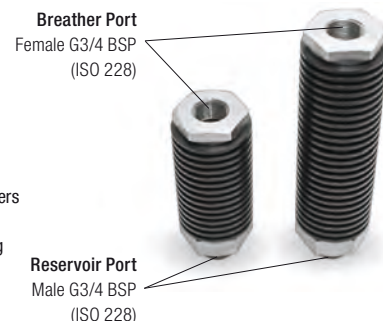
Designed to prevent oil mist from leaving the hydraulic reservoir through air breathers

**Features**

- Available in 2 different sizes with lengths of 140 mm / 5.51 in or 210 mm / 8.27 in
- Suitable for use with various types of Desiccant Air Breathers including SDB-096/2, SDB-093/2, SVDB-096, SVDB-093 and SDB-096-CV as well as Tank Filler Breathers including SPB-2, SPB-3 and SMBT-80

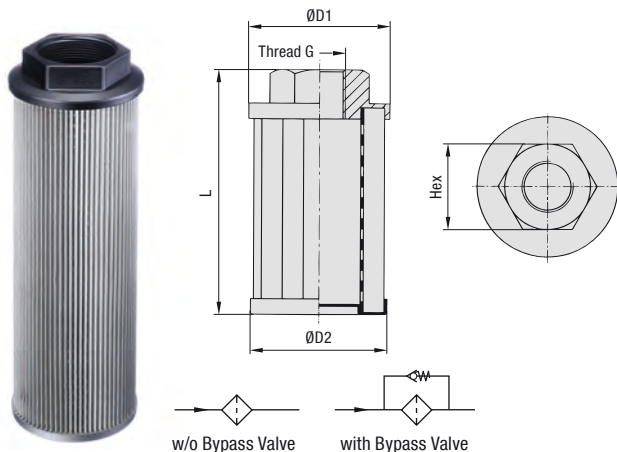
**Materials**

- Housing with cooling ribs made of Aluminium
- Threaded adaptors made of Steel

**Oil Demister - Type TBA-OD**


Dimensional drawings: All dimensions in mm (in).

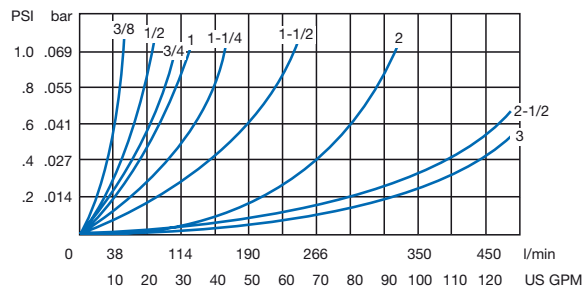
## Suction Strainer - Type SUS (Polyamide End Cap)



### Flow Characteristics

#### Nominal Flow Rate vs. Pressure Drop $\Delta P$

The following characteristics are valid for Mineral oils with a mass density of 0,85 kg/dm<sup>3</sup> and a kinematic viscosity of 30 mm<sup>2</sup>/s (cSt) at +38 °C / +100 °F.



### Characteristics

Designed as in-tank suction strainer elements for direct installation into suction lines of pumps; should always be installed below the minimum fluid level of the reservoir

#### Features

- Available with female BSP thread (ISO 228) or female NPT thread (ANSI B1.20.1)
- Operating temperature range: -20 °C ... +100 °C / -4 °F ... +212 °F

#### Media Compatibility

- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

#### Materials

- Threaded end cap made of glass-fibre reinforced Polyamide (PA); see page E35 for version with Aluminium end cap
- Lower end cap and support tube made of Steel, zinc-plated
- Standard filter material is Stainless Steel Mesh (125 µm); alternative micron ratings of 60 µm and 250 µm on request

#### Options

- Integrated bypass valve with an opening pressure of 0,2 bar (3 PSI) to reduce the risks of high-pressure drops that can be caused by contaminated strainer elements or high-viscosity fluids

Special sizes, designs, materials and configurations are available on request. Consult STAUFF for details.

Consult STAUFF for alternative materials.

### Dimensions and Technical Data (Female BSP Threaded Version)

Group Size	Thread G	Dimensions (mm/in)				Filter Surface	Max. Flow Rate
		ØD1	ØD2	L	Hex		
040 - B06F - 075	G3/8 BSP	39,5	38,5	75	22	279 cm <sup>2</sup>	12 l/min
		1,56	1,53	2,93	.87	43 in <sup>2</sup>	3.1 US GPM
050 - B06F - 067	G3/8 BSP	50	49	67	26	296 cm <sup>2</sup>	12 l/min
		1,97	1,93	2,64	1,02	46 in <sup>2</sup>	3.1 US GPM
050 - B08F - 105	G1/2 BSP	50	49	105	26	518 cm <sup>2</sup>	15 l/min
		1,97	1,93	4,13	1,02	80 in <sup>2</sup>	3.9 US GPM
068 - B12F - 105	G3/4 BSP	68	66	105	34	676 cm <sup>2</sup>	25 l/min
		2,68	2,60	4,13	1,34	105 in <sup>2</sup>	6.5 US GPM
068 - B16F - 140	G1 BSP	68	66	140	42	930 cm <sup>2</sup>	50 l/min
		2,68	2,60	5,51	1,65	144 in <sup>2</sup>	13.0 US GPM
088 - B20F - 140	G1-1/4 BSP	88	85	140	50	1172 cm <sup>2</sup>	65 l/min
		3,46	3,35	5,51	1,97	182 in <sup>2</sup>	16.9 US GPM
088 - B24F - 140	G1-1/2 BSP	88	85	140	60	1172 cm <sup>2</sup>	140 l/min
		3,46	3,35	5,51	2,36	182 in <sup>2</sup>	36.4 US GPM
102 - B24F - 200	G1-1/2 BSP	102	100	200	72	2427 cm <sup>2</sup>	140 l/min
		4,02	3,94	7,87	2,83	376 in <sup>2</sup>	36.4 US GPM
102 - B32F - 200	G2 BSP	102	100	200	72	2427 cm <sup>2</sup>	230 l/min
		4,02	3,94	7,87	2,83	376 in <sup>2</sup>	59.8 US GPM
102 - B32F - 225	G2 BSP	102	100	225	72	2811 cm <sup>2</sup>	230 l/min
		4,02	3,94	8,86	2,83	436 in <sup>2</sup>	59.8 US GPM
102 - B32F - 260	G2 BSP	102	100	260	72	3249 cm <sup>2</sup>	230 l/min
		4,02	3,94	10,24	2,83	504 in <sup>2</sup>	59.8 US GPM
102 - B32F - 300	G2 BSP	102	100	300	72	3798 cm <sup>2</sup>	230 l/min
		4,02	3,94	11,81	2,83	589 in <sup>2</sup>	59.8 US GPM
131 - B40F - 191	G2-1/2 BSP	131	128	191	86	2430 cm <sup>2</sup>	340 l/min
		5,16	5,04	10,24	3,39	377 in <sup>2</sup>	88.4 US GPM
131 - B40F - 212	G2-1/2 BSP	131	128	212	86	2748 cm <sup>2</sup>	340 l/min
		5,16	5,04	8,35	3,39	426 in <sup>2</sup>	88.4 US GPM
131 - B48F - 272	G3 BSP	131	128	272	96	3626 cm <sup>2</sup>	400 l/min
		5,16	5,04	10,71	3,78	562 in <sup>2</sup>	104 US GPM
150 - B32F - 151	G2 BSP	150	145	151	70	1812 cm <sup>2</sup>	400 l/min
		5,91	5,71	5,94	2,76	281 in <sup>2</sup>	104 US GPM

### Dimensions and Technical Data (Female NPT Threaded Version)

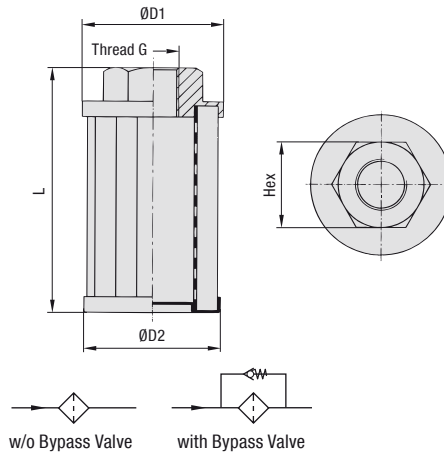
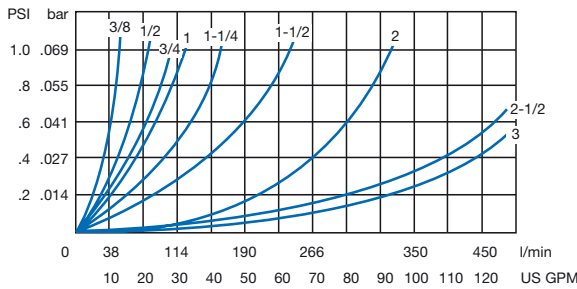
Group Size	Thread G	Dimensions (mm/in)				Filter Surface	Max. Flow Rate
		ØD1	ØD2	L	Hex		
050 - N06F - 067	3/8 NPT	50	49	67	26	296 cm <sup>2</sup>	12 l/min
		1,97	1,93	2,64	1,02	46 in <sup>2</sup>	3.1 US GPM
050 - N06F - 090	3/8 NPT	50	49	90	26	430 cm <sup>2</sup>	12 l/min
		1,97	1,93	3,54	1,02	67 in <sup>2</sup>	3.1 US GPM
050 - N08F - 105	1/2 NPT	50	49	105	26	518 cm <sup>2</sup>	15 l/min
		1,97	1,93	4,13	1,02	80 in <sup>2</sup>	3.9 US GPM
068 - N12F - 105	3/4 NPT	68	66	105	34	676 cm <sup>2</sup>	25 l/min
		2,68	2,60	4,13	1,34	105 in <sup>2</sup>	6.5 US GPM
068 - N16F - 140	1 NPT	68	66	140	42	930 cm <sup>2</sup>	50 l/min
		2,68	2,60	5,51	1,65	144 in <sup>2</sup>	13.0 US GPM
088 - N20F - 140	1-1/4 NPT	88	85	140	50	1172 cm <sup>2</sup>	65 l/min
		3,46	3,35	5,51	1,97	182 in <sup>2</sup>	16.9 US GPM
088 - N20F - 195	1-1/4 NPT	88	85	195	60	1709 cm <sup>2</sup>	65 l/min
		3,46	3,35	7,68	2,36	265 in <sup>2</sup>	16.9 US GPM
088 - N24F - 140	1-1/2 NPT	88	85	140	60	1172 cm <sup>2</sup>	140 l/min
		3,46	3,35	5,51	2,36	182 in <sup>2</sup>	36.4 US GPM
088 - N24F - 226	1-1/2 NPT	88	85	226	60	2012 cm <sup>2</sup>	140 l/min
		3,46	3,35	8,90	2,36	312 in <sup>2</sup>	36.4 US GPM
088 - N24F - 260	1-1/2 NPT	88	85	260	60	2344 cm <sup>2</sup>	140 l/min
		3,46	3,35	10,24	2,36	363 in <sup>2</sup>	36.4 US GPM
102 - N24F - 200	1-1/2 NPT	102	100	200	72	2427 cm <sup>2</sup>	140 l/min
		4,02	3,94	7,87	2,83	376 in <sup>2</sup>	36.4 US GPM
102 - N32F - 260	2 NPT	102	100	260	72	3249 cm <sup>2</sup>	230 l/min
		4,02	3,94	10,24	2,83	504 in <sup>2</sup>	59.8 US GPM
131 - N40F - 212	2-1/2 NPT	131	128	212	86	2748 cm <sup>2</sup>	340 l/min
		5,16	5,04	8,35	3,39	426 in <sup>2</sup>	88.4 US GPM
131 - N48F - 272	3 NPT	131	128	272	96	3626 cm <sup>2</sup>	400 l/min
		5,16	5,04	10,71	3,78	562 in <sup>2</sup>	104 US GPM

## Suction Strainers - Type SUS (Aluminium End Cap)

### Flow Characteristics

#### Nominal Flow Rate vs. Pressure Drop $\Delta P$

The following characteristics are valid for Mineral oils with a mass density of 0,85 kg/dm<sup>3</sup> and a kinematic viscosity of 30 mm<sup>2</sup>/s (cSt) at +38 °C / +100 °F.



### Characteristics

Designed as in-tank suction strainer elements for direct installation into suction lines of pumps; should always be installed below the minimum fluid level of the reservoir

#### Features

- Available with female NPT thread (ANSI B1.20.1)
- Operating temperature range: -20 °C ... +100 °C / -4 °F ... +212 °F

#### Media Compatibility

- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

#### Materials

- Threaded end cap made of Aluminium; see page E34 for version with Polyamide (PA) end cap
- Lower end cap and support tube made of Steel, zinc-plated
- Filter material made of Stainless Steel Mesh (125 µm); alternative micron ratings of 60 µm and 250 µm on request

Consult STAUFF for alternative materials.

#### Options

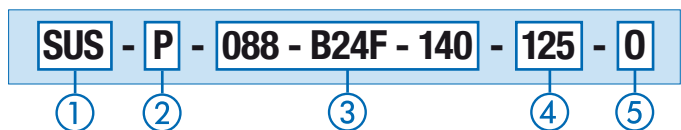
- Integrated bypass valve with an opening pressure of 0,2 bar (3 PSI) to reduce the risks of high-pressure drops that can be caused by contaminated strainer elements or high-viscosity fluids

Special sizes, designs, materials and configurations are available on request. Consult STAUFF for details.

### Dimensions and Technical Data (Female NPT Threaded Version)

Group Size	Thread G	Dimensions (mm/in)				Filter Surface	Max. Flow Rate
		ØD1	ØD2	L	Hex		
050 - N06F - 067	3/8 NPT	50	49	67	26	296 cm <sup>2</sup>	12 l/min
		1.97	1.93	2.64	1.02	46 in <sup>2</sup>	3.1 US GPM
050 - N06F - 090	3/8 NPT	50	49	90	26	430 cm <sup>2</sup>	12 l/min
		1.97	1.93	3.54	1.02	67 in <sup>2</sup>	3.1 US GPM
050 - N08F - 105	1/2 NPT	50	49	105	26	518 cm <sup>2</sup>	15 l/min
		1.97	1.93	4.13	1.02	80 in <sup>2</sup>	3.9 US GPM
068 - N12F - 105	3/4 NPT	68	66	105	34	676 cm <sup>2</sup>	25 l/min
		2.68	2.60	4.13	1.34	105 in <sup>2</sup>	6.5 US GPM
068 - N16F - 140	1 NPT	68	66	140	42	930 cm <sup>2</sup>	50 l/min
		2.68	2.60	5.51	1.65	144 in <sup>2</sup>	13.0 US GPM
088 - N20F - 140	1-1/4 NPT	88	85	140	50	1172 cm <sup>2</sup>	65 l/min
		3.46	3.35	5.51	1.97	182 in <sup>2</sup>	16.9 US GPM
088 - N20F - 195	1-1/4 NPT	88	85	195	60	1709 cm <sup>2</sup>	65 l/min
		3.46	3.35	7.68	2.36	265 in <sup>2</sup>	16.9 US GPM
088 - N24F - 140	1-1/2 NPT	88	85	140	60	1172 cm <sup>2</sup>	140 l/min
		3.46	3.35	5.51	2.36	182 in <sup>2</sup>	36.4 US GPM
088 - N24F - 226	1-1/2 NPT	88	85	226	60	2012 cm <sup>2</sup>	140 l/min
		3.46	3.35	8.90	2.36	312 in <sup>2</sup>	36.4 US GPM
088 - N24F - 260	1-1/2 NPT	88	85	260	60	2344 cm <sup>2</sup>	140 l/min
		3.46	3.35	10.24	2.36	363 in <sup>2</sup>	36.4 US GPM
088 - N32F - 260	2 NPT	88	85	260	70	2344 cm <sup>2</sup>	230 l/min
		3.46	3.35	10.24	2.76	363 in <sup>2</sup>	59.8 US GPM
150 - N40F - 213	2-1/2 NPT	150	145	213	90	2741 cm <sup>2</sup>	340 l/min
		5.91	5.71	8.39	3.54	425 in <sup>2</sup>	88.4 US GPM
150 - N48F - 272	3 NPT	150	145	272	100	3625 cm <sup>2</sup>	400 l/min
		5.91	5.71	10.71	3.94	562 in <sup>2</sup>	104 US GPM

### Order Codes



#### ① Type

Suction Strainer for direct installation into suction lines of pumps **SUS**

#### ② Material of Threaded End Cap

Glass-fibre reinforced Polyamide **P**  
Aluminium (for female NPT threaded version only) **A**

#### ③ Group Size

Select 'Group Size' from corresponding column in dimensional tables

The group size is defined by the diameter ØD1 of the threaded end cap, the thread code (type and size) and the total length of the suction strainer element (e.g. 040-B06F-075).

#### ④ Filter Material / Micron Rating

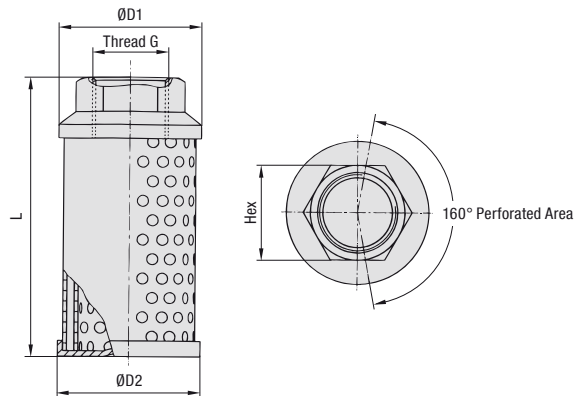
Stainless Steel Mesh, 125 µm (standard option) **125**  
Stainless Steel Mesh, 60 µm **060**  
Stainless Steel Mesh, 250 µm **250**

Consult STAUFF for alternative materials / micron ratings.

#### ⑤ Bypass Option

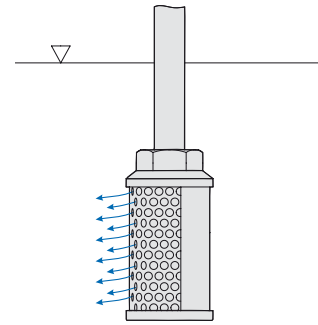
Without bypass valve (standard option) **0**  
Integrated bypass valve with opening pressure of 0,2 bar (3 PSI) **3**

## Diffuser - Type SRV



### Installation

Installation below the minimum fluid level of the reservoir with the plain area facing the pump inlet



### Characteristics

Designed for direct installation into return lines to reduce fluid aeration, foaming and noise; should always be installed below the minimum fluid level

#### Features

- Available with female BSP thread (ISO 228) or female NPT thread (ANSI B1.20.1)
- Operating temperature range: -20°C ... +100°C / -4°F ... +212°F
- Max. working pressure: 20 bar / 290 PSI

#### Media Compatibility

- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

#### Construction and Materials

- 2 concentric tubes with inner spaced holes
- Threaded end cap made of Aluminium
- Other components made of Steel, zinc-plated

Special sizes, designs, materials and configurations are available on request. Consult STAUFF for details.



Diffusers SRV are ideally suited for use with STAUFF Return Line Filters of the RF series with threaded connection.

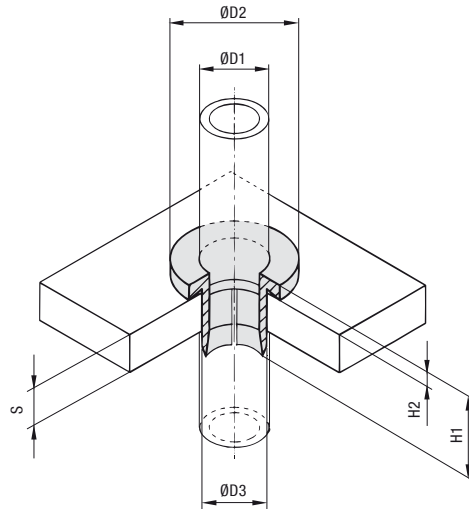
For details, please see Filtration Technology section from page C71 on.

### Dimensions and Order Codes (Female BSP Threaded Version)

Order Code	Thread G	Dimensions (mm/in)				Max. Flow Rate
		ØD1	ØD2	L	Hex	
SRV - 050 - B12	G3/4	64	62	109	36	50 l/min
		2.52	2.44	4.29	1.42	13 US GPM
SRV - 114 - B16	G1	64	62	139	46	114 l/min
		2.52	2.44	5.47	1.81	30 US GPM
SRV - 200 - B20	G1-1/4	86	84	139	60	200 l/min
		3.39	3.31	5.47	2.36	52 US GPM
SRV - 227 - B24	G1-1/2	86	84	200	60	227 l/min
		3.39	3.31	7.87	2.36	59 US GPM
SRV - 454 - B32	G2	86	84	260	70	454 l/min
		3.39	3.31	10.24	2.76	118 US GPM
SRV - 650 - B40	G2-1/2	150	148	212	90	650 l/min
		5.91	5.83	8.35	3.54	169 US GPM
SRV - 950 - B48	G3	150	148	272	100	950 l/min
		5.91	5.83	10.71	3.94	247 US GPM

### Dimensions and Order Codes (Female NPT Threaded Version)

Order Code	Thread G	Dimensions (mm/in)				Max. Flow Rate
		ØD1	ØD2	L	Hex	
SRV - 050 - N12	3/4 NPT	64	62	109	36	50 l/min
		2.52	2.44	4.29	1.42	13 US GPM
SRV - 114 - N16	1 NPT	64	62	139	46	114 l/min
		2.52	2.44	5.47	1.81	30 US GPM
SRV - 200 - N20	1-1/4 NPT	86	84	139	60	200 l/min
		3.39	3.31	5.47	2.36	52 US GPM
SRV - 227 - N24	1-1/2 NPT	86	84	200	60	227 l/min
		3.39	3.31	7.87	2.36	59 US GPM
SRV - 454 - N32	2 NPT	86	84	260	70	454 l/min
		3.39	3.31	10.24	2.76	118 US GPM
SRV - 650 - N40	2-1/2 NPT	150	148	212	90	650 l/min
		5.91	5.83	8.35	3.54	169 US GPM
SRV - 950 - N48	3 NPT	150	148	272	100	950 l/min
		5.91	5.83	10.71	3.94	247 US GPM



## Return Line Bushing ■ Type SRF



## Dimensions

Outside Diameter ØD1 (mm)	(in)	Nominal Bore (in)	Dimensions (mm/in)			Wall Thickness (mm/in) S	Mounting Bore (mm/in) ØD3
			ØD2	H1	H2		
6	1/4		18	22	4	4 ... 12	10
			.71	.87	.16	.16 ... .47	.39
8	5/16		20	22	4	4 ... 12	12
			.79	.87	.16	.16 ... .47	.47
10	3/8	1/8 Pipe	22	22	4	4 ... 12	14
		1/4 Copper Tube (ASTM B88)	.87	.87	.16	.16 ... .47	.55
12	1/2	3/8 Copper Tube (ASTM B88)	24	22	4	4 ... 12	16
			.94	.87	.16	.16 ... .47	.63
14		1/4 Pipe	26	22	4	4 ... 12	18
			1.02	.87	.16	.16 ... .47	.71
15			28	22	4	4 ... 12	20
			1.10	.87	.16	.16 ... .47	.79
16	5/8	1/2 Copper Tube (ASTM B88)	28	22	4	4 ... 12	20
			1.10	.87	.16	.16 ... .47	.79
18			30	22	4	4 ... 12	22
			1.18	.87	.16	.16 ... .47	.87
20	3/4		32	22	4	4 ... 12	24
			1.26	.87	.16	.16 ... .47	.94
22	7/8	3/4 Copper Tube (ASTM B88)	34	22	4	4 ... 12	26
			1.34	.87	.16	.16 ... .47	1.02
25	1		38	22	4	4 ... 12	30
			1.50	.87	.16	.16 ... .47	1.18
28		1 Copper Tube (ASTM B88)	41	22	4	4 ... 12	33
			1.61	.87	.16	.16 ... .47	1.30
30			43	22	4	4 ... 12	34
			1.69	.87	.16	.16 ... .47	1.39
35		1-1/4 Copper Tube (ASTM B88)	48	22	4	4 ... 12	40
			1.89	.87	.16	.16 ... .47	1.57
38	1-1/2		51	22	4	4 ... 12	43
			2.01	.87	.16	.16 ... .47	1.70
42		1-1/4 Pipe	55	22	4	4 ... 12	47
		1-1/2 Copper Tube (ASTM B88)	2.17	.87	.16	.16 ... .47	1.85

## Characteristics

Designed as tubular support, vibration and noise absorber and protection element for rigid return lines entering the hydraulic reservoir

## Features

- For all commonly available Metric and imperial pipe and tube diameters from 6 ... 42 mm and 1/4 ... 1-1/2 in
- Easy installation
- Chemically resistant against oil and solvents

## Media Compatibility

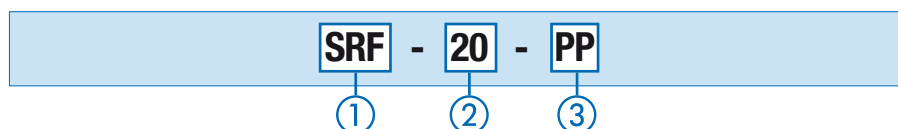
- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

## Materials

- Bushing made of Polypropylene (PP) or Thermoplastic Elastomer (TPE) with a hardness degree of 87 Shore-A

Consult STAUFF for alternative materials.

## Order Codes



## ① Type

Return Line Bushing **SRF**

## ② Pipe / Tube Diameter

Outside diameter pipe / tube ØD1 in mm (according to dimension table) **20**

## ③ Material

Polypropylene (PP) in natural colour **PP**  
Thermoplastic Elastomer (TPE) in black colour **SA**

Consult STAUFF for alternative materials.



## Pipe, Tube and Hose Cleaning System



### Characteristics

**Simple and low cost solution for the removal of unwanted contaminant from the inside surfaces of pipes, tubes and hoses**

The STAUFF Clean system comprises of a pneumatic launcher and a range of specially designed nozzles. The launcher uses standard industrial compressed air in pressure between 6 and 8 bar / 87 and 116 PSI to propel a foam projectile through the nozzle and into the hose, tube or pipe to be cleaned. This provides a safe and environmentally friendly tool that requires little formal expertise to operate and apply.

The launcher is the part of the system that controls the air supply to propel the projectile from start to finish of the cleaning job.

The nozzles are specially designed to affect an airtight seal on any pipe, tube or hose with or without end fittings. Its main purpose is to compress the foam projectile allowing it to enter the internal diameter of the pipe, tube or hose to be cleaned.

The projectile is the part of the system that does the cleaning: The foam projectile is sized to be approximately 15 % larger than the internal diameter of the pipe, tube or hose to be cleaned. The compression of the projectile against the internal wall cleans the internal surface and expels any loose contaminants from the end of the pipe, tube or hose.

The STAUFF Clean System is available as separate components or in a variety of kit forms comprising various nozzle types, adaptor and launcher, all contained in a heavy duty carrying case.

## Launchers / Launcher Kits



### Characteristics

#### Features

- Pneumatic pistol-grip launcher
- Light-weight and ergonomic design
- Easy to operate and apply
- Connection to air supply with quick release coupling
- Suitable for any type of nozzle
- Delivered separately or in a variety of kit forms including carrying case, adaptor ring and nozzles (if required)

#### Technical Data

- Air compressor requirement: 6 ... 8 bar / 87 ... 116 PSI
- Effective air volume: 250 ... 400 l/min / 66 ... 106 US GPM

### Order Codes

- Launcher only **SC-LG-1**
- Launcher kit without nozzles **SC-LK-1**
- Launcher kit with set of 10 Universal nozzles **SC-10UV-K**
- Launcher kit with set of 18 Metric Tube nozzles **SC-18MT-K**
- Launcher kit with set of 10 JIC nozzles **SC-10J-K**
- Launcher kit with set of 7 BSP nozzles **SC-7B-K**
- Launcher kit with set of 7 NPT nozzles **SC-7N-K**
- Adaptor ring **SC-UV-AR**

Consult STAUFF for special connection adaptors and couplings.

## Nozzles / Nozzle Sets



If required, nozzles can also be supplied separately. Consult STAUFF for availability and order codes.

### Universal Nozzle Set (Order Code: SC-10UV-S)

The Universal Nozzle is designed with a tapered seat that will allow it to suit for 90% of applications, including Hose, Tube and Pipe, with or without fittings, in hydraulic and pneumatic pipe systems, condenser tubes, boiler tubes and food lines.

The Universal Nozzle kit fits all and will accommodate applications with JIC, SAE and BSP end fittings.

The set of 10 nozzles consists of the following sizes: 6 mm, 8 mm, 10 mm, 13 mm, 16 mm, 19 mm, 25 mm, 32 mm, 38 mm and 50 mm.

### Metric Tube Nozzle Set (Order Code: SC-18MT-S)

The Metric Tube Nozzle is intended for use specifically with Metric sized tube and is designed to fit over the outside of the tube or pipe being cleaned.

The inside diameter of the nozzle is reduced to match the inside diameter of the tube. The nozzles are machined from solid bar stock and designed for superior strength.

The set of 18 nozzles consist of the following Metric OD sizes: 6 mm, 8 mm, 10 mm, 12 mm, 14 mm, 15 mm, 16 mm, 18 mm, 20 mm, 22 mm, 25 mm, 28 mm, 30 mm, 35 mm, 38 mm, 42 mm, 50 mm and 60 mm.

### JIC Nozzle Set (Order Code: SC-10J-S)

The JIC Nozzle is designed specifically for use with JIC and SAE type fittings. The nozzles are machined to accommodate both male and female configuration, ensuring a perfect airtight seal every time.

The set of 10 nozzles consist of the following sizes: 6 mm, 8 mm, 10 mm, 13 mm, 16 mm, 19 mm, 25 mm, 32 mm, 38 mm and 50 mm.

### BSP Nozzle Set (Order Code: SC-7B-S)

The BSP Nozzle is designed specifically for BSP configuration fittings. The nozzles are machined to accommodate both male and female configurations, ensuring a perfect airtight seal every time.

The set of 7 nozzles consist of the following sizes: 6 mm, 10 mm, 13 mm, 16 mm, 19 mm, 25 mm and 32 mm.

### NPT Nozzle Set (Order Code: SC-7N-S)

The NPT Nozzle is designed specifically for NPT configuration fittings. The nozzles are machined to accommodate both male and female configurations, ensuring a perfect airtight seal every time.

The set of 7 nozzles consist of the following sizes: 1/4 in, 3/8 in, 1/2 in, 5/8 in, 3/4 in, 1 in and 1-1/4 in.


**Standard Series (S)**

Standard Series Projectiles are intended for the cleaning of hose, tube or pipe without end fittings or restrictions.


**Coupling Series (C)**

Coupling Series Projectiles are intended for the cleaning of hose assemblies (hose with end fittings, adjustments, etc.) or the removal of loose particles from pipe or tube.


**Abrasive Series (A)**

Abrasive Series Projectiles are intended for the cleaning of metal pipe and tube to remove light rust and scale. They are recognised by the abrasive pad fixed to one end of the projectile.


**Grinding Series (G)**

Grinding Series Projectiles are intended for the cleaning of metal pipe and tube to remove medium and heavy rust and build up from the internal surface. They are coated in Silicon Carbide.

Pipe O.D. (mm)	Pipe/Hose I.D. (mm/in)	Order Codes Standard Series (S)	Order Codes Coupling Series (C)	Order Codes Abrasive Series (A)	Order Codes Grinding Series (G)	Packaging Units (Projectiles / Order Unit)
07	4,8 3/16	SC-S-07	SC-C-07	SC-A-07	SC-G-07	100
09	6,35 1/4	SC-S-09	SC-C-09	SC-A-09	SC-G-09	100
10	6,35 1/4	SC-S-10	SC-C-10	SC-A-10	SC-G-10	100
12	7,9 5/16	SC-S-12	SC-C-12	SC-A-12	SC-G-12	100
14	9,5 3/8	SC-S-14	SC-C-14	SC-A-14	SC-G-14	100
16	11,1 7/16	SC-S-16	SC-C-16	SC-A-16	SC-G-16	100
18	12,7 1/2	SC-S-18	SC-C-18	SC-A-18	SC-G-18	100
20	14,28 9/16	SC-S-20	SC-C-20	SC-A-20	SC-G-20	100
22	15,88 5/8	SC-S-22	SC-C-22	SC-A-22	SC-G-22	100
26	19,05 3/4	SC-S-26	SC-C-26	SC-A-26	SC-G-26	50
28	20,64 13/16	SC-S-28	SC-C-28	SC-A-28	SC-G-28	50
30	22,23 7/8	SC-S-30	SC-C-30	SC-A-30	SC-G-30	40
33	25,4 1	SC-S-33	SC-C-33	SC-A-33	SC-G-33	40
36	26 / 27 1-1/16	SC-S-36	SC-C-36	SC-A-36	SC-G-36	30
38	28,58 1-1/8	SC-S-38	SC-C-38	SC-A-38	SC-G-38	30
40	31,75 1-1/4	SC-S-40	SC-C-40	SC-A-40	SC-G-40	30
45	34,93 1-3/8	SC-S-45	SC-C-45	SC-A-45	SC-G-45	20
50	38,1 1-1/2	SC-S-50	SC-C-50	SC-A-50	SC-G-50	20
55	44,45 1-3/4	SC-S-55	SC-C-55	SC-A-55	SC-G-55	15
60	50,8 2	SC-S-60	SC-C-60	SC-A-60	SC-G-60	10

Please note: For optimum cleaning, it is recommended that projectiles are used once and then discarded.

Safety note: A mesh collection bag should be secured to the pipe, tube or hose exit to avoid possible injury to personnel by the projectile exiting at high velocity.

Always wear protective safety glasses, ear protection and a dust mask when operating this device.





Machined stop pin assures positive closing / opening, eliminates seat degradation due to ball misalignment.

Machined slot indicates ball bore position.

Blow out proof stem design. Bottom loaded for safety.

Secondary stem seals made of FPM (Viton®) are standard. NBR (Buna-N®) and EPDM sealings available.

Primary stem seals made of Delrin® (POM), also acting as a bearing surface between body and stem.

Ball seats made of Delrin® (POM) to assure low operating torque. Special ball seat materials available.

Micro smooth Carbon Steel (hard-chrome plated) or Stainless Steel ball.

Heavy-duty body.

NPT, SAE, BSP, ORFS, Metric and SAE flanged connectors are available.

O-rings made of FPM (Viton®) are standard. NBR (Buna-N®) and EPDM sealings available.

### Main Features

- "Floating Ball" design insures a positive, leak-free seal and automatically compensates for any seat wear or misalignment.
- Available in Carbon Steel and Stainless Steel.
- 1/4 turn positive operation.
- Hard-chrome plated micro-smooth ball greatly reduces friction and seat wear.
- Ball seats are available in a variety of materials to suit your special applications.
- Depending on size and materials, working pressures up to 800 bar / 12000 PSI and temperatures up to +500 °C / +930 °F can be accommodated.
- Full size ports on most two-way valves virtually eliminates pressure drop.
- STAUFF Ball Valves offer completely bidirectional operation, eliminating any chance of incorrect installation.
- No lubrication or maintenance required for the life of the valve.
- STAUFF Valves are easily and completely repairable.
- Long seal life.
- No threads in fluid service to contaminate flow or cause turbulence.

### Options

- Alternative lever designs and materials
- Special ball seat and O-ring materials for lower/higher temperatures and more aggressive media
- Special threads and connections

### Accessories

- Locking devices
- Actuator packages
- Limit switches

### Special Versions

- Highest-pressure ball valves
- High-temperature ball valves
- Ball valves for gas, paints, lacquers and Isocyanate
- Ball valves with fire-safe approval
- Custom-designed ball valves

Contact STAUFF with your special requirements.

### Please note:

STAUFF Ball Valves are designed for use as on/off devices and must not be used to throttle fluid flow. Use in any position other than fully open or fully closed can lead to rapid deterioration of valve components and possible product failure.
















When operated from the fully closed position at rated operating pressure, manual operation may prove difficult due to opening torque requirements.

Please consult factory prior to field application.

## F Valves

Index	F2
Two-Way Ball Valves	F4
Multi-Way Ball Valves	F42
Flow Control Valves	F80
Gauge Isolator Valves	F90
Accessories / Options	F92
Special Application Valves	F100
Technical Appendix	F104

Two-Way Ball Valves

	<b>High-Pressure Block Body Ball Valve</b> Introduction Female BSP/NPT Thread Female UN/UNF Thread O-Ring Face Seal Connection - Male Thread 24° Cone Connection - Light / Heavy Series	<b>BBV2</b>	<b>F4</b> <b>F5</b> <b>F6</b> <b>F6</b> <b>F7</b>
	<b>High-Pressure Forged Body Ball Valve</b> Introduction Female BSP/NPT Thread Female UN/UNF Thread O-Ring Face Seal Connection - Male Thread 24° Cone Connection - Light / Heavy Series	<b>FBV2</b>	<b>F8</b> <b>F9</b> <b>F10</b> <b>F10</b> <b>F11</b>
	<b>High-Pressure 800 bar / 12000 PSI Block Body Ball Valve</b> Female NPT Thread 24° Cone Connection - Heavy Series	<b>HBV2</b>	<b>F12</b> <b>F13</b> <b>F13</b>
	<b>High-Pressure Block Body Ball Valve</b> Introduction SAE Split Flange Connection (3000 / 6000 PSI)	<b>BBV22/23</b>	<b>F14</b> <b>F15</b>
	<b>High-Pressure Forged Body Ball Valve</b> Introduction SAE Split Flange Connection (3000 / 6000 PSI)	<b>FBV22/23</b>	<b>F16</b> <b>F17</b>
	<b>High-Pressure Block Body Ball Valve</b> Introduction SAE Split Flange Connection / SAE Flange Connection (3000 / 6000 PSI)	<b>BBV2H/2T</b>	<b>F18</b> <b>F19</b>
	<b>High-Pressure Forged Body Ball Valve</b> Introduction SAE Split Flange Connection / SAE Flange Connection (3000 / 6000 PSI)	<b>FBV2H/2T</b>	<b>F20</b> <b>F21</b>
	<b>High-Pressure Block Body Ball Valve</b> Introduction SAE Flange Connection (3000 / 6000 PSI)	<b>BBV2E/2S</b>	<b>F22</b> <b>F23</b>
	<b>High-Pressure Forged Body Ball Valve</b> Introduction SAE Flange Connection (3000 / 6000 PSI)	<b>FBV2E/2S</b>	<b>F24</b> <b>F25</b>
	<b>High-Pressure Round Body Ball Valve</b> Introduction SAE Flange Connection (3000 / 6000 PSI)	<b>BBV29</b>	<b>F26</b> <b>F27</b>
	<b>High-Pressure Round Body Ball Valve</b> Introduction SAE Flange Connection (3000 / 6000 PSI)	<b>BBV27/28</b>	<b>F28</b> <b>F29</b>
	<b>High-Pressure Round Body Ball Valve</b> Introduction Flange Connection with Butt Weld Ends	<b>BBVF</b>	<b>F30</b> <b>F31</b>
	<b>High-Pressure Round Body Ball Valve</b> Introduction ISO Flange Connection	<b>BBV2D</b>	<b>F32</b> <b>F33</b>
	<b>High-Pressure Round Body Ball Valve</b> Introduction CETOP Flange Connection	<b>BBV2Y</b>	<b>F34</b> <b>F35</b>
	<b>High-Pressure Block Body Ball Valve</b> Introduction SAE Flange Connection (3000 / 6000 PSI)	<b>KHZ</b>	<b>F36</b> <b>F37</b>
	<b>High-Pressure Block Body Ball Valve</b> Introduction Manifold Mounting	<b>BBV25</b>	<b>F40</b> <b>F41</b>

Multi-Way Ball Valves

	<b>High-Pressure Block Body Ball Valve</b> <i>L-Bore Three-Way Selector</i> Introduction Pressure inlet possible from center port only! Manifold Mounting	<b>BBV35</b>	<b>F42</b> <b>F43</b>
	<b>High-Pressure Block Body Ball Valve</b> <i>L-Bore Three-Way Selector</i> Introduction Pressure inlet possible from all ports! Manifold Mounting	<b>BBVS35</b>	<b>F44</b> <b>F45</b>
	<b>High-Pressure Block Body Ball Valve</b> <i>L-Bore Three-Way Selector</i> Introduction Pressure inlet possible from center port only! Female BSP Thread Female NPT Thread Female UN/UNF Thread 24° Cone Connection - Light Series 24° Cone Connection - Heavy Series	<b>CBVL</b>	<b>F46</b> <b>F47</b> <b>F47</b> <b>F48</b> <b>F49</b> <b>F49</b>
	<b>High-Pressure Block Body Ball Valve</b> <i>T-Bore Three-Way Selector</i> Introduction Pressure inlet possible from center port only! Female BSP Thread Female NPT Thread Female UN/UNF Thread 24° Cone Connection - Light Series 24° Cone Connection - Heavy Series	<b>CBVT</b>	<b>F50</b> <b>F51</b> <b>F51</b> <b>F52</b> <b>F53</b> <b>F53</b>
	<b>High-Pressure Block Body Ball Valve</b> <i>L-Bore Three-Way Selector</i> Introduction 6000 PSI SAE Flange Connection	<b>CBVL</b>	<b>F54</b> <b>F55</b>
	<b>High-Pressure Block Body Ball Valve</b> <i>L-Bore Three-Way Selector</i> Introduction Pressure inlet possible from all ports! Female BSP Thread Female NPT Thread Female UN/UNF Thread 24° Cone Connection - Light Series 24° Cone Connection - Heavy Series	<b>CBVSL</b>	<b>F56</b> <b>F57</b> <b>F57</b> <b>F58</b> <b>F59</b> <b>F59</b>
	<b>High-Pressure Block Body Ball Valve</b> <i>T-Bore Three-Way Selector</i> Introduction Pressure inlet possible from all ports! Female BSP Thread Female NPT Thread Female UN/UNF Thread 24° Cone Connection - Light Series 24° Cone Connection - Heavy Series	<b>CBVST</b>	<b>F60</b> <b>F61</b> <b>F61</b> <b>F62</b> <b>F62</b> <b>F63</b>

### Multi-Way Ball Valves

	<b>High-Pressure Block Body Ball Valve</b> <i>L-Bore Three-Way Selector</i> Introduction	<b>LBV3</b>	<b>F64</b>
	Female BSP Thread		<b>F65</b>
	Female NPT Thread		<b>F65</b>
	Female UN/UNF Thread		<b>F66</b>
	24° Cone Connection - Light Series		<b>F67</b>
24° Cone Connection - Heavy Series		<b>F67</b>	
	<b>High-Pressure Block Body Ball Valve</b> <i>T-Bore Three-Way Selector</i> Introduction	<b>TBV3</b>	<b>F68</b>
	Female BSP Thread		<b>F69</b>
	Female NPT Thread		<b>F69</b>
	Female UN/UNF Thread		<b>F70</b>
	24° Cone Connection - Light Series		<b>F71</b>
24° Cone Connection - Heavy Series		<b>F71</b>	
	<b>High-Pressure Block Body Ball Valve</b> <i>T-Bore Four-Way Selector</i> Introduction	<b>TBV4</b>	<b>F72</b>
	Female BSP Thread		<b>F73</b>
	Female NPT Thread		<b>F73</b>
	Female UN/UNF Thread		<b>F74</b>
	24° Cone Connection - Light Series		<b>F75</b>
24° Cone Connection - Heavy Series		<b>F75</b>	
	<b>High-Pressure Block Body Ball Valve</b> <i>Double L-Bore Four-Way Selector</i> Introduction	<b>XBV4</b>	<b>F76</b>
	Female BSP Thread		<b>F77</b>
	Female NPT Thread		<b>F77</b>
	Female UN/UNF Thread		<b>F78</b>
	24° Cone Connection - Light Series		<b>F79</b>
24° Cone Connection - Heavy Series		<b>F79</b>	

### Flow Control Valves

	<b>Throttle and Shut-Off Valve</b> (In-Line Assembly)	<b>DV</b>	<b>F80</b>
	<b>Flow Control Valve</b> (In-Line Assembly)	<b>DRV</b>	<b>F81</b>
	<b>Throttle and Shut-Off Valve</b> (Manifold Assembly)	<b>DVP</b>	<b>F82</b>
	<b>Flow Control Valve</b> (Manifold Assembly)	<b>DRVP</b>	<b>F83</b>
	<b>Throttle and Shut-Off Valve</b> (Cartridge Assembly)	<b>DVE</b>	<b>F84</b>
	<b>Pressure Compensated Flow Control Valve</b> (In-Line Assembly)	<b>PNDRV</b>	<b>F85</b>
	<b>Heavy-Duty Check Valve</b> (In-Line Assembly)	<b>RV</b>	<b>F86</b>
	<b>Medium-Duty Check Valve</b> (In-Line Assembly)	<b>RVM</b>	<b>F87</b>
	Flow Characteristics		<b>F88</b>

	<b>Gauge Isolator Valve</b> (Single Station)	<b>SWS-S1</b>	<b>F90</b>
	<b>Gauge Isolator Valve</b> (Multi Station)	<b>SWS-M</b>	<b>F90</b>
	<b>Gauge Isolator Needle Valve</b> (Single Station)	<b>SWS-A1/A2</b>	<b>F91</b>

### Accessories / Options

<b>Levers</b>		<b>F92</b>
<b>Locking Device</b>	<b>-LD</b>	<b>F93</b>
<b>Double-Acting Pneumatic Actuator</b>	<b>-EDA</b>	<b>F96</b>
<b>Single-Acting Pneumatic Actuator</b>	<b>-ESA</b>	<b>F96</b>
<b>Limit Switches</b>	<b>-LS / -PX</b>	<b>F96</b>
<b>Ball Valves with Detent</b>	<b>-DT</b>	<b>F97</b>
<b>Ball Valves with Assembly Holes</b>	<b>-SMH</b>	<b>F97</b>
<b>Ball Valves with Assembly Threads</b>	<b>-PM</b>	<b>F97</b>
<b>Porting Patterns</b>		<b>F98</b>

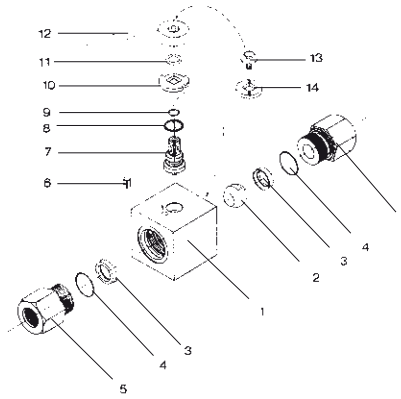
### Special Application Valves

<b>Highest-Pressure Ball Valves</b>	<b>F100</b>
<b>High-Temperature Ball Valves</b>	<b>F101</b>
<b>Ball Valves for Gas Applications</b>	<b>F102</b>
<b>Ball Valves for Paints and Lacquers</b>	<b>F102</b>
<b>Ball Valves for Isocyanates</b>	<b>F102</b>
<b>Ball Valves with Fire-Safe Approval</b>	<b>F103</b>

### Technical Appendix

<b>Nomenclature Definitions</b>	<b>F104</b>
<b>Standard Materials</b>	<b>F104</b>
<b>Admissible Working Pressures</b>	<b>F105</b>
<b>Surface Coatings</b>	<b>F105</b>
<b>Determination of Nominal Diameters</b>	<b>F106</b>
<b>Flow Characteristics of STAUFF Valves</b>	<b>F107</b>
<b>Torque Figures</b>	<b>F108</b>
<b>Pressure Equipment Directive</b>	<b>F109</b>
<b>CE-Marking of STAUFF Valves</b>	<b>F109</b>
<b>Storing and Assembling Instructions</b>	<b>F109</b>
<b>Seal Kits</b>	<b>F110</b>
<b>Tightening Torques of Adaptors and Endcaps</b>	<b>F112</b>
<b>Sealing Variations</b>	<b>F113</b>

High-Pressure Block Body Ball Valve - Type BBV2



List of Components

No.	Qty.	Description
1	1	Housing
2	1	Ball
3*	2	Seat
4*	2	Connector O-Ring
5	2	Connector
6	1	Stop Pin
7	1	Stem
8*	1	Thrust Ring
9*	1	Stem O-Ring
10	1	Cam Plate
11	1	Snap Ring
12	1	Lever
13	1	Stem Screw
14	1	Flow Indicator

\* Included in seal kit

Characteristics

Two-way high-pressure block body ball valves designed for use as on/off devices for hydraulic applications

Standard Construction

- Block body design for in-line assembly
- Supplied with off-set lever

Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Aluminium (STAUFF Size 10)  
Carbon Steel (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 1-1/2 BSP
- Female NPT thread (ANSI B1.20.1) >1-1/2-11-1/2 NPT
- Female UN/UNF thread (SAE J 514) >1-7/8-12 UN (1-1/2" SAE)
- Male O-Ring Face Seal Connection >1-11/16-12 UN
- 24° cone connection (DIN 2353); Light Series >42L
- 24° cone connection (DIN 2353); Heavy Series >38S

Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

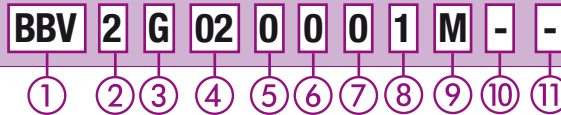
Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... +212 °F

Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

Order Codes



① Type

High-Pressure Block Body Ball Valve **BBV**

② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

③ Connection Style

Female BSP Thread (DIN ISO 228)	<b>G</b>
Female NPT Thread (ANSI B1.20.1)	<b>0</b>
Female UN/UNF Thread (SAE J 514)	<b>1</b>
Male O-Ring Face Seal Connection	<b>B</b>
24° Cone Connection (Light / Heavy Series)	<b>DN04 DN06 DN08 DN10 DN13 DN16 DN20 DN25</b>

Please consult STAUFF for alternative connection styles.

④ Connection Size

STAUFF Size (according to dimension table) for connection styles G, 0, 1 and B:

<b>02 04 06 08 10 12 16 20R 24R</b>
-------------------------------------

Tube Size (according to dimension table) for 24° Cone Connection (Light Series):

<b>06L 08L 10L 12L 15L 18L 22L 28L 35L 42L</b>
--

Tube Size (according to dimension table) for 24° Cone Connection (Heavy Series):

<b>06S 08S 10S 12S 14S 16S 20S 25S 30S 38S</b>
--

Please consult STAUFF for alternative connection sizes.

⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>
EPDM	<b>3</b>

Alternative materials are available upon request. Consult STAUFF for further information.

⑨ Manufacturing Code

Manufacturing code for all connection styles (except Female NPT Thread)	<b>M</b>
Manufacturing code (only for Female NPT Thread)	<b>K</b>
Manufacturing code for high-pressure version of connection styles 0 and 1 (STAUFF Size 16)	<b>H</b>

⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

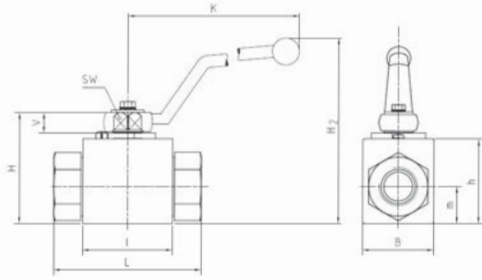
Alternative levers can be ordered separately. Please see page F92 for further information.

⑪ Accessories / Options

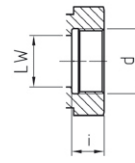
Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Locking Device LD2	<b>-LD2</b>
Supplied with Locking Device LD3	<b>-LD3</b>
Supplied with Locking Device LD4	<b>-LD4</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.

## High-Pressure Block Body Ball Valve - Type BBV2 Female BSP Thread (DIN ISO 228)



### Female BSP Thread (DIN ISO 228)



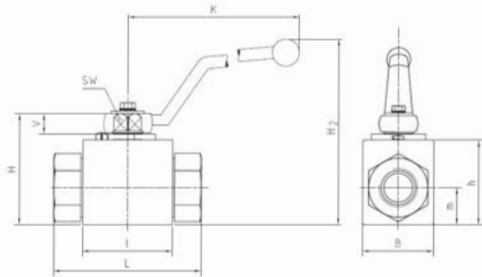
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Aluminium (STAUFF Size 10)  
Carbon Steel (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

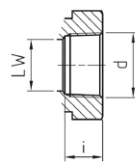
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)											Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	I	B	H	h	m	V	SW	K	i				H2
02	G 1/8 BSP	4	5	69	40	26	47	33	13,5	11	9	115	10	82	500	0,41	BBV2G020001M
			.20	2.70	1.57	1.02	1.84	1.29	.53	.43	.35	4.50	.39	3.23	7250	.90	
04	G 1/4 BSP	6	6	69	40	26	47	33	13,5	11	9	115	14	82	500	0,40	BBV2G040001M
			.23	2.70	1.57	1.02	1.84	1.29	.53	.43	.35	4.50	.55	3.23	7250	.88	
06	G 3/8 BSP	10	10	72	43	32	52	38	17,5	11	9	115	14	87	500	0,54	BBV2G060001M
			.39	2.82	1.68	1.25	2.04	1.49	.69	.43	.35	4.50	.55	3.43	7250	1.19	
08	G 1/2 BSP	13	13	83	48	35	54	40	19	11	9	115	16,3	89	500	0,65	BBV2G080001M
			.51	3.25	1.88	1.37	2.11	1.57	.74	.43	.35	4.50	.64	3.50	7250	1.43	
10	G 5/8 BSP	16	15	83	48	38	63	46	19	13	12	160	16	106	420	0,70	BBV2G100001M
			.59	3.25	1.88	1.49	2.47	1.80	.74	.51	.47	6.26	.63	4.17	6000	1.54	
12	G 3/4 BSP	20	20	95	62	49	75	57	24,5	14	14	170	18	126	420	1,50	BBV2G120001M
			.78	3.72	2.43	1.92	2.94	2.23	.96	.55	.55	6.69	.70	4.96	6000	3.31	
16	G 1 BSP	25	25	113	66	58	83	65	29,5	14	14	170	20	134	315	2,20	BBV2G160001M
			.98	4.42	2.58	2.27	3.25	2.55	1.16	.55	.55	6.69	.78	5.28	4500	4.85	
16	G 1 BSP	25	25	113	74	70	88	70	34,5	14	14	170	20	139	420	3,10	BBV2G160001H
			.98	4.42	2.91	2.76	3.46	2.76	1.36	.55	.55	6.69	.78	5.47	6000	6.83	
20R	G 1-1/4 BSP	25/32	25	120	66	58	83	65	29,5	14	14	170	22	134	315	2,30	BBV2G20R0001M
			.98	4.70	2.58	2.27	3.25	2.55	1.16	.55	.55	6.69	.86	5.28	4500	5.07	
24R	G 1-1/2 BSP	25/40	25	130	66	58	83	65	29,5	14	14	170	24	134	250	2,60	BBV2G24R0001M
			.98	5.09	2.58	2.27	3.25	2.55	1.16	.55	.55	6.69	.94	5.28	3600	5.73	

Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type BBV2 Female NPT Thread (ANSI B1.20.1)



### Female NPT Thread (ANSI B1.20.1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)											Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	I	B	H	h	m	V	SW	K	i				H2
02	1/8-27 NPT	4	5	69	40	26	47	33	13,5	11	9	115	10,5	82	500	0,30	BBV20020001K
			.20	2.70	1.57	1.02	1.84	1.29	.53	.43	.35	4.50	.41	3.23	7250	.66	
04	1/4-18 NPT	6	6	69	40	26	47	33	13,5	11	9	115	13,7	82	500	0,40	BBV20040001K
			.23	2.70	1.57	1.02	1.84	1.29	.53	.43	.35	4.50	.54	3.23	7250	.88	
06	3/8-18 NPT	10	10	72	43	32	52	38	17,5	11	9	115	13,5	87	500	0,50	BBV20060001K
			.39	2.82	1.68	1.25	2.04	1.49	.69	.43	.35	4.50	.53	3.43	7250	1.10	
08	1/2-14 NPT	13	13	83	48	35	54	40	19	11	9	115	17	89	500	0,75	BBV20080001K
			.51	3.25	1.88	1.37	2.11	1.57	.74	.43	.35	4.50	.67	3.50	7250	1.65	
12	3/4-14 NPT	20	20	95	62	49	75	57	24,5	14	14	170	18,3	126	420	1,63	BBV20120001K
			.78	3.72	2.43	1.92	2.94	2.23	.96	.55	.55	6.69	.72	4.96	6000	3.57	
16	1-11-1/2 NPT	25	25	113	66	58	83	65	29,5	14	14	170	21,6	134	315	2,30	BBV20160001K
			.98	4.42	2.58	2.27	3.25	2.55	1.16	.55	.55	6.69	.85	5.28	4500	5.06	
16	1-11-1/2 NPT	25	25	113	74	70	88	70	34,5	14	14	170	20	139	420	3,16	BBV20160001H
			.98	4.42	2.91	2.76	3.46	2.76	1.36	.55	.55	6.69	.78	5.47	6000	6.97	
20R	1-1/4-11-1/2 NPT	25/32	25	120	66	58	83	65	29,5	14	14	170	22,1	134	315	2,51	BBV2020R0001K
			.98	4.70	2.58	2.27	3.25	2.55	1.16	.55	.55	6.69	.87	5.28	4500	5.52	
24R	1-1/2-11-1/2 NPT	25/40	25	130	66	58	83	65	29,5	14	14	170	22,1	134	250	2,70	BBV2024R0001K
			.98	5.09	2.58	2.27	3.25	2.55	1.16	.55	.55	6.69	.87	5.28	3600	5.94	

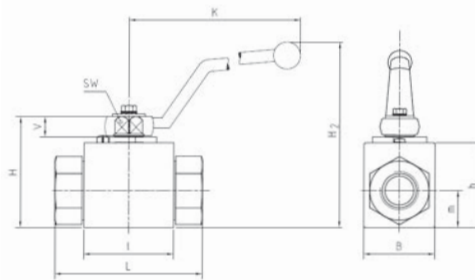
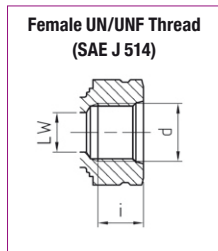
Please note the pressure ratings of the tube connections.



### High-Pressure Block Body Ball Valve - Type BBV2 Female UN/UNF Thread (SAE J 514)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 08)  
Carbon Steel (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)



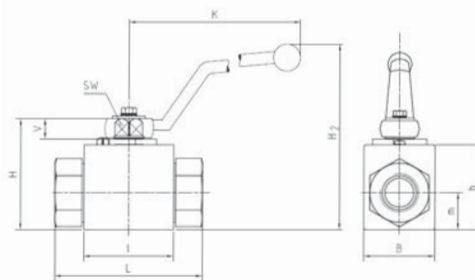
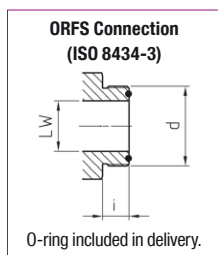
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	i	H2				
04	7/16-20 UNF (1/4" SAE)	6	.6	.69	.40	.26	.47	.33	13,5	.11	.09	115	.14	.82	500	0,40	BBV21040001M	
			.23	2.70	1.57	1.02	1.84	1.29	.53	.43	.35	4.50	.55	3.23	7250	.88		
06	9/16-18 UNF (3/8" SAE)	10	.10	.72	.43	.32	.52	.38	17,5	.11	.09	115	.14	.87	500	0,50	BBV21060001M	
			.39	2.82	1.68	1.25	2.04	1.49	.69	.43	.35	4.50	.55	3.43	7250	1.10		
08	3/4-16 UNF (1/2" SAE)	13	.13	.83	.48	.35	.54	.40	19	.11	.09	115	.16,3	.89	500	0,70	BBV21080001M	
			.51	3.25	1.88	1.37	2.11	1.57	.74	.43	.35	4.50	.64	3.50	7250	1.54		
12	1-1/16-12 UN (3/4" SAE)	20	.20	.95	.62	.49	.75	.57	24,5	.14	.14	170	.18	1.26	420	1,50	BBV21120001M	
			.78	3.72	2.43	1.92	2.94	2.23	.96	.55	.55	6.69	.70	4.96	6000	3.31		
16	1-5/16-12 UN (1" SAE)	25	.25	1.13	.66	.58	.83	.65	29,5	.14	.14	170	.20	1.34	315	2,20	BBV21160001M	
			.98	4.42	2.58	2.27	3.25	2.55	1.16	.55	.55	6.69	.78	5.28	4500	4.85		
16	1-5/16-12 UN (1" SAE)	25	.25	1.21	.74	.70	.88	.70	34,5	.14	.14	170	.20	1.39	420	2,20	BBV21160001H	
			.98	4.76	2.91	2.76	3.46	2.76	1.36	.55	.55	6.69	.78	5.47	6000	4.85		
20R	1-5/8-12 UN (1-1/4" SAE)	25/32	.25	1.20	.66	.58	.83	.65	29,5	.14	.14	170	.20	1.34	315	2,50	BBV2120R0001M	
			.98	4.70	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	.78	5.28	4500	5.50		
24R	1-7/8-12 UN (1-1/2" SAE)	25/40	.25	1.30	.66	.58	.83	.65	29,5	.14	.14	170	.20	1.34	315	2,61	BBV2124R0001M	
			.98	5.09	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	.78	5.28	4500	5.74		

Please note the pressure ratings of the tube connections.

### High-Pressure Block Body Ball Valve - Type BBV2 O-Ring Face Seal Connection - Male Thread (ISO 8434-3)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 08)  
Aluminium (STAUFF Size 10)  
Carbon Steel (STAUFF Sizes 12 and 16)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

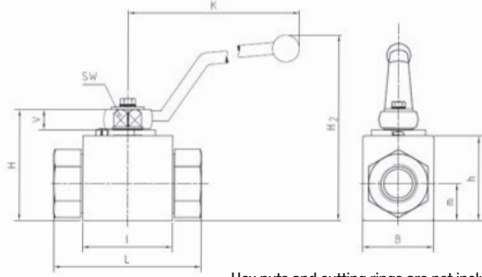


STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)													O-ring	Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	i	H2					
04	9/16-18 UNF	6	.4,5	.73	.40	.26	.47	.33	13,5	.11	.09	115	.10	.82	7,65 x 1,78	500	0,37	BBV2B040001M	
			.18	2.87	1.57	1.02	1.84	1.29	.53	.43	.35	4.50	.39	3.23		7250	.81		
05	11/16-16 UN	8	.6,5	.73	.40	.26	.47	.33	13,5	.11	.09	115	.11	.82	9,25 x 1,78	500	0,38	BBV2B050001M	
			.26	2.87	1.57	1.02	1.84	1.29	.53	.43	.35	4.50	.43	3.23		7250	.83		
06	13/16-16 UN	10	.9,5	.78	.43	.32	.52	.38	17,5	.11	.09	115	.13	.87	12,42 x 1,78	500	0,50	BBV2B060001M	
			.37	3.07	1.68	1.25	2.04	1.49	.69	.43	.35	4.50	.51	3.43		7250	1.10		
08	1-14 UNS	13	12,5	.90	.48	.35	.54	.40	19	.11	.09	115	15,5	.89	15,60 x 1,78	420	0,61	BBV2B080001M	
			.49	3.54	1.88	1.37	2.11	1.57	.74	.43	.35	4.50	.61	3.50		6000	1.34		
10	1-3/16-12 UN	16	15,5	.98	.48	.35	.63	.40	19	.13	.12	160	.17	1.06	18,77 x 1,78	420	0,80	BBV2B100001M	
			.61	3.86	1.88	1.37	2.47	1.57	.74	.51	.47	6.26	.67	4.17		6000	1.76		
12	1-7/16-12 UN	20	20,5	1.11	.62	.49	.75	.57	24,5	.14	.14	170	17,5	1.26	23,52 x 1,78	315	1,55	BBV2B120001M	
			.81	4.37	2.43	1.92	2.94	2.23	.96	.55	.55	6.69	.69	4.96		4500	3.41		
16	1-11/16-12 UN	25	.26	1.20	.66	.58	.83	.65	29,5	.14	.14	170	17,5	1.34	29,87 x 1,78	315	2,10	BBV2B160001M	
			1.02	4.72	2.58	2.27	3.25	2.55	1.16	.55	.55	6.69	.69	5.28		4500	4.63		

Please note the pressure ratings of the tube connections.

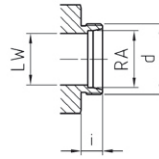


## High-Pressure Block Body Ball Valve - Type BBV2 24° Cone Connection - Light Series (DIN 2353 / ISO 8434-1)



Hex nuts and cutting rings are not included in delivery.

### 24° Cone Connection (DIN 2353 / ISO 8434-1)



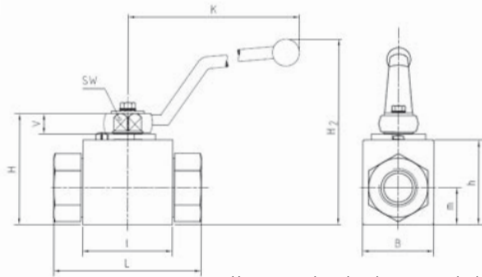
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/m)													Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	I	B	H	h	m	V	SW	K	i	H2			
02	06L / M12 x 1,5	4	6	5	67	40	26	47	33	13,5	11	9	115	10	82	500	0,36	BBV2DN0406L0001M
			.24	.20	2.64	1.57	1.02	1.85	1.30	.53	.43	.35	4.53	.39	3.23	7250	.79	
04	08L / M14 x 1,5	6	8	6	67	40	26	47	33	13,5	11	9	115	10	82	500	0,37	BBV2DN0608L0001M
			.31	.24	2.64	1.57	1.02	1.85	1.30	.53	.43	.35	4.53	.39	3.23	7250	.81	
05	10L / M16 x 1,5	8	10	8	74	40	26	47	33	13,5	11	9	115	11	82	500	0,38	BBV2DN0810L0001M
			.39	.31	2.91	1.57	1.02	1.85	1.30	.53	.43	.35	4.53	.43	3.23	7250	.83	
06	12L / M18 x 1,5	10	12	10	74	43	32	52	38	17,5	11	9	115	11	87	500	0,50	BBV2DN1012L0001M
			.47	.39	2.91	1.69	1.26	2.05	1.50	.69	.43	.35	4.53	.43	3.43	7250	1.10	
08	15L / M22 x 1,5	13	15	13	82	48	35	54	40	19	11	9	115	12	89	500	0,61	BBV2DN1315L0001M
			.59	.51	3.23	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	.47	3.50	7250	1.34	
08	18L / M26 x 1,5	13	18	13	82	48	35	54	40	19	11	9	115	12	89	500	0,60	BBV2DN1318L0001M
			.71	.51	3.23	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	.47	3.50	7250	1.32	
12	22L / M30 x 2	20	22	20	101	62	49	75	57	24,5	14	14	170	14	126	420	1,49	BBV2DN2022L0001M
			.87	.79	3.98	2.44	1.93	2.95	2.24	.96	.55	.55	6.69	.55	4.96	6000	3.33	
16	28L / M36 x 2	25	28	25	108	66	58	83	65	29,5	14	14	170	14	134	315	2,00	BBV2DN2528L0001M
			1.10	.98	4.25	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	.55	5.28	4500	4.41	
20R	35L / M45 x 2	25/32	35	25	112	66	58	83	65	29,5	14	14	170	16	134	315	2,12	BBV2DN2535L0001M
			1.38	.98	4.41	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	.63	5.28	4500	4.66	
24R	42L / M52 x 2	25/40	42	25	112	66	58	83	65	29,5	14	14	170	16	134	315	2,27	BBV2DN2542L0001M
			1.65	.98	4.41	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	.63	5.28	4500	4.99	

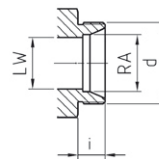
Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type BBV2 24° Cone Connection - Heavy Series (DIN 2353 / ISO 8434-1)



Hex nuts and cutting rings are not included in delivery.

### 24° Cone Connection (DIN 2353 / ISO 8434-1)



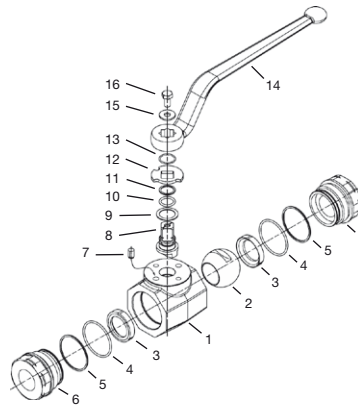
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Aluminium (STAUFF Size 10)  
Carbon Steel (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/m)													Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	I	B	H	h	m	V	SW	K	i	H2			
02	08S / M16 x 1,5	4	8	5	73	40	26	47	33	13,5	11	9	115	10	82	500	0,38	BBV2DN0408S0001M
			.31	.20	2.87	1.57	1.02	1.85	1.30	.53	.43	.35	4.53	.39	3.23	7250	.84	
04	10S / M18 x 1,5	6	10	6	73	40	26	47	33	13,5	11	9	115	10	82	500	0,39	BBV2DN0610S0001M
			.39	.24	2.87	1.57	1.02	1.85	1.30	.53	.43	.35	4.53	.39	3.23	7250	.86	
05	12S / M20 x 1,5	8	12	8	76	40	26	47	33	13,5	11	9	115	11	82	500	0,39	BBV2DN0812S0001M
			.47	.31	2.99	1.57	1.02	1.85	1.30	.53	.43	.35	4.53	.43	3.23	7250	.86	
06	14S / M22 x 1,5	10	14	10	80	43	32	52	38	17,5	11	9	115	11	87	500	0,50	BBV2DN1014S0001M
			.55	.39	3.15	1.69	1.26	2.05	1.50	.69	.43	.35	4.53	.43	3.43	7250	1.10	
08	16S / M24 x 1,5	13	16	13	86	48	35	54	40	19	11	9	115	12	89	500	0,60	BBV2DN1316S0001M
			.63	.51	3.39	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	.47	3.50	7250	1.32	
08	20S / M30 x 2	13	20	15	90	48	38	54	46	19	11	9	115	12	89	500	0,60	BBV2DN1320S0001M
			.79	.59	3.54	1.89	1.50	2.13	1.81	.75	.43	.35	4.53	.47	3.50	7250	1.32	
10	20S / M30 x 2	16	20	13	90	48	35	54	40	19	13	12	160	16	106	420	0,80	BBV2DN1620S0001M
			.79	.51	3.54	1.89	1.38	2.13	1.57	.75	.51	.47	6.26	.63	4.17	6000	1.76	
12	25S / M36 x 2	20	25	20	109	62	49	75	57	24,5	14	14	170	18	126	420	1,55	BBV2DN2025S0001M
			.98	.79	4.29	2.44	1.93	2.95	2.24	.96	.55	.55	6.69	.71	4.96	6000	3.41	
16	30S / M42 x 2	25	30	25	120	66	58	75	65	29,5	14	14	170	20	134	315	2,10	BBV2DN2530S0001M
			1.18	.98	4.72	2.60	2.28	2.95	2.56	1.16	.55	.55	6.69	.79	5.28	4500	4.63	
20R	38S / M52 x 2	25/32	38	25	124	66	58	83	65	29,5	14	14	170	22	134	315	2,30	BBV2DN2538S0001M
			1.50	.98	4.88	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	.87	5.28	4500	5.07	

Please note the pressure ratings of the tube connections.

## High-Pressure Forged Body Ball Valve - Type FBV2



### List of Components

No.	Qty.	Description
1	1	Body
2	1	Ball
3*	2	Seat
4*	2	Connector O-Ring
5*	2	Connector Back-Up Ring
6	2	Connector
7	1	Stop Pin
8	1	Stem
9*	1	Thrust Ring
10*	1	Stem O-Ring
11*	1	Stem Back-Up Ring
12	1	Cam Plate
13	1	Snap Ring
14	1	Handle
15	1	Washer
16	1	Stem Bolt

\* Included in seal kit

### Characteristics

Two-way high-pressure forged body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Forged body design for in-line assembly
- Supplied with off-set lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 2 BSP
- Female NPT thread (ANSI B1.20.1) >2-11-1/2 NPT
- Female UN/UNF thread (SAE J 514) >2-1/2-12 UN (2" SAE)
- Male O-Ring Face Seal Connection >2-12 UN
- 24° cone connection (DIN 2353); Light Series >42L
- 24° cone connection (DIN 2353); Heavy Series >38S

#### Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

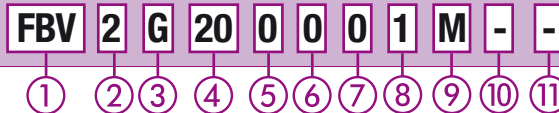
#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... + 212 °F

#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Forged Body Ball Valve **FBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

Female BSP Thread (DIN ISO 228)	<b>G</b>
Female NPT Thread (ANSI B1.20.1)	<b>0</b>
Female UN/UNF Thread (SAE J 514)	<b>1</b>
Male O-Ring Face Seal Connection	<b>B</b>
24° Cone Connection (Light / Heavy Series)	<b>DN32</b>
24° Cone Connection (only Light Series)	<b>DN40</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table) for connection styles G, 0, 1 and B:		
<b>20</b>	<b>24</b>	<b>32</b>
Tube Size (according to dimension table) for 24° Cone Connection (Light Series):		<b>35L</b>
Tube Size (according to dimension table) for 24° Cone Connection (Light Series):		<b>42L</b>
Tube Size (according to dimension table) for 24° Cone Connection (Heavy Series):		<b>38S</b>

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

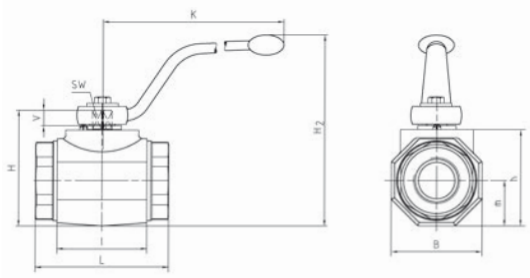
Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

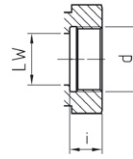
Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Locking Device LD2	<b>-LD2</b>
Supplied with Locking Device LD3	<b>-LD3</b>
Supplied with Locking Device LD4	<b>-LD4</b>
Supplied with Locking Device LD6	<b>-LD6</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.

### High-Pressure Forged Body Ball Valve - Type FBV2 Female BSP Thread (DIN ISO 228)



#### Female BSP Thread (DIN ISO 228)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

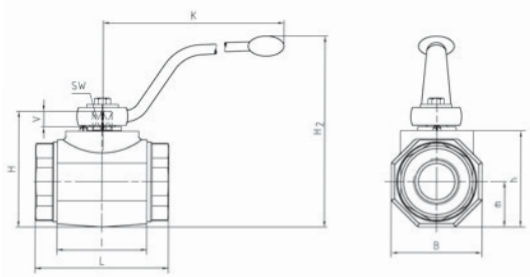
- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

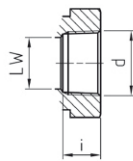
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)												Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	i	H2			
20	G 1-1/4 BSP	32	32	111	80	81	107	86	40,5	16,5	17	306	22	171	420	3,47	FBV2G200001M
			1.26	4.37	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	.87	6.73	6000	7.63	
24	G 1-1/2 BSP	40	38	130	85	100	124	103	50	16,5	17	306	24	188	420	5,67	FBV2G240001M
			1.50	5.12	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	.94	7.40	6000	12.47	
32	G 2 BSP	50	48	140	100	118	138	117	59	16,5	17	306	26	202	420	8,14	FBV2G320001M
			1.89	5.51	3.94	4.65	2.43	4.61	2.32	.65	.67	12.05	1.02	7.96	6000	17.91	

Please note the pressure ratings of the tube connections.

### High-Pressure Forged Body Ball Valve - Type FBV2 Female NPT Thread (ANSI B1.20.1)



#### Female NPT Thread (ANSI B1.20.1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)												Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	i	H2			
20	1-1/4-11-1/2 NPT	32	32	111	80	81	107	86	40,5	16,5	17	306	22	171	420	3,47	FBV20200001M
			1.26	4.37	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	.87	6.73	6000	7.63	
24	1-1/2-11-1/2 NPT	40	38	130	85	100	124	103	50	16,5	17	306	24	188	420	5,67	FBV20240001M
			1.50	5.12	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	.94	7.40	6000	12.47	
32	2-11-1/2 NPT	50	48	140	100	118	138	117	59	16,5	17	306	26	202	420	8,14	FBV20320001M
			1.89	5.51	3.94	4.65	2.43	4.61	2.32	.65	.67	12.05	1.02	7.96	6000	17.91	

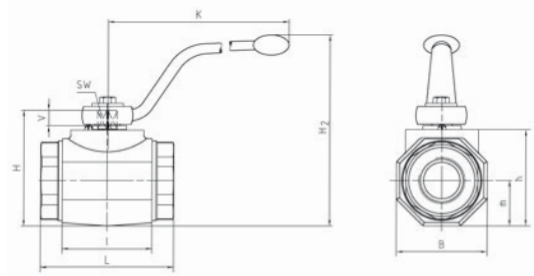
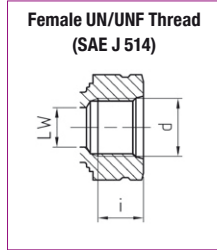
Please note the pressure ratings of the tube connections.

**High-Pressure Forged Body Ball Valve - Type FBV2**  
**Female UN/UNF Thread (SAE J 514)**

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!



STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)												Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	i	H2			
20	1-5/8-12 UN (1-1/4" SAE)	32	30	111	80	81	107	86	40,5	16,5	17	306	20	171	420	3,52	FBV21200001M
			1.18	4.37	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	.79	6.73	6000	7.75	
24	1-7/8-12 UN (1-1/2" SAE)	40	38	130	85	100	124	103	50	16,5	17	306	20	188	420	5,69	FBV21240001M
			1.50	5.12	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	.79	7.40	6000	12.52	
32	2-1/2-12 UN (2" SAE)	50	45	140	100	118	138	117	59	16,5	17	306	20	202	420	8,14	FBV21320001M
			1.79	5.51	3.94	4.65	2.43	4.61	2.32	.65	.67	12.05	.79	7.96	6000	17.91	

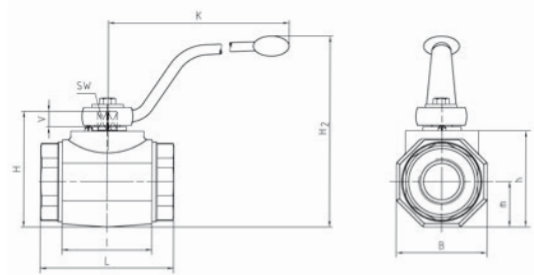
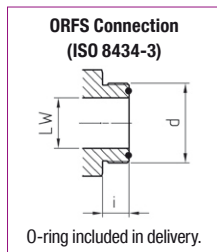
Please note the pressure ratings of the tube connections.

**High-Pressure Forged Body Ball Valve - Type FBV2**  
**O-Ring Face Seal Connection - Male Thread (ISO 8434-3)**

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

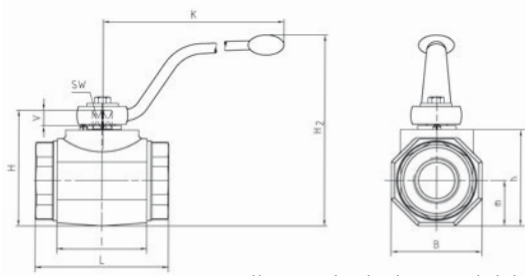
Dimensions of stainless steel ball valves may vary!



STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)												Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	I	B	H	h	m	V	SW	K	i	H2				O-ring
20	2-12 UN	32	32	139	80	81	107	86	40,5	16,5	17	306	17,5	171	37,82 x 1,78	320	3,52	FBV2B200001M
			1.26	5.47	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	.69	6.73		4600	7.75	

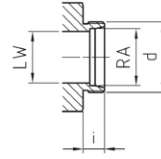
Please note the pressure ratings of the tube connections.

### High-Pressure Forged Body Ball Valve - Type FBV2 24° Cone Connection - Light Series (DIN 2353 / ISO 8434-1)



Hex nuts and cutting rings are not included in delivery.

#### 24° Cone Connection (DIN 2353 / ISO 8434-1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

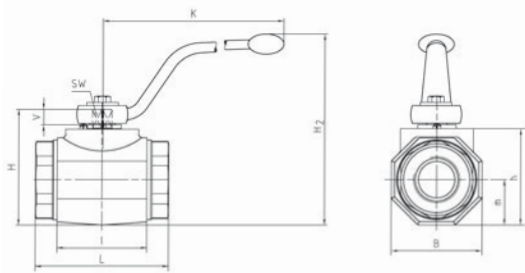
- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	l	B	H	h	m	V	SW	K	i	H2			
20	35L / M45 x 2	32	35	32	136	80	81	107	86	40,5	16,5	17	306	16	171	420	3,58	FBV2DN3235L0001M
			1.38	1.26	5.35	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	.63	6.73	6000	7.88	
24	42L / M52 x 2	40	42	38	147	85	100	124	103	50	16,5	17	306	16	188	420	5,54	FBV2DN4042L0001M
			1.65	1.50	5.79	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	.63	7.40	6000	12.19	

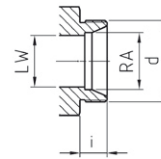
Please note the pressure ratings of the tube connections.

### High-Pressure Forged Body Ball Valve - Type FBV2 24° Cone Connection - Heavy Series (DIN 2353 / ISO 8434-1)



Hex nuts and cutting rings are not included in delivery.

#### 24° Cone Connection (DIN 2353 / ISO 8434-1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

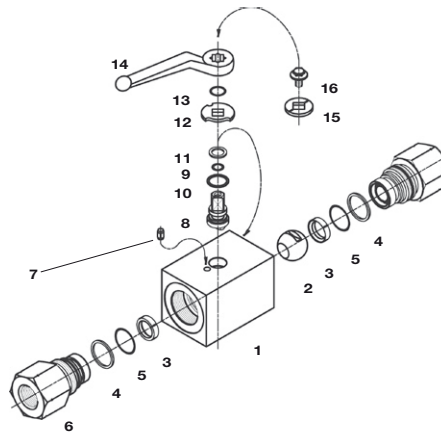
- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	l	B	H	h	m	V	SW	K	i	H2			
20	38S / M52 x 2	32	38	32	148	80	81	107	86	40,5	16,5	17	306	22	171	420	3,77	FBV2DN3238S0001M
			1.50	1.26	5.83	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	.87	6.73	6000	8.29	

Please note the pressure ratings of the tube connections.

High-Pressure 800 bar / 12000 PSI Block Body Ball Valve - Type HBV2



List of Components

No.	Qty.	Description
1	1	Body
2	1	Ball
3*	2	Seat
4*	2	Connector O-Ring
5*	2	Pipe Back-up Ring
6	2	Connector
7	1	Stop Pin
8	1	Stem
9*	1	Thrust Ring
10*	1	Stem O-Ring
11*	1	Pipe Back-up
12	1	Cam Plate
13	1	Snap Ring
14	1	Handle
15	1	Flow Indicator
16	1	Stem Screw

\* Included in seal kit

Characteristics

Two-way high-pressure block body ball valves designed for use as on/off devices for hydraulic applications (for pressures up to 800 bar / 12000 PSI)

Standard Construction

- Block body design for in-line assembly
- Supplied with lever

Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: POM encased
- O-rings: FPM (Viton®)

Standard Connections Styles / Sizes

- Female NPT thread (ANSI B1.20.1) >1-11-1/2 NPT
- 24° cone connection (DIN 2353); Heavy Series >30S

Pressure Range

- Pressure range: up to 800 bar / 12000 PSI (depending on size and material combination of the ball valve)

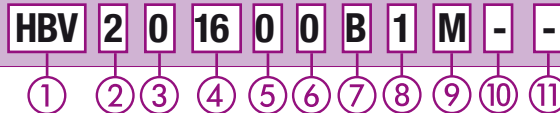
Temperature Range

- Operating temperature range: -20°C ... +100°C / -4°F ... +212°F

Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

Order Codes



① Type

High-Pressure Block Body Ball Valve **HBV**

② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

③ Connection Style

Female NPT Thread (ANSI B1.20.1) **0**  
 24° Cone Connection (Heavy Series)  
**DN04 DN06 DN08 DN10 DN13 DN16 DN20 DN25**

Please consult STAUFF for alternative connection styles.

④ Connection Size

STAUFF Size (according to dimension table) for connection styles G, O, 1 and B:  
**04 06 08 12 16**  
 Tube Size (according to dimension table) for 24° Cone Connection (Heavy Series):  
**08S 10S 12S 14S 16S 20S 25S 30S**

Please consult STAUFF for alternative connection sizes.

⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated **0**  
 Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated **0**  
 Stem: Carbon Steel **0**  
 Ball / Stem: Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

⑦ Ball Seat Material

POM encased **B**

Alternative materials are available upon request. Consult STAUFF for further information.

⑧ O-Ring Material

NBR (Buna-N®) **0**  
 FPM (Viton®) **1**

Alternative materials are available upon request. Consult STAUFF for further information.

⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

⑩ Lever Options

Supplied with standard lever (according to table) **-**  
 Supplied without lever **-0**

Alternative levers can be ordered separately. Please see page F92 for further information.

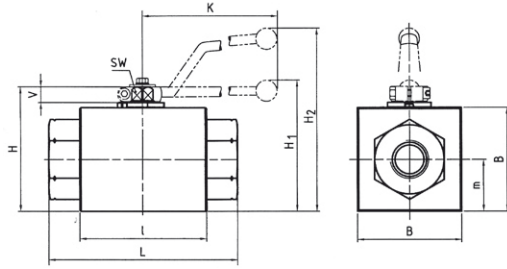
⑪ Accessories / Options

Supplied without accessories **-**  
 Supplied with Locking Device LD1 **-LD1**  
 Supplied with Locking Device LD4 **-LD4**  
 Supplied with Double-Acting Pneumatic Actuator (Please add size \*\*) **-EDA\*\***  
 Supplied with Single-Acting Pneumatic Actuator (Please add size \*\*) **-ESA\*\***

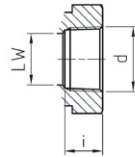
Please see page F93-F97 for further information and options.



### High-Pressure 800 bar / 12000 PSI Block Body Ball Valve - Type HBV2 Female NPT Thread (ANSI B1.20.1)



#### Female NPT Thread (ANSI B1.20.1)



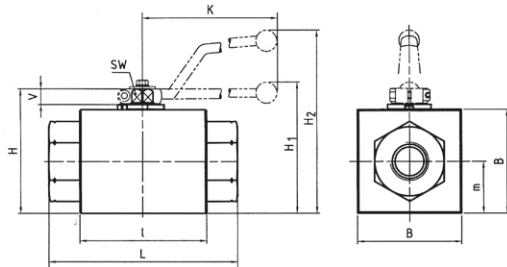
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc
- Ball seat: POM encased
- O-rings: FPM (Viton®)

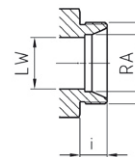
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)											Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	I	B	H	m	V	SW	K	i	H1	H2			
04	1/4-18 NPT	6	.39	8.44	4.94	3.25	4.16	1.62	.71	.58	7.47	0.89		99	800	1.92	HBV200400B1M
															6.43	12000	
06	3/8-18 NPT	10	.84	8.44	4.94	3.25	4.16	1.62	.71	.58	7.47	0.88		99	800	1.85	HBV200600B1M
															6.43	12000	
08	1/2-14 NPT	13	.84	8.44	4.94	3.25	4.16	1.62	.71	.58	7.47	1.10		99	800	1.79	HBV200800B1M
															6.43	12000	
12	3/4-14 NPT	20	1.30	10.45	7.21	5.84	7.01	2.92	.91	.91	12.99	1.19	7.27		800	7.83	HBV201200B1M
																12000	
16	1-11-1/2 NPT	25	1.62	10.65	7.21	5.84	7.01	2.92	.91	.91	12.99	1.40	7.27		800	7.68	HBV201600B1M
																12000	

Please note the pressure ratings of the tube connections.

### High-Pressure 800 bar / 12000 PSI Block Body Ball Valve - Type HBV2 24° Cone Connection - Heavy Series (DIN 2353 / ISO 8434-1)



#### 24° Cone Connection (DIN 2353 / ISO 8434-1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc
- Ball seat: POM encased
- O-rings: FPM (Viton®)

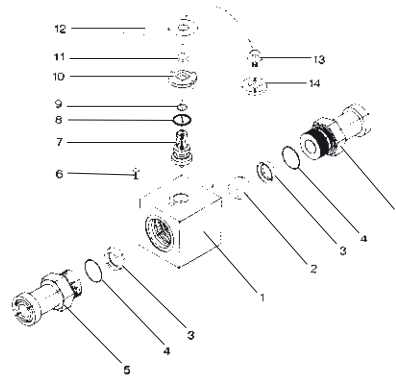
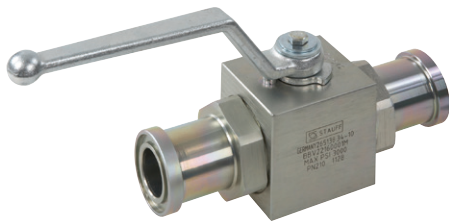
Hex nuts and cutting rings are not included in delivery.

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)											Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)			
			RA	LW	L	I	B	H	m	V	SW	K	i	H1	H2				
02	08S / M16 x 1,5	4	.8	.31	.20	110	76	50	64	25	11	9	115	12		99	800	1.60	HBV2DN0408S00B1M
						4.33	2.99	1.97	2.52	.98	.43	.35	4.53	.47		6.43	12000	3.52	
04	10S / M18 x 1,5	6	.10	.39	.24	114	76	50	64	25	11	9	115	12		99	800	1.60	HBV2DN0610S00B1M
						4.49	2.99	1.97	2.52	.98	.43	.35	4.53	.47		6.43	12000	3.52	
05	12S / M20 x 1,5	8	.12	.47	.31	114	76	50	64	25	11	9	115	12		99	800	1.64	HBV2DN0812S00B1M
						4.49	2.99	1.97	2.52	.98	.43	.35	4.53	.47		6.43	12000	3.61	
06	14S / M22 x 1,5	10	.14	.55	.51	114	76	50	64	25	11	9	115	14		99	800	1.56	HBV2DN1014S00B1M
						4.49	2.99	1.97	2.52	.98	.43	.35	4.53	.55		6.43	12000	3.43	
08	16S / M24 x 1,5	13	.16	.63	.51	114	76	50	64	25	11	9	115	14		99	800	1.58	HBV2DN1316S00B1M
						4.49	2.99	1.97	2.52	.98	.43	.35	4.53	.55		6.43	12000	3.48	
08	20S / M30 x 2	13	.20	.79	.51	118	76	50	64	25	11	9	115	16		99	800	1.63	HBV2DN1320S00B1M
						4.65	2.99	1.97	2.52	.98	.43	.35	4.53	.63		6.43	12000	3.59	
12	25S / M36 x 2	20	.25	.98	.79	162	111	90	108	45	14	14	200	18	112		800	7.31	HBV2DN2025S00B1M
						6.38	4.37	3.54	4.25	1.77	.55	.55	7.87	.71	7.27		12000	16.08	
16	30S / M42 x 2	25	.30	1.18	.98	166	111	90	108	45	14	14	200	20	112		800	7.40	HBV2DN2530S00B1M
						6.54	4.37	3.54	4.25	1.77	.55	.55	7.87	.79	7.27		12000	16.28	

Please note the pressure ratings of the tube connections.



## High-Pressure Block Body Ball Valve ▪ Type BBV22/23



### List of Components

No.	Qty.	Description
1	1	Housing
2	1	Ball
3*	2	Seat
4*	2	Connector O-Ring
5	2	Connector
6	1	Stop Pin
7	1	Stem
8*	1	Thrust Ring
9*	1	Stem O-Ring
10	1	Cam Plate
11	1	Snap Ring
12	1	Handle
13	1	Stem Screw
14	1	Flow Indicator

\* Included in seal kit

### Characteristics

Two-way high-pressure block body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 3000 PSI (code 61) SAE split flange connectors
- 6000 PSI (code 62) SAE split flange connectors
- Standard and extended adaptor lengths

#### Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

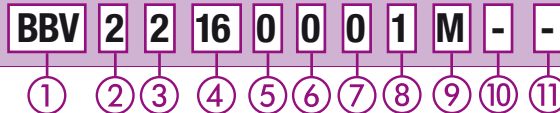
#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... +212 °F

#### Options / Accessories

- Flanges and flange kits (see Flanges section)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Block Body Ball Valve **BBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

3000 PSI (Code 61) SAE Split Flange Connectors (Standard Adaptor Length)	<b>2</b>
3000 PSI (Code 61) SAE Split Flange Connectors (Extended Adaptor Length)	<b>2X</b>
6000 PSI (code 62) SAE Split Flange Connectors (Standard Adaptor Length)	<b>3</b>
6000 PSI (code 62) SAE Split Flange Connectors (Extended Adaptor Length)	<b>3X</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table)		
<b>08</b>	<b>12</b>	<b>16</b>

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles	<b>M</b>
Manufacturing code for high-pressure version of 6000 PSI Series (STAUFF Size 16)	<b>H</b>

#### ⑩ Lever Options

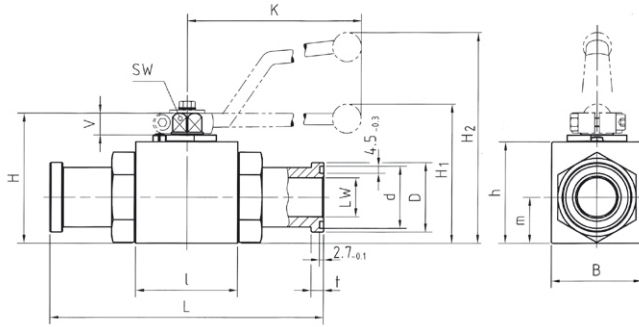
Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Locking Device LD2	<b>-LD2</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.



### High-Pressure Block Body Ball Valve ■ Type BBV22/23 3000 PSI SAE Split Flange Connection (ISO 6162-1)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 3000 PSI Series (Code 61) ■ Standard Adaptor Length

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	H1			
08	1/2	13	13	151	48	35	54	40	19	11	9	115	25,5	30,2	6,8	89	350	0,85	BBV22080001M
			.51	5.94	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	1.00	1.19	.27		3.50	5000	
12	3/4	20	19	162	62	49	75	57	24,5	14	14	200	31,9	38,1	6,8	79	350	1,87	BBV22120001M
			.75	6.38	2.44	1.93	2.95	2.24	.96	.55	.55	7.87	1.26	1.50	.27	3.11	5000	4.11	
16	1	25	25	178	66	58	83	65	29,5	14	14	200	39,8	44,4	8,1	87	320	2,70	BBV22160001M
			.98	7.01	2.60	2.28	3.27	2.56	1.16	.55	.55	7.87	1.57	1.75	.32	3.43	4600	5.94	

#### 3000 PSI Series (Code 61) ■ Extended Adaptor Length

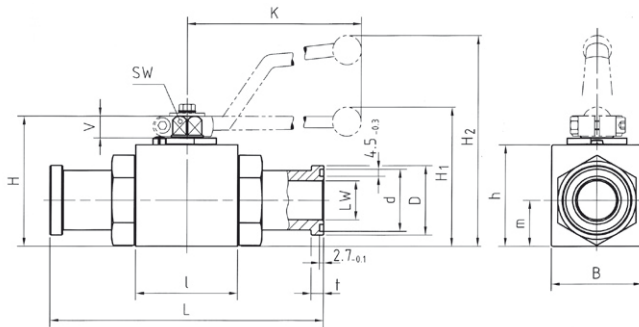
STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	H1			
08	1/2	13	13	170	48	35	54	40	19	11	9	115	25,5	30,2	6,8	89	350	0,89	BBV22X080001M
			.51	6.69	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	1.00	1.19	.27		3.50	5000	
12	3/4	20	19	200	62	49	75	57	24,5	14	14	200	31,9	38,1	6,8	79	350	2,00	BBV22X120001M
			.75	7.87	2.44	1.93	2.95	2.24	.96	.55	.55	7.87	1.26	1.50	.27	3.11	5000	4.40	
16	1	25	25	215	66	58	83	65	29,5	14	14	200	39,8	44,4	8,1	87	320	2,85	BBV22X160001M
			.98	8.46	2.60	2.28	3.27	2.56	1.16	.55	.55	7.87	1.57	1.75	.32	3.43	4600	6.27	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

<sup>1</sup> Dimension d: ±0,1 mm / .004 in

<sup>2</sup> Dimension D: -0,2 mm / .008 in

<sup>3</sup> Dimension t: -0,2 mm / .008 in



### High-Pressure Block Body Ball Valve ■ Type BBV22/23 6000 PSI SAE Split Flange Connection (ISO 6162-2)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 6000 PSI Series (Code 62) ■ Standard Adaptor Length

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	H1			
08	1/2	13	13	151	48	35	54	40	19	11	9	115	25,5	31,8	7,9	89	420	0,90	BBV23080001M
			.51	5.94	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	1.00	1.25	.31		3.50	6000	
12	3/4	20	19	174	62	49	75	57	24,5	14	14	200	31,9	41,3	8,9	79	420	1,95	BBV23120001M
			.75	6.85	2.44	1.93	2.95	2.24	.96	.55	.55	7.87	1.26	1.63	.35	3.11	6000	4.29	
16	1	25	25	198	66	58	83	65	29,5	14	14	200	39,8	47,6	9,6	87	320	3,00	BBV23160001M
			.98	7.80	2.60	2.28	3.27	2.56	1.16	.55	.55	7.87	1.70	1.87	.38	3.43	4600	6.60	
16	1	25	25	206	74	70	88	70	34,5	14	14	200	39,8	47,6	9,6	92	420	3,00	BBV23160001H
			.98	8.11	2.91	2.76	3.46	2.76	1.36	.55	.55	7.87	1.70	1.87	.38	3.62	6000	6.60	

#### 6000 PSI Series (Code 62) ■ Extended Adaptor Length

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	H1			
08	1/2	13	13	180	48	35	54	40	19	11	9	115	25,5	31,8	7,9	89	420	1,00	BBV23X080001M
			.51	7.09	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	1.00	1.25	.31		3.50	6000	
12	3/4	20	19	200	62	49	75	57	24,5	14	14	200	31,9	41,3	8,9	79	420	2,10	BBV23X120001M
			.75	7.87	2.44	1.93	2.95	2.24	.96	.55	.55	7.87	1.26	1.63	.35	3.11	6000	4.62	
16	1	25	25	250	66	58	83	65	29,5	14	14	200	39,8	47,6	9,6	87	320	3,15	BBV23X160001M
			.98	9.84	2.60	2.28	3.27	2.56	1.16	.55	.55	7.87	1.70	1.87	.38	3.43	4600	6.93	
16	1	25	25	250	74	70	88	70	34,5	14	14	200	39,8	47,6	9,6	92	420	3,15	BBV23X160001H
			.98	9.84	2.91	2.76	3.46	2.76	1.36	.55	.55	7.87	1.70	1.87	.38	3.62	6000	6.93	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

<sup>1</sup> Dimension d: ±0,1 mm / .004 in

<sup>2</sup> Dimension D: -0,2 mm / .008 in

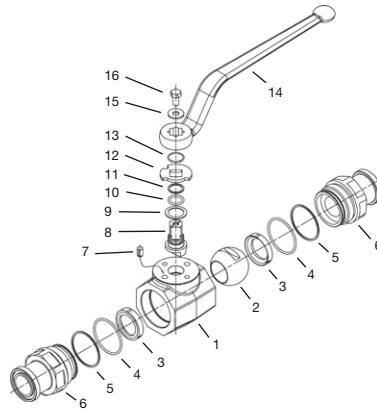
<sup>3</sup> Dimension t: -0,2 mm / .008 in

High-Pressure Forged Body Ball Valve ▪ Type FBV22/23

List of Components

No.	Qty.	Description
1	1	Body
2	1	Ball
3*	2	Seat
4*	2	Connector O-Ring
5*	2	Connector Back-Up Ring
6	2	Connector
7	1	Stop Pin
8	1	Stem
9*	1	Thrust Ring
10*	1	Stem O-Ring
11*	1	Stem Back-Up Ring
12	1	Cam Plate
13	1	Snap Ring
14	1	Handle
15	1	Washer
16	1	Stem Bolt

\* Included in seal kit



Characteristics

Two-way high-pressure forged body ball valves designed for use as on/off devices for hydraulic applications

Standard Construction

- Forged body design for in-line assembly
- Supplied with straight lever

Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Standard Connections Styles / Sizes

- 3000 PSI (code 61) SAE split flange connectors
- 6000 PSI (code 62) SAE split flange connectors
- Standard and extended adaptor lengths

Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

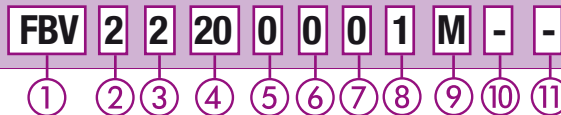
Temperature Range

- Operating temperature range: -20 °C ... +100 °C / -4 °F ... + 212 °F

Options / Accessories

- Flanges and flange kits (see Flanges section)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

Order Codes



① Type

High-Pressure Forged Body Ball Valve **FBV**

② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

③ Connection Style

3000 PSI (Code 61) SAE Split Flange Connectors (Standard Adaptor Length)	<b>2</b>
3000 PSI (Code 61) SAE Split Flange Connectors (Extended Adaptor Length)	<b>2X</b>
6000 PSI (code 62) SAE Split Flange Connectors (Standard Adaptor Length)	<b>3</b>
6000 PSI (code 62) SAE Split Flange Connectors (Extended Adaptor Length)	<b>3X</b>

Please consult STAUFF for alternative connection styles.

④ Connection Size

STAUFF Size (according to dimension table)		
<b>20</b>	<b>24</b>	<b>32</b>

Please consult STAUFF for alternative connection sizes.

⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

⑩ Lever Options

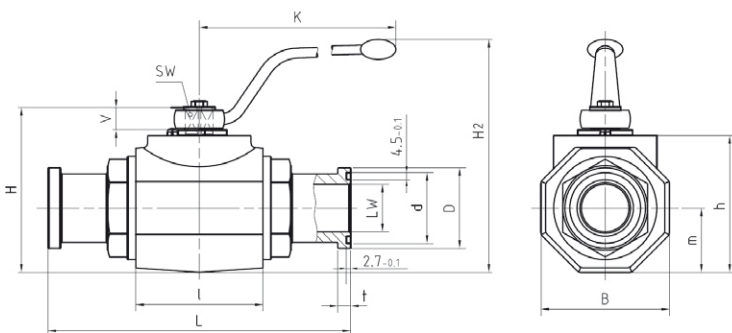
Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

Alternative levers can be ordered separately. Please see page F92 for further information.

⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Locking Device LD2	<b>-LD2</b>
Supplied with Locking Device LD6	<b>-LD6</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.



### High-Pressure Forged Body Ball Valve ▪ Type FBV22/23 3000 PSI SAE Split Flange Connection (ISO 6162-1)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

#### 3000 PSI Series (Code 61) ▪ Standard Adaptor Length

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>			
20	1-1/4	32	30	191	80	81	107	86	40,5	16,5	17	306	44,6	50,8	8,1	280	4,22	FBV22200001M
			1.18	7.52	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	1.76	2.00	.32	4000	9.28	
24	1-1/2	40	38	231	85	100	124	103	50	16,5	17	306	54,1	60,3	8,1	210	6,54	FBV22240001M
			1.50	9.09	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	2.13	2.37	.32	3000	14.39	
32	2	50	48	232	100	118	138	117	59	16,5	17	306	63,6	71,4	9,6	210	9,29	FBV22320001M
			1.89	9.13	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	2.50	2.81	.38	3000	20.44	

#### 3000 PSI Series (Code 61) ▪ Extended Adaptor Length

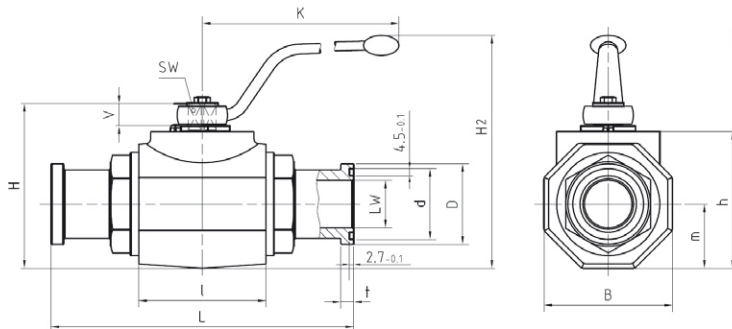
STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>			
20	1-1/4	32	30	275	80	81	107	86	40,5	16,5	17	306	44,6	50,8	8,1	280	5,15	FBV22X200001M
			1.18	10.83	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	1.76	2.00	.32	4000	11.33	
24	1-1/2	40	38	320	85	100	124	103	50	16,5	17	306	54,1	60,3	8,1	210	7,20	FBV22X240001M
			1.50	12.60	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	2.13	2.37	.32	3000	15.84	
32	2	50	48	323	100	118	138	117	59	16,5	17	306	63,6	71,4	9,6	210	11,50	FBV22X320001M
			1.89	12.72	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	2.50	2.81	.38	3000	25.30	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

<sup>1</sup> Dimension d: ±0,1 mm / .004 in

<sup>2</sup> Dimension D: -0,2 mm / .008 in

<sup>3</sup> Dimension t: -0,2 mm / .008 in



### High-Pressure Forged Body Ball Valve ▪ Type FBV22/23 6000 PSI SAE Split Flange Connection (ISO 6162-2)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

#### 6000 PSI Series (Code 62) ▪ Standard Adaptor Length

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>			
20	1-1/4	32	30	223	80	81	107	86	40,5	16,5	17	306	44,6	54	10,4	420	4,72	FBV23200001M
			1.18	8.78	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	1.76	2.13	.41	6000	10.38	
24	1-1/2	40	38	281	85	100	124	103	50	16,5	17	306	54,1	63,5	12,7	420	7,49	FBV23240001M
			1.50	11.06	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	2.13	2.50	.50	6000	16.48	
32	2	50	48	316	100	118	138	117	59	16,5	17	306	63,6	79,4	12,7	420	11,39	FBV23320001M
			1.89	12.44	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	2.50	3.13	.50	6000	25.06	

#### 6000 PSI Series (Code 62) ▪ Extended Adaptor Length

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>			
20	1-1/4	32	30	322	80	81	107	86	40,5	16,5	17	306	44,6	54	10,4	420	5,55	FBV23X200001M
			1.18	12.68	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	1.76	2.13	.41	6000	12.21	
24	1-1/2	40	38	380	85	100	124	103	50	16,5	17	306	54,1	63,5	12,7	420	7,65	FBV23X240001M
			1.50	14.96	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	2.13	2.50	.50	6000	16.83	
32	2	50	48	385	100	118	138	117	59	16,5	17	306	63,6	79,4	12,7	420	12,00	FBV23X320001M
			1.89	15.16	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	2.50	3.13	.50	6000	26.40	

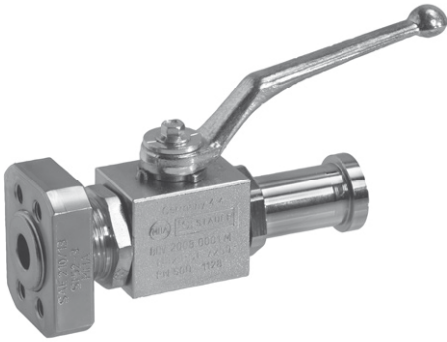
Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

<sup>1</sup> Dimension d: ±0,1 mm / .004 in

<sup>2</sup> Dimension D: -0,2 mm / .008 in

<sup>3</sup> Dimension t: -0,2 mm / .008 in

## High-Pressure Block Body Ball Valve ▪ Typ BBV2H/2T



### Characteristics

Two-way high-pressure block body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 3000 PSI (code 61) SAE split / mating flange connectors
- 6000 PSI (code 62) SAE split / mating flange connectors
- Metric ISO and unified coarse (UNC) threads

#### Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

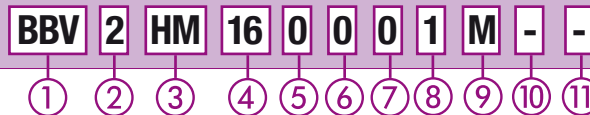
#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... + 212 °F

#### Options / Accessories

- Flanges and flange kits (see Flanges section)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Body Ball Valve **BBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

3000 PSI (code 61) SAE Split / Mating Flange Connectors with Metric ISO Threads	<b>HM</b>
3000 PSI (code 61) SAE Split / Mating Flange Connectors with Unified Coarse (UNC) Threads	<b>H</b>
6000 PSI (code 62) SAE Split / Mating Flange Connectors with Metric ISO Threads	<b>TM</b>
6000 PSI (code 62) SAE Split / Mating Flange Connectors with Unified Coarse (UNC) Threads	<b>T</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table)

<b>08</b>	<b>12</b>	<b>16</b>
-----------	-----------	-----------

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles	<b>M</b>
Manufacturing code for high-pressure version of 6000 PSI Series (STAUFF Size 16)	<b>H</b>

#### ⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

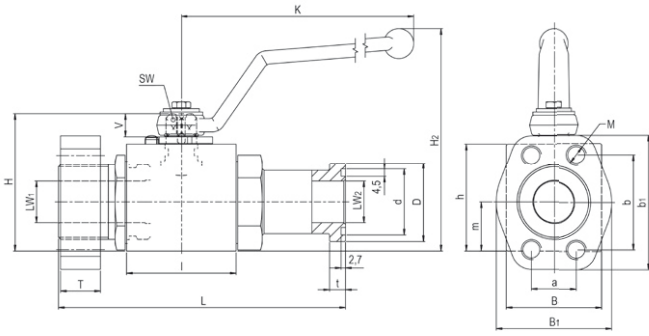
Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.





### High-Pressure Block Body Ball Valve - Type BBV2H/2T 3000 PSI SAE Split / Mating Flange Connection (ISO 6162-1)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 3000 PSI Series (Code 61) - Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW1	LW2	L	I	B	B1	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	T	a	b	b1	M				H2
08	1/2	13	13	13	136	48	35	48	54	40	19	11	9	115	25,5	30,2	6,8	13	17,5	38,1	56	M8	89	350	1,20	BBV2HM080001M
			.51	.51	5.35	1.89	1.38	1.89	2.13	1.57	.75	.43	.35	4.53	1.00	1.19	.27	.51	.69	1.50	2.20		3.50	5000	2.60	
12	3/4	20	20	19	149	62	49	50	75	57	24,5	14	14	170	31,9	38,1	6,8	14	22,3	47,6	65	M10	127	350	2,50	BBV2HM120001M
			.79	.75	5.87	2.44	1.93	1.97	2.95	2.24	.96	.55	.55	6.69	1.26	1.50	.27	.55	.88	1.87	2.56		5.00	5000	5.50	
16	1	25	25	25	163	66	58	60	83	65	29,5	14	14	170	39,8	44,4	8,1	16	26,2	52,4	70	M10	135	320	3,50	BBV2HM160001M
			.98	.98	6.42	2.60	2.28	2.36	3.27	2.56	1.16	.55	.55	6.69	1.57	1.75	.32	.63	1.03	2.06	2.76		5.31	4600	7.70	

#### 3000 PSI Series (Code 61) - Unified Coarse (UNC) Threads

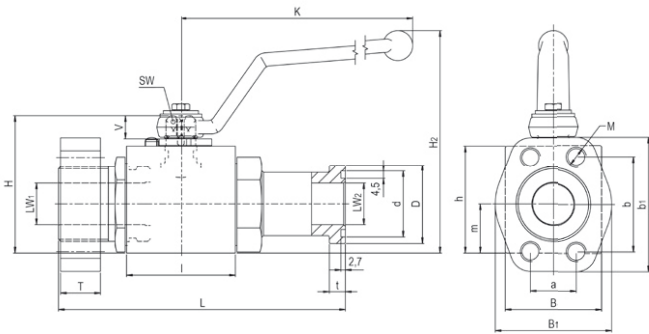
STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW1	LW2	L	I	B	B1	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	T	a	b	b1	M				H2
08	1/2	13	13	13	136	48	35	48	54	40	19	11	9	115	25,5	30,2	6,8	13	17,5	38,1	56	5/16-18 UNC	89	350	1,20	BBV2H080001M
			.51	.51	5.35	1.89	1.38	1.89	2.13	1.57	.75	.43	.35	4.53	1.00	1.19	.27	.51	.69	1.50	2.20		3.50	5000	2.60	
12	3/4	20	20	19	149	62	49	50	75	57	24,5	14	14	170	31,9	38,1	6,8	14	22,3	47,6	65	3/8-16 UNC	127	350	2,50	BBV2H120001M
			.79	.75	5.87	2.44	1.93	1.97	2.95	2.24	.96	.55	.55	6.69	1.26	1.50	.27	.55	.88	1.87	2.56		5.00	5000	5.50	
16	1	25	25	25	163	66	58	60	83	65	29,5	14	14	170	39,8	44,4	8,1	16	26,2	52,4	70	3/8-16 UNC	135	320	3,50	BBV2H160001M
			.98	.98	6.42	2.60	2.28	2.36	3.27	2.56	1.16	.55	.55	6.69	1.57	1.75	.32	.63	1.03	2.06	2.76		5.31	4600	7.70	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

<sup>1</sup> Dimension d: ±0,1 mm / .004 in

<sup>2</sup> Dimension D: -0,2 mm / .008 in

<sup>3</sup> Dimension t: -0,2 mm / .008 in



### High-Pressure Block Body Ball Valve - Type BBV2H/2T 6000 PSI SAE Split / Mating Flange Connection (ISO 6162-2)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 6000 PSI Series (Code 62) - Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW1	LW2	L	I	B	B1	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	T	a	b	b1	M				H2
08	1/2	13	13	13	136	48	35	48	54	40	19	11	9	115	25,5	31,8	7,9	16	18,2	40,8	56	M8	89	420	1,20	BBV2TM080001M
			.51	.51	5.35	1.89	1.38	1.89	2.13	1.57	.75	.43	.35	4.53	1.00	1.25	.31	.63	.72	1.61	2.20		3.50	6000	2.64	
12	3/4	20	20	19	155	62	49	60	75	57	24,5	14	14	170	31,9	41,3	8,9	19	23,8	50,8	71	M10	127	420	2,26	BBV2TM120001M
			.79	.75	6.10	2.44	1.93	2.36	2.95	2.24	.96	.55	.55	6.69	1.26	1.63	.35	.75	.94	2.00	2.80		5.00	6000	4.98	
16	1	25	25	25	173	66	58	70	83	65	29,5	14	14	170	39,8	47,6	9,6	24	27,8	57,2	71	M12	135	320	3,75	BBV2TM160001M
			.98	.98	6.81	2.60	2.28	2.76	3.27	2.56	1.16	.55	.55	6.69	1.57	1.87	.38	.94	1.09	2.25	2.80		5.31	4600	8.26	
16	1	25	25	25	181	74	70	70	88	70	34,5	14	14	170	39,8	47,6	9,6	24	27,8	57,2	81	M12	140	420	4,10	BBV2TM160001H
			.98	.98	7.13	2.91	2.76	2.76	3.46	2.76	1.36	.55	.55	6.69	1.57	1.87	.38	.94	1.09	2.25	3.19		5.51	6000	9.04	

#### 6000 PSI Series (Code 62) - Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW1	LW2	L	I	B	B1	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	T	a	b	b1	M				H2
08	1/2	13	13	13	136	48	35	48	54	40	19	11	9	115	25,5	31,8	7,9	16	18,2	40,8	56	5/16-18 UNC	89	420	1,20	BBV2TM080001M
			.51	.51	5.35	1.89	1.38	1.89	2.13	1.57	.75	.43	.35	4.53	1.00	1.25	.31	.63	.72	1.61	2.20		3.50	6000	2.64	
12	3/4	20	20	19	155	62	49	60	75	57	24,5	14	14	170	31,9	41,3	8,9	19	23,8	50,8	71	3/8-16 UNC	127	420	2,26	BBV2TM120001M
			.79	.75	6.10	2.44	1.93	2.36	2.95	2.24	.96	.55	.55	6.69	1.26	1.63	.35	.75	.94	2.00	2.80		5.00	6000	4.98	
16	1	25	25	25	173	66	58	70	83	65	29,5	14	14	170	39,8	47,6	9,6	24	27,8	57,2	71	7/16-14 UNC	135	320	3,75	BBV2TM160001M
			.98	.98	6.81	2.60	2.28	2.76	3.27	2.56	1.16	.55	.55	6.69	1.57	1.87	.38	.94	1.09	2.25	2.80		5.31	4600	8.26	
16	1	25	25	25	181	74	70	70	88	70	34,5	14	14	170	39,8	47,6	9,6	24	27,8	57,2	81	7/16-14 UNC	140	420	4,10	BBV2TM160001H
			.98	.98	7.13	2.91	2.76	2.76	3.46	2.76	1.36	.55	.55	6.69	1.57	1.87	.38	.94	1.09	2.25	3.19		5.51	6000	9.04	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

<sup>1</sup> Dimension d: ±0,1 mm / .004 in

<sup>2</sup> Dimension D: -0,2 mm / .008 in

<sup>3</sup> Dimension t: -0,2 mm / .008 in

## High-Pressure Forged Body Ball Valve ▪ Typ FBV2H/2T



### Characteristics

Two-way high-pressure forged body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Forged body design for in-line assembly
- Supplied with off-set lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 3000 PSI (code 61) SAE split / mating flange connectors
- 6000 PSI (code 62) SAE split / mating flange connectors
- Metric ISO and unified coarse (UNC) threads

#### Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

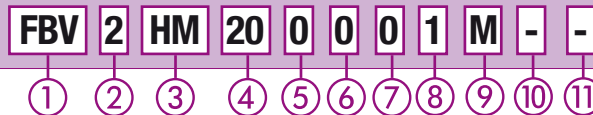
#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... + 212 °F

#### Options / Accessories

- Flanges and flange kits (see Flanges section)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Forged Body Ball Valve **FBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

3000 PSI (code 61) SAE Split / Mating Flange Connectors with Metric ISO Threads	<b>HM</b>
3000 PSI (code 61) SAE Split / Mating Flange Connectors with Unified Coarse (UNC) Threads	<b>H</b>
6000 PSI (code 62) SAE Split / Mating Flange Connectors with Metric ISO Threads	<b>TM</b>
6000 PSI (code 62) SAE Split / Mating Flange Connectors with Unified Coarse (UNC) Threads	<b>T</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table)		
<b>20</b>	<b>24</b>	<b>32</b>

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles	<b>M</b>
--	----------

#### ⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

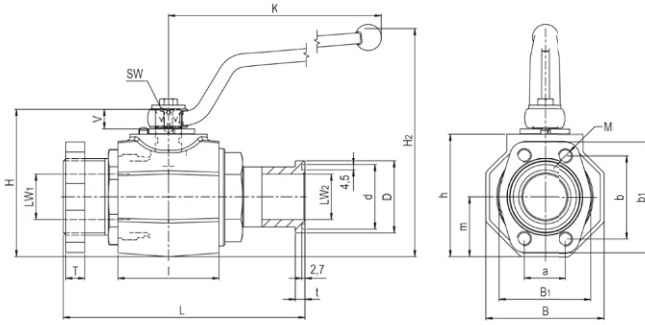
Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.





### High-Pressure Forged Body Ball Valve ■ Type FBV2H/2T 3000 PSI SAE Split / Mating Flange Connection (ISO 6162-1)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

#### 3000 PSI Series (Code 61) ■ Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW1	LW2	L	I	B	B1	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	T	a	b	b1	M				H2
20	1-1/4	32	32	30	181	80	81	68	107	86	40,5	16,5	17	306	44,6	50,8	8,1	16	30,2	58,7	79	M10	171	280	5,87	FBV2HM200001M
			1.26	1.18	7.13	3.15	3.19	2.68	4.21	3.39	1.59	.65	.67	12.05	1.76	2.00	.32	.63	1.19	2.31	3.11		6.73	4000	12.94	
24	1-1/2	40	38	38	204	85	100	78	124	103	50	16,5	17	306	54,1	60,3	8,1	16	35,7	69,9	93	M12	188	210	8,82	FBV2HM240001M
			1.50	1.50	8.03	3.35	3.94	3.07	4.88	4.06	1.97	.65	.67	12.05	2.13	2.37	.32	.63	1.41	2.75	3.66		7.40	3000	19.45	
32	2	50	48	48	214	100	118	90	138	117	59	16,5	17	306	63,6	71,4	9,6	16	42,9	77,8	102	M12	202	210	14,29	FBV2HM320001M
			1.89	1.89	8.43	3.94	4.65	3.54	5.43	4.61	2.32	.65	.67	12.05	2.50	2.81	.38	.63	1.69	3.06	4.02		7.95	3000	31.50	

#### 3000 PSI Series (Code 61) ■ Unified Coarse (UNC) Threads

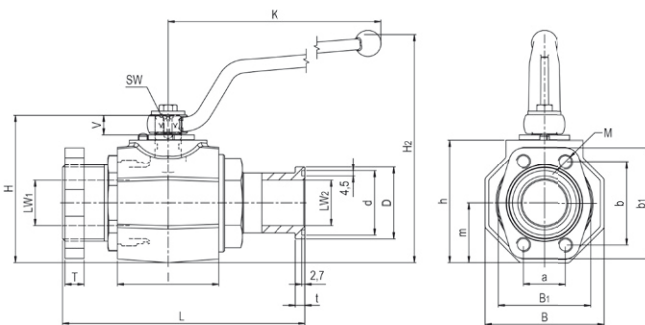
STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW1	LW2	L	I	B	B1	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	T	a	b	b1	M				H2
20	1-1/4	32	32	30	181	80	81	68	107	86	40,5	16,5	17	306	44,6	50,8	8,1	16	30,2	58,7	79	7/16-14 UNC	171	280	5,87	FBV2H200001M
			1.26	1.18	7.13	3.15	3.19	2.68	4.21	3.39	1.59	.65	.67	12.05	1.76	2.00	.32	.63	1.19	2.31	3.11		6.73	4000	12.94	
24	1-1/2	40	38	38	204	85	100	78	124	103	50	16,5	17	306	54,1	60,3	8,1	16	35,7	69,9	93	1/2-13 UNC	188	210	8,82	FBV2H240001M
			1.50	1.50	8.03	3.35	3.94	3.07	4.88	4.06	1.97	.65	.67	12.05	2.13	2.37	.32	.63	1.41	2.75	3.66		7.40	3000	19.45	
32	2	50	48	48	214	100	118	90	138	117	59	16,5	17	306	63,6	71,4	9,6	16	42,9	77,8	102	1/2-13 UNC	202	210	14,29	FBV2H320001M
			1.89	1.89	8.43	3.94	4.65	3.54	5.43	4.61	2.32	.65	.67	12.05	2.50	2.81	.38	.63	1.69	3.06	4.02		7.95	3000	31.50	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

<sup>1</sup> Dimension d: ±0,1 mm / .004 in

<sup>2</sup> Dimension D: -0,2 mm / .008 in

<sup>3</sup> Dimension t: -0,2 mm / .008 in



### High-Pressure Forged Body Ball Valve ■ Type FBV2H/2T 6000 PSI SAE Split / Mating Flange Connection (ISO 6162-2)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

#### 6000 PSI Series (Code 62) ■ Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW1	LW2	L	I	B	B1	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	T	a	b	b1	M				H2
20	1-1/4	32	32	30	189	80	81	78	107	86	40,5	16,5	17	306	44,6	54	10,4	27	31,8	66,6	95	M12	171	420	6,12	FBV2TM200001M
			1.26	1.18	7.44	3.15	3.19	3.07	4.21	3.39	1.59	.65	.67	12.05	1.76	2.13	.41	1.06	1.24	2.62	3.74		6.73	6000	13.49	
24	1-1/2	40	38	38	229	85	100	94	124	103	50	16,5	17	306	54,1	63,5	12,7	30	36,5	79,3	112	M16	188	420	9,29	FBV2TM240001M
			1.50	1.50	9.02	3.35	3.94	3.82	4.88	4.06	1.97	.65	.67	12.05	2.13	2.50	.50	1.18	1.44	3.12	4.41		7.40	6000	20.48	
32	2	50	48	48	256	100	118	114	138	117	59	16,5	17	306	63,6	79,4	12,7	35	44,5	96,3	134	M20	202	420	15,34	FBV2TM320001M
			1.89	1.89	10.08	3.94	4.65	4.49	5.43	4.61	2.32	.65	.67	12.05	2.50	3.13	.50	1.38	1.75	3.79	5.28		7.95	6000	33.82	

#### 6000 PSI Series (Code 62) ■ Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW1	LW2	L	I	B	B1	H	h	m	V	SW	K	d <sup>1</sup>	D <sup>2</sup>	t <sup>3</sup>	T	a	b	b1	M				H2
20	1-1/4	32	32	30	189	80	81	78	107	86	40,5	16,5	17	306	44,6	54	10,4	27	31,8	66,6	95	1/2-13 UNC	171	420	6,12	FBV2T200001M
			1.26	1.18	7.44	3.15	3.19	3.07	4.21	3.39	1.59	.65	.67	12.05	1.76	2.13	.41	1.06	1.24	2.62	3.74		6.73	6000	13.49	
24	1-1/2	40	38	38	229	85	100	94	124	103	50	16,5	17	306	54,1	63,5	12,7	30	36,5	79,3	112	5/8-11 UNC	188	420	9,29	FBV2T240001M
			1.50	1.50	9.02	3.35	3.94	3.82	4.88	4.06	1.97	.65	.67	12.05	2.13	2.50	.50	1.18	1.44	3.12	4.41		7.40	6000	20.48	
32	2	50	48	48	256	100	118	114	138	117	59	16,5	17	306	63,6	79,4	12,7	35	44,5	96,3	134	3/4-10 UNC	202	420	15,34	FBV2T320001M
			1.89	1.89	10.08	3.94	4.65	4.49	5.43	4.61	2.32	.65	.67	12.05	2.50	3.13	.50	1.38	1.75	3.79	5.28		7.95	6000	33.82	

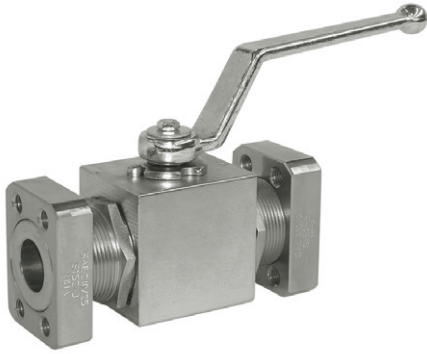
Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

<sup>1</sup> Dimension d: ±0,1 mm / .004 in

<sup>2</sup> Dimension D: -0,2 mm / .008 in

<sup>3</sup> Dimension t: -0,2 mm / .008 in

## High-Pressure Block Body Ball Valve - Type BBV2E/2S



### Characteristics

Two-way high-pressure block body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Supplied with off-set lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc (STAUFF Size 08)
- Carbon Steel (STAUFF Sizes 12 and 16)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 3000 PSI (code 61) SAE mating flange connectors
- 6000 PSI (code 62) SAE mating flange connectors
- Metric ISO and unified coarse (UNC) threads

#### Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

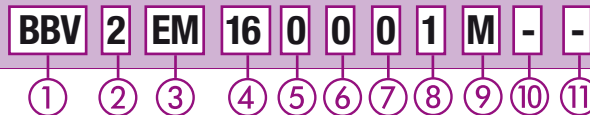
#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... + 212 °F

#### Options / Accessories

- Flanges and flange kits (see Flanges section)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Block Body Ball Valve **BBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

3000 PSI (Code 61) SAE Mating Flange Connectors with Metric ISO Threads	<b>EM</b>
3000 PSI (Code 61) SAE Mating Flange Connectors with Unified Coarse (UNC) Threads	<b>E</b>
6000 PSI (Code 62) SAE Mating Flange Connectors with Metric ISO Threads	<b>SM</b>
6000 PSI (Code 62) SAE Mating Flange Connectors with Unified Coarse (UNC) Threads	<b>S</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table)	<b>08</b>	<b>12</b>	<b>16</b>
--	-----------	-----------	-----------

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles	<b>M</b>
Manufacturing code for high-pressure version of 6000 PSI Series (STAUFF Size 16)	<b>H</b>

#### ⑩ Lever Options

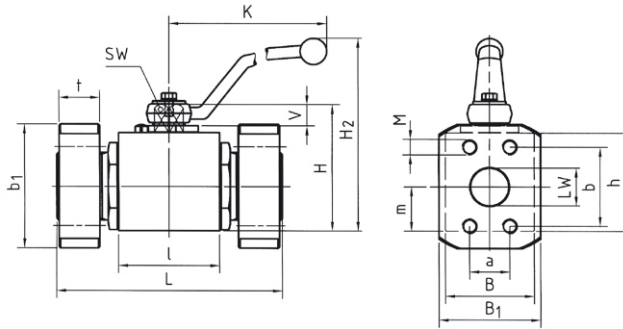
Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.



### High-Pressure Block Body Ball Valve ■ Type BBV2E/2S 3000 PSI SAE Flange Connection (ISO 6162-1)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Size 08)  
Carbon Steel (STAUFF Sizes 12 and 16)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

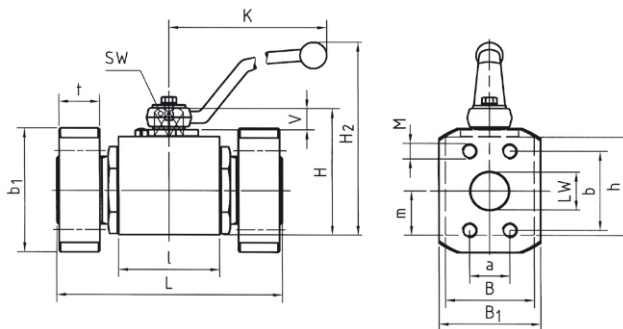
#### 3000 PSI Series (Code 61) ■ Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/m)																	Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	B1	b1	t	a	b	M	H2			
08	1/2	13	13	120	48	35	54	40	19	11	9	115	48	56	13	17,5	38,1	M8	89	350	1,50	BBV2EM080001M
			.51	4.72	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	1.89	2.20	.51	.69	1.50		3.50	5000	3.30	
12	3/4	20	20	136	62	49	75	57	24,5	14	14	170	50	65	14	22,3	47,6	M10	127	350	3,00	BBV2EM120001M
			.79	5.35	2.44	1.93	2.95	2.24	.96	.55	.55	6.69	1.97	2.56	.55	.88	1.87		5.00	5000	6.60	
16	1	25	25	148	66	58	83	65	29,5	14	14	170	60	70	16	26,2	52,4	M10	135	320	4,50	BBV2EM160001M
			.98	5.83	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	2.36	2.76	.63	1.03	2.06		5.31	4600	9.90	

#### 3000 PSI Series (Code 61) ■ Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/m)																	Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	B1	b1	t	a	b	M	H2			
08	1/2	13	13	120	48	35	54	40	19	11	9	115	48	56	13	17,5	38,1	5/16-18	89	350	1,50	BBV2E080001M
			.51	4.72	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	1.89	2.20	.51	.69	1.50	UNC	3.50	5000	3.30	
12	3/4	20	20	136	62	49	75	57	24,5	14	14	170	50	65	14	22,3	47,6	3/8-16	127	350	3,00	BBV2E120001M
			.79	5.35	2.44	1.93	2.95	2.24	.96	.55	.55	6.69	1.97	2.56	.55	.88	1.87	UNC	5.00	5000	6.60	
16	1	25	25	148	66	58	83	65	29,5	14	14	170	60	70	16	26,2	52,4	3/8-16	135	320	4,50	BBV2E160001M
			.98	5.83	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	2.36	2.76	.63	1.03	2.06	UNC	5.31	4600	9.90	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.



### High-Pressure Block Body Ball Valve ■ Type BBV2E/2S 6000 PSI SAE Flange Connection (ISO 6162-2)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Size 08)  
Carbon Steel (STAUFF Sizes 12 and 16)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 6000 PSI Series (Code 62) ■ Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/m)																	Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	B1	b1	t	a	b	M	H2			
08	1/2	13	13	120	48	35	54	40	19	11	9	115	48	56	16	18,2	40,5	M8	89	420	1,50	BBV2SM080001M
			.51	4.72	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	1.89	2.20	.63	.72	1.59		3.50	6000	3.30	
12	3/4	20	20	136	62	49	75	57	24,5	14	14	170	60	71	19	23,8	50,8	M10	127	420	3,00	BBV2SM120001M
			.79	5.35	2.44	1.93	2.95	2.24	.96	.55	.55	6.69	2.36	2.80	.75	.94	2.00		5.00	6000	6.60	
16	1	25	25	148	66	58	83	65	29,5	14	14	170	70	81	24	27,8	57,2	M12	135	320	3,80	BBV2SM160001M
			.98	5.83	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	2.76	3.19	.94	1.09	2.25		5.31	4600	8.37	
16	1	25	25	156	74	70	88	70	34,5	14	14	170	70	81	24	27,8	57,2	M12	140	420	4,50	BBV2SM160001H
			.98	6.14	2.91	2.76	3.46	2.76	1.36	.55	.55	6.69	2.76	3.19	.94	1.09	2.25		5.51	6000	9.90	

#### 6000 PSI Series (Code 62) ■ Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/m)																	Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	B	H	h	m	V	SW	K	B1	b1	t	a	b	M	H2			
08	1/2	13	13	120	48	35	54	40	19	11	9	115	48	56	16	18,2	40,5	5/16-18	89	420	1,50	BBV2S080001M
			.51	4.72	1.89	1.38	2.13	1.57	.75	.43	.35	4.53	1.89	2.20	.63	.72	1.59	UNC	3.50	6000	3.30	
12	3/4	20	20	136	62	49	75	57	24,5	14	14	170	60	71	19	23,8	50,8	3/8-16	127	420	3,00	BBV2S120001M
			.79	5.35	2.44	1.93	2.95	2.24	.96	.55	.55	6.69	2.36	2.80	.75	.94	2.00	UNC	5.00	6000	6.60	
16	1	25	25	148	66	58	83	65	29,5	14	14	170	70	81	24	27,8	57,2	7/16-14	135	320	3,80	BBV2S160001M
			.98	5.83	2.60	2.28	3.27	2.56	1.16	.55	.55	6.69	2.76	3.19	.94	1.09	2.25	UNC	5.31	4600	8.37	
16	1	25	25	156	74	70	88	70	34,5	14	14	170	70	81	24	27,8	57,2	7/16-14	140	420	4,50	BBV2S160001H
			.98	6.14	2.91	2.76	3.46	2.76	1.36	.55	.55	6.69	2.76	3.19	.94	1.09	2.25	UNC	5.51	6000	9.90	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

## High-Pressure Forged Body Ball Valve ▪ Type FBV2E/2S



### Characteristics

Two-way high-pressure forged body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Forged body design for in-line assembly
- Supplied with off-set lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 3000 PSI (code 61) SAE mating flange connectors
- 6000 PSI (code 62) SAE mating flange connectors
- Metric ISO and unified coarse (UNC) threads

#### Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

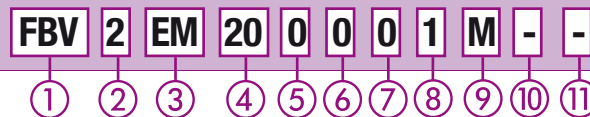
#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... +212 °F

#### Options / Accessories

- Flanges and flange kits (see Flanges section)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Forged Body Ball Valve **FBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

3000 PSI (Code 61) SAE Mating Flange Connectors with Metric ISO Threads	<b>EM</b>
3000 PSI (Code 61) SAE Mating Flange Connectors with Unified Coarse (UNC) Threads	<b>E</b>
6000 PSI (Code 62) SAE Mating Flange Connectors with Metric ISO Threads	<b>SM</b>
6000 PSI (Code 62) SAE Mating Flange Connectors with Unified Coarse (UNC) Threads	<b>S</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table)			
<b>20</b>	<b>24</b>	<b>32</b>	<b>40R</b>

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles	<b>M</b>
--	----------

#### ⑩ Lever Options

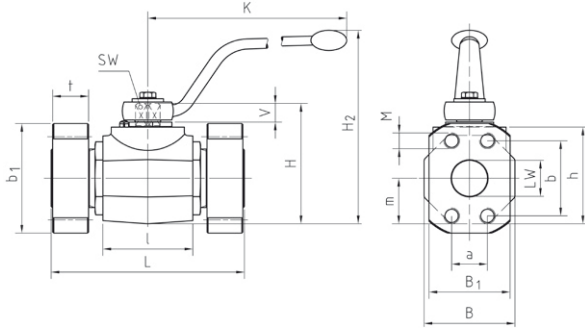
Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Locking Device LD6	<b>-LD6</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.



### High-Pressure Forged Body Ball Valve ■ Type FBV2E/2S 3000 PSI SAE Flange Connection (ISO 6162-1)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

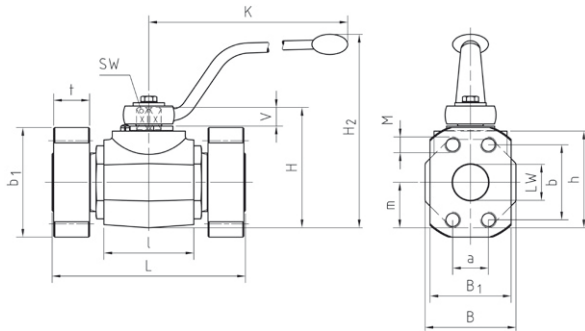
#### 3000 PSI Series (Code 61) ■ Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	I	B	H	h	m	V	SW	K	B1	b1	t	a	b	M				H2
20	1-1/4	32	32	172	80	81	107	86	40.5	16.5	17	306	68	79	16	30.2	58.7	M10	171	280	7.52	FBV2EM200001M
			1.26	6.77	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	2.68	3.11	.63	1.19	2.31		6.73	4000	16.54	
24	1-1/2	40	38	177	85	100	124	103	50	16.5	17	306	78	93	16	35.7	69.8	M12	188	210	11.09	FBV2EM240001M
			1.50	6.97	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	3.07	3.66	.63	1.41	2.75		7.40	3000	24.40	
32	2	50	48	196	100	118	138	117	59	16.5	17	306	90	102	16	42.9	77.8	M12	202	210	19.29	FBV2EM320001M
			1.89	7.72	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	3.54	4.02	.63	1.69	3.06		7.95	3000	42.44	
40R	2-1/2	50/65	48	196	100	118	138	117	59	16.5	17	306	105	114	19	50.8	88.9	M12	202	175	19.29	FBV2EM40R0001M
			1.89	7.72	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	4.13	4.49	.75	2.00	3.50		7.95	2500	42.44	

#### 3000 PSI Series (Code 61) ■ Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	I	B	H	h	m	V	SW	K	B1	b1	t	a	b	M				H2
20	1-1/4	32	32	172	80	81	107	86	40.5	16.5	17	306	68	79	16	30.2	58.7	7/16-14	171	280	7.52	FBV2E200001M
			1.26	6.77	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	2.68	3.11	.63	1.19	2.31	UNC	6.73	4000	16.54	
24	1-1/2	40	38	177	85	100	124	103	50	16.5	17	306	78	93	16	35.7	69.8	1/2-13	188	210	11.09	FBV2E240001M
			1.50	6.97	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	3.07	3.66	.63	1.41	2.75	UNC	7.40	3000	24.40	
32	2	50	48	196	100	118	138	117	59	16.5	17	306	90	102	16	42.9	77.8	1/2-13	202	210	19.29	FBV2E320001M
			1.89	7.72	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	3.54	4.02	.63	1.69	3.06	UNC	7.95	3000	42.44	
40R	2-1/2	50/65	48	196	100	118	138	117	59	16.5	17	306	105	114	19	50.8	88.9	1/2-13	202	175	19.29	FBV2E40R0001M
			1.89	7.72	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	4.13	4.49	.75	2.00	3.50	UNC	7.95	2500	42.44	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.



### High-Pressure Forged Body Ball Valve ■ Type FBV2E/2S 6000 PSI SAE Flange Connection (ISO 6162-2)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Dimensions of stainless steel ball valves may vary!

#### 6000 PSI Series (Code 62) ■ Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	I	B	H	h	m	V	SW	K	B1	b1	t	a	b	M				H2
20	1-1/4	32	32	172	80	81	107	86	40.5	16.5	17	306	78	95	27	31.8	66.6	M12	171	420	7.52	FBV2SM200001M
			1.26	6.77	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	3.07	3.74	1.06	1.25	2.62		6.73	6000	16.54	
24	1-1/2	40	38	177	85	100	124	103	50	16.5	17	306	94	112	30	36.5	79.4	M16	188	420	11.09	FBV2SM240001M
			1.50	6.97	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	3.70	4.41	1.18	1.44	3.13		7.40	6000	24.40	
32	2	50	48	196	100	118	138	117	59	16.5	17	306	114	134	35	44.5	96.8	M20	202	420	19.29	FBV2SM320001M
			1.89	7.72	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	4.49	5.28	1.38	1.75	3.81		7.95	6000	42.44	

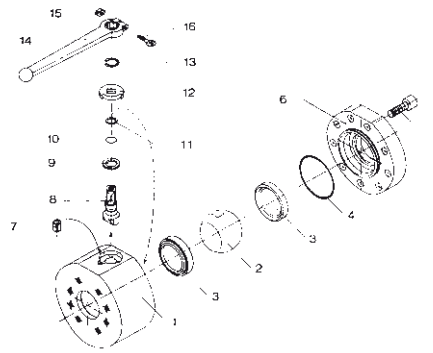
#### 6000 PSI Series (Code 62) ■ Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	I	B	H	h	m	V	SW	K	B1	b1	t	a	b	M				H2
20	1-1/4	32	32	172	80	81	107	86	40.5	16.5	17	306	78	95	27	31.8	66.7	1/2-13	171	420	7.52	FBV2S200001M
			1.26	6.77	3.15	3.19	4.21	3.39	1.59	.65	.67	12.05	3.07	3.74	1.06	1.25	2.63	UNC	6.73	6000	16.54	
24	1-1/2	40	38	177	85	100	124	103	50	16.5	17	306	94	112	30	36.5	79.4	5/8-11	188	420	11.09	FBV2S240001M
			1.50	6.97	3.35	3.94	4.88	4.06	1.97	.65	.67	12.05	3.70	4.41	1.18	1.44	3.13	UNC	7.40	6000	24.40	
32	2	50	48	196	100	118	138	117	59	16.5	17	306	114	134	35	44.5	96.8	3/4-10	202	420	19.29	FBV2S320001M
			1.89	7.72	3.94	4.65	5.43	4.61	2.32	.65	.67	12.05	4.49	5.28	1.38	1.75	3.81	UNC	7.95	6000	42.44	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.



## High-Pressure Round Body Ball Valve - Type BBV29



### List of Components

No.	Qty.	Description
1	1	Housing
2	1	Ball
3*	2	Seat
4*	1	Cover O-Ring
5	7-9**	Cover Screws
6	1	Cover
7	1	Stop Pin
8	1	Stem
9*	1	Thrust Ring
10*	1	Stem O-Ring
11*	1	Back-up Ring
12	1	Cam Plate
13	1	Snap Ring
14	1	Handle
15	1	Nut
16	1	Screw

\* Included in seal kit  
\*\* Depending on valve size

### Characteristics

Two-way high-pressure round body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Round body design for in-line assembly
- Machined parts for reduced torque operation
- Designed for direct mount to reduce threads in fluid flow
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Aluminium (STAUFF Size 08)  
Zinc (STAUFF Sizes 12 and 16)  
Aluminium (STAUFF Sizes 20 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 3000 PSI (code 61) direct SAE flange connection
- 6000 PSI (code 62) direct SAE flange connection
- Dual pattern: 3000 PSI (code 61) and 6000 PSI (code 62)
- Metric ISO and unified coarse (UNC) threads

#### Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

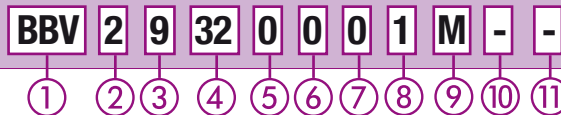
#### Temperature Range

- Operating temperature range:  
-20°C ... +100°C / -4°F ... +212°F

#### Options / Accessories

- Flanges and flange kits (see Flanges section)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Round Body Ball Valve **BBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

3000/6000 PSI (Code 61/62) SAE Direct Flange Connection with Metric ISO Threads **9M**  
3000/6000 PSI (Code 61/62) SAE Direct Flange Connection with Unified Coarse (UNC) Threads **9**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table):  
**08 12 16 20 24 32**

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated **0**  
Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated **0**  
Stem: Carbon Steel **0**  
Ball / Stem: Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) **0**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®) **0**  
FPM (Viton®) **1**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

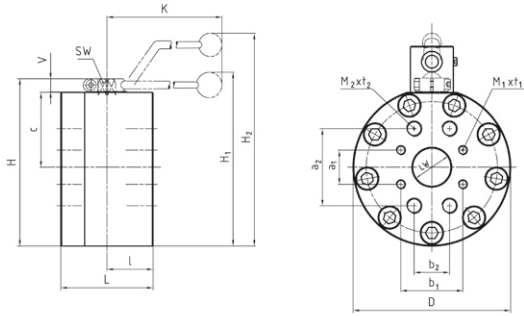
Supplied with standard lever (according to table) **-**  
Supplied without lever **-0**

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories **-**  
Supplied with Locking Device LD4 **-LD4**  
Supplied with Locking Device LD5A **-LD5A**  
Supplied with Double-Acting Pneumatic Actuator (Please add size \*\*) **-EDA\*\***  
Supplied with Single-Acting Pneumatic Actuator (Please add size \*\*) **-ESA\*\***

Please see page F93-F97 for further information and options.



## High-Pressure Round Body Ball Valve - Type BBV29 3000/6000 PSI Flange Connection (ISO 6162-1/2)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Size 08)  
Zinc (STAUFF Sizes 12 and 16)  
Aluminium (STAUFF Sizes 20 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

### Dual Pattern - 3000/6000 PSI Series (Code 61/62) - Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)		
			LW	L	I	D	H	c	V	K	SW	a1	b1	M1	t1	a2	b2	M2				t2	H1
08	1/2	15	15	75	35	88	88	31	13	160	12	17,5	38,1	M8	18	40,5	18,2	M8	18	132	420	2,96	BBV29M080001M
			.59	2.95	1.38	3.46	3.46	1.22	.51	6.30	.47	.69	1.50		.71	1.59	.72		.71		5.20	6000	
12	3/4	20	20	80	35	98	100	36,5	14	200	14	22,2	47,6	M10	18	50,8	23,8	M10	18	103	420	4,20	BBV29M120001M
			.79	3.15	1.38	3.86	3.94	1.44	.55	7.87	.55	.87	1.87		.71	2.00	.94		.71	4.06	6000	9.24	
16	1	25	25	88	38	118	113	39,5	14	200	14	27,8	57,2	M12	20	52,4	26,2	M10	20	116	420	6,00	BBV29M160001M
			.98	3.46	1.50	4.65	4.45	1.56	.55	7.87	.55	1.09	2.25		.79	2.06	1.03		.79	4.57	6000	13.20	
20	1-1/4	32	32	100	50	145	158	68	17	320	17	30,2	58,7	M10	20	66,6	31,8	M12	22	167	420	11,71	BBV29M200001M
			1.26	3.94	1.97	5.71	6.22	2.68	.67	12.60	.67	1.19	2.31		.79	2.62	1.25		.87	6.57	6000	25.76	
24	1-1/2	40	38	110	55	165	178	78	17	320	17	35,7	69,8	M12	20	79,4	36,5	M16	27	187	420	17,10	BBV29M240001M
			1.50	4.33	2.17	6.50	7.01	3.07	.67	12.60	.67	1.41	2.75		.79	3.13	1.44		1.06	7.36	6000	37.62	
32	2	50	48	116	58	198	210	94	17	320	17	42,9	77,8	M12	20	96,8	44,5	M20	28	203	420	24,60	BBV29M320001M
			1.89	4.57	2.28	7.80	8.27	3.70	.67	12.60	.67	1.69	3.06		.79	3.81	1.75		1.10	7.99	6000	54.12	

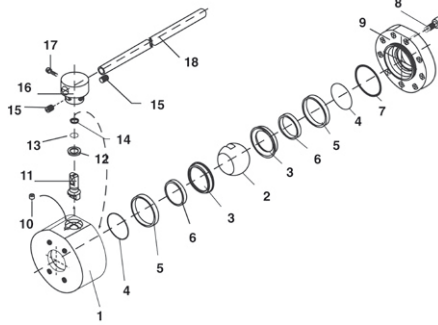
### Dual Pattern - 3000/6000 PSI Series (Code 61/62) - Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)		
			LW	L	I	D	H	c	V	K	SW	a1	b1	M1	t1	a2	b2	M2				t2	H1
08	1/2	15	15	75	35	88	88	31	13	160	12	17,5	38,1	5/16-18	18	40,5	18,2	5/16-18	18	132	420	2,96	BBV29080001M
			.59	2.95	1.38	3.46	3.46	1.22	.51	6.30	.47	.69	1.50	UNC	.71	1.59	.72	UNC	.71	5.20	6000	6.51	
12	3/4	20	20	80	35	98	100	36,5	14	200	14	22,2	47,6	3/8-16	18	50,8	23,8	3/8-16	18	103	420	4,20	BBV29120001M
			.79	3.15	1.38	3.86	3.94	1.44	.55	7.87	.55	.87	1.87	UNC	.71	2.00	.94	UNC	.71	4.06	6000	9.24	
16	1	25	25	88	38	118	113	39,5	14	200	14	27,8	57,2	7/16-14	20	52,4	26,2	3/8-16	20	116	420	6,00	BBV29160001M
			.98	3.46	1.50	4.65	4.45	1.56	.55	7.87	.55	1.09	2.25	UNC	.79	2.06	1.03	UNC	.79	4.57	6000	13.20	
20	1-1/4	32	32	100	50	145	158	68	17	320	17	30,2	58,7	7/16-14	20	66,6	31,8	1/2-13	22	167	420	11,71	BBV29200001M
			1.26	3.94	1.97	5.71	6.22	2.68	.67	12.60	.67	1.19	2.31	UNC	.79	2.62	1.25	UNC	.87	6.57	6000	25.76	
24	1-1/2	40	38	110	55	165	178	78	17	320	17	35,7	69,8	1/2-13	20	79,4	36,5	5/8-11	27	187	420	17,10	BBV29240001M
			1.50	4.33	2.17	6.50	7.01	3.07	.67	12.60	.67	1.41	2.75	UNC	.79	3.13	1.44	UNC	1.06	7.36	6000	37.62	
32	2	50	48	116	58	198	210	94	17	320	17	42,9	77,8	1/2-13	20	96,8	44,5	3/4-10	28	203	420	24,60	BBV29320001M
			1.89	4.57	2.28	7.80	8.27	3.70	.67	12.60	.67	1.69	3.06	UNC	.79	3.81	1.75	UNC	1.10	7.99	6000	54.12	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.



## High-Pressure Round Body Ball Valve - Type BBV27/28



### List of Components

No.	Qty.	Description
1	1	Housing
2	1	Ball
3*	2	Seat
4*	2	O-Ring
5	2	Outer S/S Support Ring
6	2	Inner S/S Support Ring
7*	1	Cover O-Ring
8	9	Cover Bolts
9	1	Cover
10	1	Stop Screw
11	1	Stem
12*	1	Thrust Ring
13*	1	Stem O-Ring
14*	1	Back-up Ring
15	2	Set Screws
16	1	Stem/Handle Adaptor
17	1	Screw
18	1	Steel Handle

\* Included in seal kit

### Characteristics

Two-way high-pressure round body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Round body design for in-line assembly
- Machined parts for reduced torque operation
- Designed for direct mount to reduce threads in fluid flow
- Supplied with removable, adjustable lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 3000 PSI (code 61) direct SAE flange connection
- 6000 PSI (code 62) direct SAE flange connection
- Metric ISO and unified coarse (UNC) threads

#### Pressure Range

- Pressure range: up to 170 bar / 2500PSI (depending on size and material combination of the ball valve)

**Please note: The pressure range is limited to the SAE flange ratings. Higher pressures can be accommodated by using special flange connectors, type BBVF (see page F30).**

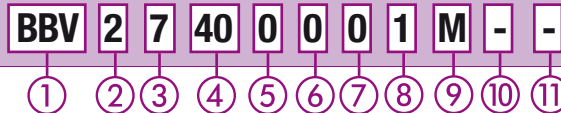
#### Temperature Range

- Operating temperature range:  
-20°C ... +100°C / -4°F ... +212°F

#### Options / Accessories

- Flanges and flange kits (see Flanges section)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Round Body Ball Valve **BBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

3000 PSI (Code 61) SAE Direct Flange Connection with Metric ISO Threads	<b>7M</b>
3000 PSI (Code 61) SAE Direct Flange Connection with Unified Coarse (UNC) Threads	<b>7</b>
6000 PSI (Code 62) SAE Direct Flange Connection with Metric ISO Threads	<b>8M</b>
6000 PSI (Code 62) SAE Direct Flange Connection with Unified Coarse (UNC) Threads	<b>8</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table):

<b>40</b>	<b>48</b>	<b>64</b>	<b>80</b>
-----------	-----------	-----------	-----------

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles	<b>M</b>
--	----------

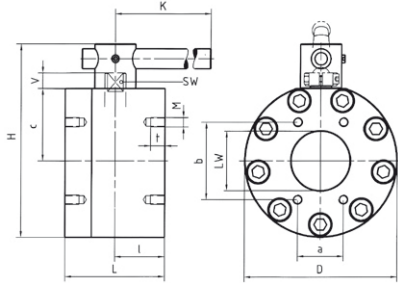
#### ⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

#### ⑪ Accessories / Options

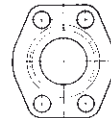
Supplied without accessories	<b>-</b>
Supplied with Locking Device LD5A	<b>-LD5A</b>
Supplied with Locking Device LD5B	<b>-LD5B</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.



### High-Pressure Round Body Ball Valve - Type BBV27/28 3000 PSI Flange Connection (ISO 6162-1)

#### Flange Position



3000 PSI  
(Code 61)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 3000 PSI Series (Code 61) - Metric ISO Threads

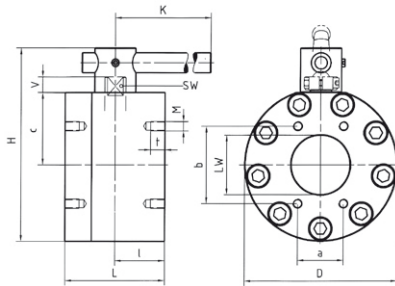
STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	D	H	c	V	K	SW	a	b	M	t			
40	2-1/2	65	63	150	75	198	259	94	20	600	16	50,8	88,9	M12	19	175	33,50	BBV27M400001M
			2.48	5.91	2.95	7.80	10.20	3.70	.79	23.62	.63	2.00	3.50		.75	2500	73.70	
48	3	80	76	140	70	210	277	100	26	600	19	61,9	106,4	M16	24	160	33,50	BBV27M480001M
			2.99	5.51	2.76	8.27	10.91	3.94	1.02	23.62	.75	2.44	4.19		.95	2300	73.70	
64	4	100	100	170	85	258	326	122	27	900	24	77,8	130,2	M16	24	35	60,50	BBV27M640001M
			3.94	6.69	3.35	10.16	12.83	4.80	1.06	35.43	.94	3.06	5.13		.95	500	133.10	
80	5	125	118	210	105	295	377	140	33	900	36	92,1	152,4	M16	30	35	95,50	BBV27M800001M
			4.65	8.27	4.13	11.61	14.84	5.51	1.30	35.43	1.42	3.63	6.00		1.18	500	210.10	

#### 3000 PSI Series (Code 61) - Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	D	H	c	V	K	SW	a	b	M	t			
40	2-1/2	65	63	150	75	198	259	94	20	600	16	50,8	88,9	1/2-13 UNC	19	175	33,50	BBV27400001M
			2.48	5.91	2.95	7.80	10.20	3.70	.79	23.62	.63	2.00	3.50		.75	2500	73.70	
48	3	80	76	140	70	210	277	100	26	600	19	61,9	106,4	5/8-11 UNC	24	160	33,50	BBV27480001M
			2.99	5.51	2.76	8.27	10.91	3.94	1.02	23.62	.75	2.44	4.19		.95	2300	73.70	
64	4	100	100	170	85	258	326	122	27	900	24	77,8	130,2	5/8-11 UNC	24	35	60,50	BBV27640001M
			3.94	6.69	3.35	10.16	12.83	4.80	1.06	35.43	.94	3.06	5.13		.95	500	133.10	
80	5	125	118	210	105	295	377	140	33	900	36	92,1	152,4	5/8-11 UNC	30	35	95,50	BBV27800001M
			4.65	8.27	4.13	11.61	14.84	5.51	1.30	35.43	1.42	3.63	6.00		1.18	500	210.10	

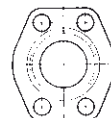
Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

Lever must be fixed in central position during operation. In case of vibration, the lever may otherwise operate the valve by itself.



### High-Pressure Round Body Ball Valve - Type BBV27/28 6000 PSI Flange Connection (ISO 6162-2)

#### Flange Position



6000 PSI  
(Code 62)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 6000 PSI Series (Code 62) - Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	D	H	c	V	K	SW	a	b	M	t			
40	2-1/2	65	63	170	75	218	275	100	20	600	16	123,8	58,8	M24	41	420	44,50	BBV28M400001M
			2.48	6.69	2.95	8.58	10.83	3.94	.79	23.62	.63	4.87	2.31		1.61	6000	97.90	
48	3	80	76	170	70	248	307	111	21	600	19	152,4	71,4	M30	47	420	55,00	BBV28M480001M
			2.99	6.69	2.76	9.76	12.09	4.37	.83	23.62	.75	6.00	2.81		1.85	6000	121.00	

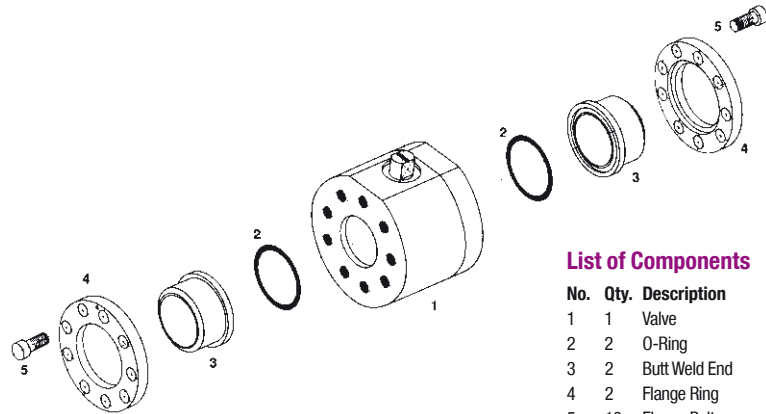
#### 6000 PSI Series (Code 62) - Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	D	H	c	V	K	SW	a	b	M	t			
40	2-1/2	65	63	170	75	218	275	100	20	600	16	123,8	58,8	7/8-9 UNC	41	420	44,50	BBV28400001M
			2.48	6.69	2.95	8.58	10.83	3.94	.79	23.62	.63	4.87	2.31		1.61	6000	97.90	
48	3	80	76	170	70	248	307	111	21	600	19	152,4	71,4	1-1/8-7 UNC	47	420	55,00	BBV28480001M
			2.99	6.69	2.76	9.76	12.09	4.37	.83	23.62	.75	6.00	2.81		1.85	6000	121.00	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

Lever must be fixed in central position during operation. In case of vibration, the lever may otherwise operate the valve by itself.

## High-Pressure Round Body Ball Valve ▪ Type BBVF



### List of Components

No.	Qty.	Description
1	1	Valve
2	2	O-Ring
3	2	Butt Weld End
4	2	Flange Ring
5	18	Flange Bolt

### Characteristics

Two-way high-pressure round body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Round body design for in-line assembly
- Machined parts for reduced torque operation
- Designed for direct mount to reduce threads in fluid flow
- High-pressure flange connection
- Supplied with removable, adjustable lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Flange connection with butt weld ends

#### Pressure Range

- Pressure range: up to 345 bar / 5000PSI (depending on size and material combination of the ball valve)

#### Working pressure at a 3:1 safety factor!

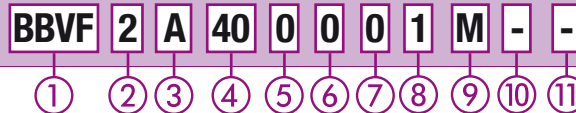
#### Temperature Range

- Operating temperature range: -20 °C ... +100 °C / -4 °F ... +212 °F

#### Options / Accessories

- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Round Body Ball Valve **BBVF**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

Flange Connection with Butt Weld Ends with Unified Coarse (UNC) Bolts **A**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table):

40	48	64	80
----	----	----	----

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles	<b>M</b>
--	----------

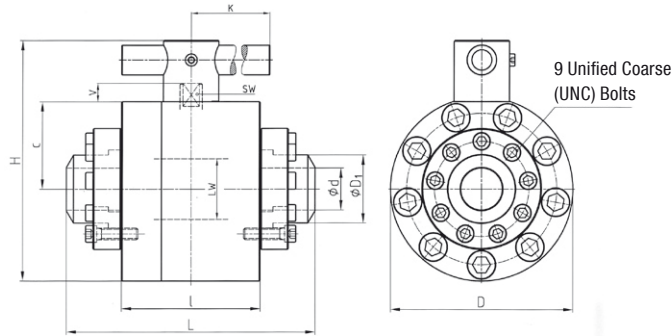
#### ⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD5A	<b>-LD5A</b>
Supplied with Locking Device LD5B	<b>-LD5B</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.



### High-Pressure Round Body Ball Valve - Type BBVF Flange Connection with Butt Weld Ends

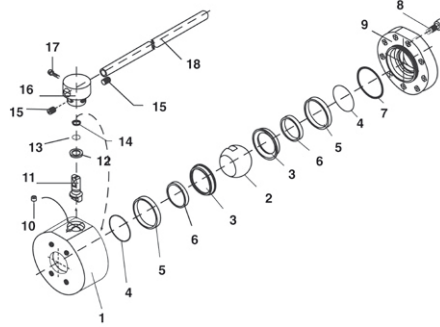
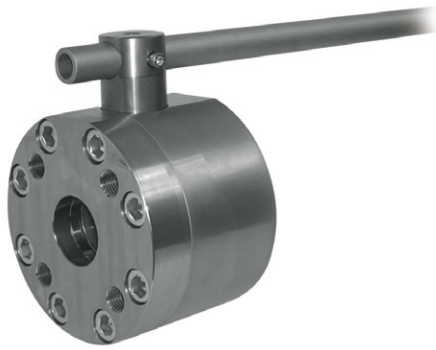
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Nominal Size DN	Dimensions (mm/in)											Bolt Type	Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
		LW	L	I	D	H	c	V	K	SW	d	D1				
40	65	65	250	150	198	259	94	21	600	16	45	73	1/2-13 UNC x 1-3/4 (Grade 8)	475	40	BBVF2A400001M
		2.56	9.84	5.91	7.80	10.20	3.70	.83	23.62	.63	1.77	2.87		6800	88.00	
48	80	76	260	140	210	277	100	26	600	19	58,4	88,9	5/8-11 UNC x 1-3/4 (Grade 8)	420	45,5	BBVF2A480001M
		2.99	10.24	5.51	8.27	10.91	3.94	1.02	23.62	.75	2.30	3.50		6000	100.10	
64	100	100	330	170	260	327	122	27	900	24	80,1	114,3	5/8-11 UNC x 1-3/4 (Grade 8)	365	75	BBVF2A640001M
		3.94	12.99	6.69	10.24	12.87	4.80	1.06	35.43	0.94	3.15	4.50		5200	165.00	
80	125	118	370	210	300	380	140	33	900	36	103,2	141,3	3/4-10 UNC x 2-1/4 (Grade 8)	329	120	BBVF2A800001M
		4.65	14.57	8.27	11.81	14.96	5.51	1.30	35.43	1.42	4.06	5.56		4700	264.00	

Please note: Lever must be fixed in central position during operation. In case of vibration, the lever may otherwise operate the valve by itself.

## High-Pressure Round Body Ball Valve - Type BBV2D



### List of Components

No.	Qty.	Description
1	1	Housing
2	1	Ball
3*	2	Seat
4*	2	O-Ring
5	2	Outer S/S Support Ring
6	2	Inner S/S Support Ring
7*	1	Cover O-Ring
8	9	Cover Bolts
9	1	Cover
10	1	Stop Screw
11	1	Stem
12*	1	Thrust Ring
13*	1	Stem O-Ring
14*	1	Back-up Ring
15	2	Set Screws
16	1	Stem/Handle Adaptor
17	1	Screw
18	1	Steel Handle

\* Included in seal kit

### Characteristics

Two-way high-pressure round body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Round body design for in-line assembly
- Machined parts for reduced torque operation
- Designed for direct mount to reduce threads in fluid flow
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Aluminium (Nominal Size DN13)  
Zinc (Nominal Sizes DN19 and DN25)  
Aluminium (Nominal Sizes DN32 to DN56)  
Carbon Steel (Nominal Sizes DN63 to DN200)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 250 bar / 3600 PSI series ISO 6164 flange connection
- 400 bar / 5800 PSI series ISO 6164 flange connection
- 350 bar / 5000 PSI series (similar to ISO 6164) flange connection
- Metric ISO threads

#### Pressure Range

- Pressure range: up to 400bar / 5800PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

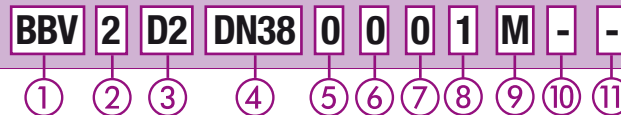
#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... + 212 °F

#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Round Body Ball Valve **BBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

400 bar / 5800 PSI Series ISO 6164 Flange Connection with Metric ISO Threads	<b>D2</b>
250 bar / 3600 PSI Series and 400 bar / 5800 PSI Series ISO 6164 Flange Connection with Metric ISO Threads	<b>D(1-2)</b>
350 bar / 5000 PSI Series (similar to ISO 6164) Flange Connection with Metric ISO Threads	<b>D3</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

Nominal Size DN					
DN13	DN19	DN25	DN32	DN38	DN51
DN56	DN63	DN80	DN100	DN125	DN150

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles	<b>M</b>
--	----------

#### ⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

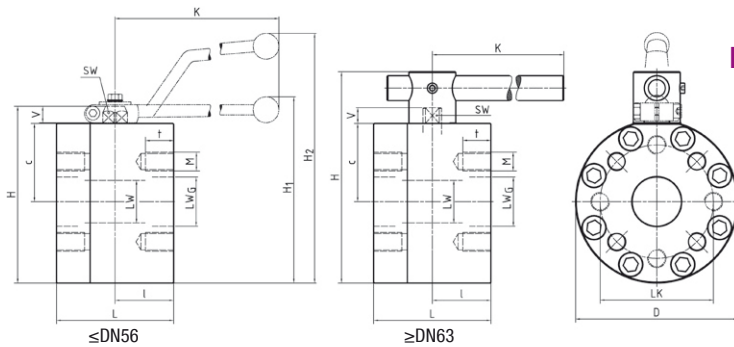
Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD4	<b>-LD4</b>
Supplied with Locking Device LD5B	<b>-LD5B</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.





### High-Pressure Round Body Ball Valve - Type BBV2Y ISO Flange Connection (ISO 6164)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (Nominal Size DN13)  
Zinc (Nominal Sizes DN19 and DN25)  
Aluminium (Nom. Sizes DN32 to DN56)  
Carbon Steel (Nom. Sizes DN63 to DN200)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 250 bar / 3600 PSI Series and 400 bar / 5800 PSI Series (ISO 6164) - Metric ISO Threads

STAUFF Size	Nominal Size DN	Dimensions (mm/in)															Nom. Pressure (bar/PSI)		Weight (kg/lbs)	Order Codes (Standard Option)
		LW	LWG	L	I	D	H	c	V	K	SW	LK	M	t	H1	H2				
08	13	15	15	85	45	78	83	31	13	160	12	42 <sup>1</sup>	4 x M8	16	127	5.00	250	400	2,90	BBV2D(1-2)DN130001M <sup>2</sup>
		.59	.59	3.35	1.77	3.07	3.27	1.22	.51	6.30	.47	1.65 <sup>1</sup>		.63			15	114	250	
12	19	20	20	88	38	119	110	36,5	14	200	14	50	4 x M8	.59	4.49		250	400	6,80	BBV2D(1-2)DN190001M <sup>2</sup>
		.79	.79	3.46	1.50	4.69	4.33	1.44	.55	7.87	.55	1.97		.59			24.5	187	3600	
16	25	25	25	88	38	126	117	39,5	14	200	14	62	4 x M10	20	120		250	400	7,20	BBV2D(1-2)DN250001M <sup>2</sup>
		.98	.98	3.46	1.50	4.96	4.61	1.56	.55	7.87	.55	2.44		.79			4.72	3600	5800	
20	32	32	32	105	50	145	158	68	17	320	17	73	4 x M12	21	167		250	400	12,50	BBV2D(1-2)DN320001M <sup>2</sup>
		1.26	1.26	4.13	1.97	5.71	6.22	2.68	.67	12.60	.67	2.87		.83			6.57	3600	5800	
24	38	38	38	110	55	165	178	78	17	320	17	85	4 x M16	24.5	187		250	400	16,60	BBV2D(1-2)DN380001M <sup>2</sup>
		1.50	1.50	4.33	2.17	6.50	7.01	3.07	.67	12.60	.67	3.35		.96			7.36	3600	5800	
32	51	48	47	116	58	198	210	94	17	320	17	98	4 x M16	25.5	219		250	400	24,90	BBV2D(1-2)DN510001M <sup>2</sup>
		1.89	1.85	4.57	2.28	7.80	8.27	3.70	.67	12.60	.67	3.86		1.00			8.62	3600	5800	
--	56	48	58	123	58	198	210	94	17	320	17	118	4 x M20	33	219		250	400	26,60	BBV2D(1-2)DN560001M <sup>2</sup>
		1.89	2.28	4.84	2.28	7.80	8.27	3.70	.67	12.60	.67	4.65		1.30			8.62	3600	5800	

#### 400 bar / 5800 PSI Series (ISO 6164) only - Metric ISO Threads

STAUFF Size	Nominal Size DN	Dimensions (mm/in)															Nom. Pressure (bar/PSI)		Weight (kg/lbs)	Order Codes (Standard Option)
		LW	LWG	L	I	D	H	c	V	K	SW	LK	M	t	H1	H2				
40	63	65	58	150	75	224	286	108	20	600	16	145	4 x M24	37.5			400		42,53	BBV2D2DN630001M <sup>3</sup>
		2.56	2.28	5.91	2.95	8.82	11.26	4.25	.79	23.62	.63	5.71		1.47			5800	93,56		
48	80	76	74	140	70	228	293	107	25	600	19	175	4 x M30	35			400		51,00	BBV2D2DN800001M <sup>3</sup>
		2.99	2.91	5.51	2.76	8.98	11.54	4.21	.98	23.62	.75	6.89		1.38			5800	112,20		

#### 350 bar / 5000 PSI Series (similar to ISO 6164) - Metric ISO Threads

STAUFF Size	Nominal Size DN	Dimensions (mm/in)															Nom. Pressure (bar/PSI)		Weight (kg/lbs)	Order Codes (Standard Option)
		LW	LWG	L	I	D	H	c	V	K	SW	LK	M	t	H1	H2				
12	19	20	20	88	38	119	110	36,5	14	200	14	64	4 x M12	22	114		350		6,80	BBV2D3DN190001M
		.79	.79	3.46	1.50	4.69	4.33	1.44	.55	7.87	.55	2.52		.87			4.49	5000	14,96	
16	25	25	25	88	38	126	117	39,5	14	200	14	72	4 x M12	20	120		350		7,20	BBV2D3DN250001M
		.98	.98	3.46	1.50	4.96	4.61	1.56	.55	7.87	.55	2.83		.79			4.72	5000	15,84	
20	32	32	32	105	50	145	158	68	17	320	17	80	4 x M16	24	167		350		12,50	BBV2D3DN320001M
		1.26	1.26	4.13	1.97	5.71	6.22	2.68	.67	12.60	.67	3.15		.95			6.57	5000	27,50	
24	38	38	38	110	55	165	178	78	17	320	17	98	4 x M16	25	187		350		16,60	BBV2D3DN380001M
		1.50	1.50	4.33	2.17	6.50	7.01	3.07	.67	12.60	.67	3.86		.98			7.36	5000	36,52	
32	51	48	48	122	58	198	210	94	17	320	17	118	4 x M20	28	219		350		24,90	BBV2D3DN510001M
		1.89	1.89	4.85	2.28	7.80	8.27	3.70	.67	12.60	.67	4.65		1.10			8.62	5000	54,78	
40	63	65	63	150	75	208	270	100	20	600	16	145	4 x M24	36			350		36,00	BBV2D3DN630001M <sup>3</sup>
		2.56	2.48	5.91	2.95	8.19	1.63	3.94	.79	23.62	.63	5.71		1.42			5000	79,36		
48	80	76	76	140	70	215	279	100	26	600	19	175	4 x M30	35			350		34,26	BBV2D3DN800001M <sup>3</sup>
		2.99	2.99	5.51	2.76	8.46	1.98	3.94	1.02	23.62	.75	6.89		1.38			5000	75,53		
64	100	100	100	200	100	260	327	122	26	900	24	200	8 x M24	36			350		70,00	BBV2D3DN1000001M <sup>3</sup>
		3.94	3.94	7.87	3.94	1.24	12.87	4.80	1.02	35.43	.94	7.87		1.42			5000	154,32		
80	125	118	118	230	110	390	470	185	32	900	36	245	8 x M30	45			350		209,00	BBV2D3DN1250001M <sup>3</sup>
		4.65	4.65	9.06	4.33	15.35	18.50	7.28	1.26	35.43	1.42	9.65		1.77			5000	460,77		
96	150	150	150	285	130	390	475	190	32	900	36	245	8 x M30	46			350		225,00	BBV2D3DN1500001M <sup>3</sup>
		5.91	5.91	11.22	5.12	15.35	18.70	7.48	1.26	35.43	1.42	9.65		1.81			5000	496,04		
128	200	200	192	378	150	456	598	223	61	940	46	315	8 x M36	55			350		395,00	BBV2D3DN2000001M <sup>3</sup>
		7.87	7.56	14.88	5.91	17.95	23.54	8.78	2.40	37.01	1.81	12.40		2.17			5000	868,62		

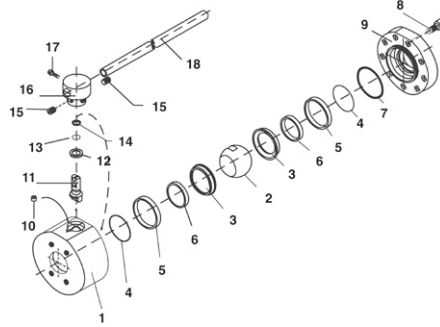
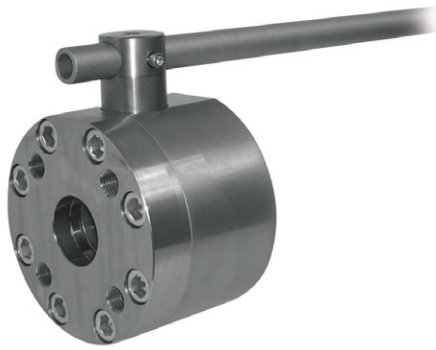
Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

<sup>1</sup> Dimension LK turned by 45°.

<sup>2</sup> Suitable for 250 bar / 3600 PSI series and 400 bar / 5800 PSI series.

<sup>3</sup> Please note: Lever must be fixed in central position during operation. In case of vibration, the lever may otherwise operate the valve by itself.

## High-Pressure Round Body Ball Valve - Type BBV2Y



### List of Components

No.	Qty.	Description
1	1	Housing
2	1	Ball
3*	2	Seat
4*	2	O-Ring
5	2	Outer S/S Support Ring
6	2	Inner S/S Support Ring
7*	1	Cover O-Ring
8	9	Cover Bolts
9	1	Cover
10	1	Stop Screw
11	1	Stem
12*	1	Thrust Ring
13*	1	Stem O-Ring
14*	1	Back-up Ring
15	2	Set Screws
16	1	Stem/Handle Adaptor
17	1	Screw
18	1	Steel Handle

\* Included in seal kit

### Characteristics

Two-way high-pressure round body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Round body design for in-line assembly
- Machined parts for reduced torque operation
- Designed for direct mount to reduce threads in fluid flow
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 250 bar / 3600 PSI series CETOP RP 63 H flange connection
- 400 bar / 5800 PSI series CETOP RP 63 H flange connection
- Metric ISO threads

#### Pressure Range

- Pressure range: up to 400 bar / 5800 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

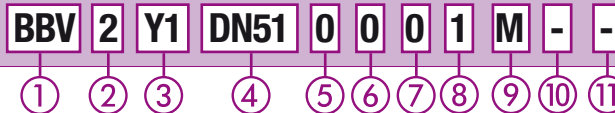
#### Temperature Range

- Operating temperature range: -20 °C ... +100 °C / -4 °F ... + 212 °F

#### Options / Accessories

- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Round Body Ball Valve **BBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

250 bar / 3600 PSI Series CETOP Flange Connection with Metric ISO Threads	<b>Y1</b>
400 bar / 5800 PSI Series CETOP Flange Connection with Metric ISO Threads	<b>Y2</b>
250 bar / 3600 PSI Series <u>and</u> 400 bar / 5800 PSI Series CETOP Flange Connection with Metric ISO Threads	<b>Y(1-2)</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

Nominal Size DN			
<b>DN51</b>	<b>DN56</b>	<b>DN63</b>	<b>DN100</b>

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

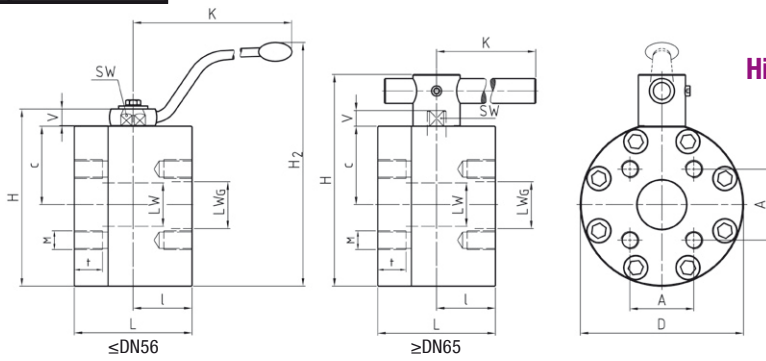
Supplied with standard lever (according to table) **-**  
Supplied without lever **-0**

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD4	<b>-LD4</b>
Supplied with Locking Device LD5B	<b>-LD5B</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size <b>**</b> )	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size <b>**</b> )	<b>-ESA**</b>

Please see page F93-F97 for further information and options.





### High-Pressure Round Body Ball Valve - Type BBV2Y CETOP Flange Connection (CETOP RP 63 H)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 250 bar / 3600 PSI Series (CETOP RP 63 H) - Metric ISO Threads

STAUFF Size	Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure		Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	LWG	L	I	D	H	c	V	K	SW	A	M	t	H2	(bar)			(PSI)
32	2	51	48	47	116	58	198	210	94	17	320	17	69,4	M16	24,5	219	250	400	24,90	BBV2Y(1-2)DN510001M <sup>1</sup>
			1.89	1.85	4.57	2.28	7.80	8.27	3.70	.67	12.60	.67	2.73		.96	8.62	3600	5800	54.78	
--	2-1/2	56	48	58	123	58	198	210	94	17	320	17	83,4	M20	33	219	250	400	26,60	BBV2Y(1-2)DN560001M <sup>1</sup>
			1.89	2.28	4.84	2.28	7.80	8.27	3.70	.67	12.60	.67	3.28		1.30	8.62	3600	5800	58.52	
40	3	63	63	70	150	75	208	270	100	20	600	16	102,5	M20	33	/	250		36,90	BBV2Y1DN630001M
			2.48	2.76	5.91	2.95	8.19	1.63	3.94	.79	23.62	.63	4.04		1.30		3600	81.18		
64	4	100	100	90	200	100	258	326	122	26	900	24	113,2	M24	40	/	250		70,40	BBV2Y1DN1000001M
			3.94	3.54	7.87	3.93	10.16	12.83	4.80	1.02	35.43	.94	4.46		1.57		3600	154.88		

#### 400 bar / 5800 PSI Series (CETOP RP 63 H) - Metric ISO Threads

STAUFF Size	Flange Size	Nominal Size DN	Dimensions (mm/in)													Nom. Pressure		Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	LWG	L	I	D	H	c	V	K	SW	A	M	t	H2	(bar)			(PSI)
32	2	51	48	47	116	58	198	210	94	17	320	17	69,4	M16	24,5	219	250	400	24,90	BBV2Y(1-2)DN510001M <sup>1</sup>
			1.89	1.85	4.57	2.28	7.80	8.27	3.70	.67	12.60	.67	2.73		.96	8.62	3600	5800	54.78	
--	2-1/2	56	48	58	123	58	198	210	94	17	320	17	83,4	M20	33	219	250	400	26,60	BBV2Y(1-2)DN560001M <sup>1</sup>
			1.89	2.28	4.84	2.28	7.80	8.27	3.70	.67	12.60	.67	3.28		1.30	8.62	3600	5800	58.52	
40	3	63	63	58	150	75	224	286	108	20	600	16	102,5	M20	37,5	/	400		42,53	BBV2Y2DN630001M <sup>2</sup>
			2.56	2.28	5.91	2.95	8.82	11.26	4.25	.79	23.62	.63	4.04		1.47		5800	93.56		
64	4	100	76	74	140	70	228	293	107	25	600	19	113,2	M24	35	/	400		51,00	BBV2Y2DN1000001M <sup>2</sup>
			2.99	2.91	5.51	2.76	8.98	11.54	4.21	.98	23.62	.75	4.46		1.38		5800	112.20		

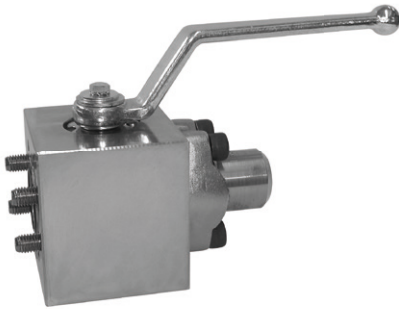
**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

Lever must be fixed in central position during operation. In case of vibration, the lever may otherwise operate the valve by itself.

<sup>1</sup> Suitable for 250 bar / 3600 PSI series and 400 bar / 5800 PSI series.

<sup>2</sup> Available on request.

## High-Pressure Block Body Ball Valve - Type KHZ



### Characteristics

Two-way high-pressure block body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Compact block body design for manifold mounting or in-line assembly
- Supplied with off-set lever

**Please note: Manifold side of valve must be secured to manifold or flange prior to operation. Failure to comply could lead to serious injury or death.**

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 3000 PSI (code 61) SAE flange bore patterns
- 6000 PSI (code 62) SAE flange bore patterns
- Metric ISO and unified coarse (UNC) threads

#### Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

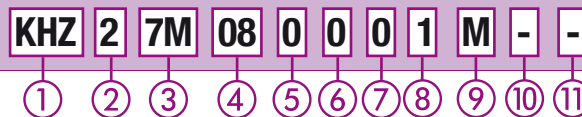
#### Temperature Range

- Operating temperature range: -20 °C ... +100 °C / -4 °F ... + 212 °F

#### Options / Accessories

- Flanges and flange kits (see Flanges section)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Compact Block Body Ball Valve **KHZ**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

3000 PSI (code 61) SAE Flange Bore Patterns and Metric ISO Threads	<b>7M</b>
3000 PSI (code 61) SAE Flange Bore Patterns and Unified Coarse (UNC) Threads	<b>7</b>
6000 PSI (code 62) SAE Flange Bore Patterns and Metric ISO Threads	<b>8M</b>
6000 PSI (code 62) SAE Flange Bore Patterns and Unified Coarse (UNC) Threads	<b>8</b>

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table):

<b>08</b>	<b>12</b>	<b>16</b>	<b>20</b>	<b>24</b>	<b>32</b>
-----------	-----------	-----------	-----------	-----------	-----------

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated **0**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated  
Stem: Carbon Steel **0**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) **0**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®) **0**  
FPM (Viton®) **1**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

Supplied with standard lever (according to table) **-**  
Supplied without lever **-0**

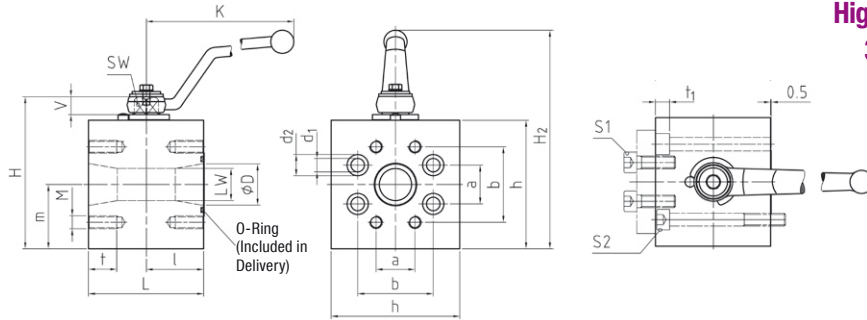
Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size <b>**</b> )	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size <b>**</b> )	<b>-ESA**</b>

Please see page F93-F97 for further information and options.

### High-Pressure Block Body Ball Valve - Type KHZ 3000 PSI SAE Flange Connection (ISO 6162-1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### 3000 PSI Series (Code 61) - Metric ISO Threads

STAUFF Size	Flange Size	Nominal Size DN	Dimensions (mm/m)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)					
			LW	D	L	I	H	h	m	K	SW	V	a	b	M				t	d1	d2	t1	H2
08	1/2	13	13	13	68	34	72	58	30	115	9	11	17,5	38,1	M8	15	8,5	13,5	9	109	350	1,80	KHZ27M080001M
			.51	.51	2.68	1.34	2.83	2.28	1.18	4.53	.35	.43	.69	1.50		.59	.33	.53	.35	4.29	5000	3.96	
12	3/4	20	20	20	70	35	93	75	37,5	170	14	14	22,3	47,6	M10	17	10,5	16,5	11	146	350	2,80	KHZ27M120001M
			.79	.79	2.76	1.38	3.66	2.95	1.48	6.69	.55	.55	.88	1.87		.67	.41	.65	.43	5.75	5000	6.16	
16	1	25	25	25	78	39	103	84,5	44	170	14	14	26,2	52,4	M10	17	10,5	16,5	11	155	320	3,90	KHZ27M160001M
			.98	.98	3.07	1.54	4.06	3.33	1.73	6.69	.55	.55	1.03	2.06		.67	.41	.65	.43	6.10	4600	8.58	
20	1-1/4	32	25	32	90	45	118,5	100	50	170	14	14	30,2	58,7	M10	21	10,5	16,5	11	171	280	6,50	KHZ27M200001M
			.98	1.26	3.54	1.77	4.67	3.94	1.97	6.69	.55	.55	1.19	2.31		.83	.41	.65	.43	6.73	4000	14.30	
24	1-1/2	40	32	38	99	49,5	141,5	120	60	306	17	17	35,7	69,9	M12	21	13	19	13	206	280	10,50	KHZ27M240001M
			1.26	1.50	3.90	1.95	5.57	4.72	2.36	12.05	.67	.67	1.41	2.75		.83	.51	.75	.51	8.11	4000	23.10	
32	2	50	38	49	120	60	158,5	137,5	70	306	17	17	42,9	77,8	M12	21	13	19	13	223	280	16,50	KHZ27M320001M
			1.50	1.93	4.72	2.36	6.24	5.41	2.76	12.05	.67	.67	1.69	3.06		.83	.51	.75	.51	8.78	4000	36.30	

#### 3000 PSI Series (Code 61) - Unified Coarse (UNC) Threads

STAUFF Size	Flange Size	Nominal Size DN	Dimensions (mm/m)													Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)					
			LW	D	L	I	H	h	m	K	SW	V	a	b	M				t	d1	d2	t1	H2
08	1/2	13	13	13	68	34	72	58	30	115	9	11	17,5	38,1	5/16-18 UNC	15	8,5	13,5	9	109	350	1,80	KHZ27080001M
			.51	.51	2.68	1.34	2.83	2.28	1.18	4.53	.35	.43	.69	1.50		.59	.33	.53	.35	4.29	5000	3.96	
12	3/4	20	20	20	70	35	93	75	37,5	170	14	14	22,3	47,6	3/8-16 UNC	17	10,5	16,5	11	146	350	2,80	KHZ27120001M
			.79	.79	2.76	1.38	3.66	2.95	1.48	6.69	.55	.55	.88	1.87		.67	.41	.65	.43	5.75	5000	6.16	
16	1	25	25	25	78	39	103	84,5	44	170	14	14	26,2	52,4	3/8-16 UNC	17	10,5	16,5	11	155	320	3,90	KHZ27160001M
			.98	.98	3.07	1.54	4.06	3.33	1.73	6.69	.55	.55	1.03	2.06		.67	.41	.65	.43	6.10	4600	8.58	
20	1-1/4	32	25	32	90	45	118,5	100	50	170	14	14	30,2	58,7	7/16-14 UNC	21	10,5	16,5	11	171	280	6,50	KHZ27200001M
			.98	1.26	3.54	1.77	4.67	3.94	1.97	6.69	.55	.55	1.19	2.31		.83	.41	.65	.43	6.73	4000	14.30	
24	1-1/2	40	32	38	99	49,5	141,5	120	60	306	17	17	35,7	69,9	1/2-13 UNC	21	13	19	13	206	280	10,50	KHZ27240001M
			1.26	1.50	3.90	1.95	5.57	4.72	2.36	12.05	.67	.67	1.41	2.75		.83	.51	.75	.51	8.11	4000	23.10	
32	2	50	38	49	120	60	158,5	137,5	70	306	17	17	42,9	77,8	1/2-13 UNC	21	13	19	13	223	280	16,50	KHZ27320001M
			1.50	1.93	4.72	2.36	6.24	5.41	2.76	12.05	.67	.67	1.69	3.06		.83	.51	.75	.51	8.78	4000	36.30	

#### Recommended Bolts and O-Rings

STAUFF Size	Nominal Size DN	Recommendations		
		Bolt S1 (min)	Bolt S2 (min)	O-ring (Included in Delivery)
08	13	M8 x 30 - 10.9	M8 x 70 - 10.9	18,64 x 3,53
		5/16-18 UNC x 1-1/4 - Gr. 8	5/16-18 UNC x 2-3/4 - Gr. 8	
12	20	M10 x 30 - 10.9	M10 x 80 - 10.9	24,99 x 3,53
		3/8-16 UNC x 1-1/4 - Gr. 8	3/8-16 UNC x 3-1/4 - Gr. 8	
16	25	M10 x 30 - 10.9	M10 x 80 - 10.9	32,92 x 3,53
		3/8-16 UNC x 1-1/4 - Gr. 8	3/8-16 UNC x 3-1/4 - Gr. 8	
20	32	M10 x 30 - 10.9	M10 x 90 - 10.9	37,69 x 3,53
		7/16-14 UNC x 1-1/4 - Gr. 8	7/16-14 UNC x 3-1/2 - Gr. 8	
24	40	M12 x 35 - 10.9	M12 x 100 - 10.9	47,22 x 3,53
		1/2-13 UNC x 1-1/2 - Gr. 8	1/2-13 UNC x 4 - Gr. 8	
32	50	M12 x 35 - 10.9	M12 x 120 - 10.9	56,74 x 3,53
		1/2-13 UNC x 1-1/2 - Gr. 8	1/2-13 UNC x 4-3/4 - Gr. 8	

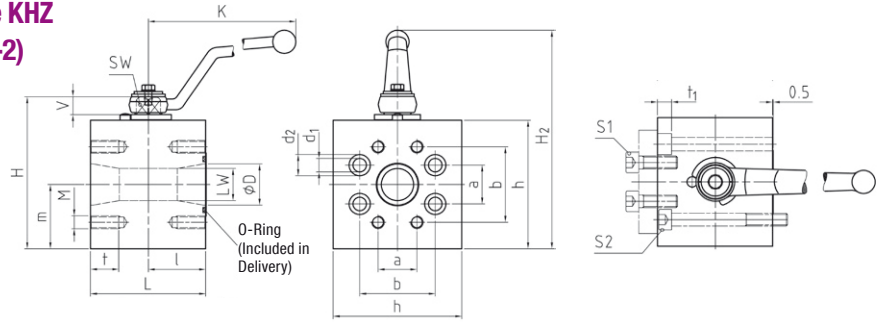
Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

Flanges and bolts are not included in delivery.

**High-Pressure Block Body Ball Valve - Type KHZ**  
**6000 PSI SAE Flange Connection (ISO 6162-2)**

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)



**6000 PSI Series (Code 62) - Metric ISO Threads**

STAUFF Size	Flange Size	Nominal Size DN	Dimensions (mm/m)													Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)					
			LW	D	L	I	H	h	m	K	SW	V	a	b	M				t	d1	d2	t1	H2
08	1/2	13	13	13	68	34	72	58	30	115	9	11	18,2	40,5	M8	15	8,5	13,5	9	109	420	1,80	KHZ28M080001M
			.51	.51	2.68	1.34	2.83	2.28	1.18	4.53	.35	.43	.72	1.59		.59	.33	.53	.35	4.29	6000	3.96	
12	3/4	20	20	20	70	35	93	75	37,5	170	14	14	23,8	50,8	M10	17	10,5	16,5	11	146	420	2,80	KHZ28M120001M
			.79	.79	2.76	1.38	3.66	2.95	1.48	6.69	.55	.55	.94	2.00		.67	.41	.65	.43	5.75	6000	6.16	
16	1	25	25	25	78	39	103	84,5	44	170	14	14	27,8	57,2	M12	21	13	19	13	155	420	3,90	KHZ28M160001M
			.98	.98	3.07	1.54	4.06	3.33	1.73	6.69	.55	.55	1.09	2.25		.83	.51	.75	.51	6.10	6000	8.58	
20	1-1/4	32	25	32	90	45	118,5	100	50	170	14	14	31,8	66,6	M12	20	13	19	13	171	420	6,50	KHZ28M200001M
			.98	1.26	3.54	1.77	4.67	3.94	1.97	6.69	.55	.55	1.25	2.62		.79	.51	.75	.51	6.73	6000	14.30	
24	1-1/2	40	32	38	99	49,5	141,5	120	60	306	17	17	36,5	79,3	M16	26	17	25	17,5	206	420	10,50	KHZ28M240001M
			1.26	1.50	3.90	1.95	5.57	4.72	2.36	12.05	.67	.67	1.44	3.12		1.02	.67	.98	.69	8.11	6000	23.10	
32	2	50	38	49	120	60	158,5	137,5	70	306	17	17	44,5	96,8	M20	34	21	31	21,5	223	420	16,50	KHZ28M320001M
			1.50	1.93	4.72	2.36	6.24	5.41	2.76	12.05	.67	.67	1.75	3.81		1.34	.83	1.22	.85	8.78	6000	36.30	

**6000 PSI Series (Code 62) - Unified Coarse (UNC) Threads**

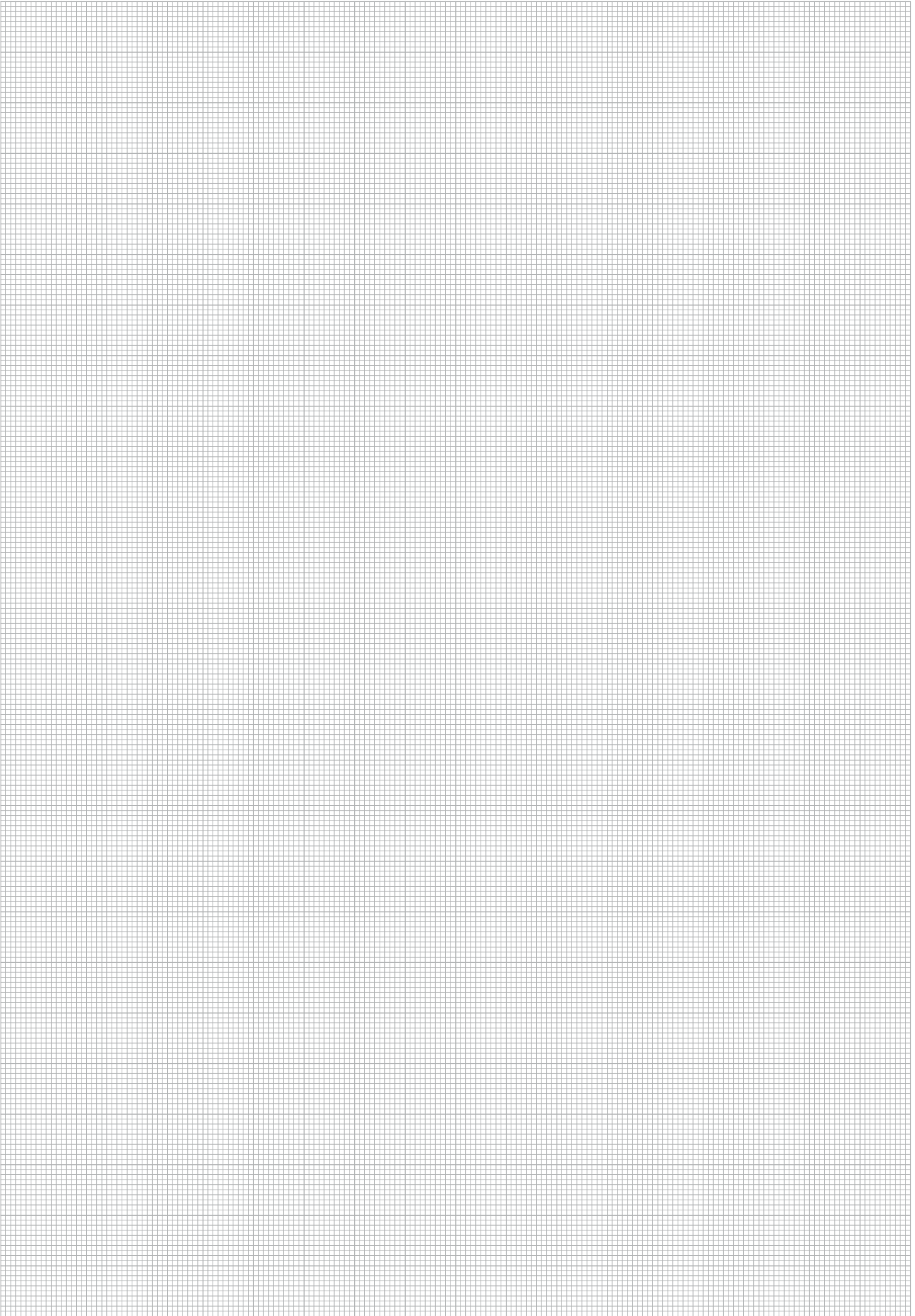
STAUFF Size	Flange Size	Nominal Size DN	Dimensions (mm/m)													Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)					
			LW	D	L	I	H	h	m	K	SW	V	a	b	M				t	d1	d2	t1	H2
08	1/2	13	13	13	68	34	72	58	30	115	9	11	18,2	40,5	5/16-18 UNC	15	8,5	13,5	9	109	420	1,80	KHZ28080001M
			.51	.51	2.68	1.34	2.83	2.28	1.18	4.53	.35	.43	.72	1.59		.59	.33	.53	.35	4.29	6000	3.96	
12	3/4	20	20	20	70	35	93	75	37,5	170	14	14	23,8	50,8	3/8-16 UNC	17	10,5	16,5	11	146	420	2,80	KHZ28120001M
			.79	.79	2.76	1.38	3.66	2.95	1.48	6.69	.55	.55	.94	2.00		.67	.41	.65	.43	5.75	6000	6.16	
16	1	25	25	25	78	39	103	84,5	44	170	14	14	27,8	57,2	7/16-14 UNC	21	13	19	13	155	420	3,90	KHZ28160001M
			.98	.98	3.07	1.54	4.06	3.33	1.73	6.69	.55	.55	1.09	2.25		.83	.51	.75	.51	6.10	6000	8.58	
20	1-1/4	32	25	32	90	45	118,5	100	50	170	14	14	31,8	66,6	1/2-13 UNC	20	13	19	13	171	420	6,50	KHZ28200001M
			.98	1.26	3.54	1.77	4.67	3.94	1.97	6.69	.55	.55	1.25	2.62		.79	.51	.75	.51	6.73	6000	14.30	
24	1-1/2	40	32	38	99	49,5	141,5	120	60	306	17	17	36,5	79,3	5/8-11 UNC	26	17	25	17,5	206	420	10,50	KHZ28240001M
			1.26	1.50	3.90	1.95	5.57	4.72	2.36	12.05	.67	.67	1.44	3.12		1.02	.67	.98	.69	8.11	6000	23.10	
32	2	50	38	49	120	60	158,5	137,5	70	306	17	17	44,5	96,8	3/4-10 UNC	34	21	31	21,5	223	420	16,50	KHZ28320001M
			1.50	1.93	4.72	2.36	6.24	5.41	2.76	12.05	.67	.67	1.75	3.81		1.34	.83	1.22	.85	8.78	6000	36.30	

**Recommended Bolts and O-Rings**

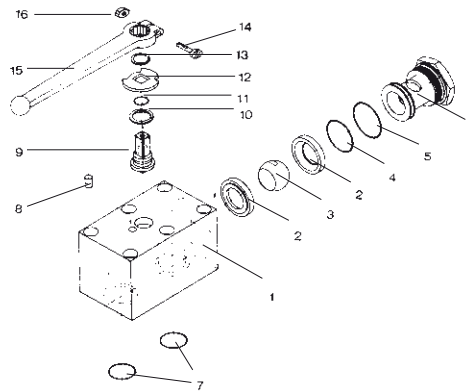
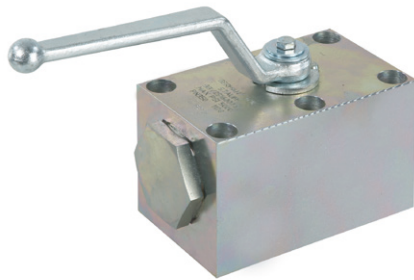
STAUFF Size	Nominal Size DN	Recommendations		
		Bolt S1 (min)	Bolt S2 (min)	O-ring (Included in Delivery)
08	13	M8 x 30 - 10.9	M8 x 70 - 10.9	18,64 x 3,53
		5/16-18 UNC x 1-1/4 - Gr. 8	5/16-18 UNC x 2-3/4 - Gr. 8	
12	20	M10 x 35 - 12.9	M10 x 80 - 12.9	24,99 x 3,53
		3/8-16UNC x 1-1/2 - Gr. 10	3/8-16UNC x 3-1/4 - Gr. 10	
16	25	M12 x 45 - 10.9	M12 x 80 - 10.9	32,92 x 3,53
		7/16-14 UNC x 1-3/4 - Gr. 8	7/16-14 UNC x 3-1/4 - Gr. 8	
20	32	M12 x 45 - 10.9	M12 x 90 - 10.9	37,69 x 3,53
		7/16-14 UNC x 1-3/4 - Gr. 8	7/16-14 UNC x 3-1/2 - Gr. 8	
24	40	M16 x 55 - 10.9	M16 x 100 - 10.9	47,22 x 3,53
		5/8-11 UNC x 2-1/4 - Gr. 8	5/8-11 UNC x 4 - Gr. 8	
32	50	M20 x 70 - 10.9	M20 x 130 - 10.9	56,74 x 3,53
		3/4-10 UNC x 2-3/4 - Gr. 8	3/4-10 UNC x 5-1/4 - Gr. 8	

Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.

Flanges and bolts are not included in delivery.



## High-Pressure Block Body Ball Valve ■ Type BBV25



### List of Components

No.	Qty.	Description
1	1	Body
2*	1	Seats
3	2	Ball
4*	2	O-Ring
5*	2	O-Ring
6	2	Retainer Plug
7*	2	O-Ring
8	1	Stop Pin
9	1	Stem
10*	1	Thrust Ring
11	1	O-Ring
12	1	Cam Plate
13	1	Snap Ring
14	1	Clamping Screw
15	1	Handle
16	1	Clamping Nut

\* Included in seal kit

### Characteristics

Two-way high-pressure block body ball valves designed for use as on/off devices for hydraulic applications

#### Standard Construction

- Block body design for manifold mounting
- Improved manifold design eliminates external piping and connectors
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 16)  
Aluminium (STAUFF Sizes 20 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Manifold mounting
- Either 4 or 6 mounting holes for added safety (bolts are not included in delivery)

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

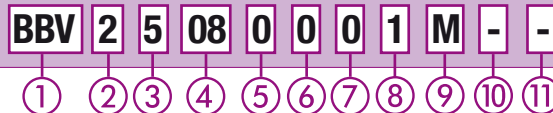
#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... + 212 °F

#### Options / Accessories

- Three-way version with 90° operation (see pages F42-F43)
- Three-way version with 180° operation (see pages F44-F45)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

### Order Codes



#### ① Type

High-Pressure Block Body Ball Valve **BBV**

#### ② Number of Ports

Two Ports (Two-Way Ball Valve) **2**

#### ③ Connection Style

Manifold Mounting **5**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table):  
**04 06 08 12 16 20 24 32**

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated **0**  
Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated **0**  
Stem: Carbon Steel **0**  
Ball / Stem: Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) **0**  
PEEK **G**  
Delrin® (POM) with  
Protection Ring against Erosion **H**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®) **0**  
FPM (Viton®) **1**  
EPDM **3**  
NBR (Buna-N®) for Low-Temperature Applications **X**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

Supplied with standard lever (according to table) **-**  
Supplied without lever **-0**

Alternative levers can be ordered separately. Please see page F92 for further information.

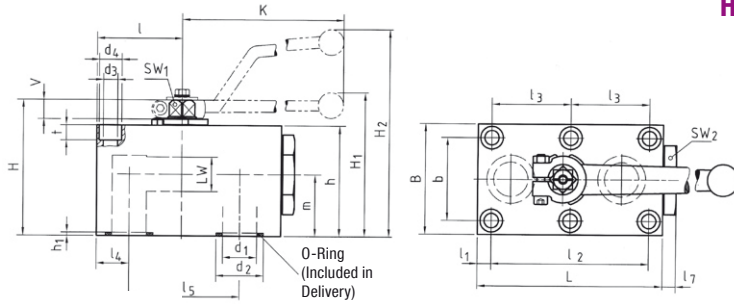
#### ⑪ Accessories / Options

Supplied without accessories **-**  
Supplied with Locking Device LD1 **-LD1**  
Supplied with Locking Device LD4 **-LD4**  
Supplied with Double-Acting Pneumatic Actuator (Please add size \*\*) **-EDA\*\***  
Supplied with Single-Acting Pneumatic Actuator (Please add size \*\*) **-ESA\*\***

Please see page F93-F97 for further information and options.



## High-Pressure Block Body Ball Valve - Type BBV25 Manifold Mounting



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 16)  
Aluminium (STAUFF Sizes 20 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)			
		l	l1	l2	l3	l4	l5	l7	L	B	b	H	h	m	V	SW1	SW2	K	LW	H1	H2	d1	d2	h1			
04	6	26	8,5	35	8,5	35	6	57	40	27	43	35	19,5	6	7	19	80	6	67	6	11,8	1,9	500	0,60	BBV25040001M		
		1.02	.33	1.38	.33	1.38	.24	2.24	1.57	1.06	1.69	1.38	.77	.24	.28	.75	3.15	.24	2.64	.24	.46	.07	7250	1.32			
06	10	29	7,5	55	10	44	10	70	55	40	59	45	24,5	11	9	30	115	10	93	9,5	14,9	1,9	500	1,30	BBV25060001M		
		1.14	.30	2.17	.39	1.73	.39	2.76	2.17	1.57	2.32	1.77	.96	.43	.35	1.18	4.53	.39	3.66	.37	.59	.07	7250	2.86			
08	13	42,5	7,5	83	41,5	16	58	10	98	60	45	69	55	34	11	9	32	115	13	104	13	24,9	1,9	400	2,20	BBV25080001M	
		1.67	.30	3.27	1.63	.63	2.28	.39	3.86	2.36	1.77	2.72	2.17	1.34	.43	.35	1.26	4.53	.51	4.09	.51	.98	.07	5800	4.84		
12	20	51	10	97	48,5	20	69	10	117	70	51	88	70	37,5	14	14	46	200	20	92	20	29	2	315	3,90	BBV25120001M	
		2.01	.39	3.82	1.91	.79	2.72	.39	4.61	2.76	2.01	3.46	2.76	1.48	.55	.55	1.81	7.87	.79	3.62	.79	1.14	.08	4500	8.58		
16	25	62	10	115	57,5	24	81	10	135	80	60	98	80	44,5	14	14	50	200	25	102	25	34,9	2,3	315	5,65	BBV25160001M	
		2.44	.39	4.53	2.26	.94	3.19	.39	5.31	3.15	2.36	3.86	3.15	1.75	.55	.55	1.97	7.87	.98	4.02	.98	1.37	.09	4500	12.43		
20	32	75	12	136	68	29	96	10	165	100	78	121	100	54,5	17	17	65	320	32	130	32	40	2	315	11,10	BBV25200001M	
		2.95	.47	5.35	2.68	1.14	3.78	.39	6.50	3.94	3.07	4.76	3.94	2.15	.67	.67	2.56	12.60	1.26	5.12	1.26	1.57	.08	4500	24.42		
24	40	84,5	28,5	112	56	28,5	112	17	200	130	95	131	110	57	17	17	80	320	38	140	38	47,7	2,3	420	19,00	BBV25240001M	
		3.33	1.12	4.41	2.20	1.12	4.41	.67	7.87	5.12	3.74	5.16	4.33	2.24	.67	.67	3.15	12.60	1.50	5.51	1.50	1.88	.09	6000	41.80		
32	50	106	38	136	68	38	136	15	240	150	112	150	129	71	17	17	90	320	48	159	48	59,8	2,3	420	29,30	BBV25320001M	
		4.17	1.50	5.35	2.68	1.50	5.35	.59	9.45	5.91	4.41	5.91	5.08	2.80	.67	.67	3.54	12.60	1.89	6.26	1.89	2.35	.09	6000	64.46		

### Recommended Bolts, Tightening Torques and O-Rings

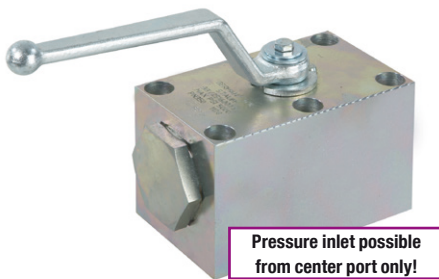
STAUFF Size	Nominal Size DN	Recommendations		Dimensions (mm/in)			Tightening Torque	O-Ring (Included in Delivery)
		Bolt (min)		d3	d4	t		
04	6	4 x M6 x 40 - 8.8		6,5	10,5	6,8	9 N-m	7x2,5
		4 x 1/4-20 x 1-1/2 UNC - Gr. 5		.26	.41	.27	10 ft-lb	
06	10	4 x M8 x 50 - 8.8		8,4	13,5	8,5	21 N-m	10x2,5
		4 x 1/4-20 x 2 UNC - Gr. 5		.33	.53	.33	10 ft-lb	
08	13	6 x M8 x 60 - 10.9		8,4	13,5	7	30 N-m	20x2,5
		6 x 5/16-18 x 2-1/2 UNC - Gr. 8		.33	.53	.28	29 ft-lb	
12	20	6 x M10 x 80 - 10.9		10,5	16,5	10,5	60 N-m	23,47x2,62
		6 x 3/8-16 x 3-1/4 UNC - Gr. 10		.41	.65	.41	58 ft-lb	
16	25	6 x M10 x 90 - 12.9		10,5	16,5	10,5	70 N-m	29x3
		6 x 3/8-16 x 3-1/2 UNC - Gr. 10		.41	.65	.41	58 ft-lb	
20	32	6 x M12 x 110 - 10.9		13	19	12	100 N-m	34,59x2,62
		6 x 7/16-14 x 4-1/2 UNC - Gr. 8		.51	.75	.47	70 ft-lb	
24	40	6 x M16 x 120 - 12.9		16,5	25	19	300 N-m	42x3
		6 x 5/8-11 x 5 UNC - Gr. 8		.65	.98	.75	170 ft-lb	
32	50	6 x M20 x 140 - 10.9		21	31	21,5	600 N-m	54x3
		6 x 3/4-10 x 5-1/2 UNC - Gr. 8		.83	1.22	.85	200 ft-lb	

Please note: Bolts are not included in delivery.

We recommend to use socket cap screws according to ISO 4762 or ANSI / ASME B18.3 for installation.



## High-Pressure Block Body Ball Valve - Type BBV35



### Characteristics

Three-way high-pressure block body ball valves designed for use as three-way selectors (L-bore, 90° operation) for hydraulic applications

#### Standard Construction

- Block body design for manifold mounting
- Improved manifold design eliminates external piping and connectors
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 16)  
Aluminium (STAUFF Sizes 20 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Manifold mounting
- Either 4 or 6 mounting holes for added safety (bolts are not included in delivery)

#### Pressure inlet only from the center port!

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

- Operating temperature range: -20 °C ... +100 °C / -4 °F ... +212 °F

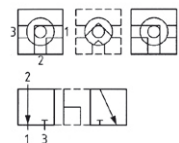
#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

- Symbol: LLU
- Overlap: negative
- Operating: 90°

#### 58-BBV35



- Stop of end position:

### Order Codes

**BBV 3 5 08 0 0 0 1 M - -**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

#### ① Type

High-Pressure Block Body Ball Valve **BBV**

#### ② Number of Ports

Three Ports (Three-Way Ball Valve) **3**

#### ③ Connection Style

Manifold Mounting **5**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table):

04	06	08	12	16	20	24	32
----	----	----	----	----	----	----	----

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
PEEK	<b>G</b>
Delrin® (POM) with Protection Ring against Erosion	<b>H</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>
EPDM	<b>3</b>
NBR (Buna-N®) for Low-Temperature Applications	<b>X</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

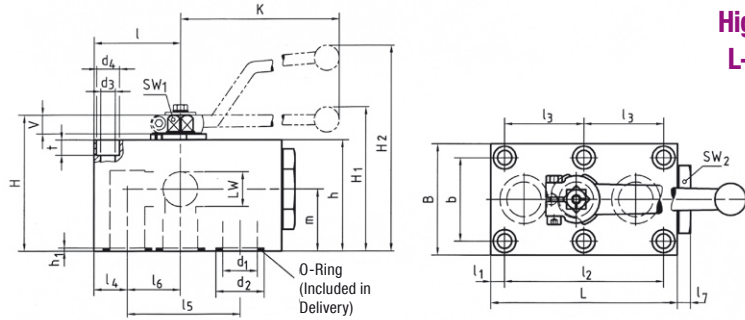
Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Locking Device LD4	<b>-LD4</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.

## High-Pressure Block Body Ball Valve - Type BBV35 L-Bore Three-Way Selector for Manifold Mounting



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 16)  
Aluminium (STAUFF Sizes 20 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

### Pressure Inlet only from the Center Port = 90° Operation

STAUFF Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)				
		l	l1	l2	l3	l4	l5	l6	l7	L	B	b	H	h	m	V	SW1	SW2	K	LW	H1	H2	d1	d2	h1			
04	6	26	8,5	35		8,5	35	17,5	6	57	40	27	43	35	19,5	6	7	19	80	6		67	6	11,8	1,9	500	0,60	BBV35040001M
		1.02	.33	1.38		.33	1.38	.69	.24	2.24	1.57	1.06	1.69	1.38	.77	.24	.28	.75	3.15	.24		2.64	.24	.46	.07	7250	1.32	
06	10	29	7,5	55		10	44	19	10	70	55	40	59	45	24,5	11	9	30	115	10		93	9,5	14,9	1,9	500	1,30	BBV35060001M
		1.14	.30	2.17		.39	1.73	.75	.39	2.76	2.17	1.57	2.32	1.77	.96	.43	.35	1.18	4.53	.39		3.66	.37	.59	.07	7250	2.86	
08	13	42,5	7,5	83	41,5	16	58	26,5	10	98	60	45	69	55	34	11	9	32	115	13		104	13	24,9	1,9	400	2,20	BBV35080001M
		1.67	.30	3.27	1.63	.63	2.28	1.04	.39	3.86	2.36	1.77	2.72	2.17	1.34	.43	.35	1.26	4.53	.51		4.09	.51	.98	.07	5800	4.84	
12	20	51	10	97	48,5	20	69	31,5	10	117	70	51	88	70	37,5	14	14	46	200	20	92		20	29	2	315	3,90	BBV35120001M
		2.01	.39	3.82	1.91	.79	2.72	1.24	.39	4.61	2.76	2.01	3.46	2.76	1.48	.55	.55	1.81	7.87	.79	3.62		.79	1.14	.08	4500	8.58	
16	25	62	10	115	57,5	24	81	38	10	135	80	60	98	80	44,5	14	14	50	200	25	102		25	34,9	2,3	315	5,65	BBV35160001M
		2.44	.39	4.53	2.26	.94	3.19	1.50	.39	5.31	3.15	2.36	3.86	3.15	1.75	.55	.55	1.97	7.87	.98	4.02		.98	1.37	.09	4500	12.43	
20	32	75	12	136	68	29	96	46	10	165	100	78	121	100	54,5	16,5	17	65	320	32	130		32	40	2	315	11,10	BBV35200001M
		2.95	.47	5.35	2.68	1.14	3.78	1.81	.39	6.50	3.94	3.07	4.76	3.94	2.15	.65	.67	2.56	12.60	1.26	5.12		1.26	1.57	.08	4500	24.42	
24	40	84,5	28,5	112	56	28,5	112	56	17	200	130	95	131	110	57	16,5	17	80	320	38	140		38	47,7	2,3	420	19,00	BBV35240001M
		3.33	1.12	4.41	2.20	1.12	4.41	2.20	.67	7.87	5.12	3.74	5.16	4.33	2.24	.65	.67	3.15	12.60	1.50	5.51		1.50	1.88	.09	6000	41.80	
32	50	106	38	136	68	38	136	68	15	240	150	112	150	129	71	16,5	17	90	320	48	159		48	59,8	2,3	420	29,30	BBV35320001M
		4.17	1.50	5.35	2.68	1.50	5.35	2.68	.59	9.45	5.91	4.41	5.91	5.08	2.80	.65	.67	3.54	12.60	1.89	6.26		1.89	2.35	.09	6000	64.46	

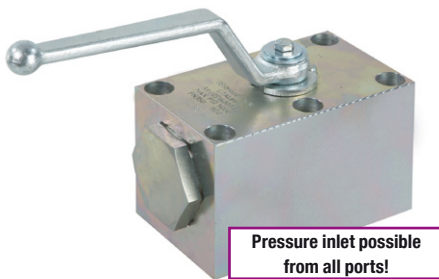
### Recommended Bolts, Tightening Torques and O-Rings

STAUFF Size	Nominal Size DN	Recommendations		Dimensions (mm/in)			Tightening Torque	O-Ring (Included in Delivery)
		Bolt (min)		d3	d4	t		
04	6	4 x M6 x 40 - 8.8		6,5	10,5	6,8	9 N·m	7x2,5
		4 x 1/4-20 x 1-1/2 UNC - Gr. 5		.26	.41	.27	10 ft·lb	
06	10	4 x M8 x 50 - 8.8		8,4	13,5	8,5	21 N·m	10x2,5
		4 x 1/4-20 x 2 UNC - Gr. 5		.33	.53	.33	10 ft·lb	
08	13	6 x M8 x 60 - 10.9		8,4	13,5	7	30 N·m	20x2,5
		6 x 5/16-18 x 2-1/2 UNC - Gr. 8		.33	.53	.28	29 ft·lb	
12	20	6 x M10 x 80 - 10.9		10,5	16,5	10,5	60 N·m	23,47x2,62
		6 x 3/8-16 x 3-1/4 UNC - Gr. 10		.41	.65	.41	58 ft·lb	
16	25	6 x M10 x 90 - 12.9		10,5	16,5	10,5	70 N·m	29x3
		6 x 3/8-16 x 3-1/2 UNC - Gr. 10		.41	.65	.41	58 ft·lb	
20	32	6 x M12 x 110 - 10.9		13	19	12	100 N·m	34,59x2,62
		6 x 7/16-14 x 4-1/2 UNC - Gr. 8		.51	.75	.47	70 ft·lb	
24	40	6 x M16 x 120 - 12.9		16,5	25	19	300 N·m	42x3
		6 x 5/8-11 x 5 UNC - Gr. 8		.65	.98	.75	170 ft·lb	
32	50	6 x M20 x 140 - 10.9		21	31	21,5	600 N·m	54x3
		6 x 3/4-10 x 5-1/2 UNC - Gr. 8		.83	1.22	.85	200 ft·lb	

#### Pressure inlet only from the center port!

Please note: Bolts are not included in delivery. We recommend to use socket cap screws according to ISO 4762 or ANSI / ASME B18.3 for installation.

## High-Pressure Block Body Ball Valve - Type BBVS35



### Characteristics

Three-way high-pressure block body ball valves designed for use as three-way selectors (L-bore, 180° operation) for hydraulic applications

#### Standard Construction

- Block body design for manifold mounting
- Improved manifold design eliminates external piping and connectors
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 16)  
Aluminium (STAUFF Sizes 20 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Manifold mounting
- Either 4 or 6 mounting holes for added safety (bolts are not included in delivery)

**Pressure inlet possible from all ports!  
Must be operated without pressure!**

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... +212 °F

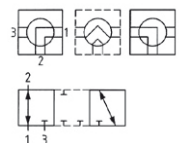
#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

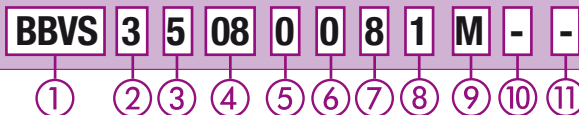
- Symbol: LU
- Overlap: positive
- Operating: 180°

#### 57-BBVS35



- Stop of end position:

### Order Codes



#### ① Type

High-Pressure Block Body Ball Valve with Pressure Inlet Possible from all Ports **BBVS**

#### ② Number of Ports

Three Ports (Three-Way Ball Valve) **3**

#### ③ Connection Style

Manifold Mounting **5**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table):

04	06	08	12	16	20	24	32
----	----	----	----	----	----	----	----

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) Frontside Sealing	<b>8</b>
PEEK	<b>G</b>
Delrin® (POM) with Protection Ring against Erosion	<b>H</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>
EPDM	<b>3</b>
NBR (Buna-N®) for Low-Temperature Applications	<b>X</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

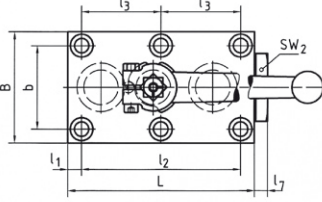
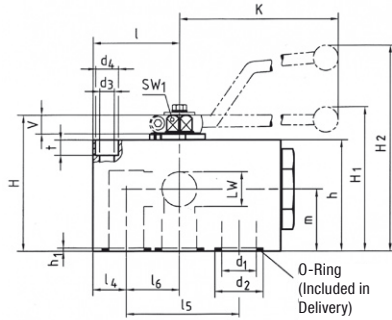
Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.



### High-Pressure Block Body Ball Valve - Type BBVS35 L-Bore Three-Way Selector for Manifold Mounting

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 16)  
Aluminium (STAUFF Sizes 20 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

#### Pressure Inlet possible from all Ports - 180° Operation

STAUFF Size	Nominal Size DN	Dimensions (mm/in)																				Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)				
		l	l1	l2	l3	l4	l5	l6	l7	L	B	b	H	h	m	V	SW1	SW2	K	LW	H1	H2	d1	d2	h1			
04	6	26	8,5	35	8,5	35	17,5	6	57	40	27	43	35	19,5	6	7	19	80	6	67	67	6	11,8	1,9	500	0,60	BBVS35040081M	
		1.02	.33	1.38	.33	1.38	.69	.24	2.24	1.57	1.06	1.69	1.38	.77	.24	.28	.75	3.15	.24	2.64	.24	.46	.07	7250	1.32			
06	10	29	7,5	55	10	44	19	10	70	55	40	59	45	24,5	11	9	30	115	10	93	93	9,5	14,9	1,9	500	1,30	BBVS35060081M	
		1.14	.30	2.17	.39	1.73	.75	.39	2.76	2.17	1.57	2.32	1.77	.96	.43	.35	1.18	4.53	.39	3.66	.37	.59	.07	7250	2.86			
08	13	42,5	7,5	83	41,5	16	58	26,5	10	98	60	45	69	55	34	11	9	32	115	13	104	13	24,9	1,9	400	2,20	BBVS35080081M	
		1.67	.30	3.27	1.63	.63	2.28	1.04	.39	3.86	2.36	1.77	2.72	2.17	1.34	.43	.35	1.26	4.53	.51	4.09	.51	.98	.07	5800	4.84		
12	20	51	10	97	48,5	20	69	31,5	10	117	70	51	88	70	37,5	14	14	46	200	20	92	20	29	2	315	3,90	BBVS35120081M	
		2.01	.39	3.82	1.91	.79	2.72	1.24	.39	4.61	2.76	2.01	3.46	2.76	1.48	.55	.55	1.81	7.87	.79	3.62	.79	1.14	.08	4500	8.58		
16	25	62	10	115	57,5	24	81	38	10	135	80	60	98	80	44,5	14	14	50	200	25	102	25	34,9	2,3	315	5,65	BBVS35160081M	
		2.44	.39	4.53	2.26	.94	3.19	1.50	.39	5.31	3.15	2.36	3.86	3.15	1.75	.55	.55	1.97	7.87	.98	4.02	.98	1.37	.09	4500	12.43		
20	32	75	12	136	68	29	96	46	10	165	100	78	121	100	54,5	16,5	17	65	320	32	130	32	40	2	315	11,10	BBVS35200081M	
		2.95	.47	5.35	2.68	1.14	3.78	1.81	.39	6.50	3.94	3.07	4.76	3.94	2.15	.65	.67	2.56	12.60	1.26	5.12	1.26	1.57	.08	4500	24.42		
24	40	84,5	28,5	112	56	28,5	112	56	17	200	130	95	131	110	57	16,5	17	80	320	38	140	38	47,7	2,3	420	19,00	BBVS35240081M	
		3.33	1.12	4.41	2.20	1.12	4.41	2.20	.67	7.87	5.12	3.74	5.16	4.33	2.24	.65	.67	3.15	12.60	1.50	5.51	1.50	1.88	.09	6000	41.80		
32	50	106	38	136	68	38	136	68	15	240	150	112	150	129	71	16,5	17	90	320	48	159	48	59,8	2,3	420	29,30	BBVS35320081M	
		4.17	1.50	5.35	2.68	1.50	5.35	2.68	.59	9.45	5.91	4.41	5.91	5.08	2.80	.65	.67	3.54	12.60	1.89	6.26	1.89	2.35	.09	6000	64.46		

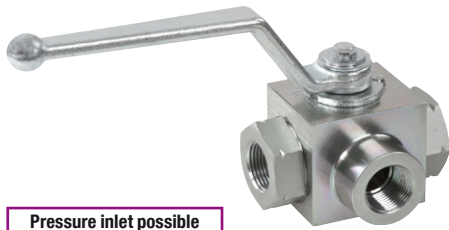
#### Recommended Bolts, Tightening Torques and O-Rings

STAUFF Size	Nominal Size DN	Recommendations		Dimensions (mm/in)			Tightening Torque	O-Ring (Included in Delivery)
		Bolt (min)		d3	d4	t		
04	6	4 x M6 x 40 - 8.8		6,5	10,5	6,8	9 N-m	7x2,5
		4 x 1/4-20 x 1-1/2 UNC - Gr. 5		.26	.41	.27	10 ft-lb	
06	10	4 x M8 x 50 - 8.8		8,4	13,5	8,5	21 N-m	10x2,5
		4 x 1/4-20 x 2 UNC - Gr. 5		.33	.53	.33	10 ft-lb	
08	13	6 x M8 x 60 - 10.9		8,4	13,5	7	30 N-m	20x2,5
		6 x 5/16-18 x 2-1/2 UNC - Gr. 8		.33	.53	.28	29 ft-lb	
12	20	6 x M10 x 80 - 10.9		10,5	16,5	10,5	60 N-m	23,47x2,62
		6 x 3/8-16 x 3-1/4 UNC - Gr. 10		.41	.65	.41	58 ft-lb	
16	25	6 x M10 x 90 - 12.9		10,5	16,5	10,5	70 N-m	29x3
		6 x 3/8-16 x 3-1/2 UNC - Gr. 10		.41	.65	.41	58 ft-lb	
20	32	6 x M12 x 110 - 10.9		13	19	12	100 N-m	34,59x2,62
		6 x 7/16-14 x 4-1/2 UNC - Gr. 8		.51	.75	.47	70 ft-lb	
24	40	6 x M16 x 120 - 12.9		16,5	25	19	300 N-m	42x3
		6 x 5/8-11 x 5 UNC - Gr. 8		.65	.98	.75	170 ft-lb	
32	50	6 x M20 x 140 - 10.9		21	31	21,5	600 N-m	54x3
		6 x 3/4-10 x 5-1/2 UNC - Gr. 8		.83	1.22	.85	200 ft-lb	

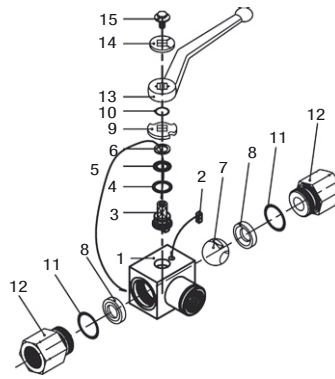
Pressure inlet possible from all ports!  
Must be operated without pressure!

Please note: Bolts are not included in delivery.  
We recommend to use socket cap screws according to ISO 4762 or ANSI / ASME B18.3 for installation.

## High-Pressure Block Body Ball Valve - Type CBVL



Pressure inlet possible from center port!



### List of Components

No.	Qty.	Description
1	1	Body
2	1	Stop Pin
3*	1	Stem
4*	1	Thrust Ring
5*	1	Stem O-Ring
6*	1	Stem Back Up Ring
7	1	Ball
8*	2	Ball Seat
9	1	Cam Plate
10	1	Snap Ring
11	2	Connector O-Ring
12	2	Connector
13	1	Handle
14	1	Flow Indicator
15	1	Stem Bolt

\* Included in seal kit

### Characteristics

Compact three-way high-pressure block body ball valves designed for use as three-way selectors (L-bore, 90° operation) for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Compact diverter style
- Supplied with off-set lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 2 BSP
- Female NPT thread (ANSI B1.20.1) >2 NPT
- Female UN/UNF thread (SAE J 514) >2-1/2-12 UN (2" SAE)
- 24° cone connection (DIN 2353); Light Series >35L
- 24° cone connection (DIN 2353); Heavy Series >38S

#### Pressure inlet only from the center port!

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

- Operating temperature range:  
-20°C ... +100°C / -4°F ... +212°F

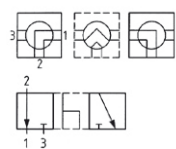
#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

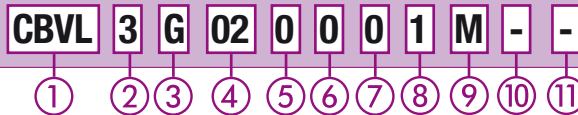
- Symbol : L
- Overlap: negative
- Operating: 90°

#### 50-CBVL



- Stop of end position:

### Order Codes



#### ① Type

Compact High-Pressure Block Body Ball Valve **CBVL**

#### ② Number of Ports

Three Ports (Three-Way Ball Valve) **3**

#### ③ Connection Style

Female BSP Thread (DIN ISO 228) **G**  
 Female NPT Thread (ANSI B1.20.1) **0**  
 Female UN/UNF Thread (SAE J 514) **1**  
 24° Cone Connection (Light / Heavy Series)  
**DN04 DN06 DN08 DN10 DN13 DN16 DN20 DN25**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table)  
for connection styles G, 0 and 1:  
**02 04 06 08 12 16 20 24 32**  
 Tube Size (according to dimension table)  
for 24° Cone Connection (Light Series):  
**06L 08L 10L 12L 15L 18L 22L 28L 35L**  
 Tube Size (according to dimension table)  
for 24° Cone Connection (Heavy Series):  
**08S 10S 12S 14S 16S 20S 25S 30S 38S**

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated **0**  
 Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated **0**  
 Stem: Carbon Steel  
 Ball / Stem: Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) **0**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®) **0**  
 FPM (Viton®) **1**  
 EPDM **3**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles (except Female NPT Thread) **M**  
 Manufacturing code (only for Female NPT Thread) **K**

#### ⑩ Lever Options

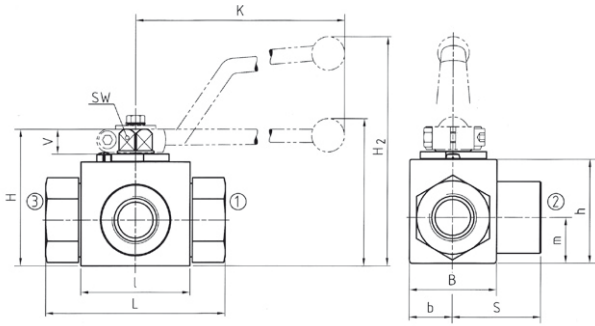
Supplied with standard lever (according to table) **-**  
 Supplied without lever **-0**

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

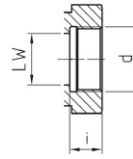
Supplied without accessories **-**  
 Supplied with Locking Device LD1 **-LD1**  
 Supplied with Locking Device LD2 **-LD2**  
 Supplied with Locking Device LD3 **-LD3**  
 Supplied with Locking Device LD4 **-LD4**  
 Supplied with Double-Acting Pneumatic Actuator (Please add size **\*\***) **-EDA\*\***  
 Supplied with Single-Acting Pneumatic Actuator (Please add size **\*\***) **-ESA\*\***

Please see page F93-F97 for further information and options.



### High-Pressure Block Body Ball Valve - Type CBVL L-Bore Three-Way Selector - Female BSP Thread (DIN ISO 228)

#### Female BSP Thread (DIN ISO 228)



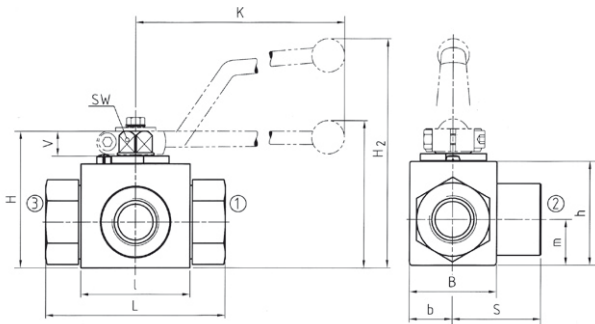
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Pressure Inlet only from the Center Port

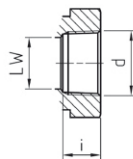
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	b	B	H	h	m	S	V	SW	K	i	H2			
02	G 1/8 BSP	4	5	69	40	13	29	47	33	13,5	34,5	11	9	115	10	82	500	0,40	CBVL3G020001M
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.39	3.23	7250	.88	
04	G 1/4 BSP	6	6	69	40	13	29	47	33	13,5	34,5	11	9	115	14	82	500	0,46	CBVL3G040001M
			.24	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.55	3.23	7250	1.01	
06	G 3/8 BSP	10	10	72	43	16	35	52	38	17,5	36	11	9	115	14	87	500	0,60	CBVL3G060001M
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.55	3.42	7250	1.32	
08	G 1/2 BSP	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	16,3	89	500	0,70	CBVL3G080001M
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.64	3.50	7250	1.54	
12	G 3/4 BSP	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	18	126	315	1,80	CBVL3G120001M
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.71	4.96	4500	3.96	
16	G 1 BSP	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	20	134	315	2,40	CBVL3G160001M
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.79	5.73	4500	5.28	
20	G 1-1/4 BSP	32	30	111	81	39	106	84,5	39	55	16,5	17	320	22	170	350	3,80	CBVL3G200001M	
			1.18	4.37	3.19	1.54	4.17	3.33	1.54	2.17	.65	.67	12.60	.87	6.69	5000	8.36		
24	G 1-1/2 BSP	40	38	130	104	53	127	106	53	65	16,5	17	320	24	191	350	6,20	CBVL3G240001M	
			1.50	5.12	4.09	2.09	5.00	4.17	2.09	2.56	.65	.67	12.60	.94	7.52	5000	13.64		
32	G 2 BSP	50	48	150	118	58	116	137	116	58	75	16,5	17	320	26	201	350	7,80	CBVL3G320001M
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	1.02	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.



### High-Pressure Block Body Ball Valve - Type CBVL L-Bore Three-Way Selector - Female NPT Thread (ANSI B1.20.1)

#### Female NPT Thread (ANSI B1.20.1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Pressure Inlet only from the Center Port

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	b	B	H	h	K	S	V	SW	K	i	H2			
02	1/8 NPT	4	5	69	40	13	29	47	33	13,5	34,5	11	9	115	10,5	82	500	0,40	CBVL30020001K
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.41	3.23	7250	.88	
04	1/4 NPT	6	6	69	40	13	29	47	33	13,5	34,5	11	9	115	13,7	82	500	0,46	CBVL30040001K
			.24	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.54	3.23	7250	1.01	
06	3/8 NPT	10	10	72	43	16	35	52	38	17,5	36	11	9	115	13,5	87	500	0,60	CBVL30060001K
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.53	3.42	7250	1.32	
08	1/2 NPT	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	17	89	500	0,70	CBVL30080001K
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.67	3.50	7250	1.54	
12	3/4 NPT	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	18,3	126	315	1,80	CBVL30120001K
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.72	4.96	4500	3.96	
16	1 NPT	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	21,6	134	315	2,40	CBVL30160001K
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.85	5.73	4500	5.28	
20	1-1/4 NPT	32	30	120	81	39	106	84,5	39	55	16,5	17	320	22,1	170	350	3,80	CBVL30200001K	
			1.18	4.72	3.19	1.54	4.17	3.33	1.54	2.17	.65	.67	12.60	.87	6.69	5000	8.36		
24	1-1/2 NPT	40	38	140	104	53	127	106	53	65	16,5	17	320	22,1	191	350	6,20	CBVL30240001K	
			1.50	5.51	4.09	2.09	5.00	4.17	2.09	2.56	.65	.67	12.60	.87	7.52	5000	13.64		
32	2 NPT	50	48	150	118	58	116	137	116	58	75	16,5	17	320	30,2	201	350	7,80	CBVL30320001K
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	1.19	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.

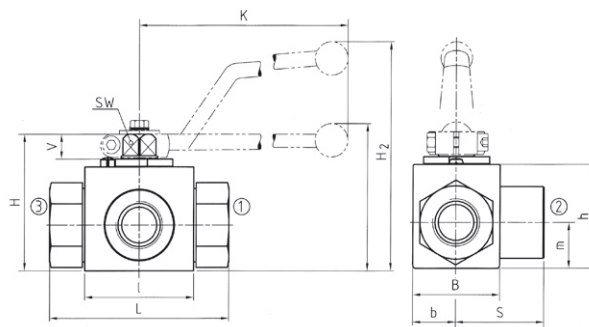
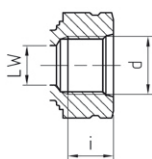


**High-Pressure Block Body Ball Valve - Type CBVL**  
**L-Bore Three-Way Selector - Female UN/UNF Thread (SAE J 514)**

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

**Female UN/UNF Thread (SAE J 514)**

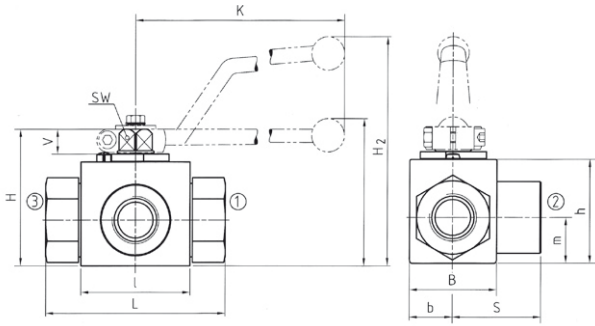


**Pressure Inlet only from the Center Port**

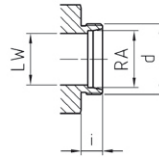
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	l	b	B	H	h	K	S	V	SW	K	i	H2			
04	7/16-20 UNF (1/4" SAE)	6	5	69	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,46	CBVL31040001M
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	1.01	
06	9/16-18 UNF (3/4" SAE)	10	10	72	43	16	35	52	38	17,5	36	11	9	115	13	87	500	0,60	CBVL31060001M
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.51	3.42	7250	1.32	
08	3/4-16 UNF (1/2" SAE)	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	15	89	500	0,70	CBVL31080001M
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.59	3.50	7250	1.54	
12	1-1/16-12 UN (3/4" SAE)	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	20	126	315	1,80	CBVL31120001M
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.79	4.96	4500	3.96	
16	1-5/16-12 UN (1" SAE)	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	20	134	315	2,40	CBVL31160001M
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.79	5.73	4500	5.28	
20	1-5/8-12 UN (1-1/4" SAE)	32	30	111	81	39		106	84,5	39	55	16,5	17	320	20	170	350	3,80	CBVL31200001M
			1.18	4.37	3.19	1.54		4.17	3.33	1.54	2.17	.65	.67	12.60	.79	6.69	5000	8.36	
24	1-7/8-12 UN (1-1/2" SAE)	40	38	130	104	53		127	106	53	65	16,5	17	320	20	191	350	6,20	CBVL31240001M
			1.50	5.12	4.09	2.09		5.00	4.17	2.09	2.56	.65	.67	12.60	.79	7.52	5000	13.64	
32	2-1/2-12 UN (2" SAE)	50	48	150	118	58	116	137	116	58	75	16,5	17	320	20	201	350	7,80	CBVL31320001M
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	.79	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.




**Pressure Inlet only from the Center Port**

Hex nuts and cutting rings are not included in delivery.

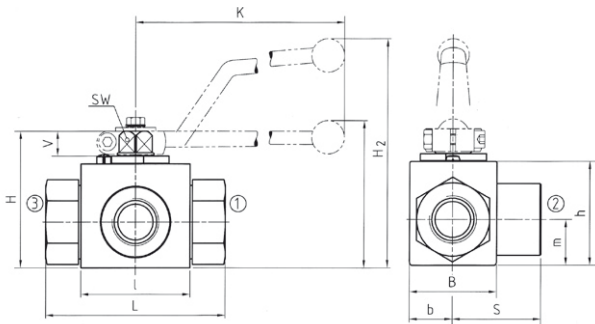
**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**


When ordering the standard option as indicated in the table below, the following materials will be supplied:

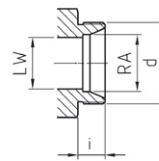
- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/m)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			RA	LW	L	l	b	B	H	h	m	S	V	SW	K	i	H2			
02	06L / M12 x 1,5	4	6,24	5,20	67,264	40,157	13,51	29,114	47,185	33,130	13,5,53	33,5,132	11,43	9,35	115,453	10,39	82,323	500,7250	0,30,66	CBVL3DN0406L0001M
04	08L / M14 x 1,5	6	8,31	6,24	67,264	40,157	13,51	29,114	47,185	33,130	13,5,53	33,5,132	11,43	9,35	115,453	10,39	82,323	500,7250	0,40,88	CBVL3DN0608L0001M
05	10L / M16 x 1,5	8	10,39	6,24	74,291	40,157	13,51	29,114	47,185	33,130	13,5,53	34,5,136	11,43	9,35	115,453	11,43	82,323	500,7250	0,40,88	CBVL3DN0810L0001M
06	12L / M18 x 1,5	10	12,47	10,39	74,291	43,169	16,63	35,138	52,205	38,150	17,5,69	36,5,144	11,43	9,35	115,453	11,43	87,342	500,7250	0,50,1.10	CBVL3DN1012L0001M
08	15L / M22 x 1,5	13	15,59	13,82	74,291	48,175	17,5,69	38,150	54,213	40,19	19,157	41,5,163	11,43	9,35	115,453	12,89	89,350	500,7250	0,65,1.43	CBVL3DN1315L0001M
08	18L / M26 x 1,5	13	18,71	13,51	82,223	48,175	17,5,69	38,150	54,213	40,19	19,157	41,5,163	11,43	9,35	115,453	12,89	89,350	500,7250	0,69,1.52	CBVL3DN1318L0001M
12	22L / M30 x 2	20	22,87	20,79	101,398	62,244	24,5,96	52,205	75,295	57,224	24,5,96	48,189	14,55	14,55	170,669	14,55	126,496	315,4500	1,50,3.30	CBVL3DN2022L0001M
16	28L / M36 x 2	25	28,110	25,98	108,425	66,260	29,114	61,240	83,327	65,256	29,5,116	54,213	14,55	14,55	170,669	14,55	134,573	315,4500	2,10,4.62	CBVL3DN2528L0001M
20R	35L / M45 x 2	25/32	35,138	25,98	112,441	66,260	29,114	61,240	83,327	65,256	29,5,116	56,220	14,55	14,55	170,669	16,63	134,573	315,4500	2,50,5.50	CBVL3DN2535L0001M

Please note the pressure ratings of the tube connections.


**Pressure Inlet only from the Center Port**

Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**


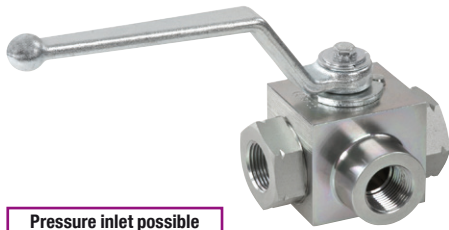
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

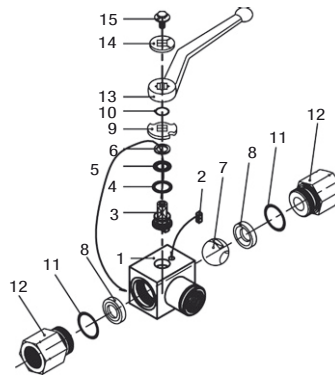
STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/m)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			RA	LW	L	l	b	B	H	h	m	S	V	SW	K	i	H2			
02	08S / M16 x 1,5	4	8,31	5,20	73,287	40,157	13,51	29,114	47,185	33,130	13,5,53	34,5,136	11,43	9,35	115,453	12,47	82,323	500,7250	0,42,92	CBVL3DN0408S0001M
04	10S / M18 x 1,5	6	10,39	6,24	73,287	40,157	13,51	29,114	47,185	33,130	13,5,53	34,5,136	11,43	9,35	115,453	12,47	82,323	500,7250	0,43,95	CBVL3DN0610S0001M
05	12S / M20 x 1,5	8	12,47	6,24	76,40	40,157	13,51	29,114	47,185	33,130	13,5,53	34,5,136	11,43	9,35	115,453	12,47	82,323	500,7250	0,44,97	CBVL3DN0812S0001M
06	14S / M22 x 1,5	10	14,55	10,39	80,315	43,169	16,63	35,138	52,205	38,150	17,5,69	36,5,143	11,43	9,35	115,453	14,55	87,342	500,7250	0,50,1.10	CBVL3DN1014S0001M
08	16S / M24 x 1,5	13	16,63	13,82	86,339	48,175	17,5,69	38,150	54,213	40,19	19,157	43,169	11,43	9,35	115,453	14,89	89,350	500,7250	0,65,1.43	CBVL3DN1316S0001M
08	20S / M30 x 2	13	20,79	20,79	90,429	48,175	17,5,69	38,150	54,213	40,19	19,157	43,169	11,43	9,35	115,63	16,89	89,350	500,7250	0,70,1.54	CBVL3DN1320S0001M
12	25S / M36 x 2	20	25,98	20,79	109,429	62,244	24,5,96	52,205	75,295	57,224	24,5,96	48,189	14,55	14,55	170,669	18,71	126,496	315,4500	1,70,3.74	CBVL3DN2025S0001M
16	30S / M42 x 2	25	30,118	25,98	120,472	66,260	29,114	61,240	83,327	65,256	29,5,116	54,226	14,55	14,55	170,669	20,79	134,573	315,4500	2,40,5.28	CBVL3DN2530S0001M
20R	38S / M52 x 2	25/32	38,150	25,98	124,488	66,260	29,114	61,240	83,327	65,256	29,5,116	57,226	14,55	14,55	170,669	22,87	134,573	315,4500	2,80,6.16	CBVL3DN2538S0001M

Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type CBVT



Pressure inlet possible from center port!



### List of Components

No.	Qty.	Description
1	1	Body
2	1	Stop Pin
3*	1	Stem
4*	1	Thrust Ring
5*	1	Stem O-Ring
6*	1	Stem Back Up Ring
7	1	Ball
8*	2	Ball Seat
9	1	Cam Plate
10	1	Snap Ring
11	2	Connector O-Ring
12	2	Connector
13	1	Handle
14	1	Flow Indicator
15	1	Stem Bolt

\* Included in seal kit

### Characteristics

Compact three-way high-pressure block body ball valves designed for use as three-way selectors (T-bore, 90° operation) for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Compact diverter style
- Supplied with off-set lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 2 BSP
- Female NPT thread (ANSI B1.20.1) >2 NPT
- Female UN/UNF thread (SAE J 514) >2-1/2-12 UN (2" SAE)
- 24° cone connection (DIN 2353); Light Series >35L
- 24° cone connection (DIN 2353); Heavy Series >38S

#### Pressure inlet only from the center port!

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

- Operating temperature range:  
-20°C ... +100°C / -4°F ... +212°F

#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

- Symbol : T
- Overlap: negative
- Operating: 90°

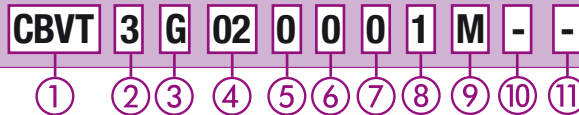
#### 51-CBVT



- Stop of end position:



### Order Codes



#### ① Type

Compact High-Pressure Block Body Ball Valve **CBVT**

#### ② Number of Ports

Three Ports (Three-Way Ball Valve) **3**

#### ③ Connection Style

Female BSP Thread (DIN ISO 228)	<b>G</b>
Female NPT Thread (ANSI B1.20.1)	<b>0</b>
Female UN/UNF Thread (SAE J 514)	<b>1</b>
24° Cone Connection (Light / Heavy Series)	
<b>DN04</b> <b>DN06</b> <b>DN08</b> <b>DN10</b> <b>DN13</b> <b>DN16</b> <b>DN20</b> <b>DN25</b>	

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table) for connection styles G, 0 and 1:

<b>02</b> <b>04</b> <b>06</b> <b>08</b> <b>12</b> <b>16</b> <b>20</b> <b>24</b> <b>32</b>
---

Tube Size (according to dimension table) for 24° Cone Connection (Light Series):

<b>06L</b> <b>08L</b> <b>10L</b> <b>12L</b> <b>15L</b> <b>18L</b> <b>22L</b> <b>28L</b> <b>35L</b>
--

Tube Size (according to dimension table) for 24° Cone Connection (Heavy Series):

<b>08S</b> <b>10S</b> <b>12S</b> <b>14S</b> <b>16S</b> <b>20S</b> <b>25S</b> <b>30S</b> <b>38S</b>
--

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>
EPDM	<b>3</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles (except Female NPT Thread)	<b>M</b>
Manufacturing code (only for Female NPT Thread)	<b>K</b>

#### ⑩ Lever Options

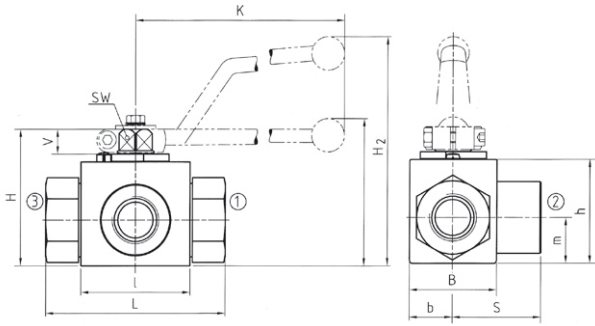
Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

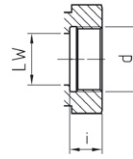
Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Locking Device LD2	<b>-LD2</b>
Supplied with Locking Device LD3	<b>-LD3</b>
Supplied with Locking Device LD4	<b>-LD4</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.



### High-Pressure Block Body Ball Valve - Type CBVT T-Bore Three-Way Selector - Female BSP Thread (DIN ISO 228)

#### Female BSP Thread (DIN ISO 228)



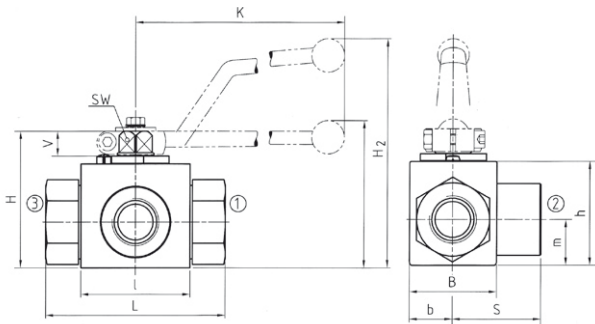
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Pressure Inlet only from the Center Port

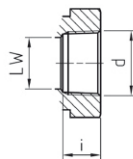
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	b	B	H	h	m	S	V	SW	K	i	H2			
02	G 1/8 BSP	4	5	69	40	13	29	47	33	13,5	34,5	11	9	115	10	82	500	0,40	CBVT3G020001M
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.39	3.23	7250	.88	
04	G 1/4 BSP	6	6	69	40	13	29	47	33	13,5	34,5	11	9	115	14	82	500	0,46	CBVT3G040001M
			.24	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.55	3.23	7250	1.01	
06	G 3/8 BSP	10	10	72	43	16	35	52	38	17,5	36	11	9	115	14	87	500	0,60	CBVT3G060001M
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.55	3.42	7250	1.32	
08	G 1/2 BSP	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	16,3	89	500	0,70	CBVT3G080001M
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.64	3.50	7250	1.54	
12	G 3/4 BSP	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	18	126	315	1,80	CBVT3G120001M
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.71	4.96	4500	3.96	
16	G 1 BSP	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	20	134	315	2,40	CBVT3G160001M
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.79	5.73	4500	5.28	
20	G 1-1/4 BSP	32	30	111	81	39	106	84,5	39	55	16,5	17	320	22	170	350	3,80	CBVT3G200001M	
			1.18	4.37	3.19	1.54	4.17	3.33	1.54	2.17	.65	.67	12.60	.87	6.69	5000	8.36		
24	G 1-1/2 BSP	40	38	130	104	53	127	106	53	65	16,5	17	320	24	191	350	6,20	CBVT3G240001M	
			1.50	5.12	4.09	2.09	5.00	4.17	2.09	2.56	.65	.67	12.60	.94	7.52	5000	13.64		
32	G 2 BSP	50	48	150	118	58	116	137	116	58	75	16,5	17	320	26	201	350	7,80	CBVT3G320001M
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	1.02	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.



### High-Pressure Block Body Ball Valve - Type CBVT T-Bore Three-Way Selector - Female NPT Thread (ANSI B1.20.1)

#### Female NPT Thread (ANSI B1.20.1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Pressure Inlet only from the Center Port

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	b	B	H	h	K	S	V	SW	K	i	H2			
02	1/8 NPT	4	5	69	40	13	29	47	33	13,5	34,5	11	9	115	10,5	82	500	0,40	CBVT30020001K
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.41	3.23	7250	.88	
04	1/4 NPT	6	6	69	40	13	29	47	33	13,5	34,5	11	9	115	13,7	82	500	0,46	CBVT30040001K
			.24	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.54	3.23	7250	1.01	
06	3/8 NPT	10	10	72	43	16	35	52	38	17,5	36	11	9	115	13,5	87	500	0,60	CBVT30060001K
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.53	3.42	7250	1.32	
08	1/2 NPT	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	17	89	500	0,70	CBVT30080001K
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.67	3.50	7250	1.54	
12	3/4 NPT	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	18,3	126	315	1,80	CBVT30120001K
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.72	4.96	4500	3.96	
16	1 NPT	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	21,6	134	315	2,40	CBVT30160001K
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.85	5.73	4500	5.28	
20	1-1/4 NPT	32	30	120	81	39	106	84,5	39	55	16,5	17	320	22,1	170	350	3,80	CBVT30200001K	
			1.18	4.72	3.19	1.54	4.17	3.33	1.54	2.17	.65	.67	12.60	.87	6.69	5000	8.36		
24	1-1/2 NPT	40	38	140	104	53	127	106	53	65	16,5	17	320	22,1	191	350	6,20	CBVT30240001K	
			1.50	5.51	4.09	2.09	5.00	4.17	2.09	2.56	.65	.67	12.60	.87	7.52	5000	13.64		
32	2 NPT	50	48	150	118	58	116	137	116	58	75	16,5	17	320	30,2	201	350	7,80	CBVT30320001K
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	1.19	7.91	5000	17.16	

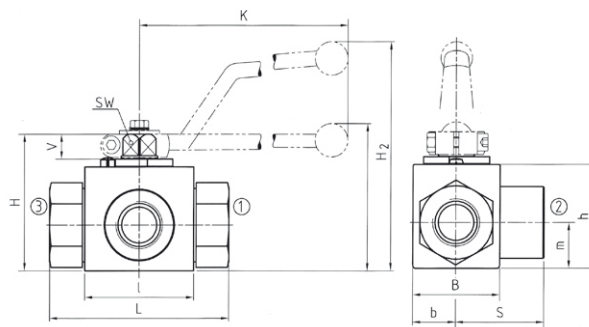
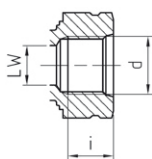
Please note the pressure ratings of the tube connections.

**High-Pressure Block Body Ball Valve - Type CBVT**  
**T-Bore Three-Way Selector - Female UN/UNF Thread (SAE J 514)**

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

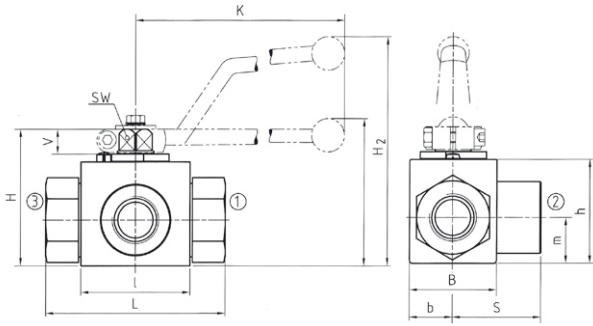
**Female UN/UNF Thread (SAE J 514)**



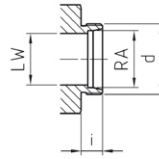
**Pressure Inlet only from the Center Port**

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	l	b	B	H	h	K	S	V	SW	K	i	H2			
04	7/16-20 UNF (1/4" SAE)	6	5	69	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,46	CBVT31040001M
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	1.01	
06	9/16-18 UNF (3/4" SAE)	10	10	72	43	16	35	52	38	17,5	36	11	9	115	13	87	500	0,60	CBVT31060001M
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.51	3.42	7250	1.32	
08	3/4-16 UNF (1/2" SAE)	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	15	89	500	0,70	CBVT31080001M
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.59	3.50	7250	1.54	
12	1-1/16-12 UN (3/4" SAE)	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	20	126	315	1,80	CBVT31120001M
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.79	4.96	4500	3.96	
16	1-5/16-12 UN (1" SAE)	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	20	134	315	2,40	CBVT31160001M
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.79	5.73	4500	5.28	
20	1-5/8-12 UN (1-1/4" SAE)	32	30	111	81	39		106	84,5	39	55	16,5	17	320	20	170	350	3,80	CBVT31200001M
			1.18	4.37	3.19	1.54		4.17	3.33	1.54	2.17	.65	.67	12.60	.79	6.69	5000	8.36	
24	1-7/8-12 UN (1-1/2" SAE)	40	38	130	104	53		127	106	53	65	16,5	17	320	20	191	350	6,20	CBVT31240001M
			1.50	5.12	4.09	2.09		5.00	4.17	2.09	2.56	.65	.67	12.60	.79	7.52	5000	13.64	
32	2-1/2-12 UN (2" SAE)	50	48	150	118	58	116	137	116	58	75	16,5	17	320	20	201	350	7,80	CBVT31320001M
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	.79	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.


**Pressure Inlet only from the Center Port**

Hex nuts and cutting rings are not included in delivery.

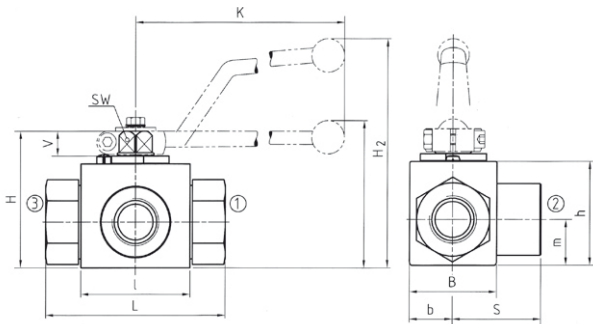
**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**


When ordering the standard option as indicated in the table below, the following materials will be supplied:

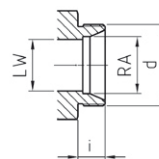
- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			RA	LW	L	l	b	B	H	h	m	S	V	SW	K	i	H2			
02	06L / M12 x 1,5	4	6	5	67	40	13	29	47	33	13,5	33,5	11	9	115	10	82	500	0,30	CBVT3DN0406L0001M
			.24	.20	2.64	1.57	.51	1.14	1.85	1.30	.53	1.32	.43	.35	4.53	.39	3.23	7250	.66	
04	08L / M14 x 1,5	6	8	6	67	40	13	29	47	33	13,5	33,5	11	9	115	10	82	500	0,40	CBVT3DN0608L0001M
			.31	.24	2.64	1.57	.51	1.14	1.85	1.30	.53	1.32	.43	.35	4.53	.39	3.23	7250	.88	
05	10L / M16 x 1,5	8	10	6	74	40	13	29	47	33	13,5	34,5	11	9	115	11	82	500	0,40	CBVT3DN0810L0001M
			.39	.24	2.91	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.43	3.23	7250	.88	
06	12L / M18 x 1,5	10	12	10	74	43	16	35	52	38	17,5	36,5	11	9	115	11	87	500	0,50	CBVT3DN1012L0001M
			.47	.39	2.91	1.69	.63	1.38	2.05	1.50	.69	1.44	.43	.35	4.53	.43	3.42	7250	1.10	
08	15L / M22 x 1,5	13	15	13	82	48	17,5	38	54	40	19	41,5	11	9	115	12	89	500	0,65	CBVT3DN1315L0001M
			.59	.51	3.23	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.47	3.50	7250	1.43	
08	18L / M26 x 1,5	13	18	13	82	48	17,5	38	54	40	19	41,5	11	9	115	12	89	500	0,69	CBVT3DN1318L0001M
			.71	.51	2.23	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.47	3.50	7250	1.52	
12	22L / M30 x 2	20	22	20	101	62	24,5	52	75	57	24,5	48	14	14	170	14	126	315	1,50	CBVT3DN2022L0001M
			.87	.79	3.98	2.44	.96	2.05	2.95	2.24	.96	1.89	.55	.55	6.69	.55	4.96	4500	3.30	
16	28L / M36 x 2	25	28	25	108	66	29	61	83	65	29,5	54	14	14	170	14	134	315	2,10	CBVT3DN2528L0001M
			1.10	.98	4.25	2.60	1.14	2.40	3.27	2.56	1.16	2.13	.55	.55	6.69	.55	5.73	4500	4.62	
20R	35L / M45 x 2	25/32	35	25	112	66	29	61	83	65	29,5	56	14	14	170	16	134	315	2,50	CBVT3DN2535L0001M
			1.38	.98	4.41	2.60	1.14	2.40	3.27	2.56	1.16	2.20	.55	.55	6.69	.63	5.73	4500	5.50	

Please note the pressure ratings of the tube connections.


**Pressure Inlet only from the Center Port**

Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**


When ordering the standard option as indicated in the table below, the following materials will be supplied:

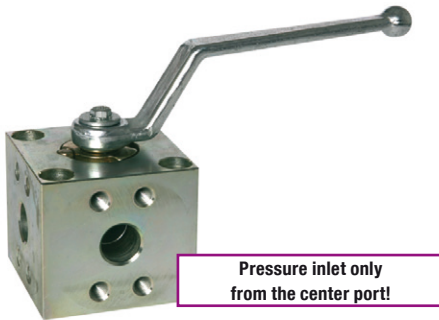
- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			RA	LW	L	l	b	B	H	h	m	S	V	SW	K	i	H2			
02	08S / M16 x 1,5	4	8	5	73	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,42	CBVT3DN0408S0001M
			.31	.20	2.87	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	.92	
04	10S / M18 x 1,5	6	10	6	73	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,43	CBVT3DN0610S0001M
			.39	.24	2.87	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	.95	
05	12S / M20 x 1,5	8	12	6	76	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,44	CBVT3DN0812S0001M
			.47	.24	2.99	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	.97	
06	14S / M22 x 1,5	10	14	10	80	43	16	35	52	38	17,5	36,5	11	9	115	14	87	500	0,50	CBVT3DN1014S0001M
			.55	.39	3.15	1.69	.63	1.38	2.05	1.50	.69	1.43	.43	.35	4.53	.55	3.42	7250	1.10	
08	16S / M24 x 1,5	13	16	13	86	48	17,5	38	54	40	19	43	11	9	115	14	89	500	0,65	CBVT3DN1316S0001M
			.63	.51	3.39	1.89	.69	1.50	2.13	1.57	.75	1.69	.43	.35	4.53	.55	3.50	7250	1.43	
08	20S / M30 x 2	13	20	13	90	48	17,5	38	54	40	19	43	11	9	115	16	89	500	0,70	CBVT3DN1320S0001M
			.79	.51	3.54	1.89	.69	1.50	2.13	1.57	.75	1.69	.43	.35	4.53	.63	3.50	7250	1.54	
12	25S / M36 x 2	20	25	20	109	62	24,5	52	75	57	24,5	48	14	14	170	18	126	315	1,70	CBVT3DN2025S0001M
			.98	.79	4.29	2.44	.96	2.05	2.95	2.24	.96	1.89	.55	.55	6.69	.71	4.96	4500	3.74	
16	30S / M42 x 2	25	30	25	120	66	29	61	83	65	29,5	57,5	14	14	170	20	134	315	2,40	CBVT3DN2530S0001M
			1.18	.98	4.72	2.60	1.14	2.40	3.27	2.56	1.16	2.26	.55	.55	6.69	.79	5.73	4500	5.28	
20R	38S / M52 x 2	25/32	38	25	124	66	29	61	83	65	29,5	57,5	14	14	170	22	134	315	2,80	CBVT3DN2538S0001M
			1.50	.98	4.88	2.60	1.14	2.40	3.27	2.56	1.16	2.26	.55	.55	6.69	.87	5.73	4500	6.16	

Please note the pressure ratings of the tube connections.



## High-Pressure Block Body Ball Valve - Type CBVL



### Characteristics

Compact three-way high-pressure block body ball valves designed for use as three-way selectors (L-bore, 90° operation) for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Compact diverter style
- Supplied with off-set lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- 6000 PSI (code 62) direct SAE flange connection
- Metric ISO and unified coarse (UNC) threads

#### Pressure inlet only from the center port!

#### Pressure Range

- Pressure range: up to 420 bar / 6000 PSI (depending on size and material combination of the ball valve)

**Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.**

#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... +212 °F

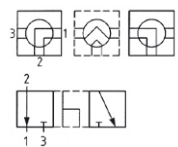
#### Options / Accessories

- Flanges and flange kits (see Flanges section)
- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

- Symbol : L
- Overlap: negative
- Operating: 90°

#### 50-CBVL



- Stop of end position:

### Order Codes

**CBVL 3 8 08 0 0 0 1 M - -**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

#### ① Type

Compact High-Pressure Block Body Ball Valve **CBVL**

#### ② Number of Ports

Three Ports (Three-Way Ball Valve) **3**

#### ③ Connection Style

6000 PSI (Code 62) SAE Direct Flange  
Connection with Metric ISO Threads **8M**  
6000 PSI (Code 62) SAE Direct Flange  
Connection with Unified Coarse (UNC) Threads **8**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table):

08	12	16	20	24	32
----	----	----	----	----	----

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM)	<b>0</b>
---------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>
EPDM	<b>3</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles	<b>M</b>
--	----------

#### ⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

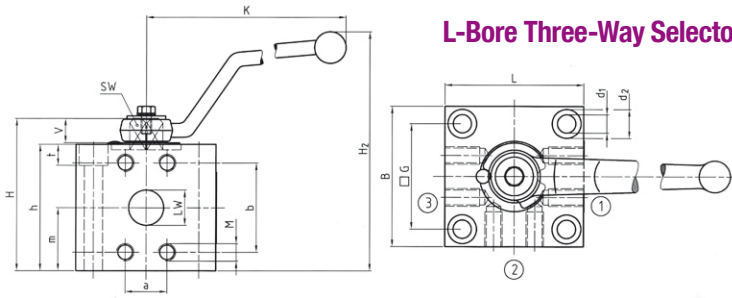
Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD4	<b>-LD4</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.

## High-Pressure Block Body Ball Valve - Type CBVL L-Bore Three-Way Selector - 6000 PSI SAE Flange Connection (ISO 6162-2)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Carbon Steel
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

### 6000 PSI Series (Code 62) - Metric ISO Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (PSI)	Weight (kg/lbs)	Order Codes (Standard Option)			
			LW	L	B	H	h	m	V	SW	K	a	b	M	G	d1				d2	t	H2
08	1/2	13	13	70	70	63	56	28	11	9	115	18,2	40,5	M8	43	8,5	13,5	9	101	420	2,00	CBVL38M080001M
			.51	2.76	2.76	2.48	2.20	1.10	.43	.35	4.53	.72	1.59		1.69	.33	.53	.35	3.98	6000	4.40	
12	3/4	20	20	80	80	87	72	36	14	14	170	23,8	50,8	M10	60	10,5	16,5	11	137	420	3,40	CBVL38M120001M
			.79	3.15	3.15	3.43	2.83	1.42	.55	.55	6.69	.94	2.00		2.36	.41	.65	.43	5.39	6000	7.48	
16	1	25	25	94	94	96	81	42	14	14	170	27,8	57,2	M12	70	10,5	16,5	11	147	420	5,40	CBVL38M160001M
			.98	3.70	3.70	3.78	3.19	1.65	.55	.55	6.69	1.09	2.25		2.76	.41	.65	.43	5.79	6000	11.88	
20	1-1/4	32	30	100	100	117	100	50,5	16,5	17	306	31,8	66,6	M12	76	13	19	13	181	420	6,80	CBVL38M200001M
			1.18	3.94	3.94	4.61	3.94	1.99	.65	.67	12.05	1.25	2.62		2.99	.51	.75	.51	7.13	6000	14.96	
24	1-1/2	40	32	110	110	136	115	55	16,5	17	306	36,5	79,4	M16	84	13	19	13	193	420	10,20	CBVL38M240001M
			1.26	4.33	4.33	5.35	4.53	2.17	.65	.67	12.05	1.44	3.13		3.31	.51	.75	.51	7.60	6000	22.44	
32	2	50	48	135	135	147	135	67,5	16,5	17	306	44,5	96,8	M20	108	13	19	13	211	420	18,50	CBVL38M320001M
			1.89	5.31	5.31	5.79	5.31	2.66	.65	.67	12.05	1.75	3.81		4.25	.51	.75	.51	8.31	6000	40.70	

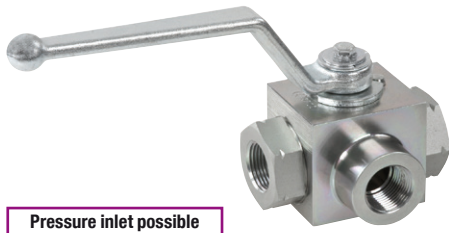
### 6000 PSI Series (Code 62) - Unified Coarse (UNC) Threads

STAUFF Size	SAE Flange Size	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (PSI)	Weight (kg/lbs)	Order Codes (Standard Option)			
			LW	L	B	H	h	m	V	SW	K	a	b	M	G	d1				d2	t	H2
08	1/2	13	13	70	70	63	56	28	11	9	115	18,2	40,5	5/16-18 UNC	43	8,5	13,5	9	101	420	2,00	CBVL38080001M
			.51	2.76	2.76	2.48	2.20	1.10	.43	.35	4.53	.72	1.59		1.69	.33	.53	.35	3.98	6000	4.40	
12	3/4	20	20	80	80	87	72	36	14	14	170	23,8	50,8	3/8-16 UNC	60	10,5	16,5	11	137	420	3,40	CBVL38120001M
			.79	3.15	3.15	3.43	2.83	1.42	.55	.55	6.69	.94	2.00		2.36	.41	.65	.43	5.39	6000	7.48	
16	1	25	25	94	94	96	81	42	14	14	170	27,8	57,2	7/16-14 UNC	70	10,5	16,5	11	147	420	5,40	CBVL38160001M
			.98	3.70	3.70	3.78	3.19	1.65	.55	.55	6.69	1.09	2.25		2.76	.41	.65	.43	5.79	6000	11.88	
20	1-1/4	32	30	100	100	117	100	50,5	16,5	17	306	31,8	66,6	1/2-13 UNC	76	13	19	13	181	420	6,80	CBVL38200001M
			1.18	3.94	3.94	4.61	3.94	1.99	.65	.67	12.05	1.25	2.62		2.99	.51	.75	.51	7.13	6000	14.96	
24	1-1/2	40	32	110	110	136	115	55	16,5	17	306	36,5	79,4	5/8-11 UNC	84	13	19	13	193	420	10,20	CBVL38240001M
			1.26	4.33	4.33	5.35	4.53	2.17	.65	.67	12.05	1.44	3.13		3.31	.51	.75	.51	7.60	6000	22.44	
32	2	50	48	135	135	147	135	67,5	16,5	17	306	44,5	96,8	3/4-10 UNC	108	13	19	13	211	420	18,50	CBVL38320001M
			1.89	5.31	5.31	5.79	5.31	2.66	.65	.67	12.05	1.75	3.81		4.25	.51	.75	.51	8.31	6000	40.70	

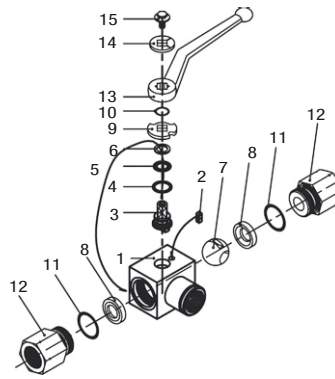
Please note: The final maximum working pressure is determined by flange and pipe/tubing rating.



## High-Pressure Block Body Ball Valve - Type CBVSL



Pressure inlet possible from all ports!



### List of Components

No.	Qty.	Description
1	1	Body
2	1	Stop Pin
3*	1	Stem
4*	1	Thrust Ring
5*	1	Stem O-Ring
6*	1	Stem Back Up Ring
7	1	Ball
8*	2	Ball Seat
9	1	Cam Plate
10	1	Snap Ring
11	2	Connector O-Ring
12	2	Connector
13	1	Handle
14	1	Flow Indicator
15	1	Stem Bolt

\* Included in seal kit

### Characteristics

Compact three-way high-pressure block body ball valves designed for use as three-way selectors (L-bore, 90° operation) for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Compact diverter style
- Supplied with off-set lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 2 BSP
- Female NPT thread (ANSI B1.20.1) >2 NPT
- Female UN/UNF thread (SAE J 514) >2-1/2-12 UN (2" SAE)
- 24° cone connection (DIN 2353); Light Series >35L
- 24° cone connection (DIN 2353); Heavy Series >38S

**Pressure inlet possible from all ports!**  
**Must be operated without pressure!**

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... +212 °F

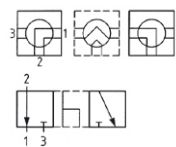
#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

- Symbol : L
- Overlap: negative
- Operating: 90°

#### 55-CBVSL



- Stop of end position:

### Order Codes

**CBVSL 3 G 02 0 0 8 1 M - -**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

#### ① Type

Compact High-Pressure Block Body Ball Valve with Pressure Inlet Possible from all Ports **CBVSL**

#### ② Number of Ports

Three Ports (Three-Way Ball Valve) **3**

#### ③ Connection Style

Female BSP Thread (DIN ISO 228)	<b>G</b>
Female NPT Thread (ANSI B1.20.1)	<b>0</b>
Female UN/UNF Thread (SAE J 514)	<b>1</b>
24° Cone Connection (Light / Heavy Series)	
<b>DN04 DN06 DN08 DN10 DN13 DN16 DN20 DN25</b>	

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table) for connection styles G, 0 and 1:

**02 04 06 08 12 16 20 24 32**

Tube Size (according to dimension table) for 24° Cone Connection (Light Series):

**06L 08L 10L 12L 15L 18L 22L 28L 35L**

Tube Size (according to dimension table) for 24° Cone Connection (Heavy Series):

**08S 10S 12S 14S 16S 20S 25S 30S 38S**

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) Frontside Sealing	<b>8</b>
---------------------------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>
EPDM	<b>3</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles (except Female NPT Thread)	<b>M</b>
Manufacturing code (only for Female NPT Thread)	<b>K</b>

#### ⑩ Lever Options

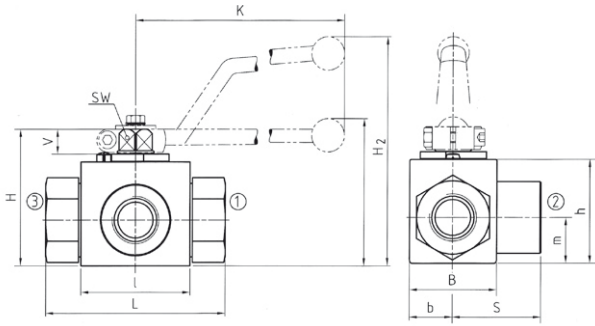
Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

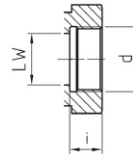
Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Locking Device LD4	<b>-LD4</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

Please see page F93-F97 for further information and options.



### High-Pressure Block Body Ball Valve - Type CBVSL L-Bore Three-Way Selector - Female BSP Thread (DIN ISO 228)

#### Female BSP Thread (DIN ISO 228)



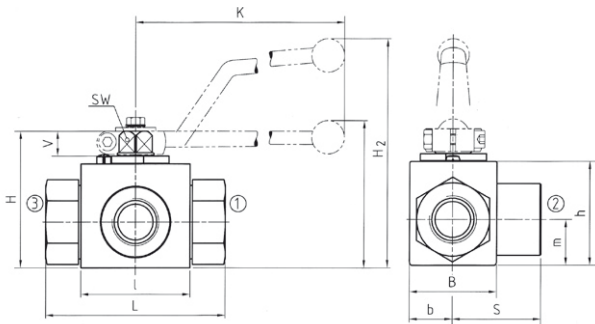
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

Pressure Inlet possible from all Ports

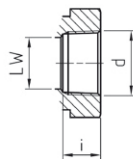
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	b	B	H	h	m	S	V	SW	K	i	H2			
02	G 1/8 BSP	4	5	69	40	13	29	47	33	13,5	34,5	11	9	115	10	82	500	0,40	CBVSL3G020081M
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.39	3.23	7250	.88	
04	G 1/4 BSP	6	6	69	40	13	29	47	33	13,5	34,5	11	9	115	14	82	500	0,46	CBVSL3G040081M
			.24	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.55	3.23	7250	1.01	
06	G 3/8 BSP	10	10	72	43	16	35	52	38	17,5	36	11	9	115	14	87	500	0,60	CBVSL3G060081M
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.55	3.42	7250	1.32	
08	G 1/2 BSP	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	16,3	89	500	0,70	CBVSL3G080081M
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.64	3.50	7250	1.54	
12	G 3/4 BSP	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	18	126	315	1,80	CBVSL3G120081M
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.71	4.96	4500	3.96	
16	G 1 BSP	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	20	134	315	2,40	CBVSL3G160081M
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.79	5.73	4500	5.28	
20	G 1-1/4 BSP	32	30	111	81	39	106	84,5	39	55	16,5	17	320	22	170	350	3,80	CBVSL3G200081M	
			1.18	4.37	3.19	1.54	4.17	3.33	1.54	2.17	.65	.67	12.60	.87	6.69	5000	8.36		
24	G 1-1/2 BSP	40	38	130	104	53	127	106	53	65	16,5	17	320	24	191	350	6,20	CBVSL3G240081M	
			1.50	5.12	4.09	2.09	5.00	4.17	2.09	2.56	.65	.67	12.60	.94	7.52	5000	13.64		
32	G 2 BSP	50	48	150	118	58	116	137	116	58	75	16,5	17	320	26	201	350	7,80	CBVSL3G320081M
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	1.02	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.



### High-Pressure Block Body Ball Valve - Type CBVSL L-Bore Three-Way Selector - Female NPT Thread (ANSI B1.20.1)

#### Female NPT Thread (ANSI B1.20.1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

Pressure Inlet possible from all Ports

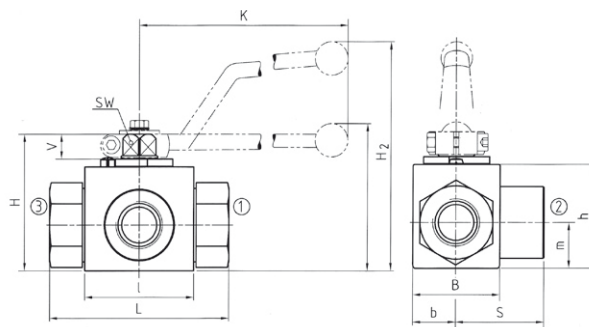
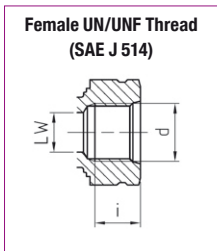
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	b	B	H	h	K	S	V	SW	K	i	H2			
02	1/8 NPT	4	5	69	40	13	29	47	33	13,5	34,5	11	9	115	10,5	82	500	0,40	CBVSL30020081K
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.41	3.23	7250	.88	
04	1/4 NPT	6	6	69	40	13	29	47	33	13,5	34,5	11	9	115	13,7	82	500	0,46	CBVSL30040081K
			.24	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.54	3.23	7250	1.01	
06	3/8 NPT	10	10	72	43	16	35	52	38	17,5	36	11	9	115	13,5	87	500	0,60	CBVSL30060081K
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.53	3.42	7250	1.32	
08	1/2 NPT	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	17	89	500	0,70	CBVSL30080081K
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.67	3.50	7250	1.54	
12	3/4 NPT	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	18,3	126	315	1,80	CBVSL30120081K
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.72	4.96	4500	3.96	
16	1 NPT	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	21,6	134	315	2,40	CBVSL30160081K
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.85	5.73	4500	5.28	
20	1-1/4 NPT	32	30	120	81	39	106	84,5	39	55	16,5	17	320	22,1	170	350	3,80	CBVSL30200081K	
			1.18	4.72	3.19	1.54	4.17	3.33	1.54	2.17	.65	.67	12.60	.87	6.69	5000	8.36		
24	1-1/2 NPT	40	38	140	104	53	127	106	53	65	16,5	17	320	22,1	191	350	6,20	CBVSL30240081K	
			1.50	5.51	4.09	2.09	5.00	4.17	2.09	2.56	.65	.67	12.60	.87	7.52	5000	13.64		
32	2 NPT	50	48	150	118	58	116	137	116	58	75	16,5	17	320	30,2	201	350	7,80	CBVSL30320081K
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	1.19	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type CBVSL L-Bore Three-Way Selector - Female UN/UNF Thread (SAE J 514)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

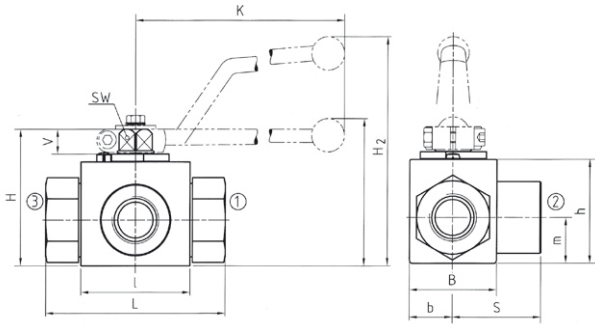
- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)



Pressure Inlet possible from all Ports

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	l	b	B	H	h	K	S	V	SW	K	i	H2			
04	7/16-20 UNF (1/4" SAE)	6	5	69	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,46	CBVSL31040081M
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	1.01	
06	9/16-18 UNF (3/8" SAE)	10	10	72	43	16	35	52	38	17,5	36	11	9	115	13	87	500	0,60	CBVSL31060081M
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.51	3.42	7250	1.32	
08	3/4-16 UNF (1/2" SAE)	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	15	89	500	0,70	CBVSL31080081M
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.59	3.50	7250	1.54	
12	1-1/16-12 UN (3/4" SAE)	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	20	126	315	1,80	CBVSL31120081M
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.79	4.96	4500	3.96	
16	1-5/16-12 UN (1" SAE)	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	20	134	315	2,40	CBVSL31160081M
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.79	5.73	4500	5.28	
20	1-5/8-12 UN (1-1/4" SAE)	32	30	111	81	39		106	84,5	39	55	16,5	17	320	20	170	350	3,80	CBVSL31200081M
			1.18	4.37	3.19	1.54		4.17	3.33	1.54	2.17	.65	.67	12.60	.79	6.69	5000	8.36	
24	1-7/8-12 UN (1-1/2" SAE)	40	38	130	104	53		127	106	53	65	16,5	17	320	20	191	350	6,20	CBVSL31240081M
			1.50	5.12	4.09	2.09		5.00	4.17	2.09	2.56	.65	.67	12.60	.79	7.52	5000	13.64	
32	2-1/2-12 UN (2" SAE)	50	48	150	118	58	116	137	116	58	75	16,5	17	320	20	201	350	7,80	CBVSL31320081M
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	.79	7.91	5000	17.16	

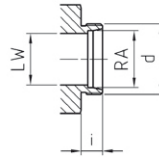
Please note the pressure ratings of the tube connections.



Pressure Inlet possible from all Ports

Hex nuts and cutting rings are not included in delivery.

24° Cone Connection  
(DIN 2353 / ISO 8434-1)

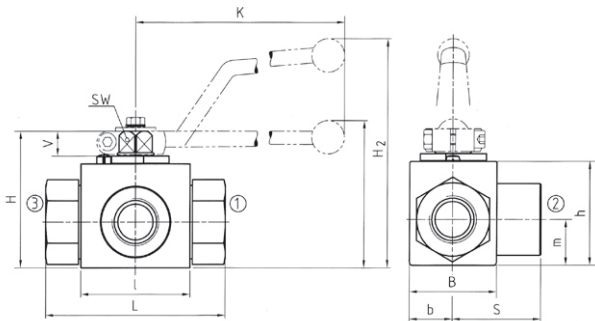


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/m)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			RA	LW	L	l	b	B	H	h	m	S	V	SW	K	i	H2			
02	06L / M12 x 1,5	4	6	5	67	40	13	29	47	33	13,5	33,5	11	9	115	10	82	500	0,30	CBVSL3DN0406L0081M
			.24	.20	2.64	1.57	.51	1.14	1.85	1.30	.53	1.32	.43	.35	4.53	.39	3.23	7250	.66	
04	08L / M14 x 1,5	6	8	6	67	40	13	29	47	33	13,5	33,5	11	9	115	10	82	500	0,40	CBVSL3DN0608L0081M
			.31	.24	2.64	1.57	.51	1.14	1.85	1.30	.53	1.32	.43	.35	4.53	.39	3.23	7250	.88	
05	10L / M16 x 1,5	8	10	6	74	40	13	29	47	33	13,5	34,5	11	9	115	11	82	500	0,40	CBVSL3DN0810L0081M
			.39	.24	2.91	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.43	3.23	7250	.88	
06	12L / M18 x 1,5	10	12	10	74	43	16	35	52	38	17,5	36,5	11	9	115	11	87	500	0,50	CBVSL3DN1012L0081M
			.47	.39	2.91	1.69	.63	1.38	2.05	1.50	.69	1.44	.43	.35	4.53	.43	3.42	7250	1.10	
08	15L / M22 x 1,5	13	15	13	82	48	17,5	38	54	40	19	41,5	11	9	115	12	89	500	0,65	CBVSL3DN1315L0081M
			.59	.51	3.23	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.47	3.50	7250	1.43	
08	18L / M26 x 1,5	13	18	13	82	48	17,5	38	54	40	19	41,5	11	9	115	12	89	500	0,69	CBVSL3DN1318L0081M
			.71	.51	2.23	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.47	3.50	7250	1.52	
12	22L / M30 x 2	20	22	20	101	62	24,5	52	75	57	24,5	48	14	14	170	14	126	315	1,50	CBVSL3DN2022L0081M
			.87	.79	3.98	2.44	.96	2.05	2.95	2.24	.96	1.89	.55	.55	6.69	.55	4.96	4500	3.30	
16	28L / M36 x 2	25	28	25	108	66	29	61	83	65	29,5	54	14	14	170	14	134	315	2,10	CBVSL3DN2528L0081M
			1.10	.98	4.25	2.60	1.14	2.40	3.27	2.56	1.16	2.13	.55	.55	6.69	.55	5.73	4500	4.62	
20R	35L / M45 x 2	25/32	35	25	112	66	29	61	83	65	29,5	56	14	14	170	16	134	315	2,50	CBVSL3DN2535L0081M
			1.38	.98	4.41	2.60	1.14	2.40	3.27	2.56	1.16	2.20	.55	.55	6.69	.63	5.73	4500	5.50	

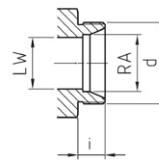
Please note the pressure ratings of the tube connections.



Pressure Inlet possible from all Ports

Hex nuts and cutting rings are not included in delivery.

24° Cone Connection  
(DIN 2353 / ISO 8434-1)



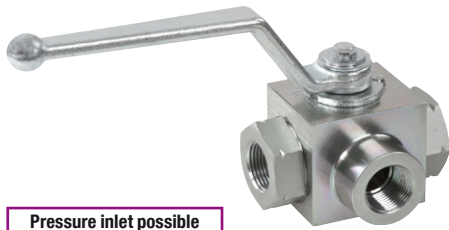
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

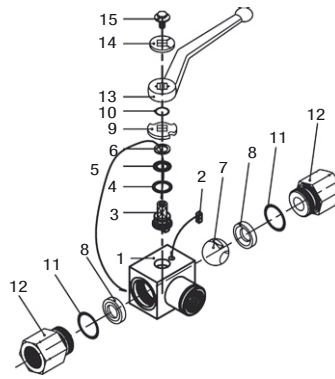
STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/m)														Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)	
			RA	LW	L	l	b	B	H	h	m	S	V	SW	K	i	H2			
02	08S / M16 x 1,5	4	8	5	73	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,42	CBVSL3DN0408S0081M
			.31	.20	2.87	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	.92	
04	10S / M18 x 1,5	6	10	6	73	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,43	CBVSL3DN0610S0081M
			.39	.24	2.87	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	.95	
05	12S / M20 x 1,5	8	12	6	76	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,44	CBVSL3DN0812S0081M
			.47	.24	2.99	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	.97	
06	14S / M22 x 1,5	10	14	10	80	43	16	35	52	38	17,5	36,5	11	9	115	14	87	500	0,50	CBVSL3DN1014S0081M
			.55	.39	3.15	1.69	.63	1.38	2.05	1.50	.69	1.43	.43	.35	4.53	.55	3.42	7250	1.10	
08	16S / M24 x 1,5	13	16	13	86	48	17,5	38	54	40	19	43	11	9	115	14	89	500	0,65	CBVSL3DN1316S0081M
			.63	.51	3.39	1.89	.69	1.50	2.13	1.57	.75	1.69	.43	.35	4.53	.55	3.50	7250	1.43	
08	20S / M30 x 2	13	20	13	90	48	17,5	38	54	40	19	43	11	9	115	16	89	500	0,70	CBVSL3DN1320S0081M
			.79	.51	3.54	1.89	.69	1.50	2.13	1.57	.75	1.69	.43	.35	4.53	.63	3.50	7250	1.54	
12	25S / M36 x 2	20	25	20	109	62	24,5	52	75	57	24,5	48	14	14	170	18	126	315	1,70	CBVSL3DN2025S0081M
			.98	.79	4.29	2.44	.96	2.05	2.95	2.24	.96	1.89	.55	.55	6.69	.71	4.96	4500	3.74	
16	30S / M42 x 2	25	30	25	120	66	29	61	83	65	29,5	57,5	14	14	170	20	134	315	2,40	CBVSL3DN2530S0081M
			1.18	.98	4.72	2.60	1.14	2.40	3.27	2.56	1.16	2.26	.55	.55	6.69	.79	5.73	4500	5.28	
20R	38S / M52 x 2	25/32	38	25	124	66	29	61	83	65	29,5	57,5	14	14	170	22	134	315	2,80	CBVSL3DN2538S0081M
			1.50	.98	4.88	2.60	1.14	2.40	3.27	2.56	1.16	2.26	.55	.55	6.69	.87	5.73	4500	6.16	

Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type CBVST



Pressure inlet possible from all ports!



### List of Components

No.	Qty.	Description
1	1	Body
2	1	Stop Pin
3*	1	Stem
4*	1	Thrust Ring
5*	1	Stem O-Ring
6*	1	Stem Back Up Ring
7	1	Ball
8*	2	Ball Seat
9	1	Cam Plate
10	1	Snap Ring
11	2	Connector O-Ring
12	2	Connector
13	1	Handle
14	1	Flow Indicator
15	1	Stem Bolt

\* Included in seal kit

### Characteristics

Compact three-way high-pressure block body ball valves designed for use as three-way selectors (T-bore, 90° operation) for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Compact diverter style
- Supplied with off-set lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 2 BSP
- Female NPT thread (ANSI B1.20.1) >2 NPT
- Female UN/UNF thread (SAE J 514) >2-1/2-12 UN (2" SAE)
- 24° cone connection (DIN 2353); Light Series >35L
- 24° cone connection (DIN 2353); Heavy Series >38S

Pressure inlet possible from all ports!  
Must be operated without pressure!

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

- Operating temperature range:  
-20 °C ... +100 °C / -4 °F ... +212 °F

#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Additional assembling threads / holes (see page F97)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

- Symbol : T
- Overlap: negative
- Operating: 90°

#### 56-CBVST



- Stop of end position:

### Order Codes

**CBVST 3 G 02 0 0 8 1 M - -**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

#### ① Type

Compact High-Pressure Block Body Ball Valve with Pressure Inlet Possible from all Ports **CBVST**

#### ② Number of Ports

Three Ports (Three-Way Ball Valve) **3**

#### ③ Connection Style

Female BSP Thread (DIN ISO 228)	<b>G</b>
Female NPT Thread (ANSI B1.20.1)	<b>0</b>
Female UN/UNF Thread (SAE J 514)	<b>1</b>
24° Cone Connection (Light / Heavy Series)	
<b>DN04 DN06 DN08 DN10 DN13 DN16 DN20 DN25</b>	

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table) for connection styles G, 0 and 1:

**02 04 06 08 12 16 20 24 32**

Tube Size (according to dimension table) for 24° Cone Connection (Light Series):

**06L 08L 10L 12L 15L 18L 22L 28L 35L**

Tube Size (according to dimension table) for 24° Cone Connection (Heavy Series):

**08S 10S 12S 14S 16S 20S 25S 30S 38S**

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated	<b>0</b>
Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated	<b>0</b>
Stem: Carbon Steel	<b>0</b>
Ball / Stem: Stainless Steel V4A (AISI 316Ti)	<b>1</b>

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) Frontside Sealing	<b>8</b>
---------------------------------	----------

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®)	<b>0</b>
FPM (Viton®)	<b>1</b>
EPDM	<b>3</b>

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles (except Female NPT Thread)	<b>M</b>
Manufacturing code (only for Female NPT Thread)	<b>K</b>

#### ⑩ Lever Options

Supplied with standard lever (according to table)	<b>-</b>
Supplied without lever	<b>-0</b>

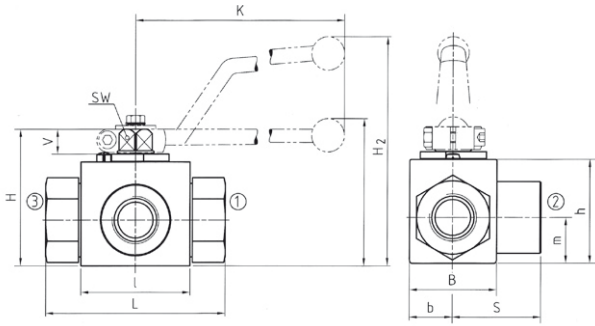
Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

Supplied without accessories	<b>-</b>
Supplied with Locking Device LD1	<b>-LD1</b>
Supplied with Locking Device LD4	<b>-LD4</b>
Supplied with Double-Acting Pneumatic Actuator (Please add size **)	<b>-EDA**</b>
Supplied with Single-Acting Pneumatic Actuator (Please add size **)	<b>-ESA**</b>

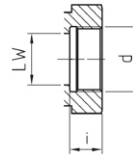
Please see page F93-F97 for further information and options.





### High-Pressure Block Body Ball Valve - Type CBVST T-Bore Three-Way Selector - Female BSP Thread (DIN ISO 228)

#### Female BSP Thread (DIN ISO 228)



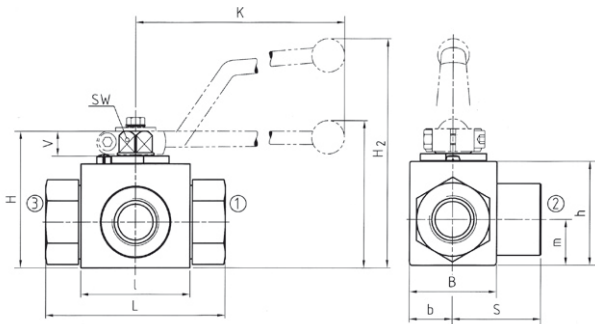
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

Pressure Inlet possible from all Ports

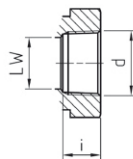
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	b	B	H	h	m	S	V	SW	K	i	H2			
02	G 1/8 BSP	4	5	69	40	13	29	47	33	13,5	34,5	11	9	115	10	82	500	0,40	CBVST3G020081M
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.39	3.23	7250	.88	
04	G 1/4 BSP	6	6	69	40	13	29	47	33	13,5	34,5	11	9	115	14	82	500	0,46	CBVST3G040081M
			.24	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.55	3.23	7250	1.01	
06	G 3/8 BSP	10	10	72	43	16	35	52	38	17,5	36	11	9	115	14	87	500	0,60	CBVST3G060081M
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.55	3.42	7250	1.32	
08	G 1/2 BSP	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	16,3	89	500	0,70	CBVST3G080081M
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.64	3.50	7250	1.54	
12	G 3/4 BSP	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	18	126	315	1,80	CBVST3G120081M
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.71	4.96	4500	3.96	
16	G 1 BSP	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	20	134	315	2,40	CBVST3G160081M
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.79	5.73	4500	5.28	
20	G 1-1/4 BSP	32	30	111	81	39	106	84,5	39	55	16,5	17	320	22	170	350	3,80	CBVST3G200081M	
			1.18	4.37	3.19	1.54	4.17	3.33	1.54	2.17	.65	.67	12.60	.87	6.69	5000	8.36		
24	G 1-1/2 BSP	40	38	130	104	53	127	106	53	65	16,5	17	320	24	191	350	6,20	CBVST3G240081M	
			1.50	5.12	4.09	2.09	5.00	4.17	2.09	2.56	.65	.67	12.60	.94	7.52	5000	13.64		
32	G 2 BSP	50	48	150	118	58	116	137	116	58	75	16,5	17	320	26	201	350	7,80	CBVST3G320081M
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	1.02	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.



### High-Pressure Block Body Ball Valve - Type CBVST T-Bore Three-Way Selector - Female NPT Thread (ANSI B1.20.1)

#### Female NPT Thread (ANSI B1.20.1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

Pressure Inlet possible from all Ports

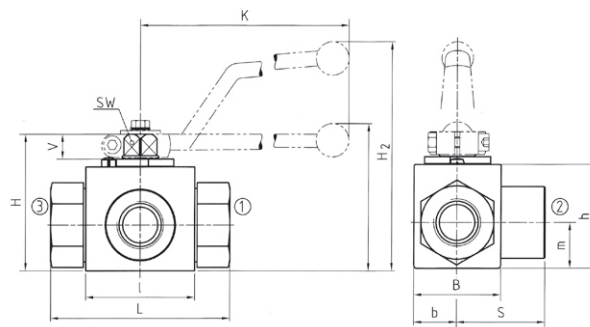
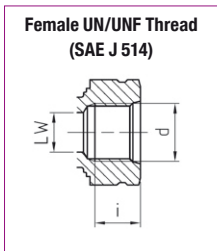
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	I	b	B	H	h	K	S	V	SW	K	i	H2			
02	1/8 NPT	4	5	69	40	13	29	47	33	13,5	34,5	11	9	115	10,5	82	500	0,40	CBVST30020081K
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.41	3.23	7250	.88	
04	1/4 NPT	6	6	69	40	13	29	47	33	13,5	34,5	11	9	115	13,7	82	500	0,46	CBVST30040081K
			.24	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.54	3.23	7250	1.01	
06	3/8 NPT	10	10	72	43	16	35	52	38	17,5	36	11	9	115	13,5	87	500	0,60	CBVST30060081K
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.53	3.42	7250	1.32	
08	1/2 NPT	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	17	89	500	0,70	CBVST30080081K
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.67	3.50	7250	1.54	
12	3/4 NPT	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	18,3	126	315	1,80	CBVST30120081K
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.72	4.96	4500	3.96	
16	1 NPT	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	21,6	134	315	2,40	CBVST30160081K
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.85	5.73	4500	5.28	
20	1-1/4 NPT	32	30	120	81	39	106	84,5	39	55	16,5	17	320	22,1	170	350	3,80	CBVST30200081K	
			1.18	4.72	3.19	1.54	4.17	3.33	1.54	2.17	.65	.67	12.60	.87	6.69	5000	8.36		
24	1-1/2 NPT	40	38	140	104	53	127	106	53	65	16,5	17	320	22,1	191	350	6,20	CBVST30240081K	
			1.50	5.51	4.09	2.09	5.00	4.17	2.09	2.56	.65	.67	12.60	.87	7.52	5000	13.64		
32	2 NPT	50	48	150	118	58	116	137	116	58	75	16,5	17	320	30,2	201	350	7,80	CBVST30320081K
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	1.19	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type CBVST T-Bore Three-Way Selector - Female UN/UNF Thread (SAE J 514)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 04 to 08)  
Carbon Steel (STAUFF Sizes 12 to 32)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

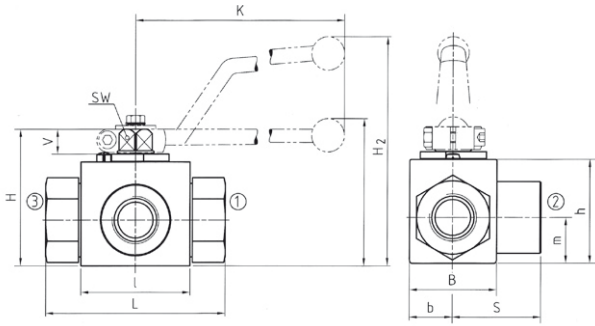


Pressure Inlet possible from all Ports

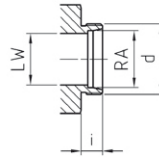
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	l	b	B	H	h	K	S	V	SW	K	i	H2			
04	7/16-20 UNF (1/4" SAE)	6	5	69	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,46	CBVST31040081M
			.20	2.72	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	1.01	
06	9/16-18 UNF (3/8" SAE)	10	10	72	43	16	35	52	38	17,5	36	11	9	115	13	87	500	0,60	CBVST31060081M
			.39	2.83	1.69	.63	1.38	2.05	1.50	.69	1.42	.43	.35	4.53	.51	3.42	7250	1.32	
08	3/4-16 UNF (1/2" SAE)	13	13	83	48	17,5	38	54	40	19	41,5	11	9	115	15	89	500	0,70	CBVST31080081M
			.51	3.27	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.59	3.50	7250	1.54	
12	1-1/16-12 UN (3/4" SAE)	20	20	95	62	24,5	52	75	57	24,5	47,5	14	14	170	20	126	315	1,80	CBVST31120081M
			.79	3.74	2.44	.96	2.05	2.95	2.24	.96	1.87	.55	.55	6.69	.79	4.96	4500	3.96	
16	1-5/16-12 UN (1" SAE)	25	25	113	66	29	61	83	65	29,5	56,5	14	14	170	20	134	315	2,40	CBVST31160081M
			.98	4.45	2.60	1.14	2.40	3.27	2.56	1.16	2.22	.55	.55	6.69	.79	5.73	4500	5.28	
20	1-5/8-12 UN (1-1/4" SAE)	32	30	111	81	39		106	84,5	39	55	16,5	17	320	20	170	350	3,80	CBVST31200081M
			1.18	4.37	3.19	1.54		4.17	3.33	1.54	2.17	.65	.67	12.60	.79	6.69	5000	8.36	
24	1-7/8-12 UN (1-1/2" SAE)	40	38	130	104	53		127	106	53	65	16,5	17	320	20	191	350	6,20	CBVST31240081M
			1.50	5.12	4.09	2.09		5.00	4.17	2.09	2.56	.65	.67	12.60	.79	7.52	5000	13.64	
32	2-1/2-12 UN (2" SAE)	50	48	150	118	58	116	137	116	58	75	16,5	17	320	20	201	350	7,80	CBVST31320081M
			1.89	5.91	4.65	2.28	4.57	5.39	4.57	2.28	2.95	.65	.67	12.60	.79	7.91	5000	17.16	

Please note the pressure ratings of the tube connections.





Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**


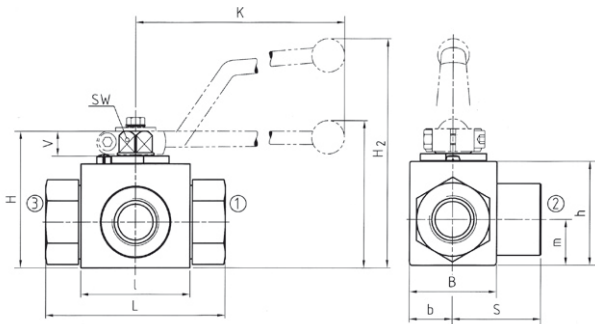
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

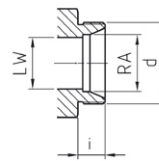
**Pressure Inlet possible from all Ports**

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/m)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			RA	LW	L	l	b	B	H	h	m	S	V	SW	K	i	H2			
02	06L / M12 x 1,5	4	6	5	67	40	13	29	47	33	13,5	33,5	11	9	115	10	82	500	0,30	CBVST3DN0406L0081M
			.24	.20	2.64	1.57	.51	1.14	1.85	1.30	.53	1.32	.43	.35	4.53	.39	3.23	7250	.66	
04	08L / M14 x 1,5	6	8	6	67	40	13	29	47	33	13,5	33,5	11	9	115	10	82	500	0,40	CBVST3DN0608L0081M
			.31	.24	2.64	1.57	.51	1.14	1.85	1.30	.53	1.32	.43	.35	4.53	.39	3.23	7250	.88	
05	10L / M16 x 1,5	8	10	6	74	40	13	29	47	33	13,5	34,5	11	9	115	11	82	500	0,40	CBVST3DN0810L0081M
			.39	.24	2.91	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.43	3.23	7250	.88	
06	12L / M18 x 1,5	10	12	10	74	43	16	35	52	38	17,5	36,5	11	9	115	11	87	500	0,50	CBVST3DN1012L0081M
			.47	.39	2.91	1.69	.63	1.38	2.05	1.50	.69	1.44	.43	.35	4.53	.43	3.42	7250	1.10	
08	15L / M22 x 1,5	13	15	13	82	48	17,5	38	54	40	19	41,5	11	9	115	12	89	500	0,65	CBVST3DN1315L0081M
			.59	.51	3.23	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.47	3.50	7250	1.43	
08	18L / M26 x 1,5	13	18	13	82	48	17,5	38	54	40	19	41,5	11	9	115	12	89	500	0,69	CBVST3DN1318L0081M
			.71	.51	2.23	1.89	.69	1.50	2.13	1.57	.75	1.63	.43	.35	4.53	.47	3.50	7250	1.52	
12	22L / M30 x 2	20	22	20	101	62	24,5	52	75	57	24,5	48	14	14	170	14	126	315	1,50	CBVST3DN2022L0081M
			.87	.79	3.98	2.44	.96	2.05	2.95	2.24	.96	1.89	.55	.55	6.69	.55	4.96	4500	3.30	
16	28L / M36 x 2	25	28	25	108	66	29	61	83	65	29,5	54	14	14	170	14	134	315	2,10	CBVST3DN2528L0081M
			1.10	.98	4.25	2.60	1.14	2.40	3.27	2.56	1.16	2.13	.55	.55	6.69	.55	5.73	4500	4.62	
20R	35L / M45 x 2	25/32	35	25	112	66	29	61	83	65	29,5	56	14	14	170	16	134	315	2,50	CBVST3DN2535L0081M
			1.38	.98	4.41	2.60	1.14	2.40	3.27	2.56	1.16	2.20	.55	.55	6.69	.63	5.73	4500	5.50	

Please note the pressure ratings of the tube connections.



Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Zinc (STAUFF Sizes 02 to 08)  
Carbon Steel (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM) Frontside Sealing
- O-rings: FPM (Viton®)

**Pressure Inlet possible from all Ports**

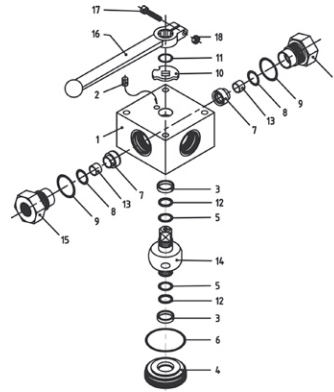
STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/m)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			RA	LW	L	l	b	B	H	h	m	S	V	SW	K	i	H2			
02	08S / M16 x 1,5	4	8	5	73	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,42	CBVST3DN0408S0081M
			.31	.20	2.87	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	.92	
04	10S / M18 x 1,5	6	10	6	73	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,43	CBVST3DN0610S0081M
			.39	.24	2.87	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	.95	
05	12S / M20 x 1,5	8	12	6	76	40	13	29	47	33	13,5	34,5	11	9	115	12	82	500	0,44	CBVST3DN0812S0081M
			.47	.24	2.99	1.57	.51	1.14	1.85	1.30	.53	1.36	.43	.35	4.53	.47	3.23	7250	.97	
06	14S / M22 x 1,5	10	14	10	80	43	16	35	52	38	17,5	36,5	11	9	115	14	87	500	0,50	CBVST3DN1014S0081M
			.55	.39	3.15	1.69	.63	1.38	2.05	1.50	.69	1.43	.43	.35	4.53	.55	3.42	7250	1.10	
08	16S / M24 x 1,5	13	16	13	86	48	17,5	38	54	40	19	43	11	9	115	14	89	500	0,65	CBVST3DN1316S0081M
			.63	.51	3.39	1.89	.69	1.50	2.13	1.57	.75	1.69	.43	.35	4.53	.55	3.50	7250	1.43	
08	20S / M30 x 2	13	20	13	90	48	17,5	38	54	40	19	43	11	9	115	16	89	500	0,70	CBVST3DN1320S0081M
			.79	.51	3.54	1.89	.69	1.50	2.13	1.57	.75	1.69	.43	.35	4.53	.63	3.50	7250	1.54	
12	25S / M36 x 2	20	25	20	109	62	24,5	52	75	57	24,5	48	14	14	170	18	126	315	1,70	CBVST3DN2025S0081M
			.98	.79	4.29	2.44	.96	2.05	2.95	2.24	.96	1.89	.55	.55	6.69	.71	4.96	4500	3.74	
16	30S / M42 x 2	25	30	25	120	66	29	61	83	65	29,5	57,5	14	14	170	20	134	315	2,40	CBVST3DN2530S0081M
			1.18	.98	4.72	2.60	1.14	2.40	3.27	2.56	1.16	2.26	.55	.55	6.69	.79	5.73	4500	5.28	
20R	38S / M52 x 2	25/32	38	25	124	66	29	61	83	65	29,5	57,5	14	14	170	22	134	315	2,80	CBVST3DN2538S0081M
			1.50	.98	4.88	2.60	1.14	2.40	3.27	2.56	1.16	2.26	.55	.55	6.69	.87	5.73	4500	6.16	

Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type LBV



Pressure inlet possible from all ports!



### List of Components

No.	Qty.	Description
1	1	Body
2	1	Stop Pin
3*	2	Bearing
4	1	Trunnion Retainer
5*	2	Trunnion O-Ring
6*	1	Retainer O-Ring
7*	3	Ball Seat
8*	3	Seat O-Ring
9*	3	Connector O-Ring
10	1	Cam Plate
11	1	Snap Ring
12*	2	Trunnion Back Up Ring
13	3	Seat Support
14	1	Trunnion Ball
15	3	Connector
16	1	Handle
17	1	Handle Bolt

\* Included in seal kit

### Characteristics

Three-way high-pressure block body ball valves designed for use as three-way selectors (L-bore, 90° operation) for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Multi-way valve with trunnion-style ball
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 1-1/2 BSP
- Female NPT thread (ANSI B1.20.1) >1-1/2 NPT
- Female UN/UNF thread (SAE J 514) >1-5/16-12 UN (1" SAE)
- 24° cone connection (DIN 2353); Light Series >35L
- 24° cone connection (DIN 2353); Heavy Series >38S

#### Pressure loaded seats at all ports!

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

- Operating temperature range:  
-20°C ... +100°C / -4°F ... +212°F

#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

- Symbol: L
- Overlap: positive
- Operating: 90°

#### 01-LBV



- Stop of end position:

Please see pages F98-F99 for alternative porting patterns.

### Order Codes

<b>LBV</b>	<b>3</b>	<b>G</b>	<b>02</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>M</b>	<b>-</b>	<b>-</b>
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪

#### ① Type

Multi-Way L-Bore Ball Valve **LBV**

#### ② Number of Ports

Three Ports (Three-Way Ball Valve) **3**

#### ③ Connection Style

Female BSP Thread (DIN ISO 228) **G**  
 Female NPT Thread (ANSI B1.20.1) **0**  
 Female UN/UNF Thread (SAE J 514) **1**  
 24° Cone Connection (Light / Heavy Series)  
**DN04 DN06 DN08 DN10 DN13 DN16 DN20 DN25**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table) for connection styles G, 0 and 1:  
**02 04 06 08 10 12 16 20R 24R**  
 Tube Size (according to dimension table) for 24° Cone Connection (Light Series):  
**06L 08L 10L 12L 15L 18L 22L 28L 35L**  
 Tube Size (according to dimension table) for 24° Cone Connection (Heavy Series):  
**08S 10S 12S 14S 16S 20S 25S 30S 38S**

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated **0**  
 Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated **0**  
 Stem: Carbon Steel  
 Ball / Stem: Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) **0**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®) **0**  
 FPM (Viton®) **1**  
 EPDM **3**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

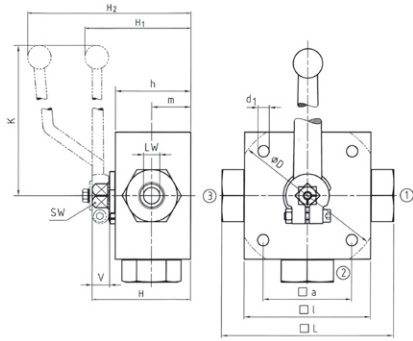
Supplied with standard lever (according to table) **-**  
 Supplied without lever **-0**

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

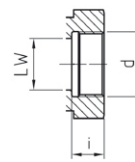
Supplied without accessories **-**  
 Supplied with Locking Device LD4 **-LD4**  
 Supplied with Double-Acting Pneumatic Actuator (Please add size \*\*) **-EDA\*\***  
 Supplied with Single-Acting Pneumatic Actuator (Please add size \*\*) **-ESA\*\***

Please see page F93-F97 for further information and options.



### High-Pressure Block Body Ball Valve - Type LBV L-Bore Three-Way Selector - Female BSP Thread (DIN ISO 228)

#### Female BSP Thread (DIN ISO 228)

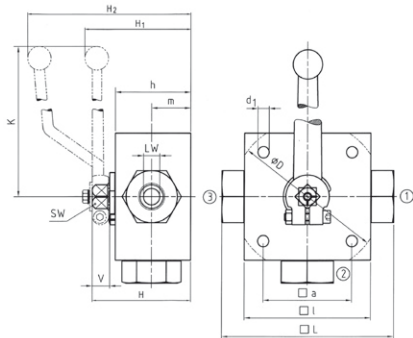


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

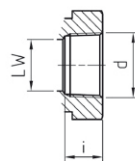
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1			
02	G 1/8 BSP	4	5	100	70	55	58	40	22	160	14	12	10	6,5	101	500	1,60	LBV3G020001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39		.26	3.98		7250
04	G 1/4 BSP	6	5	100	70	55	58	40	22	160	14	12	14	6,5	101	500	1,60	LBV3G040001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.55		.26	3.98		7250
06	G 3/8 BSP	10	8	115	80	65	68	50	27	200	14	14	14	6,5	72	500	2,70	LBV3G060001M	
			.31	4.53		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.55		.26	2.83		7250
08	G 1/2 BSP	13	13	136	100	80	78	60	31	200	14	14	16,3	9	82	400	4,90	LBV3G080001M	
			.51	5.35		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.64		.35	3.23		5800
10	G 5/8 BSP	16	13	139	100	80	78	60	31	200	14	14	18	9	82	400	4,90	LBV3G100001M	
			.51	5.47		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.71		.35	3.23		5800
12	G 3/4 BSP	20	18	154	138	113	85	88	67	36,5	320	16,5	17	18	8,5	96	315	6,70	LBV3G120001M
			.71	6.06	5.43	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.71	.33		3.78	4500	
16	G 1 BSP	25	23	172	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112	315	8,30	LBV3G160001M
			.91	6.77	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.79	.33		4.41	4500	
20R	G 1-1/4 BSP	25/32	23	180	138	119	85	103	82	47,5	320	16,5	17	22	8,5	112	315	8,50	LBV3G20R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33		4.41	4500	
24R	G 1-1/2 BSP	25/40	23	180	138	119	85	103	82	47,5	320	16,5	17	24	8,5	112	250	8,50	LBV3G24R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.94	.33		4.41	3600	

Please note the pressure ratings of the tube connections.



### High-Pressure Block Body Ball Valve - Type LBV L-Bore Three-Way Selector - Female NPT Thread (ANSI B1.20.1)

#### Female NPT Thread (ANSI B1.20.1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1			
02	1/8 NPT	4	5	100	70	55	58	40	22	160	14	12	10,5	6,5	101	500	1,60	LBV30020001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.41		.26	3.98		7250
04	1/4 NPT	6	5	100	70	55	58	40	22	160	14	12	13,7	6,5	101	500	1,60	LBV30040001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.54		.26	3.98		7250
06	3/8 NPT	10	8	115	80	65	68	50	27	200	14	14	13,5	6,5	72	500	2,80	LBV30060001M	
			.31	4.53		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.53		.26	2.83		7250
08	1/2 NPT	13	13	136	100	80	78	60	31	200	14	14	17	9	82	400	5,20	LBV30080001M	
			.51	5.35		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.67		.35	3.23		5800
12	3/4 NPT	20	18	154	138	113	85	88	67	36,5	320	16,5	17	18,3	8,5	96	315	6,80	LBV30120001M
			.71	6.06	5.43	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.72	.33		3.78	4500	
16	1 NPT	25	23	172	138	119	85	103	82	47,5	320	16,5	17	21,6	8,5	112	315	8,50	LBV30160001M
			.91	6.77	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.85	.33		4.41	4500	
20R	1-1/4 NPT	25/32	23	180	138	119	85	103	82	47,5	320	16,5	17	22,1	8,5	112	315	8,80	LBV3020R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33		4.41	4500	
24R	1-1/2 NPT	25/40	23	180	138	119	85	103	82	47,5	320	16,5	17	22,1	8,5	112	250	8,80	LBV3024R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33		4.41	3600	

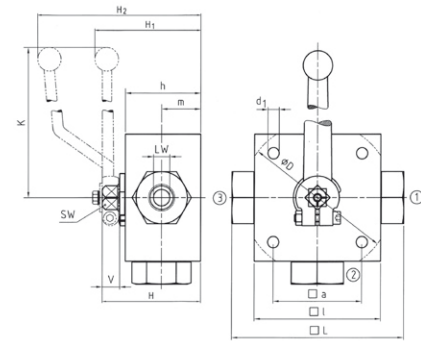
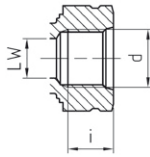
Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type LBV L-Bore Three-Way Selector - Female UN/UNF Thread (SAE J 514)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

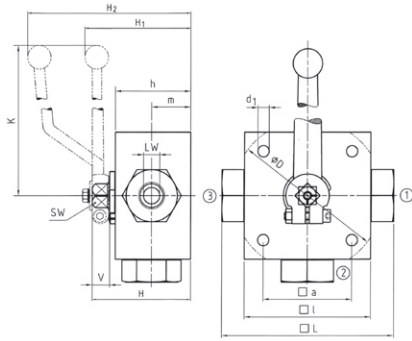
- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Size 04)  
Zinc (STAUFF Sizes 06 and 08)  
Aluminium (STAUFF Sizes 12 and 16)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Female UN/UNF Thread  
(SAE J 514)



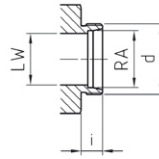
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2				
04	7/16-20 UNF (1/4" SAE)	6	5	100		70	55	58	40	22	160	14	12	14	6,5		101	500	1,60	LBV31040001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.55	.26		3.98	7250	3.52		
06	9/16-18 UNF (3/4" SAE)	10	8	115		80	65	68	50	27	200	14	14	14	6,5	72		500	2,80	LBV31060001M	
			.31	4.53		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.55	.26	2.83		7250	6.16		
08	3/4-16 UNF (1/2" SAE)	13	13	144		100	80	78	60	31	200	14	14	16,3	9	82		400	5,20	LBV31080001M	
			.51	5.67		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.64	.35	3.23		5800	11.44		
12	1-1/16-12 UN (3/4" SAE)	20	18	164	138	113	85	88	67	36,5	320	16,5	17	18	8,5	96		315	6,80	LBV31120001M	
			.71	6.46	5.43	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.71	.33	3.78		4500	14.96		
16	1-5/16-12 UN (1" SAE)	25	23	180	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112		315	8,50	LBV31160001M	
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.79	.33	4.41		4500	18.70		

Please note the pressure ratings of the tube connections.



Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**

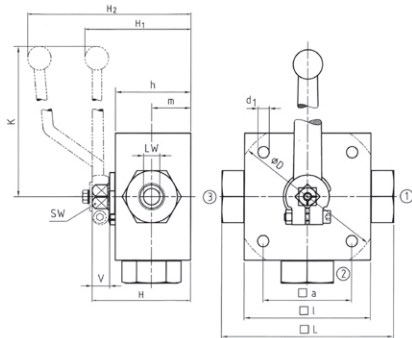


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 05 to 10)  
Aluminium (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

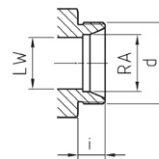
STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2			
02	06L / M12 x 1,5	4	6	5	105	/	70	55	58	40	22	160	14	12	10	6,5	/	101	500	1,60	LBV3DN0406L0001M
			.24	.20	4.13		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39	.26		3.98	7250	3.52	
04	08L / M14 x 1,5	6	8	5	105	/	70	55	58	40	22	160	14	12	10	6,5	/	101	500	1,80	LBV3DN0608L0001M
			.31	.20	4.13		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39	.26		3.98	7250	3.96	
05	10L / M16 x 1,5	8	10	8	114	/	80	65	68	50	27	200	14	14	11	6,5	72	500	2,60	LBV3DN0810L0001M	
			.39	.31	4.49		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.43	.26	2.83	7250	5.72		
06	12L / M18 x 1,5	10	12	8	114	/	80	65	68	50	27	200	14	14	11	6,5	72	500	2,60	LBV3DN1012L0001M	
			.47	.31	4.49		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.43	.26	2.83	7250	5.72		
08	15L / M22 x 1,5	13	15	13	137	/	100	80	78	60	31	200	14	14	12	9	82	400	4,70	LBV3DN1315L0001M	
			.59	.51	5.39		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.47	.35	3.23	5800	10.34		
10	18L / M26 x 1,5	16	18	18	137	/	113	85	88	67	36,5	320	16,5	17	12	8,5	82	400	4,70	LBV3DN1618L0001M	
			.71	.71	5.39		4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.47	.33	3.23	5800	10.34		
12	22L / M30 x 2	20	22	23	152	138	119	85	103	82	47,5	320	16,5	17	14	8,5	96	315	6,60	LBV3DN2022L0001M	
			.87	.91	5.98	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.55	.33	3.78	4500	14.52		
16	28L / M36 x 2	25	28	23	166	138	119	85	103	82	47,5	320	16,5	17	14	8,5	112	315	8,00	LBV3DN2528L0001M	
			1.10	.91	6.54	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.55	.33	4.41	4500	17.60		
20R	35L / M45 x 2	25/32	35	23	170	138	119	85	103	82	47,5	320	16,5	17	16	8,5	112	315	8,12	LBV3DN2535L0001M	
			1.38	.91	6.69	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.63	.33	4.41	4500	17.86		

Please note the pressure ratings of the tube connections.



Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 05 to 10)  
Aluminium (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2			
02	08S / M16 x 1,5	4	8	5	105	/	70	55	58	40	22	160	14	12	12	6,5	/	101	500	1,60	LBV3DN0408S0001M
			.31	.20	4.13		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.47	.26		3.98	7250	3.52	
04	10S / M18 x 1,5	6	10	5	105	/	70	55	58	40	22	160	14	12	12	6,5	/	101	500	1,80	LBV3DN0610S0001M
			.39	.20	4.13		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.47	.26		3.98	7250	3.96	
05	12S / M20 x 1,5	8	12	8	116	/	80	65	68	50	27	200	14	14	12	6,5	72	500	2,60	LBV3DN0812S0001M	
			.47	.31	4.57		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.47	.26	2.83	7250	5.72		
06	14S / M22 x 1,5	10	14	8	120	/	80	65	68	50	27	200	14	14	14	6,5	72	500	2,60	LBV3DN1014S0001M	
			.55	.31	4.72		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.55	.26	2.83	7250	5.72		
08	16S / M24 x 1,5	13	16	13	141	/	100	80	78	60	31	200	14	14	14	9	82	400	4,70	LBV3DN1316S0001M	
			.63	.51	5.55		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.55	.35	3.23	5800	10.34		
10	20S / M30 x 2	16	20	18	145	/	113	85	88	67	36,5	320	16,5	17	16	8,5	82	400	4,70	LBV3DN1620S0001M	
			.79	.71	5.71		4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.63	.33	3.23	5800	10.34		
12	25S / M36 x 2	20	25	23	160	138	119	85	103	82	47,5	320	16,5	17	18	8,5	96	315	6,60	LBV3DN2025S0001M	
			.98	.91	6.30	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.71	.33	3.78	4500	14.52		
16	30S / M42 x 2	25	30	23	176	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112	315	8,00	LBV3DN2530S0001M	
			1.18	.91	6.93	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.79	.33	4.41	4500	17.60		
20R	38S / M52 x 2	25/32	38	23	180	138	119	85	103	82	47,5	320	16,5	17	22	8,5	112	315	8,12	LBV3DN2538S0001M	
			1.50	.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33	4.41	4500	17.86		

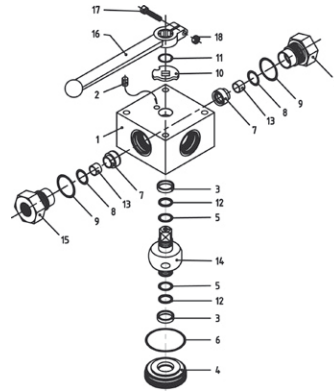
Please note the pressure ratings of the tube connections.



## High-Pressure Block Body Ball Valve - Type TBV



Pressure inlet possible  
from all ports!



### List of Components

No.	Qty.	Description
1	1	Body
2	1	Stop Pin
3*	2	Bearing
4	1	Trunnion Retainer
5*	2	Trunnion O-Ring
6*	1	Retainer O-Ring
7*	3	Ball Seat
8*	3	Seat O-Ring
9*	3	Connector O-Ring
10	1	Cam Plate
11	1	Snap Ring
12*	2	Trunnion Back Up Ring
13	3	Seat Support
14	1	Trunnion Ball
15	3	Connector
16	1	Handle
17	1	Handle Bolt

\* Included in seal kit

### Characteristics

Three-way high-pressure block body ball valves designed for use as three-way selectors (T-bore, 90° operation) for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Multi-way valve with trunnion-style ball
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 1-1/2 BSP
- Female NPT thread (ANSI B1.20.1) >1-1/2 NPT
- Female UN/UNF thread (SAE J 514) >1-5/16-12 UN (1" SAE)
- 24° cone connection (DIN 2353); Light Series >35L
- 24° cone connection (DIN 2353); Heavy Series >38S

#### Pressure loaded seats at all ports!

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

- Operating temperature range:  
-20°C ... +100°C / -4°F ... +212°F

#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

- Symbol: T
- Overlap: positive
- Operating: 90°

#### 02-TBV

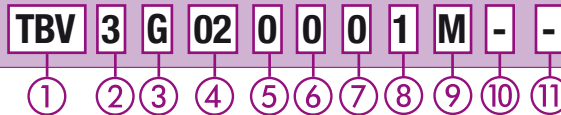


- Stop of end position:



Please see pages F98-F99 for alternative porting patterns.

### Order Codes



#### ① Type

Multi-Way T-Bore Ball Valve **TBV**

#### ② Number of Ports

Three Ports (Three-Way Ball Valve) **3**

#### ③ Connection Style

Female BSP Thread (DIN ISO 228) **G**  
 Female NPT Thread (ANSI B1.20.1) **0**  
 Female UN/UNF Thread (SAE J 514) **1**  
 24° Cone Connection (Light / Heavy Series)  
**DN04 DN06 DN08 DN10 DN13 DN16 DN20 DN25**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table)  
for connection styles G, 0 and 1:  
**02 04 06 08 10 12 16 20R 24R**  
 Tube Size (according to dimension table)  
for 24° Cone Connection (Light Series):  
**06L 08L 10L 12L 15L 18L 22L 28L 35L**  
 Tube Size (according to dimension table)  
for 24° Cone Connection (Heavy Series):  
**08S 10S 12S 14S 16S 20S 25S 30S 38S**

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated **0**  
 Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated **0**  
 Stem: Carbon Steel  
 Ball / Stem: Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) **0**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®) **0**  
 FPM (Viton®) **1**  
 EPDM **3**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

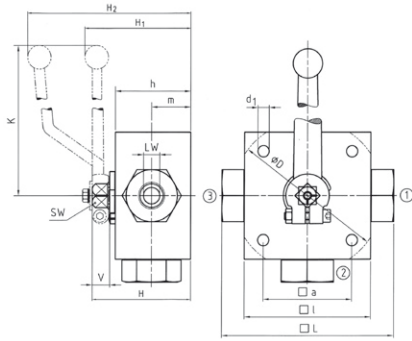
Supplied with standard lever (according to table) **-**  
 Supplied without lever **-0**

Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

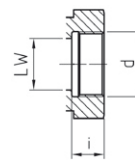
Supplied without accessories **-**  
 Supplied with Locking Device LD4 **-LD4**  
 Supplied with Double-Acting Pneumatic Actuator (Please add size \*\*) **-EDA\*\***  
 Supplied with Single-Acting Pneumatic Actuator (Please add size \*\*) **-ESA\*\***

Please see page F93-F97 for further information and options.



### High-Pressure Block Body Ball Valve - Type TBV T-Bore Three-Way Selector - Female BSP Thread (DIN ISO 228)

#### Female BSP Thread (DIN ISO 228)

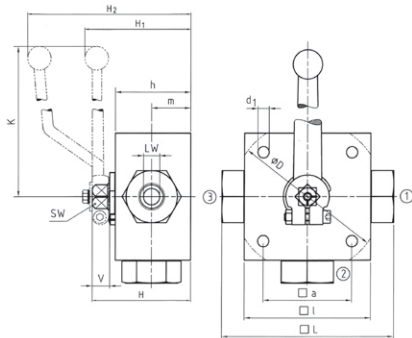


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

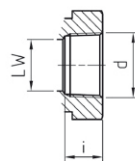
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1			
02	G 1/8 BSP	4	5	100	70	55	58	40	22	160	14	12	10	6,5	101	500	1,60	TBV3G020001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39		.26	3.98		7250
04	G 1/4 BSP	6	5	100	70	55	58	40	22	160	14	12	14	6,5	101	500	1,60	TBV3G040001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.55		.26	3.98		7250
06	G 3/8 BSP	10	8	115	80	65	68	50	27	200	14	14	14	6,5	72	500	2,70	TBV3G060001M	
			.31	4.53		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.55		.26	2.83		7250
08	G 1/2 BSP	13	13	136	100	80	78	60	31	200	14	14	16,3	9	82	400	4,90	TBV3G080001M	
			.51	5.35		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.64		.35	3.23		5800
10	G 5/8 BSP	16	13	139	100	80	78	60	31	200	14	14	18	9	82	400	4,90	TBV3G100001M	
			.51	5.47		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.71		.35	3.23		5800
12	G 3/4 BSP	20	18	154	138	113	85	88	67	36,5	320	16,5	17	18	8,5	96	315	6,70	TBV3G120001M
			.71	6.06	5.43	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.71	.33		3.78	4500	
16	G 1 BSP	25	23	172	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112	315	8,30	TBV3G160001M
			.91	6.77	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.79	.33		4.41	4500	
20R	G 1-1/4 BSP	25/32	23	180	138	119	85	103	82	47,5	320	16,5	17	22	8,5	112	315	8,50	TBV3G20R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33		4.41	4500	
24R	G 1-1/2 BSP	25/40	23	180	138	119	85	103	82	47,5	320	16,5	17	24	8,5	112	250	8,50	TBV3G24R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.94	.33		4.41	3600	

Please note the pressure ratings of the tube connections.



### High-Pressure Block Body Ball Valve - Type TBV T-Bore Three-Way Selector - Female NPT Thread (ANSI B1.20.1)

#### Female NPT Thread (ANSI B1.20.1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1			
02	1/8 NPT	4	5	100	70	55	58	40	22	160	14	12	10,5	6,5	101	500	1,60	TBV30020001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.41		.26	3.98		7250
04	1/4 NPT	6	5	100	70	55	58	40	22	160	14	12	13,7	6,5	101	500	1,60	TBV30040001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.54		.26	3.98		7250
06	3/8 NPT	10	8	115	80	65	68	50	27	200	14	14	13,5	6,5	72	500	2,80	TBV30060001M	
			.31	4.53		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.53		.26	2.83		7250
08	1/2 NPT	13	13	136	100	80	78	60	31	200	14	14	17	9	82	400	5,20	TBV30080001M	
			.51	5.35		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.67		.35	3.23		5800
12	3/4 NPT	20	18	154	138	113	85	88	67	36,5	320	16,5	17	18,3	8,5	96	315	6,80	TBV30120001M
			.71	6.06	5.43	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.72	.33		3.78	4500	
16	1 NPT	25	23	172	138	119	85	103	82	47,5	320	16,5	17	21,6	8,5	112	315	8,50	TBV30160001M
			.91	6.77	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.85	.33		4.41	4500	
20R	1-1/4 NPT	25/32	23	180	138	119	85	103	82	47,5	320	16,5	17	22,1	8,5	112	315	8,80	TBV3020R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33		4.41	4500	
24R	1-1/2 NPT	25/40	23	180	138	119	85	103	82	47,5	320	16,5	17	22,1	8,5	112	250	8,80	TBV3024R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33		4.41	3600	

Please note the pressure ratings of the tube connections.

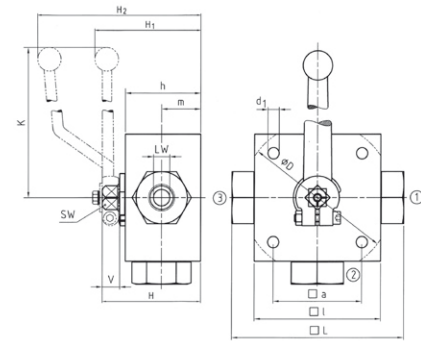
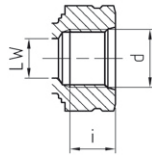


## High-Pressure Block Body Ball Valve - Type TBV T-Bore Three-Way Selector - Female UN/UNF Thread (SAE J 514)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

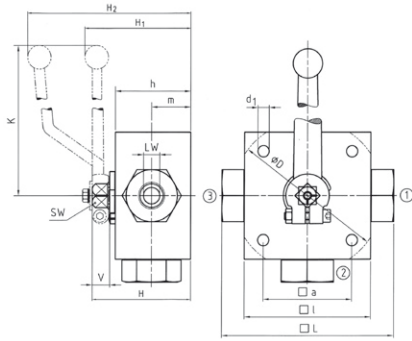
- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Size 04)  
Zinc (STAUFF Sizes 06 and 08)  
Aluminium (STAUFF Sizes 12 and 16)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Female UN/UNF Thread  
(SAE J 514)

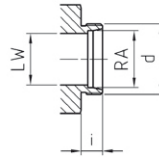


STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2				
04	7/16-20 UNF (1/4" SAE)	6	5	100		70	55	58	40	22	160	14	12	14	6,5		101	500	1,60	TBV31040001M	
			0,20	3,94		2,76	2,17	2,28	1,57	0,87	6,30	0,55	0,47	0,55	0,26		3,98	7250	3,52		
06	9/16-18 UNF (3/8" SAE)	10	8	115		80	65	68	50	27	200	14	14	14	6,5	72		500	2,80	TBV31060001M	
			0,31	4,53		3,15	2,56	2,68	1,97	1,06	7,87	0,55	0,55	0,55	0,26	2,83		7250	6,16		
08	3/4-16 UNF (1/2" SAE)	13	13	144		100	80	78	60	31	200	14	14	16,3	9	82		400	5,20	TBV31080001M	
			0,51	5,67		3,94	3,15	3,07	2,36	1,22	7,87	0,55	0,55	0,64	0,35	3,23		5800	11,44		
12	1-1/16-12 UN (3/4" SAE)	20	18	164	138	113	85	88	67	36,5	320	16,5	17	18	8,5	96		315	6,80	TBV31120001M	
			0,71	6,46	5,43	4,45	3,35	3,46	2,64	1,44	12,60	0,65	0,67	0,71	0,33	3,78		4500	14,96		
16	1-5/16-12 UN (1" SAE)	25	23	180	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112		315	8,50	TBV31160001M	
			0,91	7,09	5,43	4,69	3,35	4,06	3,23	1,87	12,60	0,65	0,67	0,79	0,33	4,41		4500	18,70		

Please note the pressure ratings of the tube connections.



Hex nuts and cutting rings are not included in delivery.

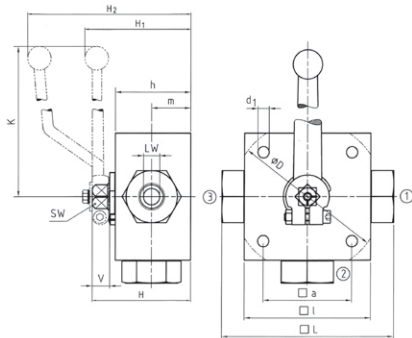
**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**


When ordering the standard option as indicated in the table below, the following materials will be supplied:

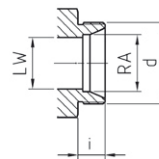
- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 05 to 10)  
Aluminium (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2			
02	06L / M12 x 1,5	4	6	5	105	70	55	58	40	22	160	14	12	10	6,5	101	500	1,60	TBV3DN0406L0001M		
			.24	.20	4.13	2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39	.26	3.98	7250	3.52			
04	08L / M14 x 1,5	6	8	5	105	70	55	58	40	22	160	14	12	10	6,5	101	500	1,80	TBV3DN0608L0001M		
			.31	.20	4.13	2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39	.26	3.98	7250	3.96			
05	10L / M16 x 1,5	8	10	8	114	80	65	68	50	27	200	14	14	11	6,5	72	500	2,60	TBV3DN0810L0001M		
			.39	.31	4.49	3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.43	.26	2.83	7250	5.72			
06	12L / M18 x 1,5	10	12	8	114	80	65	68	50	27	200	14	14	11	6,5	72	500	2,60	TBV3DN1012L0001M		
			.47	.31	4.49	3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.43	.26	2.83	7250	5.72			
08	15L / M22 x 1,5	13	15	13	137	100	80	78	60	31	200	14	14	12	9	82	400	4,70	TBV3DN1315L0001M		
			.59	.51	5.39	3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.47	.35	3.23	5800	10.34			
10	18L / M26 x 1,5	16	18	18	137	113	85	88	67	36,5	320	16,5	17	12	8,5	82	400	4,70	TBV3DN1618L0001M		
			.71	.71	5.39	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.47	.33	3.23	5800	10.34			
12	22L / M30 x 2	20	22	23	152	138	119	85	103	82	47,5	320	16,5	17	14	8,5	96	315	6,60	TBV3DN2022L0001M	
			.87	.91	5.98	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.55	.33	3.78	4500	14.52		
16	28L / M36 x 2	25	28	23	166	138	119	85	103	82	47,5	320	16,5	17	14	8,5	112	315	8,00	TBV3DN2528L0001M	
			1.10	.91	6.54	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.55	.33	4.41	4500	17.60		
20R	35L / M45 x 2	25/32	35	23	170	138	119	85	103	82	47,5	320	16,5	17	16	8,5	112	315	8,12	TBV3DN2535L0001M	
			1.38	.91	6.69	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.63	.33	4.41	4500	17.86		

Please note the pressure ratings of the tube connections.



Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 05 to 10)  
Aluminium (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

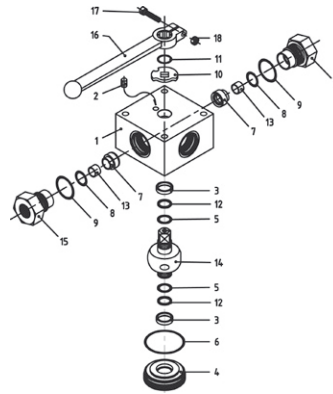
STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2			
02	08S / M16 x 1,5	4	8	5	105	70	55	58	40	22	160	14	12	12	6,5	101	500	1,60	TBV3DN0408S0001M		
			.31	.20	4.13	2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.47	.26	3.98	7250	3.52			
04	10S / M18 x 1,5	6	10	5	105	70	55	58	40	22	160	14	12	12	6,5	101	500	1,80	TBV3DN0610S0001M		
			.39	.20	4.13	2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.47	.26	3.98	7250	3.96			
05	12S / M20 x 1,5	8	12	8	116	80	65	68	50	27	200	14	14	12	6,5	72	500	2,60	TBV3DN0812S0001M		
			.47	.31	4.57	3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.47	.26	2.83	7250	5.72			
06	14S / M22 x 1,5	10	14	8	120	80	65	68	50	27	200	14	14	14	6,5	72	500	2,60	TBV3DN1014S0001M		
			.55	.31	4.72	3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.55	.26	2.83	7250	5.72			
08	16S / M24 x 1,5	13	16	13	141	100	80	78	60	31	200	14	14	14	9	82	400	4,70	TBV3DN1316S0001M		
			.63	.51	5.55	3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.55	.35	3.23	5800	10.34			
10	20S / M30 x 2	16	20	18	145	113	85	88	67	36,5	320	16,5	17	16	8,5	82	400	4,70	TBV3DN1620S0001M		
			.79	.71	5.71	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.63	.33	3.23	5800	10.34			
12	25S / M36 x 2	20	25	23	160	138	119	85	103	82	47,5	320	16,5	17	18	8,5	96	315	6,60	TBV3DN2025S0001M	
			.98	.91	6.30	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.71	.33	3.78	4500	14.52		
16	30S / M42 x 2	25	30	23	176	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112	315	8,00	TBV3DN2530S0001M	
			1.18	.91	6.93	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.79	.33	4.41	4500	17.60		
20R	38S / M52 x 2	25/32	38	23	180	138	119	85	103	82	47,5	320	16,5	17	22	8,5	112	315	8,12	TBV3DN2538S0001M	
			1.50	.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33	4.41	4500	17.86		

Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type TBV



Pressure inlet possible  
from all ports!



### List of Components

No.	Qty.	Description
1	1	Body
2	1	Stop Pin
3*	2	Bearing
4	1	Trunnion Retainer
5*	2	Trunnion O-Ring
6*	1	Retainer O-Ring
7*	4	Ball Seat
8*	4	Seat O-Ring
9*	4	Connector O-Ring
10	1	Cam Plate
11	1	Snap Ring
12*	2	Trunnion Back Up Ring
13	4	Seat Support
14	1	Trunnion Ball
15	4	Connector
16	1	Handle
17	1	Handle Bolt

\* Included in seal kit

### Characteristics

Four-way high-pressure block body ball valves designed for use as 4-way selectors (T-bore, 90° operation) for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Multi-way valve with trunnion-style ball
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 1-1/2 BSP
- Female NPT thread (ANSI B1.20.1) >1-1/2 NPT
- Female UN/UNF thread (SAE J 514) >1-5/16-12 UN (1" SAE)
- 24° cone connection (DIN 2353); Light Series >35L
- 24° cone connection (DIN 2353); Heavy Series >38S

#### Pressure loaded seats at all ports!

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

- Operating temperature range:  
-20°C ... +100°C / -4°F ... +212°F

#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

- Symbol: T
- Overlap: positive
- Operating: 90°

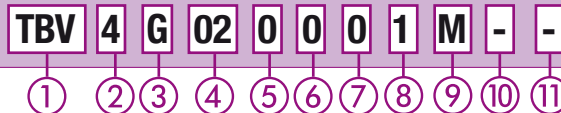
#### 13-TBV



- Stop of end position:

Please see pages F98-F99 for alternative porting patterns.

### Order Codes



#### ① Type

Multi-Way T-Bore Ball Valve **TBV**

#### ② Number of Ports

Four Ports (Four-Way Ball Valve) **4**

#### ③ Connection Style

Female BSP Thread (DIN ISO 228) **G**  
 Female NPT Thread (ANSI B1.20.1) **0**  
 Female UN/UNF Thread (SAE J 514) **1**  
 24° Cone Connection (Light / Heavy Series)  
**DN04 DN06 DN08 DN10 DN13 DN16 DN20 DN25**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table)  
for connection styles G, 0 and 1:  
**02 04 06 08 10 12 16 20R 24R**  
 Tube Size (according to dimension table)  
for 24° Cone Connection (Light Series):  
**06L 08L 10L 12L 15L 18L 22L 28L 35L**  
 Tube Size (according to dimension table)  
for 24° Cone Connection (Heavy Series):  
**08S 10S 12S 14S 16S 20S 25S 30S 38S**

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated **0**  
 Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated **0**  
 Stem: Carbon Steel  
 Ball / Stem: Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) **0**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®) **0**  
 FPM (Viton®) **1**  
 EPDM **3**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

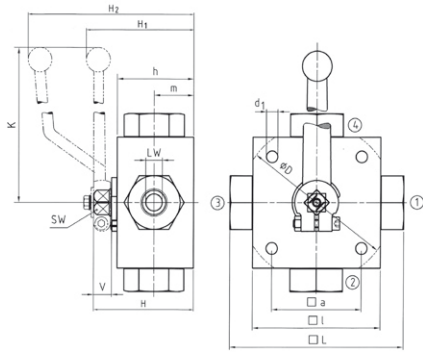
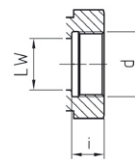
Supplied with standard lever (according to table) **-**  
 Supplied without lever **-0**

Alternative levers can be ordered separately. Please see page F80 for further information.

#### ⑪ Accessories / Options

Supplied without accessories **-**  
 Supplied with Locking Device LD4 **-LD4**  
 Supplied with Double-Acting Pneumatic Actuator (Please add size \*\*) **-EDA\*\***  
 Supplied with Single-Acting Pneumatic Actuator (Please add size \*\*) **-ESA\*\***

Please see page F81 - F85 for further information and options.

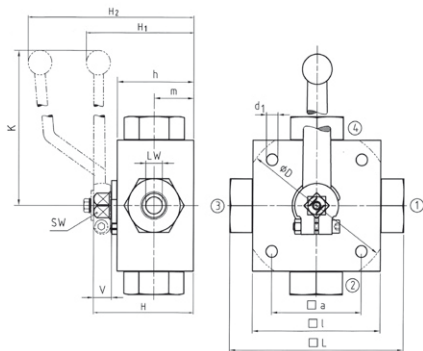
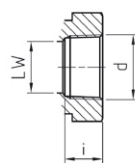

**Female BSP Thread  
(DIN ISO 228)**


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1			
02	G 1/8 BSP	4	5	100	70	55	58	40	22	160	14	12	10	6,5	101	500	1,60	TBV4G020001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39		.26	3.98		7250
04	G 1/4 BSP	6	5	100	70	55	58	40	22	160	14	12	14	6,5	101	500	1,60	TBV4G040001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.55		.26	3.98		7250
06	G 3/8 BSP	10	8	115	80	65	68	50	27	200	14	14	14	6,5	72	500	2,80	TBV4G060001M	
			.31	4.53		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.55	.26	2.83	7250		6.16
08	G 1/2 BSP	13	13	136	100	80	78	60	31	200	14	14	16,3	9	82	400	4,90	TBV4G080001M	
			.51	5.35		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.64	.35	3.23	5800		10.78
10	G 5/8 BSP	16	13	139	100	80	78	60	31	200	14	14	18	9	82	400	4,90	TBV4G100001M	
			.51	5.47		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.71	.35	3.23	5800		10.78
12	G 3/4 BSP	20	18	154	138	113	85	88	67	36,5	320	16,5	17	18	8,5	96	315	6,80	TBV4G120001M
			.71	6.06	5.43	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.71	.33	3.78	4500	14.96	
16	G 1 BSP	25	23	172	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112	315	8,50	TBV4G160001M
			.91	6.77	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.79	.33	4.41	4500	18.70	
20R	G 1-1/4 BSP	25/32	23	180	138	119	85	103	82	47,5	320	16,5	17	22	8,5	112	315	8,80	TBV4G20R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33	4.41	4500	19.36	
24R	G 1-1/2 BSP	25/40	23	180	138	119	85	103	82	47,5	320	16,5	17	24	8,5	112	250	8,80	TBV4G24R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.94	.33	4.41	3600	19.36	

Please note the pressure ratings of the tube connections.


**Female NPT Thread  
(ANSI B1.20.1)**


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1			
02	1/8 NPT	4	5	100	70	55	58	40	22	160	14	12	10,5	6,5	101	500	1,60	TBV40020001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.41		.26	3.98		7250
04	1/4 NPT	6	5	100	70	55	58	40	22	160	14	12	13,7	6,5	101	500	1,60	TBV40040001M	
			.20	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.54		.26	3.98		7250
06	3/8 NPT	10	8	115	80	65	68	50	27	200	14	14	13,5	6,5	72	500	2,80	TBV40060001M	
			.31	4.53		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.53	.26	2.83	7250		6.16
08	1/2 NPT	13	13	136	100	80	78	60	31	200	14	14	17	9	82	400	4,90	TBV40080001M	
			.51	5.35		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.67	.35	3.23	5800		10.78
12	3/4 NPT	20	18	154	138	113	85	88	67	36,5	320	16,5	17	18,3	8,5	96	315	6,80	TBV40120001M
			.71	6.06	5.43	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.72	.33	3.78	4500	14.96	
16	1 NPT	25	23	172	138	119	85	103	82	47,5	320	16,5	17	21,6	8,5	112	315	8,50	TBV40160001M
			.91	6.77	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.85	.33	4.41	4500	18.70	
20R	1-1/4 NPT	25/32	23	180	138	119	85	103	82	47,5	320	16,5	17	22,1	8,5	112	315	8,80	TBV4020R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33	4.41	4500	19.36	
24R	1-1/2 NPT	25/40	23	180	138	119	85	103	82	47,5	320	16,5	17	22,1	8,5	112	250	8,80	TBV4024R0001M
			.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33	4.41	3600	19.36	

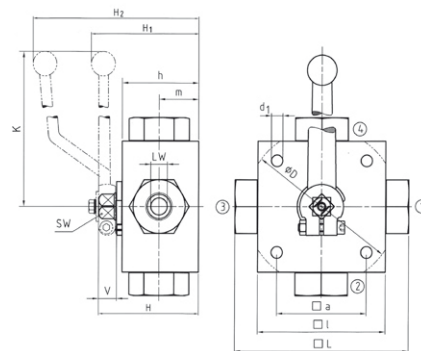
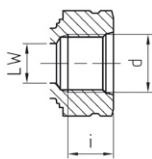
Please note the pressure ratings of the tube connections.

## High-Pressure Block Body Ball Valve - Type TBV T-Bore Four-Way Selector - Female UN/UNF Thread (SAE J 514)

When ordering the standard option as indicated in the table below, the following materials will be supplied:

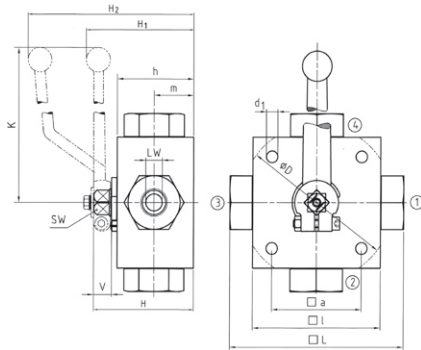
- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Size 04)  
Zinc (STAUFF Sizes 06 and 08)  
Aluminium (STAUFF Sizes 12 and 16)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

Female UN/UNF Thread  
(SAE J 514)



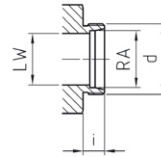
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2				
04	7/16-20 UNF (1/4" SAE)	6	5	100		70	55	58	40	22	160	14	12	14	6,5		101	500	1,60	TBV41040001M	
			0,20	3,94		2,76	2,17	2,28	1,57	0,87	6,30	0,55	0,47	0,55	0,26		3,98	7250	3,52		
06	9/16-18 UNF (3/8" SAE)	10	8	115		80	65	68	50	27	200	14	14	14	6,5	72		500	2,80	TBV41060001M	
			0,31	4,53		3,15	2,56	2,68	1,97	1,06	7,87	0,55	0,55	0,55	0,26	2,83		7250	6,16		
08	3/4-16 UNF (1/2" SAE)	13	13	144		100	80	78	60	31	200	14	14	16,3	9	82		400	5,20	TBV41080001M	
			0,51	5,67		3,94	3,15	3,07	2,36	1,22	7,87	0,55	0,55	0,64	0,35	3,23		5800	11,44		
12	1-1/16-12 UN (3/4" SAE)	20	18	164	138	113	85	88	67	36,5	320	16,5	17	18	8,5	96		315	6,80	TBV41120001M	
			0,71	6,46	5,43	4,45	3,35	3,46	2,64	1,44	12,60	0,65	0,67	0,71	0,33	3,78		4500	14,96		
16	1-5/16-12 UN (1" SAE)	25	23	180	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112		315	8,50	TBV41160001M	
			0,91	7,09	5,43	4,69	3,35	4,06	3,23	1,87	12,60	0,65	0,67	0,79	0,33	4,41		4500	18,70		

Please note the pressure ratings of the tube connections.



Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**

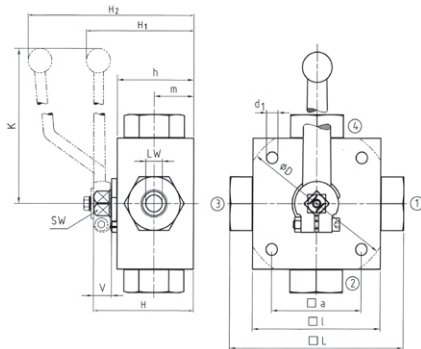


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 05 to 10)  
Aluminium (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

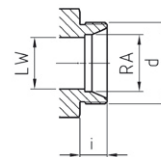
STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2			
02	06L / M12 x 1,5	4	6	5	105	70	55	58	40	22	160	14	12	10	6,5	101	500	1,60	TBV4DN0406L0001M		
			.24	.20	4.13		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39		.26	3.98		7250	3.52
04	08L / M14 x 1,5	6	8	5	105	70	55	58	40	22	160	14	12	10	6,5	101	500	1,80	TBV4DN0608L0001M		
			.31	.20	4.13		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39		.26	3.98		7250	3.96
05	10L / M16 x 1,5	8	10	8	114	80	65	68	50	27	200	14	14	11	6,5	72	500	2,60	TBV4DN0810L0001M		
			.39	.31	4.49		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.43		.26	2.83		7250	5.72
06	12L / M18 x 1,5	10	12	8	114	80	65	68	50	27	200	14	14	11	6,5	72	500	2,60	TBV4DN1012L0001M		
			.47	.31	4.49		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.43		.26	2.83		7250	5.72
08	15L / M22 x 1,5	13	15	13	137	100	80	78	60	31	200	14	14	12	9	82	400	4,70	TBV4DN1315L0001M		
			.59	.51	5.39		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.47		.35	3.23		5800	10.34
10	18L / M26 x 1,5	16	18	18	137	113	85	88	67	36,5	320	16,5	17	12	8,5	82	400	4,70	TBV4DN1618L0001M		
			.71	.71	5.39		4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.47		.33	3.23		5800	10.34
12	22L / M30 x 2	20	22	23	152	138	119	85	103	82	47,5	320	16,5	17	14	8,5	96	315	6,60	TBV4DN2022L0001M	
			.87	.91	5.98	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.55	.33		3.78	4500		14.52
16	28L / M36 x 2	25	28	23	166	138	119	85	103	82	47,5	320	16,5	17	14	8,5	112	315	8,00	TBV4DN2528L0001M	
			1.10	.91	6.54	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.55	.33		4.41	4500		17.60
20R	35L / M45 x 2	25/32	35	23	170	138	119	85	103	82	47,5	320	16,5	17	16	8,5	112	315	8,12	TBV4DN2535L0001M	
			1.38	.91	6.69	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.63	.33		4.41	4500		17.86

Please note the pressure ratings of the tube connections.



Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 05 to 10)  
Aluminium (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)
			RA	LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2			
02	08S / M16 x 1,5	4	8	5	105	70	55	58	40	22	160	14	12	12	6,5	101	500	1,60	TBV4DN0408S0001M		
			.31	.20	4.13		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.47		.26	3.98		7250	3.52
04	10S / M18 x 1,5	6	10	5	105	70	55	58	40	22	160	14	12	12	6,5	101	500	1,80	TBV4DN0610S0001M		
			.39	.20	4.13		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.47		.26	3.98		7250	3.96
05	12S / M20 x 1,5	8	12	8	116	80	65	68	50	27	200	14	14	12	6,5	72	500	2,60	TBV4DN0812S0001M		
			.47	.31	4.57		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.47		.26	2.83		7250	5.72
06	14S / M22 x 1,5	10	14	8	120	80	65	68	50	27	200	14	14	14	6,5	72	500	2,60	TBV4DN1014S0001M		
			.55	.31	4.72		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.55		.26	2.83		7250	5.72
08	16S / M24 x 1,5	13	16	13	141	100	80	78	60	31	200	14	14	14	9	82	400	4,70	TBV4DN1316S0001M		
			.63	.51	5.55		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.55		.35	3.23		5800	10.34
10	20S / M30 x 2	16	20	18	145	113	85	88	67	36,5	320	16,5	17	16	8,5	82	400	4,70	TBV4DN1620S0001M		
			.79	.71	5.71		4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.63		.33	3.23		5800	10.34
12	25S / M36 x 2	20	25	23	160	138	119	85	103	82	47,5	320	16,5	17	18	8,5	96	315	6,60	TBV4DN2025S0001M	
			.98	.91	6.30	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.71	.33		3.78	4500		14.52
16	30S / M42 x 2	25	30	23	176	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112	315	8,00	TBV4DN2530S0001M	
			1.18	.91	6.93	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.79	.33		4.41	4500		17.60
20R	38S / M52 x 2	25/32	38	23	180	138	119	85	103	82	47,5	320	16,5	17	22	8,5	112	315	8,12	TBV4DN2538S0001M	
			1.50	.91	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33		4.41	4500		17.86

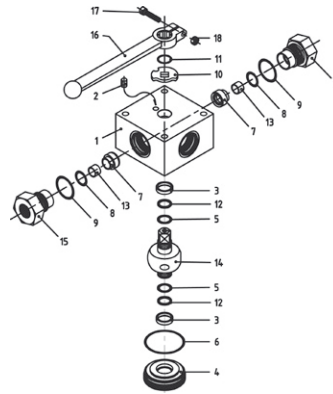
Please note the pressure ratings of the tube connections.



## High-Pressure Block Body Ball Valve - Type XBV



Pressure inlet possible from all ports!



### List of Components

No.	Qty.	Description
1	1	Body
2	1	Stop Pin
3*	2	Bearing
4	1	Trunnion Retainer
5*	2	Trunnion O-Ring
6*	1	Retainer O-Ring
7*	4	Ball Seat
8*	4	Seat O-Ring
9*	4	Connector O-Ring
10	1	Cam Plate
11	1	Snap Ring
12*	2	Trunnion Back Up Ring
13	4	Seat Support
14	1	Trunnion Ball
15	4	Connector
16	1	Handle
17	1	Handle Bolt

\* Included in seal kit

### Characteristics

Four-way high-pressure block body ball valves designed for use as 4-way selectors (double L-bore, 90° operation with closed position) for hydraulic applications

#### Standard Construction

- Block body design for in-line assembly
- Multi-way valve with trunnion-style ball
- Supplied with lever

#### Standard Materials

- Body: Carbon Steel, zinc/iron-plated
- Ball: Carbon Steel, hard chrome-plated
- Stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

#### Standard Connections Styles / Sizes

- Female BSP thread (DIN ISO 228) >G 1-1/2 BSP
- Female NPT thread (ANSI B1.20.1) >1-1/2 NPT
- Female UN/UNF thread (SAE J 514) >1-5/16-12 UN (1" SAE)
- 24° cone connection (DIN 2353); Light Series >35L
- 24° cone connection (DIN 2353); Heavy Series >38S

#### Pressure loaded seats at all ports!

#### Pressure Range

- Pressure range: up to 500 bar / 7250 PSI (depending on size and material combination of the ball valve)

#### Temperature Range

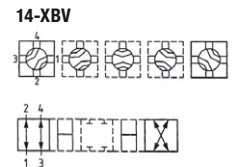
- Operating temperature range: -20°C ... +100°C / -4°F ... + 212°F

#### Options / Accessories

- Alternative lever designs/materials (see page F92)
- Locking devices (see pages F93-95)
- Actuator packages (see page F96)
- Limit switches (see page F96)
- Stainless Steel body
- Stainless Steel ball and stem
- Special ball seat and O-ring materials available for lower/higher temperatures and more aggressive media

#### Porting Pattern

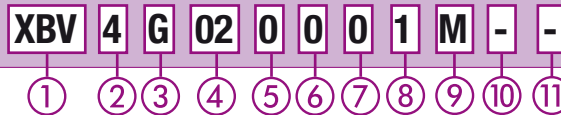
- Symbol: X
- Overlap: negative
- Operating: 90° with closed position



- Stop of end position:

Please see pages F98-F99 for alternative porting patterns.

### Order Codes



#### ① Type

Multi-Way Double L-Bore Ball Valve **XBV**

#### ② Number of Ports

Four Ports (Four-Way Ball Valve) **4**

#### ③ Connection Style

Female BSP Thread (DIN ISO 228) **G**  
 Female NPT Thread (ANSI B1.20.1) **0**  
 Female UN/UNF Thread (SAE J 514) **1**  
 24° Cone Connection (Light / Heavy Series)  
**DN04 DN06 DN08 DN10 DN13 DN16 DN20 DN25**

Please consult STAUFF for alternative connection styles.

#### ④ Connection Size

STAUFF Size (according to dimension table) for connection styles G, 0 and 1:  
**02 04 06 08 10 12 16 20R 24R**  
 Tube Size (according to dimension table) for 24° Cone Connection (Light Series):  
**06L 08L 10L 12L 15L 18L 22L 28L 35L**  
 Tube Size (according to dimension table) for 24° Cone Connection (Heavy Series):  
**08S 10S 12S 14S 16S 20S 25S 30S 38S**

Please consult STAUFF for alternative connection sizes.

#### ⑤ Body Material / Surface Finishing

Carbon Steel, zinc/iron-plated **0**  
 Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑥ Ball / Stem Material

Ball: Carbon Steel, hard chrome-plated **0**  
 Stem: Carbon Steel  
 Ball / Stem: Stainless Steel V4A (AISI 316Ti) **1**

Alternative materials / surface finishings are available upon request. Consult STAUFF for further information.

#### ⑦ Ball Seat Material

Delrin® (POM) **0**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑧ O-Ring Material

NBR (Buna-N®) **0**  
 FPM (Viton®) **1**  
 EPDM **3**

Alternative materials are available upon request. Consult STAUFF for further information.

#### ⑨ Manufacturing Code

Manufacturing code for all connection styles **M**

#### ⑩ Lever Options

Supplied with standard lever (according to table) **-**  
 Supplied without lever **-0**

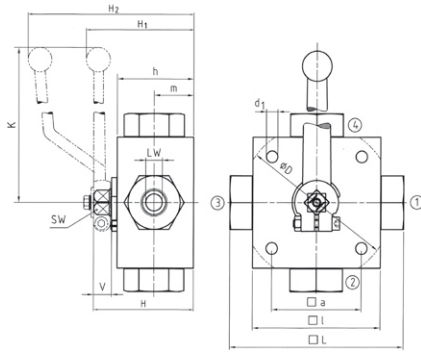
Alternative levers can be ordered separately. Please see page F92 for further information.

#### ⑪ Accessories / Options

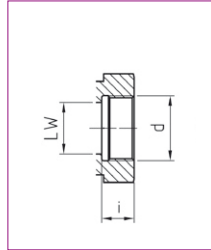
Supplied without accessories **-**  
 Supplied with Locking Device LD4 **-LD4**  
 Supplied with Double-Acting Pneumatic Actuator (Please add size \*\*) **-EDA\*\***  
 Supplied with Single-Acting Pneumatic Actuator (Please add size \*\*) **-ESA\*\***

Please see page F93-F97 for further information and options.





### High-Pressure Block Body Ball Valve - Type XBV Double L-Bore Four-Way Selector - Female BSP Thread (DIN ISO 228)

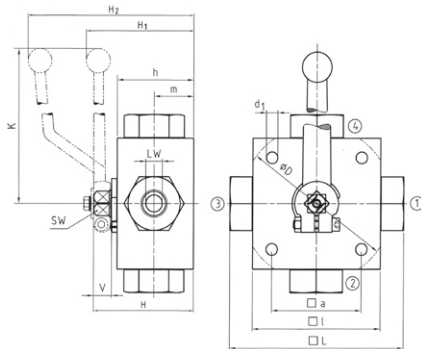


When ordering the standard option as indicated in the table below, the following materials will be supplied:

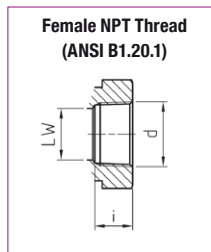
- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1				H2
02	G 1/8 BSP	4	4	100	/	70	55	58	40	22	160	14	12	10	6,5	/	101	500	1,60	XBV4G020001M
			.16	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39	.26		3.98	7250	3.52	
04	G 1/4 BSP	6	4	100	/	70	55	58	40	22	160	14	12	14	6,5	/	101	500	1,60	XBV4G040001M
			.16	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.55	.26		3.98	7250	3.52	
06	G 3/8 BSP	10	7	115	/	80	65	68	50	27	200	14	14	14	6,5	72	/	500	2,80	XBV4G060001M
			.28	4.53		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.55	.26	2.83		7250	6.16	
08	G 1/2 BSP	13	10	136	/	100	80	78	60	31	200	14	14	16,3	9	82	/	400	4,90	XBV4G080001M
			.39	5.35		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.64	.35	3.23		5800	10.78	
10	G 5/8 BSP	16	10	139	/	100	80	78	60	31	200	14	14	18	9	82	/	400	4,90	XBV4G100001M
			.39	5.47		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.71	.35	3.23		5800	10.78	
12	G 3/4 BSP	20	14	154	138	113	85	88	67	36,5	320	16,5	17	18	8,5	96	/	315	6,80	XBV4G120001M
			.55	6.06	5.43	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.71	.33	3.78		4500	14.96	
16	G 1 BSP	25	17	172	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112	/	315	8,50	XBV4G160001M
			.67	6.77	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.79	.33	4.41		4500	18.70	
20R	G 1-1/4 BSP	25/32	17	180	138	119	85	103	82	47,5	320	16,5	17	22	8,5	112	/	315	8,80	XBV4G20R0001M
			.67	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33	4.41		4500	19.36	
24R	G 1-1/2 BSP	25/40	17	180	138	119	85	103	82	47,5	320	16,5	17	24	8,5	112	/	250	8,80	XBV4G24R0001M
			.67	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.94	.33	4.41		3600	19.36	

Please note the pressure ratings of the tube connections.



### High-Pressure Block Body Ball Valve - Type XBV Double L-Bore Four-Way Selector - Female NPT Thread (ANSI B1.20.1)



When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 06 to 10)  
Aluminium (STAUFF Sizes 12 to 24)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

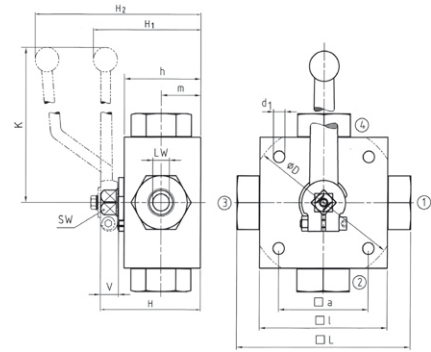
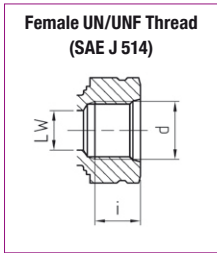
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)														Nom. Pressure (bar/psi)	Weight (kg/lbs)	Order Codes (Standard Option)	
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1				H2
02	1/8 NPT	4	4	100	/	70	55	58	40	22	160	14	12	10,5	6,5	/	101	500	1,60	XBV40020001M
			.16	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.41	.26		3.98	7250	3.52	
04	1/4 NPT	6	4	100	/	70	55	58	40	22	160	14	12	13,7	6,5	/	101	500	1,60	XBV40040001M
			.16	3.94		2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.54	.26		3.98	7250	3.52	
06	3/8 NPT	10	7	115	/	80	65	68	50	27	200	14	14	13,5	6,5	72	/	500	2,80	XBV40060001M
			.28	4.53		3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.53	.26	2.83		7250	6.16	
08	1/2 NPT	13	10	136	/	100	80	78	60	31	200	14	14	17	9	82	/	400	4,90	XBV40080001M
			.39	5.35		3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.67	.35	3.23		5800	10.78	
12	3/4 NPT	20	14	154	138	113	85	88	67	36,5	320	16,5	17	18,3	8,5	96	/	315	6,80	XBV40120001M
			.55	6.06	5.43	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.72	.33	3.78		4500	14.96	
16	1 NPT	25	17	172	138	119	85	103	82	47,5	320	16,5	17	21,6	8,5	112	/	315	8,50	XBV40160001M
			.67	6.77	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.85	.33	4.41		4500	18.70	
20R	1-1/4 NPT	25/32	17	180	138	119	85	103	82	47,5	320	16,5	17	22,1	8,5	112	/	315	8,80	XBV4020R0001M
			.67	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33	4.41		4500	19.36	
24R	1-1/2 NPT	25/40	17	180	138	119	85	103	82	47,5	320	16,5	17	22,1	8,5	112	/	250	8,80	XBV4024R0001M
			.67	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33	4.41		3600	19.36	

Please note the pressure ratings of the tube connections.

**High-Pressure Block Body Ball Valve - Type XBV**  
**Double L-Bore Four-Way Selector - Female UN/UNF Thread (SAE J 514)**

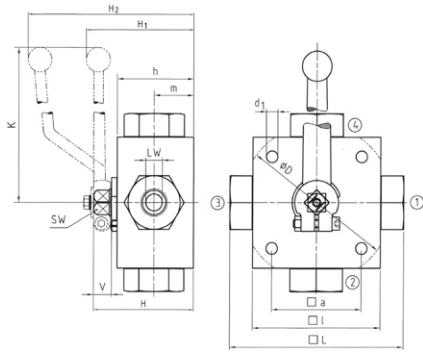
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Size 04)  
Zinc (STAUFF Sizes 06 and 08)  
Aluminium (STAUFF Sizes 12 and 16)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)



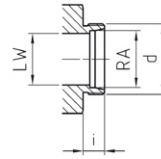
STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure (bar/PSI)	Weight (kg/lbs)	Order Codes (Standard Option)
			LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2				
04	7/16-20 UNF (1/4" SAE)	6	4	100		70	55	58	40	22	160	14	12	14	6,5		101	500	1,60	XBV41040001M	
			.16	3,94		2,76	2,17	2,28	1,57	0,87	6,30	0,55	0,47	0,55	0,26		3,98	7250	3,52		
06	9/16-18 UNF (3/8" SAE)	10	7	115		80	65	68	50	27	200	14	14	14	6,5	72		500	2,80	XBV41060001M	
			.28	4,53		3,15	2,56	2,68	1,97	1,06	7,87	0,55	0,55	0,55	0,26	2,83		7250	6,16		
08	3/4-16 UNF (1/2" SAE)	13	10	144		100	80	78	60	31	200	14	14	16,3	9	82		400	5,20	XBV41080001M	
			.39	5,67		3,94	3,15	3,07	2,36	1,22	7,87	0,55	0,55	0,64	0,35	3,23		5800	11,44		
12	1-1/16-12 UN (3/4" SAE)	20	14	164	138	113	85	88	67	36,5	320	16,5	17	18	8,5	96		315	6,80	XBV41120001M	
			.55	6,46	5,43	4,45	3,35	3,46	2,64	1,44	12,60	0,65	0,67	0,71	0,33	3,78		4500	14,96		
16	1-5/16-12 UN (1" SAE)	25	17	180	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112		315	8,50	XBV41160001M	
			.67	7,09	5,43	4,69	3,35	4,06	3,23	1,87	12,60	0,65	0,67	0,79	0,33	4,41		4500	18,70		

Please note the pressure ratings of the tube connections.



Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**

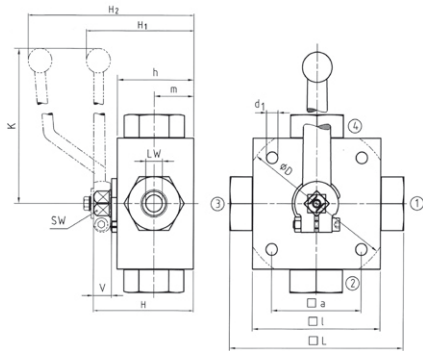


When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 05 to 10)  
Aluminium (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

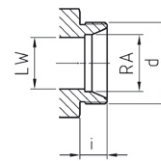
STAUFF Size	Tube/Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure ( <sup>bar</sup> /psi)	Weight ( <sup>kg</sup> /lbs)	Order Codes (Standard Option)
			RA	LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2			
02	06L / M12 x 1,5	4	6	4	105	70	55	58	40	22	160	14	12	10	6,5	101	500	1,60	XBV4DN0406L0001M		
			.24	.16	4.13	2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39	.26	3.98	7250	3.52			
04	08L / M14 x 1,5	6	8	4	105	70	55	58	40	22	160	14	12	10	6,5	101	500	1,80	XBV4DN0608L0001M		
			.31	.16	4.13	2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.39	.26	3.98	7250	3.96			
05	10L / M16 x 1,5	8	10	7	114	80	65	68	50	27	200	14	14	11	6,5	72	500	2,60	XBV4DN0810L0001M		
			.39	.28	4.49	3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.43	.26	2.83	7250	5.72			
06	12L / M18 x 1,5	10	12	7	114	80	65	68	50	27	200	14	14	11	6,5	72	500	2,60	XBV4DN1012L0001M		
			.47	.28	4.49	3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.43	.26	2.83	7250	5.72			
08	15L / M22 x 1,5	13	15	10	137	100	80	78	60	31	200	14	14	12	9	82	400	4,70	XBV4DN1315L0001M		
			.59	.39	5.39	3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.47	.35	3.23	5800	10.34			
10	18L / M26 x 1,5	16	18	10	137	113	85	88	67	36,5	320	16,5	17	12	8,5	82	400	4,70	XBV4DN1618L0001M		
			.71	.39	5.39	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.47	.33	3.23	5800	10.34			
12	22L / M30 x 2	20	22	14	152	138	119	85	103	82	47,5	320	16,5	17	14	8,5	96	315	6,60	XBV4DN2022L0001M	
			.87	.55	5.98	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.55	.33	3.78	4500	14.52		
16	28L / M36 x 2	25	28	17	166	138	119	85	103	82	47,5	320	16,5	17	14	8,5	112	315	8,00	XBV4DN2528L0001M	
			1.10	.67	6.54	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.55	.33	4.41	4500	17.60		
20R	35L / M45 x 2	25/32	35	17	170	138	119	85	103	82	47,5	320	16,5	17	16	8,5	112	315	8,12	XBV4DN2535L0001M	
			1.38	.67	6.69	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.63	.33	4.41	4500	17.86		

Please note the pressure ratings of the tube connections.



Hex nuts and cutting rings are not included in delivery.

**24° Cone Connection  
(DIN 2353 / ISO 8434-1)**



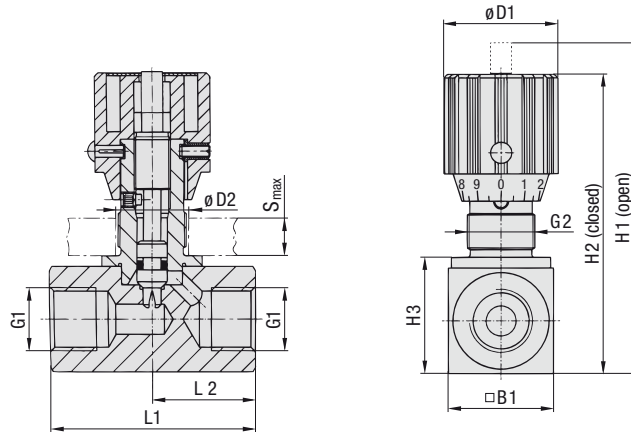
When ordering the standard option as indicated in the table below, the following materials will be supplied:

- Body, ball and stem: Carbon Steel
- Lever: Aluminium (STAUFF Sizes 02 and 04)  
Zinc (STAUFF Sizes 05 to 10)  
Aluminium (STAUFF Sizes 12 to 20R)
- Ball seat: Delrin® (POM)
- O-rings: FPM (Viton®)

STAUFF Size	Thread Size d	Nominal Size DN	Dimensions (mm/in)																Nom. Pressure ( <sup>bar</sup> /psi)	Weight ( <sup>kg</sup> /lbs)	Order Codes (Standard Option)
			RA	LW	L	D	l	a	H	h	m	K	V	SW	i	d1	H1	H2			
02	08S / M16 x 1,5	4	8	4	105	70	55	58	40	22	160	14	12	12	6,5	101	500	1,60	XBV4DN0408S0001M		
			.31	.16	4.13	2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.47	.26	3.98	7250	3.52			
04	10S / M18 x 1,5	6	10	4	105	70	55	58	40	22	160	14	12	12	6,5	101	500	1,80	XBV4DN0610S0001M		
			.39	.16	4.13	2.76	2.17	2.28	1.57	.87	6.30	.55	.47	.47	.26	3.98	7250	3.96			
05	12S / M20 x 1,5	8	12	7	116	80	65	68	50	27	200	14	14	12	6,5	72	500	2,60	XBV4DN0812S0001M		
			.47	.28	4.57	3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.47	.26	2.83	7250	5.72			
06	14S / M22 x 1,5	10	14	7	120	80	65	68	50	27	200	14	14	14	6,5	72	500	2,60	XBV4DN1014S0001M		
			.55	.28	4.72	3.15	2.56	2.68	1.97	1.06	7.87	.55	.55	.55	.26	2.83	7250	5.72			
08	16S / M24 x 1,5	13	16	10	141	100	80	78	60	31	200	14	14	14	9	82	400	4,70	XBV4DN1316S0001M		
			.63	.39	5.55	3.94	3.15	3.07	2.36	1.22	7.87	.55	.55	.55	.35	3.23	5800	10.34			
10	20S / M30 x 2	16	20	10	145	113	85	88	67	36,5	320	16,5	17	16	8,5	82	400	4,70	XBV4DN1620S0001M		
			.79	.39	5.71	4.45	3.35	3.46	2.64	1.44	12.60	.65	.67	.63	.33	3.23	5800	10.34			
12	25S / M36 x 2	20	25	14	160	138	119	85	103	82	47,5	320	16,5	17	18	8,5	96	315	6,60	XBV4DN2025S0001M	
			.98	.55	6.30	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.71	.33	3.78	4500	14.52		
16	30S / M42 x 2	25	30	17	176	138	119	85	103	82	47,5	320	16,5	17	20	8,5	112	315	8,00	XBV4DN2530S0001M	
			1.18	.67	6.93	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.79	.33	4.41	4500	17.60		
20R	38S / M52 x 2	25/32	38	17	180	138	119	85	103	82	47,5	320	16,5	17	22	8,5	112	315	8,12	XBV4DN2538S0001M	
			1.50	.67	7.09	5.43	4.69	3.35	4.06	3.23	1.87	12.60	.65	.67	.87	.33	4.41	4500	17.86		

Please note the pressure ratings of the tube connections.

## Throttle and Shut-Off Valve - Type DV (In-Line Assembly)



### Characteristics

Throttle and shut-off the flow of liquid media in both directions

#### Features

- Designed for in-line assembly with female BSP, NPT and SAE threaded connections
- Panel mounting nuts available on request
- Graduated turning knob and coded spindle to accurately control flow
- Set-screw located on side of turning knob to lock valve in position

#### Media Compatibility

- Suitable for hydraulic fluids

Please consult STAUFF before using with other media.

#### Materials

- Body and spindle made of Steel (1.0715), zinc/iron-plated (Fe/Zn Fe Co 8 C) and free of hexavalent chromium CrVI (standard option); Stainless Steel (1.4571) version available
- Turning knob made of Polyamide (PA)
- O-rings made of NBR (Buna-N®); FPM (Viton®) and EPDM sealed version available

Consult STAUFF for alternative materials.

#### Technical Data

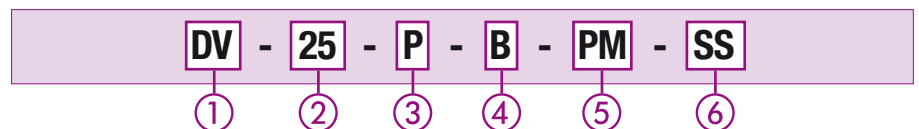
- Maximum working pressure: 350 bar / 5000 PSI (for all sizes)
- Operating temperature range: -20°C ... +100°C / -4°F ... +212°F

Please see page F88 for detailed flow characteristics.

### Dimensions

Type + Nominal Size	Thread Options G1	Dimensions (mm/in)											Weight (kg/lbs)
			G2	H1	H2	H3	B1	ØD1	ØD2	S (Max.)	L1	L2	
DV-06	G1/8 BSP 1/8 NPT	PG 7	64	59	18	16	24	13	3	38	19	0,12	
			2.52	2.32	.71	.63	.94	.51	.12	1.50	.75	.26	
DV-08	G1/4 BSP 1/4 NPT 7/16-20UNF (1/4" SAE)	PG 11	83,5	77,5	27	25	29	19	7	48	24	0,25	
			3.29	3.05	1.06	.98	1.14	.75	.28	1.89	.94	.55	
DV-10	G3/8 BSP 3/8 NPT 9/16-18UNF (3/4" SAE)	PG 11	90	83	32	30	29	19	7	58	29	0,40	
			3.54	3.27	1.26	1.18	1.14	.75	.28	2.28	1.14	.88	
DV-12	G1/2 BSP 1/2 NPT 3/4-16UNF (1/2" SAE)	PG 11	109,5	99,5	38	35	38	23	7	68	34	0,60	
			4.31	3.92	1.50	1.38	1.50	.91	.28	2.68	1.34	1.32	
DV-16	G3/4 BSP 3/4 NPT 1-1/16-12UN (3/4" SAE)	PG 16	128,5	118,5	48	45	38	23	7	78	39	1,10	
			5.06	4.67	1.89	1.77	1.50	.91	.28	3.07	1.54	2.43	
DV-20	G1 BSP 1 NPT 1-5/16-12UN (1" SAE)	PG 16	159	146	55	50	49	38	10	108	54	2,40	
			6.26	5.75	2.17	1.97	1.93	1.50	.39	4.25	2.13	5.29	
DV-25	G1-1/4 BSP 1-1/4 NPT 1-5/8-12UN (1-1/4" SAE)	PG 29	169	156	65	60	49	38	10	108	54	2,80	
			6.65	6.14	2.56	2.36	1.93	1.50	.39	4.25	2.13	6.17	
DV-30	G1-1/2 BSP 1-1/2 NPT 1-7/8-12UN (1-1/2" SAE)	PG 29	175	166	75	70	49	38	10	108	54	3,50	
			6.89	6.54	2.95	2.76	1.93	1.50	.39	4.25	2.13	7.72	
DV-40	G2 BSP 2 NPT 2-1/2-12UN (2" SAE)	PG 29	199	186	95	90	49	38	10	120	60	6,30	
			7.83	7.32	3.74	3.54	1.93	1.50	.39	4.72	2.36	13.89	

### Order Codes



#### ① Type

Throttle and Shut-Off Valve (In-Line Assembly) **DV**

#### ② Nominal Size DN

**06 08 10 12 16 20 25 30 40**

#### ③ Sealing Material

NBR (Buna-N®) (standard option) **P**  
FPM (Viton®) **V**  
EPDM **E**

#### ④ Connection

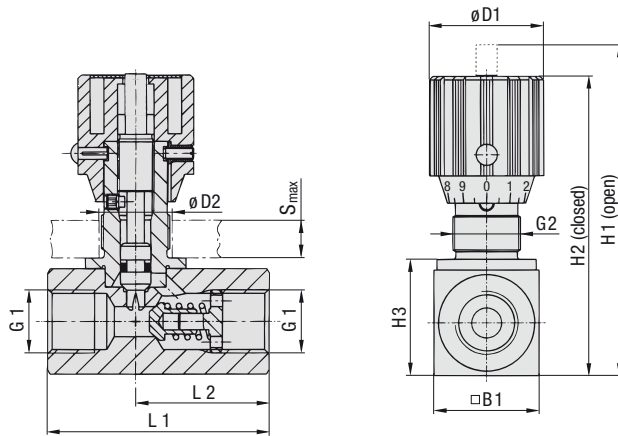
Female BSP threads (ISO 228) **B**  
Female NPT threads (ANSI B1.20.1) **N**  
Female UN/UNF thread (SAE J514) **S**

#### ⑤ Panel Mounting Nut

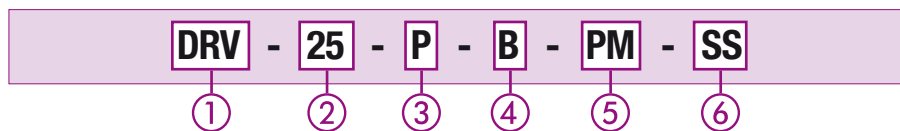
Without panel mounting nut (standard option) **-**  
With panel mounting nut **PM**

#### ⑥ Body / Spindle Material

Steel (standard option) **-**  
Stainless Steel **SS**

**Flow Control Valve - Type DRV  
(In-Line Assembly)**

**Dimensions**

Type + Nominal Size	Thread Options G1	Dimensions (mm/in)										Weight (kg/lbs)
		G2	H1	H2	H3	B1	ØD1	ØD2	S (Max.)	L1	L2	
DRV-06	G1/8 BSP 1/8 NPT	PG 7	64	59	18	16	24	13	3	45	26	0,10
			2.52	2.32	.71	.63	.94	.51	.12	1.77	1.02	.22
DRV-08	G1/4 BSP 1/4 NPT 7/16-20UNF (1/4" SAE)	PG 11	83,5	77,5	27	25	29	19	7	55	34	0,30
			3.29	3.05	1.06	.98	1.14	.75	.28	2.17	1.32	.66
DRV-10	G3/8 BSP 3/8 NPT 9/16-18UNF (3/4" SAE)	PG 11	90	83	32	30	29	19	7	65	41	0,45
			3.54	3.27	1.26	1.18	1.14	.75	.28	2.56	1.61	.99
DRV-12	G1/2 BSP 1/2 NPT 3/4-16UNF (1/2" SAE)	PG 11	109,5	99,5	38	35	38	23	7	73	44	0,70
			4.31	3.92	1.50	1.38	1.50	.91	.28	2.87	1.73	1.54
DRV-16	G3/4 BSP 3/4 NPT 1-1/16-12UN (3/4" SAE)	PG 16	128,5	118,5	48	45	38	23	7	88	57	1,26
			5.06	4.67	1.89	1.77	1.50	.91	.28	3.46	2.24	2.78
DRV-20	G1 BSP 1 NPT 1-5/16-12UN (1" SAE)	PG 16	159	146	55	50	49	38	10	127	77	2,60
			6.26	5.75	2.17	1.97	1.93	1.50	.39	5.00	3.03	5.73
DRV-25	G1-1/4 BSP 1-1/4 NPT 1-5/8-12UN (1-1/4" SAE)	PG 29	169	156	65	60	49	38	10	143	93	3,70
			6.65	6.14	2.56	2.36	1.93	1.50	.39	5.63	3.66	8.16
DRV-30	G1-1/2 BSP 1-1/2 NPT 1-7/8-12UN (1-1/2" SAE)	PG 29	175	166	75	70	49	38	10	143	91	4,76
			6.89	6.54	2.95	2.76	1.93	1.50	.39	5.63	3.58	10.49
DRV-40	G2 BSP 2 NPT 2-1/2-12UN (2" SAE)	PG 29	199	186	95	90	49	38	10	165	111	8,52
			7.83	7.32	3.74	3.54	1.93	1.50	.39	6.50	4.37	18.78

**Order Codes**

**1 Type**

 Flow Control Valve (In-Line Assembly) **DRV**
**2 Nominal Size DN**
**06 08 10 12 16 20 25 30 40**
**3 Sealing Material**

 NBR (Buna-N®) (standard option) **P**  
 FPM (Viton®) **V**  
 EPDM **E**
**4 Connection**

 Female BSP threads (ISO 228) **B**  
 Female NPT threads (ANSI B1.20.1) **N**  
 Female UN/UNF thread (SAE J514) **S**
**5 Panel Mounting Nut**

 Without panel mounting nut (standard option) **-**  
 With panel mounting nut **PM**
**6 Body / Spindle Material**

 Steel (standard option) **-**  
 Stainless Steel **SS**
**Characteristics**
**Throttle and shut-off the flow of liquid media in direction A-B (free flow in reverse direction)**
**Features**

- Designed for in-line assembly with female BSP, NPT and SAE threaded connections
- Panel mounting nuts available on request
- Graduated turning knob and coded spindle to accurately control flow
- Set-screw located on side of turning knob to lock valve in position

**Media Compatibility**

- Suitable for hydraulic fluids

Please consult STAUFF before using with other media.

**Materials**

- Body and spindle made of Steel (1.0715), zinc/iron-plated (Fe/Zn Fe Co 8 C) and free of hexavalent chromium CrVI (standard option); Stainless Steel (1.4571) version available
- Turning knob made of Polyamide (PA)
- O-rings made of NBR (Buna-N®); FPM (Viton®) and EPDM sealed version available

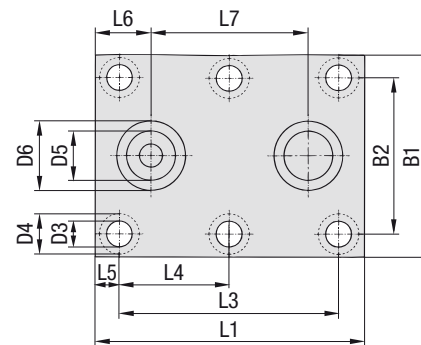
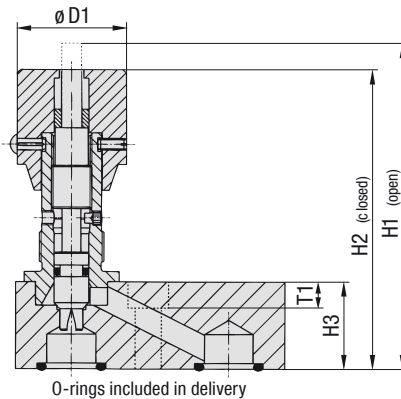
Consult STAUFF for alternative materials.

**Technical Data**

- Opening pressure: 0,5 bar / 7 PSI (4,5 bar / 65 PSI available on request)
- Maximum working pressure: 350 bar / 5000 PSI (for all sizes)
- Operating temperature range: -20 °C ... +100 °C / -4 °F ... +212 °F

Please see page F88 for detailed flow characteristics.

## Throttle and Shut-Off Valve - Type DVP (Manifold Assembly)



### Characteristics

**Throttle and shut-off the flow of liquid media in both directions**

#### Features

- Designed for manifold mounting
- Panel mounting nuts available on request
- Graduated turning knob and coded spindle to accurately control flow
- Set-screw located on side of turning knob to lock valve in position

#### Media Compatibility

- Suitable for hydraulic fluids

Please consult STAUFF before using with other media.

#### Materials

- Body and spindle made of Steel (1.0715), zinc/iron-plated (Fe/Zn Fe Co 8 C) and free of hexavalent chromium CrVI (standard option); Stainless Steel (1.4571) version available
- Turning knob made of Polyamide (PA)
- O-rings made of FPM (Viton®); NBR (Buna-N®) and EPDM sealed version available

Consult STAUFF for alternative materials.

#### Technical Data

- Maximum working pressure: 350 bar / 5000 PSI (for all sizes)
- Operating temperature range: -20°C ... +100°C / -4°F ... +212°F

Please see page F88 for detailed flow characteristics.

#### Recommended Bolts / Tightening Torques

- Socket cap screws according to ISO 4762 or ANSI / ASME B18.3 recommended for installation (not included in delivery):

Valve Type	Size	Torque (N-m)	Torque (ft-lb)
DVP-06	M6 x 20 - 8.8	9	6.6
	1/4-20 UNC x 3/4 - Gr. 5	10	7.4
DVP-08	M6 x 25 - 8.8	9	6.6
	1/4-20 UNC x 1 - Gr. 5	10	7.4
DVP-10	M6 x 30 - 10.9	12	8.8
	1/4-20 UNC x 1-1/4 - Gr. 8	12	8.8
DVP-12	M6 x 30 - 12.9	15	11.1
	1/4-20 UNC x 1-1/4 - Gr. 10	14	10.3
DVP-16	M8 x 35 - 10.9	30	22.1
	5/16-18 UNC x 1-1/2 - Gr. 8	24	17.7
DVP-20	M8 x 50 - 12.9	35	25.8
	5/16-18 UNC x 2 - Gr. 10	29	21.4
DVP-25	M10 x 50 - 12.9	70	51.6
	3/8-16 UNC x 2 - Gr. 10	58	42.9
DVP-30	M12 x 60 - 10.9	100	73.8
	7/16-14 UNC x 2-1/2 - Gr. 8	63	46.3

### Dimensions

For panel mounting, please see dimensions G2, D2 and S (Max.) on page F80.

Type + Nom. Size	Dimensions (mm/in)																	O-ring	Weight (kg/lbs)
	ØD1	ØD3	ØD4	ØD5	ØD6	L1	L3	L4	L5	L6	L7	B1	B2	T1	H1	H2	H3		
DVP-06	24	6,5	10,5	5	9,8	35	19		8	9,5	16	41,5	28,5	6,8	64	59	16	6,35 x 1,78	0,20
	.94	.26	.41	.20	.39	1.38	.75		.31	.37	.63	1.63	1.12	.27	2.52	2.32	.63		.44
DVP-08	29	6,5	10,5	7	12,4	47,5	35		6,5	11	25,5	46	33,5	6,8	79	72	20	8,5 x 2	0,40
	1.14	.26	.41	.28	.49	1.87	1.38		.26	.43	1.00	1.81	1.32	.27	3.11	2.83	.79		.88
DVP-10	29	6,5	10,5	10	15,7	51	33,5		8,5	12,7	25,5	51	38	6,8	84	78	25	12 x 2	0,60
	1.14	.26	.41	.39	.62	2.01	1.32		.33	.50	1.00	2.01	1.50	.27	3.31	3.07	.98		1.32
DVP-12	38	6,5	10,5	13	18,7	75	38		18,5	22,5	30	57,5	44,5	6,8	100	89	25	15 x 2	1,00
	1.50	.26	.41	.51	.74	2.95	1.50		.73	.89	1.18	2.26	1.75	.27	3.94	3.50	.98		2.20
DVP-16	38	8,5	13,5	17	23,9	93,5	76	38	8,5	19,5	54	70	54	9	113	103	30	19 x 2,5	1,50
	1.50	.33	.53	.67	.94	3.68	2.99	1.50	.33	.77	2.13	2.76	2.13	.35	4.45	4.06	1.18		3.31
DVP-20	49	8,5	13,5	22	30,5	111	95	47,5	8	27	57	76,5	60	9	154	142	45	25 x 3	3,40
	1.93	.33	.53	.87	1.20	4.37	3.74	1.87	.31	1.06	2.24	3.01	2.36	.35	6.06	5.59	1.77		7.50
DVP-25	49	10,5	16,5	28,5	37,5	143	120	60	11	32	79,5	100	76	11	154	142	45	32 x 3	5,15
	1.93	.41	.65	1.12	1.48	5.63	4.72	2.36	.43	1.26	3.13	3.94	2.99	.43	6.06	5.59	1.77		11.35
DVP-30	49	13	19	35	43,5	171	143	71,5	15	39	95	115	92	13	159	147	50	38 x 3	7,50
	1.93	.51	.75	1.38	1.71	6.73	5.63	2.81	.59	1.54	3.74	4.53	3.62	.51	6.26	5.79	1.97		16.53

### Order Codes

DVP - 25 - P - PM - SS

①

②

③

④

⑤

**① Type**  
Throttle and Shut-Off Valve (Manifold Assembly) **DVP**

**② Nominal Size DN**  
**06 08 10 12 16 20 25 30**

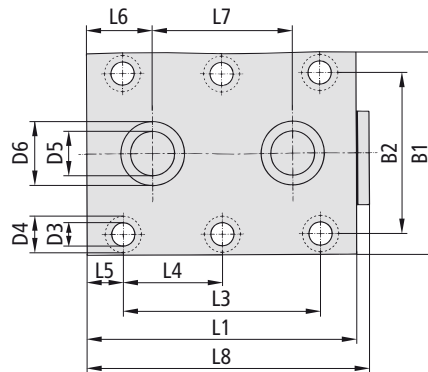
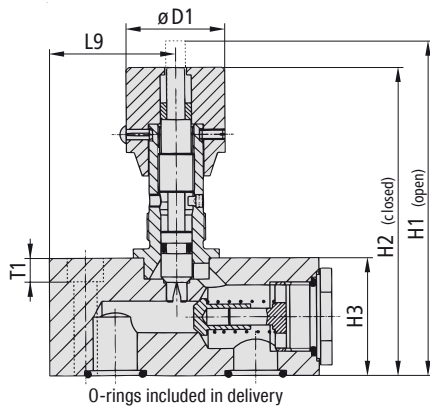
**③ Sealing Material**  
FPM (Viton®) (standard option) **V**  
NBR (Buna-N®) **P**  
EPDM **E**

**④ Panel Mounting Nut**  
Without panel mounting nut (standard option) **-**  
With panel mounting nut **PM**

**⑤ Body / Spindle Material**  
Steel (standard option) **-**  
Stainless Steel **SS**



## Flow Control Valve - Type DRVP (Manifold Assembly)



### Dimensions

For panel mounting, please see dimensions G2, D2 and S (Max.) on page F81.

Type + Nom. Size	Dimensions (mm/in)																			Weight (kg/lbs)	
	ØD1	ØD3	ØD4	ØD5	ØD6	L1	L3	L4	L5	L6	L7	L8	L9	B1	B2	T1	H1	H2	H3		O-ring
DRVP-06	24	6,5	10,5	5	9,8	41,5	19		6,4	8	16	47	13,5	41,5	28,5	6,8	64	59	16	6,35 x 1,78	0,26
	.94	.26	.41	.20	.39	1.63	.75		.25	.31	.63	1.85	.53	1.63	1.12	.27	2.52	2.32	.63		.57
DRVP-08	29	6,5	10,5	7	12,4	63,5	35		14,2	18,7	25,5	70	31	46	33,5	6,8	79	72	20	8,5 x 2	0,50
	1.14	.26	.41	.28	.49	2.50	1.38		.56	.74	1.00	2.76	1.22	1.81	1.32	.27	3.11	2.83	.79		1.10
DRVP-10	29	6,5	10,5	10	15,7	70	33,5		18	22,0	25,5	75	29,5	51	38	6,8	84	78	25	12 x 2	0,80
	1.14	.26	.41	.39	.62	2.76	1.32		.71	.87	1.00	2.95	1.16	2.01	1.50	.27	3.31	3.07	.98		1.76
DRVP-12	38	6,5	10,5	13	18,7	80	38		21	25,0	30	86	36,5	57,5	44,5	6,8	107	96	32	15 x 2	1,20
	1.50	.26	.41	.51	.74	3.15	1.50		.83	.98	1.18	3.39	1.44	2.26	1.75	.27	4.21	3.78	1.26		2.65
DRVP-16	38	8,5	13,5	17	23,9	104	76	38	14	25,4	54	110	49	70	54	9	128	118	45	19 x 2,5	2,50
	1.50	.33	.53	.67	.94	4.09	2.99	1.50	.55	1.00	2.13	4.33	1.93	2.76	2.13	.35	5.04	4.65	1.77		5.51
DRVP-20	49	8,5	13,5	22	30,5	127	95	47,5	16	35	57	133	49	76,5	60	9	159	147	50	25 x 3	3,90
	1.93	.33	.53	.87	1.20	5.00	3.74	1.87	.63	1.38	2.24	5.24	1.93	3.01	2.36	.35	6.26	5.79	1.97		8.60
DRVP-25	49	10,5	16,5	28,5	37,5	165	120	60	15	35,6	79,5	171	77	100	76	11	164	152	55	32 x 3	6,70
	1.93	.41	.65	1.12	1.48	6.50	4.72	2.36	.59	1.40	3.13	6.73	3.03	3.94	2.99	.43	6.46	5.98	2.17		14.77
DRVP-30	49	13	19	35	43,5	186	143	71,5	15	38,8	95	192	85	115	92	13	184	172	75	38 x 3	11,00
	1.93	.51	.75	1.38	1.71	7.32	5.63	2.81	.59	1.53	3.74	7.56	3.35	4.53	3.62	.51	7.24	6.77	2.95		24.25
DRVP-40	49	13	19	47,5	57,5	192	133,5	67,5	16	41,5	89	197	64	140	111	13	209	197	100	52 x 3	18,80
	1.93	.51	.75	1.87	2.26	7.56	5.25	2.66	.63	1.63	3.50	7.76	2.52	5.51	4.37	.51	8.23	7.76	3.94		41.45

### Order Codes

**DRVP - 25 - P - PM - SS**

①      ②      ③      ④      ⑤

#### ① Type

Flow Control Valve (Manifold Assembly) **DRVP**

#### ② Nominal Size DN

**06 08 10 12 16 20 25 30 40**

#### ③ Sealing Material

FPM (Viton®) (standard option) **V**  
 NBR (Buna-N®) **P**  
 EPDM **E**

#### ④ Panel Mounting Nut

Without panel mounting nut (standard option) **-**  
 With panel mounting nut **PM**

#### ⑤ Body / Spindle Material

Steel (standard option) **-**  
 Stainless Steel **SS**

### Characteristics

**Throttle and shut-off the flow of liquid media in direction A-B (free flow in reverse direction)**

#### Features

- Designed for manifold mounting
- Panel mounting nuts available on request
- Graduated turning knob and coded spindle to accurately control flow
- Set-screw located on side of turning knob to lock valve in position

#### Media Compatibility

- Suitable for hydraulic fluids

Please consult STAUFF before using with other media.

#### Materials

- Body and spindle made of Steel (1.0715), zinc/iron-plated (Fe/Zn Fe Co 8 C) and free of hexavalent chromium CrVI (standard option); Stainless Steel (1.4571) version available
- Turning knob made of Polyamide (PA)
- O-rings made of FPM (Viton®); NBR (Buna-N®) and EPDM sealed version available

Consult STAUFF for alternative materials.

#### Technical Data

- Opening pressure: 0,5 bar / 7 PSI (4,5 bar / 65 PSI available on request)
- Maximum working pressure: 350 bar / 5000 PSI (for all sizes)
- Operating temperature range: -20 °C ... +100 °C / -4 °F ... +212 °F

Please see page F88 for detailed flow characteristics.

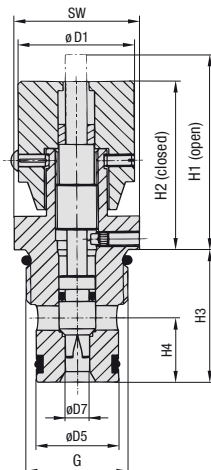
#### Recommended Bolts / Tightening Torques

- Socket cap screws according to ISO 4762 or ANSI / ASME B18.3 recommended for installation (not included in delivery):

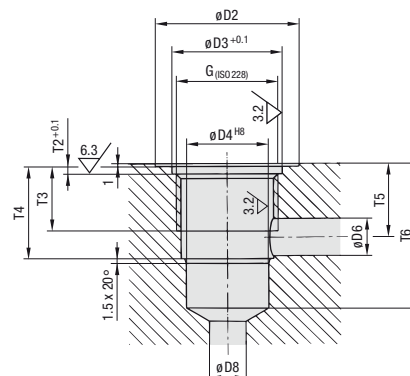
<b>DRVP-06</b>	M6 x 20 - 8.8 (9 N-m) 1/4-20 UNC x 3/4 - Gr. 5 (10 ft-lb)
<b>DRVP-08</b>	M6 x 25 - 8.8 (9 N-m) 1/4-20 UNC x 1 - Gr. 5 (10 ft-lb)
<b>DRVP-10</b>	M6 x 30 - 10.9 (12 N-m) 1/4-20 UNC x 1-1/4 - Gr. 8 (12 ft-lb)
<b>DRVP-12</b>	M6 x 35 - 12.9 (15 N-m) 1/4-20 UNC x 1-1/2 - Gr. 10 (14 ft-lb)
<b>DRVP-16</b>	M8 x 50 - 10.9 (30 N-m) 5/16-18 UNC x 2 - Gr. 8 (24 ft-lb)
<b>DRVP-20</b>	M8 x 55 - 12.9 (35 N-m) 5/16-18 UNC x 2-1/4 - Gr. 10 (29 ft-lb)
<b>DRVP-25</b>	M10 x 60 - 12.9 (70 N-m) 3/8-16 UNC x 2-1/2 - Gr. 10 (58 ft-lb)
<b>DRVP-30</b>	M12 x 85 - 10.9 (100 N-m) 7/16-14 x 3-1/2 - Gr. 8 (63 ft-lb)
<b>DRVP-40</b>	M12 x 100 - 12.9 (130 N-m) 7/16-14 x 4 - Gr. 10 (70 ft-lb)



## Throttle and Shut-Off Valve - Type DVE (Cartridge Assembly)



Installation Details



### Characteristics

Throttle and shut-off the flow of liquid media in both directions

#### Features

- Designed for direct installation into hydraulic manifolds with male BSP threaded stud
- Graduated turning knob and coded spindle to accurately control flow
- Set-screw located on side of turning knob to lock valve in position

#### Media Compatibility

- Suitable for hydraulic fluids

Please consult STAUFF before using with other media.

#### Materials

- Body and spindle made of Steel (1.0715), zinc/iron-plated (Fe/Zn Fe Co 8 C) and free of hexavalent chromium CrVI (standard option); Stainless Steel (1.4571) version available
- Turning knob made of Polyamide (PA)
- O-rings made of NBR (Buna-N®); FPM (Viton®) and EPDM sealed version available

Consult STAUFF for alternative materials.

#### Technical Data

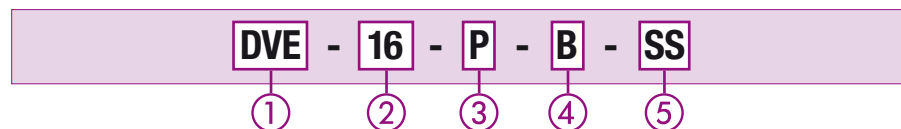
- Maximum working pressure: 350 bar / 5000 PSI (for all sizes)
- Operating temperature range: -20°C ... +100°C / -4°F ... +212°F

Please see page F88 for detailed flow characteristics.

### Dimensions

Type + Nom. Size	Thread Options G	Dimensions (mm/in)																Weight (kg/lbs)		
		H1	H2	H3	H4	ØD1	ØD2	ØD3	ØD4	ØD5	ØD6	ØD7	ØD8	SW	T2	T3	T4		T5	T6
DVE-08	G1/2BSP	47	41	28	12,0	29	32	24	14	14	5	5	5	27	1,9	14	17,5	15	29	0,15
		1,85	1,61	1,08	.47	1,14	1,26	.94	.55	.20	.20	.20	1,06	.07	.55	.69	.59	1,14	.33	
DVE-10	G1/2BSP	64	54	31	14,5	38	32	24	16	16	8	6	8	27	1,9	14	20,5	17	33	0,25
		2,52	2,13	1,21	.57	1,50	1,26	.94	.63	.63	.31	.24	.31	1,06	.07	.55	.81	.67	1,30	.55
DVE-12	G3/4BSP	65	55	40	17,5	38	37	30	19	19	10	8	10	32	1,9	21	29,0	24	43	0,50
		2,56	2,17	1,57	.69	1,50	1,46	1,18	.75	.75	.39	.31	.39	1,26	.07	.83	1,14	.94	1,69	1,10
DVE-16	G1 BSP	65	55	44	21,1	38	47	36	27	27	12	8	12	41	1,9	21	30,0	24	47	0,70
		2,56	2,17	1,71	.83	1,50	1,85	1,42	1,06	1,06	.47	.31	.47	1,61	.07	.83	1,18	.94	1,85	1,54

### Order Codes



#### ① Type

Throttle and Shut-Off Valve (Cartridge Assembly) **DVE**

#### ② Nominal Size DN

**08**    **10**    **12**    **16**

#### ③ Sealing Material

NBR (Buna-N®) (standard option)    **P**  
 FPM (Viton®)    **V**  
 EPDM    **E**

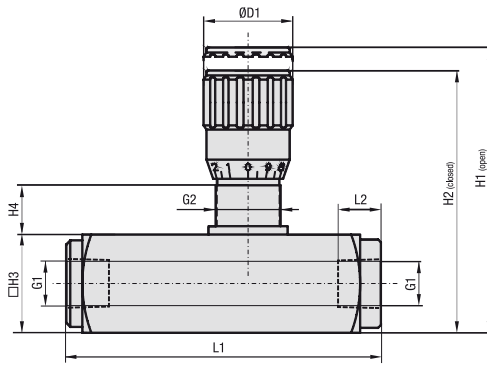
#### ④ Connection

Male BSP thread (ISO 228)    **B**

#### ⑤ Body / Spindle Material

Steel (standard option)    **-**  
 Stainless Steel    **SS**

## Pressure Compensated Flow Control Valve - Type PNDRV (In-Line Assembly)

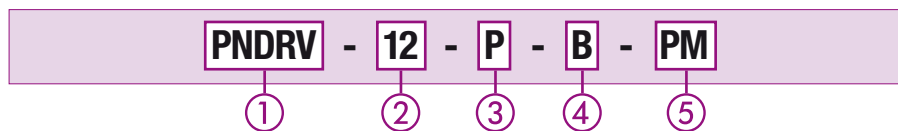


### Dimensions

Type + Nominal Size	Thread Options G1	Dimensions (mm/in)							Weight (kg/lbs)
		L1	L2	H1	H2	H3	H4	G2	
PNDRV-08	G1/4 BSP	94	12,5	88,5	81,5	30	15	M20 x 1	0,58
	1/4 NPT								
	7/16-20 UNF (1/4" SAE)	3.70	.49	3.48	3.21	1.18	.59		.77
PNDRV-10	G3/8 BSP	110,5	13	103	94,5	35	17	M25 x 1,5	0,94
	3/8 NPT								
	9/16-18 UNF (3/8" SAE)	4.35	.51	4.06	3.72	1.38	.67		2.09
PNDRV-12	G1/2 BSP	137	15,5	122	112	45	18	M30 x 1,5*	1,83
	1/2 NPT								
	3/4-16 UNF (1/2" SAE)	5.39	.61	4.80	4.41	1.77	.71		4.07
PNDRV-16	3/4 NPT	163	17	150	138	55	24	M40 x 1,5	3,35
	G3/4 BSP								
	1-1/16-12 UN (3/4" SAE)	6.42	.67	5.91	5.43	2.17	.94		7.44

\* M25 x 1,5 for version with female UN/UNF thread (SAE J514)

### Order Codes



#### ① Type

Pressure Compensated Flow Control Valve (In-Line Assembly) **PNDRV**

#### ② Nominal Size DN

**08 10 12 16**

#### ③ Sealing Material

NBR (Buna-N®) (standard option) **P**  
FPM (Viton®) **V**  
EPDM **E**

#### ④ Connection

Female BSP thread (ISO 228) **B**  
Female NPT thread (ANSI B1.20.1) **N**  
Female UN/UNF thread (SAE J514) **S**

#### ⑤ Panel Mounting Nut

Without panel mounting nut (standard option) **-**  
With panel mounting nut **PM**

### Characteristics

**Throttle and shut-off the flow of liquid media in direction A-B (free flow in reverse direction) with pressure compensating feature via built-in compensating piston**

#### Features

- Designed for in-line assembly with female BSP, NPT and SAE threaded connections
- Panel mounting nuts available on request
- Graduated turning knob to accurately control flow
- Set-screw located on side of turning knob to lock valve in position

#### Media Compatibility

- Suitable for hydraulic fluids

Please consult STAUFF before using with other media.

#### Materials

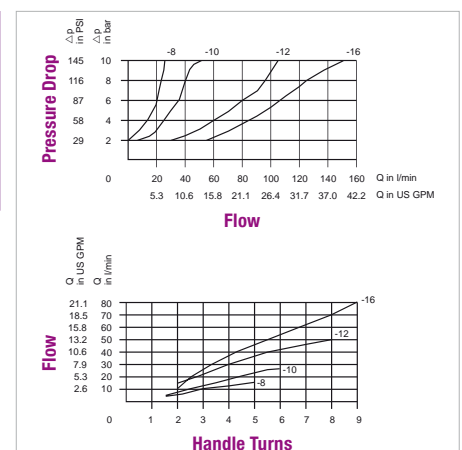
- Body made of Steel, phosphated
- Internal components made of Stainless Steel
- Turning knob made of Aluminium
- O-rings made of NBR (Buna-N®)
- Anti-extrusion ring made of PTFE

Consult STAUFF for alternative materials.

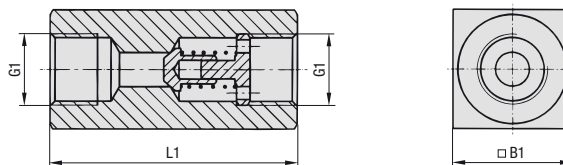
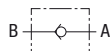
#### Technical Data

- Maximum working pressure: 210 bar / 3000 PSI (for all sizes)
- Operating temperature range: -20°C ... +120°C / -4°F ... +248°F
- Minimum filtration grade: 25 µm (absolute) to ensure the correct functioning, reduce wear and tear and increase the service life of the valve

### Flow Characteristics



## Heavy-Duty Check Valve - Type RV (In-Line Assembly)



### Characteristics

Allows a single-directional flow only

#### Features

- Designed for in-line assembly with female BSP, NPT and SAE threaded connections
- Metal-to-metal seat

#### Media Compatibility

- Suitable for hydraulic fluids

Please consult STAUFF before using with other media.

#### Materials

- Body made of Steel (1.0715), zinc/iron-plated (Fe/Zn Fe Co 8 C) and free of hexavalent chromium CrVI (standard option); Stainless Steel (1.4571) version available

#### Technical Data

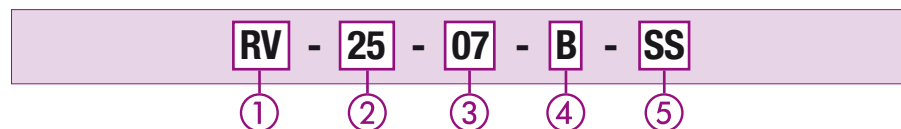
- Opening pressure: 0,5 bar / 7 PSI (4,5 bar / 65 PSI available on request)
- Maximum working pressure: 500 bar / 7250 PSI (depending on size)
- Operating temperature range: -20°C ... +100°C / -4°F ... +212°F

Please see page F88 for detailed flow characteristics.

### Dimensions

Type + Nominal Size	Thread Options G1	Dimensions (mm/in)		Working Pressure PN (bar/PSI)	Weight (kg/lbs)
		L1	B1		
RV-06	G1/8 BSP 1/8 NPT	45	16	500	0,10
		1.77	.63	7250	.22
RV-08	G1/4 BSP 1/4 NPT 7/16-20 UNF (1/4" SAE)	55	25	500	0,20
		2.17	.98	7250	.44
RV-10	G3/8 BSP 3/8 NPT 9/16-18 UNF (3/8" SAE)	65	30	500	0,40
		2.56	1.18	7250	.88
RV-12	G1/2 BSP 1/2 NPT 3/4-16 UNF (1/2" SAE)	73	35	500	0,70
		2.87	1.38	7250	1.54
RV-16	G3/4 BSP 3/4 NPT 1-1/16-12 UN (3/4" SAE)	88	45	500	1,20
		3.46	1.77	7250	2.64
RV-20	G1 BSP 1 NPT 1-5/16-12 UN (1" SAE)	127	50	500	2,00
		5.00	1.97	7250	4.40
RV-25	G1-1/4 BSP 1-1/4 NPT 1-5/8-12 UN (1-1/4" SAE)	143	60	400	3,30
		5.63	2.36	5800	7.26
RV-30	G1-1/2 BSP 1-1/2 NPT 1-7/8-12 UN (1-1/2" SAE)	143	70	315	4,20
		5.63	2.75	4500	9.24
RV-40	G2 BSP 2 NPT 2-1/2-12 UN (2" SAE)	165	90	315	7,20
		6.49	3.54	4500	15.84

### Order Codes



#### ① Type

Heavy-Duty Check Valve (In-Line Assembly) **RV**

#### ② Nominal Size DN

**06 08 10 12 16 20 25 30 40**

#### ③ Opening Pressure

0,5 bar / 7 PSI (standard option) **07**  
4,5 bar / 65 PSI **65**

Consult STAUFF for alternative opening pressures.

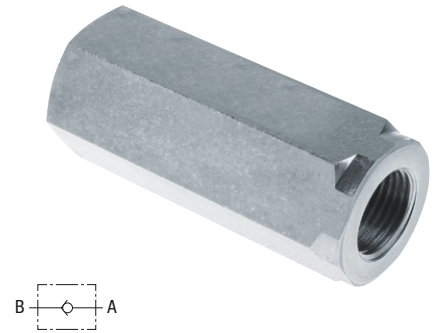
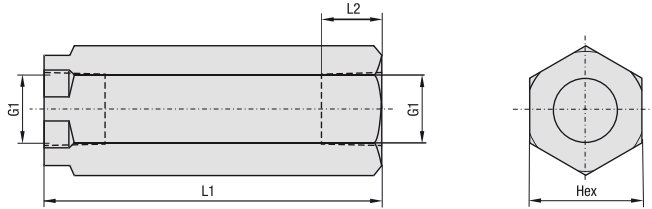
#### ④ Connection

Female BSP thread (ISO 228) **B**  
Female NPT thread (ANSI B1.20.1) **N**  
Female UN/UNF thread (SAE J514) **S**

#### ⑤ Body Material

Steel (standard option) **-**  
Stainless Steel **SS**

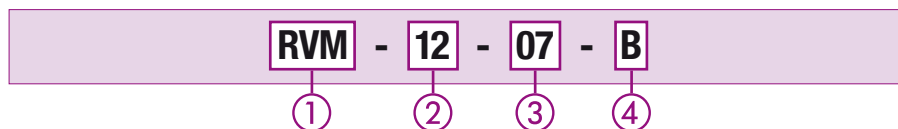
## Medium-Duty Check Valve - Type RVM (In-Line Assembly)



### Dimensions

Type + Nominal Size	Thread Options G1	Dimensions (mm/in)			Working Pressure PN (bar/PSI)	Weight (kg/lbs)
		L1	L2	Hex		
RVM-08	G1/4 BSP 1/4 NPT	63,0	12,5	22	400	0,17
		2.48	.49	.87	5800	.38
RVM-10	G3/8 BSP 3/8 NPT	69,0	12,5	27	400	0,26
		2.72	.49	1.06	5800	.58
RVM-12	G1/2 BSP 1/2 NPT	80,5	15,5	32	400	0,42
		3.17	.61	1.26	5800	.93
RVM-16	G3/4 BSP 3/4 NPT	99,5	17,0	36	400	0,61
		3.92	.67	1.42	5800	1.36

### Order Codes



#### ① Type

 Medium-Duty Check Valve (In-Line Assembly) **RVM**

#### ② Nominal Size DN

<b>08</b>	<b>10</b>	<b>12</b>	<b>16</b>
-----------	-----------	-----------	-----------

#### ③ Opening Pressure

0,5 bar / 7 PSI (standard option)	<b>07</b>
2 bar / 30 PSI	<b>30</b>
4 bar / 60 PSI	<b>60</b>

Consult STAUFF for alternative opening pressures.

#### ④ Connection

Female BSP thread (ISO 228)	<b>B</b>
Female NPT thread (ANSI B1.20.1)	<b>N</b>

### Characteristics

**Allows a single-directional flow only**

#### Features

- Designed for in-line assembly with female BSP and NPT threaded connections
- Ideal for medium-duty applications
- Metal-to-metal seat

#### Media Compatibility

- Suitable for hydraulic fluids

Please consult STAUFF before using with other media.

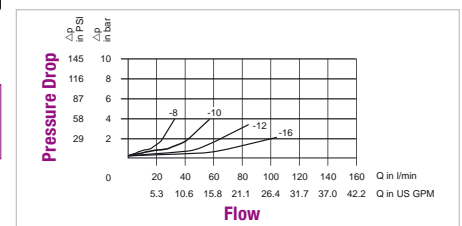
#### Materials

- Body made of Steel, zinc/nickel-coated (free of hexavalent chromium CrVI)
- Ball made of Stainless Steel

#### Technical Data

- Opening pressure: 0,5 bar / 7 PSI
- Field replaceable springs with a pressure setting of 2 bar / 30 PSI or 4 bar / 60 PSI
- Maximum working pressure: 400 bar / 5800 PSI (for all sizes)
- Operating temperature range: -20 °C ... +100 °C / -4 °F ... +212 °F

### Flow Characteristics



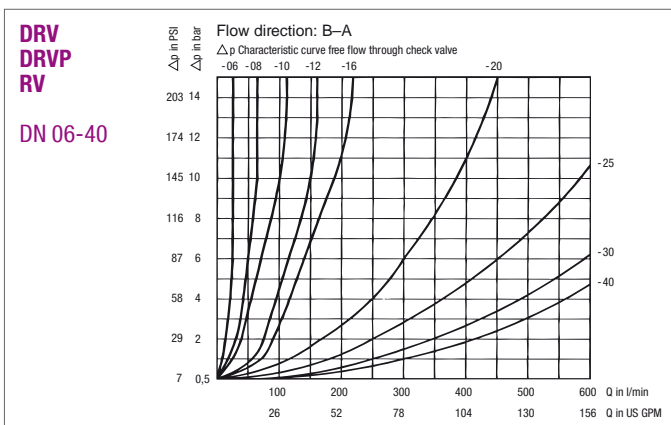
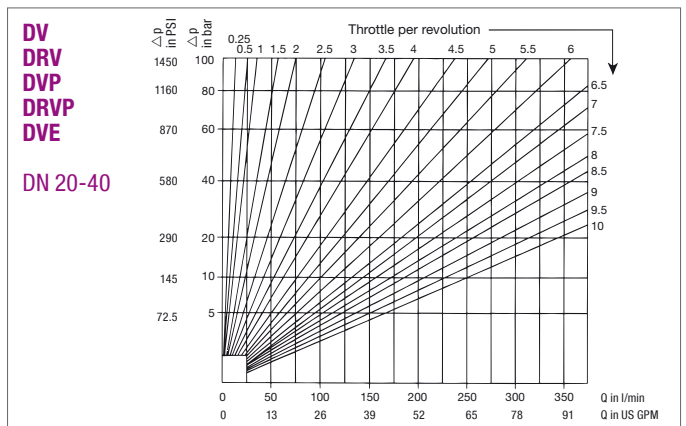
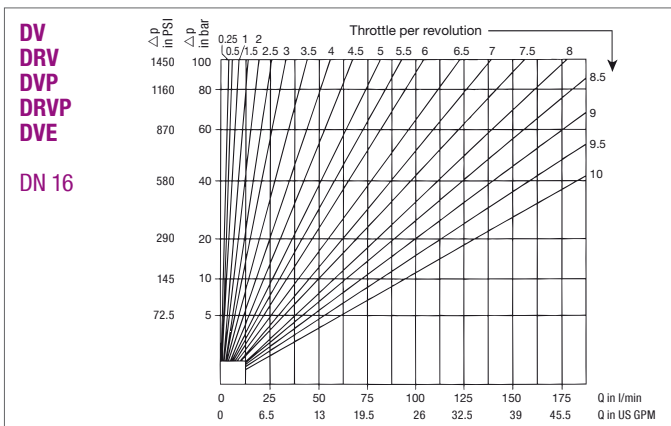
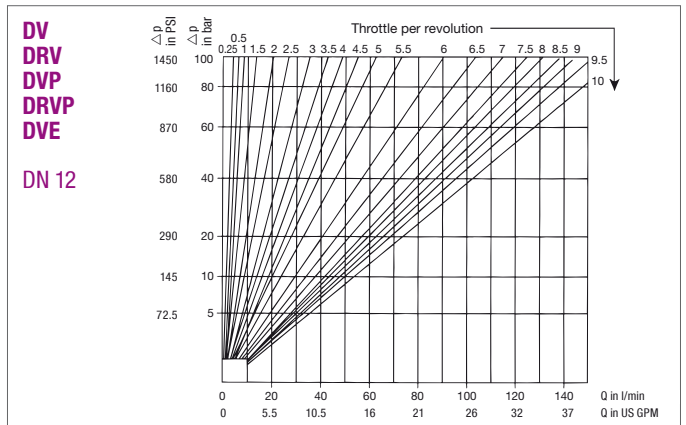
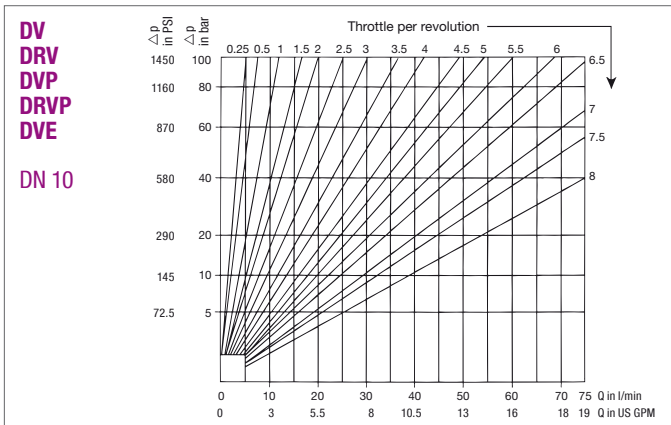
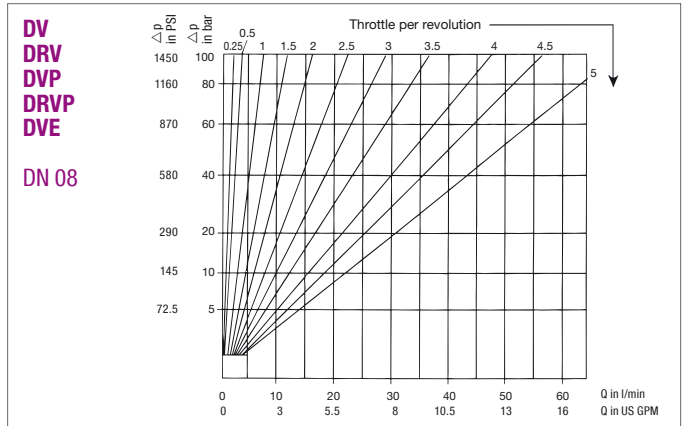
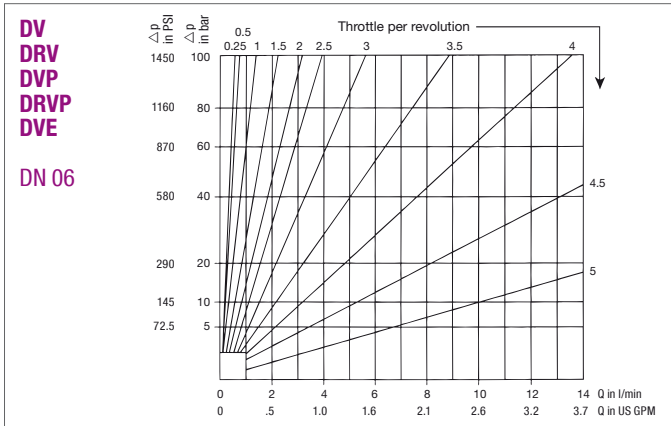
### Accessories / Spare Parts

#### Field replaceable springs

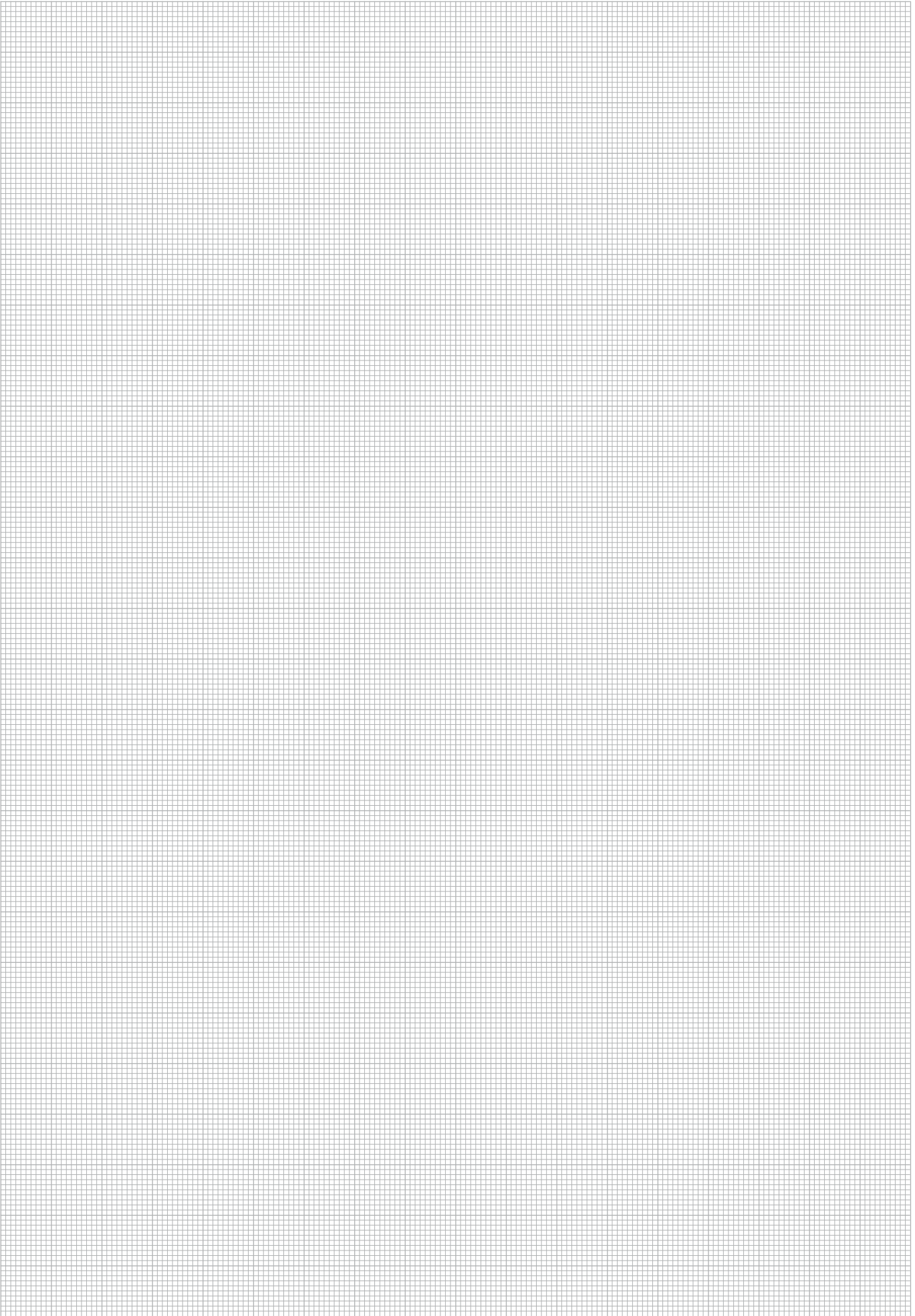
- |   |                  |
|---|------------------|
| for RVM-08 (setting of 2 bar / 30 PSI): | <b>RVM-08-30</b> |
| for RVM-08 (setting of 4 bar / 60 PSI): | <b>RVM-08-60</b> |
| for RVM-10 (setting of 2 bar / 30 PSI): | <b>RVM-10-30</b> |
| for RVM-10 (setting of 4 bar / 60 PSI): | <b>RVM-10-60</b> |
| for RVM-12 (setting of 2 bar / 30 PSI): | <b>RVM-12-30</b> |
| for RVM-12 (setting of 4 bar / 60 PSI): | <b>RVM-12-60</b> |
| for RVM-16 (setting of 2 bar / 30 PSI): | <b>RVM-16-30</b> |
| for RVM-16 (setting of 4 bar / 60 PSI): | <b>RVM-16-60</b> |

Consult STAUFF for alternative pressure settings.

Nominal Flow Rate vs. Pressure Drop



Please note: The flow characteristics mentioned on this page are valid for mineral oils with a density of 0,86 kg/dm<sup>3</sup> and the kinematic viscosity of 35 mm<sup>2</sup>/s (35 cSt). The characteristics have been determined in accordance to ISO 3968.

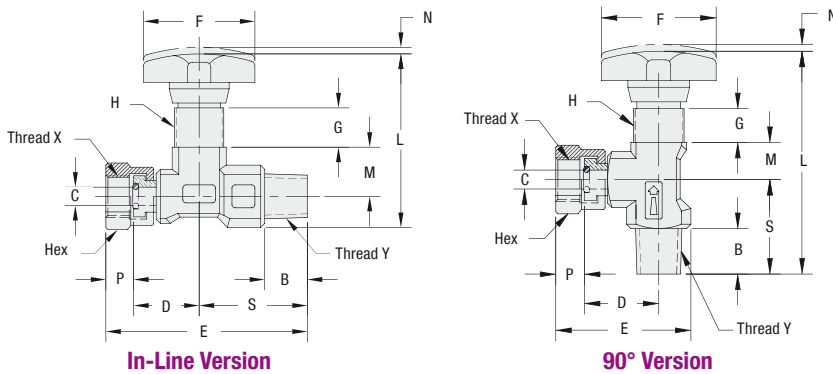








## Gauge Isolator Needle Valve - Types SWS-A1/A2 (Single Station)



### Dimensions

Type	Thread X (Female)	Thread Y (Male)	Dimensions (mm/in)													Weight (kg/lbs)
			B	C	D	E	F	G	H	L	M	N	P	S	Hex	
SWS-A1	G1/4 BSP 1/4 NPT	1/4 BSPT 1/4 NPT 7/16-20 UNF (1/4" SAE)	13	5,6	20	61,5	34	12	M15x1	53	15	2	8,5	33	18	0,13
			.51	.22	.78	2.42	1.34	.47		2.09	.59	.08	.33	1.30	.71	.22
SWS-A2	G1/4 BSP 1/4 NPT	1/4 BSPT 1/4 NPT	13,5	5,6	22	40	34	10	M15x1	66	11	2	8,5	28	18	0,11
			.53	.22	.87	1.57	1.34	.39		2.60	.43	.08	.33	1.10	.71	.44

### Characteristics

Effective protection of pressure gauges against overload caused by pressure peaks

#### Features

- Designed for in-line assembly (type A1) or 90° assembly (type A2) with female BSP / male BSPT, female NPT / male NPT or female NPT / male SAE threaded connections
- Panel mounting nuts available on request
- Rotating swivel nut allows for accurate orientation of the pressure gauge

#### Materials

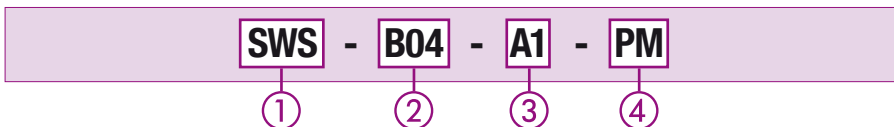
- Body made of Steel, zinc/nickel-coated (free of hexavalent chromium CrVI)
- Spindle made of Steel
- Hand-wheel made of Polyamide (PA)
- O-rings made of NBR (Buna-N®)
- Anti-extrusion ring made of PTFE

Consult STAUFF for alternative materials.

#### Technical Data

- Maximum working pressure: 400 bar / 5800 PSI (for all sizes)
- Operating temperature range: -20°C ... +100°C / -4°F ... +212°F

### Order Codes



#### ① Type

Gauge Isolator Valve **SWS**

#### ② Connection Threads

Female G1/4 BSP and Male 1/4 BSPT **B04**

Female 1/4 NPT and Male 1/4 NPT **N04**

Female 1/4 NPT and Male 7/16-20 UNF (1/4" SAE) (only available for in-line version) **S04**

#### ③ Style

Single station, in-line version **A1**

Single station, 90° version **A2**

#### ④ Panel Mounting Kit

Without panel mounting kit (standard option) **-**

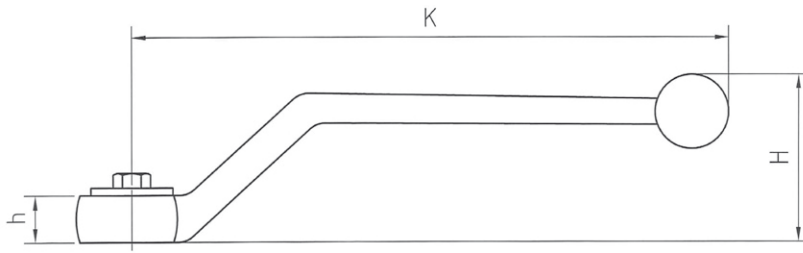
With panel mounting kit **PM**

## Pressure Gauges

Please see pages D4 to D11 of the **Diagtronics** section of this product catalogue for details on our full range of analog and digital pressure measurement equipment.



**Levers**



**Zinc - Off-Set Design**

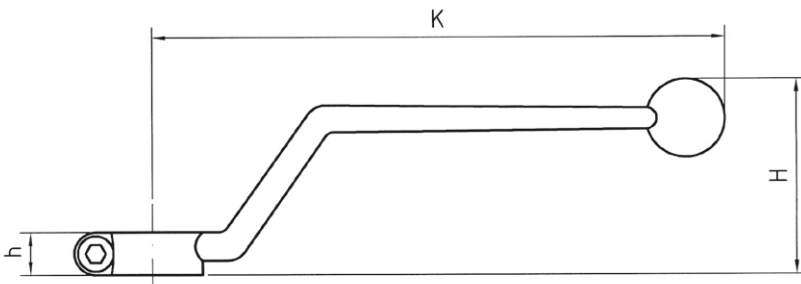
**Steel - Off-Set Design**

**Stainless Steel V4A - Off-Set Design**

SW	Dimensions (mm/in)			Weight (kg/lbs)	Order Codes
	K	h	H		
7	80	6,5	30	0,03	SW7/OS-ZN
	3.15	.26	1.18	.07	
9	115	8,7	45	0,09	SW9/OS-ZN
	4.52	.34	1.77	.20	

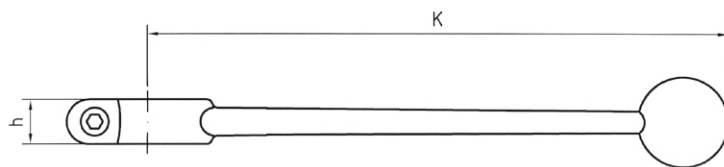
SW	Dimensions (mm/in)			Weight (kg/lbs)	Order Codes
	K	h	H		
7	80	6,5	30	0,05	SW7/OS-S
	3.15	.26	1.18	.11	
9	115	9	47	0,09	SW9/OS-S
	4.52	.35	1.85	.20	
14	170	12	64	0,23	SW14/OS-S
	6.73	.47	2.52	.51	
17	306	17	80	0,66	SW17/OS-S
	12.04	.69	3.15	1.45	

SW	Dimensions (mm/in)			Weight (kg/lbs)	Order Codes
	K	h	H		
7	60	6,5	22	0,04	SW7/OS-SS
	2.36	.26	.87	.09	
9	115	9	47	0,10	SW9/OS-SS
	4.52	.35	1.85	.22	
14	173	12	64	0,23	SW14/OS-SS
	6.80	.47	2.52	.51	
17	227,5	15	90	0,66	SW17/OS-SS
	8.96	.59	3.54	1.45	



**Aluminium - Off-Set Design**

SW	Dimensions (mm/in)			Weight (kg/lbs)	Order Codes
	K	h	H		
12	160	12	55	0,07	SW12/OS-AL
	6.30	.47	2.17	.16	



**Zinc - Straight Design**

**Aluminium - Straight Design**

SW	Dimensions (mm/in)			Weight (kg/lbs)	Order Codes
	K	h	H		
9	155	10	0,09	SW9/ST-ZN	
	6.10	.29	.20		
14	200	14	0,22	SW14/ST-ZN	
	7.87	.55	.48		

SW	Dimensions (mm/in)			Weight (kg/lbs)	Order Codes
	K	h	H		
9	150	11	0,06	SW9/ST-AL	
	5.91	.43	.13		
14	200	12	0,11	SW14/ST-AL	
	7.87	.47	.24		
17	320	16	0,27	SW17/ST-AL	
	12.60	.63	.59		

**Locking Device ■ Type LD1**
**Dimensions / Order Codes**

Nominal Size DN	SW	Dimensions (mm/in)		Order Codes Individual Part
		B	L1	
4-13	9	9	25	LD1-SW9
		.35	.98	
16	12	12	40	LD1-SW12
		.47	1.57	
20-25	14	14	40	LD1-SW14
		.55	1.57	
32-50	17	17	50	LD1-SW17
		.67	1.97	

**Characteristics**

Locking kit consisting of shackle, sliding sleeve, link with screw and Steel lever.

**Features**

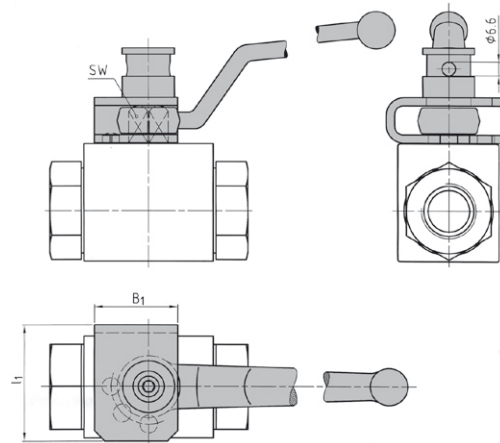
- Universal field-installed locking device
- High security: Cannot be dismantled when locked

**Suitability**

Type	Description
BBV	Block Body Valve with Threaded Connections (SW 9-14)
FBV	Forged Body Valve with Threaded Connections (SW 17)
HBV	High-Pressure Block Body Valve with Threaded Connections (SW 9-14)
BBV22/23	Block Body Valve with SAE Split Flange Connections (SW 9-14)
FBV22/23	Forged Body Valve with SAE Split Flange Connections (SW 17)

Type	Description
BBV	Block Body Valve with SAE Flange Connections (SW 9-14)
FBV	Forged Body Valve with SAE Flange Connections (SW 17)
BBV25	Block Body Valve (Two-Way Selector) for Manifold Mounting (SW 9-17)
BBV35	Block Body Valve (Three-Way Selector) for Manifold Mounting (SW 9-17)
BBVS35	Block Body Valve (Three-Way Selector) for Manifold Mounting (SW 9-17)

Type	Description
CBV	Block Body Valve (Three-Way Selector) with Threaded Connections (SW 9-17)
CBVS	Block Body Valve (Three-Way Selector) with Threaded Connections (SW 9-17)


**Dimensions / Order Codes**

Nominal Size DN	SW	Dimensions (mm/in)				Order Codes Individual Part
		H	B1	B2	B3	
4-13	9	3,5	61	24	10	LD2-SW9
		.14	2.41	.94	.39	
16	12	4,5	64	25,5	12	LD2-SW12
		.18	2.52	1.00	.47	
20-25	14	4,5	84	35,5	14	LD2-SW14
		.18	3.31	1.40	.55	
32-50	17	4,5	136	61,5	15	LD2-SW17
		.18	5.35	2.42	.59	

**Characteristics**

Locking kit consisting of locking plate, stopping disk and ring.

**Features**

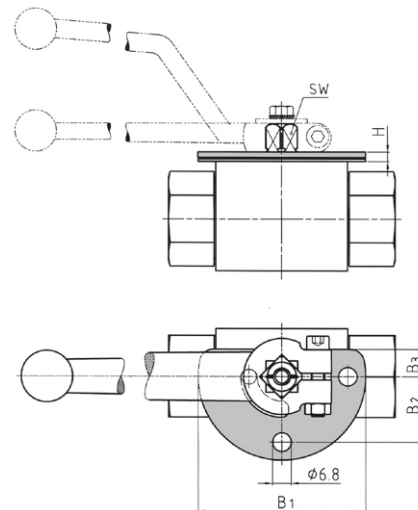
- Field-installed locking device
- Can be dismantled after disassembly of lever

**Suitability**

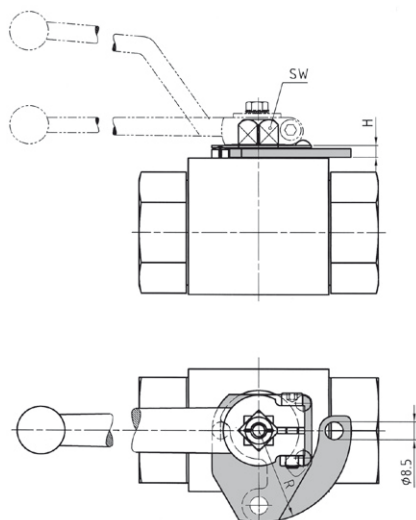
Type	Description
BBV	Block Body Valve with Threaded Connections (SW 9-14)
FBV	Forged Body Valve with Threaded Connections (SW 17)

Type	Description
BBV22/23	Block Body Valve with SAE Split Flange Connections (SW 9-14)
FBV22/23	Forged Body Valve with SAE Split Flange Connections (SW 17)

Type	Description
CBV (≤DN25)	Block Body Valve (Three-Way Selector) with Threaded Connections



### Locking Device - Type LD3



#### Dimensions / Order Codes

Nominal Size DN	SW	Dimensions (mm/in)	
		H	R
4-13	9	4	37
		.16	1.47
16	12	4,3	40
		.17	1.57
20-25	14	5,5	43,5
		.22	1.71
32-50	17	6	69,5
		.24	2.74

#### Characteristics

Only available in combination with suitable ball valve.

#### Features

- Factory-installed locking device
- High security: Cannot be dismounted when locked

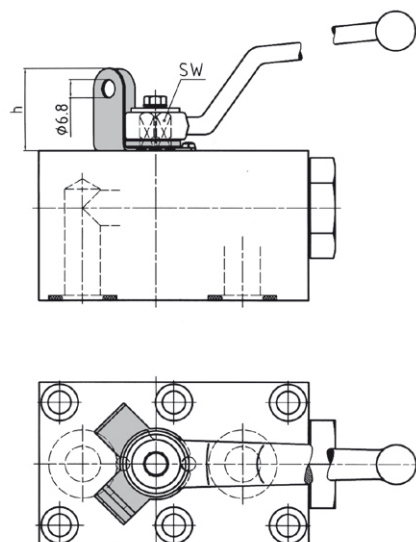
#### Order Example

FBV2G200001M-LD3

#### Suitability

Type	Description	Type	Description	Type	Description
BBV	Block Body Valve with Threaded Connections	FBV	Forged Body Valve with Threaded Connections	CBV (≤DN25)	Block Body Valve (Three-Way Selector) with Threaded Connections

### Locking Device - Type LD4



#### Dimensions / Order Codes

SW	Dimensions (mm/in)		Order Codes Individual Part
	H		
7	24		LD4-SW7-SS
	.94		
9 *	28		LD4-SW9-SS
	1.10		
14 *	34,5		LD4-SW14-SS
	1.36		
17	44		LD4-SW17-SS
	1.73		

\* Lever displaced by 180°

#### Characteristics

Locking kit consisting of locking plate, stopping disk and ring.

#### Features

- Universal field-installed locking device (for off-set lever)
- Can be dismounted after disassembly of lever

#### Suitability

Type	Description	Type	Description
BBV	Block Body Valve with Threaded Connections	BBV25	Block Body Valve (Two-Way Selector) for Manifold Mounting
FBV	Forged Body Valve with Threaded Connections	BBV35	Block Body Valve (Three-Way Selector) for Manifold Mounting
HBV	High-Pressure Block Body Valve with Threaded Connections	CBV	Block Body Valve (Three-Way Selector) with Threaded Connections
BBV29	Round Body Valve with Direct SAE Flange Connections	CBV	Block Body Valve (Three-Way Selector) with SAE Flange Connections
BBV2D	Round Body Valve with ISO Flange Connections	CBVS	Block Body Valve (Three-Way Selector) with Threaded Connections
BBV2Y	Round Body Valve with CETOP Flange Connections	LBV	Block Body Valve (Three-Way Selector) with Threaded Connections
		TBV	Block Body Valve (Three-Way Selector) with Threaded Connections
		TBV	Block Body Valve (Four-Way Selector) with Threaded Connections
		XBV	Block Body Valve (Four-Way Selector) with Threaded Connections

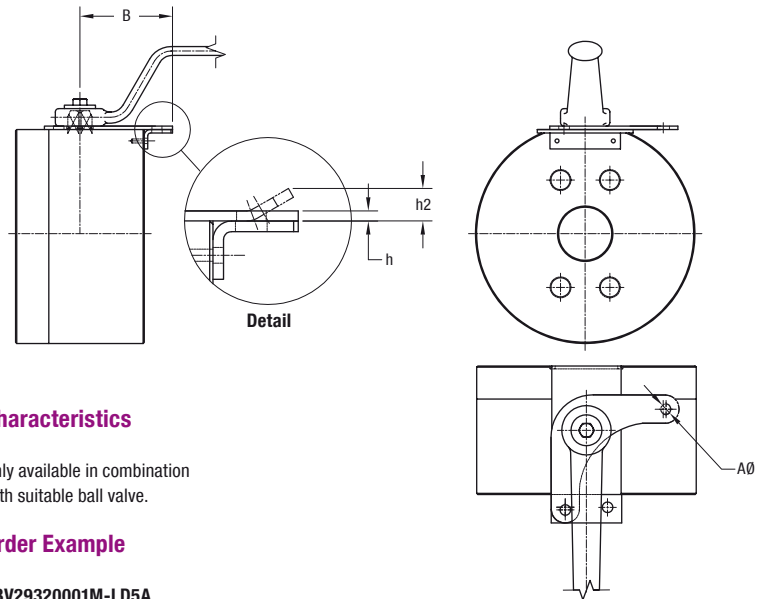
**Locking Device - Type LD5A**
**Dimensions / Order Codes**

STAUFF Size	SW	Dimensions (mm/in)			
		ØA	B	h	h2
08	12	8,5	59	2	
		.33	2.32	.08	
12-16	14	8,5	64	2	
		.33	2.52	.08	
20-32	17	9,5	83	2	
		.37	3.27	.08	
40	16	9,5	102	3	
		.37	4.01	.12	
48	19	9,5	93		27
		.37	3.66		1.06
64	24	9,5	113	3	
		.37	4.45	.12	
80	36	9,5	134	3	
		.37	5.28	.12	

**Suitability**

Type	Description
BBV29	Round Body Valve
BBV27/28	Round Body Valve
BBVF	Round Body Valve

Please consult STAUFF for use with types BBV2D (direct ISO 6164 flange connection) and BBV2Y (direct CETOP flange connection).


**Characteristics**

Only available in combination with suitable ball valve.

**Order Example**

BBV29320001M-LD5A

**Suitability**

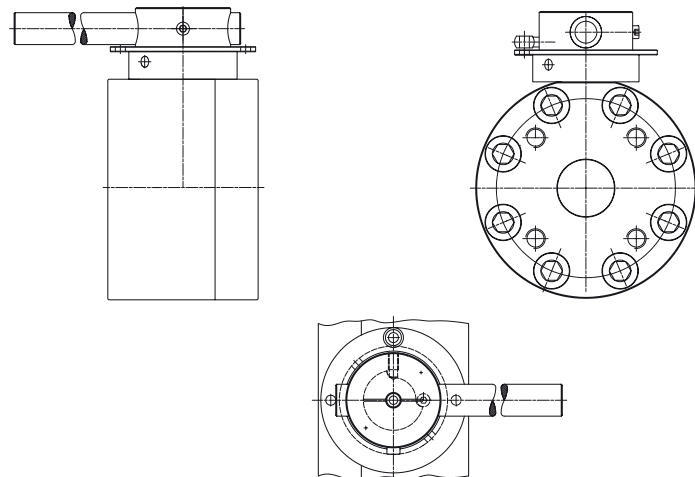
Type	Description
BBV27/28	Round Body Valve with Direct SAE Flange Connections
BBVF	Round Body Valve with DIN Flange Connections with Butt Weld Ends
BBV2Y	Round Body Valve with Direct ISO 6164 Flange Connection
BBV2D	Round Body Valve with Direct CETOP Flange Connection

**Characteristics**

Only available in combination with suitable ball valve.

**Order Example**

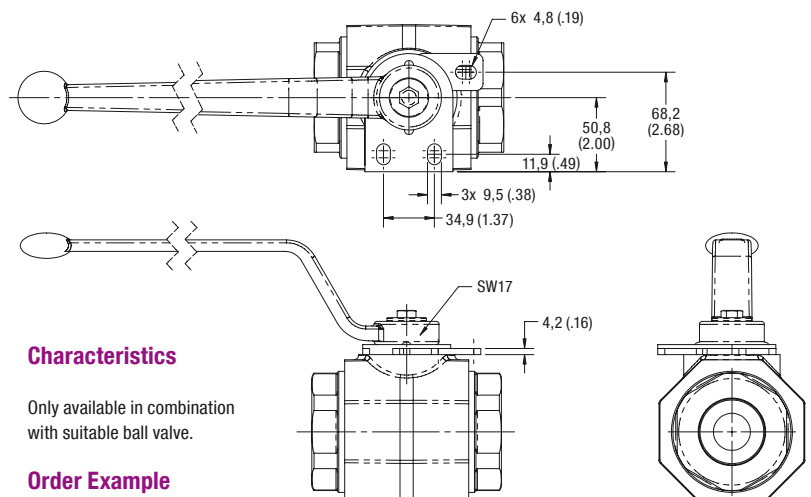
BBV27400001M-LD5B


**Locking Device - Type LD5B**
**Order Codes**

Nominal Size DN	SW	Order Codes
20-32	17	LD6-SW17

**Suitability**

Type	Description
FBV	Forged Body Valve with Threaded Connections
FBV22/23	Forged Body Valve with SAE Split Flange Connections
FBV	Forged Body Valve with SAE Flange Connections


**Characteristics**

Only available in combination with suitable ball valve.

**Order Example**

FBV2G200001M-LD6

**Double-Acting Pneumatic Actuators - Type EDA**  
**Single-Acting Pneumatic Actuators - Type ESA**



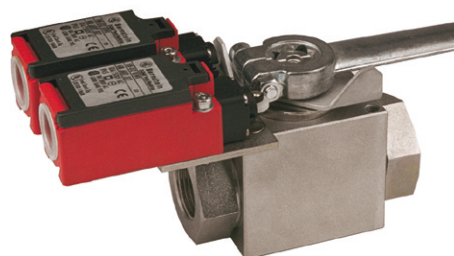
Most STAUFF ball valves can be factory-mounted to compact, efficient double-acting or single-acting pneumatic actuators for both high-pressure and low-pressure applications.

The actuators feature simple, robust construction and are suitable for applications with high cycle requirements.

Please note: The minimum air supply for STAUFF actuators is usually 5,5 bar / 80 PSI. They are designed for 90° open / close applications only and should not be used for valve throttling.

Select the size of your pneumatic actuator from the selection charts on the right (based on actual system pressures not exceeding 80% of the nominal pressures indicated in this catalogue and considering the torque / operation pressure curves as displayed on page F108). Consult STAUFF for further information.

**Limit Switches**



**Limit Switches**

Code: **-LS**

**Proximity Switches**

Code: **-PX**

**Available options:**

open: **-0**

closed: **-0**

open/closed: **-0C**

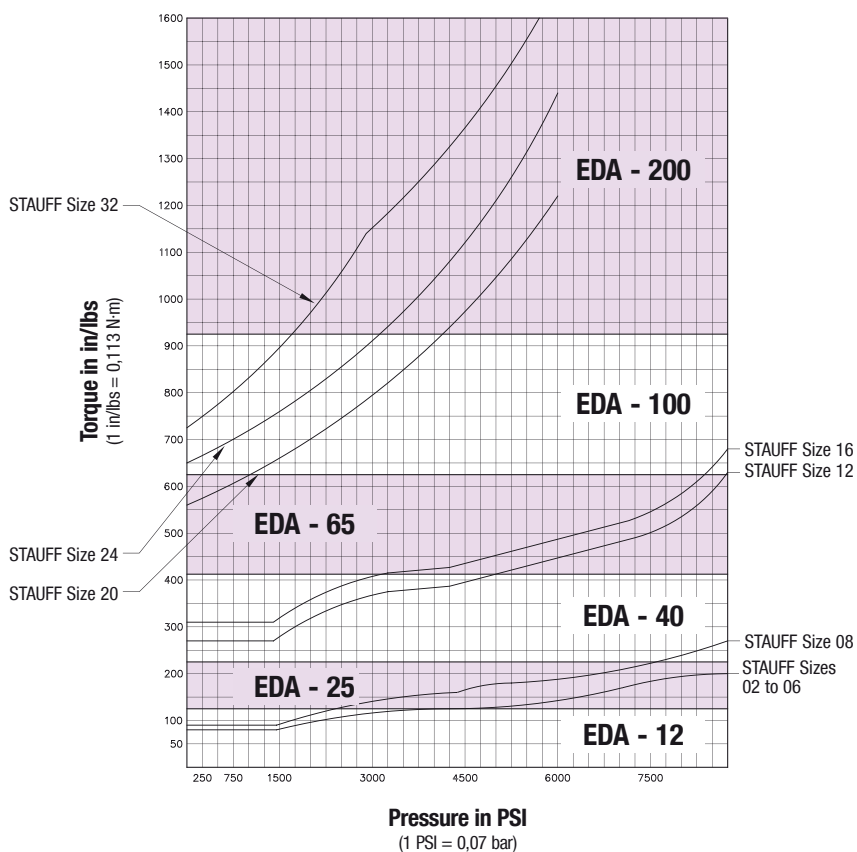
Please consult STAUFF for further information.

**Order Example:**

FBV2G200001M-LS-0

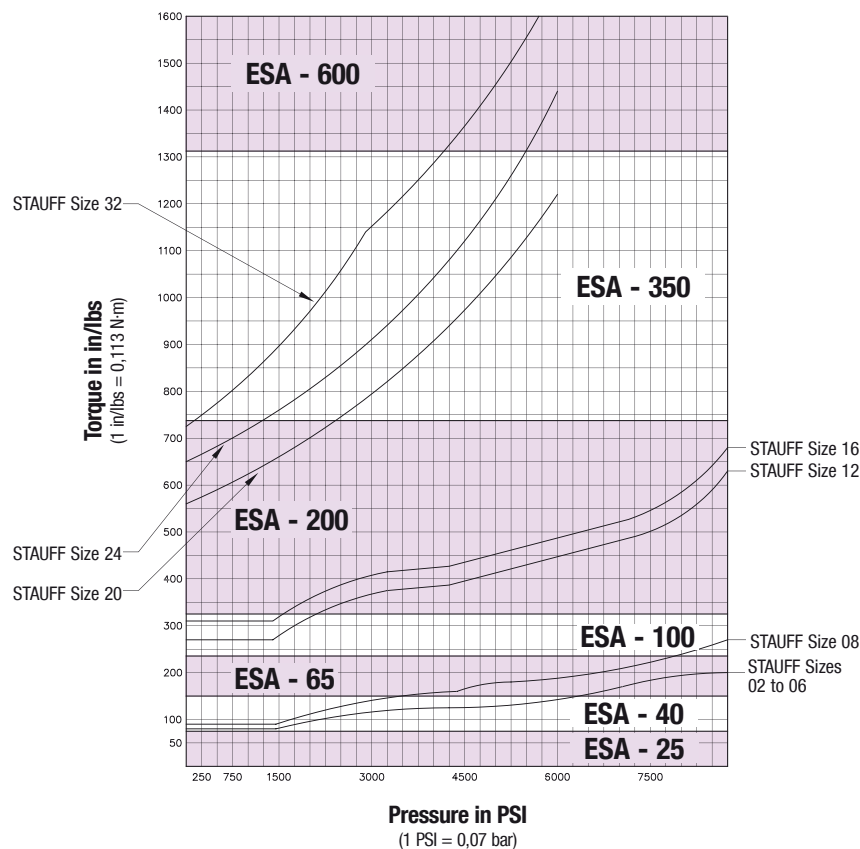
**Selection Chart for Double-Acting Pneumatic Actuators EDA**

for Two-Way Ball Valves used with Standard Mineral Oil according to DIN 51524 T1 and T2



**Selection Chart for Single-Acting Pneumatic Actuators ESA**

for Two-Way Ball Valves used with Standard Mineral Oil according to DIN 51524 T1 and T2





## Ball Valves with Detent - Type DT...

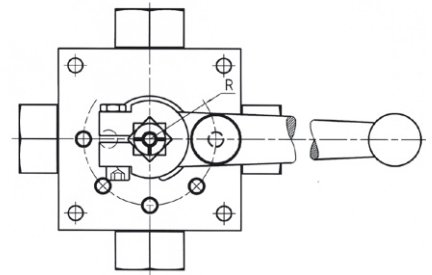
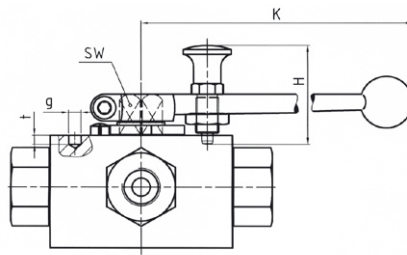
Order Example

**LBV3G060001M-DT90**

### Dimensions

**Multi-Way Ball Valves** (Types LBV / TBV / XBV)

STAUFF Size	Nominal Size DN	Dimensions (mm/in)					
		SW	K	H	R	g	t
02	4	12	175	45	20	6	7
		.47	6.89	1.77	.79	.24	.28
04	6	12	175	45	20	6	7
		.47	6.89	1.77	.79	.24	.28
05	8	14	200	45	29	6	4
		.55	7.87	1.77	1.14	.24	.16
06	10	14	200	45	29	6	4
		.55	7.87	1.77	1.14	.24	.16
08	13	14	200	45	29	6	4
		.55	7.87	1.77	1.14	.24	.16
10	16	17	200	45	29	6	4
		.67	7.87	1.77	1.14	.24	.16
12	20	17	240	45	28	6	4
		.67	9.45	1.77	1.10	.24	.16
16	25	17	240	45	28	6	4
		.67	9.45	1.77	1.10	.24	.16



### Standard Detent Settings

<b>DT090</b>	0° / 90°
<b>DT45</b>	0° / 45°
<b>DT90</b>	0° / 45° / 90°
<b>DT135</b>	0° / 45° / 90° / 135°
<b>DT180</b>	0° / 90° / 180°

Please consult STAUFF for further information.

## Ball Valves with Assembly Holes - Type SMH

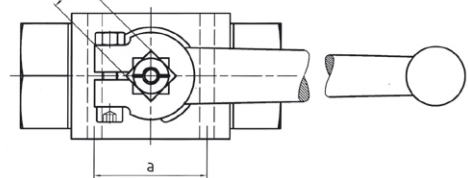
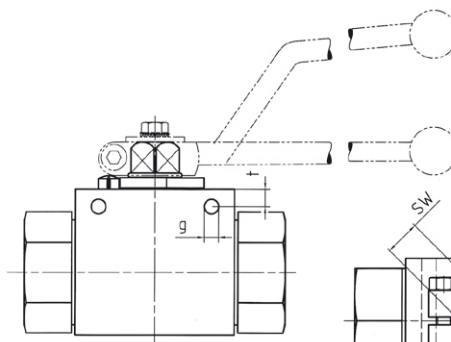
Order Example

**BBV2G060001M-SMH**

### Dimensions

**Block Body Ball Valves** (Types BBV / CBV / CBVS)

STAUFF Size	Nominal Size DN	Dimensions (mm/in)			
		SW	a	g	t
02	4	9	31	4,3	4,5
		.35	1.22	.17	.18
04	6	9	31	4,3	4,5
		.35	1.22	.17	.18
05	8	9	31	4,3	4,5
		.35	1.22	.17	.18
06	10	9	32	4,3	4
		.35	1.26	.17	.16
08	13	9	32	4,3	4
		.35	1.26	.17	.16
10	16	12	32	5,2	6
		.47	1.26	.20	.24
12	20	14	44	6,2	6
		.55	1.73	2.44	.24
16	25	14	44	6,3	6
		.55	1.73	.25	.24



Please consult STAUFF for further information.

## Ball Valves with Assembly Threads - Type PM

Order Example

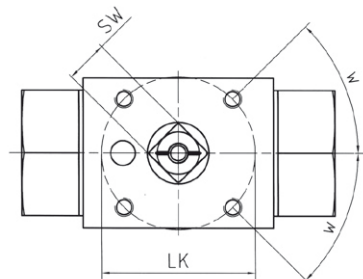
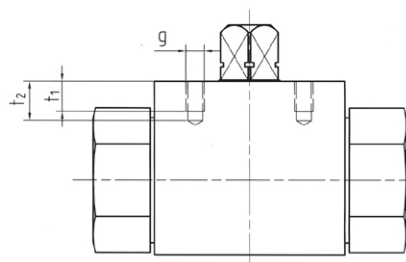
**BBV2G060001M-PM**

### Dimensions

**Block Body Ball Valves** (Types BBV / HBV / CBV / CBVS up to STAUFF Size 16)

**Forged Body Ball Valves** (Types FBV from STAUFF Size 20 on)

STAUFF Size	Nominal Size DN	Dimensions (mm/in)						ISO 5211
		SW	LK	g	t1	t2	w	
02	4	9	36	M5	6	7,5	30°*	F03*
		.35	1.42		.24	.30		
04	6	9	36	M5	6	7,5	30°*	F03*
		.35	1.42		.24	.30		
05	8	9	36	M5	6	7,5	30°*	F03*
		.35	1.42		.24	.30		
06	10	9	36	M5	7	9	45°	F03
		.35	1.42		.28	.35		
08	13	9	36	M5	6	8	45°	F03
		.35	1.42		.24	.31		
10	16	12	42	M5	8	10	45°	F04
		.47	1.65		.31	.39		
12	20	14	50	M6	10	14	45°	F05
		.55	1.97		.39	.55		
16	25	14	50	M6	10	12	45°	F05
		.55	1.97		.39	.47		
20	32	17	50	M6	8	12	45°	F05
		.67	1.97		.31	.47		
24	40	17	50	M6	8	12	45°	F05
		.67	1.97		.31	.47		
32	50	17	50	M6	8	12	45°	F05
		.67	1.97		.31	.47		



\* 30° is not corresponding to ISO 5211  
Please consult STAUFF for further information.



Porting Patterns

Type	Symbol	Porting Pattern		Stop of End Position	Operating Angle	Overlap
<b>BBV35</b>	LLu		58-BBV35		90°	negative
<b>BBVS35</b>	Lu		57-BBVS35		180°	negative
* Pressure inlet possible from all ports! Must be operated without pressure!						
<b>CBVL</b>	L		50-CBV		90°	negative
<b>CBVT</b>	T		51-CBV		90°	negative
<b>CBVSL</b>	L		55-CBVS *		90°	negative
<b>CBVST</b>	T		56-CBVS *		90°	negative
* Pressure inlet possible from all ports! Must be operated without pressure!						
<b>Not Allowed</b>	T					
<b>LBV3</b>	L		01		90°	positive
<b>TBV3</b>	T		02		90°	positive

Alternative Porting Patterns LBV3 / TBV3

<b>-LL45</b>		03		45°	negative
<b>-TL45</b>		04		45°	negative
<b>-LI90-1</b>		06		90°	negative
<b>-TL90-1</b>		08		90°	negative
<b>-TI90</b>		09		90°	negative

Alternative porting patterns have to be indicated by adding the symbol (e.g. **-LL45**) at the end of the order code!

## Porting Patterns

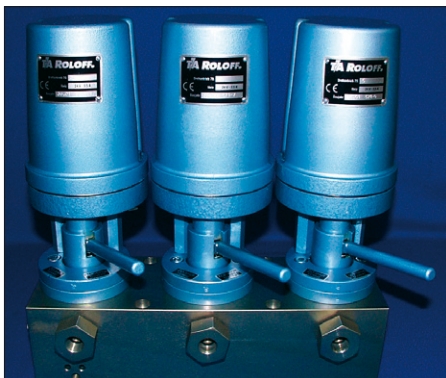
Type	Symbol	Porting Pattern	Stop of End Position	Operating Angle	Overlap
<b>TBV4</b>	T		13	90°	positive
<b>XBV4</b>	X		14	90°	negative with closed position

## Alternative Porting Patterns TBV4 / XBV4 / LBV4

<b>-X45</b>		15	45°	negative
<b>-XL45</b>		16	45°	negative
<b>-X190</b>		17	90°	negative
<b>-L190</b>		18	90°	negative
<b>-XT90</b>		19	90°	negative
<b>-TL90-2</b>		21	90°	negative
<b>-XL90-1</b>		22	90°	negative
<b>-XL90-2</b>		23	90°	negative
<b>-L180</b>		27	180°	positive

Alternative porting patterns have to be indicated by adding the symbol (e.g. **-X45**) at the end of the order code!

## Highest-Pressure Ball Valves



800 bar / 1200 PSI ball valve combination for alternating pressure demands from 6 bar / 87 PSI up to 800 bar / 12000 PSI working in a hose testing plant.

The STAUFF range of valves have stood the test of time for ultra high pressure applications up to 800 bar / 12000 PSI.

The high demands on ball valves will be maintained through the utilisation of high quality STAUFF specified materials. The extreme loads on the seals caused by the high pressures will be absorbed by a special chambering of the seals. Additionally the sealing system is protected against erosion and therefore rapid wear.

The ball valves are utilised in Test Stations, Steel Works, Cleaning and Cutting Systems.



Ball valve for a test bed: The customers demand was to apply high pressure and great volume to the specimen in a short time.

### These valves are being utilised:

#### For High pressure water blasting

- internal cleaning of reactors, containers and mixers
- sewer cleaning
- pipe cleaning
- surface treatment like chamfering, descaling, varnish removal

#### For process and industrial technology

- CO<sub>2</sub> – extraction
- hydroforming
- test bed technology
- water jet cutting systems



Descaling of steel sheets and profiles.

## High-Temperature Ball Valves



In order to provide the many advantages of ball valves in high temperature applications, STAUFF has developed the FBVT series of ball valves.

These valves are designed with a gland packing of special material. This sealing allows applications with high pressure and simultaneously high temperatures.

Up to a temperature of +260 °C / +500 °F high quality plastic seats are being utilised. These are suitable for high pressure and temperature loads due to their proven chambering.

For temperatures up to +500 °C / +932 °F STAUFF has developed a special sealing system with metal seats. Despite the additional demands on compression, wear and corrosion under high temperatures, the leak rate of these ball valves can be compared with standard valves.

High temperature ball valves with heating elements for polymer production.

## Ball Valves for Gas Applications

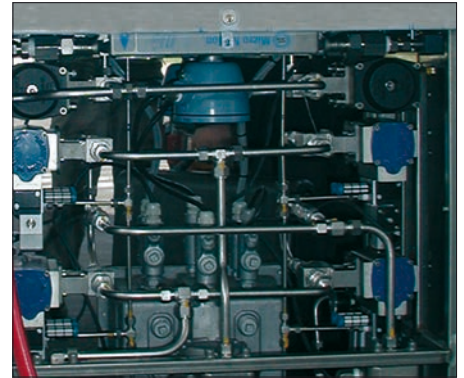
STAUFF ball valves are used for many gas applications, such as:

- General gas supply systems,
- Filling plants,
- compressor stations,
- gas stations,
- analysis equipment

The design follows the Pressure Equipment Directive 97/23/EC.

The ATEX Directive for hazardous location EX II 2G c will be proved in single test on demand.

The materials for body, ball and seals are dependant on the gas and application in consideration of the directives.



Ball valves with pneumatic actuator in gas stations.

Kugelhahn Typ	DN	PN (bar)	Approved Material Combinations (Materials: Body / Ball + Stem / Ball Seat / O-Rings)	
			for Gas Applications	for Hazardous Location EXII 2G c (ATEX)
BBV	6 - 25	16	Steel / Steel / Delrin® (POM) / NBR (Buna-N®) Steel / Steel / Delrin® (POM) with Erosion Protection Ring / NBR (Buna-N®)	Steel / Steel / PEEK with ATEX Approval / NBR (Buna-N®) Steel / Steel / Delrin® (POM) with ATEX Approval / NBR (Buna-N®)
FBV	32 - 50	16	Steel / Steel / Delrin® (POM) / NBR (Buna-N®) Steel / Steel / Delrin® (POM) with Erosion Protection Ring / NBR (Buna-N®)	Steel / Steel / PEEK with ATEX Approval / NBR (Buna-N®)
BBV	6 - 25	500 315*	Steel / Stainless Steel / Delrin® (POM) / NBR (Buna-N®) Stainless Steel / Stainless Steel / Delrin® (POM) with Erosion Protection Ring / NBR (Buna-N®)	Steel / Stainless Steel / PEEK with ATEX Approval / NBR (Buna-N®) Stainless Steel / Stainless Steel / PEEK with ATEX Approval / NBR (Buna-N®) Steel / Stainless Steel / Delrin® (POM) with ATEX Approval / NBR (Buna-N®) Stainless Steel / Stainless Steel / Delrin® (POM) with ATEX Approval / NBR (Buna-N®)
FBV	32 - 50	315*	Steel / Stainless Steel / Delrin® (POM) / NBR (Buna-N®) Stainless Steel / Stainless Steel / Delrin® (POM) with Erosion Protection Ring / NBR (Buna-N®)	Steel / Stainless Steel / PEEK with ATEX Approval / NBR (Buna-N®) Stainless Steel / Stainless Steel / PEEK with ATEX Approval / NBR (Buna-N®) Stainless Steel / Stainless Steel / Delrin® (POM) with ATEX Approval / NBR (Buna-N®)

\* Pressure up to max. allowed nominal pressure of the ball valve

Further ball valves up to DN 200 with flange connector, as well as 3/2-way-selector ball valves, multi-way ball valves and ball valves for manifold mounting and cartridge ball valves are also available.

The requirements and tests are in accordance to DIN 3230 Part 5, test group PG1 or PG2, Material and test certificate DIN EN 10204-3.1, Certification to Pressure Equipment Directive 97/23/EC.

The leaking rate can be proved with a Helium leakage test device up to a leakage rate of  $10^{-9}$  mbar x l/sec.

STAUFF recommends the use of the version with erosion protection ring in order to extend the lifetime of the seats look page F107.

Only if the most important parameters like pressure, medium, temperature, medium concentration and operation cycles are known the best or most suitable material combination and the most economical solution can be offered.

Except the general suggestions for the material combinations the chemical resistance and further directives are to be considered. For Fluids like oxygen, hydrogen, argon, helium and sour gas we request a consultation.

Sour gas application: For fluids with hydrogen sulphide (H<sub>2</sub>S) – parts ball valves can be delivered in accordance to the NACE Standard MRO175.



Double block and bleed valve for sampling.

### Gas stations:

For gas pumps both ball valves with floating ball and with trunnion ball are suitable. Most important for the design are the frequency of operation cycles in use with actuators. Assembling of actuators to ISO 5211 or direct mounting.

### Ball valves for analysis techniques and Sampling

Ball valves are deliverable as "double block and bleed valve". Part of this product range are the TALFIRE – ball valves. These ball valves meet the requirements of the TA-Luft (technical directive for clean air). They are used in applications with air pollution substances.



Filter station for the filtration of gases with STAUFF-3-way-selector ball valves for 250 bar / 3600 PSI and +200°C / +392 °F.

In case of maintenance the gas flow is diverted by a 3-way-selector valve combination allowing the filter elements to be changed. Due to the excellent KV-value this valve is the ideal switch over unit for use in high leak-tightness application.



## Ball Valves for Paints and Lacquers



### Ball valve application in airless spraying device.

Ball valves for paints and lacquers must be resistant against the varying viscosities and dye particles in the fluid.

The sealing material is the determining factor to guarantee an optimal lifetime. The choice of the seals is depending on the required operating cycles and after consideration of the pressure differential.

In case of operating the ball valve without differential pressure, standard ball seats can be used.

To increase the lifetime we recommend a seat version with erosion protection ring. For a further increase of the lifetime and also a reduction of repair and maintenance time, a metal seat is the best solution.

The specified material combinations are suitable for most applications.

The chemical resistance to the used solvent has to be tested when selecting the ball valve.

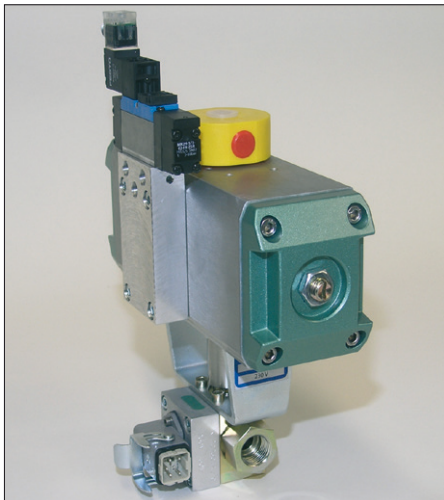
To maintain or repair the valve, it is necessary that the return and non-return lines in colour spraying plants can be blocked off.

Due to the opening of the bypass ball valve, an un-pressurised circulation has to be guaranteed.

The locking or opening of the bypass line is carried out manually, thereby incorrect operation is impossible.



## Ball Valves for Isocyanates



Isocyanates react with humidity and develop crystalline particles. To avoid that the isocyanates get in contact with environmental humidity, the ball valves have to be completely leakproof.

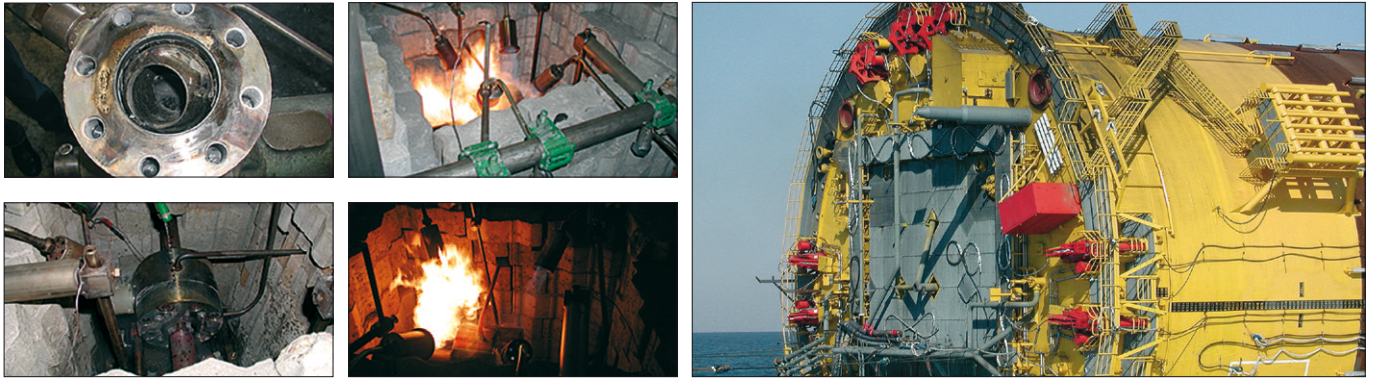
On the other hand the crystalline particles in the fluid mustn't damage the ball seats. Special seats are used because standard plastic seats can be damaged by crystalline particles.

With these sealing system from STAUFF a ball valve provides extended lifetime.

These valves are being used in the foaming systems and pasters. Ball valves are also available with heating devices and temperature sensors in order to keep the temperature regulated during the manufacturing process.

Equipped with actuators and limit switches STAUFF ball valves being operated in many instances by robots.

## Ball Valves with Fire-Safe Approval



When handling flammable liquids safety must be a prime consideration. Great importance is therefore attributed to the design of "fire-safe" shut-off valves utilized in many industrial environments including:

**This is most important for:**

- Chemical Plants
- Petrochemical Plants
- Oil Drilling
- On-Shore and Off-Shore Installations
- Oil Refineries

When fire does break out, it is important that it does not spread through failures in pipe-work systems. Even under the most extreme conditions shut-off valves must provide:

- Secure Operation
- Reliable Sealing in shut-off position
- Reliable Sealing to the outside

Due to their quarter turn shut-off design, STAUFF ball valves provide a solution to meet these demands.

Metal seat edges at the ball seats guarantee the sealing function during and after contact with fire, even if the seals themselves are burnt.

In addition both housings and shafts are also sealed with heat resistant seats ensuring their continued operation.

The "fire-safe" test undergone by STAUFF ball valves subjected them to flames and a resulting temperature of +760 °C / +1400 °F where the ball valve is heated to a general temperature of min. +650 °C / +1202 °F.

The STAUFF "fire-safe" design ensured that after this burn period of 30 min. the valves remained operable and that a continued "emergency" sealing of the valve could be guaranteed.

The test conditions under which "fire-safe" requirements are specified are characterised in various international standards.

STAUFF ball valves of the BBV series have been tested successfully according to British Standard BS 6755 T.2, API 6 FA and ISO 10497. The tests were testified by the German TÜV Inspectorate.

At this time, certification as "fire-safe" relates to our BBV series with threaded connections and nominal sizes from DN 25 to DN 50 and the BBV series with flange connections and nominal sizes from DN 25 to DN 125 and within a nominal pressure range from 260 ... 420 bar / 3700 PSI ... PN 6000 PSI.

The material utilized for the soft seals in "fire-safe" valves remains dependant upon the required chemical resistance to suit the fluid, the application and operation conditions.

A wide variety of ball valve terminations are available from STAUFF to suit the individual applications or requirements and additionally other characteristics such as antistatic design can be incorporated within the STAUFF product.

## Nomenclature Definitions

### Nominal Pressure PN

The nominal pressure indicates the pressure rate of a hydraulic component and continuous dynamic application. The number is rounded up in order to comply with the internationally specified terms.

These nominal pressure values are internationally recognised and assist to appoint common component dimensions. For all ball valves conform to a design and test pressure 1.5 x PN according to DIN 3230 T5 and ISO 5108 for body. For ball seats we admit 1,1 x PN.

The nominal pressure specifies the admissible working overpressure at +20 °C / 68 °F. Please consider the pressure reduction at higher temperature.

### Maximum Working Pressure P<sub>max.</sub>

P<sub>max.</sub> is the maximum working pressure of a component including pressure peaks for limited duration of dynamic application resp. the maximum working pressure which considers temperature reduction ratings.

### Burst Pressure P<sub>Burst</sub>

The safety factor for burst pressure tests is a minimum of 2.4 times the nominal pressure.  
 $P_{Burst} = 2.4 \times PN$

### Nominal Diameter DN

The nominal diameter is a numeric dimension of mating parts without indication of outer tube diameter or thread size, for example flanges. The nominal diameters match approximately the clear diameter of the ball valves in mm. Reduced diameters are marked by STAUFF with for example DN25/32. That corresponds to the ball valve being DN 25 and the adapter being DN 32.

### Leakage Rate

Leakage rate of ball valves with synthetic ball seats: DIN EN 12266 leakage rate A (No visually noticeable leakage during the duration of the test with fluid or air).

## Standard Materials

### Valve Body, Connections Adapters, Stem and Ball

Material Description	Standard	Temperature Range <sup>1</sup>	Applications
<b>Free Cutting Steel</b> 11SMn30 (formerly 9SMn28K)	1.0715 / DIN EN 10277-3 (SAE 1213)	-20°C ... +120°C -4°F ... +248°F	General oil hydraulics without special requirements on the material
<b>Low Alloy Steel</b> S355J2G3 (formerly St52-3)	1.0570 / DIN EN 10025	-40°C ... +120°C -40°F ... +248°F	General oil and water hydraulics as well as gas applications with special requirements to the yield stress
<b>Stainless Steel</b> X6CrNiMoTi17-12-2 X5CrNiMo17-12-2 X2CrNiMo17-13-2	DIN EN 10088 1.4571 (AISI 316 Ti) 1.4401 (AISI 316) 1.4404 (AISI 316 L)	-200°C ... +200°C -328°F ... +392°F	Special applications in the chemical and power industries with specific requirements on the material and corrosion protection

### Ball Seats

Material Description	Trade Name	Temperature Range	Applications
<b>Polyacetal</b> POM	Delrin Hostaform C Ultraform	-30°C ... +100°C -86°F ... +212°F	High pressure and wear resistance, low water absorption, particularly suitable for hydraulic oils, other oils and water based hydraulic fluids
<b>Polytetrafluorethylene</b> PTFE	Teflon Hostiflon Fluon	-200°C to +220°C <sup>2</sup> -328°F ... +428°F <sup>2</sup>	Excellent chemical resistance to almost all fluids, no water absorption, low surface friction. (Suitable for food FDA-US Food and Drug Administration) Higher characteristic compounds available.
<b>Polyvinylidenefluorid</b> PVDF	Dyflor Kynar Solef	-40°C ... +120°C <sup>2</sup> -40°F ... +302°F <sup>2</sup>	Mechanical properties like Teflon, but higher rigidity and lower thermal stability, resistant to ketones and esters at higher temperatures
<b>Polyetheretherketone</b> PEEK	Arlon Vactrex	-40°C ... +250°C -40°F ... +482°F	Good chemical resistance to many mediums, suitable for steam, high temperature resistance, high wearability
<b>Cast iron</b> GG25	0.60257 DIN 1651	-40°C ... +250°C -40°F ... +482°F	Applications for abrasive fluids

### Stem and Adapter Sealing Materials

Material description	Trade Name	Temperature Range	Applications
Acrylonitrile Butadiene Rubber <b>NBR</b>	Buna N Perbunan Hycar Chemigum	-30°C ... +100°C -86°F ... +212°F	Good technical properties, therefore especially suitable for oils and gaseous mediums
Fluor Rubber <b>FPM</b>	Viton Fuorel Tecnoflon	-20°C ... +200°C -4°C ... +392°F	High chemical resistance to various mediums, in particular mineral oils, fuels and concentrated acids
Ethylene Propylene Diene Monomer Rubber <b>EPDM</b>	Buna AP Nordel	-50°C ... +130°C -58°C ... 266°F	Good ageing stability, low wear, especially suitable for actylene, brake fluids, hot water, superheated steam, cooling gases, low-flammable liquids based upon Phosphoric acid
Polytetrafluorethylene <b>PTFE</b>	Teflon Hostiflon Fluon	-200°C ... +220°C <sup>2</sup> -328°F ... +428°F <sup>2</sup>	Excellent chemical resistance to almost all fluids, no water absorption, low surface friction. (Suitable for food FDA-US Food and Drug Administration) Higher characteristic compounds available.

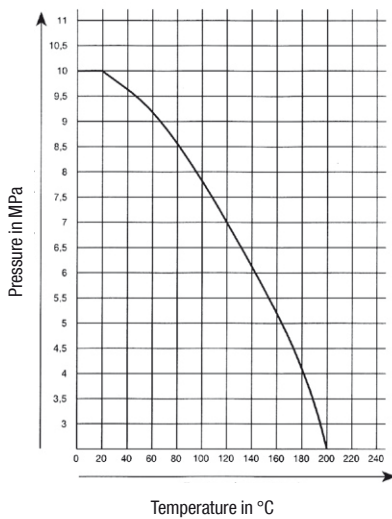
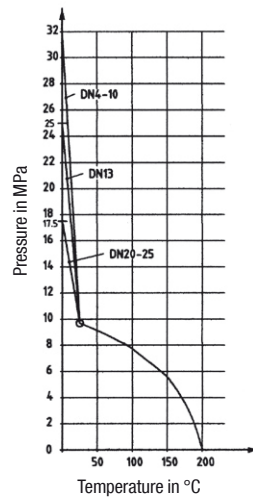
<sup>1</sup> General temperature limits: A rating above the indicated limits is possible when the temperature reduction ratings are taken into consideration.

<sup>2</sup> Pressure / temperature curve must be observed.

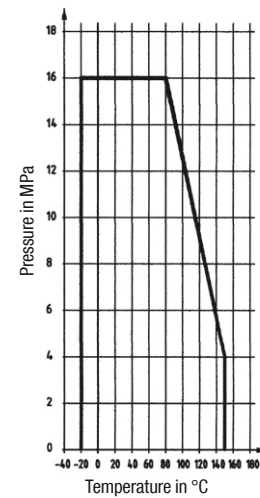


## Admissible Working Pressures

## PTFE Ball Seats


 PTFE Ball Seats  
Glass-Fibre Reinforced


## PVDV Ball Seats



## Zinc/Iron-Coating

Carbon steel products are supplied as standard with a high-quality zinc/iron-coating, which is a CrVI-free galvanic plated surface protection, corresponding to all demands according to the valid European regulations of the automobile industry, as well as the RoHS decree.

This surface protection also has a visual effect. It can be easily varnished to suit any product design, if required. The achieved corrosion protection is excellent and more effective than the protection of the yellow chrome-plating. The cathodic remote protective action prevents early occurring corrossions, that are due to handling or assembly damages.

As opposed to yellow plated surfaces zinc/iron-coated surfaces do not lose on corrosion protection with increasing thermal load from +80 ... +90°C / +176 ... +194°F. In the contrary, temperatures from approximately +100°C / +212°F increase the corrosion protection.

- Fe / ZnFe8 / Cn according to DIN 50979
- Approx. 96 hours resistance against white rust in the salt spray test to DIN EN ISO 9227
- Approx. 300 hours resistance against red rust in the salt spray test to DIN EN ISO 9227
- Free of hexavalent chromium Cr(VI)
- RoHS compliant according to 2002/95/EC (Restrictions of the Use of Hazardous Substances)
- ELV compliant according to 2000/53/EC(End of Life Vehicles Directive)

Besides the standard zinc/iron-coating, STAUFF can also supply the following surface coatings or surface treatments for the body materials:

## Carbon Steel

- chemically nickel-plated
- varnished

## Stainless Steel

- rotary or traction quality
- glass bead blasted
- electro polished
- ceramic finished

## Aluminium

- anodised
- hard anodised

Please consult STAUFF for further information.

## Surface Coatings

## STAUFF Zinc/Iron-Coating

Approx. **96 hours** resistance against white rust  
Approx. **300 hours** resistance against red rust  
in the salt spray test to DIN EN ISO 9227



## Yellow Zinc Plating

Corrosion clearly visible after **154 hours**  
in the salt spray test to DIN EN ISO 9227



## Phosphating

Corrosion clearly visible after **19.5 hours**  
in the salt spray test to DIN EN ISO 9227



## Determination of the Nominal Diameter

### Using a Nomogram

This nomogram provides a guide for the determination of the nominal diameter (DN). We recommend to use the following flow rates as a basic guideline:

- Suction lines: 0,5 ... 0,8 m/sec (.15 ... .24 ft/sec)
- Return lines: 2,0 ... 4,0 m/sec (.61 ... 1.22 ft/sec)
- Pressure lines >10 MPa: 2,0 ... 4,0 m/sec (.61 ... 1.22 ft/sec)
- Pressure lines >50 MPa: 3,0 ... 12,0 m/sec (.91 ... 3.66 ft/sec)

#### Example 1

Velocity  $v = 8 \text{ m/sec}$  (2.44 ft/sec)  
Flow rate  $Q = 150 \text{ l/min}$  (40 US GPM)

The straight line linking these two values on the outer scales intersects the nominal diameter DN 20 on the middle scale.

#### Example 2

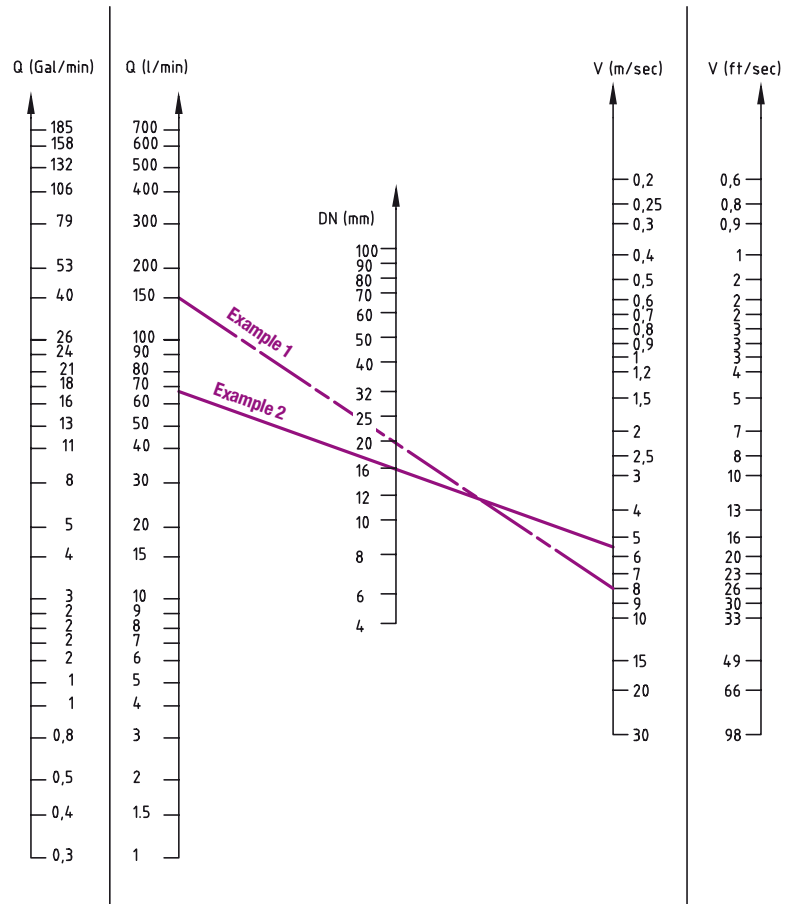
Velocity  $v = 5,5 \text{ m/sec}$  (1.68 ft/sec)  
Flow rate  $Q = 66 \text{ l/min}$  (17 US GPM)

The straight line linking these two values on the outer scales intersects the nominal diameter DN 16 on the middle scale.

#### Please note:

No allowance is incorporated for the resistance of the pipes, elbows and valves, viscosity, the effect to temperature on viscosity and other factors.

Consult STAUFF for further information.



## Determination of the Nominal Diameter

### Using a List of Nominal Flow Rates

The indicated flow rates have been determined for ball valves in open position with water at a temperature of +15°C / +60°F.

#### $K_v$ Coefficient

The nominal flow rate coefficient  $K_v$  according to German standard VDI/VDE 2173 indicates the quantity of water in cubic meter per hour (m³/h) at

$$\Delta p = 1 \text{ bar} / 14.5 \text{ PSI and } 35 \text{ mm}^2/\text{s (cSt)} \\ \text{at } +5 \dots +30^\circ\text{C} / +41 \dots +86^\circ\text{C}.$$

#### $C_v$ Coefficient

The  $C_v$  value (which is still common practice in USA) specifies how much US gallons of water flow through the valve per minute (US GPM) at

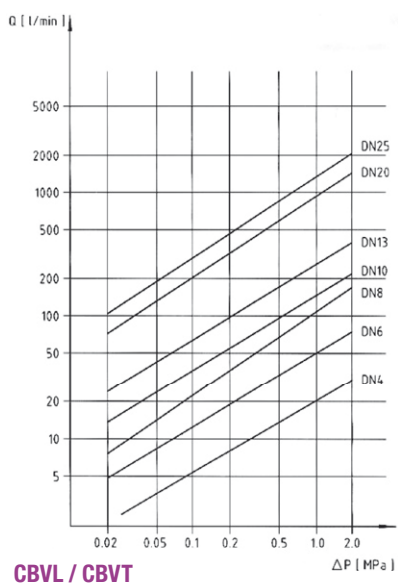
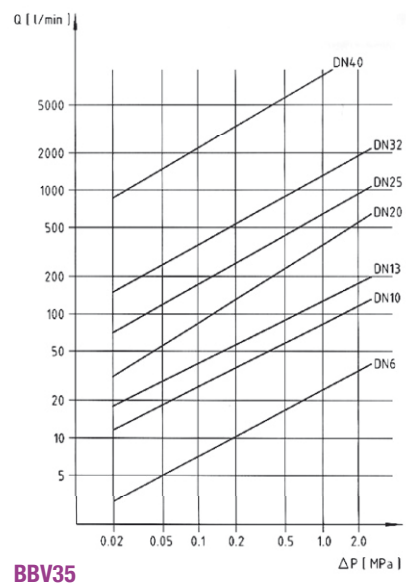
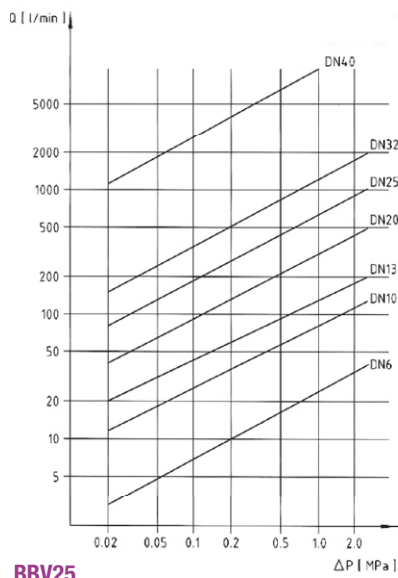
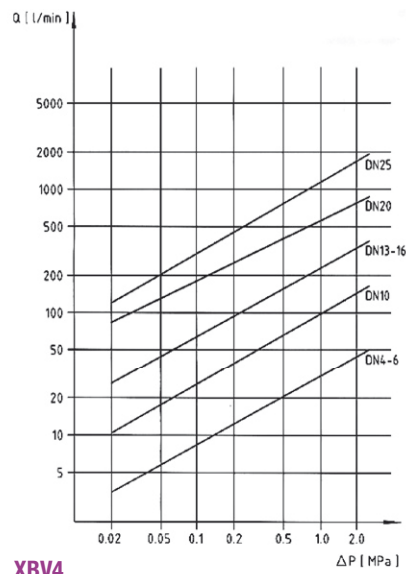
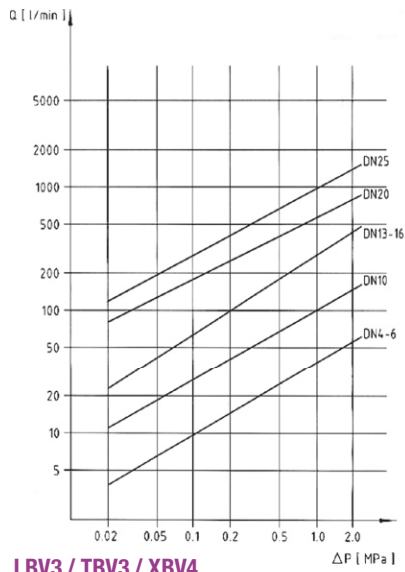
$$\Delta p = 1 \text{ bar} / 14.5 \text{ PSI at } +15^\circ\text{C} / +60^\circ\text{F}.$$

Consult STAUFF for further information.

Nominal Size DN		$K_v$	$C_v$
(mm)	(in)	(m³/h)	(US GPM)
15	1/2	19,4	22,6
20	3/4	45,6	53,0
25	1	71,5	83,1
32	1-1/4	105	122,1
40	1-1/2	170	197,7
50	2	275	319,8
65	2-1/2	507	589,5
80	3	905	1052,3
100	4	1414	1644,2
125	5	2362	2746,5
150	6	3694	4295,3

## Flow Characteristics of STAUFF Valves

The following characteristics are valid for mineral oils with density of 0,85 kg/dm<sup>3</sup> and a kinematic viscosity of 35 mm<sup>2</sup>/s (35 cSt).

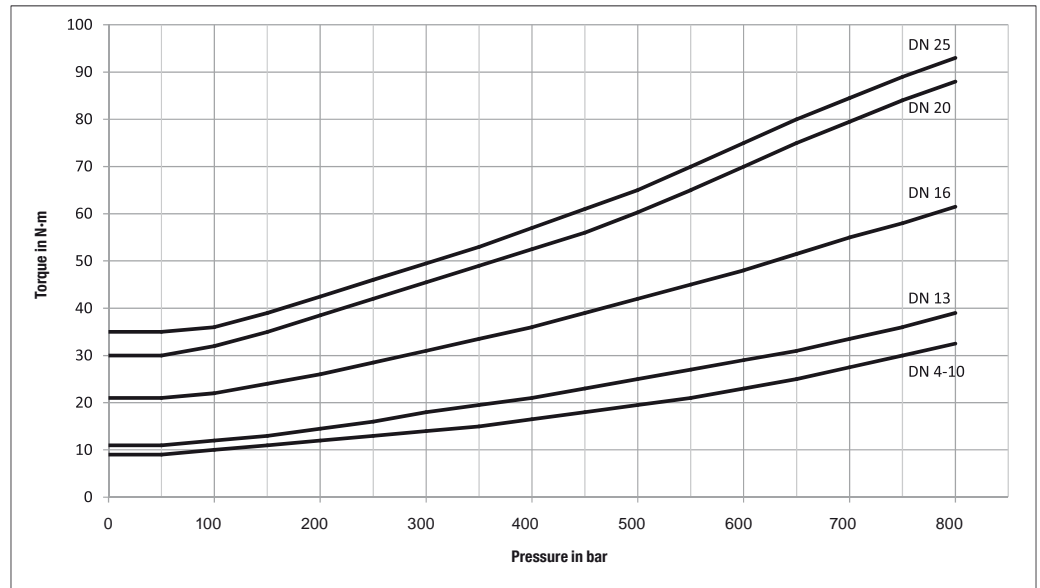


## Torque Figures

### Torque / Operation Pressure Curves

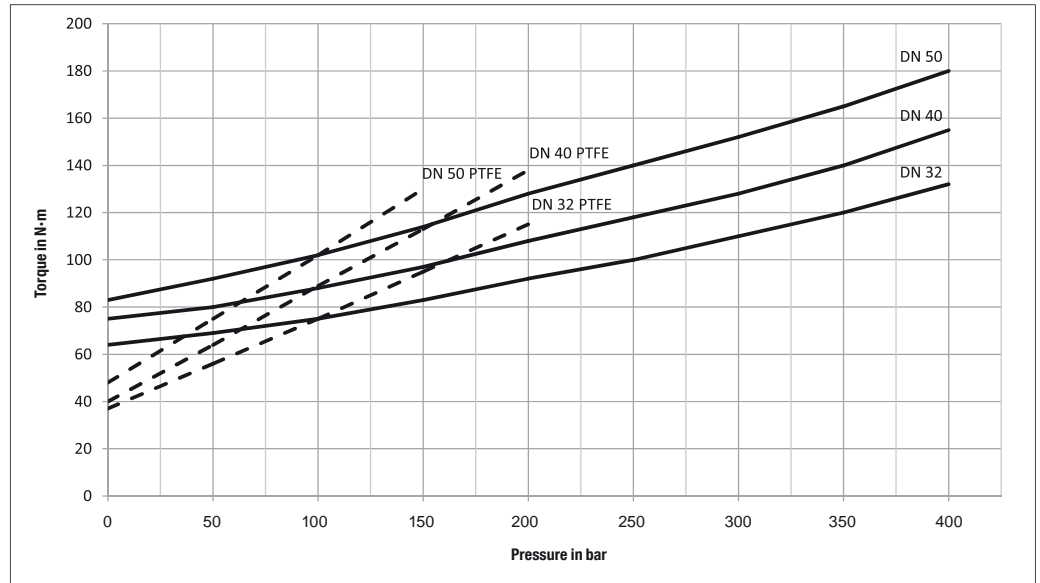
Operating torque  
for ball valves with  
POM seats

BBV  
CBV  
BBV22/23



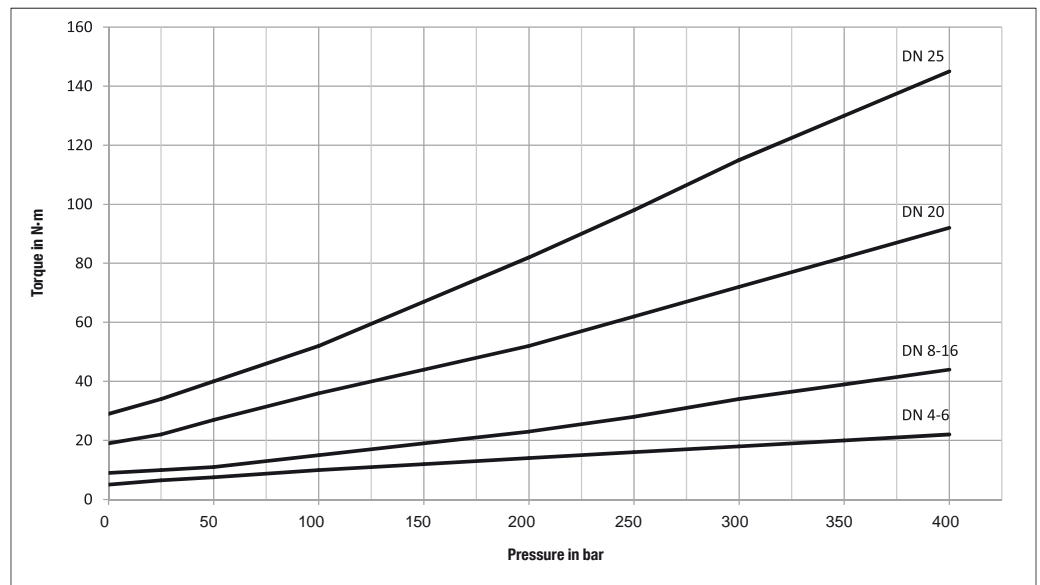
Operating torque  
for ball valves with  
Teflon or POM seats

FBV  
FBV22/23



Operating torque  
for ball valves with  
POM seats

LBV  
TBV  
XBV



## Pressure Equipment Directive CE-Marking of STAUFF Valves

### Information about essential contents and consequences of the Pressure Equipment Directive (PED 97/23 EC) and the CE-marking for STAUFF valves

From 29th May 2002 the application of the Pressure Equipment Directive (PED 97/23 EC) is mandatory throughout in the European Community.

#### Responsibility

Manufacturers are obliged to ensure that products which are placed on the market in the European Community are designed and manufactured according to the regulations of the Pressure Equipment Directive.

The company is only allowed to purchase and use pressure equipment which corresponds to the regulations of the Pressure Equipment Directive.

#### Procedure

Valves have to be classified in categories (category I to III). Category I relates to the lowest, category III to the highest, hazard category.

The classification is carried out under consideration of

- diameter
- pressure
- medium-hazardous or harmless gases or liquids

Group 1 comprises hazardous mediums

- explosive
- extremely flammable
- highly flammable
- flammable (where the maximum allowable temperature is above flashpoint)
- very toxic
- toxic
- oxidising

Group 2 comprises all harmless mediums which are not listed in Group 1 such as hydraulic oil, water, air and oxygen.

#### Consequences

No CE-marking for:

- All valves < DN200 for harmless liquids of Group 2, such as hydraulic oil, water
- All valves up to and including DN 25 for all mediums in Group 1 and 2 (gaseous and liquid)

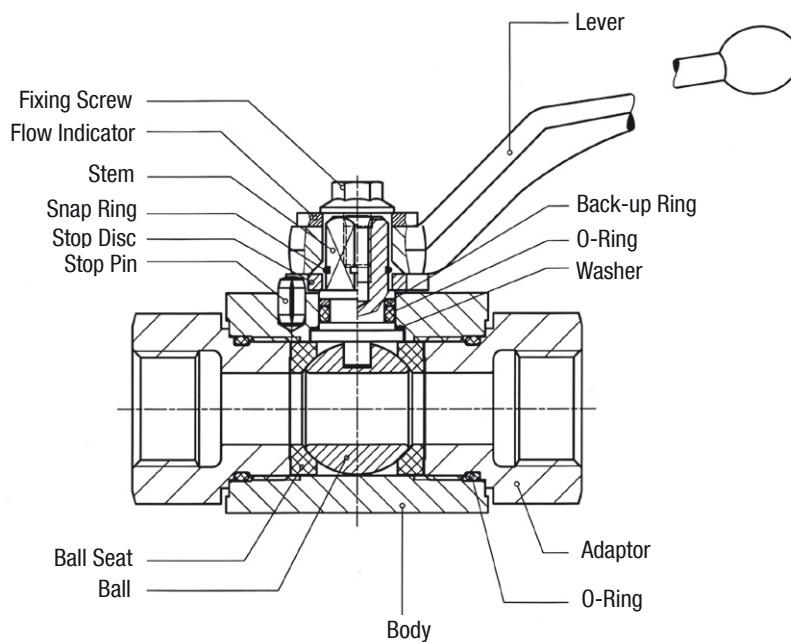
CE-marking for valves ≥ DN 32:

- With regards to valves of category I and II, STAUFF prepares a declaration of conformity.
- With regards to valves of category III an external conformity examination is necessary.
- The resulting costs will be included in our quotation.

Concerning valves of the categories I to III, it has to be observed that:

- a certification of conformity has to be enclosed with each delivery.
- operating instructions have to be enclosed with each packing unity.
- the traceability of products must be guaranteed.

## Storing and Assembling Instructions



The assembly of the lever and the flow indicator has to be carried out the way that the groove of the stem and the groove of the indicator are identical in direction.

STAUFF delivers ball valves of first-class quality. This is guaranteed by the utmost care as far as construction and production of our products are concerned. All STAUFF products must pass our rigid quality assurance system ensuring the high standard of quality. As a matter of course, quality approvals can be supplied on request.

In order to guarantee the proper function of our products, the following criteria must be adhered to (non-observance can lead to expiration of this guarantee):

1. After receipt of order, the goods must be kept from moisture, erosion and thermal shock.

2. Ball valves are being delivered in open position. Store in a dry and clean place. Do not remove protective dust caps until final installation.

3. Pipe systems must be flushed before installing ball valves (dirt and other residues can damage seals).

4. It is possible to change the switching direction from our standard „clockwise“ to „counter clockwise“ by reversing the stop disc (see illustration).

5. When mounting pipes or fittings to the ball valve, the valve connectors must be held in place at the hexagon with a suitable tool (open end wrench) to prevent expanding the end connectors.

6. Pressure test max. with 1,1 x PN with closed ball valve; 1,5 x PN in half opened position.

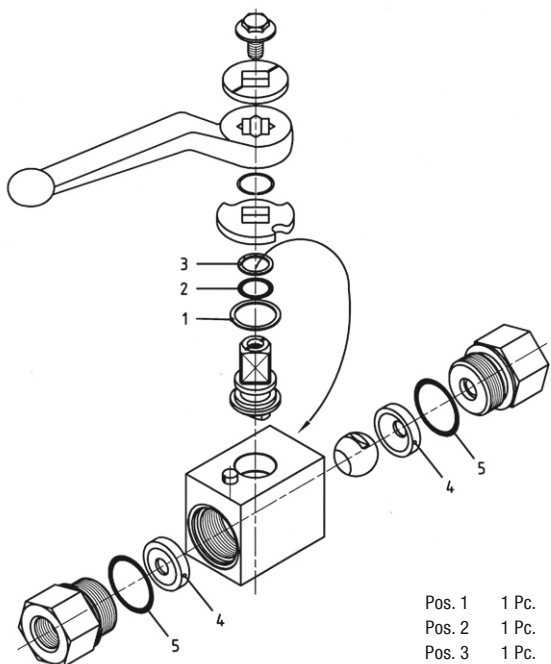
Flanged ball valves and ball valves in larger nominal diameters must be carefully aligned with pipe to prevent line stress. When welding ball valves into the pipe system, the temperature at the body must not exceed +200°C / +392°C.

When bleeding a pipe system, the ball valve must be opened 45° to assure complete drainage.

In case of a defect please contact the factory prior to disassembly of our ball valves.

## Seal Kits

### Seal Kit for Two/Three-Way Block Body Valves



- Pos. 1 1 Pc. Thrust washer
- Pos. 2 1 Pc. O-ring for stem
- Pos. 3 1 Pc. Back-up ring for stem
- Pos. 4 2 Pcs. Ball seat for ball
- Pos. 5 2 Pcs. O-ring for adapter

### Assembly Instructions

Notice: The change of seals should only be undertaken by experienced and qualified experts. We recommend that seals are only replaced at STAUFF or by one of our authorized distributors, so that the quality of repair can be guaranteed.

**1. Dismantlement:** Release any remaining fluid from the valve by first placing the ball in the HALF OPEN position and then to the OPEN position. Unscrew both adapters (anti-clockwise). Remove seals (note order and direction that these are in). The ball can only be removed when the valve is in the CLOSED position. Disassemble the stem by pressing it into the body of the valve. Remove all O-rings from the stem with suitable tools (e.g. small screw driver). Remove the thrust washer (on the stem collar) from the stem.

**2. Preparation:** Prior to replacing seals ensure that all components are clean and free of any contamination. All seal elements and O-rings as well as the areas of the valves that will be in contact with the seals have to be greased slightly with Vaseline.

**3. Pre-Assembly:** Mount the thrust washer (Pos.1) onto the stem collar. Replace O-rings (Pos.2+5) (using suitable tools) onto the stem and onto each adapter. Ensure that O-rings are not damaged on keen edges or overstretched, (e.g. by covering screw threads resp. of the shaft square by using suitable tools, alternatively by using a thin and soft foil).

Back-up rings (Pos.3) are located above the stem O-ring (Pos.2), e.g. on the pressure less side. Ensure that the back-up ring is located in the groove to avoid any damages by assembling the stem to the body.

**4. Assembly:** Reassemble the stem to the body by pressing and turning at the same time, and then align the body axially to the ball operating claw.

Then put the ball in and centre it. Turn the shaft 90° (CLOSED position) in order to retain the ball within the body. Place the new seals into the body ensuring that the concave areas face the ball. Gently screw the adapters into the body and make sure that the O-ring will not be damaged.

Tighten to the prescribed torque settings as indicated below:

- DN4-6: 48 Nm
- DN10: 90 Nm
- DN13: 110 Nm
- DN16: 110 Nm
- DN20: 220 Nm
- DN25: 250 Nm

Place stop disc over the shaft square ensuring that the valve closes when turned to the right and secure with a snap ring. Assemble handle or actuator.

**5. Test:** Test to ensure that the valve can be opened and closed easily. We recommend that the valve is tested with air at 0,6 MPa and under working pressure with a compatible liquid, max. 1,1 x PN in closed position of the ball. If water is used for testing ensure after the test procedure has been carried out that all water is removed from the valve. This is best achieved by blowing through the valve with air, whilst the valve is in a half open position. Treat with an anti-corrosion treatment.

Store the valve in the OPEN position.

### Order Codes for Seal Kit

Ordering Guide for Block Body Ball Valves ending in ...01M (Delrin/Viton seat/seal combination)

#### Threaded and SAE Flange Connections Types BBV and CBV

STAUFF Size	Order Codes
04	BBVS/K047101M
06	BBVS/K067101M
08	BBVS/K087101M
12	BBVS/K124501M
16	BBVS/K164501M

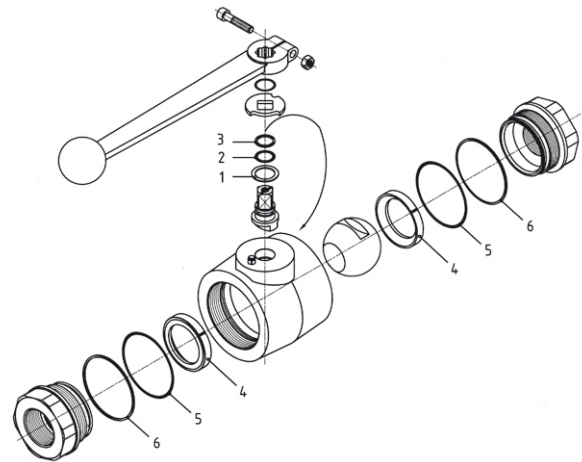
#### Direct Mount Flange Connections Types KHZ, BBV27/29 and BBVF

STAUFF Size	Order Codes
24	BBVS/K242701M
32	BBVS/K322701M
48	BBVS/K482701M
60	BBVS/K602701M



## Seal Kits

## Seal Kit for Two-Way Forged Body Valves



Pos. 1	1 Pc.	Thrust washer
Pos. 2	1 Pc.	O-ring for stem
Pos. 3	1 Pc.	Back-up ring for stem
Pos. 4	2 Pcs.	Ball seat for ball
Pos. 5	2 Pcs.	O-ring for adapter
Pos. 6	2 Pcs.	Back-up ring for adapter

## Assembly Instructions

Note: The change of seals should only be undertaken by experienced and qualified experts. We recommend that seals are only replaced at STAUFF or by one of our authorized distributors to guarantee the quality of repair.

**1. Dismantlement:** Release any remaining fluid from the valve by first placing the ball in the HALF OPEN and then to the OPEN position. Unscrew both adapters (anti-clockwise). Remove seals (note the order and direction that these are in). The ball can only be removed when the valve is in CLOSED position. Disassemble the stem by pressing it into the body of the valve. Remove all O-rings from the stem with suitable tools (e.g. small screw driver). Remove the thrust washer (on the stem collar) from the stem.

**2. Preparation:** Prior to replacing seals ensure that all components are clean and free of any contamination. Slightly grease all seals and O-rings as well as the areas of the valves that will be in contact with the seals with Vaseline.

**3. Pre-Assembly:** Mount the thrust washer (Pos.1) onto the stem collar. Mount o-ring (Pos.2) and back-up ring (Pos.3) carefully onto the stem using suitable tools and avoid damages through sharp edges or overstretching (e.g. by covering screw threads resp. of the shaft square by using suitable tools, alternatively by using a thin and soft foil). Mount the stem back-up ring (Pos.3) on top of the stem o-ring (Pos.2), e.g. on the pressure less side. Ensure that the back-up ring is located in the groove to avoid any damages by assembling the stem to the body. Mounting of the endless back-up ring to the adapter.

Mount the back-up ring (Pos.6) carefully onto the adapter by using a rounded tool (no sharp edges), but ensure to stretch it as little and constantly as possible. After a short time (approx. 30 to 60 sec.) the back-up ring returns to its original form and size. Push the back-up ring towards the threads and mount the O-ring (Pos.5).

**4. Assembly:** Reassemble the stem to the body by pressing and turning at the same time, and then align the ball operating claw axially to the body. Insert the ball and centre it. Turn the shaft 90° (CLOSED position) in order to retain the ball within the body. Place the new seals into the body ensuring that the concave areas face the ball. Gently screw the adapters into the body and make sure that the O-ring will not be damaged.

Tighten to the prescribed torque settings as indicated below:

DN32-DN50:                      800Nm

Place stop disc over the stem square ensuring that the valve closes when turned to the right and secure with the snap ring. Assemble handle or actuator.

**5. Test:** Check that the valve can be opened and closed easily. We recommend that the valve is tested with air at 0,6 MPa and under working pressure with a compatible liquid (e.g. water), max. 1,1 x PN in closed position of the ball. Afterwards all the fluid has to be removed again from the valve. This can be achieved by blowing air through the valve, whilst in HALF OPEN position. Let completely dry and treat with an anti-corrosive agent, if necessary.

Store the valve in the OPEN position.

Please consult STAUFF for details on the recommended assembling tool for back-up ring assembly on adapter.

## Order Codes for Seal Kit

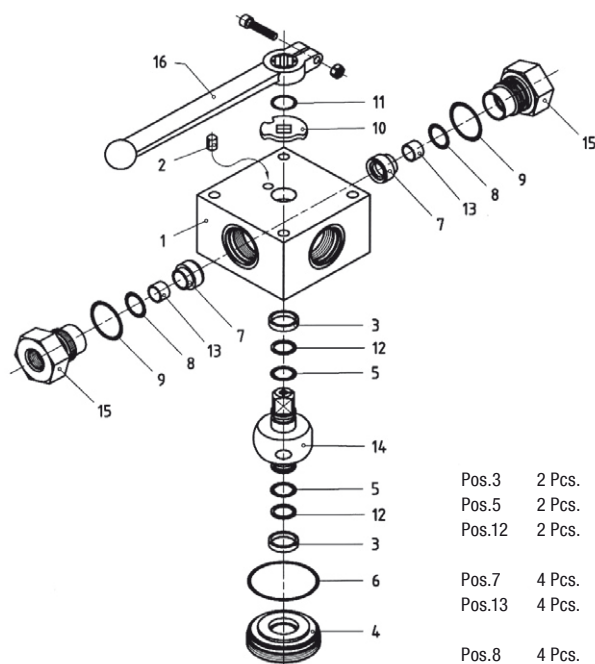
Ordering Guide for Two-Way Forged Body Ball Valves ending in ...01M (Delrin/Viton seat/seal combination)

 Threaded and SAE Flange Connections  
Types FBV

STAUFF Size	Order Codes
20	FBVS/K204501M
24	FBVS/K244501M
32	FBVS/K324501M

## Seal Kits

### Seal Kit for Multi-Way Block Body Valves



- Pos.3 2 Pcs. Bearing
- Pos.5 2 Pcs. O-ring for trunnion
- Pos.12 2 Pcs. back-up ring for O-ring on trunnion
- Pos.7 4 Pcs. Ball seats
- Pos.13 4 Pcs. Mounting tube for ball seat
- Pos.8 4 Pcs. O-ring for ball seat
- Pos.9 4 Pcs. O-ring for adapter
- Pos.6 1 Pc. O-ring for cap

### Order Codes for Seal Kit

Ordering Guide for Block Body Ball Valves ending in ...01M (Delrin/Viton seat/seal combination)

### Threaded Connections Types LBV / TBV / XBV

STAUFF Size	Order Codes
04	XBVS/K047101M
06	XBVS/K067101M
08	XBVS/K085801M
12	XBVS/K124501M
16	XBVS/K164501M
20	XBVS/K164501M
24	XBVS/K164501M

### Assembly Instructions

Notice: The change of seals should only be undertaken by experienced and qualified experts. We recommend that seals are only replaced at STAUFF or by one of our authorized distributors, so that the quality of repair can be guaranteed.

**1. Dismantlement:** In order to release the remaining pressure, carry out 1x reciprocating movement.

Disassemble the shaft handle (Pos.16). Unscrew all adapters (Pos.15) anti-clockwise. Remove seals (Pos.7). Unscrew cap (Pos.4) at body bottom with suitable tools anti-clockwise. Remove trunnions (Pos.14) and bearing shells (Pos.3). Remove all O-rings and back-up rings from trunnion resp. adapters and cap with suitable tools (for example with a small screw driver).

**2. Preparation:** Prior to replacing seals ensure that all components are clean and free of any contamination. Grease slightly with Vaseline all sealing elements and O-rings as well as the areas of the valves that will be in contact with the seals.

**3. Pre-Assembly:** Assemble O-rings (Pos.5) and back-up rings (Pos.12) in the grooves of the trunnion, back-up rings outwards to the pressure end.

Mount carefully O-rings on to the (Pos.9) adapters (Pos.15) by using suitable tools (at DN20 u. -25).

Attention: Ensure that O-rings are not damaged on keen edges or overstretched, (for example by covering screw threads resp. of the shaft square by using suitable tools, alternatively by using a thin and soft foil).

At DN4 to DN16: Place mounting tubes (Pos.13) in the provided bore of the seal elements (Pos.7), resp. at DN20 and DN25: place seal element in the sleeve (no description in this figure), spherical side directed to the exterior.

Push O-ring for sealing element (Pos.8) on to the sealing element (Pos.7), (resp. at DN20 and DN25 push on to sleeve) and place together in adapter.

Pre-assemble O-ring (Pos.6) on to the cap (Pos.4). (notice: ensure that there cannot occur any damages!).

**4. Assembly:** First assemble the bearing shells (bushing) (=Pos.3) in the body (Pos.1) and cap (Pos.4) so that the bevel shows towards the ball valve center and thus it can be used as chamfer for the O-ring (and back-up ring) of the trunnion.

Notice: Ensure that the back-up rings lie close to each other in the groove so that during the assembly process to the body and cap they are not damaged.

Assemble the shaft end of the trunnion (shaft square shows towards exterior) to the cap (Pos.4) by pressing and turning at the same time.

DN4 to DN16: place O-ring for cap (Pos.6) in the body.

Push the trunnion (together with cap) in the body, until the cap thread touches the body thread, afterwards screw in the cap and tighten to the prescribed torque. (see table).

Gently screw in the pre-assembled adapters into the body and ensure that the O-ring is not damaged. Tighten the adapters with the prescribed torque.

Replace stop disc (Pos.10) over the shaft square so that the desired operation function is achieved, secure with snap ring (Pos.11). Assemble the handle (Pos.16) or the actuator (after it had been tested).

**5. Test:** Test to ensure that the valve can be opened and closed easily. We recommend that the valve is tested with 6 bar air and under working pressure with a compatible liquid, max. 1,1 x PN. If water is used for testing ensure the after the test procedure has been carried out that all water is removed from the valve.

This is best achieved by blowing air through the valve, whilst the valve is in a half open position. Treat with anti-corrosion treatment.

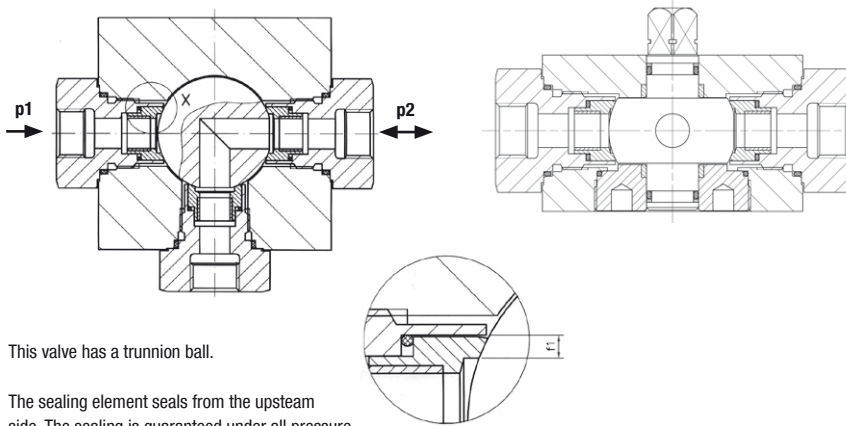
Store the valve in the „OPEN“ or „CLOSED“ position, resp. end position.

### Tightening Torques of Adaptors and Endcaps

Nominal Size	Adapter Tightening Torque in N·m	Thread	Endcap Tightening Torque in N·m	Thread
DN 4-6	40	M18 x 1,5	120 ... 140	M38 x 1,5
DN 8-10	70	M22 x 1,5	140 ... 160	M45 x 1,5
DN 13-16	110	M30 x 1,5	320 ... 350	M60 x 1,5
DN 20	180	M38 x 1,5	550 ... 600	M80 x 2
DN 25 (-32, -40)	250	M45 x 1,5	650 ... 700	M92 x 3

## Sealing Variations

### Multi-Way Ball Valves

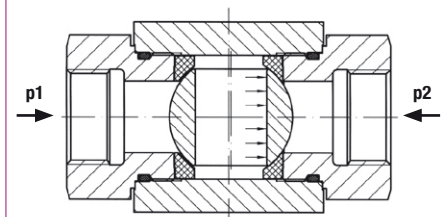


This valve has a trunnion ball.

The sealing element seals from the upstream side. The sealing is guaranteed under all pressure conditions. It is achieved by the sealing element being forced against the ball.

X3:1

### Two-Way Ball Valves (Type LBV)

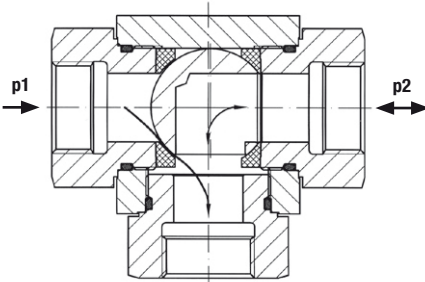


This valve has a floating ball.

The ball seats act as bearing seats for the ball. Sealing is achieved by the ball being pushed against the downstream seal due to the pressure  $p_1$  at .

Without pressure the sealing is guaranteed by the preloading of the sealing elements.

### Three-Way Ball Valves (Type CBVL)



The selector ball valve has 2 seats and a floating ball.

If the shut-off port is pressurised and  $p_1$  is higher than  $p_2$ , then the ball is being forced against the opposite sealing element.

A gap forms and the ball valve is leaking.

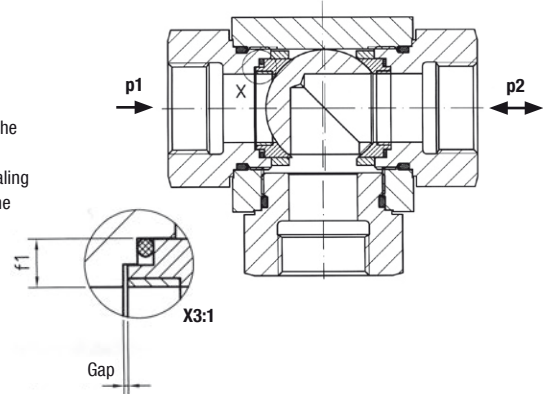
### Three-Way Ball Valves (Type CBVSL)

The selector ball valve has 2 front side sealing seats and a floating ball.

$p_1 > p_2$

Due to the forming of the ring surface „f1“ and the pressure ( $p_1-p_2$ ) the left sealing element will be forced against the ball and consequently the sealing is achieved. The „floating“ ball moves against the right sealing surface - the ball valve remains sealed.

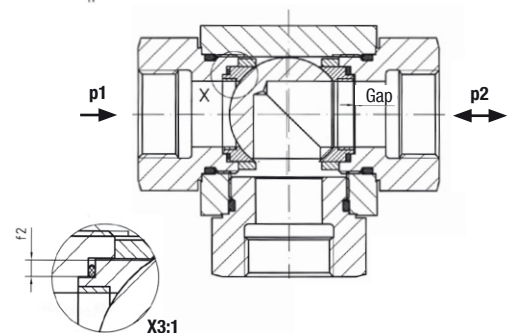
**Pressure inlet possible from all ports!  
Must be operated without pressure!**



$p_1 < p_2$

Due to the ring surface „f2“ and the pressure ( $p_2-p_1$ ) the right sealing element will also be forced against the ball and consequently the sealing is achieved. The „floating“ ball moves against the left sealing surface - the ball valve remains sealed.

**Pressure inlet possible from all ports!  
Must be operated without pressure!**



For compressible and abrasive media special protected seats are utilised.

During the first part opening of the ball valve, standard plastic seats are located unprotected in the critical cross sectional area.

During gas applications and with all kinds of compressive media this narrowest cross section can result in a very high flow rate that cause erosion of the seats.

If media contain solids, for example paint, the abrasion risk in the first opening section is extremely high.

Ball valves with standard seats can quickly become inoperative.

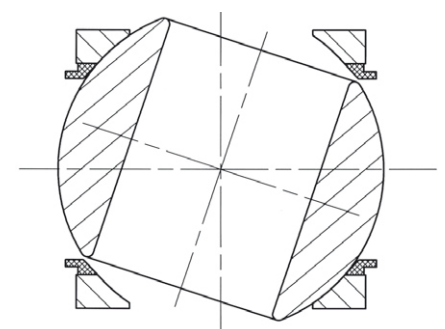
For this application, STAUFF has designed a sealing version with erosion protection ring. This ring is made of special material and keeps the high flow forces and the abrasive solids away from the plastic seats.

Tests and long term experience with this application have shown that ball valves with this sealing system provide substantially improved life times.

Times of non-use as well as maintenance and repair times are therefore reduced.

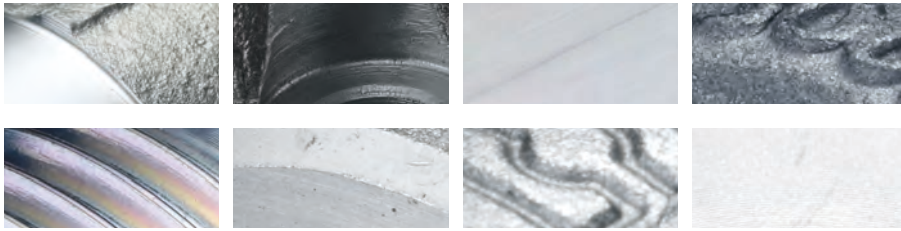
A further increase of the lifetime is possible by using metal seating elements.

### Special Protected Seats



**The ring is made of special material and protects the seats against erosion.**





The STAUFF range of flanges gives you extensive product diversity, whether it is the DIN ISO 6162-1/2:2006 range or SAEJ518 C compliant SAE flanges, as well as the range of gear pump flanges.

The standard pressure series of STAUFF SAE flanges contains components for a flange connection with maximum operating pressures from 35 ... 350 bar / 507 ... 5076 PSI. They are available in all nominal sizes between DN13 (1/2") and DN127 (5").

STAUFF covers maximum operating pressures of up to 420 bar / 6092 PSI and nominal sizes between DN13 (1/2") and DN51 (2") with this high-pressure series.

STAUFF SAE flanges are available as individual flanges without any accessories, or as complete components with gaskets and suitable sets of bolts. A large number of different components are available at all times.

STAUFF SAE flanges are made of high-quality materials. The exact steel quality and the surface treatment are adapted individually to the needs and requirements of the flange. Naturally, all our coated parts have CrVI-free surfaces. Stainless steel (1.4404/1.4571), alternate gasket materials and higher bolt strengths are also available on request.

The STAUFF range of gear pump flanges is used as a supplement for gear-type rotary pumps, motors, and other smaller size pumps. We offer you a wide range of different variations, divided into various sizes and designs, like, for example, a straight or 90° design with 3-hole or 4-hole fastening. It goes without saying that we manufacture our pump flanges from high-quality materials, and naturally they also have CrVI-free surfaces.































Please do not hesitate to contact STAUFF.

[www.stauff.com](http://www.stauff.com)

## G Flanges
















Index	G2
SAE Flanges	G4
Gear Pump Flanges	G62

## SAE Flanges

	<b>SAE Split Flange Halves</b>	DB	G4		<b>SAE Single-Part Screw-in BSPP Threaded Flange and Counterflange</b>	BFX-G / BAS-G	G18
	<b>SAE Flange Clamp</b>	BM	G5		<b>SAE Single-Part Screw-in NPT Threaded Flange and Counterflange</b>	BFX-N / BAS-N	G20
	<b>SAE Split Flange Halves (Flat Style)</b>	DB-FL	G6		<b>SAE Single-Part Screw-in UN Threaded Flange</b>	BFX-U	G22
	<b>SAE Flange Clamp (Flat Style)</b>	BM-FL	G7		<b>SAE Single-Part Screw-in Metric Threaded Flange</b>	BFX-M	G23
	<b>SAE Flange Clamp with Metric Tapped Holes</b>	BM-G	G8		<b>SAE Single-Part Butt Weld Flange for High Pressure Tubes and Counterflange</b>	BFX-ST / BAS-ST	G24
	<b>SAE Butt Weld Flange Adapter and Counterflange Adapter</b>	CAG/CSG-ST	G10		<b>SAE Single-Part Butt Weld Flange for Low Pressure Tubes and Counterflange</b>	BFX-STRE / BAS-STRE	G26
	<b>SAE Socket Weld Adapter and Counterflange Adapter</b>	CAG/CSG-ES	G11		<b>SAE Single-Part Butt Weld Flange for Metric Tubes and Counterflange</b>	BFX-SRE / BAS-SRE	G28
	<b>SAE Flange Adapter with BSPT Thread and Counterflange Adapter</b>	CAG/CSG-BSPT	G12		<b>SAE Single-Part Socket Weld Flange and Counterflange</b>	BFX-ES / BAS-ES	G30
	<b>SAE Flange Adapter with NPT Thread and Counterflange Adapter</b>	CAG/CSG-NPT	G13		<b>SAE Single-Part Socket Weld Flange (Flat Style) and Counterflange</b>	BFX-FL-ES / BAS-FL-ES	G32
	<b>SAE Flange Adapter with 24° Cone Connector</b>	CAG-L/S	G14		<b>SAE Single-Part Fitting Flange with 24° Cone Connector</b>	BFX-L/S	G34
	<b>SAE 90° Butt Weld Adapter</b>	CAG90-ST	G15		<b>SAE Single-Part Fitting Flange with BSP 60° Cone Connector</b>	BFX-B	G35
	<b>SAE 90° Flange Adapter with 24° Cone Connector</b>	CAG90-L/S	G16		<b>SAE Single-Part Fitting Flange with JIC 37° Cone Connector</b>	BFX-J	G36
					<b>SAE 90° Single-Part Screw-in BSPP Threaded Flange</b>	BFX90-G	G37
					<b>SAE 90° Single-Part Screw-in NPT Threaded Flange</b>	BFX90-N	G38
					<b>SAE 90° Single-Part Butt Weld Flange for High Pressure Tubes</b>	BFX90-STC	G39
					<b>SAE 90° Single-Part Butt Weld Flange for Metric Tubes</b>	BFX90-SRE	G40
					<b>SAE 90° Single-Part Socket Weld Flange</b>	BFX90-ES	G41
					<b>SAE 90° Single-Part Fitting Flange with 24° Cone Connector</b>	BFX90-L/S	G42



**Gear Pump Flanges**

	<b>SAE Blanking Flange</b> and Counterflange	BFX-CP / BAS-CP	<b>G44</b>		<b>4-hole Flange Connection</b> with 24° Cone Connector	GP-LK-L/S	<b>G62</b>
	<b>SAE Sandwich Plate</b> (e.g. for Test Point) - Female BSP Port	SPL-G1/4-L	<b>G46</b>		<b>4-hole 90° Flange Connection</b> with 24° Cone Connector	WP-LK-L/S	<b>G63</b>
	<b>SAE Blindplug</b> SAE Blindplug (High Version)	CAG-BP / CAG-BPH	<b>G47</b>		<b>3-hole 90° Flange Connection</b> with 24° Cone Connector	WP-3-LK-L/S	<b>G64</b>
	<b>SAE Sandwich Plate</b>	SPL	<b>G48</b>		<b>3-hole 90° Screw-in BSPP Threaded Flange</b>	WP-3-LK-G	<b>G65</b>
	<b>SAE Cover Plate</b>	CPL	<b>G49</b>		<b>4-hole 90° Screw-in BSPP Threaded Flange</b>	WP-LK-G	<b>G66</b>
	<b>SAE Reducing Flange</b>	BFX-BAS	<b>G50</b>		<b>3-hole 90° Screw-in BSPP Threaded Flange (Aluminium)</b>	WP-3-LK-G-W50	<b>G67</b>
	<b>SAE Block</b> T-Connection (Adapter Style)	BF-T	<b>G52</b>		<b>4-hole 90° Screw-in BSPP Threaded Flange (Aluminium)</b>	WP-LK-G-W50	<b>G68</b>
	<b>SAE Block</b> T-Connection (Connector Style)	BC-T	<b>G53</b>		<b>4-hole Screw-in BSPP Threaded Flange (Flat Style)</b>	GP-FL-LK-G	<b>G69</b>
	<b>SAE Block</b> L-Connection (Adapter Style)	BF-L	<b>G54</b>		<b>4-hole Butt Weld Flange</b>	GP-LK...-ST.../...#K	<b>G70</b>
	<b>SAE Block</b> L-Connection (Connector Style)	BC-L	<b>G55</b>		<b>4-hole Fitting Flange</b> with BSP 60° Cone Connector	GP-LK...-AG...#K	<b>G71</b>
	<b>SAE Block</b> L-Connection Reduction (Adapter Style)	BF-L-RED	<b>G56</b>		<b>4-hole Screw-in BSPP Threaded Flange</b>	GP-LK...-G...#K	<b>G72</b>
	<b>Accessories</b>		<b>G57</b>				
	<b>Technical Appendix</b>		<b>G58</b>				

**Pressure Information**

The pressure information (maximum working pressures) stated in this catalogue only apply to the single components mentioned. It does not apply to the used bolts, fittings, welded or screwed connections. Please take notice of the information and specification of the manufacturers for all further components used and also the legal regulations.

Please note: The pressure information of the components of flange combinations (consisting of the flange itself and a tube end) may vary from each other. Please consider the lowest pressure as the maximum working pressure of this combination.

**Temperature Information**

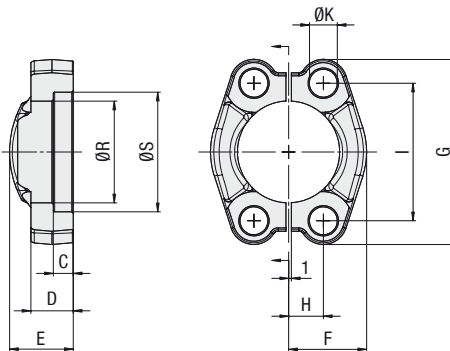
All information apply to a temperature range of

**-20 °C ... +90 °C / -4 °F ... +194 °F**

Outside of this temperature range, the material-specific properties could be reduced. This applies to the selection of the sealing materials in particular.

## SAE Split Flange Halves

## DB



**Material** S355J0 / C45 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "-W5" on request

## Order Codes

- ★ Pair of SAE Split Flange Halves **DB-...**
- ★ Including Metric bolts 8.8, **DB-...-M-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)
- ★ Including Metric bolts 10.9, **DB-...-MH-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)
- ★ Including UNC bolts (Gr8), **DB-...-U-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)

## 3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	E	F	G	H	I	ØK <sup>2</sup>	Metr.	UNC
350	350	13	1/2	<b>DB-301</b>	24,3	31	6,2	13	19	22,8	54	8,75	38,1	8,7	M8x25	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>DB-302</b>	32,2	38,9	6,2	14	22	25,9	65	11,15	47,6	10,5	M10x30	3/8-16 UNC x 1-1/4
250	315	25	1	<b>DB-303</b>	38,5	45,3	7,5	16	24	29,2	70	13,1	52,4	10,5	M10x30	3/8-16 UNC x 1-1/4
200	250	32	1-1/4	<b>DB-304-U</b>	43,7	51,6	7,5	14	22	36,3	79,5	15,1	58,7	12		7/16-14 UNC x 1-1/2
200	250	32	1-1/4	<b>DB-304-M12</b>	43,7	51,6	7,5	14	22	36,3	79,5	15,1	58,7	12,5	M12x35	
200	250	32	1-1/4	<b>DB-304-M</b>	43,7	51,6	7,5	14	22	36,3	79,5	15,1	58,7	10,5	M10x30	
200	200	38	1-1/2	<b>DB-305</b>	50,8	61,1	7,5	16	25	41,1	94	17,85	69,9	13,5	M12x35	1/2-13 UNC x 1-1/2
200	200	38	1-1/2	<b>DB-305-M14</b>	50,8	61,1	7,5	16	25	41,1	94	17,85	69,9	15	M14x35	
160	200	51	2	<b>DB-306</b>	62,8	72,3	9	16	26	48,2	102	21,45	77,8	13,5	M12x35	1/2-13 UNC x 1-1/2
160	200	51	2	<b>DB-306-M14</b>	62,8	72,3	9	16	26	48,2	102	21,45	77,8	15	M14x35	
100	160	64	2-1/2	<b>DB-307</b>	74,9	84,9	9	19	38	54,1	114,5	25,4	88,9	13,5	M12x40	1/2-13 UNC x 1-1/2
100	160	64	2-1/2	<b>DB-307-M14</b>	74,9	84,9	9	19	38	54,1	114,5	25,4	88,9	15	M14x40	
100	160	76	3	<b>DB-308</b>	90,9	102,4	9	22	41	65,3	135	30,95	106,4	17	M16x50	5/8-11 UNC x 2
35	35	89	3-1/2	<b>DB-309</b>	102,4	115,1	10,7	22	28	69,6	152	34,95	120,7	17	M16x50	5/8-11 UNC x 2
35	35	102	4	<b>DB-310</b>	115	127,8	10,7	25	35	75,9	162	38,9	130,2	17	M16x50	5/8-11 UNC x 2
35	35	127	5	<b>DB-311</b>	140,5	153,2	10,7	28	41	90,4	184	46,05	152,4	17	M16x55	5/8-11 UNC x 2-1/4

## 6000 PSI High Pressure Series (according to ISO 6162-2:2006)

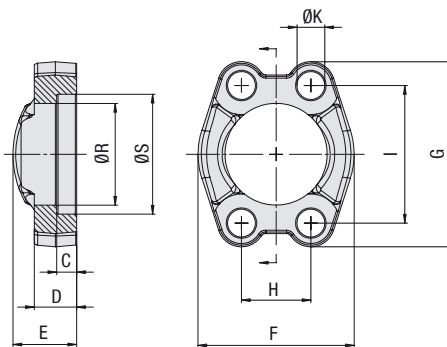
PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	E	F	G	H	I	ØK <sup>2</sup>	Metr.	UNC
350	400	13	1/2	<b>DB-601</b>	24,6	32,5	7,2	16	22	23,6	56,5	9,10	40,5	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>DB-602</b>	32,5	42	8,2	19	28	30	71	11,90	50,8	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>DB-603-U</b>	38,8	48,4	9	24	33	34,8	81	13,90	57,2	11,9		7/16-14 UNC x 1-3/4
350	400	25	1	<b>DB-603-M</b>	38,8	48,4	9	24	33	34,8	81	13,90	57,2	13	M12x45	
350	400	32	1-1/4	<b>DB-604</b>	44,5	54,8	9,8	27	38	38,6	95	15,90	66,6	13	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>DB-604-M14</b>	44,5	54,8	9,8	27	38	38,6	95	15,90	66,6	15	M14x45	
350	400	38	1-1/2	<b>DB-605</b>	51,6	64,3	12	30	43	47,5	113	18,25	79,3	17	M16x55	5/8-11 UNC x 2-1/4
350	400	51	2	<b>DB-606</b>	67,6	80,2	12	37	52	56,9	133	22,25	96,8	21	M20x70	3/4-10 UNC x 2-3/4

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> Dimensions of screw holes in part different to the ISO to match both Metric and UNC screws.

**SAE Flange Clamp  
BM**
**Order Codes**

- ★ SAE Flange Clamp **BM-...**
- ★ Including Metric bolts 8.8, **BM-...-M-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)
- ★ Including Metric bolts 10.9, **BM-...-MH-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)
- ★ Including UNC bolts (Gr8), **BM-...-U-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)



**Material** S355J0 / C45 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "W5" on request

**3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)**

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	E	F	G	H	I	ØK <sup>2</sup>	Metr.	UNC
350	350	13	1/2	<b>BM-301</b>	24,3	31	6,2	13	19	46	54	17,5	38,1	8,7	M8x25	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BM-302</b>	32,2	38,9	6,2	14	22	52	65	22,3	47,6	10,5	M10x30	3/8-16 UNC x 1-1/4
250	315	25	1	<b>BM-303</b>	38,5	45,3	7,5	16	24	59	70	26,2	52,4	10,5	M10x30	3/8-16 UNC x 1-1/4
200	250	32	1-1/4	<b>BM-304-U</b>	43,7	51,6	7,5	14	22	73	79,5	30,2	58,7	12		7/16-14 UNC x 1-1/2
200	250	32	1-1/4	<b>BM-304-M12</b>	43,7	51,6	7,5	14	22	73	79,5	30,2	58,7	12,5	M12x35	
200	250	32	1-1/4	<b>BM-304-M</b>	43,7	51,6	7,5	14	22	73	79,5	30,2	58,7	10,5	M10x30	
200	200	38	1-1/2	<b>BM-305</b>	50,8	61,1	7,5	16	25	83	94	35,7	69,9	13,5	M12x35	1/2-13 UNC x 1-1/2
200	200	38	1-1/2	<b>BM-305-M14</b>	50,8	61,1	7,5	16	25	83	94	35,7	69,9	15	M14x35	
160	200	51	2	<b>BM-306</b>	62,8	72,3	9	16	26	97	102	42,9	77,8	13,5	M12x35	1/2-13 UNC x 1-1/2
160	200	51	2	<b>BM-306-M14</b>	62,8	72,3	9	16	26	97	102	42,9	77,8	15	M14x35	
100	160	64	2-1/2	<b>BM-307</b>	74,9	84,9	9	19	38	109	114,5	50,8	88,9	13,5	M12x40	1/2-13 UNC x 1-1/2
100	160	64	2-1/2	<b>BM-307-M14</b>	74,9	84,9	9	19	38	109	114,5	50,8	88,9	15	M14x40	
100	160	76	3	<b>BM-308</b>	90,9	102,4	9	22	41	131	135	61,9	106,4	17	M16x50	5/8-11 UNC x 2
35	35	89	3-1/2	<b>BM-309</b>	102,4	115,1	10,7	22	28	140	152	69,9	120,7	17	M16x50	5/8-11 UNC x 2
35	35	102	4	<b>BM-310</b>	115	127,8	10,7	25	35	152	162	77,8	130,2	17	M16x50	5/8-11 UNC x 2
35	35	127	5	<b>BM-311</b>	140,5	153,2	10,7	28	41	181	184	92,1	152,4	17	M16x55	5/8-11 UNC x 2-1/4

**6000 PSI High Pressure Series (according to ISO 6162-2:2006)**

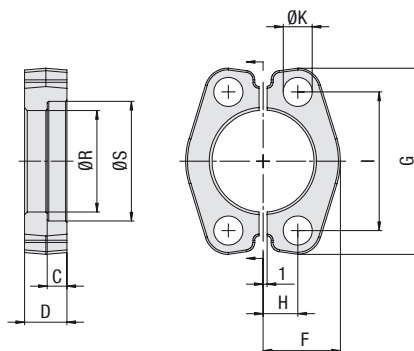
PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	E	F	G	H	I	ØK <sup>2</sup>	Metr.	UNC
350	400	13	1/2	<b>BM-601</b>	24,6	32,5	7,2	16	22	48	56,5	18,2	40,5	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BM-602</b>	32,5	42	8,2	19	28	60	71	23,8	50,8	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BM-603-U</b>	38,8	48,4	9	24	33	70	81	27,8	57,2	12		7/16-14 UNC x 1-3/4
350	400	25	1	<b>BM-603-M</b>	38,8	48,4	9	24	33	70	81	27,8	57,2	13	M12x45	
350	400	32	1-1/4	<b>BM-604</b>	44,5	54,8	9,8	27	38	78	95	31,8	66,6	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BM-604-M14</b>	44,5	54,8	9,8	27	38	78	95	31,8	66,6	15	M14x45	
350	400	38	1-1/2	<b>BM-605</b>	51,6	64,3	12	30	43	95	113	36,5	79,3	17	M16x55	5/8-11 UNC x 2-1/4
350	400	51	2	<b>BM-606</b>	67,6	80,2	12	37	52	114	133	44,5	96,8	21	M20x70	3/4-10 UNC x 2-3/4

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> Dimensions of screw holes in part different to the ISO to match both Metric and UNC screws.

## SAE Split Flange Halves (Flat Style)

## DB-FL



**Material** C60 / C55 or equivalent  
**Surface** CrVI-free

## Order Codes

- ★ Pair of SAE Split Flange Halves (Flat Style) **DB-FL-...**
- ★ Including Metric bolts 8.8, **DB-FL-...-M-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)
- ★ Including Metric bolts 10.9, **DB-FL-...-MH-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)
- ★ Including UNC bolts (Gr8), **DB-FL-...-U-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)

## 3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)									for Bolts	
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	F	G	H	I	ØK <sup>2</sup>	Metr.	UNC
350	350	13	1/2	<b>DB-FL-301</b>	24,3	31	6,2	13	22,8	54	8,75	38,1	8,7	M8x25	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>DB-FL-302</b>	32,2	38,9	6,2	14	25,9	65	11,15	47,6	10,5	M10x30	3/8-16 UNC x 1-1/4
250	315	25	1	<b>DB-FL-303</b>	38,5	45,3	7,5	16	29,2	70	13,1	52,4	10,5	M10x30	3/8-16 UNC x 1-1/4
200	250	32	1-1/4	<b>DB-FL-304-M</b>	43,7	51,6	7,5	14	36,6	79	15,1	58,7	10,5	M10x30	
200	200	38	1-1/2	<b>DB-FL-305</b>	50,8	61,6	7,5	16	41,1	94	17,85	69,9	13,5	M12x35	1/2-13 UNC x 1-1/2
160	200	51	2	<b>DB-FL-306</b>	62,8	72,3	9	16	48,2	102	21,45	77,8	13,5	M12x35	1/2-13 UNC x 1-1/2
100	160	64	2-1/2	<b>DB-FL-307</b>	74,9	84,9	9	19	53	115	25,4	88,9	13,5	M12x40	1/2-13 UNC x 1-1/2
100	160	76	3	<b>DB-FL-308</b>	90,9	102,4	9	22	64,3	135	30,95	106,4	17	M16x50	5/8-11 UNC x 2

## 6000 PSI High Pressure Series (according to ISO 6162-2:2006)

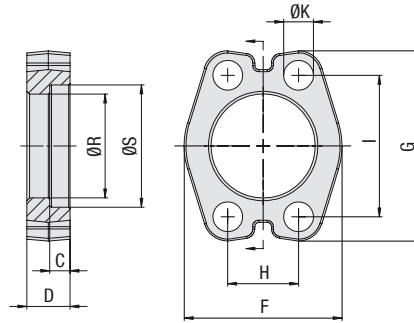
PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)									for Bolts	
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	F	G	H	I	ØK <sup>2</sup>	Metr.	UNC
350	400	13	1/2	<b>DB-FL-601</b>	24,6	32,5	7,2	16	23,6	56	9,1	40,5	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>DB-FL-602</b>	32,5	42	8,2	20	30	71	11,9	50,8	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>DB-FL-603-M</b>	38,8	48,4	9	25	34,8	81	13,9	57,2	13	M12x45	
350	400	32	1-1/4	<b>DB-FL-604-M14</b>	44,5	54,8	9,8	27	38,6	95	15,9	66,6	15	M14x45	
350	400	38	1-1/2	<b>DB-FL-605</b>	51,6	64,3	12	30	47,5	113	18,25	79,3	17	M16x55	5/8-11 UNC x 2-1/4
350	400	51	2	<b>DB-FL-606</b>	67,6	80,2	12	37	56,9	133	22,25	96,8	21	M20x70	3/4-10 UNC x 2-3/4
350	400	64	2-1/2	<b>DB-FL-607</b>	89,5	108,5	20	48	75	166	29,35	123,8	25	M24x75	
350	400	76	3	<b>DB-FL-608</b>	114,5	132,5	25	58	89	210	35,7	152,4	32	M30x90	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> Dimensions of screw holes in part different to the ISO to match both Metric and UNC screws.

**SAE Flange Clamp (Flat Style)**  
**BM-FL**
**Order Codes**

- ★ SAE Flange Clamp (Flat Style) **BM-FL-...**
- ★ Including Metric bolts 8.8, **BM-FL-...-M-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)
- ★ Including UNC bolts (Gr8), **BM-FL-...-U-B#K**  
spring rings, O-ring made of NBR (Buna-N®)  
(packed in kits)



**Material** C60 / C55 or equivalent  
**Surface** CrVI-free

**3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)**

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)									for Bolts	
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	F	G	H	I	ØK <sup>2</sup>	Metr.	UNC
350	350	13	1/2	<b>BM-FL-301</b>	24,3	31	6,2	13	45,6	54	17,5	38,1	8,7	M8x25	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BM-FL-302</b>	32,2	38,9	6,2	14	51,8	65	22,3	47,6	10,5	M10x30	3/8-16 UNC x 1-1/4
250	315	25	1	<b>BM-FL-303</b>	38,5	45,3	7,5	16	58,4	70	26,2	52,4	10,5	M10x30	3/8-16 UNC x 1-1/4
200	250	32	1-1/4	<b>BM-FL-304-M</b>	43,7	51,6	7,5	14	73,2	79	30,2	58,7	10,5	M10x30	
200	200	38	1-1/2	<b>BM-FL-305</b>	50,8	61,1	7,5	16	82,2	94	35,7	69,9	13,5	M12x35	1/2-13 UNC x 1-1/2
160	200	51	2	<b>BM-FL-306</b>	62,8	72,3	9	16	96,4	102	42,9	77,8	13,5	M12x35	1/2-13 UNC x 1-1/2
100	160	64	2-1/2	<b>BM-FL-307</b>	74,9	84,9	9	19	106,0	115	50,8	88,9	13,5	M12x40	1/2-13 UNC x 1-1/2
100	160	76	3	<b>BM-FL-308</b>	90,9	102,4	9	22	128,6	135	61,9	106,4	17	M16x50	5/8-11 UNC x 2

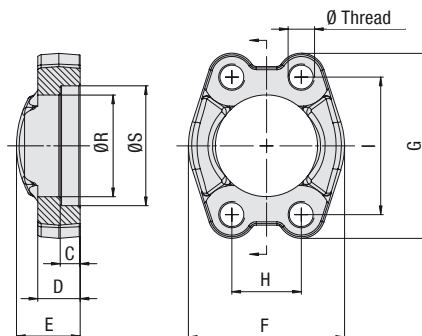
**6000 PSI High Pressure Series (according to ISO 6162-2:2006)**

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)									for Bolts	
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	F	G	H	I	ØK <sup>2</sup>	Metr.	UNC
350	400	13	1/2	<b>BM-FL-601</b>	24,6	32,5	7,2	16	47,2	56	18,2	40,5	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BM-FL-602</b>	32,5	42	8	20	60	71	23,8	50,8	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BM-FL-603-M</b>	38,8	48,4	9	25	69,6	81	27,8	57,2	13	M12x45	
350	400	32	1-1/4	<b>BM-FL-604-M14</b>	44,5	54,8	9,8	27	77,2	95	31,8	66,6	15	M14x45	
350	400	38	1-1/2	<b>BM-FL-605</b>	51,6	64,3	12	30	89,4	113	36,5	79,3	17	M16x55	5/8-11 UNC x 2-1/4
350	400	51	2	<b>BM-FL-606</b>	67,6	80,2	12	37	113,4	133	44,5	96,8	21	M20x70	3/4-10 UNC x 2-3/4
350	400	64	2-1/2	<b>BM-FL-607</b>	89,5	108,5	20	48	150	166	58,7	123,8	25	M24x75	
350	400	76	3	<b>BM-FL-608</b>	114,5	132,5	25	58	178	210	71,4	152,4	32	M30x90	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> Dimensions of screw holes in part different to the ISO to match both Metric and UNC screws.

## SAE Flange Clamp with Metric Tapped Holes BM-G



**Material** S355J0 / C45 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### Order Codes

\* SAE Flange Clamp with Metric tapped holes **BM-G-...**  
 \* Deviant Metric tapped holes (M14) **BM-G-...M14**

### 3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)									Ø Thread <sup>2</sup>
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	E	F	G	H	I	
350	350	13	1/2	<b>BM-G-301</b>	24,3	31	6,2	13	19	46	54	17,5	38,1	M8
350	350	19	3/4	<b>BM-G-302</b>	32,2	38,9	6,2	14	22	52	65	22,3	47,6	M10
250	315	25	1	<b>BM-G-303</b>	38,5	45,3	7,5	16	24	59	70	26,2	52,4	M10
200	250	32	1-1/4	<b>BM-G-304</b>	43,7	51,6	7,5	14	22	73	79,5	30,2	58,7	M10 (M12)
200	200	38	1-1/2	<b>BM-G-305</b>	50,8	61,1	7,5	16	25	83	94	35,7	69,9	M12 (M14)
160	200	51	2	<b>BM-G-306</b>	62,8	72,3	9	16	26	97	102	42,9	77,8	M12 (M14)
100	160	64	2-1/2	<b>BM-G-307</b>	74,9	84,9	9	19	38	109	114,5	50,8	88,9	M12 (M14)
100	160	76	3	<b>BM-G-308</b>	90,9	102,4	9	22	41	131	135	61,9	106,4	M16
35	35	89	3-1/2	<b>BM-G-309</b>	102,4	115,1	10,7	22	28	140	152	69,9	120,7	M16
35	35	102	4	<b>BM-G-310</b>	115	127,8	10,7	25	35	152	162	77,8	130,2	M16
35	35	127	5	<b>BM-G-311</b>	140,5	153,2	10,7	28	41	181	184	92,1	152,4	M16

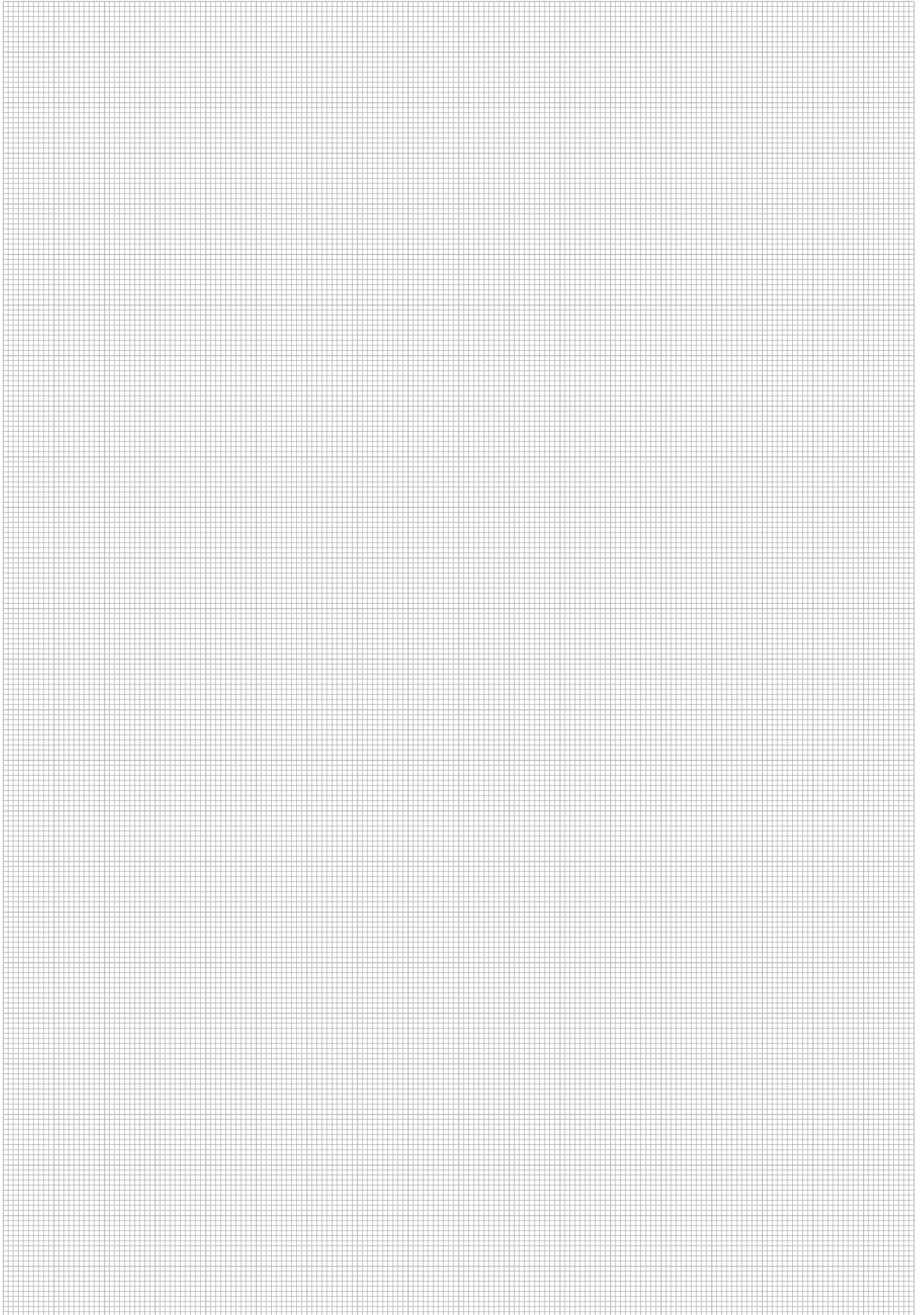
### 6000 PSI High Pressure Series (according to ISO 6162-2:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)									Ø Thread
8.8	10.9 (MH)	DN	(in)		ØR	ØS	C	D	E	F	G	H	I	
350	400	13	1/2	<b>BM-G-601</b>	24,6	32,5	7,2	16	22	48	56,5	18,2	40,5	M8
350	400	19	3/4	<b>BM-G-602</b>	32,5	42	8,2	19	28	60	71	23,8	50,8	M10
350	400	25	1	<b>BM-G-603</b>	38,8	48,4	9	24	33	70	81	27,8	57,2	M12
350	400	32	1-1/4	<b>BM-G-604</b>	44,5	54,8	9,8	27	38	78	95	31,8	66,6	M12
350	400	32	1-1/4	<b>BM-G-604-M14</b>	44,5	54,8	9,8	27	38	78	95	31,8	66,6	M14
350	400	38	1-1/2	<b>BM-G-605</b>	51,6	64,3	12	30	43	95	113	36,5	79,3	M16
350	400	51	2	<b>BM-G-606</b>	67,6	80,2	12	37	52	114	133	44,5	96,8	M20

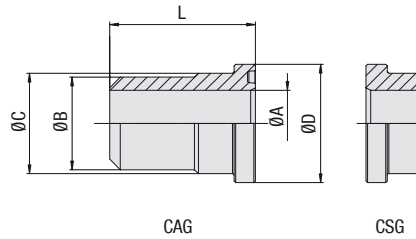
<sup>1</sup> The maximum working pressure applies PN (bar) only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> Alternative options shown in brackets are available on request.





## SAE Butt Weld Flange Adapter / SAE Butt Weld Counterflange Adapter CAG/CSG-ST



### Order Codes

- \* SAE Butt Weld Flange Adapter **CAG-...-ST-\*\*-\*\***  
(without O-ring)
- \* SAE Butt Weld Counterflange Adapter **CSG-...-ST-\*\*-\*\***
- \* Including Metric bolts 8.8, **CAG-...-ST-\*\*-\*\*/\*\*#K**  
spring rings, O-ring made of NBR (Buna-N®) and DB  
(packed in kits)
- \* Including Metric bolts 10.9, **CAG-...-ST-\*\*-\*\*/\*\*-MH#K**  
spring rings, O-ring made of NBR (Buna-N®) and DB  
(packed in kits)
- \* Including Metric bolts 8.8, **CAG-...-ST-\*\*-\*\*/\*\*-BM#K**  
spring rings, O-ring made of NBR (Buna-N®) and BM  
(packed in kits)
- \*\*/\*\* Please indicate pipe-OD and pipe-ID**

**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4571 "W5" on request

### 3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)		
8.8	10.9 (MH)	DN	(in)		ØC	ØD	L
350	350	13	1/2	<b>CAG-301-ST- ** / **</b>	24	30,2	41
<b>** / **</b> replace with ØB / ØA: 16/12 • 20/15 • 21,3/15,7 • 21,3/13,7 • 21,3/12							
350	350	19	3/4	<b>CAG-302-ST- ** / **</b>	31,5	38,1	50
<b>** / **</b> replace with ØB / ØA: 25/19 • 26,9/19,7 • 28/19							
250	315	25	1	<b>CAG-303-ST- ** / **</b>	38	44,45	50
<b>** / **</b> replace with ØB / ØA: 25/19 • 28/22 • 30/24 • 30/22 • 33,7/24,7 • 38/30 • 38/28							
200	250	32	1-1/4	<b>CAG-304-ST- ** / **</b>	43	50,8	55
<b>** / **</b> replace with ØB / ØA: 25/19 • 30/24 • 38/32 • 38/30 • 38/28 • 42,4/33,4 • 42,4/29,8 • 43/31							
200	200	38	1-1/2	<b>CAG-305-ST- ** / **</b>	50	60,35	57
<b>** / **</b> replace with ØB / ØA: 38/30 • 42/36 • 42/35 • 42/32 • 45/43 • 48,3/41 • 48,3/38,3 • 48,3/35,7 • 48,3/35 • 50/38							
160	200	51	2	<b>CAG-306-ST- ** / **</b>	62	71,4	57
<b>** / **</b> replace with ØB / ØA: 48,3/38,4 • 55/45 • 60,3/54,5 • 60,3/52 • 60,3/50,3 • 60,3/47,7 • 60,3/44,3							
100	160	64	2-1/2	<b>CAG-307-ST- ** / **</b>	74	84,1	58
<b>** / **</b> replace with ØB / ØA: 65/53 • 70/55 • 74/65 • 74/61,8 • 74/58							
100	160	76	3	<b>CAG-308-ST- ** / **</b>	90	101,6	60
<b>** / **</b> replace with ØB / ØA: 80/68 • 89/82,5 • 89/81 • 89/76 • 89/74 • 89/70							
35	35	89	3-1/2	<b>CAG-309-ST- ** / **</b>	102	114,3	80
<b>** / **</b> replace with ØB / ØA: 100/88 • 89/81,7 • 89/73							
35	35	102	4	<b>CAG-310-ST- ** / **</b>	114	127	80
<b>** / **</b> replace with ØB / ØA: 110/98 • 114/107 • 114/102 • 114/96,7							
35	35	127	5	<b>CAG-311-ST- ** / **</b>	140	152,4	80
<b>** / **</b> replace with ØB / ØA: 133/120 • 139,7/131,7 • 139,7/119,7							

### 6000 PSI High Pressure Series (according to ISO 6162-2:2006)

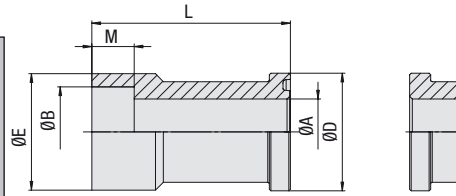
PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)		
8.8	10.9 (MH)	DN	(in)		ØC	ØD	L
350	400	13	1/2	<b>CAG-601-ST- ** / **</b>	24	31,8	34
<b>** / **</b> replace with ØB / ØA: 16/12 • 20/15 • 21,3/12,3							
350	400	19	3/4	<b>CAG-602-ST- ** / **</b>	32	41,3	38
<b>** / **</b> replace with ØB / ØA: 16/12 • 20/14 • 25/19 • 25/18 • 25/17 • 26,9/15,7 • 28/18							
350	400	25	1	<b>CAG-603-ST- ** / **</b>	38	47,6	40
<b>** / **</b> replace with ØB / ØA: 25/19 • 30/24 • 30/22 • 33,7/21 • 33,7/19,5 • 38/30 • 38/28							
350	400	32	1-1/4	<b>CAG-604-ST- ** / **<sup>2</sup></b>	44	54	45
<b>** / **</b> replace with ØB / ØA: 25/19 • 30/24 • 38/30 • 38/28 • 38/27 • 42,4/29,8							
350	400	38	1-1/2	<b>CAG-605-ST- ** / **</b>	51	63,5	50
<b>** / **</b> replace with ØB / ØA: 38/28 • 45/32 • 48,3/38,3 • 48,3/35,7 • 48,3/34 • 48,3/32,3 • 48,3/30,7 • 50/38 • 51/35							
350	400	51	2	<b>CAG-606-ST- ** / **</b>	67	79,4	58
<b>** / **</b> replace with ØB / ØA: 48,3/35,7 • 60,3/47,7 • 60,3/44,3 • 60,3/42,8 • 60,3/40,3 • 60,3/33,5 • 65/39							
350	400	64	2-1/2	<b>CAG-607-ST- ** / **</b>	89	108	75
<b>** / **</b> replace with ØB / ØA: 76,1/60 • 76,1/56 • 89/69 • 89/67 • 89/60,5							
350	400	76	3	<b>CAG-608-ST- ** / **</b>	114	131,6	80
<b>** / **</b> replace with ØB / ØA: 89/69 • 89/66,7 • 89/60,5 • 114/92,3 • 114/79,3							

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

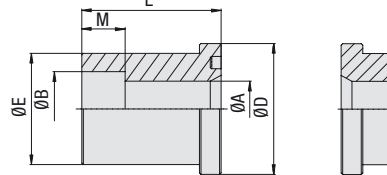
<sup>2</sup> According to ISO 6162-2 bolts M12 should be used but because usually bolts M14 are used the description of the complete part must show M14 (e.g. CAG-604-ST-\*\*-\*\*/M14#K).

**SAE Socket Weld Flange Adapter / SAE Socket Weld Counterflange Adapter  
CAG/CSG-ES**
**Order Codes**

- \* SAE Socket Weld Flange Adapter (without O-ring) **CAG-...-ES-...**
- \* SAE Socket Weld Counterflange Adapter **CSG-...-ES-...**
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) and DB (packed in kits) **CAG-...-ES-...#K**
- \* Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) and DB (packed in kits) **CAG-...-ES-...-MH#K**
- \* Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) and DB (packed in kits) **CAG-...-ES-...-V-U#K**



Version A (CAG / CSG)



Version B (CAG / CSG)



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4571 "W5" on request

**3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)**

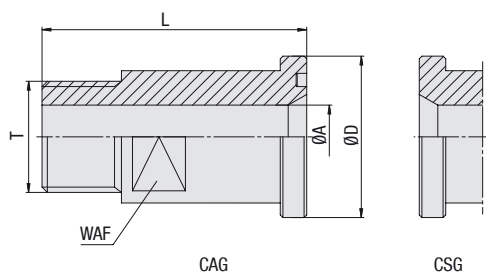
PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)						
8.8	10.9 (MH)	DN	(in)		ØA	ØB	ØD	ØE	M	L	Version
350	350	13	1/2	CAG-301-ES-16,5/12	12	16,5	30,2	24	12	35	B
350	350	13	1/2	CAG-301-ES-17,6/12	12	17,6	30,2	24	12	35	B
350	350	13	1/2	CAG-301-ES-20,5/15	15	20,5	30,2	30	13	60	A
350	350	13	1/2	CAG-301-ES-21,7/15	15	21,7	30,2	30	13	60	A
350	350	19	3/4	CAG-302-ES-20,5/13	13	20,5	38,1	31,5	12	40	B
350	350	19	3/4	CAG-302-ES-21,7/13	13	21,7	38,1	31,5	13	40	B
350	350	19	3/4	CAG-302-ES-25,5/19	19	25,5	38,1	35	13	68	A
350	350	19	3/4	CAG-302-ES-27,3/19	19	27,3	38,1	35	13	68	A
250	315	25	1	CAG-303-ES-27,3/19	19	27,3	44,45	38	14	45	B
250	315	25	1	CAG-303-ES-30,5/23	23	30,5	44,45	44	16	75	A
250	315	25	1	CAG-303-ES-34/25	25	34	44,45	44	16	75	A
200	250	32	1-1/4	CAG-304-ES-30,5/25	25	30,5	50,8	43	16	50	B
200	250	32	1-1/4	CAG-304-ES-34/25	25	34	50,8	43	16	50	B
200	250	32	1-1/4	CAG-304-ES-38,5/32	32	38,5	50,8	55	18	95	A
200	250	32	1-1/4	CAG-304-ES-43/32	32	43	50,8	55	18	95	A
200	200	38	1-1/2	CAG-305-ES-38,5/32	32	38,5	60,3	50	18	55	B
200	200	38	1-1/2	CAG-305-ES-43/32	32	43	60,3	50	18	55	B
200	200	38	1-1/2	CAG-305-ES-49/38	38	49	60,3	63	20	100	A
200	200	38	1-1/2	CAG-305-ES-50,4/38	38	50,4	60,3	63	20	100	A
160	200	51	2	CAG-306-ES-49/38	38	49	71,4	61,8	20	65	B
160	200	51	2	CAG-306-ES-50,7/38	38	50,7	71,4	61,8	20	65	B
160	200	51	2	CAG-306-ES-61/50	50	61	71,4	79	22	107	A
100	160	64	2-1/2	CAG-307-ES-61/47	47	61	84,1	73,8	22	75	B
100	160	64	2-1/2	CAG-307-ES-77/58	58	77	84,1	98	24	130	A
100	160	76	3	CAG-308-ES-77/58	58	77	101,6	90	24	85	B
100	160	76	3	CAG-308-ES-90,5/70	70	90,5	101,6	116	28	150	A

**6000 PSI High Pressure Series (according to ISO 6162-2:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)						
8.8	10.9 (MH)	DN	(in)		ØA	ØB	ØD	ØE	M	L	Version
350	400	13	1/2	CAG-601-ES-16,5/11	11	16,5	31,8	24	13	35	B
350	400	13	1/2	CAG-601-ES-17,6/11	11	17,6	31,8	24	13	35	B
350	400	13	1/2	CAG-601-ES-20,5/15	15	20,5	31,8	32	13	60	A
350	400	13	1/2	CAG-601-ES-21,7/15	15	21,7	31,8	32	13	60	A
350	400	19	3/4	CAG-602-ES-20,5/13	13	20,5	41,3	31,8	13	40	B
350	400	19	3/4	CAG-602-ES-21,7/13	13	21,7	41,3	31,8	13	40	B
350	400	19	3/4	CAG-602-ES-25,7/19	19	25,7	41,3	40	13	68	A
350	400	19	3/4	CAG-602-ES-27,3/19	19	27,3	41,3	40	13	68	A
350	400	25	1	CAG-603-ES-27,3/17,5	17,5	27,3	47,6	38	13	45	B
350	400	25	1	CAG-603-ES-34/25	25	34	47,6	48	16	75	A
350	400	32	1-1/4	CAG-604-ES-34/22	22	34	54	44	16	50	B

<sup>1</sup> The maximum working pressure applies PN (bar) only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

## SAE Flange Adapter with BSPT Thread / SAE Counterflange Adapter CAG/CSG-BSPT



### Order Codes

- \* SAE Flange Adapter with BSPT Thread (without O-ring) **CAG-...-BSPT**
- \* SAE Counterflange Adapter **CSG-...-BSPT**
- \* Deviant BSPT Thread **CAG-...-BSPT\*\*\***
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) and DB (packed in kits) **CAG-...-BSPT#K**
- \* Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) and DB (packed in kits) **CAG-...-BSPT-MH#K**
- \* Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) and DB (packed in kits) **CAG-...-BSPT-V-U#K**

**Material** S355J0 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4571 "-W5" on request

### 3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

PN (bar) <sup>1</sup> Bolts		Nominal Size		Order Codes	Dimensions (mm)				
8.8	10.9 (MH)	DN	(in)		ØA	ØD	L	WAF	T (BSPT)
300	300	13	1/2	CAG-301-BSPT	12	30,2	50	19	1/2
300	300	13	1/2	CAG-301-BSPT038	10	30,2	50	19	3/8
300	300	19	3/4	CAG-302-BSPT	17	38,1	55	27	3/4
300	300	19	3/4	CAG-302-BSPT012	12	38,1	55	27	1/2
300	300	25	1	CAG-303-BSPT	22	44,45	60	32	1
300	300	25	1	CAG-303-BSPT034	17	44,45	60	32	3/4
150	150	32	1-1/4	CAG-304-BSPT	27	50,8	65	41	1-1/4
150	150	32	1-1/4	CAG-304-BSPT100	22	50,8	65	41	1
150	150	38	1-1/2	CAG-305-BSPT	32	60,3	70	46	1-1/2
150	150	38	1-1/2	CAG-305-BSPT114	27	60,3	70	46	1-1/4
150	150	51	2	CAG-306-BSPT	40	71,4	75	55	2
150	150	51	2	CAG-306-BSPT112	30	71,4	75	55	1-1/2

### 6000 PSI High Pressure Series (according to ISO 6162-2:2006)

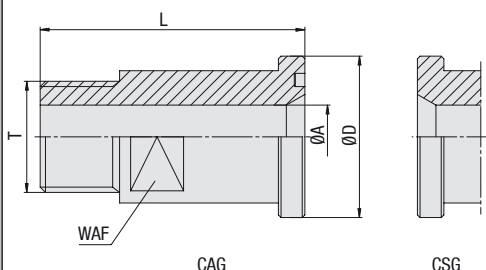
PN (bar) <sup>1</sup> Bolts		Nominal Size		Order Codes	Dimensions (mm)				
8.8	10.9 (MH)	DN	(in)		ØA	ØD	L	WAF	T (BSPT)
350	350	13	1/2	CAG-601-BSPT	12	31,8	50	19	1/2
350	350	13	1/2	CAG-601-BSPT038	10	31,8	50	19	3/8
350	350	19	3/4	CAG-602-BSPT	17	41,3	60	26	3/4
350	350	19	3/4	CAG-602-BSPT012	12	41,3	60	26	1/2
350	350	25	1	CAG-603-BSPT	22	47,6	70	32	1
350	350	25	1	CAG-603-BSPT034	17	47,6	70	32	3/4
250	250	32	1-1/4	CAG-604-BSPT	27	54	75	36	1-1/4
250	250	32	1-1/4	CAG-604-BSPT100	22	54	75	36	1
250	250	38	1-1/2	CAG-605-BSPT	30	63,5	80	41	1-1/2
250	250	38	1-1/2	CAG-605-BSPT114	27	63,5	80	41	1-1/4
200	200	51	2	CAG-606-BSPT	40	79,4	90	55	2
200	200	51	2	CAG-606-BSPT112	30	79,4	90	55	1-1/2

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

### SAE Flange Adapter with NPT Thread / SAE Counterflange Adapter CAG/CSG-NPT

#### Order Codes

- \* SAE Flange Adapter with NPT Thread (without O-ring) **CAG-...-NPT**
- \* SAE Counterflange Adapter **CSG-...-NPT**
- \* Deviant NPT Thread **CAG-...-NPT\*\*\***
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) and DB (packed in kits) **CAG-...-NPT#K**
- \* Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) and DB (packed in kits) **CAG-...-NPT-MH#K**
- \* Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) and DB (packed in kits) **CAG-...-NPT-V-U#K**



**Material** S355J0 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4571 "-W5" on request

#### 3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

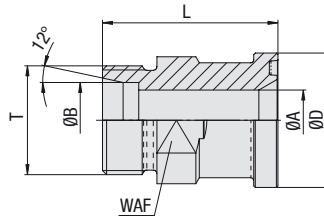
PN (bar) <sup>1</sup> Bolts		Nominal Size		Order Codes	Dimensions (mm)				
8.8	10.9 (MH)	DN	(in)		ØA	ØD	L	WAF	T (NPT)
300	300	13	1/2	CAG-301-NPT	12	30,2	50	19	1/2
300	300	13	1/2	CAG-301-NPT038	10	30,2	50	19	3/8
300	300	19	3/4	CAG-302-NPT	17	38,1	55	27	3/4
300	300	19	3/4	CAG-302-NPT012	12	38,1	55	27	1/2
300	300	25	1	CAG-303-NPT	22	44,45	60	32	1
300	300	25	1	CAG-303-NPT034	17	44,45	60	32	3/4
150	150	32	1-1/4	CAG-304-NPT	27	50,8	65	41	1-1/4
150	150	32	1-1/4	CAG-304-NPT100	22	50,8	65	41	1
150	150	38	1-1/2	CAG-305-NPT	32	60,3	70	46	1-1/2
150	150	38	1-1/2	CAG-305-NPT114	27	60,3	70	46	1-1/4
150	150	51	2	CAG-306-NPT	40	71,4	75	55	2
150	150	51	2	CAG-306-NPT112	30	71,4	75	55	1-1/2

#### 6000 PSI High Pressure Series (according to ISO 6162-2:2006)

PN (bar) <sup>1</sup> Bolts		Nominal Size		Order Codes	Dimensions (mm)				
8.8	10.9 (MH)	DN	(in)		ØA	ØD	L	WAF	T (NPT)
350	350	13	1/2	CAG-601-NPT	12	31,8	50	19	1/2
350	350	13	1/2	CAG-601-NPT038	10	31,8	50	19	3/8
350	350	19	3/4	CAG-602-NPT	17	41,3	60	26	3/4
350	350	19	3/4	CAG-602-NPT012	12	41,3	60	26	1/2
350	350	25	1	CAG-603-NPT	22	47,6	70	32	1
350	350	25	1	CAG-603-NPT034	17	47,6	70	32	3/4
250	250	32	1-1/4	CAG-604-NPT	27	54	75	36	1-1/4
250	250	32	1-1/4	CAG-604-NPT100	22	54	75	36	1
250	250	38	1-1/2	CAG-605-NPT	30	63,5	80	41	1-1/2
250	250	38	1-1/2	CAG-605-NPT114	27	63,5	80	41	1-1/4
200	200	51	2	CAG-606-NPT	40	79,4	90	55	2
200	200	51	2	CAG-606-NPT112	30	79,4	90	55	1-1/2

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

## SAE Flange Adapter with 24° Cone Connector (acc. to ISO 8434-1 / DIN 2353) CAG-L/S



**Material** S355J0 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4571 " -W5" on request

### Order Codes

- ★ SAE Flange Adapter with 24° Cone Connector **CAG-...**  
(acc. to ISO 8434-1 / DIN 2353)  
(without O-ring)
- ★ Including Metric bolts 8.8, **CAG-...#K**  
spring rings, O-ring made of NBR (Buna-N®) and DB  
(packed in kits)
- ★ Including Metric bolts 10.9, **CAG-...-MH#K**  
spring rings, O-ring made of NBR (Buna-N®) and DB  
(packed in kits)
- ★ Including UNC bolts (Gr8), **CAG-...-V-U#K**  
spring rings, O-ring made of FPM (Viton®) and DB  
(packed in kits)

### 3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)					
8.8	10.9 (MH)	DN	(in)		ØA	ØB	ØD	L	WAF	T (Metric)
315	315	13	1/2	CAG-301-L15	12	15 L	30,2	48	24	22x1,5
350	350	13	1/2	CAG-301-S16	12	16 S	30,2	50	24	24x1,5
315	315	19	3/4	CAG-302-L18	15	18 L	38,1	53	30	26x1,5
350	350	19	3/4	CAG-302-S20	16	20 S	38,1	57	30	30x2
160	160	19	3/4	CAG-302-L22	19	22 L	38,1	53	30	30x2
350	350	19	3/4	CAG-302-S25	17	25 S	38,1	57	30	36x2
160	160	19	3/4	CAG-302-L28	19	28 L	38,1	53	30	36x2
250	315	25	1	CAG-303-S25	20	25 S	44,45	58	36	36x2
160	160	25	1	CAG-303-L28	24	28 L	44,45	54	36	36x2
250	315	25	1	CAG-303-S30	24	30 S	44,45	63	36	42x2
200	250	32	1-1/4	CAG-304-S25	20	25 S	50,8	60	41	36x2
160	160	32	1-1/4	CAG-304-L28	22	28 L	50,8	59	41	36x2
200	250	32	1-1/4	CAG-304-S30	25	30 S	50,8	62	41	42x2
160	160	32	1-1/4	CAG-304-L35	30	35 L	50,8	58	41	45x2
200	250	32	1-1/4	CAG-304-S38	28	38 S	50,8	67	46	52x2
200	200	38	1-1/2	CAG-305-S38	32	38 S	60,35	70	46	52x2
160	160	38	1-1/2	CAG-305-L42	36	42 L	60,35	64	46	52x2

### 6000 PSI High Pressure Series (according to ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)					
8.8	10.9 (MH)	DN	(in)		ØA	ØB	ØD	L	WAF	T (Metric)
350	400	13	1/2	CAG-601-S16	12	16 S	31,8	53	24	24x1,5
350	400	19	3/4	CAG-602-S16	12	16 S	41,3	59	30	24x1,5
350	400	19	3/4	CAG-602-S20	16	20 S	41,3	61	30	30x2
350	400	19	3/4	CAG-602-S25	17	25 S	41,3	63	30	36x2
350	400	19	3/4	CAG-602-S30	18	30 S	41,3	64	36	42x2
350	400	25	1	CAG-603-S25	20	25 S	47,6	72	36	36x2
350	400	25	1	CAG-603-S30	24	30 S	47,6	74	36	42x2
350	400	32	1-1/4	CAG-604-S30 <sup>2</sup>	25	30 S	54	79	41	42x2
350	350	32	1-1/4	CAG-604-S38 <sup>2</sup>	30	38 S	54	83	46	52x2
350	350	38	1-1/2	CAG-605-S38	30	38 S	63,5	89	46	52x2

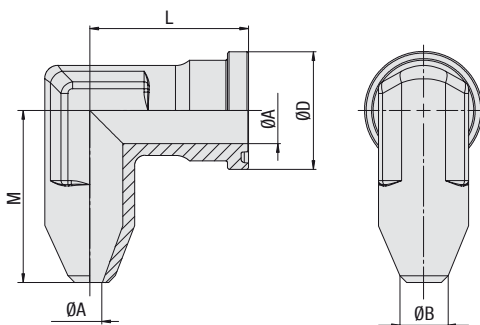
<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> According to ISO 6162-2 bolts M12 should be used but because usually bolts M14 are used the description of the complete part must show M14 (e.g. CAG-604-S30-M14#K).



**SAE 90° Butt Weld Flange Adapter  
CAG90-ST**
**Order Codes**

- \* SAE 90° Butt Weld Flange Adapter **CAG90-...-ST-...**  
(without O-ring)
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) and DB  
(packed in kits) **CAG90-...-ST-...#K**
- \* Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) and DB  
(packed in kits) **CAG90-...-ST-...-MH#K**
- \* Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) and DB  
(packed in kits) **CAG90-...-ST-...-V-U#K**



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

**3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)				
8.8	10.9 (MH)	DN	(in)		ØA	ØB	ØD	L	M
350	350	13	1/2	CAG90-301-ST-15/11	11	15	30,2	39	38
350	350	13	1/2	CAG90-301-ST-16/12	12	16	30,2	39	38
350	350	13	1/2	CAG90-301-ST-21,3/14	14	21,3	30,2	39	38
350	350	19	3/4	CAG90-302-ST-18/15	15	18	38,1	42	45
350	350	19	3/4	CAG90-302-ST-20/14	14	20	38,1	42	45
350	350	19	3/4	CAG90-302-ST-22/16	16	22	38,1	42	45
350	350	19	3/4	CAG90-302-ST-26,9/19	19	26,9	38,1	42	45
250	315	25	1	CAG90-303-ST-25/19	19	25	44,45	45	50
250	315	25	1	CAG90-303-ST-30/22	22	30	44,45	45	50
250	315	25	1	CAG90-303-ST-33,7/25	25	33,7	44,45	45	50
200	250	32	1-1/4	CAG90-304-ST-25/19	19	25	50,8	50	59
200	250	32	1-1/4	CAG90-304-ST-30/22	22	30	50,8	50	59
200	250	32	1-1/4	CAG90-304-ST-35/31	31	35	50,8	50	59
200	250	32	1-1/4	CAG90-304-ST-38/28	28	38	50,8	50	59
200	250	32	1-1/4	CAG90-304-ST-42,4/32	32	42,4	50,8	50	59
200	200	38	1-1/2	CAG90-305-ST-38/28	28	38	60,35	76	56
200	200	38	1-1/2	CAG90-305-ST-42/36	36	42	60,35	76	56
200	200	38	1-1/2	CAG90-305-ST-48,3/38	38	48,3	60,35	76	56

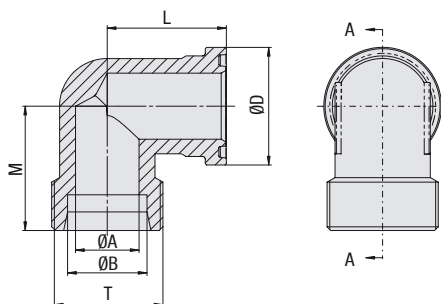
**6000 PSI High Pressure Series (according to ISO 6162-2:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)				
8.8	10.9 (MH)	DN	(in)		ØA	ØB	ØD	L	M
350	400	13	1/2	CAG90-601-ST-16/10	10	16	31,8	39	38
350	400	13	1/2	CAG90-601-ST-21,3/12	12	21,3	31,8	39	38
350	400	19	3/4	CAG90-602-ST-16/10	10	16	41,3	48	48
350	400	19	3/4	CAG90-602-ST-20/12	12	20	41,2	48	48
350	400	19	3/4	CAG90-602-ST-25/17	17	25	41,3	48	48
350	400	19	3/4	CAG90-602-ST-26,9/16	16	26,9	41,3	48	48
350	400	25	1	CAG90-603-ST-25/17	17	25	47,6	60	60
350	400	25	1	CAG90-603-ST-30/22	22	30	47,6	60	60
350	400	25	1	CAG90-603-ST-33,7/25	25	33,7	47,6	60	60
350	400	25	1	CAG90-603-ST-33,7/21	21	33,7	47,6	60	60
350	400	32	1-1/4	CAG90-604-ST-30/22 <sup>2</sup>	22	30	54	68	68
350	400	32	1-1/4	CAG90-604-ST-38/28 <sup>2</sup>	28	38	54	68	68
350	400	32	1-1/4	CAG90-604-ST-42,4/30 <sup>2</sup>	30	42,4	54	68	68
350	400	32	1-1/4	CAG90-604-ST-38/22 <sup>2</sup>	22	38	54	68	68
350	400	38	1-1/2	CAG90-605-ST-38/28	28	38	63,5	76	76
350	400	38	1-1/2	CAG90-605-ST-38/22	22	38	63,5	76	76
350	400	38	1-1/2	CAG90-605-ST-48,3/34	34	48,3	63,6	76	76
350	400	38	1-1/2	CAG90-605-ST-48,3/32	32	48,3	63,5	76	76

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> According to ISO 6162-2 bolts M12 should be used but because usually bolts M14 are used the description of the complete part must show M14 (CAG90-604-ST-30/22-M14#K).

## SAE 90° Flange Adapter with 24° Cone Connector (ISO 8434-1/DIN 2353) CAG90-L/S



### Order Codes

- ★ SAE 90° Flange Adapter with 24° Cone Connector (acc. to ISO 8434-1 / DIN 2353) (without O-ring) **CAG90-...**
- ★ Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) and DB (packed in kits) **CAG90-...#K**
- ★ Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) and DB (packed in kits) **CAG90-...-MH#K**
- ★ Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) and DB (packed in kits) **CAG90-...-V-U#K**

**Material** S355J0 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### 3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

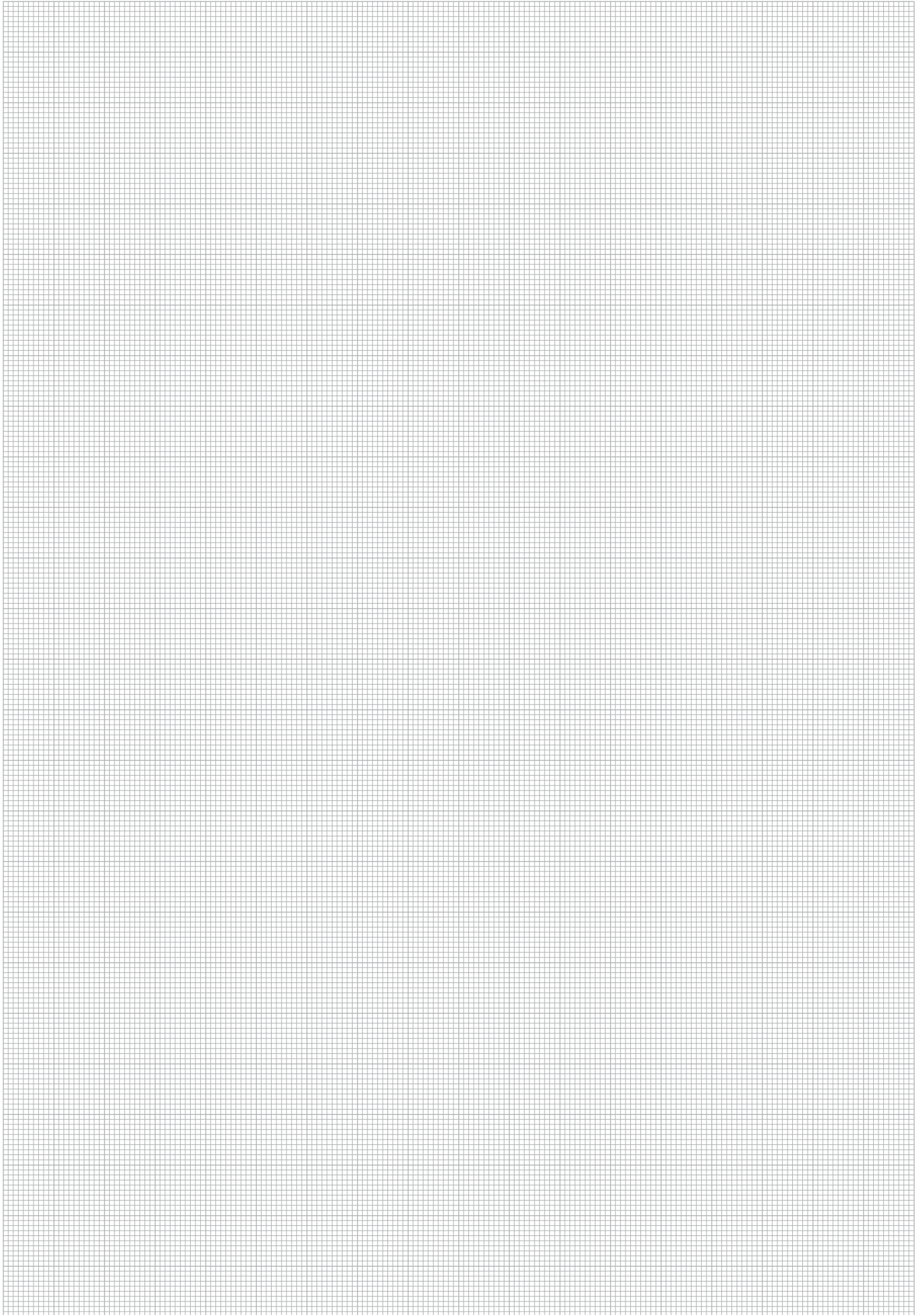
PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)					
8.8	10.9 (MH)	DN	(in)		ØA	ØB	ØD	L	M	T (Metric)
315	315	13	1/2	CAG90-301-L15	12	15 L	30,2	39	36	22x1,5
350	350	13	1/2	CAG90-301-S16	12	16 S	30,2	39	38	24x1,5
315	315	19	3/4	CAG90-302-L18	15	18 L	38,1	42	39	26x1,5
350	350	19	3/4	CAG90-302-S20	16	20 S	38,1	42	43	30x2
160	160	19	3/4	CAG90-302-L22	19	22 L	38,1	42	41	30x2
350	350	19	3/4	CAG90-302-S25	17	25 S	38,1	42	45	36x2
250	315	25	1	CAG90-303-S25	20	25 S	44,45	45	48,5	36x2
160	160	25	1	CAG90-303-L28	24	28 L	44,45	45	45,5	36x2
250	315	25	1	CAG90-303-S30	24	30 S	44,45	45	50	42x2
200	250	32	1-1/4	CAG90-304-S25	20	25 S	50,8	50	55	36x2
200	250	32	1-1/4	CAG90-304-S30	25	30 S	50,8	50	57	42x2
160	160	32	1-1/4	CAG90-304-L35	30	35 L	50,8	50	57	45x2
200	250	32	1-1/4	CAG90-304-S38	28	38 S	50,8	50	59	52x2
200	200	38	1-1/2	CAG90-305-S38	32	38 S	60,35	55	64	52x2
160	160	38	1-1/2	CAG90-305-L42	36	42 L	60,35	55	58	52x2

### 6000 PSI High Pressure Series (according to ISO 6162-2:2006)

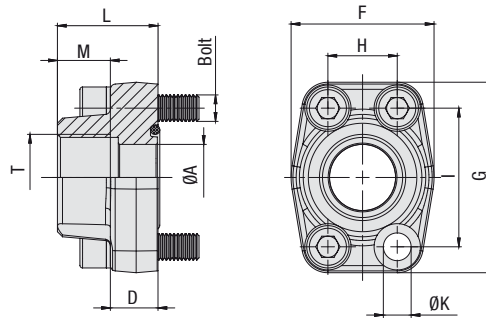
PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)					
8.8	10.9 (MH)	DN	(in)		ØA	ØB	ØD	L	M	T (Metric)
350	400	13	1/2	CAG90-601-S16	12	16 S	31,8	39	37,9	24x1,5
350	400	19	3/4	CAG90-602-S16	12	16 S	41,3	48	45	24x1,5
350	400	19	3/4	CAG90-602-S20	16	20 S	41,3	48	46	30x2
350	400	19	3/4	CAG90-602-S25	17	25 S	41,3	48	48	36x2
350	400	25	1	CAG90-603-S25	20	25 S	47,6	60	53	36x2
350	400	25	1	CAG90-603-S30	24	30 S	47,6	60	55	42x2
350	400	32	1-1/4	CAG90-604-S30 <sup>2</sup>	25	30 S	54	68	58	42x2
350	350	32	1-1/4	CAG90-604-S38 <sup>2</sup>	30	38 S	54	68	61	52x2
350	350	38	1-1/2	CAG90-605-S30	25	30 S	63,5	76	72	42x2
350	350	38	1-1/2	CAG90-605-S38	30	38 S	63,5	76	72	52x2

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> According to ISO 6162-2 bolts M12 should be used but because usually bolts M14 are used the description of the complete part must show M14 (e.g. CAG90-604-S30-M14#K).



## SAE Single-Part Screw-in BSPP Threaded Flange BFX-G



### Order Codes

- ★ SAE Single-Part Screw-in BSPP Threaded Flange (without O-ring) **BFX...-G**
- ★ Deviant Screw-in BSPP thread, including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX...-G\*\*\* #K**
- ★ Deviant Screw-in BSPP thread, including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX...-G\*\*\*-MH#K**
- ★ Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX...-G-V-U#K**

**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (BSPP)	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BFX-301-G</b>	13	16	47	57	17,5	38,1	36	15	1/2	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	13	1/2	<b>BFX-301-G038</b>	13	16	47	57	17,5	38,1	36	20	3/8	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BFX-302-G</b>	19	18	50	67	22,3	47,6	36	18	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
350	350	19	3/4	<b>BFX-302-G012</b>	13	18	50	67	22,3	47,6	36	15	1/2	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-G</b>	25	18	54	72	26,2	52,4	38	20	1	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-G034</b>	19	18	54	72	26,2	52,4	38	18	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-G</b>	31	21	68	82	30,2	58,7	41	22	1-1/4	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-G100</b>	25	21	68	82	30,2	58,7	41	20	1	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	<b>BFX-305-G</b>	38	25	79	96	35,7	69,9	44	24	1-1/2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
200	200	38	1-1/2	<b>BFX-305-G114</b>	31	25	79	96	35,7	69,9	44	22	1-1/4	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX-306-G</b>	50	25,5	88	102	42,9	77,8	45	26	2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX-306-G112</b>	38	25,5	88	102	42,9	77,8	45	24	1-1/2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	64	2-1/2	<b>BFX-307-G</b>	63	26	101	115	50,8	88,9	50	30	2-1/2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	64	2-1/2	<b>BFX-307-G200</b>	50	26	101	115	50,8	88,9	50	26	2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	76	3	<b>BFX-308-G</b>	73	27,5	127	137	61,9	106,4	50	30	3	17	M16x50	5/8-11 UNC x 2
100	160	76	3	<b>BFX-308-G212</b>	63	27,5	127	137	61,9	106,4	50	30	2-1/2	17	M16x50	5/8-11 UNC x 2
35	35	89	3-1/2	<b>BFX-309-G</b>	89	27,5	138	155	69,8	120,7	50	30	3-1/2	17	M16x50	5/8-11 UNC x 2
35	35	102	4	<b>BFX-310-G</b>	99	27,5	147	163	77,8	130,2	50	30	4	17	M16x50	5/8-11 UNC x 2
35	35	127	5	<b>BFX-311-G</b>	120	28	180	184	92	152,4	50	30	5	17	M16x55	5/8-11 UNC x 2-1/4

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (BSPP)	ØK <sup>3</sup>	Metr.	UNC
350	400	13	1/2	<b>BFX-601-G</b>	13	16,5	47	57	18,2	40,5	36	15	1/2	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	13	1/2	<b>BFX-601-G038</b>	13	16,5	47	57	18,2	40,5	36	20	3/8	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BFX-602-G</b>	19	19,5	54	72	23,8	50,8	36	18	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	19	3/4	<b>BFX-602-G012</b>	14	19,5	54	72	23,8	50,8	36	15	1/2	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BFX-603-G</b>	25	24,5	68	82	27,8	57,2	44	20	1	13	M12x45	7/16-14 UNC x 1-3/4
350	400	25	1	<b>BFX-603-G034</b>	19	24,5	68	82	27,8	57,2	44	18	3/4	13	M12x45	7/16-14 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-G</b>	31	27,5	79	95	31,6	66,6	44	22	1-1/4	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-G-M14</b>	31	27,5	79	95	31,6	66,6	44	22	1-1/4	15	M14x45	
350	400	32	1-1/4	<b>BFX-604-G100</b>	25	27,5	79	95	31,6	66,6	44	20	1	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-G100-M14</b>	25	27,5	79	95	31,6	66,6	44	20	1	15	M14x45	
350	400	38	1-1/2	<b>BFX-605-G</b>	38	31	88	108	36,5	79,3	51	24	1-1/2	17	M16x55	5/8-11 UNC x 2-1/4
350	400	38	1-1/2	<b>BFX-605-G114</b>	31	31	88	108	36,5	79,3	51	22	1-1/4	17	M16x55	5/8-11 UNC x 2-1/4
350	400	51	2	<b>BFX-606-G</b>	50	37	118	137	44,5	96,8	65	33	2	21	M20x70	3/4-10 UNC x 2-3/4

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

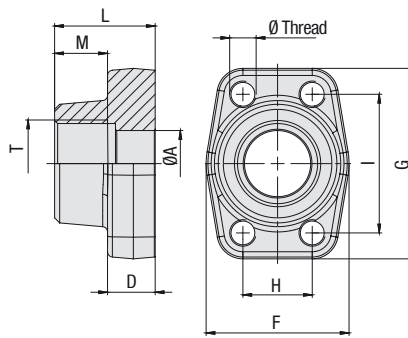
<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Screw-in BSPP Threaded Counterflange BAS-G

### Order Codes

- \* SAE Single-Part Screw-in BSPP Threaded Counterflange
- \* For UNC bolts
- \* Deviant Screw-in BSPP thread
- \* For deviant Metric bolts (M14), deviant Screw-in BSPP thread

**BAS-...-G**  
**BAS-...-GU**  
**BAS-...-G\*\*\***  
**BAS-...-GM14-100**



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)									Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (BSPP)	Metr. <sup>3</sup>	UNC
350	350	13	1/2	BAS-301-G	13	16	47	57	17,5	38,1	36	15	1/2	M8	5/16-18 UNC
350	350	13	1/2	BAS-301-G038	13	16	47	57	17,5	38,1	36	20	3/8	M8	5/16-18 UNC
350	350	19	3/4	BAS-302-G	19	18	50	67	22,3	47,6	36	18	3/4	M10	3/8-16 UNC
350	350	19	3/4	BAS-302-G012	13	18	50	67	22,3	47,6	36	15	1/2	M10	3/8-16 UNC
250	315	25	1	BAS-303-G	25	18	54	72	26,2	52,4	38	20	1	M10	3/8-16 UNC
250	315	25	1	BAS-303-G034	19	18	54	72	26,2	52,4	38	18	3/4	M10	3/8-16 UNC
200	250	32	1-1/4	BAS-304-G	31	21	68	82	30,2	58,7	41	22	1-1/4	M10 (M12)	7/16-14 UNC
200	250	32	1-1/4	BAS-304-G100	25	21	68	82	30,2	58,7	41	20	1	M10 (M12)	7/16-14 UNC
200	200	38	1-1/2	BAS-305-G	38	25	79	96	35,7	69,9	44	24	1-1/2	M12 (M14)	1/2-13 UNC
200	200	38	1-1/2	BAS-305-G114	31	25	79	96	35,7	69,9	44	22	1-1/4	M12 (M14)	1/2-13 UNC
160	200	51	2	BAS-306-G	50	25,5	88	102	42,9	77,8	45	26	2	M12 (M14)	1/2-13 UNC
160	200	51	2	BAS-306-G112	38	25,5	88	102	42,9	77,8	45	24	1-1/2	M12 (M14)	1/2-13 UNC
100	160	64	2-1/2	BAS-307-G	63	26	101	115	50,8	88,9	50	30	2-1/2	M12 (M14)	1/2-13 UNC
100	160	64	2-1/2	BAS-307-G200	50	26	101	115	50,8	88,9	50	26	2	M12 (M14)	1/2-13 UNC
100	160	76	3	BAS-308-G	73	27,5	127	137	61,9	106,4	50	30	3	M16	5/8-11 UNC
100	160	76	3	BAS-308-G212	63	27,5	127	137	61,9	106,4	50	30	2-1/2	M16	5/8-11 UNC
35	35	89	3-1/2	BAS-309-G	89	27,5	138	155	69,8	120,7	50	30	3-1/2	M16	5/8-11 UNC
35	35	102	4	BAS-310-G	99	27,5	147	163	77,8	130,2	50	30	4	M16	5/8-11 UNC
35	35	127	5	BAS-311-G	120	28	180	184	92,0	152,4	50	30	5	M16	5/8-11 UNC

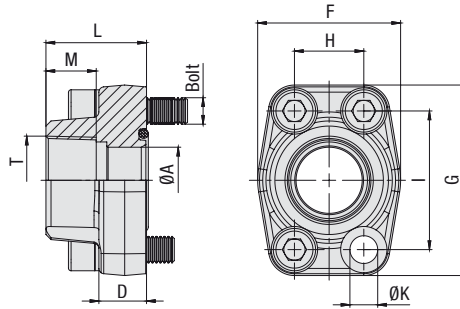
### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)									Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (BSPP)	Metr.	UNC
350	400	13	1/2	BAS-601-G	13	16,5	47	57	18,2	40,5	36	15	1/2	M8	5/16-18 UNC
350	400	13	1/2	BAS-601-G038	13	16,5	47	57	18,2	40,5	36	20	3/8	M8	5/16-18 UNC
350	400	19	3/4	BAS-602-G	19	19,5	54	72	23,8	50,8	36	18	3/4	M10	3/8-16 UNC
350	400	19	3/4	BAS-602-G012	14	19,5	54	72	23,8	50,8	36	15	1/2	M10	3/8-16 UNC
350	400	25	1	BAS-603-G	25	24,5	68	82	27,8	57,2	44	20	1	M12	7/16-14 UNC
350	400	25	1	BAS-603-G034	19	24,5	68	82	27,8	57,2	44	18	3/4	M12	7/16-14 UNC
350	400	32	1-1/4	BAS-604-G	31	27,5	79	95	31,6	66,6	44	22	1-1/4	M12	1/2-13 UNC
350	400	32	1-1/4	BAS-604-GM14	31	27,5	79	95	31,6	66,6	44	22	1-1/4	M14	
350	400	32	1-1/4	BAS-604-G100	25	27,5	79	95	31,6	66,6	44	20	1	M12	1/2-13 UNC
350	400	32	1-1/4	BAS-604-GM14-100	25	27,5	79	95	31,6	66,6	44	20	1	M14	
350	400	38	1-1/2	BAS-605-G	38	31	88	108	36,5	79,3	51	24	1-1/2	M16	5/8-11 UNC
350	400	38	1-1/2	BAS-605-G114	31	31	88	108	36,5	79,3	51	22	1-1/4	M16	5/8-11 UNC
350	400	51	2	BAS-606-G	50	37	118	137	44,5	96,8	58	33	2	M20	3/4-10 UNC

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Screw-in NPT Threaded Flange BFX-N



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 " -W5" on request

### Order Codes

- \* SAE Single-Part Screw-in NPT Threaded Flange (without O-ring) **BFX-...-N**
- \* Deviant Screw-in NPT thread, including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-N\*\*\*#K**
- \* Deviant Screw-in NPT thread, including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-N\*\*\*-MH#K**
- \* Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX-...-N-V-U#K**

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (NPT)	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BFX-301-N</b>	13	16	47	57	17,5	38,1	36	15	1/2	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	13	1/2	<b>BFX-301-N038</b>	13	16	47	57	17,5	38,1	36	20	3/8	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BFX-302-N</b>	19	18	50	67	22,3	47,6	36	18	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
350	350	19	3/4	<b>BFX-302-N012</b>	13	18	50	67	22,3	47,6	36	15	1/2	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-N</b>	25	18	54	72	26,2	52,4	38	20	1	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-N034</b>	19	18	54	72	26,2	52,4	38	18	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-N</b>	31	21	68	82	30,2	58,7	41	22	1-1/4	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-N100</b>	25	21	68	82	30,2	58,7	41	20	1	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	<b>BFX-305-N</b>	38	25	79	96	35,7	69,9	44	24	1-1/2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
200	200	38	1-1/2	<b>BFX-305-N114</b>	31	25	79	96	35,7	69,9	44	22	1-1/4	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX-306-N</b>	50	25,5	88	102	42,9	77,8	45	26	2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX-306-N112</b>	38	25,5	88	102	42,9	77,8	45	24	1-1/2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	64	2-1/2	<b>BFX-307-N</b>	63	26	101	115	50,8	88,9	50	30	2-1/2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	64	2-1/2	<b>BFX-307-N200</b>	50	26	101	115	50,8	88,9	50	26	2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	76	3	<b>BFX-308-N</b>	73	27,5	127	137	61,9	106,4	50	30	3	17	M16x50	5/8-11 UNC x 2
100	160	76	3	<b>BFX-308-N212</b>	63	27,5	127	137	61,9	106,4	50	30	2-1/2	17	M16x50	5/8-11 UNC x 2
35	35	89	3-1/2	<b>BFX-309-N</b>	89	27,5	138	155	69,8	120,7	50	30	3-1/2	17	M16x50	5/8-11 UNC x 2
35	35	102	4	<b>BFX-310-N</b>	99	27,5	147	163	77,8	130,2	50	30	4	17	M16x50	5/8-11 UNC x 2
35	35	127	5	<b>BFX-311-N</b>	120	28	180	184	92	152,4	50	30	5	17	M16x55	5/8-11 UNC x 2-1/4

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (NPT)	ØK <sup>3</sup>	Metr.	UNC
350	400	13	1/2	<b>BFX-601-N</b>	13	16,5	47	57	18,2	40,5	36	15	1/2	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	13	1/2	<b>BFX-601-N038</b>	13	16,5	47	57	18,2	40,5	36	20	3/8	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BFX-602-N</b>	19	19,5	54	72	23,8	50,8	36	18	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	19	3/4	<b>BFX-602-N012</b>	14	19,5	54	72	23,8	50,8	36	15	1/2	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BFX-603-N</b>	25	24,5	68	82	27,8	57,2	44	20	1	13	M12x45	7/16-14 UNC x 1-3/4
350	400	25	1	<b>BFX-603-N034</b>	19	24,5	68	82	27,8	57,2	44	18	3/4	13	M12x45	7/16-14 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-N</b>	31	27,5	79	95	31,6	66,6	44	22	1-1/4	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-N-M14</b>	31	27,5	79	95	31,6	66,6	44	22	1-1/4	15	M14x45	
350	400	32	1-1/4	<b>BFX-604-N100</b>	25	27,5	79	95	31,6	66,6	44	20	1	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-N100-M14</b>	25	27,5	79	95	31,6	66,6	44	20	1	15	M14x45	
350	400	38	1-1/2	<b>BFX-605-N</b>	38	31	88	108	36,5	79,3	51	24	1-1/2	17	M16x55	5/8-11 UNC x 2-1/4
350	400	38	1-1/2	<b>BFX-605-N114</b>	31	31	88	108	36,5	79,3	51	22	1-1/4	17	M16x55	5/8-11 UNC x 2-1/4
350	400	51	2	<b>BFX-606-N</b>	50	37	118	137	44,5	96,8	65	33	2	21	M20x70	3/4-10 UNC x 2-3/4

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

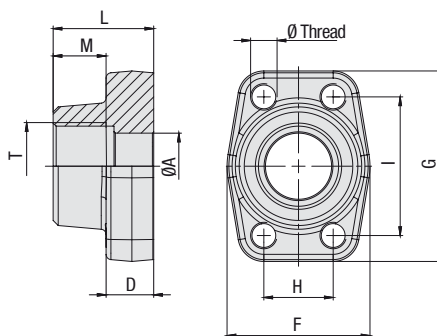
<sup>3</sup> Alternative options shown in brackets are available on request.



**SAE Single-Part Screw-in NPT Threaded Counterflange  
BAS-N**
**Order Codes**

- \* SAE Single-Part Screw-in NPT Threaded Counterflange
- \* For UNC bolts
- \* Deviant Screw-in NPT thread
- \* For deviant Metric bolts (M14), deviant Screw-in NPT thread

**BAS-...-N**  
**BAS-...-NU**  
**BAS-...-N\*\*\***  
**BAS-...-NM14-100**



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

**3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)									Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (NPT)	Metr. <sup>3</sup>	UNC
350	350	13	1/2	BAS-301-N	13	16	47	57	17,5	38,1	36	15	1/2	M8	5/16-18 UNC
350	350	13	1/2	BAS-301-N038	13	16	47	57	17,5	38,1	36	20	3/8	M8	5/16-18 UNC
350	350	19	3/4	BAS-302-N	19	18	50	67	22,3	47,6	36	18	3/4	M10	3/8-16 UNC
350	350	19	3/4	BAS-302-N012	13	18	50	67	22,3	47,6	36	15	1/2	M10	3/8-16 UNC
250	315	25	1	BAS-303-N	25	18	54	72	26,2	52,4	38	20	1	M10	3/8-16 UNC
250	315	25	1	BAS-303-N034	19	18	54	72	26,2	52,4	38	18	3/4	M10	3/8-16 UNC
200	250	32	1-1/4	BAS-304-N	31	21	68	82	30,2	58,7	41	22	1-1/4	M10 (M12)	7/16-14 UNC
200	250	32	1-1/4	BAS-304-N100	25	21	68	82	30,2	58,7	41	20	1	M10 (M12)	7/16-14 UNC
200	200	38	1-1/2	BAS-305-N	38	25	79	96	35,7	69,9	44	24	1-1/2	M12 (M14)	1/2-13 UNC
200	200	38	1-1/2	BAS-305-N114	31	25	79	96	35,7	69,9	44	22	1-1/4	M12 (M14)	1/2-13 UNC
160	200	51	2	BAS-306-N	50	25,5	88	102	42,9	77,8	45	26	2	M12 (M14)	1/2-13 UNC
160	200	51	2	BAS-306-N112	38	25,5	88	102	42,9	77,8	45	24	1-1/2	M12 (M14)	1/2-13 UNC
100	160	64	2-1/2	BAS-307-N	63	26	101	115	50,8	88,9	50	30	2-1/2	M12 (M14)	1/2-13 UNC
100	160	64	2-1/2	BAS-307-N200	50	26	101	115	50,8	88,9	50	26	2	M12 (M14)	1/2-13 UNC
100	160	76	3	BAS-308-N	73	27,5	127	137	61,9	106,4	50	30	3	M16	5/8-11 UNC
100	160	76	3	BAS-308-N212	63	27,5	127	137	61,9	106,4	50	30	2-1/2	M16	5/8-11 UNC
35	35	89	3-1/2	BAS-309-N	89	27,5	138	155	69,8	120,7	50	30	3-1/2	M16	5/8-11 UNC
35	35	102	4	BAS-310-N	99	27,5	147	163	77,8	130,2	50	30	4	M16	5/8-11 UNC
35	35	127	5	BAS-311-N	120	28	180	184	92	152,4	50	30	5	M16	5/8-11 UNC

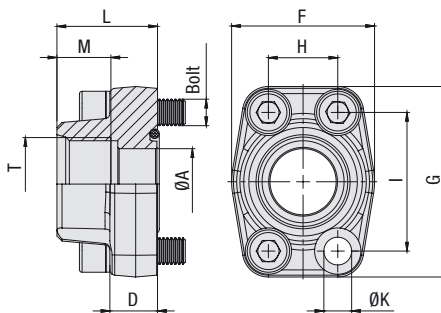
**6000 PSI High Pressure Series (based on ISO 6162-2:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)									Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (NPT)	Metr.	UNC
350	400	13	1/2	BAS-601-N	13	16,5	47	57	18,2	40,5	36	15	1/2	M8	5/16-18 UNC
350	400	13	1/2	BAS-601-N038	13	16,5	47	57	18,2	40,5	36	20	3/8	M8	5/16-18 UNC
350	400	19	3/4	BAS-602-N	19	19,5	54	72	23,8	50,8	36	18	3/4	M10	3/8-16 UNC
350	400	19	3/4	BAS-602-N012	14	19,5	54	72	23,8	50,8	36	15	1/2	M10	3/8-16 UNC
350	400	25	1	BAS-603-N	25	24,5	68	82	27,8	57,2	44	20	1	M12	7/16-14 UNC
350	400	25	1	BAS-603-N034	19	24,5	68	82	27,8	57,2	44	18	3/4	M12	7/16-14 UNC
350	400	32	1-1/4	BAS-604-N	31	27,5	79	95	31,6	66,6	44	22	1-1/4	M12	1/2-13 UNC
350	400	32	1-1/4	BAS-604-NM14	31	27,5	79	95	31,6	66,6	44	22	1-1/4	M14	
350	400	32	1-1/4	BAS-604-N100	25	27,5	79	95	31,6	66,6	44	20	1	M12	1/2-13 UNC
350	400	32	1-1/4	BAS-604-NM14-100	25	27,5	79	95	31,6	66,6	44	20	1	M14	
350	400	38	1-1/2	BAS-605-N	38	31	88	108	36,5	79,3	51	24	1-1/2	M16	5/8-11 UNC
350	400	38	1-1/2	BAS-605-N114	31	31	88	108	36,5	79,3	51	22	1-1/4	M16	5/8-11 UNC
350	400	51	2	BAS-606-N	50	37	118	137	44,5	96,8	58	33	2	M20	3/4-10 UNC

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Screw-in UN Threaded Flange BFX-U



### Order Codes

- ★ SAE Single-Part Screw-in UN Threaded Flange (without O-ring) **BFX-...-U\*\***
- ★ Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-U\*\*#K**
- ★ Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-U\*\*-MH#K**
- ★ Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX-...-U\*\*-V-U#K**

**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (UN/UNF)	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BFX-301-U3/4</b>	13	16	47	57	17,5	38,1	36	14,3	3/4-16	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BFX-302-U7/8</b>	19	18	50	67	22,3	47,6	36	16,7	7/8-14	10,5	M10x35	3/8-16 UNC x 1-1/2
350	350	19	3/4	<b>BFX-302-U1-1/16</b>	19	18	50	67	22,3	47,6	36	16,7	1-1/16-12	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-U1-1/16</b>	25	18	54	72	26,2	52,4	38	19	1-1/16-12	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-U1-5/16</b>	25	18	54	72	26,2	52,4	38	19	1-5/16-12	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-U1-5/16</b>	31	21	68	82	30,2	58,7	41	19	1-5/16-12	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-U1-5/8</b>	31	21	68	82	30,2	58,7	41	19	1-5/8-12	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	<b>BFX-305-U1-5/8</b>	38	25	79	96	35,7	69,9	44	19	1-5/8-12	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
200	200	38	1-1/2	<b>BFX-305-U1-7/8</b>	38	25	79	96	35,7	69,9	44	19	1-7/8-12	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (UN/UNF)	ØK	Metr.	UNC
350	400	13	1/2	<b>BFX-601-U3/4</b>	13	16,5	47	57	18,2	40,5	36	14,3	3/4-16	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BFX-602-U7/8</b>	19	19,5	54	72	23,8	50,8	36	16,7	7/8-14	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	19	3/4	<b>BFX-602-U1-1/16</b>	19	19,5	54	72	23,8	50,8	36	16,7	1-1/16-12	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BFX-603-U1-1/16</b>	25	24,5	68	82	27,8	57,1	44	19	1-1/16-12	13	M12x45	7/16-14 UNC x 1-3/4
350	400	25	1	<b>BFX-603-U1-5/16</b>	25	24,5	68	82	27,8	57,1	44	19	1-5/16-12	13	M12x45	7/16-14 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-U1-5/16</b>	31	27,5	79	95	31,6	66,7	44	19	1-5/16-12	13,5		1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-U1-5/16-M14</b>	31	27,5	79	95	31,6	66,7	44	19	1-5/16-12	15	M14x45	
350	400	32	1-1/4	<b>BFX-604-U1-5/8</b>	31	27,5	79	95	31,6	66,7	44	19	1-5/8-12	13,5		1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-U1-5/8-M14</b>	31	27,5	79	95	31,6	66,7	44	19	1-5/8-12	15	M14x45	
350	400	38	1-1/2	<b>BFX-605-U1-5/8</b>	38	31	88	108	36,5	79,4	51	19	1-5/8-12	17	M16x55	5/8-11 UNC x 2-1/4
350	400	38	1-1/2	<b>BFX-605-U1-7/8</b>	38	31	88	108	36,5	79,4	51	19	1-7/8-12	17	M16x55	5/8-11 UNC x 2-1/4

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

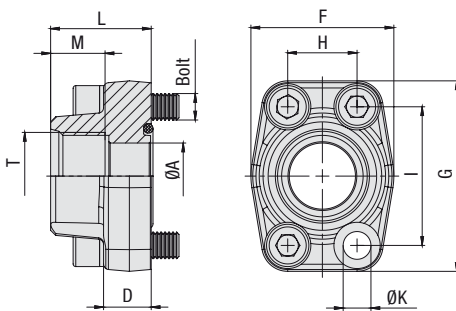
<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

<sup>3</sup> Alternative options shown in brackets are available on request.

### SAE Single-Part Screw-in Metric Threaded Flange BFX-M

#### Order Codes

- \* SAE Single-Part Screw-in Metric Threaded Flange (without O-ring) **BFX-...-M\*\***
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-M\* \*#K**
- \* Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-M\*\*-MH#K**



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

#### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (Metric)	ØK <sup>3</sup>	Metr. <sup>3</sup>
350	350	13	1/2	<b>BFX-301-M18</b>	13	16	47	57	17,5	38,1	36	15	18x1,5	8,7	M8x30
350	350	13	1/2	<b>BFX-301-M20</b>	13	16	47	57	17,5	38,1	36	15	20x1,5	8,7	M8x30
350	350	19	3/4	<b>BFX-302-M22</b>	19	18	50	67	22,3	47,6	36	16	22x1,5	10,5	M10x35
350	350	19	3/4	<b>BFX-302-M27</b>	19	18	50	67	22,3	47,6	36	19	27x2	10,5	M10x35
250	315	25	1	<b>BFX-303-M27</b>	25	18	54	72	26,2	52,4	38	19	27x2	10,5	M10x35
250	315	25	1	<b>BFX-303-M33</b>	25	18	54	72	26,2	52,4	38	19	33x2	10,5	M10x35
200	250	32	1-1/4	<b>BFX-304-M33</b>	31	21	68	82	30,2	58,7	41	19	33x2	10,5 (13,5)	M10x40 (M12x40)
200	250	32	1-1/4	<b>BFX-304-M42</b>	31	21	68	82	30,2	58,7	41	20	42x2	10,5 (13,5)	M10x40 (M12x40)
200	200	38	1-1/2	<b>BFX-305-M42</b>	38	25	79	96	35,7	69,9	44	20	42x2	13,5 (14,5)	M12x45 (M14x45)
200	200	38	1-1/2	<b>BFX-305-M48</b>	38	25	79	96	35,7	69,9	44	22	48x2	13,5 (14,5)	M12x45 (M14x45)

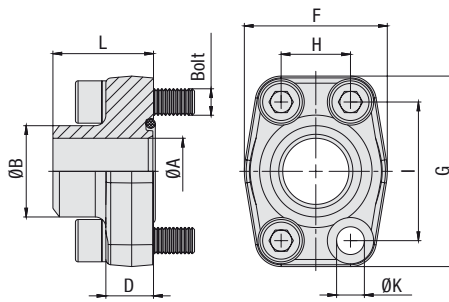
#### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	M	T (Metric)	ØK	Metr.
350	400	13	1/2	<b>BFX-601-M18</b>	13	16,5	47	57	18,2	40,5	36	15	18x1,5	8,7	M8x30
350	400	13	1/2	<b>BFX-601-M20</b>	13	16,5	47	57	18,2	40,5	36	15	20x1,5	8,7	M8x30
350	400	19	3/4	<b>BFX-602-M22</b>	19	19,5	54	72	23,8	50,8	36	16	22x1,5	10,5	M10x35
350	400	19	3/4	<b>BFX-602-M27</b>	19	19,5	54	72	23,8	50,8	36	19	27x2	10,5	M10x35
350	400	25	1	<b>BFX-603-M27</b>	25	24,5	68	82	27,8	57,2	44	19	27x2	13	M12x45
350	400	25	1	<b>BFX-603-M33</b>	25	24,5	68	82	27,8	57,2	44	19	33x2	13	M12x45
350	400	32	1-1/4	<b>BFX-604-M33</b>	31	27,5	79	95	31,6	66,6	44	19	33x2	13,5	M12x45
350	400	32	1-1/4	<b>BFX-604-M33-M14</b>	31	27,5	79	95	31,6	66,6	44	19	33x2	15	M14x45
350	400	32	1-1/4	<b>BFX-604-M42</b>	31	27,5	79	95	31,6	66,6	44	20	42x2	13,5	M12x45
350	400	32	1-1/4	<b>BFX-604-M42-M14</b>	31	27,5	79	95	31,6	66,6	44	20	42x2	15	M14x45
350	400	38	1-1/2	<b>BFX-605-M42</b>	38	31	88	108	36,5	79,3	51	20	42x2	17	M16x55
350	400	38	1-1/2	<b>BFX-605-M48</b>	38	31	88	108	36,5	79,3	51	22	48x2	17	M16x55

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Butt Weld Flange for High Pressure Tubes (Schedule 80/160/XXS) BFX-ST



### Order Codes

- ★ SAE Single-Part Butt Weld Flange **BFX-...-ST-\*\*-\*\*** (without O-ring)
- ★ Including Metric bolts 8.8, **BFX-...-ST-\*\*-\*\*#K** spring rings, O-ring made of NBR (Buna-N®) (packed in kits)
- ★ Including Metric bolts 10.9, **BFX-...-ST-\*\*-\*\*-MH#K** spring rings, O-ring made of NBR (Buna-N®) (packed in kits)
- ★ Including UNC bolts (Gr8), **BFX-...-ST-\*\*-\*\*-V-U#K** spring rings, O-ring made of FPM (Viton®) (packed in kits)

**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC	
350	350	13	1/2	<b>BFX-301-ST-21,6/13</b>	13	21,6	16	47	57	17,5	38,1	36	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	350	13	1/2	<b>BFX-301-ST-17,5/13</b>	13	17,5	16	47	57	17,5	38,1	36	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	350	19	3/4	<b>BFX-302-ST-27,2/19</b>	19	27,2	18	50	67	22,3	47,6	36	10,5	M10x35	3/8-16 UNC x 1-1/2	
250	315	25	1	<b>BFX-303-ST-34/25</b>	25	34	18	54	72	26,2	52,4	38	10,5	M10x35	3/8-16 UNC x 1-1/2	
200	250	32	1-1/4	<b>BFX-304-ST-42,8/32</b>	32	42,8	21	68	82	30,2	58,7	41	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2	
200	200	38	1-1/2	<b>BFX-305-ST-48,6/38</b>	38	48,6	25	79	96	35,7	69,9	44	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4	
160	200	51	2	<b>BFX-306-ST-61/51</b>	51	61	25,5	88	102	42,9	77,8	45	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4	
100	160	64	2-1/2	<b>BFX-307-ST-77/63</b>	63	77	26	101	115	50,8	88,9	50	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4	
100	160	76	3	<b>BFX-308-ST-92/73</b>	73	92	27,5	127	137	61,9	106,4	50	17	M16x50	5/8-11 UNC x 2	
35	35	89	3-1/2	<b>BFX-309-ST-103/89</b>	89	103	27,5	138	155	69,9	120,7	50	17	M16x50	5/8-11 UNC x 2	
35	35	102	4	<b>BFX-310-ST-115,5/99</b>	99	115,5	27,5	147	163	77,8	130,2	50	17	M16x50	5/8-11 UNC x 2	
35	35	127	5	<b>BFX-311-ST-140,2/120</b>	120	140,2	28	180	184	92	152,4	50	17	M16x55	5/8-11 UNC x 2-1/4	

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	ØK	Metr.	UNC	
350	400	13	1/2	<b>BFX-601-ST-21,6/13</b>	13	21,6	16,5	47	57	18,2	40,5	36	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	400	13	1/2	<b>BFX-601-ST-17,5/13</b>	13	17,5	16,5	47	57	18,2	40,5	36	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	400	19	3/4	<b>BFX-602-ST-28/19</b>	19	28	19,5	54	72	23,8	50,8	36	10,5	M10x35	3/8-16 UNC x 1-1/2	
350	400	25	1	<b>BFX-603-ST-34/25</b>	25	34	24,5	68	82	27,8	57,2	41	13	M12x45	7/16-14 UNC x 1-3/4	
350	400	32	1-1/4	<b>BFX-604-ST-42,8/32</b>	32	42,8	27,5	79	95	31,8	66,6	44	13,5	M12x45	1/2-13 UNC x 1-3/4	
350	400	32	1-1/4	<b>BFX-604-ST-42,8/32-M14</b>	32	42,8	27,5	79	95	31,8	66,6	44	15	M14x45		
350	400	32	1-1/4	<b>BFX-604-ST-42,8/29 (Sch 160)</b>	29	42,8	27,5	79	95	31,8	66,6	44	13,5	M12x45	1/2-13 UNC x 1-3/4	
350	400	32	1-1/4	<b>BFX-604-ST-42,8/29-M14</b>	29	42,8	27,5	79	95	31,8	66,6	44	15	M14x45		
350	400	38	1-1/2	<b>BFX-605-ST-48,6/38</b>	38	48,6	31	88	108	36,5	79,3	51	17	M16x55	5/8-11 UNC x 2-1/4	
350	400	38	1-1/2	<b>BFX-605-ST-48,6/32 (Sch 160)</b>	32	48,6	31	88	108	36,5	79,3	51	17	M16x55	5/8-11 UNC x 2-1/4	
350	400	51	2	<b>BFX-606-ST-61/51</b>	51	61	37	118	137	44,5	96,8	70	21	M20x70	3/4-10 UNC x 2-3/4	
350	400	51	2	<b>BFX-606-ST-61/43 (Sch 160)</b>	43	61	37	118	137	44,5	96,8	70	21	M20x70	3/4-10 UNC x 2-3/4	
350	400	64	2-1/2	<b>BFX-607-ST-76,1/51</b>	51	76,1	45	150	180	58,7	123,8	80	26	M24x80		
350	400	64	2-1/2	<b>BFX-607-ST-90/60 (Sch XXS)</b>	60	90	45	150	180	58,7	123,8	80	26	M24x80		

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

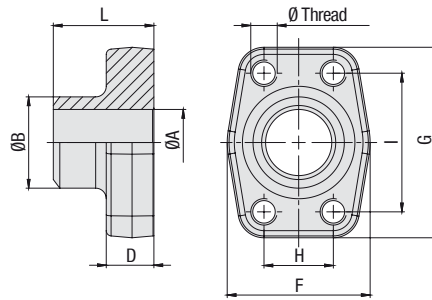
<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Butt Weld Counterflange for High Pressure Tubes (Schedule 80/160/XXS)

### BAS-ST

#### Order Codes

- \* SAE Single-Part Butt Weld Counterflange **BAS-...-ST-\*/\*\***
- \* For UNC bolts **BAS-...-STU-\*/\*\***
- \* For deviant Metric bolts (M14) **BAS-...-STM14-\*/\*\***



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

#### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)								Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	Metr. <sup>3</sup>	UNC
350	350	13	1/2	BAS-301-ST-21,6/13	13	21,6	16	47	57	17,5	38,1	36	M8	5/16-18 UNC
350	350	13	1/2	BAS-301-ST-17,5/13	13	17,5	16	47	57	17,5	38,1	36	M8	5/16-18 UNC
350	350	19	3/4	BAS-302-ST-27,2/19	19	27,2	18	50	67	22,3	47,6	36	M10	3/8-16 UNC
250	315	25	1	BAS-303-ST-34/25	25	34	18	54	72	26,2	52,4	38	M10 (M12)	7/16-14 UNC
200	250	32	1-1/4	BAS-304-ST-42,8/32	32	42,8	21	68	82	30,2	58,7	41	M10 (M12)	7/16-14 UNC
200	200	38	1-1/2	BAS-305-ST-48,6/38	38	48,6	25	79	96	35,7	69,9	44	M12 (M14)	1/2-13 UNC
160	200	51	2	BAS-306-ST-61/51	51	61	25,5	88	102	42,9	77,8	45	M12 (M14)	1/2-13 UNC
100	160	64	2-1/2	BAS-307-ST-77/63	63	77	26	101	115	50,8	88,9	50	M12 (M14)	1/2-13 UNC
100	160	76	3	BAS-308-ST-92/73	73	92	27,5	127	137	61,9	106,4	50	M16	5/8-11 UNC
35	35	89	3-1/2	BAS-309-ST-103/89	89	103	27,5	138	155	69,9	120,7	50	M16	5/8-11 UNC
35	35	102	4	BAS-310-ST-115,5/99	99	115,5	27,5	147	163	77,8	130,2	50	M16	5/8-11 UNC
35	35	127	5	BAS-311-ST-140,2/120	120	140,2	28	180	184	92	152,4	50	M16	5/8-11 UNC

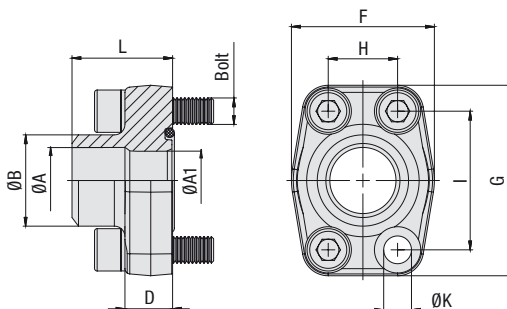
#### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)								Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	Metr.	UNC
350	400	13	1/2	BAS-601-ST-21,6/13	13	21,6	16,5	47	57	18,2	40,5	36	M8	5/16-18 UNC
350	400	13	1/2	BAS-601-ST-17,5/13	13	17,5	16,5	47	57	18,2	40,5	36	M8	5/16-18 UNC
350	400	19	3/4	BAS-602-ST-28/19	19	28	19,5	54	72	23,8	50,8	36	M10	3/8-16 UNC
350	400	25	1	BAS-603-ST-34/25	25	34	24,5	68	82	27,8	57,2	41	M12	1/2-13 UNC
350	400	32	1-1/4	BAS-604-ST-42,8/32	32	42,8	27,5	79	95	31,8	66,6	44	M12	1/2-13 UNC
350	400	32	1-1/4	BAS-604-STM14-42,8/32	32	42,8	27,5	79	95	31,8	66,6	44	M14	
350	400	32	1-1/4	BAS-604-ST-42,8/29 (Sch 160)	29	42,8	27,5	79	95	31,8	66,6	44	M12	1/2-13 UNC
350	400	32	1-1/4	BAS-604-STM14-42,8/29	29	42,8	27,5	79	95	31,8	66,6	44	M14	
350	400	38	1-1/2	BAS-605-ST-48,6/38	38	48,3	31	88	108	36,5	79,3	51	M16	5/8-11 UNC
350	400	38	1-1/2	BAS-605-ST-48,6/32 (Sch 160)	32	48,3	31	88	108	36,5	79,3	51	M16	5/8-11 UNC
350	400	51	2	BAS-606-ST-61/51	51	61	37	118	137	44,5	96,8	70	M20	3/4-10 UNC
350	400	51	2	BAS-606-ST-61/43 (Sch 160)	43	61	37	118	137	44,5	96,8	70	M20	3/4-10 UNC
350	400	64	2-1/2	BAS-607-ST-76,1/51	51	76,1	45	150	180	58,7	123,8	80	M24	
350	400	64	2-1/2	BAS-607-ST-90/60,5 (Sch XXS)	60,5	90	45	150	180	58,7	123,8	80	M24	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Butt Weld Flange for Low Pressure Tubes (Schedule 40) BFX-STRE



### Order Codes

- \* SAE Single-Part Butt Weld Flange (without O-ring) **BFX-...-STRE-\*\*-\*\***
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-STRE-\*\*-\*\*#K**
- \* Incl. Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-STRE-\*\*-\*\*-MH#K**
- \* Incl. UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX-...-STRE-\*\*-\*\*-V-U#K**

**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØA1	ØB	D	F	G	H	I	L	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BFX-301-STRE-22/16</b>	16	13	22	16	47	57	17,5	38,1	36	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BFX-302-STRE-28/21,5</b>	21,5	19	28	18	50	67	22,3	47,6	36	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-STRE-35/27</b>	27	25	35	18	54	72	26,2	52,4	38	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-STRE-43/36</b>	36	31	43	21	68	82	30,2	58,7	41	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	<b>BFX-305-STRE-49/42</b>	42	38	49	25	79	96	35,7	69,9	44	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX-306-STRE-49/42</b>	42	42	49	25,5	88	102	42,9	77,8	45	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX-306-STRE-61/53</b>	53	49	61	25,5	88	102	42,9	77,8	45	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	64	2-1/2	<b>BFX-307-STRE-61/53</b>	53	53	61	26	101	115	50,8	88,9	50	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	64	2-1/2	<b>BFX-307-STRE-77/70</b>	70	62	77	26	101	115	50,8	88,9	50	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	76	3	<b>BFX-308-STRE-90/82</b>	82	74	90	27,5	127	137	61,9	106,4	50	17	M16x50	5/8-11 UNC x 2
35	35	89	3-1/2	<b>BFX-309-STRE-90/82</b>	82	82	90	27,5	138	155	69,9	120,7	50	17	M16x50	5/8-11 UNC x 2
35	35	89	3-1/2	<b>BFX-309-STRE-77/70</b>	70	70	77	27,5	138	155	69,9	120,7	50	17	M16x50	5/8-11 UNC x 2
35	35	102	4	<b>BFX-310-STRE-90/82</b>	82	82	90	27,5	147	163	77,8	130,2	50	17	M16x50	5/8-11 UNC x 2
35	35	102	4	<b>BFX-310-STRE-115/107</b>	107	102	115	27,5	147	163	77,8	130,2	50	17	M16x50	5/8-11 UNC x 2
35	35	127	5	<b>BFX-311-STRE-140/131</b>	131	120	140,2	28	180	184	92	152,4	50	17	M16x55	5/8-11 UNC x 2-1/4

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

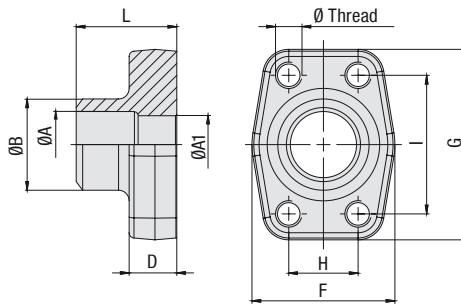
<sup>3</sup> Alternative options shown in brackets are available on request.



## SAE Single-Part Butt Weld Counterflange for Low Pressure Tubes (Schedule 40) BAS-STRE

### Order Codes

- ★ SAE Single-Part Butt Weld Counterflange      **BAS-...-STRE-\*\*-\*\***
- ★ For UNC bolts      **BAS-...-STREU-\*\*-\*\***
- ★ For deviant Metric bolts (M14)      **BAS-...-STREM14-\*\*-\*\***



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

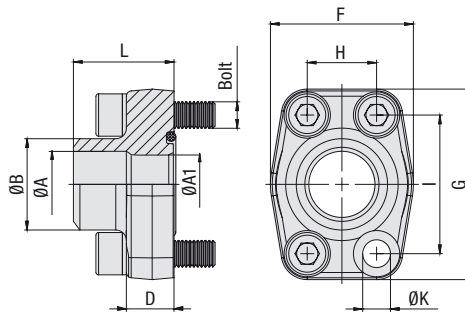
### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)										Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	ØA1	ØB	D	F	G	H	I	L	Metr. <sup>3</sup>	UNC	
350	350	13	1/2	BAS-301-STRE-22/16	16	13	22	16	47	57	17,5	38,1	36	M8	5/16-18 UNC	
350	350	19	3/4	BAS-302-STRE-28/21,5	21,5	19	28	18	50	67	22,3	47,6	36	M10	3/8-16 UNC	
250	315	25	1	BAS-303-STRE-35/27	27	25	35	18	54	72	26,2	52,4	38	M10	3/8-16 UNC	
200	250	32	1-1/4	BAS-304-STRE-43/36	36	31	43	21	68	82	30,2	58,7	41	M10 (M12)	7/16-14 UNC	
200	200	38	1-1/2	BAS-305-STRE-49/42	42	38	49	25	79	96	35,7	69,9	44	M12 (M14)	1/2-13 UNC	
160	200	51	2	BAS-306-STRE-49/42	42	42	49	25,5	88	102	42,9	77,8	45	M12 (M14)	1/2-13 UNC	
160	200	51	2	BAS-306-STRE-61/53	53	49	61	25,5	88	102	42,9	77,8	45	M12 (M14)	1/2-13 UNC	
100	160	64	2-1/2	BAS-307-STRE-61/53	53	53	61	26	101	115	50,8	88,9	50	M12 (M14)	1/2-13 UNC	
100	160	64	2-1/2	BAS-307-STRE-77/70	70	62	77	26	101	115	50,8	88,9	50	M12 (M14)	1/2-13 UNC	
100	160	76	3	BAS-308-STRE-90/82	82	74	90	27,5	127	137	61,9	106,4	50	M16	5/8-11 UNC	
35	35	89	3-1/2	BAS-309-STRE-90/82	82	82	90	27,5	138	155	69,9	120,7	50	M16	5/8-11 UNC	
35	35	89	3-1/2	BAS-309-STRE-77/70	70	70	77	27,5	138	155	69,9	120,7	50	M16	5/8-11 UNC	
35	35	102	4	BAS-310-STRE-90/82	82	82	90	27,5	147	163	77,8	130,2	50	M16	5/8-11 UNC	
35	35	102	4	BAS-310-STRE-115/107	107	102	115	27,5	147	163	77,8	130,2	50	M16	5/8-11 UNC	
35	35	127	5	BAS-311-STRE-140/131	131	120	140,2	28	180	184	92	152,4	50	M16	5/8-11 UNC	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Butt Weld Flange for Metric Tubes BFX-SRE



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### Order Codes

- \* SAE Single-Part Butt Weld Flange (without O-ring) **BFX-...-SRE-\*\*-\*\*/\***
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-SRE-\*\*-\*\*/\*#K**
- \* Incl. Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-SRE-\*\*-\*\*/\*-MH#K**
- \* Incl. UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX-...-SRE-\*\*-\*\*/\*-V-U#K**

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØA1	ØB	D	F	G	H	I	L	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BFX-301-SRE-20/14</b>	14	14	20	16	47	57	17,5	38,1	36	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	13	1/2	<b>BFX-301-SRE-22/16</b>	16	13	22	16	47	57	17,5	38,1	36	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BFX-302-SRE-25/19</b>	19	19	25	18	50	67	22,3	47,6	36	10,5	M10x35	3/8-16 UNC x 1-1/2
350	350	19	3/4	<b>BFX-302-SRE-28/21,5</b>	21,5	19	28	18	50	67	22,3	47,6	36	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-SRE-30/22</b>	22	22	30	18	54	72	26,2	52,4	38	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-SRE-35/27</b>	27	25	35	18	54	72	26,2	52,4	38	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-SRE-38/30</b>	30	30	38	21	68	82	30,2	58,7	41	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-SRE-43/36</b>	36	31	43	21	68	82	30,2	58,7	41	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	<b>BFX-305-SRE-38/30</b>	30	30	38	25	79	96	35,7	69,9	44	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
200	200	38	1-1/2	<b>BFX-305-SRE-42/36</b>	36	36	42	25	79	96	35,7	69,9	44	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
200	200	38	1-1/2	<b>BFX-305-SRE-49/38</b>	38	38	49	25	79	96	35,7	69,9	44	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX-306-SRE-61/49</b>	49	49	61	25,5	88	102	42,9	77,8	45	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	64	2-1/2	<b>BFX-307-SRE-77/62</b>	62	62	77	26	101	115	50,8	88,9	50	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	76	3	<b>BFX-308-SRE-77/62</b>	62	62	77	27,5	127	137	61,9	106,4	50	17	M16x50	5/8-11 UNC x 2

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØA1	ØB	D	F	G	H	I	L	ØK <sup>3</sup>	Metr.	UNC
350	400	13	1/2	<b>BFX-601-SRE-20/14</b>	14	14	20	16,5	47	57	18,2	40,5	36	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BFX-602-SRE-20/14</b>	14	14	20	19,5	54	72	23,8	50,8	36	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	19	3/4	<b>BFX-602-SRE-25/17</b>	17	17	25	19,5	54	72	23,8	50,8	36	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BFX-603-SRE-25/17</b>	17	17	25	24,5	68	82	27,8	57,2	44	13	M12x45	7/16-14 UNC x 1-3/4
350	400	25	1	<b>BFX-603-SRE-30/22</b>	22	22	30	24,5	68	82	27,8	57,2	44	13	M12x45	7/16-14 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-SRE-30/22</b>	22	22	30	27,5	79	95	31,6	66,6	44	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-SRE-30/22-M14</b>	22	22	30	27,5	79	95	31,6	66,6	44	15	M14x45	
350	400	32	1-1/4	<b>BFX-604-SRE-38/26</b>	26	26	38	27,5	79	95	31,6	66,6	44	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-SRE-38/26-M14</b>	26	26	38	27,5	79	95	31,6	66,6	44	15	M14x45	
350	400	38	1-1/2	<b>BFX-605-SRE-38/26</b>	26	26	38	28	88	108	36,5	79,3	56	17	M16x55	5/8-11 UNC x 2-1/4
350	400	38	1-1/2	<b>BFX-605-SRE-49/32</b>	32	32	49	28	88	108	36,5	79,3	56	17	M16x55	5/8-11 UNC x 2-1/4
350	400	38	1-1/2	<b>BFX-605-SRE-61/40</b>	40	40	61	28	88	108	36,5	79,3	56	17	M16x55	5/8-11 UNC x 2-1/4
350	400	51	2	<b>BFX-606-SRE-61/40</b>	40	40	61	37	118	137	44,5	96,8	70	21	M20x70	3/4-10 UNC x 2-3/4
350	400	51	2	<b>BFX-606-SRE-76/50</b>	50	48	76	28	118	137	44,5	96,8	80	21	M20x55	3/4-10 UNC x 2-1/4

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

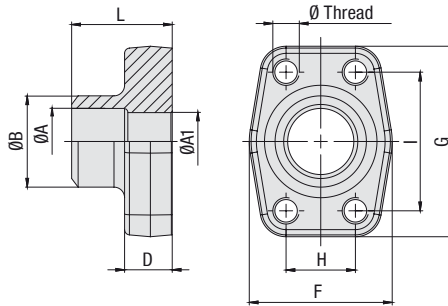
<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Butt Weld Counterflange for Metric Tubes BAS-SRE

### Order Codes

- \* SAE Single-Part Butt Weld Counterflange **BAS-...-SRE-\*\*-\*\*/\*\***
- \* For UNC bolts **BAS-...-SREU-\*\*-\*\*/\*\***
- \* For deviant Metric bolts (M14) **BAS-...-SREM14-\*\*-\*\*/\*\***



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)									Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	ØA1	ØB	D	F	G	H	I	L	Metr. <sup>3</sup>	UNC
350	350	13	1/2	BAS-301-SRE-20/14	14	14	20	16	47	57	17,5	38,1	36	M8	5/16-18 UNC
350	350	13	1/2	BAS-301-SRE-22/16	16	13	22	16	47	57	17,5	38,1	36	M8	5/16-18 UNC
350	350	19	3/4	BAS-302-SRE-25/19	19	19	25	18	50	67	22,3	47,6	36	M10	3/8-16 UNC
350	350	19	3/4	BAS-302-SRE-28/21,5	21,5	19	28	18	50	67	22,3	47,6	36	M10	3/8-16 UNC
250	315	25	1	BAS-303-SRE-30/22	22	22	30	18	54	72	26,2	52,4	38	M10	3/8-16 UNC
250	315	25	1	BAS-303-SRE-35/27	27	25	35	18	54	72	26,2	52,4	38	M10	3/8-16 UNC
200	250	32	1-1/4	BAS-304-SRE-38/30	30	30	38	21	68	82	30,2	58,7	41	M10 (M12)	7/16-14 UNC
200	250	32	1-1/4	BAS-304-SRE-43/36	36	31	43	21	68	82	30,2	58,7	41	M10 (M12)	7/16-14 UNC
200	200	38	1-1/2	BAS-305-SRE-38/30	30	30	38	25	79	96	35,7	69,9	44	M12 (M14)	1/2-13 UNC
200	200	38	1-1/2	BAS-305-SRE-42/36	36	36	42	25	79	96	35,7	69,9	44	M12 (M14)	1/2-13 UNC
200	200	38	1-1/2	BAS-305-SRE-49/38	38	38	49	25	79	96	35,7	69,9	44	M12 (M14)	1/2-13 UNC
160	200	51	2	BAS-306-SRE-61/49	49	49	61	25,5	88	102	42,9	77,8	45	M12 (M14)	1/2-13 UNC
100	160	64	2-1/2	BAS-307-SRE-77/62	62	62	77	26	101	115	50,8	88,9	50	M12 (M14)	1/2-13 UNC
100	160	76	3	BAS-308-SRE-77/62	62	62	77	27,5	127	137	61,9	106,4	50	M16	5/8-11 UNC

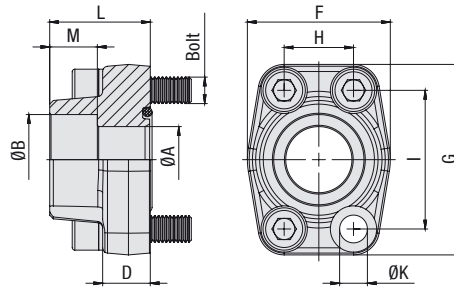
### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)									Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	ØA1	ØB	D	F	G	H	I	L	Metr.	UNC
350	400	13	1/2	BAS-601-SRE-20/14	14	14	20	16,5	47	57	18,2	40,5	36	M8	5/16-18 UNC
350	400	19	3/4	BAS-602-SRE-20/14	14	14	20	19,5	54	72	23,8	50,8	36	M10	3/8-16 UNC
350	400	19	3/4	BAS-602-SRE-25/17	17	17	25	19,5	54	72	23,8	50,8	36	M10	3/8-16 UNC
350	400	25	1	BAS-603-SRE-25/17	17	17	25	24,5	68	82	27,8	57,2	44	M12	7/16-14 UNC
350	400	25	1	BAS-603-SRE-30/22	22	22	30	24,5	68	82	27,8	57,2	44	M12	7/16-14 UNC
350	400	32	1-1/4	BAS-604-SRE-30/22	22	22	30	27,5	79	95	31,6	66,6	44	M12	1/2-13 UNC
350	400	32	1-1/4	BAS-604-SREM14-30/22	22	22	30	27,5	79	95	31,6	66,6	44	M14	
350	400	32	1-1/4	BAS-604-SRE-38/26	26	26	38	27,5	79	95	31,6	66,6	44	M12	1/2-13 UNC
350	400	32	1-1/4	BAS-604-SREM14-38/26	26	26	38	27,5	79	95	31,6	66,6	44	M14	
350	400	38	1-1/2	BAS-605-SRE-38/26	26	26	38	28	88	108	36,5	79,3	56	M16	5/8-11 UNC
350	400	38	1-1/2	BAS-605-SRE-49/32	32	32	49	28	88	108	36,5	79,3	56	M16	5/8-11 UNC
350	400	38	1-1/2	BAS-605-SRE-61/40	40	40	61	28	88	108	36,5	79,3	56	M16	5/8-11 UNC
350	400	51	2	BAS-606-SRE-61/40	40	40	61	37	118	137	44,5	96,8	70	M20	3/4-10 UNC
350	400	51	2	BAS-606-SRE-76/50	50	48	76	28	118	137	44,5	96,8	80	M20	3/4-10 UNC

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Socket Weld Flange BFX-ES



### Order Codes

- ★ SAE Single-Part Socket Weld Flange (without O-ring) **BFX-...-ES-\*\*-\*\*/\*\***
- ★ Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-ES-\*\*-\*\*/\*\*#K**
- ★ Incl. Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-ES-\*\*-\*\*/\*\*-MH#K**
- ★ Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX-...-ES-\*\*-\*\*/\*\*-V-U#K**

**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	M	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC	
350	350	13	1/2	BFX-301-ES-21,6/13	13	21,6	16	47	57	17,5	38,1	36	18	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	350	13	1/2	BFX-301-ES-17,5/13	13	17,5	16	47	57	17,5	38,1	36	18	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	350	13	1/2	BFX-301-ES-20,3/13	13	20,3	16	47	57	17,5	38,1	36	18	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	350	19	3/4	BFX-302-ES-27,2/19	19	27,2	18	50	67	22,3	47,6	36	18	10,5	M10x35	3/8-16 UNC x 1-1/2	
350	350	19	3/4	BFX-302-ES-25,3/19	19	25,3	18	50	67	22,3	47,6	36	18	10,5	M10x35	3/8-16 UNC x 1-1/2	
250	315	25	1	BFX-303-ES-34/25	25	34	18	54	72	26,2	52,4	38	18	10,5	M10x35	3/8-16 UNC x 1-1/2	
250	315	25	1	BFX-303-ES-30,3/25	25	30,3	18	54	72	26,2	52,4	38	18	10,5	M10x35	3/8-16 UNC x 1-1/2	
200	250	32	1-1/4	BFX-304-ES-42,8/32	32	42,8	21	68	82	30,2	58,7	41	20	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2	
200	250	32	1-1/4	BFX-304-ES-38,3/32	32	38,3	21	68	82	30,2	58,7	41	20	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2	
200	200	38	1-1/2	BFX-305-ES-48,6/38	38	48,6	25	79	96	35,7	69,9	44	22	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4	
200	200	38	1-1/2	BFX-305-ES-50,5/38	38	50,5	25	79	96	35,7	69,9	44	22	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4	
160	200	51	2	BFX-306-ES-61/51	51	61	25,5	88	102	42,9	77,8	45	24	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4	
100	160	64	2-1/2	BFX-307-ES-76,6/63	63	76,6	26	101	115	50,8	88,9	50	28	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4	
100	100	76	3	BFX-308-ES-90,5/73	73	90,5	27,5	127	137	61,9	106,4	50	28	17	M16x50	5/8-11 UNC x 2	
35	35	89	3-1/2	BFX-309-ES-103/89	89	103	27,5	138	155	69,9	120,7	50	30	17	M16x50	5/8-11 UNC x 2	
35	35	102	4	BFX-310-ES-115,5/99	99	115,5	27,5	147	163	77,8	130,2	50	30	17	M16x50	5/8-11 UNC x 2	
35	35	127	5	BFX-311-ES-142/120	120	142	28	180	184	92,1	152,4	50	30	17	M16x55	5/8-11 UNC x 2-1/4	

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	M	ØK <sup>3</sup>	Metr.	UNC	
350	400	13	1/2	BFX-601-ES-21,6/13	13	21,6	16,5	47	57	18,2	40,5	36	18	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	400	13	1/2	BFX-601-ES-17,5/13	13	17,5	16,5	47	57	18,2	40,5	36	18	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	400	13	1/2	BFX-601-ES-20,3/13	13	20,3	16,5	47	57	18,2	40,5	36	18	8,7	M8x30	5/16-18 UNC x 1-1/4	
350	400	19	3/4	BFX-602-ES-27,2/19	19	27,2	19,5	54	72	23,8	50,8	36	20	10,5	M10x35	3/8-16 UNC x 1-1/2	
350	400	19	3/4	BFX-602-ES-25,3/19	19	25,3	19,5	54	72	23,8	50,8	36	20	10,5	M10x35	3/8-16 UNC x 1-1/2	
350	400	25	1	BFX-603-ES-34/25	25	34	24,5	68	82	27,8	57,2	44	22	13	M12x45	7/16-14 UNC x 1-3/4	
350	400	25	1	BFX-603-ES-30,3/25	25	30,3	24,5	68	82	27,8	57,2	44	22	13	M12x45	7/16-14 UNC x 1-3/4	
350	400	32	1-1/4	BFX-604-ES-42,8/32	32	42,8	27,5	79	95	31,8	66,6	44	22	13,5	M12x45	1/2-13 UNC x 1-3/4	
350	400	32	1-1/4	BFX-604-ES-42,8/32-M14	32	42,8	27,5	79	95	31,8	66,6	44	22	15	M14x45		
350	400	32	1-1/4	BFX-604-ES-38,3/32	32	38,3	27,5	79	95	31,8	66,6	44	22	13,5	M12x45	1/2-13 UNC x 1-3/4	
350	400	32	1-1/4	BFX-604-ES-38,3/32-M14	32	38,3	27,5	79	95	31,8	66,6	44	22	15	M14x45		
350	400	38	1-1/2	BFX-605-ES-48,6/38	38	48,6	31	88	108	36,5	79,3	51	24	17	M16x55	5/8-11 UNC x 2-1/4	
350	400	38	1-1/2	BFX-605-ES-50,5/38	38	50,5	31	88	108	36,5	79,3	51	24	17	M16x55	5/8-11 UNC x 2-1/4	
350	400	51	2	BFX-606-ES-61/51	51	61	37	118	137	44,5	96,8	70	33	21	M20x70	3/4-10 UNC x 2-3/4	
350	400	64	2-1/2	BFX-607-ES-76,6/63	63	76,6	45	152	180	58,7	123,8	80	32	26	M24x80		
350	400	76	3	BFX-608-ES-90,5/73	73	90,5	55	178	208	71,4	152,4	90	30	33	M30x100		

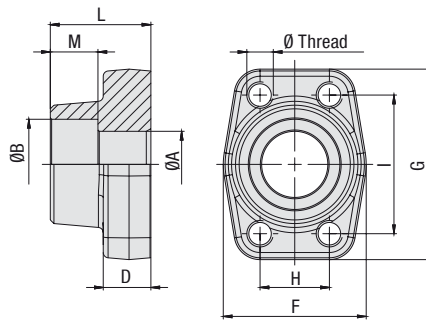
<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

<sup>3</sup> Alternative options shown in brackets are available on request.

**SAE Single-Part Socket Weld Counterflange  
BAS-ES**
**Order Codes**

- \* SAE Single-Part Socket Weld Counterflange **BAS-...-ES-\*\*-\*\*/\*\***
- \* For UNC bolts **BAS-...-ESU-\*\*-\*\*/\*\***
- \* For deviant Metric bolts (M14) **BAS-...-ESM14-\*\*-\*\*/\*\***



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

**3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	M	Metr. <sup>3</sup>	UNC	
350	350	13	1/2	BAS-301-ES-21,6/13	13	21,6	16	47	57	17,5	38,1	36	18	M8	5/16-18 UNC	
350	350	13	1/2	BAS-301-ES-17,5/13	13	17,5	16	47	57	17,5	38,1	36	18	M8	5/16-18 UNC	
350	350	13	1/2	BAS-301-ES-20,3/13	13	20,3	16	47	57	17,5	38,1	36	18	M8	5/16-18 UNC	
350	350	19	3/4	BAS-302-ES-27,2/19	19	27,2	18	50	67	22,3	47,6	36	18	M10	3/8-16 UNC	
350	350	19	3/4	BAS-302-ES-25,3/19	19	25,3	18	50	67	22,3	47,6	36	18	M10	3/8-16 UNC	
250	315	25	1	BAS-303-ES-34/25	25	34	18	54	72	26,2	52,4	38	18	M10	3/8-16 UNC	
250	315	25	1	BAS-303-ES-30,3/25	25	30,3	18	54	72	26,2	52,4	38	18	M10	3/8-16 UNC	
200	250	32	1-1/4	BAS-304-ES-42,8/32	32	42,8	21	68	82	30,2	58,7	41	20	M10 (M12)	7/16-14 UNC	
200	250	32	1-1/4	BAS-304-ES-38,3/32	32	38,3	21	68	82	30,2	58,7	41	20	M10 (M12)	7/16-14 UNC	
200	200	38	1-1/2	BAS-305-ES-48,6/38	38	48,6	25	79	96	35,7	69,9	44	22	M12 (M14)	1/2-13 UNC	
200	200	38	1-1/2	BAS-305-ES-50,5/38	38	50,5	25	79	96	35,7	69,9	44	22	M12 (M14)	1/2-13 UNC	
160	200	51	2	BAS-306-ES-61/51	51	61	25,5	88	102	42,9	77,8	45	24	M12 (M14)	1/2-13 UNC	
100	160	64	2-1/2	BAS-307-ES-76,6/63	63	76,6	26	101	115	50,8	88,9	50	28	M12 (M14)	1/2-13 UNC	
100	100	76	3	BAS-308-ES-90,5/73	73	90,5	27,5	127	137	61,9	106,4	50	28	M16	5/8-11 UNC	
35	35	89	3-1/2	BAS-309-ES-103/89	89	103	27,5	138	155	69,9	120,7	50	30	M16	5/8-11 UNC	
35	35	102	4	BAS-310-ES-115,5/99	99	115,5	27,5	147	163	77,8	130,2	50	30	M16	5/8-11 UNC	
35	35	127	5	BAS-311-ES-142/120	120	142	28	180	184	92,1	152,4	50	30	M16	5/8-11 UNC	

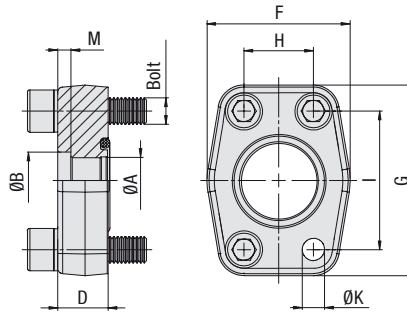
**6000 PSI High Pressure Series (based on ISO 6162-2:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										Ø Thread	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	M	Metr.	UNC	
350	400	13	1/2	BAS-601-ES-21,6/13	13	21,6	16,5	47	57	18,2	40,5	36	18	M8	5/16-18 UNC	
350	400	13	1/2	BAS-601-ES-17,5/13	13	17,5	16,5	47	57	18,2	40,5	36	18	M8	5/16-18 UNC	
350	400	13	1/2	BAS-601-ES-20,3/13	13	20,3	16,5	47	57	18,2	40,5	36	18	M8	5/16-18 UNC	
350	400	19	3/4	BAS-602-ES-27,2/19	19	27,2	19,5	54	72	23,8	50,8	36	20	M10	3/8-16 UNC	
350	400	19	3/4	BAS-602-ES-25,3/19	19	25,3	19,5	54	72	23,8	50,8	36	20	M10	3/8-16 UNC	
350	400	25	1	BAS-603-ES-34/25	25	34	24,5	68	82	27,8	57,2	44	22	M12	7/16-14 UNC	
350	400	25	1	BAS-603-ES-30,3/25	25	30,3	24,5	68	82	27,8	57,2	44	22	M12	7/16-14 UNC	
350	400	32	1-1/4	BAS-604-ES-42,8/32	32	42,8	27,5	79	95	31,8	66,6	44	22	M12	1/2-13 UNC	
350	400	32	1-1/4	BAS-604-ESM14-42,8/32	32	42,8	27,5	79	95	31,8	66,6	44	22	M14		
350	400	32	1-1/4	BAS-604-ES-38,3/32	32	38,3	27,5	79	95	31,8	66,6	44	22	M12	1/2-13 UNC	
350	400	32	1-1/4	BAS-604-ESM14-38,3/32	32	38,3	27,5	79	95	31,8	66,6	44	22	M14		
350	400	38	1-1/2	BAS-605-ES-48,6/38	38	48,6	31	88	108	36,5	79,3	51	24	M16	5/8-11 UNC	
350	400	38	1-1/2	BAS-605-ES-50,5/38	38	50,5	31	88	108	36,5	79,3	51	24	M16	5/8-11 UNC	
350	400	51	2	BAS-606-ES-61/51	51	61	37	118	137	44,5	96,8	70	33	M20	3/4-10 UNC	
350	400	64	2-1/2	BAS-607-ES-76,6/63	63	76,6	45	152	180	58,7	123,8	80	32	M24		
350	400	76	3	BAS-608-ES-90,5/73	73	90,5	55	178	208	71,4	152,4	90	30	M30		

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Socket Weld Flange (Flat Style) BFX-FL-ES



### Order Codes

- \* SAE Single-Part Socket Weld **BFX-FL-...-ES-\*\*-\*\*** Flange (Flat Style) (without O-ring)
- \* Including Metric bolts 8.8, **BFX-FL-...-ES-\*\*-\*\*#K** spring rings, O-ring made of NBR (Buna-N®) (packed in kits)

**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)									for Bolts
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	M	ØK	Metr.
40	40	13	1/2	<b>BFX-FL-301-ES-22,5/15</b>	15	22,5	10	47	57	17,5	38,1	3	8,7	M8x25
40	40	19	3/4	<b>BFX-FL-302-ES-28,5/20</b>	20	28,5	12	50	67	22,3	47,6	4	10,5	M10x30
40	40	25	1	<b>BFX-FL-303-ES-35,5/29</b>	29	35,5	12	54	72	26,2	52,4	4	10,5	M10x30
40	40	32	1-1/4	<b>BFX-FL-304-ES-42,5/34</b>	34	42,5	12	68	82	30,2	58,7	4	11,7	M10x30
40	40	38	1-1/2	<b>BFX-FL-305-ES-49/42</b>	42	49	15	79	96	35,7	69,9	4	13,5	M12x35
40	40	51	2	<b>BFX-FL-306-ES-61/53</b>	53	61	15	88	102	42,9	77,8	4	13,5	M12x35
40	40	64	2-1/2	<b>BFX-FL-307-ES-77/64</b>	64	77	15	101	115	50,8	88,9	4	13,5	M12x35
40	40	76	3	<b>BFX-FL-308-ES-90/80</b>	80	90	20	127	137	61,9	106,4	5	17	M16x50
35	35	89	3-1/2	<b>BFX-FL-309-ES-103/93</b>	93	103	20	138	155	69,9	120,7	5	17	M16x50
35	35	102	4	<b>BFX-FL-310-ES-116/105</b>	105	116	25	147	163	77,8	130,2	6	17	M16x50
35	35	125	5	<b>BFX-FL-311-ES-141/126</b>	126	141	28	170	190	92,1	152,4	8	17	M16x50

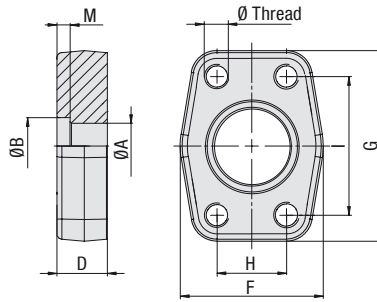
<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.



### SAE Single-Part Socket Weld Counterflange (Flat Style) BAS-FL-ES

#### Order Codes

★ SAE Single-Part Socket Weld Counterflange (Flat Style) **BAS-FL-...-ES-\*\*-\*\*/\*\***



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

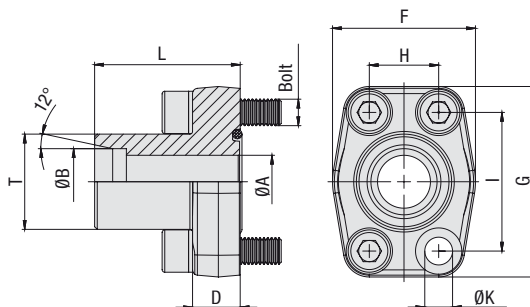
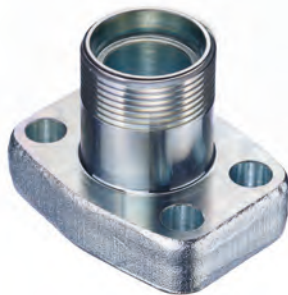
#### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)								Ø Thread
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	M	Metr.
40	40	13	1/2	BAS-FL-301-ES-22,5/15	15	22,5	10	47	57	17,5	38,1	3	M8
40	40	19	3/4	BAS-FL-302-ES-28,5/20	20	28,5	12	50	67	22,3	47,6	4	M10
40	40	25	1	BAS-FL-303-ES-35,5/29	29	35,5	12	54	72	26,2	52,4	4	M10
40	40	32	1-1/4	BAS-FL-304-ES-42,5/34	34	42,5	12	68	82	30,2	58,7	4	M10
40	40	38	1-1/2	BAS-FL-305-ES-49/42	42	49	15	79	96	35,7	69,9	4	M12
40	40	51	2	BAS-FL-306-ES-61/53	53	61	15	88	102	42,9	77,8	4	M12
40	40	64	2-1/2	BAS-FL-307-ES-77/64	64	77	15	101	115	50,8	88,9	4	M12
40	40	76	3	BAS-FL-308-ES-90/80	80	90	20	127	137	61,9	106,4	5	M16
35	35	89	3-1/2	BAS-FL-309-ES-103/93	93	103	20	138	155	69,9	120,7	5	M16
35	35	102	4	BAS-FL-310-ES-116/105	105	116	25	147	163	77,8	130,2	6	M16
35	35	125	5	BAS-FL-311-ES-141/126	126	141	28	170	190	92,1	152,4	8	M16

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.

## SAE Single-Part Fitting Flange with 24° Cone Connector (acc. to ISO 8434-1 / DIN 2353)

### BFX-L/S



#### Order Codes

- \* SAE Single-Part Fitting Flange (without O-ring) **BFX-...-L\*\*/-S\*\***
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-L\*\*#K**
- \* Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-L\*\*-MH#K**

**Material** S355J0 / C45 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 " -W5" on request

#### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	T (Metric)	ØK <sup>3</sup>	Metr. <sup>3</sup>
315	315	13	1/2	<b>BFX-301-L15</b>	11	15 L	16	43	57	17,5	38,1	47	22x1,5	8,7	M8x30
350	350	19	3/4	<b>BFX-302-S20</b>	16	20 S	18	50	67	22,3	47,6	52	30x2	10,5	M10x35
160	160	19	3/4	<b>BFX-302-L22</b>	19	22 L	18	50	67	22,3	47,6	52	30x2	10,5	M10x35
250	315	25	1	<b>BFX-303-S20</b>	16	20 S	18	54	72	26,2	52,4	55	30x2	10,5	M10x35
250	315	25	1	<b>BFX-303-S25</b>	20	25 S	18	54	72	26,2	52,4	55	36x2	10,5	M10x35
160	160	25	1	<b>BFX-303-L28</b>	23	28 L	18	54	72	26,2	52,4	55	36x2	10,5	M10x35
200	250	32	1-1/4	<b>BFX-304-S25</b>	20	25 S	21	68	82	30,2	58,7	60	36x2	11,7 (13,5)	M10x40 (M12x40)
200	250	32	1-1/4	<b>BFX-304-S30</b>	25	30 S	21	68	82	30,2	58,7	60	42x2	11,7 (13,5)	M10x40 (M12x40)
160	160	32	1-1/4	<b>BFX-304-L35</b>	30	35 L	21	68	82	30,2	58,7	60	45x2	11,7 (13,5)	M10x40 (M12x40)
200	200	38	1-1/2	<b>BFX-305-S38</b>	32	38 S	25	74	96	35,7	69,9	70	52x2	13,5 (14,5)	M12x45 (M14x45)
160	160	38	1-1/2	<b>BFX-305-L42</b>	36	42 L	25	74	96	35,7	69,9	70	52x2	13,5 (14,5)	M12x45 (M14x45)

#### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	L	T (Metric)	ØK	Metr.
350	400	13	1/2	<b>BFX-601-S16</b>	12	16 S	16	43	57	18,2	40,5	47	24x1,5	8,7	M8x30
350	400	19	3/4	<b>BFX-602-S16</b>	12	16 S	18	54	72	23,8	50,8	54	24x1,5	10,5	M10x35
350	400	19	3/4	<b>BFX-602-S20</b>	16	20 S	18	54	72	23,8	50,8	54	30x2	10,5	M10x35
350	400	19	3/4	<b>BFX-602-S25</b>	18	25 S	18	54	72	23,8	50,8	54	36x2	10,5	M10x35
350	400	25	1	<b>BFX-603-S20</b>	16	20 S	21	68	82	27,8	57,2	60	30x2	13	M12x40
350	400	25	1	<b>BFX-603-S25</b>	18	25 S	21	68	82	27,8	57,2	60	36x2	13	M12x40
350	400	25	1	<b>BFX-603-S30</b>	25	30 S	21	68	82	27,8	57,2	60	42x2	13	M12x40
350	400	32	1-1/4	<b>BFX-604-S30</b>	25	30 S	24	75	95	31,8	66,6	68	42x2	13,5	M12x45
350	400	32	1-1/4	<b>BFX-604-S30-M14</b>	25	30 S	24	75	95	31,8	66,6	68	42x2	15	M14x45
350	350	32	1-1/4	<b>BFX-604-S38</b>	29	38 S	27	75	95	31,8	66,6	92	52x2	13,5	M12x45
350	350	32	1-1/4	<b>BFX-604-S38-M14</b>	29	38 S	27	75	95	31,8	66,6	92	52x2	15	M14x45
350	350	38	1-1/2	<b>BFX-605-S38</b>	32	38 S	27	84	108	36,5	79,3	72	52x2	17	M16x50

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

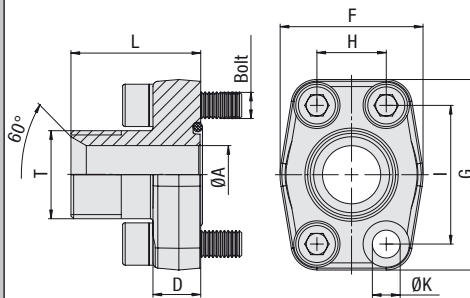
<sup>3</sup> Alternative options shown in brackets are available on request.

### SAE Single-Part Fitting Flange with BSP 60° Cone Connector (acc. to BS 5200)

#### BFX-B

#### Order Codes

- ★ SAE Single-Part Fitting Flange (without O-ring) **BFX-...-B**
- ★ Deviant 60° cone connector **BFX-...-B\*\***
- ★ Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-B#K**
- ★ Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-B-MH#K**



**Material** S355J0 / C45 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "W5" on request

#### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	T (BSPP)	ØK <sup>3</sup>	Metr. <sup>3</sup>	
350	350	13	1/2	BFX-301-B038	10	16	43	57	17,5	38	37	3/8	8,7	M8x30	
350	350	13	1/2	BFX-301-B	12	16	43	57	17,5	38	39	1/2	8,7	M8x30	
350	350	13	1/2	BFX-301-B034	13	16	43	57	17,5	38	42	3/4	8,7	M8x30	
350	350	19	3/4	BFX-302-B012	12	18	50	67	22,3	47,6	42	1/2	10,5	M10x35	
350	350	19	3/4	BFX-302-B	17	18	50	67	22,3	47,6	45	3/4	10,5	M10x35	
350	350	19	3/4	BFX-302-B100	19	18	50	67	22,3	47,6	47	1	10,5	M10x35	
250	315	25	1	BFX-303-B034	17	18	54	72	26,2	52,4	47	3/4	10,5	M10x35	
250	315	25	1	BFX-303-B	22	18	54	72	26,2	52,4	49	1	10,5	M10x35	
250	315	25	1	BFX-303-B114	25	18	54	72	26,2	52,4	49	1-1/4	10,5	M10x35	
200	250	32	1-1/4	BFX-304-B100	22	21	68	82	30,2	58,7	53	1	11,7 (13,5)	M10x40 (M12x40)	
200	250	32	1-1/4	BFX-304-B	27	21	68	82	30,2	58,7	55	1-1/4	11,7 (13,5)	M10x40 (M12x40)	
200	250	32	1-1/4	BFX-304-B112	31	21	68	82	30,2	58,7	55	1-1/2	11,7 (13,5)	M10x40 (M12x40)	
200	200	38	1-1/2	BFX-305-B114	27	24	74	96	35,7	69,9	59	1-1/4	13,5 (14,5)	M12x45 (M14x45)	
200	200	38	1-1/2	BFX-305-B	34	24	74	96	35,7	69,9	61	1-1/2	13,5 (14,5)	M12x45 (M14x45)	
200	200	38	1-1/2	BFX-305-B200	38	24	74	96	35,7	69,9	63	2	13,5 (14,5)	M12x45 (M14x45)	
160	200	51	2	BFX-306-B112	34	25	88	102	42,9	77,8	69	1-1/2	13,5 (14,5)	M12x45 (M14x45)	
160	200	51	2	BFX-306-B	42	25	88	102	42,9	77,8	69	2	13,5 (14,5)	M12x45 (M14x45)	

#### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

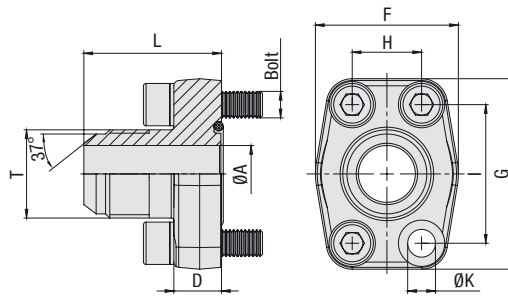
PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	T (BSPP)	ØK	Metr.	
350	400	13	1/2	BFX-601-B038	10	16	43	57	18,2	40,5	38	3/8	8,7	M8x30	
350	400	13	1/2	BFX-601-B	12	16	43	57	18,2	40,5	40	1/2	8,7	M8x30	
350	400	13	1/2	BFX-601-B034	13	16	43	57	18,2	40,5	43	3/4	8,7	M8x30	
350	400	19	3/4	BFX-602-B012	12	18	54	72	23,8	50,8	44	1/2	10,5	M10x35	
350	400	19	3/4	BFX-602-B	17	18	54	72	23,8	50,8	47	3/4	10,5	M10x35	
350	400	19	3/4	BFX-602-B100	19	18	54	72	23,8	50,8	49	1	10,5	M10x35	
350	400	25	1	BFX-603-B034	17	21	68	82	27,8	57,2	54	3/4	13	M12x40	
350	400	25	1	BFX-603-B	22	21	68	82	27,8	57,2	56	1	13	M12x40	
350	400	25	1	BFX-603-B114	25	21	68	82	27,8	57,2	56	1-1/4	13	M12x40	
350	400	32	1-1/4	BFX-604-B100	22	24	75	95	31,8	66,6	61	1	13,5	M12x45	
350	400	32	1-1/4	BFX-604-B100-M14	22	24	75	95	31,8	66,6	61	1	15	M14x45	
350	400	32	1-1/4	BFX-604-B	27	24	75	95	31,8	66,6	61	1-1/4	13,5	M12x45	
350	400	32	1-1/4	BFX-604-B-M14	27	24	75	95	31,8	66,6	61	1-1/4	15	M14x45	
350	400	32	1-1/4	BFX-604-B112	31	24	75	95	31,8	66,6	63	1-1/2	13,5	M12x45	
350	400	32	1-1/4	BFX-604-B112-M14	31	24	75	95	31,8	66,6	63	1-1/2	15	M14x45	
350	400	38	1-1/2	BFX-605-B114	27	27	84	108	36,5	79,3	65	1-1/4	17	M16x50	
350	400	38	1-1/2	BFX-605-B	32	27	84	108	36,5	79,3	67	1-1/2	17	M16x50	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Single-Part Fitting Flange with JIC 37° Cone Connector (acc.to ISO 8434-2 / SAE J514)

## BFX-J



## Order Codes

- \* SAE Single-Part Fitting Flange (without O-ring) **BFX-...-J\*\***
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-J\*\*#K**
- \* Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-J\*\*-MH#K**
- \* Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX-...-J\*\*-V-U#K**

**Material** S355J0 / C45 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "-W5" on request

## 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)									for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	T (UN/UNF)	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BFX-301-J3/4</b>	9,9	16	43	57	17,5	38,1	41	3/4-16	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	13	1/2	<b>BFX-301-J7/8</b>	12,3	16	43	57	17,5	38,1	41	7/8-14	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BFX-302-J1-1/16</b>	15,5	18	50	67	22,3	47,6	49	1-1/16-12	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-J1-5/16</b>	21,5	18	54	72	26,2	52,4	52	1-5/16-12	10,5	M10x35	3/8-16 UNC x 1-1/2
200	200	32	1-1/4	<b>BFX-304-J1-5/16</b>	21,5	21	68	82	30,2	58,7	56	1-5/16-12	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	32	1-1/4	<b>BFX-304-J1-5/8</b>	27,5	21	68	82	30,2	58,7	58	1-5/8-12	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
160	160	38	1-1/2	<b>BFX-305-J1-7/8</b>	33	24	74	96	35,7	69,9	67	1-7/8-12	13,5 (14,5)	M12x45 (M14x45)	7/16-14 UNC x 1-3/4

## 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)									for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	L	T (UN/UNF)	ØK <sup>3</sup>	Metr.	UNC
350	400	13	1/2	<b>BFX-601-J3/4</b>	9,9	16	43	57	18,2	40,5	42	3/4-16	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	13	1/2	<b>BFX-601-J7/8</b>	12,3	16	43	57	18,2	40,5	45	7/8-14	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BFX-602-J1-1/16</b>	15,5	18	54	72	23,8	50,8	51	1-1/16-12	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BFX-603-J1-5/16</b>	21,5	21	68	82	27,8	57,2	59	1-5/16-12	13	M12x40	7/16-14 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-J1-5/16</b>	21,5	24	75	95	31,6	66,6	64	1-5/16-12	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-J1-5/16-M14</b>	21,5	24	75	95	31,6	66,6	64	1-5/16-12	15	M14x45	
350	400	32	1-1/4	<b>BFX-604-J1-5/8</b>	27,5	24	75	95	31,6	66,6	66	1-5/8-12	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-J1-5/8-M14</b>	27,5	24	75	95	31,6	66,6	66	1-5/8-12	15	M14x45	
350	400	38	1-1/2	<b>BFX-605-J1-7/8</b>	33	27	84	108	36,5	79,3	73	1-7/8-12	17	M16x50	5/8-11 UNC x 2

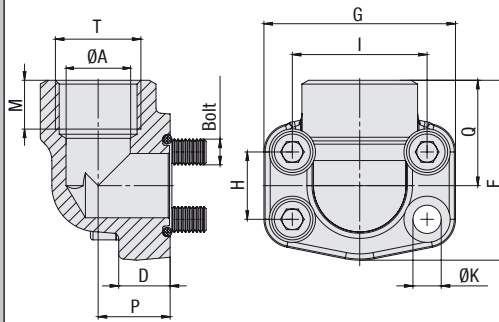
<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

<sup>3</sup> Alternative options shown in brackets are available on request.

**SAE 90° Single-Part Screw-in BSPP Threaded Flange  
BFX90-G**
**Order Codes**

- ★ SAE 90° Single-Part Screw-in BSPP Threaded Flange (without O-ring) **BFX90-...-G**
- ★ Deviant screw-in BSPP thread, including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX90-...-G \*\*#K**
- ★ Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX90-...-G-MH#K**
- ★ Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX90-...-G-V-U#K**



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

**3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	M	P	Q	T (BSPP)	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BFX90-301-G</b>	13	16	60	54	17,5	38,1	19	20	37	1/2	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	13	1/2	<b>BFX90-301-G038</b>	13	16	60	54	17,5	38,1	19	20	37	3/8	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BFX90-302-G</b>	19	18	63	65	22,3	47,6	19	24	38	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX90-303-G</b>	25	19	70	70	26,2	52,4	20	28	43	1	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX90-304-G</b>	32	21	85	79	30,2	58,7	22	34	51	1-1/4	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	<b>BFX90-305-G</b>	38	25	95	93	35,7	69,9	25	38	56	1-1/2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX90-306-G</b>	51	25	110	110	42,9	77,8	28	42	65	2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4

**6000 PSI High Pressure Series (based on ISO 6162-2:2006)**

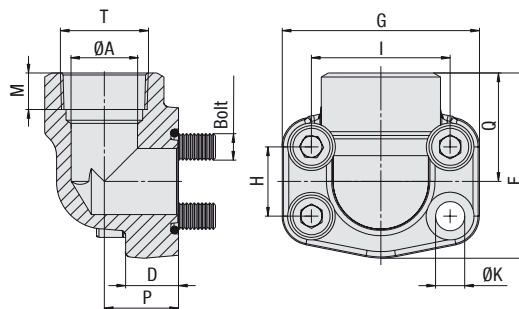
PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	M	P	Q	T (BSPP)	ØK	Metr.	UNC
350	400	13	1/2	<b>BFX90-601-G</b>	13	16	60	56	18,2	40,5	19	20	37	1/2	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	13	1/2	<b>BFX90-601-G038</b>	13	16	60	56	18,2	40,5	19	20	37	3/8	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BFX90-602-G</b>	19	19	70	72	23,8	50,8	20	28	43	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BFX90-603-G</b>	25	21	85	79	27,8	57,2	22	34	51	1	13	M12x45	7/16-14 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX90-604-G</b>	32	25	95	93	31,6	66,6	25	38	56	1-1/4	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX90-604-G-M14</b>	32	25	95	93	31,6	66,6	25	38	56	1-1/4	15	M14x45	
350	400	38	1-1/2	<b>BFX90-605-G</b>	38	25	110	110	36,5	79,3	28	42	65	1-1/2	17	M16x50	5/8-11 UNC x 2
350	400	51	2	<b>BFX90-606-G</b>	51	35	132	134	44,5	96,8	33	45	75	2	21	M20x70	3/4-10 UNC x 2-3/4

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE 90° Single-Part Screw-in NPT Threaded Flange BFX90-N



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### Order Codes

- ★ SAE 90° Single-Part Screw-in NPT Threaded Flange (without O-ring) **BFX90-...-N**
- ★ Deviant screw-in NPT thread, including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX90-...-N \*\*#K**
- ★ Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX90-...-N-MH#K**
- ★ Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX90-...-N-V-U#K**

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	M	P	Q	T (NPT)	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BFX90-301-N</b>	13	16	60	54	17,5	38,1	19	20	37	1/2	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	13	1/2	<b>BFX90-301-N038</b>	13	16	60	54	17,5	38,1	19	20	37	3/8	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BFX90-302-N</b>	19	18	63	65	22,3	47,6	19	24	38	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX90-303-N</b>	25	19	70	70	26,2	52,4	20	28	43	1	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX90-304-N</b>	32	21	85	79	30,2	58,7	22	34	51	1-1/4	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	<b>BFX90-305-N</b>	38	25	95	93	35,7	69,9	25	38	56	1-1/2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX90-306-N</b>	51	25	110	110	42,9	77,8	28	42	65	2	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	M	P	Q	T (NPT)	ØK	Metr.	UNC
350	400	13	1/2	<b>BFX90-601-N</b>	13	16	60	56	18,2	40,5	19	20	37	1/2	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	13	1/2	<b>BFX90-601-N038</b>	13	16	60	56	18,2	40,5	19	20	37	3/8	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BFX90-602-N</b>	19	19	70	72	23,8	50,8	20	28	43	3/4	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BFX90-603-N</b>	25	21	85	79	27,8	57,2	22	34	51	1	13	M12x45	7/16-14 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX90-604-N</b>	32	25	95	93	31,6	66,6	25	38	56	1-1/4	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX90-604-N-M14</b>	32	25	95	93	31,6	66,6	25	38	56	1-1/4	15	M14x45	
350	400	38	1-1/2	<b>BFX90-605-N</b>	38	25	110	110	36,5	79,3	28	42	65	1-1/2	17	M16x50	5/8-11 UNC x 2
350	400	51	2	<b>BFX90-606-N</b>	51	35	132	134	44,5	96,8	33	45	75	2	21	M20x70	3/4-10 UNC x 2-3/4

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

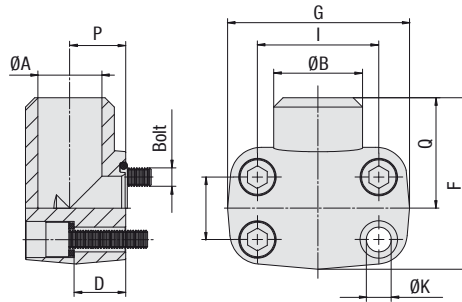
<sup>3</sup> Alternative options shown in brackets are available on request.



### SAE 90° Single-Part Butt Weld Flange for High Pressure Tubes BFX90-STC

#### Order Codes

- \* SAE 90° Single-Part Butt Weld Flange (without O-ring) **BFX90-...-STC-\*\*-\*\*/\*\***
- \* Including Metric bolts 8.8, **BFX90-...-STC-\*\*-\*\*/\*\*#K** spring rings, O-ring made of NBR (Buna-N®) (packed in kits)
- \* Incl. Metric bolts 10.9, **BFX90-...-STC-\*\*-\*\*/\*\*-MH#K** spring rings, O-ring made of NBR (Buna-N®) (packed in kits)



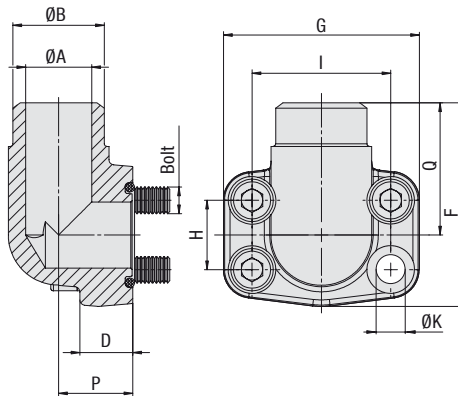
Version A



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

#### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	Version
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	P	Q	ØK	Metr.	
350	350	19	3/4	<b>BFX90-302-STC-27/19</b>	19	27	21	63	70	22,3	47,6	23	41	11	M10x40	A
350	350	25	1	<b>BFX90-303-STC-34,5/23</b>	23	34,5	24	72	75	26,2	52,4	25	48	11	M10x45	A
250	315	32	1-1/4	<b>BFX90-304-STC-43/31</b>	31	43	25	82	86	30,2	58,7	27	54	11,5	M10x45	A
200	250	38	1-1/2	<b>BFX90-305-STC-50/35</b>	35	50	29	92	97	35,7	69,9	31,5	57	14	M12x50	A
200	200	51	2	<b>BFX90-306-STC-65/48</b>	48	65	50	99	100	42,9	77,8	37,5	63	14	M12x70	A



Version B



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

#### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

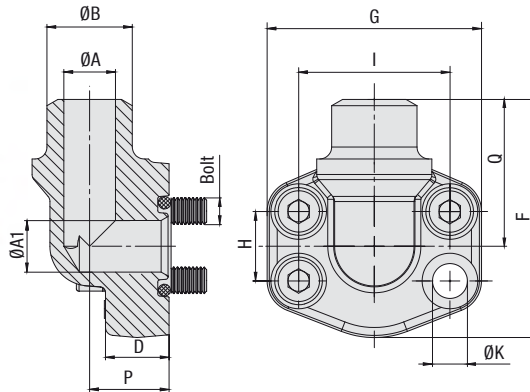
PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)										for Bolts	Version
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	P	Q	ØK	Metr.	
350	400	19	3/4	<b>BFX90-602-STC-28/19</b>	19	28	19	70	71	23,8	50,8	22	40	11	M10x35	B
350	400	25	1	<b>BFX90-603-STC-34/25</b>	25	34	24	82	81	27,8	57,2	27	47	13	M12x45	B
350	400	32	1-1/4	<b>BFX90-604-STC-42/32-M14</b>	32	42	27	95	95	31,8	66,6	32	56	15	M14x50	B
350	400	38	1-1/2	<b>BFX90-605-STC-48/38</b>	38	48	30	115	113	36,5	79,3	40	68	17	M16x50	B

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> deviant O-ring size: 25,07 x 2,62

<sup>3</sup> deviant O-ring size: 28,17 x 3,53

## SAE 90° Single-Part Butt Weld Flange for Metric Tubes BFX90-SRE



### Order Codes

- \* SAE 90° Single-Part Butt Weld Flange (without O-ring) **BFX90-...-SRE-\*/\*\*/\***
- \* Including Metric bolts 8.8, **BFX90-...-SRE-\*/\*\*/\*#K** spring rings, O-ring made of NBR (Buna-N®) (packed in kits)
- \* Incl. Metric bolts 10.9, **BFX90-...-SRE-\*/\*\*/\*-MH#K** spring rings, O-ring made of NBR (Buna-N®) (packed in kits)
- \* Incl. UNC bolts (Gr8), **BFX90-...-SRE-\*/\*\*/\*-V-U#K** spring rings, O-ring made of FPM (Viton®) (packed in kits)

**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØA1	ØB	D	F	G	H	I	P	Q	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	BFX90-301-SRE-20/14	14	13	20	16	60	54	17,5	38,1	20	37	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	13	1/2	BFX90-301-SRE-22/18	18	13	22	16	60	54	17,5	38,1	20	37	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	13	1/2	BFX90-301-SRE-25/19	19	13	25	16	60	54	17,5	38,1	20	37	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	BFX90-302-SRE-25/19	19	19	25	18	63	65	22,3	47,6	24	38	10,5	M10x35	3/8-16 UNC x 1-1/2
350	350	19	3/4	BFX90-302-SRE-28/22	22	19	28	18	63	65	22,3	47,6	24	38	10,5	M10x35	3/8-16 UNC x 1-1/2
350	350	19	3/4	BFX90-302-SRE-30/22	22	19	30	18	63	65	22,3	47,6	24	38	10,5	M10x35	3/8-16 UNC x 1-1/2
350	350	19	3/4	BFX90-302-SRE-35/27	27	19	35	18	63	65	22,3	47,6	24	38	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	BFX90-303-SRE-30/22	22	25	30	19	70	70	26,2	52,4	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	BFX90-303-SRE-35/27	27	25	35	19	70	70	26,2	52,4	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	BFX90-303-SRE-38/30	30	25	38	19	70	70	26,2	52,4	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	BFX90-303-SRE-42/36	36	25	42	19	70	70	26,2	52,4	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	BFX90-304-SRE-38/30	30	32	38	21	85	79	30,2	58,7	34	51	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	250	32	1-1/4	BFX90-304-SRE-42/36	36	32	42	21	85	79	30,2	58,7	34	51	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	250	32	1-1/4	BFX90-304-SRE-49/39	39	32	49	21	85	79	30,2	58,7	34	51	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	BFX90-305-SRE-38/30	30	38	38	25	95	93	35,7	69,9	38	56	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
200	200	38	1-1/2	BFX90-305-SRE-42/36	36	38	42	25	95	93	35,7	69,9	38	56	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
200	200	38	1-1/2	BFX90-305-SRE-49/39	39	38	49	25	95	93	35,7	69,9	38	56	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	BFX90-306-SRE-61/49	49	51	61	25	110	110	42,9	77,8	42	65	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØA1	ØB	D	F	G	H	I	P	Q	ØK <sup>3</sup>	Metr.	UNC
350	400	13	1/2	BFX90-601-SRE-20/14	14	13	20	16	60	54	18,2	40,5	20	37	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	13	1/2	BFX90-601-SRE-25/17	17	13	25	16	60	54	18,2	40,5	20	37	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	BFX90-602-SRE-25/17	17	19	25	19	70	72	23,8	50,8	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	19	3/4	BFX90-602-SRE-30/22	22	19	30	19	70	72	23,8	50,8	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	BFX90-603-SRE-30/22	22	25	30	21	85	79	27,8	57,2	34	51	13,5	M12x45	7/16-14 UNC x 1-3/4
350	400	25	1	BFX90-603-SRE-38/28	28	25	38	21	85	79	27,8	57,2	34	51	13,5	M12x45	7/16-14 UNC x 1-3/4
350	400	32	1-1/4	BFX90-604-SRE-38/28	28	32	38	25	95	93	31,8	66,6	38	56	15	M14x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	BFX90-604-SRE-38/28-M14	28	32	38	25	95	93	31,8	66,6	38	56	15	M14x45	
350	400	32	1-1/4	BFX90-604-SRE-49/32	32	32	49	25	95	93	31,8	66,6	38	56	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	BFX90-604-SRE-49/32-M14	32	32	49	25	95	93	31,8	66,6	38	56	15	M14x45	
350	400	38	1-1/2	BFX90-605-SRE-38/28	28	38	38	25	110	110	36,5	79,3	42	65	17	M16x50	5/8-11 UNC x 2
350	400	38	1-1/2	BFX90-605-SRE-49/32	32	38	49	25	110	110	36,5	79,3	42	65	17	M16x50	5/8-11 UNC x 2
350	400	38	1-1/2	BFX90-605-SRE-61/40	40	38	61	25	110	110	36,5	79,3	42	65	17	M16x50	5/8-11 UNC x 2
350	400	51	2	BFX90-606-SRE-61/40	40	51	61	35	132	134	44,5	96,8	45	75	21	M20x70	3/4-10 UNC x 2-3/4
350	400	51	2	BFX90-606-SRE-74/50	50	51	74	35	132	134	44,5	96,8	45	75	21	M20x70	3/4-10 UNC x 2-3/4

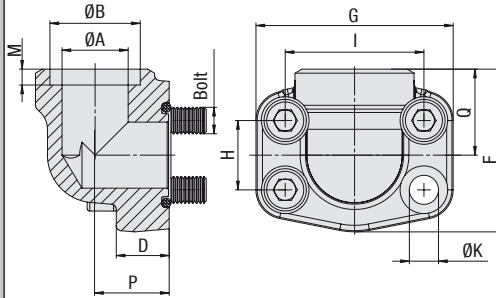
<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

<sup>3</sup> Alternative options shown in brackets are available on request.

**SAE 90° Single-Part Socket Weld Flange  
BFX90-ES**
**Order Codes**

- \* SAE 90° Single-Part Socket Weld Flange (without O-ring) **BFX90-...-ES-\*\*-\*\***
- \* Incl. Metric bolts 8.8, **BFX90-...-ES-\*\*-\*\*#K**  
spring rings, O-ring made of NBR (Buna-N®) (packed in kits)
- \* Incl. Metric bolts 10.9, **BFX90-...-ES-\*\*-\*\*-MH#K**  
spring rings, O-ring made of NBR (Buna-N®) (packed in kits)
- \* Incl. UNC bolts (Gr8), **BFX90-...-ES-\*\*-\*\*-V-U#K**  
spring rings, O-ring made of FPM (Viton®) (packed in kits)



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

**3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	M	P	Q	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	BFX90-301-ES-21,6/13	13	21,6	16	60	54	17,5	38,1	10	20	37	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	13	1/2	BFX90-301-ES-17,5/13	13	17,5	16	60	54	17,5	38,1	10	20	37	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	BFX90-302-ES-27,2/19	19	27,2	18	63	65	22,3	47,6	10	24	38	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	BFX90-303-ES-34/25	25	34	19	70	70	26,2	52,4	12	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	BFX90-304-ES-42,8/32	32	42,8	21	85	79	30,2	58,7	14	34	51	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	BFX90-305-ES-48,6/38	38	48,6	25	95	93	35,7	69,9	16	38	56	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	BFX90-306-ES-61/51	51	61	25	110	110	42,9	77,8	18	42	65	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4

**6000 PSI High Pressure Series (based on ISO 6162-2:2006)**

PN (bar) <sup>1</sup> bolts		Nominal Size		Order Codes	Dimensions (mm)											for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	M	P	Q	ØK	Metr.	UNC
350	400	13	1/2	BFX90-601-ES-21,6/13	13	21,6	16	60	54	18,2	40,5	10	20	37	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	13	1/2	BFX90-601-ES-17,5/13	13	17,5	16	60	54	18,2	40,5	10	20	37	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	BFX90-602-ES-27,2/19	19	27,2	19	70	72	23,8	50,8	12	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	19	3/4	BFX90-602-ES-20,3/16	16/19	20,3	19	70	72	23,8	50,8	12	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	19	3/4	BFX90-602-ES-25,3/19	19	25,3	19	70	72	23,8	50,8	12	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	19	3/4	BFX90-602-ES-30,3/25	25/19	30,3	19	70	72	23,8	50,8	12	28	43	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	BFX90-603-ES-34/25	25	34	21	85	79	27,8	57,2	14	34	51	13	M12x45	7/16-14 UNC x 1-3/4 <sup>2</sup>
350	400	25	1	BFX90-603-ES-30,3/25	25	30,3	21	85	79	27,8	57,2	14	34	51	13	M12x45	7/16-14 UNC x 1-3/4 <sup>2</sup>
350	400	32	1-1/4	BFX90-604-ES-42,8/32	32	42,8	25	95	93	31,8	66,6	16	38	56	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	BFX90-604-ES-42,8/32-M14	32	42,8	25	95	93	31,8	66,6	16	38	56	15	M14x45	
350	400	32	1-1/4	BFX90-604-ES-30,3/22	22/32	30,3	25	95	93	31,8	66,6	16	38	56	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	BFX90-604-ES-30,3/22-M14	22/32	30,3	25	95	93	31,8	66,6	16	38	56	15	M14x45	
350	400	32	1-1/4	BFX90-604-ES-38,3/27	27/32	38,3	25	95	93	31,8	66,6	16	38	56	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	BFX90-604-ES-38,3/27-M14	27/32	38,3	25	95	93	31,8	66,6	16	38	56	15	M14x45	
350	400	38	1-1/2	BFX90-605-ES-48,6/38	38	48,6	25	110	110	36,5	79,3	18	42	65	17	M16x50	5/8-11 UNC x 2
350	400	51	2	BFX90-606-ES-61/51	51	61	35	132	134	36,5	79,3	28	45	75	21	M20x70	3/4-10 UNC x 2-3/4

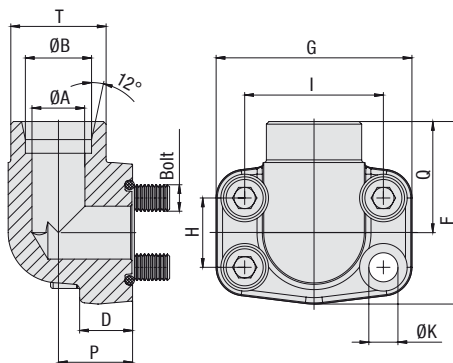
<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE 90° Single-Part Fitting Flange with 24° Cone Connector (acc. to ISO 8434-1 / DIN 2353)

## BFX90-L/S



## Order Codes

- \* SAE 90° Single-Part Fitting Flange (without O-ring) **BFX90-...-L\*\*/-S\*\***
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX90-...-L\*\*#K**
- \* Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX90-...-L\*\*-MH#K**
- \* Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX90-...-S\*\*-V-U#K**

**Material** S355J0 / C45 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 " -W5" on request

## 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

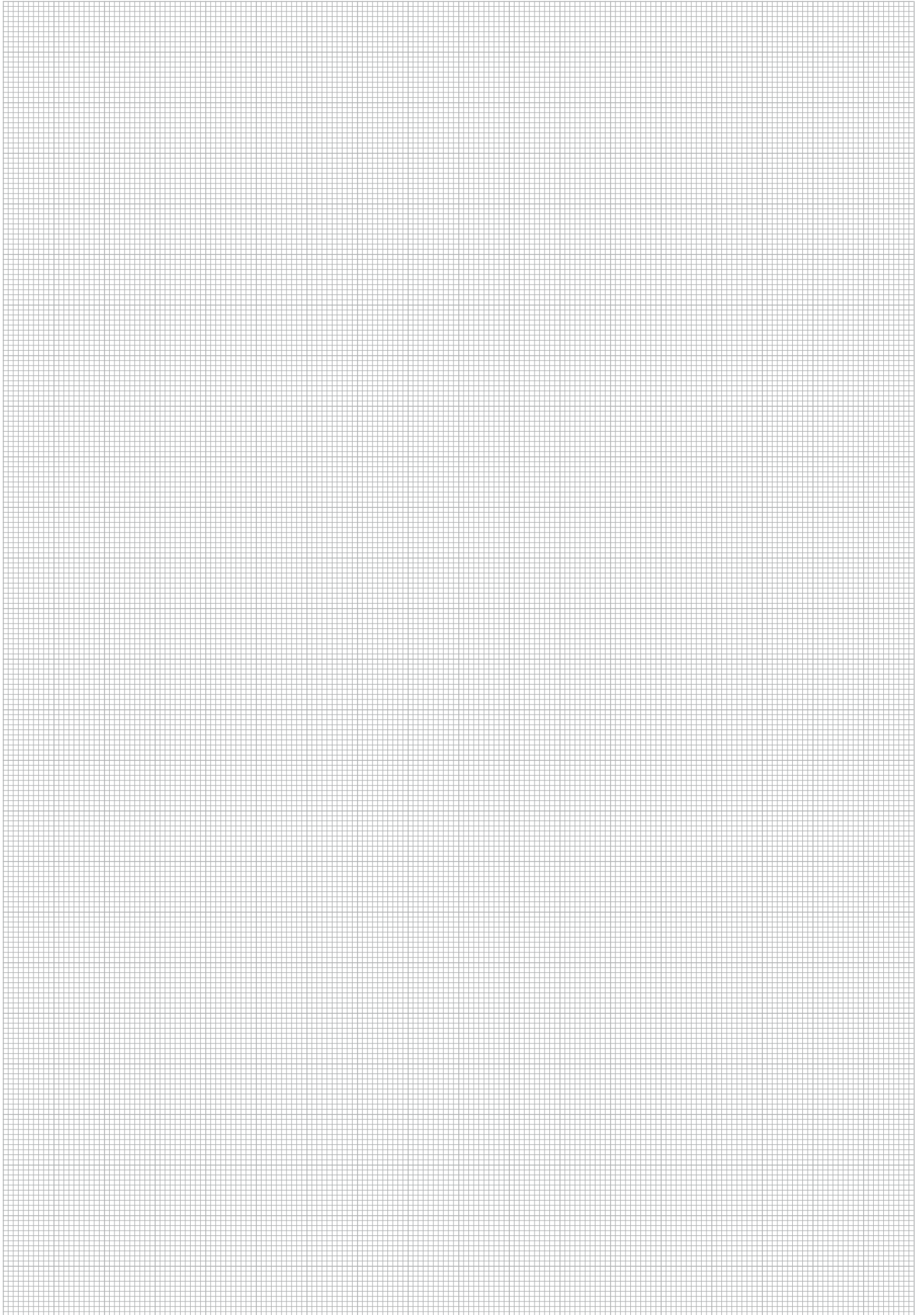
PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)													for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	P	Q	T (Metric)	ØK	Metr.	UNC		
315	315	13	1/2	<b>BFX90-301-L15</b>	11	15 L	16	60	54	17,5	38,1	18	36	22x1,5	9	M8x30	5/16-18 UNC x 1-1/4		
350	350	13	1/2	<b>BFX90-301-S16</b>	12	16 S	16	60	54	17,5	38,1	18	36	24x1,5	9	M8x30	5/16-18 UNC x 1-1/4		
350	350	19	3/4	<b>BFX90-302-S16</b>	12	16 S	18	63	65	22,3	47,6	22	38	24x1,5	11	M10x35	3/8-16 UNC x 1-1/2		
350	350	19	3/4	<b>BFX90-302-S20</b>	16	20 S	18	63	65	22,3	47,6	22	38	30x2	11	M10x35	3/8-16 UNC x 1-1/2		
160	160	19	3/4	<b>BFX90-302-L22</b>	18	22 L	18	63	65	22,3	47,6	22	38	30x2	11	M10x35	3/8-16 UNC x 1-1/2		
250	315	25	1	<b>BFX90-303-S25</b>	20	25 S	19	70	70	26,2	52,4	28	42	36x2	11	M10x35	3/8-16 UNC x 1-1/2		
160	160	25	1	<b>BFX90-303-L28</b>	23	28 L	19	70	70	26,2	52,4	28	42	36x2	11	M10x35	3/8-16 UNC x 1-1/2		
200	250	32	1-1/4	<b>BFX90-304-S25</b>	20	25 S	22	85	79	30,2	58,7	30	50	36x2	11,5	M10x40	7/16-14 UNC x 1-1/2		
200	250	32	1-1/4	<b>BFX90-304-S30</b>	25	30 S	22	85	79	30,2	58,7	30	50	42x2	11,5	M10x40	7/16-14 UNC x 1-1/2		
160	160	32	1-1/4	<b>BFX90-304-L35</b>	30	35 L	22	85	79	30,2	58,7	30	50	45x2	11,5	M10x40	7/16-14 UNC x 1-1/2		
200	200	38	1-1/2	<b>BFX90-305-S38</b>	32	38 S	25	95	93	35,7	69,8	36	58	52x2	13,5	M12x45	1/2-13 UNC x 1-3/4		
160	160	38	1-1/2	<b>BFX90-305-L42</b>	36	42 L	25	95	93	35,7	69,8	36	58	52x2	13,5	M12x45	1/2-13 UNC x 1-3/4		

## 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

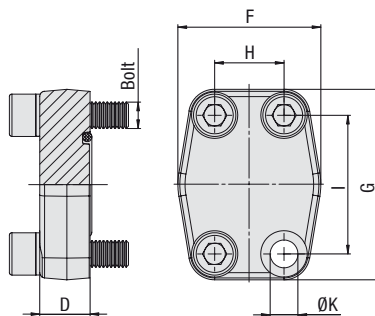
PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)													for Bolts	
8.8	10.9 (MH)	DN	(in)		ØA	ØB	D	F	G	H	I	P	Q	T (Metric)	ØK	Metr.	UNC		
350	400	13	1/2	<b>BFX90-601-S16</b>	12	16 S	16	60	54	18,2	40,5	20	36	24x1,5	9	M8x30	5/16-18 UNC x 1-1/4		
350	400	19	3/4	<b>BFX90-602-S16</b>	12	16 S	19	70	72	23,8	50,8	26	41	24x1,5	11	M10x35	3/8-16 UNC x 1-1/2		
350	400	19	3/4	<b>BFX90-602-S20</b>	20	20 S	19	70	72	23,8	50,8	26	41	30x2	11	M10x35	3/8-16 UNC x 1-1/2		
350	400	25	1	<b>BFX90-603-S25</b>	20	25 S	24	85	79	27,8	57,2	30	50	36x2	13	M12x40	7/16-14 UNC x 1-1/2		
350	400	32	1-1/4	<b>BFX90-604-S30-M14</b>	25	30 S	25	95	93	31,8	66,6	36	58	42x2	15	M14x45	1/2-13 UNC x 1-3/4		
350	350	38	1-1/2	<b>BFX90-605-S38</b>	32	38 S	26	110	110	36,5	79,3	41	65	52x2	17	M16x50	5/8-11 UNC x 2		

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9). The actual maximum working pressure depends on the thickness and the quality of the tube used.

<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.



## SAE Single-Part Blanking Flange BFX-CP



**Material** S355J0/C45 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 " -W5" on request

### Order Codes

- \* SAE Single-Part Blanking Flange (without O-ring) **BFX-...-CP**
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-CP#K**
- \* Including Metric bolts 10.9, spring rings, O-ring made of NBR (Buna-N®) (packed in kits) **BFX-...-MH-CP#K**
- \* Including UNC bolts (Gr8), spring rings, O-ring made of FPM (Viton®) (packed in kits) **BFX-...-CP-V-U#K**

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)						for Bolts	
8.8	10.9 (MH)	DN	(in)		D	F	G	H	I	ØK <sup>3</sup>	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BFX-301-CP</b>	16	47	57	17,5	38,1	8,7	M8x30	5/16-18 UNC x 1-1/4
350	350	19	3/4	<b>BFX-302-CP</b>	18	50	67	22,3	47,6	10,5	M10x35	3/8-16 UNC x 1-1/2
250	315	25	1	<b>BFX-303-CP</b>	19	54	72	26,2	52,4	10,5	M10x35	3/8-16 UNC x 1-1/2
200	250	32	1-1/4	<b>BFX-304-CP</b>	18	68	82	30,2	58,7	11,7 (13,5)	M10x40 (M12x40)	7/16-14 UNC x 1-1/2
200	200	38	1-1/2	<b>BFX-305-CP</b>	20	79	96	35,7	69,9	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
160	200	51	2	<b>BFX-306-CP</b>	20	88	102	42,9	77,8	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	64	2-1/2	<b>BFX-307-CP</b>	20	101	115	50,8	88,9	13,5 (14,5)	M12x45 (M14x45)	1/2-13 UNC x 1-3/4
100	160	76	3	<b>BFX-308-CP</b>	24	127	137	61,9	106,4	17	M16x50	5/8-11 UNC x 2
35	35	89	3-1/2	<b>BFX-309-CP</b>	22	138	155	69,8	120,7	17	M16x50	5/8-11 UNC x 2
35	35	102	4	<b>BFX-310-CP</b>	25	147	163	77,8	130,2	17	M16x50	5/8-11 UNC x 2
35	35	127	5	<b>BFX-311-CP</b>	25	180	184	92	152,4	17	M16x55	5/8-11 UNC x 2-1/4

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)						for Bolts	
8.8	10.9 (MH)	DN	(in)		D	F	G	H	I	ØK	Metr.	UNC
350	400	13	1/2	<b>BFX-601-CP</b>	16	47	57	18,2	40,5	8,7	M8x30	5/16-18 UNC x 1-1/4
350	400	19	3/4	<b>BFX-602-CP</b>	19	54	72	23,8	50,8	10,5	M10x35	3/8-16 UNC x 1-1/2
350	400	25	1	<b>BFX-603-CP</b>	24	68	82	27,8	57,2	13	M12x45	7/16-14 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-CP</b>	27	79	95	31,8	66,6	13,5	M12x45	1/2-13 UNC x 1-3/4
350	400	32	1-1/4	<b>BFX-604-CP-M14</b>	27	79	95	31,8	66,6	15	M14x45	
350	400	38	1-1/2	<b>BFX-605-CP</b>	30	88	108	36,5	79,3	17	M16x55	5/8-11 UNC x 2-1/4
350	400	51	2	<b>BFX-606-CP</b>	30	118	137	44,5	96,8	21	M20x65	3/4-10 UNC x 2-3/4
350	400	64	2-1/2	<b>BFX-607-CP</b>	45	152	180	58,7	123,8	26	M24x80	
350	400	76	3	<b>BFX-608-CP</b>	55	178	208	71,4	152,4	33	M30x100	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9).

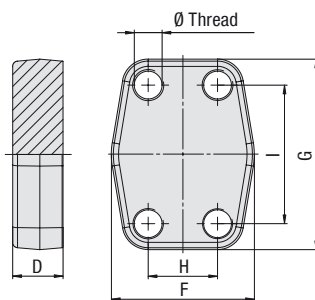
<sup>2</sup> For UNC threaded bolts, use hexagon head bolts only. Please note that these do not belong to our product range.

<sup>3</sup> Alternative options shown in brackets are available on request.



**SAE Single-Part Blanking Counterflange  
BAS-CP**
**Order Codes**

- \* SAE Single-Part Blanking Counterflange      **BAS-...-CP**
- \* For UNC bolts    **BAS-...-CPU**
- \* For deviant Metric bolts (M14)                      **BAS-...-CPM14**



**Material** S355J0/C45 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "W5" on request

**3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)**

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)					Ø Thread	
8.8	10.9 (MH)	DN	(in)		D	F	G	H	I	Metr. <sup>3</sup>	UNC
350	350	13	1/2	<b>BAS-301-CP</b>	16	47	57	17,5	38,1	M8	5/16-18 UNC
350	350	19	3/4	<b>BAS-302-CP</b>	18	50	67	22,3	47,6	M10	3/8-16 UNC
250	315	25	1	<b>BAS-303-CP</b>	19	54	72	26,2	52,4	M10	3/8-16 UNC
200	250	32	1-1/4	<b>BAS-304-CP</b>	18	68	82	30,2	58,7	M10 (M12)	7/16-14 UNC
200	200	38	1-1/2	<b>BAS-305-CP</b>	20	79	96	35,7	69,9	M12 (M14)	1/2-13 UNC
160	200	51	2	<b>BAS-306-CP</b>	20	88	102	42,9	77,8	M12 (M14)	1/2-13 UNC
100	160	64	2-1/2	<b>BAS-307-CP</b>	20	101	115	50,8	88,9	M12 (M14)	1/2-13 UNC
100	160	76	3	<b>BAS-308-CP</b>	24	127	137	61,9	106,4	M16	5/8-11 UNC
35	35	89	3-1/2	<b>BAS-309-CP</b>	22	138	155	69,8	120,7	M16	5/8-11 UNC
35	35	102	4	<b>BAS-310-CP</b>	25	147	163	77,8	130,2	M16	5/8-11 UNC
35	35	127	5	<b>BAS-311-CP</b>	25	180	184	92	152,4	M16	5/8-11 UNC

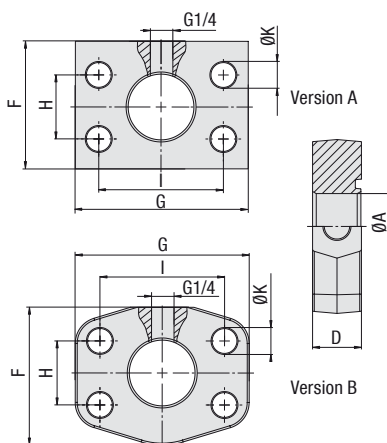
**6000 PSI High Pressure Series (based on ISO 6162-2:2006)**

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)					Ø Thread	
8.8	10.9 (MH)	DN	(in)		D	F	G	H	I	Metr.	UNC
350	400	13	1/2	<b>BAS-601-CP</b>	16	47	57	18,2	40,5	M8	5/16-18 UNC
350	400	19	3/4	<b>BAS-602-CP</b>	19	54	72	23,8	50,8	M10	3/8-16 UNC
350	400	25	1	<b>BAS-603-CP</b>	24	68	82	27,8	57,2	M12	7/16-14 UNC
350	400	32	1-1/4	<b>BAS-604-CP</b>	27	79	95	31,8	66,6	M12	1/2-13 UNC
350	400	32	1-1/4	<b>BAS-604-CPM14</b>	27	79	95	31,8	66,6	M14	
350	400	38	1-1/2	<b>BAS-605-CP</b>	30	88	108	36,5	79,3	M16	5/8-11 UNC
350	400	51	2	<b>BAS-606-CP</b>	30	118	137	44,5	96,8	M20	3/4-10 UNC
350	400	64	2-1/2	<b>BAS-607-CP</b>	45	152	180	58,7	123,8	M24	
350	400	76	3	<b>BAS-608-CP</b>	55	178	208	71,4	152,4	M30	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9).

<sup>3</sup> Alternative options shown in brackets are available on request.

## SAE Sandwich Plate (e.g. for Test Coupling) - Female BSPP Port SPL-G1/4-L



### Order Codes

\* SAE Sandwich Plate **SPL-...-G1/4-L**  
(e.g. for Test Point) Female BSPP Port



Please see **STAUFF Test** section  
for further information on the  
corresponding test couplings.

**Material** S355J0/C45 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)							
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	ØK	Version
350	350	13	1/2	<b>SPL-301-G1/4-L</b>	12	24	40	55	17,5	38,1	8,7	A
350	350	19	3/4	<b>SPL-302-G1/4-L</b>	19	28	50	65	22,3	47,6	10,5	A
250	315	25	1	<b>SPL-303-G1/4-L</b>	24	25	60	70	26,2	52,4	10,5	B
200	250	32	1-1/4	<b>SPL-304-G1/4-L</b>	31	23	68	82	30,2	58,7	11,7	B
200	200	38	1-1/2	<b>SPL-305-G1/4-L</b>	38	24	79	96	35,7	69,9	13,5	B
160	200	51	2	<b>SPL-306-G1/4-L</b>	50	24	88	102	42,9	77,8	13,5	B

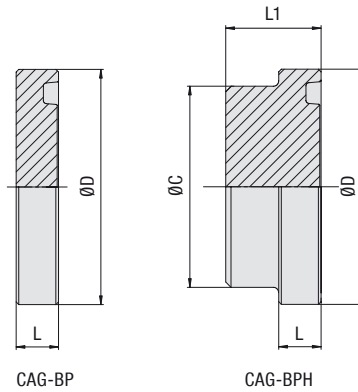
### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)							
8.8	10.9 (MH)	DN	(in)		ØA	D	F	G	H	I	ØK	Version
350	400	13	1/2	<b>SPL-601-G1/4-L</b>	12	24	40	55	18,2	40,5	8,7	A
350	400	19	3/4	<b>SPL-602-G1/4-L</b>	19	25	60	70,6	23,8	50,8	10,5	A
350	400	25	1	<b>SPL-603-G1/4-L</b>	25	23	68	82	27,8	57,2	13	B
350	400	32	1-1/4	<b>SPL-604-G1/4-L</b>	31	25	79	95	31,8	66,6	13,5	B
350	400	32	1-1/4	<b>SPL-604-G1/4-L-M14</b>	31	25	79	95	31,8	66,6	15	B
350	400	38	1-1/2	<b>SPL-605-G1/4-L</b>	38	28	88	108	36,5	79,3	17	B
350	400	51	2	<b>SPL-606-G1/4-L</b>	50	33	118	137	44,5	96,8	21	B

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9).

**SAE Blindplug  
CAG-BP / CAG-BPH (high Version)**
**Order Codes**

- \* SAE Blindplug (without O-ring) **CAG-BP-...**
- \* Including Metric bolts 8.8, spring rings, O-ring made of NBR (Buna-N®) and DB (packed in kits) **CAG-BP-...#K**
- \* SAE Blindplug - high Version (without O-ring) **CAG-BPH-...**
- \* SAE Blindplug Counterflange high Version **CSG-BPH-...**



**Material** S355J0/C45 or equivalent  
**Surface** CrVI free  
**Special Material** Stainless Steel 1.4571 “-W5” on request

**3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)**

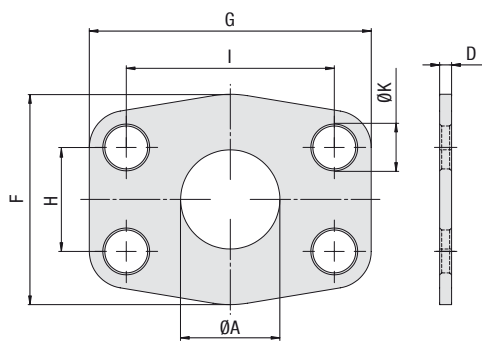
PN (bar)		Nominal Size		Order Codes	Order Codes	Dimensions (mm)			
BP	BPH	DN	(in)			ØC	ØD	L	L1
210	350	13	1/2	CAG-BP-301	CAG-BPH-301	24	30,2	6,8	15
210	350	19	3/4	CAG-BP-302	CAG-BPH-302	31,5	38,1	6,8	16
210	315	25	1	CAG-BP-303	CAG-BPH-303	38	44,45	8	18
200	250	32	1-1/4	CAG-BP-304	CAG-BPH-304	43	50,8	8	18
160	200	38	1-1/2	CAG-BP-305	CAG-BPH-305	50	60,35	8	18
160	200	51	2	CAG-BP-306	CAG-BPH-306	61,8	71,4	9,6	21
100	160	64	2-1/2	CAG-BP-307	CAG-BPH-307	73,8	84,1	9,6	21
100	160	76	3	CAG-BP-308	CAG-BPH-308	90	101,6	9,6	24
35	35	89	3-1/2	CAG-BP-309	CAG-BPH-309	102	114,3	11,3	45
35	35	102	4	CAG-BP-310	CAG-BPH-310	114	127	11,3	55

**6000 PSI High Pressure Series (according to ISO 6162-2:2006)**

PN (bar)		Nominal Size		Order Codes	Order Codes	Dimensions (mm)			
BP	BPH	DN	(in)			ØC	ØD	L	L1
250	350	13	1/2	CAG-BP-601	CAG-BPH-601	24	31,8	7,8	18
250	350	19	3/4	CAG-BP-602	CAG-BPH-602	32	41,3	8,8	21
250	350	25	1	CAG-BP-603	CAG-BPH-603	38	47,6	9,5	26
250	350	32	1-1/4	CAG-BP-604 <sup>2</sup>	CAG-BPH-604 <sup>2</sup>	43,8	54	10,3	31
250	350	38	1-1/2	CAG-BP-605	CAG-BPH-605	50,8	63,5	12,6	34
250	350	51	2	CAG-BP-606	CAG-BPH-606	66,5	79,4	12,6	42
250	350	64	2-1/2		CAG-BPH-607	89	108	21,2	45

<sup>2</sup> According to ISO 6162-2 bolts M12 should be used but because usually bolts M14 are used the description of the complete clamp must show M14 (e.g. CAG-BP-604-M14#K).

## SAE Sandwich Plate SPL



**Material** ST35 or equivalent  
**Surface** blank, oiled

### Order Codes

\* SAE Sandwich Plate

SPL-...

### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

Nominal Size		Order Codes	Dimensions (mm)						
DN	(in)		ØA	D	F	G	H	I	ØK
13	1/2	SPL-301	13	3	47	57	17,5	38,1	9
19	3/4	SPL-302	19	3	49	66	22,3	47,6	11
25	1	SPL-303	25	3	53	71	26,2	52,4	11
32	1-1/4	SPL-304	32	3	69	80	30,2	58,7	11,5
38	1-1/2	SPL-305	38	3	77	95	35,7	69,9	13,5
51	2	SPL-306	51	3	89	103	42,9	77,8	13,5
64	2-1/2	SPL-307	63	3	101	116	50,8	88,9	13,5
76	3	SPL-308	73	4	124	136	61,9	106,4	17
89	3-1/2	SPL-309	89	4	136	152	69,8	120,7	17
102	4	SPL-310	99	4	146	162	77,8	130,2	17
127	5	SPL-311	120	4	180	184	92	152,4	17

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

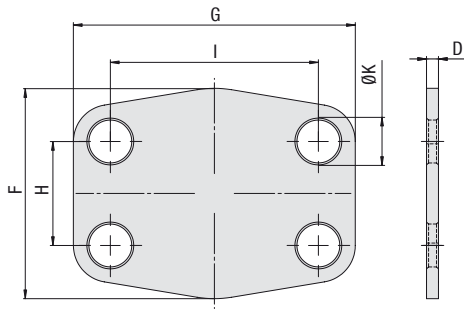
Nominal Size		Order Codes	Dimensions (mm)						
DN	(in)		ØA	D	F	G	H	I	ØK
13	1/2	SPL-601	13	4	47	57	18,2	40,5	9
19	3/4	SPL-602	17	4	53	71	23,8	50,8	11
25	1	SPL-603	24	4	66	80	27,8	57,2	13
32	1-1/4	SPL-604-M14	31	4	77	94	31,8	66,6	15
38	1-1/2	SPL-605	38	4	89	103	36,5	79,3	17
51	2	SPL-606	51	4	116	135	44,5	96,8	21
64	2-1/2	SPL-607	63	4	150	166	58,7	123,8	25
76	3	SPL-608	73	4	178	208	71,4	152,4	32

SAE Cover Plate  
CPL

## Order Codes

★ SAE Cover Plate

CPL-...


**Material  
Surface**

 ST35 or equivalent  
blank, oiled

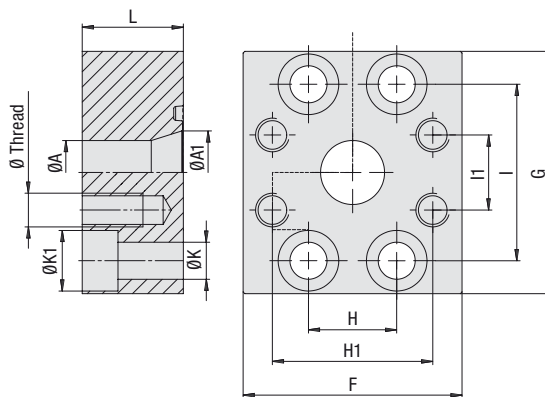
## 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

Nominal Size		Order Codes	Dimensions (mm)					
DN	(in)		D	F	G	H	I	ØK
13	1/2	CPL-301	3	47	57	17,5	38,1	9
19	3/4	CPL-302	3	49	66	22,3	47,6	11
25	1	CPL-303	3	53	71	26,2	52,4	11
32	1-1/4	CPL-304	3	69	80	30,2	58,7	11,5
38	1-1/2	CPL-305	3	77	95	35,7	69,9	13,5
51	2	CPL-306	3	89	103	42,9	77,8	13,5
64	2-1/2	CPL-307	3	101	116	50,8	88,9	13,5
76	3	CPL-308	4	124	136	61,9	106,4	17
89	3-1/2	CPL-309	4	136	152	69,8	120,7	17
102	4	CPL-310	4	146	162	77,8	130,2	17
127	5	CPL-311	4	180	184	92	152,4	17

## 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

Nominal Size		Order Codes	Dimensions (mm)					
DN	(in)		D	F	G	H	I	ØK
13	1/2	CPL-601	4	47	57	18,2	40,5	9
19	3/4	CPL-602	4	53	71	23,8	50,8	11
25	1	CPL-603	4	66	80	27,8	57,2	13
32	1-1/4	CPL-604-M14	4	77	94	31,8	66,6	15
38	1-1/2	CPL-605	4	89	103	36,5	79,3	17
51	2	CPL-606	4	116	135	44,5	96,8	21
64	2-1/2	CPL-607	4	150	166	58,7	123,8	25
76	3	CPL-608	4	178	208	71,4	152,4	32

## SAE Reducing Flange BFX-...-BAS-...



**Material** S355J0 or equivalent  
**Surface** blank, oiled  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### Order Codes

\* SAE Reducing Flange  
(without O-ring)

**BFX-...-BAS-...**

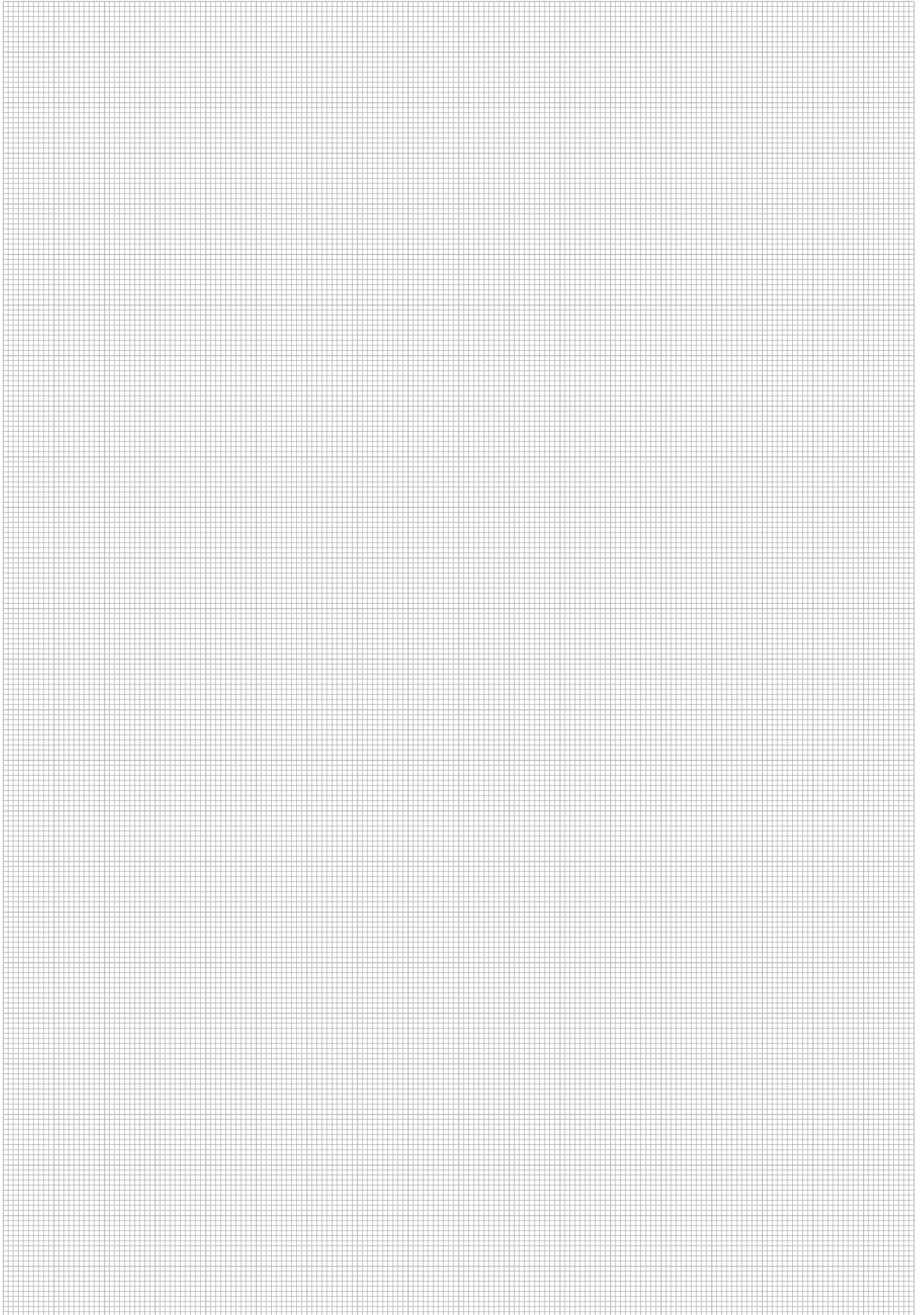
### 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

Nominal Size		Order Codes	Dimensions (mm)											for Bolts	Ø Thread
DN	(in)		ØA	ØA1	F	G	H	H1	I	I1	L	ØK	ØK1	Metr.	Metr.
25	1	BFX-303-BAS-302	19	25	65	72	26,2	47,6	52,4	22,3	30	11	18	M10x30	M10
32	1-1/4	BFX-304-BAS-303	25	32	70	80	30,2	52,4	58,7	26,2	30	11	18	M10x30	M10
38	1-1/2	BFX-305-BAS-304	32	38	80	95	35,7	58,7	69,9	30,2	30	13,5	20	M12x35	M10
51	2	BFX-306-BAS-304	32	51	95	100	42,9	58,7	77,8	30,2	30	13,5	20	M12x35	M10
51	2	BFX-306-BAS-305	38	46	95	120	42,9	69,9	77,8	35,7	30	13,5	20	M12x35	M12
64	2-1/2	BFX-307-BAS-305	38	62	109	114	50,8	69,9	88,9	35,7	35	13,5	20	M12x40	M12
64	2-1/2	BFX-307-BAS-306	51	64	109	114	50,8	77,8	88,9	42,9	35	13,5	20	M12x40	M12
76	3	BFX-308-BAS-306	51	76	114	140	61,9	77,8	106,4	42,9	40	17,5	26	M16x50	M12
76	3	BFX-308-BAS-307	64	76	114	140	61,9	88,9	106,4	50,8	40	17,5	26	M16x50	M12

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

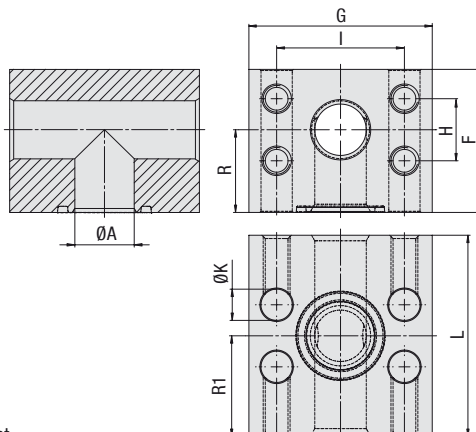
Nominal Size		Order Codes	Dimensions (mm)											for Bolts	Ø Thread
DN	(in)		ØA	ØA1	F	G	H	H1	I	I1	L	ØK	ØK1	Metr.	Metr.
19	3/4	BFX-602-BAS-602	19	19	70	70	23,8	50,8	50,8	23,8	28	11	18	M10x35	M10
25	1	BFX-603-BAS-602	19	23	70	81	27,8	50,8	57,2	23,8	30	13,5	20	M12x40	M10
25	1	BFX-603-BAS-603	25	25	75	80	27,8	57,2	57,2	27,8	36	13,5	20	M12x45	M12
32	1-1/4	BFX-604-M14-BAS-603	23	30	83	100	31,8	57,2	66,6	27,8	25	15	22	M14x40	M12
32	1-1/4	BFX-604-M14-BAS-604-M14	31	31	90	100	31,8	66,6	66,6	31,8	35	15	22	M14x50	M14
38	1-1/2	BFX-605-BAS-604-M14	32	40	95	113	36,5	66,6	79,3	31,8	48	17,5	26	M16x55	M14
38	1-1/2	BFX-605-BAS-605	38	38	113	113	36,5	79,3	79,3	36,5	50	17,5	26	M16x55	M16
51	2	BFX-606-BAS-605	38	49	125	140	44,5	79,3	96,8	36,5	60	22	33	M20x100	M16





## SAE Block T-Connection (Adapter Style)

## BF-T



## Order Codes

- \* SAE Block T-Connection (Adapter Style) **BF-T-...**
- \* Deviant screw holes and threads **BF-T-...M\*\***
- \* Deviant surface treatment (blank, oiled) **BF-T-...-W1**

**Material** S355J0 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "-W5" on request

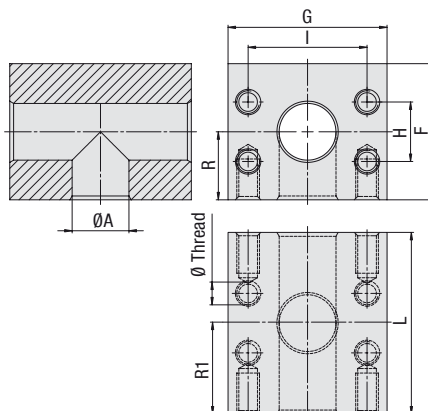
## 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)										Ø Thread
8.8	10.9 (MH)	DN	(in)		ØA	F	G	H	I	L	R	R1	ØK	Metr.	
350	400	19	3/4	<b>BF-T-602</b>	19	55	72	23,8	50,8	72	32	36	11	M10	
350	400	25	1	<b>BF-T-603</b>	23	64	82	27,8	57,2	90	37	45	13,5	M12	
350	400	32	1-1/4	<b>BF-T-604-M14</b>	30	72	100	31,8	66,6	100	41	50	15,5	M14	
350	400	38	1-1/2	<b>BF-T-605</b>	38	89	114	36,5	79,3	110	50	55	17,5	M16	
350	400	51	2	<b>BF-T-606</b>	50	107	133	44,5	96,8	135	64	67,5	22	M20	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9).

**SAE Block T-Connection (Connector Style)**  
**BC-T**
**Order Codes**

- \* SAE Block T-Connection (Connector Style) **BC-T-...**
- \* Deviant threads **BC-T-...M\*\***
- \* Deviant surface treatment (blank, oiled) **BC-T-...-W1**



**Material** S355J0 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "-W5" on request

**3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)**

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)								Ø Thread
8.8	10.9 (MH)	DN	(in)		ØA	F	G	H	I	L	R	R1	Metr.
350	350	13	1/2	<b>BC-T-301</b>	13	50	55	17,5	38,1	70	25	35	M8
350	350	19	3/4	<b>BC-T-302</b>	19	60	65	23,3	47,6	75	30	37,5	M10
250	315	25	1	<b>BC-T-303</b>	24	65	72	26,2	52,4	80	33	40	M10
200	250	32	1-1/4	<b>BC-T-304</b>	32	80	82	30,2	58,7	90	39	45	M10
200	200	38	1-1/2	<b>BC-T-305</b>	38	92	100	35,7	69,9	110	51	55	M12
160	200	51	2	<b>BC-T-306</b>	51	87	102	42,9	77,8	120	51	60	M12
100	160	64	2-1/2	<b>BC-T-307</b>	62	120	115	50,8	88,9	160	60	80	M12
100	138	76	3	<b>BC-T-308</b>	73	135	135	61,9	106,4	160	67,5	80	M16
35	35	89	3-1/2	<b>BC-T-309</b>	89	145	150	69,9	120,7	160	72,5	80	M16

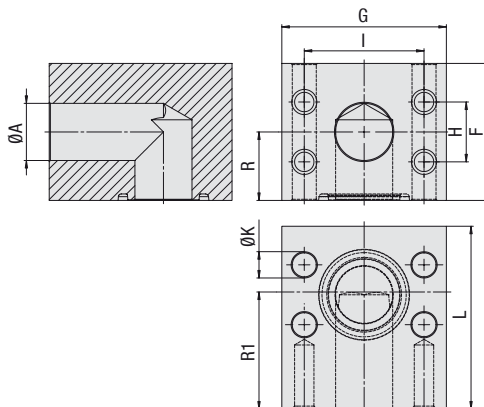
**6000 PSI High Pressure Series (based on ISO 6162-2:2006)**

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)								Ø Thread
8.8	10.9 (MH)	DN	(in)		ØA	F	G	H	I	L	R	R1	Metr.
350	400	13	1/2	<b>BC-T-601</b>	13	50	60	18,2	40,5	90	25	45	M8
350	400	19	3/4	<b>BC-T-602</b>	19	55	72	23,8	50,8	72	32	36	M10
350	400	25	1	<b>BC-T-603</b>	23	64	82	27,8	57,2	90	37	45	M12
350	400	32	1-1/4	<b>BC-T-604</b>	30	72	100	31,8	66,6	100	41	50	M12
350	400	32	1-1/4	<b>BC-T-604M14</b>	30	72	100	31,8	66,6	100	41	50	M14
350	400	38	1-1/2	<b>BC-T-605</b>	38	89	114	36,5	79,3	110	50	55	M16
350	400	51	2	<b>BC-T-606</b>	50	107	133	44,5	96,8	135	64	67,5	M20
350	400	64	2-1/2	<b>BC-T-607</b>	62	155	180	58,8	123,8	180	77,5	90	M24

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9).

## SAE Block L-Connection (Adapter Style)

## BF-L



## Order Codes

- \* SAE Block L-Connection (Adapter Style) **BF-L-...**
- \* Deviant screw holes and threads **BF-L-...M\*\***
- \* Deviant surface treatment (blank, oiled) **BF-L-...-W1**

**Material** S355J0 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 " -W5" on request

## 3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)										Ø Thread
8.8	10.9 (MH)	DN	(in)		ØA	F	G	H	I	L	R	R1	ØK	Metr.	
350	350	13	1/2	<b>BF-L-301</b>	13	50	55	17,5	38,1	55	25	35	9	M8	
350	350	20	3/4	<b>BF-L-302</b>	19	60	65	23,3	47,6	60	30	40	11	M10	
250	315	25	1	<b>BF-L-303</b>	24	65	72	26,2	52,4	65	33	40	11	M10	
200	200	32	1-1/4	<b>BF-L-304</b>	32	80	82	30,2	58,7	82	39	38	11	M10	
160	200	38	1-1/2	<b>BF-L-305</b>	38	92	100	35,7	69,9	92	51	59	13,5	M12	
100	160	51	2	<b>BF-L-306</b>	51	87	102	42,9	77,8	85	51	48	13,5	M12	
100	160	64	2-1/2	<b>BF-L-307</b>	62	120	110	50,8	88,9	110	60	65	13,5	M12	
100	138	76	3	<b>BF-L-308</b>	73	135	135	61,9	106,4	150	67,5	90	17,5	M16	
35	35	89	3-1/2	<b>BF-L-309</b>	89	145	150	69,9	120,7	145	72,5	75	17,5	M16	

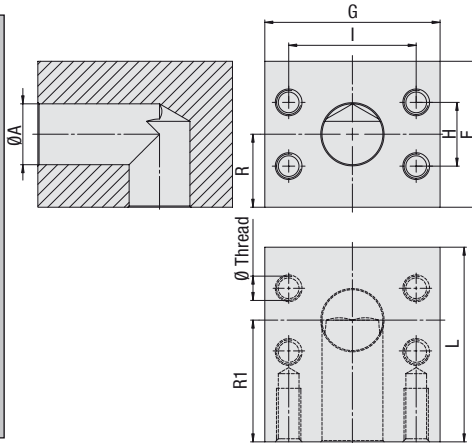
## 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)										Ø Thread
8.8	10.9 (MH)	DN	(in)		ØA	F	G	H	I	L	R	R1	ØK	Metr.	
350	400	13	1/2	<b>BF-L-601</b>	13	50	60	18,2	40,5	60	25	40	9	M8	
350	400	19	3/4	<b>BF-L-602</b>	19	55	72	23,8	50,8	60	32	36	11	M10	
350	400	25	1	<b>BF-L-603</b>	23	64	82	27,8	57,2	68	37	40	13,5	M12	
350	400	32	1-1/4	<b>BF-L-604</b>	30	72	100	31,8	66,6	76	41	46	13,5	M12	
350	400	32	1-1/4	<b>BF-L-604-M14</b>	30	72	100	31,8	66,6	76	41	46	15,5	M14	
350	400	38	1-1/2	<b>BF-L-605</b>	38	89	114	36,5	79,3	86	50	52	17,5	M16	
350	400	51	2	<b>BF-L-606</b>	50	107	133	44,5	96,8	107	64	70	22	M20	
350	400	64	2-1/2	<b>BF-L-607</b>	62	155	180	58,8	123,8	160	77,5	90	26	M24	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9).

**SAE Block L-Connection (Connector Style)  
BC-L**
**Order Codes**

- \* SAE Block L-Connection (Connector Style) **BC-L-...**
- \* Deviant threads **BC-L-...M\*\***
- \* Deviant surface treatment (blank, oiled) **BC-L-...-W1**



**Material** S355J0 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "-W5" on request

**3000 PSI Standard Pressure Series (based on ISO 6162-1:2006)**

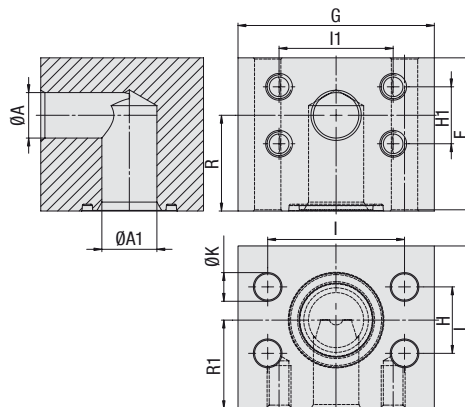
PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)								Ø Thread
8.8	10.9 (MH)	DN	(in)		ØA	F	G	H	I	L	R	R1	Metr.
350	350	13	1/2	<b>BC-L-301</b>	13	50	55	17,5	38,1	55	25	35	M8
350	350	20	3/4	<b>BC-L-302</b>	19	60	65	23,3	47,6	60	30	40	M10
250	315	25	1	<b>BC-L-303</b>	24	65	72	26,2	52,4	65	33	40	M10
200	200	32	1-1/4	<b>BC-L-304</b>	32	80	82	30,2	58,7	82	39	38	M10
160	200	38	1-1/2	<b>BC-L-305</b>	38	92	100	35,7	69,9	92	51	59	M12
100	160	51	2	<b>BC-L-306</b>	51	87	102	42,9	77,8	85	51	48	M12
100	160	64	2-1/2	<b>BC-L-307</b>	62	120	110	50,8	88,9	110	60	65	M12
100	138	76	3	<b>BC-L-308</b>	73	135	135	61,9	106,4	150	67,5	90	M16
35	35	89	3-1/2	<b>BC-L-309</b>	89	145	150	69,9	120,7	145	72,5	75	M16

**6000 PSI High Pressure Series (based on ISO 6162-2:2006)**

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)								Ø Thread
8.8	10.9 (MH)	DN	(in)		ØA	F	G	H	I	L	R	R1	Metr.
350	400	13	1/2	<b>BC-L-601</b>	13	50	60	18,2	40,5	60	25	40	M8
350	400	19	3/4	<b>BC-L-602</b>	19	55	72	23,8	50,8	60	32	36	M10
350	400	25	1	<b>BC-L-603</b>	23	64	82	27,8	57,2	68	37	40	M12
350	400	32	1-1/4	<b>BC-L-604</b>	30	72	100	31,8	66,6	76	41	46	M12
350	400	32	1-1/4	<b>BC-L-604M14</b>	30	72	100	31,8	66,6	76	41	46	M14
350	400	38	1-1/2	<b>BC-L-605</b>	38	89	114	36,5	79,3	86	50	52	M16
350	400	51	2	<b>BC-L-606</b>	50	107	133	44,5	96,8	107	64	70	M20
350	400	64	2-1/2	<b>BC-L-607</b>	62	155	180	58,8	123,8	160	77,5	90	M24

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9).

## SAE Block L-Connection Reduction (Adapter Style) BF-L-RED



**Material** S355J0 or equivalent  
**Surface** CrVI-free  
**Special Material** Stainless Steel 1.4404 "-W5" on request

### Order Codes

- \* SAE Block L-Connection (Adapter Style) **BF-L-...-...**
- \* Deviant screw holes **BF-L-...-M\*\*-...**
- \* Deviant threads **BF-L-...-...M\*\***
- \* Deviant surface treatment (blank, oiled) **BF-L-...-W1**

### 6000 PSI High Pressure Series (based on ISO 6162-2:2006)

PN (bar) <sup>1</sup>		Nominal Size		Order Codes	Dimensions (mm)														Ø Thread
8.8	10.9 (MH)	DN	(in)		ØA	ØA1	F	G	H	H1	I1	I	L	R	R1	ØK	Metr.		
350	400	25 - 19	1 - 3/4	<b>BF-L-603-602</b>	19	23	64	82	27,8	23,8	50,8	57,2	68	37	40	14	M10		
350	400	32 - 19	1-1/4 - 3/4	<b>BF-L-604-M14-602</b>	19	30	72	100	31,8	23,8	50,8	66,6	76	41	46	16	M10		
350	400	32 - 25	1-1/4 - 1	<b>BF-L-604-M14-603</b>	23	30	72	100	31,8	27,8	57,2	66,6	76	41	46	16	M12		
350	400	38 - 32	1-1/2 - 1-1/4	<b>BF-L-605-604M14</b>	30	38	89	114	36,5	31,8	66,6	79,3	86	50	52	18	M14		
350	400	51 - 38	2 - 1-1/2	<b>BF-L-606-605</b>	38	50	107	133	44,5	36,5	79,3	96,8	107	64	70	22	M16		

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself and depends on the bolts used (Grade 8.8 / 10.9).



## Ordering of Separate Sealings

Ordering of separate sealings by using the ordering code as stated below:

### O-Ring \*\*\* - ID x Cross-section - SH90

\*\*\* Material Code (NBR or FKM)  
 ID x Cross-section Dimensions according to Dimension Table  
 SH90 Shore Hardness (Standard)

Nominal Size		Sealing ID x Cross-section SAE J515 - STAUFF Standard
DN	(in)	
13	1/2	18,64 x 3,53
19	3/4	24,99 x 3,53
25	1	32,92 x 3,53
32	1-1/4	37,69 x 3,53
38	1-1/2	47,22 x 3,53
51	2	56,74 x 3,53
64	2-1/2	69,44 x 3,53
76	3	85,32 x 3,53
89	3-1/2	98,02 x 3,53
102	4	110,72 x 3,53
127	5	136,12 x 3,53

## Ordering of Separate Bolt Sets

Ordering of separate bolt sets (consisting of 4 hexagon socket head cap bolts and 4 spring rings) by using the ordering code as stated below:

Metric bolts 8.8 **SET-BFX-IS-M12x50-8.8-ISO4762-W66 (CrVI-free)**

Metric bolts 10.9 **SET-BFX-IS-M12x50-10.9-ISO4762-W1**

UNC bolts **SET-BFX-IS-U5/16"-18x1"1/4-Gr8-AB18.3-W1**

Thread diameter, length (see corresponding catalogue pages) and type (8.8 or 10.9 for MH / Gr8 for U) have to be replaced according to your requirements. Bolts MH (Strength Properties 10.9) are delivered in blank, oiled. Please replace W66 (zinc plated) for Metric bolts and W1 (blank, oiled) with W5 to order Stainless Steel (1.4571) bolts.

Metric bolts ISO 4762  
 Spring rings for Metric bolts DIN 7980  
 UNC bolts ANSI B 18.3  
 Spring rings for UNC bolts ANSI B 18.21.1

## Sealings / Sealing Materials

### NBR (Buna-N®)

Shore Hardness 90 Shore  
 Temperature Range -30 °C ... +100 °C / -22 °F ... + 212 °F

### FPM (Viton®)

Shore Hardness 85 ... 90 Shore  
 Temperature Range -20 °C ... +200 °C / -4 °F ... +392 °F

Other sealing materials are available on request.

### 3000 PSI Standard Pressure Series (according to ISO 6162-1)

Nominal Size		Sealing ID x Cross-section	
DN	(in)	SAE J515 - STAUFF Standard	ISO 3601-1 - Nominal Size
13	1/2	18,64 x 3,53	-210
19	3/4	24,99 x 3,53	-214
25	1	32,92 x 3,53	-219
32	1-1/4	37,69 x 3,53	-222
38	1-1/2	47,22 x 3,53	-225
51	2	56,74 x 3,53	-228
64	2-1/2	69,44 x 3,53	-232
76	3	85,32 x 3,53	-237
89	3-1/2	98,02 x 3,53	-241
102	4	110,72 x 3,53	-245
127	5	136,12 x 3,53	-253

### 6000 PSI High Pressure Series (according to ISO 6162-2)

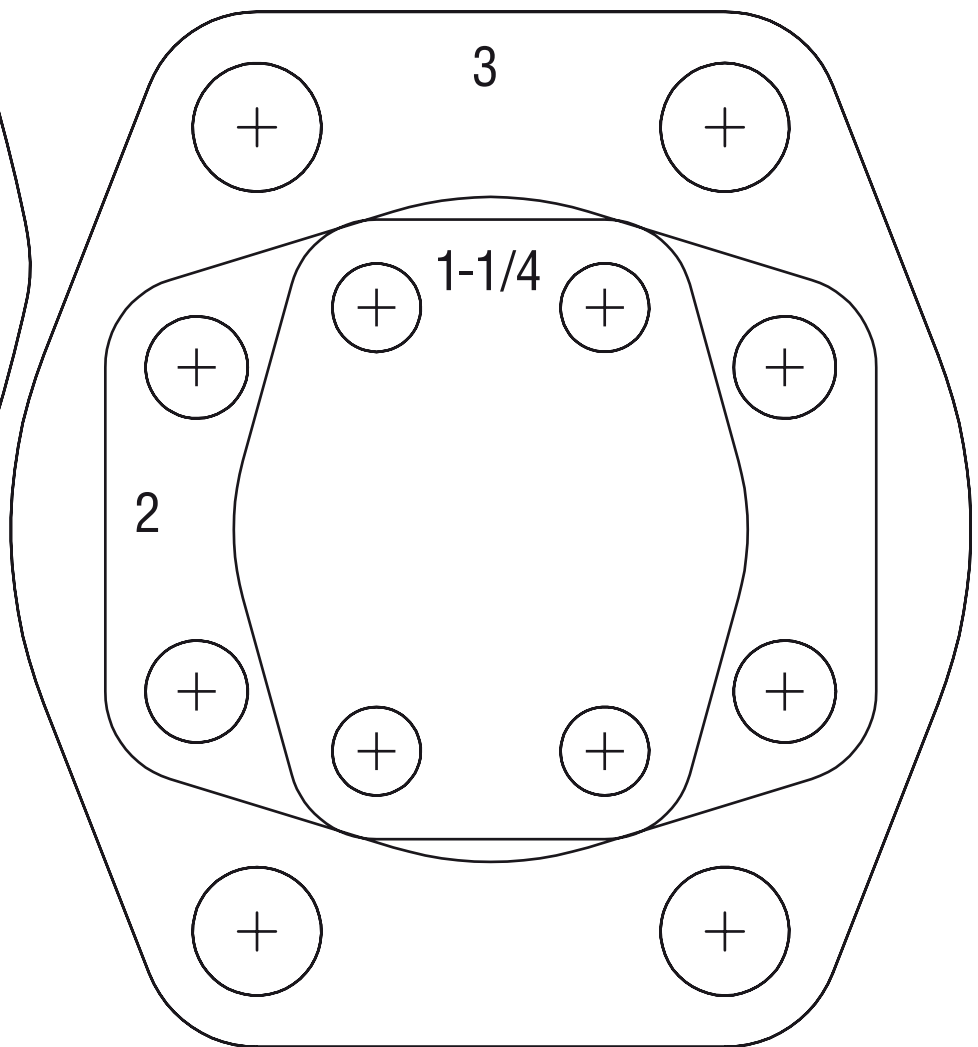
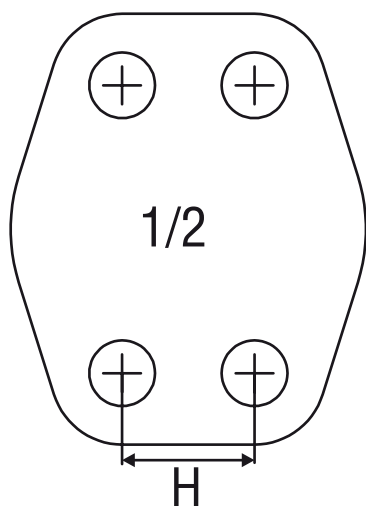
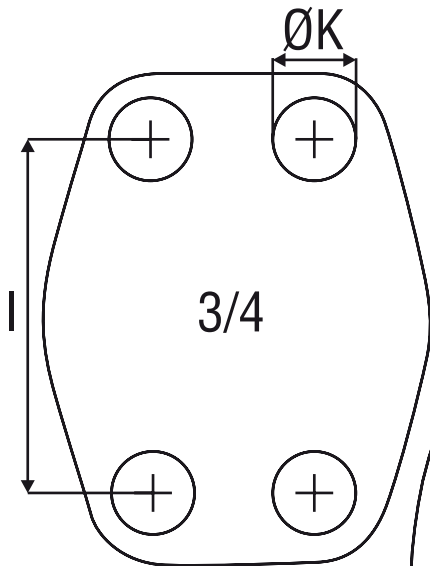
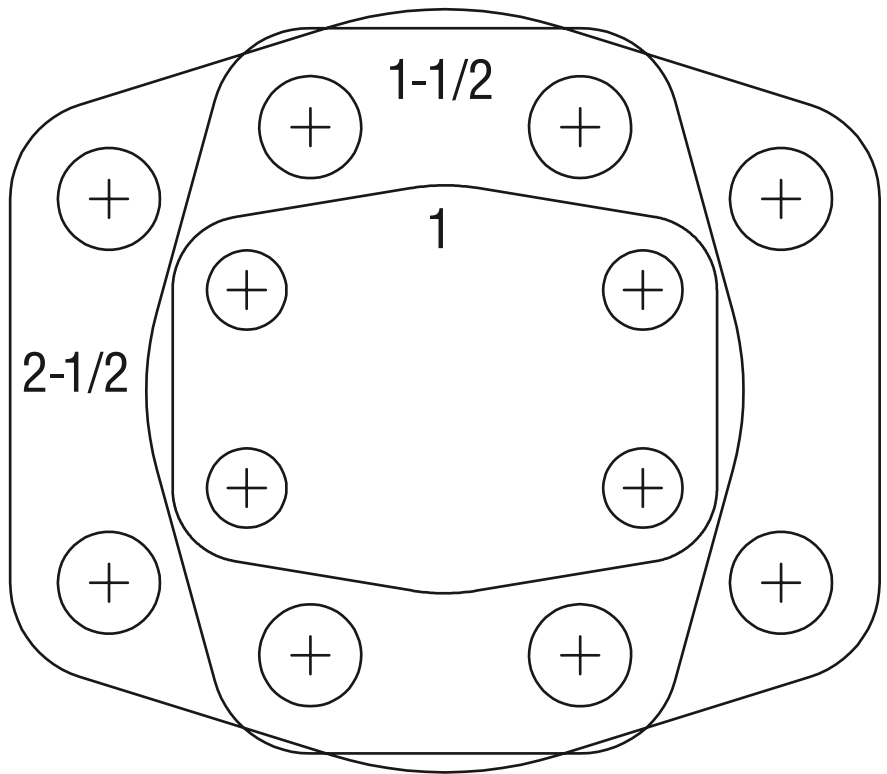
Nominal Size		Sealing ID x Cross-section	
DN	(in)	SAE J515 - STAUFF Standard	ISO 3601-1 - Nominal Size
13	1/2	18,64 x 3,53	-210
19	3/4	24,99 x 3,53	-214
25	1	32,92 x 3,53	-219
32	1-1/4	37,69 x 3,53	-222
38	1-1/2	47,22 x 3,53	-225
51	2	56,74 x 3,53	-228

Sizing Guide 3000 PSI Standard Pressure Series

**Instructions**

To determine flange type and size, place flange over drawing provided and line up holes.

Size	H	I	Ø Screw Holes	Ø Threads
1/2	17,5	38,1	8,7	M8
3/4	22,3	47,6	10,5	M10
1	26,2	52,4	10,5	M10
1-1/4	30,2	58,7	10,5 / 12,5	M10 / M12
1-1/2	35,7	69,9	13,5 / 14,5	M12 / M14
2	42,9	77,8	13,5 / 14,5	M12 / M14
2-1/2	50,8	88,9	13,5 / 14,5	M12 / M14
3	61,9	106,4	17	M16
3-1/2	69,9	120,7	17	M16
4	77,8	130,2	17	M16
5	92,1	152,4	17	M16

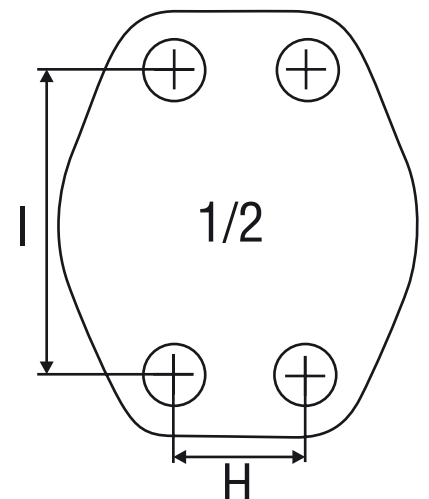
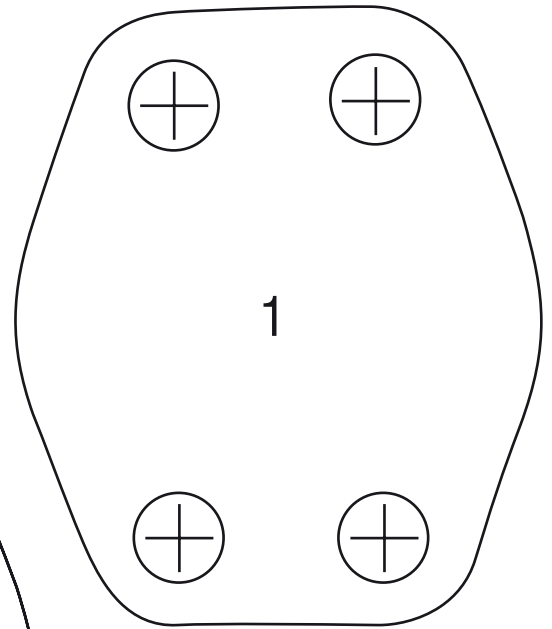
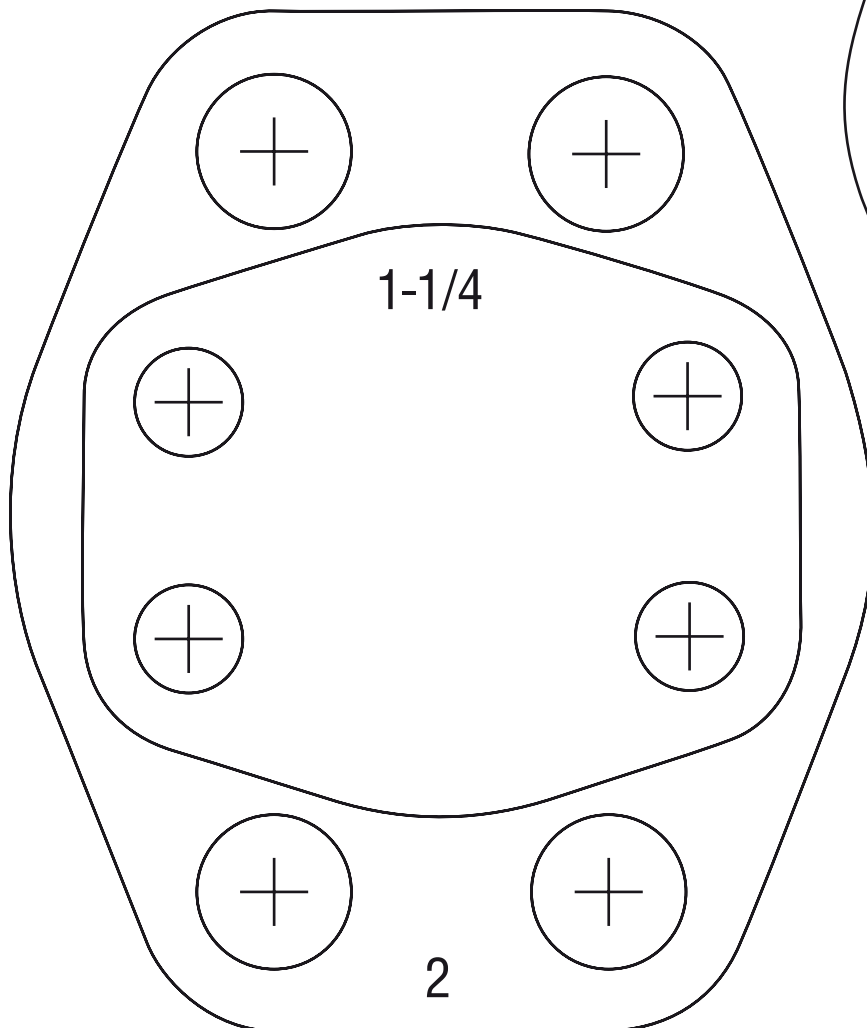
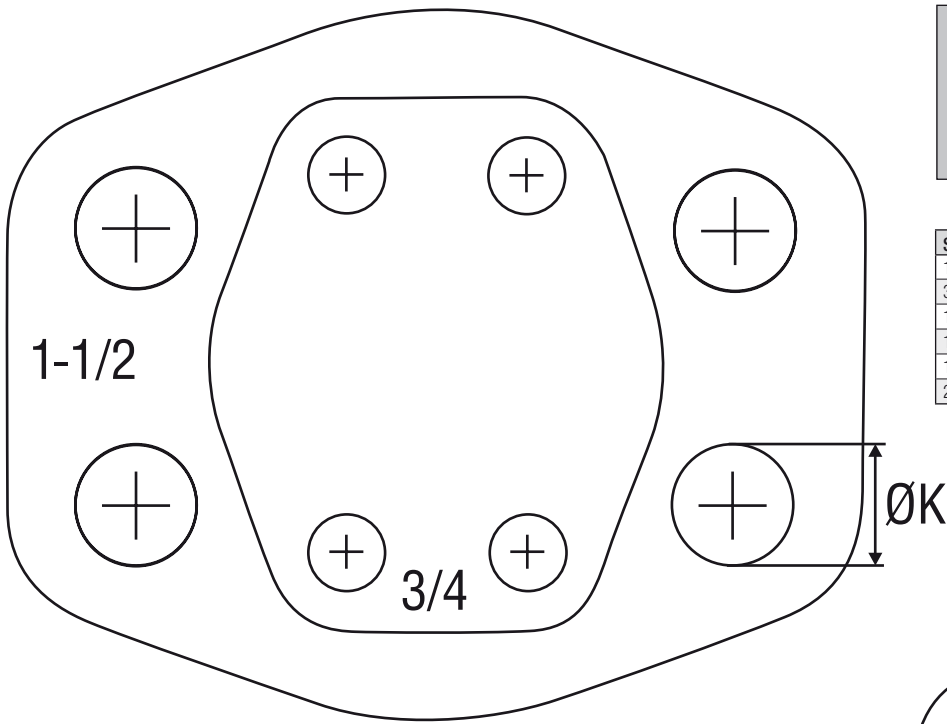


**Sizing Guide 6000 PSI High Pressure Series**

**Instructions**

To determine flange type and size, place flange over drawing provided and line up holes.

Size	H	I	Ø Screw Holes	Ø Threads
1/2	18,2	40,5	8,7	M8
3/4	23,8	50,8	10,5	M10
1	27,8	57,2	13	M12
1-1/4	31,8	66,6	13,5/15	M12 / M14
1-1/2	36,5	79,3	17	M16
2	44,5	96,8	21	M20



## Used Bolts: Property Classes and Tightening Torques

### Bolts 8.8 M (Metric Standard)

3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

Nominal Size		Diameter	Tightening Torques (Nm) <sup>+10%</sup>	Working Pressure max (bar)	Burst Pressure min (bar)
ISO	SAE				
13	1/2	M8	24	350	1400
19	3/4	M10	50	350	1400
25	1	M10	50	250	1000
32	1-1/4	M10	50	200	800
38	1-1/2	M12	92	200	800
51	2	M12	92	160	640
64	2-1/2	M12	92	100	400
76	3	M16	210	100	400
89	3-1/2	M16	210	35	140
102	4	M16	210	35	140
127	5	M16	210	35	140

### Bolts 10.9 MH (Metric High)

3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

Nominal Size		Diameter	Tightening Torques (Nm) <sup>+10%</sup>	Working Pressure max (bar)	Burst Pressure min (bar)
ISO	SAE				
13	1/2	M8	32	350	1400
19	3/4	M10	70	350	1400
25	1	M10	70	315	1260
32	1-1/4	M10	70	250	1000
38	1-1/2	M12	130	200	800
51	2	M12	130	200	800
64	2-1/2	M12	130	160	640
76	3	M16	295	160	640
89	3-1/2	M16	295	35	140
102	4	M16	295	35	140
127	5	M16	295	35	140

6000 PSI High Pressure Series (according to ISO 6162-2:2006)

Nominal Size		Diameter	Tightening Torques (Nm) <sup>+10%</sup>	Working Pressure max (bar)	Burst Pressure min (bar)
ISO	SAE				
13	1/2	M8	32	350	1400
19	3/4	M10	50	350	1400
25	1	M12	92	350	1400
32	1-1/4	M12	92	350	1400
32	1-1/4	M14 <sup>1</sup>	130	350	1400
38	1-1/2	M16	210	350	1400
51	2	M20	400	350	1400

6000 PSI High Pressure Series (according to ISO 6162-2:2006)

Nominal Size		Diameter	Tightening Torques (Nm) <sup>+10%</sup>	Working Pressure max (bar)	Burst Pressure min (bar)
ISO	SAE				
13	1/2	M8	32	400	1600
19	3/4	M10	70	400	1600
25	1	M12	130	400	1600
32	1-1/4	M12	130	400	1600
32	1-1/4	M14 <sup>1</sup>	180	400	1600
38	1-1/2	M16	295	400	1600
51	2	M20	550	400	1600

### Bolts Gr8 U (UNC)

3000 PSI Standard Pressure Series (according to ISO 6162-1:2006)

Nominal Size		Diameter	Tightening Torques (Nm) <sup>+10%</sup>	Working Pressure max (bar)	Burst Pressure min (bar)
ISO	SAE				
13	1/2	5/16-18 UNC	32	350	1400
19	3/4	3/8-16 UNC	60	350	1400
25	1	3/8-16 UNC	60	315	1260
32	1-1/4	7/16-14 UNC	92	250	1000
38	1-1/2	1/2-13 UNC	150	200	800
51	2	1/2-13 UNC	150	200	800
64	2-1/2	1/2-13 UNC	150	160	640
76	3	5/8-11 UNC	295	160	640
89	3-1/2	5/8-11 UNC	295	35	140
102	4	5/8-11 UNC	295	35	140
127	5	5/8-11 UNC	295	35	140

6000 PSI High Pressure Series (according to ISO 6162-2:2006)

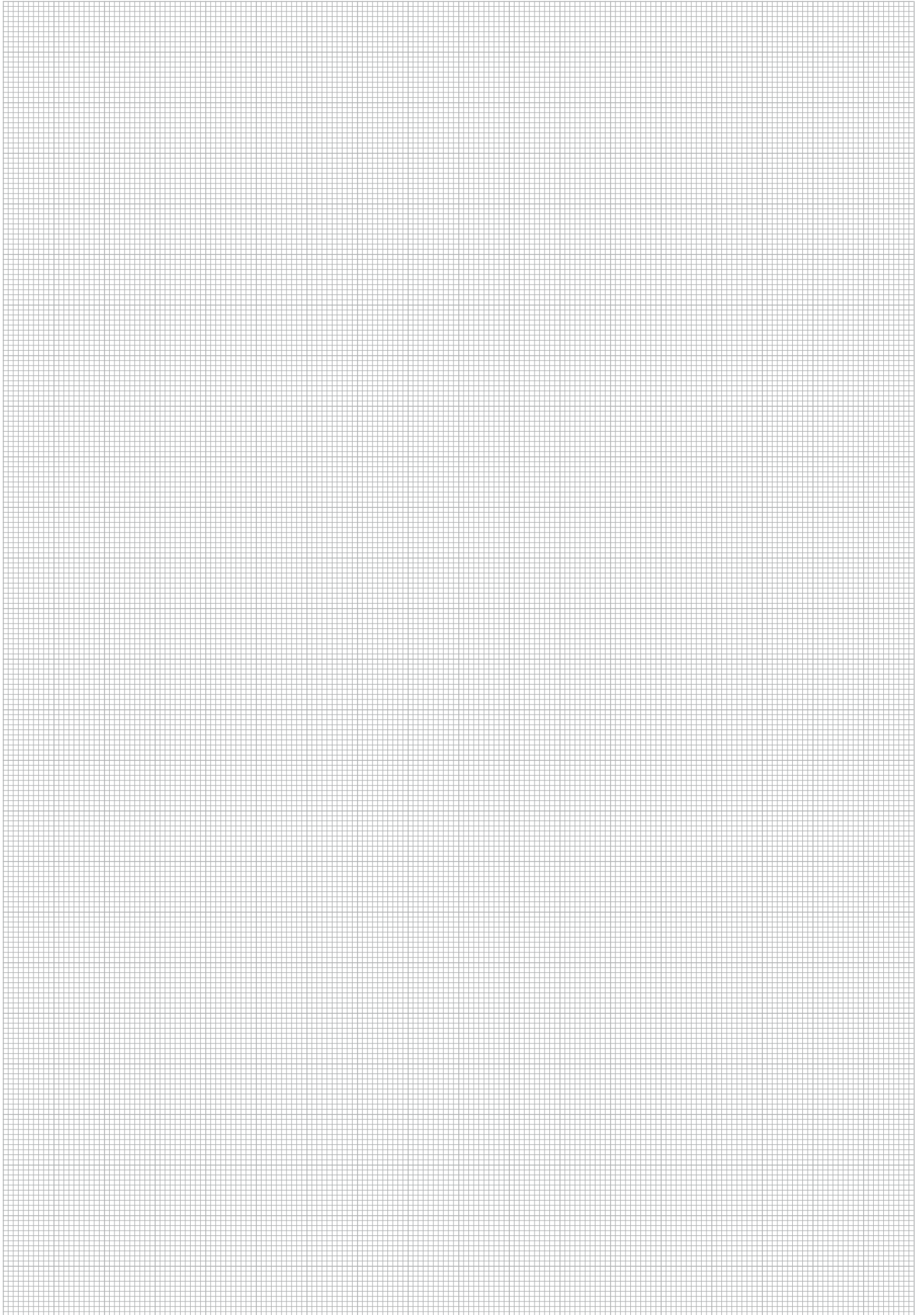
Nominal Size		Diameter	Tightening Torques (Nm) <sup>+10%</sup>	Working Pressure max (bar)	Burst Pressure min (bar)
ISO	SAE				
13	1/2	5/16-18 UNC	32	400	1600
19	3/4	3/8-16 UNC	60	400	1600
25	1	7/16-14 UNC	92	400	1600
32	1-1/4	1/2-13 UNC	150	400	1600
38	1-1/2	5/8-11 UNC	295	400	1600
51	2	3/4-10 UNC	450	400	1600

### Notes

<sup>1</sup> Not to be used for new designs.

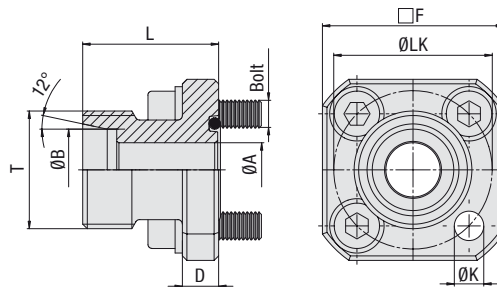
**Attention: All bolts have to be pre-tightened before applying the full tightening torque to the bolts. Otherwise, the flange may break.**

Please note that the tightening torques as stated above are only recommendations. These values correspond to oiled bolts with a friction coefficient of 0.17 and the material combination Steel/Steel. The exact tightening torques depend on factors like material, finishing, coating and lubrication of the components used, and have to be determined by the user himself.



4-hole Flange Connection with 24° Cone Connector (acc. to ISO 8434-1 / DIN 2353)

GP-LK-L/S



**Material** S355J0 or equivalent  
**Surface** ZnNi

**Order Codes**

\* 4-hole Flange Connection with 24° Cone Connector **GP-LK...-L/S...#K**

Including Metric bolts 8.8, spring rings and O-ring made of NBR (Buna-N®) (packed in kits)

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)								Bolts Metr.	O-ring
		ØLK	ØA	ØB	D	F	L	T (Metric)	ØK		
8.8											
315	GP-LK35-L10#K	35	7	10 L	8	40	30	16x1,5	6,5	4 x M6x22	20x2,5
315	GP-LK35-L12#K	35	9	12 L	8	40	30	18x1,5	6,5	4 x M6x22	20x2,5
250	GP-LK35-L15#K	35	11	15 L	8	40	30	22x1,5	6,5	4 x M6x22	20x2,5
250	GP-LK35-L18#K	35	12	18 L	8	40	30	26x1,5	6,5	4 x M6x22	20x2,5
315	GP-LK35-S16#K	35	12	16 S	8	40	30	24x1,5	6,5	4 x M6x22	20x2,5
100	GP-LK40-L15#K	40	11	15 L	8	40	35	22x1,5	6,5	4 x M6x22	26x2,5
100	GP-LK40-L18#K	40	14	18 L	8	40	35	26x1,5	6,5	4 x M6x22	26x2,5
100	GP-LK40-L22#K	40	18	22 L	8	40	35	30x2	6,5	4 x M6x22	26x2,5
100	GP-LK40-L28#K	40	18	28 L	8	40	35	36x2	6,5	4 x M6x22	26x2,5
100	GP-LK55-L28#K	55	25	28 L	12	55	40	36x2	8,5	4 x M8x25	32x2,5
100	GP-LK55-L35#K	55	25	35 L	12	55	50	45x2	8,5	4 x M8x25	32x2,5
250	GP-LK55-S20#K	55	16	20 S	12	55	35	30x2	8,5	4 x M8x25	32x2,5

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.

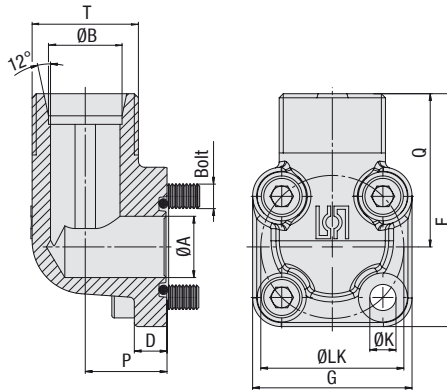
### 4-hole 90° Flange Connection with 24° Cone Connector (acc. to ISO 8434-1 / DIN 2353)

#### WP-LK-L/S

#### Order Codes

★ 4-hole 90° Flange Connection with 24° Cone Connector **WP-LK...-L/S...#K**

Including Metric bolts 8.8, spring rings and O-ring made of NBR (Buna-N®) (packed in kits)



**Material Surface**

S355J0 or equivalent  
ZnNi

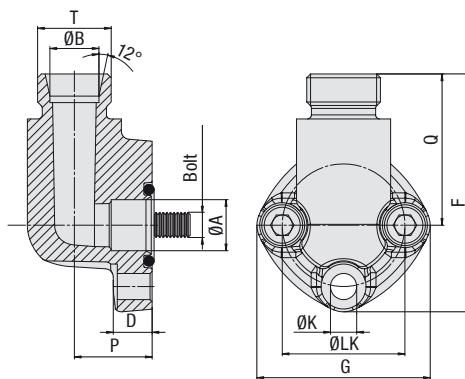


PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)										Bolts	O-ring	
		ØLK	ØA	ØB	D	F	G	P	Q	T (Metric)	ØK			Metr.
8.8														
315	WP-LK35-L10#K	35	14	10 L	8	57	39	16,5	37,5	16x1,5	6,4	2 x M6x22 2 x M6x35	20x2,5	
315	WP-LK35-L12#K	35	14	12 L	8	57	39	16,5	37,5	18x1,5	6,4	2 x M6x22 2 x M6x35	20x2,5	
250	WP-LK35-L15#K	35	14	15 L	8	56,5	39	16,5	37,5	22x1,5	6,4	2 x M6x22 2 x M6x35	20x2,5	
250	WP-LK35-L18#K	35	15	18 L	8	57	39	20	37,5	26x1,5	6,4	2 x M6x22 2 x M6x40	20x2,5	
315	WP-LK35-S16#K	35	15	16 S	8	57,5	39	20	38	24x1,5	6,4	2 x M6x22 2 x M6x40	20x2,5	
315	WP-LK35-S20#K	35	15	20 S	8	64,5	39	25	45	30x2	6,4	2 x M6x22 2 x M6x45	20x2,5	
100	WP-LK40-L15#K	40	20	15 L	9	58	42	22,5	37	22x1,5	6,4	4 x M6x22	26x2,5	
100	WP-LK40-L18#K	40	20	18 L	9	59	42	22,5	38	26x1,5	6,4	4 x M6x22	26x2,5	
100	WP-LK40-L22#K	40	20	22 L	9	59	42	22,5	38	30x2	6,4	4 x M6x22	26x2,5	
100	WP-LK40-L28#K	40	20	28 L	9	61	42	28	40	36x2	6,4	2 x M6x22 2 x M6x50	26x2,5	
100	WP-LK40-L35#K	40	20	35 L	9	62	42	34	41	45x2	6,4	2 x M6x22 2 x M6x60	26x2,5	
250	WP-LK40-S20#K	40	20	20 S	9	61	42	22,5	40	30x2	6,4	2 x M6x22 2 x M6x45	26x2,5	
100	WP-LK55-L35#K	55	26,5	35 L	12	78	58	32	49	45x2	8,4	2 x M8x25 2 x M8x60	32x2,5	
100	WP-LK55-L42#K	55	26,5	42 L	12	78	58	40	49	52x2	8,4	2 x M8x25 2 x M8x70	32x2,5	
250	WP-LK55-S20#K	55	18	20 S	13	69	58	24	45	30x2	8,4	2 x M8x25 2 x M8x50	32x2,5	
250	WP-LK55-S25#K	55	26,5	25 S	13	78	58	30	49	36x2	8,4	2 x M8x25 2 x M8x55	32x2,5	
250	WP-LK55-S30#K	55	26,5	30 S	12	78	58	32	49	42x2	8,4	2 x M8x25 2 x M8x50	32x2,5	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.



**3-hole 90° Flange Connection with 24° Cone Connector (acc. to ISO 8434-1 / DIN 2353)  
WP-3-LK-L/S**



**Order Codes**

★ 3-hole 90° Flange Connection with 24° Cone Connector **WP-3-LK...-L/S...#K**

Including Metric bolts 8.8, spring rings and O-ring made of NBR (Buna-N®) (packed in kits)

**Material** S355J0 or equivalent  
**Surface** ZnNi

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)										Bolts	O-ring
		ØLK	ØA	ØB	D	F	G	P	Q	T (Metric)	ØK		
8.8													
250	<b>WP-3-LK30-L12#K</b>	30	12,5	12 L	9,5	58	42,5	19	37	18x1,5	6,4	3 x M6x25	16x2,5
250	<b>WP-3-LK30-L15#K</b>	30	12,5	15 L	9,5	58	42,5	19	37	22x1,5	6,4	3 x M6x25	16x2,5
160	<b>WP-3-LK40-L22#K</b>	40	19	22 L	13,5	70	54	25	43	30x2	8,4	3 x M8x30	24x2,5
160	<b>WP-3-LK40-L28#K</b>	40	19	28 L	13,5	70	54	25	43	36x2	8,4	3 x M8x30	24x2,5

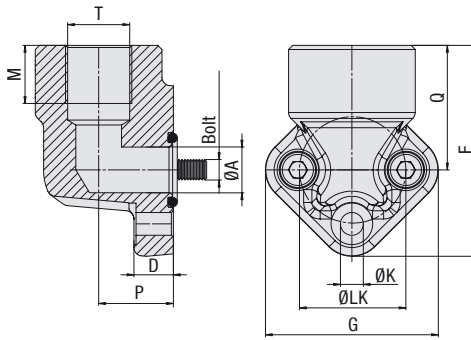
<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.

**3-hole 90° Screw-in BSPP Threaded Flange  
WP-3-LK-G**
**Order Codes**

★ 3-hole 90° Screw-in  
BSPP Threaded Flange

**WP-3-LK...-G...#K**

Including Metric bolts 8.8, spring rings and  
O-ring made of NBR (Buna-N®)  
(packed in kits)



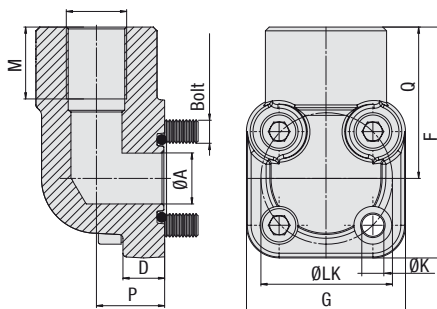
**Material  
Surface**

S355J0 or equivalent  
ZnNi

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)										Bolts Metr.	O-ring
		ØLK	ØA	D	F	G	M	P	Q	T (BSPP)	ØK		
300	WP-3-LK26-G038#K	26	11,5	9,5	51	42	14	18	30	3/8	5,5	3 x M5x20	14x1,78
300	WP-3-LK26-G012#K	26	11,5	9,5	51	42	14	18	30	1/2	5,5	3 x M5x20	14x1,78
300	WP-3-LK30-G038#K	30	11,5	9,5	51	42	14	18	30	3/8	6,5	3 x M6x20	16x2,5
300	WP-3-LK30-G012#K	30	11,5	9,5	51	42	14	18	30	1/2	6,5	3 x M6x20	16x2,5
300	WP-3-LK40-G012#K	40	20	11,5	68	61	18	21	38	1/2	8,5	3 x M8x25	24x2,5
300	WP-3-LK40-G034#K	40	20	11,5	68	61	22	21	38	3/4	8,5	3 x M8x25	24x2,5
300	WP-3-LK51-G034#K	51	25	13,5	84	75	22	27	47	3/4	10,5	3 x M10x30	32x2,5
300	WP-3-LK51-G100#K	51	25	13,5	84	75	27	27	47	1	10,5	3 x M10x30	32x2,5
300	WP-3-LK56-G034#K	56	34	13,5	84	75	22	27	47	3/4	10,5	3 x M10x30	38x2,5
300	WP-3-LK56-G100#K	56	34	13,5	84	75	27	27	47	1	10,5	3 x M10x30	38x2,5

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.

**4-hole 90° Screw-in BSPP Threaded Flange  
WP-LK-G**



**Material** S355J0 or equivalent  
**Surface** ZnNi

**Order Codes**

★ 4-hole 90° Screw-in  
BSPP Threaded Flange

**WP-LK...-G...#K**

Including Metric bolts 8.8, spring rings and  
O-ring made of NBR (Buna-N®)  
(packed in kits)

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)										Bolts Metr.	O-ring
		ØLK	ØA	D	F	G	M	P	Q	T (BSPP)	ØK		
8.8													
300	WP-LK35-G038#K	35	13,5	11	61	42	19	18	40	3/8	6,5	2 x M6x20 2 x M6x35	19x2,5
300	WP-LK35-G012#K	35	13,5	11	61	42	19	18	40	1/2	6,5	2 x M6x20 2 x M6x35	19x2,5
300	WP-LK40-G012#K	40	20	10	67,5	45	19	24	45	1/2	6,5	2 x M6x25 2 x M6x45	24x2,5
300	WP-LK40-G034#K	40	20	10	67,5	45	20	24	45	3/4	6,5	2 x M6x25 2 x M6x45	24x2,5
300	WP-LK40-G100#K	40	20	10	67,5	45	22	24	45	1	6,5	3 x M6x25 2 x M6x55	24x2,5
250	WP-LK55-G100#K	55	25	13	83,5	59	22	35	54	1	8,5	2 x M8x25 2 x M8x60	32x2,5
250	WP-LK55-G114#K	55	25	13	83,5	59	25	35	54	1-1/4	8,5	3 x M8x25 2 x M8x70	32x2,5

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.

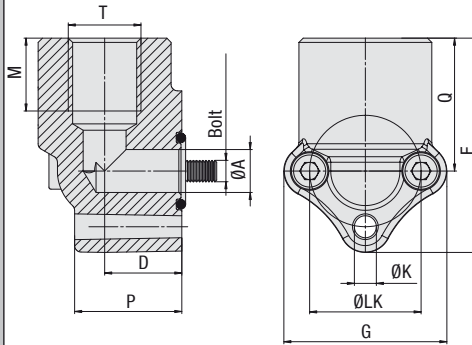
### 3-hole 90° Screw-in BSPP Threaded Flange (Aluminium) WP-3-LK-G-W50

#### Order Codes

★ 3-hole 90° Screw-in  
BSPP Threaded Flange

**WP-3-LK...-G...W50#K**

Including Metric bolts 8.8, spring rings and  
O-ring made of NBR (Buna-N®)  
(packed in kits)



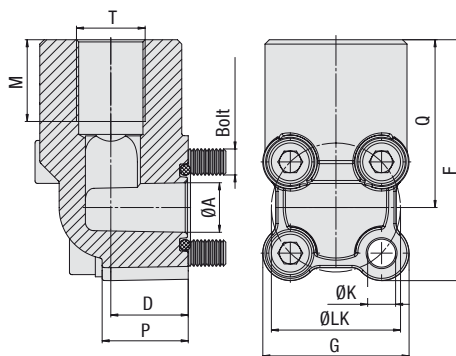
**Material**

Aluminium [EN AC-Al Si9Cu(Fe)]

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)										Bolts Metr.	O-ring	
		ØLK	ØA	D	F	G	M	P	Q	T (BSPP)	ØK			
8.8														
180	WP-3-LK26-G038-W50#K	26	10	25	50	38	17	18	31	3/8	6	3 x M5x35	14x1,78	
180	WP-3-LK26-G012-W50#K	26	10	25	50	38	18	18	31	1/2	6	3 x M5x35	14x1,78	
180	WP-3-LK30-G038-W50#K	30	12,5	26	53	40	17	18	31	3/8	7	3 x M6x35	15,88x2,62	
180	WP-3-LK30-G012-W50#K	30	12,5	26	53	44	18	18	31	1/2	7	3 x M6x35	15,88x2,62	
180	WP-3-LK40-G012-W50#K	40	18	31	68	56	18	21,5	40	1/2	9,5	3 x M8x45	21,89x2,62	
180	WP-3-LK40-G034-W50#K	40	18	31	68	56	22	21,5	40	3/4	9,5	3 x M8x45	21,89x2,62	
180	WP-3-LK51-G034-W50#K	51-56	24,5	42	85	78	22	26	46	3/4	11	3 x M10x60	29,74x2,62	
180	WP-3-LK51-G100-W50#K	51-56	24,5	42	85	78	27	26	46	1	11	3 x M10x60	29,74x2,62	

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.

**4-hole 90° Screw-in BSPP Threaded Flange (Aluminium)**  
**WP-LK-G-W50**



**Material** Aluminium [EN AC-Al Si9Cu(Fe)]

**Order Codes**

★ 4-hole 90° Screw-in BSPP Threaded Flange **WP-LK...-G...W50#K**

Including Metric bolts 8.8, spring rings and O-ring made of NBR (Buna-N®) (packed in kits)

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)										Bolts	O-ring
		ØLK	ØA	D	F	G	M	P	Q	T (BSPP)	ØK		
8.8													
180	WP-LK30-G038-W50#K	30	11,5	20	56	34	19	18	39	3/8	6,5	2 x M6x30 2 x M6x40	15,88x2,62
180	WP-LK30-G012-W50#K	30	11,5	20	56	34	19	18	39	1/2	6,5	2 x M6x30 2 x M6x40	15,88x2,62
180	WP-LK35-G038-W50#K	35	14	20	61,5	38	19	18	42,5	3/8	6,5	2 x M6x30 2 x M6x40	18,72x2,62
180	WP-LK35-G012-W50#K	35	14	20	61,5	38	19	18	42,5	1/2	6,5	2 x M6x30 2 x M6x40	18,72x2,62
180	WP-LK40-G012-W50#K	40	18	28	69	43	19	24	47,5	1/2	6,5	2 x M6x40 2 x M6x50	21,89x2,62
180	WP-LK40-G034-W50#K	40	18	28	69	43	20	24	47,5	3/4	6,5	2 x M6x40 2 x M6x50	21,89x2,62
180	WP-LK55-G034-W50#K	55	24,5	31	83	58	20	29	54	3/4	8,5	2 x M8x45 2 x M8x60	29,74x2,62
180	WP-LK55-G100-W50#K	55	24,5	31	83	58	22	29	54	1	8,5	2 x M8x45 2 x M8x60	29,74x2,62

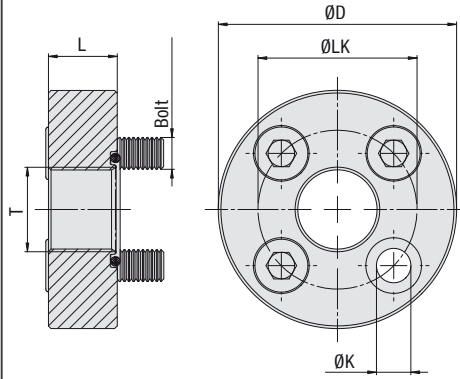
<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.

**4-hole Screw-in BSPP Threaded Flange (Flat Style)  
GP-FL-LK-G**
**Order Codes**

★ 4-hole Screw-in BSPP  
Threaded Flange (Flat Style)

**GP-FL-LK...-G...#K**

Including Metric bolts 8.8 and  
O-ring made of NBR (Buna-N®)  
(packed in kits)



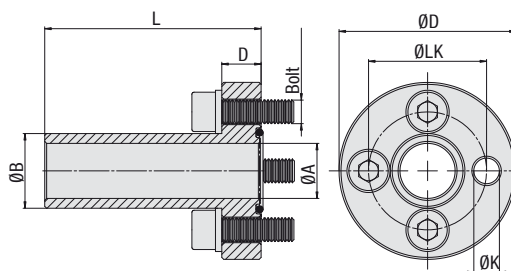
**Material  
Surface**

S355J0 or equivalent  
CrVI-free

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)					Bolts Metr.	O-ring
		ØLK	ØD	L	T (BSPP)	ØK		
8.8								
250	GP-FL-LK30-G038#K	30	45	13	3/8	6,5	M6x16	18,77x1,78
250	GP-FL-LK40-G012#K	40	58	15	1/2	8,5	M8x20	25,12x1,78
250	GP-FL-LK51-G034#K	51	75	18	3/4	10,5	M10x25	31,42x2,62
250	GP-FL-LK56-G034#K	56	75	18	3/4	10,5	M10x25	31,42x2,62
180	GP-FL-LK62-G100#K	62	88	20	1	10,5	M10x25	39,69x3,53
180	GP-FL-LK62-G100-M12#K	62	88	20	1	12,5	M12x25	39,69x3,53
180	GP-FL-LK72,5-G114#K	72,5	98	22	1-1/4	12,5	M12x30	47,22x3,53

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.

**4-hole Butt Weld Flange**  
**GP-LK...-ST.../...#K**



**Order Codes**

\* 4-hole Butt Weld Flange                      **GP-LK...-ST.../...#K**

Including Metric bolts 8.8, spring rings and  
 O-ring made of NBR (Buna-N®)  
 (packed in kits)

**Material**                      S355J0 or equivalent  
**Surface:**                      blank, oiled

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)							Bolts	O-ring
		ØLK	ØA	ØB	D	ØD	L	ØK		
8.8									Metr.	
250	<b>GP-LK30-ST-19/14#K</b>	30	14	19	10	45	55	6,5	M6x20	18,77x1,78
250	<b>GP-LK40-ST-25,4/19#K</b>	40	19	25,4	12	58	60	8,5	M8x25	25,12x1,78
250	<b>GP-LK51-ST-32/24,5#K</b>	51	24,5	32	16	76	72	10,5	M10x35	31,42x2,62
250	<b>GP-LK56-ST-32/24,5#K</b>	56	24,5	32	16	76	72	10,5	M10x35	31,42x2,62

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.



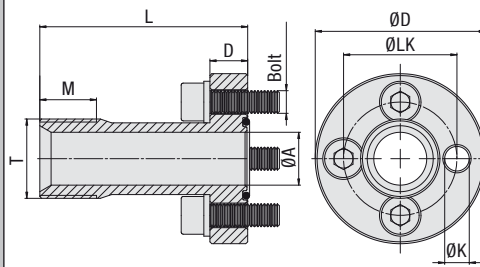
### 4-hole Fitting Flange with BSP 60° Cone Connector (acc. to BS 5200) GP-LK...-AG...#K

#### Order Codes

★ 4-hole Fitting Flange  
with 60° Cone Connector

GP-LK...-AG...#K

Including Metric bolts 8.8, spring rings and  
O-ring made of NBR (Buna-N®)  
(packed in kits)



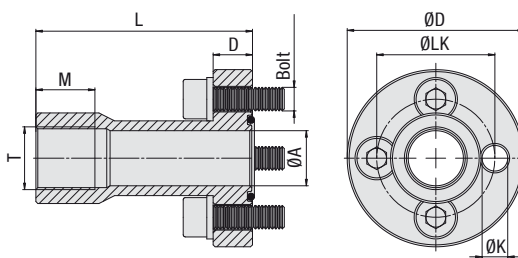
**Material**  
**Surface**

S355J0 or equivalent  
CrVI-free

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)								Bolts Metr.	O-ring
		ØLK	ØA	D	ØD	L	M	T (BSP)	ØK		
8.8											
250	GP-LK30-AG012#K	30	14	10	45	55	15	1/2	6,5	M6x20	18,77x1,78
250	GP-LK40-AG034#K	40	19	12	58	60	16	3/4	8,5	M8x25	25,12x1,78
250	GP-LK51-AG100#K	51	24	16	76	72	19	1	10,5	M10x35	31,42x2,62
250	GP-LK56-AG100#K	56	24	16	76	72	19	1	10,5	M10x35	31,42x2,62

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.

**4-hole Screw-in BSPP Threaded Flange  
GP-LK...-G...#K**



**Order Codes**

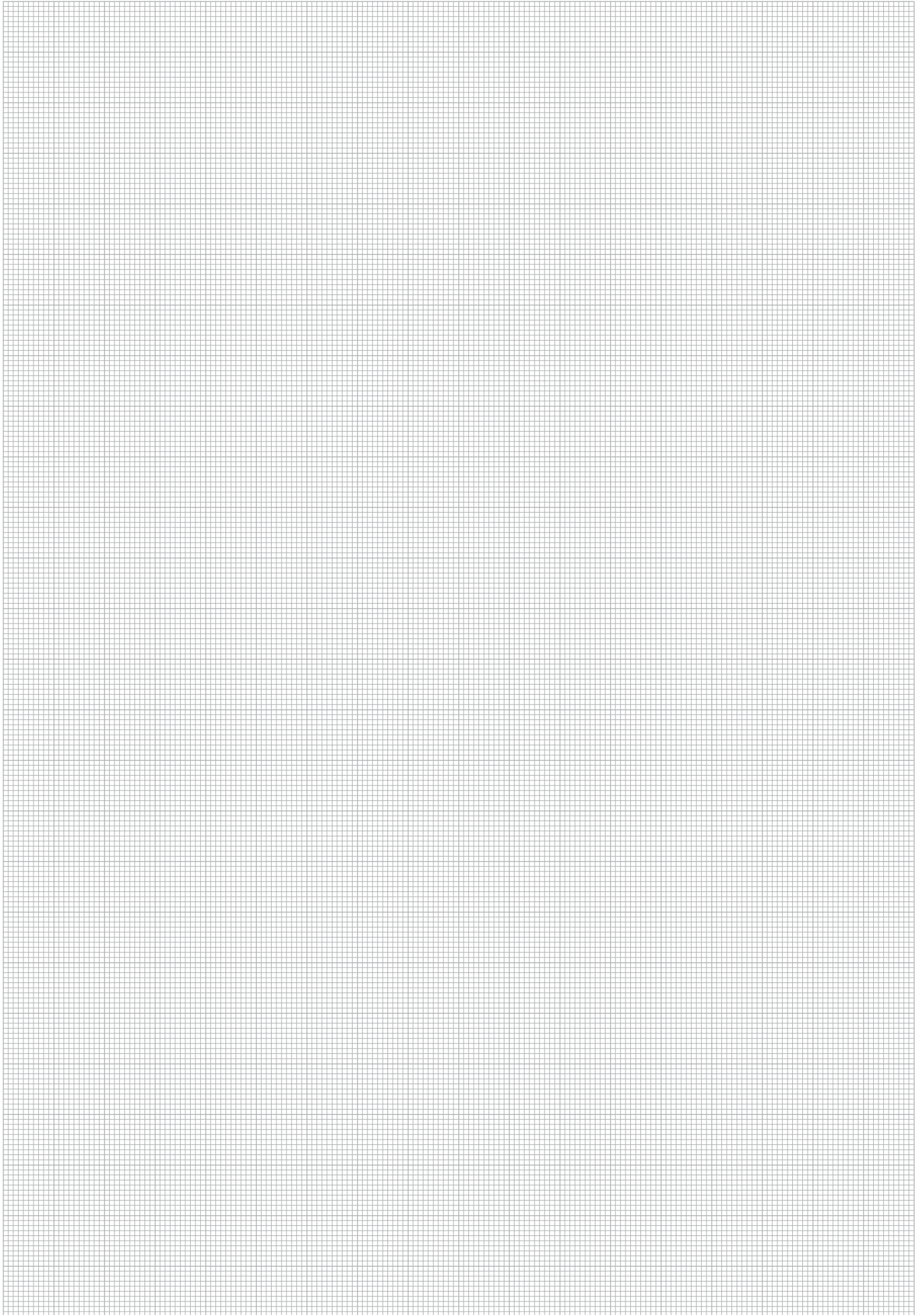
★ 4-hole Screw-in BSPP Threaded Flange **GP-LK...-G...#K**

Including Metric bolts 8.8, spring rings and O-ring made of NBR (Buna-N®) (packed in kits)

**Material:** S355J0 or equivalent  
**Surface:** CrVI-free

PN (bar) <sup>1</sup>	Order Codes	Dimensions (mm)								Bolts Metr.	O-ring
		ØLK	ØA	D	ØD	L	M	T (BSPP)	ØK		
8.8											
250	GP-LK30-G038#K	30	14	10	45	55	15	3/8	6,5	M6x20	18,77x1,78
250	GP-LK40-G012#K	40	19	12	58	60	16	1/2	8,5	M8x25	25,12x1,78
250	GP-LK51-G034#K	51	24,5	16	76	72	19	3/4	10,5	M10x35	31,42x2,62
250	GP-LK56-G034#K	56	24,5	16	76	72	19	3/4	10,5	M10x35	31,42x2,62

<sup>1</sup> The maximum working pressure PN (bar) applies only to the flange itself. The actual maximum working pressure depends on the thickness and the quality of the tube used.





## Appendix

Product Group Index

Alphabetical Index

General Information

## STAUFF Clamps

Product Description	Code	Page	Product Description	Code	Page
Clamp Body (Standard Series, Size 1)	1***	A6	Clamp Body (Light Series, Type LNUF) - Twin Design	LNUF	A65
Clamp Body (Twin Series, Size 1D)	1***/**	A40	Clamp Body for Multi-Group Weld Plate (Standard Series)	MGR	A13
Clamp Body (Standard Series, Size 1a)	1***a	A6	Group Weld Plate (Standard Series)	RAP	A11
Clamp Body (Heavy Series, Size 10S)	10***	A24	Group Weld Plate (Twin Series)	RAP	A41
Clamp Body (Heavy Series, Size 11S)	11***	A24	Multi-Group Weld Plate (Standard Series)	RAP-MGR	A13
Clamp Body (Heavy Series, Size 12S)	12***	A24	Round Steel U-Bolt with Plastic Pipe Saddle (Short)	RB / RUK	A70
Clamp Body (Standard Series, Size 2)	2***	A6	Round Steel U-Bolt with Plastic Pipe Saddle (Long)	RB / RUL	A72
Clamp Body (Twin Series, Size 2D)	2***/**	A40	Round Steel U-Bolt without Plastic Pipe Saddle	RBD	A74
Clamp Body (Standard Series, Size 3)	3***	A6	Channel Rail	SCS	A83
Clamp Body (Twin Series, Size 3D)	3***/**	A40	Safety Washer (Standard Series)	SI (DIN 463)	A17
Clamp Body (Heavy Series, Size 3S)	30***	A24	Safety Washer (Standard Series)	SI (DIN 93)	A17
Clamp Body (Standard Series, Size 4)	4***	A6	Safety Washer (Heavy Series)	SI (DIN 463)	A34
Clamp Body (Twin Series, Size 4D)	4***/**	A40	Safety Washer (Heavy Series)	SI (DIN 93)	A34
Clamp Body (Heavy Series, Size 4S)	40***	A24	Safety Locking Plate (Twin Series)	SI	A46
Clamp Body (Standard Series, Size 5)	5***	A6	Safety Locking Plate (Standard Series)	SIG	A19
Clamp Body (Twin Series, Size 5D)	5***/**	A40	Safety Locking Plate (Heavy Series)	SIP	A35
Clamp Body (Heavy Series, Size 5S)	50***	A24	Safety Locking Plate (Heavy Twin Series)	SIPD	A52
Clamp Body (Standard Series, Size 6)	6***	A6	Safety Locking Plate (Twin Series)	SIV	A46
Clamp Body (Heavy Series, Size 6S)	60***	A24	Hexagon Rail Nut (Standard Series)	SM	A14
Clamp Body (Standard Series, Size 7)	7***	A6	Hexagon Rail Nut (Twin Series)	SM	A42
Clamp Body (Heavy Series, Size 7S)	70***	A24	Hexagon Rail Nut (Standard Series)	SMG	A14
Clamp Body (Standard Series, Size 8)	8***	A6	Hexagon Rail Nut (Twin Series)	SMG	A42
Clamp Body (Heavy Series, Size 8S)	80***	A24	Weld Plate (Standard Series)	SP	A10
Clamp Body (Heavy Series, Size 9S)	90***	A24	Single Weld Plate (Twin Series)	SP	A41
Stacking Bolt (Standard Series)	AF	A19	Single Weld Plate (Compact Twin Series)	SP DS1	A54
Stacking Bolt (Heavy Series)	AF	A35	Weld Plate (Heavy Twin Series)	SPAD	A51
Stacking Bolt (Twin Series)	AF	A47	Weld Plate for Single Clamps (Heavy Series)	SPAL	A28
Stacking Bolt (Heavy Twin Series)	AF	A52	Elongated Weld Plate for Single Clamps (Heavy Series)	SPAL/DUEB	A29
Hexagon Head Bolt (Standard Series)	AS	A16	Weld Plate for Double Clamps (Heavy Series)	SPAS	A28
Hexagon Head Bolt (Heavy Series)	AS	A33	Elongated Weld Plate for Double Clamps (Heavy Series)	SPAS/DUEB	A29
Hexagon Head Bolt (Twin Series)	AS	A44	Cushion Clamp Series	SPC	A82
Hexagon Head Bolt (Heavy Twin Series)	AS	A52	Elongated Weld Plate (Standard Series)	SPV	A10
Hexagon Head Bolt (Light Series, Type LBBU)	AS	A61	Cushion Clamp Series	STC	A82
Hexagon Head Bolt (Compact Twin Series)	AS DS1	A54	Mounting Rail (Heavy Series)	STSV	A30
Hexagon Head Bolt (Standard Series)	ASE	A18	Mounting Rail (Heavy Twin Series)	STSV	A52
Bridge Weld Plate (Standard Series)	BSP	A12	Mounting Rail (Standard Series)	TS	A14
Channel Rail Adaptor (Standard Series)	CRA	A15	Mounting Rail (Twin Series)	TS	A42
Channel Rail Adaptor (Heavy Series)	CRA	A31	Cover Plate (Compact Twin Series)	US DS1	A54
Channel Rail Adaptor (Twin Series)	CRA	A43	Angled Weld Plate (Standard Series)	WSP	A12
Channel Rail Adaptor (Heavy Twin Series)	CRA	A52	Clamps for Cylinder Supply Lines	ZR	A55
Heavy Saddles - Single-Ended Design	DIN 1592	A78			
Heavy Saddles - Double-Ended Design	DIN 1593	A79			
Light Saddles - Single-Ended Design	DIN 1596	A80			
Light Saddles - Double-Ended Design	DIN 1597	A81			
Metal Pipe Clamp with Rounded Ends	DIN 3567	A76			
Construction Series	DKS	A66			
Construction Series (for Anchor Bolt Fastening)	DKSV	A67			
Cover Plate (Standard Series)	DP	A16			
Cover Plate (Heavy Twin Series)	DPAD	A51			
Cover Plate for Single Clamps (Heavy Series)	DPAL	A32			
Cover Plate for Double Clamps (Heavy Series)	DPAS	A32			
Cover Plate (Light Series, Type LNGF/LNUF) - Twin Design	DPL	A65			
Twin Weld Plate (Standard Series)	DSP	A11			
Insert (Standard Series)	EP	A18			
Insert (Standard Series)	ES	A18			
Flat Steel U-Bolt with Plastic Pipe Saddle (Short) and U-Profile	FB / RUK	A68			
Cover Plate (Twin Series)	GD	A44			
Mounting Rail Nut (Heavy Series)	GMV	A30			
Mounting Rail Nut (Heavy Twin Series)	GMV	A52			
Socket Cap Screw (Standard Series)	IS	A18			
Socket Cap Screw (Heavy Series)	IS	A33			
Socket Cap Screw (Twin Series)	IS	A45			
Socket Cap Screw (Heavy Twin Series)	IS	A52			
Construction Series	KS	A66			
Construction Series (for Anchor Bolt Fastening)	KSV	A67			
Clamp Body (Light Series, Type LB) - Single Design	LB	A62			
Cover Plate (Light Series, Type LBBU)	LBBU-DP	A61			
Sleeve (Light Series, Type LBBU)	LBBU-HUE	A60			
Weld Plate (Light Series, Type LBBU)	LBBU-SP	A60			
Clamp Body (Light Series, Type LBG) - Twin Design	LBG	A63			
Clamp Body (Light Series, Type LBU) - Twin Design	LBU	A63			
Slotted Head Screw (Standard Series)	LI	A18			
Clamp Body (Light Series, Type LN) - Single Design	LN	A64			
Clamp Body (Light Series, Type LNGF) - Twin Design	LNGF	A65			

Product Description	Code	Page
Adjustable Gauge Fitting	EMV	B34
STAUFF Test Screw-type, suitable for test points, Hose End	HE	B38
STAUFF Test Plug in-type, Hose End	HE	B38
Gauge adaptor NPT-thread, 90° elbow, Hose End	HE-A	B39
Sealing head with swivel nut for cone fitting according to DIN EN 560, Hose Ends	HE-B	B41
Male thread for 24° cone fitting according to ISO 8434-1 / DIN 2353, Hose End	HE-C	B41
Universal sealing head with swivel nut for 24° cone fitting according to ISO 8434-1 / DIN 2353, Hose End	HE-D	B41
Sealing head with swivel nut according to SAE J 516, 37° cone, 90° elbow, Hose End	HE-E	B42
Sealing head with swivel nut according to SAE J 516, 45° cone, 90° elbow, Hose End	HE-ER	B42
Male thread NPT according to ANSI Standard, Hose End	HE-F	B40
Male thread according to DIN 3852-B, Hose End	HE-G	B40
Sealing head with swivel nut, 60° cone, Hose End	HE-H	B43
Male thread according to SAE J 514, Hose End	HE-J	B41
Seal with O-ring for 24° cone fitting according to ISO 8434-1 / DIN 2353, c/w swivel nut, Hose End	HE-K	B40
Seal with O-ring for 24° cone fitting according to ISO 8434-1 / DIN 2353, c/w swivel nut, 90° elbow, Hose End	HE-L	B40
Gauge adaptor BSP-thread, Hose End	HE-M	B38
Gauge adaptor NPT-thread, Hose End	HE-N	B39
STAUFF Test Screw-type, 90° elbow, suitable for test points, Hose End	HE-O	B38
STAUFF Test Screw-type, 90° elbow, suitable for test points (short wire version), Hose End	HE-OX	B38
Test hose for air brake systems, Hose End	HE-P	B42
Universal sealing head with swivel nut for 24° cone fitting according to ISO 8434-1 / DIN 2353, 90° elbow, Hose End	HE-Q	B41
Seal with O-ring for 24° cone fitting according to ISO 8434-1 / DIN 2353, c/w swivel nut, 45° elbow, Hose End	HE-R	B40
Hose End with integrated check valve, Hose End	HE-RV	B43
Standpipe for compression ring fittings according to ISO 8434-1 / DIN 2353, Hose End	HE-S	B39
Standpipe for compression ring fittings according to ISO 8434-1 / DIN 2353, 90° elbow, Hose End	HE-SG	B39
Screw-type ORFS according to SAE J 1453, Hose End	HE-T	B43
Sealing head with swivel nut according to SAE J 514, 37° cone, Hose End	HE-U	B42
Sealing head with swivel nut according to SAE J 516, 45° cone, Hose End	HE-UR	B42
Screw-type ORFS according to SAE J 1453, 90° elbow, Hose End	HE-V	B43
Gauge adaptor BSP-thread, 90° elbow, Hose End	HE-W	B39
Adaptor, Series Test 12	SAD12	B27
Adaptor, Series Test 15	SAD15	B21
Adaptor, Series Test 20	SAD20	B11
Welding Adaptor SAS	SAS	B33
Swivel Run Tee	SGV-JIC Type F/M	B9 B20 B26
Sampling Hose Adaptor	SHA	B44
Test Coupling SKK with Port Connection, Series Test 12	SKK12	B23
Test Coupling SKK complete with Straight Fitting, Series Test 12	SKK12 Type G	B24
Test Coupling SKK for 24° Cone Fittings, Series Test 12	SKK12 Type K	B25
Test Coupling SKK with Port Connection, Series Test 20	SKK20	B13
Test Coupling SKK complete with Straight Fitting, Series Test 20	SKK20 Type G	B14
Test Coupling SKK for 24° Cone Fittings, Series Test 20	SKK20 Type K	B15
Gauge Adaptor, Series Test 10	SMA10	B29
Gauge Adaptor, Series Test 12	SMA12	B27
Gauge Adaptor, Series Test 15	SMA15	B21
Gauge Adaptor, Series Test 20	SMA20	B11
Pressure Test Kit	SMB	B35
Direct Gauge Adaptor, Series Test 12	SMD12	B27
Direct Gauge Adaptor, Series Test 15	SMD15	B21
Direct Gauge Adaptor, Series Test 20	SMD20	B11
Test Coupling SMK with Port Connection, Series Test 10	SMK10	B29
Test Coupling SMK complete with Straight Fitting, Series Test 10	SMK10 Type G	B30
Test Coupling SMK for 24° Cone Fittings, Series Test 10	SMK10 Type K	B31
Test Coupling SMK with Port Connection, Series Test 15	SMK15	B17

Product Description	Code	Page
Test Coupling SMK complete with Straight Fitting, Series Test 15	SMK15 Type G	B18
Test Coupling SMK for 24° Cone Fittings, Series Test 15	SMK15 Type K	B19
Test Coupling SMK with Port Connection, Series Test 20	SMK20	B5
Test Coupling SMK complete with Straight Fitting, Series Test 20	SMK20 Type G	B6
Test Coupling SMK for 24° Cone Fittings, Series Test 20	SMK20 Type K	B7
Test Coupling SMK-ORFS Connection, Series Test 20	SMK20 Type ORFS	B9
Test Coupling SMK-JIC Connection (to SAE-J514), Series Test 20	SMK20-JIC Type G	B8
Test Coupling SMK-JIC Connection (to SAE-J514), Series Test 20	SMK20-JIC Type K	B8
Test Hose	SMS / SGS	B37
Pressure Gauge	SPG	B34
Thread Adaptor SRS	SRS15	B33
Thread Adaptor SRS	SRS20	B32
Bulkhead Test Coupling, Series Test 15	SSK15	B20
Bulkhead Test Coupling, Series Test 20	SSK20	B10
Bulkhead Test Coupling, Series Test 12	SSKK12	B26
Hose Connector	SSV	B44



## Filtration Technology

Product Description	Code	Page
Bypass Lube-Oil Filter	BPLS	C172
Bypass Filter	BPS	C167
Visual Clogging Indicator	CI	C121
Visual Clogging Indicator for Spin-On Filters	CI	C147
Electrical Clogging Indicator	EPS	C121
Electrical Clogging Indicator for Spin-On Filters	EPS	C147
Electrical Clogging Indicator for Spin-On Filters	EVS	C147
Visual Clogging Indicator for Spin-On Filters	GV	C147
Clogging Indicators for Medium and High Pressure Filters	HI	C40
Clogging Indicators for Medium Pressure Filters	HIM	C49
Valves for Medium and High Pressure Filters	HV	C39
Offline Filters	OLS	C151
Heated Offline Filter	OLSH	C163
Water Absorbing Offline Filter	OLSW	C157
Replacement Filter Element for Return Line Filters	RA	C118
Replacement Filter Elements for Return Line Filters	RE	C63
Air Filter Element for Return Line Filters	RE	C95
Replacement Filter Element for Return Line Filters	REA	C88
Replacement Filter Elements for Return Line Filters	REL	C69
Return-Line Filter for Tank-Top Mounting	RF	C71
Return-Line Filter for Tank-Top Mounting	RFA	C79
Return-Line Filter for Tank-Top Mounting	RFB	C85
Return-Line Filter for Tank-Top Mounting	RFS	C91
Replacement Filter Element for Return Line Filters	RTE10	C102
Replacement Filter Element for Return Line Filters	RTE20	C106
Replacement Filter Element for Return Line Filters	RTE25	C102
Replacement Filter Element for Return Line Filters	RTE47	C110
Replacement Filter Element for Return Line Filters	RTE48	C110
Replacement Filter Element for Return Line Filters	RTE49	C110
Replacement Filter Element for Return Line Filters	RTE58	C114
Replacement Filter Element for Return Line Filters	RTE59	C114
Air Filter Element for Return Line Filters	RTEA20	C106
Return-Line Filter for Tank-Top Mounting	RTF10	C99
Return-Line Filter for Tank-Top Mounting	RTF20	C103
Return-Line Filter for Tank-Top Mounting	RTF25	C99
Return-Line Filter for Tank-Top Mounting	RTF47	C107
Return-Line Filter for Tank-Top Mounting	RTF48	C107
Return-Line Filter for Tank-Top Mounting	RTF49	C107
Return-Line Filter for Tank-Top Mounting	RTF58	C111
Return-Line Filter for Tank-Top Mounting	RTF59	C111
Return-Line Filter for In-Tank Mounting	RTF-N	C115
Spin-On Filter Head for In-Line Assembly	SAF	C125
Mobile Filter System	SCFC	C178
Replacement Filter Elements for High Pressure Filters	SE	C41
High Pressure Filters for In-Line Assembly	SF	C19
Spin-On Replacement Filter Element	SF63	C141
Spin-On Replacement Filter Element	SF65	C142
Spin-On Replacement Filter Element	SF67	C143
Medium Pressure Filters for In-Line Assembly	SFA	C35
Spin-On Replacement Filter Element	SFC	C139
Spin-On Replacement Filter Element	SFCT	C139
High Pressure Filters for Manifold Mounting	SF-SM	C27
High Pressure Filters for Manifold Mounting	SF-TM	C23
High Pressure Filters for Sandwich Plate Mounting	SFZ	C31
Electrical Clogging Indicator	SIE	C121
Electrical Clogging Indicator for Spin-On Filters	SIE	C147
Visual Clogging Indicator	SIM	C121
Visual Clogging Indicator for Spin-On Filters	SIM	C147
Visual Clogging Indicator for Spin-On Filters	SIS	C147
Spin-On Filter Head for In-Line Assembly	SLF	C124
Replacement Filter Elements for Medium Pressure Filters	SME	C45
Mobile Filter System	SMFS-P	C178
Mobile Filter System	SMFS-U	C178
Medium Pressure Filters for In-Line Assembly	SMPF	C45
Mini Water Vac	SMWV	C174
Mobile Filter System	SPFC	C178
Return Line Filters - Duplex Housing	SRFL-D	C51
Return Line Filters - Simplex Housing	SRFL-S	C51
Return Line Filters for Industrial Water - Simplex Housing	SRFL-SW	C65
Replacement Filter Element for Offline and Bypass Filters	SRM	C176
Spin-On Filter Head for In-Line Assembly	SSF	C127
Spin-On Filter Head for Tank-Top Mounting	SSFT	C135

## Diagtronics

Product Description	Code	Page
Bottle Sampler Unit	LasPaC II-Bottle Sampler	D49
Laser Particle Counter (Inline)	LasPaC II-I	D46
Laser Particle Counter (Inline, ATEX2)	LasPaC II-I-ATEX2	D48
Laser Particle Counter (Mobile)	LasPaC II-M	D44
Laser Particle Counter (Portable)	LasPaC II-P	D42
Particle Monitor	LPM II	D52
Particle Monitor (ATEX2)	LPM II-ATEX2	D55
Flow Control Valve	LPM II-DAV	D54
Particle Monitor with Ethernet Interface	LPM II-ETH INTERFACE	D53
Remote Display Unit	LPM II-REMOTE DISPLAY	D53
Particle Monitor with USB Interface	LPM II-USB	D53
Complete System (analogue)	PPC-04/06/08-plus-SET	D34
Pressure Sensor	PPC-04/12-P	D22
Pressure / Temperature Sensor	PPC-04/12-PT	D26
Rotational Speed Sensor	PPC-04/12-SDS-CAB	D30
Flow Turbine	PPC-04/12-SFM	D28
Temperature Sensor	PPC-04/12-T	D24
Complete System (CAN)	PPC-04-CAN-SET	D35
Hydraulic Tester	PPC-04-plus	D16
Hydraulic Tester	PPC-04-plus-CAN	D16
Hydraulic Tester	PPC-06/08-plus	D17
Current / Voltage Adaptor	PPC-06/12-A/V-A	D31
CAN Frequency Converter	PPC-CAN-FR	D33
Pressure Sensor	PPC-CAN-P	D23
Pressure / Temperature Sensor	PPC-CAN-PT	D27
Flow Turbine	PPC-CAN-SFM	D28
Temperature Sensor	PPC-CAN-T	D25
Hydraulic Tester	PPC-Pad	D18
Complete System (PPC-Pad)	PPC-Pad-SET	D36
Pressure Transmitter	PT	D68
Flow Indicator	SDM	D82
Flow Indicator	SDMKR	D82
Flowtell Inline Flow Meter	SFF	D81
Oil Sampling Kit	SFSK-1/ -2	D56
Flow Monitoring Unit	SGF	D84
Flow Monitoring Unit	SGFE	D84
Flow Monitoring Unit (Aluminium)	SGFE	D90
Level-Temperature Switch	SLTS	D59
Level-Temperature Switch (Aluminium)	SLTSA	D60
Level-Temperature Switch with Display	SLTSD	D61
Pressure Test Kit (analogue)	SMB	D8
Pressure Test Kit (digital)	SMB-DIGI	D11
Pressure Gauge (analogue)	SPG	D6
Pressure Gauge (digital)	SPG-DIGI	D10
Pressure Transmitter	SPT	D64
Pressure Switch	SPW	D62
Pressure Switch / Transmitter	SPWF	D72
Pressure Switch	SPW-SD	D63
Temperature Transmitter	STC	D78
Flow Monitoring Unit	STD	D84
Flow Monitoring Unit with Display	STD 1 / 2 / 3 / 4	D93
Temperature Switch	STW	D80
Temperature Switch / Transmitter	STWE	D76

## Hydraulic Accessories

Product Description	Code	Page
Adaptor Plate for use with Desiccant Air Breather	AP	E33
Side Mount Bracket (Polyamide) for use with Filler Breather	ASMB-1	E24
Side Mount Bracket (Aluminium) for use with Filler Breather	ASMB-2	E24
Extended Bayonet Flange for use with Filler Breather	EBF-1	E25
Extended Bayonet Flange for use with Filler Breather	EBF-2	E25
Visual Contamination Indicator for use with Adaptor Plate	FM	E33
Pipe, Tube and Hose Cleaning System (STAUFF Clean)	SC	E38
Desiccant Air Breather	SDB	E30
Desiccant Air Breather with Check Valves	SDB-CV	E32
Anti-Drain Valve for use with Level Gauge	SDV-SNA/SNK	E11
Plastic Filler Breather (Screw-In Version)	SES-1	E26
Plastic Filler Breather (Welded Version)	SES-2	E26
Giant Air Breather	SGB	E28
Metal Filler Breather (Bayonet Version)	SMBB-47	E19
Metal Filler Breather (Bayonet Version)	SMBB-80	E21
Lockable Metal Filler Breather (Clamping, Threaded and Push-On Version)	SMBL	E23
Metal Filler Breather (Push-On Version)	SMBP-80	E22
Metal Filler Breather (Screw-In Version)	SMBT-47	E18
Metal Filler Breather (Screw-In Version)	SMBT-80	E20
Level Gauge	SNA	E4
Level Gauge	SNK	E6
Level Gauge (Compact Design)	SNKK	E7
Plastic Filler Breather (Screw-In Version)	SPB 1	E12
Plastic Filler Breather (Screw-In Version)	SPB 2	E12
Plastic Filler Breather (Screw-In Version)	SPB 3	E12
Plastic Filler Breather (Flange Version)	SPB 4	E13
Plastic Filler Breather (Flange Version)	SPB 5	E13
Plastic Filler Breather (Compact Design, Screw-In Version)	SPBN	E16
Plastic Filler Breather (Compact Design, Bayonet Version)	SPBN	E16
Return Line Bushing	SRF	E37
Diffuser	SRV	E36
Suction Strainer	SUS	E34
Desiccant Air Breather Economy Version)	SVDB	E31
Dial Thermometer with Probe for use with Level Gauge	T1 / T2	E8
Breather Adaptor	TBA	E29
Oil Demister for use with Desiccant Air Breather	TBA-OD	E33
Thermo Switch for use with Level Gauge	TS-SNA/SNK	E8
Temperature Sensor for use with Level Gauge	TS-SNA/SNK-PT100	E9
Signal Convertor for use with Temperature Sensor	TS-SNA/SNK-PT100-C	E10
Temperature Sensor with Direct Installation Set	TS-SNA/SNK-PT100-D	E9
Display / Evaluation Unit for use with Temperature Sensor	TS-SNA/SNK-PT100-T	E10
Weld Riser for use with Filler Breather	WR	E25

## Valves

Product Description	Code	Page
High-Pressure Block Body Ball Valve (Two-Way) - Female NPT Thread	<b>BBV20</b>	F5
High-Pressure Block Body Ball Valve (Two-Way) - Female UN/UNF Thread	<b>BBV21</b>	F6
High-Pressure Block Body Ball Valve (Two-Way) - SAE Split Flange Connection (3000 / 6000 PSI)	<b>BBV22/23</b>	F15
High-Pressure Block Body Ball Valve (Two-Way) - Manifold Mounting	<b>BBV25</b>	F41
High-Pressure Round Body Ball Valve (Two-Way) - SAE Flange Connection (3000 / 6000 PSI)	<b>BBV27/28</b>	F29
High-Pressure Round Body Ball Valve (Two-Way) - SAE Flange Connection (3000 / 6000 PSI)	<b>BBV29</b>	F27
High-Pressure Block Body Ball Valve (Two-Way) - O-Ring Face Seal Connection - Male Thread	<b>BBV2B</b>	F6
High-Pressure Round Body Ball Valve (Two-Way) - CETOP Flange Connection	<b>BBV2D</b>	F33
High-Pressure Block Body Ball Valve (Two-Way) - 24° Cone Connection - Light / Heavy Series	<b>BBV2DN</b>	F7
High-Pressure Block Body Ball Valve (Two-Way) - SAE Flange Connection (3000 / 6000 PSI)	<b>BBV2E/2S</b>	F23
High-Pressure Block Body Ball Valve (Two-Way) - Female BSP Thread	<b>BBV2G</b>	F5
High-Pressure Block Body Ball Valve (Two-Way) - SAE Split Flange Connection / SAE Flange Connection (3000 / 6000 PSI)	<b>BBV2H/2T</b>	F19
High-Pressure Round Body Ball Valve (Two-Way) - ISO Flange Connection	<b>BBV2Y</b>	F35
High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Manifold Mounting	<b>BBV35</b>	F43
High-Pressure Round Body Ball Valve (Two-Way) - Flange Connection and Butt Weld Ends	<b>BBVF</b>	F31
High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Manifold Mounting	<b>BBVS35</b>	F45
Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female NPT Thread	<b>CBVL30</b>	F47
Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female UN/UNF Thread	<b>CBVL31</b>	F48
Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) - SAE Flange Connection (6000 PSI)	<b>CBVL38</b>	F55
Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) - 24° Cone Connection - Light / Heavy Series	<b>CBVL3DN</b>	F49
Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female BSP Thread	<b>CBVL3G</b>	F47
Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female NPT Thread	<b>CBVSL30</b>	F57
Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female UN/UNF Thread	<b>CBVSL31</b>	F58
Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female BSP Thread	<b>CBVSL3G</b>	F57
Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) - 24° Cone Connection - Light / Heavy Series	<b>CBVSLDN</b>	F59
Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female NPT Thread	<b>CBVST0</b>	F61
Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female UN/UNF Thread	<b>CBVST31</b>	F62
Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) - 24° Cone Connection - Light / Heavy Series	<b>CBVST3DN</b>	F63
Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female BSP Thread	<b>CBVST3G</b>	F61
Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female NPT Thread	<b>CBVT30</b>	F51
Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female UN/UNF Thread	<b>CBVT31</b>	F52
Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) - 24° Cone Connection - Light / Heavy Series	<b>CBVT3DN</b>	F53
Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female BSP Thread	<b>CBVT3G</b>	F51
Flow Control Valve (In-Line Assembly)	<b>DRV</b>	F81
Flow Control Valve (Manifold Assembly)	<b>DRVP</b>	F83
Ball Valves with Detents	<b>DT</b>	F97
Throttle and Shut-Off Valve (In-Line Assembly)	<b>DV</b>	F80
Throttle and Shut-Off Valve (Cartridge Assembly)	<b>DVE</b>	F84
Throttle and Shut-Off Valve (Manifold Assembly)	<b>DVP</b>	F82
Double-Acting Pneumatic Actuator	<b>EDA</b>	F96
Single-Acting Pneumatic Actuator	<b>ESA</b>	F96
High-Pressure Forged Body Ball Valve (Two-Way) - Female NPT Thread	<b>FBV20</b>	F9
High-Pressure Forged Body Ball Valve (Two-Way) - Female UN/UNF Thread	<b>FBV21</b>	F10
High-Pressure Forged Body Ball Valve (Two-Way) - SAE Split Flange Connection (3000 / 6000 PSI)	<b>FBV22/23</b>	F17

Product Description	Code	Page
High-Pressure Forged Body Ball Valve (Two-Way) - O-Ring Face Seal Connection - Male Thread	<b>FBV2B</b>	F10
High-Pressure Forged Body Ball Valve (Two-Way) - 24° Cone Connection - Light / Heavy Series	<b>FBV2DN</b>	F11
High-Pressure Forged Body Ball Valve (Two-Way) - SAE Flange Connection (3000 / 6000 PSI)	<b>FBV2E/2S</b>	F25
High-Pressure Forged Body Ball Valve (Two-Way) - Female BSP Thread	<b>FBV2G</b>	F9
High-Pressure Forged Body Ball Valve (Two-Way) - SAE Split Flange Connection / SAE Flange Connection (3000 / 6000 PSI)	<b>FBV2H/2T</b>	F21
High-Pressure Block Body Ball Valve (Two-Way) up to 800 bar / 12000 PSI - Female NPT Thread	<b>HBV20</b>	F13
High-Pressure Block Body Ball Valve (Two-Way) up to 800 bar / 12000 PSI - 24° Cone Connection - Heavy Series	<b>HBV2DN</b>	F13
High-Pressure Forged Body Ball Valve (Two-Way) - SAE Flange Connection (3000 / 6000 PSI)	<b>KHZ</b>	F37
High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female NPT Thread	<b>LBV30</b>	F65
High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female UN/UNF Thread	<b>LBV31</b>	F66
High-Pressure Block Body Ball Valve (Three-Way, L-bore) - 24° Cone Connection - Light / Heavy Series	<b>LBV3DN</b>	F67
High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female BSP Thread	<b>LBV3G</b>	F65
Locking Device	<b>LD</b>	F93
Limit Switches	<b>LS</b>	F96
Ball Valves with Assembly Threads	<b>PM</b>	F97
Pressure Compensated Throttle and Shut-Off Valve (In-Line Assembly)	<b>PNDRV</b>	F85
Proximity Switches	<b>PX</b>	F96
Check Valve (In-Line Assembly)	<b>RV</b>	F86
Check Valve (In-Line Assembly)	<b>RVM</b>	F87
Ball Valves with Assembly Holes	<b>SMH</b>	F97
Gauge Isolator Needle Valve (Single Station)	<b>SWS-A1</b>	F91
Gauge Isolator Needle Valve (Single Station)	<b>SWS-A2</b>	F91
Gauge Isolator Valve (Multi Station)	<b>SWS-M</b>	F90
Gauge Isolator Valve (Single Station)	<b>SWS-S1</b>	F90
High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female NPT Thread	<b>TBV30</b>	F69
High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female UN/UNF Thread	<b>TBV31</b>	F70
High-Pressure Block Body Ball Valve (Three-Way, T-bore) - 24° Cone Connection - Light / Heavy Series	<b>TBV3DN</b>	F71
High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female BSP Thread	<b>TBV3G</b>	F69
High-Pressure Block Body Ball Valve (Four-Way, T-bore) - Female NPT Thread	<b>TBV40</b>	F73
High-Pressure Block Body Ball Valve (Four-Way, T-bore) - Female UN/UNF Thread	<b>TBV41</b>	F74
High-Pressure Block Body Ball Valve (Four-Way, T-bore) - 24° Cone Connection - Light / Heavy Series	<b>TBV4DN</b>	F75
High-Pressure Block Body Ball Valve (Four-Way, T-bore) - Female BSP Thread	<b>TBV4G</b>	F73
High-Pressure Block Body Ball Valve (Four-Way, double-L-bore) - Female NPT Thread	<b>XBV40</b>	F77
High-Pressure Block Body Ball Valve (Four-Way, double-L-bore) - Female UN/UNF Thread	<b>XBV41</b>	F78
High-Pressure Block Body Ball Valve (Four-Way, double-L-bore) - 24° Cone Connection - Light / Heavy Series	<b>XBV4DN</b>	F79
High-Pressure Block Body Ball Valve (Four-Way, double-L-bore) - Female BSP Thread	<b>XBV4G</b>	F77

## Flanges

Product Description	Code	Page
SAE Blanking Counterflange	<b>BAS-CP</b>	G45
SAE Single-Part Socket Weld Counterflange	<b>BAS-ES</b>	G31
SAE Single-Part Socket Weld Counterflange (Flat Style)	<b>BAS-FL-ES</b>	G33
SAE Single-Part Screw-in BSPP Threaded Counterflange	<b>BAS-G</b>	G19
SAE Single-Part Screw-in NPT Threaded Counterflange	<b>BAS-N</b>	G21
SAE Single-Part Butt Weld Counterflange for Metric Tubes	<b>BAS-SRE</b>	G29
SAE Single-Part Butt Weld Counterflange for High Pressure Tubes	<b>BAS-ST</b>	G25
SAE Single-Part Butt Weld Counterflange for Low Pressure Tubes	<b>BAS-STRE</b>	G27
SAE Block - L-Connection (Connector Style)	<b>BC-L</b>	G55
SAE Block - T-Connection (Connector Style)	<b>BC-T</b>	G53
SAE Block - L-Connection (Adapter Style)	<b>BF-L</b>	G54
SAE Block - L-Connection / Reduction (Adapter Style)	<b>BF-L-RED</b>	G56
SAE Block - T-Connection (Adapter Style)	<b>BF-T</b>	G52
SAE 90° Single-Part Socket Weld Flange	<b>BFX90-ES</b>	G41
SAE 90° Single-Part Screw-in BSPP Threaded Flange	<b>BFX90-G</b>	G37
SAE 90° Single-Part Fitting Flange with 24° Cone Connector	<b>BFX90-L/S</b>	G42
SAE 90° Single-Part Screw-in NPT Threaded Flange	<b>BFX90-N</b>	G38
SAE 90° Single-Part Butt Weld Flange for Metric Tubes	<b>BFX90-SRE</b>	G40
SAE 90° Single-Part Butt Weld Flange for Low Pressure Tubes	<b>BFX90-STC</b>	G39
SAE Single-Part Fitting Flange with BSP 60° Cone Connector	<b>BFX-B</b>	G35
SAE Reducing Flange	<b>BFX-BAS</b>	G50
SAE Blanking Flange	<b>BFX-CP</b>	G44
SAE Single-Part Socket Weld Flange	<b>BFX-ES</b>	G30
SAE Single-Part Socket Weld Flange (Flat Style)	<b>BFX-FL-ES</b>	G32
SAE Single-Part Screw-in BSPP Threaded Flange	<b>BFX-G</b>	G18
SAE Single-Part Fitting Flange with JIC 37° Cone Connector	<b>BFX-J</b>	G36
SAE Single-Part Fitting Flange with 24° Cone Connector	<b>BFX-L/S</b>	G34
SAE Single-Part Screw-in Metric Threaded Flange	<b>BFX-M</b>	G23
SAE Single-Part Screw-in NPT Threaded Flange	<b>BFX-N</b>	G20
SAE Single-Part Butt Weld Flange for Metric Tubes	<b>BFX-SRE</b>	G28
SAE Single-Part Butt Weld Flange for High Pressure Tubes	<b>BFX-ST</b>	G24
SAE Single-Part Butt Weld Flange for Low Pressure Tubes	<b>BFX-STRE</b>	G26
SAE Single-Part Screw-in UN Threaded Flange	<b>BFX-U</b>	G22
SAE Flange Clamp	<b>BM</b>	G5
SAE Flange Clamp (Flat Style)	<b>BM-FL</b>	G7
SAE Flange Clamp with Metric Tapped Holes	<b>BM-G</b>	G8
SAE 90° Flange Adapter with 24° Cone Connector	<b>CAG90-L/S</b>	G16
SAE 90° Butt Weld Adapter	<b>CAG90-ST</b>	G15
SAE Blindplug	<b>CAG-BP</b>	G47
SAE Blindplug (High Version)	<b>CAG-BPH</b>	G47
SAE Flange Adapter with BSPT Thread	<b>CAG-BSPT</b>	G12
SAE Socket Weld Flange Adapter	<b>CAG-ES</b>	G11
SAE Flange Adapter with 24° Cone Connector	<b>CAG-L/S</b>	G14
SAE Flange Adapter with NPT Thread	<b>CAG-NPT</b>	G13
SAE Butt Weld Flange Adapter	<b>CAG-ST</b>	G10
SAE Cover Plate	<b>CPL</b>	G49
SAE Counterflange Adapter with BSPT Thread	<b>CSG-BSPT</b>	G12
SAE Socket Weld Counterflange Adapter	<b>CSG-ES</b>	G11
SAE Counterflange Adapter with NPT Thread	<b>CSG-NPT</b>	G13
SAE Butt Weld Counterflange Adapter	<b>CSG-ST</b>	G10
SAE Split Flange Halves	<b>DB</b>	G4
SAE Split Flange Halves (Flat Style)	<b>DB-FL</b>	G6
4-hole Screw-in BSPP Threaded Flange (Flat Style)	<b>GP-FL-LK-G</b>	G69
4-hole Fitting Flange with BSP 60° Cone Connector	<b>GP-LK...-AG...#K</b>	G71
4-hole Screw-in BSPP Threaded Flange	<b>GP-LK...-G...#K</b>	G72
4-hole Butt Weld Flange	<b>GP-LK...-ST.../...#K</b>	G70
4-hole Flange Connection with 24° Cone Connector	<b>GP-LK-L/S</b>	G62
SAE Sandwich Plate	<b>SPL</b>	G48
SAE Sandwich Plate with Female BSP Port (e.g. for Test Point)	<b>SPL-G1/4-L</b>	G46
3-hole 90° Screw-in BSPP Threaded Flange	<b>WP-3-LK-G</b>	G65
3-hole 90° Screw-in BSPP Threaded Flange (Aluminium)	<b>WP-3-LK-G-W50</b>	G67
3-hole 90° Flange Connection with 24° Cone Connector	<b>WP-3-LK-L/S</b>	G64
4-hole 90° Screw-in BSPP Threaded Flange	<b>WP-LK-G</b>	G66
4-hole 90° Screw-in BSPP Threaded Flange (Aluminium)	<b>WP-LK-G-W50</b>	G68
4-hole 90° Flange Connection with 24° Cone Connector	<b>WP-LK-L/S</b>	G63

**0-9**

3-hole 90° Flange Connection with 24° Cone Connector  
 3-hole 90° Screw-in BSPP Threaded Flange  
 3-hole 90° Screw-in BSPP Threaded Flange (Aluminium)  
 4-hole 90° Flange Connection with 24° Cone Connector  
 4-hole 90° Screw-in BSPP Threaded Flange  
 4-hole 90° Screw-in BSPP Threaded Flange (Aluminium)  
 4-hole Butt Weld Flange  
 4-hole Fitting Flange with BSP 60° Cone Connector  
 4-hole Flange Connection with 24° Cone Connector  
 4-hole Screw-in BSPP Threaded Flange  
 4-hole Screw-in BSPP Threaded Flange (Flat Style)

**A**

Adaptor Plate for use with Desiccant Air Breather  
 Adaptor, Series Test 12  
 Adaptor, Series Test 15  
 Adaptor, Series Test 20  
 Adjustable Gauge Fitting  
 Air Filter Element for Return Line Filters  
 Angled Weld Plate (Standard Series)  
 Anti-Drain Valve for use with Level Gauge

**B**

Ball Valves for Gas Applications  
 Ball Valves for Isocyanates  
 Ball Valves for Paints and Lacquers  
 Ball Valves with Assembly Holes  
 Ball Valves with Assembly Threads  
 Ball Valves with Detents  
 Ball Valves with Fire-Safe Approval  
 Bottle Sampler Unit  
 Breather Adaptor  
 Bridge Weld Plate (Standard Series)  
 Bulkhead Test Coupling, Series Test 12  
 Bulkhead Test Coupling, Series Test 15  
 Bulkhead Test Coupling, Series Test 20  
 Bypass Filter  
 Bypass Lube-Oil Filter

**C**

CAN Frequency Converter  
 Channel Rail  
 Channel Rail Adaptor (Heavy Series)  
 Channel Rail Adaptor (Heavy Twin Series)  
 Channel Rail Adaptor (Standard Series)  
 Channel Rail Adaptor (Twin Series)  
 Check Valve (In-Line Assembly)  
 Clamp Assemblies (Heavy Series)  
 Clamp Assemblies (Heavy Twin Series)  
 Clamp Assemblies (Standard Series)  
 Clamp Assemblies (Twin Series)  
 Clamp Body (Agriculture Twin Series) - Profiled Inside Surface  
 Clamp Body (Compact Twin Series) - Profiled Inside Surface  
 Clamp Body (Heavy Series) - Profiled Inside Surface  
 Clamp Body (Heavy Series) - Smooth Inside Surface  
 Clamp Body (Heavy Series) - with Rubber Insert  
 Clamp Body (Heavy Series)  
 Clamp Body (Heavy Twin Series) - Profiled Inside Surface  
 Clamp Body (Heavy Twin Series) - with Rubber Insert  
 Clamp Body (Light Series, Type LB) - Single Design  
 Clamp Body (Light Series, Type LBBU) - Single Design  
 Clamp Body (Light Series, Type LBBU) - Twin Design  
 Clamp Body (Light Series, Type LBG) - Twin Design  
 Clamp Body (Light Series, Type LBU) - Twin Design  
 Clamp Body (Light Series, Type LN) - Single Design  
 Clamp Body (Light Series, Type LNGF) - Twin Design  
 Clamp Body (Light Series, Type LNUF) - Twin Design  
 Clamp Body (Standard Series) - Compact Design  
 Clamp Body (Standard Series) - Oval Design  
 Clamp Body (Standard Series) - Profiled Inside Surface  
 Clamp Body (Standard Series) - Rectangular Design  
 Clamp Body (Standard Series) - Smooth Inside Surface  
 Clamp Body (Standard Series) - with Rubber Insert

**C**

G64 Clamp Body (Standard Series) A6  
 G65 Clamp Body (Twin Series) - Profiled Inside Surface A40  
 G67 Clamp Body (Twin Series) - Smooth Inside Surface A40  
 G63 Clamp Body (Twin Series) A40  
 G66 Clamp Body for Multi-Group Weld Plate (Standard Series) A13  
 G68 Clamps for Cylinder Supply Lines A55  
 G70 Clogging Indicators for Medium and High Pressure Filters C40  
 G71 Clogging Indicators for Medium Pressure Filters C49  
 G62 Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) -  
 G72 24° Cone Connection F49, F59  
 G69 Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) -  
 Female BSP Thread F47, F57  
 Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) -  
 Female NPT Thread F47, F57  
 E33 Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) -  
 B27 Female UN/UNF Thread F48, F58  
 B21 Compact High-Pressure Block Body Ball Valve (Three-Way, L-bore) -  
 B11 SAE Flange Connection (6000 PSI) F55  
 B34 Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) -  
 C95, C106 24° Cone Connection F53, F63  
 A12 Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) -  
 E11 Female BSP Thread F51, F61  
 Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) -  
 Female NPT Thread F51, F61  
 Compact High-Pressure Block Body Ball Valve (Three-Way, T-bore) -  
 F102 Female UN/UNF Thread F52, F62  
 F102 Complete System (analogue) D34  
 F102 Complete System (CAN) D35  
 F97 Complete System (PPC-Pad) D36  
 F97 Construction Series A66  
 F97 Construction Series (for Anchor Bolt Fastening) A67  
 F103 Cover Plate (Compact Twin Series) A54  
 D49 Cover Plate (Heavy Twin Series) A51  
 E29 Cover Plate (Light Series, Type LBBU) A61  
 A12 Cover Plate (Light Series, Type LNGF/LNUF) - Twin Design A65  
 B26 Cover Plate (Standard Series) A16  
 B20 Cover Plate (Twin Series) A44  
 B10 Cover Plate for Double Clamps (Heavy Series) A32  
 C167 Cover Plate for Single Clamps (Heavy Series) A32  
 C172 Current / Voltage Adaptor D31  
 Cushion Clamp Series A82  
 Custom-Designed Clamps A56

**D**

D33  
 A83  
 A31 Desiccant Air Breather E30  
 A52 Desiccant Air Breather Economy Version E31  
 A15 Desiccant Air Breather with Check Valves E32  
 A43 Dial Thermometer with Probe for use with Level Gauge E8  
 F86 Differential Pressure Gauge for Return Line Filters C69  
 A36 Differential Pressure Switch with Visual Gauge Indicator for Return Line Filters C63  
 A53 Diffuser E36  
 A20 Direct Gauge Adaptor, Series Test 12 B27  
 A48 Direct Gauge Adaptor, Series Test 15 B21  
 A54 Direct Gauge Adaptor, Series Test 20 B11  
 A54 Display / Evaluation Unit for use with Temperature Sensor E10  
 A24 Double-Acting Pneumatic Actuator F96

**E**

A50 Electrical Clogging Indicator C121  
 A50 Electrical Clogging Indicator for Spin-On Filters C147  
 A62 Elongated Weld Plate (Standard Series) A10  
 A58 Elongated Weld Plate for Double Clamps (Heavy Series) A29  
 A59 Elongated Weld Plate for Single Clamps (Heavy Series) A29  
 A63 Extended Bayonet Flange for use with Filler Breather E25

**E**

A65  
 A65 Flat Steel U-Bolt with Plastic Pipe Saddle (Short) and U-Profile A68  
 A9 Flow Control Valve D54  
 A9 Flow Control Valve (In-Line Assembly) F81  
 A6 Flow Control Valve (Manifold Assembly) F83  
 A9 Flow Indicator D82  
 A7 Flow Monitoring Unit D84  
 A8 Flow Monitoring Unit (Aluminium) D90  
 Flow Monitoring Unit with Display D93  
 Flow Turbine D28  
 Flowtell Inline Flow Meter D81



**G**

Gauge adaptor BSP-thread, 90° elbow, Hose End  
 Gauge adaptor BSP-thread, Hose End  
 Gauge adaptor NPT-thread, 90° elbow, Hose End  
 Gauge adaptor NPT-thread, Hose End  
 Gauge Adaptor, Series Test 10  
 Gauge Adaptor, Series Test 12  
 Gauge Adaptor, Series Test 15  
 Gauge Adaptor, Series Test 20  
 Gauge Isolator Needle Valve (Single Station)  
 Gauge Isolator Valve (Multi Station)  
 Gauge Isolator Valve (Single Station)  
 Giant Air Breather  
 Group Weld Plate (Standard Series)  
 Group Weld Plate (Twin Series)

**H**

Heated Offline Filter  
 Heavy Saddles - Double-Ended Design  
 Heavy Saddles - Single-Ended Design  
 Hexagon Head Bolt (Compact Twin Series)  
 Hexagon Head Bolt (Heavy Series)  
 Hexagon Head Bolt (Heavy Twin Series)  
 Hexagon Head Bolt (Light Series, Type LBBU)  
 Hexagon Head Bolt (Standard Series)  
 Hexagon Head Bolt (Twin Series)  
 Hexagon Rail Nut (Standard Series)  
 Hexagon Rail Nut (Twin Series)  
 High Pressure Filters for In-Line Assembly  
 High Pressure Filters for Manifold Mounting  
 High Pressure Filters for Sandwich Plate Mounting  
 Highest-Pressure Ball Valves  
 High-Pressure Block Body Ball Valve (Four-Way, double-L-bore) - 24° Cone Connection  
 High-Pressure Block Body Ball Valve (Four-Way, double-L-bore) - Female BSP Thread  
 High-Pressure Block Body Ball Valve (Four-Way, double-L-bore) - Female NPT Thread  
 High-Pressure Block Body Ball Valve (Four-Way, double-L-bore) - Female UN/UNF Thread  
 High-Pressure Block Body Ball Valve (Four-Way, T-bore) - 24° Cone Connection  
 High-Pressure Block Body Ball Valve (Four-Way, T-bore) - Female BSP Thread  
 High-Pressure Block Body Ball Valve (Four-Way, T-bore) - Female NPT Thread  
 High-Pressure Block Body Ball Valve (Four-Way, T-bore) - Female UN/UNF Thread  
 High-Pressure Block Body Ball Valve (Three-Way, L-bore) - 24° Cone Connection  
 High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female BSP Thread  
 High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female NPT Thread  
 High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Female UN/UNF Thread  
 High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Manifold Mounting  
 High-Pressure Block Body Ball Valve (Three-Way, L-bore) - Manifold Mounting  
 High-Pressure Block Body Ball Valve (Three-Way, T-bore) - 24° Cone Connection  
 High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female BSP Thread  
 High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female NPT Thread  
 High-Pressure Block Body Ball Valve (Three-Way, T-bore) - Female UN/UNF Thread  
 High-Pressure Block Body Ball Valve (Two-Way) - 24° Cone Connection  
 High-Pressure Block Body Ball Valve (Two-Way) - Female BSP Thread  
 High-Pressure Block Body Ball Valve (Two-Way) - Female NPT Thread  
 High-Pressure Block Body Ball Valve (Two-Way) - Female UN/UNF Thread  
 High-Pressure Block Body Ball Valve (Two-Way) - Manifold Mounting  
 High-Pressure Block Body Ball Valve (Two-Way) - O-Ring Face Seal Connection - Male Thread  
 High-Pressure Block Body Ball Valve (Two-Way) - SAE Flange Connection (3000 / 6000 PSI)  
 High-Pressure Block Body Ball Valve (Two-Way) - SAE Split Flange Connection (3000 / 6000 PSI)  
 High-Pressure Block Body Ball Valve (Two-Way) - SAE Split Flange Connection / SAE Flange Connection (3000 / 6000 PSI)  
 High-Pressure Block Body Ball Valve (Two-Way) up to 800 bar / 12000 PSI - 24° Cone Connection  
 High-Pressure Block Body Ball Valve (Two-Way) up to 800 bar / 12000 PSI - Female NPT Thread  
 High-Pressure Forged Body Ball Valve (Two-Way) - 24° Cone Connection  
 High-Pressure Forged Body Ball Valve (Two-Way) - Female BSP Thread  
 High-Pressure Forged Body Ball Valve (Two-Way) - Female NPT Thread  
 High-Pressure Forged Body Ball Valve (Two-Way) - Female UN/UNF Thread  
 High-Pressure Forged Body Ball Valve (Two-Way) - O-Ring Face Seal Connection - Male Thread  
 High-Pressure Forged Body Ball Valve (Two-Way) - SAE Flange Connection (3000 / 6000 PSI)  
 High-Pressure Forged Body Ball Valve (Two-Way) - SAE Flange Connection (3000 / 6000 PSI)

B39 High-Pressure Forged Body Ball Valve (Two-Way) -  
 B38 SAE Split Flange Connection (3000 / 6000 PSI) F17  
 B39 High-Pressure Forged Body Ball Valve (Two-Way) -  
 B39 SAE Split Flange Connection / SAE Flange Connection (3000 / 6000 PSI) F21  
 B29 High-Pressure Round Body Ball Valve (Two-Way) -  
 B27 Flange Connection and Butt Weld Ends F31  
 B21 High-Pressure Round Body Ball Valve (Two-Way) -  
 B11 CETOP Flange Connection F33  
 F91 High-Pressure Round Body Ball Valve (Two-Way) -  
 F90 ISO Flange Connection F35  
 F90 High-Pressure Round Body Ball Valve (Two-Way) -  
 E28 SAE Flange Connection (3000 / 6000 PSI) F27  
 A11 High-Pressure Round Body Ball Valve (Two-Way) -  
 A41 SAE Flange Connection (3000 / 6000 PSI) F29  
 High-Temperature Ball Valves F101  
 Hose Connector B44  
 Hose End with integrated check valve, Hose End B43  
 C163 Hydraulic Tester D16, D17, D18  
 A79  
 A78  
 A54

**I**

A33 Insert (Standard Series) A18  
 A52 Insert (Standard Series) A18

**L**

A14 Laser Particle Counter (Inline) D46  
 A42 Laser Particle Counter (Inline, ATEX2) D48  
 C19 Laser Particle Counter (Mobile) D44  
 C23, C27 Laser Particle Counter (Portable) D42  
 C31 Level Gauge E4, E6  
 F100 Level Gauge (Compact Design) E7  
 F79 Level-Temperature Switch D59  
 F77 Level-Temperature Switch (Aluminium) D60  
 F77 Level-Temperature Switch with Display D61  
 F78 Levers F92  
 F75 Light Saddles - Double-Ended Design A81  
 F73 Light Saddles - Single-Ended Design A80  
 F73 Limit Switches F96  
 F74 Lockable Metal Filler Breather (Clamping, Threaded and Push-On Version) E23  
 F67 Locking Device F93  
 F65  
 F65  
 F66

**M**

F43 Male thread according to DIN 3852-B, Hose End B40  
 F45 Male thread according to SAE J 514, Hose End B41  
 F71 Male thread for 24° cone fitting according to ISO 8434-1 / DIN 2353, Hose End B41  
 F69 Male thread NPT according to ANSI Standard, Hose End B40  
 F69 Medium Pressure Filters for In-Line Assembly C35, C45  
 F70 Metal Filler Breather (Bayonet Version) E19  
 F7 Metal Filler Breather (Bayonet Version) E21  
 F5 Metal Filler Breather (Push-On Version) E22  
 F5 Metal Filler Breather (Screw-In Version) E18  
 F6 Metal Filler Breather (Screw-In Version) E20  
 F41 Metal Pipe Clamp with Rounded Ends A76  
 Mini Water Vac C174  
 F6 Mobile Filter System C178  
 Mounting Rail (Heavy Series) A30  
 F23 Mounting Rail (Heavy Twin Series) A52  
 Mounting Rail (Standard Series) A14  
 F15 Mounting Rail (Twin Series) A42  
 Mounting Rail Nut (Heavy Series) A30  
 F19 Mounting Rail Nut (Heavy Twin Series) A52  
 Multi-Group Weld Plate (Standard Series) A13

**O**

F13  
 F11 Offline Filters C151  
 F9 Oil Demister for use with Desiccant Air Breather E33  
 F9 Oil Sampling Kit D56  
 F10  
 F10  
 F10  
 F25  
 F37

## P

Particle Monitor  
 Particle Monitor (ATEX2)  
 Particle Monitor with Ethernet Interface  
 Particle Monitor with USB Interface  
 Pipe, Tube and Hose Cleaning System (STAUFF Clean)  
 Plastic Filler Breather (Compact Design, Bayonet Version)  
 Plastic Filler Breather (Compact Design, Screw-In Version)  
 Plastic Filler Breather (Flange Version)  
 Plastic Filler Breather (Screw-In Version)  
 Plastic Filler Breather (Welded Version)  
 Pressure / Temperature Sensor  
 Pressure Compensated Throttle and Shut-Off Valve (In-Line Assembly)  
 Pressure Gauge  
 Pressure Gauge (analogue)  
 Pressure Gauge (digital)  
 Pressure Sensor  
 Pressure Switch  
 Pressure Switch / Transmitter  
 Pressure Test Kit  
 Pressure Test Kit (analogue)  
 Pressure Test Kit (digital)  
 Pressure Transmitter  
 Proximity Switches

## R

Remote Display Unit  
 Replacement Filter Element for Offline and Bypass Filters  
 Replacement Filter Element for Return Line Filters C88, C102, C106, C110, C114  
 Replacement Filter Elements for High Pressure Filters  
 Replacement Filter Elements for Medium Pressure Filters  
 Replacement Filter Elements for Return Line Filters C63, C69  
 Return Line Bushing E37  
 Return Line Filters - Duplex Housing C51  
 Return Line Filters - Simplex Housing C51  
 Return Line Filters for Industrial Water - Simplex Housing  
 Return-Line Filter for In-Tank Mounting C115  
 Return-Line Filter for Tank-Top Mounting C71, C79, C85, C91, C99, C103, C107, C111  
 Rotational Speed Sensor D30  
 Round Steel U-Bolt with Plastic Pipe Saddle (Long) A72  
 Round Steel U-Bolt with Plastic Pipe Saddle (Short) A70  
 Round Steel U-Bolt without Plastic Pipe Saddle A74

## S

SAE 90° Butt Weld Adapter G15  
 SAE 90° Flange Adapter with 24° Cone Connector G16  
 SAE 90° Single-Part Butt Weld Flange for Low Pressure Tubes G39  
 SAE 90° Single-Part Butt Weld Flange for Metric Tubes G40  
 SAE 90° Single-Part Fitting Flange with 24° Cone Connector G42  
 SAE 90° Single-Part Screw-in BSPP Threaded Flange G37  
 SAE 90° Single-Part Screw-in NPT Threaded Flange G38  
 SAE 90° Single-Part Socket Weld Flange G41  
 SAE Blanking Counterflange G45  
 SAE Blanking Flange G44  
 SAE Blindplug G47  
 SAE Blindplug (High Version) G47  
 SAE Block - L-Connection (Adapter Style) G54  
 SAE Block - L-Connection (Connector Style) G55  
 SAE Block - L-Connection / Reduction (Adapter Style) G56  
 SAE Block - T-Connection (Adapter Style) G52  
 SAE Block - T-Connection (Connector Style) G53  
 SAE Butt Weld Counterflange Adapter G10  
 SAE Butt Weld Flange Adapter G10  
 SAE Counterflange Adapter with BSPT Thread G12  
 SAE Counterflange Adapter with NPT Thread G13  
 SAE Cover Plate G49  
 SAE Flange Adapter with 24° Cone Connector G14  
 SAE Flange Adapter with BSPT Thread G12  
 SAE Flange Adapter with NPT Thread G13  
 SAE Flange Clamp G5  
 SAE Flange Clamp (Flat Style) G7  
 SAE Flange Clamp with Metric Tapped Holes G8  
 SAE Reducing Flange G50  
 SAE Sandwich Plate G48  
 SAE Sandwich Plate with Female BSP Port (e.g. for Test Point) G46

SAE Single-Part Butt Weld Counterflange for High Pressure Tubes G25  
 SAE Single-Part Butt Weld Counterflange for Low Pressure Tubes G27  
 SAE Single-Part Butt Weld Counterflange for Metric Tubes G29  
 SAE Single-Part Butt Weld Flange for High Pressure Tubes G24  
 SAE Single-Part Butt Weld Flange for Low Pressure Tubes G26  
 SAE Single-Part Butt Weld Flange for Metric Tubes G28  
 SAE Single-Part Fitting Flange with 24° Cone Connector G34  
 SAE Single-Part Fitting Flange with BSP 60° Cone Connector G35  
 SAE Single-Part Fitting Flange with JIC 37° Cone Connector G36  
 SAE Single-Part Screw-in BSPP Threaded Counterflange G19  
 SAE Single-Part Screw-in BSPP Threaded Flange G18  
 SAE Single-Part Screw-in Metric Threaded Flange G23  
 SAE Single-Part Screw-in NPT Threaded Counterflange G21  
 SAE Single-Part Screw-in NPT Threaded Flange G20  
 SAE Single-Part Screw-in UN Threaded Flange G22  
 SAE Single-Part Socket Weld Counterflange G31  
 SAE Single-Part Socket Weld Counterflange (Flat Style) G33  
 SAE Single-Part Socket Weld Flange G30  
 SAE Single-Part Socket Weld Flange (Flat Style) G32  
 SAE Socket Weld Counterflange Adapter G11  
 SAE Socket Weld Flange Adapter G11  
 SAE Split Flange Halves G4  
 SAE Split Flange Halves (Flat Style) G6  
 Safety Locking Plate (Heavy Series) A35  
 Safety Locking Plate (Heavy Twin Series) A52  
 Safety Locking Plate (Standard Series) A19  
 Safety Locking Plate (Twin Series) A46  
 Safety Washer (Heavy Series) A34  
 Safety Washer (Standard Series) A17  
 Sampling Hose Adaptor B44  
 Screw-type ORFS according to SAE J 1453, 90° elbow, Hose End B43  
 Screw-type ORFS according to SAE J 1453, Hose End B43  
 Seal Kits for Ball Valves F110  
 Seal with O-ring for 24° cone fitting according to ISO 8434-1 / DIN 2353, c/w swivel nut, Hose End B40  
 Seal with O-ring for 24° cone fitting according to ISO 8434-1 / DIN 2353, c/w swivel nut, 45° elbow, Hose End B40  
 Seal with O-ring for 24° cone fitting according to ISO 8434-1 / DIN 2353, c/w swivel nut, 90° elbow, Hose End B40  
 Sealing head with swivel nut according to SAE J 514, 37° cone, Hose End B42  
 Sealing head with swivel nut according to SAE J 516, 37° cone, 90° elbow, Hose End B42  
 Sealing head with swivel nut according to SAE J 516, 45° cone, 90° elbow, Hose End B42  
 Sealing head with swivel nut according to SAE J 516, 45° cone, Hose End B42  
 Sealing head with swivel nut for cone fitting according to DIN EN 560, Hose Ends B41  
 Sealing head with swivel nut, 60° cone, Hose End B43  
 Side Mount Bracket (Aluminium) for use with Filler Breather E24  
 Side Mount Bracket (Polyamide) for use with Filler Breather E24  
 Signal Converter for use with Temperature Sensor E10  
 Single Weld Plate (Compact Twin Series) A54  
 Single Weld Plate (Twin Series) A41  
 Single-Acting Pneumatic Actuator F96  
 Sleeve (Light Series, Type LBBU) A60  
 Slotted Head Screw (Standard Series) A18  
 Socket Cap Screw (Heavy Series) A33  
 Socket Cap Screw (Heavy Twin Series) A52  
 Socket Cap Screw (Standard Series) A18  
 Socket Cap Screw (Twin Series) A45  
 Spin-On Filter Head for In-Line Assembly C124, C125, 127  
 Spin-On Filter Head for Tank-Top Mounting C135  
 Spin-On Replacement Filter Element C139, C141, 142, 143  
 Stacking Bolt (Heavy Series) A35  
 Stacking Bolt (Heavy Twin Series) A52  
 Stacking Bolt (Standard Series) A19  
 Stacking Bolt (Twin Series) A47  
 Standpipe for compression ring fittings according to ISO 8434-1 / DIN 2353, 90° elbow, Hose End B39  
 Standpipe for compression ring fittings according to ISO 8434-1 / DIN 2353, Hose End B39  
 STAUFF Test Plug in-type, Hose End B38  
 STAUFF Test Screw-type, 90° elbow, suitable for test points (short wire version), Hose End B38  
 STAUFF Test Screw-type, 90° elbow, suitable for test points, Hose End B38  
 STAUFF Test Screw-type, suitable for test points, Hose End B38  
 Suction Strainer E34  
 Swivel Run Tee B9; B20; B26



**T**

Temperature Sensor  
 Temperature Sensor for use with Level Gauge  
 Temperature Sensor with Direct Installation Set  
 Temperature Switch  
 Temperature Switch / Transmitter  
 Temperature Transmitter  
 Test Coupling SKK complete with Straight Fitting, Series Test 12  
 Test Coupling SKK complete with Straight Fitting, Series Test 20  
 Test Coupling SKK for 24° Cone Fittings, Series Test 12  
 Test Coupling SKK for 24° Cone Fittings, Series Test 20  
 Test Coupling SKK with Port Connection, Series Test 12  
 Test Coupling SKK with Port Connection, Series Test 20  
 Test Coupling SMK complete with Straight Fitting, Series Test 10  
 Test Coupling SMK complete with Straight Fitting, Series Test 15  
 Test Coupling SMK complete with Straight Fitting, Series Test 20  
 Test Coupling SMK for 24° Cone Fittings, Series Test 10  
 Test Coupling SMK for 24° Cone Fittings, Series Test 15  
 Test Coupling SMK for 24° Cone Fittings, Series Test 20  
 Test Coupling SMK with Port Connection, Series Test 10  
 Test Coupling SMK with Port Connection, Series Test 15  
 Test Coupling SMK with Port Connection, Series Test 20  
 Test Coupling SMK-JIC Connection (to SAE-J514), Series Test 20  
 Test Coupling SMK-JIC Connection (to SAE-J514), Series Test 20  
 Test Coupling SMK-ORFS Connection, Series Test 20  
 Test Hose  
 Test hose for air brake systems, Hose End  
 Thermo Switch for use with Level Gauge  
 Thread Adaptor SRS  
 Throttle and Shut-Off Valve (Cartridge Assembly)  
 Throttle and Shut-Off Valve (In-Line Assembly)  
 Throttle and Shut-Off Valve (Manifold Assembly)  
 Twin Weld Plate (Standard Series)

**U**

D24 Universal sealing head with swivel nut for 24° cone fitting according  
 E9 to ISO 8434-1 / DIN 2353, 90° elbow, Hose End B41  
 E9 Universal sealing head with swivel nut for 24° cone fitting according  
 D80 to ISO 8434-1 / DIN 2353, Hose End B41  
 D76  
 D78

**V**

B24  
 B14 Valves for Medium and High Pressure Filters C39  
 B25 Visual Clogging Indicator C121  
 B15 Visual Clogging Indicator for Spin-On Filters C147  
 B23 Visual Contamination Indicator for use with Adaptor Plate E33  
 B13

**W**

B30  
 B18  
 B6 Water Absorbing Offline Filter C157  
 B31 Weld Plate (Heavy Twin Series) A51  
 B19 Weld Plate (Light Series, Type LBBU) A60  
 B7 Weld Plate (Standard Series) A10  
 B29 Weld Plate for Double Clamps (Heavy Series) A28  
 B17 Weld Plate for Single Clamps (Heavy Series) A28  
 B5 Weld Riser for use with Filler Breather E25  
 B8 Welding Adaptor SAS B33  
 B8  
 B9  
 B37  
 B42  
 E8  
 B32  
 F84  
 F80  
 F82  
 A11

## General Information

The outlined particulars are approximate values and are only valid as references, which are not binding, also with regard to possible protection of third parties, and they do not exempt you from your own examination of suitability of the products delivered by us. Therefore, these values can only be used in a limited sense for construction purposes. The application of the products is carried out outside our control possibilities and, therefore, is exclusively subject to your own area of responsibility. If, however, liability should be possible, it would be limited for all damages to the value of the goods supplied by us and in use by you. It goes without saying, that we guarantee the perfect quality of our products according to our general sales and delivery conditions.

**Because of technical advances, dimensions subject to change without notification.  
 This catalog supersedes all previous catalogues.**

