



Cat.: Accumulators DEF 30.000



Cat.: Filters DEF 70.000



Cat.: Process technology DEF 7.700



Cat.: Fluid service DEF 7.929



Cat.: Compact hydraulics DEF 5.300



Cat.: Accessories DEF 6.104



Cat.: Electronics DEF 180.000



Cat.: Cooling systems DEF 5.700

**Global Presence.  
Local Expertise.  
www.hydac.com**



- HYDAC Head Office
- HYDAC Companies
- HYDAC Sales and Service Partners

**HYDAC INTERNATIONAL**

HYDAC Accessories GmbH

Hirschbachstraße 2  
66280 Sulzbach/Saar  
Germany

Telefon: +49 6897 509-01  
Fax: +49 6897 509-1009

E-Mail: [accessories@hydac.com](mailto:accessories@hydac.com)  
Internet: [www.hydac.com](http://www.hydac.com)



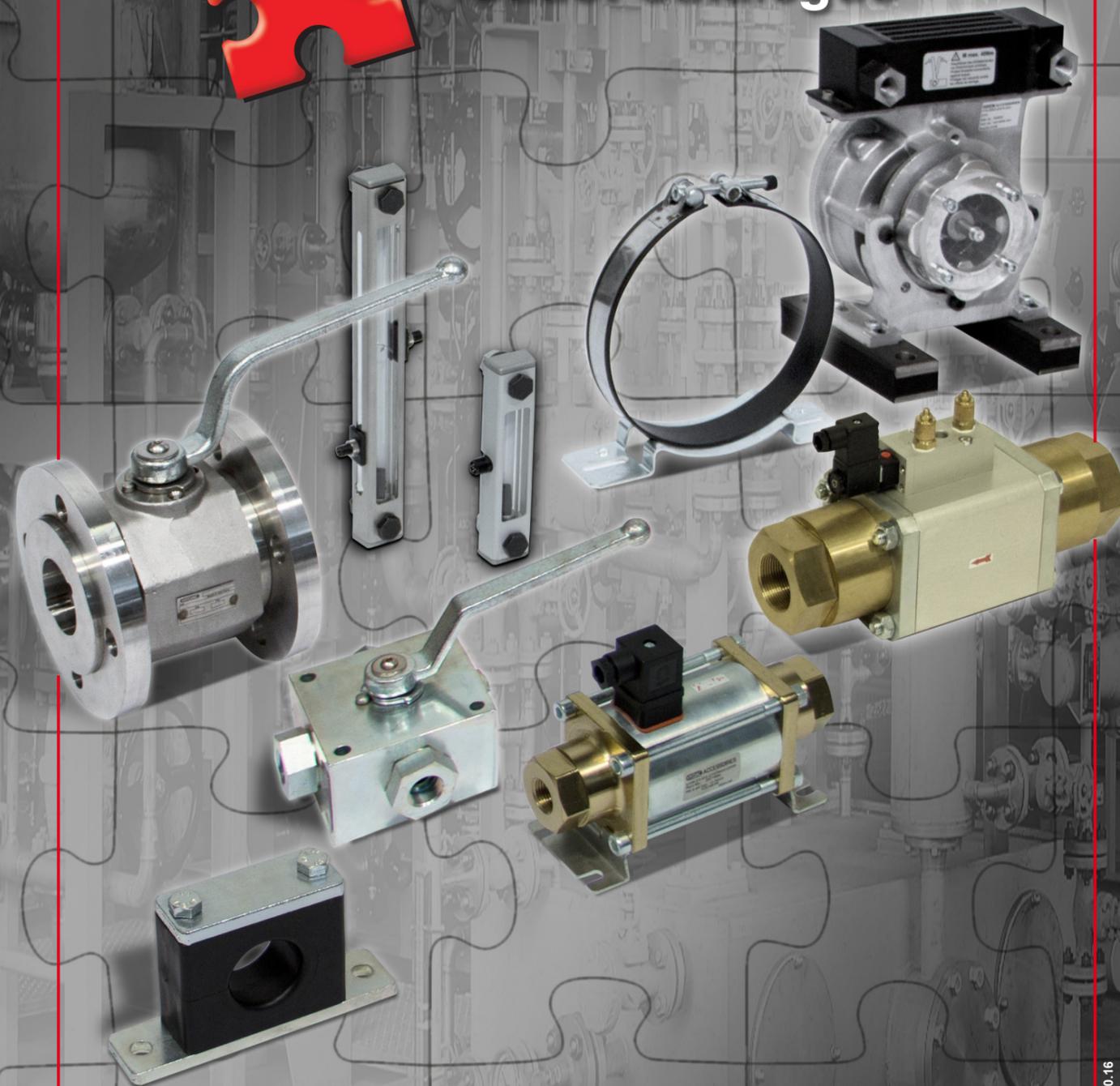
E 61.000.410.16

**HYDAC INTERNATIONAL**



**HYDAC Accessories.  
Product Catalogue**

**HYDAC Accessories. Product Catalogue.**



E 61.000.410.16

## HYDAC Accessories, for every application ...

Wherever fluid technology requires to be shut off, switched or controlled, wherever lines and components are to be mounted and wherever these need to be connected, coupled and damped, the comprehensive range of HYDAC Accessories provides suitable components to every standard - from one supplier, on call-off.

This is particularly true when standard products are not enough and individual functions are required, HYDAC Accessories is your professional partner for modifications and special solutions. In-house engineering and access to HYDAC's interdisciplinary and global know-how network ensure state-of-the-art technology and close co-operation between development and sales.

The breadth and depth of the range of standard and special components from HYDAC Accessories enhances and completes fluid technology systems in almost all applications and sectors:

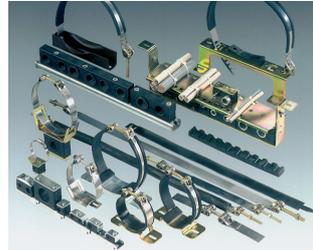
- **Automotive industry**
- **Vehicle technology**
- **Construction machinery**
- **Agricultural machinery**
- **Lifting and material handling technology**
- **Rail technology**
- **Machine tools**
- **Plastic injection moulding machines**
- **Paint spray plants**
- **Hydraulic presses**
- **Mechanical presses**
- **Iron and steel industry**
- **Paper industry**
- **Power plant technology**
- **Wind power**
- **Process engineering**
- **Mining**
- **Marine engineering**
- **Offshore technology**
- **and many other applications and industries ...**



**CX valves**



**Fitting systems**



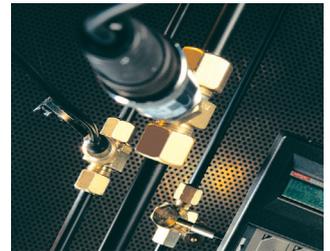
**Mounting technology**



**Quick release couplings**



**Ball valves**



**Test points**



**Bell housings and dampers**



**Fluid level gauge/sensor**



**Tank sets**



**Multi-station gauge isolators**

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

<b>CATALOGUE INDEX</b>	<b>PAGE</b>
<b>INDUSTRY INDEX</b>	<b>4</b>
<b>BALL VALVES</b>	<b>7</b>
Standard ball valves; Low pressure ball valves; Flange type ball valves; ANSI Flange ball valves; SAE Flange ball valves; Direct flange ball valves Change over ball valves; change over low pressure ball valves; multiway ball valves; multiway plate ball valves; plate ball valves Spring-return isolator, Isolator block CETOP Ball valves with pneumatic / electrical actuator; Lockable ball valves; Ball valves with electrical limit controls; Handles Three-way safety block DSV; Compatibility list	
<b>HY-ROS MOUNTING TECHNOLOGY</b>	<b>153</b>
Mounting clamp DIN 3015; Diagonal clamp; Buegu clamp; Oval clamp; Series strips; U-bolt clamps; Flat steel bolt clamps  Swivel bolt clamps; Clamps for mounting pipes/hoses to cylinders; Sensor clamp; Rubber tank bush  Mounting elements for hydraulic accumulators	
<b>BELL HOUSING</b>	<b>283</b>
Bell housings with flexible pump mounting; Bell housings with rigid pump mounting; Bell housings with oil/air coolers; Flexible drive (spider) couplings; Gear couplings; Bell housing foot brackets; Bell housing mounting plate; Damping rails; Damping rings; Tank set	
<b>COAXIAL VALVES / PISTON VALVES</b>	<b>295</b>
<b>TEST POINTS</b>	<b>389</b>
<b>QUICK RELEASE COUPLINGS</b>	<b>399</b>
<b>MULTI-STATION GAUGE ISOLATORS</b>	<b>409</b>
<b>FLUID LEVEL GAUGES / FLUID LEVEL SENSORS</b>	<b>417</b>
<b>BUYER'S GUIDE / STOCK ITEMS</b>	<b>434</b>
<b>OPERATING MANUALS</b>	<b>454</b>

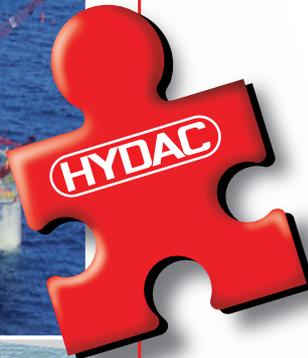
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: www.hydac.com  
E-Mail: info@hydac.com

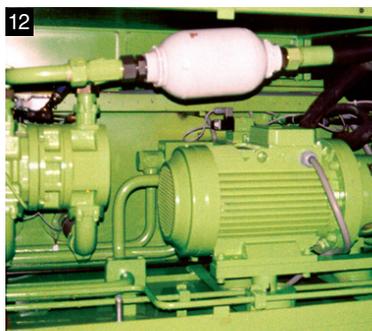
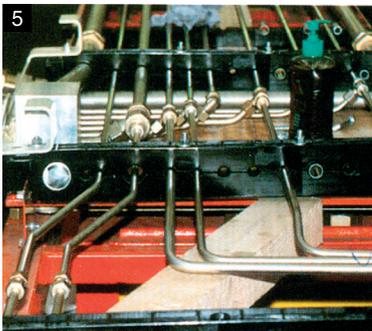
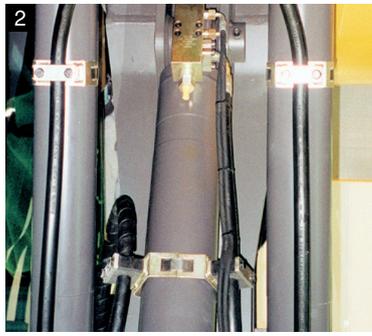
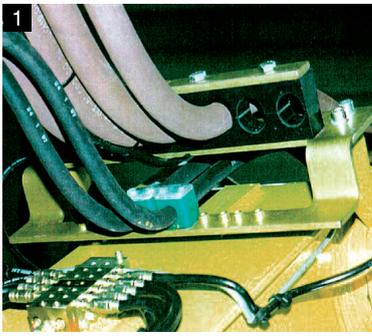


## ACCESSORIES FOR EVERY SECTOR.

Your professional partner for...

- Industrial hydraulics
- Commercial vehicle technology
- Gas-powered vehicle technology
- Earth-moving technology
- Agricultural Technology
- Rail vehicle technology
- Paint spraying plants
- Plastic injection moulding machines
- Chemical industry
- Wind energy
- Heavy industry
- Off-shore and marine
- Machine tools





## HYDAC ACCESSORIES

### FOR ALMOST EVERY APPLICATION

- Mobile excavators (1, 2)
- Braking systems (3)
- Commercial vehicles (4)
- Rail vehicles (5)
- Paint spraying systems (6, 9)
- Hydraulic systems (7, 11)
- Agricultural machines (8)
- Machine tools (10)
- Plastic injection moulding machines (12)

Extensive information is available on applications and products.





**HYDAC**

**INTERNATIONAL**

**Ball valves**



# Introduction

HYDAC ball valves are developed and constructed in response to problems encountered in everyday practice.

The requirements placed on the products are:

- Functionality
- Value for money
- Quality
- Safety
- Service life
- Standard model availability
- Flexibility

HYDAC's ball valve design department is equipped with the most modern computer assisted systems (CAD), which also make it possible to quickly and cost-effectively implement customer-specific solutions.

The manufacture of our products is highly vertically integrated and our modern machine park enables both efficient series manufacture as well as flexible reactions to customer request. On completion of the product assembly, each item is 100% tested and our product-specific orientation ensures optimum functionality at a consistently high quality level. The comprehensive extreme tests constantly carried out in our laboratories confirm the high requirements placed on our products.

HYDAC ball valves can be tested for approvals, standards such as DVGW and "fire safe", and to all standards and specifications. Apart from the standard ball valves HYDAC offers a wide range of customer-specific solutions.

HYDAC ball valves offer you the following benefits:

- Full-flow passage to ensure unrestricted flow of the medium.
- Self-sealing due to sealing principle with floating ball
- Easy actuation, even at high pressures
- Maintenance-free, no adjustment of the seal necessary
- 100 % individual tests of the ball valves

All of our company procedures such as development, production, assembly and maintenance are organised within an effective quality management system.

HYDAC is certified to DIN ISO 9001 11.



HYDAC Accessories plant, Sulzbach

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

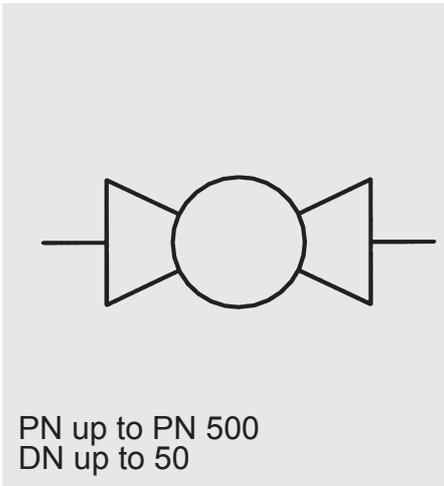
Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

## Catalogue overview

	<b>Ball Valves</b>	KHB KHM	DN04 - 25 DN32 - 50	up to PN500	<b>11</b>
	<b>Ball Valve with DKO connection</b>	KHB DKO	DN04 - 25	up to PN500	<b>17</b>
	<b>Ultra-high Pressure Ball Valves</b>	KHBH KHMH	DN04 - 25	up to PN800	<b>21</b>
	<b>Three-Piece High-Pressure Ball Valve</b>	KHB3H	up to DN40	PN420	<b>25</b>
	<b>Low Pressure Ball Valves</b>	KHNVN KHNVS KHN	DN06 - 100	PN4 - PN50	<b>29</b>
	<b>Stainless Steel Low Pressure Ball Valves</b>	KHNVN KHNVS	DN04 - 80	PN25 - PN140	<b>33</b>
	<b>Weld-Type Low Pressure Ball Valves</b>	KHM3S	DN08 - 100	PN16 - PN64	<b>37</b>
	<b>Flanged Ball Valves</b>	KHBF KHMf KHMFF	DN16 - 50	up to PN315	<b>41</b>
	<b>Flange Type Ball Valves DN65 - 125</b>	KHMFF	up to DN125	up to PN16	<b>45</b>
	<b>Flanged Ball Valves</b>	KHFF	DN65 - 300	PN10 - PN40	<b>49</b>
	<b>ANSI Flange Ball Valves</b>	KHBF KHMf	DN16 - 50	ANSI class 150 - 2500	<b>53</b>
	<b>SAE Flanged Ball Valves</b>	KHB-F3/6 KHM-F3/6	up to DN50	up to PN420	<b>57</b>
	<b>SAE Threaded / Split Flange Ball Valves</b>	KHBGS-F3/6 KHMGS-F3/6	up to DN50	up to PN420	<b>61</b>
	<b>SAE Threaded Flange Ball Valve</b>	KHBG-F3/6 KHMg-F3/6	up to DN50	up to PN420	<b>65</b>
	<b>SAE Fixed Flange Ball Valves</b>	KHF3	DN65 - 125	up to PN160	<b>69</b>
	<b>SAE Fixed Flange Ball Valves</b>	KHF3/6	up to DN80	up to PN420	<b>71</b>
	<b>Direct Flange Ball Valves</b>	KHDF3 KHDF6	up to DN80	up to PN420	<b>75</b>

	<b>Direct Flange Ball Valve</b>	KHZF3 KHZF6	up to DN50	PN420	<b>79</b>
	<b>ISO 6164 Flanged Ball Valves</b>	KHF	DN13 - 80	up to PN400	<b>81</b>
	<b>3/2 Way Ball Valves</b>	KHB3K	up to DN50	up to PN500	<b>85</b>
	<b>Change-Over Low Pressure Ball Valves</b>	KHN3K	up to DN45	up to PN25	<b>91</b>
	<b>3-Way and 4-Way Ball Valves</b>	KH3 KH4	up to DN20	up to PN500	<b>93</b>
	<b>3-Way and 4-Way Manifold Mounted Ball Valves</b>	KH3P KH4P	DN06 - 20	up to PN400	<b>97</b>
	<b>Manifold Mounted Ball Valves</b>	KHP KHP3K	DN06 - 50	up to PN500	<b>101</b>
	<b>Spring Return Isolator</b>	HKHB	DN13	up to PN350	<b>105</b>
	<b>Isolator Sandwich Plate</b>	KHB4K KHB6K	DN06 DN10	PN315 PN315	<b>109</b>
	<b>Ball Valve Combinations</b>		up to DN50	up to PN500	<b>113</b>
	<b>Ball Valves with Pneumatic Actuator</b>		DN04 - 50	up to PN500	<b>119</b>
	<b>Electrically Actuated Ball Valves</b>		DN04 - 50	up to PN500	<b>121</b>
	<b>Lockable Ball Valves</b>		up to DN50	up to PN500	<b>123</b>
	<b>Ball Valves with Electrical Limit Controls</b>		up to DN50	up to PN500	<b>127</b>
	<b>Handles</b>	SW06 - 22			<b>131</b>
	<b>3-Way Safety Block</b>	DSV	DN10	up to PN350	<b>135</b>
	<b>Compatibility List for 2/2-, 3/2- and 4/2-Way Ball Valves</b>				<b>147</b>



## Ball Valves

### KHB / KHM

**Model code**  
(also order example)

**KHB G 1/2 1112 01 X A SO940**

#### Designation

KHB = Block-type ball valve DN 04-25  
KHM = Sleeve type ball valve DN 32-50

#### Type of connection

Thread size or outside diameter of pipe and type of connection

#### Materials

##### Housing, connection adapters

1 = Steel  
3 = Stainless steel

##### Ball, control spindle

1 = Steel  
3 = Stainless steel  
11 = Hardened steel

##### Sealing cups

1 = POM  
3 = PTFE (max. operating pressure 100 bar)  
8 = PEEK  
11 = Steel

##### Control spindle seals and connection seals

2 = NBR (Perbunan)  
3 = PTFE (max. operating pressure 100 bar)  
4 = FKM (Viton)

#### Handle

01 = Aluminium clamped handle, straight DN 12 - 50  
02 = Aluminium clamped handle, cranked DN 12 - 50  
03 = Zinc die-cast clamped handle, straight DN 04 - 10, 13  
04 = Zinc die-cast bolt-on handle, cranked DN 04 - 10, 13  
06 = Steel bolt-on handle, cranked DN 12 - 50  
09 = Without handle  
26 = Steel bolt-on handle, cranked, long DN 12 - 50

#### Series

(determined by manufacturer)

#### Surface protection

... = Phosphate-plated (no details required)  
A = Zinc-plated, chrome (VI)-free  
ZN = Zinc-nickel, chrome (VI)-free

#### Option

TT = O-rings for low temperatures, temperature range from -40 °C to +80 °C (only for stainless steel version)  
SO 940 = Ball valve with 4 fixing holes (for example, panel mounting)  
SO 1073 = Ball valve with 2 through holes

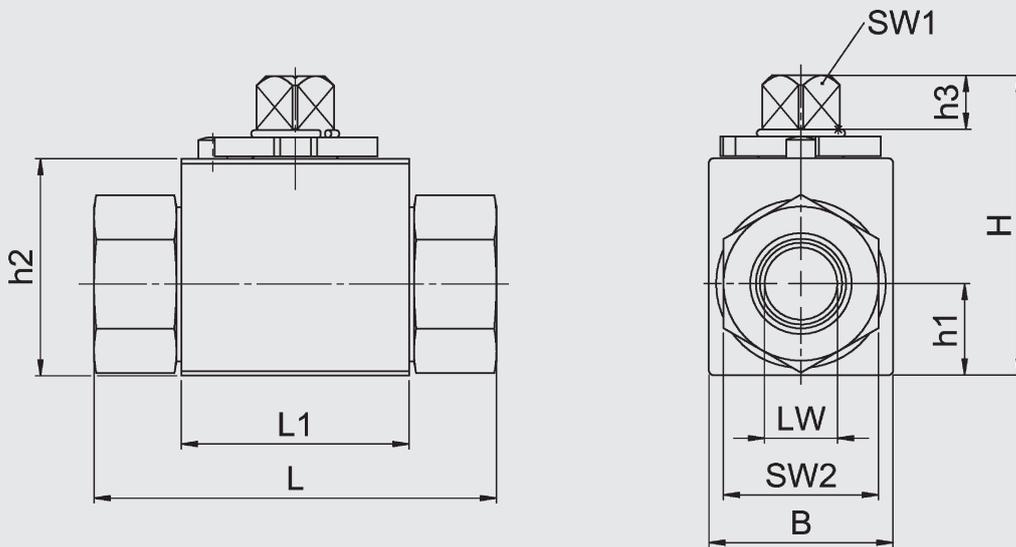
Delivery for non-standard valves is longer and the price is higher.

## Technical specifications

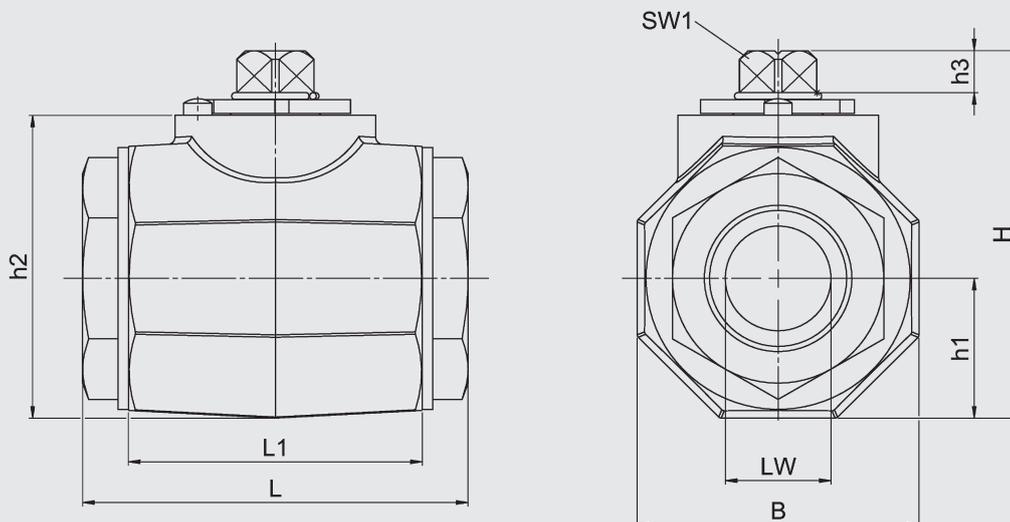
Type of construction:	Block type KHB DN 04 - 25 Sleeve type KHM DN 32 - 50			
Types of connection:	Light and heavy threaded pipe connection to DIN 2353 Whitworth female thread to ISO 228 NPT SAE			
Mounting position:	Optional			
Ambient temperature:	-10 °C to +80 °C			
Nominal pressure:	up to PN 500 / 7250 PSI			
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)			
Temperature of operating fluid:	-10 °C to +80 °C			
Type of construction:	Shut-off device is a ball			
Weight:	See table			
Flow direction:	Optional			
Spare parts:	Seal kits available on request			
Accessories:	All ball valves can be supplied with the following options: <table style="float: right; margin-left: 20px;"> <tr> <td>Actuator</td> </tr> <tr> <td>Limit controls</td> </tr> <tr> <td>Lock</td> </tr> </table>	Actuator	Limit controls	Lock
Actuator				
Limit controls				
Lock				

## Dimensions

KHB



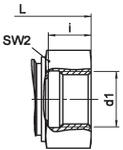
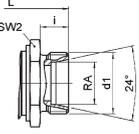
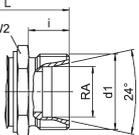
KHM



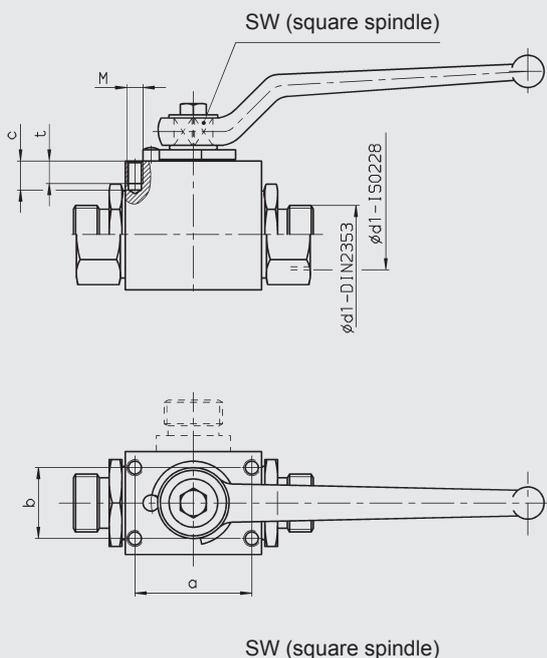
# Steel

Connection type	Type	DN	LW	RA	d1	I	L	L1	B	H	h1	h2	h3	SW1	SW2	Weight [kg]	Nom. pressure PN [bar]
<b>DIN ISO 228</b> Female thread	KHB-G1/8	4	8	–	G1/8	10	69	37	28	44	14	33	7	9	22	0.29	500
	KHB-G1/4	6	8	–	G1/4	14	69	37	28	44	14	33	7	9	22	0.32	500
	KHB-G3/8	10	10	–	G3/8	14	72	42	32	53	17	40	8,5	9	27	0.46	500
	KHB-G1/2	13	12	–	G1/2	15	84	47	35	53	17	40	8,5	9	30	0.59	500
	KHB-G1/2	16	15	–	G1/2	16	83	47	40	62	20	46	11	12	32	0.7	420
	KHB-G3/4	20	20	–	G3/4	18	95	60	49	75	24.5	57	11.6	14	41	1.3	420
	KHB-G1	25	25	–	G1	20,5	113	65	58	82	28.5	65	11.6	14	50	2.03	420
	KHB-G11/4	25/32	25	–	G11/4	22	120	65	58	82	28.5	65	11.6	14	50	2.06	315
	KHM-G11/4	32	30	–	G11/4	22	109.4	83.4	82	106.2	40	87.7	12	17	60	3.1	420
	KHM-G11/2	40	38	–	G11/2	24	130	91	94	118.2	45	99.7	12	17	70	4.4	420
KHM-G2	50	48	–	G2	28	140	100	111	134.2	55.5	115.7	12	17	80	6.6	420	
<b>DIN 2353</b> Light range	KHB-06LR	4	4	6	M12x1,5	7	67	37	28	44	14	33	7	9	22	0.26	500
	KHB-08LR	6	6	8	M14x1,5	7	67	37	28	44	14	33	7	9	22	0.26	500
	KHB-10LR	8	8	10	M16x1,5	11	74	42	32	53	17	40	8.5	9	27	0.43	500
	KHB-12LR	10	10	12	M18x1,5	11	74	42	32	53	17	40	8.5	9	27	0.43	500
	KHB-15LR	13	12	15	M22x1,5	12	82	47	35	53	17	40	8.5	9	30	0.54	500
	KHB-15LR	12	12	15	M22x1,5	12	82	47	40	62	20	46	11.6	12	32	0.64	420
	KHB-18LR	13	12	18	M26x1,5	12	82	47	35	53	17	40	8.5	9	30	0.63	500
	KHB-18LR	16	15	18	M26x1,5	12	82	47	40	62	20	46	11	12	32	1.25	420
	KHB-22LR	20	19	22	M30x2	14	101	60	49	75	24.5	57	11.6	14	41	1.54	420
	KHB-28LR	25	24	28	M36x2	14	108	65	58	82	28.5	65	11.6	14	50	1.54	420
	KHB-35LR	25/32	25	35,3	M45x2	16	112	65	58	82	28.5	65	11.6	14	50	1.95	315
	KHM-35LR	32	30	35,3	M45x2	16	141.4	83.4	82	106.2	40	87.7	12	17	60	3.36	420
KHM-42LR	40	36	42,3	M52x2	16	162	91	94	118.2	45	99.7	12	17	70	4.88	420	
<b>DIN 2353</b> Heavy range	KHB-08SR	4	5	8	M16x1,5	7	73	37	28	44	14	33	7	9	22	0.28	500
	KHB-10SR	6	7	10	M18x1,5	7,5	73	37	28	44	14	33	7	9	22	0.32	500
	KHB-12SR	8	8	12	M20x1,5	12	76	42	32	53	17	40	8.5	9	27	0.45	500
	KHB-14SR	10	10	14	M22x1,5	14	80	42	32	53	17	40	8.5	9	27	0.46	500
	KHB-16SR	13	12	16	M24x1,5	14	86	47	35	53	17	40	8.5	9	30	0.55	500
	KHB-16SR	12	12	16	M24x1,5	14	86	47	40	62	20	46	11.6	12	32	0.65	420
	KHB-20SR	13	12	20	M30x2	16	90	47	35	53	17	40	8.5	9	30	0.61	500
	KHB-20SR	16	15	20	M30x2	16	90	47	40	62	20	46	11	12	32	0.67	420
	KHB-25SR	20	20	25	M36x2	18	109	60	49	75	24.5	57	11.6	14	41	1.32	420
	KHB-30SR	25	25	30	M42x2	20	120	65	58	82	28.5	65	11.6	14	50	1.87	420
	KHB-38SR	25/32	25	38,3	M52x2	22	124	65	58	82	28.5	65	11.6	14	55	2.18	315
	KHM-38SR	32	30	38,3	M52x2	22	153.4	83.4	82	106.2	40	87.7	12	17	60	3.43	420
<b>ANSI B1.20.1</b> NPT female thread	KHB-06NPT	6	8	–	1/4 - 18 NPT	6.7	69	37	28	44	14	33	7	9	22	0.3	500
	KHB-10NPT	10	10	–	3/8 - 18 NPT	10.36	72	42	32	53	17	40	8.5	9	27	0.5	500
	KHB-16NPT	13	12	–	1/2 - 14 NPT	13.56	84	47	35	53	17	40	8.5	9	30	0.6	500
	KHB-16NPT	16	15	–	1/2 - 14 NPT	13.56	83	47	40	62	20	46	11	12	32	0.75	420
	KHB-20NPT	20	20	–	3/4 - 14 NPT	13.86	95	60	49	75	24.5	57	11.6	14	41	1.3	420
	KHB-25NPT	25	25	–	1 - 11 1/2 NPT	17.34	113	65	58	82	28.5	65	11.6	14	50	2	420
	KHM-32NPT	32	30	–	1 1/4 - 11 1/2 NPT	17.95	109.4	83.4	82	106.2	40	87.7	12	17	60	3.1	420
	KHM-40NPT	40	38	–	1 1/2 - 11 1/2 NPT	18.38	130	91	94	118.2	45	99.7	12	17	70	4.4	420
	KHM-50NPT	50	48	–	2 - 11 1/2 NPT	19.22	140	100	111	134.2	55.5	115.7	12	17	80	6.6	420
<b>SAE J 514 UN/UNF</b> Female thread	KHB-06SAE	6	8	–	7/16 - 20 UNF	12	69	37	28	44	14	33	7	9	22	0.3	500
	KHB-10SAE	10	10	–	9/16 - 18 UNF	13	72	42	32	53	17	40	8.5	9	27	0.5	500
	KHB-16SAE	13	12	–	3/4 - 16 UNF	15	92	47	35	53	17	40	8.5	9	30	0.6	500
	KHB-16SAE	16	15	–	3/4 - 16 UNF	15	83	47	40	62	20	46	11	12	32	0.75	420
	KHB-20SAE	20	20	–	1 1/16 - 12 UN	20	95	60	49	75	24.5	57	11.6	14	41	1.3	420
	KHB-25SAE	25	25	–	1 5/16 - 12 UN	20	113	65	58	82	28.5	65	11.6	14	50	2	420
	KHM-32SAE	32	30	–	1 5/8 - 12 UN	20	109.4	83.4	82	106.2	40	87.7	12	17	60	3.1	420
	KHM-40SAE	40	38	–	1 7/8 - 12 UN	20	130	91	94	118.2	45	99.7	12	17	70	4.4	420
	KHM-50SAE	50	48	–	2 1/2 - 12 UN	20	140	100	111	134.2	55.5	115.7	12	17	80	6.6	420

## Stainless steel

Connection type	Type	DN	LW	RA	d1	l	L	L1	B	H	h1	h2	h3	SW1	SW2	Weight [kg]	Nom. pressure PN [bar]
<b>DIN ISO 228</b> Female thread 	KHB-G1/8	4	8	–	G1/8	10	69	37	28	44.7	14	33	6.7	9	22	0.36	500
	KHB-G1/4	6	8	–	G1/4	14	69	37	28	44.7	14	33	6.7	9	22	0.43	500
	KHB-G3/8	10	10	–	G3/8	14	71.9	42	32	53.2	17.2	40	8.2	9	27	0.59	500
	KHB-G1/2	13	12	–	G1/2	15	84.2	47	35	53.2	17.2	40	8.2	9	30	0.66	500
	KHB-G1/2	16	15	–	G1/2	16	82.8	47	40	63.2	20	46	11	12	32	1.82	400
	KHB-G3/4	20	20	–	G3/4	18	95	60	49	74.8	24.5	57	11.4	14	41	1.82	350
	KHB-G1	25	25	–	G1	20.5	113.1	65	58	82.6	29.5	65	11.4	14	50	2.97	350
	KHM-G11/4	32	30	–	G11/4	22	109.4	83.4	80	105.2	40	86.7	12	17	60	3.29	350
	KHM-G11/2	40	38	–	G11/2	24	130	91	90	116.2	45	97.7	12	17	70	4	350
	KHM-G2	50	48	–	G2	28	140	100	111	134.2	55.5	115.7	12	17	80	6.82	350
<b>DIN 2353</b> Light range 	KHB-06LR	4	4	6	M12x1,5	10	67	37	28	44.7	14	33	6.7	9	22	0.32	500
	KHB-08LR	6	6	8	M14x1,5	10	67	37	28	44.7	14	33	6.7	9	22	0.43	500
	KHB-10LR	8	8	10	M16x1,5	11	73.9	42	32	53.2	17.2	40	8.2	9	27	0.66	500
	KHB-12LR	10	10	12	M18x1,5	11	73.9	42	32	53.2	17.2	40	8.2	9	27	0.66	500
	KHB-15LR	13	12	15	M22x1,5	12	82	47	35	53.2	17.2	40	8.2	9	30	0.92	500
	KHB-18LR	16	15	18	M26x1,5	12	81.8	47	40	63.2	20	46	11	12	32	0.98	400
	KHB-22LR	20	19	22	M30x2	14	100.7	60	49	74.8	24.5	57	11.4	14	41	1.88	350
	KHB-28LR	25	24	28	M36x2	14	107.9	65	58	82.6	29.5	65	11.4	14	50	2.88	350
	KHM-35LR	32	30	35,3	M45x2	16	141.4	83.4	80	105.2	40	86.7	12	17	60	3.7	350
	KHM-42LR	40	36	42,3	M52x2	16	162	91	90	116.2	45	97.7	12	17	70	4.9	350
<b>DIN 2353</b> Heavy range 	KHB-08SR	4	5	8	M16x1,5	12	73	37	28	44.7	14	33	6.7	9	22	0.46	500
	KHB-10SR	6	7	10	M18x1,5	12	73	37	28	44.7	14	33	6.7	9	22	0.55	500
	KHB-12SR	8	8	12	M20x1,5	12	75.9	42	32	53.2	17.2	40	8.2	9	27	0.67	500
	KHB-14SR	10	10	14	M22x1,5	14	79.9	42	32	53.2	17.2	40	8.2	9	27	0.68	500
	KHB-16SR	13	12	16	M24x1,5	14	85.9	47	35	53.2	17.2	40	8.2	9	30	0.63	500
	KHB-20SR	16	15	20	M30x2	16	89.8	47	40	63.2	20	46	11	12	32	0.95	400
	KHB-25SR	20	20	25	M36x2	18	108.8	60	49	74.8	24.5	57	11.4	14	41	1.98	350
	KHB-30SR	25	25	30	M42x2	20	119.9	65	58	82.6	29.5	65	11.4	14	50	3.09	350
	KHM-38SR	32	30	38,3	M52x2	22	153.4	83.4	80	105.2	40	86.7	12	17	60	3.89	350

## Fixing hole dimensions (SO 940)



## DIN ISO 228

\*\* NOTE: Dimensions changed

$\phi d1$	DN	SW	a	b	M	t	c
G 1/8	4	9	31**	20**	M4	6	8
G 1/4	6	9	31**	20**	M4	6	8
G 3/8	10	9	36	22	M5	7	9
G 1/2*	13	9	36	22	M5	7	9
G 1/2	16	12	39**	26**	M5	7	9
G 3/4	20	14	45	28	M6	9	11
G 1	25	14	45	28	M6	9	11

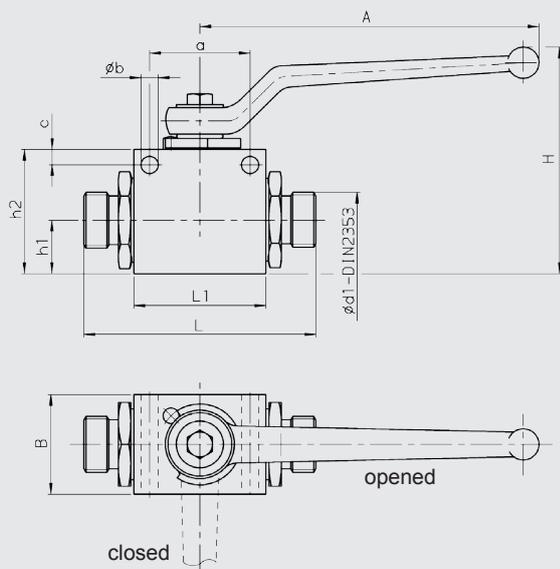
## DIN 2353 Light Range

$\phi d1$	DN	SW	a	b	M	t	c
06LR	4	9	31**	20**	M4	6	8
08LR	6	9	31**	20**	M4	6	8
10LR	8	9	36	22	M5	7	9
12LR	10	9	36	22	M5	7	9
15LR*	12	12	36	22	M5	7	9
15LR	13	9	36	22	M5	7	9
18LR	16	12	39**	26**	M5	7	9
18LR*	13	9	36	22	M5	7	9
22LR	20	14	45	28	M6	9	11
28LR	25	14	45	28	M6	9	11

## DIN 2353 Heavy Range

$\phi d1$	DN	SW	a	b	M	t	c
08SR	4	9	31**	20**	M4	6	8
10SR	6	9	31**	20**	M4	6	8
12SR	8	9	36	22	M5	7	9
14SR	10	9	36	22	M5	7	9
16SR	12	12	36	22	M5	7	9
16SR*	13	9	36	22	M5	7	9
20SR	16	12	39**	26**	M5	7	9
20SR*	13	9	36	22	M5	7	9
25SR	20	14	45	28	M6	9	11
30SR	25	14	45	28	M6	9	11

## Through hole dimensions (SO 1073)



## DIN ISO 228

$\phi d1$	DN	L	L1	B	H	h1	h2	a	$\phi b$	c	A
G 1/8	4	69	37	26	64	13	32	28	5.5	4.5	108
G 1/4	6	69	37	26	64	13	32	28	5.5	5	108
G 3/8	10	72	42	32	68	17	40	32	5.5	5	108
G 1/2*	13	84	47	35	68	17	40	32	5.5	5	108
G 1/2	16	83	47	38	102	19	45	38	5.5	5	174
G 3/4	20	95	60	48	115	24.5	57	46	6.6	6	174
G 1	25	113	65	57	122	28.5	64	46	6.6	6	174

## DIN 2353 Light Range

$\phi d1$	DN	L	L1	B	H	h1	h2	a	$\phi b$	c	A
08LR	6	67	37	26	64	13	32	28	5.5	4.5	108
10LR	8	71	37	26	64	13	32	28	5.5	4.5	108
12LR	10	74	42	32	68	17	40	32	5.5	5	108
15LR*	13	82	47	35	68	17	40	32	5.5	5	108
15LR	12	82	47	38	102	19	45	38	5.5	5	174
18LR	16	82	47	38	102	19	45	38	5.5	5	174
22LR	20	101	60	48	115	24.5	57	46	6.6	6	174
28LR	25	108	65	57	122	28.5	64	46	6.6	6	174

## DIN 2353 Heavy Range

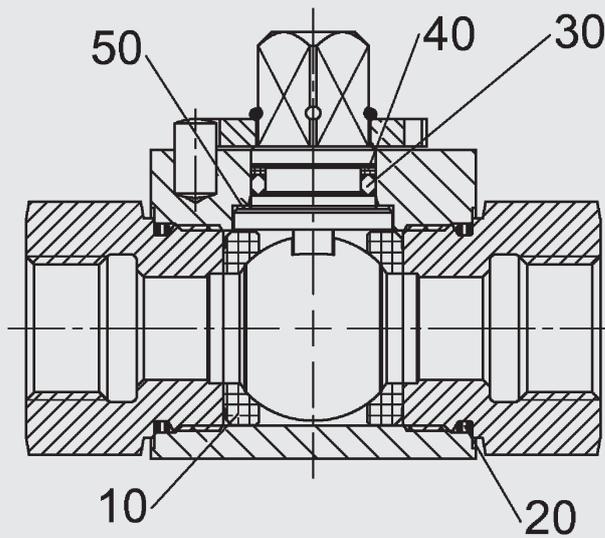
$\phi d1$	DN	L	L1	B	H	h1	h2	a	$\phi b$	c	A
08SR	4	73	35	25	55	13	30	27	4.5	4	70
10SR	6	73	35	25	55	13	30	27	4.5	4	70
12SR	8	76	42	32	68	17	40	32	5.5	5	108
14SR	10	80	42	32	68	17	40	32	5.5	5	108
16SR*	12	86	47	35	68	17	40	32	5.5	5	108
16SR	13	86	47	38	102	19	45	38	5.5	5	174
20SR*	16	90	47	35	68	17	40	32	5.5	5	108
20SR	13	90	47	38	102	19	45	38	5.5	5	174
25SR	20	109	60	48	115	24.5	57	46	6.6	6	174
30SR	25	120	65	57	122	28.5	64	46	6.6	6	174

\* reduced bore

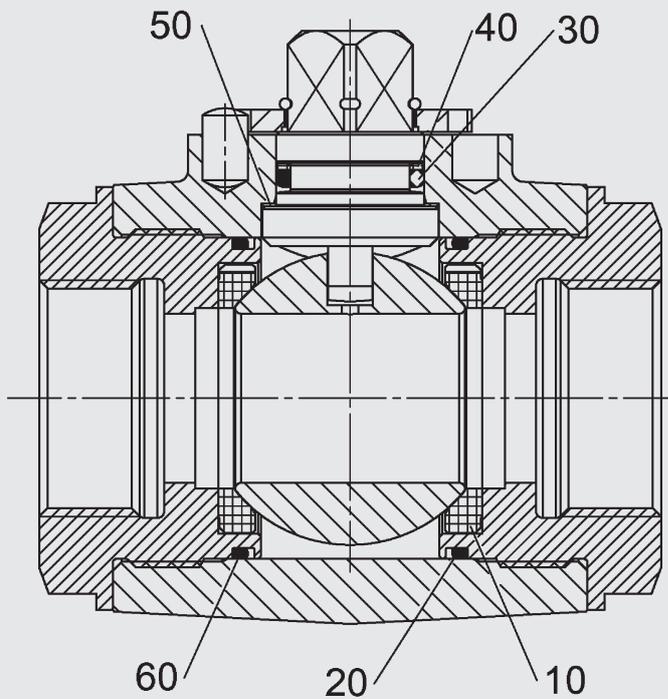
## Spare Parts

(Seal kit)

**KHB**, DN 04 - 25



**KHM**, DN 32 - 50



Seal kit	Order No. = Part No.
DN 04/06	703 048
DN 08/10	703 014
DN 13	703 046
DN 12/16	703 010
DN 20	703 005
DN 25	703 004
DN 32	703 045
DN 40	701 292
DN 50	703 007

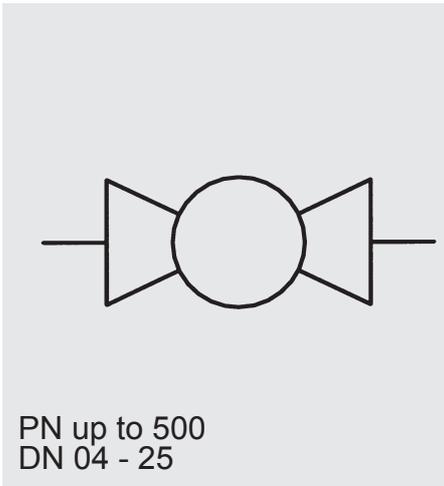
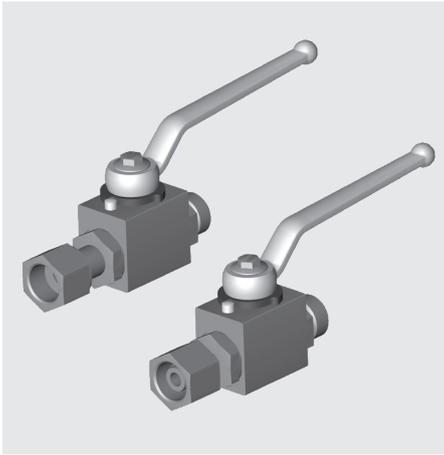
The parts indicated by numbers in the above drawings are contained in the seal kit.

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.



## Ball Valve with DKO Connection KHB DKO

**Model code**  
(also order example)

**KHB DKO 12 LR 1112 14 X A**

### Designation

KHB = Block-type ball valve

### Type of connection 1

DKO = Rotating ball valve port  
with O-ring seal

### Type of connection 2

Thread size or pipe O/D and connection code

### Materials

*Housing, connection adapters*

1 = Steel

*Ball, control spindle*

1 = Steel

*Ball seals*

1 = POM

*Control spindle seal and connection seal*

2 = NBR

### Handle

14 = Zinc die-cast bolt-on handle, cranked, fitted

16 = Steel bolt-on handle, cranked, fitted

### Series

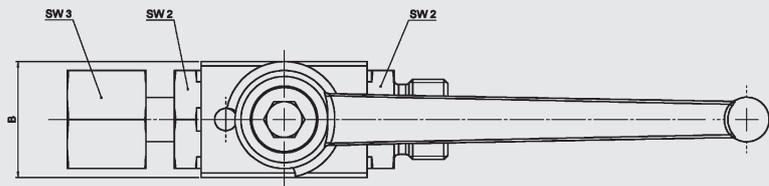
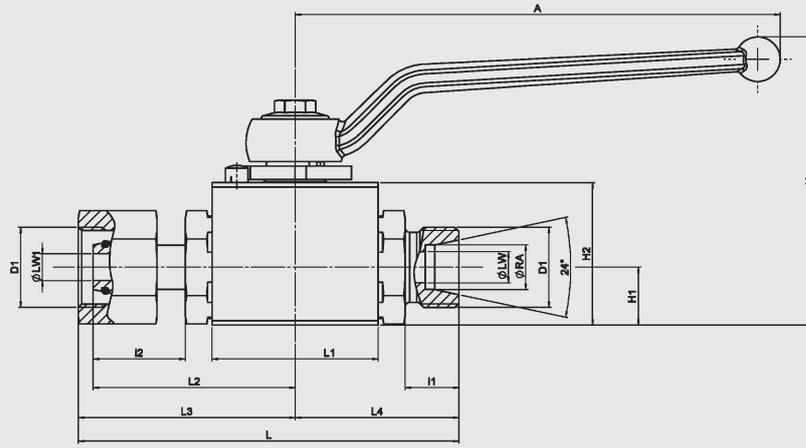
(determined by manufacturer)

### Surface protection

A = Zinc-plated, chrome (VI)-free

# Dimensions

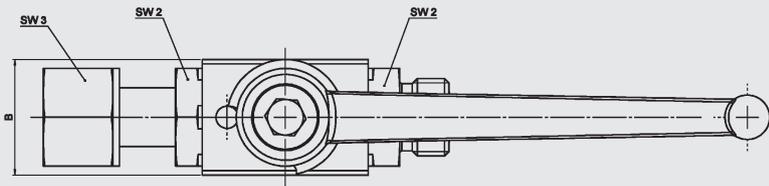
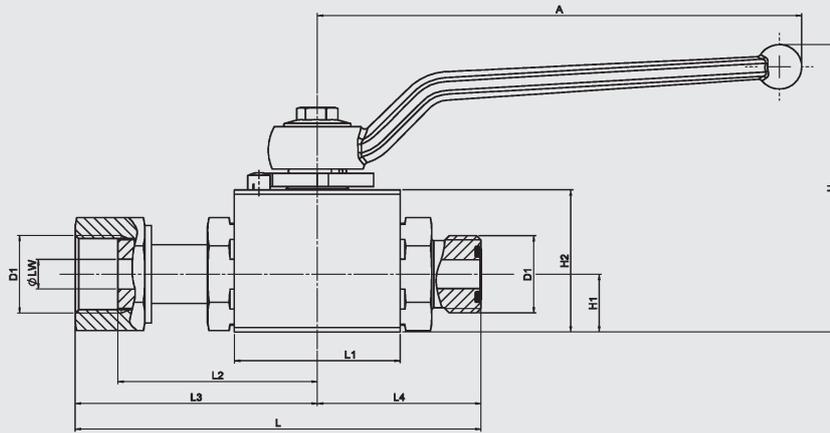
KHB DKO LR/SR



Type	DN	LW Int. diam	LW1 Int. diam	RA	D1	i1	i2	L	L1	L2	L3	L4	B	H	H1	H2	A	SW2	SW3	PN [bar]
08 LR	6	6	4	8	M14x1.5	7	19.4	77.8	37	43.9	44.3	33.5	28	66	14	33	108	22	17	250
10 LR	8	7	6	10	M16x1.5	11	20.5	82.8	37	45	47.3	35.5	28	66	13	33	108	22	22	250
12 LR	10	10	8	12	M18x1.5	11	20.5	84.7	42	46.5	47.7	37	32	73	17	40	108	27	22	250
15 LR	13	12	10	15	M22x1.5	12	21.0	92.4	47	50.0	51.4	41	32	73	17	40	108	30	27	250
18 LR	16	15	13	18	M26x1.5	12	21	93.2	47	49.8	52.2	41	40	111	20	46	169	32	32	160
22 LR	20	19	17	22	M30x2	14	22.5	112.4	60	59	61.9	50.5	49	122	24.5	57	169	41	36	160
28 LR	25	24	22	28	M36x2	14	23	121.4	65	63	67.4	54	58	128	29.5	65	169	50	41	100
08 SR	4	5	4	8	M16x1.5	7	19.4	82.8	37	43.9	46.3	36.5	28	66	14	33	108	22	19	500
10 SR	6	7	6	10	M18x1.5	7.5	20.5	84.8	37	45	48.3	36.5	28	66	14	33	108	22	22	500
12 SR	8	8	8	12	M20x1.5	12	20.5	86.7	42	46.5	48.7	38	32	73	17	40	108	27	24	500
14 SR	10	10	9	14	M22x1.5	14	23.0	92.8	42	49.0	52.8	40	32	73	17	40	108	27	27	500
16 SR	13	12	11	16	M24x1.5	14	23.0	98.0	47	52.0	55.0	43	32	73	17	40	108	30	30	400
20 SR	16	15	14	20	M30x2	16	27.5	104	47	56.3	59	45	40	111	20	46	169	32	36	400
25 SR	20	20	18	25	M36x2	18	29	128.5	60	65.5	74	54.5	49	122	24.5	57	169	41	46	315
30 SR	25	25	25	30	M42x2	20	32.5	140.8	65	72.5	80.8	60	58	128	29.5	65	169	50	50	250

## Dimensions

KHB DKO ORFS



Type ORFS	OD pipe	DN	LW Int. diam	D1	L	L1	L2	L3	L4	B	H	H1	H2	A	SW2	SW3	PN [bar]
9/16	6	6	5	9/16-18UNF	86.2	37	42.5	50.7	35.5	28	66	14	33	108	22	19	400
11/16	10	8	6.5	11/16-16UN	90.5	37	44.5	54	36.5	28	66	14	33	108	22	22	400
13/16	12	10	9.5	13/16-16UN	103.6	42	53	64	39.6	32	73	17.2	40	108	27	27	400
1	16	13	12.5	1-14UNS	115	47	56.5	70	45	35	73	17.2	40	108	30/27	32	400
1-3/16	20	16	15.5	1-3/16-12UN	121.3	47	58.7	73.3	48	40	111	20	46	169	32	36	400
1-7/16	25	20	20.5	1-7/16-12UN	137.3	60	69.0	83.8	53.5	49	122	24.5	57	169	41	40	315
1-11/16	30	25	26	1-11/16-12UN	147.8	65	75.5	90.3	57.5	58	128	29.5	65	169	50	50	250

## Technical specifications

Construction		Block-type KHB
Types of connection	connection 1*	DKO to DIN 2353 DKO to ISO 8434
	connection 2*	Light and heavy threaded pipe connection to DIN 2353 ORFS ISO 8434
	* Both ports are configured according to the same standard.	
Mounting position		Optional
Ambient temperature		-10 °C to +80 °C
Nominal pressure		up to PN 500
Operating fluids		Mineral oil to DIN 51524 part 1 and part 2
Temperature of operating fluid		-10 °C to +80 °C
Viscosity range		10 to 380 mm <sup>2</sup> /s

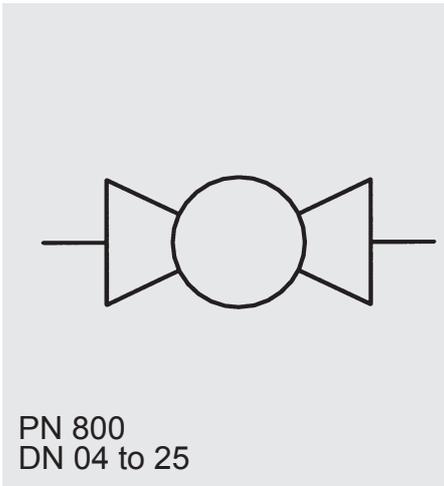
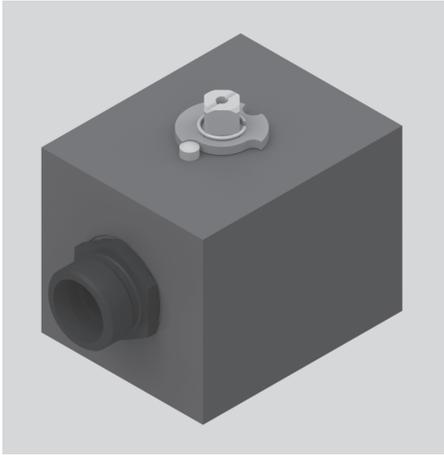
### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Ultra-High Pressure Ball Valve KHBH / KHMH

**Model code**  
(also order example)

**KHBH 16 NPT 1114 04 X A**

### Designation

KHBH = Ultra-high pressure block ball valve  
KHMH = Ultra-high pressure sleeve ball valve

**Nominal bore**  
(DN)

### Type of connection

NPT = NPT - ANSI B1.20.1  
SR = SR - DIN 2353

### Materials

*Housing, connection adapters*

1 = Steel  
3 = Stainless steel

*Ball, control spindle*

1 = Steel  
3 = Stainless steel

*Sealing cups*

1 = POM

*Control spindle seal and connection seal*

2 = NBR (Perbunan)  
4 = FKM (Viton)

### Handle

03 = Zinc die-casting clamped handle, straight DN 04 - 13  
04 = Zinc die-casting bolt-on handle, cranked DN 20 - 25

### Series

(determined by manufacturer)

### Surface protection

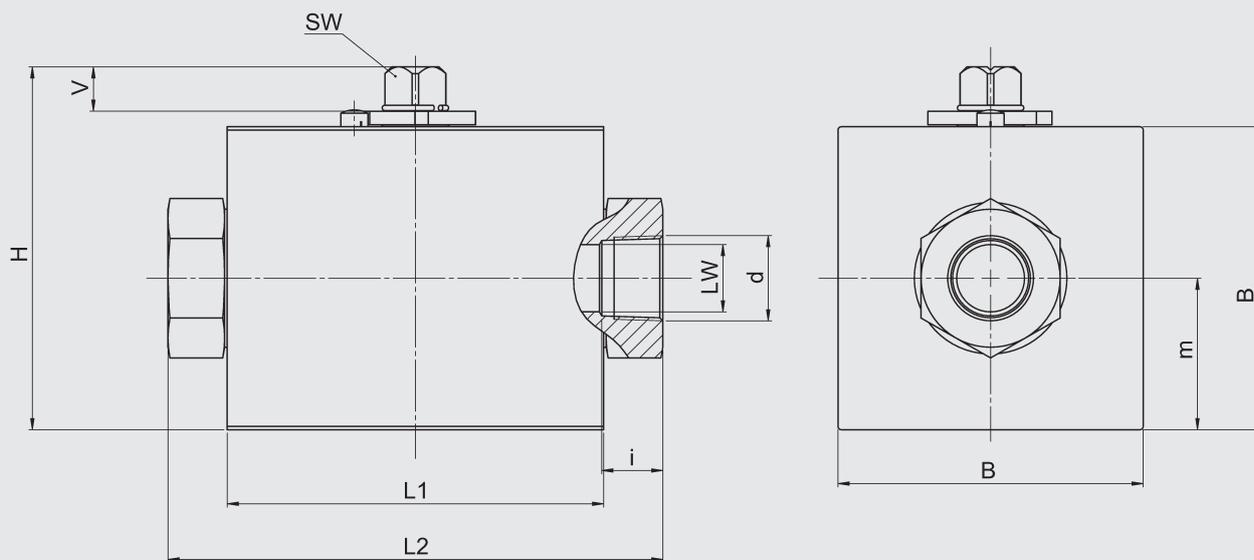
A = Zinc-plated, chrome (VI)-free

## Technical specifications

Type of construction:	Block type KHBH DN 04 - 25 Sleeve type KHMH DN 04 - 25, stainless steel (on request)
Types of connection:	Heavy threaded pipe connection to DIN 2353 NP ANSI B1.20.1
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	PN 800
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2
Temperature of operating fluid:	-20 °C to +100 °C
Viscosity range:	10 to 380 mm <sup>2</sup> /s

## Dimensions

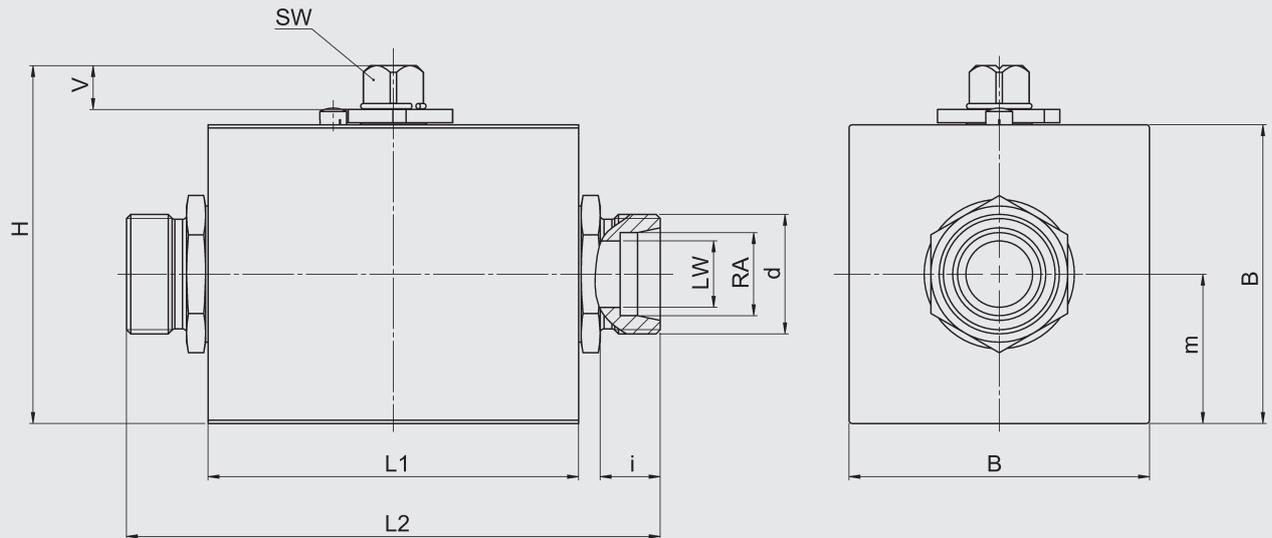
NPT ANSI B1.20.1



Type	DN	LW	L1	L2	B	H	m	V	SW	i	d
KHBH 06 NPT	6	6	76	130	50	64	25	11	9	13.7	1/4 NPT
KHBH 10 NPT	10	13	76	130	50	64	25	11	9	13.5	3/8 NPT
KHBH 16 NPT	13	13	76	130	50	64	25	11	9	17	1/2 NPT
KHBH 20 NPT	20	20	111	161	90	108	45	14	14	18.3	3/4 NPT
KHBH 25 NPT	25	25	111	164	90	108	45	14	14	21.6	1 NPT

## Dimensions

DIN 2353 heavy range



Type	DN	RA	LW	L1	L2	B	H	m	V	SW	i	d
KHBH-08SR	4	8	5	76	110	50	64	25	11	9	12	M16x1.5
KHBH-10SR	6	10	6	76	114	50	64	25	11	9	12	M18x1.5
KHBH-12SR	8	12	8	76	114	50	64	25	11	9	12	M20x1.5
KHBH-14SR	10	14	13	76	114	50	64	25	11	9	14	M22x1.5
KHBH-16SR	13	16	13	76	114	50	64	25	11	9	14	M24x1.5
KHBH-20SR	13	20	13	76	118	50	64	25	11	9	16	M30x2
KHBH-25SR	20	25	20	111	162	90	108	45	14	14	18	M36x2
KHBH-30SR	25	30	25	111	166	90	108	45	14	14	20	M42x2

### NOTE

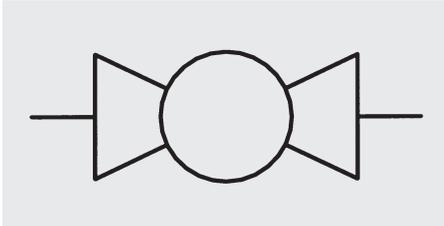
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)





PN 420  
DN to 40

# Three-Piece High-Pressure Ball Valve

## KHB3H

**Model code**  
(also order example)

**KHB3H - 1 - SW - 3312 - 18 X ...**

**Designation**

KHB3H = Three-piece high-pressure ball valve

**Port size**

1/2" to 2"

**Connection type**

SW = Socket weld

**Materials**

*Housing, connection adapters*

1 = Steel

3 = Steel to NACE MRO175

*Ball, control spindle*

3 = Stainless steel to NACE MRO175

*Sealing cups*

8 = Peek

*Control spindle seal and connection seal*

2 = NBR

4 = FKM

**Handle**

18 = stainless steel - bolt-on cranked, fitted

**Series**

(determined by manufacturer)

**Options**

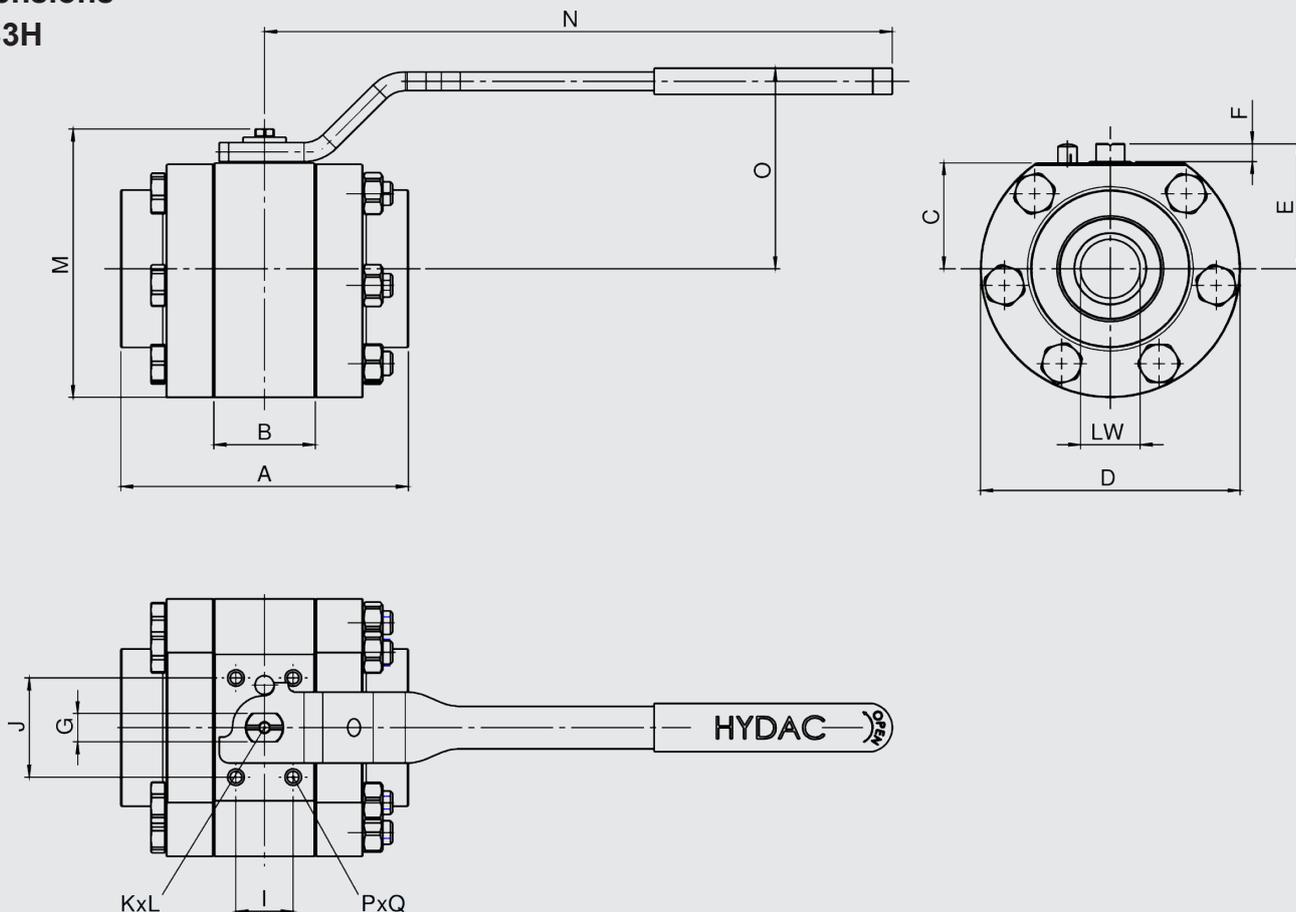
SO 940 = Ball Valve with 4 threaded holes

## Technical data

Design	Three-piece high-pressure ball valve in accordance with ASME B16.34, Standard Class 2500
Design	Shut-off device is a ball
Connection type	Socket weld to ASME B16.11
Port size	SW 1/2" - SW 2" (for ASME-compliant NPS pipe)
Bore	12 - 38 mm
Weight	See table
Installation position	In any position
Ambient temperature (standard)	-10 °C to +80 °C
Nominal pressure	PN 420 / 6000 psi
Operating media	Various fluids possible (seal-dependent)
Temperature of operating media (standard)	-10 °C to +80 °C
Flow direction	In both directions
Accessories	On request
Material certification 3.1 according to DIN EN 10204	On request
Manufacturer's inspection certificate M in accordance with DIN 55350-18	On request
Spare parts	Seal kits available on request

## Dimensions

### KHB3H

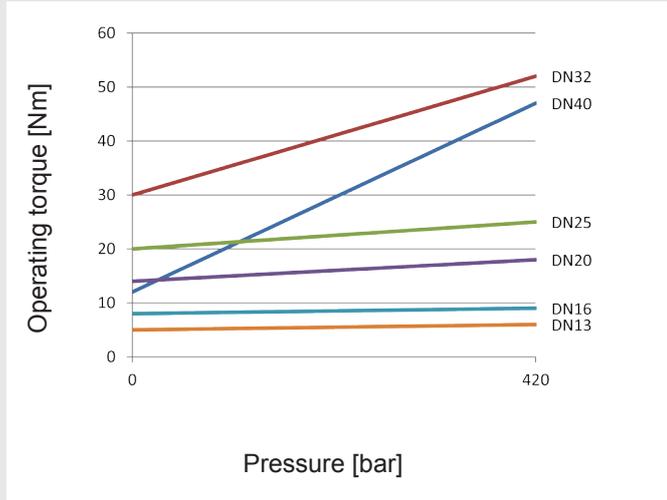


Type	SW	DN	LW Ø	A	B	C	D Ø	E	F	G	I	J	KxL*	M	N	O	PxQ*	PN		Weight [kg]
																		[bar]	[psi]	
KHB3H-1/2	1/2"	13	12	77.8	24.9	27	69.5	33.2	5.6	SW09	15	34	M5x7	76.5	183	61.1	M5x9	420	6000	1.7
KHB3H-3/4	3/4"	15	16	85	27.8	33	79	39.2	5.6	SW09	15	34	M5x7	87.2	183	67.1	M5x9	420	6000	3.0
KHB3H-1	1"	20	20	107.9	38.3	42	98	50.2	7.6	SW12	24	42	M6x9	107.7	263.5	82.1	M5x9	420	6000	5.0
KHB3H-11/4	1 1/4"	25	25	120.7	42.5	44.8	109	53	7.6	SW12	24	42	M6x9	116.0	263.5	84.9	M5x9	420	6000	6.5
KHB3H-11/2	1 1/2"	32	30	131.2	52.4	58	128	66.2	7.6	SW17	36	40	M8x8	142.3	378.5	96.6	M8x15	420	6000	10.5
KHB3H-2	2"	40	38	143	54.4	64	144.8	72.2	7.6	SW17	40	58	M8x8	156.7	378.5	104.1	M8x15	420	6000	14.2

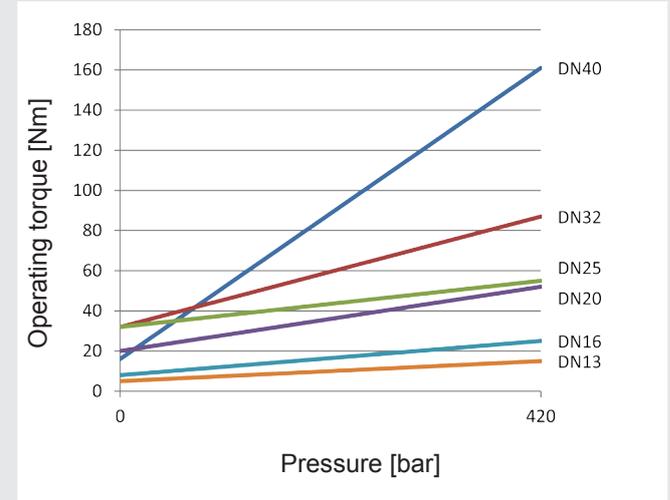
\*optional

## Operating torques (breakaway torques)

Short-term pressures  $\approx$  1 min

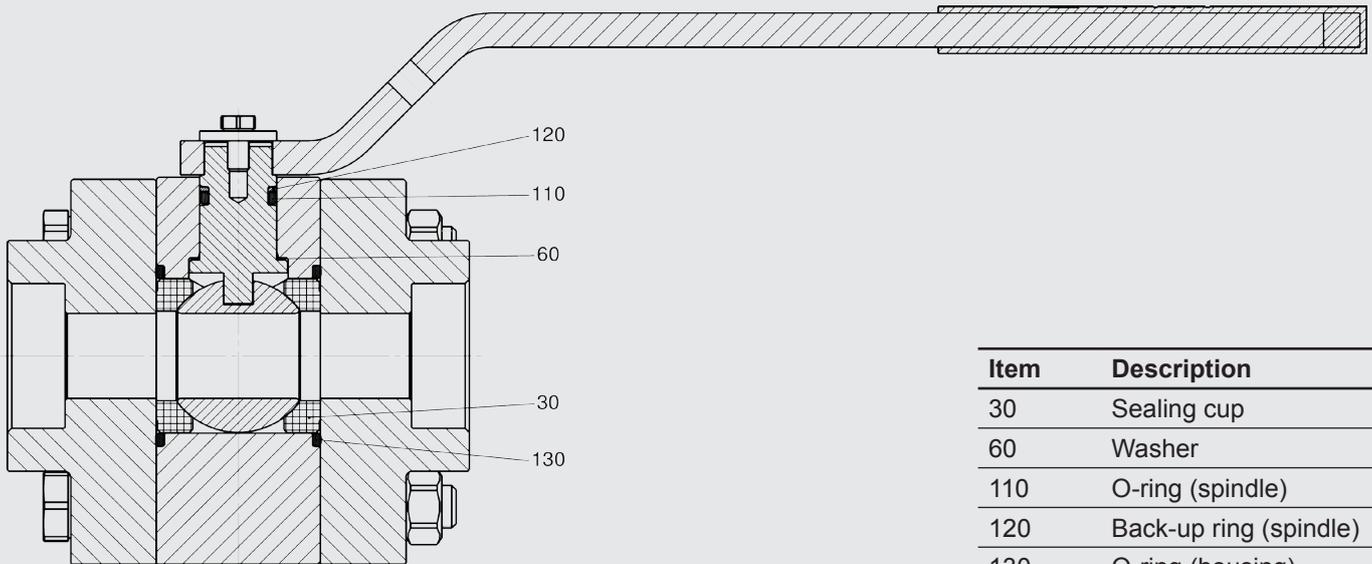


Long-term pressures  $>$  2 days



The operating torques (breakaway torques) of the ball valves are dependent on many parameters and can deviate from the above graphs.

## Spare parts (seal kit) KHB3H, DN13-40



Item	Description
30	Sealing cup
60	Washer
110	O-ring (spindle)
120	Back-up ring (spindle)
130	O-ring (housing)

## **NOTE**

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

### **HYDAC Accessories GmbH**

Hirschbachstr. 2

**66280 Sulzbach/Saar**

Tel.: +49 (0)6897 - 509-01

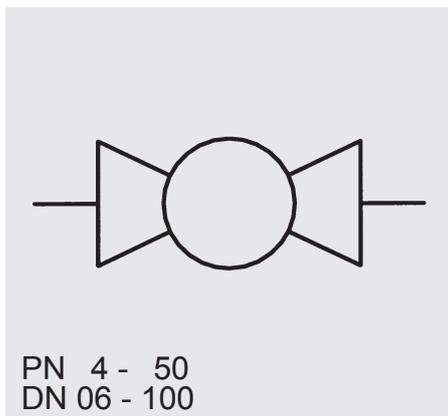
Fax: +49 (0)6897 - 509-1009

Internet: [www.hydac.com](http://www.hydac.com)

E-Mail: [info@hydac.com](mailto:info@hydac.com)

## Low Pressure Ball Valves

KHNVN / KHNVS / KHN



PN 4 - 50  
DN 06 - 100

### Model code

(also order example)

KHNVS Rp 1/2 2233 12 X ...

### Designation

KHNVN – Low pressure ball valve – standard model  
KHNVS – Low pressure ball valve – heavy-duty model  
KHN – Low pressure ball valve – DIN-DVGW

### Connection type

### Thread size

### Materials

#### Housing

2 = Nickel-plated brass

#### Ball, control spindle

2 = Chrome-plated brass

#### Ball seals

3 = PTFE

#### Soft seals

3 = PTFE

### Handle

12 = Aluminium clamped handle, cranked, supplied fitted

### Series

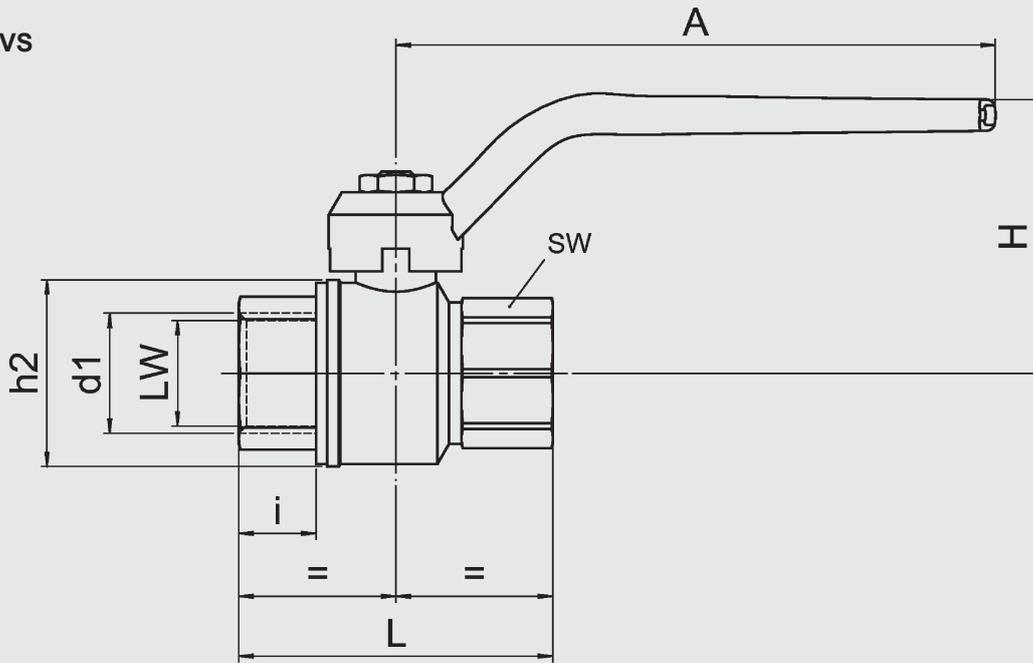
(determined by manufacturer)

### Approval

DIN-DVGW (only KHN)

## Dimensions

KHNVN / KHNVS



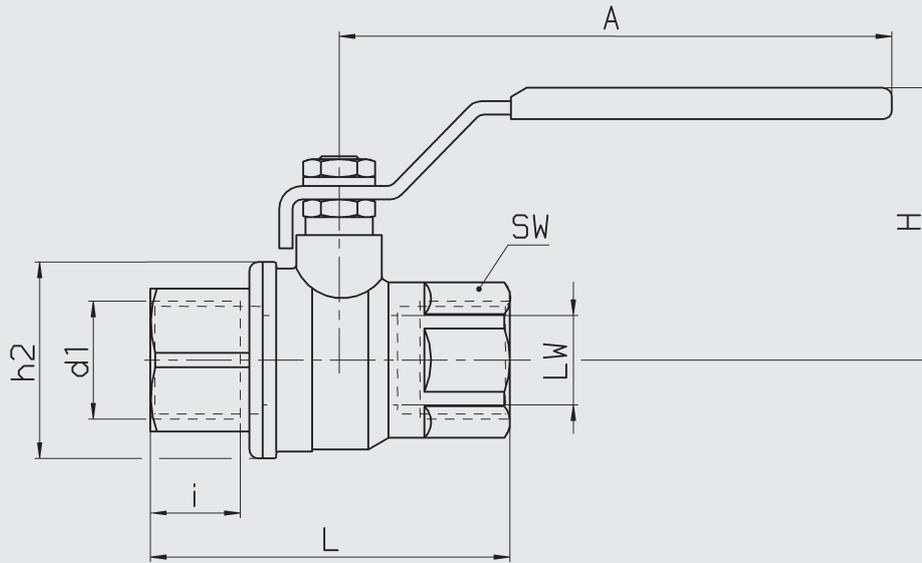
Type	d1	L [mm]	h2 [mm]	H [mm]	A [mm]	i [mm]	LW [mm]	SW [mm]	Nominal pressure PN [bar]
KHNVN	G 1/4	44.4	23.5	37	80	10	10	18	50
KHNVN	G 3/8	44.4	24	37	80	10	10	21	50
KHNVN	G 1/2	50.5	30.5	41	80	12	15	25	50
KHNVN	G 3/4	57.5	37.0	55	113	12.5	20	31	40
KHNVN	G 1	70	45.5	59	113	15	25	38	40
KHNVN	G 1 1/4	80.5	57	74.5	137.5	17	32	47	30
KHNVN	G 1 1/2	94	70	80.5	137.5	18.5	40	54	30
KHNVN	G 2	112.5	84	96.5	157	22	50	66	25
KHNVN	G 2 1/2	134.5	109	116	197	24	65	85	18
KHNVN	G 3	157	131	133	250	26	80	99	16
KHNVN	G 4	190	164	148	250	30	100	125	14

Type	d1	L [mm]	h2 [mm]	H [mm]	A [mm]	i [mm]	LW [mm]	SW [mm]	Nominal pressure PN [bar]
KHNVS	Rp 1/4	49.5	23.5	37	80	11	10	18	50
KHNVS	Rp 3/8	52.4	24	37	80	11.4	10	21	50
KHNVS	Rp 1/2	61	30.5	48.3	88.5	15	15	25	50
KHNVS	Rp 3/4	68	37	54.8	113	16.3	20	31	40
KHNVS	Rp 1	85	45.5	58.8	113	19.1	25	38	40
KHNVS	Rp 1 1/4	99.5	58	75	137.5	21.4	32	47	30
KHNVS	Rp 1 1/2	109	71	90	157.3	21.4	40	54	30
KHNVS	Rp 2	130	85	97	157.3	25.7	50	66	25

## Technical specifications

Type of connection:	Whitworth female thread to ISO 228 (G) Whitworth female thread to DIN 2999 (Rp)	
Mounting position:	Optional	
Ambient temperature:	-20 °C to + 150 °C	
Nominal pressure:	up to PN 50	
Operating media:	Mineral oil to DIN 51524 part 1 + 2, gaseous media, compressed air, water other media on request	
Temperature of operating media:	-20 °C to + 150 °C	
<b>Accessories:</b>	All ball valves can be supplied with the following options:	Actuator Limit controls Lock

## KHN - DVGW



Type DVGW	d1	Nominal bore DN	ØLW	Nominal pressure PN [bar]	i	L	Øh2	H	A	SW	Weight [kg]
KHN	Rp1/4	06	8	4	11.4	51.5	23	48	95	20	0.14
KHN	Rp3/8	10	10	4	11.4	51.5	23	48	95	20	0.13
KHN	Rp1/2	16	15	4	15.0	62	32	51	95	25	0.21
KHN	Rp3/4	20	20	4	16.3	69	39	60	110	31	0.33
KHN	Rp1	25	25	4	19.1	83	49	64	110	38	0.53
KHN	Rp11/4	32	32	4	21.4	96	59	78	160	48	0.97
KHN	Rp11/2	40	40	4	21.4	108	73	86	160	54	1.45
KHN	Rp2	50	50	4	25.7	126	86	104	170	67	1.98

### Technical specifications

Type of connection:	Whitworth female thread to ISO 7/1 (Rp)
Mounting position:	Optional
Certification:	<u>DIN</u> -DVGW (EN 331)
Ambient temperature:	-10 °C to + 70 °C
Nominal pressure:	PN 4
Operating media:	all gases in accordance with DVGW – Worksheet G260/I
Temperature of operating media:	5 °C to + 50 °C

### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

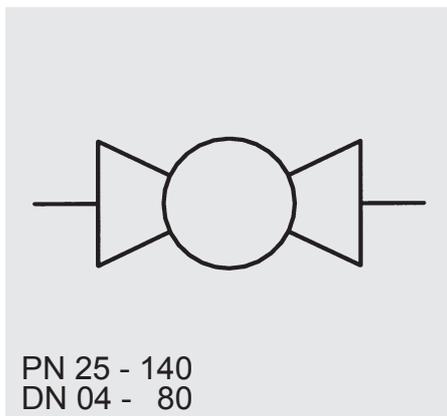
Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Stainless Steel Low Pressure Ball Valves

KHNVN / KHNVS



### Model code

(also order example)

KHNVS Rp 1/2 3333 18 X

#### Designation

KHNVN – Low pressure ball valve - standard model

KHNVS – Low pressure ball valve - heavy duty model

#### Type of connection

Rp

G

#### Thread size

#### Materials

##### Housing

3 = Stainless steel (1.4408)

##### Ball, control spindle

3 = Stainless steel (1.4408)

##### Ball seals

3 = PTFE

##### Seals

3 = PTFE

#### Handle

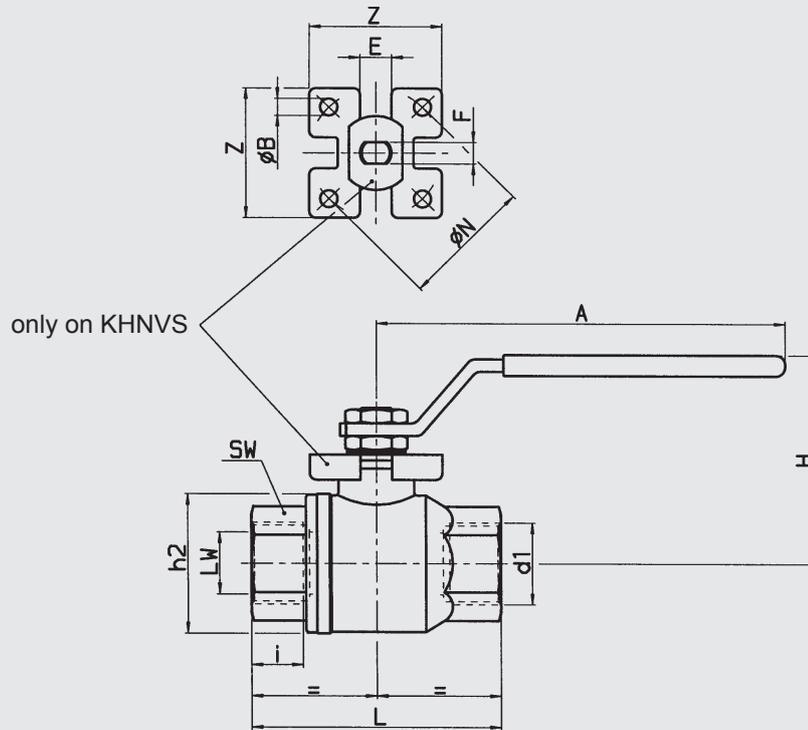
18 = Stainless steel handle, cranked, supplied fitted

#### Series

(determined by manufacturer)

## Dimensions

### KHNVN / KHNVS



Type	d1	Nominal bore DN	ØLW Int. diam.	PN [bar]	i	L	H	A	SW	Weight [kg]
KHNVN	G1/4	6	9.2	64	10	48.6	47.5	81	19	0.24
KHNVN	G3/8	10	12.5	64	12	52.5	52	87	22	0.25
KHNVN	G1/2	16	15	64	14.5	59	56.5	100	26	0.29
KHNVN	G3/4	20	20	64	16	65	58.5	100	32	0.44
KHNVN	G1	25	25	50	18	76	74	148	41	0.72
KHNVN	G1 1/4	32	32	50	20	90	78	148	50	1.20
KHNVN	G1 1/2	40	38	40	20	108	92	190	55	1.82
KHNVN	G2	50	50	40	22	122	103	190	70	2.74

Type	d1	Nominal bore DN	ØLW Int. diam.	PN [bar]	i	L	Øh2	H	A	SW	Weight [kg]
KHNVS	Rp1/8	04	8	140	7.4	55.5	30	50	111	22	0.25
KHNVS	Rp1/4	06	10	140	11	55.5	30	50	111	22	0.24
KHNVS	Rp3/8	10	10	140	11.4	55.5	30	50	111	22	0.22
KHNVS	Rp1/2	16	15	140	15	66	36	53	111	27	0.30
KHNVS	Rp3/4	20	20	105	16.3	79	45	68	132	32	0.50
KHNVS	Rp1	25	25	105	19.1	93	54	77	175	41	0.95
KHNVS	Rp1 1/4	32	32	64	21.4	100	64	83	175	50	1.30
KHNVS	Rp1 1/2	40	40	64	21.4	110	80	100	250	55	2.10
KHNVS	Rp2	50	50	64	25.7	131	95	108	250	70	3.30
KHNVS	Rp2 1/2	65	65	25	30.2	159	122	126	321	90	6.81
KHNVS	Rp3	80	80	25	33.3	185	144	137	321	105	10.20
KHNVS	Rp4	100	100	25	39.3	222	177	156	381	130	17.40

Type	d1	ØB	F	E	ØN	Z
KHNVS	Rp1/8	–	5	8	–	–
KHNVS	Rp1/4	5.5	5	8	36F03	36
KHNVS	Rp3/8	5.5	5	8	36F03	36
KHNVS	Rp1/2	5.5	5	8	36F03	36
KHNVS	Rp3/4	5.5	7	10	42F04	42
KHNVS	Rp1	5.5	8	12	42F04	42
KHNVS	Rp11/4	5.5	8	12	42F04	42
KHNVS	Rp11/2	6.5	10	16	50F05	50
KHNVS	Rp2	8.5	10	16	50F05	50

## Technical specifications

Type of connection:	Whitworth female thread to ISO 228 (G) Whitworth female thread to DIN 2999 (Rp)
Mounting position:	Optional
Ambient temperature:	-20 °C to + 160 °C
Nominal pressure:	up to PN 140
Operating media:	Mineral oil to DIN 51524 part 1 + 2, gaseous media, compressed air, water other media on request
Temperature of operating media:	-20 °C to + 160 °C

<b>Accessories:</b>	All ball valves can be supplied with the following options: Actuator Limit switch Lock
---------------------	---

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

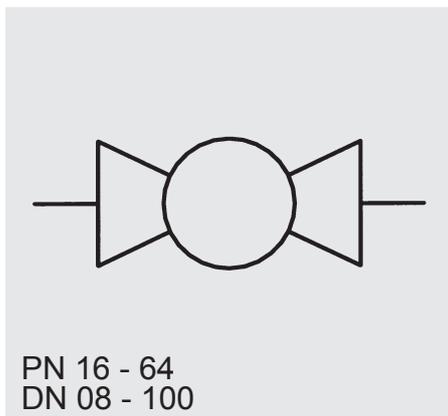
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)





## Weld-Type Low Pressure Ball Valves

### KHM3S



#### Model code

(also order example)

**KHM3S 20 1333 16 X**

#### Designation

KHM3S = Three-part weld-type low pressure ball valve

#### Nominal bore

#### Materials

*Housing, butt weld*

- 1 = Steel
- 3 = Stainless steel

*Ball, spindle*

- 3 = Stainless steel

*Ball seals*

- 3 = PTFE

*Seals*

- 3 = PTFE

#### Handle

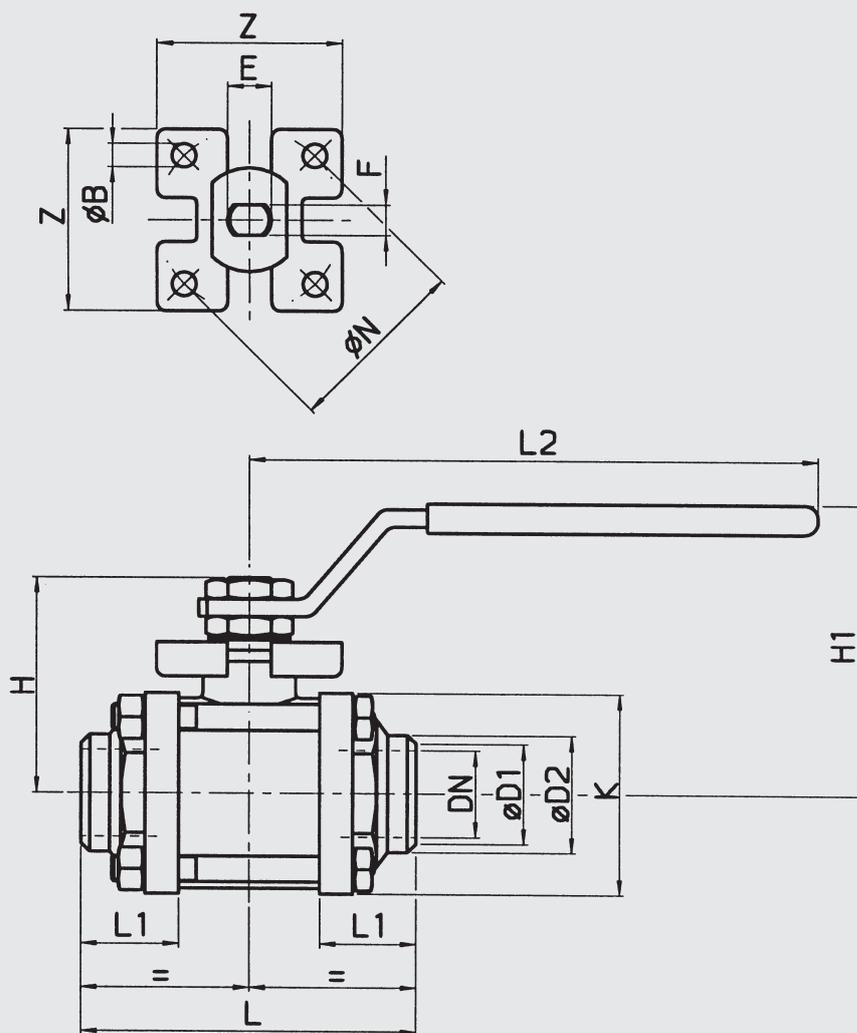
- 16 = Steel bolt-on handle, cranked, supplied fitted
- 18 = Stainless steel bolt-on handle, cranked, supplied fitted      DN 10 - 50

#### Series

(determined by manufacturer)

## Dimensions

### KHM3S



Type	DN	D1	D2	H	H1	L	L1	L2
KHM3S - 8	8	-	-	35	50	57	18	110
KHM3S - 10	10	12.48	17.1	35	50	57	18	110
KHM3S - 15	15	15.76	21.3	47	64	65	20.5	131
KHM3S - 20	20	20.96	26.7	51.5	68	76	22.5	131
KHM3S - 25	25	26.64	33.4	60	78.5	92	27	174
KHM3S - 32	32	35.08	42.2	64.5	83.5	106.5	30	174
KHM3S - 40	40	40.94	48.3	79	100	116	31	250
KHM3S - 50	50	52.48	60.3	86	107	136	36	250
KHM3S - 65	65	62.68	73	103	126.5	153.5	38.5	321
KHM3S - 80	80	77.92	88.9	114	137.5	180	43	321
KHM3S - 100	100	102.26	114.3	137	156.5	217	50	381

Type	K	Z	B	N	F	E	Weight [kg]	PN [bar]
KHM3S - 8	33	-	-	-	5	8	0.28	64
KHM3S - 10	33	-	-	-	5	8	0.28	64
KHM3S - 15	38	36	6	36 F03	7	10	0.40	64
KHM3S - 20	46.5	42	5.5	42 F04	7	10	0.60	40
KHM3S - 25	58	42	5.5	42 F04	8	12	1.10	40
KHM3S - 32	66.5	42	5.5	42 F04	8	12	1.50	25
KHM3S - 40	76	50	6.5	50 F05	10	16	2.10	25
KHM3S - 50	90	50	6.5	50 F05	10	16	3.20	25
KHM3S - 65	134	64	M 8	70 F07	14	20	8.15	16
KHM3S - 80	161	64	M 8	70 F07	14	20	12.80	16
KHM3S - 100	190	92	M10	102 F10	18	24	21.50	16

## Technical specifications

Type of connection:	Butt weld
Mounting position:	Optional
Ambient temperature:	-20 °C to + 160 °C
Nominal pressure:	up to PN 64
Operating fluids:	Mineral oil to DIN 51524 part 1 + 2, gaseous media, compressed air, water other media on request
Temperature of operating fluid:	-20 °C to + 160 °C
<b>Spare parts:</b>	Seal kits available on request
<b>Accessories:</b>	All ball valves can be supplied with the following options: Actuator Limit controls Lock

### NOTE

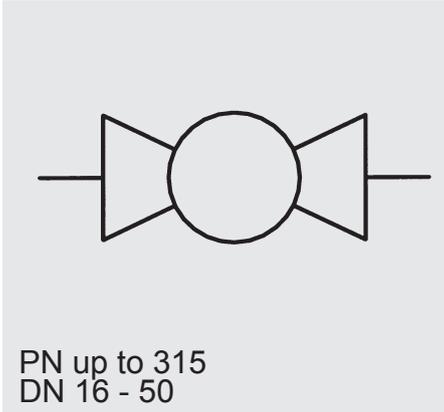
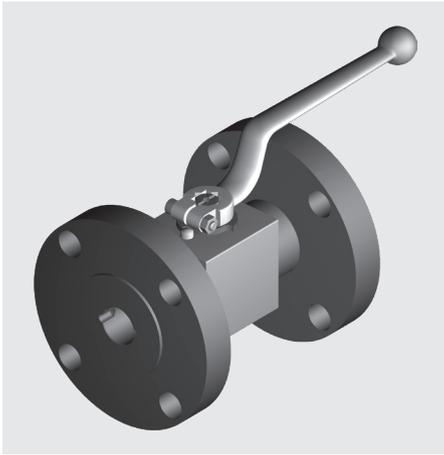
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)





## Flanged Ball Valves

KHBF / KHMFF / KHMFF

**Model code**  
(also order example)

**KHBF 16 PN040 11141 02 X ...**

### Designation

- KHBF = Block-type ball valve DN 16 - 25 (steel)
- KHMF = Sleeve-type ball valve DN 32 - 50 (steel)  
DN 16 - 50 (stainless steel)
- Long version – DIN 3202 - F1  
DIN-EN 558-1, FTF, basic range 1
- KHMFF= Sleeve-type ball valve DN 32 - 50 (steel / stainless steel)  
Short version – DIN 3202 - F4  
DIN-EN 558-1, FTF, basic range 14

**Nominal bore**  
(DN)

**Pressure range**  
(to DIN 2401)

### Materials

*Housing, connection adapters*

- 1 = Steel
- 3 = Stainless steel (1.4571)

*Ball, control spindle*

- 1 = Steel
- 3 = Stainless steel (1.4571)

*Ball seal*

- 1 = POM (polyacetal)

*Soft seal*

- 4 = FKM (Viton)

*Flanges*

- 1 = Steel
- 3 = Stainless steel (1.4571)

(other material combinations on request)

### Handle

- 02 = Aluminium clamped handle, cranked, supplied loose DN 16 - 25
- 06 = Steel bolt-on handle, cranked, supplied loose DN 32 - 50

### Series

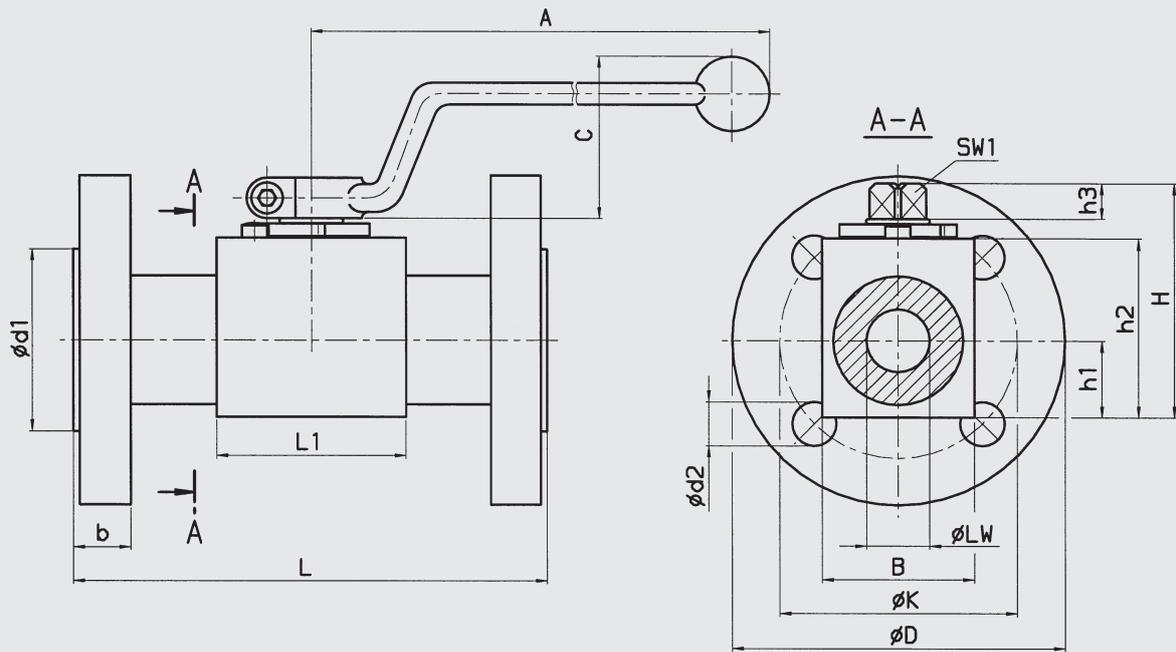
(determined by manufacturer)

### Surface protection

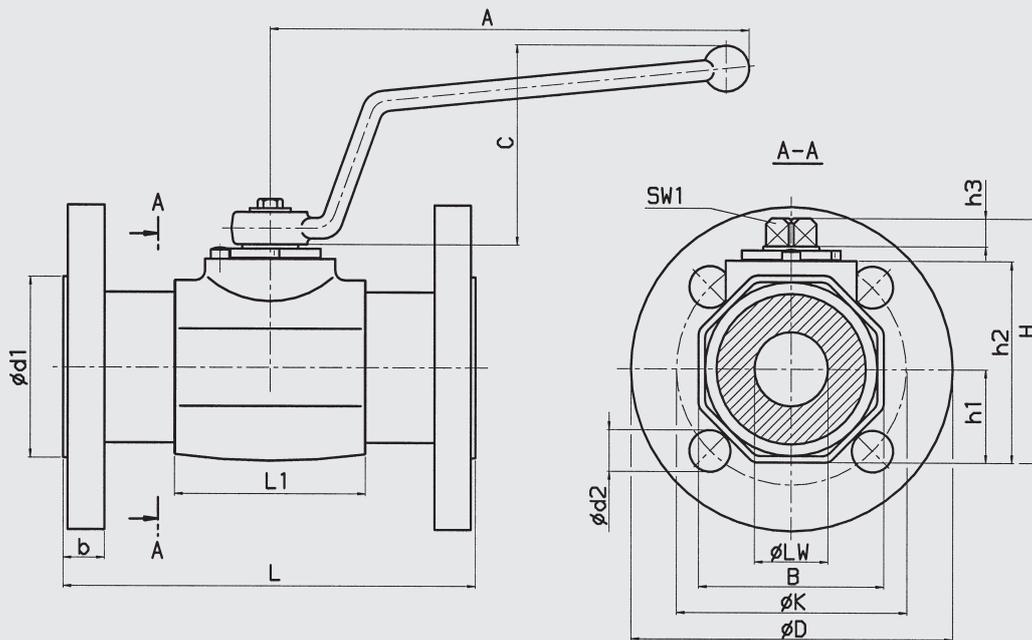
- ... = Phosphate-plated (no details required)
- A = Zinc-plated, chrome (VI)-free

# Dimensions

## KHBF



## KHMF / KHMFF



Version	Housing dimensions											PN (ball valve) [bar]
	DN	LW	L1	B	H	h1	h2	h3	SW1	A	C	
Block housing KHBF DN16-25 (steel)	16	15	47	38	62	19	45	11	12	185	47	400
	20	20	60	48	75	24.5	57	11	14	203	54	315
	25	25	65	57	81.5	28.5	64	11	14	203	54	315
Sleeve housing KHMF / KHMFF DN16-50 (stainless steel) DN32-50 (steel)	16	15	46	45	66.5	22.5	48.5	11	12	185	47	400
	20	20	58	55	78	27.5	60	11	14	203	54	315
	25	25	64	60	83.5	30	65.5	11	14	203	54	315
	32	30	84	75	103	38	85	12	17	228	80	315
	40	38	91	85	114	43	96	12	17	228	80	315
50	48	100	105	131.5	53	113	12	17	228	80	315	

Type of conn. / Seal face	Type	Pressure range PN [bar]	L	D	d1	d2	K	b	Z*	Weight [kg]	
<b>F1</b>  (FTF, basic range 1)	Flange connection DIN EN 1092, type B2	KHBF - 16	40	130	95	45	14	65	16	4	2.2
		KHMF - 16	160	130	105	45	14	75	20	4	3.0
			315	130	130	45	18	90	26	4	4.1
	KHBF - 20 KHMF - 20	40	150	105	58	14	75	18	4	3.4	
		KHBF - 25 KHMF - 25	40	160	115	68	14	85	18	4	5.0
			160	160	140	68	18	100	24	4	7.1
	250		160	150	68	22	105	28	4	8.6	
	KHMF - 32	315	160	160	68	22	115	34	4	9.2	
		40	180	140	78	18	100	18	4	7.3	
		160	180	155	78	22	110	26	4	10.0	
	KHMF - 40	40	200	150	88	18	110	18	4	9.5	
		160	200	170	88	22	125	28	4	13.0	
		250	200	185	88	26	135	34	4	15.5	
		315	200	195	88	26	145	38	4	17.5	
	KHMF - 50	40	230	165	102	18	125	20	4	13.1	
63		230	180	102	22	135	26	4	18.0		
160		230	195	102	26	145	30	4	23.5		
250		230	200	102	26	150	38	8	28.5		
315		230	210	102	26	160	42	8	31.0		
Flange connection DIN EN 1092, type B2 <b>F4</b> (FTF, basic range 14)	KHMFF - 032	40	130	140	78	18	100	18	4	6.1	
		40	140	150	88	18	110	18	4	7.7	
	KHMFF - 050	40	150	165	102	18	125	20	4	10.7	

z\* = number of fixing holes

## Technical specifications

Length:	DIN-EN 558-1 - FTF, basic range 1 (DIN 3202 – F1, long version) DIN-EN 558-1 - FTF, basic range 14 (DIN 3202 – F4, short version)
Flange dimensions:	DIN EN 1092, type B2
Flange connections:	Rotating flanges
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 315 (see pressure range for flanges to DIN EN 1092)
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
<b>Spare parts:</b>	Seal kits available on request
<b>Accessories:</b>	All ball valves can be supplied with the following options: Actuator Limit switch Lock

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

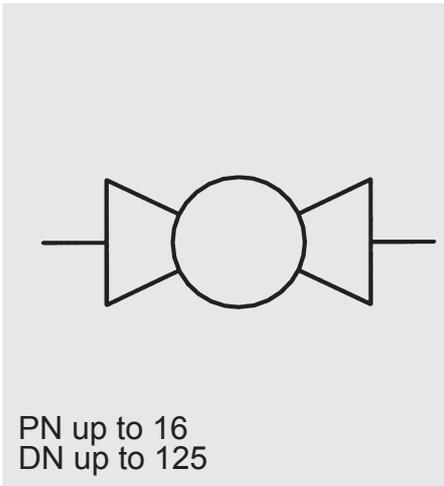
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: www.hydac.com  
E-Mail: info@hydac.com





## Flange Type Ball Valve DN 65 - 125

KHMFF



PN up to 16  
DN up to 125

### Model code

(also order example)

KHMFF 080 PN016 8834 02 X

#### Designation

KHMFF = Sleeve-type flange type ball valve  
(short version F4) DN 65 - 100  
and DN 125 reduced

#### Nominal bore

DN 65 - 100	PN 16	Material code	8834
DN 65 - 125	PN 16 reduced	Material code	8232

#### Pressure range

to DIN EN 1092

#### Materials

##### Housing, flange

8 = Cast iron (GG25), spindle in steel

##### Ball

2 = Brass

8 = Cast iron, hard-chromed

##### Ball seal

3 = PTFE

##### Housing seal and control spindle seal

2 = NBR (Perbunan)

4 = FKM (Viton)

#### Handle

02 = Aluminium clamped handle, cranked DN 16 - 100

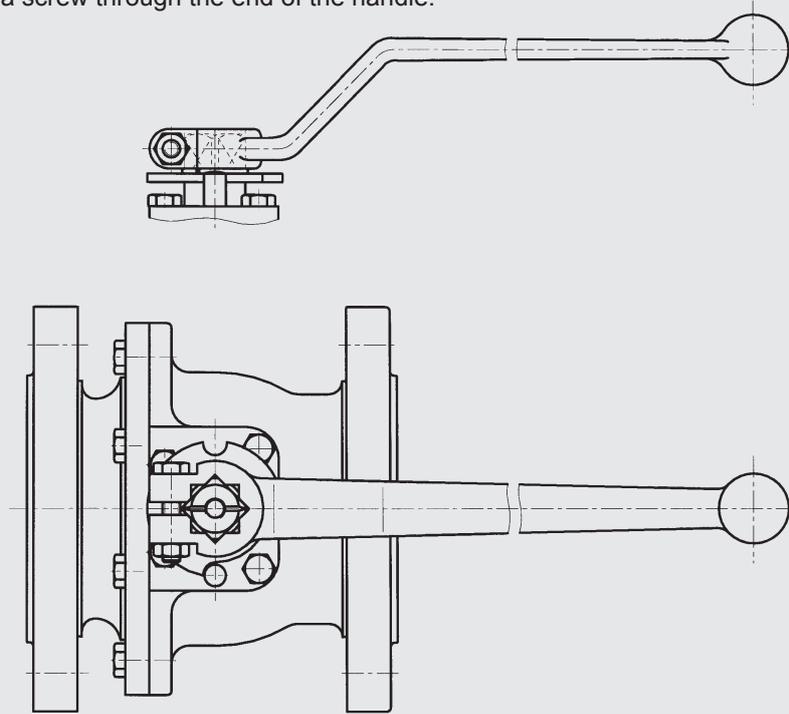
16 = Steel bolt-on handle, cranked, supplied loose  
reduced nominal bores DN 65 - 125

#### Series

(determined by manufacturer)

## Notes on assembly

The clamped handle is pushed onto the square end of the ball valve spindle and clamped to the square by means of a screw through the end of the handle.



The handles can be displaced by 45° DN 65 -100.  
(Except for DN 65 - 125 reduced with fixed handle position)

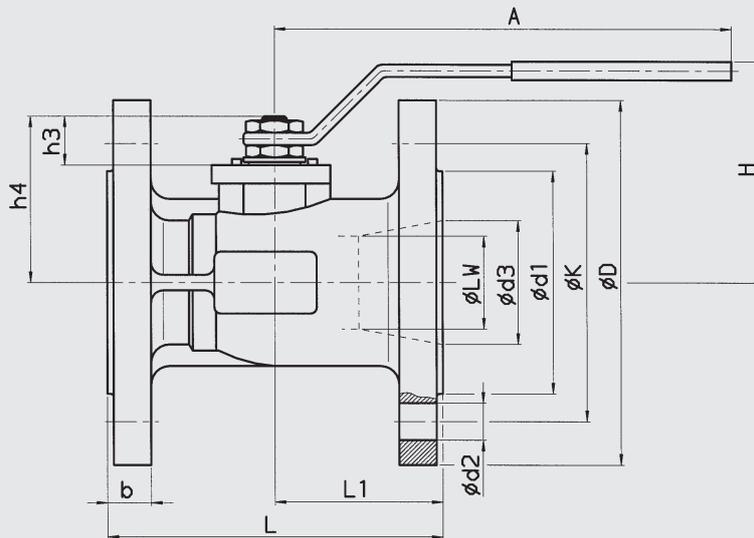
SW 22

Torque value

10 Nm

## Dimensions

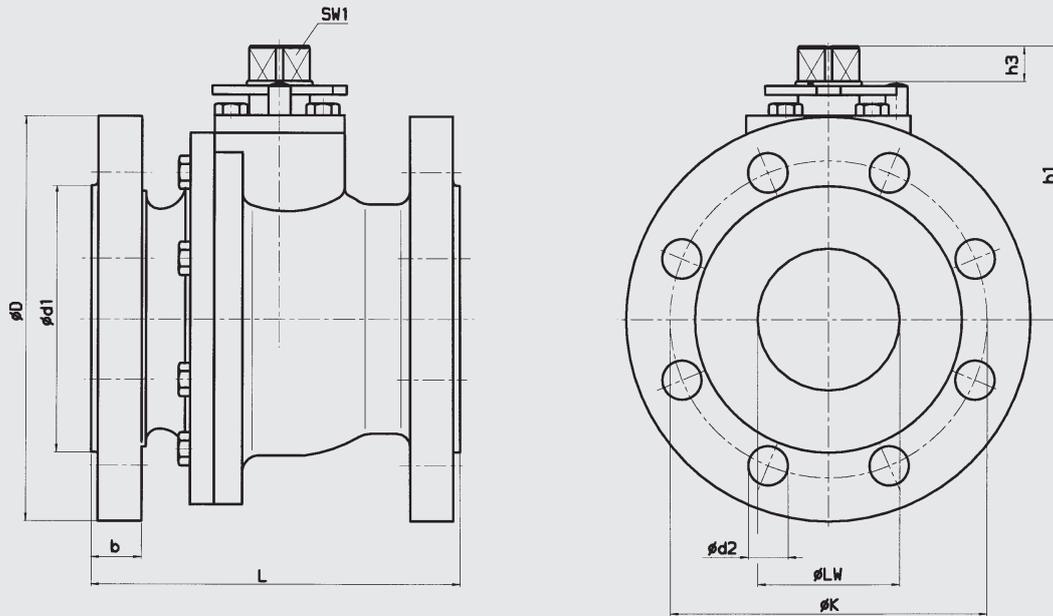
KHMFF (reduced)



Type of conn. / sealing face	Type	Pressure range	LW	A	L	L1	D	d1	d2	d3	K	b	H	h3	h4	Z*	Weight [kg]	Length DIN 3202
Flange connection DIN EN 1092, Form B2 <b>F4</b>	KHMFF - 065	16	50.2*	250	170	85	185	122	18	65	145	18	112	23	86.5	4	10.5	F4
	KHMFF - 080	16	64*	321	180	90	200	138	18	80	160	20	128	29	105	8	15	F4
	KHMFF - 100	16	76*	321	190	95	220	158	18	100	180	20	138	29	114.5	8	18	F4
	KHMFF - 125	16	95*	381	200	100	250	188	18	125	210	22	157	33	137.5	8	26.5	F4

\* = reduced nominal bore  
Z\* = number of fixing holes

## KHMFF (DN 65-100)



Type of conn./ sealing face	Type	Pressure range	LW	L	D	d1	d2	K	b	h1	h3	SW1	Z*	Weight (kg)
Flange connection DIN EN 1092, Form B2 <b>F4</b>	KHMFF - 065	10 - 16	65	170	185	122	18	145	21.5	118	16	22	4	17
	KHMFF - 080	10 - 16	80	180	200	138	18	160	24	128	16	22	8	20
	KHMFF - 100	10 - 16	100	190	220	158	18	180	22	142.5	16	22	8	24

Z\* = number of fixing holes

### NOTE

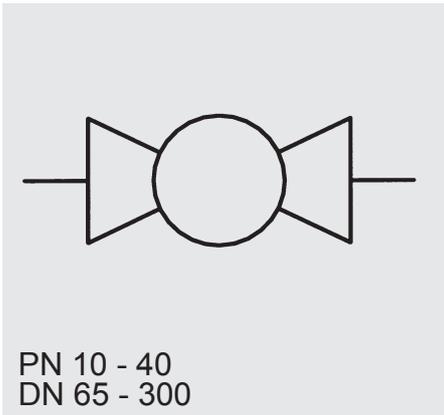
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)





## Flanged Ball Valves KHFF

**Model code**  
(also order example)

**KHFF 100 PN040 10333 06 X**

**Designation**

KHFF = Flange ball valve DN 65 - 300 (short version - DIN EN 558-1 - series 27)  
KHF = Flange ball valve DN 65 - 300 (long version - DIN EN 558-1 - series 1)

**Nominal bore**

**Pressure range**

**Materials**

*Housing*

3 = Stainless steel (1.4408)  
10 = Cast steel (1.0619)

*Ball*

3 = Stainless steel (1.4408 / 1.4308)

*Ball seal*

3 = PTFE + 25% glass fibre reinforced

*Stem seal*

3 = PTFE

(other materials on request)

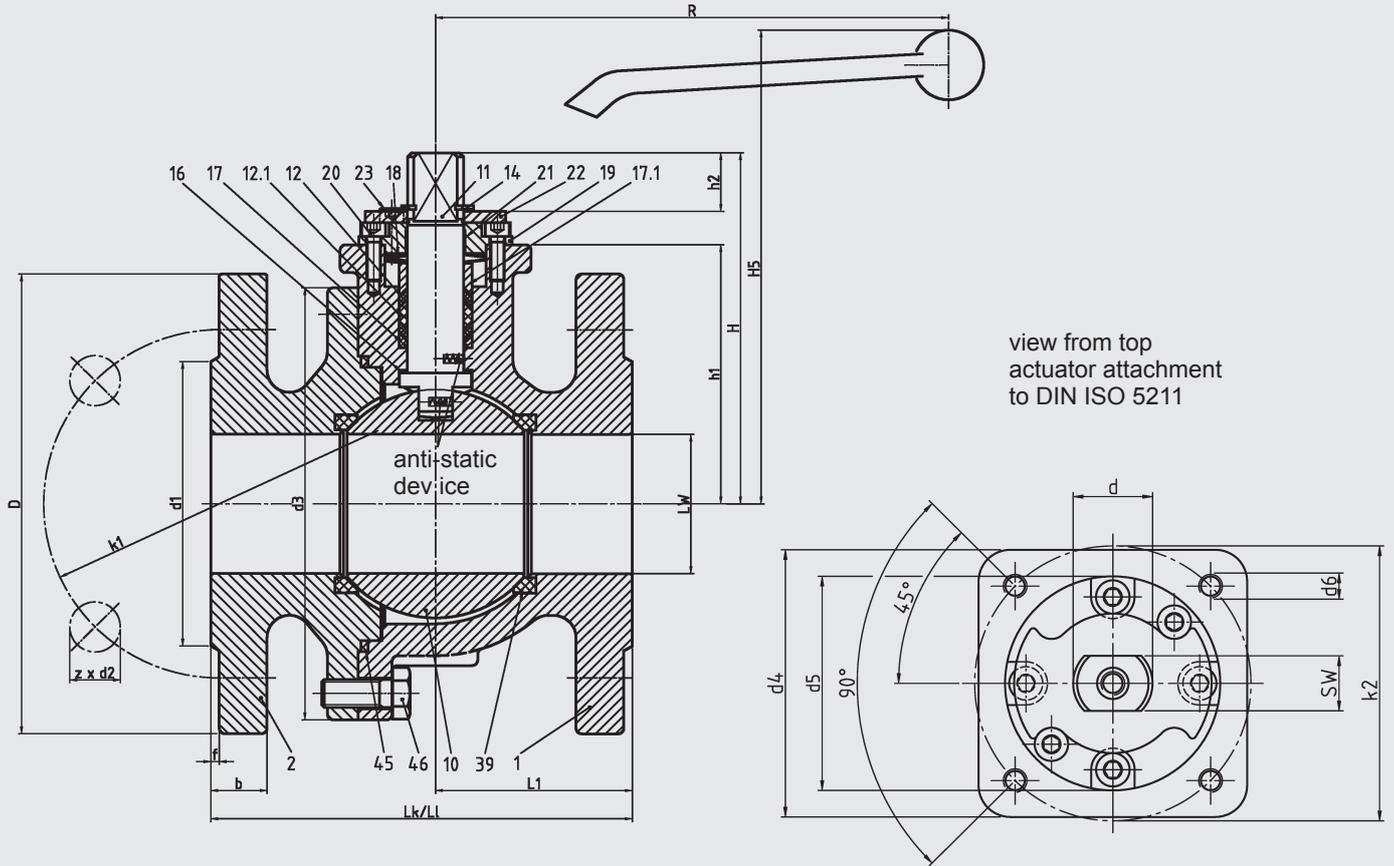
**Handle**

06 = Steel bolt-on handle, cranked

**Series**

(determined by manufacturer)

# KHFF



Item	Description
1	Body 1
2	Body 2
10	Ball
11	Stem
12	Stem seal
12.1	Stem seal
14	Safety ring
16	Thrust ring
17	Ring
17.1	Gland
18	Belleville-type washer
19	Cover
20	Socket head screw
21	Bearing strip
22	Stop disc
23	Socket head screw
39	Ball seat ring
45	Body seal
46	Hexagon bolt

## Dimensions

DN	PN	LW	L <sub>k</sub> *	L <sub>l</sub> *	L1	d3	H	H5	h1	h2	d	SW	k1	d1	d2	d4	d5	d6	k2	R	D	b	f	z	Wt. kg L <sub>k</sub> *	Wt. kg L <sub>l</sub> *	ISO 5211
65	40	65	170	290	80	190	150	195	115	18	20	14	145	122	18	96	70	M10	102	215	185	22		8	20	21.5	F10
80	40	80	180	310	86	208	161	211	124	20	25	19.3	160	138						25	27.5						
100	40	100	190	350	94.5	242	178	228	141	30	35	25.5	190	162	22	150	85	M12	125	300	235	24		8	33.5	37.5	F10
125	16	125	325	400	162.5	290	265	270	222				210	188	18					220	188	26			635	250	
125	40	150	350	480	175	327	297.5	301	242.5	41.5	44	32	240	212	22	150	85	M12	125	285	22		8	100	106	F12	
150	16												240	212	22					300	28			106	112		
150	40	200	400	600	200	400	335	338	280	41.5	44	32	250	218	26	150	85	M12	125	300	28		8	161	173	F12	
200	10												295	268	22					340	26			161	173		
200	16	200	400	600	200	400	335	338	280	41.5	44	32	310	278	26	150	85	M12	125	360	30	2	12	164	176	F14	
200	25												320	285	30					375	34			172	184		
200	40	250	450	-	225	492	390	-	330	51	48	36	350	320	22	175	100	M16	140	395	26		12	255	-	F14	
250	16												355	320	26					405	26			257			
250	25	300	500	-	250	575	425	-	365	51	48	36	370	335	30	175	100	M16	140	425	32		12	272	-	F14	
250	40												385	345	33					450	38			292			
300	10	300	500	-	250	575	425	-	365	51	48	36	400	370	22	175	100	M16	140	445	26		12	339	-	F14	
300	16												410	378	26					460	28			340			
300	25	300	500	-	250	575	425	-	365	51	48	36	430	395	30	175	100	M16	140	485	34	16	16	355	-	F14	
300	40												450	410	33					515	42			380			

\* L<sub>k</sub> = short version - DIN EN 558-1 - series 27

\* L<sub>l</sub> = long version - DIN EN 558-1 - series 1

## Technical specifications

Flange connections:	DIN EN 1092 - 1 : 2000, DN 65 - DN 300, PN 10 - PN 40
Raised face:	DIN EN 1092 - 1 : 2000 Form B1 (others on request)
Face-to-face:	DIN EN 558- 1 Series 27 (F4/F5), DIN EN 558- 1 Series 1 (F1)
Stem seal:	PTFE or graphite stuffing box, supported by Belleville-type washer. Belleville-type washers are completely enclosed and protected against ingress of dirt.
Operation:	By stem on two flats according to NAMUR recommendation.
Top flange:	DIN ISO 5211 for hand-operation by worm gear, pneumatic, electric or hydraulic actuator.
Test certificates:	EN 10204 2.2 or 3.1 B/C/A
Certification according to:	PED 97/23/EC Manufactured to AD-2000 TA - Luft 2002 (Technical Instructions on Air Quality Control) Fire - safe BS 6755, part 2 (DN 65 - DN 100) DIN DVGW Reg. no. NG-4313AP1147 (German Technical and Scientific Association for Gas and Water) DIN EN ISO 9001 - TÜV CERT -
Accessories:	Stem extension, locking and positioning device, heating jackets and high quality sensors. (additional equipment on request)
Temperature range:	-50 °C to + 230 °C, depending on ball seals.
Application:	Neutral gases and fluids, mineral oil products, alkalis, corrosive fluids and gases.

## NOTE

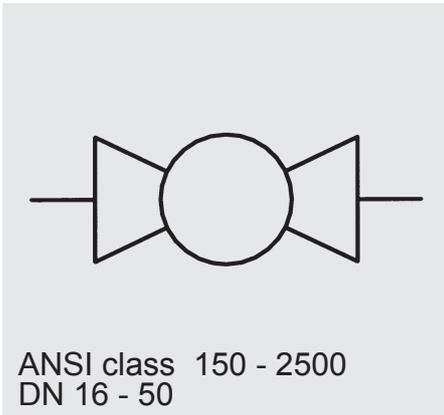
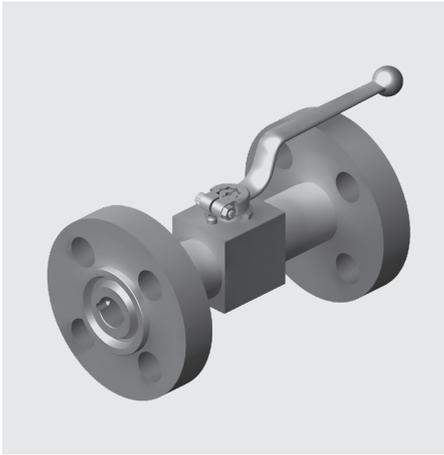
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: www.hydac.com  
E-Mail: info@hydac.com





## ANSI Flange Ball Valve KHBF / KHMF

### Model code

(also order example)

**KHBF 16 A0150 ... 11141 06 X ...**

#### Designation

KHBF = Block-type ball valve DN 16 – 25  
KHMF = Sleeve-type ball valve DN 16 – 50

#### Nominal size

#### Pressure range ANSI class

150	220 psi / 15 bar
300	574 psi / 40 bar
400	768 psi / 54 bar
600	1151 psi / 81 bar
900	1725 psi / 121 bar
1500	2876 psi / 202 bar
2500	4792 psi / 337 bar

#### Sealing surface

... = Smooth seal face (no details required)  
RTJ = Seal face with O-ring

#### Materials

*Housing, connection adapters*

1 = Steel  
3 = Stainless steel (1.4571)

*Ball, control spindle*

1 = Steel  
3 = Stainless steel (1.4571)

*Ball seal*

1 = POM (polyacetal)

*Soft seal*

4 = FKM (Viton)

*Flanges*

1 = Steel  
3 = Stainless steel (1.4571)

(other materials on request)

#### Handle

06 = Steel bolt-on handle, cranked

#### Series

(determined by manufacturer)

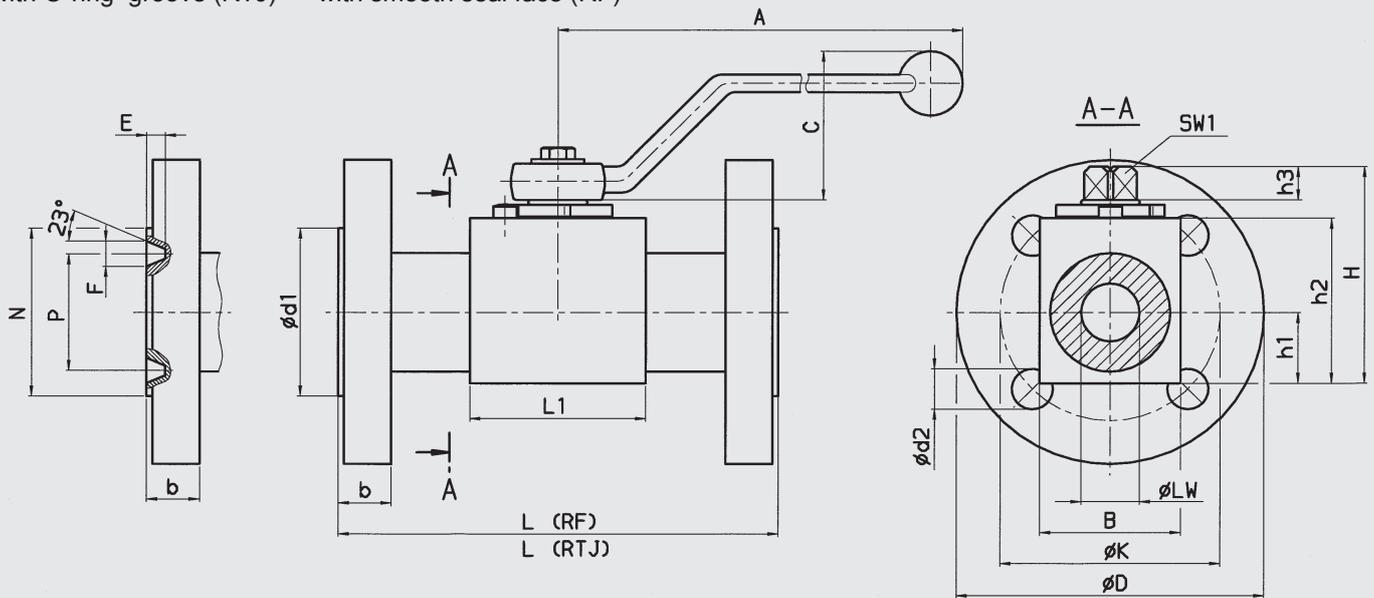
#### Surface protection

... = Phosphate-plated (no details required)  
A = Zinc-plated, chrome (VI)-free

## Dimensions

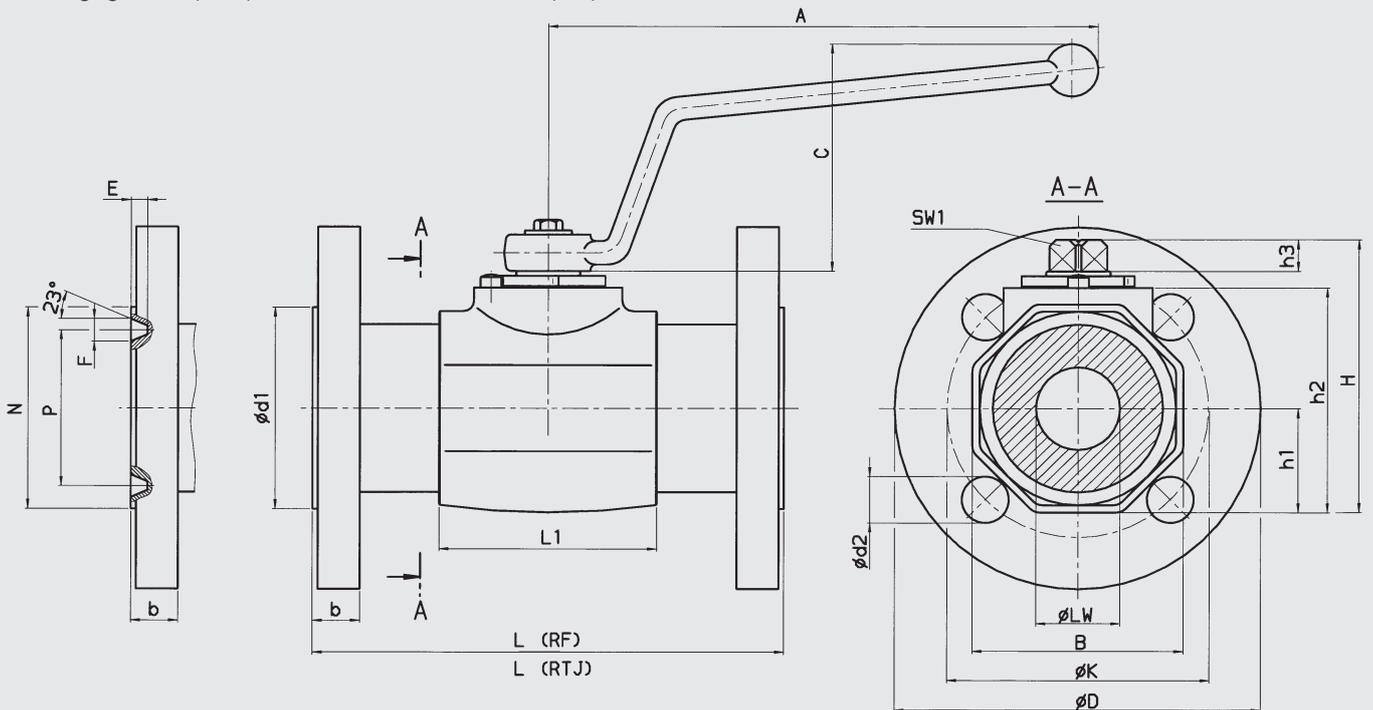
### KHBF

with O-ring groove (RTJ) with smooth seal face (RF)



### KHMF

with O-ring groove (RTJ) with smooth seal face (RF)



Type of constr.	Housing dimensions												PN (ball valve) [bar]
	Type	DN	LW	L1	B	H	h1	h2	h3	SW1	A	C	
Block housing DN16-25 (steel)	KHBF-16	1/2"	15	47	38	62	19	45	11	12	169	59	400
	KHBF-20	3/4"	20	60	48	75	24.5	57	11	14	169	59	350
	KHBF-25	1"	25	65	57	81.5	28.5	64	11	14	169	59	350
Sleeve housing DN16-50 (stainless steel) DN32-50 (steel)	KHMF-16	1/2"	15	45.8	45	66.5	22.5	48.5	11	12	169	59	400
	KHMF-20	3/4"	20	58.3	55	78	27.5	60	11	14	169	59	350
	KHMF-25	1"	25	63.5	60	83.5	30	65.5	11	14	169	59	350
	KHMF-32	1 1/4"	30	84	75	103	38	85	12	17	228	80	350
	KHMF-40	1 1/2"	38	91	85	114	43	96	12	17	228	80	350
KHMF-50	2"	48	100	105	131.5	53	113	12	17	228	80	350	

**Flange dimensions ANSI class 150**

DN	L (RF)	L (RTJ)	D	d1	d2	k	b	z*	N	P	F	E	Weight (kg)
16 - 1/2"	108	–	88.9	35.1	15.8	60.5	11.2	4	–	–	–	–	1.8
20 - 3/4"	117.4	–	98.6	42.9	15.8	69.9	12.7	4	–	–	–	–	2.9
25 - 1"	127	139.7	108	50.8	15.8	79.2	14.2	4	63.5	47.6	8.7	6.4	4.0
32 - 11/4"	139.7	152.4	117.3	63.5	15.8	88.9	15.7	4	73.2	57.2	8.7	6.4	6.4
40 - 11/2"	165.1	177.8	127	73.2	15.8	98.6	17.5	4	82.6	65.1	8.7	6.4	7.5
50 - 2"	177.8	190.5	152.4	91.9	19	120.7	19	4	101.6	82.6	8.7	6.4	11.1

**Flange dimensions ANSI class 300**

DN	L (RF)	L (RTJ)	D	d1	d2	k	b	z*	N	P	F	E	Weight (kg)
16 - 1/2"	139.7	150.9	95.3	35.1	15.8	66.6	14.2	4	50.8	34.1	7.1	5.6	2.2
20 - 3/4"	152.4	165.1	117.4	42.9	19	82.6	15.7	4	63.5	42.9	8.7	6.4	3.9
25 - 1"	165.1	177.8	124	50.8	19	88.9	17.5	4	69.9	50.8	8.7	6.4	5.0
32 - 11/4"	177.8	190.5	133.4	63.5	19	98.6	19	4	79.3	60.3	8.7	6.4	8.3
40 - 11/2"	190.5	203.2	155.5	73.2	22.4	114.3	20.6	4	90.4	68.3	8.7	6.4	9.9
50 - 2"	215.9	231.7	165.1	91.9	19	127	22.4	8	108	82.6	11.9	7.9	12.8

**Flange dimensions ANSI class 400/600**

DN	L (RF)	L (RTJ)	D	d1	d2	k	b	z*	N	P	F	E	Weight (kg)
16 - 1/2"	165.1	163.6	95.3	35.1	15.8	66.6	20.6	4	50.8	34.1	7.1	5.6	2.5
20 - 3/4"	190.5	190.5	117.4	42.9	19	82.6	22.1	4	63.5	42.9	8.7	6.4	4.4
25 - 1"	215.9	215.9	124	50.8	19	88.9	23.9	4	69.9	50.8	8.7	6.4	5.5
32 - 11/4"	228.6	228.6	133.4	63.5	19	98.6	26.9	4	79.3	60.3	8.7	6.4	9.2
40 - 11/2"	241.3	241.3	155.4	73.2	22.4	114.3	28.7	4	90.4	68.3	8.7	6.4	11.1
50 - 2"	292.1	295.2	165.1	91.9	19	127	31.8	8	108	82.6	11.9	7.9	14.7

**Flange dimensions ANSI class 900/1500**

DN	L (RF)	L (RTJ)	D	d1	d2	k	b	z*	N	P	F	E	Weight (kg)
16 - 1/2"	215.9	215.9	120.7	35.1	22.4	82.6	28.7	4	60.5	39.7	8.7	6.4	4.9
20 - 3/4"	228.6	228.6	130.1	42.9	22.4	88.9	31.8	4	66.6	44.5	8.7	6.4	6.7
25 - 1"	254	254	149.4	50.8	25.4	101.6	34.8	4	71.4	50.8	8.7	6.4	9.7
32 - 11/4"	279.4	279.4	158.8	63.5	25.4	111.3	34.8	4	81	60.3	8.7	6.4	13.5
40 - 11/2"	304.8	304.8	177.8	73.2	28.5	124	38.1	4	92	68.3	8.7	6.4	17.4
50 - 2"	368.3	371.4	215.9	91.9	25.4	165.1	44.5	8	124	95.3	11.9	7.9	28.4

**Flange dimensions ANSI class 2500**

DN	L (RF)	L (RTJ)	D	d1	d2	k	b	z*	N	P	F	E	Weight (kg)
16 - 1/2"	263.7	263.7	133.4	35.1	22.4	88.9	36.6	4	65	42.9	8.7	6.4	9.0
20 - 3/4"	273.1	273.1	139.7	42.9	22.4	95.3	38.1	4	73.2	50.8	8.7	6.4	11.5
25 - 1"	307.9	307.9	158.8	50.8	25.4	108	41.4	4	82.6	60.3	8.7	6.4	14.8
32 - 11/4"	349.3	352.3	184.2	63.5	28.5	130.1	44.5	4	101.6	72.2	11.9	7.9	21.9
40 - 11/2"	384.1	387.1	203.1	73.2	31.8	146	50.8	4	114.3	82.6	11.9	7.9	29.5
50 - 2"	450.9	453.9	235	91.9	28.5	171.5	57.2	8	133.4	101.6	11.9	7.9	43.0

z\* = number of fixing holes

**Technical specifications**

Length:	ASME / ANSI - B16.10		
Flange dimensions:	ASME / ANSI - B16.5		
Flange connections:	Rotating flanges		
Mounting position:	Optional		
Ambient temperature:	-10 °C to +80 °C		
Nominal pressure:	up to PN 337 (see pressure range)		
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)		
Temperature of operating fluid:	-10 °C to +80 °C		
<b>Spare parts:</b>	Seal kits available on request		
<b>Accessories:</b>	All ball valves can be supplied with the following options:		Actuator Limit controls Lock

**NOTE**

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

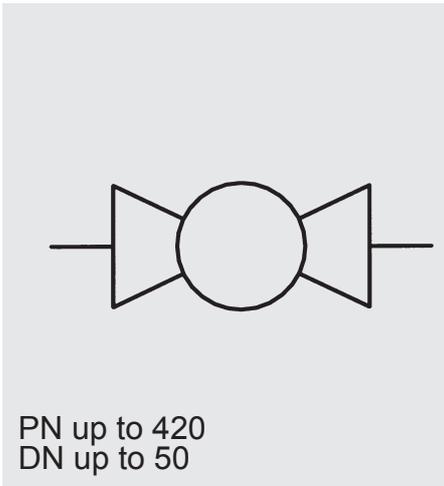
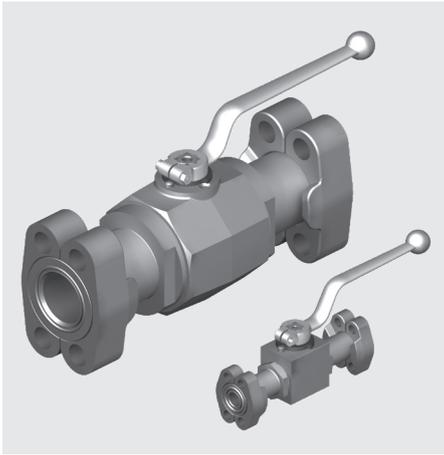
**HYDAC Accessories GmbH**

Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: [www.hydac.com](http://www.hydac.com)  
 E-Mail: [info@hydac.com](mailto:info@hydac.com)



## SAE Flanged Ball Valves

KHB-F3/6 / KHM-F3/6



**Model code**  
(also order example)

**KHB 20 F3 11141 02 X ...**

### Designation

KHB = Block-type ball valve DN 16-25  
KHM = Sleeve type ball valve DN 32-50

### Nominal bore

### Type of SAE flange

F3 = 3000 PSI (210 bar)  
F6 = 6000 PSI (420 bar)

### Materials

*Housing, connection adapters*

1 = Steel  
3 = Stainless steel

*Ball, control spindle*

1 = Steel  
3 = Stainless steel

*Ball seals*

1 = POM

*Control spindle seal and connection seal*

2 = NBR  
4 = FKM (Viton)

*SAE split flange*

1 = Steel  
3 = Stainless steel

### Handle

02 = Aluminium clamped handle, cranked  
06 = Steel bolt-on handle, cranked  
26 = Steel bolt-on handle, cranked, long (SW17)

### Series

(determined by manufacturer)

### Surface protection

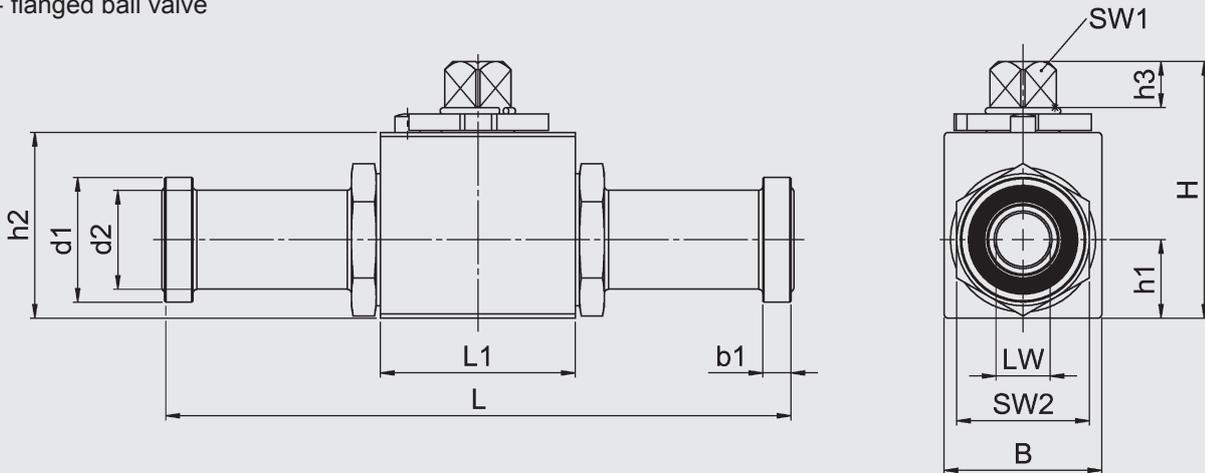
... = Phosphate-plated (no details required)  
A = Zink-plated, chrome (VI)-free

## Technical specifications

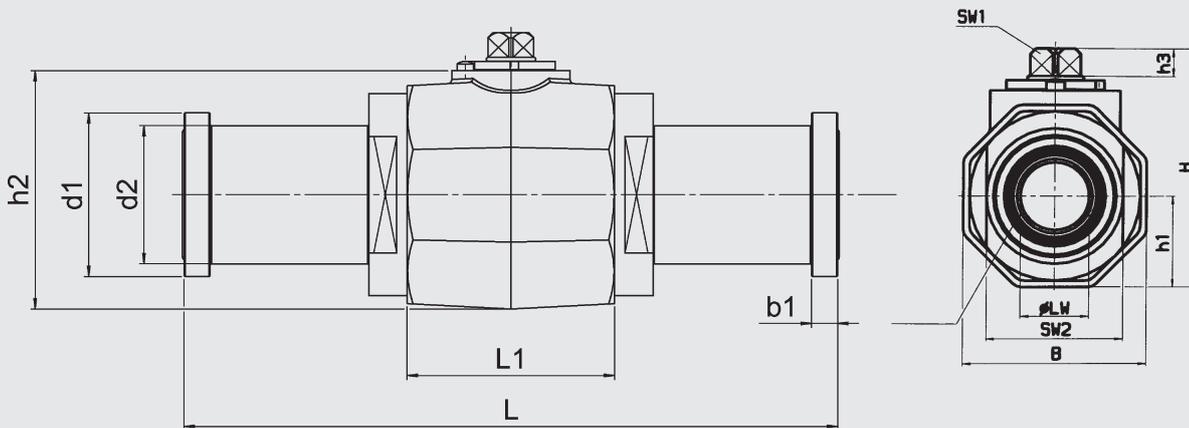
Type of construction:	Block type KHB DN 16 - 25 Sleeve type KHM DN 32 - 50
Flange dimensions:	ISO 6162, Table 1 and 2 (SAE J 518 c)
Flange connections:	SAE split flanges
Mounting position:	Optional
Ambient temperature steel:	-10 °C to +80 °C
Temperature range NIRO/POM/Viton:	-20 °C to +80 °C
Temperature range NIRO/POM/NBR:	-25 °C to +80 °C
Temperature range NIRO/POM/NBR TT:	-40 °C to +80 °C
Nominal pressure:	Up to PN 420 / 6000 PSI
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
<b>Spare parts:</b>	Seal kits available on request

## Dimensions

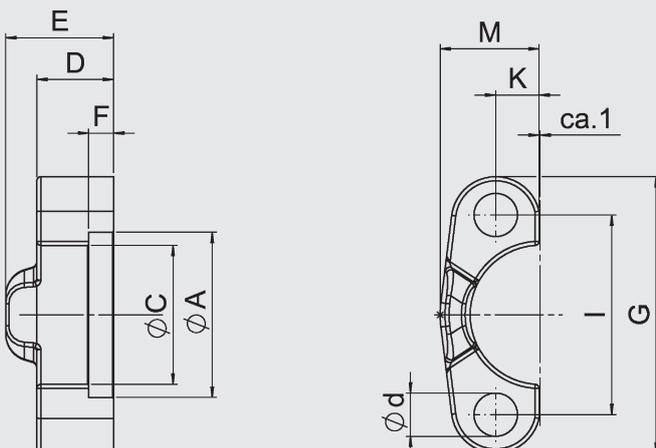
SAE - flanged ball valve  
KHB



KHM



SAE split flanges



## KHB / KHM – F3

Type	SAE size	DN	LW	L	L1	H	h1	h2	h3	B	b1	d1	d2	SW1	SW2	O-ring
KHB-16-F3	1/2"	16	13	151	47	62	20	46	11	38	6.8	30.2	24	12	32	18.66x3.53
KHB-16/20-F3	3/4"	16	16	170	47	62	20	46	11	38	6.8	38.1	31.5	12	32	25x3.53
KHB-20-F3	3/4"	20	19	170	60	75	24.5	57	11.6	48	6.8	38.1	31.5	14	41	25x3.53
KHB-25-F3	1"	25	25	176.5	65	82	28.5	64	11.6	57	8	44.45	38	14	50	32.92x3.53
KHM-32-F3	1 1/4"	32	30	191.4	83.4	105.2	40	86.7	12	80	8	50.8	43	17	60	37.7x3.53
KHM-40-F3	1 1/2"	40	38	231	91	116.2	45	97.7	12	90	8	60.35	50	17	70	47.22x3.53
KHM-50-F3	2"	50	48	234	100	134.2	55.5	115.7	12	111	9.6	71.4	62	17	80	56.74x3.53

## KHB / KHM – F3 – XL

Type	SAE size	DN	LW	L	L1	H	h1	h2	h3	B	b1	d1	d2	SW1	SW2	O-ring
KHM-32-F3-XL	1 1/4"	32	30	274	83.4	105.2	40	86.7	12	80	8	50.8	43	17	60	37.7x3.53
KHM-40-F3-XL	1 1/2"	40	38	320	91	116.2	45	97.7	12	90	8	60.35	50	17	70	47.22x3.53
KHM-50-F3-XL	2"	50	48	323	100	134.2	55.5	115.7	12	111	9.6	71.4	62	17	80	56.74x3.53

## SAE split flanges - F3

Type	A	C	D	E	F	M	K	I	G	d	Nominal pressure PN [bar]	Weight [kg]
KHB-16-F3	31	24.5	13	19	6.2	23	9	38.1	54	8.8	350	1.6
KHB-16/20-F3	38.9	32.1	14	22	6.2	26	11.1	47.6	65	10.5	350	1.6
KHB-20-F3	38.9	32.1	14	22	6.2	26	11.1	47.6	65	10.5	350	2.1
KHB-25-F3	45.2	38.5	16	22	7.5	29.2	13.1	52.4	70	10.5	350	2.8
KHM-32-F3	51.6	43.7	14	22	7.5	36.3	15.1	58.7	80	12	275	4.7
KHM-40-F3	61.1	50.8	16	24	7.5	41.1	17.9	69.9	94	13.5	210	6.9
KHM-50-F3	72.2	62.7	16	26	9	48.2	21.4	77.8	102	13.5	210	9.7

## KHB / KHM – F6

Type	SAE size	DN	LW	L	L1	H	h1	h2	h3	B	b1	d1	d2	SW1	SW2	O-ring
KHB-16-F6	1/2"	16	13	151	47	62	20	46	11	38	7.8	31.8	24	12	32	18.66x3.53
KHB-16/20-F6	3/4"	16	16	170	47	62	20	46	11	38	8.8	41.3	32	12	32	25x3.53
KHB-20-F6	3/4"	20	19	170	60	75	24.5	57	11.6	48	8.8	41.3	32	14	46	25x3.53
KHB-25-F6	1"	25	25	198.5	65	82	28.5	64	11.6	57	9.5	47.6	38	14	50	32.92x3.53
KHM-32-F6	1 1/4"	32	30	223.4	83.4	105.2	40	86.7	12	80	10.3	54	44	17	60	37.7x3.53
KHM-40-F6	1 1/2"	40	38	281	91	116.2	45	97.7	12	90	12.6	63.5	51	17	70	47.22x3.53
KHM-50-F6	2"	50	48	315	100	134.2	55.5	115.7	12	111	12.6	79.4	67	17	80	56.74x3.53

## KHB / KHM – F6 – XL

Type	SAE size	DN	LW	L	L1	H	h1	h2	h3	B	b1	d1	d2	SW1	SW2	O-ring
KHM-32-F6-XL	1 1/4"	32	30	322	83.4	105.2	40	86.7	12	80	10.3	54	44	17	60	37.7x3.53
KHM-40-F6-XL	1 1/2"	40	38	380	91	116.2	45	97.7	12	90	12.6	63.5	51	17	70	47.22x3.53
KHM-50-F6-XL	2"	50	48	385	100	134.2	55.5	115.7	12	111	12.6	79.4	67	17	80	56.74x3.53

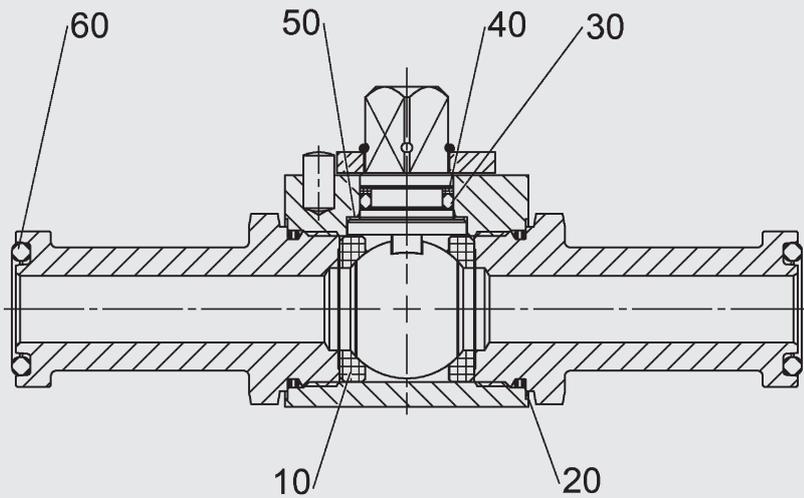
## SAE split flanges - F6

Type	A	C	D	E	F	M	K	I	G	d	Nominal pressure PN [bar]	Weight [kg]
KHB-16-F6	32.5	24.6	16	22	7.2	23.6	9	40.5	56	8.8	420	1.9
KHB-16/20-F6	42	32.5	19	28	8.3	30	11.9	50.8	72	10.5	420	1.9
KHB-20-F6	42	32.5	19	28	8.3	30	11.9	50.8	72	10.5	420	2.5
KHB-25-F6	48.4	38.9	24	32	9	35	13.9	57.2	81	13	420	3.5
KHM-32-F6	54.8	44.5	27	38	9.8	39	15.9	66.7	96	15	420	6.4
KHM-40-F6	64.3	51.6	30	42	12.1	48	18.3	79.4	113	17	420	9.7
KHM-50-F6	80.2	67.6	37	52	12.1	57	22.2	96.8	134	21	420	14.7

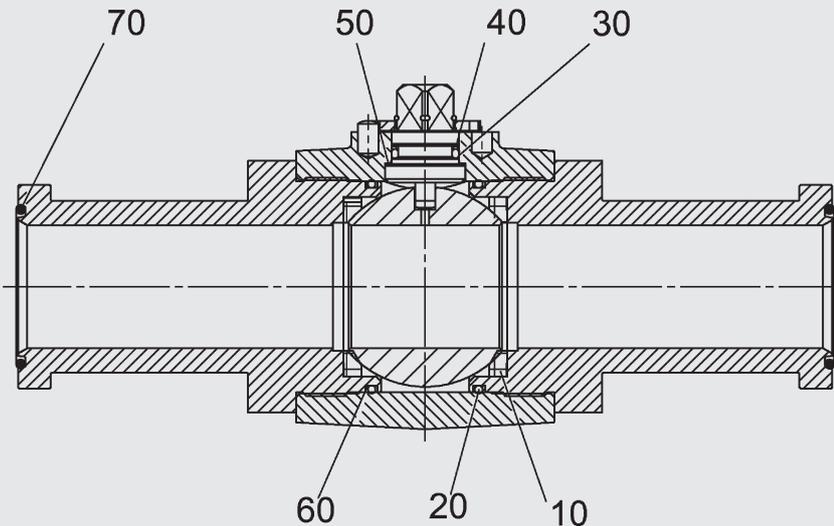
## Spare Parts

(Seal kit)

**KHB**, DN 16 - 25



**KHM**, DN 32 - 50



Seal kit	Order No. = Part No.
DN 16	3046470
DN 16/20	554819
DN 20	703153
DN 25	703117
DN 32	703142
DN 40	703030
DN 50	703031

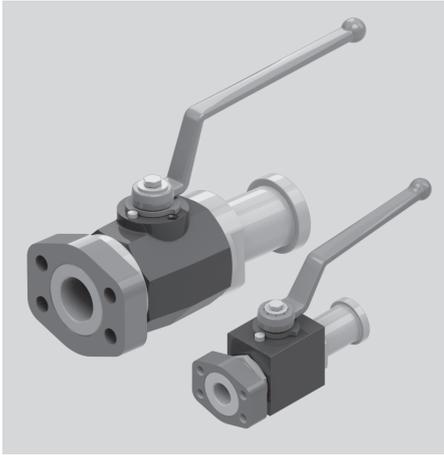
The parts indicated by numbers in the above drawing are contained in the seal kit.

## NOTE

The information in this brochure relates to the operating conditions and applications described.

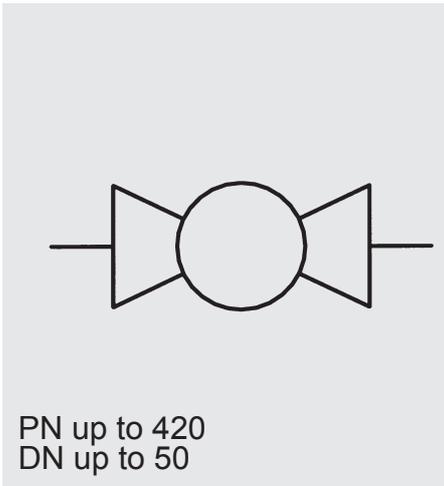
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.



## SAE Threaded / Split flange Ball Valves

KHBGS-F3/6 / KHMGS-F3/6



**Model code**  
(also order example)

**KHBGS 16 F3 11141 06 X ...**

### Designation

KHBGS = Block-type ball valve - threaded/split flange  
DN 16 - 25

KHMGS = Sleeve-type ball valve - threaded/split flange  
DN 32 - 50

**Nominal bore**  
(DN)

### Type of SAE flange

F3 = 3000 PSI (210 bar)

F6 = 6000 PSI (420 bar)

### Materials

*Housing, connection adapters*

1 = Steel

3 = Stainless steel

*Ball, control spindle*

1 = Steel

3 = Stainless steel

*Ball seals*

1 = POM

*Control spindle seal and connection seal*

2 = NBR

4 = FKM (Viton)

*SAE flanges*

1 = Steel

3 = Stainless steel

### Handle

02 = Aluminium clamped handle, cranked

06 = Steel bolt-on handle, cranked

26 = Steel bolt-on handle, cranked, long (SW17)

### Series

(determined by manufacturer)

### Surface protection

... = Phosphate-plated (no details required)

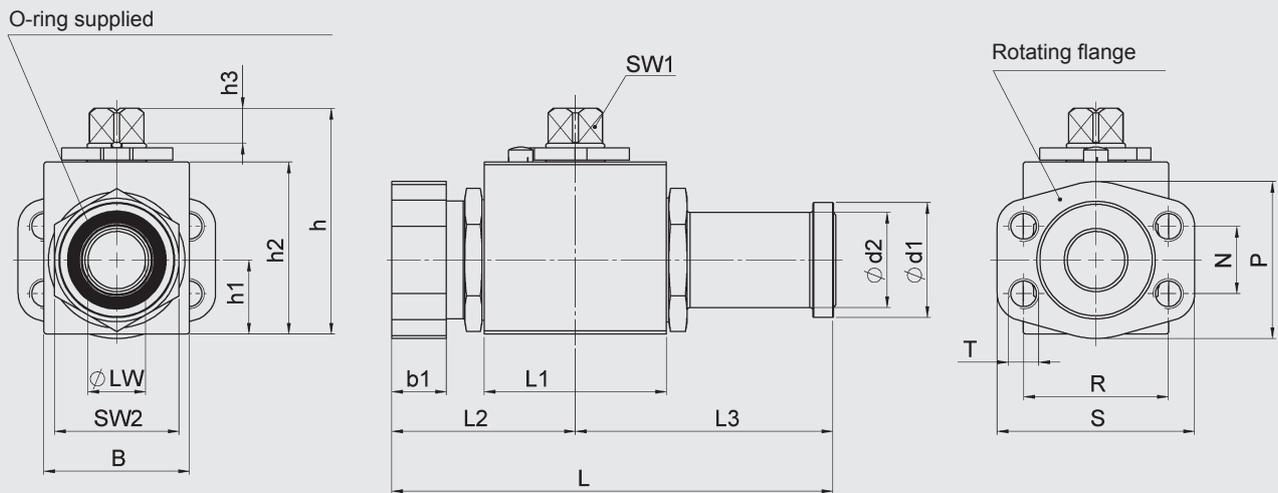
A = Zinc-plated, chrome (VI)-free

## Technical specifications

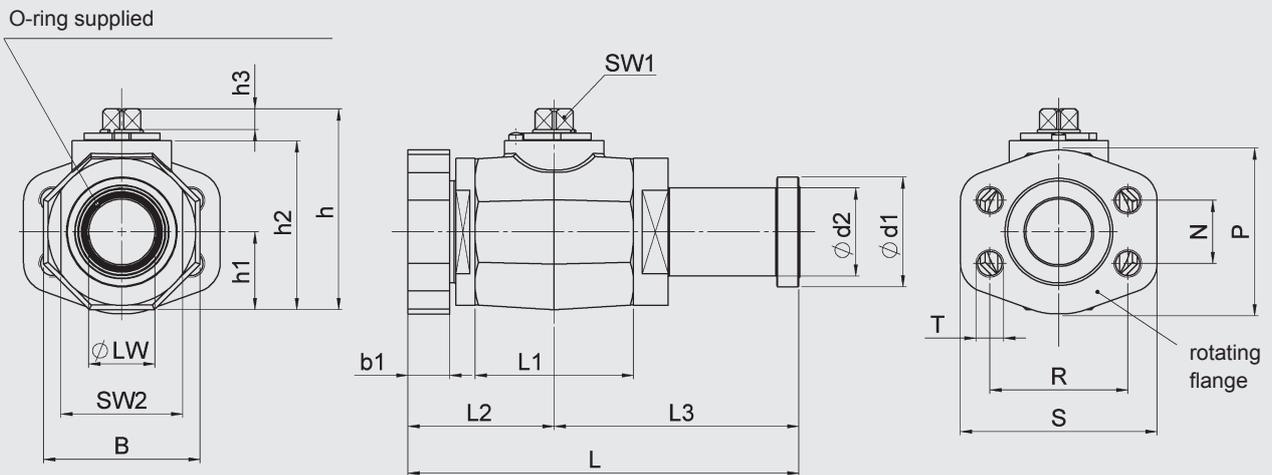
Type of construction:	Block type KHB DN 16 - 25 Sleeve type KHM DN 32 - 50
Flange dimensions:	ISO 6162, Table 1 and 2 (SAE J 518 c)
Flange connections:	SAE threaded flange, SAE split flange
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 420 / 6000 PSI
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Spare parts:	Seal kits available on request

## Dimensions

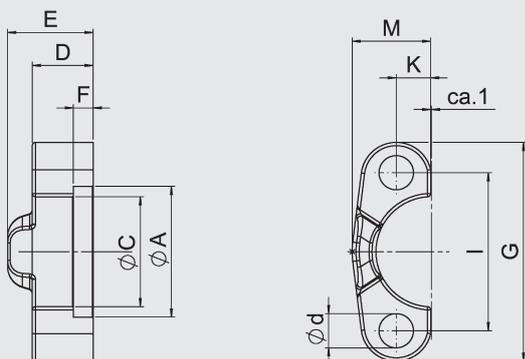
### SAE threaded/split flange ball valve KHB



### KHM



### SAE split flange



## KHBGS / KHMGS - F3

Type	SAE size	DN	LW	L	L1	L2	L3	h	h1	h2	h3	B	b1	d1	d2	SW1	SW2	O-ring
KHBGS-16-F3	1/2"	16	13	127.5	47	52	75.5	62	19	45	11	38	16	30.2	24	12	32	18.66x3.53
KHBGS-20-F3	3/4"	20	19	145.5	60	60.5	85	75	24.5	57	11.6	48	18	38.1	31.5	14	41	25x3.53
KHBGS-25-F3	1"	25	25	154.7	65	66.5	88.2	82	28.5	64	11.6	57	19	44.45	38	14	50	32.92x3.53
KHMGS-32-F3	1 1/4"	32	30	218.5	83.4	81.5	137	105.2	40	86.7	12	80	8	50.8	43	17	60	37.7x3.53
KHMGS-40-F3	1 1/2"	40	38	244	91	84	160	116.2	45	97.7	12	90	8	60.35	50	17	70	47.22x3.53
KHMGS-50-F3	2"	50	48	254.5	100	93	161.5	134.2	55.5	115.7	12	111	9.6	71.4	62	17	80	56.74x3.53

## SAE split flanges - F3

Type	A	C	D	E	F	M	K	I	G	d	Nominal pressure PN [bar]	Weight [kg]
KHBGS-16-F3	31	24.3	13	19	6.2	21.8	8	38.1	53.1	9	350	1.1
KHBGS-20-F3	38.9	32.1	14	22	6.2	26	11.1	47.6	65	10.5	350	2.1
KHBGS-25-F3	45.2	38.5	16	22	7.5	29.2	13.1	52.4	70	10.5	350	2.8
KHMGS-32-F3	51.6	43.7	14	22	7.5	36.3	15.1	58.7	80	12	275	4.7
KHMGS-40-F3	61.1	50.8	16	24	7.5	41.1	17.9	69.9	94	13.5	210	6.9
KHMGS-50-F3	72.2	62.7	16	26	9	48.2	21.4	77.8	102	13.5	210	9.7

## SAE threaded flanges - F3

Type	S	P	R	N	T	Nominal pressure PN [bar]	Weight [kg]
KHBGS-16-F3	54	46	38.1	17.5	M8	350	1.1
KHBGS-20-F3	65	52	47.6	22.3	M10	350	1.9
KHBGS-25-F3	70	59	52.4	26.2	M10	350	2.4
KHMGS-32-F3	79.5	73	58.7	30.2	M10	275	3.8
KHMGS-40-F3	93.8	83	69.9	35.7	M12	210	6.3
KHMGS-50-F3	102	97	77.8	42.9	M12	210	9.6

## KHBGS / KHMGS - F6

Type	SAE size	DN	LW	L	L1	L2	L3	h	h1	h2	h3	B	b1	d1	d2	SW1	SW2	O-ring
KHBGS-16-F6	1/2"	16	13	127.5	47	52	75.5	62	19	45	11	38	16	31.8	24	12	32	18.66x3.53
KHBGS-20-F6	3/4"	20	19	145.5	60	60.5	85	75	24.5	57	11.6	48	18	41.3	32	14	46	25x3.53
KHBGS-25-F6	1"	25	25	165.75	65	66.5	99.3	82	28.5	64	11.6	57	19	47.6	38	14	50	32.92x3.53
KHMGS-32-F6	1 1/4"	32	30	242.5	83.4	81.5	161	105.2	40	86.7	12	80	10.3	54	44	17	60	37.7x3.53
KHMGS-40-F6	1 1/2"	40	38	274	91	84	190	116.2	45	97.7	12	90	12.6	63.5	51	17	70	47.22x3.53
KHMGS-50-F6	2"	50	48	285.5	100	93	192.5	134.2	55.5	115.7	12	111	12.6	79.4	67	17	80	56.74x3.53

## SAE split flanges - F6

Type	A	C	D	E	F	M	K	I	G	d	Nominal pressure PN [bar]	Weight [kg]
KHBGS-16-F6	32.5	24.6	16	22	7.2	22.6	8	40.5	55.6	9	420	1.3
KHBGS-20-F6	42	32.5	19	28	8.3	30	11.9	50.8	72	10.5	420	2.5
KHBGS-25-F6	48.4	38.9	24	32	9	35	13.9	57.2	81	13	420	3.5
KHMGS-32-F6	54.8	44.5	27	38	9.8	39	15.9	66.7	96	15	420	6.4
KHMGS-40-F6	64.3	51.6	30	42	12.1	48	18.3	79.4	113	17	420	9.7
KHMGS-50-F6	80.2	67.6	37	52	12.1	57	22.2	96.8	134	21	420	14.7

## SAE threaded flanges - F6

Type	S	P	R	N	T	Nominal pressure PN [bar]	Weight [kg]
KHBGS-16-F6	56.5	48	40.5	18.2	M8	420	1.2
KHBGS-20-F6	71.4	60	50.8	23.8	M10	420	2
KHBGS-25-F6	81	70	57.2	27.8	M12	420	3
KHMGS-32-F6	95.3	78	66.6	31.8	M14	420	4.7
KHMGS-40-F6	113	95	79.3	36.5	M16	420	7.3
KHMGS-50-F6	133	114	96.8	44.5	M20	420	11.5

## **NOTE**

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

### **HYDAC Accessories GmbH**

Hirschbachstr. 2

**66280 Sulzbach/Saar**

Tel.: +49 (0)6897 - 509-01

Fax: +49 (0)6897 - 509-1009

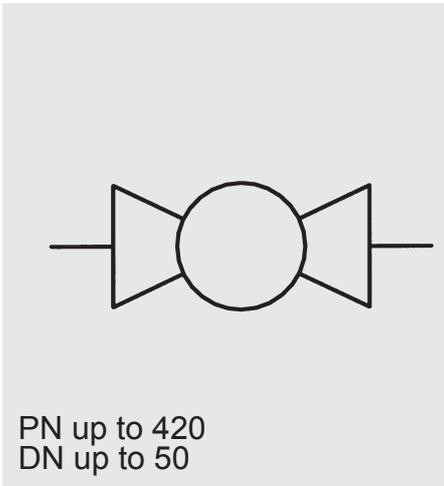
Internet: [www.hydac.com](http://www.hydac.com)

E-Mail: [info@hydac.com](mailto:info@hydac.com)



## SAE Threaded Flange Ball Valves

KHBG-F3/6 / KHMG-F3/6



PN up to 420  
DN up to 50

**Model code**  
(also order example)

**KHBG 20 F3 11141 02 X ...**

### Designation

KHBG = Block-type ball valve - threaded flange  
DN 16 - 25

KHMG = Sleeve-type ball valve - threaded flange  
DN 32 - 50

### Nominal bore

### Type of SAE flange

F3 = 3000 PSI (210 bar)  
F6 = 6000 PSI (420 bar)

### Materials

*Housing, connection adapters*

1 = Steel  
3 = Stainless steel

*Ball, control spindle*

1 = Steel  
3 = Stainless steel

*Ball seals*

1 = POM

*Control spindle seal and connection seal*

4 = FKM (Viton)

*SAE threaded flange*

1 = Steel  
3 = Stainless steel

### Handle

02 = Aluminium clamped handle, cranked  
06 = Steel bolt-on handle, cranked  
26 = Steel bolt-on handle, cranked, long (SW17)

### Series

(determined by manufacturer)

### Surface protection

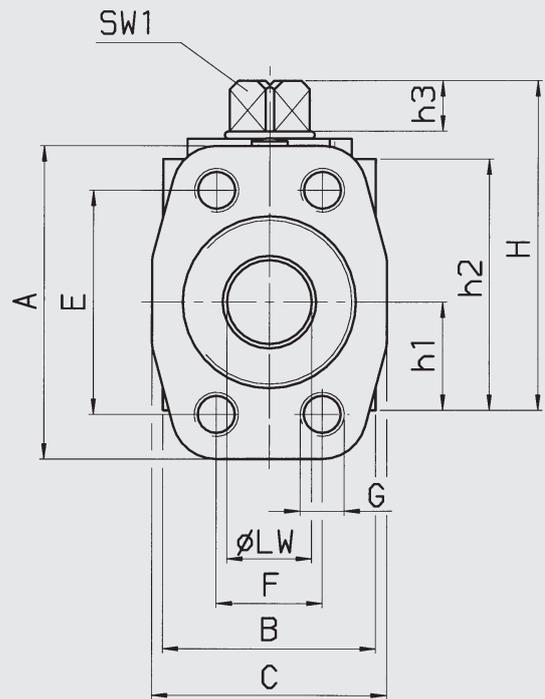
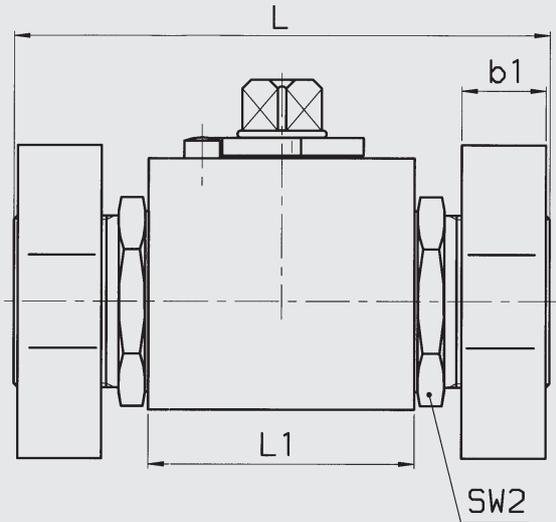
... = Phosphate-plated (no details required)  
A = Zinc-plated, chrome (VI)-free

## Technical specifications

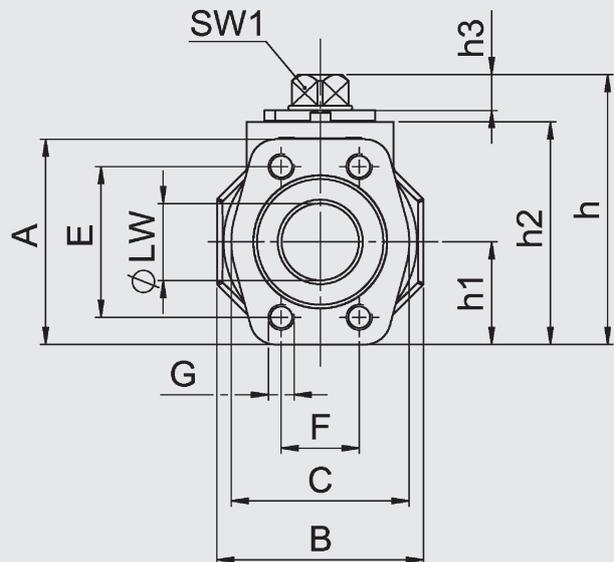
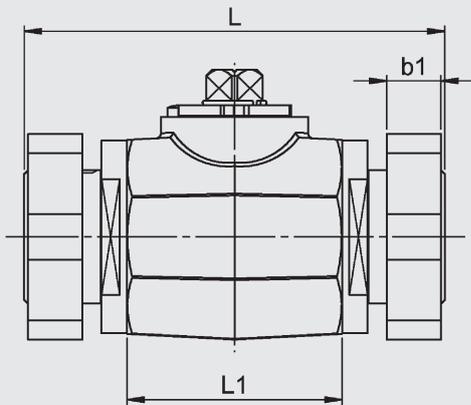
Type of construction:	Block type KHBG DN 16 - 25 Sleeve type KHMG DN 32 - 50
Type of connection:	ISO 6162, Table 1 and 2 (SAE J 518 c)
Flange connections:	SAE threaded flange
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 420/6000 PSI
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
<b>Spare parts:</b>	Seal kits available on request, see Spare Parts List

## Dimensions

SAE - threaded flange ball valve  
KHBG



KHMG



## KHBG / KHMG - F3

Type	SAE size	DN	LW	L	L1	H	h1	h2	h3	B	SW1	SW2
KHBG-16-F3	1/2"	16	13	104	47	62	20	46	11	39	12	32
KHBG-20-F3	3/4"	20	19	121	60	75	24.5	57	11.6	48	14	41
KHBG-25-F3	1"	25	25	133	65	82	28.5	64	11.6	57	14	50
KHMG-32-F3	1 1/4"	32	30	163	83.4	105.2	40	86.7	12	80	17	60
KHMG-40-F3-XL	1 1/2"	40	38	177	91	116.2	45	97.7	12	90	17	70
KHMG-50-F3-XL	2"	50	48	196	100	134.2	55.5	115.7	12	111	17	80

## Flange F3

Type	b1	A	C	E	F	G	Nominal pressure PN [bar]	Weight [kg]
KHBG-16-F3	16	54	46	38.1	17.5	M8	350	1.1
KHBG-20-F3	18	65	52	47.6	22.3	M10	350	1.9
KHBG-25-F3	19	70	59	52.4	26.2	M10	350	2.4
KHMG-32-F3	21	79.5	73	58.7	30.2	M10	275	3.8
KHMG-40-F3-XL	25	93.8	83	69.9	35.7	M12	210	6.3
KHMG-50-F3-XL	26	102	97	77.8	42.9	M12	210	9.6

## KHBG / KHMG - F6

Type	SAE size	DN	LW	L	L1	H	h1	h2	h3	B	SW1	SW2
KHBG-16-F6	1/2"	16	13	104	47	62	20	46	11	39	12	32
KHBG-20-F6	3/4"	20	19	121	60	75	24.5	57	11.6	48	14	46
KHBG-25-F6-XL	1"	25	25	148	65	82	28.5	64	11.6	57	14	50
KHMG-32-F6-XL	1 1/4"	32	30	172	83.4	105.2	40	86.7	12	80	17	60
KHMG-40-F6-XL	1 1/2"	40	38	177	91	116.2	45	97.7	12	90	17	70
KHMG-50-F6-XL	2"	50	48	196	100	134.2	55.5	115.7	12	111	17	80

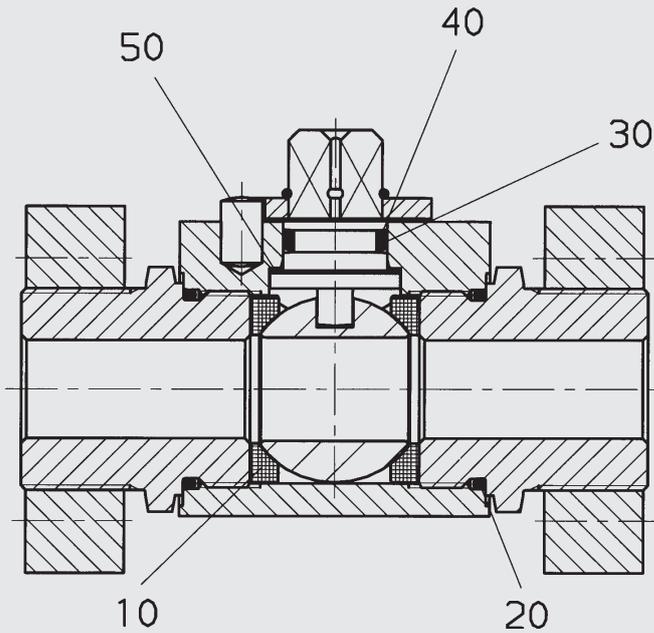
## Flange F6

Type	b1	A	C	E	F	G	Nominal pressure PN [bar]	Weight [kg]
KHBG-16-F6	16	56.5	48	40.5	18.2	M8	420	1.2
KHBG-20-F6	19	71.4	60	50.8	23.8	M10	420	2
KHBG-25-F6-XL	24	81	70	57.2	27.8	M12	420	3.0
KHMG-32-F6-XL	27	95.3	78	66.6	31.8	M14	420	4.7
KHMG-40-F6-XL	30	113	95	79.3	36.5	M16	420	7.3
KHMG-50-F6-XL	35	133	114	96.8	44.5	M20	420	11.5

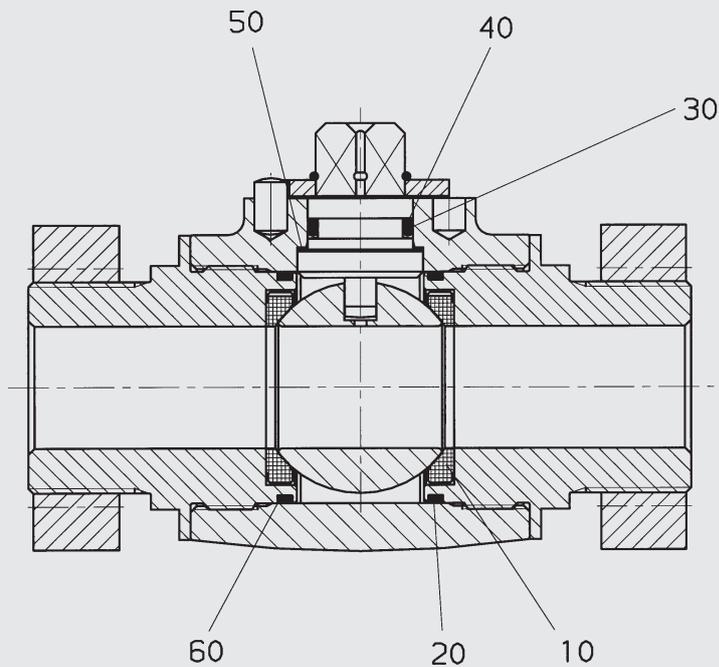
## Spare Parts

(Seal kit)

**KHBG**, DN 16 - 25



**KHMG**, DN 32 - 50



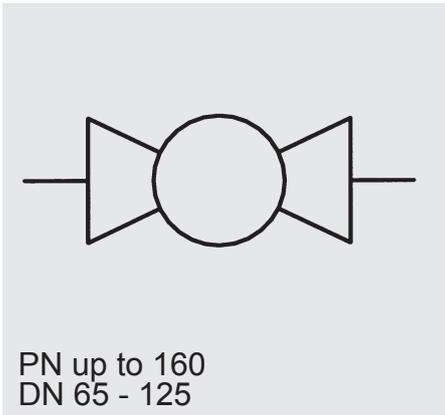
Seal kit	Order No. = Part No.
DN 16	703003
DN 20	703016
DN 25	700978
DN 32	703025
DN 40	703015
DN 50	701293

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.



# SAE Fixed Flange Ball Valves

KHF3

**Model code**  
(also order example)

KHF3 65 1114 05 X A ...

**Designation**

KHF3 = Fixed flange ball valve DN 65 - 125

**Nominal bore**

**Materials**

*Housing, housing flange*

- 1 = Steel
- 3 = Stainless steel
- 5 = Structural steel ST 52-3

*Ball, control spindle*

- 1 = Steel
- 3 = Stainless steel

*Ball seal*

- 1 = POM (polyacetal)

*Soft seal*

- 4 = FKM (Viton)

(other materials on request)

**Handle**

- 05 = Steel bolt-on handle, straight

**Series**

(determined by manufacturer)

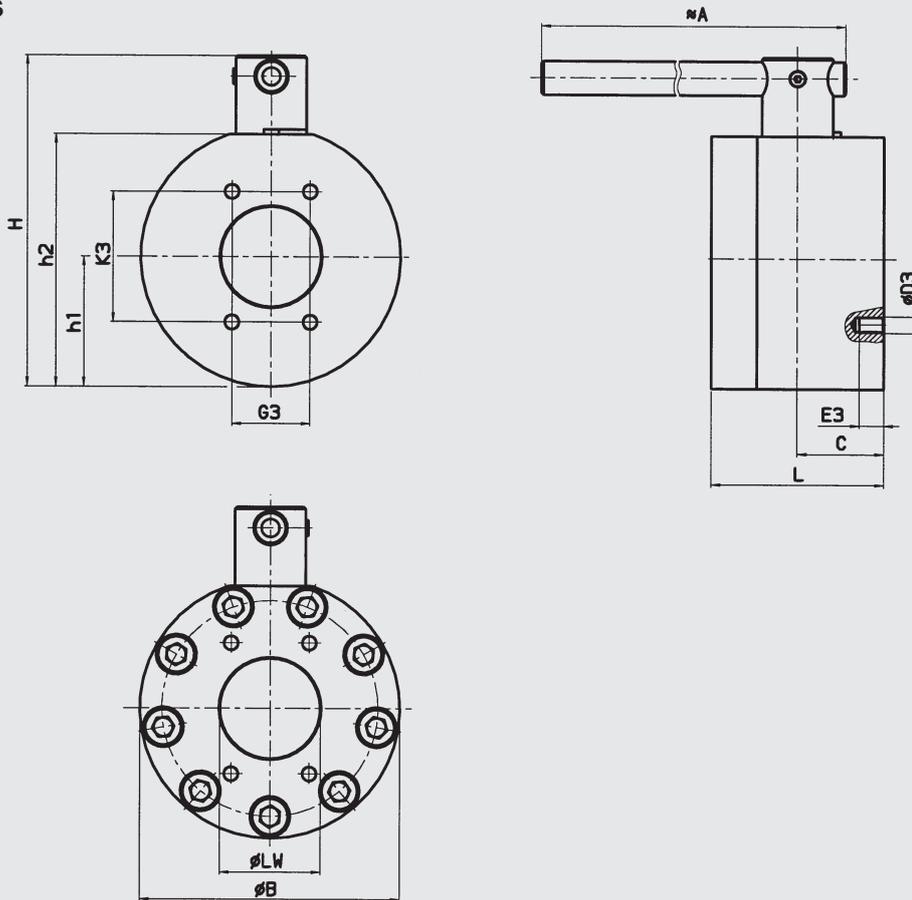
**Surface protection**

- ... = Phosphate-plated (no details required)
- A = Zinc-plated, chrome (VI)-free

**Version**

- ... = Metric connection thread (no details required)
- UNC = UNC connection thread

## Dimensions KHF3



Connection type			Housing dimensions								PN [ bar ]	Weight [ kg ]
	DN	SAE size	LW	L	C	H	h1	h2	B	A		
Fixed flange ISO 6162 table 1 (SAE J 518 c) <b>SAE - F3</b>	65	2 1/2"	63	150	75	274	99	193	198	800	160	33.3
	80	3"	76	140	70	290	105	209	210	800	100	40.0
	100	4"	100	170	85	332	129	251	258	800	35	59.5
	125	5"	118	210	105	380	147.5	287.5	295	900	35	65.0

DN	SAE Size	Connection dimensions - metric				Connection dimensions - UNC			
		K3	G3	D3	E3	K3	G3	D3	E3
65	2 1/2"	88.9	50.8	M12	20	88.9	50.8	1/2-13 UNC	20
80	3"	106.4	61.9	M16	24	106.4	61.9	5/8-11 UNC	24
100	4"	130.2	77.8	M16	24	130.2	77.8	5/8-11 UNC	24
125	5"	152.4	92.1	M16	30	132.4	92.1	5/8-11 UNC	30

## Technical specifications

Mounting position: Optional

Ambient temperature: -10 °C to +80 °C

Nominal pressure: Up to PN 160 (see pressure range)

Operating fluids: Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)

Temperature of operating fluid: -10 °C to +80 °C

**Spare Parts** Seal kits available on request

**Accessories:** All ball valves can be supplied with the following options: Actuator  
Limit switch  
Lock

## NOTE

The information in this brochure relates to the operating conditions and applications described.

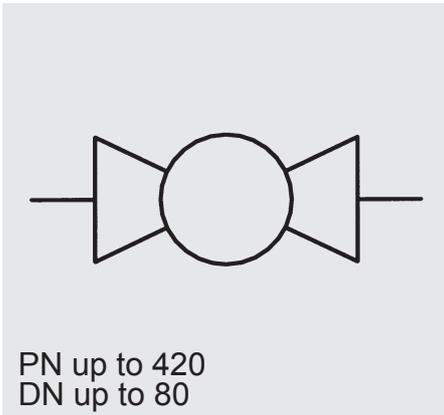
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: www.hydac.com  
E-Mail: info@hydac.com

## SAE Fixed Flange Ball Valves

### KHF3/6



**Model code**  
(also order example)

KHF3/6 20 1114 16 X A

**Designation**

KHF3/6 = Fixed flange ball valve

**Nominal bore**

**Materials**

*Housing, connection adapters*

- 1 = Steel
- 3 = Stainless steel
- 5 = Structural steel ST52-3

*Ball, control spindle*

- 1 = Steel
- 3 = Stainless steel

*Ball seal*

- 1 = POM
- 3 = PTFE
- 8 = PEEK

*Control spindle seal*

- 2 = NBR (Perbunan)
- 3 = PTFE
- 4 = FKM (Viton)

**Handle**

- 05 = Steel bolt-on handle, straight
- 16 = Steel bolt-on handle, cranked, fitted
- 18 = Stainless steel bolt-on handle, cranked, fitted
- 36 = Steel bolt-on handle, cranked, long, fitted

**Series**

(determined by manufacturer)

**Surface protection**

- ... = Phosphate-plated (no details required)
- A = Zinc-plated, chrome (VI)-free

## Technical specifications

Types of connection:	SAE fixed flanges to ISO 6162, Table 1 and 2 (SAE J 518 c), either with metric or UNC thread
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	420 bar
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Spare parts:	Seal kits available on request

### Metric thread version

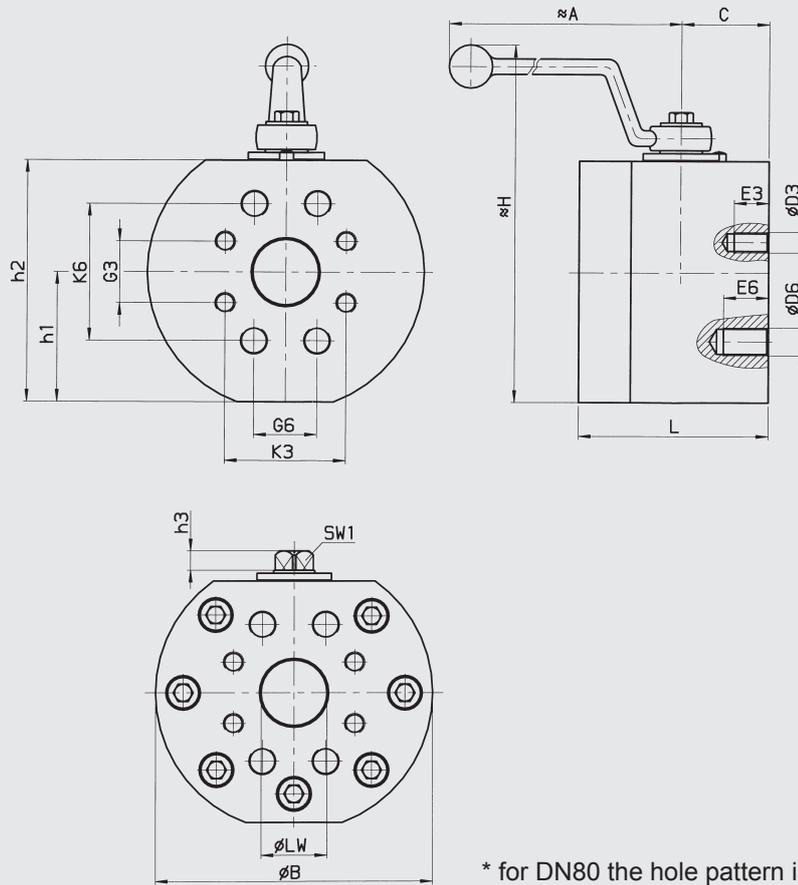
Connection type	SAE Size	Nominal bore / Type	Nominal bore DN	Nominal pressure PN [bar] *	Weight [kg]
Fixed flange connection ISO 6162 Table 1+2 (SAE J 518 c) <b>F3/F6</b>	1/2 "	KHF3/6 - 16 - 1114-16X-A	16	420	2.5
	3/4 "	KHF3/6 - 20 - 1114-16X-A	20	420	3.9
	1 "	KHF3/6 - 25 - 1114-16X-A	25	420	6.0
	1 1/4 "	KHF3/6 - 32 - 1114-36X-A-M12	32	420	11.6
	1 1/4 "	KHF3/6 - 32 - 1114-36X-A-M14	32	420	11.6
	1 1/2 "	KHF3/6 - 40 - 1114-36X-A	40	420	16.4
	2 "	KHF3/6 - 50 - 1114-36X-A	50	420	24.9
	2 1/2 "	KHF3/6 - 65 - 5314-05X-A	65	420	60.0
	3 "	KHF3/6 - 80 - 5314-05X-A	80	420	64.0

### UNC thread version

Connection type	SAE Size	Nominal bore / Type	Nominal bore DN	Nominal pressure PN [bar] *	Weight [kg]
Fixed flange connection ISO 6162 Table 1+2 (SAE J 518 c) <b>F3/F6</b>	1/2 "	KHF3/6 - 16 - 1114-16X-UNC	16	420	2.5
	3/4 "	KHF3/6 - 20 - 1114-16X-UNC	20	420	3.9
	1 "	KHF3/6 - 25 - 1114-16X-UNC	25	420	6.0
	1 1/4 "	KHF3/6 - 32 - 1114-36X-UNC	32	420	11.6
	1 1/2 "	KHF3/6 - 40 - 1114-36X-UNC	40	420	16.4
	2 "	KHF3/6 - 50 - 1114-36X-UNC	50	420	24.9

\* = The permitted operating pressure for the flange connection must be adhered to.

## Dimensions



\* for DN80 the hole pattern is rotated by 90°

### KHF3/6

Type	SAE size	DN	LW	L	C	H	h1	h2	h3	B	SW1	A
KHF3/6-16	1/2"	16	13	75	32.5	136.6	37.5	77.5	11	79	12	169
KHF3/6-20	3/4"	20	19	80	34.3	155.2	46	90	11.6	99	14	169
KHF3/6-25	1"	25	25	88	38	167.2	55	102	11.6	119	14	169
KHF3/6-32	1 1/4"	32	30	100	44	211.5	65	124	12	139	17	306
KHF3/6-40	1 1/2"	40	38	110	51	227.5	75	140	12	159	17	306
KHF3/6-50	2"	50	48	116	54	244	84	156.6	12	179	17	306
KHF3/6-65	2 1/2"	65	63	170	80	317	120	234	27.9	240	27	900
KHF3/6-80	3"	80*	76	170	80	336.5	129	253	27.9	258	27	900

### Connection dimensions - metric

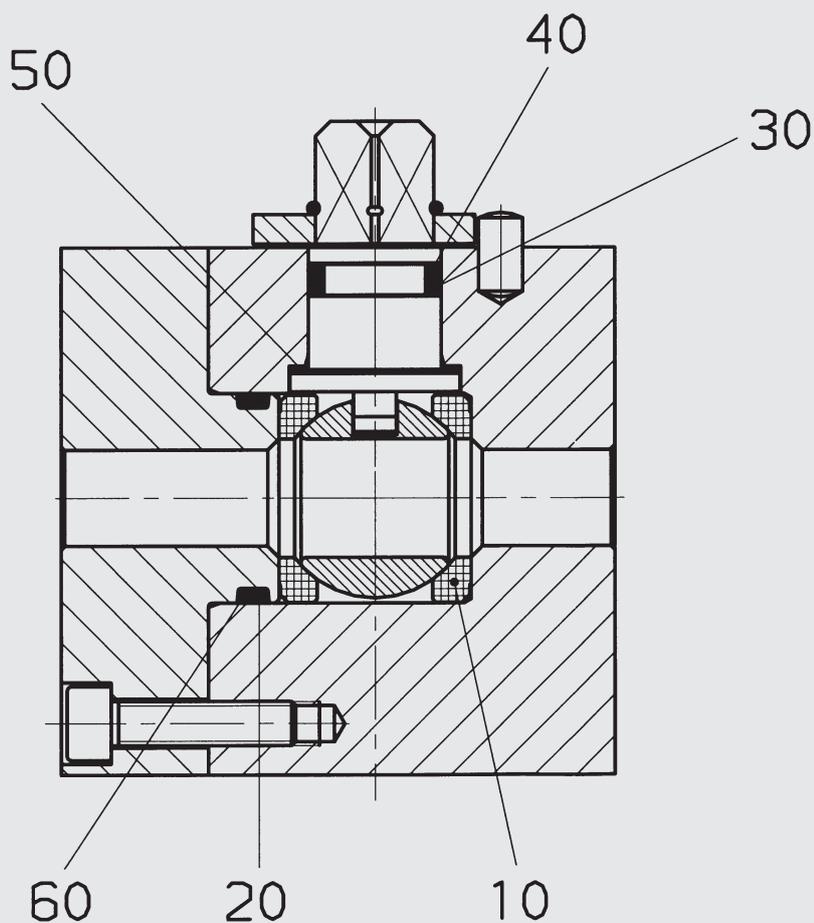
Type	K3	G3	D3	E3	K6	G6	D6	E6
KHF3/6-16	38.1	17.5	M8	16	40.5	18.2	M8	16
KHF3/6-20	47.6	22.3	M10	18	50.8	23.8	M10	18
KHF3/6-25	52.4	26.2	M10	18	57.2	27.8	M12	21
KHF3/6-32 / M12	58.7	30.2	M10	18	66.6	31.8	M12	21
KHF3/6-32 / M14	58.7	30.2	M10	18	66.6	31.8	M14	21
KHF3/6-40	69.9	35.7	M12	20	79.3	36.5	M16	26
KHF3/6-50	77.8	42.9	M12	22	96.8	44.5	M20	34
KHF3/6-65	88.9	50.8	M12	19	123.8	58.8	M24	41
KHF3/6-80	106.4	61.9	M16	24	152.4	71.4	M30	47

### Connection dimensions - UNC

Type	K3	G3	D3	E3	K6	G6	D6	E6
KHF3/6-16	38.1	17.5	5/16-18-UNC	16	40.5	18.2	5/16-18-UNC	16
KHF3/6-20	47.6	22.3	3/8-16-UNC	18	50.8	23.8	3/8-16-UNC	19
KHF3/6-25	52.4	26.2	3/8-16-UNC	21	57.2	27.8	7/16-14-UNC	21
KHF3/6-32	58.7	30.2	7/16-14-UNC	18	66.6	31.8	1/2-13-UNC	21
KHF3/6-40	69.9	35.7	1/2-13-UNC	26	79.3	36.5	5/8-11-UNC	26
KHF3/6-50	77.8	42.9	1/2-13-UNC	22	96.8	44.5	3/4-10-UNC	30

## Spare parts

(Seal kit)



Seal kit	Order no. = part no.
DN 16	3015691
DN 20	3015694
DN 25	3015695
DN 32	3015696
DN 40	3015697
DN 50	3015698
DN 65	3791490
DN 80	3791492

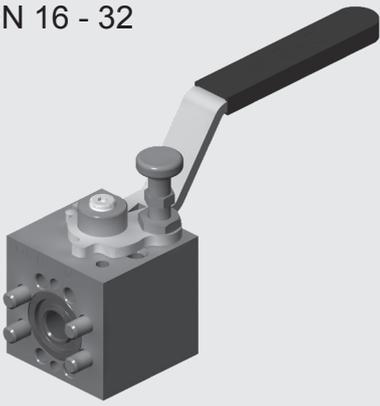
## NOTE

The information in this brochure relates to the operating conditions and applications described.

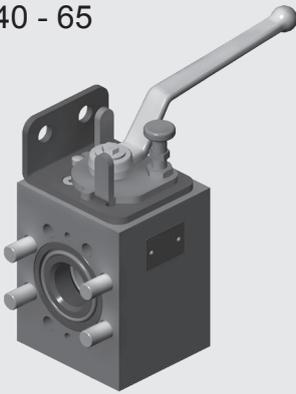
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

DN 16 - 32



DN 40 - 65



PN up to 420  
DN up to 80

## Direct Flange Ball Valve KHDF3 / KHDF6

### Model code

(also order example)

**KHDF3 16 1114 18X A X**

### Designation

KHDF3 = Direct flange ball valve 3000 PSI

KHDF6 = Direct flange ball valve 6000 PSI

### Nominal bore

### Materials

*Housing, connection adapters*

1 = Steel (standard)

3 = Stainless steel

*Ball, control spindle*

1 = Steel (standard)

3 = Stainless steel

*Ball seal*

1 = POM

*Control spindle seal*

2 = NBR (Perbunan)

4 = FKM (Viton) (standard)

### Handle

18 = Stainless steel bolt-on handle, cranked      DN16-32

16 = Steel bolt-on handle, cranked      DN40-80

### Surface protection

A = Zinc-plated, chrome (VI)-free      (standard)

### Option

SO 760 = Can be locked in open and closed position using padlock.  
Padlock not supplied

I-1.300 = Adapted for proximity switch M12,  
Monitoring of ball valve in either open, closed or both positions

I-1.200 = With standard proximity switch M12,  
Monitoring of ball valve in open position

I-3.200 = With 2 standard proximity switches M12,  
Monitoring of ball valve in open and closed positions

### Note

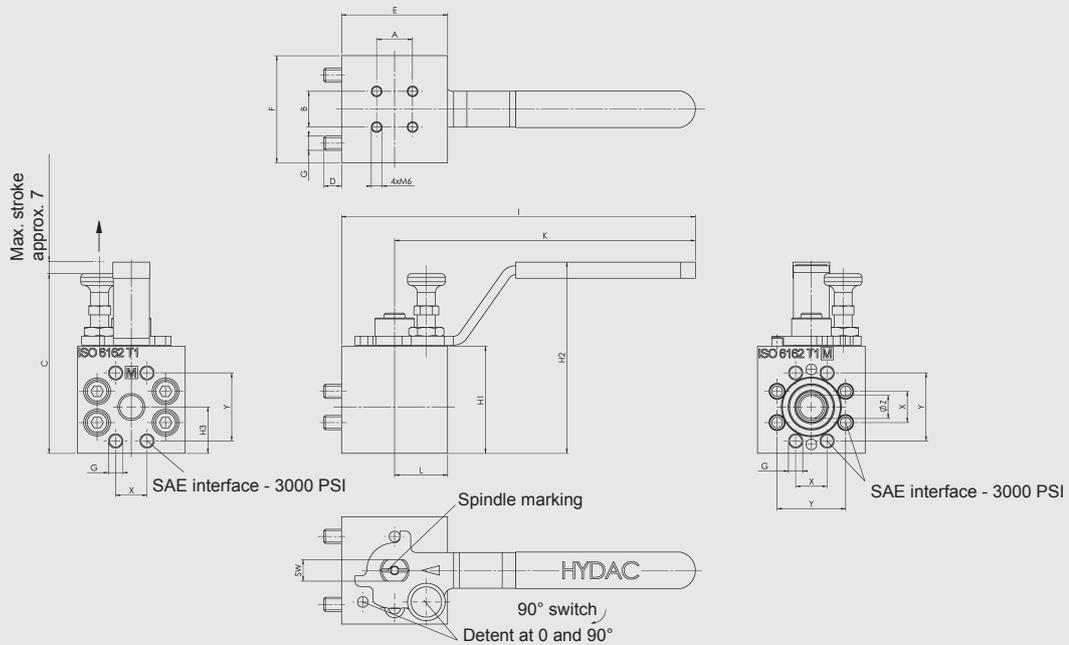
For DN40-50-65 the ball is trunnion mounted (double bearing, easy operation)

Detent on open and closed positions as standard

4 mounting bolts are supplied

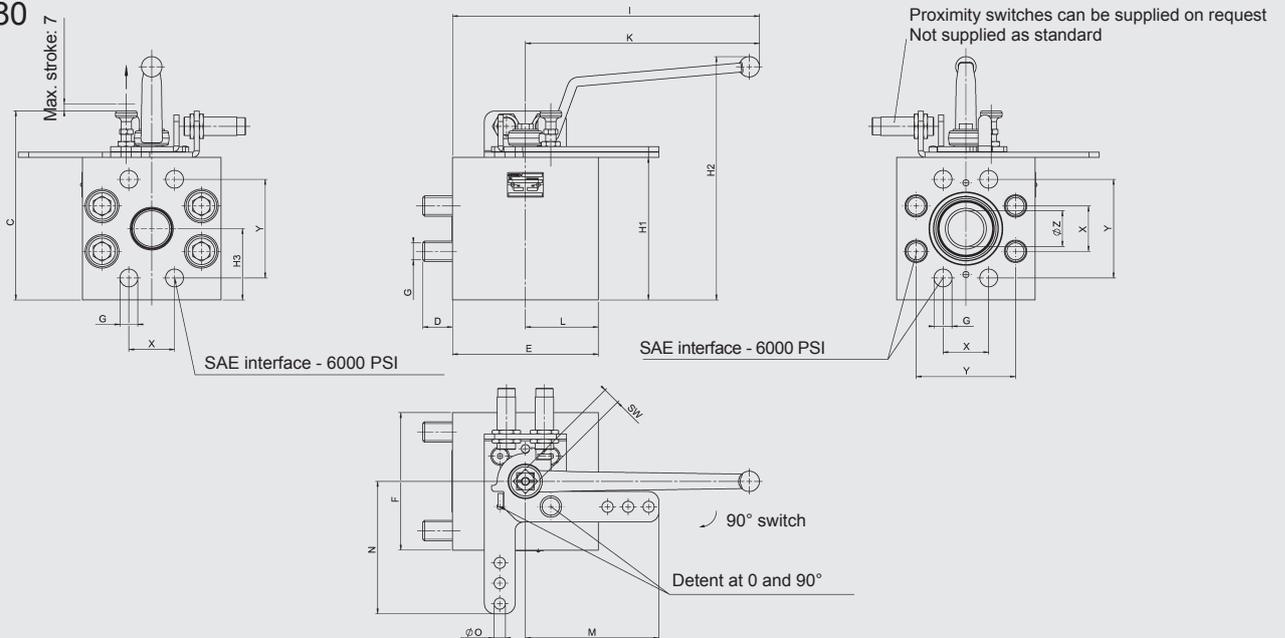
# Dimensions

## DN16 - 32



Type	A	B	C	D	E	F	G	H1	H2	H3	I	K	L	X	Y	SW	Z	PN	
																		bar	PSI
KHDF3-16	20	20	100.6	10	59	60	M8	60	107.1	26	197	167	29.5	17.5	38.1	12	13	350	5000
KHDF3-20	20	20	111	12.6	68	70	M10	70	118	32.5	206	170	32	22.3	47.6	14	19	350	5000
KHDF3-25	25	25	116	11.6	69	75	M10	75	123	37.5	206	170	33	26.2	52.4	14	20	350	5000
KHDF3-32	25	25	126	12	81	85	M10	85	133	42.5	209	170	42	30.2	58.7	14	25	250	3600
KHDF6-16	20	20	105.6	13.5	65	60	M8	65	112.1	31	200	167	32.5	18.2	40.5	12	13	400	5800
KHDF6-20	20	20	116	15	71	75	M10	75	123	37.5	206	170	35	23.8	50.8	14	19	400	5800
KHDF6-25	25	25	126	18	81	85	M12	85	133	42.5	209	170	42	27.8	57.2	14	25	400	5800
KHDF6-32	25	25	141	20	81	100	M12	100	147.5	49.5	209	170	42	31.8	66.6	14	25	400	5800
KHDF6-32	25	25	141	19	81	100	M14	100	147.5	49.5	209	170	42	31.8	66.6	14	25	400	5800

## DN40 - 80



Type	C	D	E	F	G	H1	H2	H3	I	K	L	X	Y	SW	Z	PN		Proximity switch
																bar	PSI	
KHDF3-40	165.5	19	84	94	M12	120	190.7	60	208	169	45	35.7	69.9	14	27	210	3000	M12
KHDF3-50	185.4	19	94	102	M12	140	238.7	70	275	228	47	42.9	77.8	17	35	210	3000	M12
KHDF3-65	200.4	19	114	120	M12	155	253.7	77.5	286	228	56	50.8	88.9	17	45	160	2300	M12
KHDF3-80	217.0	25.5	162	158	M16	171	258.0	85.5	381	300	81	61.9	106.4	22	55	100	1400	M18
KHDF6-40	165.4	27	120	115	M16	120	190.7	60	229	169	60	36.5	79.3	14	27	420	6000	M12
KHDF6-50	185.5	29	142	135	M20	140	238.8	70	299	228	71	44.5	96.8	17	35	420	6000	M12

## Technical specifications

Types of connection	SAE fixed flanges to ISO 6162, Table 1 and 2 (SAE J 518c)
Mounting position	Optional
Ambient temperature	-10 °C to +80 °C
Nominal pressure	210 bar or 420 bar
Operating fluids	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid	-10 °C to +80 °C
Spare Parts	Seal kits available on request

## NOTE

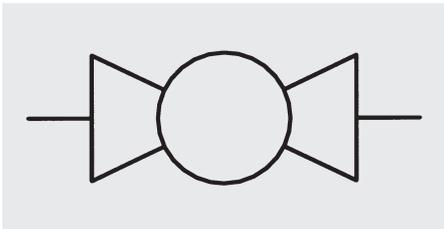
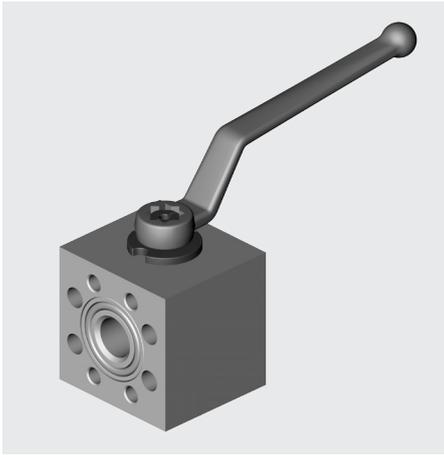
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)





PN 420  
DN to 50

## Direct Flange Ball Valve KHZF3 / KHZF6

**Model code**  
(also order example)

**KHZF6 16 1112 16 X A**

### Designation

KHZF3 = Direct flange ball valve 3000 psi  
KHZF6 = Direct flange ball valve 6000 psi

### Nominal size

### Materials

*Housing, connection adapters*

1 = Steel  
5 = Steel, ST52-3

*Ball, control spindle*

1 = Steel

*Sealing cups*

1 = POM

*Control spindle seal und connection seal*

2 = NBR

### Handle

16 = steel handle, bolt-on, cranked, fitted

### Series ID

(specified by manufacturer)

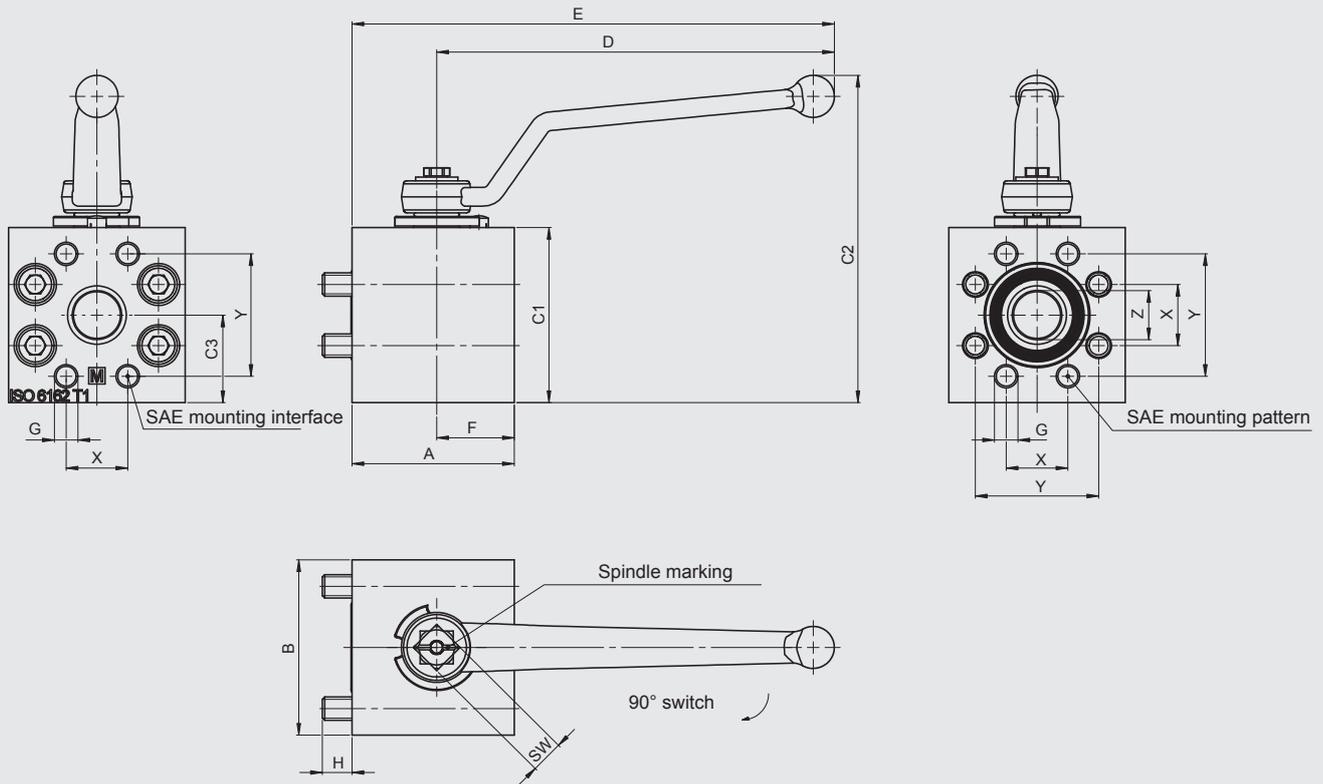
### Surface protection

A = zinc-plated, (chrome VI-free)

## Technical specifications

Types of connection:	SAE fixed flanges to ISO 6162, Table 1 and 2 (SAE J 518c)
Installation:	In any position
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	to PN 420
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
<b>Spare parts:</b>	Seal kits available on request
<b>Accessories:</b>	All ball valves can be supplied with the following options: Limit controls Lock

## Dimensions



Type	A	B	C1	C2	C3	D	E	F	G	H	X	Y	ØZ	SW	PN	
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	bar	psi
KHZF3-16	59	60	60	125.1	26	169	198.5	29.5	M8x12	12	17.5	38.1	13	12	350	5000
KHZF3-20	68	70	70	135	32.5	169	205	32	M10x15	13.6	22.3	47.6	19	14	350	5000
KHZF3-25	69	75	75	140	37.5	169	205	33	M10x15	12.6	26.2	52.4	21	14	350	5000
KHZF3-32	81	85	85	150	42.5	169	208	42	M10x20	14	30.2	58.7	25	14	275	4000
KHZF3-40	99	110	110	204	51	228	277.5	49.5	M12x21	14	35.7	69.9	30	17	210	3000
KHZF3-50	120	120	115	209	50	228	288	60	M12x24	13	42.9	77.8	38	17	210	3000
KHZF6-16	65	60	65	130.1	31	169	201.5	32.5	M8x16	13.5	18.2	40.5	13	12	420	6000
KHZF6-20	71	75	75	140	37.5	169	205	35	M10x18	15	23.8	50.8	19	14	420	6000
KHZF6-25	81	85	85	150	42.5	169	208	42	M12x23	18	27.8	57.2	25	14	420	6000
KHZF6-32	81	100	100	165	49.5	169	208	42	M14x25	19	31.8	66.6	25	14	420	6000
KHZF6-40	99	120	119	213	60	228	278	49	M16x27	19	36.5	79.3	30	17	420	6000
KHZF6-50	120	140	140	234	70	228	288	60	M20x35	31.5	44.5	96.8	38	17	420	6000

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

## HYDAC Accessories GmbH

Hirschbachstr. 2

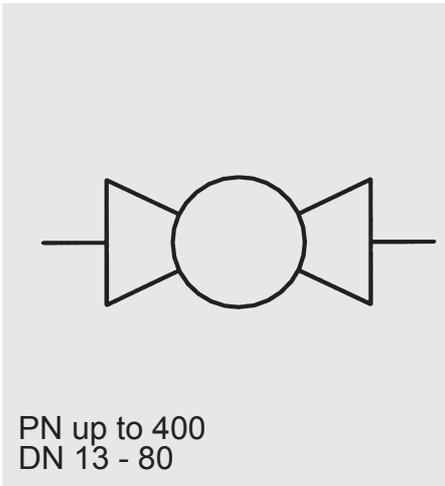
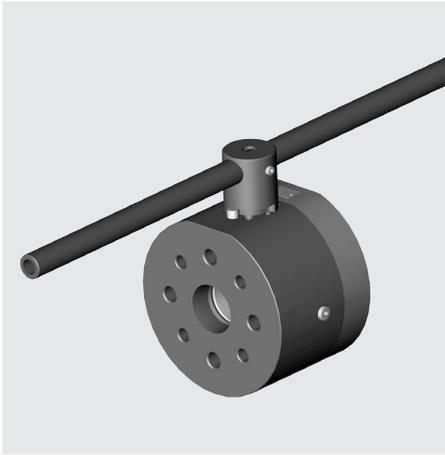
**66280 Sulzbach/Saar**

Tel.: +49 (0)6897 - 509-01

Fax: +49 (0)6897 - 509-1009

Internet: [www.hydac.com](http://www.hydac.com)

E-Mail: [info@hydac.com](mailto:info@hydac.com)



# ISO - Flanged Ball Valve KHF

**Model code**  
(also example order)

**KHF 100 ISO400 DN80 5314 05 X A**

**Designation**

KHF = Fixed flange ball valve

**Size**

**Type of connection**

ISO 400 = ISO6164, p<sub>max</sub> 400 bar

ISO 250/400 = ISO6164, p<sub>max</sub> 250/400 bar

**Nominal bore**  
(DN)

**Materials**

*Housing, housing flange*

5 = Steel

*Ball, control spindle*

3 = Stainless steel

*Ball seal*

1 = POM

*Control spindle seal and connection seal*

4 = FKM (Viton)

**Handle**

05 = Steel bolt-on handle, straight

**Series**

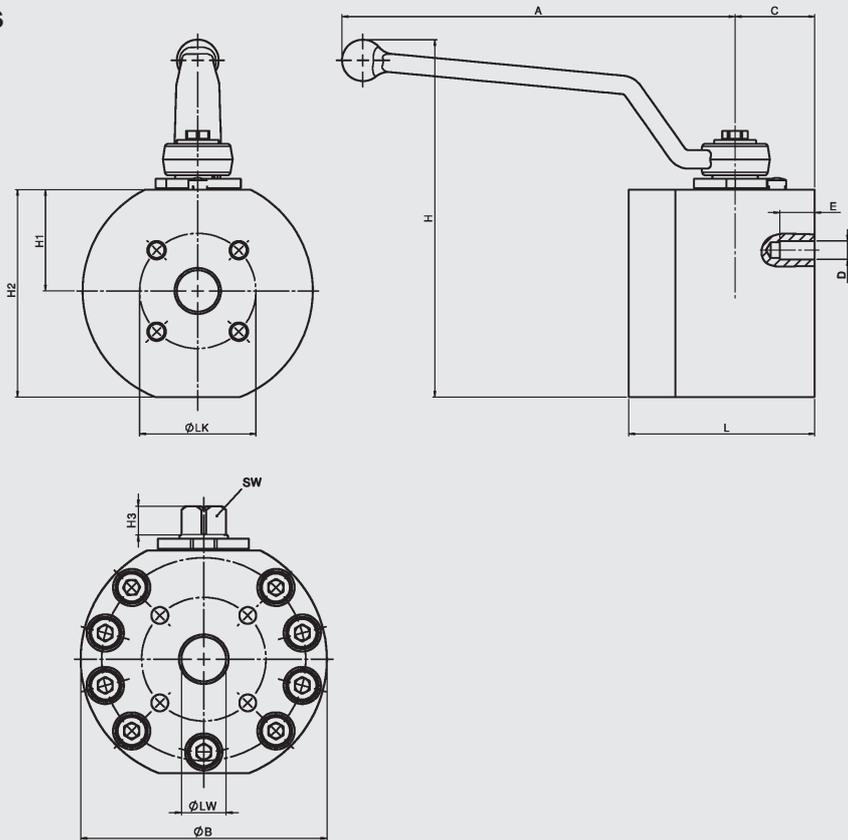
(determined by manufacturer)

**Surface protection**

A = Zinc-plated, chrome (VI)-free

## Dimensions

DIN ISO 6164  
Size 16 - 50



Type	DN	LW	L	C	H	h1	h2	h3	ØB	SW1	A
KHF 016	13	14	75	32.5	137	34.0	71.5	11	79	12	169
KHF 020	19	18	80	34.3	155	44.0	90.0	11	99	14	169
KHF 025	25	22	88	38.0	167	46.8	102.0	11	119	14	169
KHF 032	32	29	100	44.0	220	59.0	124.0	12	139	17	306
KHF 040	38	35	110	51.0	240	65.0	145.0	12	169	17	306
KHF 050	51	43	116	54.0	252	72.6	156.6	12	179	17	306

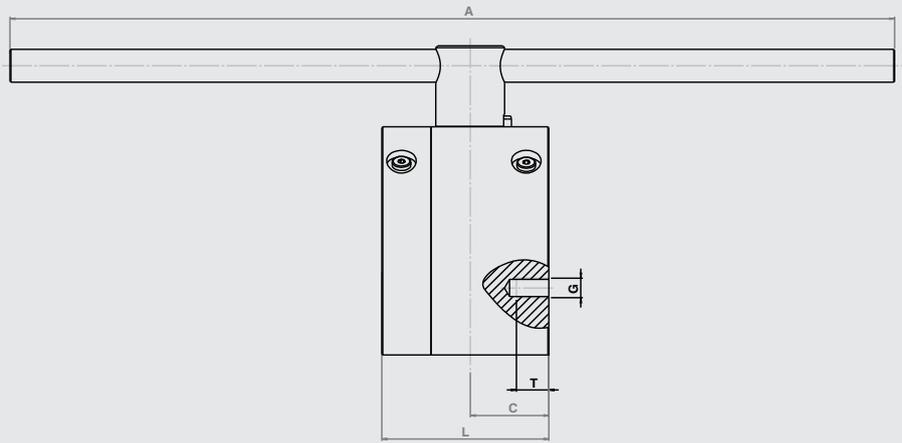
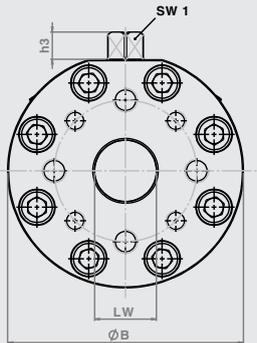
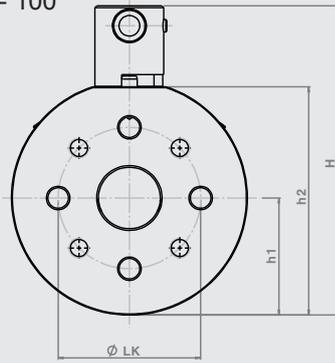
### Flange dimensions

Connection type	Typ	DN	PN	LK	D	E
Fixed flange connection ISO 6164	KHF 016	13	250 / 400	42	M8	16
	KHF 020	19	250 / 400	50	M8	15
	KHF 025	25	250 / 400	62	M10	17
	KHF 032	32	250 / 400	73	M12	22
	KHF 040	38	250 / 400	85	M16	26
	KHF 050	51	250 / 400	98	M16	27

## Dimensions

DIN ISO 6164

Size 65 - 100



Type	DN	LW	L	C	H	h1	h2	h3	ØB	SW1	A
KHF 065	56	58	170	80	276	99	193	27.9	198	27	900
KHF 080	63	63	170	80	317	120	234	27.9	240	27	900
KHF 100	80	76	170	80	336.5	129	253	27.9	258	27	900

### Flange dimensions

Connection type	Type	DN	PN	ØLK	G	T
Fixed flange connection ISO 6164	KHF-065	56	250	118	M20	33
			400	118	M20	33
	KHF-080	63	250	145	M20	33
			400	145	M24	38
	KHF-100	80	400	175	M30	47

## Technical specifications

Connections:	Fixed flange to ISO 6164
Mounting position:	Optional
Housing material:	Steel, zinc-plated
Ambient temperature range:	-10 °C to +80 °C
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Temperature of operating fluid:	-10 °C to +80 °C
Viscosity range:	10 to 380 mm <sup>2</sup> /s
Max. operating pressure	400 bar
Spare parts:	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Bypass Actuator Limit controls Lock

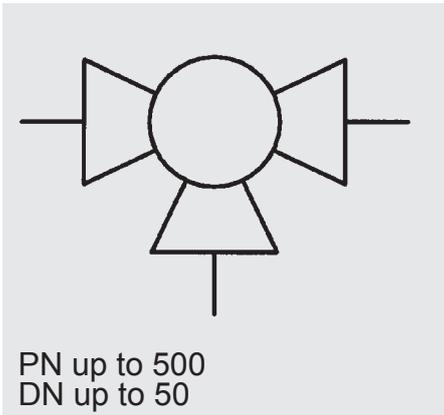
### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

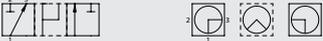


PN up to 500  
DN up to 50

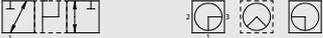
### Function diagram

3/2-way change over ball valves

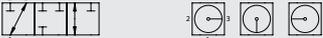
L-bore, 90° neg.



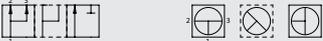
L-bore SO560, 90° neg.



L-bore SO560.1, 180° pos.



T-bore, 90° neg.



T-bore, 180° neg.



= undefined switching position

## 3/2 Way Ball Valves KHB3K

### Model code

(also order example)

**KHB3K** **G 1/2** **L** **1112** **01** **X** **A** ...

### Designation

KHB3K = 3/2 way ball valve

### Type of connection

G = Whitworth female thread ISO 228  
LR = Pipe connection light range DIN 2353  
SR = Pipe connection heavy range DIN 2353  
NPT = Female thread ANSI B 1.20.1  
SAE = Female thread SAE J 514 UN/UNF

### Ball bore

### Materials

*Housing, connection adapters*

1 = Steel  
3 = Stainless steel

*Ball, control spindle*

1 = Steel  
3 = Stainless steel

*Ball seals*

1 = POM  
3 = PTFE  
8 = PEEK

*Control spindle seal*

2 = NBR (Perbunan)  
3 = PTFE  
4 = FKM (Viton)

### Handle

01 = Aluminium clamped handle, straight  
02 = Aluminium clamped handle, cranked  
03 = Zinc die-cast clamped handle, straight  
04 = Zinc die-cast bolt-on handle, cranked  
06 = Steel bolt-on handle, cranked  
09 = Without handle

### Series

(determined by manufacturer)

### Surface protection

... = Phosphate-plated (no details required)  
A = Zinc-plated, chrome (VI)-free

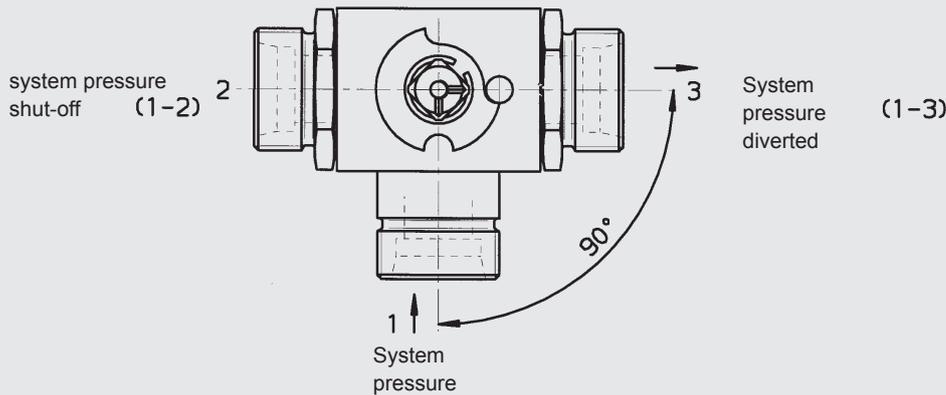
### Option

SO560 = Seals on inlet side, negative switching overlap, switch 90°  
SO560.1 = Seals on inlet side, positive switching overlap, switch 180°  
TT = O-rings for low temperature, temperature range -40 °C to +80 °C  
SO 940 = Ball valve with 4 fixing holes (for example, panel mounting)  
SO 1073 = Ball Valve with 2 through holes

## Technical specifications

Types of connection:	Light and heavy threaded pipe fitting to DIN 2353 Whitworth female thread to ISO 228 NPT SAE
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 500
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Spare parts:	Seal kits available on request

## Function



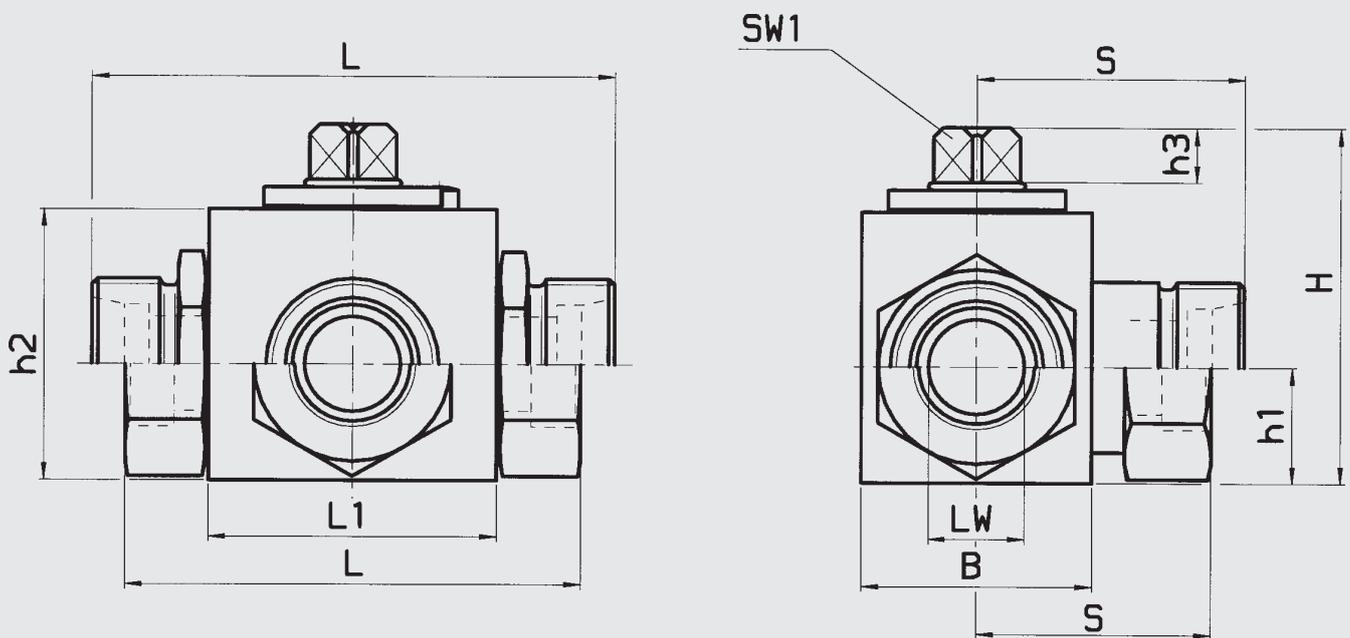
By turning the control spindle the flow is diverted, according to the ball bore, and the opposite side is shut off leakage-free.

The system pressure pushes the ball against the non-pressurised side of the closed-off sealing cup. The ball shuts off the flow from port 1 to port 2 or 3 leakage-free.

When the direction of flow is from 2 or 3 to 1, some leakage can be expected, depending on the pressure. During change-over all three ports are linked (negative switching overlap).

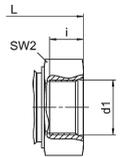
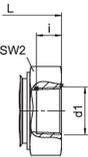
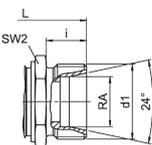
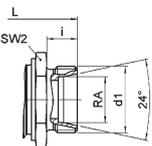
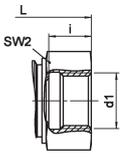
## Dimensions

3/2 way ball valve

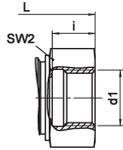
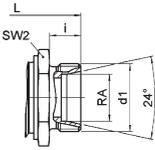
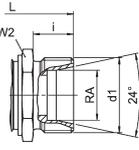


# Steel

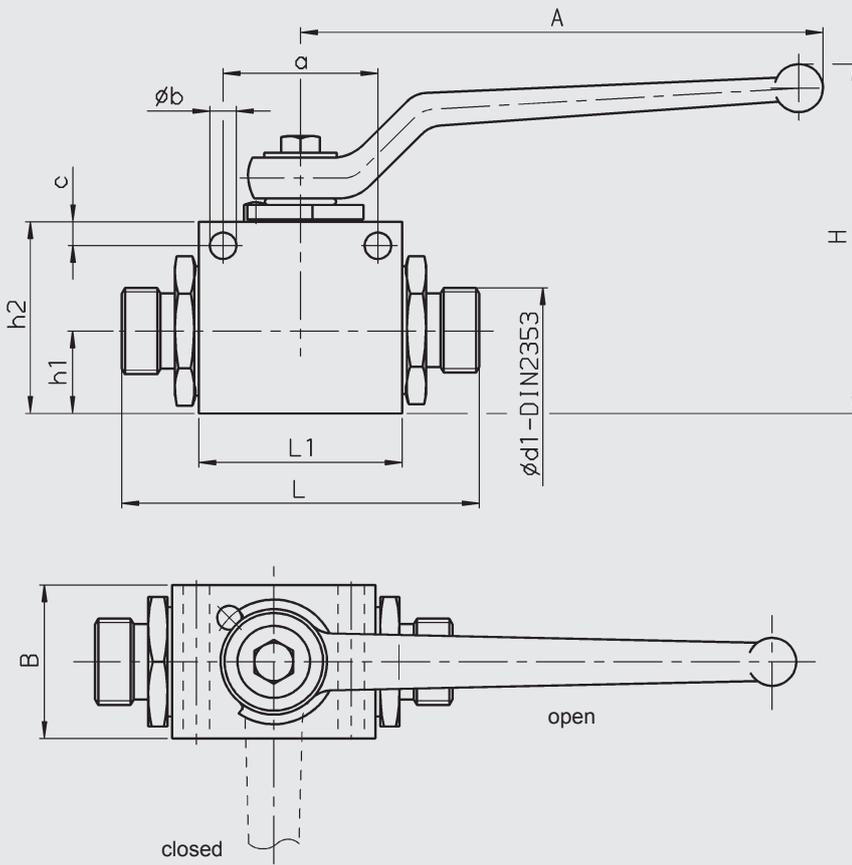
Connection type	Type	DN	Int. Ø LW	RA	d1	l	L	L1	B	H	h1	h2	h3	S	SW1	SW2	Weight [kg]	Nom. pressure PN [bar]
<b>DIN ISO 228</b> Female thread	KHB3K-G1/8	4	8	-	G1/8	10	69	37	26	43.7	13	32	7	34.5	9	22	0.40	500
	KHB3K-G1/4	6	8	-	G1/4	14	69	37	26	43.7	13	32	7	34.5	9	22	0.49	500
	KHB3K-G3/8	10	10	-	G3/8	14	72	42	32	53.2	17.2	40	8.5	36	9	27	0.61	500
	KHB3K-G1/2	13	12	-	G1/2	15	84	47	35	53.2	17.2	40	8.5	41.5	9	30	0.76	500
	KHB3K-G1/2	16	15	-	G1/2	16	83	47	38	62.2	19	45	11	41.5	12	32	0.87	400
	KHB3K-G3/4	20	20	-	G3/4	18	95	60	49	77.8	27.5	60	11.6	47.5	14	41	1.57	315
	KHB3K-G1	25	25	-	G1	20.5	113	65	58	82.6	29.5	65	11.6	56.5	14	50	2.36	315
	KHB3K-G11/4	32	30	-	G11/4	20	110	76	110.5	108.5	43.3	90	12	70.5	17	65	5.50	350
	KHB3K-G11/2	40	35	-	G11/2	24	120	85	115.5	114.7	43.5	96.2	12	72	17	75	6.40	350
	KHB3K-G2	50	44	-	G2	28	150	120	135	138.5	59.8	120	12	75	17	80	16.90	350
<b>DIN 2353</b> Light range	KHB3K-06LR	4	4	6	M12x1.5	7	67	37	26	43.7	13	32	7	33.5	9	22	0.30	500
	KHB3K-08LR	6	6	8	M14x1.5	7	67	37	26	43.7	13	32	7	33.5	9	22	0.38	500
	KHB3K-10LR	8	8	10	M16x1.5	11	74	42	32	53.2	17.2	40	8.5	37	9	27	0.55	500
	KHB3K-12LR	10	10	12	M18x1.5	11	74	42	32	53.2	17.2	40	8.5	37	9	27	0.55	500
	KHB3K-15LR	13	12	15	M22x1.5	12	82	47	35	53.2	17.2	40	8.5	41	9	30	0.69	500
	KHB3K-18LR	13	12	18	M26x1.5	12	82	47	35	53.2	17.2	40	8.5	41	9	30	0.77	500
	KHB3K-18LR	16	15	18	M26x1.5	12	82	47	38	62.2	19	45	11	41	12	32	0.78	400
	KHB3K-22LR	20	19	22	M30x2	14	101	60	49	77.8	27.5	60	11.6	50.5	14	41	1.49	315
	KHB3K-28LR	25	24	28	M36x2	14	108	65	58	82.6	29.5	65	11.6	54	14	50	1.98	315
	KHB3K-35LR	32	30	35.3	M45x2	16	128	76	80	108.5	43.3	90	12	69	17	65	2.90	350
KHB3K-42LR	40	35	42.3	M52x2	16	149	85	87	114.7	43.5	96.2	12	74.5	17	75	5.20	350	
<b>DIN 2353</b> Heavy range	KHB3K-08SR	4	5	8	M16x1.5	7	73	37	26	43.7	13	32	7	36.5	9	22	0.41	500
	KHB3K-10SR	6	7	10	M18x1.5	7.5	73	37	26	43.7	13	32	7	36.5	9	22	0.41	500
	KHB3K-12SR	8	8	12	M20x1.5	12	76	42	32	53.2	17.2	40	8.5	38	9	27	0.58	500
	KHB3K-14SR	10	10	14	M22x1.5	14	80	42	32	53.2	17.2	40	8.5	40	9	27	0.71	500
	KHB3K-16SR	13	12	16	M24x1.5	14	86	47	35	53.2	17.2	40	8.5	43	9	30	0.79	500
	KHB3K-20SR	13	12	20	M30x2	16	90	47	35	53.2	17.2	40	8.5	45	9	30	0.84	500
	KHB3K-20SR	16	15	20	M30x2	16	90	47	38	62.2	19	45	11	45	12	32	1.54	400
	KHB3K-25SR	20	20	25	M36x2	18	109	60	49	77.8	27.5	60	11.6	54.5	14	41	2.11	315
	KHB3K-30SR	25	25	30	M42x2	20	120	65	58	82.6	29.5	65	11.6	60	14	50	2.40	315
	KHB3K-38SR	32	30	38.3	M52x2	22	140	76	80	108.5	43.3	90	12	74	17	65	2.60	350
<b>ANSI B1.20.1</b> NPT female thread	KHB3K-06NPT	6	8	-	1/4-18 NPT	10.21	69	37	26	43.7	13	32	7	34.5	9	22	0.60	500
	KHB3K-10NPT	10	10	-	3/8-18 NPT	10.36	72	42	32	53.2	17.2	40	8.5	36	9	27	0.60	500
	KHB3K-16NPT	13	12	-	1/2-14 NPT	13.56	84	47	35	53.2	17.2	40	8.5	41.5	9	30	0.30	500
	KHB3K-16NPT	16	15	-	1/2-14 NPT	13.56	83	47	38	62.2	19	45	11	41.5	12	32	0.80	400
	KHB3K-20NPT	20	20	-	3/4-14 NPT	13.86	95	60	49	77.8	27.5	60	11.6	47.5	14	41	1.57	315
	KHB3K-25NPT	25	25	-	1-11 1/2 NPT	17.34	113	65	58	82.6	29.5	65	11.6	56.5	14	50	2.20	315
	KHB3K-32NPT	25	25	-	1 1/4-11 1/2 NPT	17.95	120	65	58	86.5	29.5	65	12.4	60	14	50		315
	KHB3K-32NPT	32	32	-	1 1/4-11 1/2 NPT	17.95	115	76	110	108.5	43.3	90	12	70	17	65	5.90	350
	KHB3K-40NPT	40	35	-	1 1/2-11 1/2 NPT	18.38	135	85	118.5	114.7	43.5	96.2	12	75	17	75	7.90	350
	KHB3K-50NPT	50	48	-	2 - 11 1/2 NPT	19.22	150	120	145	138.5	59.8	120	12	85	17	80	13.80	350
<b>SAE J 514 UN/UNF</b> Female thread	KHB3K-06SAE	6	8	-	7/16-20 UNF	12	69	37	26	43.7	13	32	7	34.5	9	22	0.36	500
	KHB3K-10SAE	10	10	-	9/16-18 UNF	13	72	42	32	53.2	17.2	40	8.5	36	9	27	0.54	500
	KHB3K-16SAE	16	15	-	3/4-16 UNF	15	83	47	38	62.2	19	45	11	41.5	12	32	0.80	500
	KHB3K-20SAE	20	20	-	1 1/16-12 UN	20	100	60	49	77.8	27.5	60	11.6	47.5	14	41	1.45	315
	KHB3K-25SAE	25	25	-	1 5/16-12 UN	20	113	65	58	82.5	29.5	65	11.6	56.5	14	50	2.28	315
	KHB3K-32SAE	32	32	-	1 5/8-12 UN	20	110	76	110.5	108.5	43.3	90	12	70.5	17	65	5.60	350
	KHB3K-40SAE	40	35	-	1 7/8-12 UN	20	120	85	119	114.7	43.5	96.2	12	75.5	17	75	7.40	350
	KHB3K-50SAE	50	48	-	2 1/2-12 UN	20	150	120	145.5	138.5	59.8	120	12	85.5	17	80	14.50	350



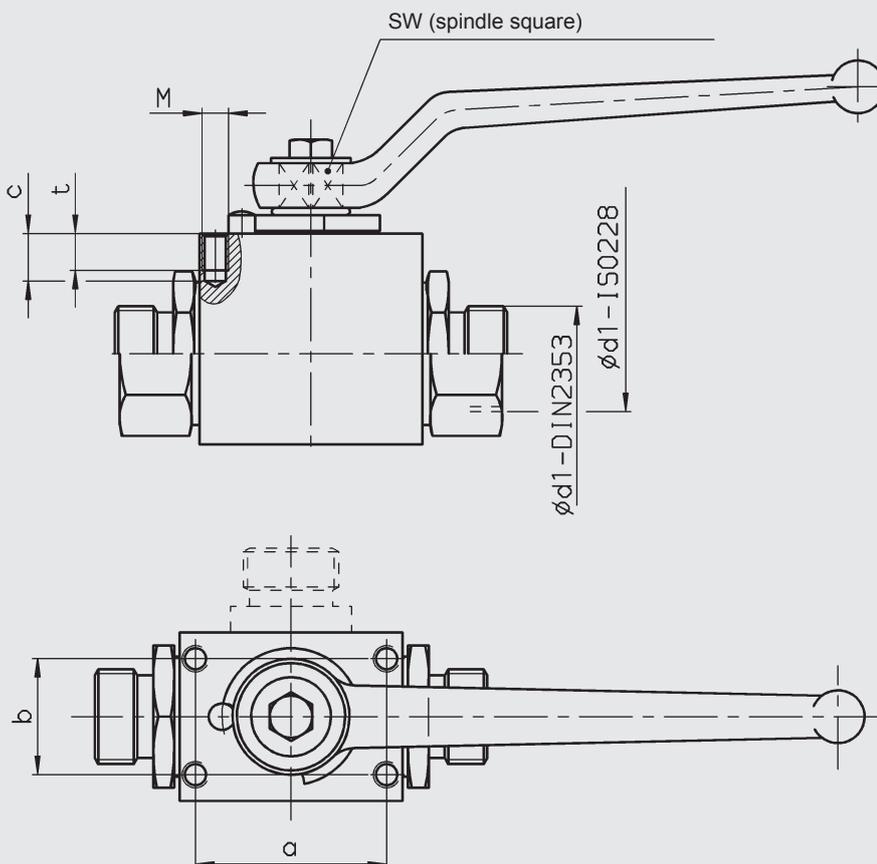
## Stainless steel

Connection type	Type	DN	Int. Ø LW	RA	d1	l	L	L1	B	H	h1	h2	h3	S	SW1	SW2	Weight [kg]	Nom. pressure PN [bar]
<b>DIN ISO 228</b> Female thread 	KHB3K-G1/8	4	8	–	G1/8	10	69	37	29	45.2	14.5	33.5	7	34.5	9	22	0.41	500
	KHB3K-G1/4	6	8	–	G1/4	14	69	37	29	45.2	14.5	33.5	7	34.5	9	22	0.49	500
	KHB3K-G3/8	10	10	–	G3/8	14	72	42	35	50.7	17.2	40	8.5	36	9	27	0.62	500
	KHB3K-G1/2	13	12	–	G1/2	16	84	42	35	53.2	17.2	40	8.5	41.5	9	30	0.8	500
	KHB3K-G1/2	16	15	–	G1/2	16	82.8	47	41	63.7	20.5	46.5	11	41.5	12	32	1	400
	KHB3K-G3/4	20	20	–	G3/4	18	95	60	49	77.8	27.5	60	11.6	47.5	14	41	1.9	315
	KHB3K-G1	25	25	–	G1	20.5	113	65	58	82.6	29.5	65	11.6	56.5	14	50	2.4	315
<b>DIN 2353</b> Light range 	KHB3K-06LR	4	4	6	M12x1.5	10	67	37	29	45.2	14.5	33.5	7	33.5	9	22	0.36	500
	KHB3K-08LR	6	6	8	M14x1.5	10	67	37	29	45.2	14.5	33.5	7	33.5	9	22	0.36	500
	KHB3K-10LR	8	8	10	M16x1.5	11	74	42	35	53.2	17.2	40	8.5	37	9	27	0.72	500
	KHB3K-12LR	10	10	12	M18x1.5	11	74	42	35	53.2	17.2	40	8.5	37	9	27	0.73	500
	KHB3K-15LR	13	12	15	M22x1.5	12	82	42	35	53.2	17.2	40	8.5	41	9	30	0.9	500
	KHB3K-18LR	13	12	18	M26x1.5	12	82	42	35	53.2	17.2	40	8.5	41	9	30	0.92	500
	KHB3K-18LR	16	15	18	M26x1.5	12	81.8	47	41	63.7	20.5	46.5	11	41	12	32	0.95	400
	KHB3K-22LR	20	19	22	M30x2	14	101	60	49	77.8	27.5	60	11.6	50.5	14	41	2.02	315
	KHB3K-28LR	25	24	28	M36x2	14	108	65	58	82.6	29.5	65	11.6	54	14	50	2.13	315
<b>DIN 2353</b> Heavy range 	KHB3K-08SR	4	5	8	M16x1.5	12	73	37	29	45.2	14.5	33.5	7	36.5	9	22	0.39	500
	KHB3K-10SR	6	7	10	M18x1.5	12	73	37	29	45.2	14.5	33.5	7	36.5	9	22	0.39	500
	KHB3K-12SR	8	8	12	M20x1.5	12	76	42	35	53.2	17.2	40	8.5	38	9	27	0.74	500
	KHB3K-14SR	10	10	14	M22x1.5	14	80	42	35	53.2	17.2	40	8.5	40	9	27	0.77	500
	KHB3K-16SR	13	12	16	M24x1.5	14	81	42	35	53.2	17.2	40	8.5	40.5	9	30	0.92	500
	KHB3K-20SR	13	12	20	M30x2	16	85	42	35	53.2	17.2	40	8.5	42.5	9	32	1.02	500
	KHB3K-20SR	16	15	20	M30x2	16	89.8	47	41	63.7	20.5	46.5	11	45	12	32	1.6	400
	KHB3K-25SR	20	20	25	M36x2	18	109	60	49	77.8	27.5	60	11.6	54.5	14	41	2.2	315
	KHB3K-30SR	25	25	30	M42x2	20	120	65	58	82.6	29.5	65	11.6	60	14	50	2.4	315

## Through hole dimensions (SO 1073)



## Fixing hole dimensions (SO 940)



## DIN ISO 228

Ød1	DN	L	L1	B	H	h1	h2	a	Øb	c	A
G 1/8	4	69	37	26	64	13	32	28	5.5	4.5	108
G1/4	6	69	37	26	64	13	32	28	5.5	5	108
G 3/8	10	72	42	32	68	17	40	32	5.5	5	108
G 1/2*	13	84	47	35	68	17	40	32	5.5	5	108
G 1/2	16	83	47	38	102	19	45	38	5.5	5	174
G 3/4	20	95	60	48	115	24.5	57	46	6.6	6	174
G1	25	113	65	57	122	28.5	64	46	6.6	6	174

## DIN 2353 Light Range

Ød1	DN	L	L1	B	H	h1	h2	a	Øb	c	A
08LR	6	67	37	26	64	13	32	28	5.5	4	108
10LR	8	71	37	26	64	13	32	28	5.5	4	108
12LR	10	74	42	32	68	17	40	32	5.5	5	108
15LR*	13	82	47	35	68	17	40	32	5.5	5	108
15LR	12	82	47	38	102	19	45	38	5.5	5	174
18LR	16	82	47	38	102	19	45	38	5.5	5	174
22LR	20	101	60	48	115	24.5	57	46	6.6	6	174
28LR	25	108	65	57	122	28.5	64	46	6.6	6	174

## DIN 2353 Heavy Range

Ød1	DN	L	L1	B	H	h1	h2	a	Øb	c	A
08SR	4	73	35	25	55	13	30	27	4.5	4	70
10SR	6	73	35	25	55	13	30	27	4.5	4	70
12SR	8	76	42	32	68	17	40	32	5.5	5	108
14SR	10	80	42	32	68	17	40	32	5.5	5	108
16SR*	12	86	47	35	68	17	40	32	5.5	5	108
16SR	13	86	47	38	102	19	45	38	5.5	5	174
20SR*	16	90	47	35	68	17	40	32	5.5	5	108
20SR	13	90	47	38	102	19	45	38	5.5	5	174
25SR	20	109	60	48	115	24.5	57	46	6.6	6	174
30SR	25	120	65	57	122	28.5	64	46	6.6	6	174

## DIN ISO 228

Ød1	DN	SW	a	b	M	t	c
G 1/8	4	9	28	18	M4	6	8
G1/4	6	9	28	18	M4	6	8
G 3/8	10	9	36	22	M5	7	9
G 1/2*	13	9	36	22	M5	7	9
G 1/2	16	12	36	22	M5	7	9
G 3/4	20	14	45	28	M6	9	11
G1	25	14	45	28	M6	9	11

## DIN 2353 Light Range

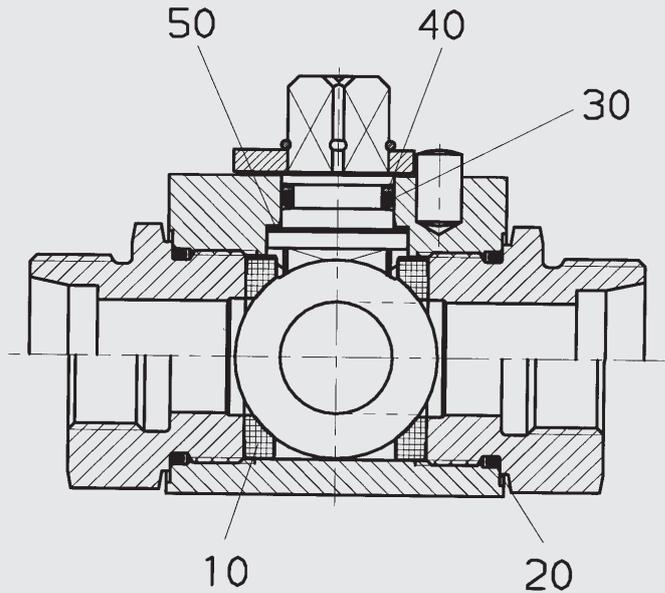
Ød1	DN	SW	a	b	M	t	c
06LR		9	28	18	M4	6	8
08LR	6	9	28	18	M4	6	8
10LR	8	9	36	22	M5	7	9
12LR	10	9	36	22	M5	7	9
15LR*	12	12	36	22	M5	7	9
15LR	13	9	36	22	M5	7	9
18LR	16	12	36	22	M5	7	9
18LR*	13	9	36	22	M5	7	9
22LR	20	14	45	28	M6	9	11
28LR	25	14	45	28	M6	9	11

## DIN 2353 Heavy Range

Ød1	DN	SW	a	b	M	t	c
08SR	4	9	28	18	M4	6	8
10SR	6	9	28	18	M4	6	8
12SR	8	9	36	22	M5	7	9
14SR	10	9	36	22	M5	7	9
16SR	12	12	36	22	M5	7	9
16SR*	13	9	36	22	M5	7	9
20SR	16	12	36	22	M5	7	9
20SR*	13	9	36	22	M5	7	9
25SR	20	14	45	28	M6	9	11
30SR	25	14	45	28	M6	9	11

\* reduced bore

## SPARE PARTS (SEAL KIT)



Seal kit	Order No. = Part No.
DN 04/06	703 048
DN 08/10	703 014
DN 13	703 046
DN 12/16	703 010
DN 20	703 005
DN 25	703 004

The parts indicated by numbers in the above drawing are contained in the seal kit.

## NOTE

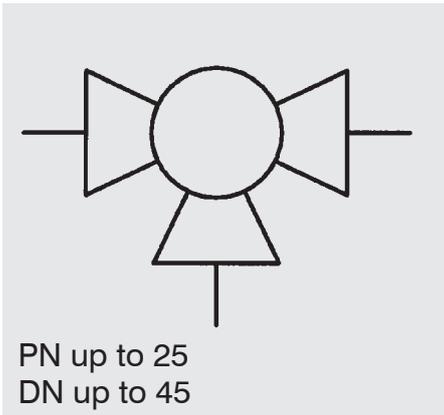
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

## Change-Over Low Pressure Ball Valves

### KHN3K



#### Model code

(also order example)

**KHN3K** **G1/2** **L** **2233** **12** **X**

#### Designation

KHN3K = change-over low pressure ball valve

#### Connection type

Thread size

#### Ball bore

L

T

#### Materials

*Housing, connection adapters*

2 = Nickel-plated brass

*Ball, control spindle*

2 = Brass, hard-chromed

*Ball seal*

3 = PTFE (Teflon)

*Control spindle seal*

3 = PTFE (Teflon)

#### Handle

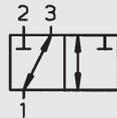
12 = Aluminium clamped handle, cranked, fitted

#### Series

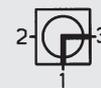
X = Determined by manufacturer

#### Switching functions (as supplied)

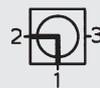
3/2 way change-over ball valve



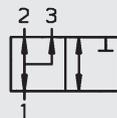
L-bore



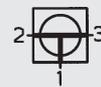
90° switch



3/2 way change-over ball valve



T-bore

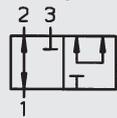


90° switch



**By moving the control spindle through 90°, the following switching positions can also be achieved.**

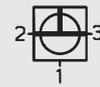
3/2 way change-over ball valve



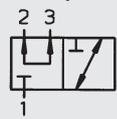
T-bore



90° switch



3/2 way change-over ball valve



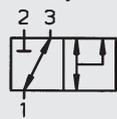
T-bore



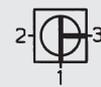
90° switch



3/2 way change-over ball valve



T-bore



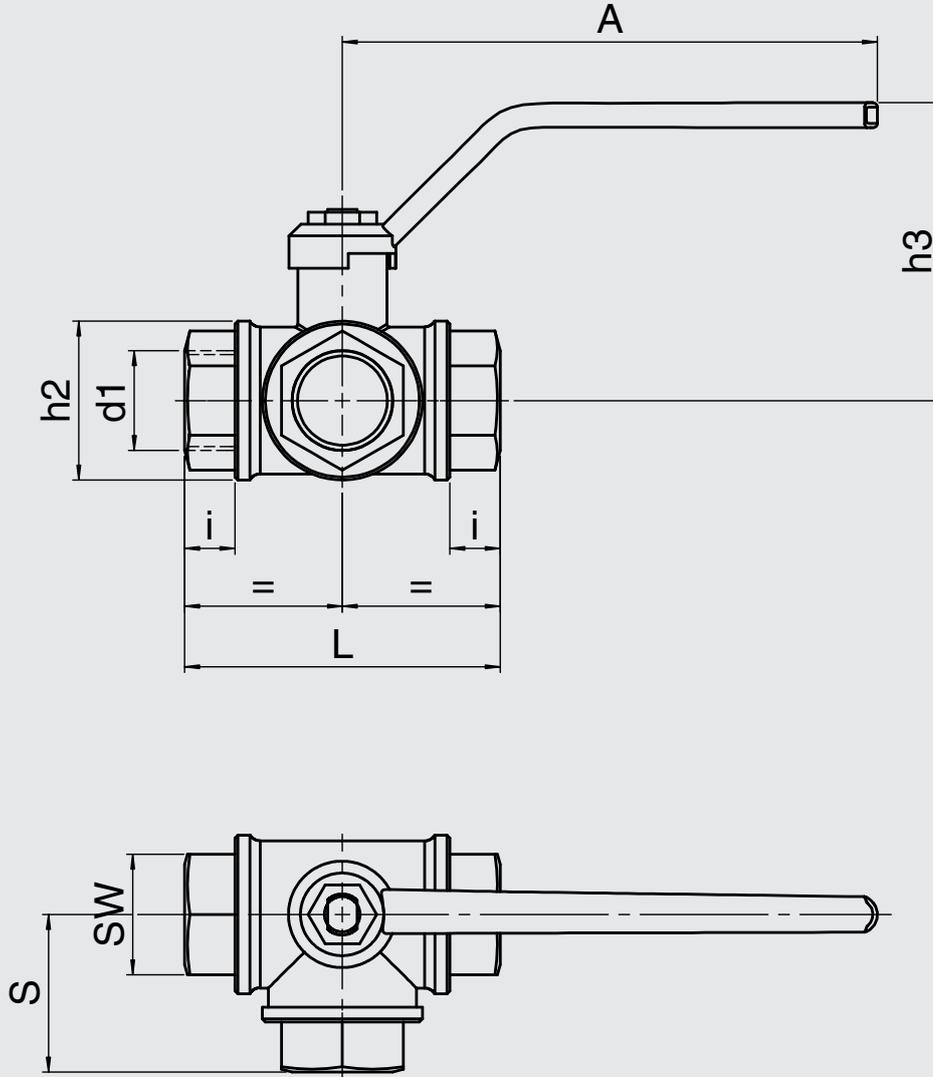
90° switch



## Technical specifications

Connection:	Whitworth female thread to ISO 228
Mounting position:	Optional
Ambient temperature:	-20 °C to +150 °C
Nominal pressure:	Up to 25 bar
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2, water and compressed air (other media on request)
Temperature of operating fluid:	-20 °C to +150 °C

## DIMENSIONS



Type	Ball bore	Size d1	L [mm]	h2 [mm]	SW	A [mm]	i [mm]	Nominal bore DN	S [mm]	h3 [mm]	Nominal pressure PN [bar]	[psi]	Weight [kg]
KHN3K-G1/4	L, T	1/4"	77	39	22	125	19	8	38.5	65.5	25	360	0.78
KHN3K-G3/8	L, T	3/8"	77	39	22	125	19	10	38.5	65.5	25	360	0.74
KHN3K-G1/2	L, T	1/2"	77	39	27	125	19	15	38.5	65.5	25	360	0.77
KHN3K-G3/4	L, T	3/4"	92	47	34	145	23	20	46.5	83.5	25	360	1.26
KHN3K-G1	L, T	1"	104	55	41	170	25	25	52.5	96.5	25	360	1.91
KHN3K-G1 1/4	L, T	1 1/4"	118	65	50	170	27	32	59.5	101.5	25	360	2.64
KHN3K-G1 1/2	L, T	1 1/2"	138	79	57	170	31	40	69.5	105.5	25	360	4.2
KHN3K-G2	L, T	2"	162	93	70	260	36	50	81.5	139.5	25	360	6.66

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

## HYDAC Accessories GmbH

Hirschbachstr. 2

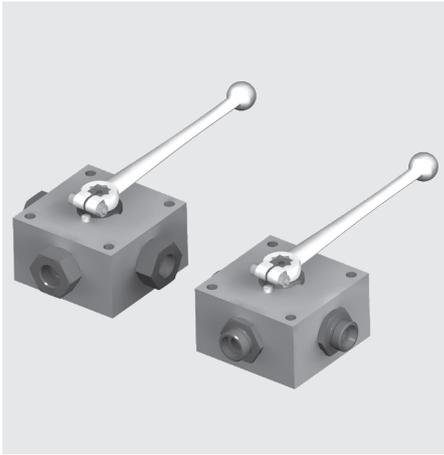
**66280 Sulzbach/Saar**

Tel.: +49 (0)6897 - 509-01

Fax: +49 (0)6897 - 509-1009

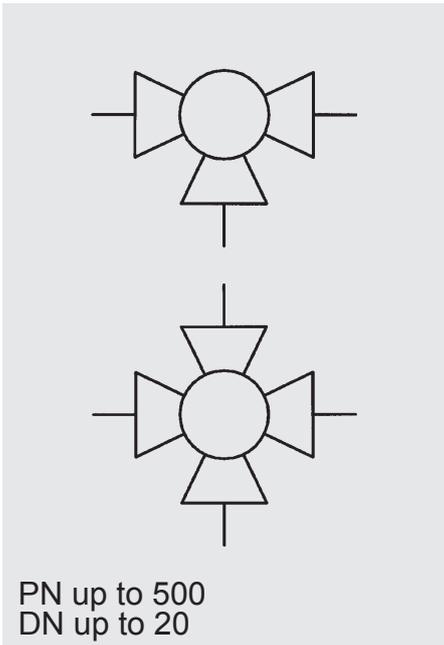
Internet: [www.hydac.com](http://www.hydac.com)

E-Mail: [info@hydac.com](mailto:info@hydac.com)



## 3-Way and 4-Way Ball Valves

KH3 / KH4



### Model code

(also order example)

KH3 G1/2 L 1114 06 X

### Designation

KH3 = 3-way ball valve  
KH4 = 4-way ball valve

### Nominal bore

### Ball bore

KH3 - L  
KH3 - T  
KH4 - T  
KH4 - X

### Materials

*Housing, connection adapters*

1 = Steel  
3 = Stainless steel

*Ball, control spindle*

1 = Steel  
3 = Stainless steel

*Ball seal*

1 = POM  
3 = PTFE  
8 = PEEK

*Control spindle seal*

2 = NBR (Perbunan)  
4 = FKM (Viton)

### Handle

01 = Aluminium clamped handle, straight  
02 = Aluminium clamped handle cranked  
03 = Zinc die-cast clamped handle, straight  
04 = Zinc die-cast bolt-on handle, cranked  
06 = Steel bolt-on handle, cranked  
09 = Without handle

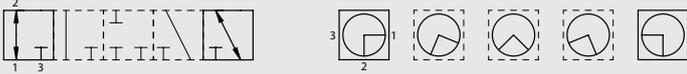
### Series

(determined by manufacturer)

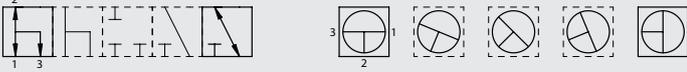
## Standard model functions

(available as standard)

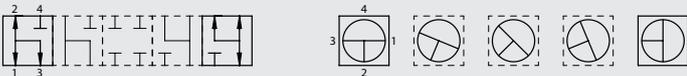
Three-way ball valve L bore, 90°, pos.



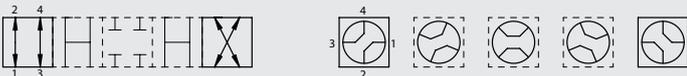
Three-way ball valve T bore, 90°, pos.



Four-way ball valve T bore, 90°, pos.



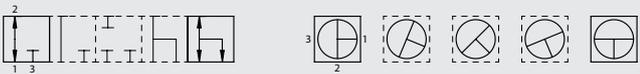
Four-way ball valve X bore, 90°, pos.



## Non-standard model functions

For different applications, it is possible to produce other non-standard models by using special limit discs and detent pins.

Three-way ball valve SO 926, 90°, pos.



Three-way ball valve SO 376, 45°, neg.



Three-way ball valve SO 377, 45°, neg.



Three-way ball valve 180°, pos.



Three-way ball valve SO 926.1, 180°, pos.



Three-way ball valve SO 926.2, 180°, pos.



Three-way ball valve SO 378, 90°, pos.



Three-way ball valve SO 379, 90°, pos.



Three-way ball valve SO 381, 90°, neg.



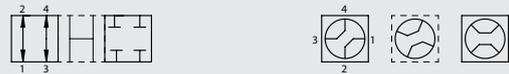
Three-way ball valve SO 382, 90°, neg.



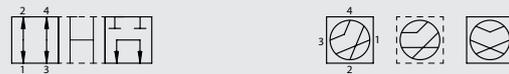
Three-way ball valve SO 380, 90°, neg.



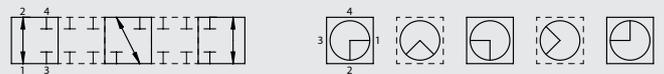
Four-way ball valve SO 384, 45°, neg.



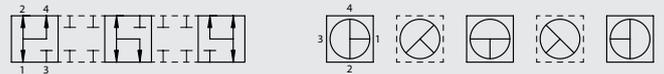
Four-way ball valve SO 383, 45°, neg.



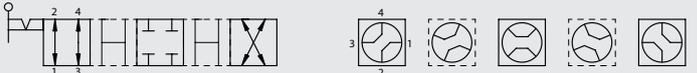
Four-way ball valve 180°, pos.



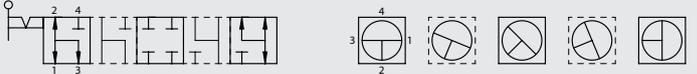
Four-way ball valve 180°, pos.



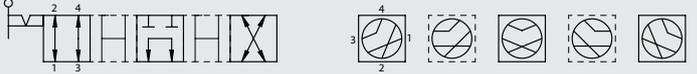
Four-way ball valve SO 385, 90°, pos.



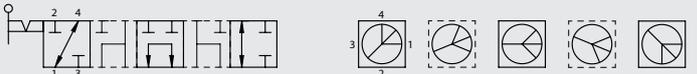
Four-way ball valve SO 389, 90°, pos.



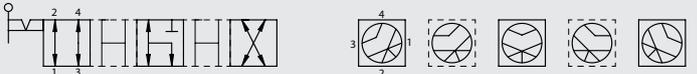
Four-way ball valve SO 388, 90°, neg.



Four-way ball valve SO 391, 90°, neg.



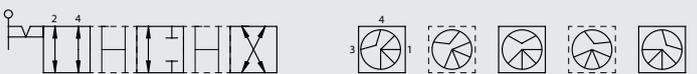
Four-way ball valve SO 386, 90°, neg.



Four-way ball valve SO 392, 90°, neg.



Four-way ball valve SO 387, 90°, neg.



Four-way ball valve SO 390, 90°, neg.



 undefined switching position

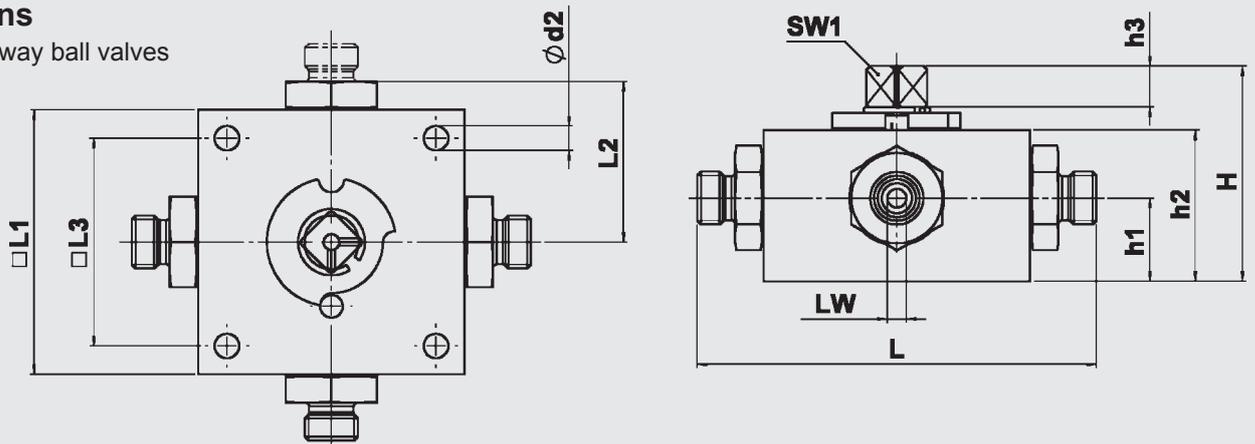
 Centre position (45°) detented

## Technical specifications

Types of connection:	Light and heavy threaded pipe fitting to DIN 2353 Whitworth female thread to ISO 228 NPT SAE
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 500
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Spare parts:	Seal kits available on request

## Dimensions

3-way and 4-way ball valves



Type	DN	Bore int. Ø LW			RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nominal pressure PN [bar]
KH3/4-G1/8	4	6	6	4.5		G1/8	10	100	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-G1/4	6	6	6	4.5		G1/4	14	100	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-G3/8	10	9	9	6		G3/8	14	115	80	46	65	67.5	27	50	11.5	6.5	14	30	2.4	500
KH3/4-G1/2	16	13	13	10		G1/2	16	135	100	56	80	77.5	31	60	11.5	9	14	36	4.3	400
KH3/4-G3/4	20	18	18	14		G3/4	18	144	100	58	85	91	36	73	11.5	9	17	46	6	315

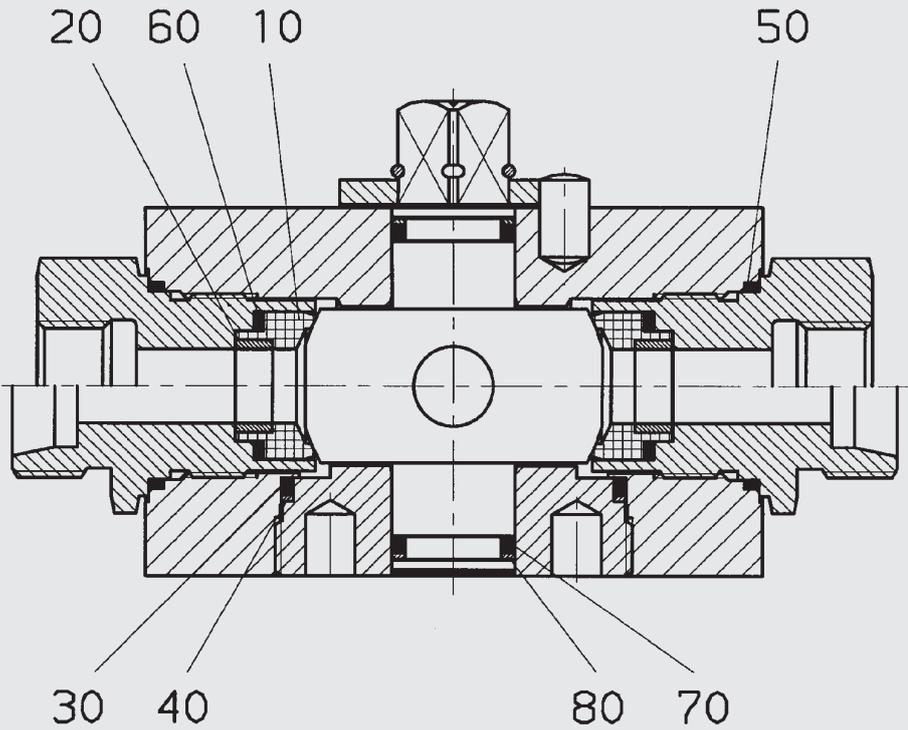
Type	DN	Bore int. Ø LW			RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nominal pressure PN [bar]
KH3/4-06LR	4	6	6	4.5	6	M12x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-08LR	6	6	6	4.5	8	M14x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-10LR	8	9	9	6	10	M16x1.5	11	114	80	46	65	67.5	27	50	11.5	6.5	14	30	2.4	500
KH3/4-12LR	10	9	9	6	12	M18x1.5	11	114	80	46	65	67.5	27	50	11.5	6.5	14	30	2.4	500
KH3/4-15LR	12	13	13	10	15	M22x1.5	12	136	100	56	80	77.5	31	60	11.5	9	14	36	4.3	400
KH3/4-18LR	16	13	13	10	18	M26x1.5	12	136	100	56	80	77.5	31	60	11.5	9	14	36	4.3	400
KH3/4-22LR	20	18	18	14	22	M30x2	14	143	100	58	85	91	36	73	11.5	9	17	46	6	315

Type	DN	Bore int. Ø LW			RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nominal pressure PN [bar]
KH3/4-08SR	4	6	6	4.5	8	M16x1.5	12	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-10SR	6	6	6	4.5	10	M18x1.5	12	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-12SR	8	9	9	6	12	M20x1.5	12	116	80	46	65	67.5	27	50	11.5	6.5	14	30	2.4	500
KH3/4-14SR	10	9	9	6	14	M22x1.5	14	120	80	46	65	67.5	27	50	11.5	6.5	14	30	2.4	500
KH3/4-16SR	12	13	13	10	16	M24x1.5	14	140	100	56	80	77.5	31	60	11.5	9	14	36	4.3	400
KH3/4-20SR	16	13	13	10	20	M30x2	16	144	100	56	80	77.5	31	60	11.5	9	14	36	4.3	400
KH3/4-25SR	20	18	18	14	25	M36x2	18	151	100	58	85	91	36	73	11.5	9	17	46	6	315

Type	DN	Bore int. Ø LW			RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nominal pressure PN [bar]
KH3/4-06NPT	6	6	6	4.5		1/4 - 18 NPT	10.21	100	70	42.5	55	83	22	40	11	6.5	12	24	1.75	500
KH3/4-10NPT	10	9	9	6		3/8 - 18 NPT	10.36	115	80	46	65	63.5	27	50	11.5	6.5	14	30	2.7	500
KH3/4-12NPT	12	13	13	10		1/2 - 14 NPT	13.56	135	100	56	85	75.5	31	60	11.5	9	14	36	4.8	400
KH3/4-20NPT	20	18	18	14		3/4 - 14 NPT	13.86	144	100	58	85	92	36	73	11.5	9	17	46	6.3	315

Type	DN	Bore int. Ø LW			RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nominal pressure PN [bar]
KH3/4-10SAE	10	9	9	6		9/16-18 UNF	13	115	80	46	65	63.5	27	50	11.5	6.5	14	30	2.68	500
KH3/4-12SAE	12	9	9	10		3/4-16 UNF	15	135	100	56	80	75.5	31	60	11.5	9	14	36	4.75	400
KH3/4-20SAE	20	13	13	14		1 1/16 - 12 UN	20	144	100	58	85	91	36	73	10.5	9	17	46	6.1	315

## Spare parts (seal kit)



Seal kit	Order No. = Part No.
DN 04/06	703 028
DN 08/10	703 017
DN 12/16	703 129
DN 20	703 029

The parts indicated by numbers in the above drawing are contained in the seal kit.

## NOTE

The information in this brochure relates to the operating conditions and applications described.

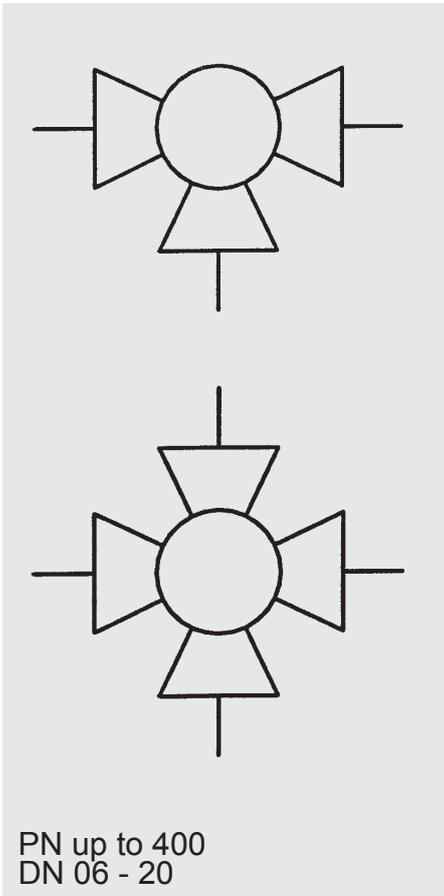
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.



## 3-Way and 4-Way Manifold Mounted Ball Valves

KH3P / KH4P



**Model code**  
(also order example)

**KH3P 16 L 1114 02 X ...**

**Designation**

KH3P = 3-way manifold mounted ball valves  
KH4P = 4-way manifold mounted ball valves

**Nominal bore**

**Ball bore**

L, T, X  
(according to table on next page)

**Materials**

*Housing, blanking plug, locking screw*

- 1 = Steel
- 3 = Stainless steel

*Ball spindle*

- 1 = Steel
- 3 = Stainless steel

*Ball seal*

- 1 = POM (polyacetal)

*Soft seal*

- 4 = FKM (Viton)

(other materials on request)

**Handle**

- 09 = Without handle
- 02 = Aluminium clamped handle, cranked

**Series**

(determined by manufacturer)

**Special model**

SO ... = Special model according to customer specifications

180 Grad = 180° switch

(Please see examples on the next page)

## Standard models

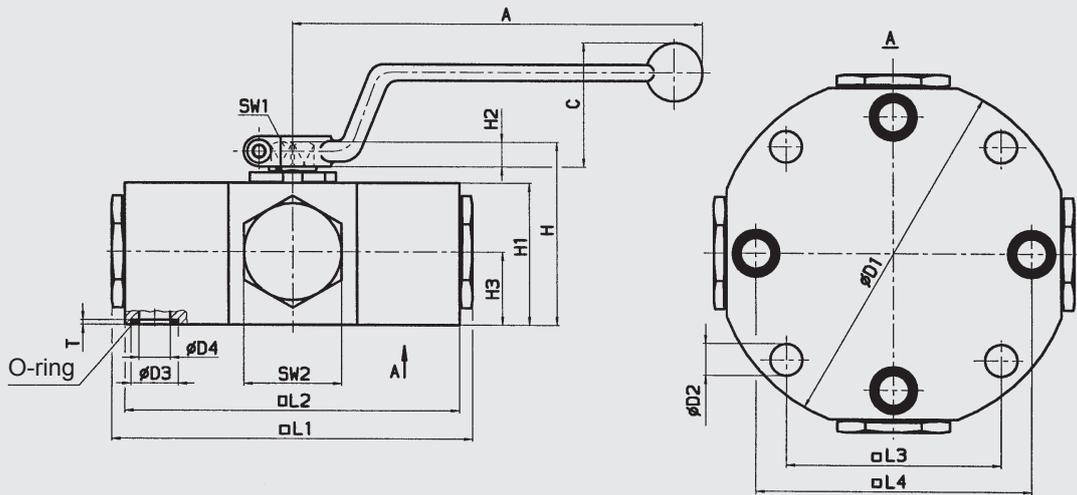
	Ball bore	Switch movement	Function diagram	SO ... Model	
<b>KH3P</b>	L	0° - 90°			-
	T	0° - 45°			45 Grad
	T	0° - 90°			-
	T	0° - 90° - 180°			180 Grad
	L	0° - 45° - 90°			SO 378
	T	0° - 45° - 90°			SO 379
<b>KH4P</b>	T	0° - 90°			-
	X	0° - 45°			45 Grad
	X	0° - 90°			-
	L	0° - 90° - 180°			180 Grad
	T	0° - 90° - 180°			180 Grad
	X	0° - 45° - 90°			SO 385
	T	0° - 45° - 90°			SO 389

\* - detent position at 45°

--- undefined switching position

Other models or special ball bores on request

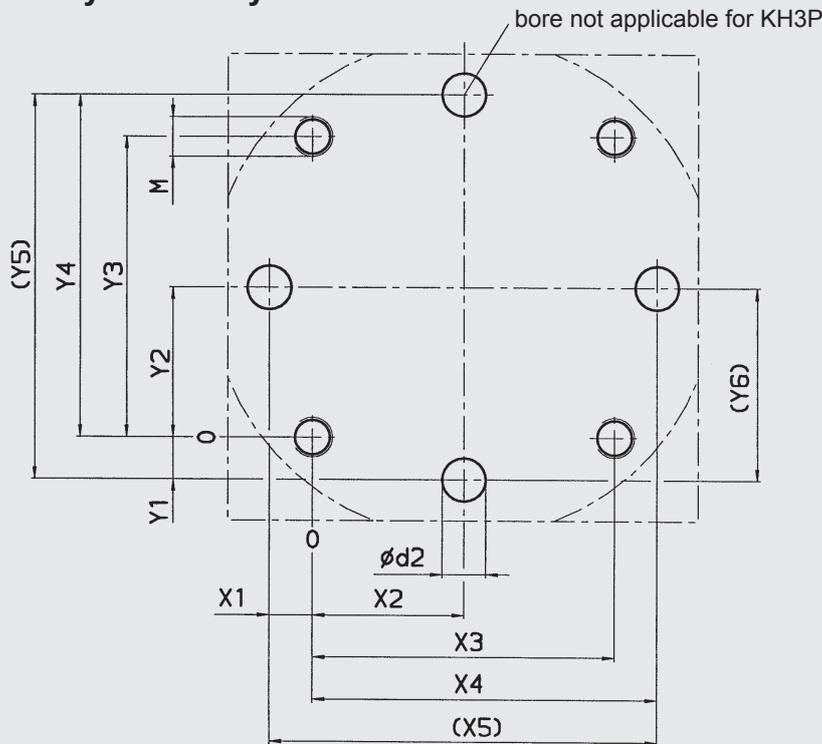
### 3-way and 4-way manifold mounted ball valve with cranked aluminium handle



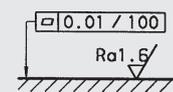
DN	Int. diam.			L1	L2	L3	L4	H	H1	H2	H3	D1	D2	D3	D4	SW 1	SW 2	T
	L	T	X															
06	5	5	4.5	103	90	70	68.6	57	40	11	22	--	6.5	11.7	6	12	27	1.9
10	9	9	6	113	100	80	81	67.5	50	11.5	27	--	9	14.7	8	14	30	1.9
16	12	12	10	152.5	140	90	115.4	77.5	60	11.5	31.5	150	13.5	19.7	13	14	41	2
20	18	18	14	184	170	100	137	92	73	11.5	36	180	13.5	28.8	18	17	46	2

DN	A	C	O-ring	Weight (kg)	Pressure range PN [bar]
06	163	52	7.3 x 2.4	2.5	400
10	183	54	10.3 x 2.4	3.7	315
16	183	54	15 x 2.5	7.5	315
20	227	55	24 x 2.5	13.1	250

### Interface for 3-way and 4-way manifold mounted ball valve



Required surface finish on interface area



Dimensional tolerances ISO 2768 m

DN	Y1	Y2	Y3	Y4	Y5	Y6	X1	X2	X3	X4	X5	d2	M	Int. hex. screw ISO 4762 (property class)	Torque value MA [Nm]*
06	0.7	35	70	69.3	68.6	34.3	0.7	35	70	69.3	68.6	6	M 6	M 6 - 12.9	10
10	-0.5	40	80	80.3	81.0	40.5	-0.5	40	80	80.5	81.0	8	M 8	M 8 - 12.9	20
16	-12.7	45	90	102.7	115.4	57.7	-12.7	45	90	102.7	115.4	13	M 12	M 12 - 12.9	65
20	-18.5	50	100	118.5	137.0	68.5	-18.5	50	100	118.5	137.0	18	M 12	M 12 - 12.9	70

\* Standard values for friction coefficient  $\mu$  0.14

## Technical specifications

Mounting position:	optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 400 (see pressure range)
Operating fluids:	mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
<b>Spare parts:</b>	Seal kits available on request
<b>Accessories:</b>	All ball valves can be supplied with the following options: Actuator Limit switch Lock

### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

### HYDAC Accessories GmbH

Hirschbachstr. 2

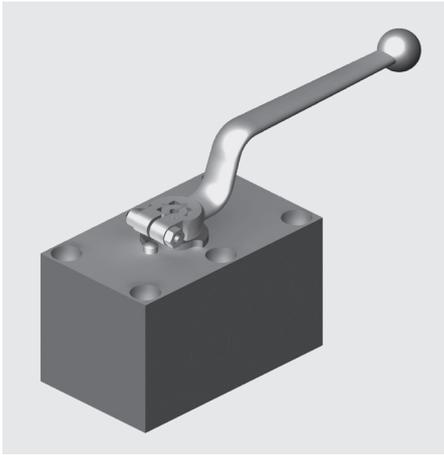
**66280 Sulzbach/Saar**

Tel.: +49 (0)6897 - 509-01

Fax: +49 (0)6897 - 509-1009

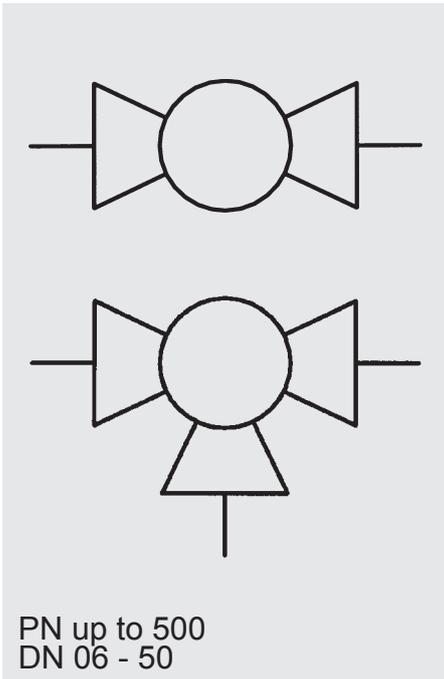
Internet: [www.hydac.com](http://www.hydac.com)

E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Manifold Mounted Ball Valves

### KHP / KHP3K



PN up to 500  
DN 06 - 50

**Model code**  
(also order example)

**KHP3K 16 L 1114 06 X ...**

#### Designation

KHP = 2/2 way manifold ball valve (DN 06 - 50)

KHP3K = 3/2 or 3/3 way manifold mounted ball valve (DN 06 - 50)

#### Nominal bore

#### Ball bore (not applicable for KHP)

Switch	Function diagram	SO No.:
L 0° - 90°		—
L (positive) 0° - 90° - 180°		SO 560.1

#### Materials

*Housing, locking screw*

1 = Steel

3 = Stainless steel

*Ball, control spindle*

1 = Steel

3 = Stainless steel

*Ball seal*

1 = POM (polyacetal)

*Soft seal*

4 = FKM (Viton)

(other materials on request)

#### Handle

09 = Without handle

14 = Zinc die-cast bolt-on handle cranked, fitted

DN06

04 = Zinc die-cast bolt-on handle, cranked

DN10

02 = Aluminium clamped handle, cranked

DN16 - 25

06 = Steel bolt-on handle, cranked

DN32 - 50

#### Series

(determined by manufacturer)

#### Special model

T-bore on request

SO560 = Seals on inlet side, negative switching overlap, switch 90°

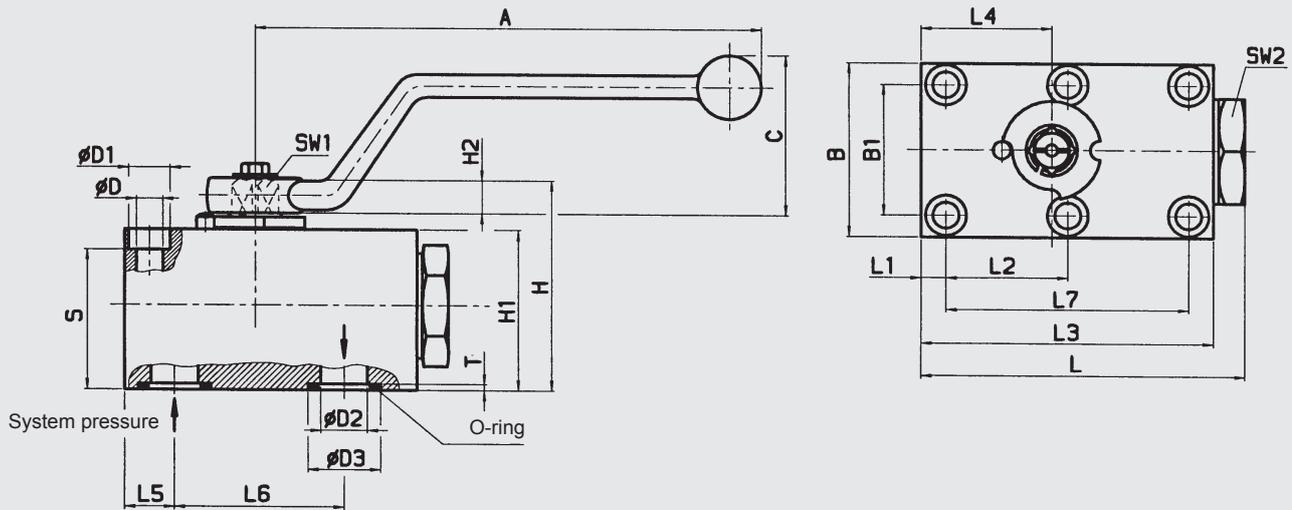
SO560.1 = Seals on inlet side, positive switching overlap, switch 180°

TT = O-rings for low temperature, temperature range -40 °C to +80 °C

## Dimensions

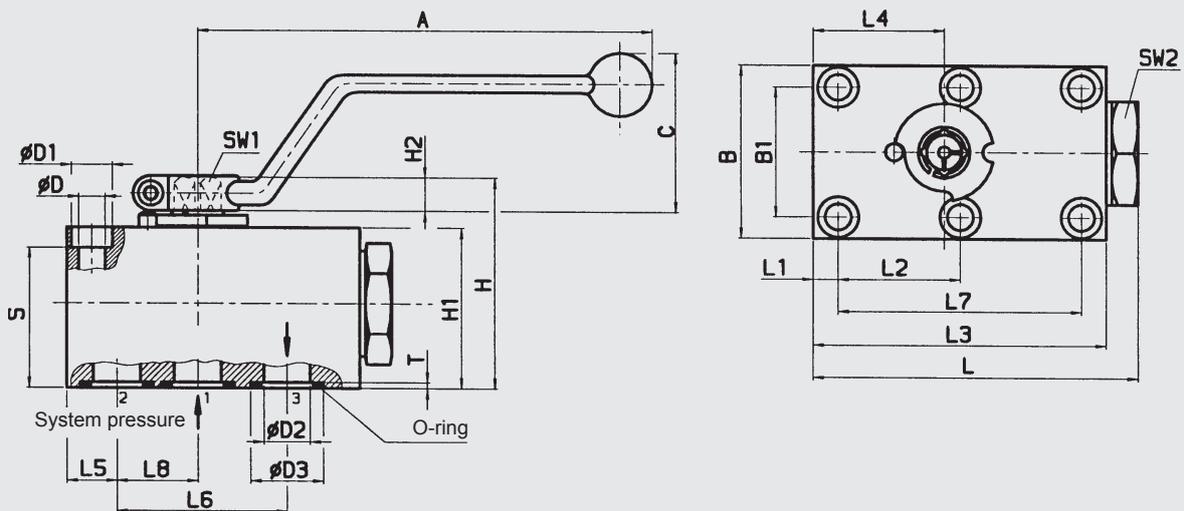
### KHP

Manifold mounted ball valve with cranked bolt-on steel handle



### KHP3K

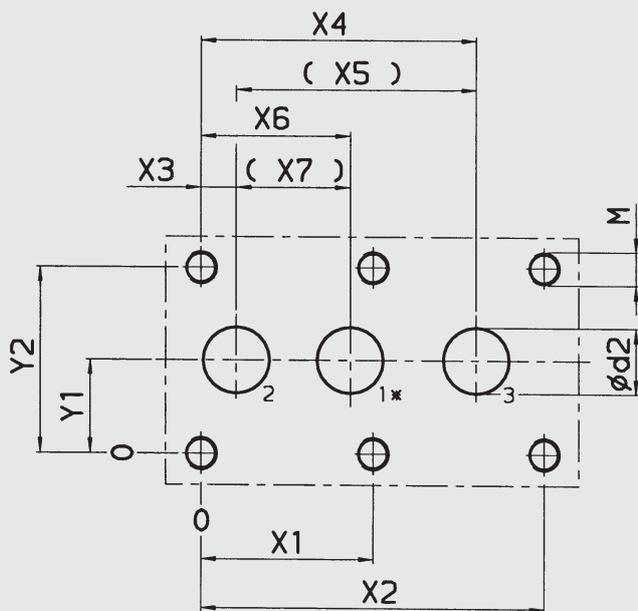
3-way manifold mounted ball valve with cranked clamped aluminium handle



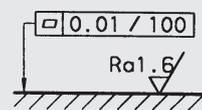
DN	int. Ø	L	L1	L2	L3	L4	L5	L6	L7	L8	B	B1	SW1	A	C
06	6	64	8.5	17.5	59	25	8.5	35	35	17.5	40	27	6	60	23
10	9.5	80	7.5	27.5	70	29	10	44	55	19	55	40	9	108	28
16	16	109.4	8.5	41.5	100	44	17	58	83	26.5	60	45	12	163	50
20	20	127	10	48.5	117	51	20	69	97	31	70	51	14	169	59
25	23.5	145	10	57.5	135	62	24	81	115	38	80	60	14	169	59
32	32	176	12	68	165	75	29	96	136	46	100	78	17	228	80
40	38	205	28.5	56	180	84.6	28.5	112	112	56.1	130	95	17	228	80
50	48	245	38	68	220	106	38	136	136	68	149	112	17	228	80

DN	SW2	H	H1	H2	D	D1	D2	D3	T	S	O-ring	Weight KHP [kg]	Weight KHP3K [kg]	Pressure range PN [bar]
06	22	37.5	30	7	6.6	11	6	11.7	1.6	23.2	8x2	0.6	0.55	500
10	30	58	45	8.5	9	14	9.5	15	2	36	10x2.6	1.2	1.2	350
16	36	72.2	55	11	9	14	16	25	2	46	20.29x2.62	2.1	2	350
20	41	87.8	70	11.6	10.5	16.5	20	30	3	59.5	23.39x3.53	3.7	3.6	350
25	50	97.6	80	11.6	10.5	17	23.5	35	3	69	28.17x3.53	5.6	5.4	350
32	65	118.2	100	12	13	19	32	39.4	2.9	84	32.92x3.53	10.9	10.2	350
40	-	117.5	100	12	17.5	26	38	48.4	2.9	82.5	42x3.5	17.5	-	350
50	-	127.5	110	12	22	33	48	55.4	2.9	88.5	49x3.5	24.5	-	350

## Interface for (3-way) manifold mounted ball valve



required surface finish  
on interface area



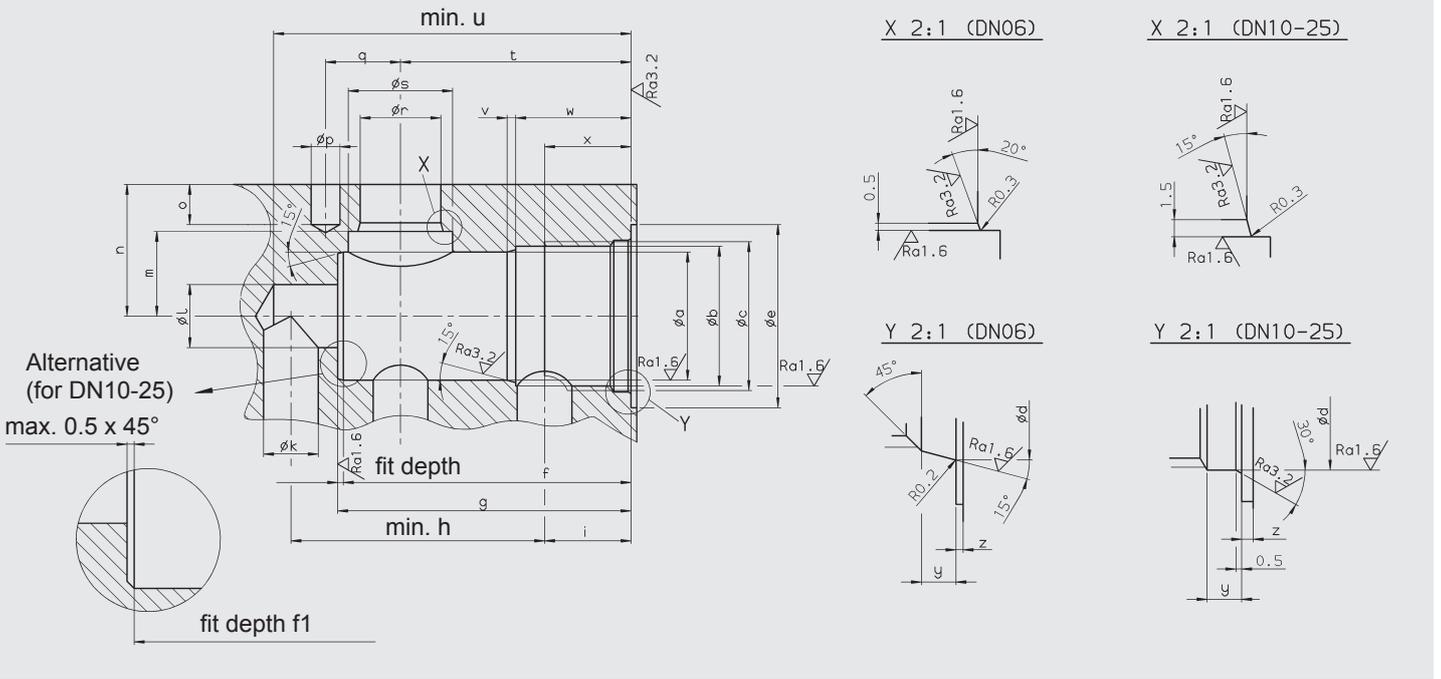
Dimensional tolerances  
ISO 2768 m

\* = bore 1 not applicable  
for KHP

DN	Y1	Y2	X1	X2	X3	X4	X5	X6	X7	d2	M	Int. hex. screw ISO 4762 (property class)	Torque value MA [Nm] *
06	13.5	27	17.5	35	0	35	35	17.5	17.5	6	M6	M6 - 10.9	13
10	20	40	27.5	55	2.5	46.5	44	21.5	19	9.5	M8	M8 - 10.9	30
16	22.5	45	41.5	83	8.5	66.5	58	35	26.5	16	M8	M8 - 12.9	35
20	25.5	51	48.5	97	10	79	69	41	31	20	M10	M10 - 12.9	60
25	30	60	57.5	115	14	95	81	52	38	23.5	M10	M10 - 12.9	60
32	39	78	68	136	17	113	96	63	46	32	M12	M12 - 12.9	110
40	47.5	95	56	112	0	112	112	56.1	56.1	38	M16	M16 - 12.9	300
50	56	112	68	136	0	136	136	68	68	48	M20	M20 - 12.9	600

\* = standard values for friction coefficient  $\mu$  0.14

# Cavity



DN	Øa <sup>H8</sup>	Øb <sup>+0.2</sup>	Øc	Ød	Øe	f <sup>+1</sup>	f1 <sup>+0.5</sup>	g <sup>-0.05</sup>	h <sup>+0.2</sup>	l	Øk	Øl <sup>+0.1</sup>	m <sup>+0.2</sup>	n <sup>+0.2</sup>	o	Øp <sup>H11</sup>	q	Ør <sup>H7</sup>	Øs <sup>+0.3</sup>	t <sup>±0.1</sup>	u	v	w	x <sup>+1</sup>	y	z
6	12.8	14.4	M16x1.5	17.8 <sup>+0.1</sup>	24	27.5	27.5	40.55	35	15	6	6	8.3	12.5	3	3	9	9	12.2	33.5	53	0.5	18.5	10.5	2.4 <sup>+0.4</sup>	0.5
10	22.4	24.4	M26x1.5	26.5 <sup>-0.1</sup>	32	49.9	50.4	50.9	44	15	9.5	11	14.8	22.8	7	5	13	14	18.2	40	62	1.5	20	15	3	1
16	28.4	30.4	M32x1.5	32.5 <sup>-0.1</sup>	38	66.55	67.05	67.55	58	23.5	16	16	17.9	26	6	6	17	18	23.2	54.5	86.5	1.5	33 <sup>-0.3</sup>	18	3	1.5
20	36.4	36.4	M38x1.5	38.4 <sup>-0.1</sup>	45	80.3	80.8	81.3	69	27	20	21	23.5	32	8	8	18	20	25.2	65	104	-	-	19	3	1
25	43.4	44.4	M46x1.5	46.5 <sup>-0.1</sup>	55	89.3	89.8	90.3	81	29	23.5	26	26.3	36	8	8	18	20	25.2	72	120	1.5	43	20	3	1

## Technical specifications

Mounting position:	KHP: Optional
	KHP3K: When pressure is applied from port 2 or 3 to port 1, some leakage can be expected, depending on the pressure.
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 500 (see pressure level)
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Spare parts:	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Actuator Limit controls Lock

## NOTE

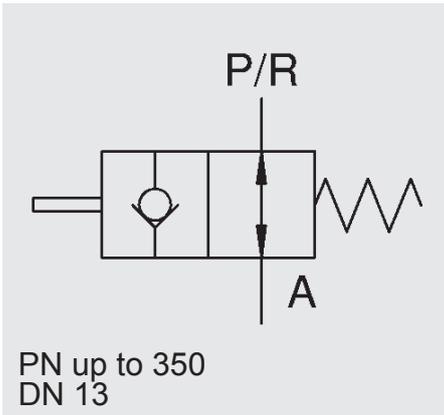
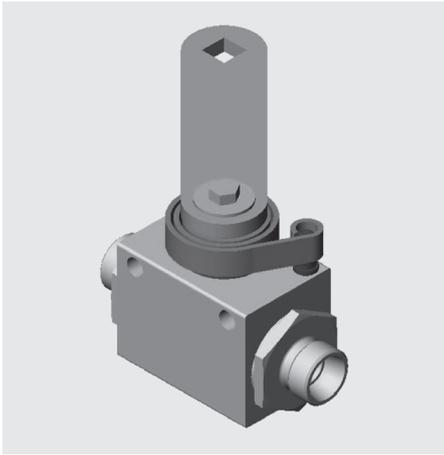
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: www.hydac.com  
E-Mail: info@hydac.com

## Spring Return Isolator HKHB



**Model code**  
(also example order)

HKHB 12LR 1112 09X A CCW OK 0°

### Designation

HKHB = Block ball valve with 2 mounting holes  $\varnothing$  6.5, 37.5 mm apart, 5 mm from top edge of block and spring return.

### Type of connection

LR = Threaded connection - light range DIN 2353  
SR = Threaded connection - heavy range DIN 2353  
Other types of connection on request

### Materials

*Housing, connection adapters*

1 = Steel

*Ball, control spindle*

1 = Steel

*Ball seal*

1 = POM

*Control spindle seal*

2 = NBR (Perbunan)

### Handle

15 = Steel bolt-on handle, straight, fitted

09 = Without handle

### Surface protection

A = Zinc-plated, chrome (VI)-free

### Switching direction

CW = Clockwise

CCW = Anti-clockwise

### Ball valve

*Ball valve port*

O = Open

C = Closed

*Handle*

L = Long

K = Short

### Handle position

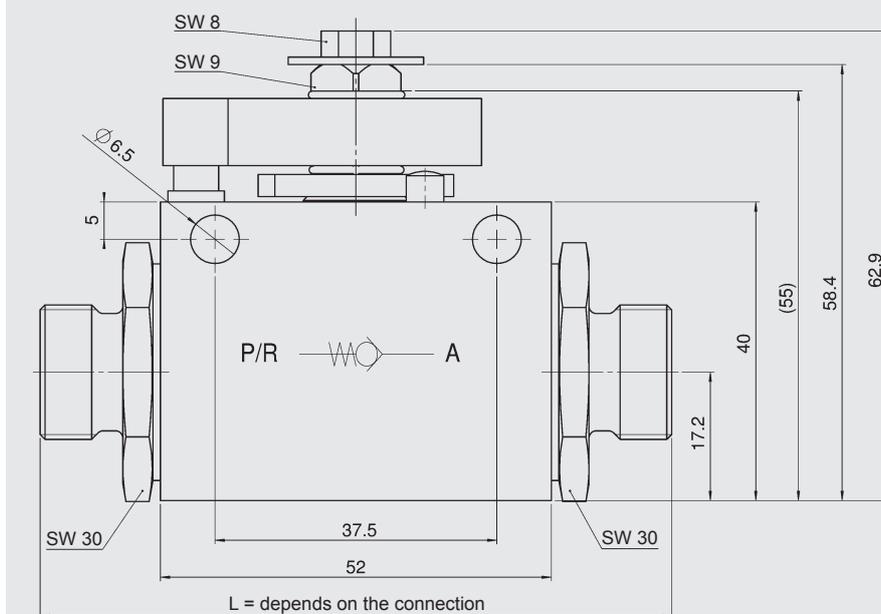
0° ... 315°

(see order form)

## APPLICATION

- Controlled by a spring, this valve shuts off the pressure line, thereby accurately limiting the cylinder stroke,
- e.g. for tipping cylinders on truck bodies, tail-lifts and agricultural machinery hydraulics

## DIMENSIONS

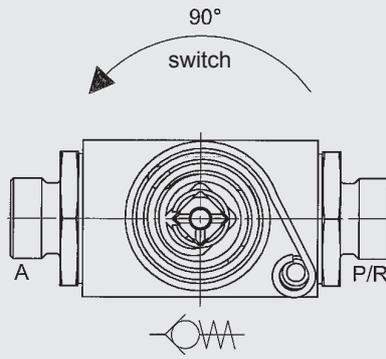
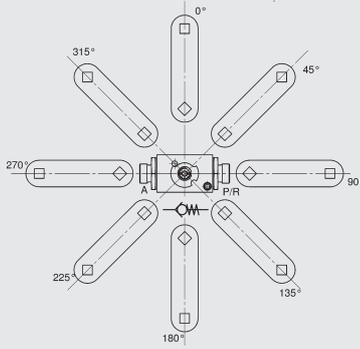


### Technical specifications

DN/Nominal bore	13
Connection	10L, 12L and 15L
Operating pressure	350 bar
Medium	Hydraulic oil
Temperature of the medium	-10 °C to + 80 °C
Housing width	35 mm
Handle	short 75 mm (100x25x4) long 125 mm (150x25x4)
Reset torque	2 Nm
End position	8 Nm

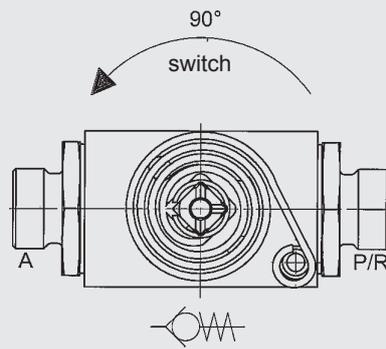
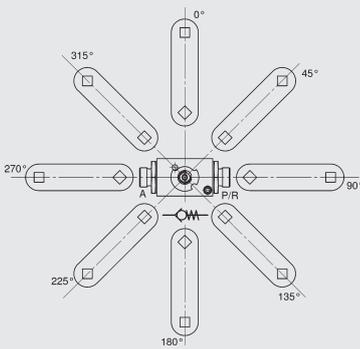
# ORDER FORM

## Handle position



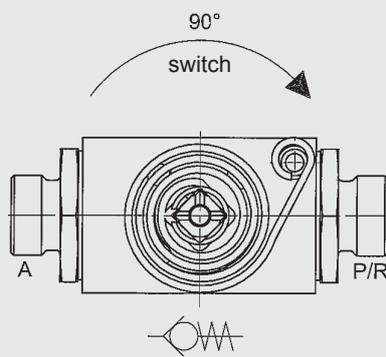
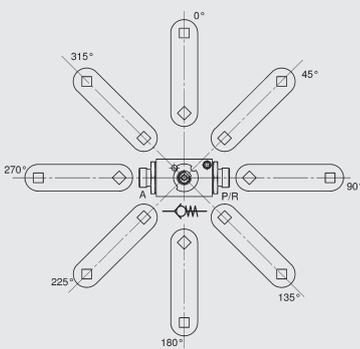
- 
- Open
- Anti-clockwise CCW
- Connection: 10L
- 12L
- 15L
- 10SR
- Handle: short
- long
- Handle position: .....°

## Handle position



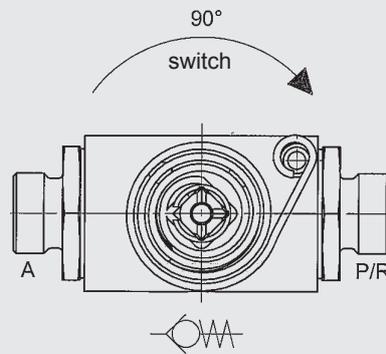
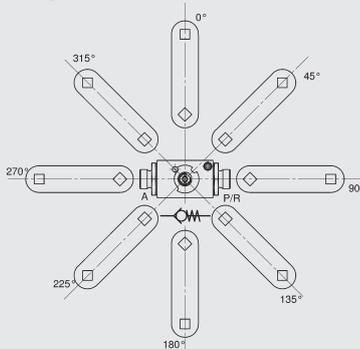
- 
- Closed
- Anti-clockwise CCW
- Connection: 10L
- 12L
- 15L
- 10SR
- Handle: short
- long
- Handle position: .....°

## Handle position



- 
- Open
- Clockwise CW
- Connection: 10L
- 12L
- 15SR
- 10SR
- Handle: short
- long
- Handle position: .....°

## Handle position



- 
- Closed
- Clockwise CW
- Connection: 10L
- 12L
- 15L
- 10SR
- Handle: short
- long
- Handle position: .....°

## NOTE

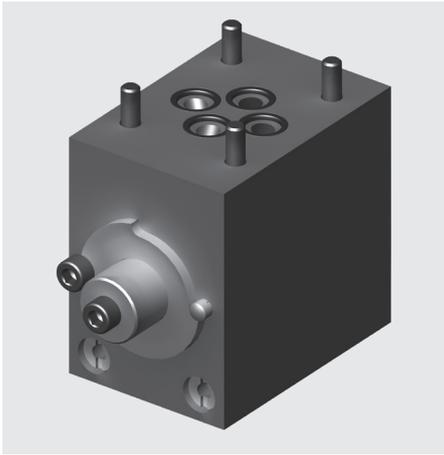
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

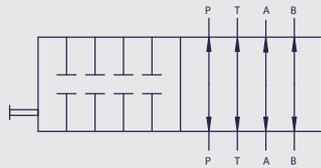
**HYDAC Accessories GmbH**  
 Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: www.hydac.com  
 E-Mail: info@hydac.com



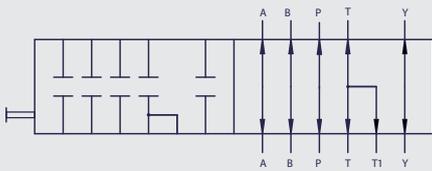


## Isolator Sandwich Plate CETOP

Symbol DN 06



Symbol DN 10



PN up to 315  
DN 06 - 10

### Model code

(also order example)

**KHB4K** **DN06** **CETOP** **1302** **09** **X**

### Designation

KHB4K = 4-gallery isolator ball valve  
KHB6K = 6-gallery isolator ball valve

### Nominal bore

DN06  
DN10

### Connection type

CETOP

### Materials

#### Housing

1 = Steel 1.0718 (DN06)  
5 = Steel 1.0570 (DN10)

#### Spindle

3 = Stainless steel 1.4462

#### Gasket

0 = Metal

#### O-ring

2 = NBR

### Handle

09 = Without handle

### Series

(determined by manufacturer)

## Function

The sandwich plate is mounted before DN06/DN10 directional valves and is used to isolate all channels at the same time via a common spindle. This is operated manually using an open-ended spanner SW9. This means that the directional valve mounted on the sandwich plate can be changed quickly without having to relieve the pressure or drain the system, and with a minimum of leakage.

In normal operation, all channels are open. The spindle is secured and locked with two screws to prevent unauthorized operation.

## Advantages

- Reduction in downtimes for hydraulic systems
- Minimum of internal leakage during normal operation
- Minimum of leakage during the short time when the valve is being replaced
- Not necessary to vent the line after changing the components
- Components can be changed without risk of accidents because all the channels are isolated

## Technical specifications

Control	Sandwich plate
Mounting position	Optional
Medium	Mineral oil
Viscosity range	10 to 380 mm <sup>2</sup> /s
Leakage rate	1 ml / min at 160 bar / 35 °C
Surface protection	Phosphated
Applied standards	PED 97/93/EG; DIN EN 19; ISO 4401, DIN 24340T2

### KHB4K-DN06-CETOP-1302-09X

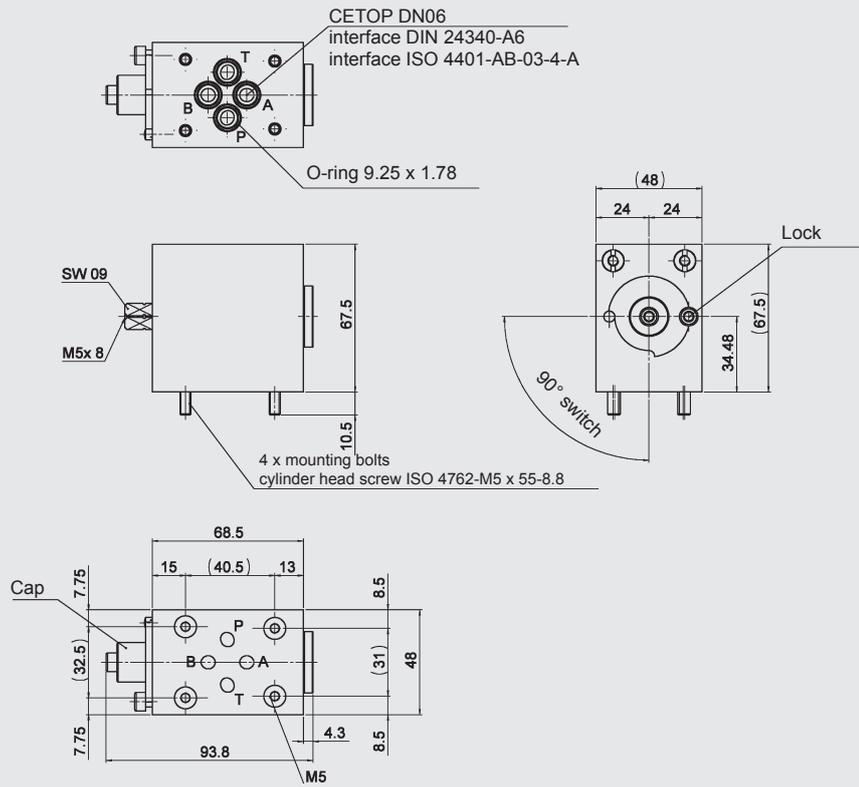
Connection type	CETOP DN06
Interface	DIN 24340-A6 ISO 4401
Temperature of the medium	-10 °C to + 70 °C
Ambient temperature	-10 °C to + 70 °C
Nominal pressure	PN 315
Max. operating pressure PB	315 bar

### KHB6K-DN10-CETOP-5302-09X

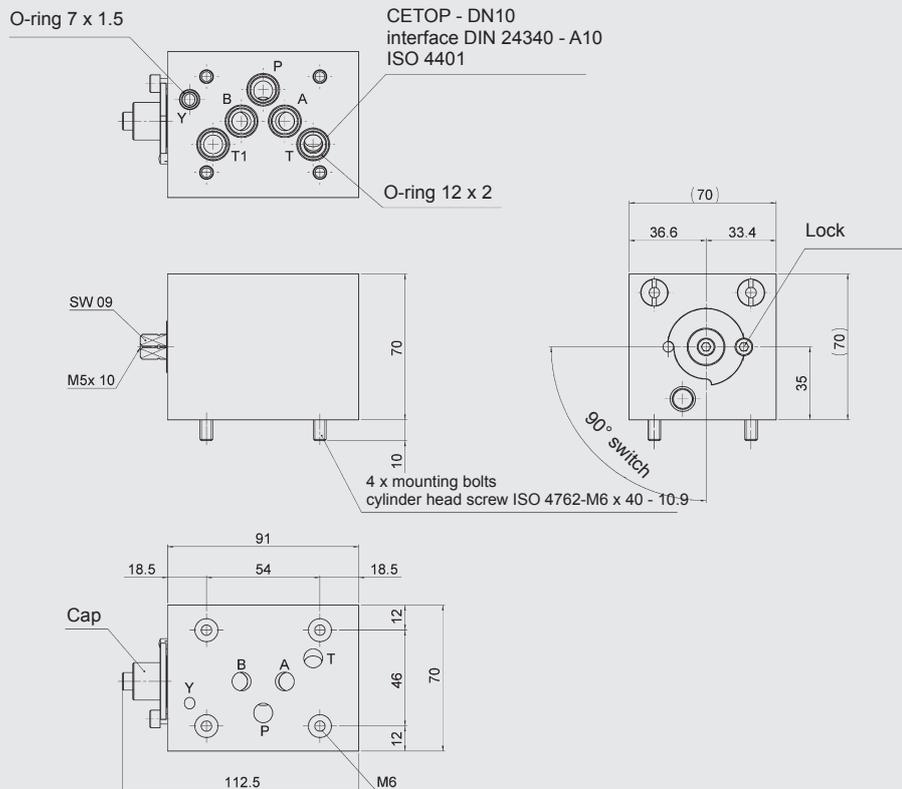
Connection type	CETOP DN10
Interface	DIN 24340-A10 ISO 4401
Temperature of the medium	+30 °C to + 60 °C
Ambient temperature	-20 °C to + 70 °C
Nominal pressure	PN 315
Max. operating pressure PB	315 bar

# Dimensions

## KHB4K-DN06-CETOP



## KHB6K-DN10-CETOP



### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
 Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: [www.hydac.com](http://www.hydac.com)  
 E-Mail: [info@hydac.com](mailto:info@hydac.com)



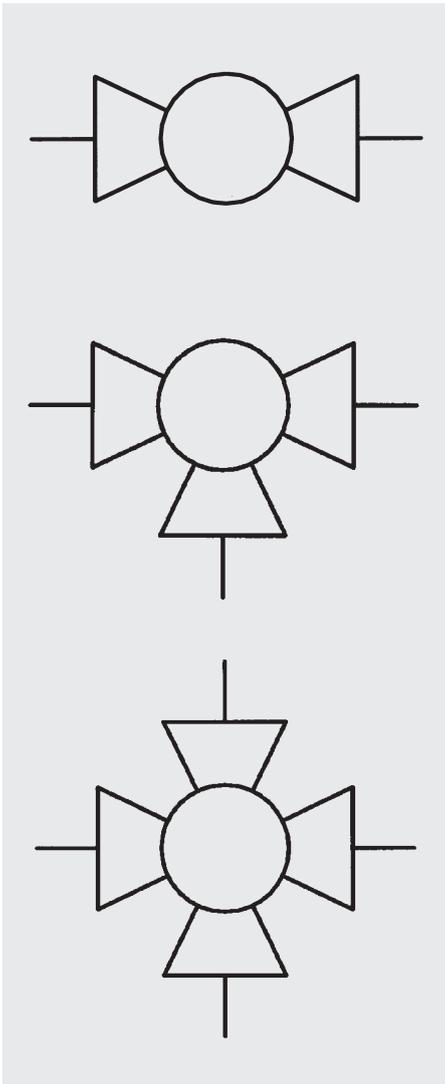
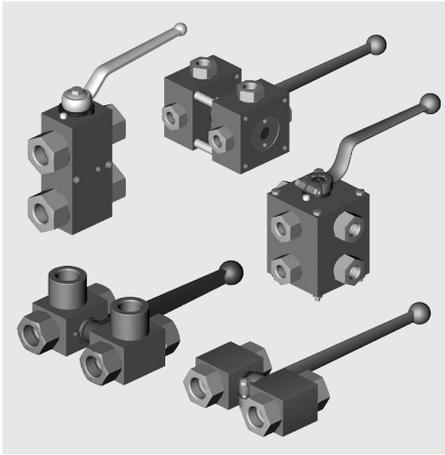
---

---

---

---

## Ball Valve Combinations



PN to 500  
DN to 50

**Model code**  
(also order example)

KH3-12SR-L-1112-01X KOMBI ... ..

### Designation

Type of ball valve

### Arrangement

KOMBI = Combination  
(ball valves mounted in tandem)

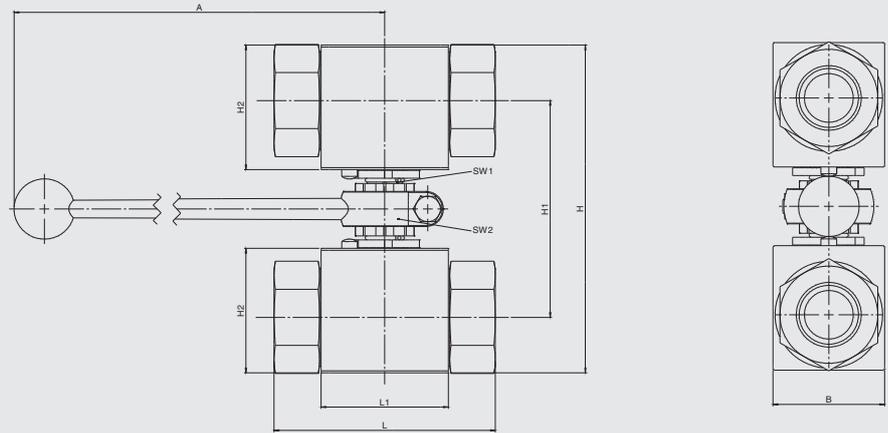
### Number of ball valves

... = 2 ball valves (2 supplied as standard)  
4X = 4 ball valves  
(others on request)

### Options

SO241 = Block combinations  
SB = Stackable design

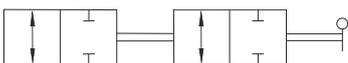
## Dimensions 2/2-way combinations (KHB)



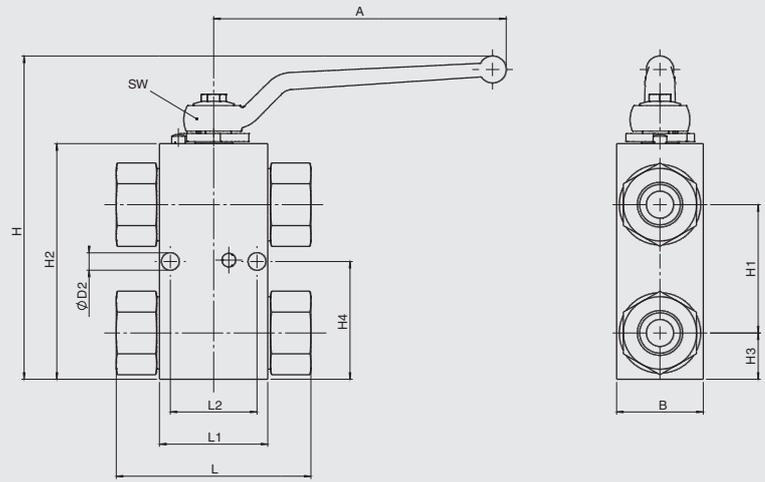
Type	DN	RA	D1	L	L1	B	H	H1	H2	SW1	SW2	A
KHB-G1/8	4	-	G1/8	69	37	28	93.5	65.5	33	9	9	160.5
KHB-G1/4	6	-	G1/4	69	37	28	93.5	65.5	33	9	9	160.5
KHB-G3/8	10	-	G3/8	72	42	32	107.5	73.5	40	9	9	160.5
KHB-G1/2	13	-	G1/2	84	47	35	107.5	73.5	40	9	9	160.5
KHB-G1/2	16	-	G1/2	83	47	40	128.0	88.0	46	12	17	240.0
KHB-G3/4	20	-	G3/4	95	60	49	154.5	105.0	57	14	22	319.5
KHB-G1	25	-	G1	113	65	58	170.5	113.5	65	14	22	319.5
KHB-G11/4	25/32	-	G11/4	120	65	57	170.5	113.5	65	14	22	319.5
KHB-06LR	4	6	M12x1.5	67	37	28	93.5	65.5	33	9	9	160.5
KHB-08LR	6	8	M14x1.5	67	37	28	93.5	65.5	33	9	9	160.5
KHB-10LR	8	10	M16x1.5	74	42	32	107.5	73.5	40	9	9	160.5
KHB-12LR	10	12	M18x1.5	74	42	32	107.5	73.5	40	9	9	160.5
KHB-15LR	13	15	M22x1.5	82	47	35	107.5	73.5	40	9	9	160.5
KHB-15LR	12	15	M22x1.5	82	47	39	128.0	88.0	46	12	17	240.0
KHB-18LR	13	18	M26x1.5	82	47	35	107.5	73.5	40	9	9	160.5
KHB-18LR	16	18	M26x1.5	82	47	40	128.0	88.0	46	12	17	240.0
KHB-22LR	20	22	M30x2	101	60	49	154.5	105.0	57	14	22	319.5
KHB-28LR	25	28	M36x2	108	65	58	170.5	113.5	65	14	22	319.5
KHB-35LR	25/32	35.5	M45x2	112	65	58	170.5	113.5	65	14	22	319.5
KHB-08SR	4	8	M16x1.5	73	37	28	93.5	65.5	33	9	9	160.5
KHB-10SR	6	10	M18x1.5	73	37	28	93.5	65.5	33	9	9	160.5
KHB-12SR	8	12	M20x1.5	76	42	32	107.5	73.5	40	9	9	160.5
KHB-14SR	10	14	M22x1.5	80	42	32	107.5	73.5	40	9	9	160.5
KHB-16SR	13	16	M24x1.5	86	47	35	107.5	73.5	40	9	9	160.5
KHB-16SR	12	16	M24x1.5	86	47	39	128.0	88.0	46	12	17	240.0
KHB-20SR	13	20	M30x2	90	47	35	107.5	73.5	40	9	9	160.5
KHB-20SR	16	20	M30x2	90	47	40	128.0	88.0	46	12	17	240.0
KHB-25SR	20	25	M36x2	109	60	49	154.5	105.0	57	14	22	319.5
KHB-30SR	25	30	M42x2	120	65	58	170.5	113.5	65	14	22	319.5
KHB-38SR	25/32	38.3	M52x2	124	65	58	170.5	113.5	65	14	22	319.5
KHB-06NPT	6	-	1/4 - 18 NPT	69	37	28	93.5	65.5	33	9	9	160.5
KHB-10NPT	10	-	3/8 - 18 NPT	72	42	32	107.5	73.5	40	9	9	160.5
KHB-16NPT	13	-	1/2 - 14 NPT	84	47	35	107.5	73.5	40	9	9	160.5
KHB-16NPT	16	-	1/2 - 14 NPT	83	47	40	128.0	88.0	46	12	17	240.0
KHB-20NPT	20	-	3/4 - 14 NPT	95	60	49	154.5	105.0	57	14	22	319.5
KHB-25NPT	25	-	1 - 11 1/2 NPT	113	65	58	170.5	113.5	65	14	22	319.5
KHB-06SAE	6	-	7/16 - 20 UNF	69	37	28	93.5	65.5	33	9	9	160.5
KHB-10SAE	10	-	9/16 - 18 UNF	72	42	32	107.5	73.5	40	9	9	160.5
KHB-16SAE	13	-	3/4 - 16 UNF	92	47	35	107.5	73.5	40	9	9	160.5
KHB-16SAE	16	-	3/4 - 16 UNF	83	47	40	128.0	88.0	46	12	17	240.0
KHB-20SAE	20	-	1 1/16 - 12 UN	95	60	49	154.5	105.0	57	14	22	319.5
KHB-25SAE	25	-	1 5/16 - 12 UN	113	65	58	170.5	113.5	65	14	22	319.5

Other connections on request

### Switching functions



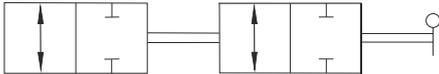
## 2/2-way block combinations (SO241)



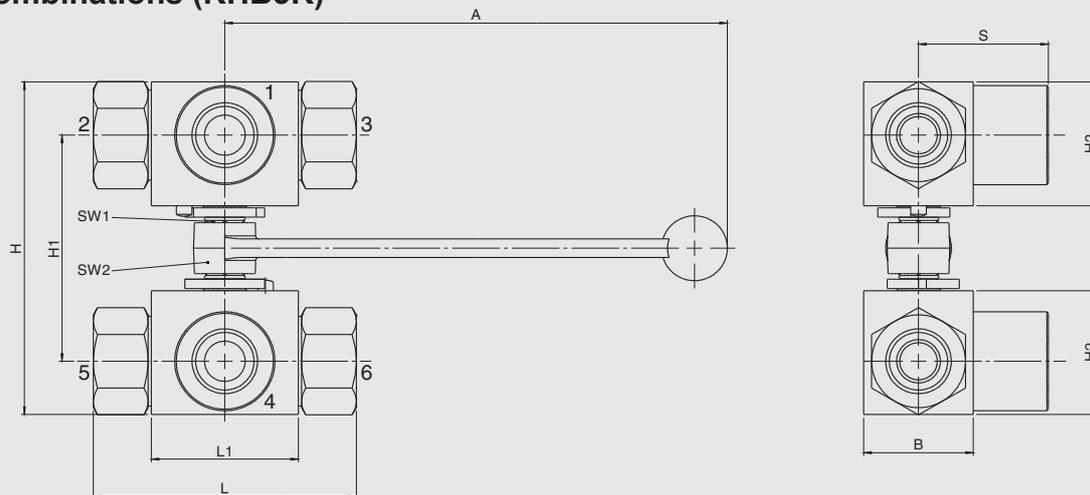
Type	DN	RA	D1	D2	i	L	L1	L2	B	H	H1	H2	H3	H4	SW	A
KHB-G3/8	10	-	G3/8	6.5	14	70	40	32	32	121	47.9	88	17.3	44	9	108
KHB-G1/2	13	-	G1/2	6.5	15	82	40	32	32	121	47.9	88	17.3	44	9	108
KHB-10LR	8	10	M16x1.5	6.5	11	72	40	32	32	121	47.9	88	17.3	44	9	108
KHB-12LR	10	12	M18x1.5	6.5	11	72	40	32	32	121	47.9	88	17.3	44	9	108
KHB-15LR	12	15	M22x1.5	6.5	12	80	40	32	32	121	47.9	88	17.3	44	9	108
KHB-15LR	13	15	M22x1.5	6.5	12	80	40	32	32	121	47.9	88	17.3	44	9	108
KHB-12SR	8	12	M20x1.5	6.5	12	74	40	32	32	121	47.9	88	17.3	44	9	108

Other connections on request

### Switching functions



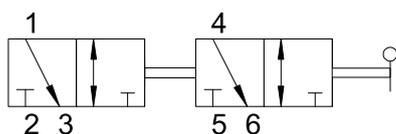
## 3/2-way combinations (KHB3K)



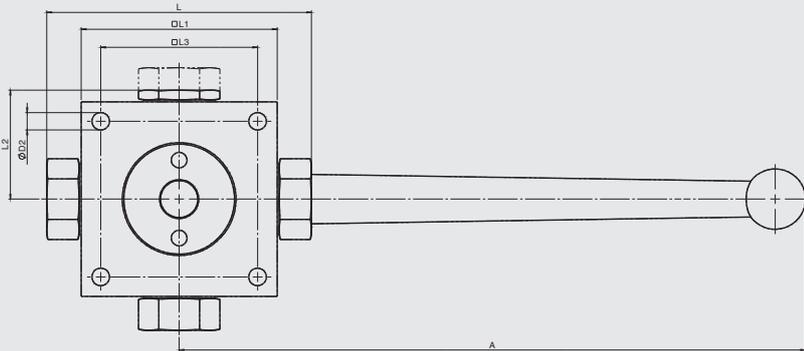
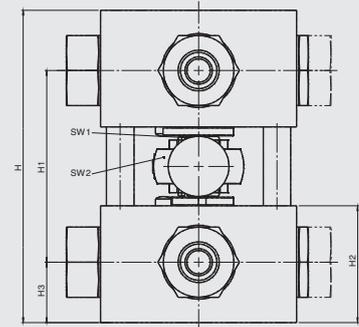
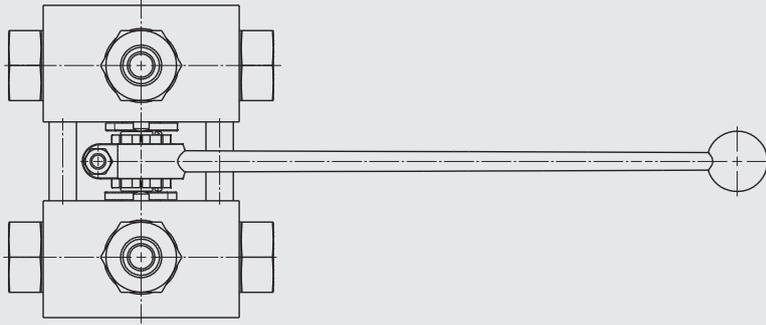
Type	DN	RA	D1	i	L	L1	B	H	H1	H2	S	SW1	SW2	A
KHB3K-G1/4	6	-	G1/4	14	69	37	28	93.5	65.5	33	34.5	9	9	160.5
KHB3K-G3/8	10	-	G3/8	14	72	42	32	107.5	73.5	40	36	9	9	160.5
KHB3K-G1/2	13	-	G1/2	15	84	47	35	107.5	73.5	40	41.5	9	9	160.5
KHB3K-G1/2	16	-	G1/2	16	83	47	40	128.0	88.0	46	41.5	12	17	240.0
KHB3K-G3/4	20	-	G3/4	18	95	60	49	154.5	105.0	57	47.5	14	22	319.5
KHB3K-G1	25	-	G1	20.5	113	65	58	170.5	113.5	65	56.5	14	22	319.5
KHB3K-G11/4	25/32	-	G11/4	22	120	65	57	170.5	113.5	65	70.5	14	22	319.5
KHB3K-06LR	4	6	M12x1.5	7	67	37	28	93.5	65.5	33	33.5	9	9	160.5
KHB3K-08LR	6	8	M14x1.5	7	67	37	28	93.5	65.5	33	33.5	9	9	160.5
KHB3K-10LR	8	10	M16x1.5	11	74	42	32	107.5	73.5	40	37	9	9	160.5
KHB3K-12LR	10	12	M18x1.5	11	74	42	32	107.5	73.5	40	37	9	9	160.5
KHB3K-15LR	13	15	M22x1.5	12	82	47	35	107.5	73.5	40	41	9	9	160.5
KHB3K-18LR	13	18	M26x1.5	12	82	47	35	107.5	73.5	40	41	9	9	160.5
KHB3K-18LR	16	18	M26x1.5	12	82	47	40	128.0	88.0	46	41	12	17	240.0
KHB3K-22LR	20	22	M30x2	14	101	60	49	154.5	105.0	57	50.5	14	22	319.5
KHB3K-28LR	25	28	M36x2	14	108	65	58	170.5	113.5	65	54	14	22	319.5
KHB3K-35LR	25/32	35.3	M45x2	16	112	65	58	170.5	113.5	65	69	14	22	319.5
KHB3K-08SR	4	8	M16x1.5	7	73	37	28	93.5	65.5	33	36.5	9	9	160.5
KHB3K-10SR	6	10	M18x1.5	7.5	73	37	28	93.5	65.5	33	36.5	9	9	160.5
KHB3K-12SR	8	12	M20x1.5	12	76	42	32	107.5	73.5	40	38	9	9	160.5
KHB3K-14SR	10	14	M22x1.5	14	80	42	32	107.5	73.5	40	40	9	9	160.5
KHB3K-16SR	13	16	M24x1.5	14	86	47	35	107.5	73.5	40	43	9	9	160.5
KHB3K-20SR	13	20	M30x2	16	90	47	35	107.5	73.5	40	45	9	9	160.5
KHB3K-20SR	16	20	M30x2	16	90	47	40	128.0	88.0	46	45	12	17	240.0
KHB3K-25SR	20	25	M36x2	18	109	60	49	154.5	105.0	57	54.5	14	22	319.5
KHB3K-30SR	25	30	M42x2	20	120	65	58	170.5	113.5	65	60	14	22	319.5
KHB3K-06NPT	6	-	1/4 - 18 NPT	6.7	69	37	28	93.5	65.5	33	33	9	9	160.5
KHB3K-10NPT	10	-	3/8 - 18 NPT	10.36	72	42	32	107.5	73.5	40	40	9	9	160.5
KHB3K-16NPT	13	-	1/2 - 14 NPT	13.56	84	47	35	107.5	73.5	40	40	9	9	160.5
KHB3K-16NPT	16	-	1/2 - 14 NPT	13.56	83	47	40	128.0	88.0	46	46	12	17	240.0
KHB3K-20NPT	20	-	3/4 - 14 NPT	13.86	95	60	49	154.5	105.0	57	57	14	22	319.5
KHB3K-25NPT	25	-	1 - 11 1/2 NPT	17.34	113	65	58	170.5	113.5	65	65	14	22	319.5
KHB3K-06SAE	6	-	7/16 - 20 UNF	12	69	37	28	93.5	65.5	33	33	9	9	160.5
KHB3K-10SAE	10	-	9/16 - 18 UNF	13	72	42	32	107.5	73.5	40	40	9	9	160.5
KHB3K-16SAE	16	-	3/4 - 16 UNF	15	83	47	40	128.0	88.0	46	46	12	17	240.0
KHB3K-20SAE	20	-	1 1/16 - 12 UN	20	95	60	49	154.5	105.0	57	57	14	22	319.5
KHB3K-25SAE	25	-	1 5/16 - 12 UN	20	113	65	58	170.5	113.5	65	65	14	22	319.5

Other connections on request

### Switching functions



## 3/2- and 4/2-way ball valve combination

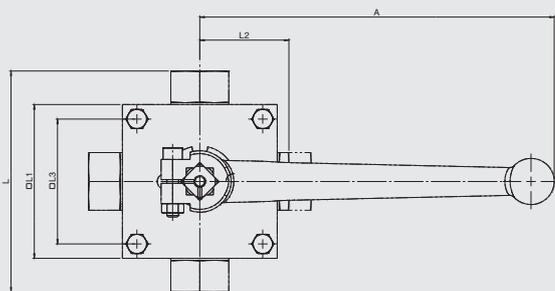
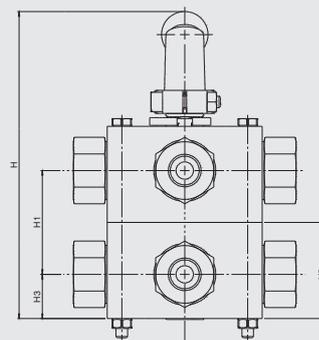
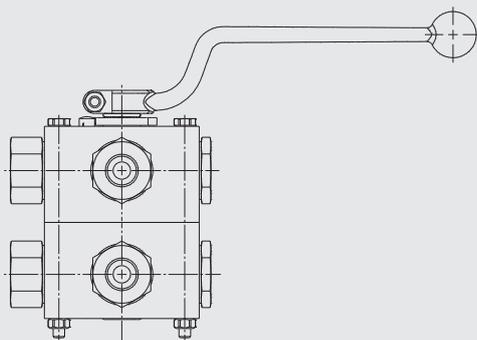


Type	DN	RA	D1	i	L	L1	L2	L3	H	H1	H2	H3	D2	SW1	SW2	A
KH3/4-G1/4	6	-	G1/4	14	100	70	42.5	55	116.0	72.0	40	22	6.5	12	17	240.0
KH3/4-G3/8	10	-	G3/8	14	115	80	46	65	140.5	86.5	50	27	6.5	14	22	319.5
KH3/4-G1/2	16	-	G1/2	16	135	100	56	80	160.5	98.5	60	31	9	14	22	319.5
KH3/4-G3/4	20	-	G3/4	18	144	100	58	85	186.5	114.5	73	36	9	17	22	319.5
KH3/4-06LR	4	6	M12x1.5	10	105	70	42.5	55	116.0	72.0	40	22	6.5	12	17	240.0
KH3/4-08LR	6	8	M14x1.5	10	105	70	42.5	55	116.0	72.0	40	22	6.5	12	17	240.0
KH3/4-10LR	8	10	M16x1.5	11	114	80	46	65	140.5	86.5	50	27	6.5	14	22	319.5
KH3/4-12LR	10	12	M18x1.5	11	114	80	46	65	140.5	86.5	50	27	6.5	14	22	319.5
KH3/4-15LR	12	15	M22x1.5	12	136	100	56	80	160.5	98.5	60	31	9	14	22	319.5
KH3/4-18LR	16	18	M26x1.5	12	136	100	56	80	160.5	98.5	60	31	9	14	22	319.5
KH3/4-22LR	20	22	M30x2	14	143	100	58	85	186.5	114.5	73	36	9	17	22	319.5
KH3/4-08SR	4	8	M16x1.5	12	105	70	42.5	55	116.0	72.0	40	22	6.5	12	17	240.0
KH3/4-10SR	6	10	M18x1.5	12	105	70	42.5	55	116.0	72.0	40	22	6.5	12	17	240.0
KH3/4-12SR	8	12	M20x1.5	12	116	80	46	65	140.5	86.5	50	27	6.5	14	22	319.5
KH3/4-14SR	10	14	M22x1.5	14	120	80	46	65	140.5	86.5	50	27	6.5	14	22	319.5
KH3/4-16SR	12	16	M24x1.5	14	140	100	56	80	160.5	98.5	60	31	9	14	22	319.5
KH3/4-20SR	16	20	M30x2	16	144	100	56	80	160.5	98.5	60	31	9	14	22	319.5
KH3/4-25SR	20	25	M36x2	18	151	100	58	85	186.5	114.5	73	36	9	17	22	319.5
KH3/4-06NPT	6	-	1/4 - 18 NPT	10.21	100	70	42.5	55	116.0	72.0	40	22	6.5	12	17	240.0
KH3/4-10NPT	10	-	3/8 - 18 NPT	10.36	115	80	46	65	140.5	86.5	50	27	6.5	14	22	319.5
KH3/4-12NPT	12	-	1/2 - 14 NPT	13.56	135	100	56	85	160.5	98.5	60	31	9	14	22	319.5
KH3/4-20NPT	20	-	3/4 - 14 NPT	13.86	144	100	58	85	186.5	114.5	73	36	9	17	22	319.5
KH3/4-10SAE	10	-	9/16 - 18 UNF	13	115	80	46	65	140.5	86.5	50	27	6.5	14	22	319.5
KH3/4-12SAE	12	-	3/4 - 16 UNF	15	135	100	56	80	160.5	98.5	60	31	9	14	22	319.5
KH3/4-20SAE	20	-	1 1/16 - 12 UN	20	144	100	58	85	186.5	114.5	73	36	9	17	22	319.5

Other connections on request

**Note:** Numerous switching functions can be found in Brochure 5.503 (3-way and 4-way ball valves KH3 / KH4).  
(Caution: switching function max. 90°)

## Multi-way ball valve combination Stackable design



Type	DN	RA	D1	i	L	L1	L2	L3	H	H1	H2	H3	D2	SW1	SW2	A
KH3/4-G1/4	6	-	G1/4	14	100	70	42.5	55	137	36	40	22	6.5	12	17	163
KH3/4-G3/8	10	-	G3/8	14	115	80	46	65	160	46	50	27	6.5	14	22	183
KH3/4-G1/2	16	-	G1/2	16	135	100	56	80	180	58	60	31	9	14	22	183
KH3/4-G3/4	20	-	G3/4	18	144	100	58	85	208	74	73	36	9	17	22	227
KH3/4-06LR	4	6	M12x1.5	10	105	70	42.5	55	137	36	40	22	6.5	12	17	163
KH3/4-08LR	6	8	M14x1.5	10	105	70	42.5	55	137	36	40	22	6.5	12	17	163
KH3/4-10LR	8	10	M16x1.5	11	114	80	46	65	160	46	50	27	6.5	14	22	183
KH3/4-12LR	10	12	M18x1.5	11	114	80	46	65	160	46	50	27	6.5	14	22	183
KH3/4-15LR	12	15	M22x1.5	12	136	100	56	80	180	58	60	31	9	14	22	183
KH3/4-18LR	16	18	M26x1.5	12	136	100	56	80	180	58	60	31	9	14	22	183
KH3/4-22LR	20	22	M30x2	14	143	100	58	85	208	74	73	36	9	17	22	227
KH3/4-08SR	4	8	M16x1.5	12	105	70	42.5	55	137	36	40	22	6.5	12	17	163
KH3/4-10SR	6	10	M18x1.5	12	105	70	42.5	55	137	36	40	22	6.5	12	17	163
KH3/4-12SR	8	12	M20x1.5	12	116	80	46	65	160	46	50	27	6.5	14	22	183
KH3/4-14SR	10	14	M22x1.5	14	120	80	46	65	160	46	50	27	6.5	14	22	183
KH3/4-16SR	12	16	M24x1.5	14	140	100	56	80	180	58	60	31	9	14	22	183
KH3/4-20SR	16	20	M30x2	16	144	100	56	80	180	58	60	31	9	14	22	183
KH3/4-25SR	20	25	M36x2	18	151	100	58	85	208	74	73	36	9	17	22	227
KH3/4-06NPT	6	-	1/4 - 18 NPT	10.21	100	70	42.5	55	137	36	40	22	6.5	12	17	163
KH3/4-10NPT	10	-	3/8 - 18 NPT	10.36	115	80	46	65	160	46	50	27	6.5	14	22	183
KH3/4-12NPT	12	-	1/2 - 14 NPT	13.56	135	100	56	85	180	58	60	31	9	14	22	183
KH3/4-20NPT	20	-	3/4 - 14 NPT	13.86	144	100	58	85	208	74	73	36	9	17	22	227
KH3/4-10SAE	10	-	9/16 - 18 UNF	13	115	80	46	65	160	46	50	27	6.5	14	22	183
KH3/4-12SAE	12	-	3/4 - 16 UNF	15	135	100	56	80	180	58	60	31	9	14	22	183
KH3/4-20SAE	20	-	1 1/16 - 12 UN	20	144	100	58	85	208	74	73	36	9	17	22	227

Other connections on request

**Note:** Numerous switching functions can be found in Brochure 5.503 (3-way and 4-way ball valves KH3 / KH4) .

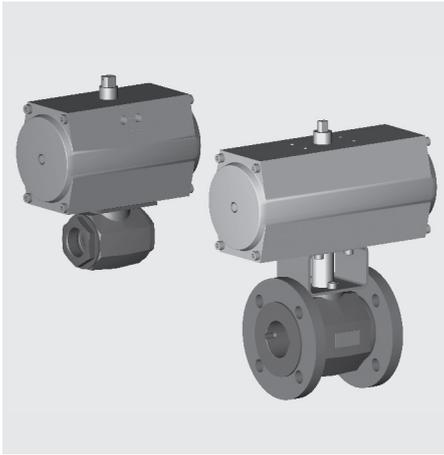
### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

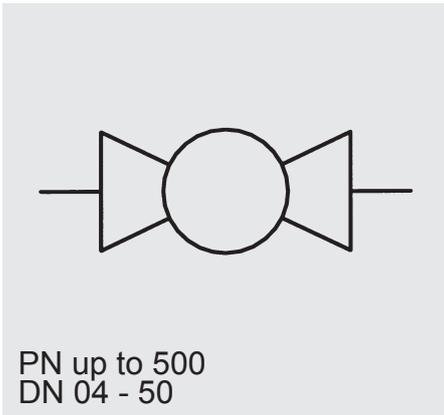
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Ball Valves with Pneumatic Actuator

**Model code**  
(also example order)

**KHB-G1/4-1114 AP.E 3/2DC E**



### Designation

Type of ball valve

### Actuator code

- AP = Pneumatic actuator
- .E = Spring return actuator
- .D = Double-acting actuator

### Directional valve options

- 3/2 = 3/2 directional NAMUR control valve
- 5/2 = 5/2 directional NAMUR control valve
- DC = 24 V
- AC = 230 V 50 Hz

### Limit switch box options

- E = Electro-mechanical, visual indication open and closed
- I = Contactless (inductive), visual indication open and closed

## Dimensions

Ball valves with pneumatic actuator	Single-return				Double acting				
	DN	A	B	C	D	A	B	C	D
04/06-SW09	182	91	108	5	139	70	88	5	
08/10/13	215	100	117	5	160	83	100	5	
16	222	120	140	5	182	91	108	10	
20	222	120	140	5	182	91	108	10	
25	294	120	140	5	215	100	117	10	
32	300	137	160	5	222	120	140	5	
40	350	172	198	5	294	120	140	5	
50	350	172	198	5	294	120	140	5	

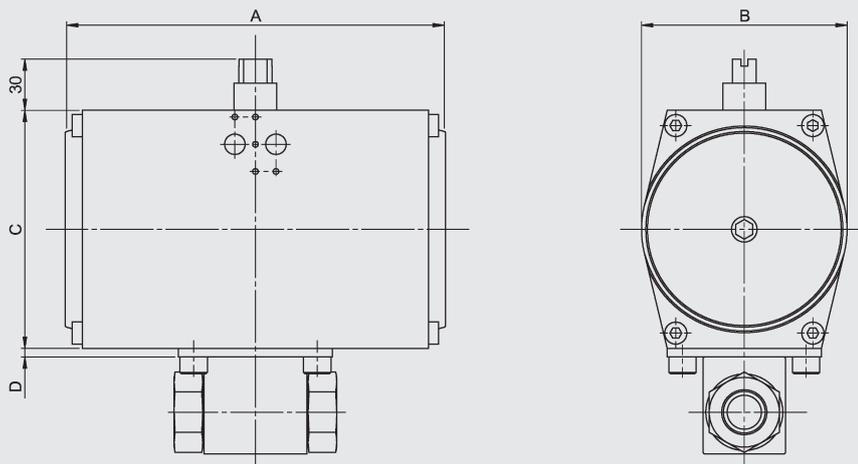
## Note

We recommend using an adapter plate when fitting a pneumatic actuator to block-type, sleeve-type and 3-way change-over ball valves.

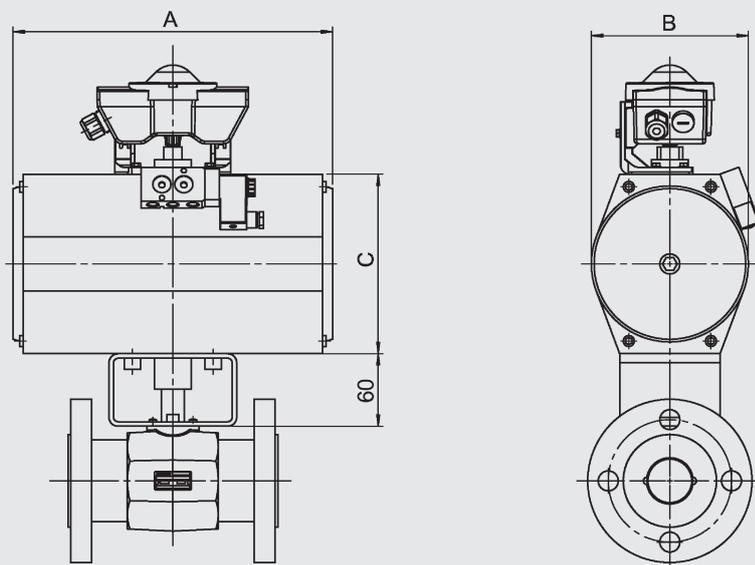
For flanged, manifold and 3-way and 4-way ball valves, a separate coupling is required for installation.

On request other versions are available to suit almost all applications.

## Installation using adapter plate



## Installation using separate coupling



## Technical specifications

Mounting position	Optional
Ambient temperature	-10 °C to +80 °C
Nominal pressure	Up to PN 500 (see pressure range)
Operating fluids	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid	-10 °C to +80 °C
Control pressure (Actuator)	min. 6 bar (other on request)
<b>Spare Parts</b>	Seal kits available on request

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

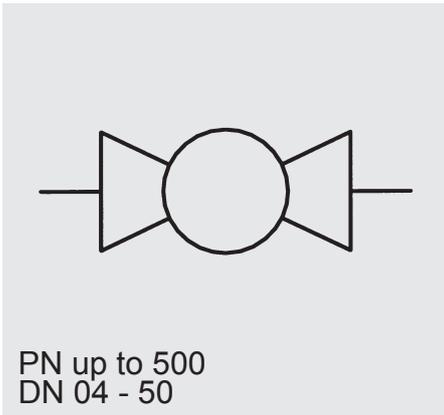
Subject to technical modifications.

## Electrically Actuated Ball Valves



**Model code**  
(also example order)

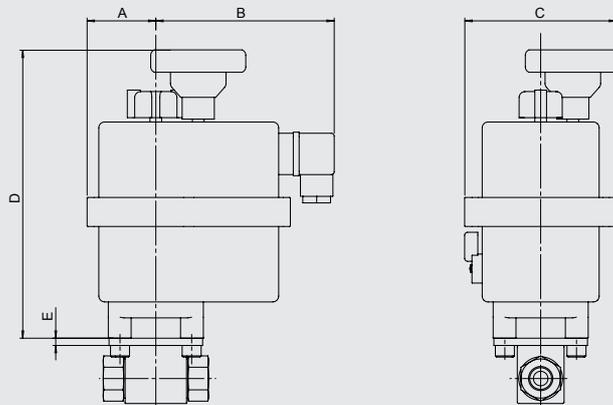
**KHB-G1/4-1114 AE.24V**



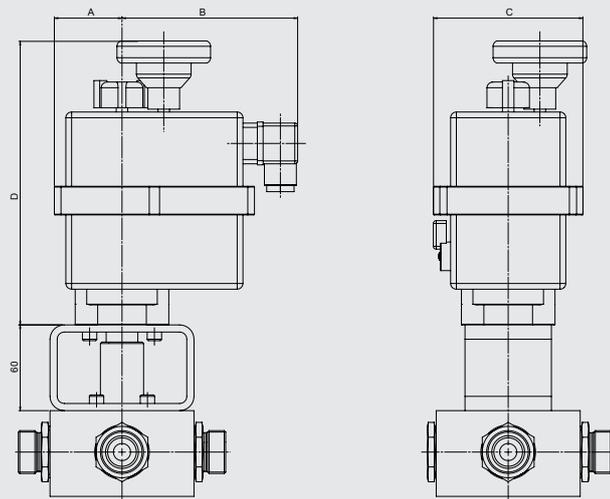
**Designation**  
Type of ball valve

**Actuator code**  
 AE = Electric actuation  
 .24V = 12 - 24 V AC/DC  
 .240V = 85 - 240 V AC/DC

### Installation using adapter plate



### Installation using separate coupling



## Dimensions

DN	A	B	C	D	E
04/06-SW09	51	126	110	196	5
08/10/13	51	126	110	196	5
16	51	126	110	196	10
20	107	128	214	254	5
25	107	128	214	254	5
32	107	128	214	254	5
40	107	128	214	254	5
50	107	128	214	254	5

## Note

We recommend using an adapter plate when fitting an electric actuator to block-type, sleeve-type and 3-way change-over ball valves.

For flanged, manifold and 3-way and 4-way ball valves, a separate coupling is required for installation.

On request other versions are available to suit almost all applications.

## Equipment

### Electrical actuator

- ETL (electronic torque limiter)
- AVS (automatic voltage sensor)
- ATC (automatic temperature control) to prevent condensation
- Mechanical release in event of jam
- Manual override
- Two integrated, volt-free micro switches for position confirmation
- Protection class IP 65

## Technical specifications

Mounting position	Optional
Ambient temperature	-10 °C to +80 °C
Nominal pressure	Up to PN 500 (see pressure level)
Operating fluids	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid	-10 °C to +80 °C
<b>Spare Parts</b>	Seal kits available on request

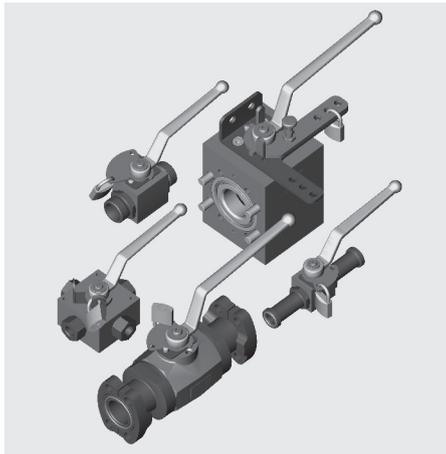
## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Lockable Ball Valves

**Model code**  
(also example order)

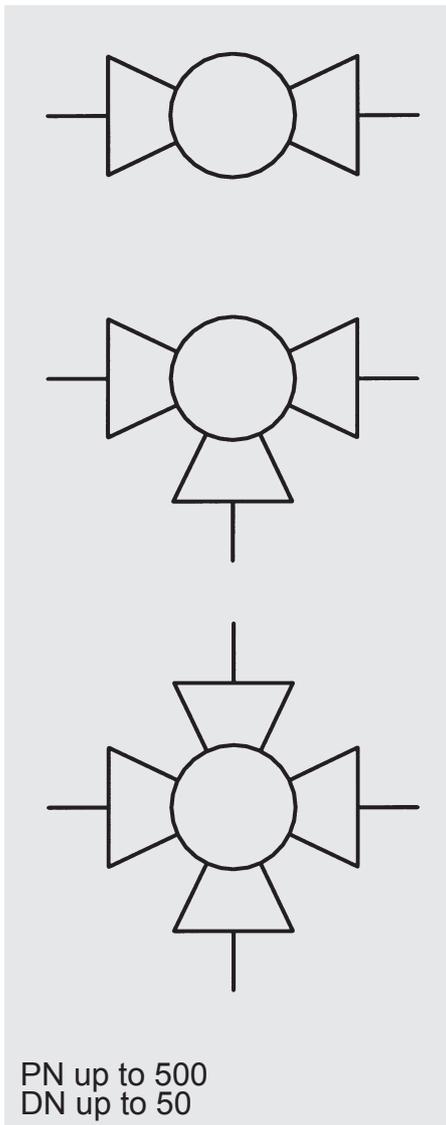
**KHB-16SR-1114-16X SO 760**

### Designation

Type of ball valve

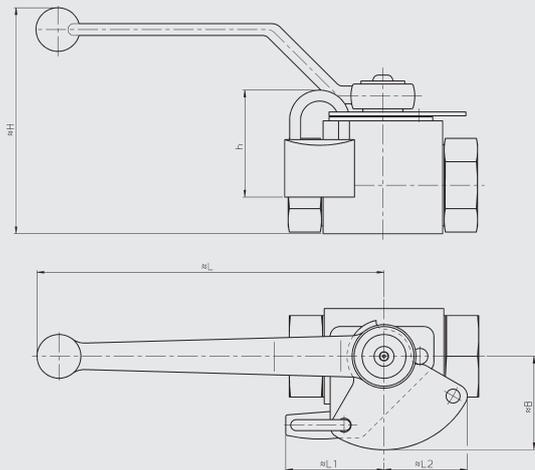
### Lockable

- SO 760 = Ball valve can be locked in open and closed position using padlock. Padlock not supplied.
- SO 770 = Ball valve can be locked in open and closed position using padlock.
- SO 160 = Ball valve can be locked in open and closed position using cylinder lock. Key can be removed once locked.



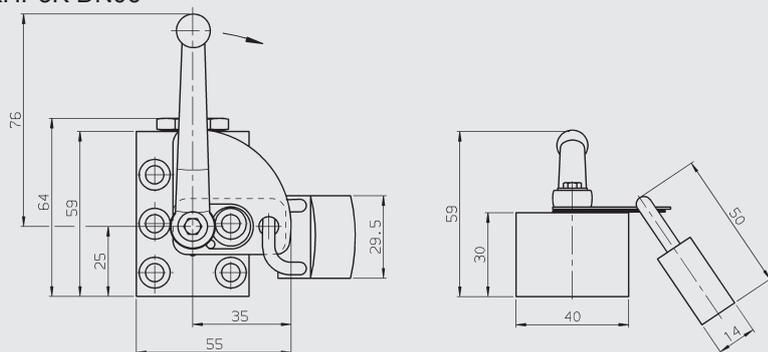
## Lockable ball valves SO 760/770

KHB/KHM

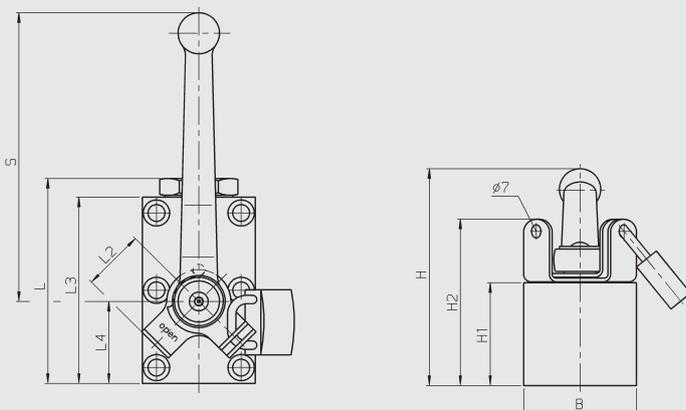


DN		L1	L2	h	B	H	L
04/06	M5	42	28.5	54	32	63.5	108
08/10/13	M5	42	28.5		32	68.5	108
12/16	M5	43	30.5		34	102	174
20	M6	50	41.7		47	114	174
25	M6	50	41.7		47	121	174
32	M8	47	37.9		42	158.5	213
40	M8	47	37.9		42	169.5	213
50	M8	47	37.9		42	186	213

### KHP/KHP3K DN06



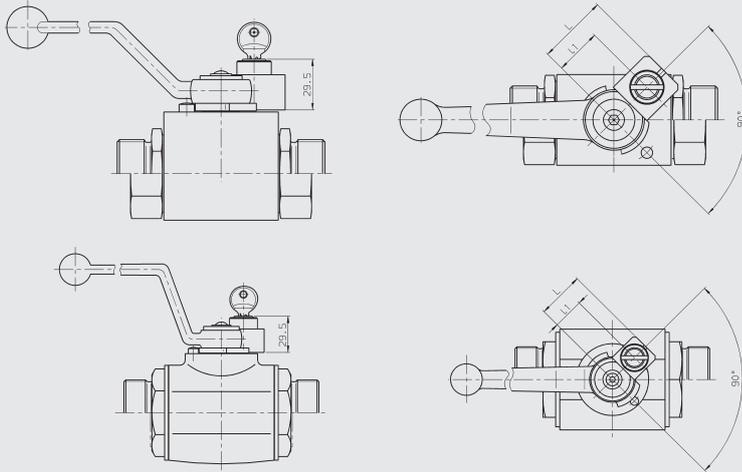
### KHP/KHP3K DN10 - 50



Type	DN	B	H	H1	H2	L	L2	L3	L4	S
KHP/ KHP3K	06	40	59	30	–	64	35	59	25	76
	10	55	78	45	74	80	22	70	29	108
	16	60	120	55	89	110	33	100	44.5	174
	20	70	136	70	106	127	35	117	51	174
	25	80	146	80	116	145	35	135	62	174
	32	100	187	100	137	176	36	165	75	231
KHP	40	130	187	100	137	205	36	180	85	231
	50	149	197	110	147	245	36	220	106	231

## Lockable ball valve SO 160 (cylinder lock)

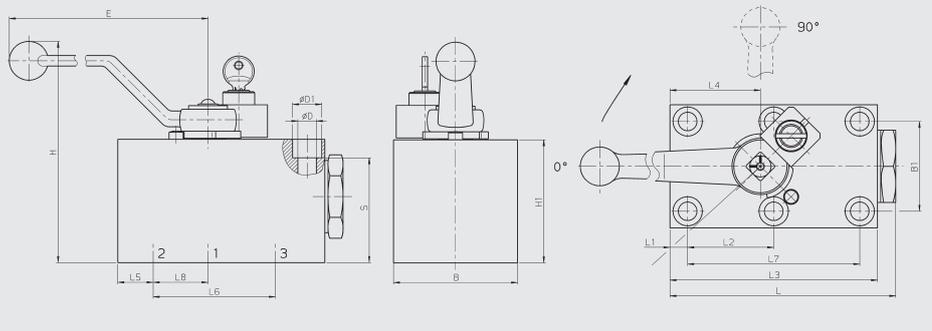
KHB - KHM



SO 160 - Ball valve can be locked in open or closed position with a cylinder lock.  
Key can be removed once locked

DN	L	L1
04/06	35	22.5
08/10/13	31.5	19
12/16	33.5	21
20/25	37	24.5
32/50	37	24.5

## KHP3K 16-25



Type	DN	LW	L	L1	L2	L3	L4	L5	L6	L7	L8	B	B1	E	H	H1	ØD	ØD1	S
KHP3K	16	16	110	8.5	41.5	100	44.5	17	58	83	26.5	60	45	169	119	55	9	14	48
	20	20	127	10	48.5	117	51	20	69	97	31	70	51	169	134	70	10.5	16.5	59.5
	25	23.5	145	10	57.5	135	62	24	81	115	38	80	60	169	144	80	10.5	17	69

## NOTE

The information in this brochure relates to the operating conditions and applications described.

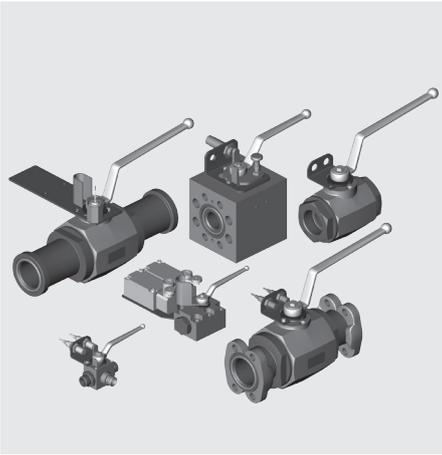
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Ball Valves with Electrical Limit Controls



**Model code** (Limit switch)  
(also example order)

**KHM-G2-1114-16X E 1. 000**

### Designation

Type of ball valve

### Limit control

E = Limit switch (position switch)

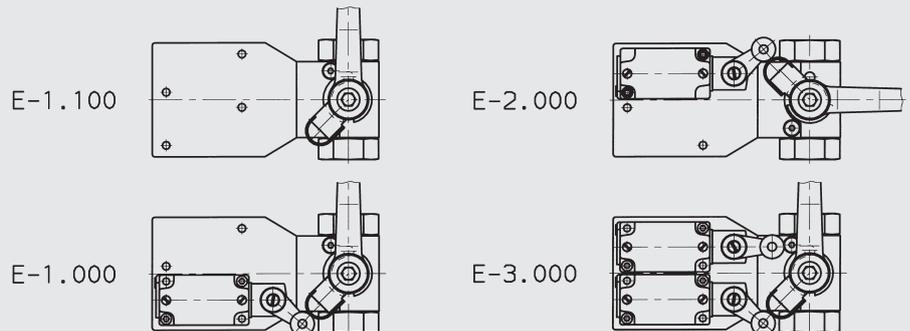
### Monitored switching position

- 1 = Monitoring of ball valve in open position
- 2 = Monitoring of ball valve in closed position
- 3 = Monitoring of ball valve in open and closed positions

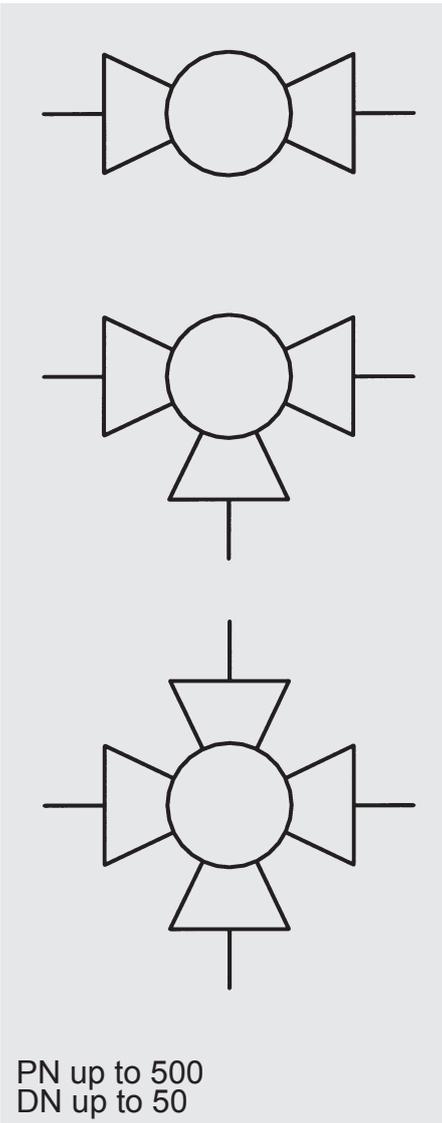
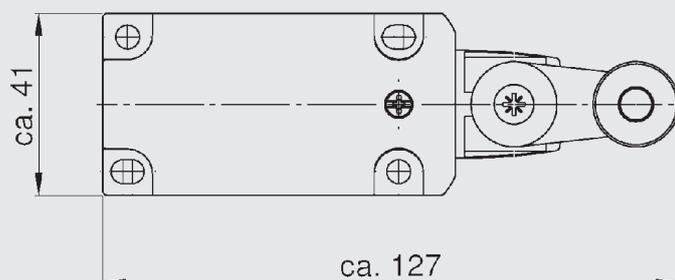
### Limit switch code

000 = Limit switch to DIN EN 50041 - type A  
100 = Adapted for limit switch to DIN EN 50041 - type A  
... = On request, almost all commercially available makes and protection classes can be supplied.

### Examples of different models



### Limit switch



PN up to 500  
DN up to 50

**Model code** (Inductive proximity switch)  
(also order example)

**KHM-G2-1114-16X I 1. 200**

**Designation**

Type of ball valve

**Limit control**

I = Inductive proximity switch

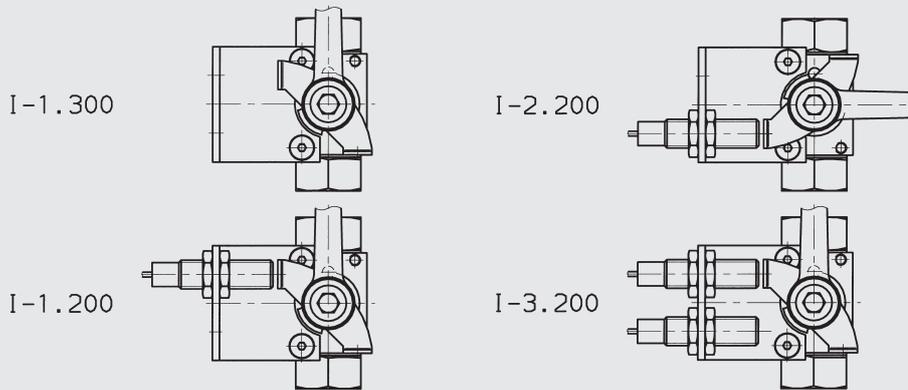
**Monitored switching position**

- 1 = Monitoring of ball valve in open position
- 2 = Monitoring of ball valve in closed position
- 3 = Monitoring of ball valve in open and closed positions

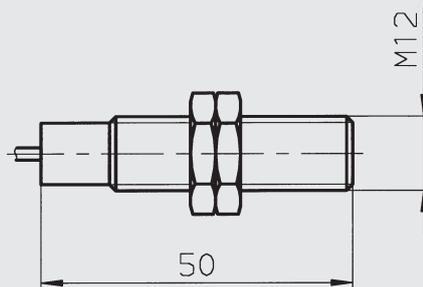
**Proximity switch code**

- 200 = With built-in cylindrical proximity switch M12 to DIN EN 60947 type: IA
- 300 = Adapted for cylindrical proximity switch M12 to DIN EN 60947 Type: IA.
- ... = On request; almost all commercially available makes and protection classes can be supplied.

**Examples of different models**



**inductive proximity switch**



## Technical specifications

### Limit switch:

Position switch:	To DIN EN 50041 Form A, metal enclosure with roller lever
Switch equipment:	1 N/C contact and 1 N/O contact
Protection class:	IP 67
Insulation group:	500 V AC
Continuous current:	10 A
Nominal voltage:	300 V AC
Mechanical service life:	30 x 10 <sup>6</sup> switching cycles
Switching frequency:	6 x 10 <sup>3</sup> switching cycles per hour
Permitted ambient temperature:	-40 °C to +85 °C

### Inductive proximity switch:

Type of construction:	Cylindrical form M12 to DIN EN 60947
Rated switching distance:	4 mm
Output:	Normally open contact / PNP logic
Protection type:	IP 67
Operating voltage:	10 - 30 V DC (including residual ripple)
Nominal voltage:	12 - 24 V DC
Switching current:	≤ 200 mA
Current consumption without load:	< 11 mA
Switching hysteresis:	10%
Switching frequency:	800 Hz
Permitted ambient temperature:	-25 °C to +70 °C
Function display:	LED
Type of connection:	Cable 3 conductor, 5 m long

## Spare Parts

Retrofit kit for electrical switching position monitoring can be supplied on request.

### NOTE

The information in this brochure relates to the operating conditions and applications described.

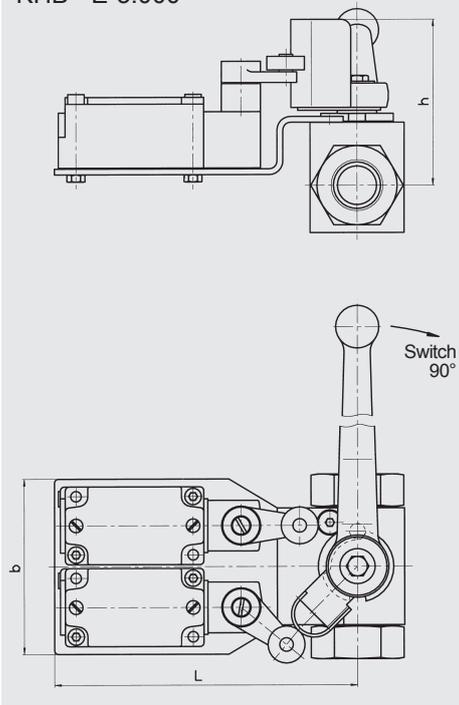
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

## DIMENSIONS

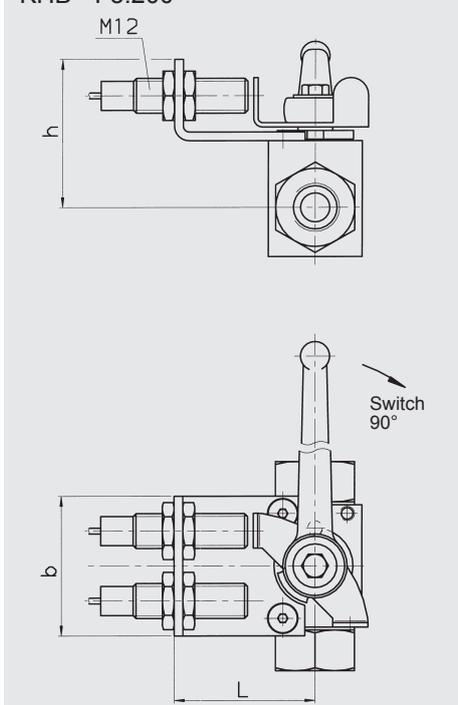
### BALL VALVE WITH LIMIT SWITCH

KHB - E-3.000



### BALL VALVE WITH INDUCTIVE PROXIMITY SWITCH M12

KHB - I-3.200



DN	L	b	h
04/06	155	90	75
08/10/13	155	90	75
16	155	90	82
20	155	90	87
25	155	90	90
32	155	90	103
40	155	90	109
50	155	90	115

DN	L	b	h
06	45	47	59
08/10/13	46	47	51
16	46	47	54
20	49	60	61
25	49	60	64
32	50	60	78
40	50	60	84
50	50	60	91

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: www.hydac.com  
E-Mail: info@hydac.com





## Handles SW 06–22

**Model code**  
(also order example)

Handle

AG

SW12

### Designation

Handle

### Materials and type

AG (01) = Aluminium clamped handle, straight

ZG (03) = Zinc die-casting clamped handle, straight

AK (02) = Aluminium clamped handle, cranked

ZK (04) = Zinc die-casting bolt-on handle, cranked

SK (06) = Steel bolt-on handle, cranked

SK (26) = Steel bolt-on handle, cranked, long (only SW 17)

### Widths of control spindle square

SW 06

SW 09

SW 12

SW 14

SW 17

SW 22

Other handles (e.g. stainless steel) on request

## Description

Handles are designed to switch shut-off valves/ball valves.

### Clamped handle

The handle is pushed onto the square end of the ball valve spindle and clamped to the square by means of a screw through the end of the handle.

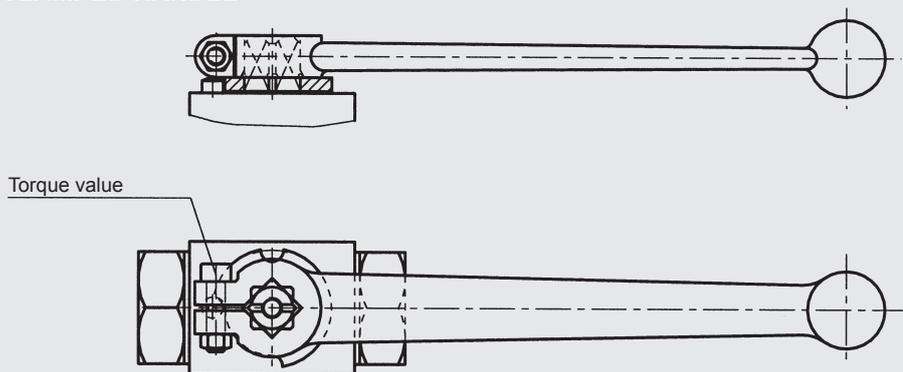
### Bolt-on handle

The handle is screwed to the ball valve control spindle by means of a fixing bolt from above.

Both types handle can be displaced by 45°.

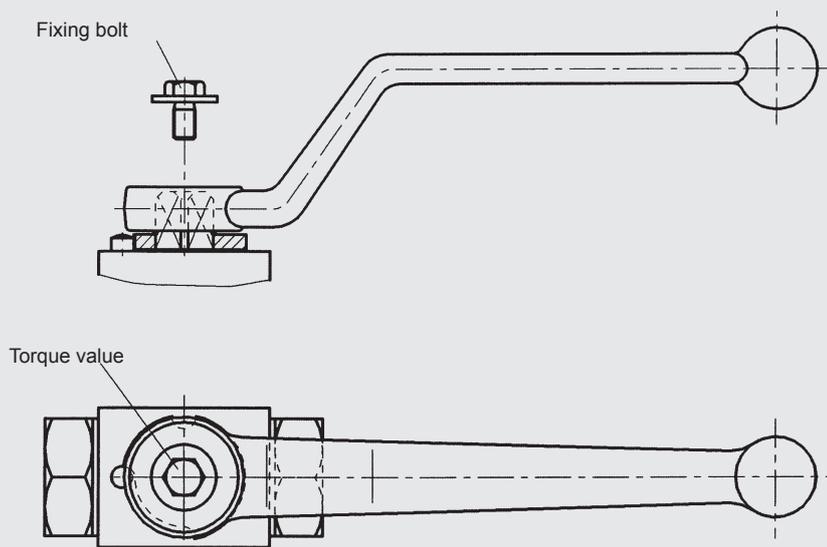
The fixing bolts for the bolt-on handles must be ordered separately.

#### CLAMPED HANDLE



	SW 09	SW 12	SW 14	SW 17	SW 22
	M 5 x 20	M 5 x 20	M 6 x 30	M 6 x 30	M 8 x 40
Torque value	3 Nm	3 Nm	5 Nm	7 Nm	10 Nm

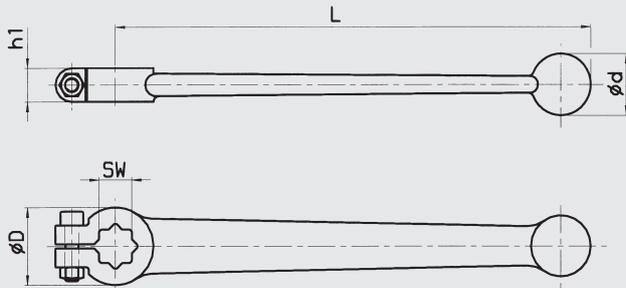
#### BOLT-ON HANDLE



	SW 06	SW 09	SW 12	SW 14	SW 17
Fixing bolt	M 3 x 6	M 5 x 10	M 5 x 12	M 6 x 10	M 8 x 16
Torque value	0.5 Nm	3 Nm	3 Nm	3 Nm	5 Nm

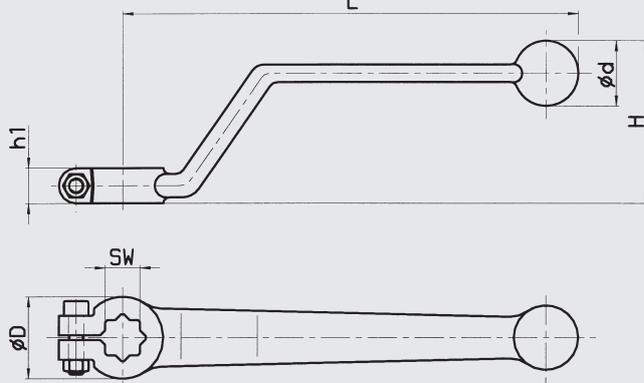
## Dimensions

### STRAIGHT HANDLE - CLAMPED HANDLE



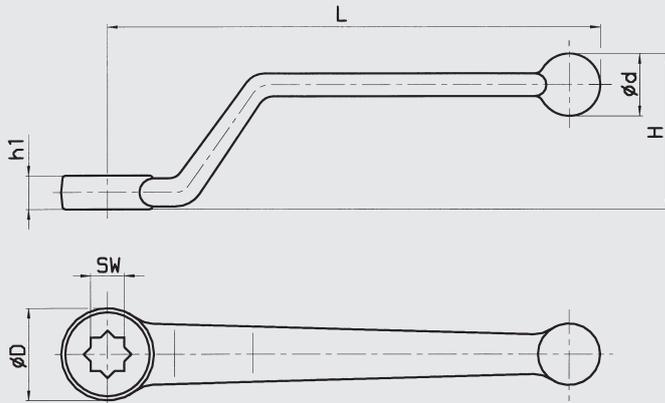
L	ØD	Ød	h1	SW	Type	Part number	Weight (kg)
150	22	15	10	09	ZG (03)	559419	0.090
150	25	20	11	09	AG (01)	270099	0.054
175	28	22	12	12	AG (01)	270100	0.073
200	32	24	12	14	AG (01)	270101	0.096
240	36	26	14	17	AG (01)	270311	0.120

### CRANKED HANDLE - CLAMPED HANDLE



L	H	ØD	Ød	h1	SW	Type	Part number	Weight (kg)
140	41	25	20	11	09	AK (02)	271423	0.054
163	50	28	22	12	12	AK (02)	270381	0.072
183	54	32	24	12	14	AK (02)	270382	0.097
227	55	36	26	14	17	AK (02)	270383	0.120
360	85	44	32	18	22	AK (02)	281604	0.290

### CRANKED HANDLE - BOLT-ON HANDLE



L	H	ØD	Ød	h1	SW	Type	Part number	Weight (kg)	Fixing bolt/washer part no.
76	27	16	12	6	06	ZK (04)	554893	0.030	6060920
108	28	22	10	9.5	09	ZK (04)	556352	0.053	6047759
169	59	31	18	12.5	12	SK (06)	275036	0.28	6047760
169	59	31	18	12.5	14	SK (06)	282976	0.275	6047761
228	80	34	20	14	17	SK (06)	273662	0.342	6047762
306	81	35	22	16	17	SK (26)	561681	0.591	6047762

## Technical specifications

### Material:

Aluminium - red anodised  
 Zinc die-casting - blue zinc-plated  
 Steel handle - blue zinc-plated

### Widths of control spindle square

SW 06, SW 09, SW 12, SW 14,  
 SW 17, SW 22

### NOTE

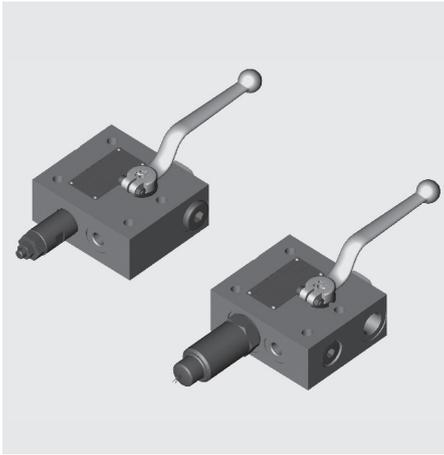
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

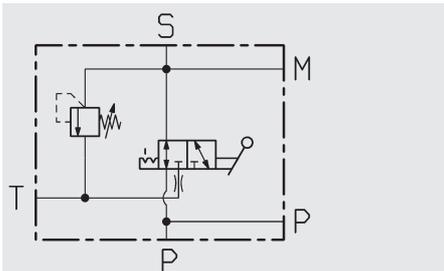
Subject to technical modifications.

**HYDAC Accessories GmbH**  
 Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: www.hydac.com  
 E-Mail: info@hydac.com

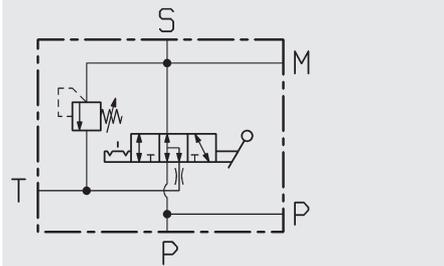




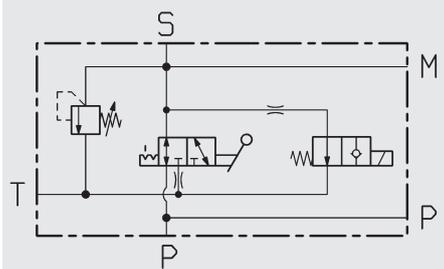
## 3-Way Safety Block DSV



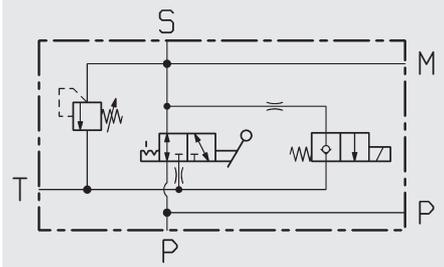
DSV 10 - M



DSV 10 - M - T-ball



DSV 10 - EY



DSV 10 - EZ

PN up to 350  
DN 10

### 1. DESCRIPTION

#### 1.1. GENERAL

The 3-way safety block is used to shut off and discharge hydraulic accumulators or consumers. It complies with relevant safety standards in accordance with accident prevention regulations (UVV (VBG 17)), safety regulations to DIN 24552, pressure vessels regulations (Druckbeh.V) and technical regulations on pressure vessels (TRB 403 and TRB 404).

The pressure relief valve can be supplied either pre-set by the manufacturer according to order, adjustable or pressure-set & lead-sealed by TÜV.

There are four different models:

- DSV 10 M  
manual discharge  
standard - L-ball
- DSV 10 M - T-ball  
manual discharge  
T-ball
- DSV 10 EY  
manual /  
solenoid-operated discharge  
open when de-energised
- DSV 10 EZ  
manual /  
solenoid-operated discharge  
closed when de-energised

Benefits of the accumulator block:

- Slot on the control spindle gives visual indication of the switching position
- Switching limited by means of stop pin and stop disc
- Sealing principle with floating ball, sealing on the inlet side
- Easy operation
- Two pump ports
- Optimised block design
- Minimum of space and fitting required
- All types of connection adapters for various makes and systems of accumulator
- Surface protection phosphate-plated

On request we can supply other models to cover nearly all applications, e.g. for aggressive media. Test certificates to EN 10204 and quality test certificates to DIN 55350 Part 18 can be supplied if required.

## 1.2. FUNCTION

When the accumulator is in operation the change-over ball valve connects the pump port with the accumulator. At the same time the accumulator is monitored for pressure via the built-in pressure relief valve.

By switching over the ball valve, the pump port is shut off leakage-free on the inlet side and the accumulator is discharged simultaneously to the tank. During switching, all three ports (P, S and T) are momentarily interconnected (negative switching overlap).

If a solenoid operated 2/2 directional poppet valve is fitted, automatic discharge is possible (e.g. in the event of a power failure or shut-down).

## 1.3. APPLICATION

The three-way safety block DSV is used to protect, shut-off and discharge hydraulic accumulators and consumers.

Areas of application:

- Hydraulic systems using accumulators
- Accumulator stations
- System engineering

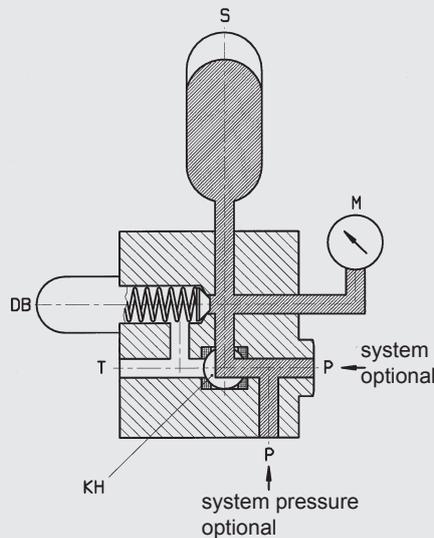
## 1.4. NOTES

Ball valves are not designed to be used as flow control valves. Therefore they should always be either fully open or fully closed, to avoid damaging the sealing cups.

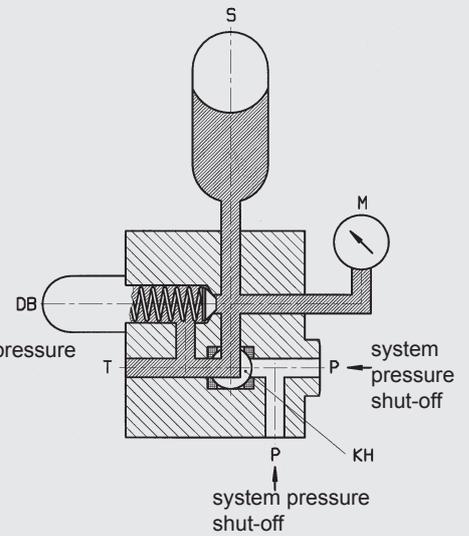
To ensure correct functioning, pressure and temperature specifications must be observed.

The handles are supplied loose.

### Accumulator operation



### Shutting off the system pressure and simultaneously discharging the accumulator



P	Pump port	S	Accumulator
KH	Change-over ball valve	DB	Pressure relief valve
M	Pressure gauge port	T	Tank port

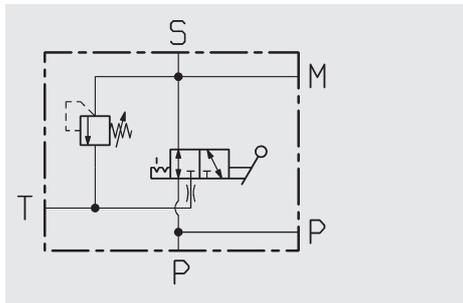
## 2. SPECIFICATIONS

### 2.1. GENERAL

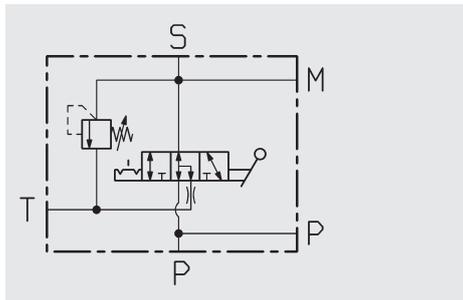
#### 2.1.1 Designation and Symbol

3-way safety block DSV

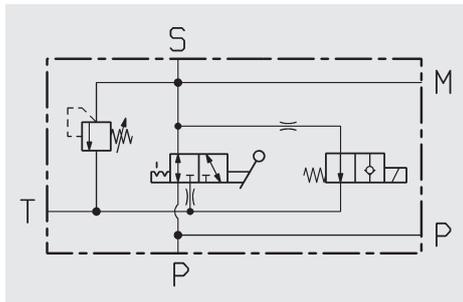
DSV 10 - M



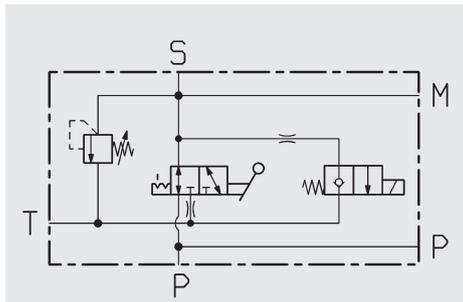
DSV 10 - M - T-ball



DSV 10 - EY



DSV 10 - EZ



#### 2.1.2 Model code (also order example)

**DSV - 10 - M ... - 4 . 1 / 1 / X / T 100 - G 24 - Z4 - ...**

**3-way safety block**

**Nominal bore**  
10

**Discharge**

M = Manual

E = Manual / solenoid-operated

**For solenoid-operated discharge  
with manual override, also indicate:**

Y = Open when de-energised

Z = Closed when de-energised

**Type of pressure relief valve**

4 = DB 12

2 = DB 4

0 = DBD 6 (on request)

**With/without fitted  
pressure relief valve**

1 = With pressure relief valve

0 = Without pressure relief valve

**Accumulator connection**

1 = M 33 x 2

(M 20 x 1.5 - DBD6, on request)

**Series**

(determined by manufacturer)

**Setting of pressure relief valve**

T = TÜV certificate (pressure set & lead sealed)

V = Adjustable using tool

F = Preset by manufacturer

x = No details (for model without relief valve cartridge)

**Pressure setting**

... = Customer-specified opening pressure

xxx = No details (for model without relief valve cartridge)

Pressure setting range

DB 4 – 100 bar

DB 12 – 150 bar

DB 4 – 200 bar

DB 12 – 250 bar

DB 4 / 12 – 350 bar

**Type of voltage for solenoid** (see 2.3.2)

G = DC

W = AC

**Nominal voltage for solenoid** (see 2.3.2)

24 = 24 Volt DC (for type G voltage)

230 = 230 Volt 50/60 Hz AC (for type W voltage)

**Type of connection for solenoid**

Z4 = Connector to DIN 43650 - AF2 - PG11

**Supplementary details**

T-Ball = Ball bore (180° switch)

FKM (Viton) = O-ring seal

When ordering please quote Part No. (see Table 2.1.3)

Delivery is longer for non-standard models.

### 2.1.3 Standard models

Nominal bore / Type	Pressure relief valve	Order No. = Part No.	Weight [kg]
DSV - 10 - M - 2.0/1/X/XXXX	without DB 4	555998	2.5
DSV - 10 - M - 2.1/1/X/T100	DB 4	557361	2.6
DSV - 10 - M - 2.1/1/X/T200	DB 4	557362	2.6
DSV - 10 - M - 2.1/1/X/T210	DB 4	555408	2.6
DSV - 10 - M - 2.1/1/X/T315	DB 4	557363	2.6
DSV - 10 - M - 2.1/1/X/T330	DB 4	557364	2.6
DSV - 10 - EY - 2.0/1/X/XXXX - G24 - Z4	without DB 4	557366	3.6
DSV - 10 - EY - 2.1/1/X/T210 - G24 - Z4	DB 4	557365	3.8
DSV - 10 - M - 4.0/1/X/XXXX	without DB 12	555999	3.1
DSV - 10 - M - 4.1/1/X/T100	DB 12	555971	3.5
DSV - 10 - M - 4.1/1/X/T200	DB 12	555973	3.5
DSV - 10 - M - 4.1/1/X/T210	DB 12	555974	3.5
DSV - 10 - M - 4.1/1/X/T315	DB 12	555977	3.4
DSV - 10 - M - 4.1/1/X/T330	DB 12	555978	3.5
DSV - 10 - EY - 4.0/1/X/XXXX - G24 - Z4	without DB 12	557367	4.5
DSV - 10 - EY - 4.1/1/X/T100 - G24 - Z4	DB 12	555983	4.9
DSV - 10 - EY - 4.1/1/X/T200 - G24 - Z4	DB 12	555985	3.9
DSV - 10 - EY - 4.1/1/X/T210 - G24 - Z4	DB 12	555986	4.9
DSV - 10 - EY - 4.1/1/X/T315 - G24 - Z4	DB 12	555989	3.9
DSV - 10 - EY - 4.1/1/X/T330 - G24 - Z4	DB 12	555990	4.9

### 2.1.4 Type of construction

Ball valve isolating device

Pressure relief valve is a direct-acting cone poppet valve

Poppet valve is pilot-operated

### 2.1.5 Mounting position

Optional

### 2.1.6 Weight

See table 2.1.3

### 2.1.7 Flow direction

According to symbol

### 2.1.8 Ambient temperature

- 10 °C to + 80 °C

### 2.1.9 Materials

Housing and blanking plug

- Steel
- Surface protection: phosphate-plated

Ball

- Steel
- Hard-chromed

Pressure relief valve and poppet valve

Valve body:

- High tensile steel

Closing element:

- Hardened and polished steel
- Wear-resistant
- Surface protection: phosphate-plated

Ball seal

- High quality synthetic material (POM)

Soft seals

- Perbunan (NBR)

Clamped handle SW 09, cranked

- Red anodised aluminium

## 2.2. HYDRAULIC SPECIFICATIONS

### 2.2.1 Nominal pressure PN 350

**2.2.2 Operating fluids**  
Mineral oil to DIN 51524 Part 1 and 2 (other fluids on request)

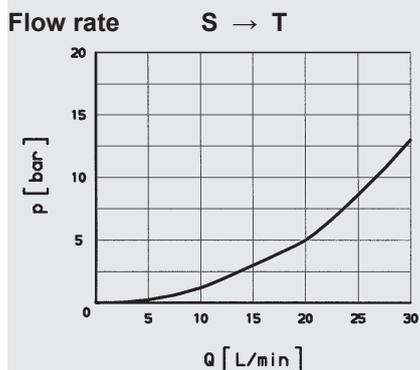
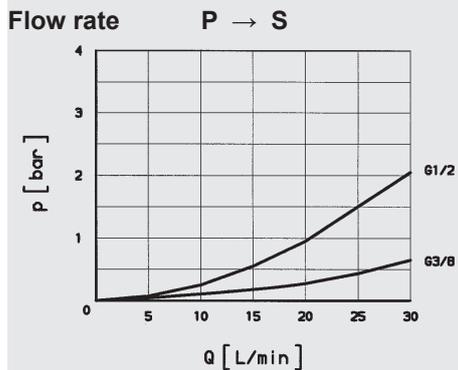
**2.2.3 Temperature of operating fluid**  
- 10 °C to + 80 °C

**2.2.4 Viscosity range**  
min. 10 mm<sup>2</sup>/s  
max. 380 mm<sup>2</sup>/s

**2.2.5 Filtration**  
Max. permitted contamination level of the operating fluid to NAS 1638 class 10. We therefore recommend a filter with a minimum retention rate of  $\beta_{20} \geq 100$ . The fitting of filters and regular replacement of filter elements guarantees correct operation, reduces wear and tear and extends the service life.

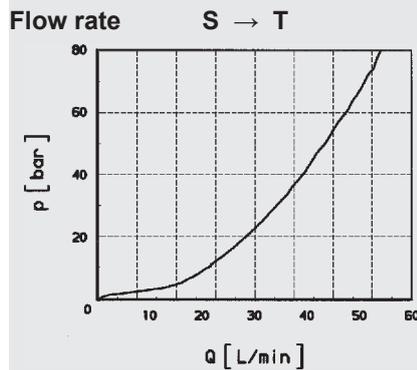
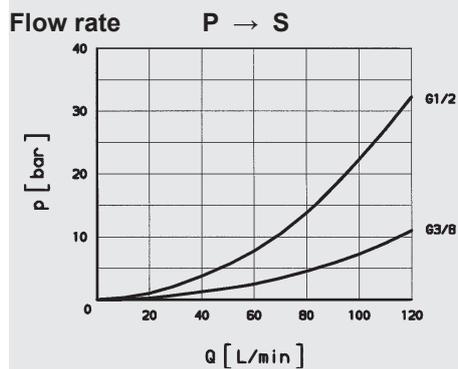
### 2.2.6 $\Delta p$ - Q Graph curve DSV - 10 with pressure relief valve DB 4

Measured at  $v = 30 \text{ mm}^2/\text{s}$  and  $t_{\text{oil}} = 50 \text{ }^\circ\text{C}$



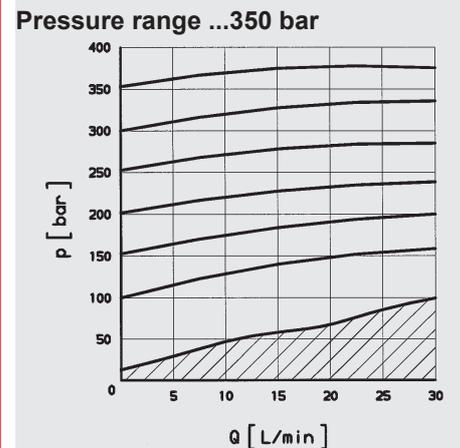
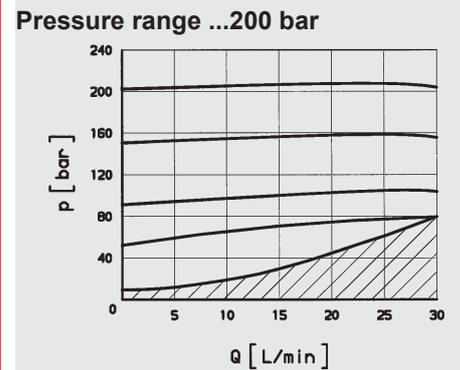
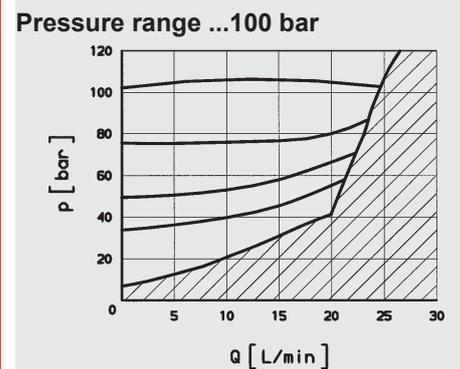
### 2.2.7 $\Delta p$ - Q Graph curve DSV - 10 with pressure relief valve DB 12

Measured at  $v = 30 \text{ mm}^2/\text{s}$  and  $t_{\text{oil}} = 50 \text{ }^\circ\text{C}$



### 2.2.8 Pressure, dependent on flow rate DB 4

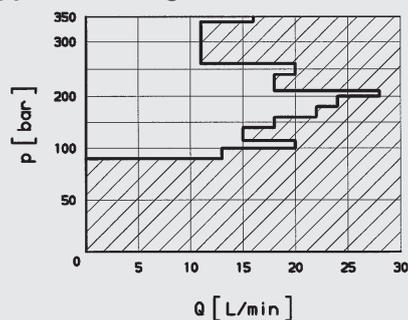
Measured at  $v = 36 \text{ mm}^2/\text{s}$  and  $t_{\text{oil}} = 50 \text{ }^\circ\text{C}$



## 2.2.9 Pressure, flow rate dependent DB 4 - TÜV

Measured at  $v = 36 \text{ mm}^2/\text{s}$  and  
 $t_{\text{oil}} = 50 \text{ }^\circ\text{C}$

### Application range of DB 4 - TÜV



### $Q_{\text{max}}$ table for DB 4 - TÜV

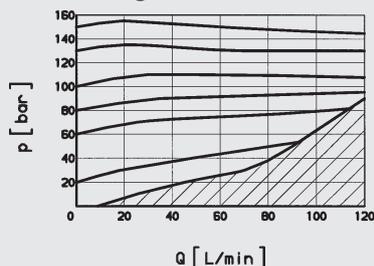
Max. permitted flow rate of the pump

$Q_{\text{max}}$ [l/min]	p [bar]
13	90 - 100
20	101 - 115
15	116 - 140
18	141 - 160
22	161 - 180
24	181 - 200
28	201 - 210
18	211 - 240
20	241 - 260
11	261 - 340
16	341 - 360

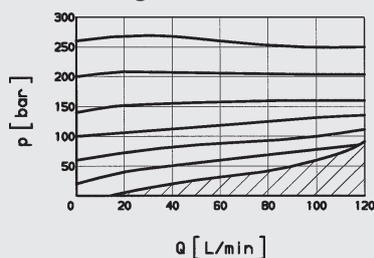
## 2.2.10 Pressure, dependent on flow rate DB 12

Measured at  $v = 28 \text{ mm}^2/\text{s}$  and  
 $t_{\text{oil}} = 50 \text{ }^\circ\text{C}$

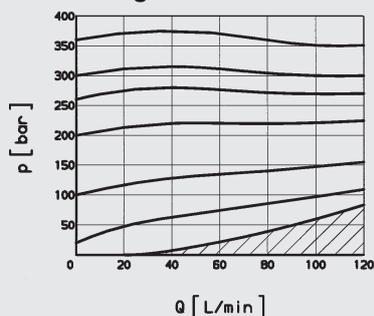
### Pressure range ...150 bar



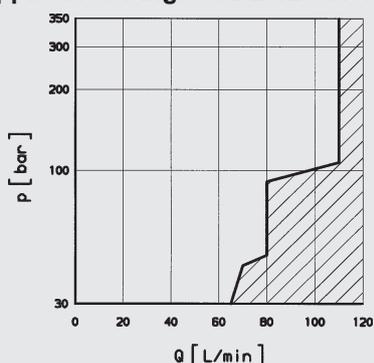
### Pressure range ...250 bar



### Pressure range ...350 bar



### Application range of DB 12 - TÜV



### $Q_{\text{max}}$ table for DB 12 - TÜV

Max. permitted flow rate of the pump

$Q_{\text{max}}$ [l/min]	p [bar]
65	30, 35
72	40, 45
80	50, 60, 70, 80, 90
95	100
110	110, 120, 140, 160... to 400

Note:

This valve cannot be set to values in the shaded areas.

## 2.3. TYPE OF OPERATION

### 2.3.1 Type of construction

Solenoid-operated by means of pressure-tight, oil-immersed, single-stroke solenoids in accordance with VDE 0580.

Actuating solenoid with male connector to DIN 43650, standard for general industrial applications, available for 24 V DC and 230 V AC.

### 2.3.2 Type of voltage

DC solenoid (type G)  
When connected to AC voltage (type W) the necessary DC voltage is produced by means of a bridge rectifier connector.

### 2.3.3 Nominal voltage

Standard nominal voltages :  
Voltage type G : 24 V  
Voltage type W : 230 V

### 2.3.4 Voltage tolerance

- 5 %  
+ 10 %

### 2.3.5 Nominal current

Dependent on the nominal voltage  
G 24 V : 1.04 A  
W 230 V : 0.13 A

### 2.3.6 Power consumption

$p_{20} = 26 \text{ W}$

### 2.3.7 Duty cycle

100% = continuous operation

### 2.3.8 Switching time

Depending on the symbol, pressure across the individual ports and flow rate, switch-on time is approx. 25 ms, switch-off time approx. 35 ms.

### 2.3.9 Protection class

Protection class IP 65 to DIN 40050 provided connector has been fitted correctly.

### 2.3.10 Ambient temperature range

- 10 °C to + 40 °C

### 3. ADAPTERS

#### 3.1. GENERAL

Adapters for mounting different makes and systems of accumulator must be ordered separately.

#### 3.2. MODEL CODE

(also order example)

**UEBERG-ST - S30 - NBR**

Adapter \_\_\_\_\_

Type \_\_\_\_\_

S10 = M 33 x 2 / G 3/4 A

S11 = M 33 x 2 / G 1 A

S12 = M 33 x 2 / G 1 1/4 A

S13 = M 33 x 2 / G 2 A

S20 = M 33 x 2 / M 30 x 1.5

S21 = M 33 x 2 / M 40 x 1.5

S22 = M 33 x 2 / M 50 x 1.5

S30 = M 33 x 2 / G 1/2 A

S31 = M 33 x 2 / G 3/4 A

S32 = M 33 x 2 / G 1 A

S33 = M 33 x 2 / G 1 1/4 A

( M 20 x 1.5 / ... on request )

Seal \_\_\_\_\_

NBR = Perbunan

When ordering, please quote part number (see Table 3.3.)

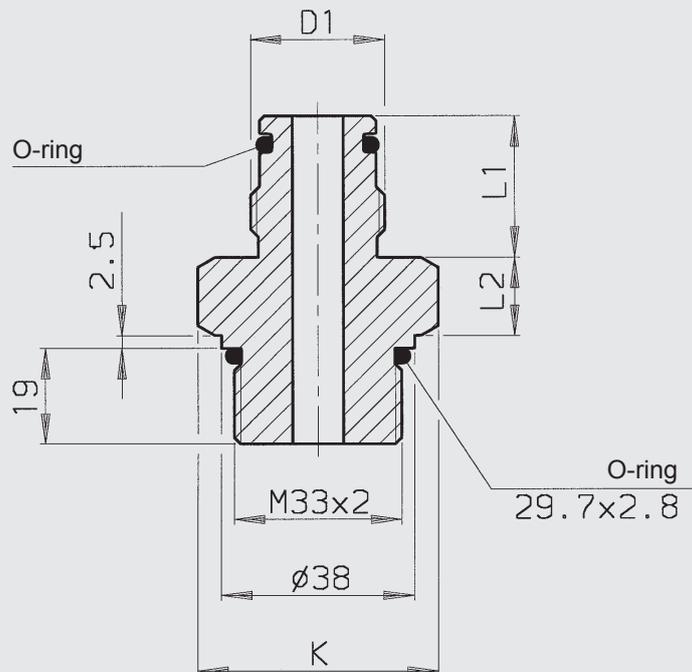
Delivery is longer for non-standard models.

#### 3.3. STANDARD MODELS

Adapter / Type	Order No. = Part No.
ADAPTER - S10 - NBR	369479
ADAPTER - S11 - NBR	372750
ADAPTER - S12 - NBR	369480
ADAPTER - S13 - NBR	369481
ADAPTER - S20 - NBR	369482
ADAPTER - S21 - NBR	369483
ADAPTER - S22 - NBR	369484
ADAPTER - S30 - NBR	369485
ADAPTER - S31 - NBR	369486
ADAPTER - S32 - NBR	369487
ADAPTER - S33 - NBR	379009

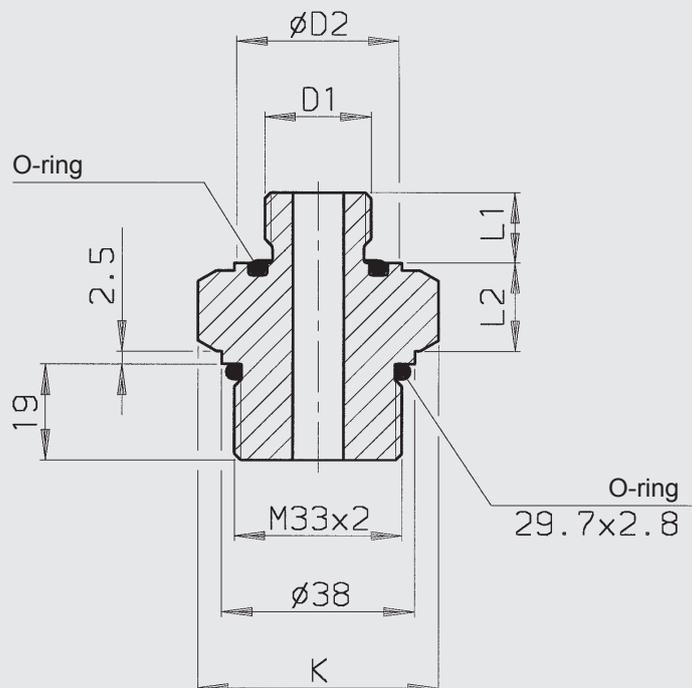
### 3.4. DIMENSIONS OF ADAPTERS

Adapter - M 33 x 2, Figure 1



Type	Thread D1	D2	L1	L2	K	O-ring
S10	ISO 228 - G ¼ A	-	28	15.5	SW 41	17 x 3
S11	ISO 228 - G 1 A	-	34	16.5	SW 46	22 x 3
S12	ISO 228 - G 1¼ A	-	37	16.5	SW 46	30 x 3
S13	ISO 228 - G 2 A	-	44	20.5	SW 65	48 x 31

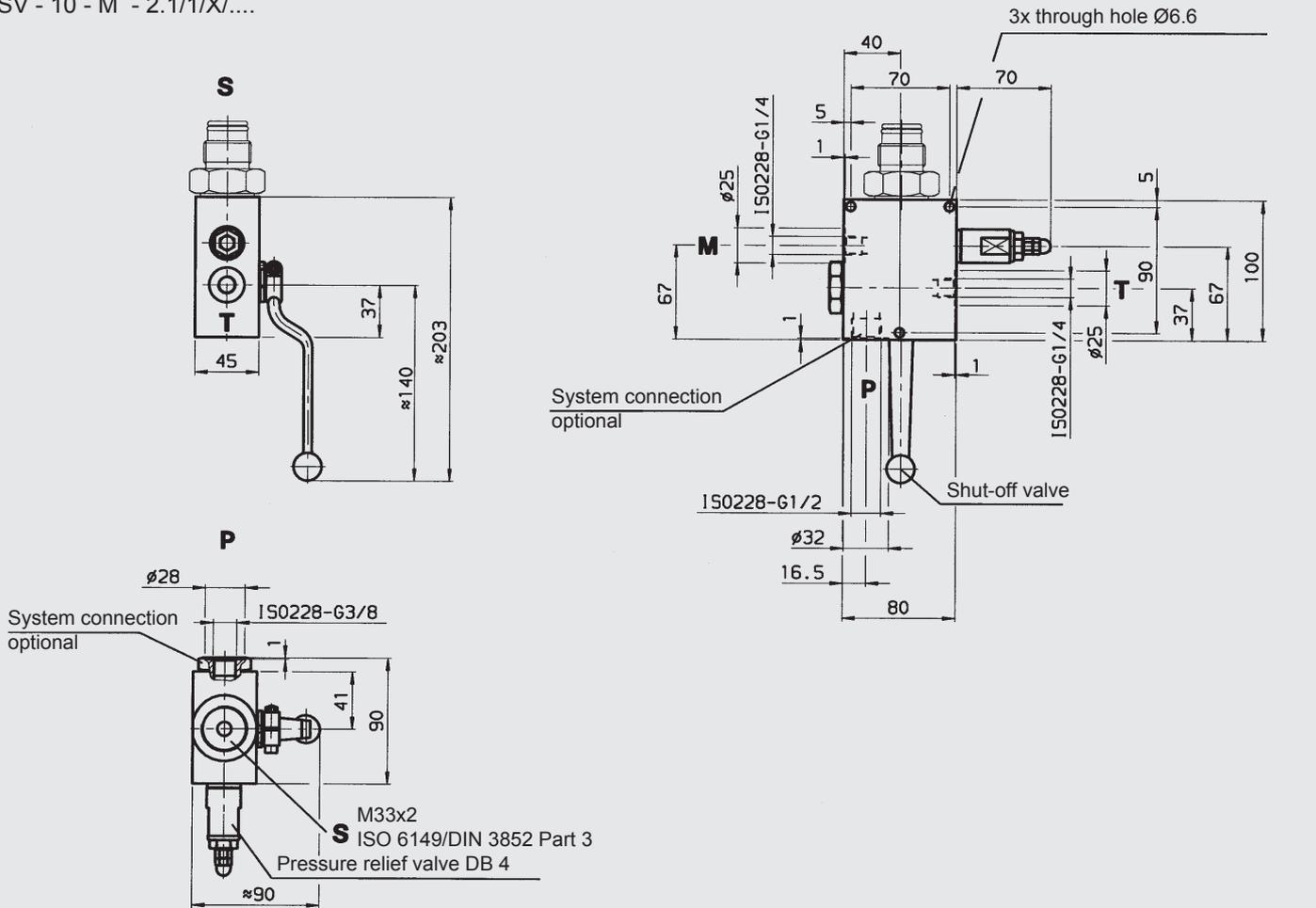
Adapter - M 33 x 2, Figure 2



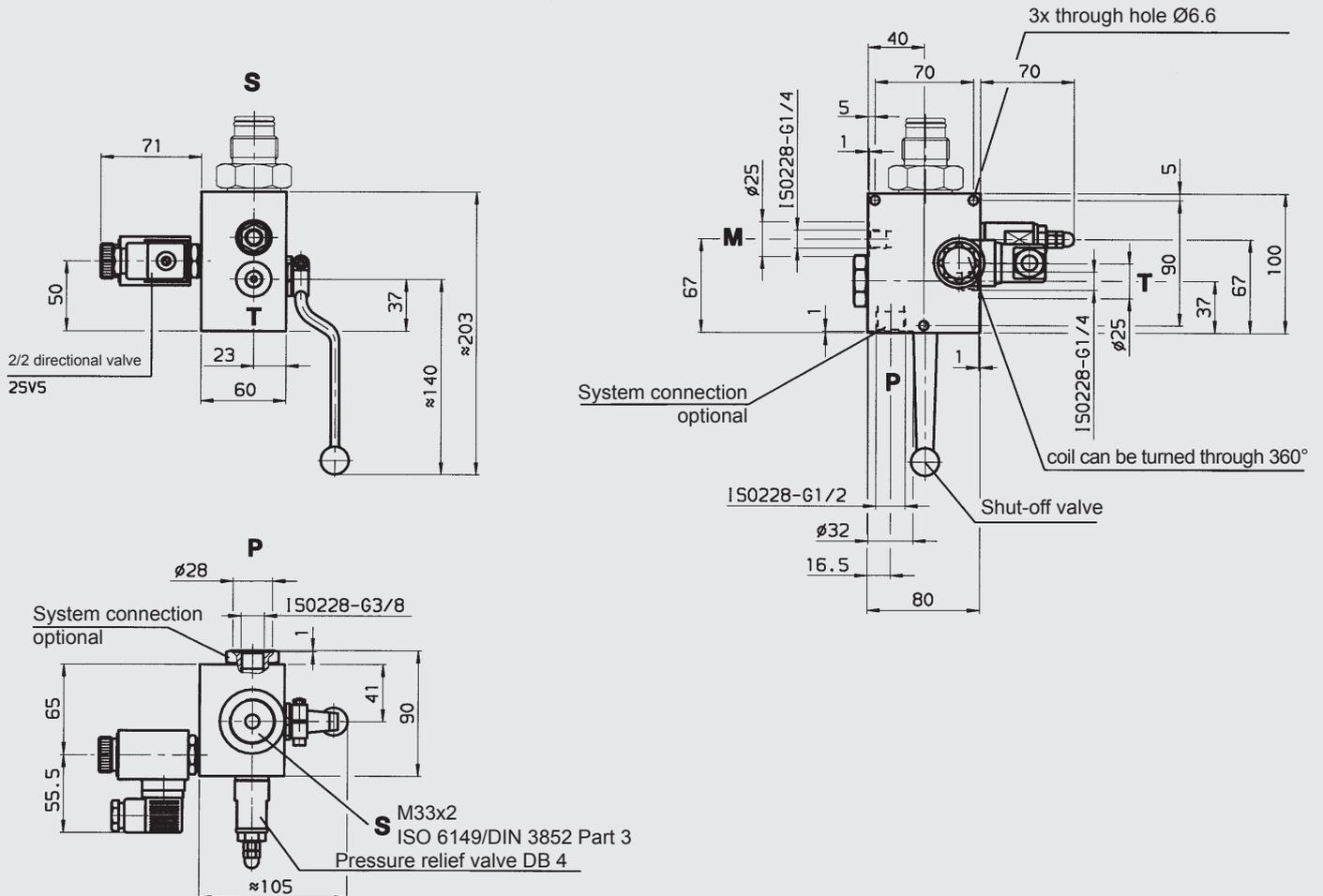
Type	Thread D1	D2	L1	L2	K	O-ring
S20	M 30 x 1.5	40	15	17.5	SW 41	32 x 2
S21	M 40 x 1.5	54	20	20.5	SW 55	43 x 3
S22	M 50 x 1.5	64	20	20.5	SW 65	53 x 3
S30	ISO 228 - G ½ A	33	14	17.5	SW 41	22 x 3
S31	ISO 228 - G ¾ A	40	16	17.5	SW 41	28 x 3
S32	ISO 228 - G 1 A	45	18	18.5	SW 46	35 x 3
S33	ISO 228 - G 1¼ A	55	20	18.5	SW 65	44 x 33

## 4. DIMENSIONS

DSV - 10 - M - 2.1/1/X/....



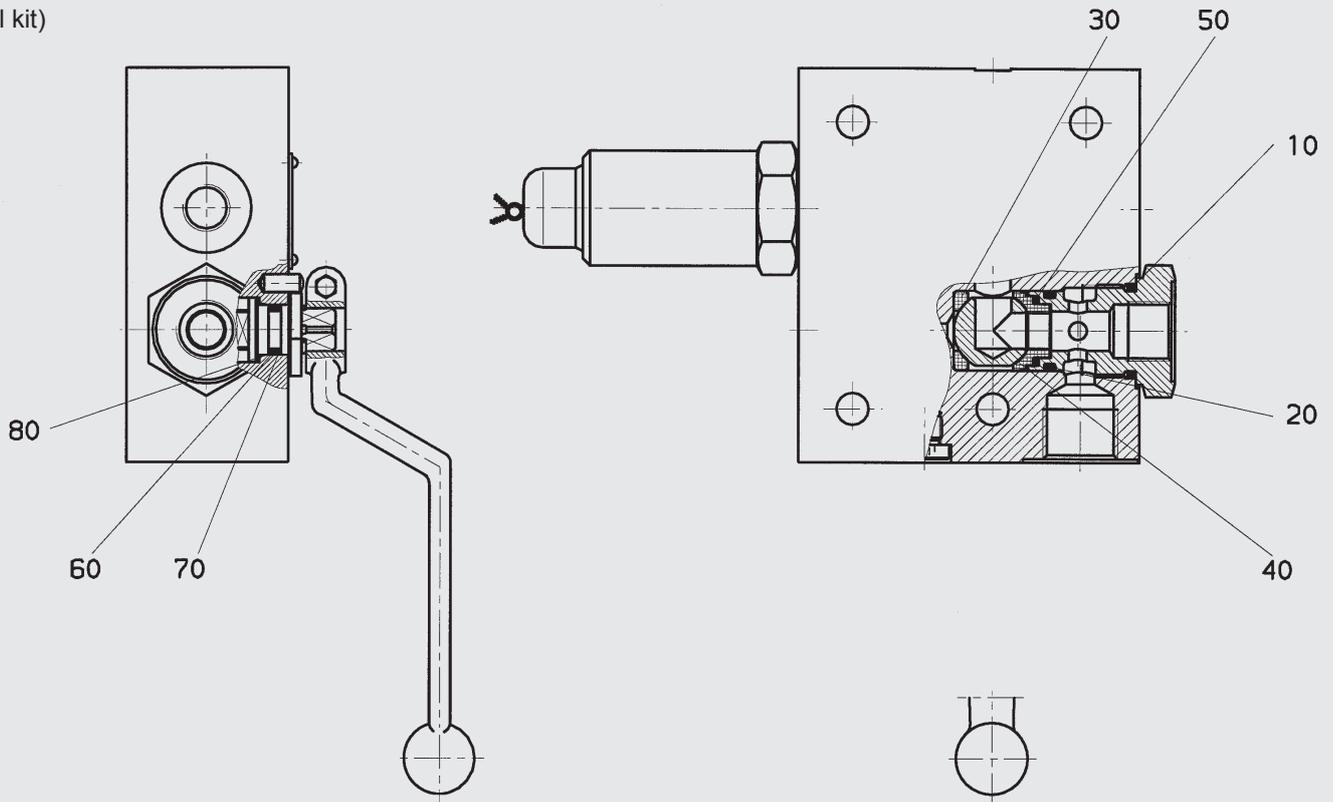
DSV - 10 - E.- 2.1/1/X/....





## 5. SPARE PARTS

(Seal kit)



The parts indicated by numbers in the above drawing are contained in the seal kit.

Seal kit	Order No. = Part No.
DSV - 10	702513
DB 4	715870
DB 12	557399
2 SV 5	480078

### NOTE

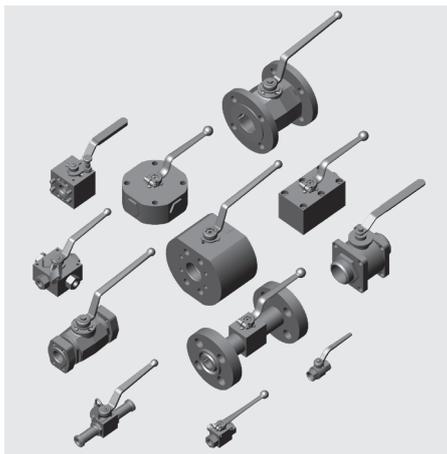
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

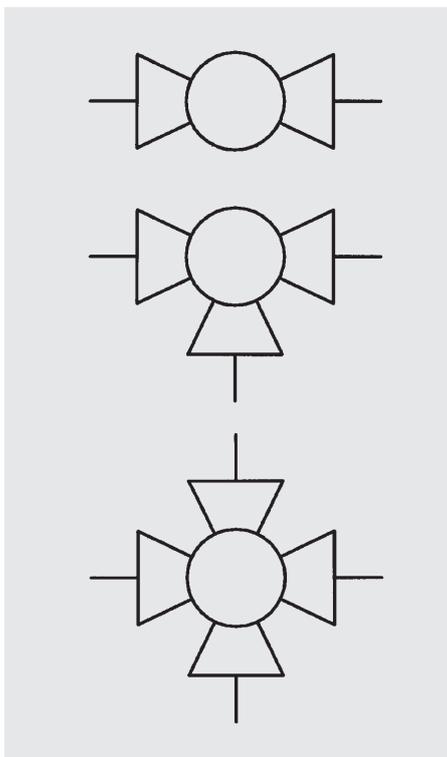
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
Email: [info@hydac.com](mailto:info@hydac.com)





## Compatibility List

For 2/2-, 3/2- and 4/2-Way Ball Valves



### 1. DESCRIPTION

#### 1.1 GENERAL

The HYDAC compatibility list is intended as a non-binding recommendation for the selection of materials for the housing, connection adapters, control spindle, ball and seals for ball valves.

The data given in this brochure is based on the tests, recommendations and experience of our suppliers. Given the immense variety of applications, media concentrations, pressures and temperatures, the data is intended to be a general guideline only.

#### 1.2 NOTES

All the data applies to the usual concentrations of the media at room temperature, 20 °C. In individual cases we can select specific seal combinations and suitable materials for problematic operating conditions on request.

Medium	Ball valve materials				Soft seals		Sealing cups	
	Steel	Brass	Control spindle		NBR	FKM	POM	PTFE
			Housing Ball	GG, GS-C				
<b>A</b>								
Acetaldehyde	3	2	3	1	4	3	2	1
Acetic acid	3	3	3	1	4	4	4	1
Acetic anhydride	4	3	4	2	4	4	4	1
Acetone	1	1	1	1	4	4	2	2
Acetylene	1	4	1	1	2	2	2	2
Acrylonitrile	1	1	3	1	4	3	4	1
Air	1	1	1	1	1	1	1	1
Alcohol	4	4	4	4	4	1	1	1
Alum, aqueous	3	3	3	1	2	1	2	1
Aluminium chloride	3	3	3	1	2	1	1	1
Ammonia	1	4	2	1	3	4	2	1
Ammonium carbonate	2	4	2	2	3	3	3	1
Ammonium chloride	4	4	4	2	2	1	2	1
Ammonium phosphate, aqueous	4	4	4	2	2	1	2	1
Ammonium sulphate	3	4	3	2	2	1	2	1
Amyl acetate	3	3	3	2	4	4	2	1
Aniline	2	3	3	1	4	2	2	1
Argon gas	1	1	1	1	1	1	1	1
Aviation fuel JP 3-6	1	1	1	1	3	2	3	1
<b>B</b>								
Beer	4	1	4	1	1	1	1	1
Beet sugar solution	2	-	2	1	2	1	1	1
Benzene	2	2	2	2	4	3	2	1
Bitumen	1	2	2	1	4	2	3	1
Borax, aqueous	3	3	3	2	1	1	1	1
Boric acid, aqueous	3	3	4	2	1	1	2	1
Brake fluid	2	2	3	2	4	3	2	1
Brandy	2	2	3	2	2	1	2	1
Bromine	4	3	4	4	4	2	-	1
Brown coal tar	1	4	1	1	4	4	4	1
Butane, gaseous	2	1	2	2	2	2	2	1
Butter fat	4	4	4	1	1	4	1	1
Butyric acid, aqueous	4	3	4	2	2	2	2	1
<b>C</b>								
Cadmium chloride	4	4	4	1	1	4	4	1
Cadmium sulphate	1	1	1	1	1	1	1	1
Calcareous water	1	1	1	1	1	1	1	1
Calcium bisulphate, aqueous	4	2	4	2	2	2	2	1
Calcium carbonate	1	4	4	1	1	1	4	1
Calcium chloride, aqueous	3	2	3	2	1	1	1	1
Calcium hydroxide	3	1	3	2	1	1	2	1
Carbon dioxide	1	1	2	1	2	1	4	1
Carbon disulphide	3	3	3	2	4	1	2	1
Carbonic acid	2	4	4	2	2	2	2	1
Castor oil	2	1	2	1	1	1	1	1
Cellolube 220	1	1	1	1	4	1	1	1
Chlorine wet + dry	4	4	4	4	4	2	4	1
Chlorine, gaseous up to 100 °C	4	4	4	1	4	1	4	1
Chlorobenzene	2	2	2	1	4	2	2	1
Chloroform	2	2	2	1	4	2	4	1
Citric acid	4	2	4	2	2	1	2	1
Clophen A	1	1	1	1	4	1	4	1
Coal tar oil	1	1	1	1	4	2	3	1
Coke oven gas	2	3	2	1	4	2	-	1
Condenser oil	1	4	1	1	4	1	1	1

Medium	Ball valve materials				Soft seals		Sealing cups	
	Steel	Brass	Control spindle		NBR	FKM	POM	PTFE
			Housing Ball	GG, GS-C				
<b>C</b>								
Copper nitrate, aqueous	4	4	4	2	2	1	2	1
Copper sulphate, aqueous	4	4	4	2	2	1	2	1
Cresoly, aqueous	3	3	4	2	4	2	4	1
Crude oil	2	2	2	1	2	1	1	1
Crude oil	2	2	2	1	2	1	2	1
Cutting oil	1	1	1	1	1	1	1	1
Cutting oil emulsion	3	3	2	2	1	2	1	1
<b>D</b>								
Diesel fuel	1	1	1	1	3	1	2	1
<b>E</b>								
Edible oil	4	4	4	1	1	4	4	1
Ethane	2	1	2	2	1	1	1	1
Ethanol	2	2	2	1	3	3	2	1
Ether	1	1	1	1	4	4	4	1
Ethyl acetate	2	3	2	2	4	4	2	1
Ethylene	2	-	2	1	2	2	2	1
<b>F</b>								
Faecal matter	1	4	1	1	1	1	1	1
Fatty acids	4	-	4	1	3	1	1	1
Fertilizer solution	4	3	4	3	4	4	-	1
Fire extinguishing substance	1	1	1	1	1	4	4	1
Fish oil	2	2	2	1	2	1	1	1
Formaldehyde	3	1	3	1	2	2	1	1
Formic acid	4	2	4	2	4	4	4	1
Freon	2	2	2	1	2	2	2	1
Fruit juices	4	3	4	1	2	1	1	1
Fuel oil, heavy	2	2	3	1	4	3	3	1
Fuel oil, light	2	2	2	1	3	2	3	1
Furan	1	4	4	1	4	4	4	1
Furfural	1	1	2	1	4	4	2	1
<b>G</b>								
Gas liquor	2	2	2	2	2	1	2	1
Gas oil	2	2	2	1	3	1	2	1
Gasoline, pure	1	1	2	1	2	2	2	1
Gelatine	3	3	4	1	1	1	1	1
Glucose	2	1	2	1	1	1	2	1
Glycerine	2	2	2	1	1	2	3	1
Glycol	2	2	2	2	2	2	3	1
<b>H</b>								
Heavy oil	1	1	1	1	4	4	4	1
Heptane	2	1	2	1	2	1	1	1
Hexane	2	2	2	2	2	1	1	1
Hydraulic fluid, based on phosphate-ester	2	4	2	1	4	1	1	1
Hydraulic fluid, based on glycol	2	3	2	1	3	2	3	1
Hydraulic fluid, based on mineral oil	1	1	1	1	1	1	1	1
Hydrochloric acid	4	4	4	4	-	1	-	1
Hydrogen	2	2	2	1	2	2	-	1
Hydrogen peroxide	4	4	4	2	4	2	4	1
Hydrogen sulphide	3	4	4	2	3	2	3	1
<b>I</b>								
Ink	4	3	4	1	1	1	1	1
Iron chloride	4	2	4	4	2	1	3	1
Iron sulphate	4	2	4	2	3	1	1	1

Medium	Ball valve materials				Soft seals		Sealing cups	
	Steel	Brass	Control spindle		NBR	FKM	POM	PTFE
			Housing Ball	GG, GS-C				
<b>I</b>								
Isobutyl alcohol	2	2	3	2	3	1	3	1
Isooctane	1	1	1	1	1	1	3	1
Isopropyl alcohol	2	2	3	2	3	1	2	1
Isopropyl ether	1	1	3	1	3	4	-	1
<b>K</b>								
Kerosene	2	2	2	1	2	1	1	1
Ketone	4	4	4	1	4	4	4	1
<b>L</b>								
Lacquers	2	1	2	1	4	3	2	1
Latex emulsion	2	1	2	1	-	-	1	1
Lead acetate, aqueous	4	3	4	1	4	2	3	1
Linseed oil	1	2	1	2	2	1	1	1
Lubricating oil	1	2	1	1	1	1	1	1
Lubricating oil, mineral	1	1	1	1	1	1	2	1
Lyes, alkaline	4	4	4	1	1	4	1	1
<b>M</b>								
Magnesium chloride	3	3	4	2	2	1	1	1
Magnesium hydroxide	2	4	2	1	2	1	1	1
Magnesium sulphate	3	2	3	2	2	1	1	1
Maleic anhydride	4	2	4	2	-	2	3	1
Malic acid	4	3	4	2	1	1	1	1
Mercury	1	4	1	1	1	1	1	1
Mercury chloride	4	4	4	3	2	1	4	1
Methane	2	1	2	2	1	1	2	1
Methanol	2	2	2	2	3	4	2	1
Methyl ethyl ketone	1	1	3	1	4	4	1	1
Methylamine, aqueous	2	4	2	1	4	4	-	1
Methylene bromide	4	1	4	4	4	1	3	1
Methylene chloride	2	1	3	1	4	3	3	1
Milk of lime	2	-	2	1	4	2	2	1
Mine gas	1	1	4	1	1	1	1	1
<b>N</b>								
Naphtha	2	2	2	1	2	1	1	1
Naphthalene	2	2	2	2	4	1	1	1
Natural gas	2	2	2	1	2	1	2	1
Nickel chloride	4	4	4	2	1	1	2	1
Nickel sulphate	4	4	4	2	2	1	2	1
Nitric acid	1	4	1	1	4	4	4	1
Nitrobenzene	-	4	3	1	4	3	4	1
Nitrogen	1	1	1	1	1	1	1	1
<b>O</b>								
Oil-water emulsion	1	1	1	1	1	1	1	1
Oleic acid	2	2	3	2	2	1	1	1
Oleum	3	4	3	2	4	2	4	1
Oxalic acid	4	4	4	2	2	1	3	1
Oxygen	2	1	3	1	4	2	4	1
Oxygen gas	1	1	1	1	1	1	1	1
Ozone	4	4	4	1	-	-	-	1
<b>P</b>								
Palm oil	4	4	4	1	4	1	1	1
Palmitic acid	2	2	2	2	2	1	2	1
Paraffin	2	1	2	1	1	1	2	1
Pentane	2	1	2	1	1	1	2	1
Perchloroethylene	1	4	1	1	4	4	4	1
Petroleum	2	2	2	1	2	1	1	1
Phenol	2	2	2	2	4	2	4	1

Medium	Ball valve materials				Soft seals		Sealing cups	
	Steel	Brass	Control spindle		NBR	FKM	POM	PTFE
			Housing Ball	GG, GS-C				
<b>P</b>								
Picric acid	4	3	4	1	2	1	-	1
Pine needle oil	2	2	2	1	2	1	2	1
Pit water	1	1	1	1	1	1	1	1
Potassium bromide, aqueous	4	3	4	1	2	1	2	1
Potassium carbonate, aqueous	2	2	2	2	1	1	2	1
Potassium chlorate, aqueous	2	2	2	2	4	1	2	1
Potassium chloride, aqueous	3	2	3	3	1	1	2	1
Potassium nitrate, aqueous	2	2	2	2	1	1	1	1
Potassium sulphate, aqueous	2	2	2	2	1	1	1	1
Propane	2	1	2	2	2	2	2	1
Propyl alcohol	4	1	4	1	4	-	-	1
Propylene glycol	2	2	2	2	2	1	3	1
Pydraul F9	1	1	1	1	4	1	1	1
<b>S</b>								
Salicylic acid	4	3	4	1	1	1	2	1
Silver nitrate	4	4	4	2	2	2	2	1
Soap solutions	1	1	2	1	1	1	1	1
Sodium bicarbonate	2	2	2	2	2	1	2	1
Sodium carbonate	2	2	2	2	2	1	2	1
Sodium chlorate	3	-	3	2	3	1	2	1
Sodium chloride	2	2	2	2	1	1	1	1
Sodium cyanide	2	4	2	2	2	1	2	1
Sodium hydroxide	2	2	2	1	3	3	-	1
Sodium hydroxide solution	4	4	4	1	1	4	4	1
Sodium nitrate	2	2	2	2	2	1	1	1
Sodium phosphate	3	2	3	1	2	1	2	1
Sodium silicate	2	2	2	2	2	1	2	1
Sodium sulphate	2	2	2	1	2	1	1	1
Sodium sulphide	2	4	3	2	2	1	2	1
Sodium sulphite, aqueous	4	-	4	1	4	3	3	1
Sodium thiosulphate	2	3	2	1	4	1	1	1
Solvents	2	2	2	1	4	3	2	1
Spirit	1	1	1	1	4	4	4	1
Steam (water)	2	1	2	1	4	4	4	1
Stearic acid	3	3	3	2	1	1	1	1
Styrene	1	1	2	1	4	2	2	1
Sugar solution	4	4	4	1	1	4	1	1
Sulphur	3	4	3	2	4	1	2	1
Sulphur dioxide	2	2	2	1	4	1	2	1
Sulphuric acid	2	3	2	1	4	2	4	1
<b>T</b>								
Tannic acid	3	2	3	1	2	2	1	1
Tartaric acid	4	2	4	2	2	1	2	1
Tin chloride	4	4	4	4	2	1	2	1
Toluene	1	1	1	1	4	2	2	1
Town gas	1	1	1	1	2	1	2	1
Transformer oil	1	2	2	1	2	2	1	1
Transmission oil	1	1	1	1	1	1	1	1
Tributyl phosphate	2	2	2	1	4	3	-	1
Trichloroacetic acid	4	4	4	1	4	4	4	1
Trichloroethylene	2	3	3	2	4	3	3	1
Turbine oil	1	1	1	1	4	1	4	1
Turpentine oil	3	2	2	2	2	1	1	1
Urea, aqueous	3	2	3	2	2	2	2	1
<b>V</b>								
Vinegar	4	3	4	1	3	2	4	1

	Ball valve material				Soft seals		Sealing cups	
	Housing	Ball	Control spindle					
Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
<b>V</b>								
Vinyl chloride	2	3	2	2	4	3	2	1
Viscose	1	4	1	1	1	4	1	1
Volatile oils	2	2	2	1	3	2	2	1
<b>W</b>								
Water up to 180 °C.	2	1	2	1	4	4	4	1
Water up to 80 °C.	2	1	2	1	2	2	2	1
Water, distilled	4	1	4	1	2	2	2	1
Water, sea water	4	2	4	2	3	2	3	1
Wax	1	1	1	1	3	2	1	1
<b>X</b>								
Xylenes	2	1	2	1	4	2	1	1
<b>Z</b>								
Zinc chloride	4	4	3	4	3	1	2	1
Zinc sulphate	4	2	4	2	1	1	2	1

- 1 = recommended  
 2 = mostly suitable  
 3 = probably suitable  
 4 = not recommended  
 – = not yet determined

NOTE:  
 MEDIUM TESTED AT ROOM TEMPERATURE 20 °C

## MATERIALS SUMMARY AND APPLICATIONS OF THE MATERIALS IN HYDAC BALL VALVES.

Housing, connection adapter, control spindle and ball:

Material code	Material	Application
1	11SMnPb30+C	General oil hydraulics without special materials requirement.
2	Brass (MS58)	General oil and water hydraulics with increased corrosion protection requirements. Low and medium pressure range.
3	Stainless steel (1.4571)	Special application in the chemical and power industry with high corrosion protection requirements of the material.
5	Structural steel (ST52-3)	General oil and water hydraulics with special materials requirement.
6	Tempered steel (C 22.8)	As for code 5.
8	Cast iron (GG25)	Low pressure applications with good corrosion resistance.
10	Cast steel (GS-C 25)	High temperature applications with high stability values. Poor corrosive property.

Material of ball sealing cup:

Material code	Material	Application
1	Polyacetal (POM)	Primarily for high pressure hydraulics in the temperature range from - 20 °C to + 80 °C. Operating pressure up to max. 500 bar. Not resistant to aggressive media.
2	Perbunan (NBR)	Primarily for pneumatics and gas applications (DVGW, German Technical Association for Gas and Water). Temperature range from - 5 °C to + 70 °C. Operating pressure up to max. 100 bar. Not resistant to aggressive media.
3	PTFE	Given the excellent chemical and thermal properties, the application ranges are varied. Temperature range from - 200 °C to + 250 °C. Operating pressure up to max. 100 bar.
8	Victrex- Peek	Good chemical and thermal properties. Temperature range from - 150 °C to + 200 °C. Operating pressure up to max. 500 bar.

Material of O-rings on the control spindle and the connection adapters:

Material code	Material	Application
2	Perbunan (NBR)	General hydraulics. Temperature range from - 20 °C to + 100 °C. Operating pressure up to max. 500 bar
4	Viton (FKM)	General hydraulics, however primarily for aggressive media. Temperature range from - 10 °C to + 200 °C. Operating pressure up to max. 500 bar.

### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

### HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

Tel.: +49 (0)6897 - 509-01

Fax: +49 (0)6897 - 509-1009

Internet: www.hydac.com

Email: info@hydac.com

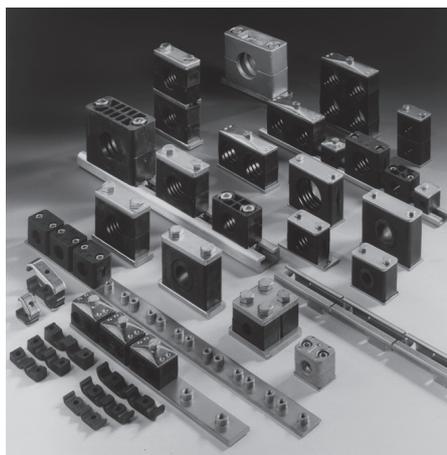
## HY-ROS Mounting Technology for ...

	Catalogue Section ...	Mounting for ...	Pipes	Hoses, cables	Components
Clamps to DIN 3015	1	Light range DIN 3015 Part 1	●		
		Heavy range DIN 3015 Part 2	●		
		Light range DIN 3015 Part 1 with elastomer insert	●	●	
		Heavy range DIN 3015 Part 2 with elastomer insert	●	●	
		Twin clamps DIN 3015 Part 3	●		
HYDAC Clamps	2	Diagonal clamp	●		
		Buegu clamp	●	●	●
		Oval clamp	●	●	
Series strips	3	Series strips, light range	●		
		Series strips, heavy range with elastomer insert	●	●	
U-bolt clamps	4	U-bolt clamps similar to DIN 3570	●		
		Flat steel bolt clamp DIN 3567	●		
Swivel bolt clamps	5	Swivel bolt clamping band			●
		Support, short, for mounting air reservoirs			●
		Quick release swivel bolt clamp		●	●
		Quick release swivel bolt band clamp			●
		Quick release swivel bolt band clamp "Multi"	●		●
		Swivel bolt prism clamp	●		●
		Clamps for cylinders	●	●	●
Other solutions	6	Sensor clamp			●
		Rubber tank bush	●		

## HY-ROS Mounting Technology for ...



Mounting for ...	Catalogue section ...	Design	Single clamps	Multiple clamps	Swivel bolt clamps	Combinations
Pipes	1	Clamp DIN 3015	●	●		
	4	Clamp DIN 3567	●			
	4	Clamp DIN 3570 with support	●			
	3	Series strip, light range		●		
	3	Series strip, heavy range with elastomer insert		●		
	2	Clamps with rubber insert	●	●		
	2	HYDAC clamps	●			
	5	Clamps for mounting pipes to cylinders	●	●		●
Hoses and cables	1	Clamp DIN 3015	●	●		
	2	Clamps with rubber insert	●	●		
	5	Clamps for mounting hoses/cables to cylinders	●	●		●
	5	Hose clamps	●	●	●	
	3	Series strip, heavy range with elastomer insert		●		
Components	5	Clamps for hydraulic accumulators			●	●
	5	Clamps for mounting air reservoirs			●	●
	5	Clamps for mounting components to cylinders	●	●		●
	6	Sensor clamps	●	●		



## Schellen nach DIN 3015

Clamps to DIN 3015

Colliers selon DIN 3015



### BT 1.1 Leichte Reihe DIN 3015 Teil 1

BT 1.1 Light range DIN 3015 part 1

BT 1.1 Série légère selon DIN 3015 chap. 1



### BT 1.2 Schwere Reihe DIN 3015 Teil 2

BT 1.2 Heavy range DIN 3015 Part 2

BT 1.2 Série lourde selon DIN 3015 chap. 2



### BT 1.3 Leichte Reihe DIN 3015 Teil 1 mit Elastomereinsatz

BT 1.3 Light range DIN 3015 part 1 with elastomer insert

BT 1.3 Série légère avec garniture élastomère selon DIN 3015 chap. 1



### BT 1.4 Schwere Reihe DIN 3015 Teil 2 mit Elastomereinsatz

BT 1.4 Heavy range DIN 3015 Part 2 with elastomer insert

BT 1.4 Série lourde avec garniture élastomère selon DIN 3015 chap. 2



### BT 1.5 Zweiroherschelle DIN 3015 Teil 3

BT 1.5 Twin clamps DIN 3015 Part 3

BT 1.5 Collier double selon DIN 3015 chap. 3

### BT 1.6 Technische Daten

BT 1.6 Technical Details

BT 1.6 Caractéristiques techniques

### BT 1.7 Verpackungseinheiten

BT 1.7 Packing details

BT 1.7 Conditionnement

### BT 1.8 Maße Metrisch / Zoll

BT 1.8 Comparison metric / imperial measurements

BT 1.8 Correspondance métrique/pouce

**HYDAC Accessories GmbH**

Hirschbachstr. 2

**66280 Sulzbach/Saar**

Tel.: +49 (0)6897 - 509-01

Fax: +49 (0)6897 - 509-1009

Internet: [www.hydac.com](http://www.hydac.com)

E-Mail: [info@hydac.com](mailto:info@hydac.com)

**ANMERKUNG**

Die Angaben in diesem Prospekt beziehen sich auf die beschriebenen Betriebsbedingungen und Einsatzfälle. Bei abweichenden Einsatzfällen und/oder Betriebsbedingungen wenden Sie sich bitte an die entsprechende Fachabteilung. Technische Änderungen sind vorbehalten.

**NOTE**

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

**REMARQUE**

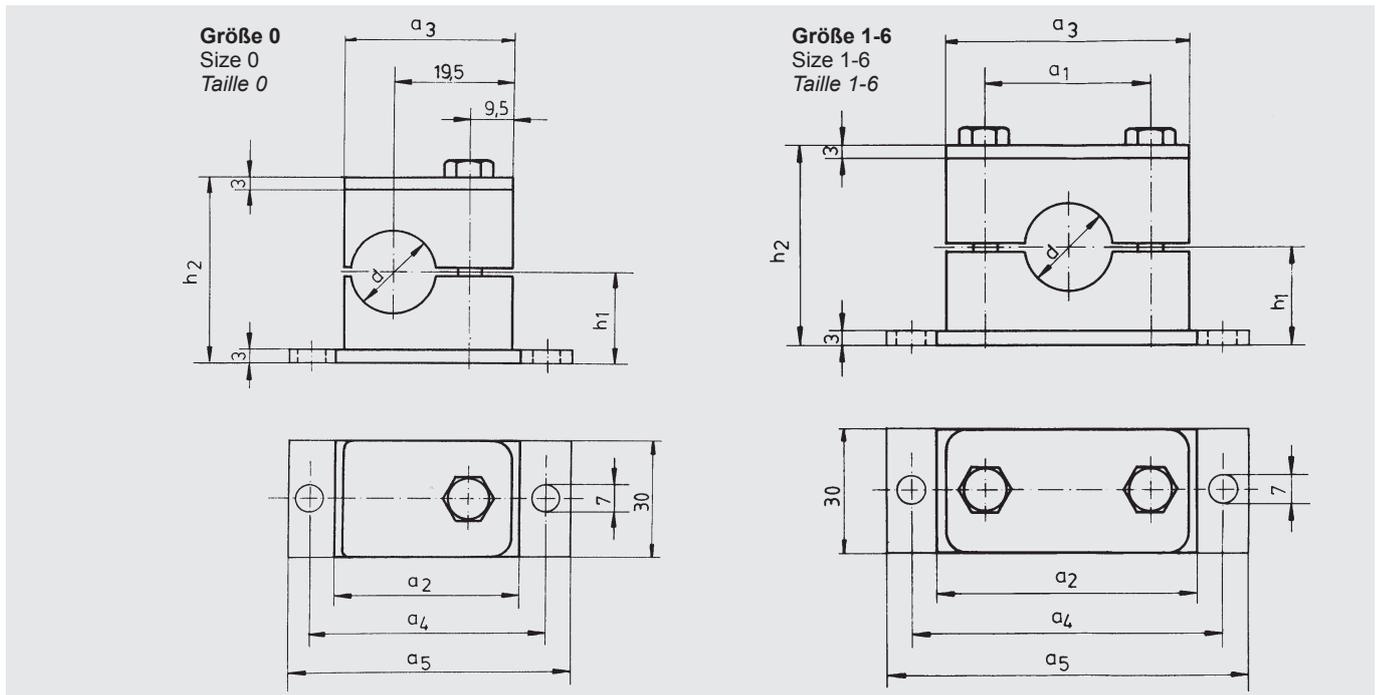
Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.

# 1.1 Leichte Reihe DIN 3015 Teil 1

## 1.1 Light range DIN 3015 part 1

### 1.1 SERIE LEGERE selon DIN 3015 chap. 1

**BT 1**



Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Abmessungen Dimensions Dimensions							h1	h2	ASKT ISO 4014 Ext. hex. ISO 4014 Vis H ISO 4014	ISKT ISO 4762 Int. hex. ISO 4762 Vis CHc ISO 4762	STIFT DIN 938 STUD DIN 938 Goujon DIN 938	SCHLITZ ISO 1207 SLOTTED HEAD ISO 1207 Vis tête fendue ISO 1207
		a1	a2	a3	a4	a5								
6 6,4 8 9,5 10 12	0	-	30	28	44	58	16	32	M6 x 30	M6 x 20	M6 x 20	M6 x 20		
6 6,4 8 9,5 10 12	1	20	36	36	50	64	16	32	M6 x 30	M6 x 20	M6 x 20	M6 x 20		
12,7 13,7 14 15 16 17,1 18	2	26	42	40	56	70	19,5	39	M6 x 35	M6 x 25	M6 x 25	M6 x 25		
19 20 21,3 22 23 25 25,4	3	33	50	48	64	78	20,5	41	M6 x 40	M6 x 30	M6 x 30	M6 x 30		
26,9 28 30	4	40	59	57	73	87	24	48	M6 x 45	M6 x 35	M6 x 35	M6 x 35		
32 33,7 35 38 40 42	5	52	72	70	86	100	32	64	M6 x 60	M6 x 50	M6 x 50	M6 x 50		
44,5 48,3 50,8	6	66	88	86	100	116	36	72	M6 x 70	M6 x 60	M6 x 60	M6 x 60		

# 1.1 Leichte Reihe DIN 3015 Teil 1

## 1.1 Light range DIN 3015 part 1

### 1.1 SERIE LEGERE selon DIN 3015 chap. 1

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 12	0
6 .. 12	1
12,7 .. 18	2
19 .. 25,4	3
26,9 .. 30	4
32 .. 42	5
44,5 .. 50,8	6

**Ausführung A**  
Model A  
Exécution A

**Ausführung AV**  
Model AV  
Exécution AV

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 12	0
6 .. 12	1
12,7 .. 18	2
19 .. 25,4	3
26,9 .. 30	4
32 .. 42	5
44,5 .. 50,8	6

**Ausführung A1**  
Model A1  
Exécution A1

**Ausführung A1TM**  
Model A1TM  
Exécution A1TM

### Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRL  
HRGL

Baugröße / size / taille

0 / 1 / 2 / 3 / 4 / 5 / 6

Ausführung / model / exécution

A / A1 / A1TM / AV

Durchmesser / O/D / diamètre

Werkstoff der Klemmbacken/ clamp material / matériau des pièces de serrage

PP / PA / PAFF / TPE / AL

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier

BL blank / unplated / sans revêtement

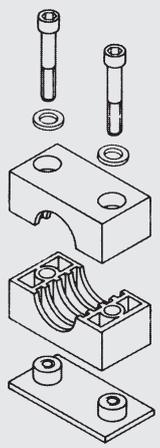
ZN verzinkt / zinc plated / zingué

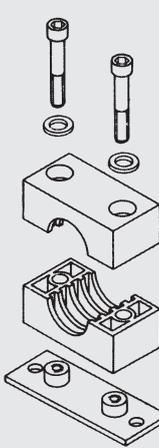
**HRL 2 A 16 PP ST M BL**

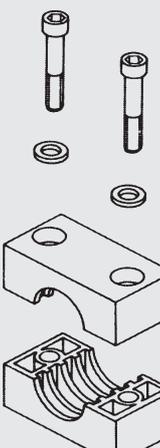
# 1.1 Leichte Reihe DIN 3015 Teil 1

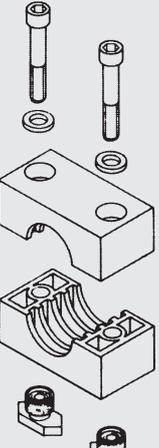
## 1.1 Light range DIN 3015 part 1

### 1.1 SERIE LEGERE selon DIN 3015 chap. 1

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung B Model B Exécution B
6 .. 12	0	 <p>entfällt bei AL not required for AL sauf exécution AL</p>
6 .. 12	1	
12,7 .. 18	2	
19 .. 25,4	3	
26,9 .. 30	4	
32 .. 42	5	
44,5 .. 50,8	6	

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung BV Model BV Exécution BV
6 .. 12	0	 <p>entfällt bei AL not required for AL sauf exécution AL</p>
6 .. 12	1	
12,7 .. 18	2	
19 .. 25,4	3	
26,9 .. 30	4	
32 .. 42	5	
44,5 .. 50,8	6	

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung B1 Model B1 Exécution B1
6 .. 12	0	 <p>entfällt bei AL not required for AL sauf exécution AL</p>
6 .. 12	1	
12,7 .. 18	2	
19 .. 25,4	3	
26,9 .. 30	4	
32 .. 42	5	
44,5 .. 50,8	6	

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung B1TM Model B1TM Exécution B1TM
6 .. 12	0	 <p>entfällt bei AL not required for AL sauf exécution AL</p>
6 .. 12	1	
12,7 .. 18	2	
19 .. 25,4	3	
26,9 .. 30	4	
32 .. 42	5	
44,5 .. 50,8	6	

### Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRL  
HRGL

Baugröße / size / taille

0 / 1 / 2 / 3 / 4 / 5 / 6

Ausführung / model / exécution

B / B1 / B1TM / BV

Durchmesser / O/D / diamètre

Werkstoff der Klemmbacken / clamp material / matériau des pièces de serrage

PP / PA / PAFF / TPE / AL

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

**HRL 2 B 16 PP ST M BL**

# 1.1 Leichte Reihe DIN 3015 Teil 1

## 1.1 Light range DIN 3015 part 1

### 1.1 SERIE LEGERE selon DIN 3015 chap. 1

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung C Model C Exécution C	Ausführung CV Model CV Exécution CV	Ausführung C1 Model C1 Exécution C1
6 .. 12	0	entfällt bei AL not required for AL sauf exécution AL	entfällt bei AL not required for AL sauf exécution AL	entfällt bei AL not required for AL sauf exécution AL
6 .. 12	1			
12,7 .. 18	2			
19 .. 25,4	3			
26,9 .. 30	4			
32 .. 42	5			
44,5 .. 50,8	6			

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung C1TM Model C1TM Exécution C1TM	Ausführung D Model D Exécution D
6 .. 12	0	entfällt bei AL not required for AL sauf exécution AL	
6 .. 12	1		
12,7 .. 18	2		
19 .. 25,4	3		
26,9 .. 30	4		
32 .. 42	5		
44,5 .. 50,8	6		

#### Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRL  
HRGL

Baugröße / size / taille

0 / 1 / 2 / 3 / 4 / 5 / 6

Ausführung / model / exécution

C / C1 / C1TM / CV / D

Durchmesser / O/D / diamètre

Werkstoff der Klemmbacken/ clamp material / matériau des pièces de serrage

PP / PA / PAFF / TPE / AL

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

HRL 2 C 16 PP ST M BL

# 1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

## 1.1 Light range DIN 3015 part 1, individual parts

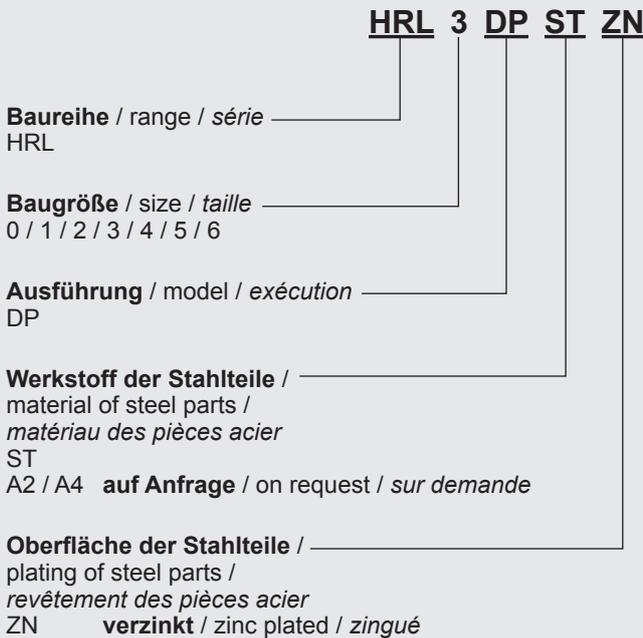
### 1.1 SERIE LEGERE selon DIN 3015 chap. 1, pièces individuelles

Größe Size Taille	Deckplatte Cover plate Plaque de protection (DP)	
0		0
1		0
2		0
3		1 ... 6
4		1 ... 6
5		1 ... 6
6		1 ... 6

Größe Size Taille	Anschweißplatte Weld plate Plaque à souder (AP)	
0		0
1		1 ... 6
2	<b>Anschweißplatte verlängert</b> Extended weld plate Plaque à souder rallongée (APV)	0
3		0
4		1 ... 6
5		1 ... 6
6		1 ... 6

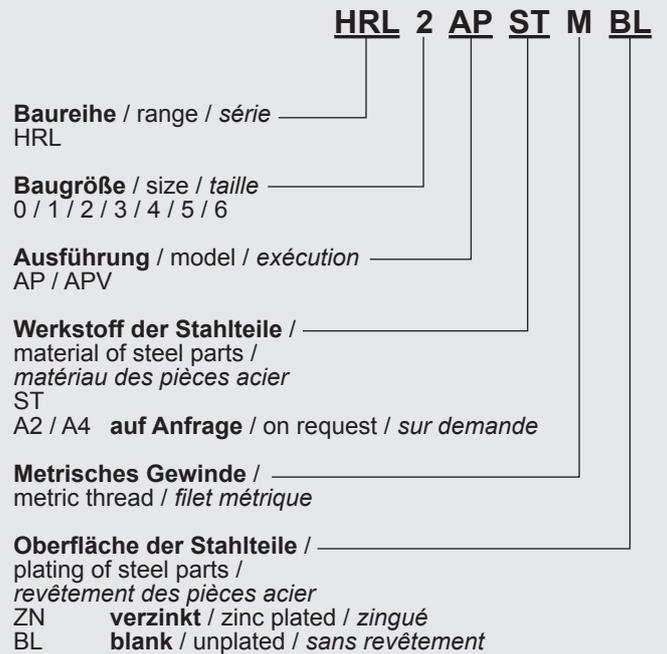
#### Bestellschlüssel

Order code / Code de commande



#### Bestellschlüssel

Order code / Code de commande



# 1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

## 1.1 Light range DIN 3015 part 1, individual parts

### 1.1 SERIE LEGERE DIN 3015 chap. 1, pièces individuelles

**Größe**  
Size  
Taille

**Reihenansweißplatte**  
Interconnecting weld plate  
Plaque de combinaison à souder  
(RAP)

0
1b
2a
2b
3a
3b
4
5
6

**Größe**  
Size  
Taille

**Doppelansweißplatte**  
Double weld plate  
Plaque à souder double  
(DAP)

0
1b
2a
2b
3a
3b
4
5
6

#### Bestellschlüssel

Order code / Code de commande

**HRL** **2a** **RAP** **ST** **M** **BL**

**Baureihe** / range / série  
HRL

**Baugröße** / size / taille  
0 / 1b / 2a / 2b / 3a / 3b / 4 / 5 / 6

**Ausführung** / model / exécution  
RAP

**Werkstoff der Stahlteile** /  
material of steel parts /  
matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage** / on request / sur demande

**Metrisches Gewinde** / metric thread / filet métrique

**Oberfläche der Stahlteile** / plating of steel parts /  
revêtement des pièces acier  
BL **blank** / unplated / sans revêtement  
ZN **verzinkt** / zinc plated / zingué

#### Bestellschlüssel

Order code / Code de commande

**HRL** **2a** **DAP** **ST** **M** **BL**

**Baureihe** / range / série  
HRL

**Baugröße** / size / taille  
0 / 1b / 2a / 2b / 3a / 3b / 4 / 5 / 6

**Ausführung** / model / exécution  
DAP

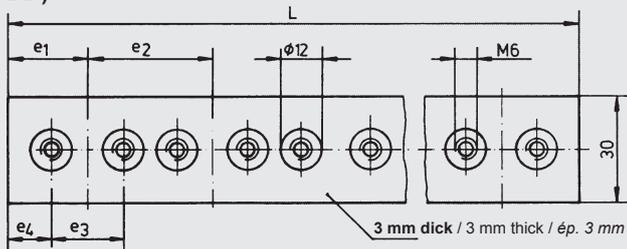
**Werkstoff der Stahlteile** /  
material of steel parts /  
matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage** / on request / sur demande

**Metrisches Gewinde** / metric thread / filet métrique

**Oberfläche der Stahlteile** / plating of steel parts /  
revêtement des pièces acier  
BL **blank** / unplated / sans revêtement  
ZN **verzinkt** / zinc plated / zingué

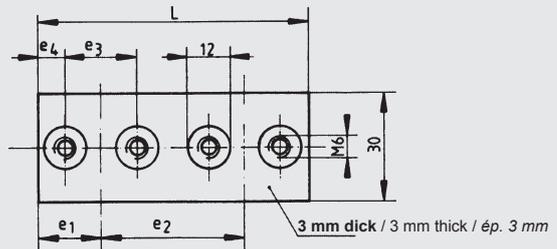
#### Reihenansweißplatte

Interconnecting weld plate  
Plaque de combinaison à souder  
(RAP)



#### Doppelansweißplatte

Double weld plate  
Plaque à souder double  
(DAP)



Größe Size Taille	Schellenanzahl Number of clamps Nombre de colliers	Abmessungen Dimensions Dimensions				
		e1	e2	e3	e4	L
0	10	-	30	-	-	298
1b	10	17	40	20	7	394
2a	10	20	43	26	7	427
2b	10	20	52	26	7	508
3a	10	24	52	33	7,5	516
3b	10	24	75	33	7,5	723
4	5	28,5	60	40	8,5	297
5	5	35	75	52	9	370
6	5	43	90	66	10	446

Größe Size Taille	Schellenanzahl Number of clamps Nombre de colliers	Abmessungen Dimensions Dimensions				
		e1	e2	e3	e4	L
0	2	-	-	30	9,5	63
1b	2	18	40	20	8	76
2a	2	21,5	43	26	8,5	86
2b	2	21	52	26	8	94
3a	2	26	52	33	9,5	104
3b	2	25	75	33	8,5	125
4	2	28,5	60	40	8,5	117
5	2	35	75	52	9	145
6	2	43	90	66	10	176

**1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile**

1.1 Light range DIN 3015 part 1, individual parts

1.1 SERIE LEGERE DIN 3015 chap. 1, pièces individuelles

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Klemmbackenpaar gerippt Pair of clamp jaws, ribbed body Paire de pièces de serrage, rainurée (HRL ... KP ...)	
		0	1 ... 6
6 .. 12	0		
6 .. 12	1		
12,7 .. 18	2		
19 .. 25,4	3		
26,9 .. 30	4		
32 .. 42	5		
44,5 .. 50,8	6		

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Klemmbackenpaar glatt Pair of clamp jaws, smooth Paire de pièces de serrage, lisse (HRGL ... KP ...)	
		0	1 ... 6
6 .. 12	0		
6 .. 12	1		
12,7 .. 18	2		
19 .. 25,4	3		
26,9 .. 30	4		
32 .. 42	5		
44,5 .. 50,8	6		

**Bestellschlüssel**

Order code / Code de commande

**HRL 3 KP 23 PP**

Baureihe / range / série \_\_\_\_\_

HRL  
HRGL

Baugröße / size / taille \_\_\_\_\_

0 / 1 / 2 / 3 / 4 / 5 / 6

Ausführung / model / exécution \_\_\_\_\_

KP

Durchmesser / O/D / diamètre \_\_\_\_\_

Werkstoff der Klemmbacken / clamp material / matériau des pièces de serrage \_\_\_\_\_

PP / PA / AL / PAFF / TPE / AL\*

\* nicht für Größe 0

not for size 0

pas pour la taille 0

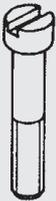
# 1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

## 1.1 Light range DIN 3015 part 1, individual parts

### 1.1 SERIE LEGERE selon DIN 3015 chap. 1, pièces individuelles

Abmessungen Dimensions Dimensions	Größe Size Taille	<b>6-kt-Schraube ISO 4014</b> Ext. hex. bolt ISO 4014 Vis H ISO 4014 (6kt-schr.ISO4014)	
M6 x 30	0		
M6 x 30	1		
M6 x 35	2		
M6 x 40	3		
M6 x 45	4		
M6 x 60	5		
M6 x 70	6		

Abmessungen Dimensions Dimensions	Größe Size Taille	<b>Zylinder-Schraube ISO 4762</b> Int. hex. bolt ISO 4762 Vis CHc ISO 4762 (zyl-schr.ISO4762)	
M6 x 20	0		
M6 x 20	1		
M6 x 25	2		
M6 x 30	3		
M6 x 35	4		
M6 x 50	5		
M6 x 60	6		

Abmessungen Dimensions Dimensions	Größe Size Taille	<b>Zylinder-Schraube ISO 1207</b> Slotted head bolt ISO 1207 Vis tête fendue ISO 1207 (zyl-schr.ISO1207)	
M6 x 20	0		
M6 x 20	1		
M6 x 25	2		
M6 x 30	3		
M6 x 35	4		
M6 x 50	5		
M6 x 60	6		

#### Bestellschlüssel

Order code / Code de commande

**6kt-schr. ISO4014 - M6 x 30 - 8.8 - A4B**

Bauart / design / série

6kt-schr. ISO4014  
 zyl-schr.ISO4762  
 zyl-schr.ISO1207

Baugröße / size / taille

ISO4014|ISO4762|ISO1207  
 M6 x 30 M6 x 20 M6 x 20  
 M6 x 35 M6 x 25 M6 x 25  
 M6 x 40 M6 x 30 M6 x 30  
 M6 x 45 M6 x 35 M6 x 35  
 M6 x 60 M6 x 50 M6 x 50  
 M6 x 70 M6 x 60 M6 x 60

Schraubenqualität / bolt quality / qualité de vis

ISO4014, ISO4762 = 8.8      ISO 1207 = 5.6

Oberfläche der Schraube / bolt plating / revêtement de vis

A4B      verzinkt / zinc plated / zingué

# 1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

## 1.1 Light range DIN 3015 part 1, individual parts

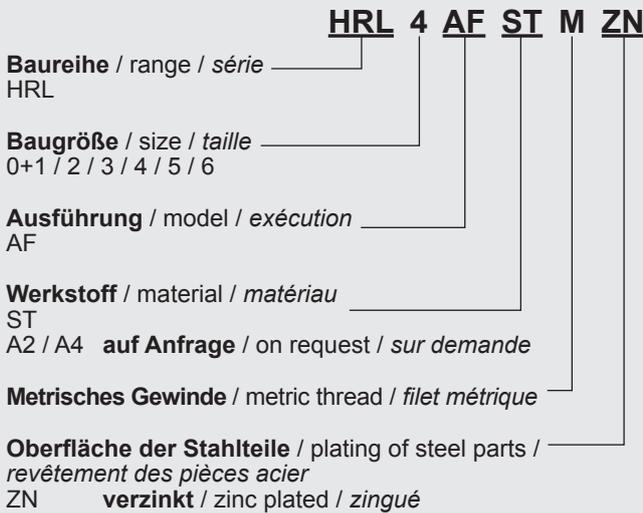
### 1.1 SERIE LEGERE selon DIN 3015 chap. 1, pièces individuelles

Abmessungen Dimensions Dimensions	Größe Size Taille	Aufbauschraube Build-up bolt Goujon-écrou (AF ...)	
AF 6	0+1		
AF 6	2		
AF 6	3		
AF 6	4		
AF 6	5		
AF 6	6		

Abmessungen Dimensions Dimensions	Größe Size Taille	Sicherungsblech Locking plate Plaque intermédiaire (SIP)	
SIP	0		

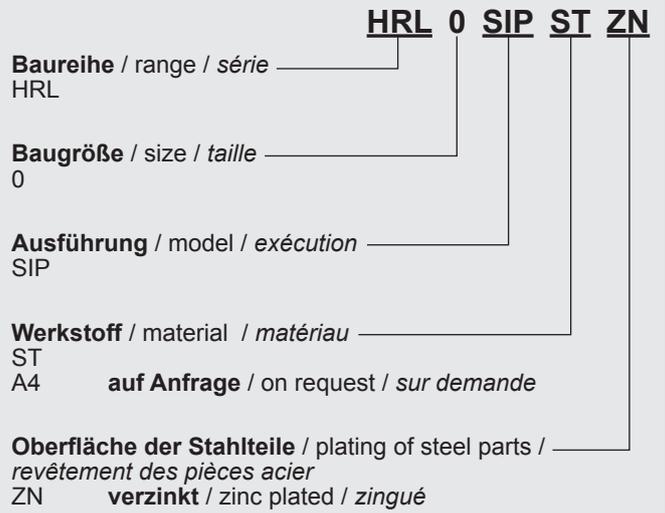
#### Bestellschlüssel

Order code / Code de commande

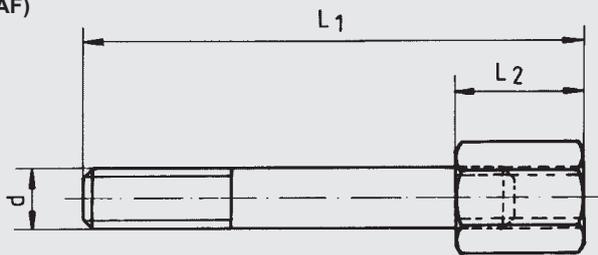


#### Bestellschlüssel

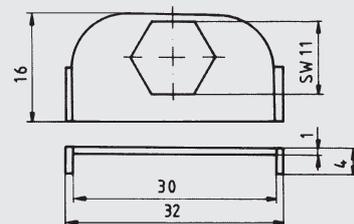
Order code / Code de commande



**Aufbauschraube Gr. 0-6L**  
Build-up bolt size 0-6L  
Goujon-écrou taille 0-6L  
(AF)



**Sicherungsblech Gr. 0L**  
Locking plate size 0L  
Plaque intermédiaire taille 0L  
(SIP)



Größe Size Taille	Abmessungen Dimensions Dimensions	L1	L2	d
0+1		34	14	M6
2		39	14	M6
3		44	14	M6
4		49	14	M6
5		64	14	M6
6		74	14	M6

**für alle Größen**

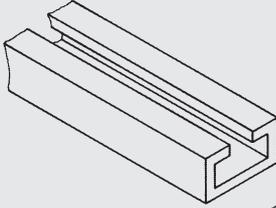
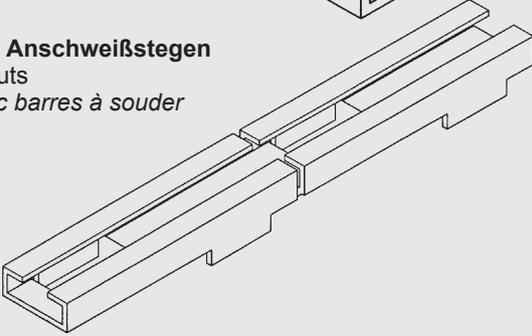
for all sizes

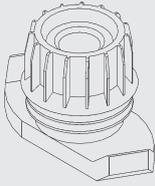
pour toutes les tailles

## 1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

### 1.1 Light range DIN 3015 part 1, individual parts

### 1.1 SERIE LEGERE selon DIN 3015 chap. 1, pièces individuelles

Abmessungen Dimensions Dimensions	<b>C-Tragschiene</b> C-rail C-Rail porteur (TS)	
28 x 11	<b>C-Tragschiene m. Anschweißstegen</b> C-rail with weld struts C-Rail porteur avec barres à souder (TS28x11AS)	
28 x 14		
28 x 30		
28 x 11AS		

Abmessungen Dimensions Dimensions	<b>Tragschienenmutter</b> Bayonet nut Ecrou rail porteur (TMV6)	
TMV6		

#### Bestellschlüssel

Order code / Code de commande

	<b>HRL</b>	<b>TS28x11</b>	<b>ST</b>	<b>BL</b>	<b>1m</b>
<b>Baureihe / range / série</b> HRL					
<b>Ausführung / model / exécution</b> TS28x11 TS28x14 TS28x30 TS28x11AS					
<b>Werkstoff der Stahlteile /</b> material of steel parts / matériau des pièces acier ST / AL* / A2* / A4*					
<b>Oberfläche der Stahlteile /</b> plating of steel parts / revêtement des pièces acier BL <b>blank</b> / unplated / sans revêtement ZN <b>verzinkt</b> / zinc plated / zingué					
<b>Baulänge (nur für Ausführung TS) /</b> length (only for model TS) / longueur (seulement pour exécution TS) 1m / 2m					

\* auf Anfrage / on request / sur demande

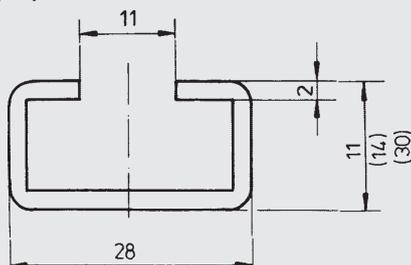
#### Bestellschlüssel

Order code / Code de commande

	<b>HRL</b>	<b>TMV6</b>	<b>ST</b>	<b>ZN</b>
<b>Baureihe /</b> range / série HRL				
<b>Ausführung /</b> model / exécution TMV 6				
<b>Werkstoff der Stahlteile /</b> material of steel parts / matériau des pièces acier ST A4 <b>auf Anfrage</b> / on request / sur demande				
<b>Oberfläche der Stahlteile /</b> plating of steel parts / revêtement des pièces acier ZN <b>verzinkt</b> / zinc plated / zingué				

#### C-Tragschiene

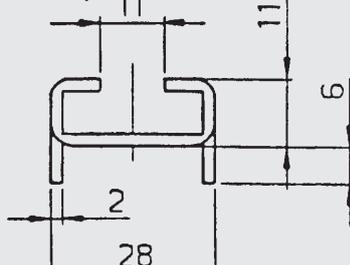
C-rail  
C-Rail porteur  
(TS)



Lieferbar in 1m und 2m Stücken  
Available in 1m and 2m lengths  
Existe en longueur de 1m et 2m

#### C-Tragschiene m. Anschweißstegen

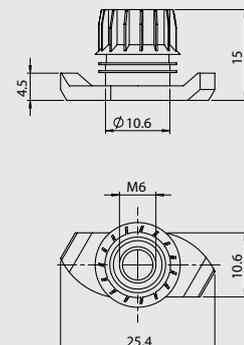
C-rail with weld struts  
C-Rail porteur avec barres à souder  
(TS28x11AS)



Lieferbar in 1m Stücken  
Available in 1m lengths  
Existe en longueur de 1m

#### Tragschienenmutter M6

Bayonet nut M6  
Ecrou rail porteur M6  
(TMV6)

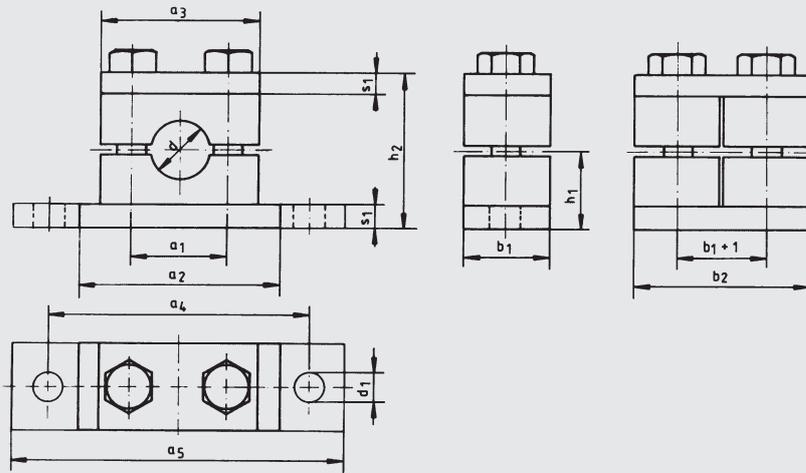


# 1.2 SCHWERE REIHE DIN 3015 Teil 2

## 1.2 HEAVY RANGE DIN 3015 part 2

### 1.2 SERIE LOURDE selon DIN 3015 chap. 2

**BT 1**



Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Abmessungen Dimensions Dimensions											ASKT ISO 4014 Ext. hex. 4014 Vis H ISO 4014	ISKT ISO 4762 Int. hex. 4762 Vis CHc ISO 4762
		a1	a2	a3	a4	a5	b1	b2	h1	h2	s1	d1		
6 6,4 8 9,5 10 12 12,7	1	33	73	55	85	113	30	60	24	48	8	11	M10 x 45	M10 x 25
19 20 21,3 22 25	2	45	85	70	97	125	30	60	32	64	8	11	M10 x 60	M10 x 40
25 30 32 33,7 35	3	60	100	85	112	140	30	60	38	76	8	11	M10 x 70	M10 x 50
30 38 42 44,5 48,3 50,8	4	90,5	140	115	160	190	45	90	54,5	109	10	14	M12 x 100	M12 x 80
38 65 70 73	5	122	180	152	205	240	60	120	70	140	10	18	M16 x 130	M16 x 110
65 96 101,6 108	6	168	225	205	270	310	80	160	100	200	15	22	M20 x 190	M20 x 150
90 136 139,7 168	7	205	270	252	320	370	90	180	115	230	15	26	M24 x 220	M24 x 180
168 177,8 193,7 219,1	8	265	340	320	-	-	120	240	160	320	25	-	M30 x 300	-
219,1 244,5 273	9	395	520	466	-	-	160	324	235	470	30	-	M30 x 450	-
355,6 406,4	10	530	680	630	-	-	180	364	295	590	30	-	M30 x 560	-

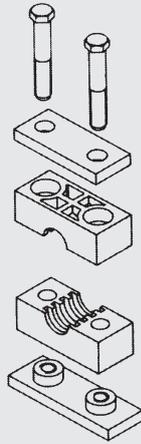
## 1.2 SCHWERE REIHE DIN 3015 Teil 2

### 1.2 HEAVY RANGE DIN 3015 part 2

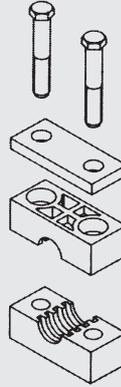
### 1.2 SERIE LOURDE selon DIN 3015 chap. 2

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 18	1
19 .. 30	2
25 .. 42	3
30 .. 70	4
38 .. 88,9	5
65 .. 114,3	6
90 .. 168	7
168 .. 219,1	8
219,1 .. 323,9	9
355,6 .. 406,4	10

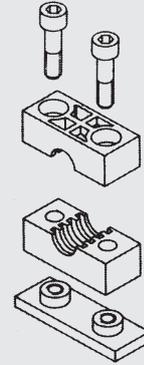
**Ausführung S**  
Model S  
Exécution S



**Ausführung S1**  
Model S1  
Exécution S1

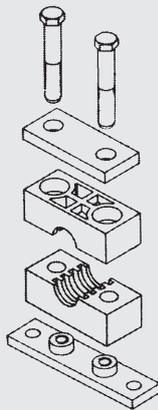


**Ausführung I**  
Model I  
Exécution I

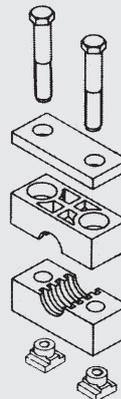


Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 18	1
19 .. 30	2
25 .. 42	3
30 .. 70	4
38 .. 88,9	5
65 .. 114,3	6
90 .. 168	7
168 .. 219,1	8
219,1 .. 323,9	9
355,6 .. 406,4	10

**Ausführung SV**  
Model SV  
Exécution SV



**Ausführung S1TM**  
Model S1TM  
Exécution S1TM



### Bestellschlüssel

Order code / Code de commande

Baureihe / range / série \_\_\_\_\_

HRS

HRGS (auf Anfrage / on request / sur demande)

Baugröße / size / taille \_\_\_\_\_

1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10

Ausführung / model / exécution \_\_\_\_\_

S / SV / S1 / S1TM / I

S1TM nur bis Größe 4 / S1TM only up to size 4 / S1TM seulement jusqu'à taille 4

I nur bis Größe 7 / I only up to size 7 / I seulement jusqu'à taille 7

Durchmesser / O/D / diamètre \_\_\_\_\_

Werkstoff der Klemmbacken / clamp material / matériau des pièces de serrage \_\_\_\_\_

PP / PA / PAFF / TPE / AL

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier \_\_\_\_\_

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique \_\_\_\_\_

Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier \_\_\_\_\_

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

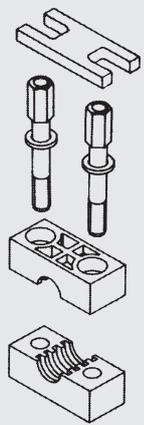
**HRS 2 S 30 PP ST M BL**

## 1.2 SCHWERE REIHE DIN 3015 Teil 2

### 1.2 HEAVY RANGE DIN 3015 part 2

### 1.2 SERIE LOURDE selon DIN 3015 chap. 2

**BT 1**

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung A Model A Exécution A
6 .. 18	1	
19 .. 30	2	
25 .. 42	3	
30 .. 70	4	
38 .. 88,9	5	
65 .. 114,3	6	
90 .. 168	7	
168 .. 219,1	8	
219,1 .. 323,9	9	
355,6 .. 406,4	10	



#### Bestellschlüssel

Order code / Code de commande

Baureihe / range / série \_\_\_\_\_

HRS

HRGS (auf Anfrage / on request / sur demande)

Baugröße / size / taille \_\_\_\_\_

1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10

Ausführung / model / exécution \_\_\_\_\_

A / D

Ausführung A nur bis Größe 7 / model A up to size 7 / exécution A seulement jusqu'à taille 7

Durchmesser / O/D / diamètre \_\_\_\_\_

Werkstoff der Klemmböcken / clamp material / matériau des pièces de serrage \_\_\_\_\_

PP / PA / PAFF / TPE / AL

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier \_\_\_\_\_

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique \_\_\_\_\_

Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier \_\_\_\_\_

BL

blank / unplated / sans revêtement

ZN

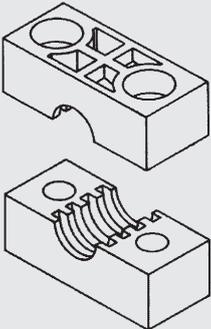
verzinkt / zinc plated / zingué

**HRS 5 D 76.1 PP ST M BL**

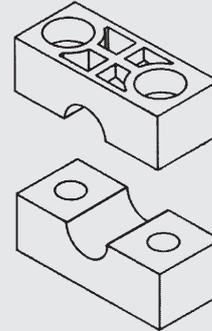
## 1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

### 1.2 HEAVY RANGE DIN 3015 part 2, individual parts

### 1.2 SERIE LOURDE selon DIN 3015 chap. 2, pièces individuelles

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Klemmbackenpaar gerippt Pair of clamp jaws, ribbed Paire de pièces de serrage, rainurée (HRS ... KP ...)
6 .. 18	1	
19 .. 30	2	
25 .. 42	3	
30 .. 70	4	
38 .. 88,9	5	
65 .. 114,3	6	
90 .. 168	7	
168 .. 219,1	8	
219,1 .. 323,9	9	
355,6 .. 406,4	10	

**Klemmbackenpaar glatt**  
Pair of clamp jaws, smooth  
Paire de pièces de serrage, lisse  
(HRGS ... KP ...)



nicht in AL  
not in AL  
ne pas en AL

#### Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRS  
HRGS (auf Anfrage / on request / sur demande)

Baugröße / size / taille

1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10

Ausführung / model / exécution

KP

Durchmesser / O/D / diamètre

Werkstoff der Klemmbacken / clamp material / matériau des pièces de serrage

PP / PA / PAFF / TPE / AL

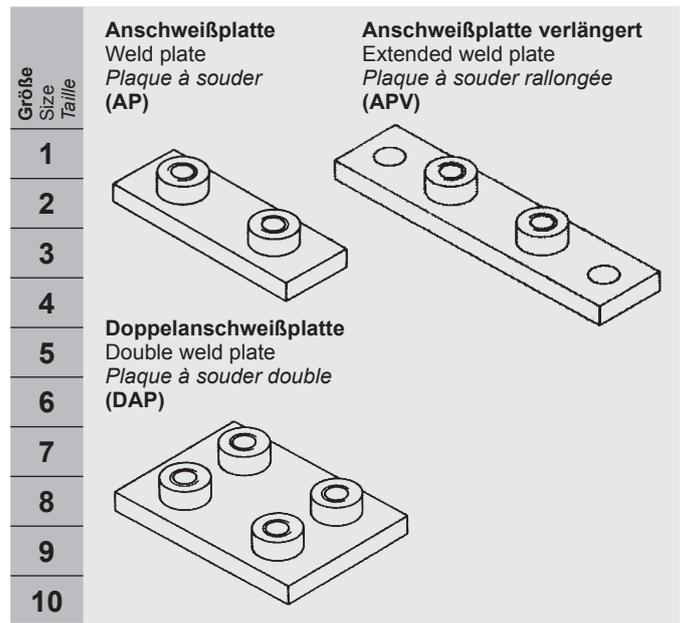
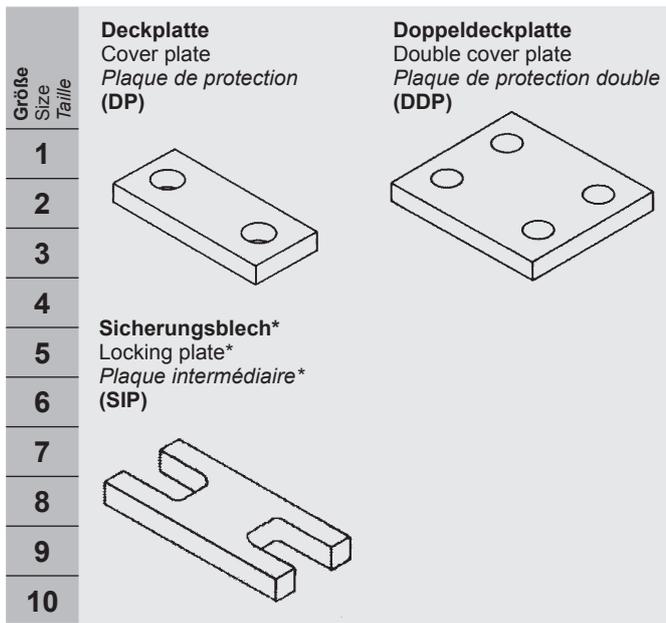
HRS 2 KP 30 PP

## 1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

### 1.2 HEAVY RANGE DIN 3015 part 2, individual parts

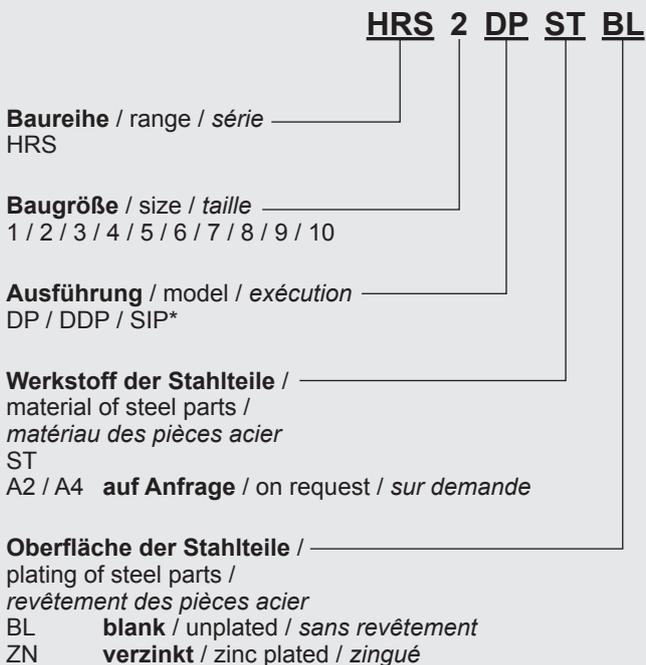
### 1.2 SERIE LOURDE selon DIN 3015 chap. 2, pièces individuelles

**BT 1**



#### Bestellschlüssel

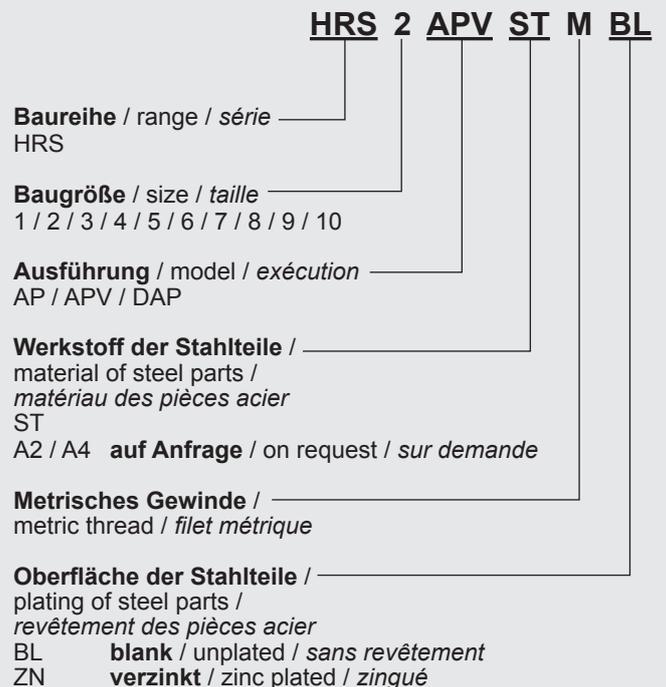
Order code / Code de commande



\* nur bis Größe 7  
only up to size 7  
*seulement jusqu'à la taille 7*

#### Bestellschlüssel

Order code / Code de commande



## 1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

### 1.2 HEAVY RANGE DIN 3015 part 2, individual parts

### 1.2 SERIE LOURDE selon DIN 3015 chap. 2, pièces individuelles

Abmessungen Dimensions Dimensions	Größe Size Taille	<b>6-kt-Schraube ISO 4014</b> Ext. hex. bolt ISO 4014 Vis H ISO 4014 (6kt-schr.ISO4014)
M10 x 45	1	
M10 x 60	2	
M10 x 70	3	
M12 x 100	4	
M16 x 130	5	
M20 x 190	6	
M24 x 220	7	
M30 x 300	8	
M30 x 450	9	
M30 x 560	10	



Abmessungen Dimensions Dimensions	Größe Size Taille	<b>Zylinder-Schraube ISO 4762</b> Int. hex. bolt ISO 4762 Vis CHc ISO 4762 (zyl-schr.ISO4762)
M10 x 25	1	
M10 x 40	2	
M10 x 50	3	
M12 x 80	4	
M16 x 110	5	
M20 x 150	6	
M24 x 180	7	



#### Bestellschlüssel

Order code / Code de commande

**6kt-schr. ISO4014 - M10 x 70 - 8.8 - A4B**

Bauart / design / série

6kt-schr. ISO4014

zyl-schr. ISO4762

Baugröße / size / taille

ISO4014

ISO4762

M10 x 45

M10 x 25

M10 x 60

M10 x 40

M10 x 70

M10 x 50

M12 x 100

M12 x 80

M16 x 130

M16 x 110

M20 x 190

M20 x 150

M24 x 220

M24 x 180

M30 x 300

M30 x 450

M30 x 560

Schraubenqualität / bolt quality / qualité de vis

8.8

Oberfläche der Schraube / bolt plating / revêtement de vis

keine Angabe (blank) / no details (unplated) / pas d'indication (pas de couvert)

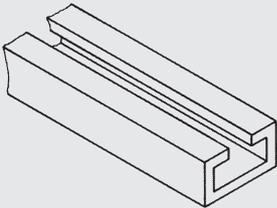
A4B verzinkt / zinc plated / zingué

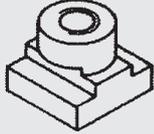
## 1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

1.2 HEAVY RANGE DIN 3015 part 2, individual parts

1.2 SERIE LOURDE selon DIN 3015 chap. 2, pièces individuelles

**BT 1**

Abmessungen Dimensions Dimensions	C-Tragschiene C-rail C-Rail porteur (TS)
	
40 x 22	

Abmessungen Dimensions Dimensions	Tragschienenmutter Bayonet nut Ecrou rail porteur (TM ...)
	
TM10	
TM12	

### Bestellschlüssel

Order code / Code de commande

**HRS TS40x22 ST BL 2m**

Baureihe / range / série  
HRS

Ausführung / model / exécution  
TS 40 x 22

Werkstoff der Stahlteile /  
material of steel parts /  
matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage** / on request / sur demande

Oberfläche der Stahlteile /  
plating of steel parts /  
revêtement des pièces acier  
BL **blank** / unplated / sans revêtement  
ZN **verzinkt** / zinc plated / zingué

Baulänge / length / longueur  
1 m / 2 m

### Bestellschlüssel

Order code / Code de commande

**HRS TM10 ST M ZN**

Baureihe / range / série  
HRS

Ausführung / model / exécution  
TM10 / TM12

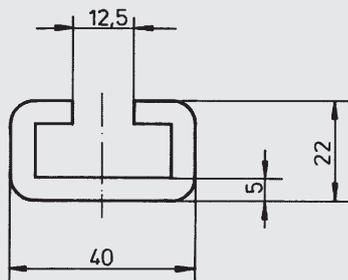
Werkstoff der Stahlteile /  
material of steel parts /  
matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage** / on request / sur demande

Metrisches Gewinde /  
metric thread / filet métrique

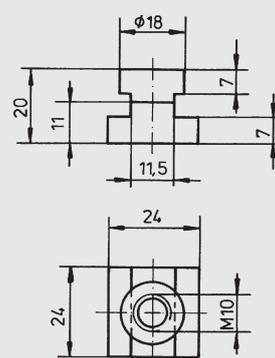
Oberflächenbeschichtung /  
plating / revêtement  
ZN **verzinkt** / zinc plated / zingué

### C-Tragschiene

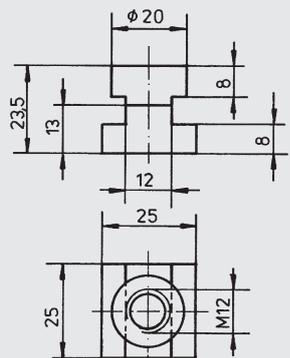
C-rail  
C-Rail porteur  
(TS)



Tragschienenmutter M10  
Bayonet nut M10  
Ecrou pour rail porteur M10  
(TM10)



Tragschienenmutter M12  
Bayonet nut M12  
Ecrou pour rail porteur M12  
(TM12)



## 1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

### 1.2 HEAVY RANGE DIN 3015 part 2, individual parts

### 1.2 SERIE LOURDE selon DIN 3015 chap. 2, pièces individuelles

Abmessungen Dimensions Dimensions	Größe Size Taille	Aufbauschraube Build-up bolt Goujon-écrou (AF...)
AF 10	1	
AF 10	2	
AF 10	3	
AF 12	4	
AF 16	5	
AF 20	6	
AF 24	7	

### Bestellschlüssel

Order code / Code de commande

**HRS 5 AF16 ST M ZN**

**Baureihe / range / série** — HRS

**Baugröße / size / taille** — 1 / 2 / 3 / 4 / 5 / 6 / 7

**Ausführung / model / exécution** — AF10, AF12, AF16, AF20, AF24

**Werkstoff / material / matériau** — ST  
A2 / A4 **auf Anfrage / on request / sur demande**

**Metrisches Gewinde / metric thread / filet métrique** — M

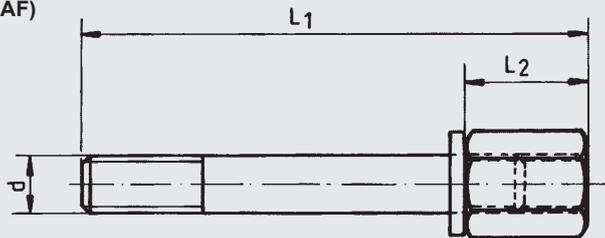
**Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier** — ZN  
BL **blank / unplated / sans revêtement**  
ZN **verzinkt / zinc plated / zingué**

### Aufbauschraube Gr. 1-7S

Build-up bolt size 1-7S

Goujon-écrou taille 1-7S

(AF)



\* ohne U-Scheibe  
without washer  
sans rondelle

Größe Size Taille	Abmessungen Dimensions Dimensions		
	L1	L2	d
1	50	25	M10
2	65	25	M10
3	75	25	M10
4	106	26	M12
5*	145	35	M16
6*	200	50	M20
7*	236	56	M24

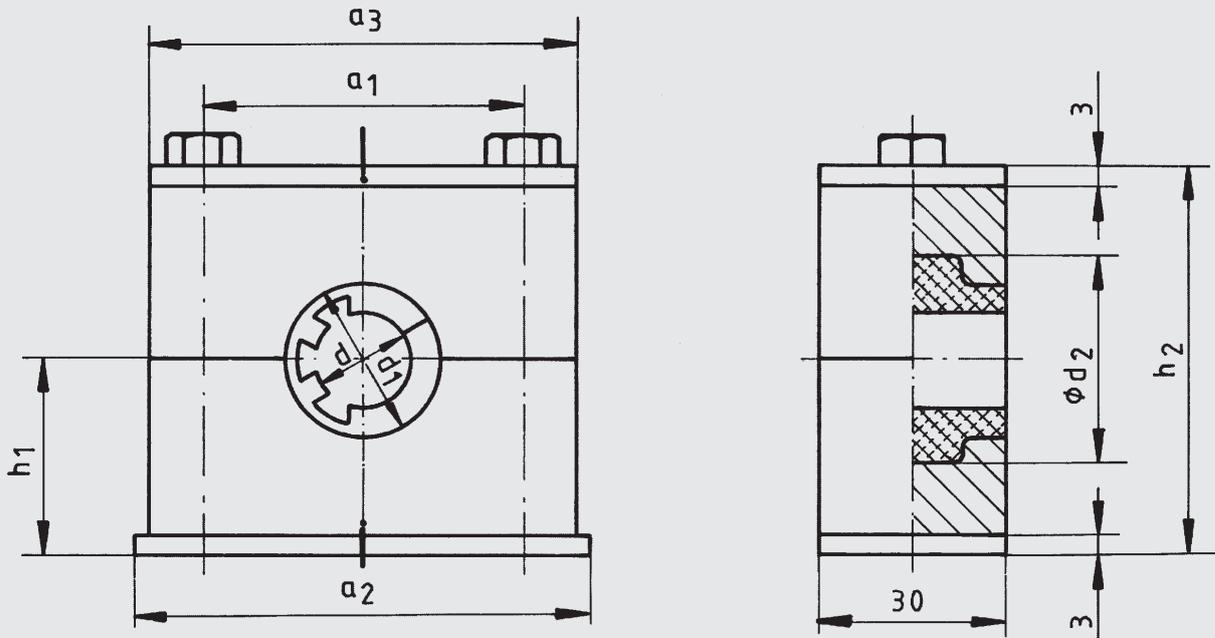
# 1.3 Leichte Reihe mit Elastomereinsatz DIN 3015 Teil 1

## 1.3 Light range with elastomer insert DIN 3015 part 1

### 1.3 SERIE LEGERE avec garniture élastomère selon DIN 3015 chap. 1

**BT 1**

Schelle in PP- und PA-Ausführung, Elastomereinsatz: Thermoplastisches Elastomer  
 Clamp in PP or PA, elastomer insert: thermoplastic elastomer  
 Collier en exécution PP et PA: garniture élastomère



d	Innenfläche glatt Intern. surface smooth Portée lisse	d	Innenfläche gerippt Intern. surface ribbed Portée rainurée	Größe Size Taille	Abmessungen Dimensions Dimensions	d1	d2	a1	a2	a3	h1	h2	ASKT ISO 4014 Ext. hex. ISO 4014 Vis H ISO 4014	ISKT ISO 4762 Int. hex. ISO 4762 Vis CHc ISO 4762	STIFT DIN 938 STUD DIN 938 Goujon DIN 938	SCHLITZ ISO 1207 SLOTTED HEAD ISO 1207 Vis tête fondue ISO 1207
6	-	-	-													
8	-	-	-													
10	10															
12	12															
12,7	-															
14	14	4			25,5	31	40	59	57	23,5	47	M6 x 45	M6 x 35	M6 x 35	M6 x 35	
15	15															
16	16															
17,2	17,2															
18	-															
19	-															
20	20	6			39	46	66	88	86	35,5	71	M6 x 70	M6 x 60	M6 x 60	M6 x 60	
21,3	-															
22	22															
23	-															
25	25															
26,9	-															
28	28															
30	30															
32	-															

### 1.3 Leichte Reihe mit Elastomereinsatz DIN 3015 Teil 1

#### 1.3 Light range with elastomer insert DIN 3015 part 1

#### 1.3 SERIE LEGERE avec garniture élastomère selon DIN 3015 chap. 1

			Ausführung A Model A Exécution A
d Innenfläche glatt Intern. surface smooth Portée lisse	d Innenfläche gerippt Intern. surface ribbed Portée rainurée	Größe Size Taille	
6-19	10-17,2	4	
20-32	20-30	6	

#### Bestellschlüssel

Order code / Code de commande

**HREL 4 A 16 PP ST M BL**

Baureihe / range / série

HREL  
HRERL

Baugröße / size / taille

4 / 6

Ausführung / model / exécution

A

Durchmesser / O/D / diamètre

Werkstoff der Klemmbacken/ clamp material / matériau des pièces de serrage

PP / PA / PAFF

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier

BL blank / unplated / sans revêtement

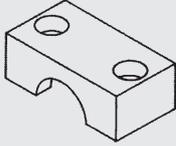
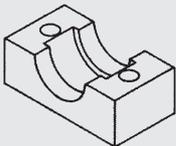
ZN verzinkt / zinc plated / zingué

# 1.3 Leichte Reihe mit Elastomereinsatz DIN 3015 Teil 1, Einzelteile

**BT 1**

1.3 Light range with elastomer insert DIN 3015 part 1, individual parts

1.3 *SERIE LEGERE avec garniture élastomère selon DIN 3015 chap. 1, pièces individuelles*

	<b>Klemmbackenpaar</b> Pair of clamp jaws <i>Paire de pièces de serrage (KP)</i>
<b>Größe</b> Size <i>Taille</i>	
<b>4</b>	
<b>6</b>	

### Bestellschlüssel

Order code / *Code de commande*

**HREL 4 KP PP**

**Baureihe / range / série** \_\_\_\_\_  
HREL

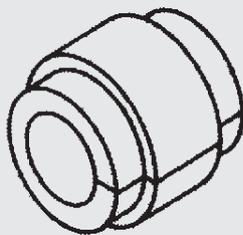
**Baugröße / size / taille** \_\_\_\_\_  
4 / 6

**Ausführung / model / exécution** \_\_\_\_\_  
KP

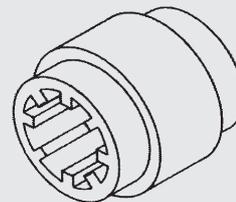
**Werkstoff der Klemmbacken /** \_\_\_\_\_  
material of clamp jaws / *matériau de la garniture élastomère*  
PP / PA / PAFF

<b>d</b> Innenfläche glatt Intern. surface smooth <i>Portée lisse</i>	<b>d</b> Innenfläche gerippt Intern. surface ribbed <i>Portée rainurée</i>	<b>Größe</b> Size <i>Taille</i>
6	-	<b>2/4L</b>
8	-	
10	10	
12	12	
12,7	-	
14	14	
15	15	
16	16	
17,2	17,2	
18	-	
19	-	<b>3/6L</b>
20	20	
21,3	-	
22	22	
23	-	
25	25	
26,9	-	
28	28	
30	30	
32	-	

**Elastomereinsatz glatt**  
Elastomer insert smooth  
*Garniture élastomère lisse*  
(HRES ... EE ...)



**Elastomereinsatz gerippt**  
Elastomer insert ribbed  
*Garniture élastomère rainurée*  
(HRERS ... EE ...)



### Bestellschlüssel

Order code / *Code de commande*

**HRES 2/4L EE 16 TPE**

**Baureihe / range / série** \_\_\_\_\_  
HRES / HRERS

**Baugröße / size / taille** \_\_\_\_\_  
2/4L / 3/6L

**Ausführung / model / exécution** \_\_\_\_\_  
EE

**Durchmesser / O/D / diamètre** \_\_\_\_\_

**Werkstoff des Einsatzes / insert material / matériau de la garniture élastomère** \_\_\_\_\_  
TPE



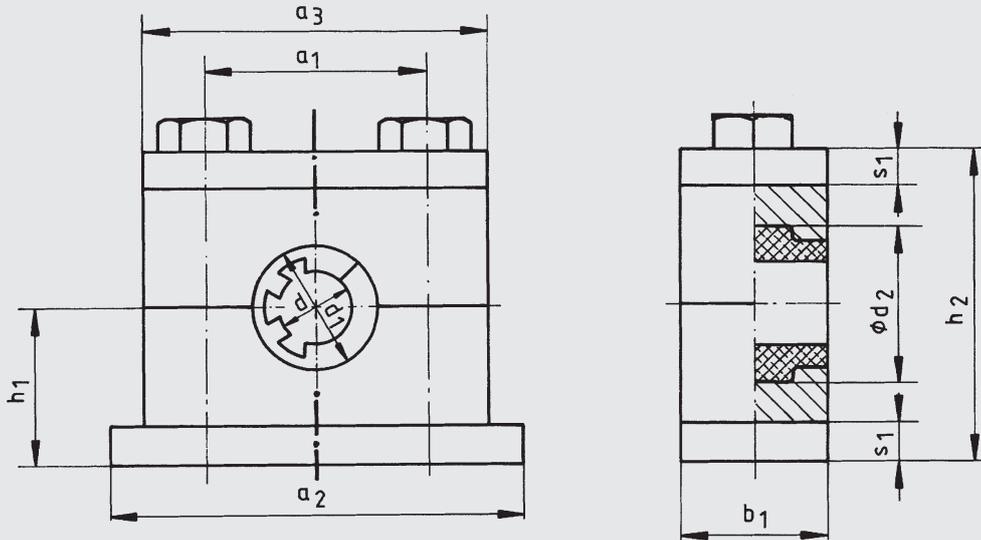
# 1.4 SCHWERE REIHE mit Elastomereinsatz DIN 3015 Teil 2, Einzelteile

**BT 1**

## 1.4 HEAVY RANGE with elastomer insert DIN 3015 part 2, individual parts

## 1.4 SERIE LOURDE avec garniture élastomère selon DIN 3015 chap. 2, pièces individuelles

Schelle in PP- und PA-Ausführung, Elastomereinsatz: Acrylnitril-Butadien-Elastomer (NBR), Thermoplastisches Elastomer  
 Clamp in PP or PA, elastomer insert: acrylonitrile butadiene rubber (NBR), thermoplastic rubber  
 Collier en PP et PA, garniture élastomère: Acrylnitril-Butadien élastomère (NBR), élastomère thermoplastique



d Innenfläche glatt Intern. surface smooth Portée lisse	d Innenfläche gerippt Intern. surface ribbed Portée rainurée	Größe Size Taille	Abmessungen Dimensions Dimensions									ASKT ISO 4014 Ext. hex ISO 4014 Vis H ISO 4014
			d1	d2	b1	h1	h2	a1	a2	a3	s1	
6	-	2	25,5	31	30	31	62	45	85	70	8	M10 x 60
8	-											
10	10											
12	12											
12,7	-											
14	14											
15	15											
16	16											
17,2	17,2											
18	-											
19	-	3	39	46	30	37	74	60	100	85	8	M10 x 70
20	20											
21,3	-											
22	22											
23	-											
25	25											
26,9	-											
28	28											
30	30											
32	-											
33,7	-											
35	-											
38	38											
40	-											
42	42											
45,5	44,5											
48	48											
51	-											
53,4	-											
56,4	57	5	89	98	60	68,5	137	122	180	152	10	M16 x 130
60	-											
65	-											
70	-											
73	-											
76	76	6	116	132	80	98,5	197	168	225	205	15	M20 x 190
83	-											
89	89											
94	-											
101	-											
108	108											
114	-											
133	-											
140	-											

# 1.4 SCHWERE REIHE mit Elastomereinsatz DIN 3015 Teil 2

## 1.4 HEAVY RANGE with elastomer insert DIN 3015 part 2

### 1.4 SERIE LOURDE avec garniture élastomère selon DIN 3015 chap. 2

d Innenfläche glatt Intern. surface smooth Portée lisse	d Innenfläche gerippt Intern. surface ribbed Portée rainurée	Größe Size Taille	Ausführung S Model S Exécution S
6 .. 19	10 .. 17,2	2	
20 .. 32	20 .. 30	3	
33,7 .. 56,4	38 .. 57	4	
60 .. 76	76	5	
83 .. 101	89	6	
108 .. 140	108	7	

#### Bestellschlüssel

Order code / Code de commande

**HRES 2 S 16 PP ST M BL**

**Baureihe / range / série** \_\_\_\_\_

HRES  
HRERS

**Baugröße / size / taille** \_\_\_\_\_

2 / 3 / 4 / 5 / 6 / 7

**Ausführung / model / exécution** \_\_\_\_\_

S

**Durchmesser / O/D / diamètre** \_\_\_\_\_

**Werkstoff der Klemmbacken/ clamp material / matériau des pièces de serrage** \_\_\_\_\_

PP / PA / PAFF

**Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier** \_\_\_\_\_

ST

A2 / A4 **auf Anfrage / on request / sur demande**

**Metrisches Gewinde / metric thread / filet métrique** \_\_\_\_\_

**Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier** \_\_\_\_\_

BL **blank / unplated / sans revêtement**

ZN **verzinkt / zinc plated / zingué**

# 1.4 SCHWERE REIHE mit Elastomereinsatz DIN 3015 Teil 2, Einzelteile

## 1.4 HEAVY RANGE with elastomer insert DIN 3015 part 2, individual parts

### 1.4 SERIE LOURDE avec garniture élastomère selon DIN 3015 chap. 2, pièces individuelles

**BT 1**

**Klembackenpaar**  
Pair of clamp jaws  
Paire de pièces de serrage  
(KP)

Größe Size Taille	
2	
3	
4	
5	
6	
7	

#### Bestellschlüssel

Order code / Code de commande

**HRES 4 KP PP**

Baureihe / range / série

HRES

Baugröße / size / taille

2 / 3 / 4 / 5 / 6 / 7

Ausführung / model / exécution

KP

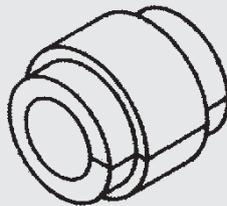
Werkstoff der Klembacken /

material of clamp jaws / matériau de la garniture élastomère  
PP / PA / PAFF

d	Innenfläche glatt Intern. surface smooth Portée lisse	d	Innenfläche gerippt Intern. surface ribbed Portée rainurée	Größe Size Taille
6 .. 19	10 .. 17,2			<b>2/4L</b>
20 .. 32	20 .. 30			<b>3/6L</b>
33,7 .. 56,4	38 .. 57			<b>4</b>
60 .. 76	76			<b>5</b>
83 .. 101	89			<b>6</b>
108 .. 140	108			<b>7</b>

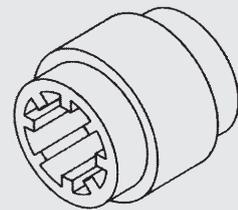
#### Elastomereinsatz glatt

Elastomer insert smooth  
Garniture élastomère lisse  
(HRES ... EE ...)



#### Elastomereinsatz gerippt

Elastomer insert ribbed  
Garniture élastomère rainurée  
(HRERS ... EE ...)



#### Bestellschlüssel

Order code / Code de commande

**HRES 2/4L EE 16 TPE**

Baureihe / range / série

HRES / HRERS

Baugröße / size / taille

2/4L / 3/6L / 4 / 5 / 6 / 7

Ausführung / model / exécution

EE

Durchmesser / O/D / diamètre

Werkstoff des Einsatzes / insert material / matériau de la garniture élastomère  
TPE / NBR (Größe 5 ... 7 / Size 5 ... 7 / Taille 5 ... 7)

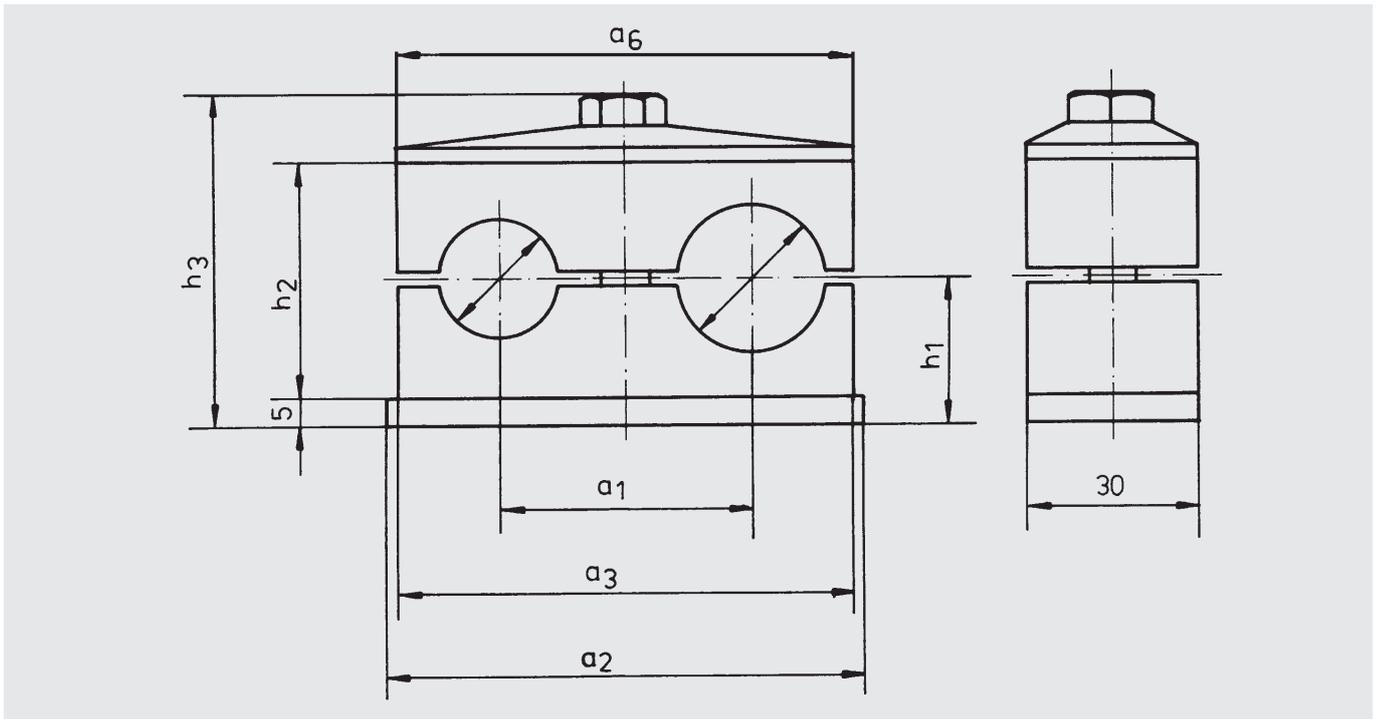


# 1.5 Zweiroherschelle DIN 3015 Teil 3

## 1.5 Twin clamp DIN 3015 part 3

### 1.5 Collier double selon DIN 3015 chap. 3

**BT 1**



Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Abmessungen Dimensions Dimensions							6-Kt.-Schraube ISO 4014 Hex. bolt ISO 4014 Vis H ISO 4014
		a1	a2	a3	a6	h1	h2	h3	
6 6,4 8 9,5 10 12	1	20	37	36	34	18,5	27	43	M6 x 35
12,7 13,7 14 15 16 17,1 18	2	29	55	53	51	18	26	43,5	M8 x 35
19 20 21,3 22 23 25 25,4	3	36	70	67	64	23,5	37	54,5	M8 x 45
26,9 28 30	4	45	85	82	78	26	42	59,5	M8 x 50
32 33,7 35 38 40 42	5	56	110	106	102	32	54	71,5	M8 x 60

# 1.5 Zweirohrschele DIN 3015 Teil 3

## 1.5 Twin clamp DIN 3015 part 3

### 1.5 Collier double selon DIN 3015 chap. 3

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung A Model A Exécution A	Ausführung A1 Model A1 Exécution A1	Ausführung A1TM Model A1TM Exécution A1TM
6 .. 12	1			
12,7 .. 18	2			
19 .. 25,4	3			
26,9 .. 30	4			
32 .. 42	5			

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung D Model D Exécution D
6 .. 12	1	
12,7 .. 18	2	
19 .. 25,4	3	
26,9 .. 30	4	
32 .. 42	5	

#### Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRZ / HRGZ

Baugröße / size / taille

1 / 2 / 3 / 4 / 5

Ausführung / model / exécution

A / A1 / A1TM / D

Durchmesser / O/D / diamètre

(Einzel-Ø / indiv. Ø / Ø-particulier – siehe vorherige Seite / see previous page / voir page précédente)

Werkstoff der Klemmbacken/ clamp material / matériau des pièces de serrage

PP / PA / PAFF / TPE

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier

BL blank / unplated / sans revêtement

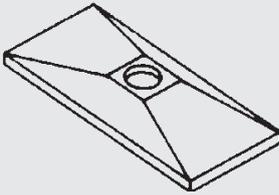
ZN verzinkt / zinc plated / zingué

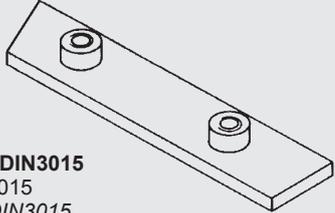
HRZ 2 A 16-16 PP ST M BL

# 1.5 Zweirohrschele DIN 3015 Teil 3, Einzelteile

## 1.5 Twin clamp DIN 3015 part 3, individual parts

### 1.5 Collier double selon DIN 3015 chap. 3, pièces individuelles

<b>Größe</b> Size Taille	<b>Deckplatte</b> Cover plate Plaque de protection (DP)
1	
2	
3	
4	
5	

<b>Größe</b> Size Taille	<b>Reihenanschweißplatte*</b> Interconnecting weld plate Plaque de combinaison à souder (RAP)
1	
2	
3	
4	
5	

\* nicht nach DIN3015  
not to DIN3015  
pas selon DIN3015

**Bestellschlüssel**  
Order code / Code de commande

**HRZ 3 DP ST ZN**

**Baureihe / range / série** ——— **HRZ**

**Baugröße / size / taille** ——— **3**  
1 / 2 / 3 / 4 / 5

**Ausführung / model / exécution** ——— **DP**

**Werkstoff der Stahlteile /** \_\_\_\_\_  
material of steel parts / *matériau des pièces acier*  
**ST**  
A2 / A4 **auf Anfrage / on request / sur demande**

**Oberfläche der Stahlteile /** \_\_\_\_\_  
plating of steel parts / *revêtement des pièces acier*  
**ZN** **verzinkt / zinc plated / zingué**

**Bestellschlüssel**  
Order code / Code de commande

**HRZ 2 RAP ST M BL**

**Baureihe / range / série** ——— **HRZ**

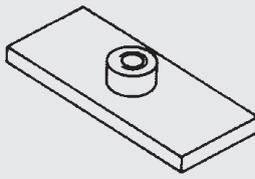
**Baugröße / size / taille** ——— **2**  
1 / 2 / 3 / 4 / 5

**Ausführung / model / exécution** ——— **RAP**

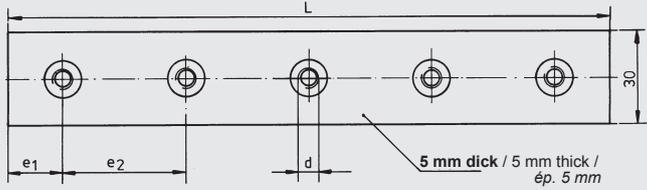
**Werkstoff der Stahlteile /** \_\_\_\_\_  
material of steel parts / *matériau des pièces acier*  
**ST**  
A2 / A4 **auf Anfrage / on request / sur demande**

**Metrisches Gewinde / metric thread / filet métrique** ——— **M**

**Oberfläche der Stahlteile /** \_\_\_\_\_  
plating of steel parts / *revêtement des pièces acier*  
**BL** **blank / unplated / sans revêtement**  
**ZN** **verzinkt / zinc plated / zingué**

<b>Größe</b> Size Taille	<b>Anschweißplatte</b> Weld plate Plaque à souder (AP)
1	
2	
3	
4	
5	

**Reihenanschweißplatte**  
Interconnecting weld plate  
Plaque de combinaison à souder  
(RAP)



**Bestellschlüssel**  
Order code / Code de commande

**HRZ 2 AP ST M BL**

**Baureihe / range / série** ——— **HRZ**

**Baugröße / size / taille** ——— **2**  
1 / 2 / 3 / 4 / 5

**Ausführung / model / exécution** ——— **AP**

**Werkstoff der Stahlteile /** \_\_\_\_\_  
material of steel parts / *matériau des pièces acier*  
**ST**  
A2 / A4 **auf Anfrage / on request / sur demande**

**Metrisches Gewinde / metric thread / filet métrique** ——— **M**

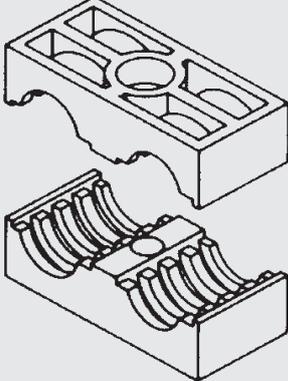
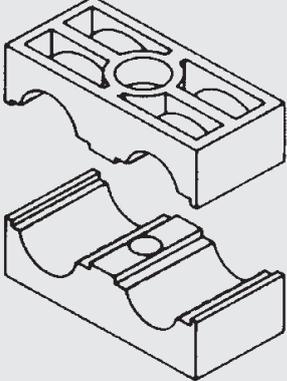
**Oberfläche der Stahlteile /** \_\_\_\_\_  
plating of steel parts / *revêtement des pièces acier*  
**BL** **blank / unplated / sans revêtement**  
**ZN** **verzinkt / zinc plated / zingué**

Größe Size Taille	Schellenanzahl Number of clamps Nombre de colliers	Abmessungen Dimensions Dimensions			
		e1	e2	L	d
1	5	18	40	196	M6
2	5	28	58	288	M8
3	5	35	72	358	M8
4	5	43	90	446	M8
5	5	55	112	558	M8

## 1.5 Zweirohrschele DIN 3015 Teil 3, Einzelteile

1.5 Twin clamp DIN 3015 part 3, individual parts

1.5 Collier double selon DIN 3015 chap. 3, pièces individuelles

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Klemmbackenpaar gerippt Pair of clamp jaws, ribbed Paire de pièces de serrage, rainurée (HRZ ... KP ...)	Klemmbackenpaar glatt Pair of clamp jaws, smooth Paire de pièces de serrage, lisse (HRGZ ... KP ...)
6 .. 12	1		
12,7 .. 18	2		
19 .. 25,4	3		
26,9 .. 30	4		
32 .. 42	5		

### Bestellschlüssel

Order code / Code de commande

**HRZ 3 KP 23-23 PP**

Baureihe / range / série \_\_\_\_\_

HRZ  
HRGZ

Baugröße / size / taille \_\_\_\_\_

1 / 2 / 3 / 4 / 5

Ausführung / model / exécution \_\_\_\_\_

KP

Durchmesser / O/D / diamètre \_\_\_\_\_

Werkstoff der Klemmbacken / clamp material / matériau des pièces de serrage \_\_\_\_\_

PP / PA / PAFF / TPE

andere Werkstoffe auf Anfrage / other materials on request / autres matériaux sur demande

# 1.5 Zweirohrschele DIN 3015 Teil 3, Einzelteile

## 1.5 Twin clamp DIN 3015 part 3, individual parts

### 1.5 Collier double selon DIN 3015 chap. 3, pièces individuelles

Abmessungen Dimensions Dimensions	Größe Size Taille	6-kt-Schraube ISO 4014 Hex. bolt ISO 4014 Vis H ISO 4014 (6kt-schr.ISO4014)
M6 x 35	1	
M8 x 35	2	
M8 x 45	3	
M8 x 50	4	
M8 x 60	5	

Abmessungen Dimensions Dimensions	Größe Size Taille	Aufbauschraube Build-up bolt Goujon-écrou (AF...)
AF6	1	
AF8	2	
AF8	3	
AF8	4	
AF8	5	

### Bestellschlüssel

Order code / Code de commande

**6kt-schr. ISO4014 - M6 x 35 - 8.8 - A4B**

**Bauart** / design / forme  
6kt-schr. ISO4014

**Baugröße** / size / taille  
ISO4014

M6 x 35  
M8 x 35  
M8 x 45  
M8 x 50  
M8 x 60

**Schraubenqualität** / bolt quality / qualité de vis  
8.8

**Oberfläche der Schraube** / bolt plating / revêtement de vis  
A4B **verzinkt** / zinc plated / zingué

### Bestellschlüssel

Order code / Code de commande

**HRZ 4 AF ST M ZN**

**Baureihe** / range / série  
HRZ

**Baugröße** / size / taille  
1 = HRL 0+1 AF ST M ZN  
2 / 3 / 4 / 5

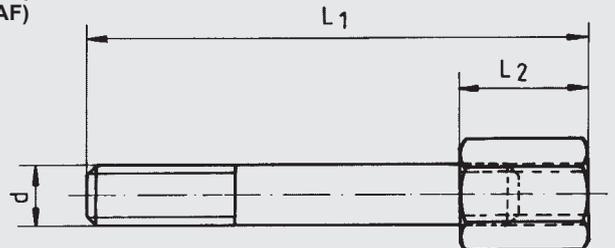
**Ausführung** / model / exécution  
AF

**Werkstoff** / material / matériau  
ST  
A2 / A4 **auf Anfrage** / on request / sur demande

**Metrisches Gewinde** / metric thread / filet métrique

**Oberfläche der Stahlteile** / plating of steel parts / revêtement des pièces acier  
ZN **verzinkt** / zinc plated / zingué

**Aufbauschraube**  
Build-up bolt  
Goujon-écrou  
(AF)



Größe Size Taille	Abmessungen Dimensions Dimensions		
	L1	L2	d
1	34	14	M6
2	33	13	M8
3	44	15	M8
4	49	15	M8
5	62	15	M8

# 1.5 Zweirohrschele DIN 3015 Teil 3, Einzelteile

## 1.5 Twin clamp DIN 3015 part 3, individual parts

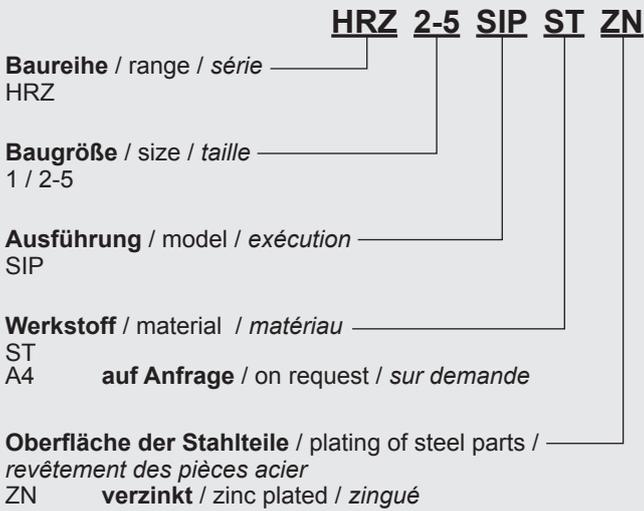
### 1.5 Collier double DIN 3015 chap. 3, pièces individuelles

Größe Size Taille	Sicherungsblech Locking plate Plaque intermédiaire (SIP)
1	
2-5	

Abmessungen Dimensions Dimensions	Größe Size Taille	Tragschienenmutter Bayonet nut Ecrou rail porteur (TM ...)
TMV6	1	
TM8	2-5	

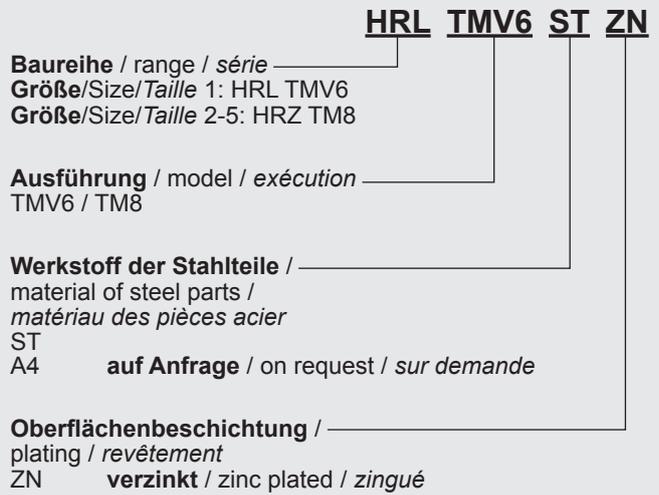
#### Bestellschlüssel

Order code / Code de commande



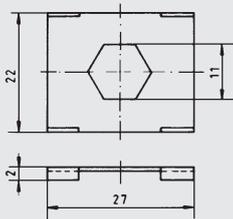
#### Bestellschlüssel

Order code / Code de commande



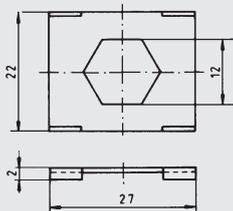
#### Sicherungsblech Gr. 1

Locking plate size 1  
Plaque intermédiaire taille 1  
(SIP)



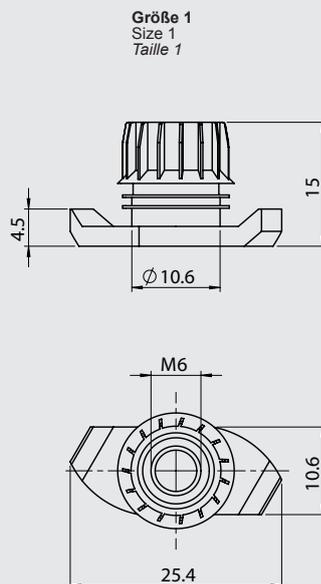
#### Sicherungsblech Gr. 2-5

Locking plate size 2-5  
Plaque intermédiaire taille 2-5  
(SIP)



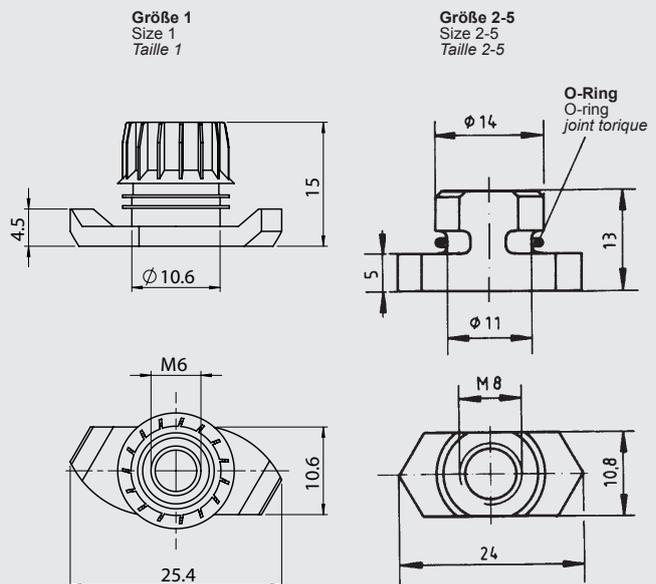
#### Tragschienenmutter M6

Bayonet nut M6  
Ecrou pour rail porteur M6  
(TMV6)



#### Tragschienenmutter M8

Bayonet nut M8  
Ecrou pour rail porteur M8  
(TM8)



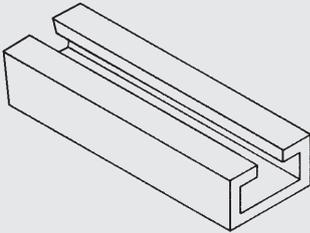
# 1.5 Zweirohrschelle DIN 3015 Teil 3, Einzelteile

1.5 Twin clamp DIN 3015 part 3, individual parts

1.5 Collier double DIN 3015 chap. 3, pièces individuelles

**BT 1**

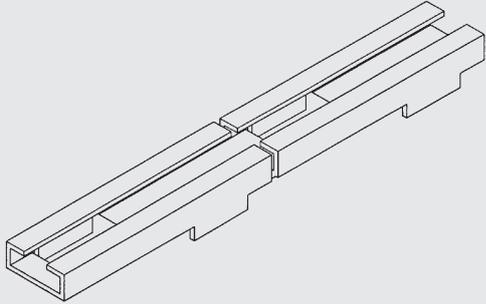
**C-Tragschiene**  
C-rail  
C-Rail porteur  
(TS)



**Größe**  
Size  
Taille

28 x 11
28 x 14
28 x 30

**C-Tragschiene m. Anschweißstegen**  
C-rail with weld struts  
C-Rail porteur avec barres à souder  
(TS28x11AS)



**Abmessungen**  
Dimensions  
Dimensions

28 x 11
---------

**Bestellschlüssel**  
Order code / Code de commande

**HRL TS28x11 ST BL 1m**

**Baureihe / range / série** — HRL

**Ausführung / model / exécution** — TS28 x 11  
TS28 x 14  
TS28 x 30

**Werkstoff der Stahlteile /** \_\_\_\_\_  
material of steel parts /  
*matériau des pièces acier*  
ST / AL\* / A2\* / A4\*

**Oberfläche der Stahlteile /** \_\_\_\_\_  
plating of steel parts /  
*revêtement des pièces acier*  
BL **blank** / unplated / *sans revêtement*  
ZN **verzinkt** / zinc plated / *zingué*

**Baulänge / length / longueur** — 1 m / 2 m

\* **auf Anfrage** / on request / *sur demande*

**Bestellschlüssel**  
Order code / Code de commande

**HRL TS28x11AS ST BL 1m**

**Baureihe /** \_\_\_\_\_  
range / série  
HRL

**Ausführung / model / exécution** — TS28 x 11AS

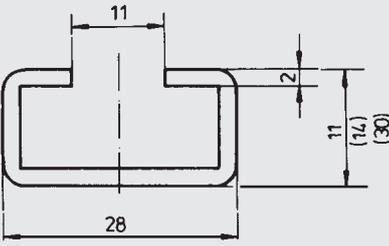
**Werkstoff der Stahlteile /** \_\_\_\_\_  
material of steel parts /  
*matériau des pièces acier*  
ST / AL\* / A2\* / A4\*

**Oberfläche der Stahlteile /** \_\_\_\_\_  
plating of steel parts /  
*revêtement des pièces acier*  
BL **blank** / unplated / *sans revêtement*  
ZN **verzinkt** / zinc plated / *zingué*

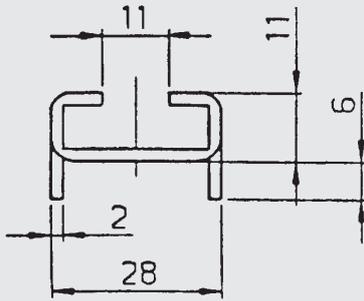
**Baulänge / length / longueur** — 1 m

\* **auf Anfrage** / on request / *sur demande*

**C-Tragschiene**  
C-rail  
C-Rail porteur  
(TS)



**C-Tragschiene m. Anschweißstegen**  
C-rail with weld struts  
C-Rail porteur avec barres à souder  
(TS28x11AS)





## 1.6 Schellen nach DIN 3015

### 1.6 Clamps to DIN 3015

### 1.6 Colliers selon DIN 3015

## Technische Daten / Allgemeine Hinweise

Dem Anwender stehen zur Befestigung von Rohrleitungen umfassende Angebote an Systemen zur Verfügung. Die Befestigungsbauteile bestehen in der Regel aus Stahl-, Aluminium-, Kunststoff- und Gummiteilen. Aus diesen Bauteilen werden Kombinationen gewählt, die zur Montage der Rohrleitungen notwendig sind.

So ergeben sich z.B. für die Schellen in Blockform nach DIN 3015 die vielfältigsten Anwendungsmöglichkeiten.

Bei der Verwendung dieser Schellen stellt sich die Frage:

Wann setze ich die Leichte Baureihe, wann die Schwere Baureihe und wann die Zweirohrschelle ein?

Die nachstehenden Informationen sollen helfen, diese Entscheidung zu vereinfachen.

### Allgemeine Hinweise

Für die sichere Montage ist eine stabile, den Belastungen entsprechende Unterbefestigung der Trägereinheiten, wie Grundplatten und Tragschienen notwendig.

Die erste Schelle soll unmittelbar nach der Anschlussverschraubung platziert sein. Sie hält somit die Schwingungen von der Verschraubung ab.

Rohrbögen sind unmittelbar hinter den Bögen abzufangen (Pulsationsrichtung beachten).

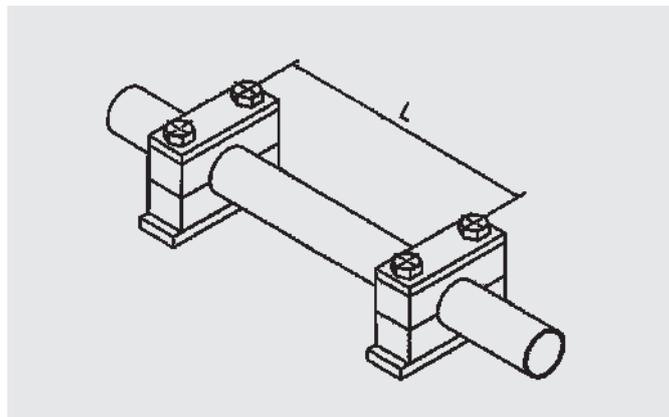
Die vorgegebenen Schraubenanzugsmomente nach DIN 3015, Teil 10 sind einzuhalten (siehe Folgeseiten).

Die vorgegebenen Grenzen der Materialeigenschaften sind zu beachten (siehe Folgeseiten).

Wo keine Aussage aufgrund der praktischen Erfahrung vorliegt, sind die empfohlenen Rohrstützweiten einzuhalten (siehe unten).

Werden in den Rohrleitungen Armaturen integriert, so ist eine Abstützung vor und hinter diesen Armaturen empfohlen.

### Empfohlene Rohrstützweiten



Rohrstützweite L (m)	Rohrdurchmesser D	
	min (mm)	max (mm)
1,0	6,0	12,7
1,2	12,7	22,0
1,5	22,0	32,0
2,0	32,0	38,0
2,7	38,0	57,0
3,0	57,0	75,0
3,5	75,0	76,1
3,7	76,1	88,9
4,0	88,9	102,0
4,5	102,0	114,0
5,0	114,0	168,0
6,0	168,0	219,0
6,7	219,0	324,0
7,0	324,0	356,0

## 1.6 Schellen nach DIN 3015

### 1.6 Clamps to DIN 3015

#### 1.6 Colliers selon DIN 3015

## Recommended guidelines for mounting pipelines

There is an extensive range of systems available for mounting pipelines. The mounting components are generally made of steel, aluminium, plastic and rubber. From these components combinations are selected as required. This means that block type clamps to DIN 3015, for example, have a multitude of application possibilities. The question arises concerning the use of these clamps:

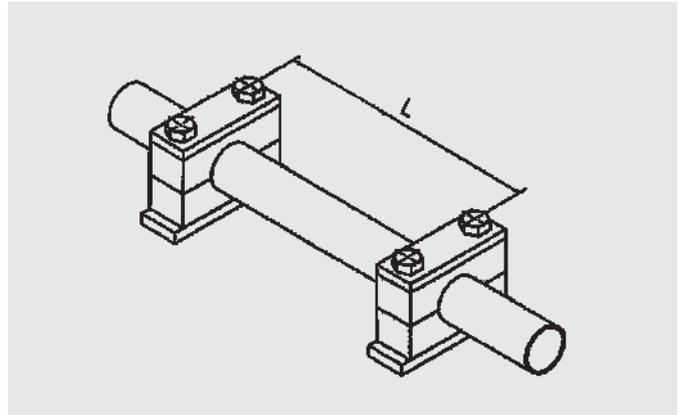
When to use the Light range, heavy range or twin clamp?

The following information is intended to simplify this decision.

### Basic prerequisite

- For secure mounting, stable carrier units, such as base plates and rails are required according to specific load requirements.
- The first clamp should be situated directly after the threaded connection or coupling. This protects the threaded connection or coupling from vibrations.
- Bends in the pipe should be clamped on each side (pulsation direction must be taken into account).
- The given screw torque ratings to DIN 3015, Part 10 must be adhered to (see following pages).
- Material property limitations must be observed (see following pages).
- In the absence of any past experience, the recommended distance between pipe supports must be adhered to (see below).
- If valves are incorporated in the pipelines, it is recommended that support is provided in front of and behind these valves.

### Recommended distance between pipe supports



Distance between pipe supports L (m)	Pipe outside diameters D (mm)	
	min	max
1.0	6.0	12.7
1.2	12.7	22.0
1.5	22.0	32.0
2.0	32.0	38.0
2.7	38.0	57.0
3.0	57.0	75.0
3.5	75.0	76.1
3.7	76.1	88.9
4.0	88.9	102.0
4.5	102.0	114.0
5.0	114.0	168.0
6.0	168.0	219.0
6.7	219.0	324.0
7.0	324.0	356.0

## 1.6 Schellen nach DIN 3015

### 1.6 Clamps to DIN 3015

### 1.6 Colliers selon DIN 3015

**BT 1**

## Consignes pour la fixation de tuyauteries

Il existe aujourd'hui pour l'utilisateur un choix très large et varié de types de fixation de tuyauteries. Les pièces de fixation sont en règle générale composées de pièces en acier, aluminium, matière plastique et matière caoutchouc. La combinaison entre ces différentes pièces permet le montage de tuyauteries. On peut ainsi obtenir pour les colliers en forme bloc suivant DIN 3015 un nombre très important de possibilités. Les questions suivantes se posent lors de l'utilisation de ces colliers:

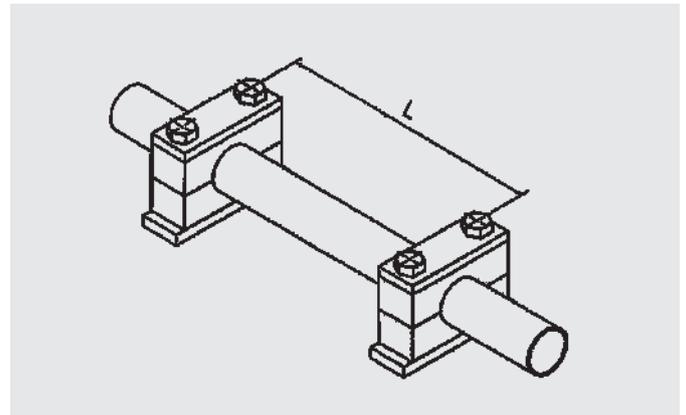
A quel moment dois-je choisir la série légère ou la série lourde ou les colliers doubles?

Les informations suivantes sont destinées à vous aider lors de votre choix.

### Conditions de base

- Pour assurer un montage sûr, il est nécessaire d'utiliser une embase supportant les charges, comme la plaque de base ou le rail porteur.
- Le premier collier doit impérativement être monté directement après le raccord. Il empêche ainsi des oscillations de ce raccord.
- Sur un tube coudé, la fixation est à prévoir en sortie de courbe (sens de pulsation à vérifier).
- Le couple de serrage des vis prescrit dans la norme DIN 3015, partie 10, est à respecter (voir pages suivantes).
- Les caractéristiques limites des matériaux prescrites dans le tableau E sont à vérifier (voir pages suivantes).
- En l'absence de caractéristiques techniques, lorsque l'expérience pratique prévaut, respecter les espacements de colliers conseillés (voir ci-dessous).
- Lorsque des vannes sont intégrées dans la tuyauterie, il est conseillé de prévoir des points de fixation directement avant et après ces vannes.

### Espacement recommandé



Espacement L (m)	Diamètre extérieur du tube D	
	min (mm)	max (mm)
1,0	6,0	12,7
1,2	12,7	22,0
1,5	22,0	32,0
2,0	32,0	38,0
2,7	38,0	57,0
3,0	57,0	75,0
3,5	75,0	76,1
3,7	76,1	88,9
4,0	88,9	102,0
4,5	102,0	114,0
5,0	114,0	168,0
6,0	168,0	219,0
6,7	219,0	324,0
7,0	324,0	356,0

## 1.6 Schellen nach DIN 3015

### 1.6 Clamps to DIN 3015

### 1.6 Colliers selon DIN 3015

## Materialeigenschaften der Schellen nach DIN 3015

Mechanische Eigenschaften		Polypropylen	Polyamid	Thermo- plastisches Elastomer (TPE)	Acrylnitril- Butadien Elastomer (NBR)
Streckspannung	DIN 53455	30 N/mm <sup>2</sup>	55 bis 82 N/mm <sup>2</sup>	8,3 N/mm <sup>2</sup>	25 N/mm <sup>2</sup>
Grenzbiegespannung	DIN 53452	54 N/mm <sup>2</sup>	145 N/mm <sup>2</sup>	24 N/mm <sup>2</sup>	–
Schlagzähigkeit	DIN 53453	ohne Bruch	ohne Bruch	–	–
Kugeldruckhärte	ISO 2039	60 N/mm <sup>2</sup>	70 N/mm <sup>2</sup>	–	–
Shore-Härte		–	–	73 ± 5° Shore A andere Härten a.A.	73 ± 5° Shore A andere Härten a.A.

### Thermische Eigenschaften

Temperaturbeständigkeit		-30 bis +90 °C	-40 bis +120 °C	-40 bis +125 °C	-30 bis +120 °C
Wärmeausdehnungskoeffizient		1,5 x 10 <sup>-4</sup> /°C	7 bis 10 x 10 <sup>-3</sup> /°C	–	–

### Elektrische Eigenschaften

Spezif. Durchgangswiderstand	DIN 53482 VDE 0303	10 <sup>15</sup> Ohm x cm	10 <sup>15</sup> Ohm x cm	–	–
Kriechstromfestigkeit	DIN 53480 VDE 0303	KA 3 c	KA 3 b	–	–

### Festigkeitswerte

#### AL-Schelle

Zugfestigkeit	160 – 200 N/mm <sup>2</sup>
Druckfestigkeit	HB 600 – 750 N/mm <sup>2</sup>
E-Modul	68000 – 78000 N/mm <sup>2</sup>

### Thermische Eigenschaften

Temperaturbeständigkeit	bis 300 °C
-------------------------	------------

### Vorbeugender Brandschutz

nach UL 94  
nach DIN 5510 Teil 2

#### Polyamid Ultramid C3U

PAFF V0  
PAFF S4

### Mechanische Eigenschaften

Streckspannung	ISO 527	45 N/mm <sup>2</sup>
Kerbschlagzähigkeit	nach Charpy / ISO 179 / 1eA	35 kJ/m <sup>2</sup> bei +23 °C
Kugeldruckhärte		100 N/mm <sup>2</sup>

### Thermische Eigenschaften

Temperaturbeständigkeit	-40 °C bis +120 °C
-------------------------	--------------------

## Schraubenanzugs-Drehmoment (Nm) nach DIN 3015 Teil 10

Norm	Gewinde	Nenngröße	Anzugsmoment in Nm bei Klemmwerkstoff			
			PP	PA	AL	
Leichte Reihe	M 6	0 bis 6	8	10	12	
	Schwere Reihe	M 10	1 bis 2	12	20	30
		3	15	25	35	
M 12		4	30	40	55	
M 16		5	45	55	120	
M 20		6	80	150	220	
M 24		7	110	200	250	
M 30			8	180	350	500
			9	200	370	500
		10	270	470	600	
Zweirohrschellen Reihe	M 6	1	5	6	–	
	M 8	2 bis 4	12	12	–	
		5	8	8	–	

Die angegebenen Schraubenanzugsmomente beziehen sich auf Montage mit Deckplatten und Außensechskantschrauben nach ISO 4014 / 4017.

## 1.6 Schellen nach DIN 3015

### 1.6 Clamps to DIN 3015

### 1.6 Colliers selon DIN 3015

**BT 1**

## Properties of plastic pieces to DIN 3015

Mechanical properties		Polypropylene	Polyamide	Thermo-plastic elastomer (TPE)	Acrylonitrile butadiene elastomer (NBR)
Yield stress	DIN 53455	30 N/mm <sup>2</sup>	55 to 82 N/mm <sup>2</sup>	8.3 N/mm <sup>2</sup>	25 N/mm <sup>2</sup>
Critical bending stress	DIN 53452	54 N/mm <sup>2</sup>	145 N/mm <sup>2</sup>	24 N/mm <sup>2</sup>	–
Impact resistance	DIN 53453	no breakage	no breakage	–	–
Ball indentation hardness	ISO 2039	60 N/mm <sup>2</sup>	70 N/mm <sup>2</sup>	–	–
Shore hardness	–	–	–	73 ± 5° Shore A other hardness on request	73 ± 5° Shore A other hardness on request
Thermal properties					
Temperature resistant		-30 to +90 °C	-40 to +120 °C	-40 to +125 °C	-30 to +120 °C
Coefficient of thermal expansion		1.5 x 10 <sup>-4</sup> /°C	7 to 10 x 10 <sup>-3</sup> /°C	–	–
Electrical properties					
Specific current-flow resistance	DIN 53482 VDE 0303	10 <sup>15</sup> Ohm x cm	10 <sup>15</sup> Ohm x cm	–	–
Creep resistance	DIN 53480 VDE 0303	KA 3 c	KA 3 b	–	–

### Strength values

### Alu clamp

Tensile strength	160 – 200 N/mm <sup>2</sup>
Pressure resistance	HB 600 – 750 N/mm <sup>2</sup>
Modulus of elasticity	68000 – 78000 N/mm <sup>2</sup>

### Thermal properties

Temperature resistant	to 300 °C
-----------------------	-----------

### Preventive fire protection

to UL 94

to DIN 5510 part 2

### Polyamid Ultramid C3U

PAFF V0

PAFF S4

### Mechanical properties

Yield stress	ISO 527	45 N/mm <sup>2</sup>
Noched impact strength	to Charpy / ISO 179 / 1eA	35 kJ/m <sup>2</sup> at +23 °C
Ball indentation hardness		100 N/mm <sup>2</sup>

### Thermal properties

Temperature resistant	-40 °C to +120 °C
-----------------------	-------------------

## Bolt Torque Rating (Nm) to DIN 3015 Part 10

Standard	Thread	Nominal size	Torque rating in Nm with clamping material		
			PP	PA	AL
Light range	M 6	0 to 6	8	10	12
Heavy range	M 10	1 to 2	12	20	30
		3	15	25	35
		4	30	40	55
	M 12	4	30	40	55
	M 16	5	45	55	120
	M 20	6	80	150	220
	M 24	7	110	200	250
	M 30	8	180	350	500
		9	200	370	500
10		270	470	600	
Twin clamp range	M 6	1	5	6	–
		2 to 4	12	12	–
	M 8	5	8	8	–

The indicated screw tightening torques refer to the assembly with cover plates and hexagon bolts according to ISO 4014 / 4017.

## 1.6 Schellen nach DIN 3015

### 1.6 Clamps to DIN 3015

### 1.6 Colliers selon DIN 3015

## Caractéristiques des pièces en plastique selon DIN 3015

Caractéristiques mécaniques		Polypropylène	Polyamide	Thermo-plastique élastomère (TPE)	Acrylonitril-Butadien élastomère (NBR)
Résistance à la traction	DIN 53455	30 N/mm <sup>2</sup>	55 à 82 N/mm <sup>2</sup>	8,3 N/mm <sup>2</sup>	25 N/mm <sup>2</sup>
Résistance à la flexion	DIN 53452	54 N/mm <sup>2</sup>	145 N/mm <sup>2</sup>	24 N/mm <sup>2</sup>	–
Résistance aux chocs	DIN 53453	sans rupture	sans rupture	–	–
Dureté à la bille	ISO 2039	60 N/mm <sup>2</sup>	70 N/mm <sup>2</sup>	–	–
Dureté - Shore	–	–	–	73 ± 5° Shore A autres duretés sur demande	73 ± 5° Shore A autres duretés sur demande
<b>Caractéristiques thermiques</b>					
Résistance à la température		-30 à +90 °C	-40 à +120 °C	-40 à +125 °C	-30 à +120 °C
Coefficient de dilatation thermique		1,5 x 10 <sup>-4</sup> /°C	7 à 10 x 10 <sup>-3</sup> /°C	–	–
<b>Caractéristiques électriques</b>					
Résistivité spécifique	DIN 53482 VDE 0303	10 <sup>15</sup> Ohm x cm	10 <sup>15</sup> Ohm x cm	–	–
Résistivité au courant de fuite	DIN 53480 VDE 0303	KA 3 c	KA 3 b	–	–

### Résistances mécaniques

### Collier aluminium

Résistance à la traction	160 – 200 N/mm <sup>2</sup>
Résistance à la compression	HB 600 – 750 N/mm <sup>2</sup>
Module d'élasticité	68000 – 78000 N/mm <sup>2</sup>

### Caractéristiques thermiques

Résistance à la température (max)	à 300 °C
-----------------------------------	----------

### Prévention protection contre le feu

### Polyamid Ultramid C3U

UL 94	PAFF V0
DIN 5510 part 2	PAFF S4

### Caractéristiques mécaniques

Résistance à la traction	ISO 527	45 N/mm <sup>2</sup>
Essai de résilience	Charpy / ISO 179 / 1eA	35 kJ/m <sup>2</sup> à +23 °C
Dureté à la bille		100 N/mm <sup>2</sup>

### Caractéristiques thermiques

Résistance à la température	-40 °C à +120 °C
-----------------------------	------------------

## Couple de serrage des vis (Nm) suivant DIN 3015 partie 10

Norme	Filetage	Taille nom.	Couple de serrage en Nm suivant matériau de collier		
			PP	PA	AL
Série légère	M 6	0 à 6	8	10	12
Série lourde	M 10	1 à 2	12	20	30
		3	15	25	35
	M 12	4	30	40	55
	M 16	5	45	55	120
	M 20	6	80	150	220
	M 24	7	110	200	250
		8	180	350	500
	M 30	9	200	370	500
		10	270	470	600
Collier série double	M 6	1	5	6	–
		2 à 4	12	12	–
	M 8	5	8	–	

Les couples de serrage des vis sont donnés pour le montage avec plaque de protection et vis hexagonale d'après ISO 4014 / 4017.

## 1.7 Leichte Reihe DIN 3015 Teil 1

1.7 Light range DIN 3015 part 1

1.7 *SERIE LEGERE* selon DIN 3015 chap. 1

**BT 1**

### Verpackungseinheiten

Packing details

*Conditionnement*

L	Klemmbackenpaare Pair of clamp jaws <i>Pièces de serrage</i>		Anschweiß- und Deckplatten Weld and cover plates <i>Plaques de base et de protection</i>		Schrauben Bolts <i>Vis</i>		
	Karton (Paar) Box (pairs) <i>Carton (paires)</i>	Tüte (Paar) Bag (pairs) <i>Sachet (paires)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>	
	PP, PA	AL	AP	DP			
0	1000		250	500	50	1000	50
1	1000	500	250	500	50	1000	50
2	1000	250		250	50	1000	50
3	500	250		250	50	1000	50
4	500	200		200	25	1000	50
5	250	100	100	200	25	500	50
6	250	100	100	200	25	500	50
TMV 6				1000	50		
U-Scheibe Washer <i>Rondelle</i>					50		
Aufbaumutter Build-up nut <i>Ecrou pour collier superposable</i>				1000	50		

L = Leichte Baureihe DIN 3015 / Light range DIN 3015 / *Série légère* selon DIN 3015

#### Abgabe nur in Verpackungseinheiten.

Only available in given pack sizes.

*Livraison uniquement sous conditionnement.*

## 1.7 SCHWERE REIHE DIN 3015 Teil 2

### 1.7 HEAVY RANGE DIN 3015 part 2

### 1.7 SERIE LOURDE selon DIN 3015 chap. 2

## Verpackungseinheiten

### Packing details

### Conditionnement

S	Klembackenpaare Pair of clamp jaws <i>Pièces de serrage</i>		Anschweiß- und Deckplatten Weld and cover plates <i>Plaques de base et de protection</i>		Schrauben Bolts <i>Vis</i>	
	Karton (Paar) Box (pairs) <i>Carton (paires)</i>	Tüte (Paar) Bag (pairs) <i>Sachet (paires)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>
	PP, PA	AL				
1	500	250	25	100	25	250
2	250	150	25	100	25	250
3	250	100	25	100	25	250
4	250 (Stück,pieces,pièces)			50		100
5	120 (Stück,pieces,pièces)			25		25
TM 10				250		50
TM 12				250		50
U-Scheibe	Washer <i>Rondelle</i>					50
Aufbaumutter	Build-up nut <i>Ecrou pour collier superposable</i>		Gr. 1-4	250		50
Aufbaumutter	Build-up nut <i>Ecrou pour collier superposable</i>		Gr. 5	100		
Stiftschraube	Stud <i>Gougeon</i>		Gr. 1-3	250		50
Stiftschraube	Stud <i>Gougeon</i>		Gr. 4	250		
Stiftschraube	Stud <i>Gougeon</i>		Gr. 5	100		

S = Schwere Baureihe DIN 3015 / Heavy range DIN 3015 / Série lourde selon DIN 3015

Gr. = Größe / Size / Taille

### Abgabe nur in Verpackungseinheiten.

Only available in given pack sizes.

*Livraison uniquement sous conditionnement.*

**1.7 Zweiroherschelle DIN 3015 Teil 3**

1.7 Twin clamp DIN 3015 part 3

1.7 Collier double selon DIN 3015 chap. 3

**Verpackungseinheiten**

Packing details

*Conditionnement*

Z	Klemmbackenpaare Pair of clamp jaws <i>Pièces de serrage</i>		Anschweiß- und Deckplatten Weld and cover plates <i>Plaques de base et de protection</i>		Schrauben Bolts <i>Vis</i>	
	Karton (Paar) Box (pairs) <i>Carton (paires)</i>	Tüte (Paar) Bag (pairs) <i>Sachet (paires)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>
			AP	DP		
1	1000	50	200	250	50	500
2	750	50	100	200	50	500
3	500	50	100	200	50	500
4	250	25		100	25	200
5	250	25		100	25	200
TMV 6					50	
TM 8					25	

**Aufbauschraube wie normale Schrauben**

Build-up bolt the same as normal bolts

*Vis pour collier superposable identiques aux vis standard*

Z = Zweiroherschelle DIN 3015 / Twin clamp DIN 3015 / Collier double selon DIN 3015

**Abgabe nur in Verpackungseinheiten.**

Only available in given pack sizes.

*Livraison uniquement sous conditionnement.*



## 1.8 Gegenüberstellung "Metrisch" zu "Zoll"

1.8. Comparison metric / imperial measurements

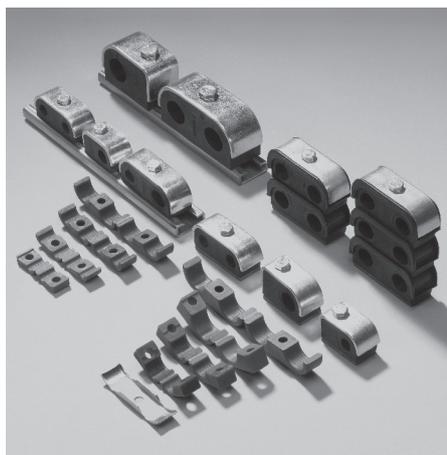
1.8 Correspondance métrique / pouce

**BT 1**

Rohr-Außen-Ø in mm Pipe OD mm Ø extérieur du tuyau mm	Zoll Inch pouce	Gewinderohre Nominal bore (inch) Tube fileté pouce
6	–	–
6,4	1/4	–
8	5/16	–
9,5	3/8	–
10	–	G 1/8
12	–	–
12,7	1/2	–
13,7	–	G 1/4
14	–	–
15	–	–
16	5/8	–
17,1	–	G 3/8
18	–	–
19	3/4	–
20	–	–
21,3	–	G 1/2
22	–	–
23	–	–
25	–	–
25,4	1	–
26,9	–	G 3/4
28	–	–
30	–	–
32	1 1/4	–
33,7	–	G 1
35	–	–
38	1 1/2	G 1 1/8
40	–	–
42	–	G 1 1/4
44,5	1 3/4	–
48,3	–	G 1 1/2
50,8	2	–
54	–	–
57	2 1/4	–
60,3	–	G 2
63,5	2 1/2	–
65	–	–
70	–	–
73	–	–
76,1	3	G 2 1/2

Rohr-Außen-Ø in mm Pipe OD mm Ø extérieur du tuyau mm	Zoll Inch pouce	Gewinderohre Nominal bore (inch) Tube fileté pouce
80	–	–
88,9	3 1/2	G 3
90	–	–
96	–	–
101,6	4	G 3 1/2
108	4 1/4	–
114,3	4 1/2	G 4
136	–	–
139,7	5 1/2	G 5
168	6 1/2	G 6
177,8	7	–
193,7	7 5/8	G 7
219,1	8 5/8	G 8
244,5	–	–
273	–	G 10
323,9	12 3/4	G12
355,6	–	G 14
406,4	–	G 16





## HYDAC Schellen

HYDAC Clamps

*Colliers HYDAC*



### BT 2.1. Diagonalschelle

BT 2.1. Diagonal clamp

*BT 2.1. Collier forme diagonale*



### BT 2.2. Buegu-Schelle

BT 2.2. Buegu Clamp

*BT 2.2. Collier Buegu*



### BT 2.3. Oval-Schelle

BT 2.3. Oval clamp

*BT 2.3. Collier ovale*

**HYDAC Accessories GmbH**  
 Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: [www.hydac.com](http://www.hydac.com)  
 E-Mail: [info@hydac.com](mailto:info@hydac.com)

**ANMERKUNG**

Die Angaben in diesem Prospekt beziehen sich auf die beschriebenen Betriebsbedingungen und Einsatzfälle. Bei abweichenden Einsatzfällen und/oder Betriebsbedingungen wenden Sie sich bitte an die entsprechende Fachabteilung. Technische Änderungen sind vorbehalten.

**NOTE**

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

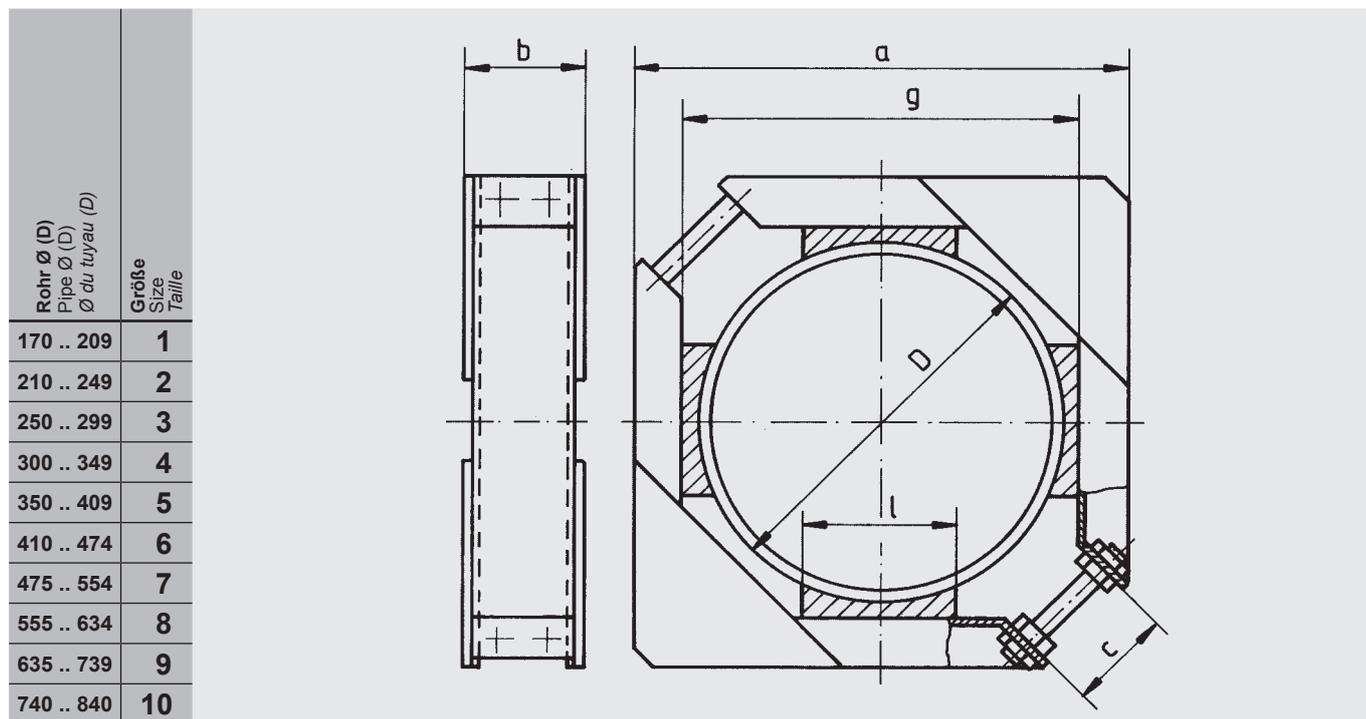
**REMARQUE**

Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.

## 2.1 Diagonalschelle

2.1 Diagonal clamp

2.1 Collier forme diagonale



Rohr Ø (D) Pipe Ø (D) Ø du tuyau (D)	Größe Size Taille
170 .. 209	1
210 .. 249	2
250 .. 299	3
300 .. 349	4
350 .. 409	5
410 .. 474	6
475 .. 554	7
555 .. 634	8
635 .. 739	9
740 .. 840	10

### Bestellschlüssel

Order code / Code de commande

**HRD 5 A 370 PP ST**

**Baureihe / range / série**  
HRD

**Baugröße / size / taille**  
1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10

**Ausführung / model / exécution**  
A

**Durchmesser / O/D / diamètre**

**Werkstoff der Klemmbacken /**  
clamp material /  
matériau des pièces de serrage  
PP / PA

**Werkstoff der Stahlteile /**  
material of steel parts /  
matériau des pièces acier  
ST

Größe / Size / Taille	Abmessungen Dimensions Dimensions					Stiftschraube Stud Goujon
	a	b	c	l	g	
1	315		50		225	M16 x 100
2	355	117	78	110	265	
3	420		82		320	M16 x 130
4	470	121	75		370	
5	540		106		430	M20 x 180
6	605	161	153	175	495	M20 x 220
7	685		165		575	M20 x 240
8	780	186	170		655	
9	880	190	255	250	760	M24 x 320
10	980		297		860	M24 x 360

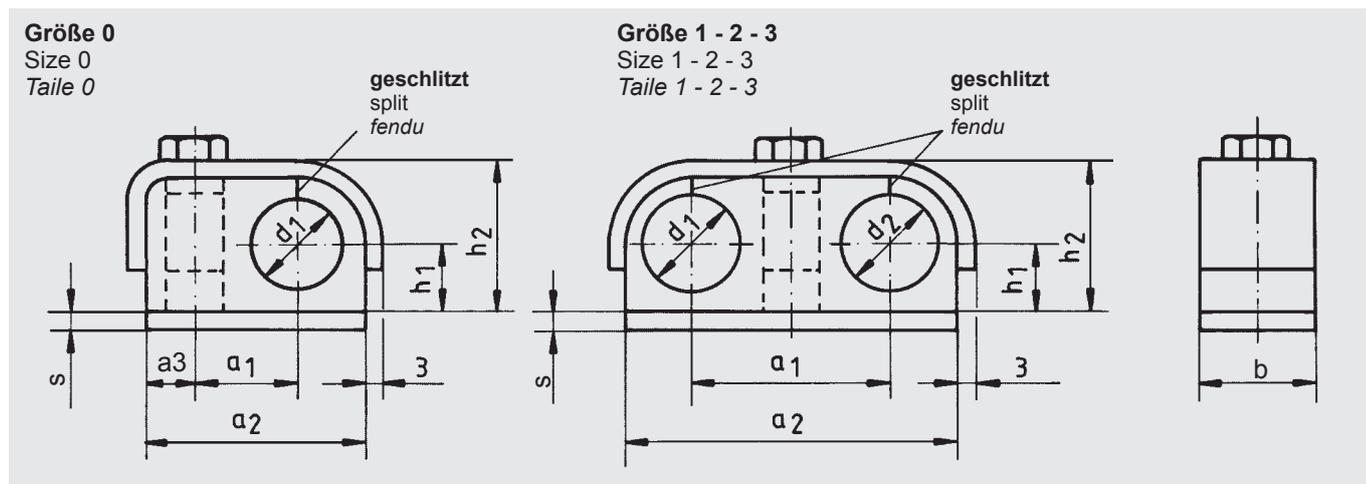


## 2.2 Buegu-Schelle

### 2.2 Buegu clamp

### 2.2 Collier Buegu avec garniture élastomère

**BT 2**



Ø d1 - d2* lagenvorrätig available ex stock disponible	Größe Size Taille	Abmessungen Dimensions Dimensions							ASKT für Ausführung Ext. hex. bolt for model Vis H pour exécution			Höhe der Hülse für Ausführung Length of sleeve for model Hauteur de l'entretoise pour exécution		
		a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	b	h <sub>1</sub>	h <sub>2</sub>	s	A	A1	A1TM	A	A1	A1TM
6 8 10 12	<b>0A</b>	15	34	9	20	10	23	3	M6 x 25	M6 x 30	M6 x 25	11,5	18	11,5
10 12 14 15 16 18 19 20	<b>0B</b>	18	39	9	20	12	27	3	M6 x 25	M6 x 35	M6 x 30	15,5	22	15,5
21,3 22 23 25 25,4 28 30 32	<b>0C</b>	23,5	57,5	15	30	20	43	5	M8 x 45	M8 x 50	M8 x 45	32	38	32
6 - 6 8 - 8 10 - 10 12 - 12	<b>1</b>	30	50	-	20	10	23	3	M6 x 25	M6 x 30	M6 x 25	11,5	18	11,5
10 - 10 12 - 12 15 - 15 16 - 16 17,1 - 17,1 18 - 18 19 - 19 20 - 20	<b>2</b>	35	59	-	20	12	27	3	M6 x 25	M6 x 35	M6 x 30	15,5	22	15,5
21,3-21,3 22 - 22 23 - 23 25 - 25 25,4-25,4 28 - 28 30 - 30 32 - 32	<b>3</b>	47	86	-	30	20	43	5	M8 x 45	M8 x 50	M8 x 45	32	38	32

\* Andere Ø-Kombinationen auf Anfrage

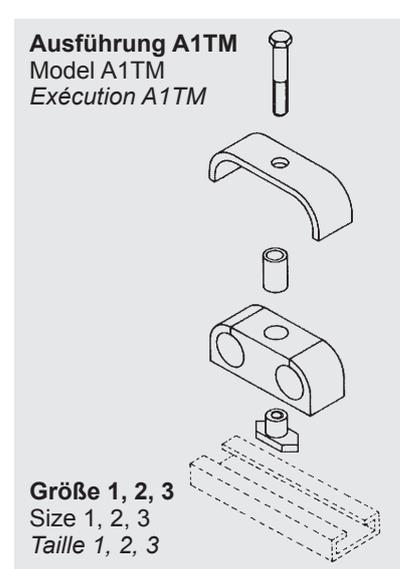
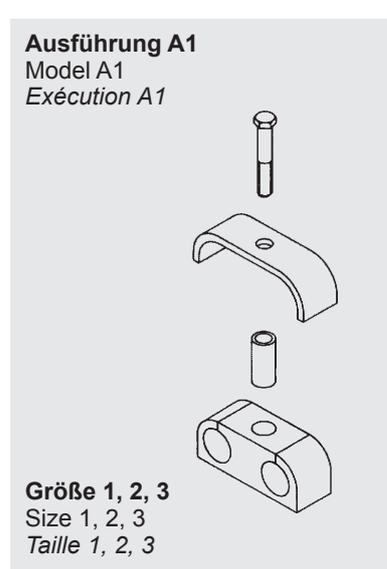
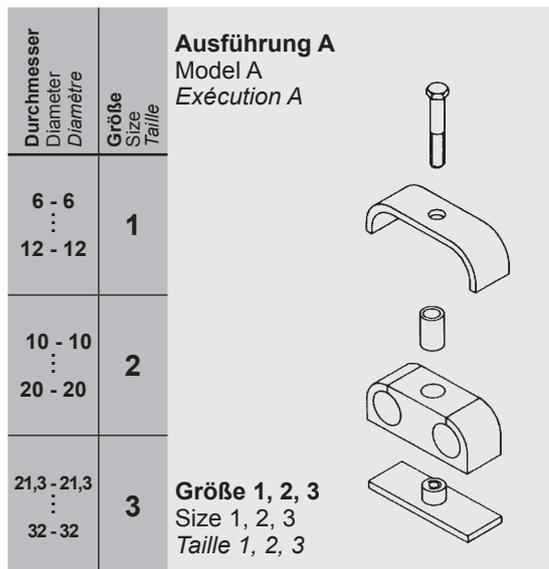
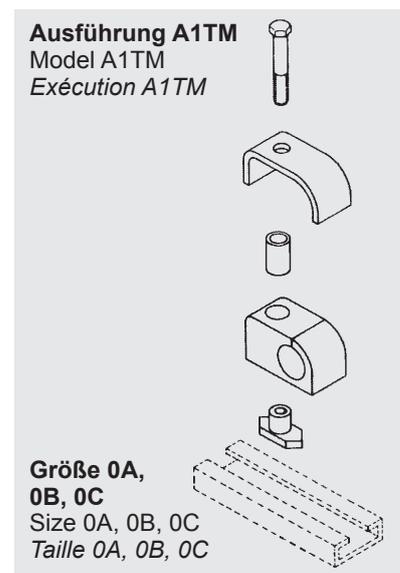
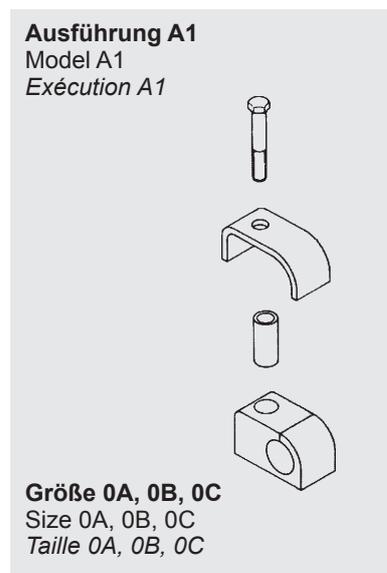
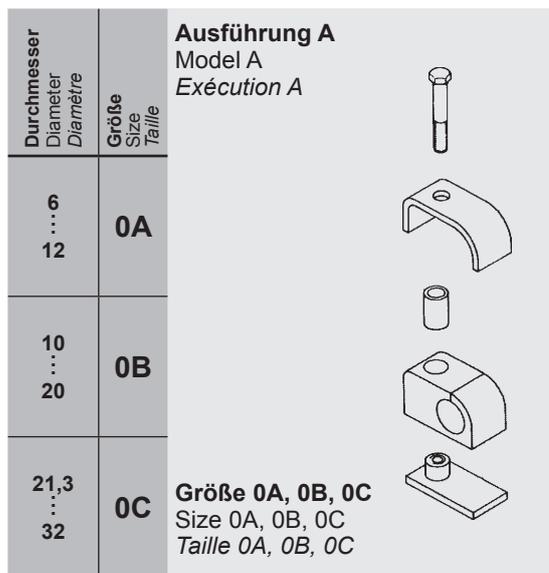
\* Other Ø-combinations on request

\* Autres combinaisons de diamètre sur demande

## 2.2 Buegu-Schelle

### 2.2 Buegu clamp

### 2.2 Collier Buegu avec garniture élastomère



### Bestellschlüssel

Order code / Code de commande

Baureihe / range / série  
HRBGS

Baugröße / size / taille  
0A / 0B / 0C / 1 / 2 / 3

Ausführung / model / exécution  
A / A1 / A1TM

Durchmesser / O/D / diamètre

Werkstoff des Gummiteils / material of rubber body / matériau de la garniture élastomère  
TPE

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier  
ST  
A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

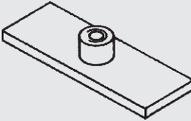
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier  
BL blank / unplated / sans revêtement  
ZN verzinkt / zinc plated / zingué

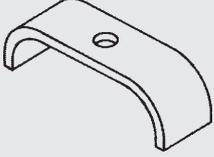
**HRBGS 1 A1 12 - 12 TPE ST M BL**

## 2.2 Buegu-Schelle, Einzelteile

2.2 Buegu clamp, individual parts

2.2 Collier Buegu avec garniture élastomère, pièces individuelles

Größe Size Taille	<b>Anschweißplatte</b> Weld plate <i>Plaque à souder</i> (AP)	
0A		
0B		
0C		
1		
2		
3		

Größe Size Taille	<b>Bügel</b> Stirrup <i>Arceau</i> (BUE)	
0A		
0B		
0C		
1		
2		
3		

### Bestellschlüssel

Order code / Code de commande

**HRBGS 0A AP ST M BL**

**Baureihe / range / série** \_\_\_\_\_  
HRBGS

**Baugröße / size / taille** \_\_\_\_\_  
0A / 0B / 0C / 1 / 2 / 3

**Ausführung / model / exécution** \_\_\_\_\_  
AP

**Werkstoff der Stahlteile /** \_\_\_\_\_  
material of steel parts /  
*matériau des pièces acier*  
ST  
A4 **auf Anfrage / on request / sur demande**

**Metrisches Gewinde /** \_\_\_\_\_  
metric thread /  
*filet métrique*

**Oberfläche der Stahlteile /** \_\_\_\_\_  
plating of steel parts /  
*revêtement des pièces acier*  
BL **blank / unplated / sans revêtement**  
ZN **verzinkt / zinc plated / zingué**

### Bestellschlüssel

Order code / Code de commande

**HRBGS 2 BUE ST ZN**

**Baureihe / range / série** \_\_\_\_\_  
HRBGS

**Baugröße / size / taille** \_\_\_\_\_  
0A / 0B / 0C / 1 / 2 / 3

**Ausführung / model / exécution** \_\_\_\_\_  
BUE

**Werkstoff der Stahlteile /** \_\_\_\_\_  
material of steel parts /  
*matériau des pièces acier*  
ST  
A4 **auf Anfrage / on request / sur demande**

**Oberfläche der Stahlteile /** \_\_\_\_\_  
plating of steel parts /  
*revêtement des pièces acier*  
ZN **verzinkt / zinc plated / zingué**

Größe Size Taille	<b>Außen-6-kt-Schraube DIN</b> Ext. hex. screw DIN <i>Vis H DIN</i> (6kt-schr. ISO 4014 / 4017)	
0A		
0B		
0C		
1		
2		
3		

### Bestellschlüssel

Order code / Code de commande

**6kt-schr. ISO4014 - M6 x 30 - 8.8 - A3B**

**Bauart / design / série** \_\_\_\_\_  
6kt-schr. ISO4014  
6kt-schr. ISO4017

**Baugröße / size / taille** \_\_\_\_\_  
ISO4014 ISO4017  
M6 x 30 M6 x 25  
M6 x 35  
M8 x 45  
M8 x 50

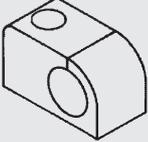
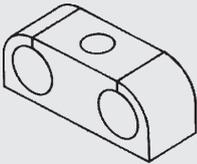
**Schraubenqualität / bolt quality / qualité de vis** \_\_\_\_\_  
8.8  
A2 / A4 **auf Anfrage / on request / sur demande**

**Oberfläche der Schraube / bolt plating / revêtement de vis** \_\_\_\_\_  
A3B **verzinkt / zinc plated / zingué**

## 2.2 Buegu-Schelle, Einzelteile

### 2.2 Buegu clamp, individual parts

### 2.2 Collier Buegu avec garniture élastomère, pièces individuelles

Durchmesser Diameter Diamètre	Größe Size Taille	Gummiteil Rubber section Garniture élastomère (GT)
6 .. 12	<b>0A</b>	
10 .. 20	<b>0B</b>	
21,3 .. 32	<b>0C</b>	
6 - 6 .. 12 - 12	<b>1</b>	
8 - 14 .. 20 - 20	<b>2</b>	
21,3 .. 32	<b>3</b>	

### Bestellschlüssel

Order code / Code de commande

**HRBGS 0A GT 12 TPE**

**Baureihe / range / série** ———  
HRBGS

**Baugröße / size / taille** ———  
0A / 0B / 0C / 1 / 2 / 3

**Gummiteil /** ———  
rubber section /  
garniture élastomère  
GT

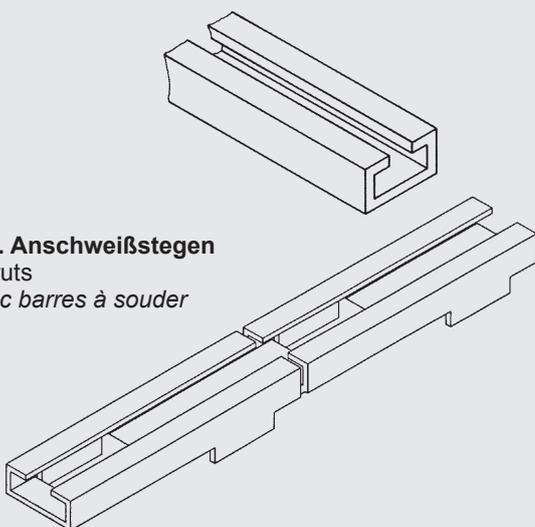
**Durchmesser /** ———  
O/D /  
diamètre

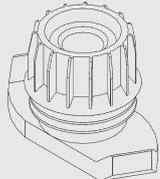
**Werkstoff des Klemmkörpers /** ———  
clamp material /  
matériau de l'élément de serrage  
TPE

## 2.2 Buegu-Schelle, Einzelteile

2.2 Buegu clamp, individual parts

2.2 Collier Buegu avec garniture élastomère, pièces individuelles

Abmessungen Dimensions Dimensions	C-Tragschiene C-rail C-Rail porteur (TS)	
28 x 11	C-Tragschiene m. Anschweißstegen C-rail with weld struts	
28 x 14	C-Rail porteur avec barres à souder (TS28x11AS)	
28 x 30		
28 x 11AS		

Abmessungen Dimensions Dimensions	Tragschienenmutter Bayonet nut Ecrou rail porteur (TMV6)	
TMV6		

### Bestellschlüssel

Order code / Code de commande

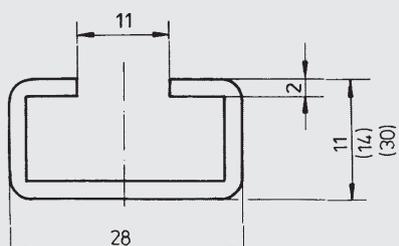
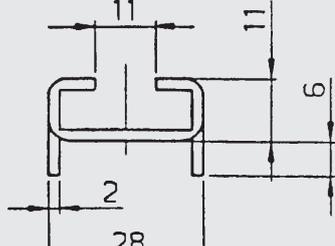
	<b>HRL</b>	<b>TS28x11</b>	<b>ST</b>	<b>BL</b>	<b>1m</b>
<b>Baureihe / range / série</b> HRL					
<b>Ausführung / model / exécution</b> TS28x11 TS28x14 TS28x30 TS28x11AS					
<b>Werkstoff der Stahlteile /</b> material of steel parts / matériau des pièces acier ST / AL * / A2* / A4*					
<b>Oberfläche der Stahlteile /</b> plating of steel parts / revêtement des pièces acier BL <b>blank</b> / unplated / sans revêtement ZN <b>verzinkt</b> / zinc plated / zingué					
<b>Baulänge (nur für Ausführung TS) /</b> length (only for model TS) / longueur (seulement pour exécution TS) 1m / 2m					

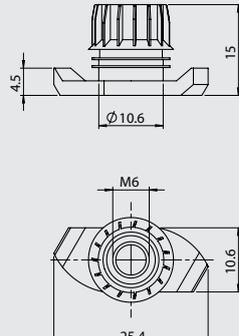
\* **auf Anfrage / on request / sur demande**

### Bestellschlüssel

Order code / Code de commande

	<b>HRL</b>	<b>TMV6</b>	<b>ST</b>	<b>ZN</b>
<b>Baureihe /</b> range / série HRL				
<b>Ausführung /</b> model / exécution TMV6				
<b>Werkstoff der Stahlteile /</b> material of steel parts / matériau des pièces acier ST A4 <b>auf Anfrage / on request /</b> <b>sur demande</b>				
<b>Oberfläche der Stahlteile /</b> plating of steel parts / revêtement des pièces acier ZN <b>verzinkt /</b> zinc plated / zingué				

<p><b>C-Tragschiene</b> C-rail C-Rail porteur (TS)</p>  <p><b>Lieferbar in 1m und 2m Stücken</b> Available in 1m and 2m lengths Existe en longueur de 1m et 2m</p>	<p><b>C-Tragschiene m. Anschweißstegen</b> C-rail with weld struts C-Rail porteur avec barres à souder (TS28x11AS)</p>  <p><b>Lieferbar in 1m Stücken</b> Available in 1m lengths Existe en longueur de 1m</p>
---	--

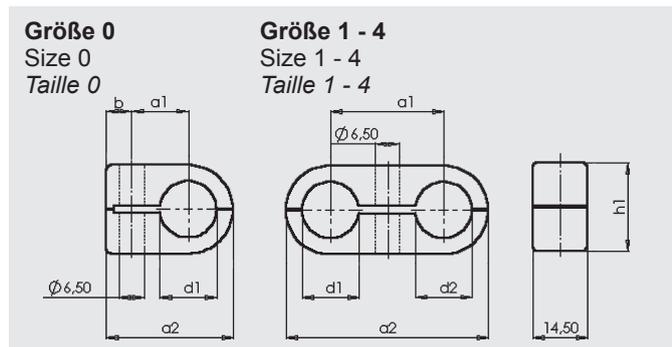
<p><b>Tragschienenmutter M6</b> Bayonet nut M6 Ecrou rail porteur M6 (TMV6)</p> 
---



## 2.3 Oval-Schelle

### 2.3 Oval clamp

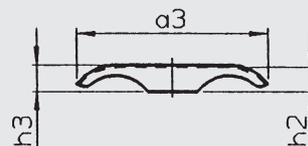
### 2.3 Collier ovale



### Zubehör zu Größe 1 - 4

Accessories to size 1 - 4

Accessoires pour la taille 1 - 4

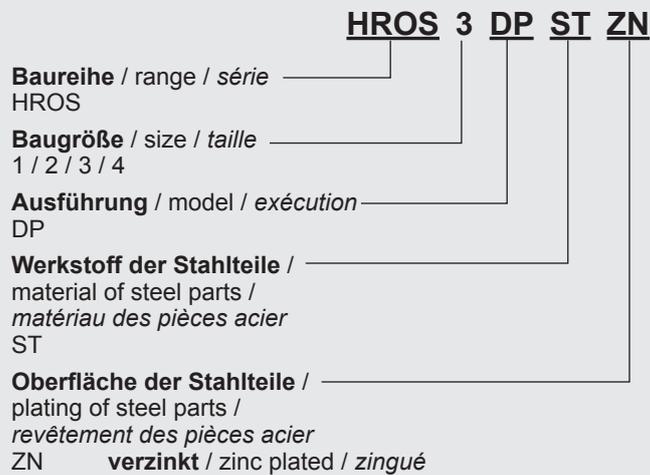


Ø d1 - d2 Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Abmessungen Dimensions Dimensions			
		a <sub>1</sub>	a <sub>2</sub>	b	h <sub>1</sub>
6 6,4 8	<b>0a</b>	9	23	7	13,5
8 9,5 10 12 12,7	<b>0b</b>	11	27	7	18,5
10 12 12,7 13,5	<b>0c</b>	15	34	7	23,5
14 15 16 17,2 18 19	<b>0d</b>	19	40	6	30,5
6 6,4 8	<b>1</b>	18	32	-	13,5
8 9,5 10 12 12,7	<b>2</b>	22	41	-	18,5
10 12 12,7 13,5	<b>3</b>	30	54	-	23,5
14 15 16 17,2 18 19	<b>4</b>	38	69	-	30,5

Größe Size Taille	Werkstoff Material Matériau	Abmessungen Dimensions Dimensions		
		a <sub>3</sub>	h <sub>2</sub>	h <sub>3</sub>
<b>1</b>	STZN	29	4,0	4,5
<b>2</b>	STZN	40	4,0	4,5
<b>3</b>	STZN	50,5	7,6	8,2
<b>4</b>	STZN	63	7,6	8,2

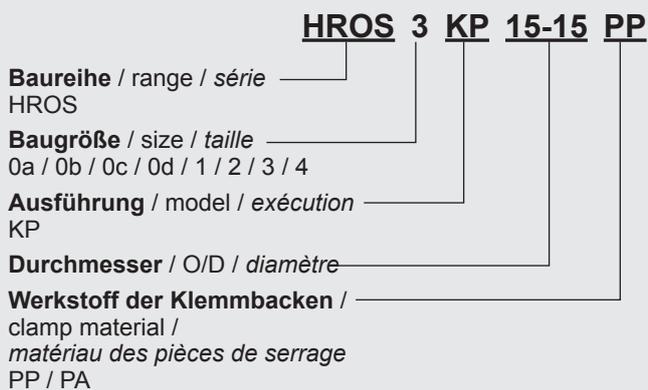
### Bestellschlüssel

Order code / Code de commande

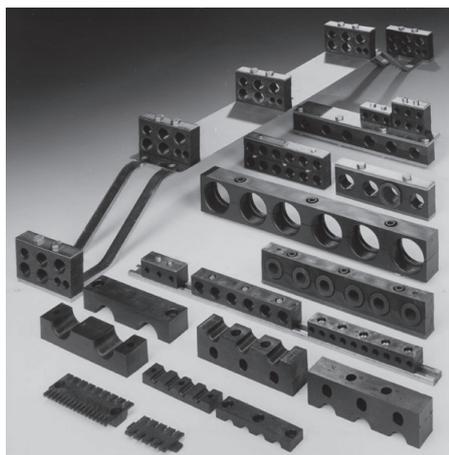


### Bestellschlüssel

Order code / Code de commande







## Reihenleisten

Series strips

*Colliers en ligne*



### BT 3.1. Reihenleiste Leichte Reihe

BT 3.1. Series strip light range

*BT 3.1. Colliers en ligne série légère*



### BT 3.2. Reihenleiste Schwere Reihe mit Elastomereinsatz

BT 3.2. Series strip heavy range with elastomer insert

*BT 3.2. Colliers en ligne série lourde avec garniture élastomère*

**ANMERKUNG**

Die Angaben in diesem Prospekt beziehen sich auf die beschriebenen Betriebsbedingungen und Einsatzfälle. Bei abweichenden Einsatzfällen und/oder Betriebsbedingungen wenden Sie sich bitte an die entsprechende Fachabteilung. Technische Änderungen sind vorbehalten.

**NOTE**

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

**REMARQUE**

Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.

### 3.1 Reihenleiste Leichte Reihe

#### 3.1 Series strip light range

#### 3.1 Colliers en ligne série légère

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	2 Rohre mit 2 Befestigungsschrauben 2 pipes with 2 fixing screws 2 tuyaux avec 2 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Größe Size Taille	Abmessungen Dimensions Dimensions			
	A	C	H	L
1L	20	40	13,5	60,5
2L	29	58	16,5	78,5
3L	36	72	18,5	92,5

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	3 Rohre mit 2 Befestigungsschrauben 3 pipes with 2 fixing screws 3 tuyaux avec 2 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Größe Size Taille	Abmessungen Dimensions Dimensions			
	A	C	H	L
1L	20	20	13,5	56
2L	29	29	16,5	85
3L	36	36	18,5	106

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	4 Rohre mit 2 Befestigungsschrauben 4 pipes with 2 fixing screws 4 tuyaux avec 2 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Größe Size Taille	Abmessungen Dimensions Dimensions			
	A	C	H	L
1L	20	40	13,5	76
2L	29	58	16,5	114
3L	36	72	18,5	142

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	4 Rohre mit 3 Befestigungsschrauben 4 pipes with 3 fixing screws 4 tuyaux avec 3 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Größe Size Taille	Abmessungen Dimensions Dimensions			
	A	C	H	L
1L	20	40	13,5	100,5
2L	29	58	16,5	136,5
3L	36	72	18,5	164,5

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	6 Rohre mit 3 Befestigungsschrauben 6 pipes with 3 fixing screws 6 tuyaux avec 3 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Größe Size Taille	Abmessungen Dimensions Dimensions			
	A	C	H	L
1L	20	40	13,5	116
2L	29	58	16,5	172
3L	36	72	18,5	214

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	10 Rohre mit 5 Befestigungsschrauben 10 pipes with 5 fixing screws 10 tuyaux avec 5 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

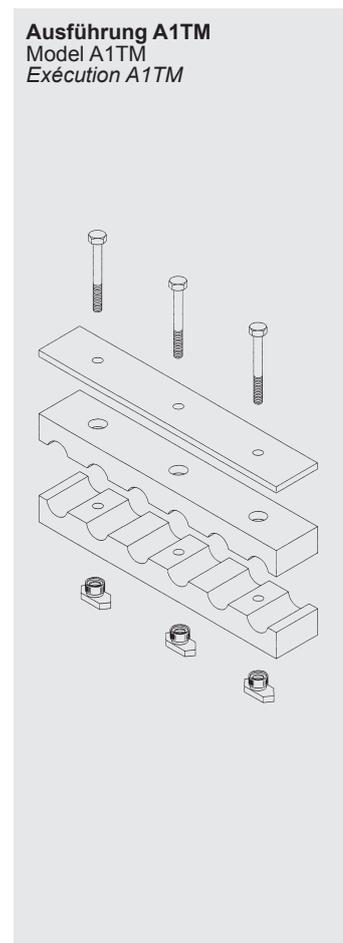
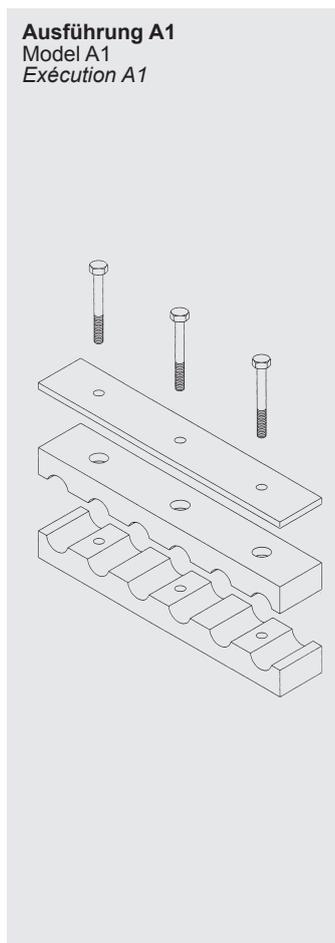
Größe Size Taille	Abmessungen Dimensions Dimensions			
	A	C	H	L
1L	20	40	13,5	196
2L	29	58	16,5	288
3L	36	72	18,5	358

### 3.1 Reihenleiste Leichte Reihe

#### 3.1 Series strip light range

#### 3.1 Colliers en ligne série légère

Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Ausführung A Model A Exécution A
2 x D	60,5 / 2	1L	
3 x D	56 / 2		
4 x D	76 / 2		
4 x D	100,5 / 3		
6 x D	116 / 3		
10 x D	196 / 5	2L	
2 x D	78,5 / 2		
3 x D	85 / 2		
4 x D	114 / 2		
6 x D	172 / 3		
10 x D	288 / 5	3L	
2 x D	92,5 / 2		
3 x D	106 / 2		
4 x D	142 / 2		
6 x D	214 / 3		
10 x D	358 / 5		



Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Ausführung D Model D Exécution D
2 x D	60,5 / 2	1L	
3 x D	56 / 2		
4 x D	76 / 2		
4 x D	100,5 / 3		
6 x D	116 / 3		
10 x D	196 / 5	2L	
2 x D	78,5 / 2		
3 x D	85 / 2		
4 x D	114 / 2		
6 x D	172 / 3		
10 x D	288 / 5	3L	
2 x D	92,5 / 2		
3 x D	106 / 2		
4 x D	142 / 2		
6 x D	214 / 3		
10 x D	358 / 5		

### Bestellschlüssel

Order code / Code de commande

**HRRL 2L A 4x12 PP 114/2 ST M6 BL**

**Baureihe /**  
range /  
série  
HRRL

**Baugröße / size / taille**  
1L / 2L / 3L

**Ausführung / model /**  
exécution  
A / A1 / A1TM / D

**Durchmesser / O/D / diamètre**  
**Werkstoff der Klemmbacken /**  
clamp material /  
matériau des pièces de serrage  
PP / PA

**Baulänge / Anzahl der Schrauben /**  
Length / number of screws /  
Longueur / nombre de vis de fixation

**Werkstoff der Stahlteile /**  
material of steel parts /  
matériau des pièces acier

ST  
A2 / A4 **auf Anfrage / on request / sur demande**

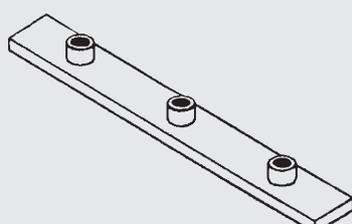
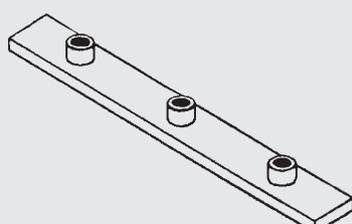
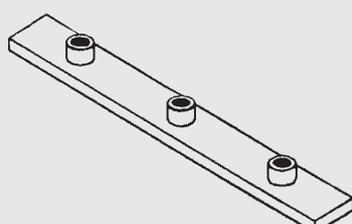
**Metrisches Gewinde / metric thread / filet métrique**

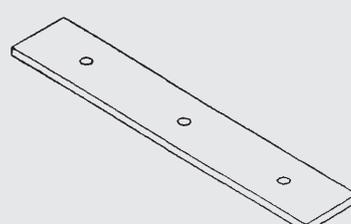
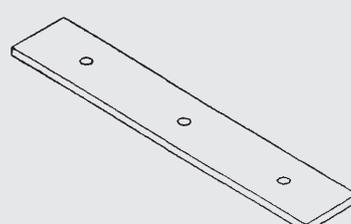
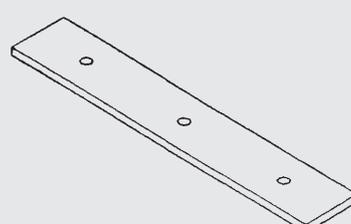
**Oberfläche der Stahlteile / plating of steel parts /**  
revêtement des pièces acier  
BL **blank / unplated / sans revêtement**  
ZN **verzinkt / zinc plated / zingué**

### 3.1 Reihenleiste Leichte Reihe, Einzelteile

#### 3.1 Series strip light range, individual parts

#### 3.1 Colliers en ligne série légère, pièces individuelles

Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Anschweißplatte Weld plate Plaque à souder (AP)
60,5 / 2	<b>1L</b>	
56 / 2		
76 / 2		
100,5 / 3		
116 / 3		
196 / 5	<b>2L</b>	
78,5 / 2		
85 / 2		
114 / 2		
136,5 / 3		
172 / 3	<b>3L</b>	
288 / 5		
92,5 / 2		
106 / 2		
142 / 2		
164,5 / 3		
214 / 3		
358 / 5		

Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Deckplatte Cover plate Plaque de protection (DP)
60,5 / 2	<b>1L</b>	
56 / 2		
76 / 2		
100,5 / 3		
116 / 3		
196 / 5	<b>2L</b>	
78,5 / 2		
85 / 2		
114 / 2		
136,5 / 3		
172 / 3	<b>3L</b>	
288 / 5		
92,5 / 2		
106 / 2		
142 / 2		
164,5 / 3		
214 / 3		
358 / 5		

**Bestellschlüssel**  
Order code / Code de commande

**HRRL 3L AP 30x3x214/3 ST M6 BL**

Baureihe / range / série  
HRRL

Baugröße / size / taille  
1L / 2L / 3L

Ausführung / model / exécution  
AP

Baulänge / Anzahl der Schrauben / Length / number of screws / Longueur / nombre de vis de fixation

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage** / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier  
BL **blank** / unplated / sans revêtement  
ZN **verzinkt** / zinc plated / zingué

**Bestellschlüssel**  
Order code / Code de commande

**HRRL 3L DP 30x3x106/2 ST D7 ZN**

Baureihe / range / série  
HRRL

Baugröße / size / taille  
1L / 2L / 3L

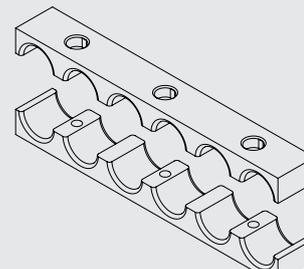
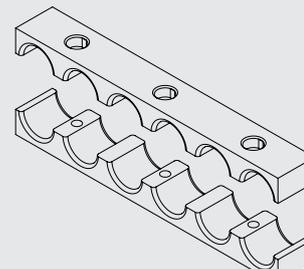
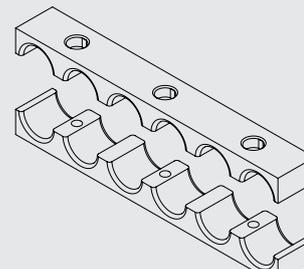
Ausführung / model / exécution  
DP

Baulänge / Anzahl der Schrauben / Length / number of screws / Longueur / nombre de vis de fixation

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage** / on request / sur demande

Schraubenbohrung / hole / Perçage pour vissage

Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier  
ZN **verzinkt** / zinc plated / zingué

Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Klemmbackenpaar Pair of clamp jaws Paire de pièces de serrage (KP)
2 x D	60,5 / 2	<b>1L</b>	
3 x D	56 / 2		
4 x D	76 / 2		
4 x D	100,5 / 3		
6 x D	116 / 3		
10 x D	196 / 5	<b>2L</b>	
2 x D	78,5 / 2		
3 x D	85 / 2		
4 x D	114 / 2		
4 x D	136,5 / 3		
6 x D	172 / 3	<b>3L</b>	
10 x D	288 / 5		
2 x D	92,5 / 2		
3 x D	106 / 2		
4 x D	142 / 2		
4 x D	164,5 / 3		
6 x D	214 / 3		
10 x D	358 / 5		

**Bestellschlüssel**  
Order code / Code de commande

**HRRL 1L KP 3x12 PP 56/2 M6**

Baureihe / range / série  
HRRL

Baugröße / size / taille  
1L / 2L / 3L

Ausführung / model / exécution  
KP

Durchmesser / O/D / diamètre

Werkstoff der Klemmbacken / clamp material / matériau des pièces de serrage  
PP / PA

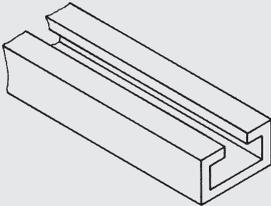
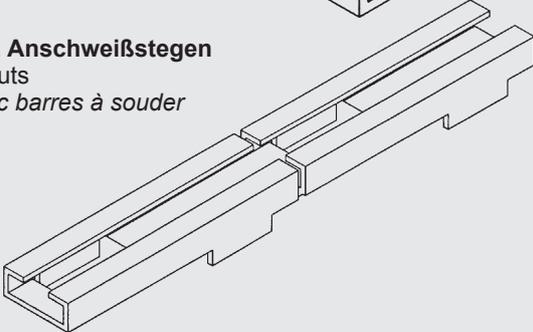
Baulänge / Anzahl der Schrauben / Length / number of screws / Longueur / nombre de vis de fixation

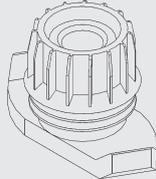
Schraubenbohrung / hole / Perçage pour vissage

### 3.1 Reihenleiste Leichte Reihe, Einzelteile

#### 3.1 Series strip light range, individual parts

#### 3.1 Colliers en ligne série légère, pièces individuelles

Abmessungen Dimensions Dimensions	<b>C-Tragschiene</b> C-rail C-Rail porteur (TS)	
28 x 11	<b>C-Tragschiene m. Anschweißstegen</b> C-rail with weld struts C-Rail porteur avec barres à souder (TS28x11AS)	
28 x 14		
28 x 30		
28 x 11AS		

Abmessungen Dimensions Dimensions	<b>Tragschienenmutter</b> Bayonet nut Ecrou rail porteur (TMV6)	
TMV6		

#### Bestellschlüssel

Order code / Code de commande

	<b>HRL</b>	<b>TS28x11</b>	<b>ST</b>	<b>BL</b>	<b>1m</b>
<b>Baureihe / range / série</b>	HRL				
<b>Ausführung / model / exécution</b>		TS28x11 TS28x14 TS28x30 TS28x11AS			
<b>Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier</b>			ST / AL* / A2* / A4*		
<b>Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier</b>				BL <b>blank</b> / unplated / sans revêtement ZN <b>verzinkt</b> / zinc plated / zingué	
<b>Baulänge (nur für Ausführung TS) / length (only for model TS) / longueur (seulement pour exécution TS)</b>					1m / 2m
* auf Anfrage / on request / sur demande					

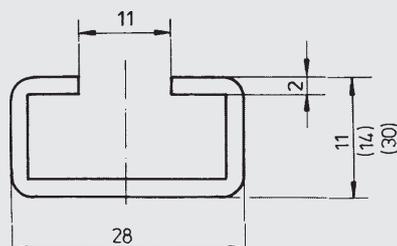
#### Bestellschlüssel

Order code / Code de commande

	<b>HRL</b>	<b>TMV6</b>	<b>ST</b>	<b>ZN</b>
<b>Baureihe / range / série</b>	HRL			
<b>Ausführung / model / exécution</b>		TMV6		
<b>Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier</b>			ST A4 <b>auf Anfrage</b> / on request / sur demande	
<b>Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier</b>				ZN <b>verzinkt</b> / zinc plated / zingué

#### C-Tragschiene

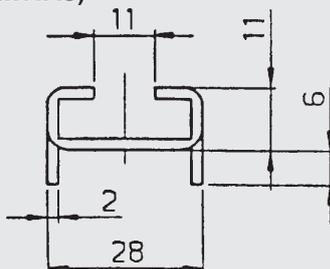
C-rail  
C-Rail porteur  
(TS)



Lieferbar in 1m und 2m Stücken  
Available in 1m and 2m lengths  
Existe en longueur de 1m et 2m

#### C-Tragschiene m. Anschweißstegen

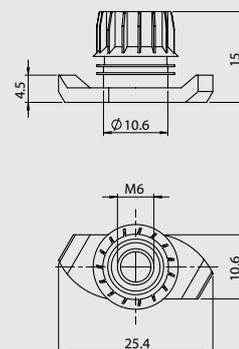
C-rail with weld struts  
C-Rail porteur avec barres à souder  
(TS28x11AS)



Lieferbar in 1m Stücken  
Available in 1m lengths  
Existe en longueur de 1m

#### Tragschienenmutter M6

Bayonet nut M6  
Ecrou rail porteur M6  
(TMV6)



### 3.1 Reihenleiste Leichte Reihe, Einzelteile

3.1 Series strip light range, individual parts

3.1 Colliers en ligne série légère, pièces individuelles

Abmessungen Dimensions Dimensions	Größe Size Taille	Außen-6-kt-Schraube ISO 4014 Ext. hex. screw ISO 4014 Vis H ISO 4014 (6kt-schr. ISO 4014)
M6 x 30	1L	
M6 x 35	2L	
M6 x 40	3L	

#### Bestellschlüssel

Order code / Code de commande

**6kt-schr. ISO4014 - M6 x 30 - 8.8 - A3B**

**Bauart** / design / série

6kt-schr. ISO4014

**Baugröße** / size / taille

M6 x 30

M6 x 35

M6 x 40

**Schraubenqualität** / bolt quality / qualité de vis

8.8

A2 / A4 **auf Anfrage** / on request / sur demande

**Oberfläche der Schraube** / bolt plating / revêtement de vis

A3B **verzinkt** / zinc plated / zingué

### 3.1 Reihenleiste Leichte Reihe, Einzelteile

#### 3.1 Series strip light range, individual parts

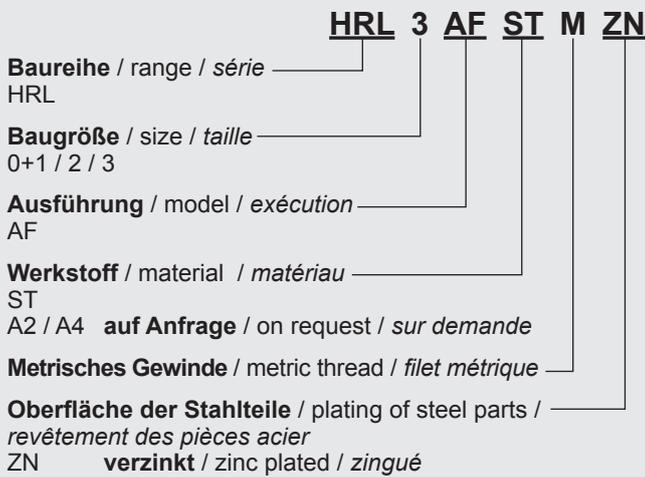
#### 3.1 Colliers en ligne série légère, pièces individuelles

Abmessungen Dimensions Dimensions	Größe Size Taille	Aufbauschraube Build-up screw Goujon-écrou (AF...)
AF 6	0+1	
AF 6	2	
AF 6	3	

Abmessungen Dimensions Dimensions	Größe Size Taille	Sicherungsblech Locking plate Plaque intermédiaire (SIP)
SIP	0	

#### Bestellschlüssel

Order code / Code de commande



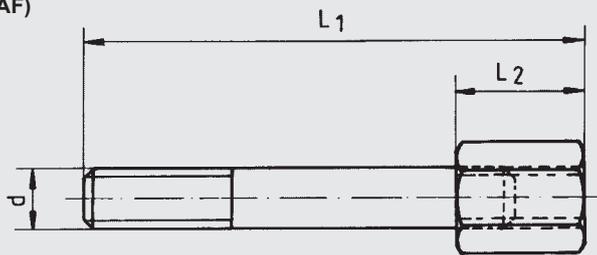
#### Bestellschlüssel

Order code / Code de commande



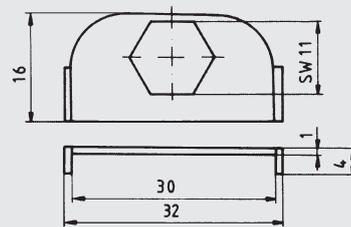
#### Aufbauschraube Gr. 0-3

Build-up bolt size 0-3  
 Goujon-écrou taille 0-3  
 (AF)



#### Sicherungsblech Gr. 0

Locking plate size 0  
 Plaque intermédiaire taille 0  
 (SIP)



#### für alle Größen

for all sizes

pour toutes les tailles

Größe Size Taille	Abmessungen Dimensions Dimensions	L1	L2	d
0+1		34	14	M6
2		39	14	M6
3		44	14	M6

## 3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz

### 3.2 Series strip heavy range with elastomer inserts

### 3.2 Colliers en ligne série lourde avec garniture élastomère

**BT 3**

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	2 Rohre mit 1 Befestigungsschrauben 2 pipes with 1 fixing bolts 2 tuyaux avec 1 vis de fixation
6 .. 19	2	
6 .. 19	3*	
20 .. 32	3	
33,7 .. 56,4	4	

Größe / Size / Taille	Abmessungen Dimensions Dimensions								
	d1	d2	A1	A2	B	L	H	C	S
2	25,5	31		46	30	83	23		8
3	39	46		60	30	115	30		8
4	65	74		93	45	173	40		10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	2 Rohre mit 2 Befestigungsschrauben 2 pipes with 2 fixing bolts 2 tuyaux avec 2 vis de fixation
6 .. 19	2	
6 .. 19	3*	
20 .. 32	3	
33,7 .. 56,4	4	

Größe / Size / Taille	Abmessungen Dimensions Dimensions								
	d1	d2	A1	A2	B	L	H	C	S
2	25,5	31	34		30	107	23	80	8
3	39	46	50		30	134	30	110	8
4	65	74	80		45	199	40	173	10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	3 Rohre mit 2 Befestigungsschrauben 3 pipes with 2 fixing bolts 3 tuyaux avec 2 vis de fixation
6 .. 19	2	
6 .. 19	3*	
20 .. 32	3	
33,7 .. 56,4	4	

Größe / Size / Taille	Abmessungen Dimensions Dimensions								
	d1	d2	A1	A2	B	L	H	C	S
2	25,5	31	34	46	30	135	23	80	8
3	39	46	50	60	30	179,5	30	110	8
4	65	74	80	93	45	273	40	173	10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	4 Rohre mit 2 Befestigungsschrauben 4 pipes with 2 fixing bolts 4 tuyaux avec 2 vis de fixation
6 .. 19	2	
6 .. 19	3*	
20 .. 32	3	
33,7 .. 56,4	4	

Größe / Size / Taille	Abmessungen Dimensions Dimensions								
	d1	d2	A1	A2	B	L	H	C	S
2	25,5	31	34	46	30	163	23	80	8
3	39	46	50	60	30	225	30	110	8
4	65	74	80	93	45	346	40	173	10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	4 Rohre mit 3 Befestigungsschrauben 4 pipes with 3 fixing bolts 4 tuyaux avec 3 vis de fixation
6 .. 19	2	
6 .. 19	3*	
20 .. 32	3	
33,7 .. 56,4	4	

Größe / Size / Taille	Abmessungen Dimensions Dimensions								
	d1	d2	A1	A2	B	L	H	C	S
2	25,5	31	34	46	30	187	23	80	8
3	39	46	50	60	30	244	30	110	8
4	65	74	80	93	45	373	40	173	10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	6 Rohre mit 3 Befestigungsschrauben 6 pipes with 3 fixing bolts 6 tuyaux avec 3 vis de fixation
6 .. 19	2	
6 .. 19	3*	
20 .. 32	3	
33,7 .. 56,4	4	

Größe / Size / Taille	Abmessungen Dimensions Dimensions								
	d1	d2	A1	A2	B	L	H	C	S
2	25,5	31	34	46	30	243	23	80	8
3	39	46	50	60	30	335	30	110	8
4	65	74	80	93	45	519	40	173	10

\* Nur mit Reduzierstück / Only with reducing piece / Seulement avec pièce de réduction

## 3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz

### 3.2 Series strip heavy range with elastomer inserts

### 3.2 Colliers en ligne série lourde avec garniture élastomère

Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Ausführung S Model S Exécution S	Ausführung S1 Model S1 Exécution S1	Ausführung S1TM Model S1TM Exécution S1TM
2 x D	83 / 1	<b>2</b>			
2 x D	107 / 2				
3 x D	135 / 2				
4 x D	163 / 2				
4 x D	187 / 3				
6 x D	243 / 3				
2 x D	115 / 1	<b>3</b>			
2 x D	134 / 2				
3 x D	179,5 / 2				
4 x D	225 / 2				
4 x D	244 / 3				
6 x D	335 / 3				
2 x D	199 / 2	<b>4</b>			
3 x D	346 / 2				
4 x D	373 / 3				
6 x D	519 / 3				

### Bestellschlüssel

Order code / Code de commande

**HRRLE 2 S 2x15 PP 107/2 ST M10 BL**

**Baureihe /** \_\_\_\_\_  
range /  
série  
HRRLE

**Baugröße / size / taille** \_\_\_\_\_  
2 / 3 / 4

**Ausführung / model / exécution** \_\_\_\_\_  
S / S1 / S1TM

**Durchmesser / O/D / diamètre** \_\_\_\_\_

**Werkstoff der Klemmbacken /** \_\_\_\_\_  
clamp material /  
matériau des pièces de serrage  
PP / PA

**Baulänge / Anzahl der Schrauben /** \_\_\_\_\_  
Length / number of bolts /  
Longueur / nombre de vis de fixation

**Werkstoff der Stahlteile /** \_\_\_\_\_  
material of steel parts /  
matériau des pièces acier  
ST

A2 / A4 **auf Anfrage / on request / sur demande**

**Metrisches Gewinde / metric thread / filet métrique** \_\_\_\_\_

**Oberfläche der Stahlteile / plating of steel parts /** \_\_\_\_\_  
revêtement des pièces acier

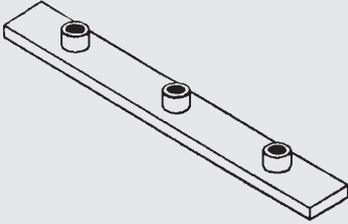
BL **blank / unplated / sans revêtement**  
ZN **verzinkt / zinc plated / zingué**

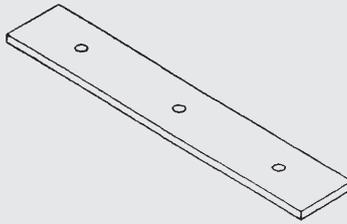
### 3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz, Einzelteile

3.2 Series strip heavy range with elastomer inserts, individual parts

3.2 Colliers en ligne série lourde avec garniture élastomère, pièces individuelles

**BT 3**

Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Anschweißplatte Weld plate Plaque à souder (AP)
83 / 1	2	
107 / 2		
135 / 2		
163 / 2		
187 / 3		
243 / 3	3	
115 / 1		
134 / 2		
179,5 / 2		
225 / 2		
244 / 3	4	
335 / 3		
199 / 2		
346 / 2		
373 / 3		
519 / 3		

Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Deckplatte Cover plate Plaque de protection (DP)
83 / 1	2	
107 / 2		
135 / 2		
163 / 2		
187 / 3		
243 / 3	3	
115 / 1		
134 / 2		
179,5 / 2		
225 / 2		
244 / 3	4	
335 / 3		
199 / 2		
346 / 2		
373 / 3		
519 / 3		

#### Bestellschlüssel

Order code / Code de commande

**HRRLE 3 AP 30x8x225/2 ST M10 BL**

**Baureihe /** range / série  
HRRLE

**Baugröße /** size / taille  
2 / 3 / 4

**Ausführung /** model /  
exécution: AP

**Baulänge / Anzahl der Schrauben /**  
Length / number of bolts /  
Longueur / nombre de vis de fixation

**Werkstoff der Stahlteile /**  
material of steel parts /  
matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage /** on request /  
sur demande

**Metrisches Gewinde /** metric thread /  
filet métrique

**Oberfläche der Stahlteile /**  
plating of steel parts /  
revêtement des pièces acier  
BL **blank /** unplated /  
sans revêtement  
ZN **verzinkt /** zinc plated /  
zingué

#### Bestellschlüssel

Order code / Code de commande

**HRRLE 4 DP 45x10x519/3 ST ZN**

**Baureihe /** range / série  
HRRLE

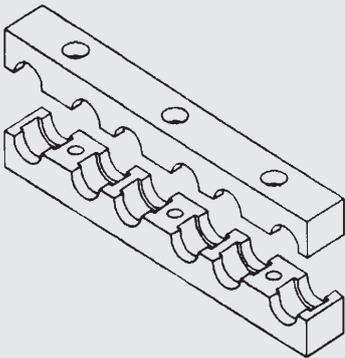
**Baugröße /** size / taille  
2 / 3 / 4

**Ausführung /** model /  
exécution  
DP

**Baulänge / Anzahl der Schrauben /**  
Length / number of bolts /  
Longueur / nombre de vis de fixation

**Werkstoff der Stahlteile /**  
material of steel parts /  
matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage /** on request /  
sur demande

**Oberfläche der Stahlteile /**  
plating of steel parts /  
revêtement des pièces acier  
ZN **verzinkt /** zinc plated /  
zingué

Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Klemmbackenpaar Pair of clamp jaws Paire de pièces de serrage (KP)
2 x 25,5	83 / 1	2	
2 x 25,5	107 / 2		
3 x 25,5	135 / 2		
4 x 25,5	163 / 2		
4 x 25,5	187 / 3		
6 x 25,5	243 / 3	3	
2 x 39	115 / 1		
2 x 39	134 / 2		
3 x 39	179,5 / 2		
4 x 39	225 / 2		
4 x 39	244 / 3	4	
6 x 39	335 / 3		
2 x 65	199 / 2		
4 x 65	346 / 2		
4 x 65	373 / 3		
6 x 65	519 / 3		

#### Bestellschlüssel

Order code / Code de commande

**HRRLE 4 KP 4x65 PP 346/2**

**Baureihe /** range /  
série  
HRRLE

**Baugröße /** size /  
taille  
2 / 3 / 4

**Ausführung /** model /  
exécution  
KP

**Durchmesser /** O/D /  
diamètre

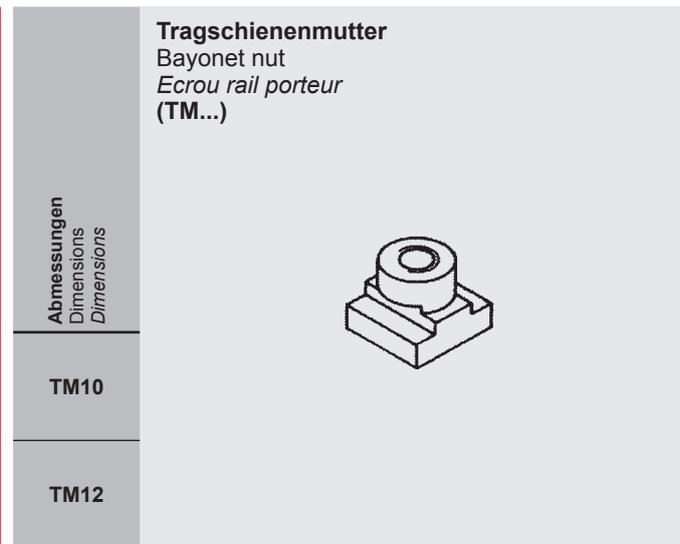
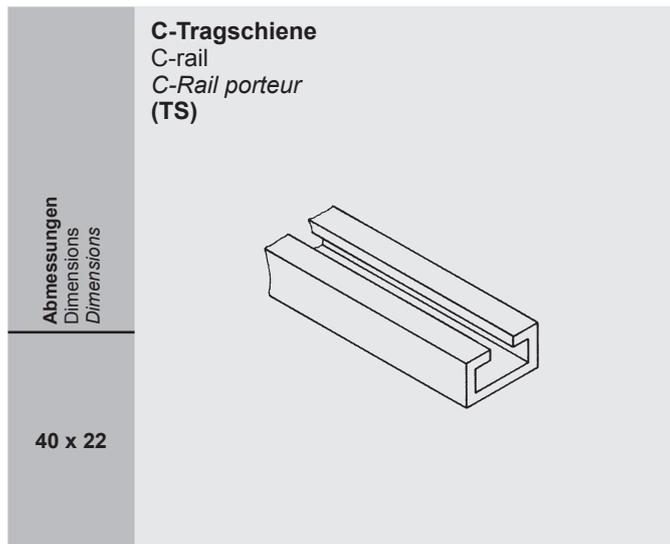
**Werkstoff der Klemmbacken /**  
clamp material /  
matériau des pièces de serrage  
PP / PA

**Baulänge / Anzahl der Schrauben /**  
Length / number of bolts /  
Longueur / nombre de vis de fixation

## 3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz, Einzelteile

3.2 Series strip heavy range with elastomer inserts, individual parts

3.2 Colliers en ligne série lourde avec garniture élastomère, pièces individuelles



### Bestellschlüssel

Order code / Code de commande

**HRS TS40x22 ST BL 2m**

**Baureihe / range / série**  
HRS

**Ausführung / model / exécution**  
TS 40 x 22

**Werkstoff der Stahlteile /**  
material of steel parts /  
matériau des pièces acier  
ST

A4 **auf Anfrage / on request / sur demande**

**Oberfläche der Stahlteile /**  
plating of steel parts /  
revêtement des pièces acier

BL **blank / unplated / sans revêtement**  
ZN **verzinkt / zinc plated / zingué**

**Baulänge / length / longueur**  
1 m / 2 m

### Bestellschlüssel

Order code / Code de commande

**HRS TM10 ST M ZN**

**Baureihe / range / série**  
HRS

**Ausführung / model / exécution**  
TM10 / TM12

**Werkstoff der Stahlteile /**  
material of steel parts /  
matériau des pièces acier  
ST

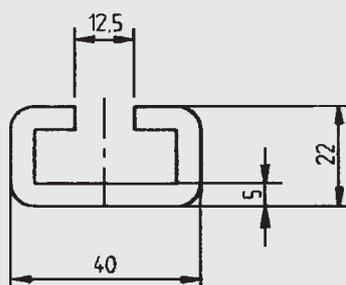
A4 **auf Anfrage / on request / sur demande**

**Metrisches Gewinde /**  
metric thread / filet métrique

**Oberflächenbeschichtung /**  
plating / revêtement  
ZN **verzinkt / zinc plated / zingué**

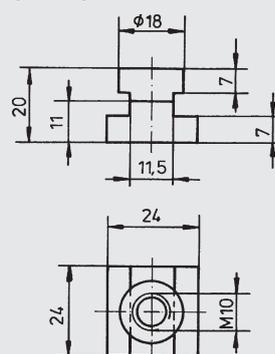
### C-Tragschiene

C-rail  
C-Rail porteur  
(TS)



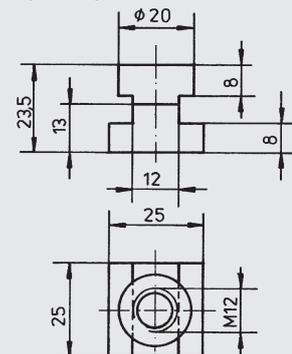
### Tragschienenmutter M10

Bayonet nut M10  
Ecrou pour rail porteur M10  
(TM10)



### Tragschienenmutter M12

Bayonet nut M12  
Ecrou pour rail porteur M12  
(TM12)



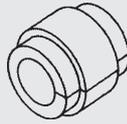
## 3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz, Einzelteile

3.2 Series strip heavy range with elastomer inserts, individual parts

3.2 Colliers en ligne série lourde avec garniture élastomère, pièces individuelles

**BT 3**

Abmessungen Dimensions Dimensions	Größe Size Taille	6-kt-Schraube ISO 4014 Ext. hex. bolt ISO 4014 Vis H ISO 4014 (6kt-schr. ISO 4014)
M10 x 60	2	
M10 x 70	3	
M12 x 100	4	

Abmessungen Dimensions Dimensions	Größe Size Taille	Elastomereinsatz glatt Elastomer insert, smooth Garniture élastomère à portée lisse (EE)
6 - 19	2/4L	
20 - 32	3/6L	
33,7 - 56,4	4	

### Bestellschlüssel

Order code / Code de commande

**6kt-schr. ISO4014 - M10 x 70 - 8.8 - A4B**

**Bauart /** \_\_\_\_\_  
design / forme  
6kt-schr. ISO4014

**Baugröße / size / taille** \_\_\_\_\_  
ISO4014  
M10 x 60  
M10 x 70  
M12 x 100

**Schraubenqualität / bolt quality / qualité de vis** \_\_\_\_\_  
8.8

**Oberfläche der Schraube / bolt plating / revêtement de vis** \_\_\_\_\_  
**keine Angabe (blank) /**  
no details (unplated) /  
pas d'indication (sans revêtement)  
A4B **verzinkt / zinc plated / zingué**

### Bestellschlüssel

Order code / Code de commande

**HRES 2/4L EE 16 TPE**

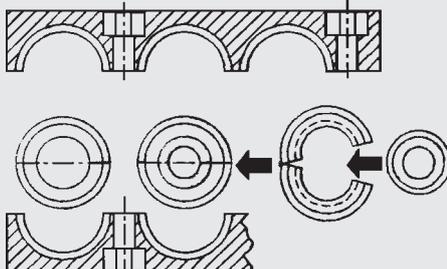
**Baureihe / range / série** \_\_\_\_\_  
HRES

**Baugröße / size / taille** \_\_\_\_\_  
2/4L 3/6L 4

**Ausführung / model / exécution** \_\_\_\_\_  
EE

**Durchmesser / O/D / diamètre** \_\_\_\_\_

**Werkstoff des Einsatzes /**  
insert material /  
matériau de la garniture élastomère  
TPE

Größe Size Taille	Reduzierstück Reducing piece Pièce de réduction (RE)
3/2	 <p><b>Elastomereinsatz Gr. 3S</b> Rubber insert size 3S Garniture élastomère taille 3S</p> <p><b>Reduzierstück mit Elastomereinsatz Gr. 3S</b> Reducing piece with rubber insert size 3S Pièce insert avec garniture élastomère taille 3S</p>

### Bestellschlüssel

Order code / Code de commande

**HRES 3/2 RE PP**

**Baureihe / range / série** \_\_\_\_\_  
HRES

**Baugröße / size / taille** \_\_\_\_\_  
3/2

**Ausführung / model / exécution** \_\_\_\_\_  
RE

**Werkstoff des Einsatzes /**  
material of reducing piece /  
matériau de la garniture élastomère  
PP / PA





**Bügelschellen**

U-bolt clamps

*Collier arceau*



**BT 4.1. Rundstahlbügelschellen ähnlich DIN 3570**

BT 4.1. U-bolt clamps similar to DIN 3570

*BT 4.1. Collier arceau semblable à DIN 3570*



**BT 4.2. Flachstahlbügelschellen DIN 3567**

BT 4.2. Flat steel bolt clamp to DIN 3567

*BT 4.2. Collier circulaire plat en acier selon DIN 3567*

**HYDAC Accessories GmbH**  
 Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: [www.hydac.com](http://www.hydac.com)  
 E-Mail: [info@hydac.com](mailto:info@hydac.com)

**ANMERKUNG**

Die Angaben in diesem Prospekt beziehen sich auf die beschriebenen Betriebsbedingungen und Einsatzfälle. Bei abweichenden Einsatzfällen und/oder Betriebsbedingungen wenden Sie sich bitte an die entsprechende Fachabteilung. Technische Änderungen sind vorbehalten.

**NOTE**

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

**REMARQUE**

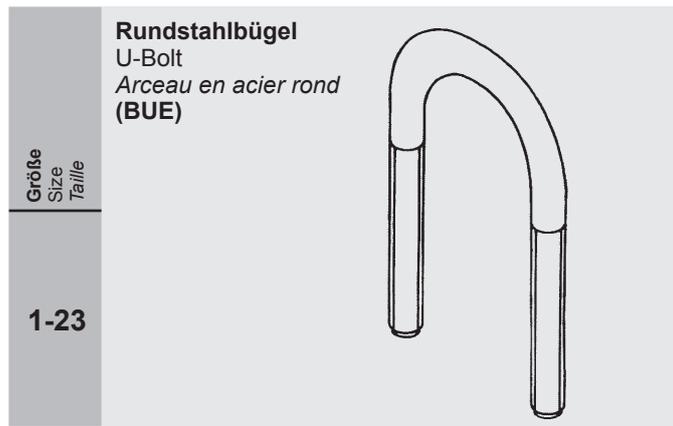
Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.



## 4.1 Rundstahlbügelschellen ähnlich DIN 3570

4.1 U-bolt clamps similar to DIN 3570

4.1 Colliers arceau semblable à DIN 3570



### Bestellschlüssel

Order code / Code de commande

**HRRBS 10 BUE ST ZN**

**Baureihe** / range / série

HRRBS

**Baugröße** / size / taille

1 -23

**Ausführung** / model / exécution

BUE

**Werkstoff der Stahlteile** /

material of steel parts /

matériau des pièces acier

ST

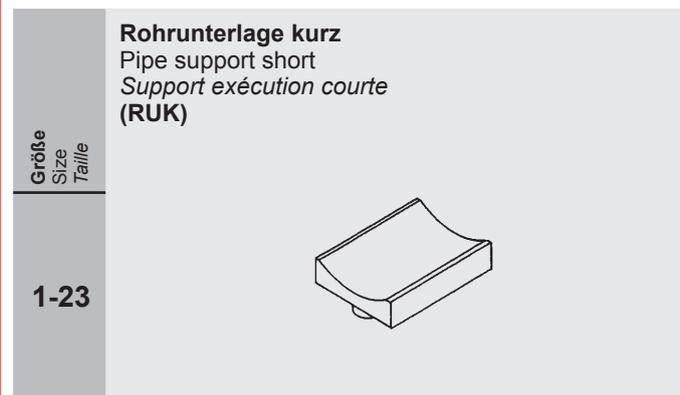
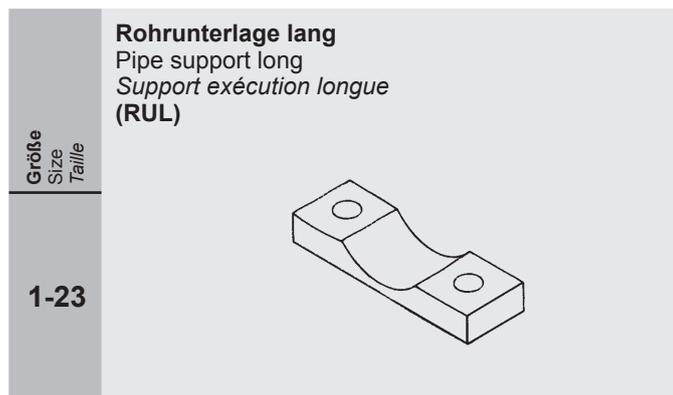
A2 / A4 **auf Anfrage** / on request / sur demande

**Oberfläche der Stahlteile** / plating of steel parts /

revêtement des pièces acier

ZN

**verzinkt** / zinc plated / zingué



### Bestellschlüssel

Order code / Code de commande

**HRRBS 10 RUL 139.7 PP**

**Baureihe** / range / série

HRRBS

**Baugröße** / size / taille

1 - 23

**Ausführung** / model / exécution

RUL / RUK

**Durchmesser** / O/D / diamètre

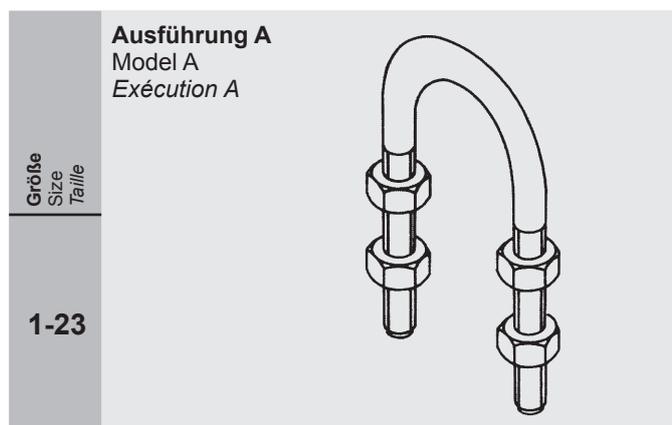
**Werkstoff der Klemmbacken** / clamp material / matériau des pièces de serrage

PP / PA (nur für RUK / for RUK only / seulement RUK)

## 4.1 Rundstahlbügelschellen ähnlich DIN 3570

### 4.1 U-bolt clamps similar to DIN 3570

### 4.1 Colliers arceau semblable à DIN 3570



**Bestellschlüssel**  
Order code / Code de commande

**HRRBS 10 A ST ZN**

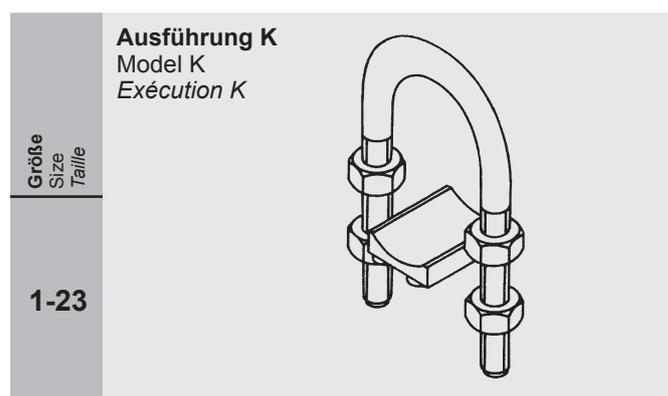
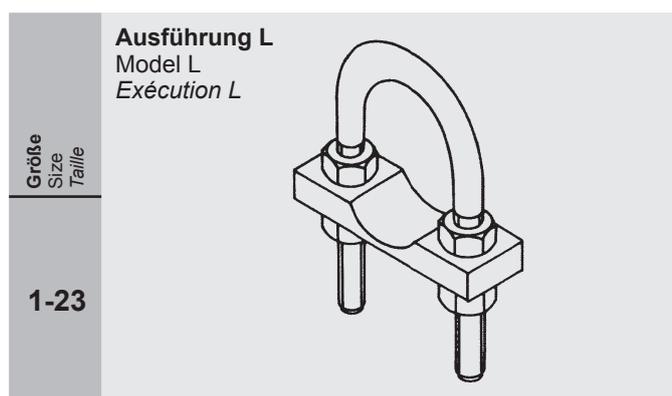
**Baureihe / range / série** ——— HRRBS  
HRRBS

**Baugröße / size / taille** ——— 10  
1 -23

**Ausführung / model / exécution** ——— A  
A

**Werkstoff der Stahlteile /** ——— ST  
material of steel parts /  
matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage / on request / sur demande**

**Oberfläche der Stahlteile /** ——— ZN  
plating of steel parts /  
revêtement des pièces acier  
ZN **verzinkt / zinc plated / zingué**



**Bestellschlüssel**  
Order code / Code de commande

**HRRBS 10 L 139.7 PP ST ZN**

**Baureihe / range / série** ——— HRRBS  
HRRBS

**Baugröße / size / taille** ——— 10  
1 -23

**Ausführung / model / exécution** ——— L / K  
L / K

**Durchmesser / O/D / diamètre** ——— 139.7  
139.7

**Werkstoff der Klemmbacken /** ——— PP  
clamp material / matériau de pièces de serrage  
PP / PA

**Werkstoff der Stahlteile /** ——— ST  
material of steel parts / matériau des pièces acier  
ST  
A2 / A4 **auf Anfrage / on request / sur demande**

**Oberfläche der Stahlteile /** ——— ZN  
plating of steel parts / revêtement des pièces acier  
ZN **verzinkt / zinc plated / zingué**



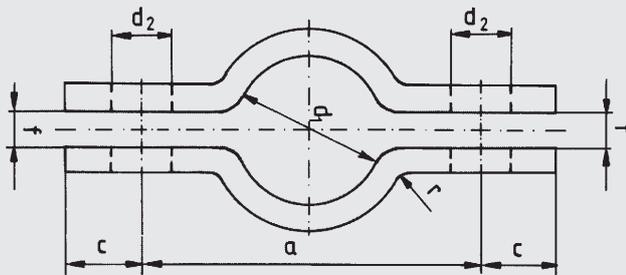
## 4.2 Flachstahlbügelschellen DIN 3567

4.2 Flat steel bolt clamp to DIN 3567

4.2 Colliers circulaire plat en acier selon DIN 3567

Form A  
Form A  
Forme A

Lagerware bis Größe 12  
Available ex stock up to size 12  
Disponible jusqu'à taille 12



d <sub>1</sub>	Größe Size Taille	Anzuwenden bei Nennweite To be used for nominal width A utiliser pour les tailles dor- nées	Abmessungen Dimensions Dimensions					Flachstahl Flat steel to DIN 1017 Acier selon DIN 1017	ASKT nach ISO 4017 Ext. hex. to ISO 4017 Vis H selon ISO 4017	Gewicht kg/100 St. Weight kg/100 off Pieces Kg/100 pieces	Form A					
			a	c	d <sub>2</sub>	f	r									
25	1	20		15	11,5	7	4	30 x 5	M10 x 30MU	21,73						
27	2		3/4"							66	22,75					
30	3	25	68							23,37						
34	4		1"							72	24,79					
38	5	32	76							26,12						
43	6		1 1/4"							82	27,87					
45	7	40	84							28,81						
49	8		1 1/2"							88	30,37					
57	9	50	104							18	14	9	6	40 x 6	M12 x 35MU	56,10
61	10		2"													108
77	11	65	122													66,30
89	12	80	136													75,30
108	13	100	172	24	18	11	6	50 x 8	M16 x 45MU							159,10
115	14		4"													178
133	15	125	196													178,50
140	16		204													183,10
159	17	150	222													200,00
169	18		232													208,10
191	19	(175)	254													239,40
194	20		258													242,00
216	21	200	280							260,00						
220	22		284							264,40						
267	23	250	342							30	23	14	8	60 x 8	M20 x 50MU	385,00
273	24		348													390,60
318	25	300	392	440,00												
324	26		398	448,80												
356	27	350	432	508,70												
368	28		444	530,00												
407	29	400	498	36	27	18	8	70 x 10	M24 x 60MU							852,20
419	30		510													875,00
508	31	500	600													1020,00
521	32		614													1050,00

Eingeklammerte Größe möglichst vermeiden / Size in brackets should be avoided if possible / Éviter si possible les tailles entre parenthèses

## 4.2 Flachstahlbügelschellen DIN 3567

### 4.2 Flat steel bolt clamp to DIN 3567

### 4.2 Colliers circulaire plat en acier selon DIN 3567

Größe Size Taille	<b>Form A</b> <b>Ausführung A1 = ohne Schrauben und Muttern</b> Model A1 = without bolts or nuts <i>Exécution A1 = sans vis ni écrou</i>
1-32	

Größe Size Taille	<b>Form A</b> <b>Ausführung A = mit Schrauben und Muttern</b> Model A = with bolts and nuts <i>Exécution A = avec vis et écrou</i>
1-32	

### Bestellschlüssel

Order code / Code de commande

**HRFBS 12 A1 89 ST ZN Form A**

**Baureihe / range / série** \_\_\_\_\_  
HRFBS

**Baugröße / size / taille** \_\_\_\_\_  
1 - 32

**Ausführung / model / exécution** \_\_\_\_\_  
A / A1

**Durchmesser / O/D / diamètre** \_\_\_\_\_

**Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier** \_\_\_\_\_  
ST

A2 / A4 **auf Anfrage / on request / sur demande**

**Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier** \_\_\_\_\_

BL **blank / unplated / sans revêtement**

ZN **verzinkt / zinc plated / zingué**

**Form / form / forme** \_\_\_\_\_

Form A



## Gelenkbandschellen

Swivel bolt clamps

*Colliers à bande articulée*



### BT 5.1 Gelenkbolzenspannband

BT 5.1 Swivel bolt clamping band

*BT 5.1 Bande de serrage à vis articulée*



### BT 5.2 Unterlage kurz, für Luftbehälter

BT 5.2 Support short, for mounting air reservoirs

*BT 5.2 Support exécution courte, pour fixation réservoir à air*



### BT 5.3 Gelenkbolzenschelle mit Schnellverschluss

BT 5.3 Quick release swivel bolt clamp

*BT 5.3 Collier à arceau à verrouillage rapide*



### BT 5.4 Gelenkbandkonsolenschelle

BT 5.4 Quick release swivel bolt band clamp

*BT 5.4 Collier console à bande articulée*



### BT 5.5 Gelenkbandkonsolenschelle "MULTI"

BT 5.5 Quick release swivel bolt band clamp "MULTI"

*BT 5.5 Collier à bande articulée sur support "MULTI"*



### BT 5.6 Gelenkband-Prismaschelle

BT 5.6 Swivel bolt prism clamp

*BT 5.6 Collier prismatique à arceau*



### BT 5.7 Halter für Zylinder

BT 5.7 Mounting for cylinder

*BT 5.7 Fixation pour vérin*

### HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

Tel.: +49 (0)6897 - 509-01

Fax: +49 (0)6897 - 509-1009

Internet: [www.hydac.com](http://www.hydac.com)

E-Mail: [info@hydac.com](mailto:info@hydac.com)

**Befestigungstechnik, wie insbesondere Gelenkbänder, ist Sicherheitstechnik. Deshalb sind An- und Einbau unserer Befestigungsmittel nur durch geschultes Personal vorzunehmen.**

**Gewährleistung und Haftung übernehmen wir nur für die Mangelfreiheit unseres Liefergegenstandes als solchen. Für die Eignung der Umfeldbedingungen und für die fachgerechte Montage tragen wir keine Verantwortung.**

Mounting technology, in particular swivel bolt clamps, has health & safety implications. Therefore our mounting equipment must only be fitted and installed by trained personnel. We will only guarantee and accept liability for our products as such, but not their installation or their suitability for individual ambient conditions.

*La technique de fixation, tout comme les bandes articulées, relèvent de la sécurité. Pour cette raison, le montage et l'installation de notre matériel de fixation ne peuvent être effectués que par un personnel qualifié. Notre garantie et notre responsabilité couvrent uniquement l'absence de vice sur le matériel livré. Nous n'engageons pas notre responsabilité quant aux conditions et à la qualité du montage.*

**ANMERKUNG**

Die Angaben in diesem Prospekt beziehen sich auf die beschriebenen Betriebsbedingungen und Einsatzfälle. Bei abweichenden Einsatzfällen und/oder Betriebsbedingungen wenden Sie sich bitte an die entsprechende Fachabteilung. Technische Änderungen sind vorbehalten.

**NOTE**

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

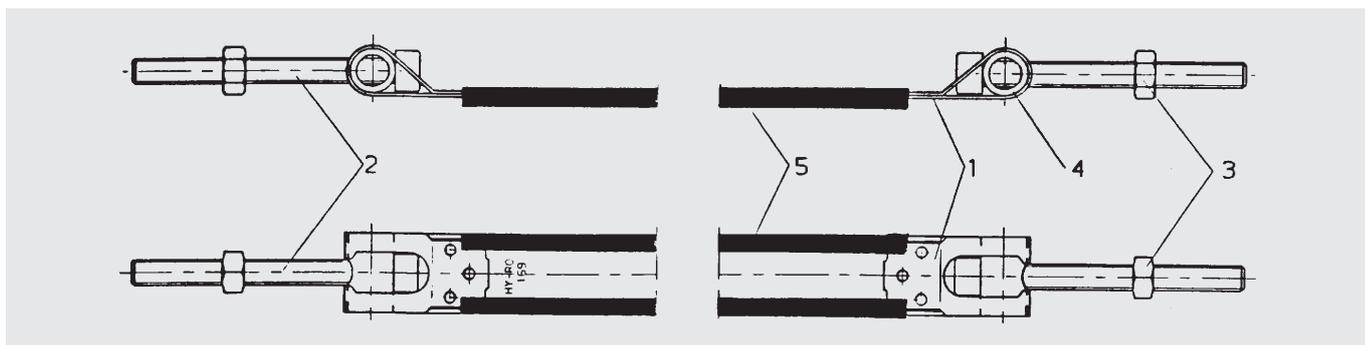
**REMARQUE**

*Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.*

# 5.1 Gelenkbolzenspannband

## 5.1 Swivel bolt clamping band

### 5.1 Bande de serrage à vis articulées



**Einzelteile**

Individual parts

Pièces individuelles

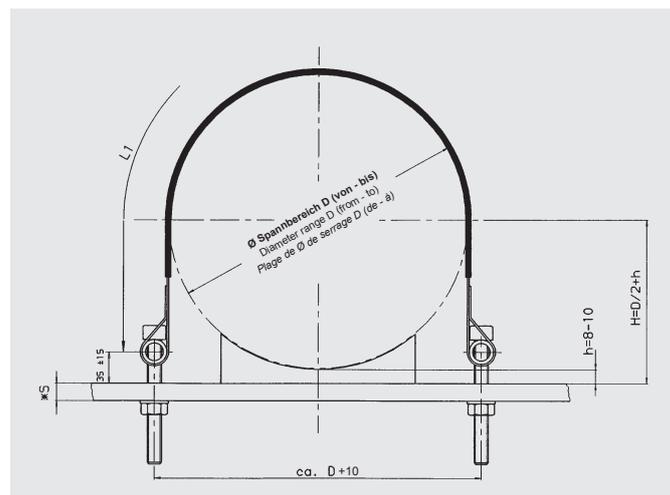
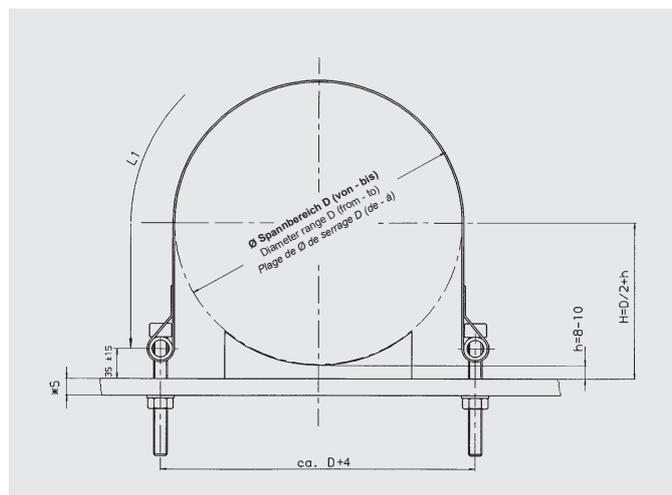
Nr. No. No.	Bezeichnung Description Désignation	Werkstoff/Oberfläche Material/Coating Matériau/Surface
1	<b>Spannband</b> Clamping band Bande de serrage <b>Leichte Baureihe (GBSP)</b> Light range (GBSP) Série légère (GBSP) <b>Schwere Baureihe (GBSSP)</b> Heavy range (GBSSP) Série lourde (GBSSP)	<b>Stahl nicht rostend</b> Stainless steel Acier inoxydable
2	<b>Schraube</b> Bolt Vis	<b>Stahl verzinkt</b> Zinc-plated steel Acier galvanisé
3	<b>Mutter</b> Nut Ecrou	<b>Stahl verzinkt</b> Zinc-plated steel Acier galvanisé
4	<b>Gelenkhülse, Gelenkbolzen</b> Swivel sleeve, swivel bolt Douille articulée, vis articulée	<b>Stahl verzinkt</b> Zinc-plated steel Acier galvanisé
5	<b>Gummiprofil</b> Rubber profile Garniture caoutchouc <b>Bandbreite 25, 30, 40 mm</b> Band width 25, 30, 40 mm Largeur de la bande 25, 30, 40 mm <b>Temperatur-Beständigkeit: -20 °C bis +90 °C</b> Temperature resistance: -20 °C to +90 °C Résistance à la température de -20 °C à +90 °C	<b>Ethylen-Propylen-Terpolymer</b> Ethylene propylene terpolymer Éthylène-propylène-terpolymère

**Belastungswerte**

Stress factors

Facteurs de résistance

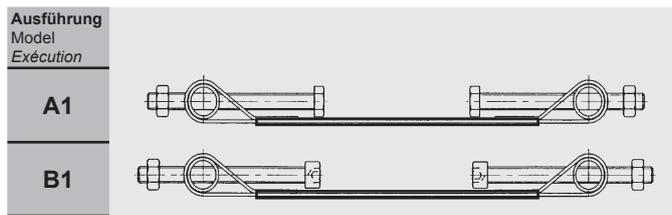
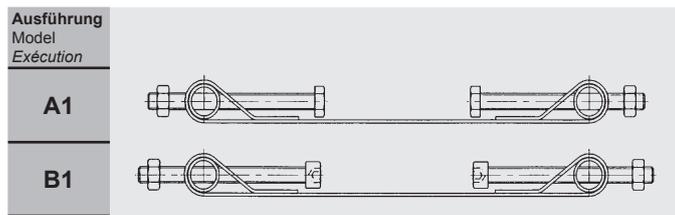
Bandgröße Band dimension Dimension de la bande	max. Zugbelastung (N) max. tensile strength (N) résistance à la traction max. (N)	Anzugsmoment Nm torque rating Nm couple de serrage Nm
25 x 1,0	4600	auf Anfrage, on request, sur demande
30 x 1,0	5500	auf Anfrage, on request, sur demande
30 x 1,5	8300	auf Anfrage, on request, sur demande
40 x 1,5	11000	auf Anfrage, on request, sur demande



# 5.1 Gelenkbolzenspannband

## 5.1 Swivel bolt clamping band

### 5.1 Bande de serrage à vis articulées



Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
64	80 - 86	187
70	87 - 93	206
76	94 - 101	224
82	101 - 109	242
88	108 - 121	260
94	115 - 128	279
100	122 - 139	297
106	130 - 148	316
115	140 - 159	343
120	146 - 164	358
124	151 - 169	371
133	162 - 180	399
142	173 - 191	427
151	184 - 202	455
160	195 - 213	483
169	206 - 224	511
178	217 - 235	539
187	228 - 246	567
196	239 - 257	595
205	250 - 268	623
214	261 - 279	651
223	272 - 290	679
231	281 - 299	704
234	284 - 302	713
241	293 - 311	735
250	304 - 322	764
259	315 - 333	792
268	326 - 344	820
277	337 - 355	849
286	348 - 366	877
295	359 - 377	905
300	366 - 384	921

Leichte Baureihe  
Band- und Schraubenabmessung  
Light range  
Band and thread dimension  
Série légère  
Dimension de la bande et des vis  
25 x 1 mm, M8 x 80

Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
80	99 - 109	232
89	110 - 119	260
98	120 - 130	287
107	131 - 141	315
116	142 - 153	342
125	153 - 171	370
134	164 - 186	398
143	175 - 197	426
152	186 - 208	454
165	201 - 224	494
178	216 - 239	534
191	232 - 255	575
204	248 - 271	615
217	264 - 287	656
230	279 - 302	696
243	295 - 318	737
256	311 - 334	777
269	327 - 350	818
282	342 - 365	859
295	358 - 381	900
300	366 - 389	916
308	374 - 397	941
321	390 - 413	981
334	406 - 429	1022
347	422 - 445	1063
360	437 - 460	1103
373	453 - 476	1144
386	469 - 492	1185
399	485 - 508	1225
412	501 - 524	1266
425	516 - 540	1307
438	532 - 556	1348
451	548 - 571	1388
464	564 - 587	1429
477	580 - 603	1470
490	596 - 619	1511

Leichte Baureihe / Schwere Baureihe  
Band- und Schraubenabmessung  
Light range / Heavy range  
Band and thread dimension  
Série légère / Série lourde  
Dimension de la bande et des vis  
30 x 1 mm, M10x90 / 30 x 1,5 mm, M10x90/  
40 x 1,5 mm, M10x90

Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
64	77 - 83	187
70	84 - 90	206
76	91 - 98	224
82	98 - 106	242
88	105 - 118	260
94	112 - 125	279
100	119 - 136	297
106	127 - 145	316
115	137 - 156	343
120	143 - 161	358
124	148 - 166	371
133	159 - 177	399
142	170 - 188	427
151	181 - 199	455
160	192 - 210	483
169	203 - 221	511
178	214 - 232	539
187	225 - 243	567
196	236 - 254	595
205	247 - 265	623
214	258 - 276	651
223	269 - 287	679
231	278 - 296	704
234	281 - 299	713
241	290 - 308	735
250	301 - 319	764
259	312 - 330	792
268	323 - 341	820
277	334 - 352	849
286	345 - 363	877
295	356 - 374	905
300	363 - 382	921

Leichte Baureihe  
Band- und Schraubenabmessung  
Light range  
Band and thread dimension  
Série légère  
Dimension de la bande et des vis  
25 x 1 mm, M8 x 80

Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
80	96 - 106	232
89	107 - 116	260
98	117 - 127	287
107	128 - 138	315
116	139 - 150	342
125	150 - 168	370
134	161 - 183	398
143	172 - 194	426
152	183 - 205	454
165	198 - 221	494
178	213 - 236	534
191	229 - 252	575
204	245 - 268	615
217	261 - 284	656
230	276 - 299	696
243	292 - 315	737
256	308 - 331	777
269	324 - 347	818
282	339 - 362	859
295	355 - 378	900
300	363 - 386	916
308	371 - 394	941
321	387 - 410	981
334	403 - 426	1022
347	419 - 442	1063
360	434 - 457	1103
373	450 - 473	1144
386	466 - 489	1185
399	482 - 505	1225
412	496 - 521	1266
425	513 - 537	1307
438	529 - 553	1348
451	545 - 568	1388
464	561 - 584	1429
477	577 - 600	1470
490	593 - 616	1511

Leichte Baureihe / Schwere Baureihe  
Band- und Schraubenabmessung  
Light range / Heavy range  
Band and thread dimension  
Série légère / Série lourde  
Dimension de la bande et des vis  
30 x 1 mm, M10x90 / 30 x 1,5 mm, M10x90  
40 x 1,5 mm, M10x90

### Bestellschlüssel

Order code / Code de commande

**HRGBLP 25 A1 169 ST**

Baureihe /  
range / série

25 x 1 / 30 x 1 HRGBLP  
30 x 1,5 / 40 x 1,5 HRSGBLP

Bandbreite /

band width / largeur de la bande  
25 / 30 / 40

Ausführung / model / exécution

A1 / B1

Typ / type / type

Werkstoff der Stahlteile /  
material of steel parts /  
matériau des pièces acier  
ST / A2

### Bestellschlüssel

Order code / Code de commande

**HRSGBLPU 30 A1 373 ST**

Baureihe /

range / série  
25 x 1 / 30 x 1 HRGBLPU  
30 x 1,5 / 40 x 1,5 HRSGBLPU

Bandbreite /

band width / largeur de la bande  
25 / 30 / 40

Ausführung / model / exécution

A1 / B1

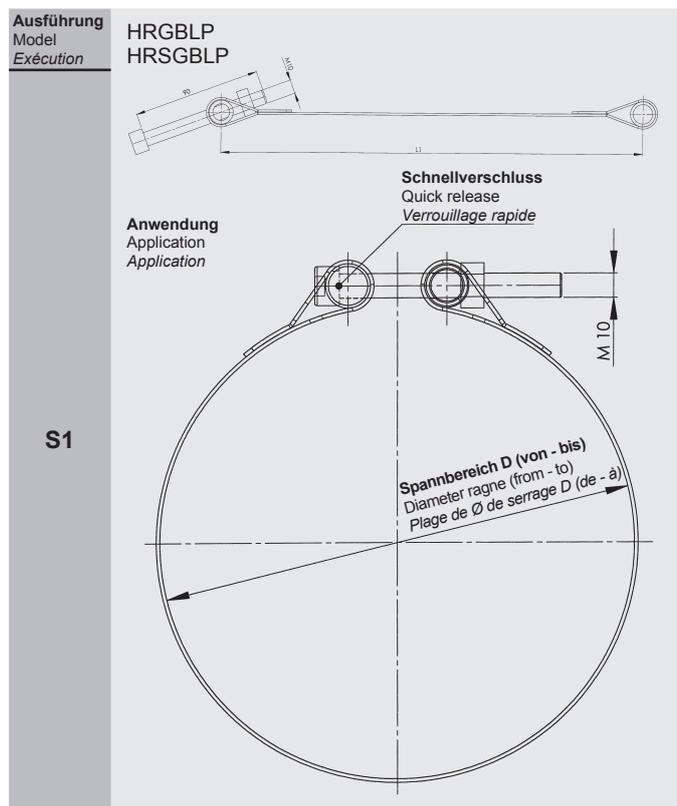
Typ / type / type

Werkstoff der Stahlteile /  
material of steel parts /  
matériau des pièces acier  
ST / A2

# 5.1 Gelenkbolzenspannband

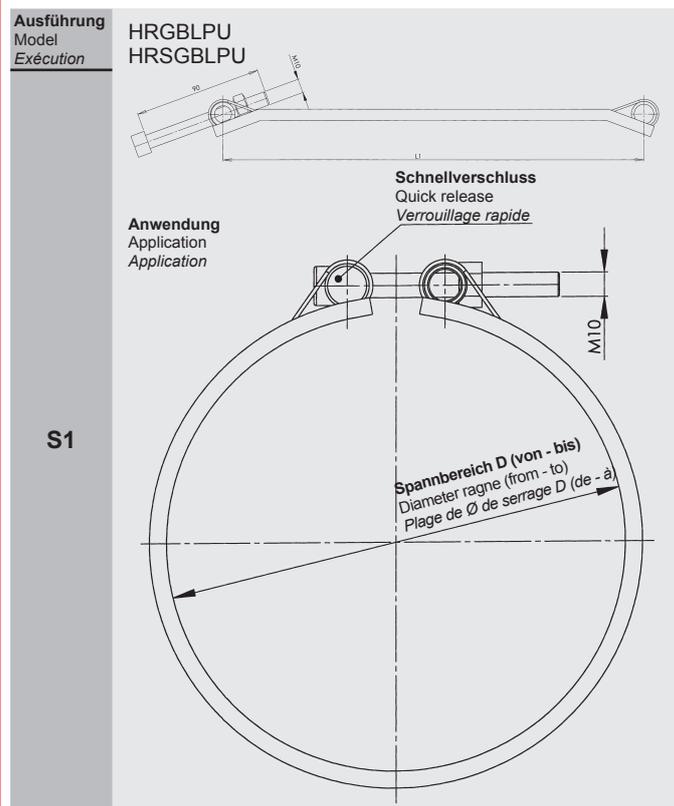
## 5.1 Swivel bolt clamping band

### 5.1 Bande de serrage à vis articulées



Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
80	77 - 82	232
89	86 - 91	260
98	95 - 100	287
107	104 - 112	315
116	113 - 121	342
125	122 - 130	370
134	131 - 139	398
143	140 - 148	426
152	149 - 157	454
165	162 - 170	494
178	175 - 183	534
191	188 - 196	575
204	201 - 209	615
217	214 - 222	656
230	227 - 235	696
243	240 - 251	737
256	253 - 264	777
269	266 - 277	818
282	279 - 290	859
295	292 - 303	900
300	297 - 308	916
308	305 - 316	941
321	318 - 329	981
334	331 - 342	1022
347	344 - 355	1063
360	357 - 368	1103
373	370 - 381	1144
386	383 - 394	1185
399	396 - 407	1225
412	409 - 420	1266
425	422 - 433	1307
438	435 - 446	1348
451	448 - 459	1388
464	461 - 472	1429
477	474 - 485	1470
490	487 - 498	1511
503	500 - 511	1552

Leichte Baureihe / Schwere Baureihe  
Band- und Schraubenabmessung  
Light range / Heavy range  
Band and thread dimension  
Série légère / Série lourde  
Dimension de la bande et des vis  
30 x 1 mm, M10x90 / 30 x 1,5 mm, M10x90  
40 x 1,5 mm, M10x90



Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
80	71 - 76	232
89	80 - 85	260
98	89 - 94	287
107	98 - 103	315
116	107 - 115	342
125	116 - 124	370
134	125 - 133	398
143	134 - 142	426
152	143 - 151	454
165	156 - 164	494
178	169 - 177	534
191	182 - 190	575
204	195 - 203	615
217	208 - 216	656
230	221 - 229	696
243	234 - 245	737
256	247 - 258	777
269	260 - 271	818
282	273 - 284	859
295	286 - 297	900
300	291 - 302	916
308	299 - 310	941
321	312 - 323	981
334	325 - 336	1022
347	338 - 349	1063
360	351 - 362	1103
373	364 - 375	1144
386	377 - 388	1185
399	390 - 401	1225
412	403 - 414	1266
425	416 - 427	1307
438	429 - 440	1348
451	442 - 453	1388
464	455 - 466	1429
477	468 - 479	1470
490	481 - 492	1511
503	494 - 505	1552

Leichte Baureihe / Schwere Baureihe  
Band- und Schraubenabmessung  
Light range / Heavy range  
Band and thread dimension  
Série légère / Série lourde  
Dimension de la bande et des vis  
30 x 1 mm, M10x90 / 30 x 1,5 mm, M10x90  
40 x 1,5 mm, M10x90

## Bestellschlüssel

Order code / Code de commande

**HRSGBLP 30 S1 373 ST**

### Baureihe / range / série

HRGBLP (30 x 1,0)  
HRGBLPU (30 x 1,0)  
HRSGBLP (30 x 1,5; 40 x 1,5)  
HRSGBLPU (30 x 1,5; 40 x 1,5)

### Bandbreite / band width / largeur de la bande

30  
40

### Ausführung / model / exécution

S1

### Typ / type / type

### Werkstoff der Stahlteile / material of steel parts / matériau des pièces en acier

ST / A2

### ANMERKUNG

**Eigengefertigte Spannbänder der  
Bandgrößen 30x1,0; 30x1,5 und 40x1,5  
nach Schweißzulassung DIN EN 15085**

**Zertifizierungsstufe: CL2**  
**Schweißnahtgüteklasse: CP-C3**  
**Prüfklasse: CT4**  
**Oberflächengüte: Stufe 3**

### NOTE

Internally manufactured of clamping  
bands, band dimension 30x1.0; 30x1.5  
and 40x1.5 according to weld certification  
DIN EN 15085

Certification level: CL2  
Weld seam quality: CP-C3  
Quality class: CT4  
Surface quality: step 3

### REMARQUE

*Production de bandes de serrage  
de 30x1,0; 30x1,5 et 40x1,5 d'après  
agrément de soudure DIN EN 15085*

*Niveau de certification: CL2*  
*Classe de qualité cordonde soudure:*  
*CP-C3*  
*Classe de contrôle: CT4*  
*Qualité de surface: Niveau 3*

## 5.2 Unterlage kurz, für Luftbehälter

5.2 Support short, for mounting air reservoirs

5.2 Support exécution courte, pour fixation réservoir à air

**Unterlage kurz (BUK) für Luftbehälter in Verbindung mit:**

– HY-ROS Gelenkbolzen - Spannband (siehe Seite BT 5.1.)

Support short (BUK) for mounting of air reservoir in conjunction with:

– HY-ROS Swivel bolt clamping band (see pages BT 5.1.)

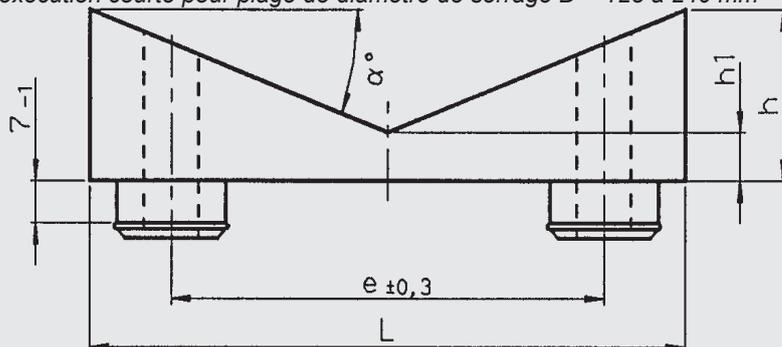
Support exécution courte (BUK) pour fixation de réservoir à air en combinaison avec:

– HY-ROS Bande de serrage à vis articulée (voir pages BT 5.1.)

**Unterlage kurz für Spannbereich D = 125 bis 240 mm**

Support short for diameter range D = 125 to 240 mm

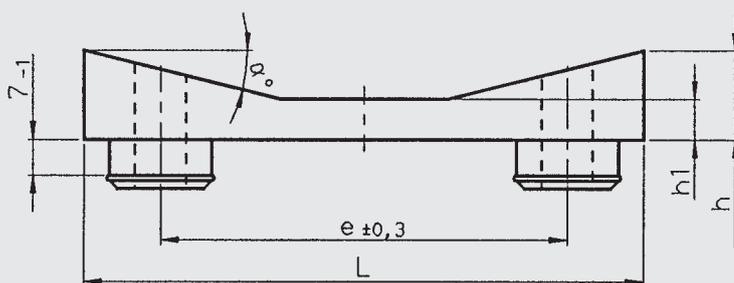
Support exécution courte pour plage de diamètre de serrage D = 125 à 240 mm



**Unterlage kurz für Spannbereich D = 240 bis 500 mm**

Support short for diameter range D = 240 to 500 mm

Support exécution courte pour plage de diamètre de serrage D = 240 à 500 mm



Spannbereich (von - bis) Diameter range (from - to) Plage de serrage (de - à)	Abmessungen Dimensions Dimensions						Gewicht (g/Stück) Weight (g/ea) Poids (g/pièce)	
	b	L	h	e	h1	α	PP	PA
125 - 240	30	110	28	80	8	20°	49	63
240 - 350			17,6			14°	32	43
350 - 420	40	200	38	80	10	22°	82	106
420 - 500			32			17,5°	65	83

### Bestellschlüssel

Order code / Code de commande

**HRLBB BUK 240-350 PA**

Baureihe / range / série \_\_\_\_\_  
HRLBB

Ausführung / model / exécution \_\_\_\_\_  
BUK

Durchmesser/ O/D / diamètre \_\_\_\_\_  
125 - 240, 240 - 350, 350 - 420, 420 - 500

Werkstoff / material / matériau \_\_\_\_\_  
PP / PA



### 5.3 Gelenkbolzenschelle mit Schnellverschluss

#### 5.3 Quick release swivel bolt clamp

#### 5.3 Colliers à arceau à verrouillage rapide

**Einfach**  
Basic  
Simple  
HRGBP

**Bandbreite 25 mm**  
Band width 25 mm  
Largeur de bande 25 mm

**mit Lasche**  
with strap  
avec lèvre  
HRGB

**Bandbreite 25 mm**  
Band width 25 mm  
Largeur de bande 25 mm

**mit Gummiprofil**  
with rubber profile  
avec garniture caoutchouc  
HRGBPU

**Bandbreite 25 mm**  
Band width 25 mm  
Largeur de bande 25 mm

Typ Type Type	D (von - bis) D (from - to) D (de - à)
62	60 - 65
64	62 - 67
70	68 - 73
76	74 - 79
82	80 - 85
88	86 - 91
94	92 - 97
100	98 - 103
106	104 - 112
115	113 - 121
124	122 - 130
133	131 - 139
142	140 - 148
151	149 - 157
160	158 - 166
169	167 - 175
178	176 - 184
187	185 - 193
196	194 - 202
205	203 - 211
214	212 - 220
223	221 - 229
231	230 - 238
241	239 - 247
250	248 - 256
259	257 - 265
268	266 - 274
277	275 - 283
286	284 - 292
295	293 - 301

Typ Type Type	D (von - bis) D (from - to) D (de - à)
62	60 - 65
64	62 - 67
70	68 - 73
76	74 - 79
82	80 - 85
88	86 - 91
94	92 - 97
100	98 - 103
108	104 - 112
117	113 - 121
126	122 - 130
135	131 - 139
144	140 - 148
153	149 - 157
162	158 - 166
171	167 - 175
180	176 - 184
189	185 - 193
198	194 - 202
207	203 - 211
216	212 - 220
225	221 - 229
234	230 - 238
243	239 - 247
252	248 - 256
261	257 - 265
270	266 - 274
279	275 - 283
288	284 - 292
297	293 - 301

Typ Type Type	D (von - bis) D (from - to) D (de - à)
62	54 - 59
64	56 - 61
70	62 - 67
76	68 - 73
82	74 - 79
88	80 - 85
94	86 - 91
100	92 - 97
106	98 - 106
115	107 - 115
124	116 - 124
133	125 - 133
142	134 - 142
151	143 - 151
160	152 - 160
169	161 - 169
178	170 - 178
187	179 - 187
196	188 - 196
205	197 - 205
214	206 - 214
223	215 - 223
231	224 - 232
241	233 - 241
250	242 - 250
259	251 - 259
268	260 - 268
277	269 - 277
286	278 - 286
295	287 - 295

**Bestellschlüssel / Order code / Code de commande**  
**HRGBP 25 S1 203-211/205 ST**

Baureihe / range / série  
HRGBP

Größe / size / taille

Ausführung / model / exécution

Durchmesser / O/D / diamètre

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier  
ST / A2

**Bestellschlüssel / Order code / Code de commande**  
**HRGB 25 S1 203-211/207 ST**

Baureihe / range / série  
HRGB

Größe / size / taille

Ausführung / model / exécution

Durchmesser / O/D / diamètre

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier  
ST / A2

**Bestellschlüssel / Order code / Code de commande**  
**HRGBPU 25 S1 74-79/82 ST**

Baureihe / range / série  
HRGBPU

Größe / size / taille

Ausführung / model / exécution

Durchmesser / O/D / diamètre

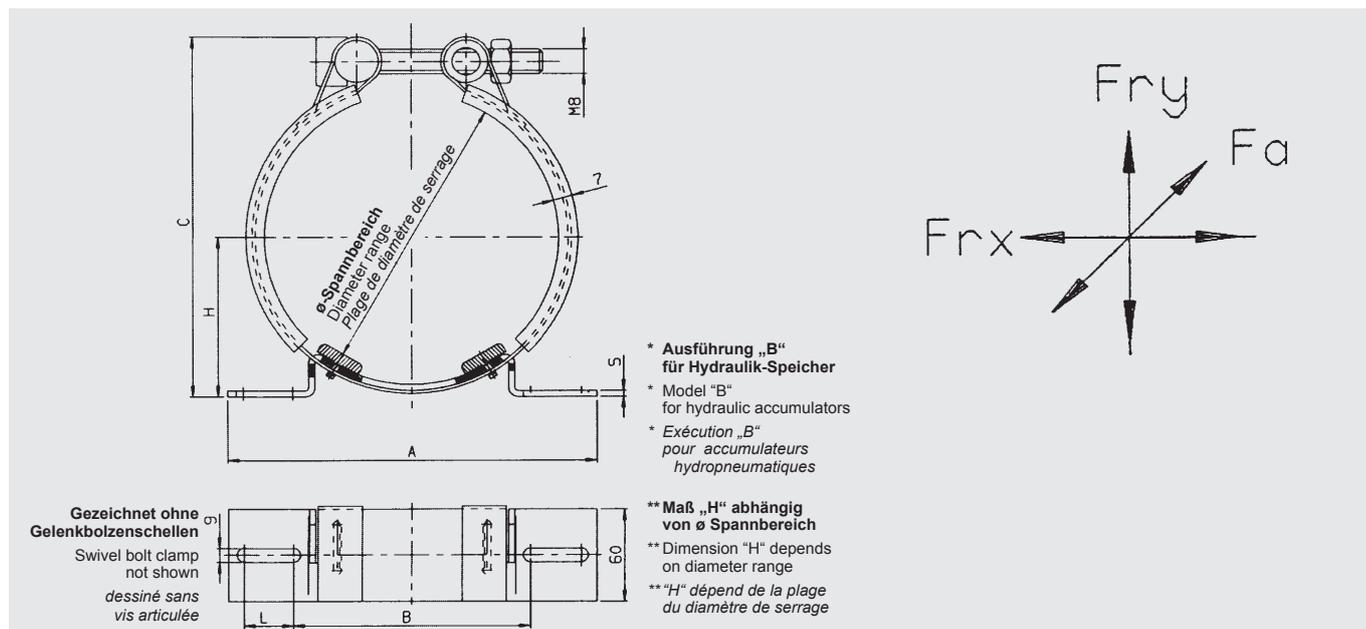
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier  
ST / A2



## 5.4 Gelenkbandkonsolenschelle

### 5.4 Quick release swivel bolt band clamp

### 5.4 Colliers console à bande articulée



#### Werkstoff der Einzelteile

Material of individual parts

Matériaux des différents éléments

Bezeichnung Description Désignation	Werkstoff / Oberfläche Material / Coating Matériau / Surface	Abkürzung Abbreviation Abréviation
<b>Konsole (KONS)</b> Support (KONS) Console (KONS)	<b>Stahl / verzinkt</b> Zinc-plated steel Acier galvanisé	<b>ST ZN</b> ST ZN ST ZN
<b>Rohrunterlage</b> Pipe support Support exécution courte	<b>Polyethylen</b> Polyethylene Polyéthylène	<b>PE</b> PE PE
<b>Gelenkbolzenschelle mit Schnellschraubverschluss (HRGB)</b> Quick release swivel bolt clamp (HRGB) Colliers a arceau à verrouillage rapide (HRGB)	<b>Stahl / nicht rostend</b> <b>Stahl / verzinkt</b> Stainless steel Zinc-plated steel Acier inoxydable Acier galvanisé	<b>ST ZN / F1</b> ST ZN / F1 ST ZN / F1
<b>Gummiprofil</b> Rubber profile Garniture caoutchouc	<b>Chloropren</b> Chloroprene Caoutchouc chloroprène	<b>EPDM</b> EPDM EPDM

#### Schellengröße mit Belastungswerten (N)

Clamp size with stress factors (N)

Taille de colliers avec facteurs de résistance (N)

Größe Size Taille	Durchmesser Diameter Diamètre	Fry (N)	Fr <sub>x</sub> (N)	Fa (N)	Anzugsmoment in Nm Torque rating in Nm Couple de serrage en Nm
1	100 - 120	500	400	360	max. 17
	121 - 159	550	350	350	max. 17
2	160 - 180	1100	700	650	max. 17
	181 - 200	1200	640	640	max. 17
	201 - 230	1500	630	630	max. 17

Größe Size Taille	A		B		Abmessungen und Gewicht gültig für Ausführung A und B* Dimensions and weight apply to model A and B* Dimensions et poids pour exécutions A et B*					Gewicht (KG) Weight (KG) Poids (KG)
	Spannbereich (von - bis) Diameter range (from - to) Plage de diamètre de serrage (de - à)	H** (von - bis) H** (from - to) H** (de - à)	Hydr. Speicher Hydr. accumulators Accumulateur hydropneumatique	Hydr. Speicher Hydr. accumulators Accumulateur hydropneumatique H	B	L	A	C max	S	
1	100-105	59 - 62			100	18	156	135	3	0,4
	106-114	62,5 - 66	108	64				138		0,41
	115-123	66,5 - 71	114	67				150		0,42
	124-132	71,5 - 76	126	77				160		0,43
	133-142	76,5 - 82,5						174		0,44
	143-151	83 - 86,5	146	83				182		0,45
	152-159	87 - 91						191		0,46
2	160-167	89 - 92	167	92,5	152	32	236	196	4	0,7
	167-175	92,5 - 96,5	175	99,5				207		0,72
	176-185	97 - 102,5	206	118				241		0,75
	186-194	103 - 108	210	123				248		0,76
	195-203	108,5 - 113,5	216	123				251		0,76
	204-213	111,5 - 115,5	219	123				252		0,77
	214-222	116 - 120	222	120/123				254		0,77
	223-230	120,5 - 123,5	229	123				259		0,78

## Bestellschlüssel

Order code / Code de commande

**HRGKS 1 A 124-132 ST**

Baureihe / range / série \_\_\_\_\_

HRGKS

Baugröße / size / taille \_\_\_\_\_

1 / 2

Ausführung / model / exécution \_\_\_\_\_

A / B

Durchmesser/ O/D / diamètre \_\_\_\_\_

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier \_\_\_\_\_

ST ZN verzinkt / zinc plated / zinqué

**5.5 Gelenkbandkonsolenschelle "MULTI"**

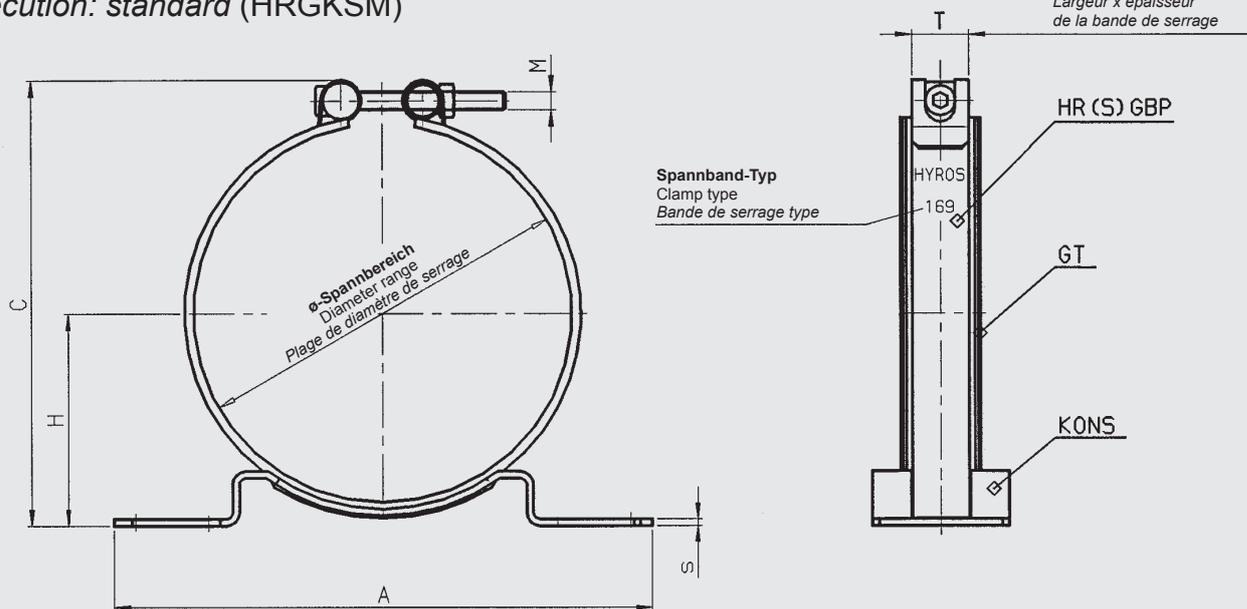
5.5 Quick release swivel bolt band clamp "MULTI"

5.5 Colliers à bande articulée sur support "MULTI"

**Ausführung: Standard (HRGKSM)**

Model: standard (HRGKSM)

Exécution: standard (HRGKSM)



Gezeichnet ohne Gelenkbolzenschelle  
Swivel bolt clamp not shown  
dessiné sans colliers à arceau

**Werkstoff der Einzelteile**

Material of individual parts

Matériaux des différents éléments

Bezeichnung Description Désignation	Werkstoff/Oberfläche Material/Coating Matériau/Revêtement	Abkürzung Abbreviation Abréviation
<b>Konsole (KONS)</b> Support (KONS) Console (KONS)	<b>Stahl/verzinkt</b> Zinc-plated steel Acier galvanisé	<b>ST ZN</b> ST ZN ST ZN
<b>Kunststoffprofil (GT)</b> Synthetic material profile (GT) Profil en matériau synthétique (GT)	<b>Polyethylen</b> Polyethylene Polyéthylène	<b>PE</b> PE PE
<b>Gelenkbolzenschelle mit Schnellverschraubverschluss (HR(S)GBP)</b> Quick release swivel bolt clamp (HR(S)GBP) Colliers à arceau à verrouillage rapide (HR(S)GBP)	<b>Stahl/nicht rostend</b> <b>Stahl/verzinkt</b> Stainless steel Zinc-plated steel Acier inoxydable Acier galvanisé	<b>ST ZN/F1</b> ST ZN/F1 ST ZN/F1

## 5.5 Gelenkbandkonsolenschelle "MULTI"

### 5.5 Quick release swivel bolt band clamp "MULTI"

### 5.5 Colliers à bande articulée sur support "MULTI"

Größe Size Taille	Ausführung Model Exécution	D (von - bis) D (from - to) D (de - à)	Typ Type Type	H	C max	M	T	A	s	L	B	E	d	Werkstoff Material Matériau	Gewicht in kg/Stück Weight in kg/ea Poids en kg/pièce
0	R	44 - 46	47	29,8 - 32,3	67	M6x50	20x0,8	120	3	8	85	40	9	ST	0,15
		46 - 49	50	30,8 - 32,3	69										0,15
		51 - 54	55	33,3 - 34,8	75										0,15
		55 - 58	59	35,3 - 36,8	77										0,16
		58 - 61	62	37,3 - 38,8	83										0,16
		62 - 65	65	38,0 - 39,5	85										0,20
		66 - 69	69	40,0 - 41,5	89										0,21
		70 - 73	73	42,0 - 43,5	93										0,21
		73 - 76	76	43,5 - 45,0	96										0,22
		77 - 80	80	45,5 - 47,0	100										0,22
		81 - 84	85	47,0 - 48,5	104										0,23
		85 - 88	89	49,0 - 50,5	108										0,23
		89 - 92	93	51,0 - 52,5	112										0,24
		92 - 95	96	52,5 - 54,0	115										0,24
96 - 100	100	54,5 - 56,5	120	0,24											
1	R	101 - 109	106	58,5 - 62,5	137	M8 x 80	25x1,0	156	3	18	100	50	9	ST	0,34
		110 - 118	115	63,0 - 67,0	146										0,35
		119 - 127	124	66,8 - 70,8	154										0,36
		128 - 136	133	71,3 - 75,3	163										0,37
		137 - 145	142	76,0 - 80,0	172										0,38
		146 - 154	151	80,5 - 84,5	181										0,39
		155 - 163	160	85,0 - 89,0	190										0,40
2	R	163 - 171	169	90,1 - 94,1	200	M8 x 80	25x1,0	236	3	32	152	60	9	ST	0,57
		167 - 175	173	92,1 - 96,1	204										0,58
		172 - 180	178	94,6 - 98,6	209										0,58
		181 - 189	187	98,4 - 102,4	217										0,59
		186 - 194	192	100,9 - 104,9	222										0,60
		190 - 198	196	102,9 - 106,9	226										0,60
		199 - 207	205	107,4 - 111,4	235										0,61
		208 - 216	214	111,2 - 115,2	243										0,62
		217 - 225	223	115,7 - 119,7	252										0,63
		226 - 234	231	120,2 - 124,2	261										0,64
3	R	235 - 246	243	129,0 - 134,5	279	M10 x 90	30x1,0	300	4	28	222	60	11	ST	0,97
		248 - 259	256	135,5 - 141,0	292										0,99
		261 - 272	269	140,9 - 146,4	304										1,00
		274 - 285	282	147,4 - 152,9	317										1,02
		287 - 298	295	153,9 - 159,4	330										1,03
		300 - 311	308	159,4 - 164,9	342										1,05
		313 - 324	321	165,9 - 171,4	355										1,06
		326 - 337	334	172,4 - 177,9	368										1,08
4	R	339 - 350	347	181,2 - 186,7	385	M10 x 90	30x1,5	400	4	28	322	60	11	ST	1,47
		352 - 363	360	187,7 - 193,2	398										1,49
		365 - 376	373	194,2 - 199,7	411										1,51
		378 - 389	386	200,7 - 206,2	424										1,52
		391 - 402	399	205,2 - 210,7	435										1,54
		404 - 415	412	211,7 - 217,2	448										1,56
		417 - 428	425	218,2 - 223,7	461										1,58
		430 - 441	438	224,7 - 230,2	474										1,60
		443 - 454	451	229,4 - 234,9	485										1,62
		456 - 467	464	235,9 - 241,4	498										1,63
		469 - 480	477	242,4 - 247,9	511										1,65
		482 - 493	490	248,9 - 254,4	524										1,67
		495 - 506	503	255,4 - 260,9	537										1,70

### 5.5 Gelenkbandkonsolenschelle "MULTI"

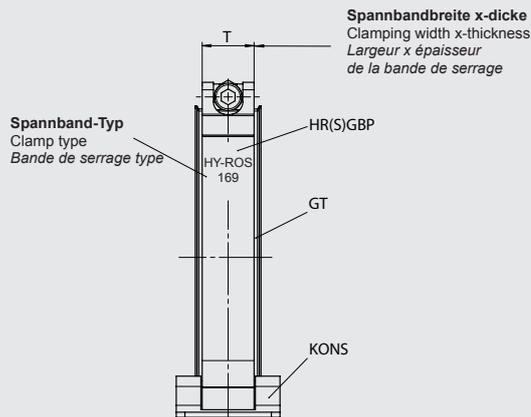
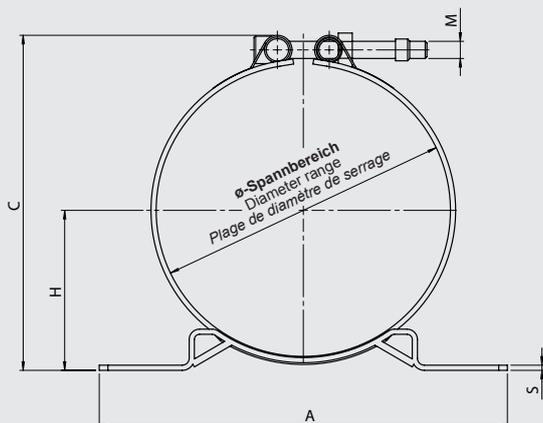
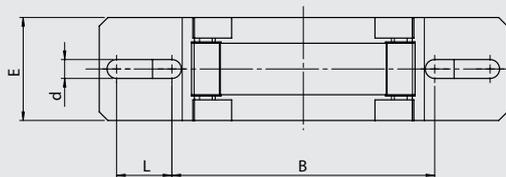
5.5 Quick release swivel bolt band clamp "MULTI"

5.5 Colliers à bande articulée sur support "MULTI"

**Ausführung: mit Steg (HRVMS)**

Model: with web plate (HRVMS)

Exécution: avec nervure de reifort (HRVMS)



Größe Size Taille	Ausführung Model Exécution	Spannbereich (von - bis) Diameter range (from - to) Plage de diamètre de serrage (de - à)	Typ Type Type	H	C max	M	T	A	s	L	B	E	d	Werkstoff Material Matériau	Gewicht in kg/Stück Weight in kg/ea Poids en kg/pièce	HRVMS
2	R	159-167	165	88,1- 92,1	197	M10x90	30x1,5	236	3	28	158	60	11	ST	0,73	
		165-173	171	91,1- 95,1	203										0,73	
		172-180	178	94,2- 98,2	210										0,74	
		178-186	184	97,6-101,6	216										0,74	
		185-193	191	101,1-105,1	223										0,75	
		192-200	198	103,9-107,9	229										0,75	
		198-206	204	106,9-110,9	235										0,75	
		204-212	210	109,9-113,9	241										0,76	
		211-219	217	112,7-116,7	248										0,77	
		217-225	223	115,7-119,7	254										0,78	
224-232	230	119,2-125,2	263	0,79												
3	R	235-246	243	129,0-134,5	279	M10x90	30x1,5	300	4	28	222	60	11	ST	1,03	
		248-259	256	135,5-141,0	292										1,05	
		261-272	269	140,9-146,4	304										1,06	
		274-285	282	147,4-152,9	317										1,08	
		287-298	295	153,9-159,4	330										1,09	
		300-311	308	159,4-164,9	342										1,11	
		313-324	321	165,9-171,4	355										1,12	
		326-337	334	172,4-177,9	368										1,14	
4	R	339-350	347	181,2-186,7	385	M10x90	30x1,5	400	4	28	322	60	11	ST	1,53	
		352-363	360	187,7-193,2	398										1,55	
		365-376	373	194,2-199,7	411										1,57	
		378-389	386	200,7-206,2	424										1,58	
		391-402	399	205,2-210,7	435										1,60	
		404-415	412	211,7-217,2	448										1,62	
		417-428	425	218,2-223,7	461										1,64	
		430-441	438	224,7-230,2	474										1,66	
		443-454	451	229,4-234,9	485										1,68	
		456-467	464	235,9-241,4	498										1,69	
		469-480	477	242,4-247,9	511										1,71	
		482-493	490	248,9-254,4	524										1,73	
		495-506	503	255,4-260,9	537										1,76	

## 5.5 Gelenkbandkonsolenschele "MULTI"

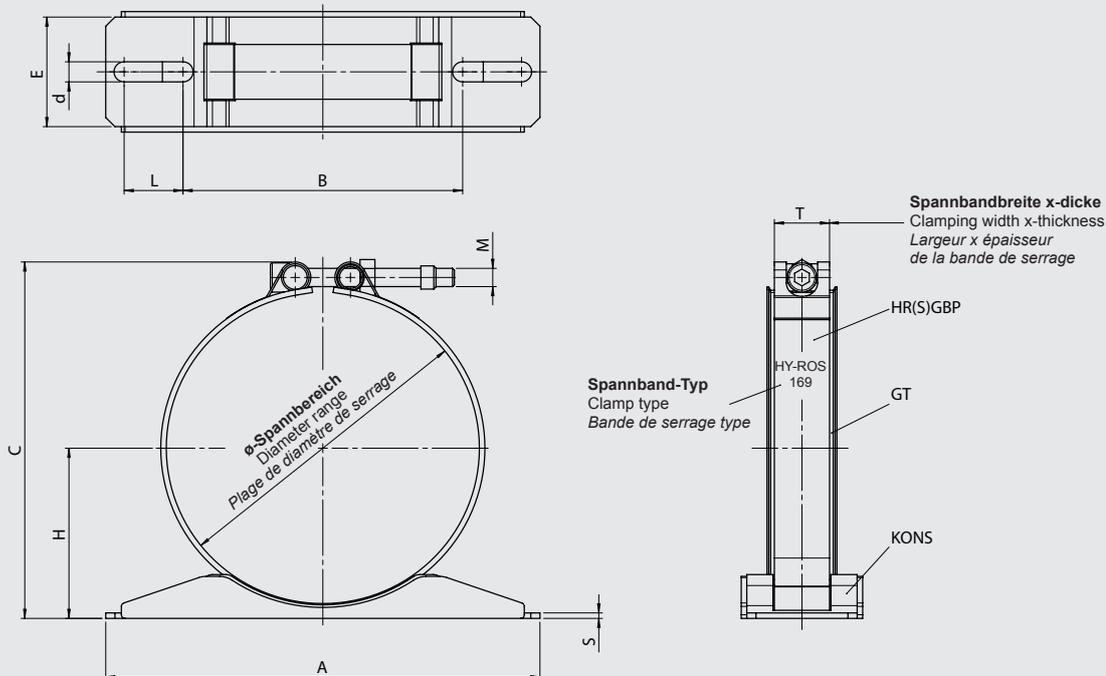
5.5 Quick release swivel bolt band clamp "MULTI"

5.5 Colliers à bande articulée sur support "MULTI"

### Ausführung: mit Wange (HRVMW)

Model: with reinforced side wall (HRVMW)

Exécution: avec renfort latéral (HRVMW)



Größe Size Taille	Ausführung Model Exécution	Spannbereich (von - bis) Diameter range (from - to) Plaque de diamètre de serrage (de - à)	Typ Type Type	H	C max	M	T	A	s	L	B	E	d	Werkstoff Material Matériau	Gewicht in kg/Stück Weight in kg/ea Poids en kg/pièce	HRVMW
2	R	159-167	165	88,1-92,1	197	M10x90	30x1,5	236	3	28	158	60	11	ST	0,73	
		165-173	171	91,1-95,1	203										0,73	
		172-180	178	94,2-98,2	210										0,74	
		178-186	184	97,6-101,6	216										0,74	
		185-193	191	101,1-105,1	223										0,75	
		192-200	198	103,9-107,9	229										0,75	
		198-206	204	106,9-110,9	235										0,75	
		204-212	210	109,9-113,9	241										0,76	
		211-219	217	112,7-116,7	248										0,77	
		217-225	223	115,7-119,7	254										0,78	
224-232	230	119,2-125,2	263	0,79												
3	R	235-246	243	129,0-134,5	279	M10x90	30x1,5	300	4	28	222	60	11	ST	1,41	
		248-259	256	135,5-141,0	292										1,43	
		261-272	269	140,9-146,4	304										1,44	
		274-285	282	147,4-152,9	317										1,46	
		287-298	295	153,9-159,4	330										1,47	
		300-311	308	159,4-164,9	342										1,49	
		313-324	321	165,9-171,4	355										1,50	
		326-337	334	172,4-177,9	368										1,52	
4	R	339-350	347	181,2-186,7	385	M10x90	30x1,5	400	4	28	322	60	11	ST	2,08	
		352-363	360	187,7-193,2	398										2,10	
		365-376	373	194,2-199,7	411										2,12	
		378-389	386	200,7-206,2	424										2,13	
		391-402	399	205,2-210,7	435										2,15	
		404-415	412	211,7-217,2	448										2,17	
		417-428	425	218,2-223,7	461										2,19	
		430-441	438	224,7-230,2	474										2,21	
		443-454	451	229,4-234,9	485										2,23	
		456-467	464	235,9-241,4	498										2,24	
		469-480	477	242,4-247,9	511										2,26	
		482-493	490	248,9-254,4	524										2,28	
		495-506	503	255,4-260,9	537										2,30	

**5.5 Gelenkbandkonsolenschelle “MULTI“**

5.5 Quick release swivel bolt band clamp “MULTI“

5.5 Colliers à bande articulée sur support “MULTI“

**Bestellschlüssel**

Order code / Code de commande

**HRGKSM 2 R 186-194/ 192 ST GS O.PE**

**Baureihe / range / série** \_\_\_\_\_

HRGKSM / HRVMS / HRVMW

**Baugröße / size / taille** \_\_\_\_\_

HRGKSM (0 / 1 / 2 / 3 / 4)

HRVMS (2 / 3 / 4)

HRVMW (2 / 3 / 4)

**Ausführung / model / exécution** \_\_\_\_\_

R

**Durchmesser/ O/D / diamètre** \_\_\_\_\_

**Typ / type / type** \_\_\_\_\_

**Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier** \_\_\_\_\_

ST ZN **verzinkt / zinc plated / zinqué**

A2\*

A4\*

**Sonderausführung / special model / exécution spéciale** \_\_\_\_\_

GS

**mit Gleitschiene / with guide rail / avec rail de guidage**

(nur HRVMW / only HRVMW / seulement HRVMW)

**ab Größe 3 / for size 3 and above / à partir de la taille de 3**

O.PE

**ohne Kunststoffprofil / without synthetic material profile / sans profile en matériau synthétique**

\* auf Anfrage / on request / sur demande



## 5.6 Gelenkbandprismaschelle

5.6 Swivel bolt prism clamp

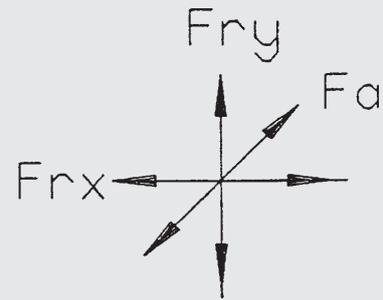
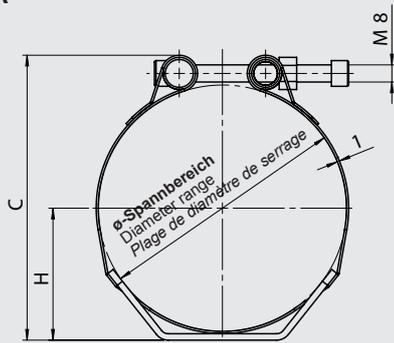
5.6 Colliers prismatique à arceau

**BT 5**

### Ausführung A

Model A

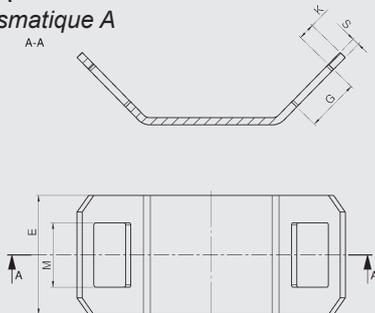
Exécution A



### Prisma-Ausführung A

Prism model A

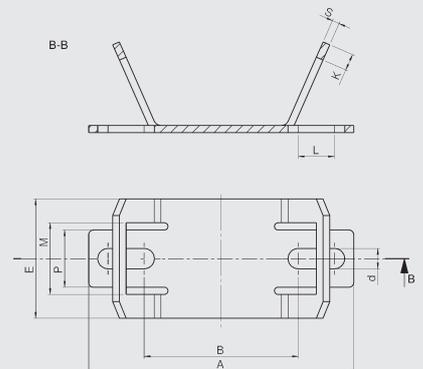
Exécution prismatique A



### Prisma-Ausführung AV

Prism model AV

Exécution prismatique AV



### Schellengröße mit Belastungswerten (N)

Clamp size with stress factors (N)

Taille de colliers avec facteurs de résistance (N)

(2-fache Sicherheit gegen Verformung)

(double protection against distortion)

(double sécurité contre déformation)

Größe Size Taille	Spannbereich Diameter range Plage de diamètre	Fry (N)	Fr <sub>x</sub> (N)	Fa (N)	Anzugsmoment in Nm Torque rating in Nm Couple de serrage en Nm
0	67 - 138	450	450	350	max. 17
1	139-300	1000	630	630	max. 17

## 5.6 Gelenkbandprismaschelle

### 5.6 Swivel bolt prism clamp

### 5.6 Colliers prismatique à arceau

Größe Size Taille	Ausführung Model Exécution	Spannereich (von - bis) Diameter range (from - to) Plage de diamètre de serrage (de - à)	Typ Type Type	H	C <sub>max</sub>	E	M	S	K	G	A	B	d	L	P	Werkstoff Material Matériau	Gewicht A/AV in (kg) Weight/AV in (kg) Poids A/AV en (kg)	
																	A	AV
0	A / AV	67 - 72	70	37,5 - 40,0	93	50	27/30	3	7	22	110	64	8,5	15	24	ST	0,25	0,26
		73 - 78	76	40,5 - 43,0	99												0,26	0,26
		79 - 84	82	43,5 - 46,0	105												0,26	0,27
		85 - 90	88	46,5 - 49,0	111												0,26	0,27
		91 - 96	94	49,5 - 52,0	117												0,27	0,27
		97 - 102	100	52,5 - 55,0	123												0,27	0,28
		103 - 111	106	55,5 - 59,5	132												0,27	0,28
		112 - 120	115	60,0 - 64,0	141												0,28	0,29
		121 - 129	124	64,5 - 68,5	150												0,29	0,29
		130 - 138	133	69,0 - 73,0	159												0,29	0,30
		139 - 147	142	73,5 - 77,5	168												0,41	
1	A	148 - 156	151	78,0 - 82,0	177	50	27	3	13	22						ST	0,42	
		157 - 165	160	82,5 - 86,5	186												0,42	
		166 - 174	169	87,0 - 91,0	195												0,43	
		175 - 183	178	91,5 - 95,5	204												0,44	
		184 - 192	187	96,0 - 100,0	213												0,44	
		193 - 201	196	100,5 - 104,5	222												0,44	
		202 - 210	205	105,0 - 109,0	231												0,45	
		211 - 219	214	109,5 - 113,5	240												0,46	
		216 - 224	219	112,0 - 116,0	245												0,47	
		220 - 228	223	114,0 - 118,0	249												0,48	
		228 - 236	231	118,0 - 122,0	257												0,48	
		238 - 246	241	123,0 - 127,0	267												0,48	
		247 - 255	250	127,5 - 131,5	276												0,49	
		256 - 264	259	132,0 - 136,0	285												0,49	
		265 - 273	268	136,5 - 140,5	294												0,50	
		274 - 282	277	141,0 - 145,0	303												0,50	
		283 - 291	286	145,5 - 149,5	312												0,51	
		292 - 300	295	150,0 - 154,0	321												0,52	

### Bestellschlüssel

Order code / Code de commande

**HRGPS 0 AV 91-96/94 ST**

Baureihe / range / série

HRGPS

Baugröße / size / taille

0

Ausführung / model / exécution

A / AV

Durchmesser / O/D / diamètre

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier

ST blank / unplated / sans revêtement

ST ZN verzinkt / zinc plated / zingué

A2\*

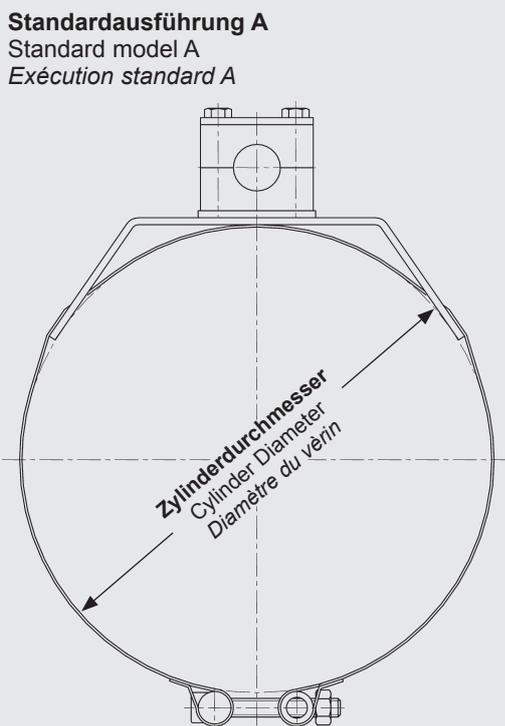
\* auf Anfrage / on request / sur demande

# 5.7 Halter für Zylinder

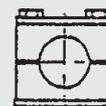
## 5.7 Clamp for cylinders

### 5.7 Fixation pour vérin

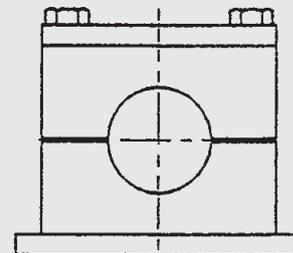
Größe Size Taille	Zylinderdurchmesser Cylinder diameter Diamètre du vérin
7	67 - 88
8	89 - 99
9	100 - 114
10	115 - 140
11	141 - 169
12	170 - 194
13	195 - 220
14	221 - 274
15	275 - 299



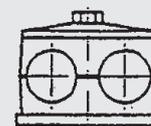
**Schelle DIN3015 Teil 1**  
Clamp DIN3015 part 1  
Colliers DIN3015 chap. 1



**Schelle DIN3015 Teil 2**  
Clamp DIN3015 part 2  
Colliers DIN3015 chap. 2



**Schelle DIN3015 Teil 3**  
Clamp DIN3015 part 3  
Colliers DIN3015 chap. 3



**Andere Kombinationen auf Anfrage**  
Other combinations on request  
Autres combinaisons sur demande

### Bestellschlüssel

Order code / Code de commande

**HRHZ 12 / 3S A 172 / 33.7 PP ST M ZN**

**Baureihe / range / série** \_\_\_\_\_  
HRHZ

**Baugröße Zylinder / size of cylinder / taille du vérin** \_\_\_\_\_  
7 / 8 / 9 / 10 / 11 / 12 / 13 / 14 / 15

**Baugröße Schelle / clamp size / taille des pièces de serrage** \_\_\_\_\_

1L	1S	1Z
2L	2S	2Z
3L	3S	3Z
4L	4S	4Z
5L		5Z
6L		

**Ausführung / model / exécution** \_\_\_\_\_  
A

**Durchmesser Zylinder / O/D cylinder / diamètre extérieur du vérin** \_\_\_\_\_

**Durchmesser Rohr / pipe O/D / diamètre extérieur du tuyau** \_\_\_\_\_

**Werkstoff der Klemmbacken / clamp material / matériau des pièces de serrage** \_\_\_\_\_  
PP / PA

**Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier** \_\_\_\_\_  
ST  
A2 / A4 auf Anfrage / on request / sur demande

**Metrisches Gewinde / metric thread / filet métrique** \_\_\_\_\_

**Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier** \_\_\_\_\_  
ZN  
verzinkt / zinc plated / zingué





## Sonstige Lösungen

Other solutions  
*Autres solutions*



**BT 6.1 Sensorschelle**  
BT 6.1 Sensor clamp  
*BT 6.1 Collier pour capteur*



**BT 6.2 Rohrdurchführung**  
BT 6.2 Rubber tank bush  
*BT 6.2 Traversée de cloison*

**ANMERKUNG**

Die Angaben in diesem Prospekt beziehen sich auf die beschriebenen Betriebsbedingungen und Einsatzfälle. Bei abweichenden Einsatzfällen und/oder Betriebsbedingungen wenden Sie sich bitte an die entsprechende Fachabteilung. Technische Änderungen sind vorbehalten.

**NOTE**

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

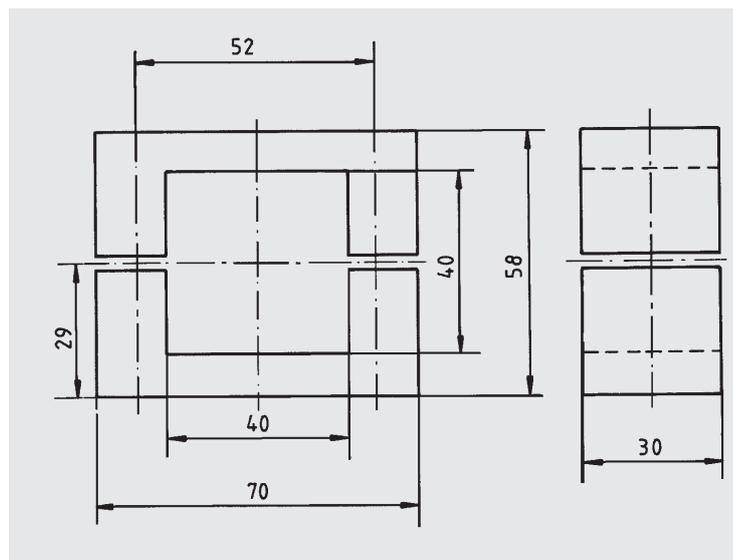
**REMARQUE**

Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.

# 6.1 Sensorschelle

## 6.1 Sensor clamp

### 6.1 Collier pour capteur



Weitere Einzelteile sind bau- und preisgleich mit der Leichten Reihe (Standard) siehe Kapitel Schellen nach DIN 3015.

Other components are identical in size and price to the light range (standard) see chapter on clamps to DIN 3015.

Les autres pièces détachées sont identiques en prix et en encombrement à celles de la série légère (standard). Voir § colliers selon DIN 3015.

Abmessungen Dimensions Dimensions	Größe Size Taille	Ausführung B Model B Exécution B	<p>entfällt bei AL not required for AL sauf exécution AL</p>
		40 x 40	

Abmessungen Dimensions Dimensions	Größe Size Taille	Klembackenpaar Pair of clamp jaws Paire de pièces de serrage (KP)	
		40 x 40	

**Bestellschlüssel**  
Order code / Code de commande

**HRSEN 5 B 40x40 PP ST M BL**

- Baureihe / range / série** HRSEN
- Baugröße / size / taille** 5
- Ausführung / model / exécution** B
- Durchmesser/ O/D / diamètre** 40x40
- Werkstoff der Klembacken / clamp material / matériau des pièces de serrage** PP / PA / AL
- Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier** ST
- A2 / A4 auf Anfrage / on request / sur demande** M
- Metrisches Gewinde / metric thread / filet métrique** BL
- Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier** BL

**Bestellschlüssel**  
Order code / Code de commande

**HRSEN 5 KP 40x40 PP**

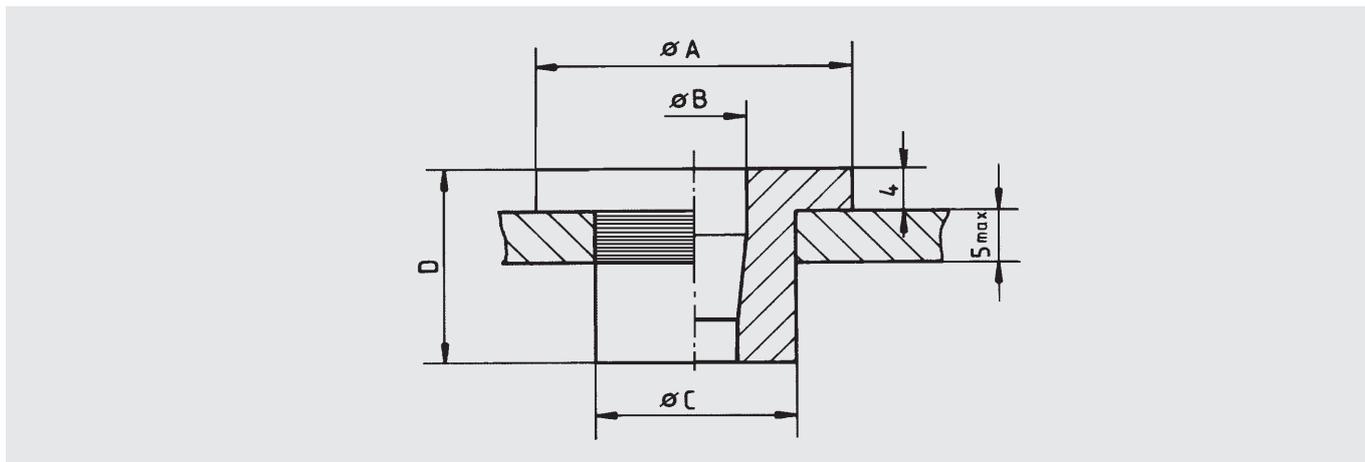
- Baureihe / range / série** HRSEN
- Baugröße / size / taille** 5
- Ausführung / model / exécution** KP
- Durchmesser/ O/D / diamètre** 40x40
- Werkstoff der Klembacken / clamp material / matériau des pièces de serrage** PP / PA / AL



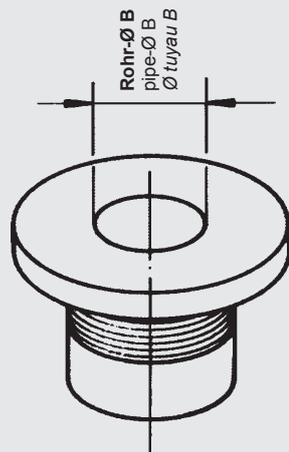
**6.2 Rohrdurchführung**

6.2 Rubber tank bush

6.2 Traversée de cloison



$\varnothing B$ lagervorrätig $\varnothing B$ available ex stock $\varnothing B$ disponible	$\varnothing B$ auf Anfrage $\varnothing B$ on request $\varnothing B$ sur demande	$\varnothing A$	$\varnothing C$	D	Größe Size Taille
6					
8					
	9	30	18	18	1
	9,5				
10					
12					
14					
15					
16					
17					
18		40	28	24	2
	19				
20					
21,3					
22					
25					
27					
28					
30		55	42	24	3
	31,5				
34					
35					
38					
42					
42,5		70	58	24	4
48,5					
50,5					
60,5		80	67	24	5



**Bestellschlüssel**

Order code / Code de commande

**HRRDF 3 GT 30 TPE**

**Baureihe / range / série** ————  
HRRDF

**Baugröße / size / taille** ————  
1 / 2 / 3 / 4 / 5

**Ausführung / model / exécution** ————  
GT

**Durchmesser / O/D / diamètre** ————

**Werkstoff / material / matériau** ————  
Größe/Size/Taille 1-3: TPE 64

Größe/Size/Taille 4: NBR

Größe/Size/Taille 5: TPE 64



## Supports for Hydraulic Accumulators



### 1. DESCRIPTION

#### 1.1. GENERAL

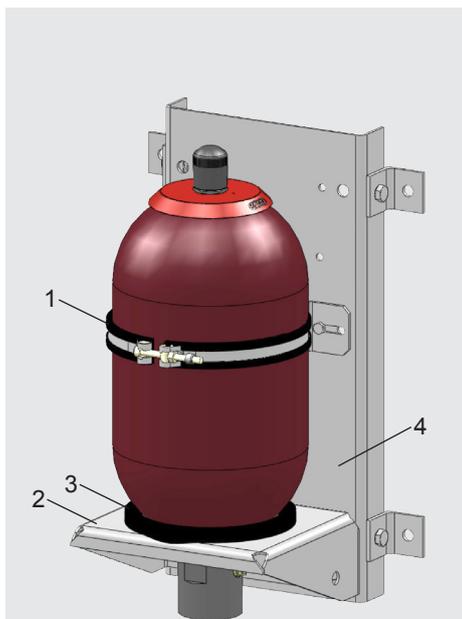
HYDAC supports are used to mount all types of hydraulic accumulator safely and simply. Clamps, consoles and complete accumulator sets are available.

#### 1.2. USE

The supports are designed for static use. For dynamic stresses, specially designed clamps are available on request.

### 2. SELECTION TABLES FOR SUPPORTS

#### 2.1. BLADDER ACCUMULATOR

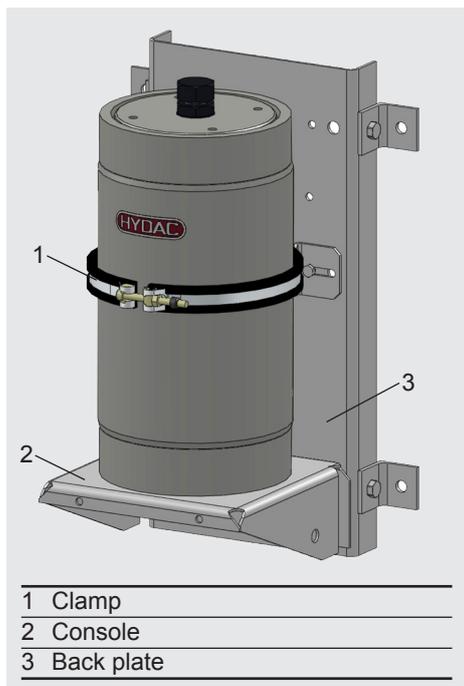


- 1 Clamp
- 2 Console
- 3 Rubber support ring
- 4 Back plate

Description	Capacity [l]																									
	SB330					SB400			SB550		SB500 / SB600		SB35		SB40		SB35H		SB35HB		SN					
	1	2.5+5	4+6	10-24	32-50	0.5	4	10-20	32-50	1	2.5-5	10-20	32-50	2.5-5	10-20	32-50	2.5-5	10-20	32-50	20	32-50	20	32-50	50		
Clamps *																										
HyRac 89-92 193 ST						1																				
HyRac 106-114/115 H3 ST														2		2										
HyRac 110-118/124 H10 ST	1	2																								
HyRac 121-129/133 H8 ST										1	2															
HyRac 167-175/178 H5 ST			1				1																			
HyRac 202-210/214 H8 ST															1	2					1	2				
HyRac 216-224/226 H5 ST																		1	2				1	2		
HyRac 223-230/231 H3 ST				1	2																					2
HyRac 225-234/234 H3 ST								1	2																	
HSS 242														1	2											
Consoles																										
KBK 167 / G			1				1																			
KBK 222 / G				1	1			1	1				1	1		1	1		1	1						1
KHF 210 / G																					1	1	1	1		
Accumulator set																										
SEB	1	1	1	1		1	1	1																		
SEH												1	1	1												
SEN														1	1	1										
SEM																	1	1	1							
SEHF																					1	1				
SEHB																							1	1		

\* The number of clamps can vary depending on the requirements and on the length of the accumulator. These are recommendations.

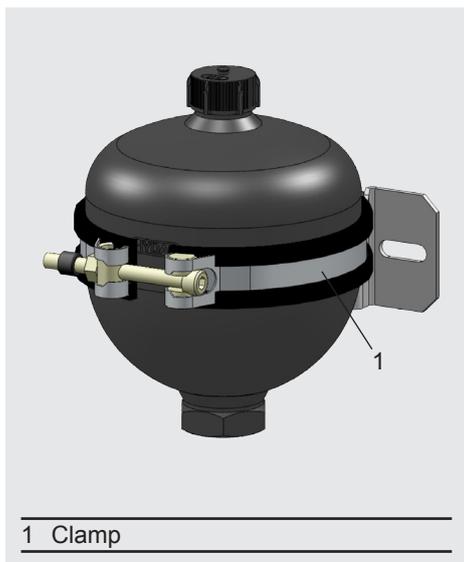
## 2.2. PISTON ACCUMULATOR



	Piston diameter [mm]											
	50	60	80	100	150	180	250	> 250				
Type	Accumulator external diameter [mm]											
	60	70	95	100	120	125	180	210	220	286	300	> 300
Clamps SK280 *												
HRGKSM 0 R 58-61/62 ST	●											On request
HRGKSM 0 R 70-73/73 ST		●										
HRGKSM 0 R 92-95/96 ST			●									
HRGKSM 1 R 119-127/124 ST					●							
Clamps SK Standard *												
HyRac 96-100/100 ST				●								on request
HyRac 121-129/133 H8 ST					●							
HyRac 176-185/187 H5 ST						●						
HyRac 209-217/223 H10 ST							●					
HyRac 216-224/226 H5 ST								●				
HSS 286										●		
HSS 310											●	
consoles												
KBK 126						1						On request
KBK 219								1	1			
KBK 310										1	1	

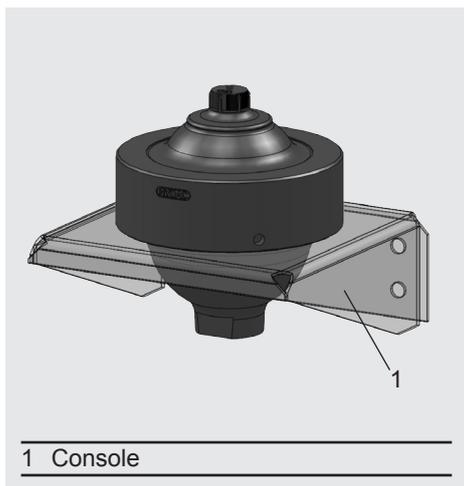
\* Selecting the correct clamp depends on the external diameter of the accumulator. Depending on the application and length of the accumulator, we recommend that several clamps are used. Clamps must be mounted near the end caps in order to prevent deformation of the cylinder.

## 2.3. DIAPHRAGM ACCUMULATOR (WELD TYPE)



Accumulator type	Clamp type
SBO250-0.075E	HyRac 62-65/65 ST
SBO210-0.16E	HyRac 73-76/76 ST
SBO210-0.32E	HyRac 92-95/96 ST
SBO210-0.5E	HyRac 100-105/106 H3 ST
SBO100-0.7E	HyRac 106-114/115 H3 ST
SBO330-0.6E	HyRac 110-118/124 H10 ST
SBO330-0.7E	
SBO210-0.75E	HyRac 121-129/133 H8 ST
SBO330-0.75E	
SBO200-1E	HyRac 133-142/142 H3 ST
SBO140-1.4E	HyRac 143-151/151 H3 ST
SBO210-1.4E	
SBO330-1.4E	HyRac 152-159/160 H3 ST
SBO100-2E	HyRac 160-167/169 H5 ST
SBO210-2E	HyRac 167-175/178 H5 ST
SBO210-2.8E	
SBO250-3.5E	
SBO330-2E	
SBO330-2.8E	
SBO330-3.5E	

## 2.4. DIAPHRAGM ACCUMULATOR (SCREW TYPE)



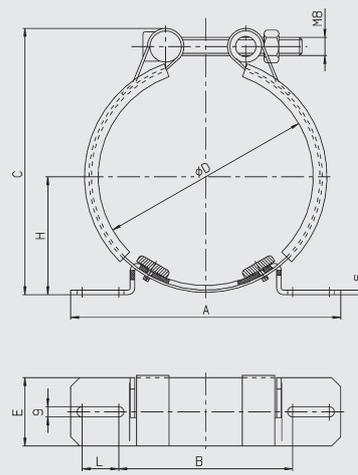
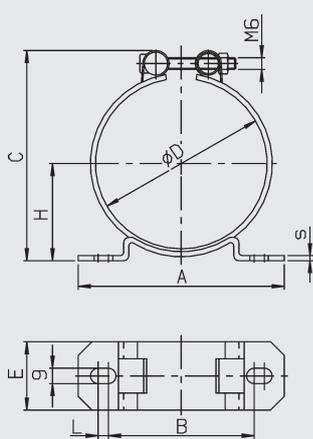
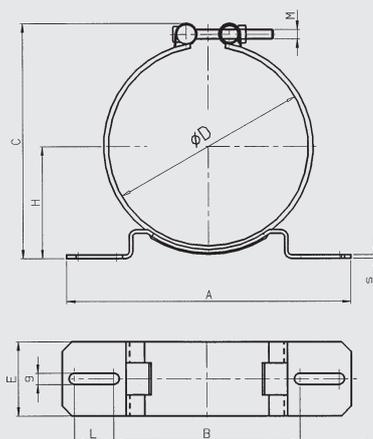
Type of accumulator	Console
SBO210-1.3A6	KMS 200
SBO400-1.3A6	KMS 210
SBO100-2.0A6	KMS 220
SBO250-2.0A6	
SBO210-2.8A6	KMS 250
SBO400-2.8A6	KMS 280
SBO210-4.0A6	KMS 300
SBO400-4.0A6	KMS 310

### 3. CLAMPS

HRGKSM

HyRac (  $\varnothing D \leq 100 \text{ mm}$  )

HyRac (  $\varnothing D \geq 100 \text{ mm}$  )



Closing device, support zinc-plated  
Clamping band stainless steel  
Insert LDPE

Closing device, support zinc-plated  
Clamping band stainless steel  
Insert PE

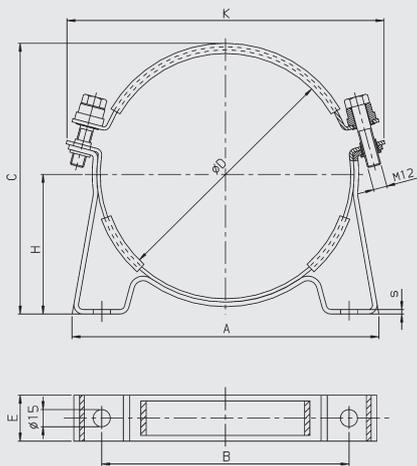
Closing device, support zinc-plated  
Clamping band stainless steel  
Insert PE, NBR

Description	Part no.	A [mm]	B [mm]	C max [mm]	$\varnothing D$ (from - to) [mm]	H (from - to) [mm]	E [mm]	L [mm]	S [mm]	K max. [mm]	Weight: [kg]
HRGKSM 0 R 58-61/62 ST	3018442	120	85	83	58 - 61	37.3 - 38.8	40	6	3	-	0.16
HRGKSM 0 R 70-73/73 ST	3018444			93	70 - 73	42.0 - 43.5					0.21
HRGKSM 0 R 92-95/96 ST	444995			115	92 - 95	52.5 - 54.0					0.24
HRGKSM 1 R 119-127/124 ST	444505	158	100	154	119 - 127	66.8 - 70.8	50	18			0.36
HyRac 62-65/65 ST	445037	120	85	85	62 - 65	38 - 39.5	40	6	3	-	0.16
HyRac 73-76/76 ST	445038			96	73 - 76	43.5 - 45					0.16
HyRac 89-92/92 ST	445039			112	89 - 92	51 - 52.5					0.17
HyRac 92-95/96 ST	445040			115	92 - 95	52.5 - 54					0.17
HyRac 96-100/100 ST	445041			120	96 - 100	54.5 - 56.5					0.17
HyRac 100-105/106 H3 ST	444904	156	100	135	100 - 105	59 - 62	60	18	3	-	0.40
HyRac 106-114/115 H3 ST	444905			143	106 - 114	62.5 - 66					0.41
HyRac 110-118/124 H10 ST	445042			156	110 - 118	72.5 - 77					0.42
HyRac 121-129/133 H8 ST	444906			165	121 - 129	75.5 - 80					0.43
HyRac 133-142/142 H3 ST	444907			174	133 - 142	76.5 - 82.5					0.44
HyRac 143-151/151 H3 ST	444908			182	143 - 151	83 - 86.5					0.45
HyRac 152-159/160 H3 ST	444909			191	152 - 159	87 - 91					0.46
HyRac 160-167/169 H5 ST	444910	236	152	197	160 - 167	89 - 92	60	32	4	-	0.70
HyRac 167-175/178 H5 ST	445043			207	167 - 175	92.5 - 96.5					0.72
HyRac 176-185/187 H5 ST	445044			241	176 - 185	97 - 102.5					0.75
HyRac 202-210/214 H8 ST	445045			245	202 - 210	116 - 120					0.76
HyRac 209-217/223 H10 ST	445046			255	209 - 217	122.5 - 126.5					0.77
HyRac 216-224/226 H5 ST	445047			256	216 - 224	120 - 124					0.77
HyRac 223-230/231 H3 ST	445048			259	223 - 230	120.5 - 123.5					0.78
HyRac 225-234/234 H3 ST	445049			265	225 - 234	123 - 127.5					0.79

Model/order code (example):

HyRac 167-175/178 H5 ST 445043

# HSS



Clamp            zinc-plated

Insert            NBR

Description	Part no.	A [mm]	B [mm]	C max [mm]	ØD (from - to) [mm]	H (from - to) [mm]	E [mm]	L [mm]	S [mm]	K max. [mm]	Weight: [kg]
HSS 222/229	235224	268	216	244	222 - 229	123	40	Ø15	4	292	1.60
HSS 242	362712	267	216	267	242	136				306	1.66
HSS 286	237395	330	280	314	286	163				355	1.95
HSS 310	237389	330	280	333	310	170				390	2.45
HSS 360	355592	426	365	383	360	195				434	2.56

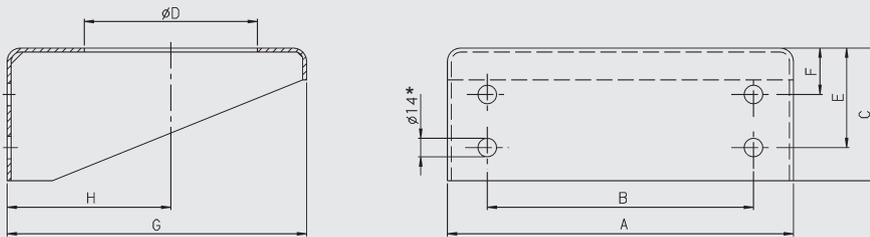
Model/order code (example):

HSS 222/229            235224

## 4. CONSOLES

### 4.1. CONSOLE KBK FOR BLADDER AND PISTON ACCUMULATOR

Console KBK



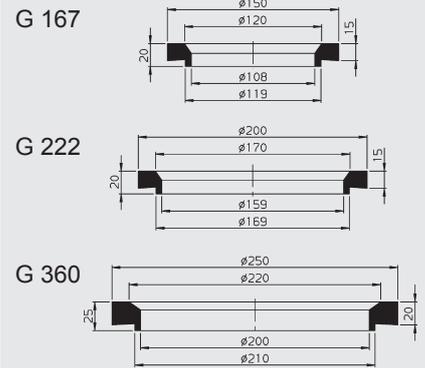
\* Ø22 on KBK 310 and KBK 360

Type	Mat.	Part no.	A [mm]	B [mm]	C [mm]	ØD [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight: [kg]
126	STZN	290530	175	100	60	65	36	—	150	77	1.1
167		238526	260	200	100	120	75	35	225	92	2.5
219		238042	270	180		135	80	40	250	123	6.5
222		3002160	260	200		170	75	35	225	2.4	
310		238043	330	220	200	190	140	60	340	170	18.3
360		357959	390	270	240	211	180		390	195	20.1

Model/order code (example):

KBK	167	STZN	238526
-----	-----	------	--------

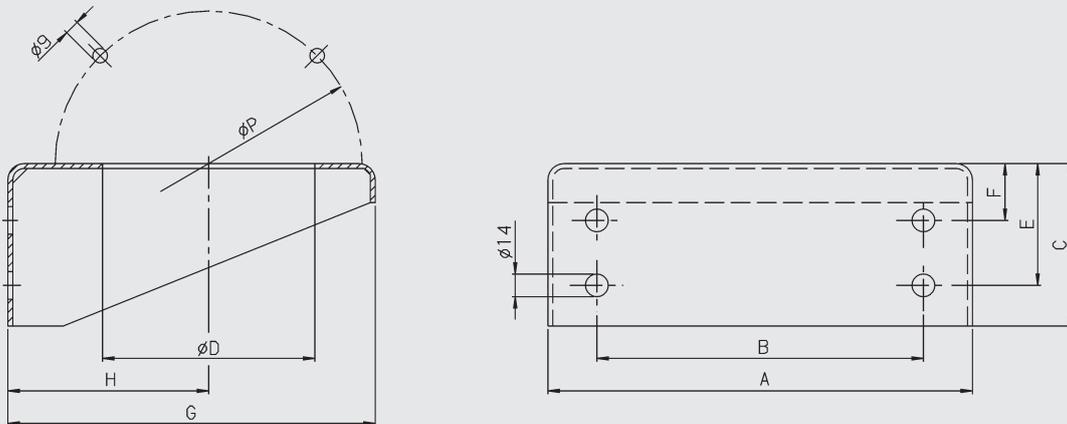
Rubber support ring G



Type	Material	Part no.
—	NBR	—
167		236997
—		—
222		236996
—		—
360		355966

G	167	NBR	236997
---	-----	-----	--------

### 4.2. KMS CONSOLES FOR DIAPHRAGM ACCUMULATOR SCREW TYPE



The screw type diaphragm accumulator has threaded bores M8 in the lock nut for fixing to the KMS console.

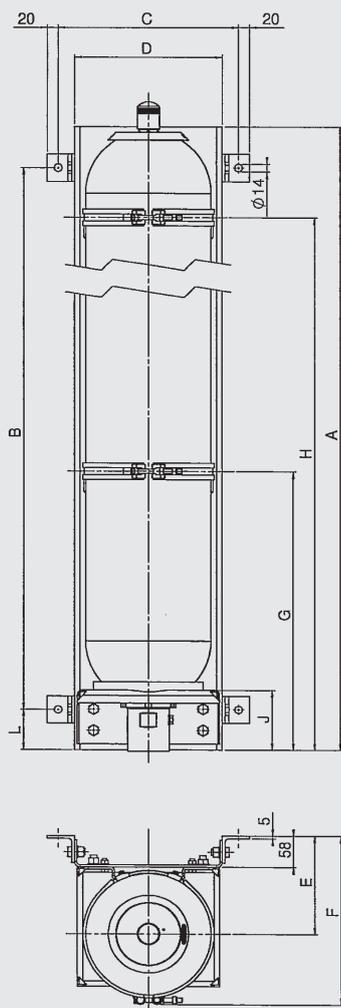
Type	Mat.	Part no.	A [mm]	B [mm]	C [mm]	ØD [mm]	ØP [mm]	E [mm]	F [mm]	G [mm]	H [mm]	ØI [mm]	Weight: [kg]	
200	STZN	359931	270	180	100	148	160	80	40	250	123	14	6.5	
210		358989	260	200		170	180	75	35	225				2.4
220		359922				170	188							
250		359924	330	220	200	192	204	140	60	340	170	22	18.3	
280		359925				215	230							
300		359926				220	235							
310		359927				245	265							
320		359928	290	305										

Model/order code (example):

KMS	200	STZN	359931
-----	-----	------	--------

## 5. ACCUMULATOR SET FOR BLADDER ACCUMULATORS

SEB, SEH, SEM



### 5.1. SEB FOR SB330/440

Accumulator set	Part no.	Vol. [l]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	J [mm]
SEB 2.5	290787	2.5	460	310	198	138	132	214	200	400	75	–
SEB 4	238403	4	410	320	330	270	152	253	–	270	45	95
SEB 6	2115851	6	570	420	330	270				180	317	330
SEB 10	238407	10					500					
SEB 20	240598	20	1340	1190			330	270	180			317
SEB 32	238409	32			1160							
SEB 50	240599	50										

This accumulator set SEB is also available with a SAF and SB330 as a compact unit (ACCUSET SB330).

See catalogue section:

- ACCUSET SB  
No. 3.503

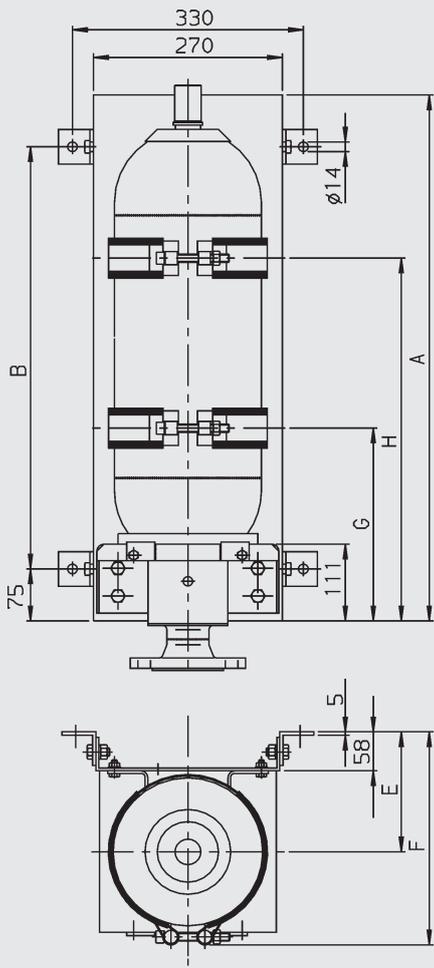
### 5.2. SEH FOR SB500/550/600

Accumulator set	Part no.	Vol. [l]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	J [mm]
SEH 2.5	2105194	2.5	460	310	198	138	133.5	223	200	400	75	–
SEH 5	2105195	5	750	600						650		
SEH 10	378952	10	570	420	330	270	194	323		330		
SEH 20	298181	20							500			
SEH 32	298182	32	1340	1190					330	270	194	323
SEH 50	298183	50			1160							

### 5.3. SEM FOR SB40

Accumulator set	Part no.	Vol. [l]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	J [mm]
SEM 2.5	3007402	2.5	460	310	198	138	121.5	201	200	410	75	–
SEM 5	3007423	5	750	600					220	650		
SEM 10	3007424	10	570	420	330	270	172	310	–	330		
SEM 20	3007425	20							500			
SEM 32	3007426	32	1340	1190					330	270	172	310
SEM 50	3007427	50			1160							

SEHB



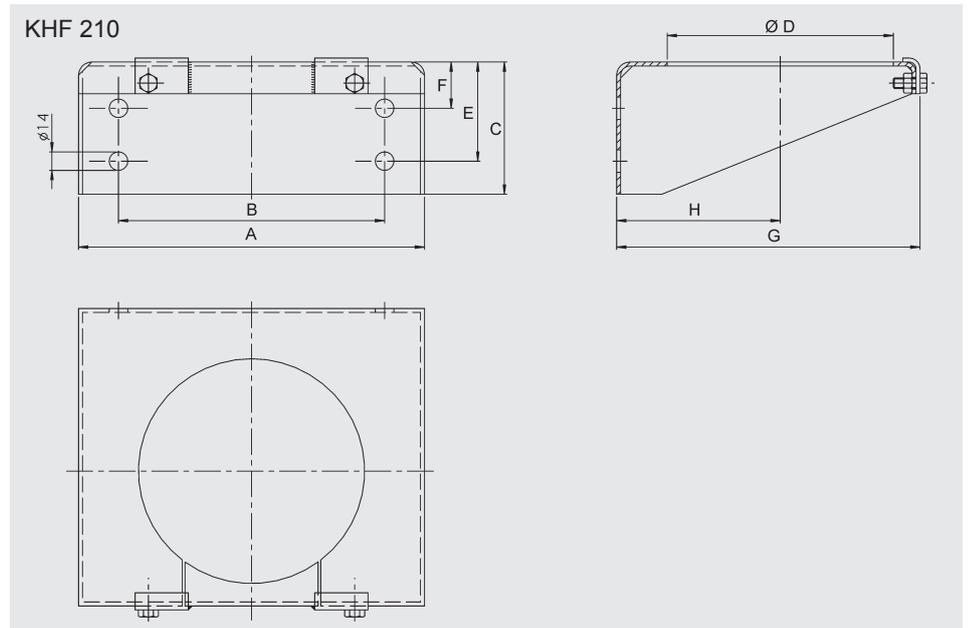
5.4. SEHB FOR SB35HB

Accumulator set	Part no.	Vol. [l]	A [mm]	B [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	J [mm]
SEHB 20	3007431	20	570	420			-	500		
SEHB 32	3007432	32	1340	1190	172	310	500	1160	75	111
SEHB 50	3007433	50	1340	1190			500	1160		

Console	Mat.	Part no.	A [mm]	B [mm]	C [mm]	ØD [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [kg]
KHF 210	STZN	239965	260	200	100	170	75	35	230	123	2.5

Model/order code (example):

SEB 10 238407



The accumulator sets SEHF/SEHB are supplied with console KHF 210 / G which can be opened at the front for easier mounting of the bladder accumulator.

6. NOTE

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the proper HYDAC department. Subject to technical modifications.

**HYDAC Accessories GmbH**  
 Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: www.hydac.com  
 E-Mail: info@hydac.com





## Bell Housings with Rigid / Flexible Pump Mounting

### PTS / PT

## 1. DESCRIPTION

### 1.1. GENERAL

Bell housings are connection elements between drive motors and hydraulic pumps. Both connecting flanges are supplied ready for installation. The bell housings are made from an aluminium cast alloy.

### 1.2. MODELS

Bell housings in both flexible and rigid design are available in dimensions to the VDMA 24561 standard.

## 2. TECHNICAL SPECIFICATIONS

### 2.1. GENERAL

#### 2.1.1 Mounting position

Optional.

#### 2.1.2 Operating temperature

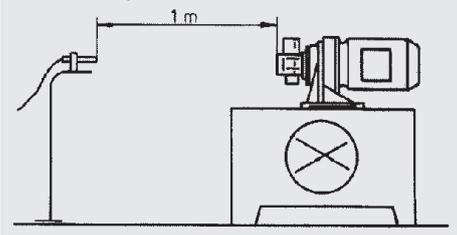
-20 °C to +100 °C

#### 2.1.3 Noise level reduction

The noise level reduction achieved depends on many factors such as pump type, operating pressure, type of fitting, design etc. It is therefore not possible to quote exact figures. In general, noise level reductions of up to 6 db(A) can be achieved.

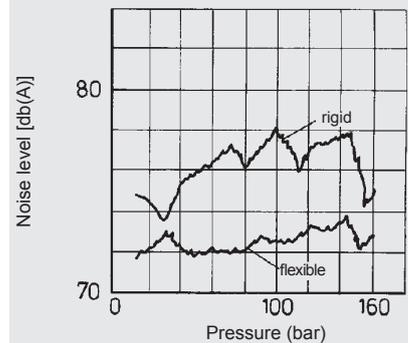
The illustration in the next column shows how the test is set up, together with a graph showing typical noise level improvements when using a flexible bell housing compared to a rigid bell housing.

Test set-up



Bell housing with foot bracket mounted on the oil tank cover plate.

Noise level diagram



### 2.1.4 Notes on mounting

The fixing bolts used for mounting the motor to the pump must be long enough in order to fully utilize the available thread depth on the bell housing. If the bolts used are too short, there is the risk of damaging the thread.

### 2.1.5 Weight loading

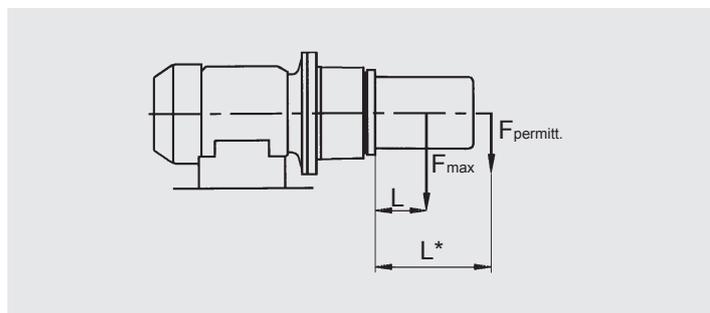
The permitted radial or axial load of the bell housing with flexible and rigid pump mounting, allowing for an operating temperature of +60 °C:

Bell housings Nominal size	Type of Damping ring	Permitted force due to gravity $F_{max}$ [N]	Centre of gravity distance for radial load $L$ [mm]
160	Only rigid bell housing possible		
200	E	400	200
	K	500	
250	E	600	200
	K	800	
300	E	1000	200
	K	1300	
350	E	1500	200
	K	2000	
400	E	2200	200
	K	3000	
450	E	4000	200
	K	5500	
550	E	4000	200
	K	5500	
660	E	4500	200
	K	6000	
800	Only rigid bell housing possible		

For a larger centre of gravity distance  $L^*$  the permitted force due to gravity is reduced according to the following formula:

$$F_{\text{permitt.}^*} = \frac{F_{\text{max.}} \cdot L}{L^*} \text{ [N]}$$

If the centre of gravity distance  $L^*$  of the pump is smaller than the centre of gravity distance  $L$  in the table, then the permitted force due to gravity  $F_{\text{permitt.}}$  for the pump is equal to the maximum force due to gravity  $F_{\text{max}}$  in the table.



## 2.2. SPECIFICATIONS

### 2.2.1 Permitted fluids

Mineral oil to DIN 51524, other fluids on request.

### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

### 3. MODEL CODE

PT - 250 / 5.0 / M / FL001 - E / F3

**Type** \_\_\_\_\_

PTS = Rigid bell housing  
PT = Flexible bell housing

**Nominal size for IEC standard motor** (type of mounting B5, B35, V1, V15) \_\_\_\_\_

Nominal size PTS / PT	Type		Electric motor size	Output n = 1430 rpm
	Rigid	Flexible		
160	x		71	0.25 - 0.37 kW
200	x	x	80/90	0.55 - 1.5 kW
250	x	x	100/112	2.2 - 4.0 kW
300	x	x	132	5.5 - 7.5 kW
350	x	x	160/180	11 - 22 kW
400	x	x	200	30 kW
450	x	x	225	37 - 45 kW
550	x	x	250/280	55 - 90 kW
660	x	x	315	110 - 200 kW
800	x		335/400	250 - 400 kW

**Model with additional bores** \_\_\_\_\_

Rigid PTS	Flexible PT	Additional bores
2.0	5.0	Without additional bore (standard)
5.1	5.1	1x Leakage bore
5.3	5.3	Additional bores to Cnomo standard*

**Mineral oil resistance** (Special models on request) \_\_\_\_\_

**Bore template code for pump connection** (see our sizing program PT-WIN) \_\_\_\_\_

**Type of damping ring** (only required for flexible bell housings) \_\_\_\_\_

**E** = standard  
**K** = damping ring for higher loads (greater rigidity)

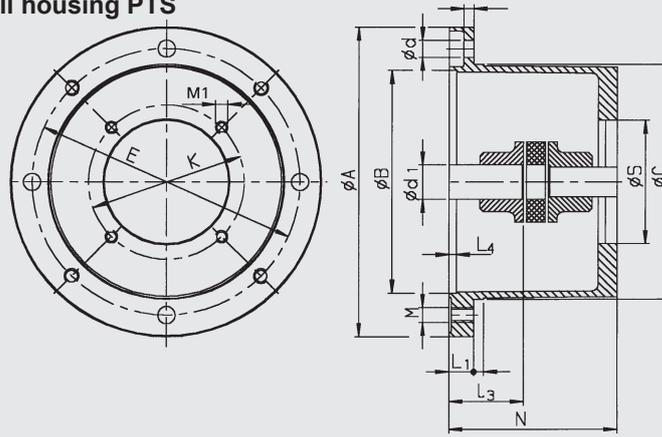
**Accessories** \_\_\_\_\_

... = without accessories (no details)  
**F3** = bell housing foot bracket

\* Cnomo: 1x mounting hole with grille, 1x leakage bore

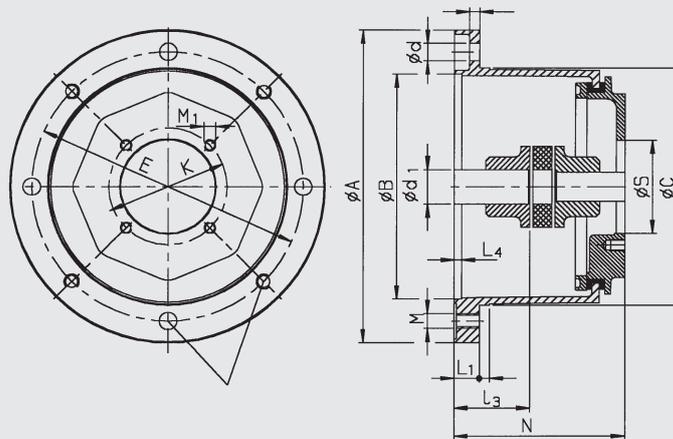
### 3.1. DIMENSIONS

#### 3.1.1 Dimensions of rigid bell housing PTS



Electric motor size	KW at n =1500 1/min	Drive shaft Ød <sub>1</sub> x l <sub>3</sub>	Bell housing	Ø A	Ø B	Ø C	E	M	Ø d	L1	L4
71	0.25 - 0.37	14x30	PTS-160	160	110	110	130	M8	9	13	4
80	0.55 - 0.75	19x40									
90S-90L	1.1 - 1.5	24x50	PTS-200	200	130	145	165	M10	11	16	6
100L-112M	2.2 - 4	28x60	PTS-250	250	180	190	215	M12	14	19	6
132S-132M	5.5 - 7.5	38x80	PTS-300	300	230	234	265	M12	14	20	6
160M-160L	11 - 15	42x110									
180M-180L	18.5 - 22	48x110	PTS-350	350	250	260	300	M16	18	25	6
200 L	30	55x110	PTS-400	400	300	300	350	M16	18	25	6
225S-225M	37 - 45	60x140	PTS-450	450	350	350	400	M16	18	25	6
250M	55	65x140									
280S-280M	75 - 90	75x140	PTS-550	550	450	450	500	M16	18	26	6
315S-315L	110 - 200	80x170	PTS-660	660	550	550	600	M20	22	32	6
355L-400L	250 - 400	95x170	PTS-800	800	680	680	740	M20	23	60	10

#### 3.1.2 Dimensions of flexible bell housing PT



Electric motor size	KW at n =1500 1/min	Drive shaft Ød <sub>1</sub> x l <sub>3</sub>	Bell housing	Ø A	Ø B	Ø C	E	M	Ø d	L1	L4
80	0.55 - 0.75	19x40	PT-200	200	130	145	165	M10	11	16	6
90S-90L	1.1 - 1.5	24x50									
100L-112M	2.2 - 4	28x60	PT-250	250	180	190	215	M12	14	20	6
132S-132M	5.5 - 7.5	38x80	PT-300	300	230	234	265	M12	14	20	6
160M-160L	11 - 15	42x110									
180M-180L	18.5 - 22	48x110	PT-350	350	250	260	300	M16	18	25	6
200 L	30	55x110	PT-400	400	300	300	350	M16	18	25	6
225S-225M	37 - 45	60x140	PT-450	450	350	350	400	M16	18	25	6
250M	55	65x140									
280S-280M	75 - 90	75x140	PT-550	550	450	450	500	M16	18	40	6
315S-315L	110 - 200	80x170	PT-660	660	550	550	600	M20	22	32	6

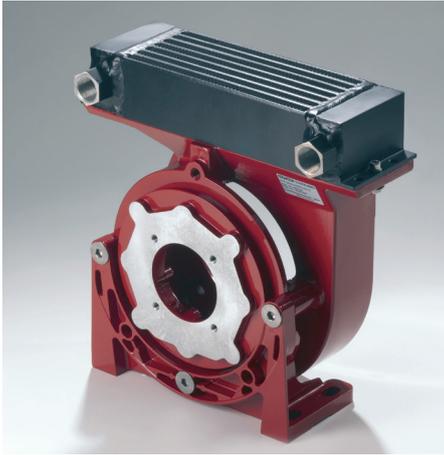
To identify the bore template code (dimensions N, S, K, M1), please use our sizing program PT-WIN as far as possible, or consult Head Office. You can download and use the PT-WIN program free of charge from our website [www.hydac.com](http://www.hydac.com) by clicking through Support » Download » Software » Product Division - Accessories.

#### Accessories:

For the range of accessories (bell housing foot brackets, bell housing mounting plate, damping rails, damping rings and couplings) please use our supplementary brochure "Bell Housing Accessories". This brochure can be downloaded from our website [www.hydac.com](http://www.hydac.com).

#### HYDAC Accessories GmbH

Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: [www.hydac.com](http://www.hydac.com)  
 E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Bell Housings with Flexible Pump Mounting with Oil/Air Cooler

### PTK Series

## 1. DESCRIPTION

### 1.1. GENERAL

Bell housings are connection elements between drive motors and hydraulic pumps.

Both connecting flanges are supplied ready for installation.

The bell housings are made from an aluminium cast alloy.

On the PTK (bell housing with built-in oil/air cooler) the oil is cooled efficiently by an air stream produced by a fan mounted on the motor shaft.

This combination of noise-damping bell housing and oil/air cooler considerably simplifies the construction and reduces the cost of hydraulic systems.

The high cooling capacity of the built-in cooler enables the user to reduce his tank capacity.

This reduction in oil quantity results in a reduction in operating costs and oil disposal costs.

### 1.2. MODELS

Bell housings with flexible pump mounting and oil/air cooler are supplied with dimensions to the VDMA 24561 standard.

## 2. TECHNICAL SPECIFICATIONS

### 2.1. GENERAL

#### 2.1.1 Mounting position

Optional.

Once both mounting bolts have been removed, the cooler element can be turned through 180° (ports point towards the motor or to the pump).

#### 2.1.2 Temperature ranges

During operation of the PTK, ensure that the maximum oil temperature of +100 °C is not exceeded.

Warning! If there is a temperature difference of over 50 °C between the oil inlet on the cooler element and the ambient temperature, large fluctuations in temperature (e.g. by turning on and off frequently) must be avoided. Otherwise this could result in significant reduction in lifetime or direct damage to the element through stress cracking.

Permitted ambient temperature: -20 °C to +60 °C

#### 2.1.3 Noise level reduction

PTKs have a flexible damping ring as standard between the bell housing and pump flange.

This ensures a complete decoupling of the pump from the motor and bell housing.

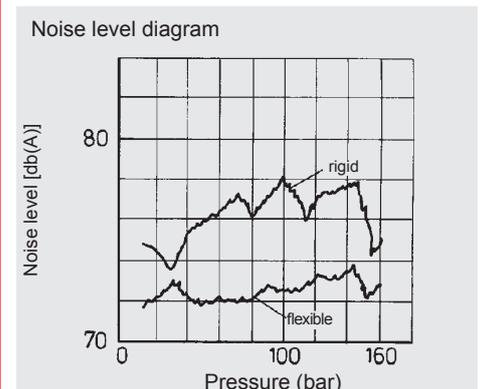
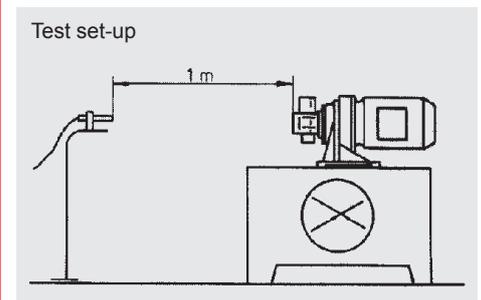
The additional use of flexible damping rails reduces the noise level still further.

Basically, the noise level reduction achieved depends on many factors such as pump type, operating pressure, type of fitting, design etc.

It is therefore not possible to quote exact figures.

In general, noise level reductions of up to 6 dB(A) can be achieved by using the flexible pump mounting.

The illustration below shows how the test is set up, together with a graph showing typical noise level improvements when using a flexible bell housing compared with a rigid bell housing.



### 2.1.4 Notes on mounting

The fixing bolts used for mounting the motor to the pump must be long enough in order to fully utilize the available thread depth on the PTK.

If the bolts used are too short, there is the risk of damaging the thread and consequently the whole unit.

### 2.1.5 Weight loading

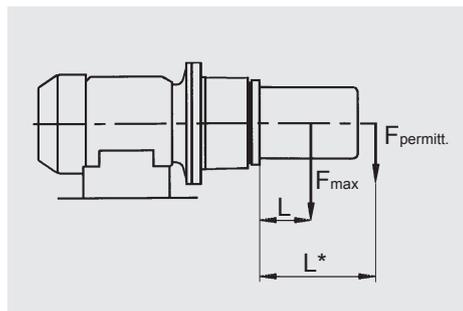
The permitted radial or axial load of the PTK with flexible pump mounting, allowing for an operating temperature of +60 °C:

PTK Nominal size	Type of damping ring	Permitted force due to gravity $F_{max}$ [N]	Centre of gravity distance for radial load $L$ [mm]
200/2001	E	400	200
250	E	700	200
300	E	1150	200
350/3501	E	1500	200

For a larger centre of gravity distance  $L^*$  the permitted force due to gravity is reduced according to the following formula:

$$F_{\text{permitt.}^*} = \frac{F_{\text{max.}} \cdot L}{L^*} \text{ [N]}$$

If the centre of gravity distance  $L^*$  of the pump is smaller than the centre of gravity distance  $L$  in the table, then the permitted force due to gravity  $F_{\text{permitt.}}$  for the pump is equal to the maximum force due to gravity  $F_{\text{max}}$  in the table.



## 2.2. SPECIFICATIONS

### 2.2.1 Coolant

Mineral oil to DIN 51524, other fluids on request

### 2.2.2 Nominal rpm for drive

$n=1430$  1/min

(Base rpm for the stated technical data)

(up to 3000 1/min possible)

### 2.2.3 Direction of rotation

When looking at the pump shaft **clockwise**

### 2.2.4 Air flow rate

Nominal size	Volume
PTK-200	approx. 72 m³/h
PTK-2001	approx. 72 m³/h
PTK-250	approx. 260 m³/h
PTK-300	approx. 435 m³/h
PTK-350	approx. 780 m³/h
PTK-3501	approx. 780 m³/h

### 2.2.5 Power requirement for fan

Nominal size	Rotation speed	
	1430 1/min	1800 1/min
PTK-200	20 Watt	30 Watt
PTK-2001	20 Watt	30 Watt
PTK-250	30 Watt	50 Watt
PTK-300	90 Watt	130 Watt
PTK-350	140 Watt	220 Watt
PTK-3501	140 Watt	220 Watt

### 2.2.6 Noise levels for PTK with electric motor without pump

(measured to DIN 45635, Part 1)

Nominal size	Output of electric motor at 1430 1/min	PTK with electric motor
PTK-200	1.5 kW	52 db(A)
PTK-250	4 kW	58 db(A)
PTK-300	5.5 kW	69 db(A)
PTK-350	11 kW	70 db(A)

The noise levels with electric motor depend on the make of motor.

The noise levels are only a guide as the acoustic properties of a room and reflections have an effect on the noise level.

## 2.3. HYDRAULIC DATA

### 2.3.1 Cooler element

#### Material

Aluminium

#### Pressure resistance

– At an operating pressure of  $\leq 16$  bar and a temperature  $\leq 50$  °C, 2 million cycles (2 Hz) are achieved. For higher operating pressures and/or temperatures, the life expectancy will be shorter.

– Maximum operating pressure at static pressure resistance is 40 bar.

#### Mounting

When mounting or dismantling the threaded connection of the cooler inlet or outlet, the torque must be countered (protects the cooler element from distortions). Please also see the assembly instructions supplied with the product.

## NOTE

The information in this brochure relates to the operating conditions and applications described.

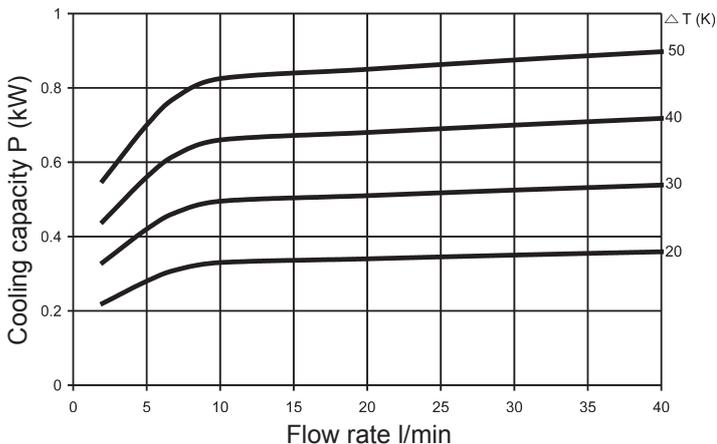
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

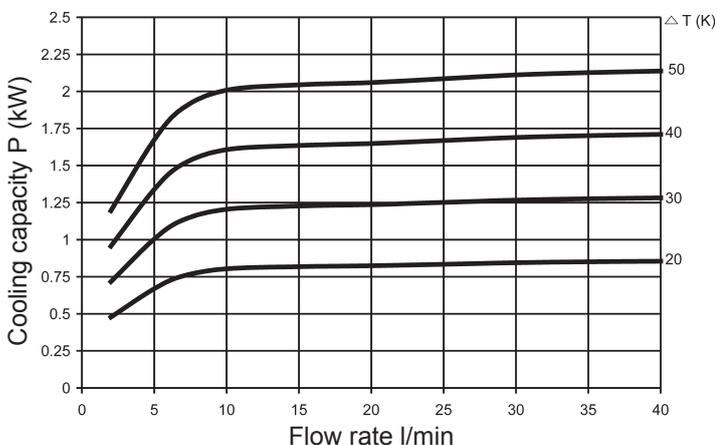
### 2.3.2 Cooling capacity

Cooling capacity against oil flow rate for different temperature differentials  $\Delta T$  between oil inlet and air inlet.  
(Motor rpm 1430 1/min)

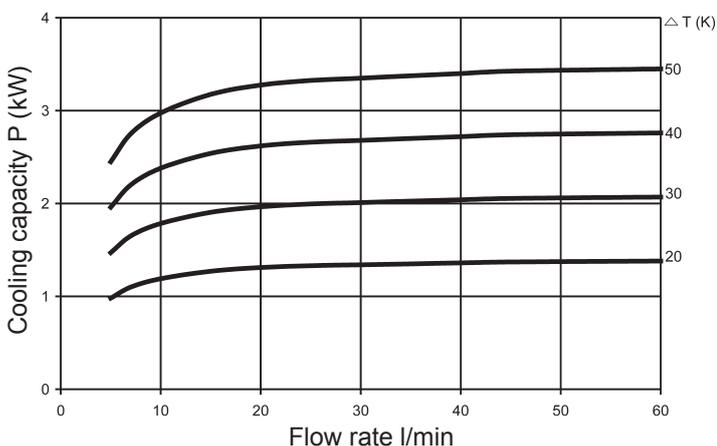
#### PTK-200/PTK-2001



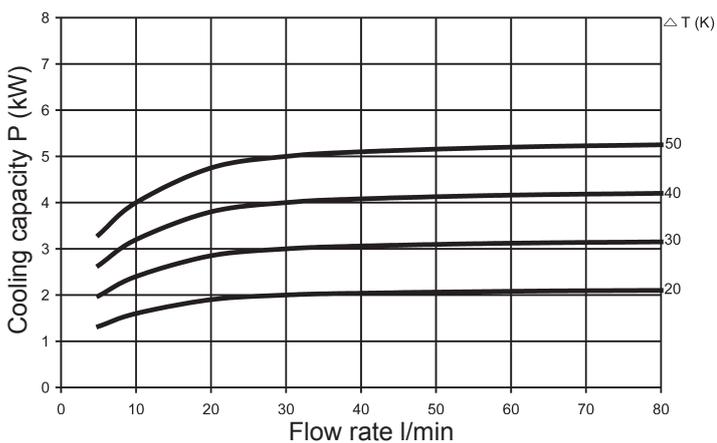
#### PTK-250



#### PTK-300



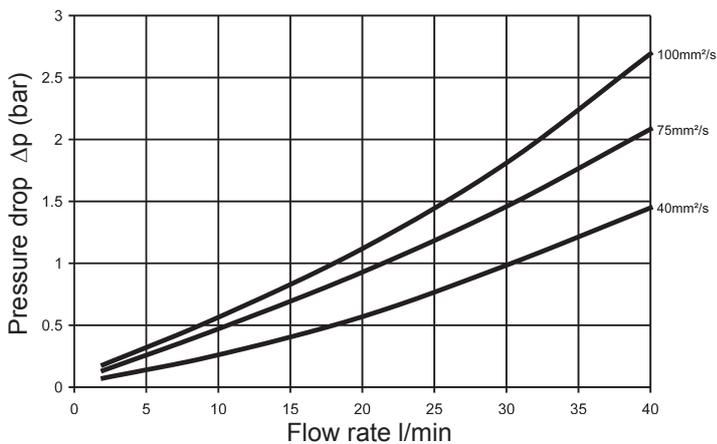
#### PTK-350/PTK-3501



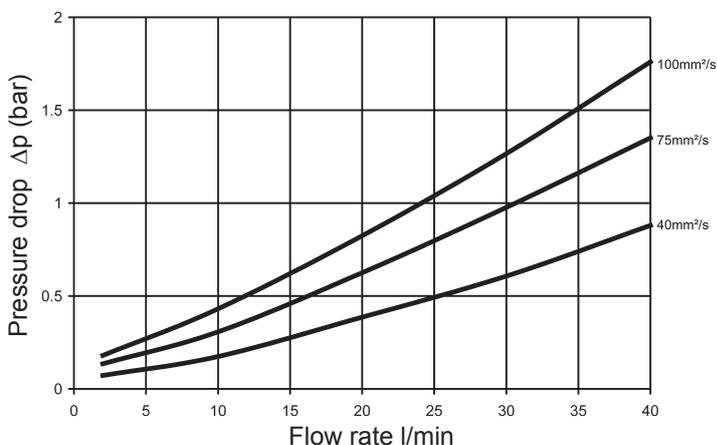
### 2.3.3 Pressure drop $\Delta p$ in the cooler element

Flow direction is optional. The differential pressure  $\Delta p$  is shown against flow rate for different viscosities.

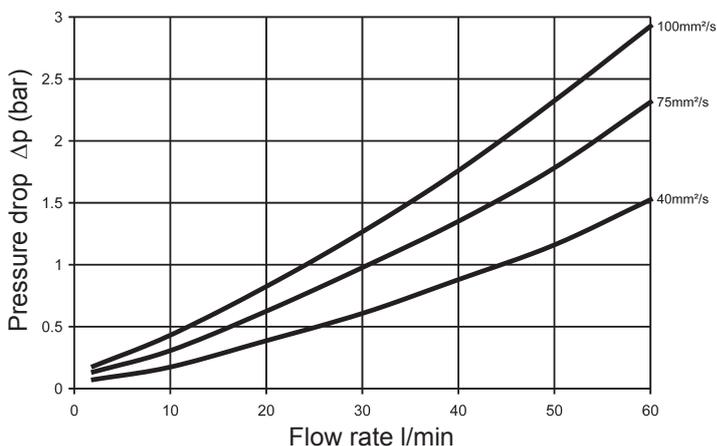
#### PTK-200/PTK-2001



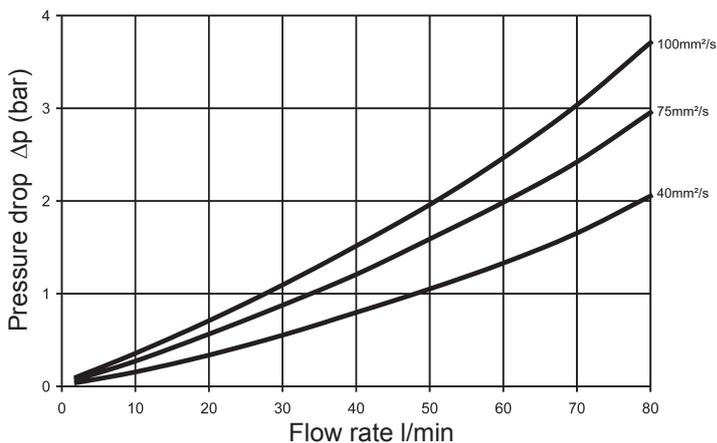
#### PTK-250



#### PTK-300



#### PTK-350/PTK-3501



### 3. MODEL CODE

PTK - 250 / 2.X / M / FL001 - E / F3

Bell housing with flexible pump mounting and built-in oil/air cooler

Nominal size for IEC standard motor (type of mounting B5, B35, V1, V15)

Nominal size PTK	Size Electric motor	Output n = 1430 rpm
2001	80	0.55 - 0.75 kW
200	90	1.1 - 1.5 kW
250	100/112	2.2 - 4.0 kW
300	132	5.5 - 7.5 kW
350	160	11.0 - 15.0 kW
3501	180	18.5 - 22.0 kW

Modification number

Mineral oil resistance (Special models on request)

Bore template code for pump connection (please use our sizing program PT-WIN)

Type of damping ring

E = standard

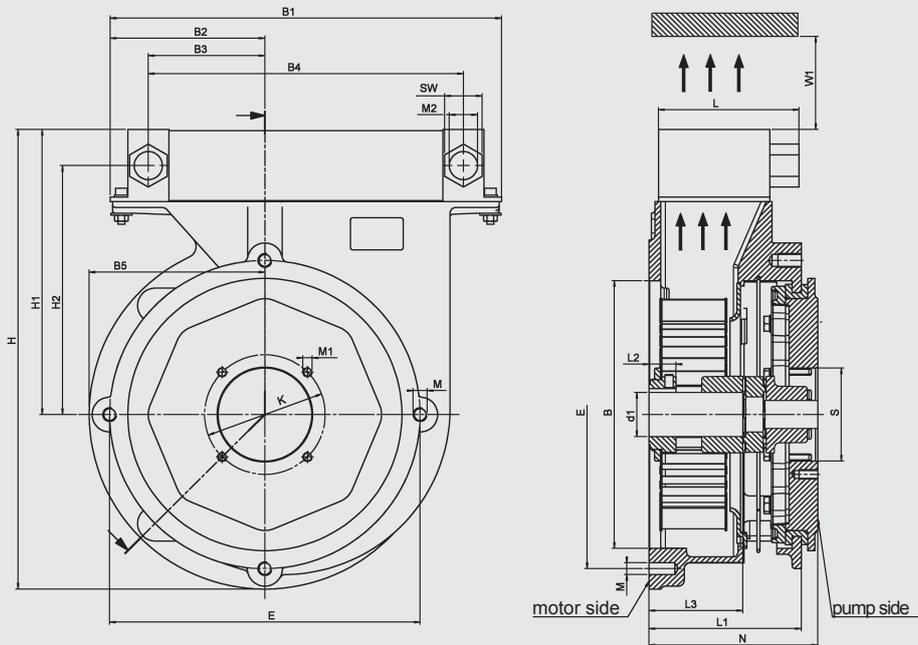
K = damping ring for higher loads (greater rigidity)

Accessories

... = without accessories (no details)

F3 = bell housing foot bracket

#### 3.1. DIMENSIONS



Electric motor	Output at 1500 rpm	Electric Drive shaft	PTK Nominal size	PTK Foot bracket	PTK Mounting plate	H	H1	H2	B	E	M	B1	B2	B3	B4	B5	SW	M2	L	L1	L2	min. W1
80	0.55	19 x 40	PTK-2001	PTFL-200	PP200	275	174	143	130	164	M10	260	110	77.5	195	100	32	G3/4	84	80	21	120
90 S	1.1	24 x 50	PTK-200																			
90 L	1.5																					
100 L	2.2	28 x 60	PTK-250	PTFL-250	PP250	327	197	166	180	215	M12	334	156	123.5	269	130	32	G3/4	120	105	23	160
112 M	4																					
132 S	5.5	38 x 80	PTK-300	PTFL-300	PP-300	395	245	214	230	265	M12	334	132	99.5	269	150	32	G3/4	120	130	23	200
132 M	7.5																					
160 M	11	42 x 110	PTK-350																			
160 L	15			PTFL-350	-	437	262	231	250	300	M16	334	102	69.5	269	175	32	G3/4	148	170	31	240
180 M	18.5	48 x 110	PTK-3501																			
180 L	22																					

To identify the bore template code (dimensions N, S, K, M1), please use our sizing program PT-WIN as far as possible, or ask at our Head Office. You can download and use the PT-WIN program free of charge from our website [www.hydac.com](http://www.hydac.com) by clicking through Support » Download » Software » Product Division - Accessories.

#### Accessories:

For the range of accessories (bell housing foot brackets, bell housing mounting plate, damping rails, damping rings and couplings) please use our supplementary brochure "Bell Housing Accessories". This brochure can be downloaded from our website [www.hydac.com](http://www.hydac.com).

#### HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

Tel.: +49 (0)6897 - 509-01

Fax: +49 (0)6897 - 509-1009

Internet: [www.hydac.com](http://www.hydac.com)

E-Mail: [info@hydac.com](mailto:info@hydac.com)

## Bell Housing Set



### 1. DESCRIPTION

To connect HYDAC pumps easily and effectively to the drive motors, HYDAC Accessories provides bell housing sets.

Depending on the requirements, the sets consist of corresponding bell housings and couplings. Foot brackets are also available for the bell housing and damping rails, as an option.

### 2. VARIANTS OF THE BELL HOUSINGS

Bell housings are connecting parts between drive motors and hydraulic pumps.

They are made in an aluminium alloy, in dimensions according to VDMA 24561. Both connecting flanges are supplied ready for installation.

Using a HYDAC bell housing eliminates costly alignment work.

#### Possible versions:

- Rigid bell housing (PTS)
- Flexible bell housing (PT)
- Flexible bell housing with oil-air cooler (PTK)

#### Selecting the matching nominal size

Motor size	Bell housing size	Motor power at 1500 rpm kW *	Bell housing version		
			PTS rigid	PT flexible	PTK flexible with oil-air cooler
71	160	0.25-0,37	x	not available	
80	2001	0.55-0,75	x	x	x
90S	200	1.1	x	x	x
90L	200	1.5	x	x	x
100L	250	2.2-3	x	x	x
112M	250	4	x	x	x
132S	300	5.5	x	x	x
132M	300	7.5	x	x	x
160M	350	11	x	x	x
160L	350	15	x	x	x
180M	3501	18.5	x	x	x
180L	3501	22	x	x	x
200L	400	30	x	x	not available
225S	450	37	x	x	
225M	450	45	x	x	
250M	550	55	x	x	
280S	5501	75	x	x	
280M	5501	90	x	x	
315S	660	110	x	x	
315M	660	132	x	x	
315L	6601	160-200	x	x	

#### Order details

- Electric motor size
- Motor power [kW]
- Motor speed [rpm]
- Complete pump designation

\* For other motor speeds or sizes please get in touch.

### 3. Model code (also example order)

**PTK – 2001 / 2.0 / PPV100 / 016 / S F00 - 00**

#### Version of the bell housing base

PTS = rigid bell housing  
 PT = flexible bell housing  
 PTK = flexible bell housing with oil-air cooler

#### Set size

Set size	Motor size	Power at 1500 rpm *		
160	71	0.25	- 0.37	kW
2001	80	0.55	- 0.75	kW
200	90S-90L	1.1	- 1.5	kW
250	100L-112M	2.2	- 4	kW
300	132S-132M	5.5	- 7.5	kW
350	160M-160L	11	- 15	kW
3501	180M-180L	18.5	- 22	kW
400	200L		30	kW
450	225S-225M	37	- 45	kW
550	250M		55	kW
5501	280S-280M	75	- 90	kW
660	315S-315M	110	- 132	kW
6601	315L	160	- 200	kW

\* For other motor speeds or sizes please get in touch.

#### Version

2.0 = standard  
 5.3 = to CNOMO standard (leakage hole and assembly hole with grille)

#### Pump series

PPV100 axial piston pump medium pressure series  
 PPV101 axial piston pump light heavy duty series  
 PPV102 axial piston pump heavy duty series  
 PPV103 axial piston pump light medium pressure series  
 PVF100 vane pump, fixed displacement  
 PVF101 vane pump as double pump  
 PVV100 vane pump, variable displacement, pilot-operated  
 PVV101 vane pump variable displacement, direct-acting  
 PGE101-PGE104 gear pump

#### Set designation

HYDAC issues the designation of the set.

## 4. ACCESSORIES

To complement the pump mounting set, HYDAC Accessories also offers foot brackets and damping rails.

You will find extensive information in our brochure "Bell housing accessories" (E 5.616), which you can download from our web site [www.hydac.com](http://www.hydac.com).

### BELL HOUSING FOOT BRACKETS

HYDAC bell housing foot brackets to simply fasten the motor pump unit to the unit

- Bell housing foot brackets to VDMA 24561
- Lightweight and heavy series available off the shelf
- Reduction of the motor bearing bracket to IMB5/V1
- Simple replacement of the electric motor
- It is also possible to set up the hydraulic pump and pipework without an electric motor
- Available sizes:
  - lightweight series: PF-160/3 to PF-300/3
  - heavy series: PF-250/4 to PF-660/4

### DAMPING RAILS

HYDAC damping rails decouple vibrations and lower the noise level

- For bell housing foot brackets to VDMA 24561 in the light and heavy duty design
- Resistant to mineral oil due to NBR rubber compound
- Designed for weight-bearing when installed horizontally
- Reduces noise & vibration
- Available from stock
- Special lengths and/or special designs available on request
- Available sizes:
  - FDS.../3 for bell housing foot brackets for light range
  - FDS.../4 for bell housing foot brackets for the heavy duty range



### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Bell Housing Accessories



### FLEXIBLE DRIVE (SPIDER) COUPLINGS

Features  
Code  
Dimensions



### GEAR COUPLINGS

Features  
Code  
Dimensions



### BELL HOUSING FOOT BRACKETS

Light-duty range  
Heavy-duty range



### BELL HOUSING MOUNTING PLATE

Bell housing mounting plate  
Seal for bell housing mounting plate



### DAMPING RAILS

Damping rails for motors  
Damping rails for bell housing foot brackets



### DAMPING RINGS

Application  
Dimensions



### TANK SET



## Flexible Drive (Spider) Couplings

### FEATURES

- Torsionally flexible and vibration damping due to elastomer toothed insert (spider) with 98° Shore A (polyurethane)
- Elastomer is only subjected to compression loading
- Axial plug-in
- Failsafe as a result of positive-fit power transmission
- Maintenance-free
- Axial, radial and angular misalignment compensation
- Available in aluminium (Al), cast iron (GG/GGG) or steel (St)
- Temperature range:  
-30 °C to +90 °C for continuous operation, -40 °C to +120 °C for short-term operation

### MODEL CODE

(also order example)

Coupling 24/28 - 28 / 22.2 F ALU

**Coupling size** \_\_\_\_\_

**Version of motor hub** \_\_\_\_\_

28 = 28H7 cylindrical bore with key to DIN 6885

**Version of pump hub** \_\_\_\_\_

22.2F = 22.2 code F (7/8") imperial hole

B17...TN2A = tapered bores

SAE ... = profiled bores / spline shafts

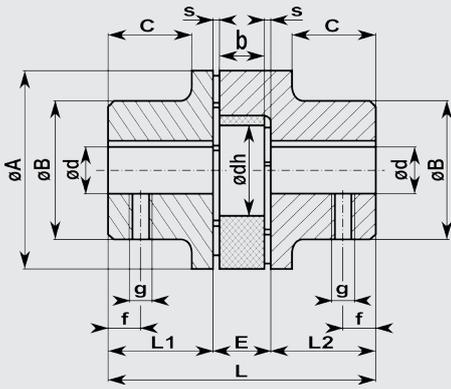
**Special model** \_\_\_\_\_

... = coupling in cast iron or steel (no details required)

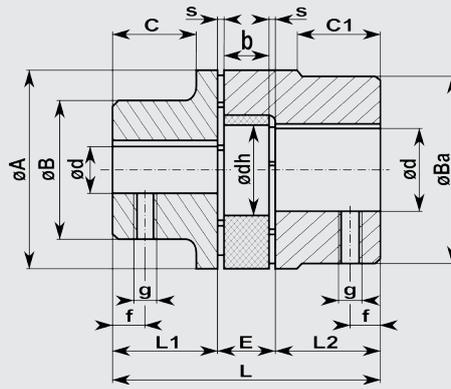
ALU = coupling in aluminium

ATEX = with ATEX approval

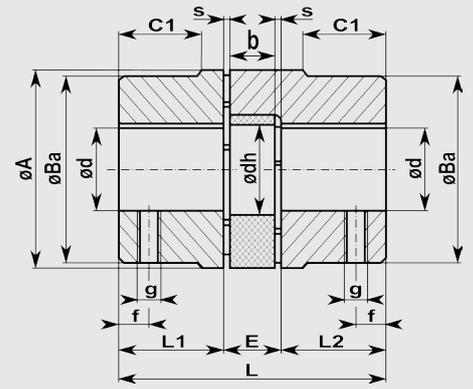
## DIMENSIONS



**Hub combination A/A**  
e.g. Coupling 28 – 28/20



**Hub combination A/B**  
e.g. Coupling 28/38 – 28/35



**Hub combination B/B**  
e.g. Coupling 28/38 – 38/38

### Coupling hubs in aluminium

Order example: Coupling 19/24-24/14 ALU

Type	max. kW at 1000 rpm	max. kW at 1500 rpm	Bores						Dimensions [mm]												Weight [kg]					
			A-hub			B-hub			Pilot hole	Finished bore Ø d	Pilot hole	Finished bore Ø d	A	B	OM	L	L1+L2	E	s	b		C	C1	dh	g	f
			Pilot hole	min	max	Pilot hole	min	max																		
19/24	1.1	1.5	5	6	19	18	19	24	40	32	39	66	25	16	2	12	20	21	18	M5	10	0.13				
24/28	2.2	4	7	8	24	15	16	32	55	40	53	78	30	18	2	14	24	26	27	M5	10	0.26				
28/38	5.5	7.5	8	10	28	25	28	38	65	48	63	90	35	20	3	15	28	29	30	M6	15	0.46				
38/45	11	15	13	14	38	35	38	45	80	66	79	114	45	24	3	18	37	39	38	M8	15	0.9				
42/55	22	30	13	19	42	40	42	55	95	75	94	126	50	26	3	20	40	41	46	M8	20	1.39				
48/60	30	45	18	19	48	46	48	60	105	85	104	140	56	28	4	21	45	46	51	M8	20	1.86				

### Coupling hubs in steel / cast iron

Order example: Coupling 24/28-20/24

Type	max. kW at 1000 rpm	max. kW at 1500 rpm	Bores						Dimensions [mm]												Weight [kg]					
			A-hub			B-hub			Pilot hole	Finished bore Ø d	Pilot hole	Finished bore Ø d	A	B	OM	L	L1+L2	E	s	b		C	C1	dh	g	f
			Pilot hole	min	max	Pilot hole	min	max																		
19/24	1.1	1.5	–	6	19	–	12	24	40	32	39	66	25	16	2	12	20	21	18	M5	10	0.35				
24/28	2.2	4	–	10	24	–	14	32	55	40	52	78	30	18	2	14	24	26	27	M5	10	1				
28/38	5.5	7.5	–	12	28	22	24	38	65	45	62	90	35	20	2.5	15	28	29	30	M6	15	1.6				
38/45	11	15	–	14	38	30	38	45	80	66	77	114	45	24	3	18	37	37	38	M8	15	2.3				
42/55	22	30	–	19	42	15	42	55	95	75	94	126	50	26	3	20	40	40	46	M8	20	3.6				
48/60	30	45	–	19	48	15	48	60	105	85	102	140	56	28	3.5	21	45	45	51	M8	20	4.8				
55/70	37	55	–	19	55	47	55	70	120	98	118	160	65	30	4	22	52	52	60	M10	20	7.4				
65/75	55	90	–	22	65	57	65	75	135	115	132	185	75	35	4.5	26	61	59	68	M10	20	10.9				
75/90	90	132	–	30	75	50	75	90	160	135	158	210	85	40	5	30	69	65	80	M10	25	17.7				
90/100	250	315	29	40	90	79	90	100	200	160	180	245	100	45	5.5	34	81	81	100	M10	25	29.5				
100/110	315	315	–	–	–	40	55	110	225	–	200	270	110	50	6	38	–	89	113	M12	30	43.5				

## IMPERIAL BORES

Order Code	Ød mm	Ød Inch	Groove	
			b+0.05	t2+0.2
9.5 TB	9.5	3/8	3.17	11.1
11.11 DNB	11.11	7/16	2.4	12.5
12.69 T	12.69	1/2	4.75	14.6
12.7 TA	12.7	1/2	3.17	14.3
13.45 DNC	13.45	17/32	3.17	14.9
14.29 DO	14.29	9/16	3.17	15.6
15.87 E	15.87	5/8	3.17	17.5
15.87 S	15.87	5/8	3.97	17.9
15.88 ES	15.88	5/8	4.0	17.7
15.85 DND	15.852	5/8	4.75	18.1
15.87 ED	15.87	5/8	4.75	18.1
17.47 DNH	17.465	11/16	4.75	19.6
19.02 AD	19.02	3/4	3.17	20.7
19.02 AS	19.02	3/4	4.78	21.3
19.05 A	19.05	3/4	4.78	21.3
22.2 FA	22.2	7/8	6.35	25.2
22.23 DNI	22.228	7/8	6.35	25.0
22.22 GS	22.22	7/8	4.78	24.4
22.22 g	22.22	7/8	4.75	24.7
22.22 GB	22.22	7/8	4.78	25.5
22.22 F	22.22	7/8	6.38	25.2
22.225 GD	22.225	7/8	4.76	24.7
23.8 GF	23.8	15/16	6.35	26.8
25.0 HB	25.0	63/64	6.35	28.7
25.38 BA	25.38	1	6.35	27.6
25.38 BS	25.38	1	6.37	28.3
25.4 H	25.4	1	4.78	27.8
25.4 HS	25.4	1	6.35	28.7
26.95 R	26.95	1 1/16	4.78	29.3
28.58 SA	28.575	1 1/8	6.35	31.7
28.58 SB	28.58	1 1/8	6.35	31.5
28.58 SD	28.58	1 1/8	7.93	32.1
31.7 JA	31.7	1 1/4	7.93	34.4
31.71 JC	31.71	1 1/4	7.93	35.3
31.75 JS	31.75	1 1/4	6.35	34.6
31.75 K	31.75	1 1/4	7.93	35.5
31.75 KS	31.75	1 1/4	7.93	36.6
31.76 DNK	31.755	1 1/4	7.93	35.3
34.93 MA	34.925	1 3/8	7.93	38.7
34.92 M	34.92	1 3/8	7.93	38.6
34.93 RH1	34.93	1 3/8	9.55	37.8
36.5 CB	36.5	1 7/16	9.55	40.9
38.07 CA	38.07	1 1/2	7.93	42.0
38.07 C	38.07	1 1/2	9.55	42.5
41.25 N	41.25	1 5/8	9.55	45.6
41.28 NB	41.275	1 5/8	9.55	45.8
44.42 LS	44.42	1 3/4	9.55	48.8
44.45 LA	44.45	1 3/4	11.0	48.1
44.45 L	44.45	1 3/4	11.11	49.4
47.63 LU	47.625	1 7/8	12.7	53.5
49.2 DA	49.2	1 15/16	12.7	55.0
50.77 DS	50.77	2	12.7	56.4
50.8 D	50.8	2	12.7	55.1
53.95 P	53.95	2 1/8	12.7	59.6
53.98 PA	53.975	2 1/8	12.7	60.0
57.1 U	57.1	2 1/4	12.73	62.9
60.33 UB	60.325	2 3/8	15.875	67.6
73.03 WA	73.025	2 7/8	19.05	81.7
85.73 WD	85.725	3 3/8	22.225	95.8
92.08 WF	92.075	3 5/8	22.225	101.9

## PROFILE BORES

Profile spline DIN 5480	Profile DIN 5482	Profile SAE
N 20 x 1.25 x 14 x 9 G	A 17 x 14	SAE 5/8" - 16/32 - Z9
N 25 x 1.25 x 18 x 9 G	A 28 x 25	SAE 3/4" - 16/32 - Z11
N 30 x 2 x 14 x 9 G	A 30 x 27	SAE 7/8" - 16/32 - Z13
N 35 x 2 x 16 x 9 G	A 35 x 31	SAE 1" - 16/32 - Z15
N 40 x 2 x 18 x 9 G	A 40 x 36	SAE 1-1/8" - 16/32 - Z17
N 45 x 2 x 21 x 9 G	A 45 x 41	SAE 1-1/4" - 12/24 - Z14
N 50 x 2 x 24 x 9 G	A 48 x 44	SAE 1-3/8" - 16/32 - Z21
N 55 x 2 x 24 x 9 G	A 50 x 45	SAE 1-1/2" - 12/24 - Z17
N 60 x 2 x 28 x 9 G	A 58 x 53	SAE 1-1/2" - 16/32 - Z23
N 70 x 3 x 22 x 9 G	A 70 x 64	SAE 1-3/4" - 16/32 - Z27
N 80 x 3 x 25 x 9 G		SAE 1-3/4" - 8/16 - Z13
N 90 x 3 x 28 x 9 G		SAE 2" - 8/16 - Z15
		SAE 2-1/4" - 8/16 - Z17

## TAPER BORES

Order code	Cone 1:8			
	Ød	b	t2	l
TN1	9.75	2.40	10.7	17.0
TN1C	11.60	3.00	12.9	16.5
TN1E	13.00	2.40	13.8	21.0
TN1D	14.00	3.00	15.5	17.5
TN1B	14.30	3.20	15.7	19.5
TN2	17.20	3.20	18.3	24.0
TN2A	17.20	4.00	18.9	24.0
TN2B	17.20	3.00	18.3	24.0
TN3	22.00	4.00	23.4	28.0
TN4	25.46	4.78	27.8	36.0
TN4B	25.46	5.00	28.2	36.0
TN4A	27.00	4.78	28.8	32.5
TN4G	28.45	6.00	29.3	38.5
TN5	33.17	6.38	35.4	44.0
TN5A	33.17	7.00	35.4	44.0

Order code	Cone 1:5			
	Ød	b	t2	l
A10	9.85	2	10.9	11.5
B17	16.85	3	18.9	18.5
C20	19.85	4	22.0	21.5
Cs22	21.95	3	23.8	21.5
D25	24.85	5	27.9	26.5
E30	29.85	6	32.5	31.5
F35	34.85	6	37.5	36.5
G40	39.85	6	45.5	41.5

 = Standard

## Gear Couplings



### FEATURES

- Flexible shaft connection
- Axial, radial and angular misalignment compensation
- Coupling hub in steel, coupling sleeve in polyamide
- Torque transmission without radial stress due to double Cardan construction
- Temperature range: -25 °C to +80 °C for continuous operation

### MODEL CODE

(also order example)

Coupling B 24 24H7 / 20H7

Gear coupling \_\_\_\_\_

Coupling size \_\_\_\_\_

Version of motor hub \_\_\_\_\_

24H7 = cylindrical bore with key to DIN 6885

Version of pump hub \_\_\_\_\_

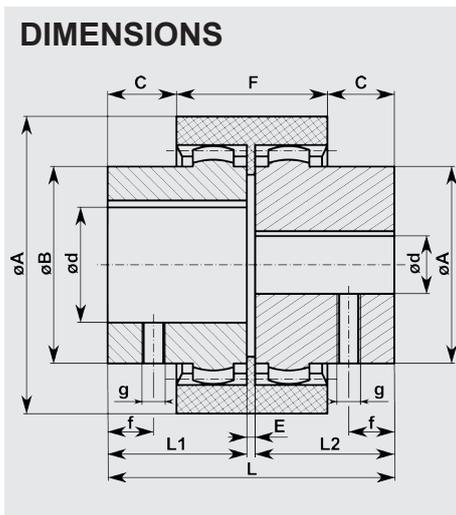
20H7 = cylindrical bore with key to DIN 6885

22.2F = 22.2 Code F (7/8") imperial bore\*

B17/TN2A = tapered bore\*

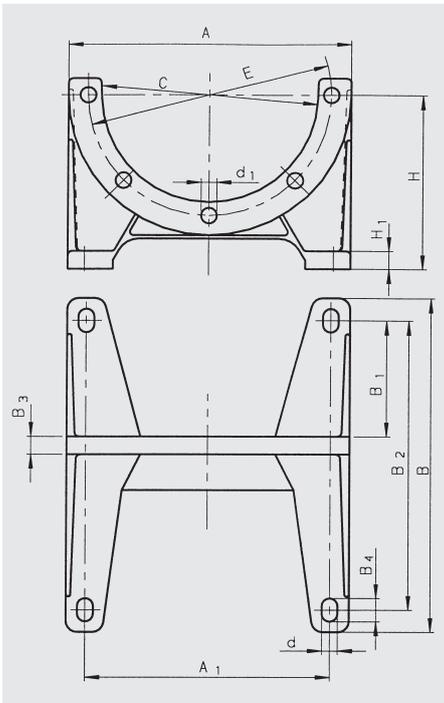
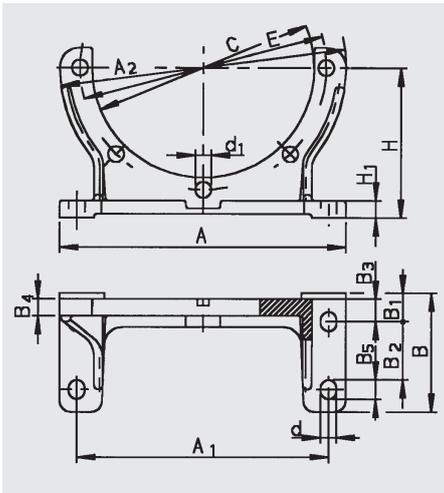
\* see tables under flexible drive couplings

### DIMENSIONS



Type	max. kw for 1000 rpm	max. kw for 1500 rpm	Pilot hole	Finished-holes d [mm]		Dimensions [mm]										Weight [kg]
				Min.	Max.	A	B	L	L1 + L2	E	C	F	g	f		
B 24	1.10	1.50	—	10	24	52	36	56	26	4	7.5	41	M 5	6	0.316	
B 28	2.20	4.00	7	10	28	66	44	84	40	4	19	46	M 8	10	0.739	
B 38	5.50	7.50	12	14	38	83	58	84	40	4	18	48	M 8	10	1.22	
B 42	11.00	15.00	12	20	42	92	65	88	42	4	19	50	M 8	10	1.49	

## Bell Housing Foot Brackets for PT, PTK, PTS



### LIGHT-DUTY RANGE TO VDMA 24561

Size	Part no.	A	A1	A2	B	B1	B2	B3	B4	B5	H	H1	d	C	E	d1
PF-160/3	3130712	160	140	–	80	15	50	7	12	–	100	10	9	110	130	9
PF-200/3	953938	210	180	200	93	14	60	3	8	23	112	12	11	146	165	11
PF-250/3 for PT, PTS	3326868	250	220	–	110	20	60	21	19	–	132	15	14	190	215	14
PF-250/3 for PTK*	3290117	250	220	–	110	20	60	21	19	–	132	15	14	190	215	14
PF-300/3	953710	290	260	300	120	19	80	19	15	32	160	15	14	240	265	14

\* additional counterbore for use with countersunk screws

### HEAVY-DUTY RANGE TO VDMA 24561

Size	Part no.	A	A1	B	B1	B2	B3	B4	H	H1	d	C	E	d1
PF-350/3*	953942	350	300	305	70	265	18	22	180	18	18	265	300	18
PF-250/4	3045399	250	215	260	60	185	15	24	155	15	14	190.3	215	14
PF-300/4	3043132	300	265	270	75	225	18	24	185	18	14	234.5	265	14
PF-350/4	3045259	350	300	305	90	265	18	30	235	18	18	260	300	18
PF-400/4	3044298	400	350	350	100	300	20	30	260	20	18	302	350	18
PF-450/4	3044299	450	400	385	110	335	22	30	295	20	18	352	400	18
PF-550/4	3030682	550	500	465	140	415	25	30	350	25	18	452	500	18
PF-660/4	3044300	660	600	555	165	495	30	40	380	30	22	552	600	22

\* PF-350/3 is part of the light-duty range but has dimensions according to drawing on left

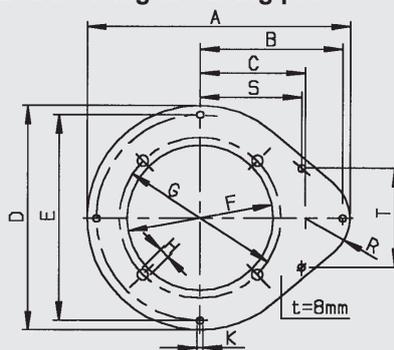
## Bell Housing Mounting Plate for Bell Housings Type PT, PTK, PTS



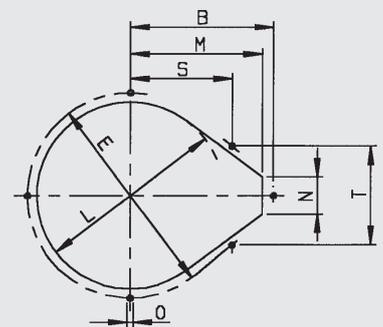
### FEATURES

- Enables the complete motor-pump unit to be fitted and removed from outside the tank
- Simplifies cleaning and maintenance
- Bell housing mounting plate in aluminium, seal in NBR rubber (mineral oil resistant)

Bell housing mounting plate

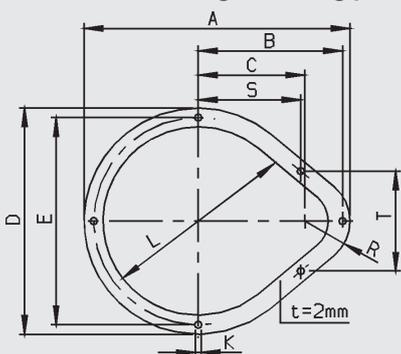


Oil tank cut-out



Size	Part no.	A	B	C	D	E	F	G	H	K	R	L	M	N	O	S	T
PP 200	273931	325	190	140	250	225	146	165	11	9.5	60	200	175	50	M8	84	168
PP 250	272058	350	190	140	300	275	194	215	14	9.5	60	250	175	50	M8	135	134
PP 300	272059	423	225	150	350	330	246	265	14	14.5	98	300	200	100	M12	160	190
PP 350	637939	475	225	160	410	380	262	300	18	14	110	350	200	136	M12	112	307.5

Seal for bell housing mounting plate



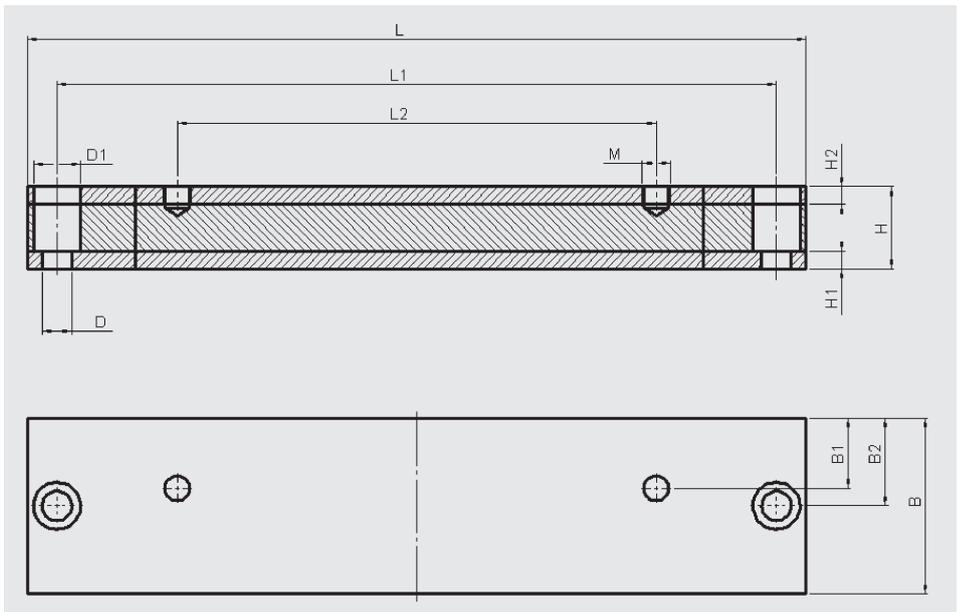
Size	Part no.	A	B	C	D	E	K	R	L	S	T
PPD 200	952788	325	190	140	250	225	10	60	200	84	168
PPD 250	952789	350	190	140	300	275	10	60	250	135	134
PPD 300	952812	420	225	150	360	330	15	90	300	160	190
PPD 350	3159093	475	225	160	410	380	20	110	350	112	307.5

## Damping Rails for Electric Motors Mounting-Type IMB35



### FEATURES

- Horizontal base mounting (not overhead mounted)
- Machined ready for IMB 35 motors
- Noise reduction due to decoupling
- Resistant to mineral oil due to NBR rubber compound, shore A60 $\pm$ 5
- Special lengths and models are possible on request



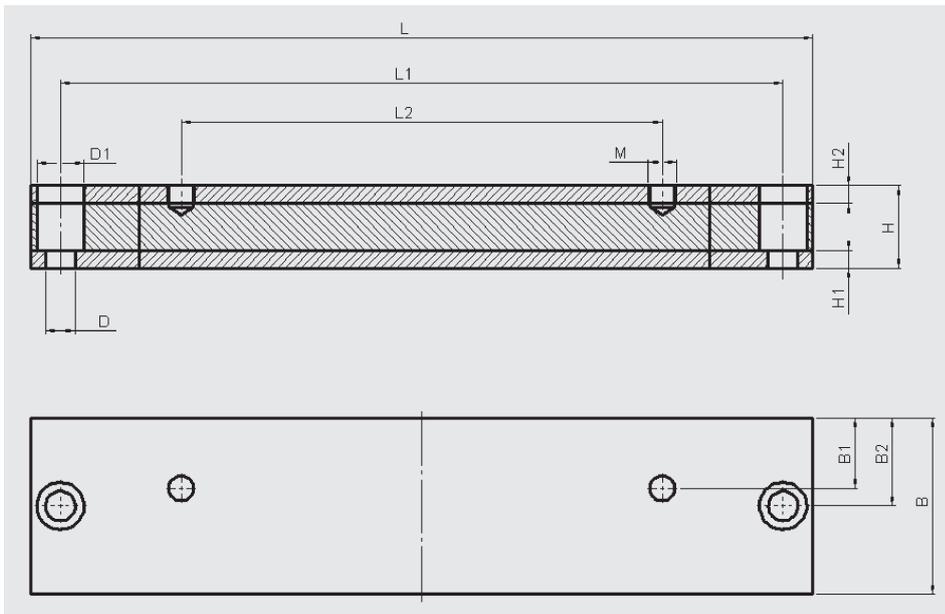
Damping rails	For type	Part no.	L	L1	L2	H	H1	H2	B	B1	B2	D	D1	M
MDS 080	80	3134999	176	146	100	40	8	12	50	22	25	14	20	M8
MDS 090S	90S	721987	196	156	100	40	8	12	50	22	25	14	20	M8
MDS 090L	90L	721988	240	205	125	40	8	12	50	24	25	14	20	M8
MDS 100L	100L	721989	240	205	140	40	8	12	50	24	25	14	20	M10
MDS 112M	112M	3065818	240	205	140	40	8	12	50	20	25	14	20	M10
MDS 132S	132S	721990	285	245	140	45	8	12	50	20	25	14	20	M10
MDS 132M	132M	721991	285	245	178	45	8	12	50	20	25	14	20	M10
MDS 160M	160M	721992	340	300	210	60	15	15	70	28	35	18	26	M12
MDS 160L	160L	3128252	416	370	254	60	15	15	70	28	35	18	26	M12
MDS 180M	180M	3234395	416	370	241	60	15	15	70	35	35	18	26	M12
MDS 180L	180L	721995	446	400	279	60	15	15	70	35	35	18	26	M12
MDS 200L	200L	724279	496	430	305	60	15	15	70	35	35	22	32	M16
MDS 225S	225S	3042916	496	430	286	60	15	15	70	35	35	22	32	M16
MDS 225M	225M	723832	496	445	311	60	15	15	70	35	35	22	32	M16
MDS 250M	250M	722801	496	445	349	60	15	15	100	50	50	25	40	M20
MDS 280S	280S	3042928	580	530	368	60	15	15	100	50	50	25	40	M20
MDS 280M	280M	3042929	580	530	419	60	15	15	100	50	50	25	40	M20
MDS 315S	315S	3026755	660	610	406	70	15	15	150	60	75	25	40	M24
MDS 315M	315M	3026452	660	610	457	70	15	15	150	60	75	25	40	M24
MDS 315L	315L	3065559	720	670	508	70	15	15	150	60	75	25	40	M24

## Damping Rails for Bell Housing Foot Bracket



### FEATURES

- Horizontal base mounting (not overhead mounted)
- Ready machined for bell housing base
- Noise reduction due to decoupling
- Resistant to mineral oil due to NBR rubber compound, shore A60 $\pm$ 5
- Special lengths and models are possible on request



Damping rails *	For type	Part no.	L	L1	L2	H	H1	H2	B	B1	B2	D	D1	M
FDS 160/3	PF160/3	3156788	166	120	50	40	8	12	50	19	25	14	20	M8
FDS 200/3	PF200/3	721983	190	150	60	40	8	12	50	21	25	14	20	M10
FDS 250/3	PF250/3	721984	225	185	60	40	8	12	50	21	25	14	20	M12
FDS 300/3	PF300/3	721985	285	245	80	45	8	12	50	21	25	14	20	M12
FDS 350/3	PF350/3	721986	380	340	265	60	8	12	70	29	35	18	26	M16
FDS 300/4	PF300/4	3169191	350	300	225	40	8	12	50	25	20	14	20	M12
FDS 350/4	PF350/4	3169192	375	340	265	60	15	15	70	29	35	18	26	M16
FDS 400/4	PF400/4	3044302	420	385	300	60	15	15	70	30	35	18	26	M16
FDS 450/4	PF450/4	3044304	455	420	335	60	15	15	70	30	35	18	26	M16
FDS 550/4	PF550/4	3044305	535	500	415	60	15	15	70	30	35	18	26	M16
FDS 660/4	PF660/4	3044306	660	610	495	60	15	15	70	30	35	22	32	M20

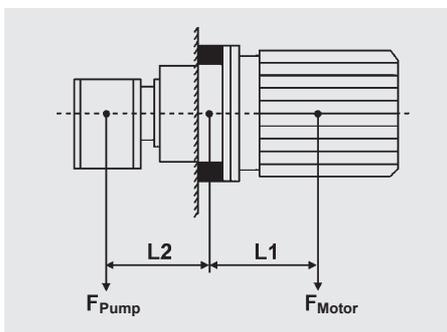
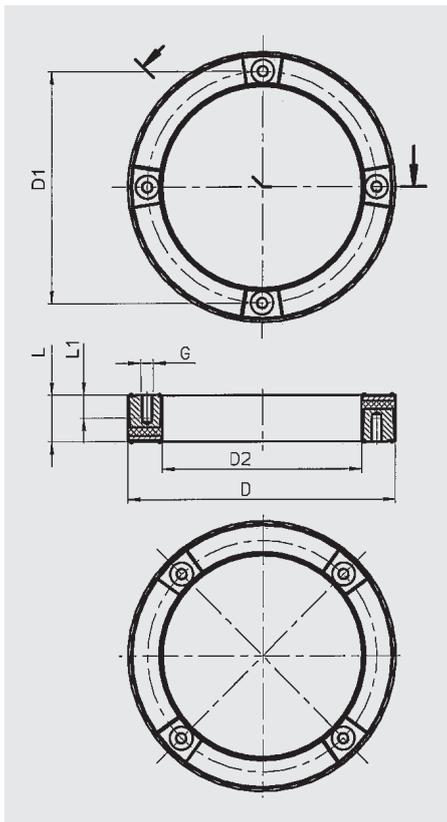
\*FDS .../3 for bell housing foot bracket for the light-duty range  
FDS .../4 for bell housing foot bracket for heavy-duty range

## Damping Rings



### APPLICATION

- For vertical and horizontal mounting
- Cost-effective noise reduction due to decoupling
- Resistant to mineral oil through the use of NBR rubber compound
- Vulcanized seal lip, no additional seal required



### DIMENSIONS

Damping ring type	IEC motor size	Part no.	Dimensions [mm]					
			D	D1	D2	G	L1	L
DFR-V1/B5 200	80, 90S / 90L	3026885	200	165	146	4xM10	18	40
DFR-V1/B5 250	100L / 112 M	3026886	250	215	191	4xM12	22	45
DFR-V1/B5 300	132S / 132 M	3026887	300	265	235	4xM12	22	50
DFR-V1/B5 350	160M / 160L / 180M / 180 L	3210971	350	300	261	4xM16	28	60
DFR-V1/B5 400	200L	3210987	400	350	301	4xM16	29	50
DFR-V1/B5 450	225S / 225M	1151180	450	400	352	8xM16	32	60
DFR-V1/B5 550	250M / 280S / 280M	1151181	550	500	452	8xM16	32	60
DFR-V1/B5 660	315S / 315M	3041666	660	600	552	8xM20	33	65
DFR-V1/B5-350-VS	160M / 160L / 180M / 180L	3870296	350	300	261	4xM16	22	60
DFR-V1/B5-400-VS	200L	3870297	400	350	301	4xM16	29	50
DFR-V1/B5-450-VS	225S / 225M	3870298	450	400	352	8xM16	32	60

Permitted radial weight load and bending stress, allowing for an operating temperature of + 60 °C:

**Maximum permitted force:**  $F_{\text{pump}} + F_{\text{motor}} \leq F_{\text{perm.}}$

**Maximum permitted bending moment:**  $F_{\text{motor}} \times L1 - F_{\text{pump}} \times L2 \leq Mb_{\text{perm.}}$

Damp. ring type	200	250	300	350	400	450	550	660
$F_{\text{perm.},L}$ [N]	385	755	1520	3780	5040	6800	13390	24720
$Mb_{\text{perm.}}$ [Nm]	32	68	184	770	1135	1650	4530	9270

## TankSet



### COMPONENT PARTS:

- Tank (aluminium)
- Feet (aluminium)
- Cover seal
- Cover (steel, black primer)
- Fluid level gauge FSA
- Return Line Filter RF
- Breather filter BFP
- Screw set



Type	Tank size LxBxH1/H2	Coordinates L1/B1	Part. no.	Displ. vol. (l)	Fluid level gauge	Return line filter with filter cartridge 10 µm	Breather filters
HYNG 6.5-140	260x220x170/10	85/85	3102944	6	FSA 076	RF 30	BFP3G10W3.0
HYNG 12-140	310x240x215/75	81/86	3104404	10	FSA 076	RF 30	BFP3G10W3.0
HYNG 12-160	310x240x215/75	96/96	3102945	10	FSA 076	RF 30	BFP3G10W3.0
HYNG 20-160	366x288x245/75	99/100	3102946	17	FSA 076	RFM 75	BFP3G10W3.0
HYNG 20-200	366x288x245/75	119/120	3104405	17	FSA 076	RFM 75	BFP3G10W3.0
HYNG 30-200	490x340x275/150	125/120	3104406	27	FSA 076	RFM 165	BFP3G10W3.0
HYNG 30-250	490x340x275/150	150/145	3102947	27	FSA 076	RFM 165	BFP3G10W3.0
HYNG 44-200	515x415x305x150	170/170	3104407	40	FSA 127	RFM 165	BFP3G10W3.0
HYNG 44-250	515x415x305x150	170/170	3103018	40	FSA 127	RFM 165	BFP3G10W3.0
HYNG 70-250	605x465x355/150	170/170	3103019	63	FSA 127	RFM 165	BFP3G10W3.0
HYNG 70-300	605x465x355/150	170/170	3104428	63	FSA 127	RFM 165	BFP3G10W3.0
HYNG 130-xxx	760x600x396/150	x/x	-	123	FSA 127	RFM 185	BFP3G10W3.0

### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

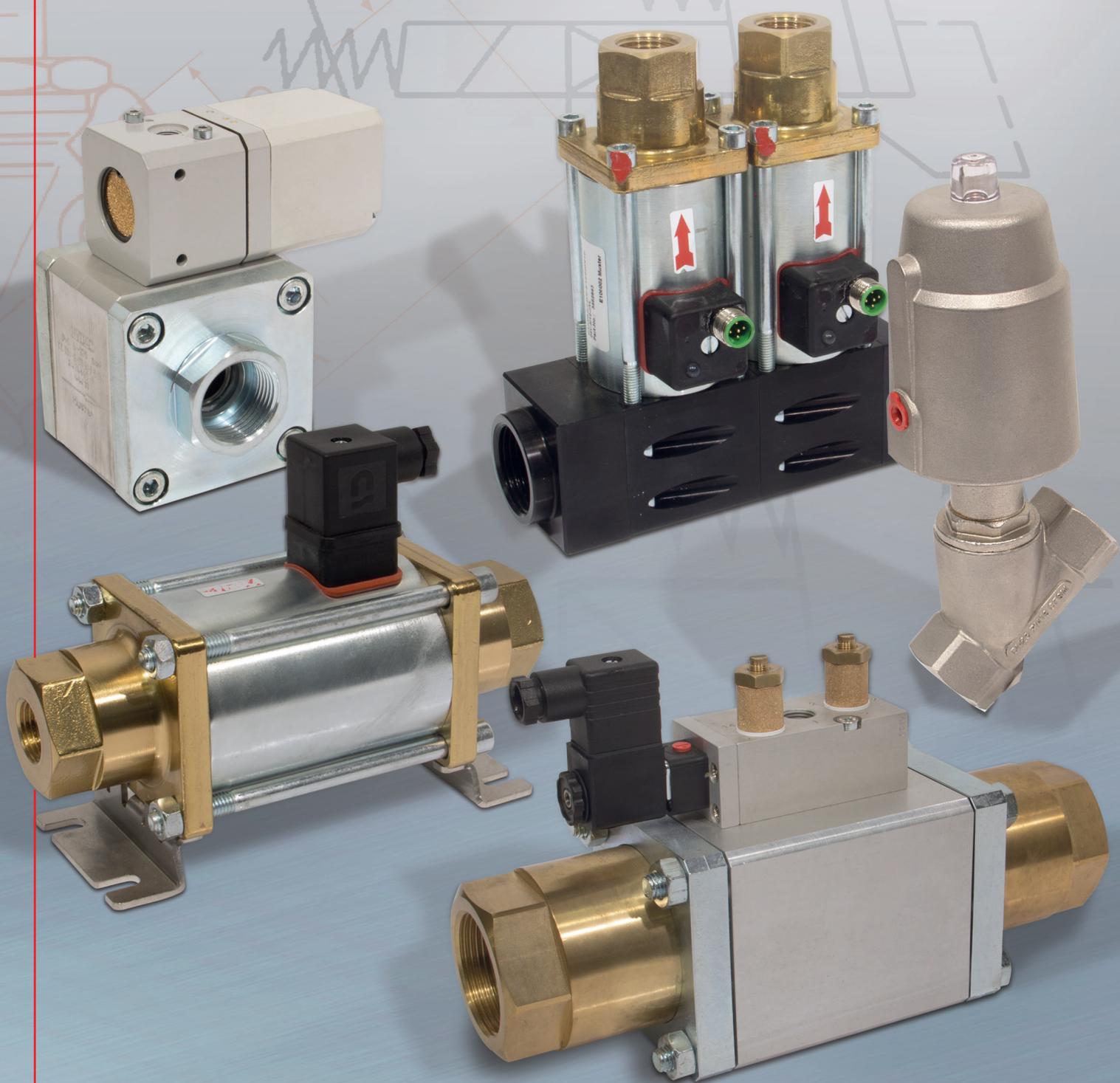
**HYDAC Accessories GmbH**  
 Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: [www.hydac.com](http://www.hydac.com)  
 E-Mail: [info@hydac.com](mailto:info@hydac.com)



**HYDAC**

**INTERNATIONAL**

**Catalogue  
of CX valves**



## Introduction

For the control of vacuum, gaseous, liquid, gelatinous, abrasive, dirty and aggressive media, HYDAC ACCESSORIES offers a diverse range of well-established valves available on demand and from stock.

■ Piston Valves,  
pilot-operated

■ Coaxial Valves,  
direct acting and pilot-operated

■ Pressure Relief Valves,  
pilot-operated

In low pressure systems HYDAC piston valves guarantee a high level of reliability. They are designed as pilot-operated seat valves and are pneumatically-actuated with a spring return.

In high pressure systems, e.g. where coolant at 80 bar is used to cool and lubricate internally cooled tools through 0.3 fine drill channels, the HYDAC Coaxial Valves are largely insensitive to contamination and ensure trouble-free production.

For easy integration in blocks and systems, these valves are available not only as individual valves, but also as stacking and customized special solutions. available singly but also as stacking assemblies and as customer-specific special solutions.

In addition, HYDAC ACCESSORIES offers a comprehensive range of accessories for final installation and optimizing fluid technology systems:

- Mounting technology for pipes, hoses, cables, reservoirs and components
- Ball valves in standard, change-over, 3 and 4 way, flange and manifold designs
- Fluid level gauges, Fluid level sensors
- Bell housings, rigid and flexible
- Test points and quick release couplings, connections
- Flexible drive couplings and gear couplings
- Tank set

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

# Catalogue overview

	Valve type	Control system	Series / brochure no.	Page
Overview of switching cycles and switching times				299
	<b>2/2-way Piston valves</b>	<b>Pilot operated</b>	CXK01, CXK02 E 6.175	<b>301</b>
	<b>2/2-way Coaxial valves</b>	<b>Direct acting</b>	CX02, CX03, CX04, CX05 E 6.176	<b>307</b>
		<b>Pilot operated</b>	CX06, CX07, CX08, CX09 E 6.178	<b>311</b>
	<b>3/2-way Coaxial valves</b>	<b>Direct acting</b>	CX03, CX04 E 6.180	<b>317</b>
		<b>Pilot operated</b>	CX06, CX07 E 6.181	<b>321</b>
	<b>2/2-way Coaxial valves Flange design</b>	<b>Direct acting</b>	CX02F, CX03F, CX05F E 6.183	<b>325</b>
		<b>Pilot operated</b>	CX06F, CX07F, CX08F E 6.184	<b>329</b>
	<b>2/2-way Coaxial valves Modular design</b>	<b>Direct acting</b>	CX03M, CX04M, CX05M E 6.177	<b>333</b>
		<b>Pilot operated</b>	CX06M, CX07M, CX08M E 6.179	<b>339</b>
	<b>2/2-way Coaxial valves Compact</b>	<b>Pilot operated</b>	CXR E 6.188	<b>345</b>
	<b>2/2-way Coaxial valves Compact, modular design</b>	<b>Pilot operated</b>	CXRM E 6.189	<b>349</b>
	<b>2/2-way Coaxial valves Compact, modular design</b>	<b>Pilot operated</b>	CXC E 6.190	<b>355</b>
	<b>2/2-way Coaxial valves High pressure</b>	<b>Direct acting</b>	CXH1, CXH2 E 6.182	<b>359</b>

## Catalogue overview / continued

	<b>2/2-way Coaxial valves ATEX</b>	<b>Direct acting</b>	CXEX E 6.186	<b>363</b>
	<b>2/2-way Coaxial valves ATEX, modular design</b>	<b>Direct acting</b>	CXMEX E 6.185	<b>367</b>
	<b>3/2-way Coaxial valves ATEX</b>	<b>Direct acting</b>	CX EX E 6.191	<b>371</b>
	<b>2/2 way Pressure relief valves Coaxial design</b>	<b>Pilot operated</b>	CX CBV E 6.172	<b>375</b>
	<b>2/2 way Pressure relief valves Right angle design</b>	<b>Pilot operated</b>	CX DBV E 6.173	<b>381</b>

# Overview of switching cycles and switching times for coaxial valves, direct acting

Measuring conditions: Valve depressurised  
70 % rated voltage  
Solenoid in cold condition  
Closing time with flyback diode

Series	Ways	Pressure [bar]	Control	DN	Switching cycles [1/min]	Switching time [ms]	
						Opening	Closing
CX02	2/2	0 - 20	Direct acting	10	320	80	105
		0 - 20		15	420	70	70
		0 - 20		20	220	120	145
		0 - 20		25	115	320	200
		0 - 20		32	80	490	240
CX03	2/2	0 - 40	Direct acting	10	400	40	110
		0 - 40		15	420	60	80
		0 - 40		20	250	90	150
		0 - 40		25	130	250	205
		0 - 40		32	80	490	240
		0 - 16		40	60	440	500
		0 - 16		50	60	440	500
CX04	2/2	0 - 64	Direct acting	10	410	35	110
		0 - 64		15	420	55	85
		0 - 64		20	260	80	150
		0 - 64		25	140	220	210
		0 - 64		32	80	490	240
CX05	2/2	0 - 100	Direct acting	10	410	35	110
		0 - 100		15	420	55	85
		0 - 100		20	260	80	150
		0 - 100		25	140	220	210
		0 - 100		32	80	490	240
CX03M	2/2	0 - 40	Direct acting	10	400	40	110
		0 - 40		15	420	60	80
		0 - 40		20	250	90	150
		0 - 40		25	130	250	205
		0 - 40		32	80	490	240
CX04M	2/2	0 - 64	Direct acting	10	410	35	110
		0 - 64		15	420	55	85
		0 - 64		20	260	80	150
		0 - 64		25	140	220	210
		0 - 64		32	80	490	240
CX05M	2/2	0 - 100	Direct acting	10	410	35	110
		0 - 100		15	420	55	85
		0 - 100		20	260	80	150
		0 - 100		25	140	220	210
		0 - 100		32	80	490	240
CX03	3/2	0 - 40	Direct acting	10	400	40	110
		0 - 40		15	420	60	80
		0 - 40		20	250	90	150
		0 - 40		25	130	250	205
		0 - 40		32	80	490	240
		0 - 16		40	60	440	500
		0 - 16		50	60	440	500
CX04	3/2	0 - 64	Direct acting	10	410	35	110
		0 - 64		15	420	55	85
		0 - 64		20	260	80	150
		0 - 64		25	140	220	210
		0 - 64		32	80	490	240

# Overview of switching cycles and switching times for coaxial valves, pilot operated

Measuring conditions: Ventil depressurised  
4 bar pilot pressure  
Closing time with flyback diode

Series	Ways	Pressure [bar]	Control	DN	Switching cycles [1/min]	Switching time [ms]	
						Opening	Closing
CX06	2/2	0 - 64	Pilot operated	10	680	30 - 3000	50 - 3000
		0 - 64		15	600	50 - 3000	50 - 3000
		0 - 64		20	600	50 - 3000	50 - 3000
		0 - 64		25	600	50 - 3000	50 - 3000
		0 - 64		32	400	75 - 3000	75 - 3000
		0 - 64		40	300	100 - 3000	100 - 3000
		0 - 64		50	300	100 - 3000	100 - 3000
CX07	2/2	0 - 120	Pilot operated	10	680	30 - 3000	50 - 3000
		0 - 120		15	600	50 - 3000	50 - 3000
		0 - 120		20	600	50 - 3000	50 - 3000
		0 - 120		25	600	50 - 3000	50 - 3000
		0 - 100		32	400	75 - 3000	75 - 3000
		0 - 100		40	300	100 - 3000	100 - 3000
		0 - 100		50	300	100 - 3000	100 - 3000
CX08	2/2	0 - 160	Pilot operated	10	680	30 - 3000	50 - 3000
		0 - 160		15	600	50 - 3000	50 - 3000
		0 - 160		20	600	50 - 3000	50 - 3000
		0 - 160		25	600	50 - 3000	50 - 3000

CX06M	2/2	0 - 64	Pilot operated	10	680	30 - 3000	50 - 3000
		0 - 64		15	600	50 - 3000	50 - 3000
		0 - 64		20	600	50 - 3000	50 - 3000
		0 - 64		25	600	50 - 3000	50 - 3000
		0 - 64		32	400	75 - 3000	75 - 3000
CX07M	2/2	0 - 120	Pilot operated	10	680	30 - 3000	50 - 3000
		0 - 120		15	600	50 - 3000	50 - 3000
		0 - 120		20	600	50 - 3000	50 - 3000
		0 - 120		25	600	50 - 3000	50 - 3000
		0 - 100		32	400	75 - 3000	75 - 3000
CX08M	2/2	0 - 160	Pilot operated	10	600	50 - 3000	50 - 3000
		0 - 160		15	400	75 - 3000	75 - 3000
		0 - 160		20	300	100 - 3000	100 - 3000
		0 - 160		25	300	100 - 3000	100 - 3000

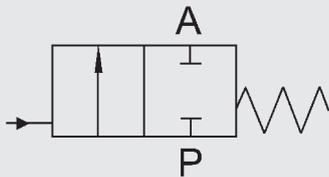
CX06	3/2	0 - 64	Pilot operated	10	680	30 - 3000	50 - 3000
		0 - 64		15	600	50 - 3000	50 - 3000
		0 - 64		20	600	50 - 3000	50 - 3000
		0 - 64		25	600	50 - 3000	50 - 3000
		0 - 64		32	400	75 - 3000	75 - 3000
		0 - 64		40	300	100 - 3000	100 - 3000
		0 - 64		50	300	100 - 3000	100 - 3000
CX07	3/2	0 - 100	Pilot operated	10	680	30 - 3000	50 - 3000
		0 - 100		15	600	50 - 3000	50 - 3000
		0 - 100		20	600	50 - 3000	50 - 3000
		0 - 100		25	600	50 - 3000	50 - 3000
		0 - 100		32	400	75 - 3000	75 - 3000
		0 - 100		40	300	100 - 3000	100 - 3000
		0 - 100		50	300	100 - 3000	100 - 3000



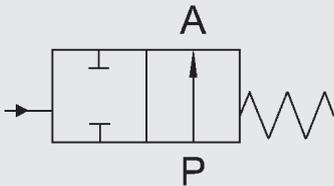
## 2/2-way Piston Valves

CXK01 and CXK02

### Switching function



NC (normally closed)



NO (normally open)

### Model code

(also example order)

CXK01 2/2 F C 3 15 025 012 PP

#### Type

CXK01 = Closes with the flow  
 CXK02 = Closes against the flow

#### Ways

2/2 = The number of ways

#### Control

F = External pilot

#### Switching function

C = NC - closed when de-energised  
 O = NO - open when de-energised

#### Body material

3 = Red bronze  
 6 = Stainless steel

#### Nominal size

15 = DN 15  
 20 = DN 20  
 25 = DN 25  
 32 = DN 32  
 40 = DN 40  
 50 = DN 50

#### Pressure range (see table)

003 = 0 to 3 bar  
 ∴ ∴  
 025 = 0 to 25 bar

#### Connection

012 = G $\frac{1}{2}$  - DN 15  
 034 = G $\frac{3}{4}$  - DN 20  
 100 = G1 - DN 25  
 114 = G1 $\frac{1}{4}$  - DN 32  
 112 = G1 $\frac{1}{2}$  - DN 40  
 200 = G2 - DN 50

#### Sealing Spindle / Seat

Red bronze  
 PP = PTFE / PTFE  
Stainless steel  
 PF = PTFE / FKM

### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature

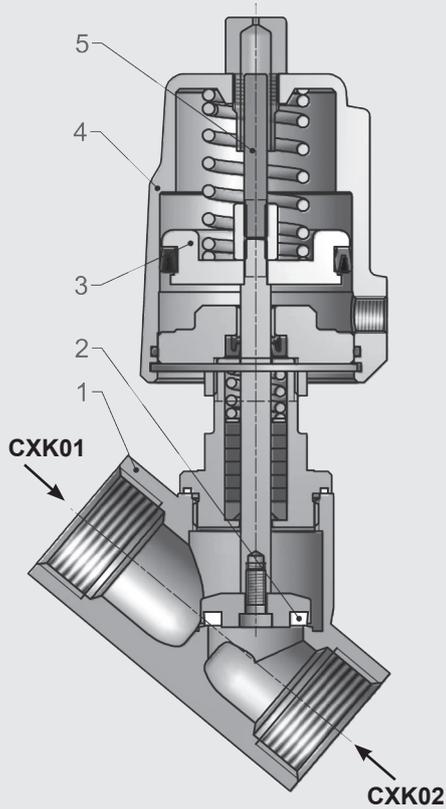
## Technical specifications

Nominal size:	DN15 to DN50	
Pressure range:	PN0 to PN25 (see table)	
Body material:	Red bronze, stainless steel	
Seal material:	Red bronze	Seat seals: PTFE Spindle seal: PTFE, optional NBR
	Stainless steel	Seat seals: FKM optional PTFE Spindle seal: PTFE, optional NBR
Flow rate	0 – approx. 792 l/min	
Medium temperature	-10 °C to +80 °C for NBR -40 °C to +200 °C for PTFE	
Ambient temperature	Max. +60 °C	
Connection	G½ - G2	
Operating fluid	Media	Aggressive, neutral, gaseous and liquid media, which do not have a negative effect on the physical and chemical properties of the material of the housing or sealing material concerned
	Max. permitted pressure	See table
	Max. permissible viscosity	600 m <sup>2</sup> /s
Control medium	Medium	Neutral gases
	Volume	Drive size 50 mm 0.035 dm <sup>3</sup>
		Drive size 80 mm 0.131 dm <sup>3</sup>
Control pressure	4 to 10 bar	
Pilot valve	Optional 3/2-way pilot valve, possible with M12x1 plug	
Mounting position	In any position	

Designation	Nom. dia. mm	Pressure		Connection	Kv value m <sup>3</sup> /h DIN 60354	Material
		bar – Ø 50	bar – Ø 80*			
CXX01	15	0 – 16	–	G½	4.6	Red bronze
	20	0 – 16	0 – 16	G¾	9.4	
	25	0 – 16	0 – 16	G1	17.4	
	32	0 – 10	0 – 16	G1¼	21.5	
	40	0 – 8	0 – 16	G1½	26.4	
	50	0 – 4	0 – 16	G2	47.5	
CXX01	15	0 – 25	–	G½	4.6	Stainless steel
	20	0 – 20	–	G¾	9.4	
	25	0 – 16	0 – 25	G1	17.4	
	32	0 – 9	0 – 25	G1¼	21.5	
	40	0 – 7	0 – 20	G1½	26.4	
	50	0 – 4	0 – 12	G2	47.5	
CXX02	15	0 – 16	–	G½	4.6	Red bronze
	20	0 – 16	–	G¾	9.4	
	25	0 – 10	0 – 16	G1	17.4	
	32	0 – 7	0 – 12	G1¼	21.5	
	40	0 – 6	0 – 8	G1½	26.4	
	50	0 – 4	0 – 5	G2	47.5	
CXX02	15	0 – 16	–	G½	4.6	Stainless steel
	20	0 – 20	0 – 25	G¾	9.4	
	25	0 – 10	0 – 16	G1	17.4	
	32	0 – 7	0 – 10	G1¼	21.5	
	40	0 – 6	0 – 8	G1½	26.4	
	50	0 – 3	0 – 5	G2	47.5	

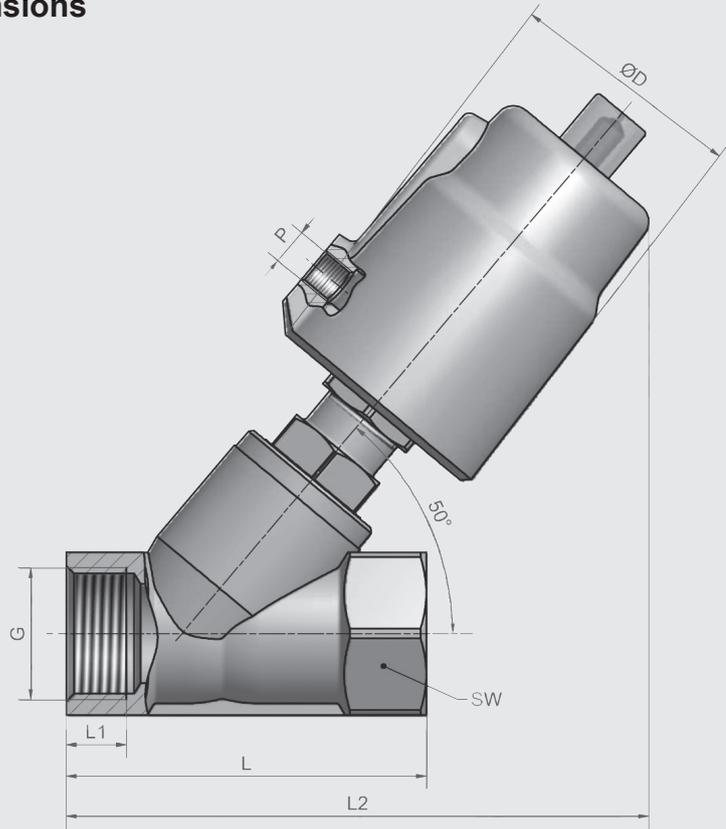
\*Actuator Ø 80 as option

## Sectional drawing NC



Item	Designation	Quantity
1	Valve body	1
2	Seals	1
3	Piston	1
4	End cap	1
5	Spindle	1

## Dimensions

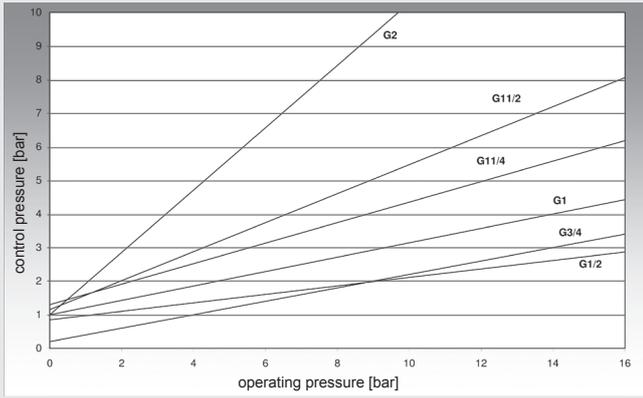


	Actuator Ø 50							Actuator Ø 80		
	G	1/2	3/4	1	1 1/4	1 1/2	2	1 1/4	1 1/2	2
<b>Red bronze</b>	ØD	62	62	62	62	62	62	94	94	94
	P	G 1/8	G 1/8	G 1/8						
	L	57	68	80	97	107	124	97	107	124
	L1	8	9	10.5	12.5	14.5	16.5	12.5	14.5	16.5
	L2	135	140	145	150	155	160	195	205	215
	SW	27	33	41	50	56	68	50	56	68
	kg	1.2	1.3	1.5	1.8	2.4	3.5	3.0	3.4	4.5

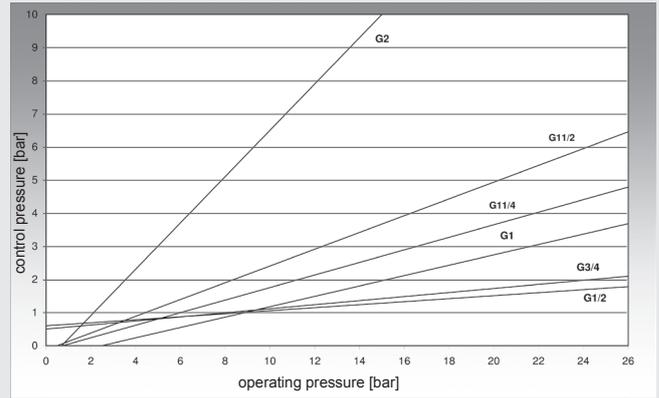
	Actuator Ø 50							Actuator Ø 80		
	G	1/2	3/4	1	1 1/4	1 1/2	2	1 1/4	1 1/2	2
<b>Stainless steel</b>	ØD	62	62	62	62	62	62	94	94	94
	P	G 1/8	G 1/8	G 1/8						
	L	65	75	90	110	120	150	110	120	150
	L1	12	13	15	17	19	21	17	19	21
	L2	140	145	150	155	160	175	200	210	230
	SW	27	32	42	50	55	70	50	55	70
	kg	1.3	1.4	1.6	2.2	2.5	3.5	3.2	3.4	4.6

# Operating pressure / control pressure graph

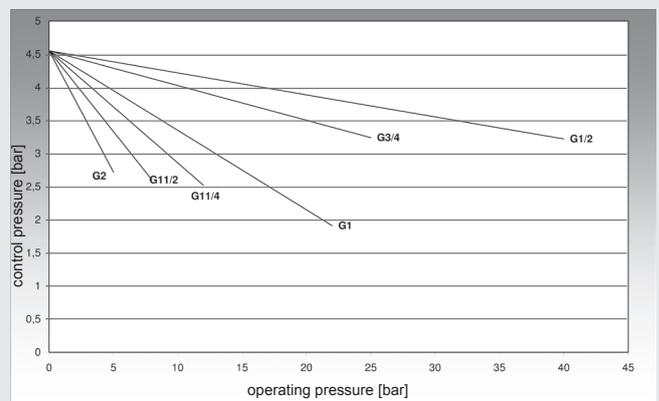
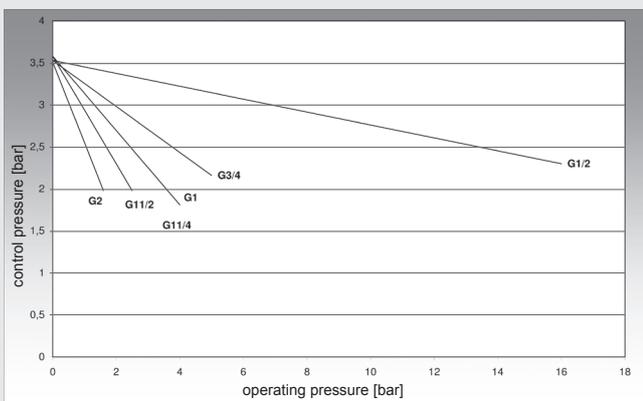
Actuator Ø 50 mm



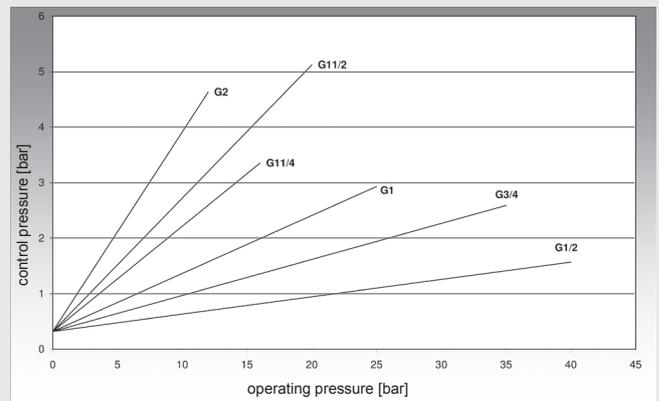
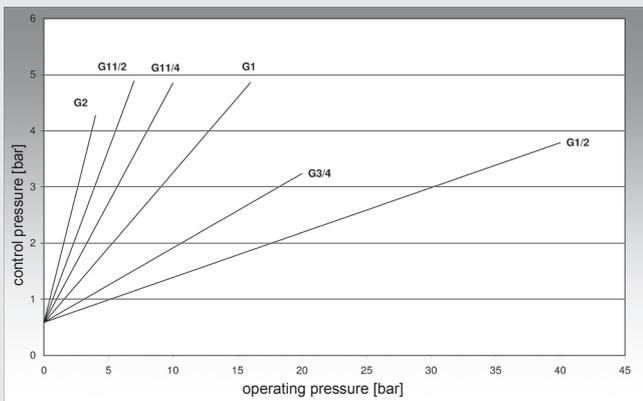
Actuator Ø 80 mm



CXK01 NC closes with the flow, normally closed

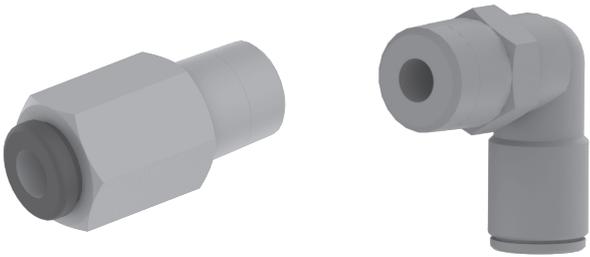


CXK02 NC closes with the flow, normally closed



CXK02 NO closes against the flow, normally open

## Accessories

<b>Threaded connections</b>	
<b>3/2-way pilot valve</b>	

On request we would be happy to discuss your requirements for further options and accessories.

### NOTE

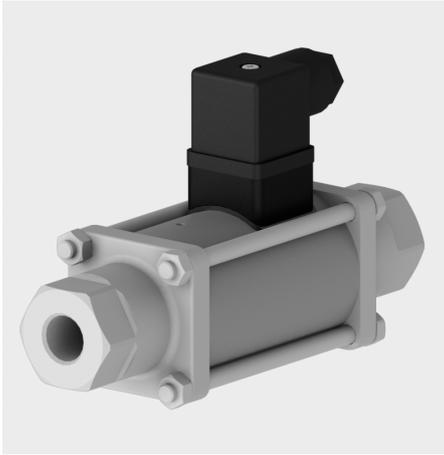
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

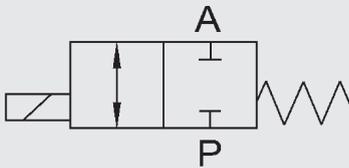




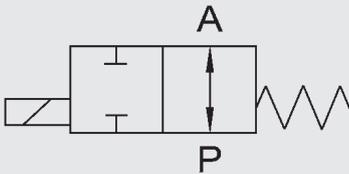
## 2/2 way coaxial valve

### CX02 to CX05 direct acting

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Model code

(also example order)

CX02 2/2 D C 2 10 020 014 24V ...

#### Designation

CX02 = CX02 series  
 CX03 = CX03 series  
 CX04 = CX04 series  
 CX05 = CX05 series

#### Ways

2/2 = Number of ways

#### Control

D = Direct

#### Switching function

C = NC - closed when de-energised  
 O = NO - open when de-energised

#### Housing material

1 = Free from non-ferrous materials\*  
 2 = Brass (standard)  
 3 = Brass, nickel-plated\*  
 4 = 1.4305\* (except for CX02)  
 5 = 1.4571\* (except for CX02)

#### Nominal size

10 = DN 10  
 15 = DN 15  
 20 = DN 20  
 25 = DN 25  
 32 = DN 32  
 40 = DN 40  
 50 = DN 50

#### Pressure range

020 = CX02 > 0 - 20 bar  
 040 = CX03 > 0 - 40 bar  
 064 = CX04 > 0 - 64 bar  
 100 = CX05 > 0 - 100 bar

#### Connection

014 = G $\frac{1}{4}$  - DN 10  
 038 = G $\frac{3}{8}$  - DN 10, DN 15  
 012 = G $\frac{1}{2}$  - DN 10, DN 15, DN 20  
 034 = G $\frac{3}{4}$  - DN 10\*, DN 15, DN 20, DN 25  
 100 = G1 - DN 15\*, DN 20, DN 25, DN 32  
 114 = G1 $\frac{1}{4}$  - DN 20\*, DN 25, DN 32  
 112 = G1 $\frac{1}{2}$  - DN 25\*, DN 32, DN 40  
 200 = G2 - DN 50

#### Supply voltage

24V = 24 V DC  
 230V = 230 V AC 40-60 Hz  
 Special voltages on request

#### Options

See accessories

\*optional

## Technical Data

Control	2/2 way valve, direct acting	
Nominal size	DN 10 to DN 50	
Pressure range (see table)	CX02 – 2/2 DN 10 - 32	PN 0 to PN 20
	CX03 – 2/2 DN 10 - 32	PN 0 to PN 40
	CX03 – 2/2 DN 40 - 50	PN 0 to PN 16
	CX04 – 2/2 DN 10 - 32	PN 0 to PN 64
	CX05 – 2/2 DN 10 - 32	PN 0 to PN 100
Connections (see table)	Threaded sleeve flange on request	
Housing material	Sleeve version Flange version	Brass, nickel-coated brass, 1.4305, 1.4571 on request
Valve seat (plastic on metal)	FKM PTFE	CX02 / CX03 / CX04 CX05
Material of seals	Static: Dynamic:	FKM PTFE
Back-pressure resistant	Up to 16 bar	
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *	
Media	Gaseous, liquid, contaminated	
Abrasive operating fluids	On request	
Flow direction	P → A A → P	as marked max. 16 bar
Temperature of medium	-10 °C to +100 °C	
Ambient temperature	-10 °C to +50 °C	
Mounting position	No orientation restrictions	
Limit switch	Inductive*	
Fixing	Mounting bracket*	

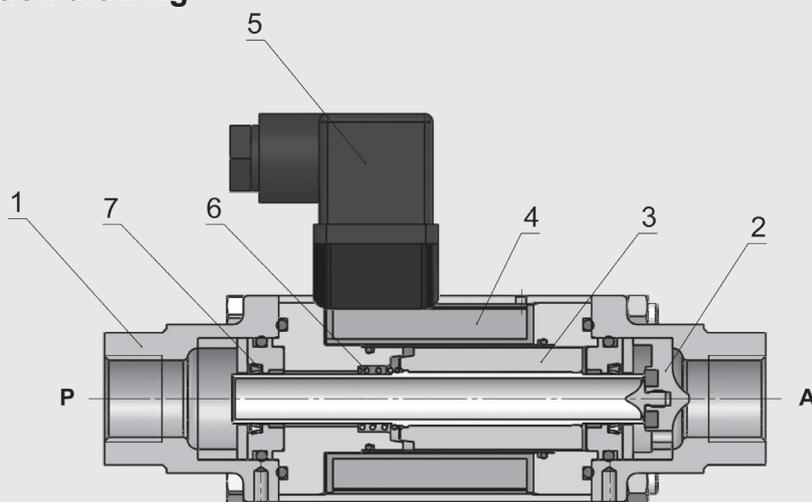
## Electrical part

Supply voltage	DC: 24 V AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet AC: DC magnet with integrated rectifier
Connection	Connector plug to DIN EN 175301-803 type A Connector plug to DESINA M12x1 * Illuminated plug with varistor *
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when fitted with connector plug

⚠ The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

⚠ The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

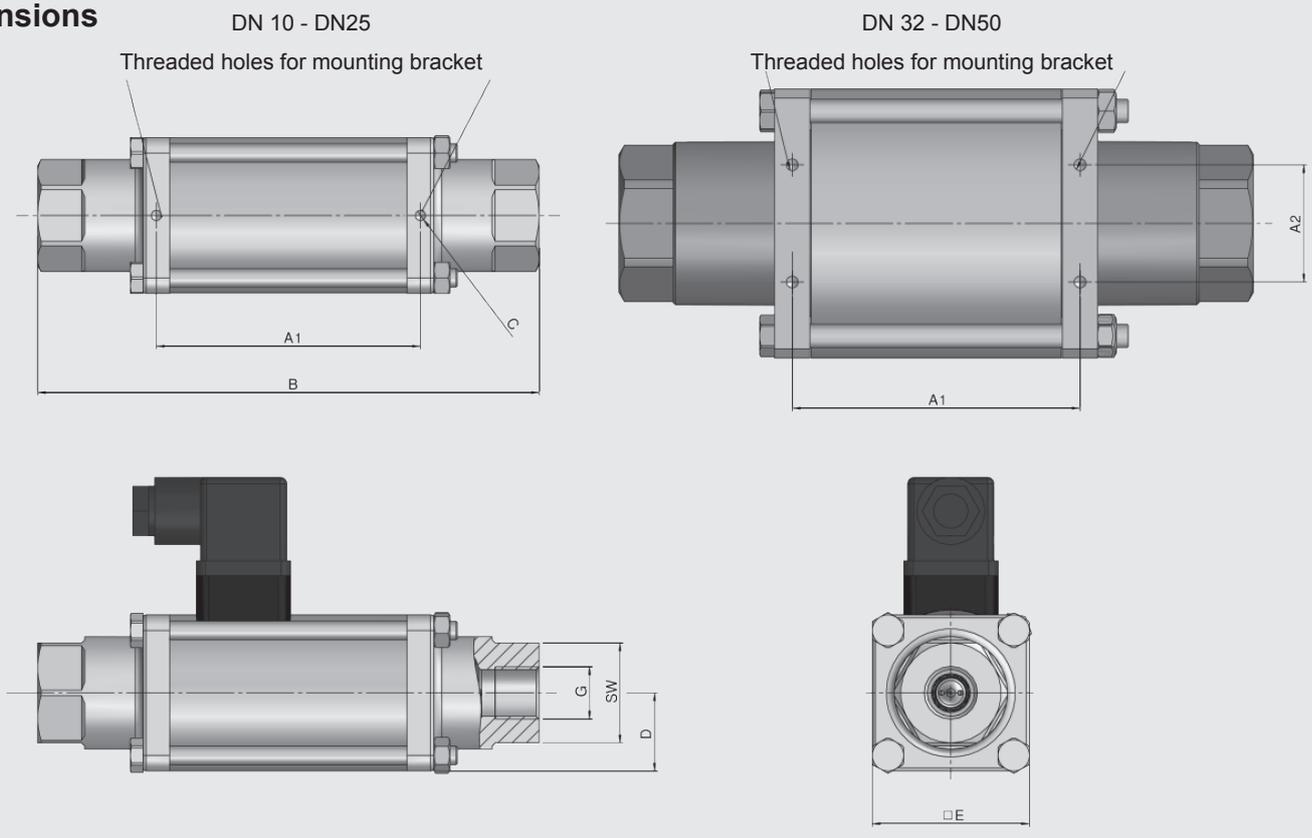
## Section drawing



Item	Designation	Qty.
1	Connection	2
2	Valve seat	1
3	Solenoid armature	1
4	Magnet	1
5	Connector plug	1
6	Spring	1
7	PTFE rod seal	2

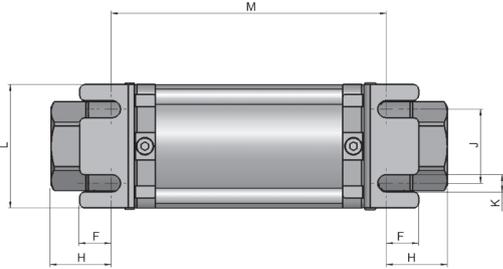
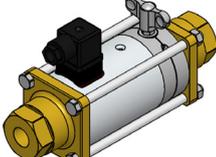
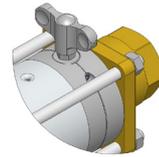
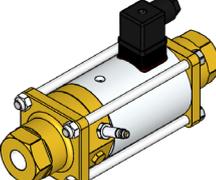
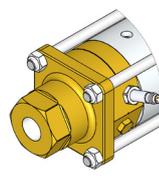
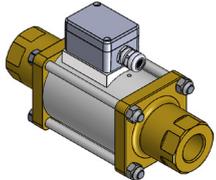
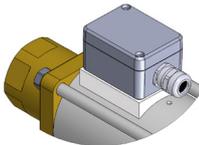
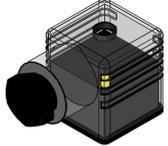
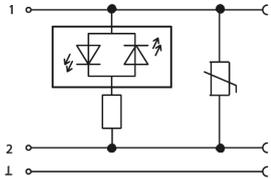
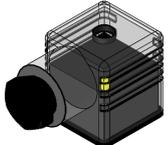
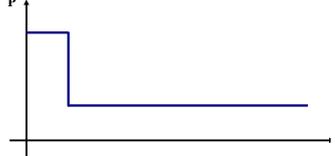
Series	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h]	Power consumption [W]		Weight [kg]
					24V DC	230 V 50 Hz	
CX02	10	0 – 20	G¼, G¾, G½	2.5	25	29	1.7
	15	0 – 20	G¾, G½, G¾	5.2	30	32	3.6
	20	0 – 20	G½, G¾, G1	7.0	34	42	5.4
	25	0 – 20	G¾, G1, G1¼	12.3	51	60	7.1
	32	0 – 20	G1, G1¼, G1½	20.0	73	76	12.6
CX03	10	0 – 40	G¼, G¾, G½	2.5	35	41	1.7
	15	0 – 40	G¾, G½, G¾	5.2	40	45	3.6
	20	0 – 40	G½, G¾, G1	7.0	45	53	5.4
	25	0 – 40	G¾, G1, G1¼	12.3	60	68	7.1
	32	0 – 40	G1, G1¼, G1½	20.0	73	76	12.6
	40	0 – 16	G1½	45.7	73	91	18.3
	50	0 – 16	G2	47.2	73	91	18.3
CX04	10	0 – 64	G¼, G¾, G½	2.5	44	53	1.7
	15	0 – 64	G¾, G½, G¾	5.2	50	55	3.6
	20	0 – 64	G½, G¾, G1	7.0	53	59	5.4
	25	0 – 64	G¾, G1, G1¼	12.3	77	85	7.1
	32	0 – 64	G1, G1¼, G1½	20.0	73	76	12.6
CX05	10	0 – 100	G¼, G¾, G½	2.5	44	53	1.7
	15	0 – 100	G¾, G½, G¾	5.2	50	55	3.6
	20	0 – 100	G½, G¾, G1	7.0	53	59	5.4
	25	0 – 100	G¾, G1, G1¼	12.3	77	85	7.1
	32	0 – 100	G1, G1¼, G1½	20.0	73	76	12.6

## Dimensions



DN	G	SW	A1 [mm]	A2 [mm]	B [mm]	C	D [mm]	E [mm]
10	G¼, G¾, G½	32	84	–	159.5	M4	25	50
15	G¾, G½, G¾	41	100	–	184	M5	35	70
20	G½, G¾, G1	46	108	–	215	M5	40	80
25	G¾, G1, G1¼	55	121	–	246	M5	45	90
32	G1, G1¼, G1½	60	122	50	269	M6	57.5	115
40	G1½	75	131	60	304	M6	65	130
50	G2	75	131	60	304	M6	65	130

## Accessories

	<p><b>Mounting bracket</b> mechanical option = HW</p> <table border="1"> <thead> <tr> <th>DN</th> <th>F [mm]</th> <th>H [mm]</th> <th>J [mm]</th> <th>K [mm]</th> <th>L [mm]</th> <th>M [mm]</th> </tr> </thead> <tbody> <tr><td>10</td><td>10</td><td>23.5</td><td>30</td><td>7</td><td>50</td><td>113</td></tr> <tr><td>15</td><td>10.5</td><td>22.5</td><td>45</td><td>7</td><td>70</td><td>139</td></tr> <tr><td>20</td><td>15.3</td><td>33.5</td><td>50</td><td>7</td><td>80</td><td>149</td></tr> <tr><td>25</td><td>16</td><td>34</td><td>60</td><td>8.5</td><td>90</td><td>178</td></tr> <tr><td>32</td><td>6</td><td>37</td><td>78</td><td>6.5</td><td>115</td><td>195</td></tr> <tr><td>40</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>130</td><td>224</td></tr> <tr><td>50</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>130</td><td>224</td></tr> </tbody> </table>	DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	10	10	23.5	30	7	50	113	15	10.5	22.5	45	7	70	139	20	15.3	33.5	50	7	80	149	25	16	34	60	8.5	90	178	32	6	37	78	6.5	115	195	40	6	40	98	6.5	130	224	50	6	40	98	6.5	130	224	
DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]																																																				
10	10	23.5	30	7	50	113																																																				
15	10.5	22.5	45	7	70	139																																																				
20	15.3	33.5	50	7	80	149																																																				
25	16	34	60	8.5	90	178																																																				
32	6	37	78	6.5	115	195																																																				
40	6	40	98	6.5	130	224																																																				
50	6	40	98	6.5	130	224																																																				
	<p><b>Manual override</b> mechanical option = HT</p>																																																									
	<p><b>Position indicator, inductive</b> electrical option = 1I (open or closed) electrical option = 2I (open and closed)</p>																																																									
	<p><b>Terminal box</b> Protection class: IP 65 PG11-screw connection electrical option = PG</p>																																																									
	<p><b>Female connector with LED</b> electrical option = LED</p>																																																									
	<p><b>Female connector with power reduction</b> 24 V DC Form A electrical option = LS</p>																																																									
	<p><b>Female connector M12x1</b> electrical option = M12</p>																																																									

On request we would be happy to discuss your requirements for further options and accessories.

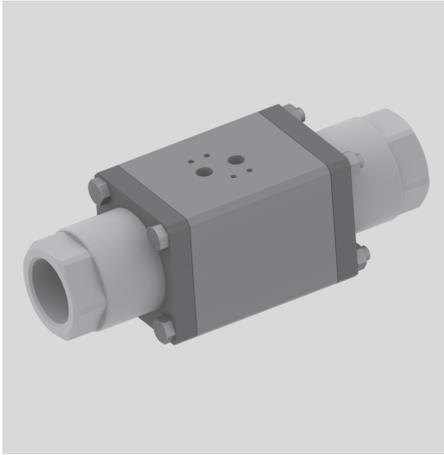
### NOTE

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

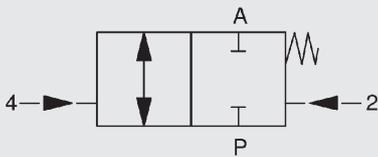
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



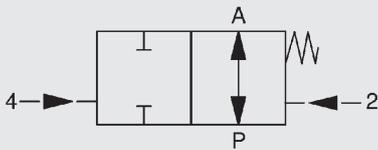
## 2/2 way coaxial valve

CX06 to CX09 pilot operated

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Model code

(also example order)

**CX06 2/2 F C 2 10 064 100 PV**

#### Designation

- CX06 = CX06 series
- CX07 = CX07 series
- CX08 = CX08 series
- CX09 = CX09 series

#### Ways

- 2/2 = Number of ways

#### Control

- F = External pilot

#### Switching function

- C = NC - closed when de-energised
- O = NO - open when de-energised\*

#### Housing material

- 1 = Free from non-ferrous materials\*
- 2 = Brass (standard)
- 3 = Brass, nickel-plated\*
- 4 = 1.4305\*
- 5 = 1.4571\*

#### Nominal size

- 10 = DN 10
- 15 = DN 15
- 20 = DN 20
- 25 = DN 25
- 32 = DN 32
- 40 = DN 40
- 50 = DN 50

#### Pressure range

- 064 = CX06 >0 - 64 bar
- 100 = CX07 >0 - 100 bar
- 120 = CX07 >0 - 120 bar
- 160 = CX08 >0 - 160 bar
- 200 = CX09 >0 - 200 bar

#### Connection

- 014 = G $\frac{1}{4}$  - DN 10
- 038 = G $\frac{3}{8}$  - DN 10, DN 15
- 012 = G $\frac{1}{2}$  - DN 10, DN 15, DN 20
- 034 = G $\frac{3}{4}$  - DN 15, DN 20, DN 25
- 100 = G1 - DN 20, DN 25, DN 32
- 114 = G1 $\frac{1}{4}$  - DN 25, DN 32
- 112 = G1 $\frac{1}{2}$  - DN 32, DN 40\*
- 200 = G2 - DN 50\*

#### Option

- PV ... = Pilot valve (... acc. to accessories)

\*optional

## Technical Data

Control	2/2 way valve, pilot operated		
Nominal size	DN 10 to DN 50		
Pressure range (see table)	CX06 – 2/2	DN 10 to DN 50	PN 0 to PN 64
	CX07 – 2/2	DN 10 to DN 25	PN 0 to PN 120
	CX07 – 2/2	DN 32 to DN 50	PN 0 to PN 100
	CX08 – 2/2	DN 10 to DN 25	PN 0 to PN 160
	CX09 – 2/2	DN 15	PN 0 to PN 200
Connections (see table)	Threaded sleeve flange on request		
Housing material	Sleeve version	Brass, nickel-coated brass, 1.4305, 1.4571	
	Flange version	on request	
Material of seals	Static:	FKM	
	Dynamic:	FKM CX06 PTFE CX07, CX08 & CX09	
	Seat seal	PTFE	
Back-pressure resistant	Up to 16 bar		
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	On request		
Flow direction	P → A	as marked	
	A → P	max. 16 bar	
Temperature of medium	-10 °C to +100 °C		
Ambient temperature	-10 °C to +50 °C		
Actuating part	Dual acting piston with return spring		
Mounting position	No orientation restrictions		
Limit switch	Magnetic field sensor		
Fixing	Mounting bracket*		

### Pneumatic part (for pilot valve option)

Control	5/2-way pilot valve
Mounting pattern	Namur
Control pressure	3 to 8 bar
Air requirement	approx. 7 cm <sup>3</sup> / stroke
Pilot ports 2+4	G <sup>1</sup> / <sub>8</sub> at DN 10
	G <sup>1</sup> / <sub>4</sub> at DN 15 to DN 50
Switching speed	CX valve can be smoothly adjusted by adjusting the supply to the pilot valve
Switching times	Open/close 50 - 1000 ms depending on control pressure, pilot valve and meter-out control

### Electrical part (for pilot valve option)

Supply voltage	DC: 24 V
	AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet
	AC: DC magnet with integrated rectifier
Connection	Connector plug to industrial standard, model B
	Connector plug to DESINA M12x1 *
	Connector with LED (transparent housing) with varistor*
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when fitted with connector plug

 The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

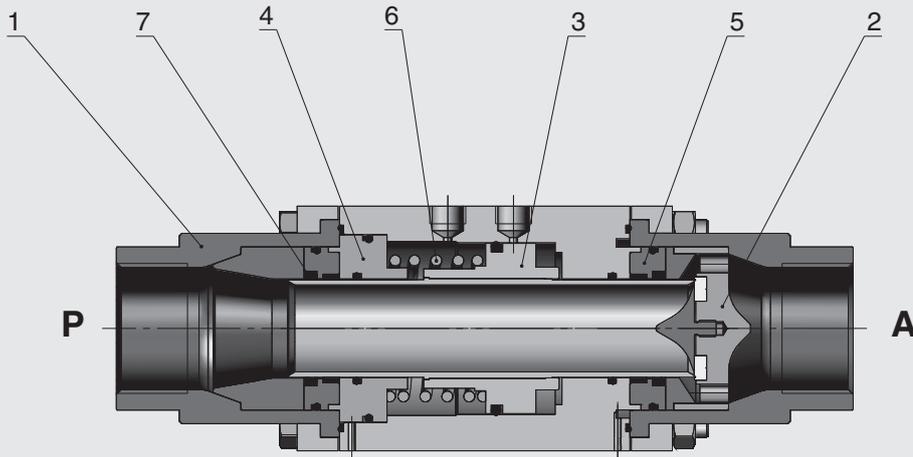
 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

Series	DN [mm]	Pressure [bar]	Connection	Kv value [m <sup>3</sup> /h]	Weight [kg]
CX06	10	0 – 64	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.7	1.6
	15	0 – 64	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	7.2	2.8
	20	0 – 64	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	9.4	4.0
	25	0 – 64	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	14.5	5.3
	32	0 – 64	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	20.0	6.9
	40	0 – 64	G1 <sup>1</sup> / <sub>2</sub>	45.7	11.7
CX07	10	0 – 120	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.7	1.6
	15	0 – 120	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	7.2	2.8
	20	0 – 120	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	9.4	4.0
	25	0 – 120	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	14.5	5.3
	32	0 – 100	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	20.0	6.9
	40	0 – 100	G1 <sup>1</sup> / <sub>2</sub>	45.7	11.7
CX08	10	0 – 160	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.7	1.6
	15	0 – 160	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	7.2	2.8
	20	0 – 160	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	9.4	4.0
	25	0 – 160	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	14.5	5.3
CX09	15	0 – 200	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	7.2	3.2

NOTE: Inserting a maintenance unit upstream will increase the service life of the unit.

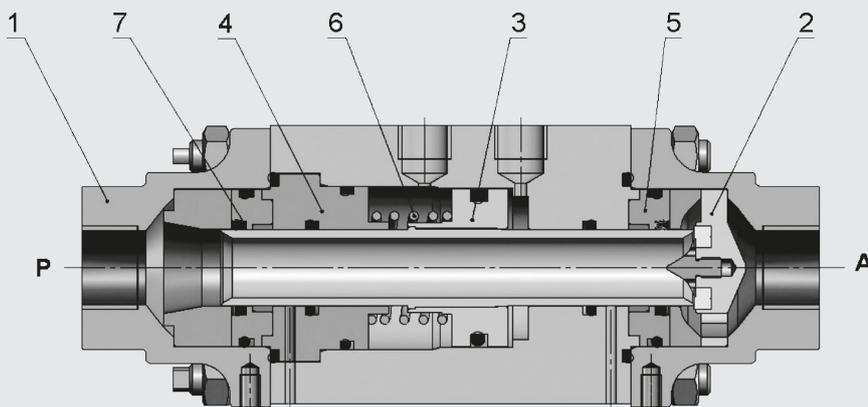
## Section drawing

CX06 - CX08



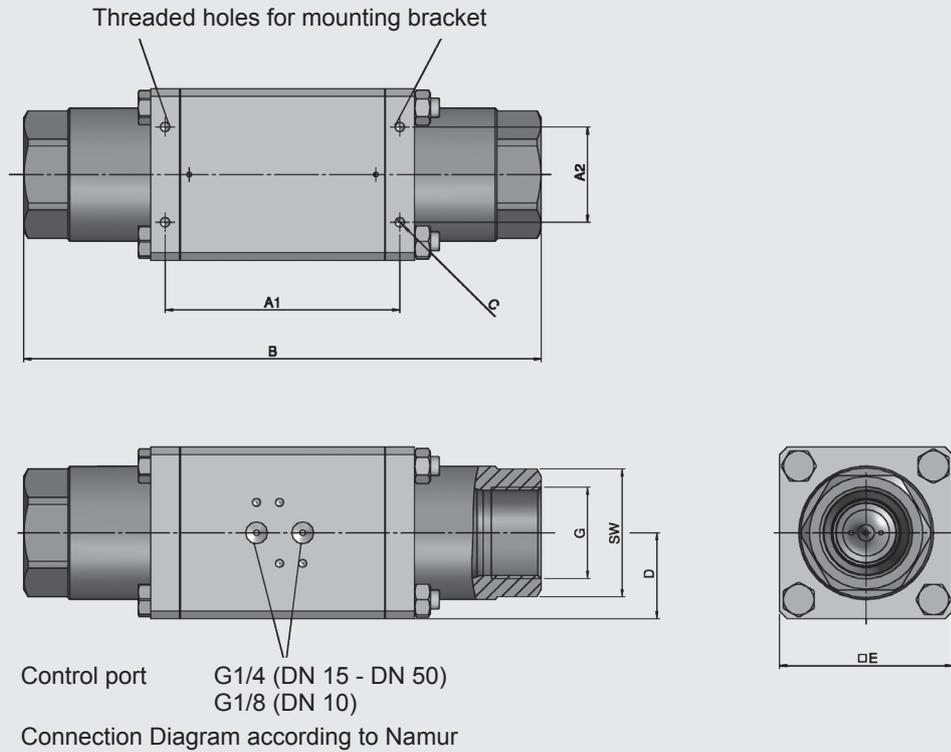
Item	Designation	Quantity
1	Connection	2
2	Valve seat	1
3	Piston / control tube	1
4	Actuation disc	1
5	Guide disc	2
6	Spring	1
7	PTFE rod seal	2

CX09



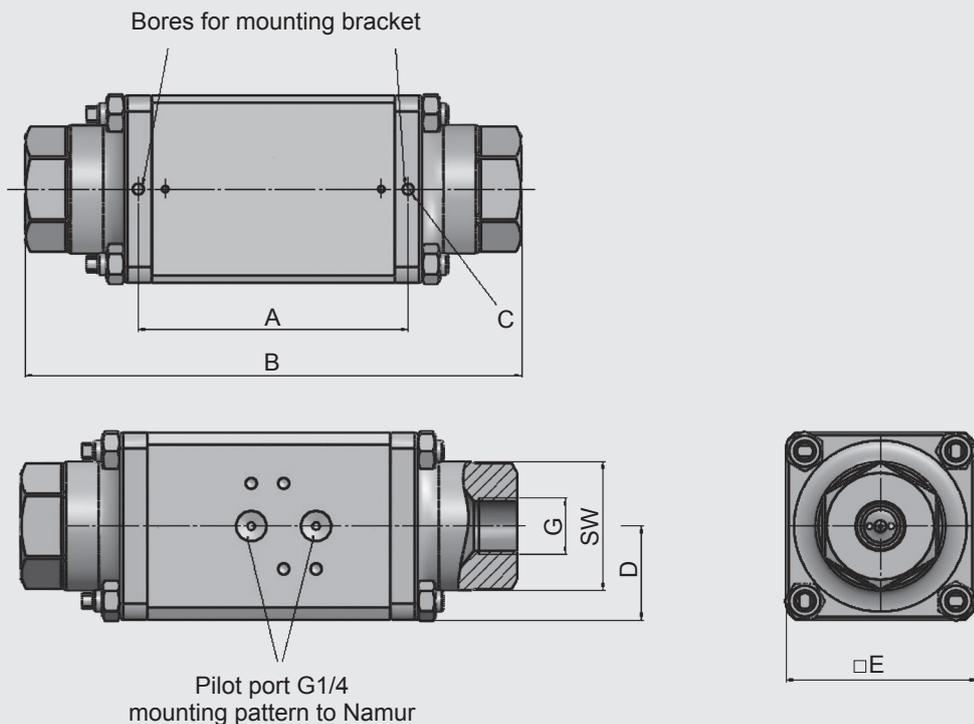
## Dimensions

CX06 - CX08



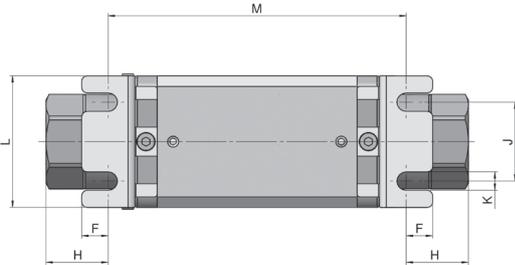
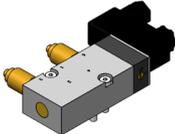
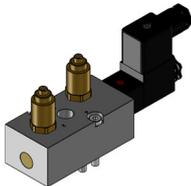
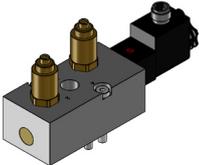
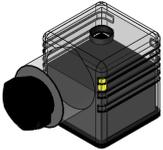
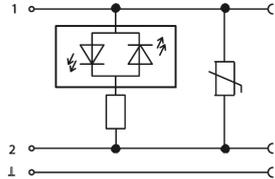
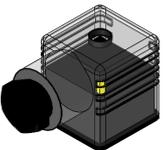
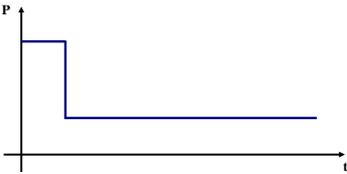
DN	G	SW	A <sub>1</sub> [mm]	A <sub>2</sub> [mm]	B [mm]	C	D [mm]	E [mm]
10	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	32	84	–	159.5	M4	25	50
15	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	41	100	–	184	M5	35	70
20	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	46	108	–	215	M5	40	80
25	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	55	121	–	246	M5	45	90
32	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	60	122	50	269	M6	45	90
40	G1 <sup>1</sup> / <sub>2</sub>	75	131	60	304	M6	55	110
50	G2	75	131	60	304	M6	55	110

CX09



DN	G	SW	A [mm]	B [mm]	C	D [mm]	E [mm]
15	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	50	100	184	M5	35	70

## Accessories

	<p><b>Mounting bracket</b> mechanical option = HW</p> <table border="1"> <thead> <tr> <th>DN</th> <th>F [mm]</th> <th>H [mm]</th> <th>J [mm]</th> <th>K [mm]</th> <th>L [mm]</th> <th>M [mm]</th> </tr> </thead> <tbody> <tr><td>10</td><td>10</td><td>23.5</td><td>30</td><td>7</td><td>50</td><td>113</td></tr> <tr><td>15</td><td>10.5</td><td>22.5</td><td>45</td><td>7</td><td>70</td><td>139</td></tr> <tr><td>20</td><td>15.3</td><td>33.5</td><td>50</td><td>7</td><td>80</td><td>149</td></tr> <tr><td>25</td><td>16</td><td>34</td><td>60</td><td>8.5</td><td>90</td><td>178</td></tr> <tr><td>32</td><td>6</td><td>37</td><td>78</td><td>6.5</td><td>115</td><td>195</td></tr> <tr><td>40</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>130</td><td>224</td></tr> <tr><td>50</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>130</td><td>224</td></tr> </tbody> </table>	DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	10	10	23.5	30	7	50	113	15	10.5	22.5	45	7	70	139	20	15.3	33.5	50	7	80	149	25	16	34	60	8.5	90	178	32	6	37	78	6.5	115	195	40	6	40	98	6.5	130	224	50	6	40	98	6.5	130	224	
DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]																																																				
10	10	23.5	30	7	50	113																																																				
15	10.5	22.5	45	7	70	139																																																				
20	15.3	33.5	50	7	80	149																																																				
25	16	34	60	8.5	90	178																																																				
32	6	37	78	6.5	115	195																																																				
40	6	40	98	6.5	130	224																																																				
50	6	40	98	6.5	130	224																																																				
	<p><b>5/2-way pilot valve = PV</b> (Namur)</p>	<p>To use flange connection connections at side 24 V DC 230 V 50 Hz</p>																																																								
	<p><b>5/2-way pilot valve = PV</b> (Namur)</p>	<p>To use flange connection connections on top 24 V DC 230 V 50Hz</p>																																																								
	<p><b>5/2-way pilot valve = PV</b> (Namur)</p>	<p>To use flange connection Connections on top Solenoid M12x1 24V DC 230V 50Hz</p>																																																								
	<p><b>Exhaust air throttle = DR</b></p>	<p>G1/8 G1/4</p>																																																								
	<p><b>Silencer in sintered bronze = SD</b></p>	<p>G1/8 G1/4</p>																																																								
	<p><b>Female connector with LED</b> electrical option = LED</p>																																																									
	<p><b>Female connector with power reduction</b> 24 V DC Form A electrical option = LS</p>																																																									
	<p><b>Special explosion protection</b> II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = EX</p>	<p><b>Note:</b> The operating pressure is reduced by approx. 20% on the Ex version.</p>																																																								

On request we would be happy to discuss your requirements for further options and accessories.

## NOTE

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

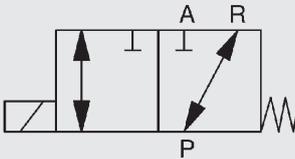
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



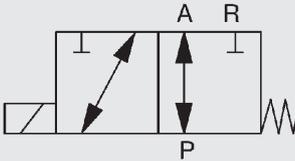
## 3/2 way coaxial valve

### CX03 and CX04 direct acting

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Model code

(also example order)

**CX04 3/2 D C 2 10 064 014 24V**

#### Designation

CX03 = CX03 series  
CX04 = CX04 series

#### Ways

3/2 = Number of ways

#### Control

D = direct

#### Switching function

C = NC - closed when de-energised  
O = NO - open when de-energised

#### Housing material

1 = Free from non-ferrous materials\*  
2 = Brass (standard)  
3 = Brass, nickel-plated\*  
4 = 1.4305\*  
5 = 1.4571\*

#### Nominal size

10 = DN 10  
15 = DN 15  
20 = DN 20  
25 = DN 25  
32 = DN 32  
40 = DN 40  
50 = DN 50

#### Pressure range

040 = CX03 >0 - 40 bar  
064 = CX04 >0 - 64 bar

#### Connection

014 = G $\frac{1}{4}$  - DN 10  
038 = G $\frac{3}{8}$  - DN 10, DN 15  
012 = G $\frac{1}{2}$  - DN 10, DN 15, DN 20  
034 = G $\frac{3}{4}$  - DN 10\*, DN 15, DN 20, DN 25  
100 = G1 - DN 15\*, DN 20, DN 25, DN 32  
114 = G1 $\frac{1}{4}$  - DN 20\*, DN 25, DN 32  
112 = G1 $\frac{1}{2}$  - DN 25\*, DN 32, DN 40  
200 = G2 - DN 50

#### Supply voltage

24 V = 24 V DC  
230 V = 230 V AC 40-60 Hz  
Special voltages on request

\*optional

## Technical Data

Control	3/2 way valve, direct acting		
Nominal size	DN 10 to DN 50		
Pressure range (see table)	CX03 – 3/2	DN 10 - 32	PN 0 to PN 40
	CX03 – 3/2	DN 40 - 50	PN 0 to PN 16
	CX04 – 3/2	DN 10 - 32	PN 0 to PN 64
Connections (see table)	Female threaded connection		
Housing material	Brass, nickel-coated brass, 1.4305, 1.4571		
Valve seat (plastic on metal)	FKM		
Material of seals	Static:	FKM	
	Dynamic:	PTFE	
Back-pressure resistant	Up to 16 bar		
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	On request		
Flow direction	CX03	P → A max. 40 bar P → R max. 40 bar	A → P max. 16 bar R → P max. 16 bar
	CX04	P → A max. 64 bar P → R max. 64 bar	A → P max. 16 bar R → P max. 16 bar
Temperature of medium	-10 °C to +100 °C		
Ambient temperature	-10 °C to +50 °C		
Mounting position	No orientation restrictions		
Limit switch	Inductive*		
Fixing	Mounting bracket*		

## Electrical part

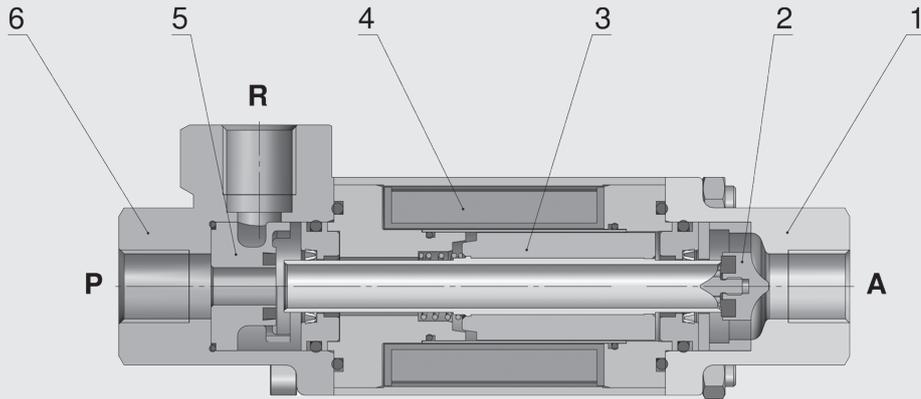
Supply voltage	DC: 24 V AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet AC: DC magnet with integrated rectifier
Connection	Connector plug to DIN EN 175301-803 type A Connector plug to DESINA M12x1 * illuminated plug with varistor *
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when fitted with connector plug

 The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

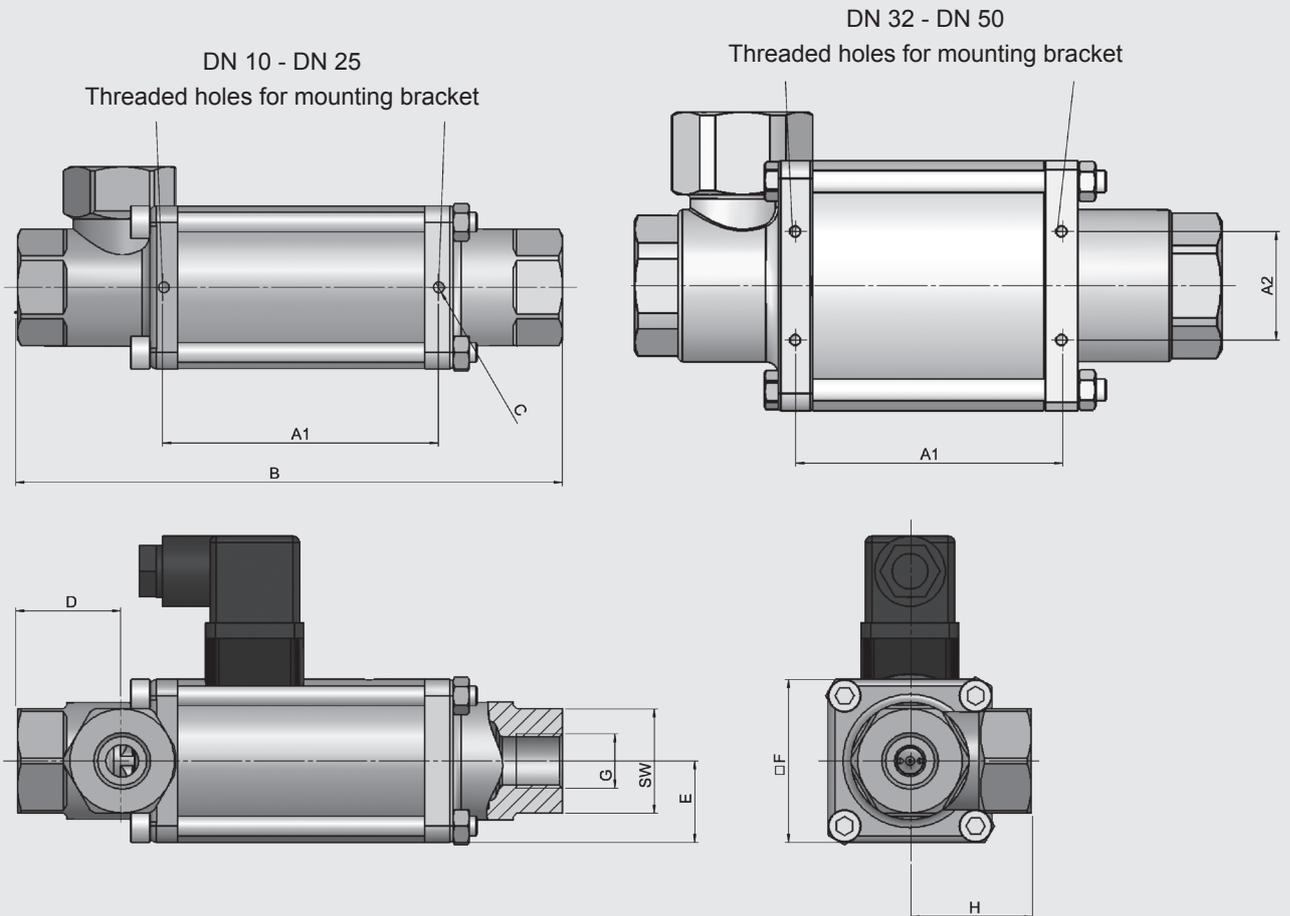
Series	DN [mm]	Pressure [bar]	Connection	Kv-value [m <sup>3</sup> /h]	Power consumption [W]		Weight [kg]
					24V DC	230 V 50 Hz	
CX03	10	0 - 40	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.0	35	41	1.9
	15	0 - 40	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	5.6	40	45	4.0
	20	0 - 40	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	8.0	45	53	6.0
	25	0 - 40	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	11.5	60	68	7.5
	32	0 - 40	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	17.9	73	76	13.4
	40	0 - 16	G1 <sup>1</sup> / <sub>2</sub>	41.5	73	90	18.7
	50	0 - 16	G2	43.0	73	90	18.5
CX04	10	0 - 64	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.0	44	53	1.9
	15	0 - 64	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	5.6	50	55	4.0
	20	0 - 64	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	8.0	53	59	6.0
	25	0 - 64	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	11.5	77	85	7.5
	32	0 - 64	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	17.9	73	76	13.4

## Section drawing



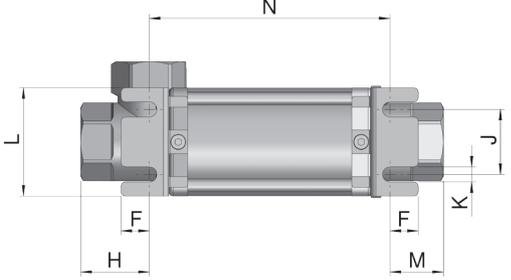
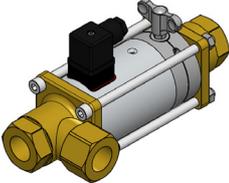
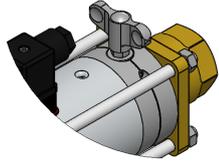
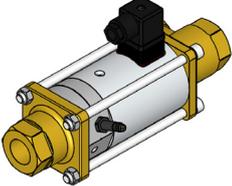
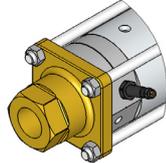
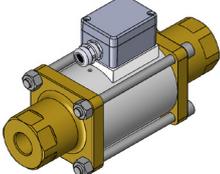
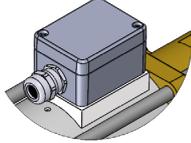
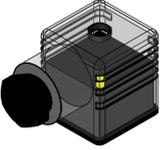
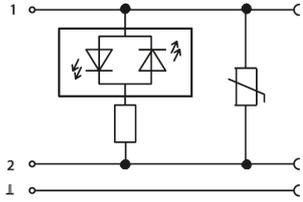
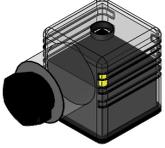
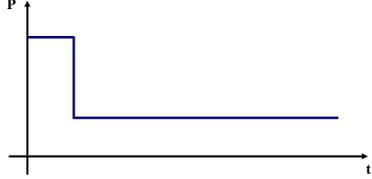
Item	Designation	Qty.
1	2/2-way connection	1
2	2/2-way valve seat	1
3	Solenoid armature	1
4	Solenoid	1
5	3/2-way valve seat	1
6	3/2-way connection	1

## Dimensions



DN	Connection	SW [mm]	A1 [mm]	A2 [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]
10	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$	32	84	–	166.5	M4	32	25	50	37
15	G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	41	100	–	200	M5	38.5	35	70	60
20	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1	46	108	–	228	M5	45.5	40	80	72
25	G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$	55	121	–	252	M5	48	45	90	80
32	G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	60	122	50	269	M6	49.5	57.5	115	80
40	G1 $\frac{1}{2}$	75	131	60	304	M6	56.5	65	130	84
50	G2	75	131	60	304	M6	56.5	65	130	84

## Accessories

	<p><b>Mounting bracket</b> mechanical option = HW</p> <table border="1"> <thead> <tr> <th>DN</th> <th>F [mm]</th> <th>H [mm]</th> <th>J [mm]</th> <th>K [mm]</th> <th>L [mm]</th> <th>M [mm]</th> </tr> </thead> <tbody> <tr><td>10</td><td>10</td><td>30.5</td><td>30</td><td>7</td><td>50</td><td>113</td></tr> <tr><td>15</td><td>10.5</td><td>38.5</td><td>45</td><td>7</td><td>70</td><td>139</td></tr> <tr><td>20</td><td>15.3</td><td>46.5</td><td>50</td><td>7</td><td>80</td><td>149</td></tr> <tr><td>25</td><td>16</td><td>40</td><td>60</td><td>8.5</td><td>90</td><td>178</td></tr> <tr><td>32</td><td>6</td><td>37</td><td>78</td><td>6.5</td><td>115</td><td>195</td></tr> <tr><td>40</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>130</td><td>224</td></tr> <tr><td>50</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>130</td><td>224</td></tr> </tbody> </table>	DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	10	10	30.5	30	7	50	113	15	10.5	38.5	45	7	70	139	20	15.3	46.5	50	7	80	149	25	16	40	60	8.5	90	178	32	6	37	78	6.5	115	195	40	6	40	98	6.5	130	224	50	6	40	98	6.5	130	224	
DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]																																																				
10	10	30.5	30	7	50	113																																																				
15	10.5	38.5	45	7	70	139																																																				
20	15.3	46.5	50	7	80	149																																																				
25	16	40	60	8.5	90	178																																																				
32	6	37	78	6.5	115	195																																																				
40	6	40	98	6.5	130	224																																																				
50	6	40	98	6.5	130	224																																																				
	<p><b>Manual override</b> mechanical option = HT</p>																																																									
	<p><b>Position indicator, inductive</b> electrical option = 1I (open or closed) electrical option = 2I (open and closed)</p>																																																									
	<p><b>Terminal box</b> Protection class: IP 65 PG11-screw connection electrical option = PG</p>																																																									
	<p><b>Female connector with LED</b> electrical option = LED</p>																																																									
	<p><b>Female connector with power reduction</b> 24 V DC Form A electrical option = LS</p>																																																									
	<p><b>Female connector M12x1</b> electrical option = M12</p>																																																									

On request we would be happy to discuss your requirements for further options and accessories.

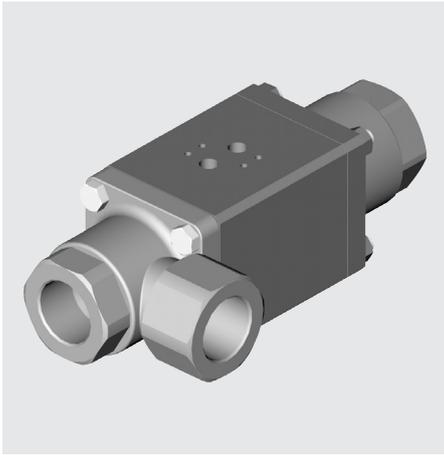
### NOTE

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

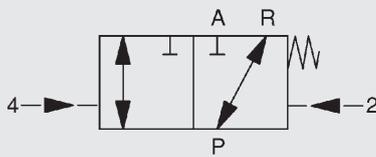
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



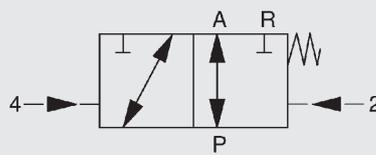
## 3/2 way Coaxial Valve

CX06 and CX07 pilot operated

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Model code

(also example order)

CX06 3/2 F C 2 15 064 034 PV

#### Designation

CX06 = CX06 series  
CX07 = CX07 series

#### Ways

3/2 = Number of ways

#### Control

F = External pilot

#### Switching function

C = NC - closed when de-energised  
O = NO - open when de-energised\*

#### Housing material

1 = Free from non-ferrous materials\*  
2 = Brass (standard)  
3 = Brass, nickel-plated\*  
4 = 1.4305\*  
5 = 1.4571\*

#### Nominal size

10 = DN 10  
15 = DN 15  
20 = DN 20  
25 = DN 25  
32 = DN 32  
40 = DN 40  
50 = DN 50

#### Pressure range

064 = CX06 >0 - 64 bar  
100 = CX07 >0 - 100 bar

#### Connection

014 = G $\frac{1}{4}$  - DN 10  
038 = G $\frac{3}{8}$  - DN 10, DN 15  
012 = G $\frac{1}{2}$  - DN 10, DN 15, DN 20  
034 = G $\frac{3}{4}$  - DN 10\*, DN 15, DN 20, DN 25  
100 = G1 - DN 15\*, DN 20, DN 25, DN 32  
114 = G1 $\frac{1}{4}$  - DN 20\*, DN 25, DN 32  
112 = G1 $\frac{1}{2}$  - DN 25\*, DN 32, DN 40  
200 = G2 - DN 50

#### Option

PV ... = pilot valve (... acc. to accessories)

\*optional

## Technical Data

Control	3/2 way valve, pilot operated		
Nominal size	DN 10 to DN 50		
Pressure range (see table)	CX06 – 3/2	PN 0 to PN 64	
	CX07 – 3/2	PN 0 to PN 100	
Connections	Female threaded connection		
Housing material	Brass, nickel-coated brass, 1.4305, 1.4571 on request		
Material of seals	Static:	FKM	
	Dynamic:	FKM	CX06
	Seat seal	PTFE	CX07
		PTFE	
Back-pressure resistant	Up to 16 bar		
Vacuum	Leakage rate <math>10^{-6}</math> mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	On request		
Flow direction	P → A max. 100 bar	A → P max. 16 bar	
	P → R max. 100 bar	R → P max. 16 bar	
Temperature of medium	-10 °C to +100 °C		
Ambient temperature	-10 °C to +50 °C		
Actuating part	Dual acting piston with return spring		
Mounting position	No orientation restrictions		
Limit switch	Magnetic field sensor*		
Fixing	Mounting bracket*		

## Pneumatic part (for pilot valve option)

Control	5/2-way pilot valve
Mounting pattern	Namur
Control pressure	3 to 8 bar
Air requirement	Approx. 7 cm <sup>3</sup> / stroke
Pilot ports 2+4	G <sup>1</sup> / <sub>8</sub> at DN 10 G <sup>1</sup> / <sub>4</sub> at DN 15 to DN 50
Switching speed	CX valve can be smoothly adjusted by adjusting the supply to the pilot valve
Switching times	Open/close 50 - 1000 ms depending on control pressure, pilot valve and meter-out control

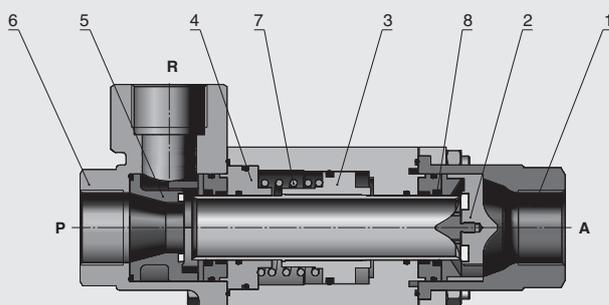
## Electrical part (for pilot valve option)

Supply voltage	DC: 24 V AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet AC: DC magnet with integrated rectifier
Connection	Connector plug to industrial standard, model B Connector plug to DESINA M12x1 * Connector with LED (transparent housing) with varistor*
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when fitted with connector socket

⚠ The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

⚠ The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

## Section drawing



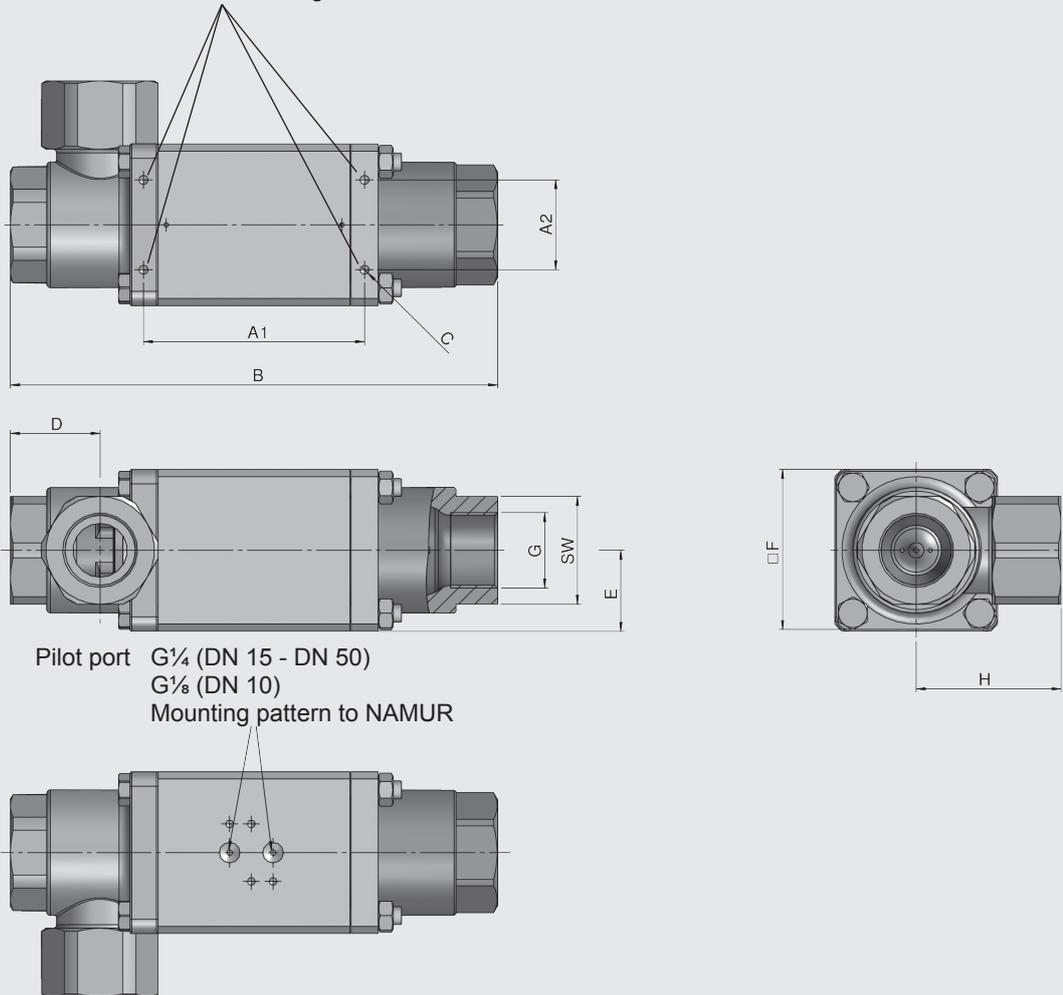
Item	Designation	Qty.
1	2/2-way connection	1
2	2/2-way valve seat	1
3	Piston / control tube	1
4	Actuation disc	1
5	3/2-way valve seat	1
6	3/2-way connection	1
7	Spring	1
8	PTFE rod seal	2

Series	DN [mm]	Pressure [bar]	Connection	Kv value [m <sup>3</sup> /h]	Weight [kg]
CX06	10	0 – 64	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.5	1.8
	15	0 – 64	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	6.6	3.2
	20	0 – 64	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	10.0	4.6
	25	0 – 64	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	12.2	6.5
	32	0 – 64	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	17.9	7.6
	40	0 – 64	G 1 <sup>1</sup> / <sub>2</sub>	41.5	12.1
CX07	10	0 – 100	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.5	1.8
	15	0 – 100	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	6.6	3.2
	20	0 – 100	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	10.0	4.6
	25	0 – 100	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	12.2	6.5
	32	0 – 100	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	17.9	7.6
	40	0 – 100	G 1 <sup>1</sup> / <sub>2</sub>	41.5	12.1
	50	0 – 100	G 2	43.0	12.1

**NOTE:** Inserting a maintenance unit upstream will increase the service life of the unit.

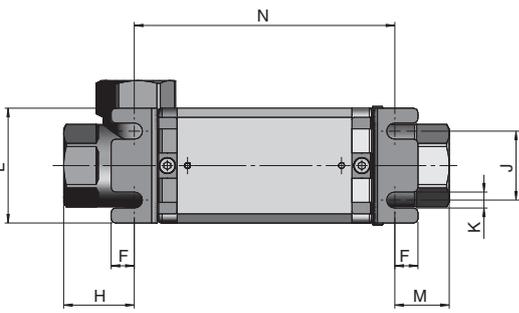
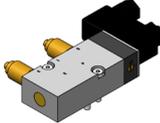
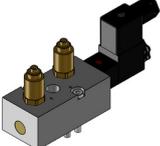
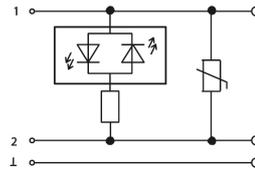
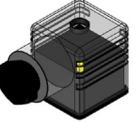
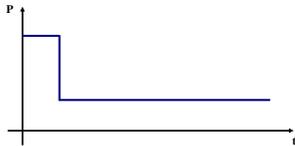
## Dimensions

Threaded holes for mounting bracket



DN	G	SW	A <sub>1</sub> [mm]	A <sub>2</sub> [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]
10	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	32	84	–	166.5	M4	32	25	50	37
15	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	41	100	–	200	M5	38.5	35	70	60
20	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	46	108	–	228	M5	45.5	40	80	72
25	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	55	121	–	252	M5	48	45	90	80
32	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	60	122	50	269	M6	49.5	45	90	80
40	G1 <sup>1</sup> / <sub>2</sub>	75	131	60	304	M6	56.5	55	110	84
50	G2	75	131	60	304	M6	56.5	55	110	84

## Accessories

	<p><b>Mounting bracket</b> mechanical option = HW</p> <table border="1"> <thead> <tr> <th>DN</th> <th>F [mm]</th> <th>H [mm]</th> <th>J [mm]</th> <th>K [mm]</th> <th>L [mm]</th> <th>M [mm]</th> </tr> </thead> <tbody> <tr><td>10</td><td>10</td><td>30.5</td><td>30</td><td>7</td><td>50</td><td>113</td></tr> <tr><td>15</td><td>10.5</td><td>38.5</td><td>45</td><td>7</td><td>70</td><td>139</td></tr> <tr><td>20</td><td>15.3</td><td>46.5</td><td>50</td><td>7</td><td>80</td><td>149</td></tr> <tr><td>25</td><td>16</td><td>40</td><td>60</td><td>8.5</td><td>90</td><td>178</td></tr> <tr><td>32</td><td>6</td><td>37</td><td>78</td><td>6.5</td><td>115</td><td>195</td></tr> <tr><td>40</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>130</td><td>224</td></tr> <tr><td>50</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>130</td><td>224</td></tr> </tbody> </table>	DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	10	10	30.5	30	7	50	113	15	10.5	38.5	45	7	70	139	20	15.3	46.5	50	7	80	149	25	16	40	60	8.5	90	178	32	6	37	78	6.5	115	195	40	6	40	98	6.5	130	224	50	6	40	98	6.5	130	224	
DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]																																																				
10	10	30.5	30	7	50	113																																																				
15	10.5	38.5	45	7	70	139																																																				
20	15.3	46.5	50	7	80	149																																																				
25	16	40	60	8.5	90	178																																																				
32	6	37	78	6.5	115	195																																																				
40	6	40	98	6.5	130	224																																																				
50	6	40	98	6.5	130	224																																																				
	<p><b>5/2-way pilot valve = PV</b> (Namur)</p>	<p>To use flange connection connections at side 24 V DC 230 V 50Hz</p>																																																								
	<p><b>5/2-way pilot valve = PV</b> (Namur)</p>	<p>To use flange connection connections on top 24 V DC 230 V 50Hz</p>																																																								
	<p><b>5/2-way pilot valve = PV</b> (Namur)</p>	<p>To use flange connection Connections on top Solenoid M12x1 24V DC 230V 50Hz</p>																																																								
	<p><b>Exhaust air throttle = DR</b></p>	<p>G1/8 G1/4</p>																																																								
	<p><b>Silencer in sintered bronze = SD</b></p>	<p>G1/8 G1/4</p>																																																								
	<p><b>Female connector with LED</b> electrical option = LED</p>																																																									
	<p><b>Female connector with power reduction</b> 24 V DC Form A electrical option = LS</p>																																																									
	<p><b>Special explosion protection</b> II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = EX</p>	<p><b>Note:</b> The operating pressure is reduced by approx. 20% on the Ex version.</p>																																																								

On request we would be happy to discuss your requirements for further options and accessories.

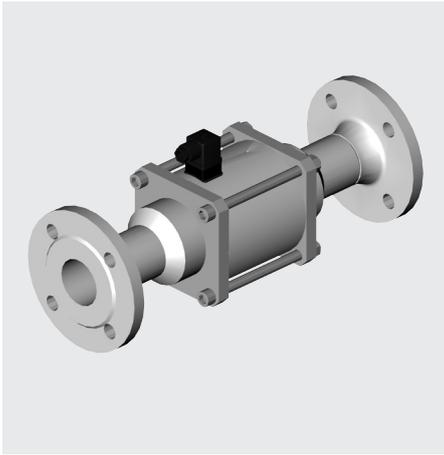
### NOTE

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



## 2/2-way Coaxial Valve

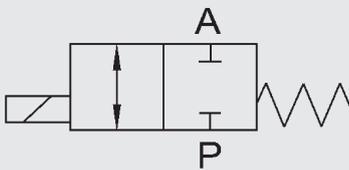
### CX03F to CX05F direct acting

### Flange version

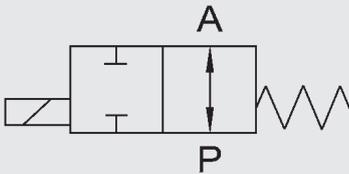
**Model code**  
(also example order)

CX 03F 2/2 D C 2 20 016 24 V ...

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- NC/NO function
- Operating pressure
- Flow rate
- Medium
- Temperature of medium
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Designation

CX03F = CX03F series

CX05F = CX05F series

### Ways

2/2 = Number of ways

### Control

D = Direct

### Switching function

C = NC - closed when de-energised

O = NO - open when de-energised\*

### Housing material

1 = Free from non-ferrous metals\*

2 = Brass

3 = Brass, nickel-plated\*

4 = 1.4305\*

5 = 1.4571\*

6 = Steel, zinc-plated

7 = Steel, nickel-plated

### Valve sizes

15 = DN 15

20 = DN 20

25 = DN 25

32 = DN 32

40 = DN 40

50 = DN 50

### Pressure range

016 = PN 16 CX03F

040 = PN 40 CX03F

100 = PN 100 CX05F

### Supply voltage

24V = 24 V DC

230V = 230 V AC 40 - 60 Hz

Special voltages on request!

### Options

See accessories

\*optional

## Technical data

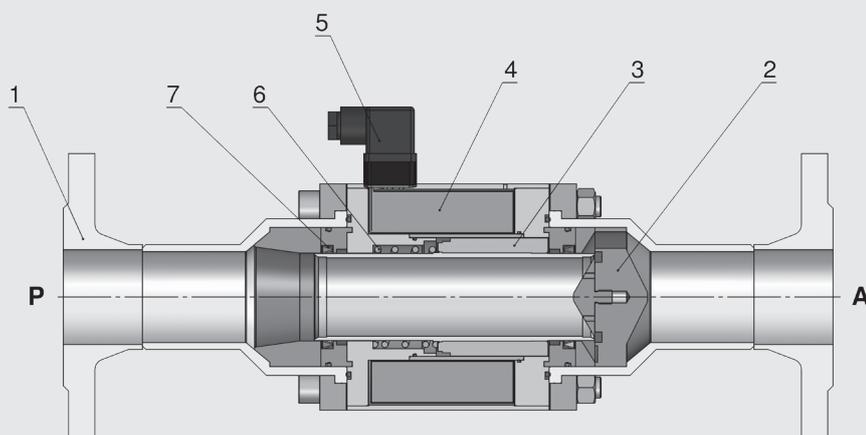
Control	2/2-way valve, direct acting		
Nominal size	DN 15 to DN 50		
Pressure range (see table)	CX03F - 2/2	DN 15 - 50	PN 0 to PN 16
	CX03F - 2/2	DN 15 - 32	PN 0 to PN 40
	CX05F - 2/2	DN 15 - 32	PN 0 to PN 100
Connections	Flange		
Housing material	Zinc-plated steel, nickel-plated steel, 1.4571		
Seal material	Static:	FKM	
	Dynamic:	PTFE	
	Seat seal:	FKM	CX03F
		PTFE	CX05F
Back-pressure resistant	Up to 16 bar		
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	On request		
Flow direction	P → A	as marked	
	A → P	max. 16 bar	
Temperature of medium	-10 °C to +100 °C		
Ambient temperature	-10 °C to +50 °C		
Mounting position	No orientation restrictions		
Limit switch	Inductive*		
Fixing	Mounting bracket*		

## Electrical part

Supply voltage	DC: 24 V
	AC: 230 V 40-60 Hz
Electrical part	DC: DC solenoid
	AC: DC solenoid with integrated rectifier
Connection	Female connector to DIN EN 175301-803 Form A, Female connector to DESINA M12x1*
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100%
IP class	IP 65 when connector plug is fitted

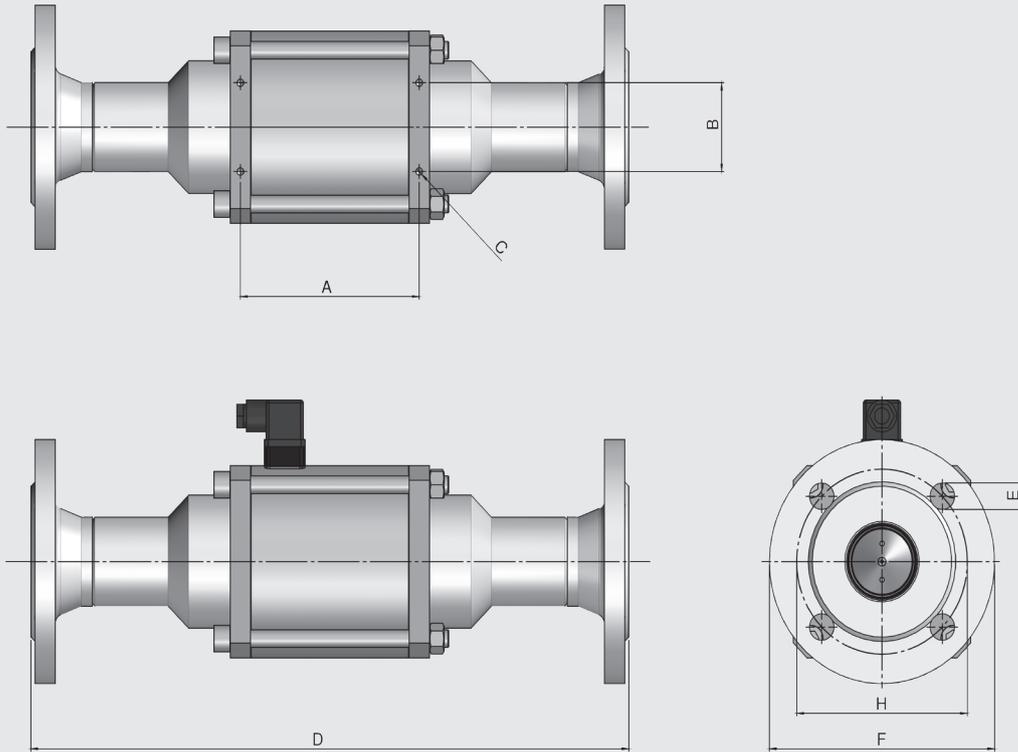
 The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

## Sectional drawing



Item	Designation	Qty.
1	Flange connection	2
2	Valve seat	1
3	Solenoid armature	1
4	Solenoid	1
5	Female connector	1
6	Spring	1
7	PTFE rod seal	2

## Dimensions

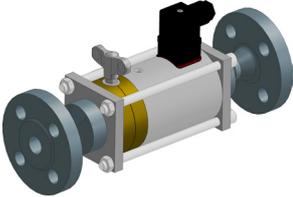
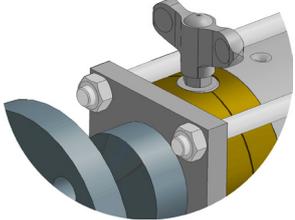
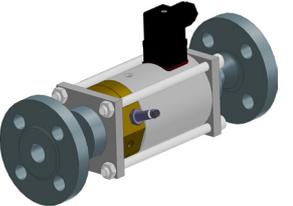
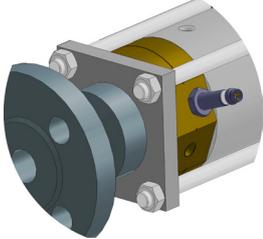
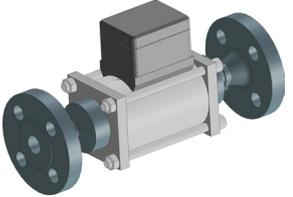
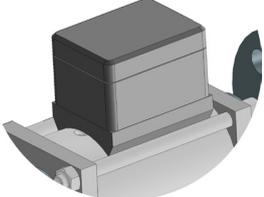
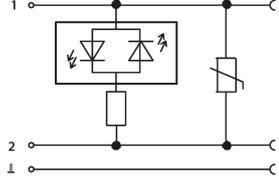
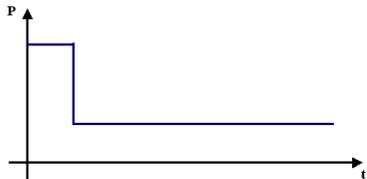


Series	Flange standard		PN	DN (Flange)	DN (Valve)	Pressure [bar]	Kv value [m³/h]	Power consumption [W]		A [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]	Weight [kg]
	DIN	EN						24 V DC	230 V 50 Hz								
CX03F	2633	-	16	15	15	0 - 16	5.2	40	45	100	-	M5	242	14	95	65	4.4
	2633	-	16	20	20	0 - 16	7.0	45	53	108	-	M5	269	14	105	75	6.8
	2633	-	16	25	25	0 - 16	12.3	60	68	121	-	M5	302	14	115	85	8.5
	2633	-	16	32	32	0 - 16	20.0	73	76	122	50	M6	324	18	140	100	14.6
	2633	-	16	40	40	0 - 16	45.7	73	91	131	60	M6	385	18	150	110	19.3
	2633	1092-1 type 11	16	50	50	0 - 16	47.2	73	91	131	60	M6	385	18	165	125	20.9
	2635	1092-1 type 11	40	15	15	0 - 40	5.2	40	45	100	-	M5	242	14	95	65	4.6
	2635	1092-1 type 11	40	20	20	0 - 40	7.0	45	53	108	-	M5	269	14	105	75	7.0
	2635	1092-1 type 11	40	25	25	0 - 40	12.3	60	68	121	-	M5	302	14	115	85	8.9
	2635	1092-1 type 11	40	32	32	0 - 40	20.0	73	76	122	50	M6	324	18	140	100	15.0
CX05F	2637	1092-1 type 11	100	15	15	0 - 100	5.2	50	55	100	-	M5	242	14	105	75	5.6
	-	1092-1 type 11	100	20	20	0 - 100	7.0	53	59	108	-	M5	269	18	130	90	9.0
	2637	1092-1 type 11	100	25	25	0 - 100	12.3	77	85	121	-	M5	302	18	140	100	11.5
	-	1092-1 type 11	100	32	32	0 - 100	20.0	73	76	122	50	M6	324	22	155	110	17.2
	2637	1092-1 type 11	100	40	32	0 - 100	20.0	73	76	131	60	M6	324	22	170	125	19.0

**Note:** Mounting brackets are not included with the standard model.

 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

## Accessories

	<p><b>Mounting brackets</b> (on request) mechanical option = <b>HW</b></p>	
	<p><b>Manual override</b> mechanical option = <b>HT</b></p>	
	<p><b>Position indicator, inductive</b> electrical option = <b>1I</b> (open or closed) electrical option = <b>2I</b> (open and closed)</p>	
	<p><b>Terminal box</b> Protection class: IP 65 PG11 gland electrical option = <b>PG</b></p>	
	<p><b>Female connector with LED</b> electrical option = <b>LED</b></p>	
	<p><b>Female connector with power reduction</b> <b>24 V DC</b> <b>Form A</b> electrical option = <b>LS</b></p>	
	<p><b>Female connector M12x1</b> electrical option = <b>M12</b></p>	

We would be happy to discuss your requirements for further options and accessories

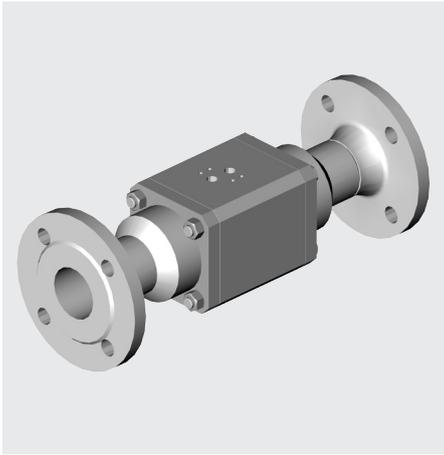
### NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



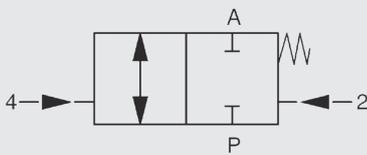
## 2/2-way Coaxial Valve

### CX06F to CX08F pilot operated Flange version

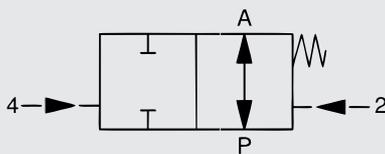
**Model code**  
(also example order)

CX 06F 2/2 F C 2 10 064 PV

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Ordering data

- Nominal size of flange
- Flange standard
- Valve size
- NC/NO function
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Designation

CX06F = CX06F series  
CX07F = CX07F series  
CX08F = CX08F series

### Ways

2/2 = Number of ways

### Control

F = External pilot

### Switching function

C = NC - closed when de-energised  
O = NO - open when de-energised\*

### Body material

1 = Free from non-ferrous metals\*  
2 = Brass  
3 = Brass, nickel-plated\*  
4 = 1.4305\*  
5 = 1.4571\*  
6 = Steel, zinc-plated  
7 = Steel, nickel-plated

### Valve sizes

15 = DN 15  
20 = DN 20  
25 = DN 25  
32 = DN 32  
40 = DN 40  
50 = DN 50

### Pressure range

016 = PN 16 CX06F  
040 = PN 40 CX06F  
063 = PN 63 CX06F  
064 = PN 64 CX06F  
100 = PN 100 CX07F  
160 = PN 160 CX08F

### Options

PV... = Pilot valve (... acc. to accessories)

\*optional

## Technical specifications

Control	2/2 way valve, pilot operated
Nominal size	DN 15 to DN 50
Pressure range (see table)	CX06F - 2/2 DN 15 - 50 PN 0 to PN 64 CX07F - 2/2 DN 15 - 50 PN 0 to PN 100 CX08F - 2/2 DN 15, DN 25 PN 0 to PN 160
Connection	Flange
Housing material	Zinc-plated steel, nickel-plated steel, 1.4571
Seal material	Static: FKM Dynamic: FKM CX06F PTFE CX07F, CX08F Seat seal: PTFE
Back-pressure resistant	Up to 16 bar
Vacuum	Leakage rate <math>10^{-6}</math> mbar•l/s *
Media	Gaseous, liquid, contaminated
Abrasive operating fluids	On request
Flow direction	P → A as marked A → P max. 16 bar
Temperature of medium	-10 °C to +100 °C
Ambient temperature	-10 °C to +50 °C
Actuating part	Double acting piston with return spring
Mounting position	No orientation restrictions
Limit switch	Magnetic field sensor*
Fixing	Mounting bracket*

## Pneumatic part (for pilot valve option)

Control	5/2-way pilot valve
Mounting pattern	Namur
Control pressure	3 to 8 bar
Air requirement	Approx. 7 cm <sup>3</sup> / stroke
Pilot ports 2+4	G <sup>1</sup> / <sub>4</sub> (DN 15 - 50), G <sup>1</sup> / <sub>8</sub> (DN 10)
Switching speed	CX valve can be adjusted steplessly by adjusting the supply to the pilot valve
Switching times	Open/close 50-1000 ms depending on control pressure, pilot valve and meter-out control

**Note:** Connecting an air line filter / water trap upstream will extend the service life of the valves

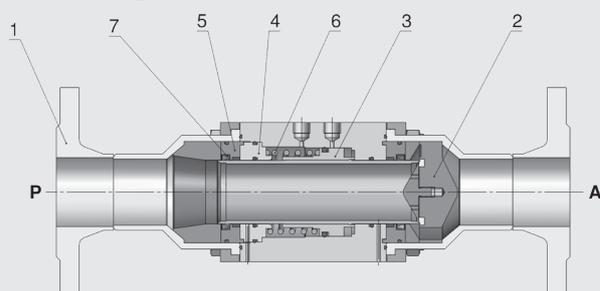
## Electrical part

Supply voltage	DC: 24 V AC: 230 V 40 - 60 Hz
Electrical part	DC: DC solenoid AC: DC solenoid with integrated rectifier
Connection	Female connector to industrial standard, Form B Female connector to DESINA M12x1 * Connector with LED (transparent housing) with varistor*
Voltage tolerance	+ / - 10 % to VDE 0580
Duty cycle	100 %
Protection class	IP 65 when connector is fitted correctly

 The material specification refers exclusively to the valve connection parts in contact with the medium.

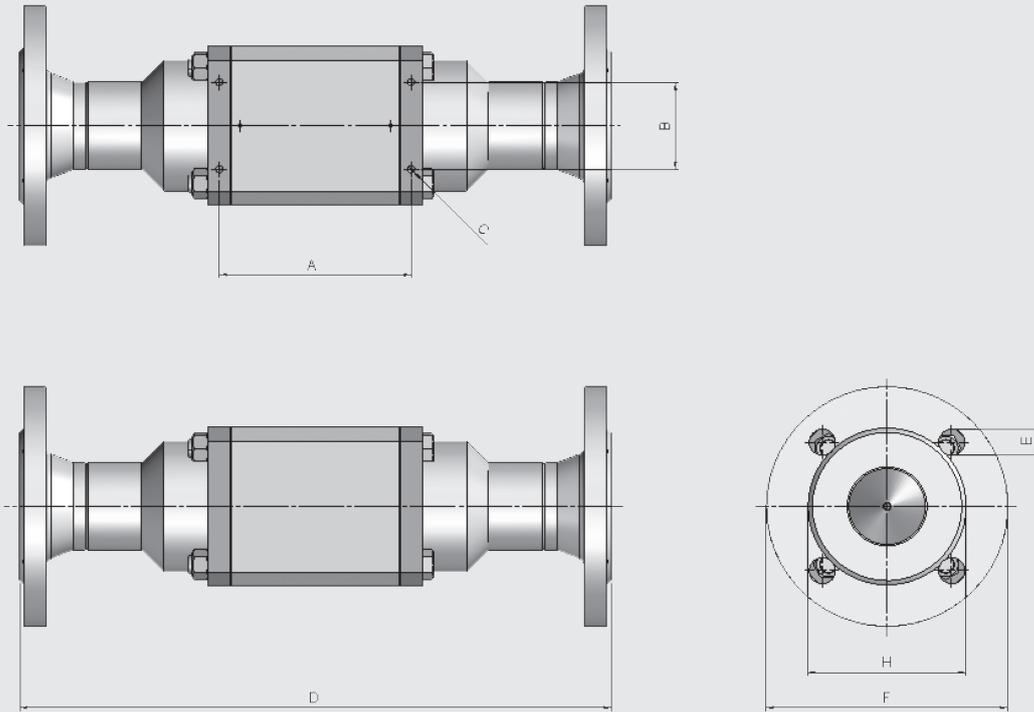
\*optional

## Sectional drawing



Item	Designation	Qty.
1	Flange connector	2
2	Valve seat	1
3	Piston / control tube	1
4	Actuation disc	1
5	Guide disc	2
6	Spring	1
7	PTFE rod seal	2

## Dimensions

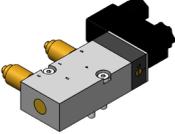
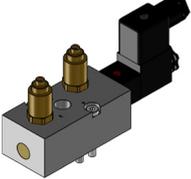
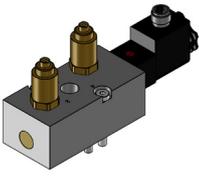
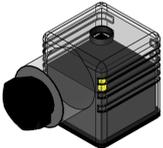
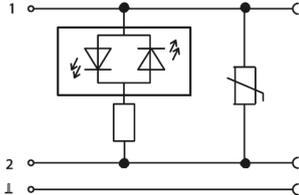
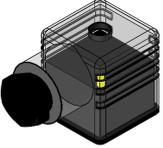
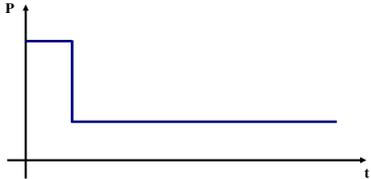


Series	Flange standard		PN	DN (Flange)	DN (Valve)	Pressure [bar]	Kv value [m <sup>3</sup> /h]	a [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]	Weight [kg]
	DIN	EN													
CX06F	2633	-	16	15	15	0 - 16	6.6	100	-	M5	242	14	95	65	3.6
	2633	-	16	20	20	0 - 16	9.4	108	-	M5	269	14	105	75	5.4
	2633	-	16	25	25	0 - 16	14.5	121	-	M5	302	14	115	85	6.7
	2633	-	16	32	32	0 - 16	20.0	122	50	M6	324	18	140	100	9.1
	2633	-	16	40	40	0 - 16	38.2	131	60	M6	385	18	150	110	12.9
	2633	1092-1 Type 11	16	50	50	0 - 16	47.2	131	60	M6	385	18	165	125	14.5
	2635	1092-1 Type 11	40	15	15	0 - 40	6.6	100	-	M5	242	14	95	65	3.8
	2635	1092-1 Type 11	40	20	20	0 - 40	9.4	108	-	M5	269	14	105	75	5.6
	2635	1092-1 Type 11	40	25	25	0 - 40	14.5	121	-	M5	302	14	115	85	7.1
	2635	1092-1 Type 11	40	32	32	0 - 40	20.0	122	50	M6	324	18	140	100	9.5
	2635	1092-1 Type 11	40	40	40	0 - 40	38.2	131	60	M6	385	18	150	110	13.5
	2635	1092-1 Type 11	40	50	50	0 - 40	47.2	131	60	M6	385	18	165	125	14.9
	-	1092-1 Type 11	63	50	50	0 - 63	47.2	131	60	M6	385	22	180	135	18.1
2636	-	64	50	50	0 - 64	47.2	131	60	M6	385	22	180	135	18.1	
CX07F	2637	1092-1 Type 11	100	15	15	0 - 100	6.6	100	-	M5	242	14	105	75	4.8
	-	1092-1 Type 11	100	20	20	0 - 100	9.4	108	-	M5	269	18	130	90	7.6
	2637	1092-1 Type 11	100	25	25	0 - 100	14.5	121	-	M5	302	18	140	100	9.7
	-	1092-1 Type 11	100	32	32	0 - 100	20.0	122	50	M6	324	22	155	110	11.9
	2637	1092-1 Type 11	100	40	40	0 - 100	38.2	131	60	M6	385	22	170	125	17.3
	2637	1092-1 Type 11	100	50	50	0 - 100	47.2	131	60	M6	385	26	195	145	20.5
CX08F	2638	1092-1 Type 11	160	15	15	0 - 160	6.6	100	-	M5	242	14	105	75	4.8
	2638	1092-1 Type 11	160	25	25	0 - 160	14.5	121	-	M5	302	18	140	100	9.7

**Note:** Mounting brackets are not included with the standard model.

 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

## Accessories

	<p><b>Mounting bracket</b> mechanical option = HW</p>	<p>On request</p>
	<p><b>5/2-way pilot valve (NAMUR)</b> for flange-mounting = PV</p>	<p>Connections on side 24V DC 230V 50Hz</p>
	<p><b>5/2-way pilot valve (NAMUR)</b> for flange-mounting = PV</p>	<p>Connections on top 24V DC 230V 50Hz</p>
	<p><b>5/2-way pilot valve (NAMUR)</b> for flange-mounting = PV</p>	<p>Connections on top Solenoid M12x1 24V DC 230V 50Hz</p>
	<p><b>Exhaust air throttle = DR</b></p>	<p>G<math>\frac{1}{8}</math> G<math>\frac{1}{4}</math></p>
	<p><b>Silencer in sintered bronze = SD</b></p>	<p>G<math>\frac{1}{8}</math> G<math>\frac{1}{4}</math></p>
	<p><b>Female connector with LED</b> electrical option = LED</p>	
	<p><b>Female connector with power reduction</b> 24 V DC Form A electrical option = LS</p>	
	<p><b>Special explosion protection</b> II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = EX</p>	<p><b>Note:</b> The operating pressure is reduced by approx. 20% on the Ex version.</p>

We would be happy to discuss your requirements for further options and accessories

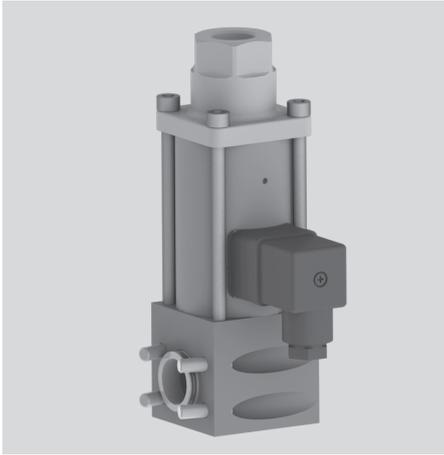
### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

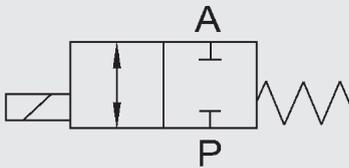
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



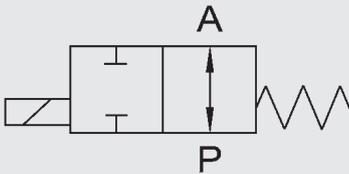
## 2/2 way coaxial valve

### CX03M to CX05M direct acting

#### Switching function



NC (closed when de-energised)



NO (open when de-energised)

#### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage
- Number of module blocks

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

#### Model code

(also example order)

**CX03M 2/2 D C 2 10 040 014 24V**

#### Designation

CX03M = CX03M series  
 CX04M = CX04M series  
 CX05M = CX05M series

#### Ways

2/2 = Number of ways

#### Control

D = Direct

#### Switching function

C = NC - closed when de-energised  
 O = NO - open when de-energised\*

#### Housing material

2 = Brass (valve), aluminium (block)

#### Nominal size

10 = DN 10  
 15 = DN 15  
 20 = DN 20  
 25 = DN 25  
 32 = DN 32  
 40 = DN 40  
 50 = DN 50

#### Pressure range

040 = CX03 >0 - 40 bar  
 064 = CX04 >0 - 64 bar  
 100 = CX05 >0 - 100 bar

#### Connection

014 = G $\frac{1}{4}$  - DN 10  
 038 = G $\frac{3}{8}$  - DN 10, DN 15  
 012 = G $\frac{1}{2}$  - DN 10, DN 15, DN 20  
 034 = G $\frac{3}{4}$  - DN 15, DN 20, DN 25  
 100 = G1 - DN 20, DN 25, DN 32  
 114 = G1 $\frac{1}{4}$  - DN 25, DN 32  
 112 = G1 $\frac{1}{2}$  - DN 32, DN40  
 200 = G2 - DN50

#### Connection diagram

24V = 24V DC  
 230V = 230 V AC 40-60 Hz  
 Special voltage on request

\*optional

## Technical Data

Control	2/2 way valve, direct acting	
Nominal size	DN 10 to DN 50	
Pressure range (see table)	CX03M – 2/2	PN 0 to PN 40
	CX04M – 2/2	PN 0 to PN 64
	CX05M – 2/2	PN 0 to PN 100
Connections	Valve: G ¼ - G 2 Block: G ½ - G 2½	
Housing material	Single valve:	Brass
	Block:	Aluminium
Valve seat (plastic on metal)	FKM	CX03M / CX04M
	PTFE	CX05M
Material of seals	Static:	FKM
	Dynamic:	PTFE
Back-pressure resistant	Up to 16 bar	
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *	
Media	Gaseous, liquid, contaminated	
Abrasive operating fluids	On request	
Flow direction	P → A as marked A → P max. 16 bar	
Temperature of medium	-10 °C to +100 °C	
Ambient temperature	-10 °C to +50 °C	
Mounting position	No orientation restrictions	
Limit switch	Inductive*	
Fixing	Mounting bracket*	

## Electrical part

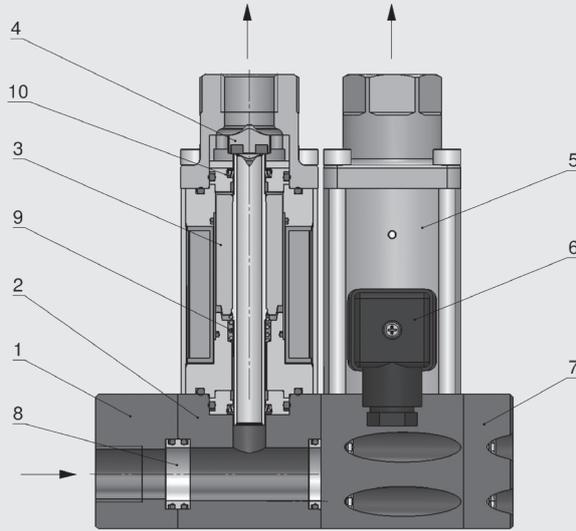
Supply voltage	DC: 24 V AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet AC: DC magnet with integrated rectifier
Connection	Connector plug to DIN EN 175301-803 type A Connector plug to DESINA M12x1 * Illuminated plug with varistor *
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when fitted with connector plug

 The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

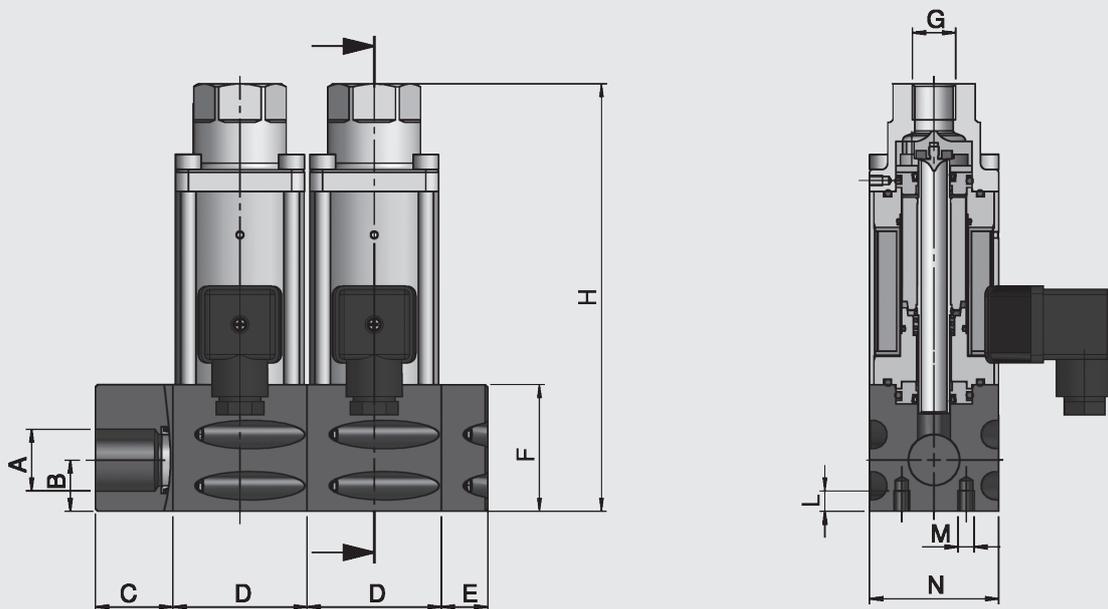
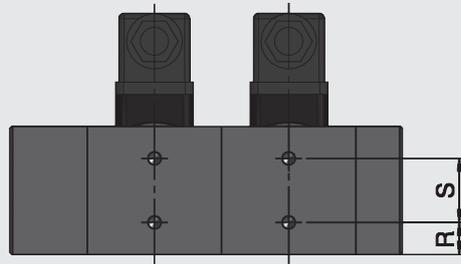
Series	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h]	Power consumption [W]		Weight [kg]
					24V	230 V 50 Hz	
CX03M	10	0 - 40	G¼, G¾, G½	2.5	35	41	1.7
	15	0 - 40	G¾, G½, G¾	5.2	40	45	3.6
	20	0 - 40	G½, G¾, G1	7.0	45	53	5.4
	25	0 - 40	G¾, G1, G1¼	12.3	60	68	7.1
	32	0 - 40	G1, G1¼, G1½	20.0	73	76	12.6
	40	0 - 16	G1½	45.7	73	91	18.3
	50	0 - 16	G2	47.2	73	91	18.3
CX04M	10	0 - 64	G¼, G¾, G½	2.5	44	53	1.7
	15	0 - 64	G¾, G½, G¾	5.2	50	55	3.6
	20	0 - 64	G½, G¾, G1	7.0	53	59	5.4
	25	0 - 64	G¾, G1, G1¼	12.3	77	85	7.1
	32	0 - 64	G1, G1¼, G1½	20.0	73	76	12.6
CX05M	10	0 - 100	G¼, G¾, G½	2.5	44	53	1.7
	15	0 - 100	G¾, G½, G¾	5.2	50	55	3.6
	20	0 - 100	G½, G¾, G1	7.0	53	59	5.4
	25	0 - 100	G¾, G1, G1¼	12.3	77	85	7.1
	32	0 - 100	G1, G1¼, G1½	20.0	73	76	12.6

## Section drawing



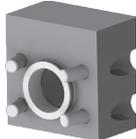
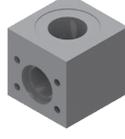
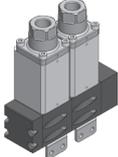
Item	Designation	Quantity
1	Connection, left	1
2	Block module	2
3	Solenoid armature	2
4	Valve seat	2
5	Solenoid	2
6	Connector plug	2
7	End cap	1
8	Spacer	3
9	Spring	2
10	PTFE rod seal	2

## Dimensions



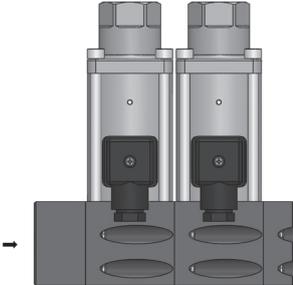
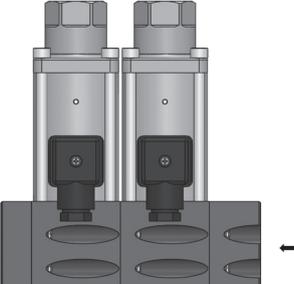
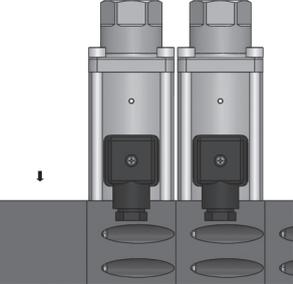
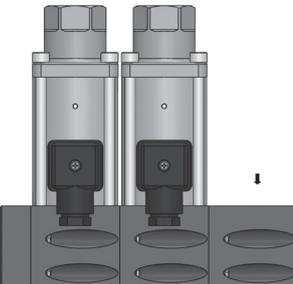
DN	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	G	L [mm]	M [mm]	N [mm]	R [mm]	S [mm]
10	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1	20	42	52	18	49.5	167	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$	8	M6	50	13	25
15	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$	28	42	72	27	69.5	207	G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	8	M6	70	21	28
20	G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	34	32	82	32	79.5	235	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1	10	M8	80	25	34
25	G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	36	32	92	32	89.5	265	G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$	10	M8	90	20	50
32	G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$ , G2	50	34	118	34	114.5	302	G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	10	M8	115	34	50
40	G1 $\frac{1}{2}$ , G2, G2 $\frac{1}{2}$	58	40	132	40	129.5	339	G1 $\frac{1}{2}$	21	M12	130	30	70
50	G1 $\frac{1}{2}$ , G2, G2 $\frac{1}{2}$	58	40	132	40	129.5	339	G2	21	M12	130	30	70

## Accessories

<b>Joining parts</b>	Separating plate	
	Spacer	
<b>End caps</b>	End cap, right	
	End cap, left	
<b>Connecting blocks</b>	Connecting block, right	
	Connecting block, left	
	Connecting block, right Angled version G1 on top DN 10	
	Connecting block, left Angled version G1 on top DN 10	
<b>Reducing adapter</b>	Reducing adapter	
<b>Mounting bracket</b>		

On request we would be happy to discuss your requirements for further options and accessories.

## Examples of ordering codes

	<p>Basic valve</p>	<p>CX03M-2/2-D/C-2/10/040/012/24V</p>
	<p>Connecting block, left</p>	<p>CX03M-2/2-D/C-2/10/040/012/24V -WS-2XL</p>
	<p>Connecting block, right</p>	<p>CX03M-2/2-D/C-2/10/040/012/24V -WS-2XR</p>
	<p>Connecting block, left 90° Angled version, outlet on top</p>	<p>CX03M-2/2-D/C-2/10/040/012/24V -WS-2XLO</p>
	<p>Connecting block, right 90° Angled version, outlet on top</p>	<p>CX03M-2/2-D/C-2/10/040/012/24V -WS-2XRO</p>

### NOTE

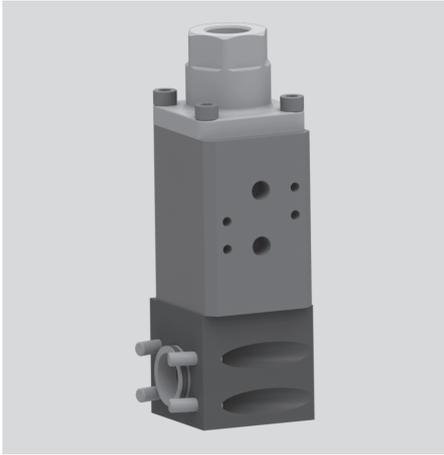
The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

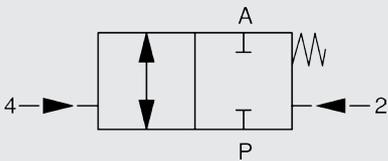




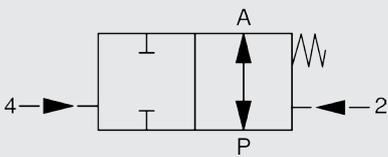
## 2/2 way coaxial valve

### CX06M to CX08M pilot operated

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage
- Number of module blocks

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Model code

(also example order)

**CX06M 2/2 F C 2 10 064 014 PV**

#### Designation

CX06M = CX06M series  
 CX07M = CX07M series  
 CX08M = CX08M series

#### Ways

2/2 = Number of ways

#### Control

F = External pilot

#### Switching function

C = NC - closed when de-energised  
 O = NO - open when de-energised\*

#### Housing material

2 = Brass (valve), aluminium (block)

#### Nominal size

10 = DN 10  
 15 = DN 15  
 20 = DN 20  
 25 = DN 25  
 32 = DN 32  
 40 = DN 40  
 50 = DN 50

#### Pressure range

064 = CX06M > 0 - 64 bar  
 120 = CX07M > 0 - 120 bar  
 160 = CX08M > 0 - 160 bar

#### Connection

014 = G $\frac{1}{4}$  - DN 10  
 038 = G $\frac{3}{8}$  - DN 10, DN 15  
 012 = G $\frac{1}{2}$  - DN 10, DN 15, DN 20  
 034 = G $\frac{3}{4}$  - DN 15, DN 20, DN 25  
 100 = G1 - DN 20, DN 25, DN 32  
 114 = G1 $\frac{1}{4}$  - DN 25, DN 32  
 112 = G1 $\frac{1}{2}$  - DN 32, DN 40  
 200 = G2 - DN 50

#### Option

PV ... = Pilot valve (... acc. to accessories)

\*optional

## Technical Data

Control	2/2 way valve, pilot operated		
Nominal size	DN 10 to DN 50		
Pressure range (see table)	CX06M	DN 10 to DN 50	PN 0 to PN 64
	CX07M	DN 10 to DN 25	PN 0 to PN 120
	CX07M	DN 32 to DN 50	PN 0 to PN 100
	CX08M	DN 10 to DN 25	PN 0 to PN 160
Ports	Valve: G $\frac{1}{4}$ - G2 Block: G $\frac{1}{2}$ - G2 $\frac{1}{2}$		
Housing material	Single valve: brass Block: aluminium		
Material of seals	Static:	FKM	
	Dynamic:	FKM / CX06M	
	Seat seal:	PTFE / CX07M, CX08M	
		PTFE	
Back-pressure resistant	Up to 16 bar		
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	On request		
Flow direction	P → A as marked		
	A → P max. 16 bar		
Temperature of medium	-10 °C to +100 °C		
Ambient temperature	-10 °C to +50 °C		
Actuating part	Dual acting piston with return spring		
Mounting position	No orientation restrictions		
Limit switch	Magnetic field sensor		
Fixing	Mounting bracket*		

### Pneumatic part (for pilot valve option)

Control	5/2-way pilot valve
Mounting pattern	Namur
Control pressure	3 to 8 bar
Air requirement	approx. 7 cm <sup>3</sup> / stroke
Pilot ports 2+4	G $\frac{1}{8}$ at DN 10
	G $\frac{1}{4}$ at DN 15 to DN 50
Switching speed	CX valve can be adjusted steplessly by adjusting the supply to the pilot valve
Switching times	Open/close 50 - 1000 ms depending on control pressure, pilot valve option) and meter-out control (option)

### Electrical part (for pilot valve option)

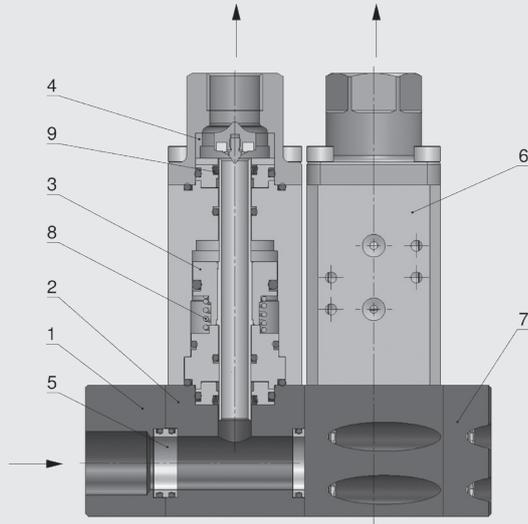
Supply voltage	DC: 24 V
	AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet
	AC: DC magnet with integrated rectifier
Connection	Connector plug to industrial standard, model B
	Connector plug to DESINA M12x1 *
	Connector with LED (transparent housing) with varistor*
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when fitted with connector plug

 The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

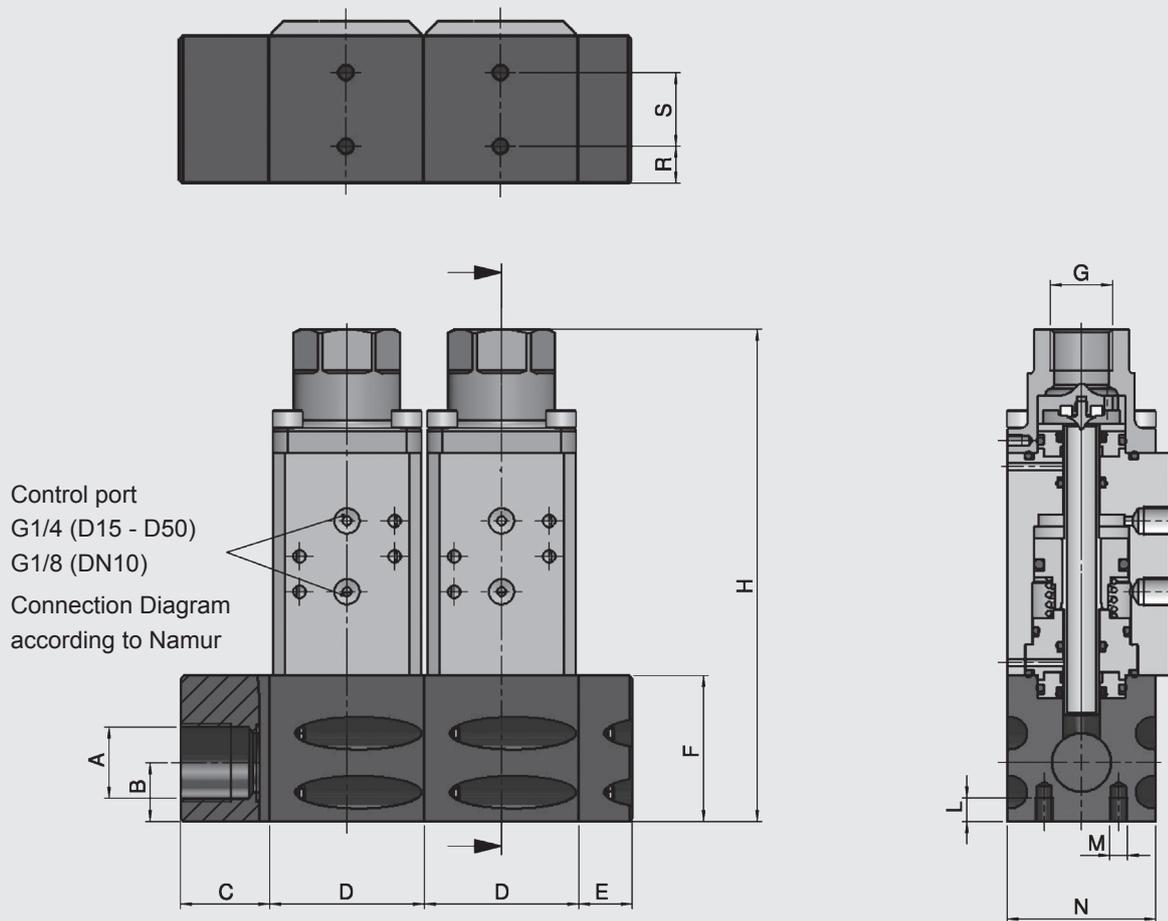
Series	DN [mm]	Pressure [bar]	Connection	Kv value [m <sup>3</sup> /h]	Weight [kg]
CX06M	10	0 - 64	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.7	1.5
	15	0 - 64	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	7.2	3.2
	20	0 - 64	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	9.4	4.0
	25	0 - 64	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	14.5	5.3
	32	0 - 64	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	20.0	6.9
	40	0 - 64	G1 <sup>1</sup> / <sub>2</sub>	45.7	11.7
	50	0 - 64	G2	47.2	11.7
CX07M	10	0 - 120	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.7	1.5
	15	0 - 120	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	7.2	3.2
	20	0 - 120	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	9.4	4.0
	25	0 - 120	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	14.5	5.3
	32	0 - 100	G1, G1 <sup>1</sup> / <sub>4</sub> , G1 <sup>1</sup> / <sub>2</sub>	20.0	6.9
	40	0 - 100	G1 <sup>1</sup> / <sub>2</sub>	45.7	11.7
	50	0 - 100	G2	47.2	11.7
CX08M	10	0 - 160	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.7	1.5
	15	0 - 160	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	7.2	3.2
	20	0 - 160	G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub> , G1	9.4	4.0
	25	0 - 160	G <sup>3</sup> / <sub>4</sub> , G1, G1 <sup>1</sup> / <sub>4</sub>	14.5	5.3

## Section drawing



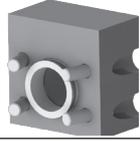
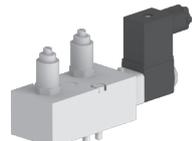
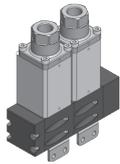
Item	Designation	Quantity
1	Connection block, left	1
2	Block module	2
3	Piston	2
4	Valve seat	2
5	Spacer	3
6	Cylinder	2
7	End cap	1
8	Spring	2
9	PTFE rod seal	2

## Dimensions



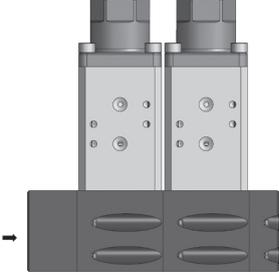
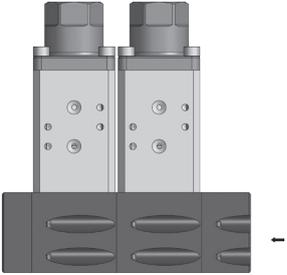
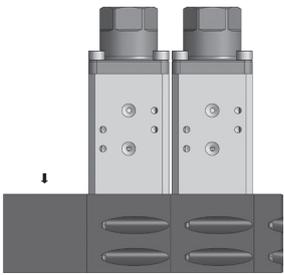
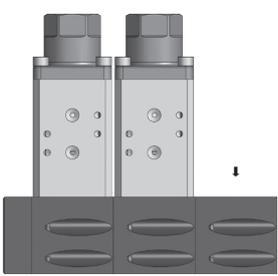
DN	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	G	L [mm]	M [mm]	N [mm]	R [mm]	S [mm]
10	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1	20	42	52	18	49.5	167	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$	8	M6	50	13	25
15	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$	28	42	72	27	69.5	207	G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	8	M6	70	21	28
20	G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	34	32	82	32	79.5	235	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1	10	M8	80	25	34
25	G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	36	32	92	32	89.5	265	G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$	10	M8	90	20	50
32	G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$ , G2	44	34	93	34	99.5	287	G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	10	M8	90	21	50
40	G1 $\frac{1}{2}$ , G2, G2 $\frac{1}{2}$	58	40	132	40	129.5	339	G1 $\frac{1}{2}$	21	M12	130	30	70
50	G1 $\frac{1}{2}$ , G2, G2 $\frac{1}{2}$	58	40	132	40	129.5	339	G2	21	M12	130	30	70

## Accessories

<b>Joining parts</b>	Separating plate		
	Spacer		
<b>End caps</b>	End cap, right		
	End cap, left		
<b>Connection blocks</b>	Connection block, right		
	Connection block, left		
	Connection block, right Angled version G1 on top DN 10		
	Connection block, left Angled version G1 on top DN 10		
<b>Reducing adapter</b>	Reducing adapter	DN 15 to DN 10 DN 25 to DN 10 DN 25 to DN 15 DN 32 to DN 20	
<b>5/2-way pilot valve (NAMUR)</b>	To use flange connection connections at side 24 V DC 230 V 50Hz		
<b>5/2-way pilot valve (NAMUR)</b>	To use flange connection connections on top 24 V DC 230 V 50Hz		
<b>Mounting bracket</b>			

On request we would be happy to discuss your requirements for further options and accessories.

## Examples for code key

	<p>Basic valve</p>	<p>CX06M-2/2-F/C-2/10/064/014/24V</p>
	<p>Connection block, left</p>	<p>CX06M-2/2-F/C-2/10/064/014/24V - 2XL</p>
	<p>Connection block, right</p>	<p>CX06M-2/2-F/C-2/10/064/014/24V - 2XR</p>
	<p>Connection block, left 90° Angled version, outlet on top</p>	<p>CX06M-2/2-F/C-2/10/064/014/24V - 2XLO</p>
	<p>Connection block, right 90° Angled version, outlet on top</p>	<p>CX06M-2/2-F/C-2/10/064/014/24V - 2XRO</p>

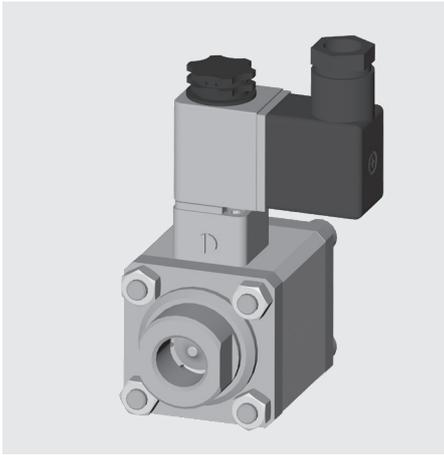
### NOTE

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



## 2/2 way Coaxial Valve

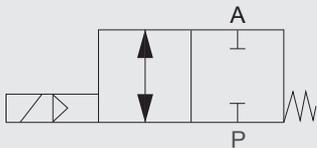
### CXR compact, pilot operated

**Model code**  
(also example order)

CXR 2/2 F C 2 08 040 038 PV ...

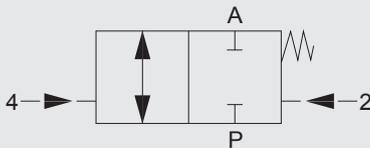
### Switching function

#### Standard

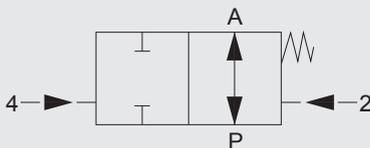


NC (closed when de-energised)

#### With external 3/2-way pilot valve



NO (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage

**⚠** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Designation

CXR = CXR series

### Ways

2/2 = Number of ways

### Control

F = External pilot

### Switching function

C = NC - closed when de-energised

O = NO - open when de-energised\*

### Housing material

2 = Brass

### Nominal size

08 = DN 08

### Pressure range

040 = >0-40 bar

### Connection

038 = G<sup>3/8</sup>

### Pilot valve

PV = 3/2-way pilot valve

### Options

See accessories

\*optional

## Technical data

Control	2/2 way valve, pilot operated	
Nominal size	DN 08	
Pressure range	PN 0 to PN 40	
Connections	Female threaded connection	
Housing material	Brass	
Seal material	Static:	FKM
	Dynamic:	PTFE
	Seat seal	FKM
Back-pressure resistant	Max. 40 bar	
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *	
Media	Emulsions, oils, neutral gases (other media on request)	
Flow direction	P → A max. 40 bar P → R max. 40 bar	
Temperature of medium	-10 °C to +100 °C	
Ambient temperature	-10 °C to +50 °C	
Actuating part	Double acting piston with return spring	
Mounting position	No direction restrictions	
Fixing	Mounting bracket*	

## Pneumatic part (pilot valve)

Control system	3/2-way pilot valve
Mounting pattern	Flange
Control pressure	3 to 10 bar
Connection, control air	Connector for hose with external diameter 6 mm
Air requirement	Approx. 7 cm <sup>3</sup> / stroke
Switching times	Opening/closing 21–40 ms depending on control pressure
Switching function	NC – closed when de-energised

## Optional external 3/2-way pilot valve

Ports, control air	M5
Switching function	NC/NO

## Electrical part (pilot valve)

Supply voltage	DC: 24 V AC: 230 V 40–60 Hz
Electrical part	DC: DC linear solenoid AC: DC linear solenoid with integrated rectifier
Connection	Connector plug to industrial standard, model B Connector plug to DESINA M12x1 * Connector with LED (transparent housing) with varistor*
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when connector plug is fitted

 The material information relates exclusively to valve connection parts that come into contact with medium. \*optional

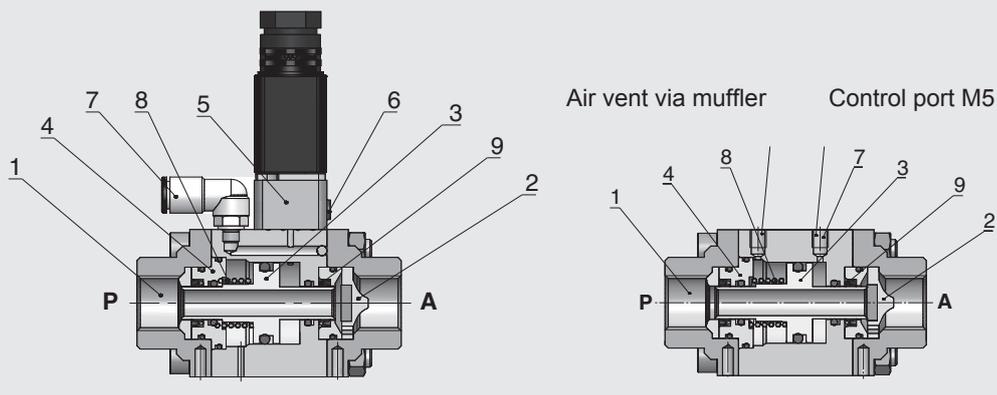
Series	DN [mm]	Pressure [bar]	Connection	Kv value [m <sup>3</sup> /h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
CXR	08	0 - 40	G $\frac{3}{8}$	1.7	6	9.2	0.7

**NOTICE:** Inserting a maintenance unit upstream will increase the service life of the unit.

 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

## Sectional drawing 3/2-way pilot valve

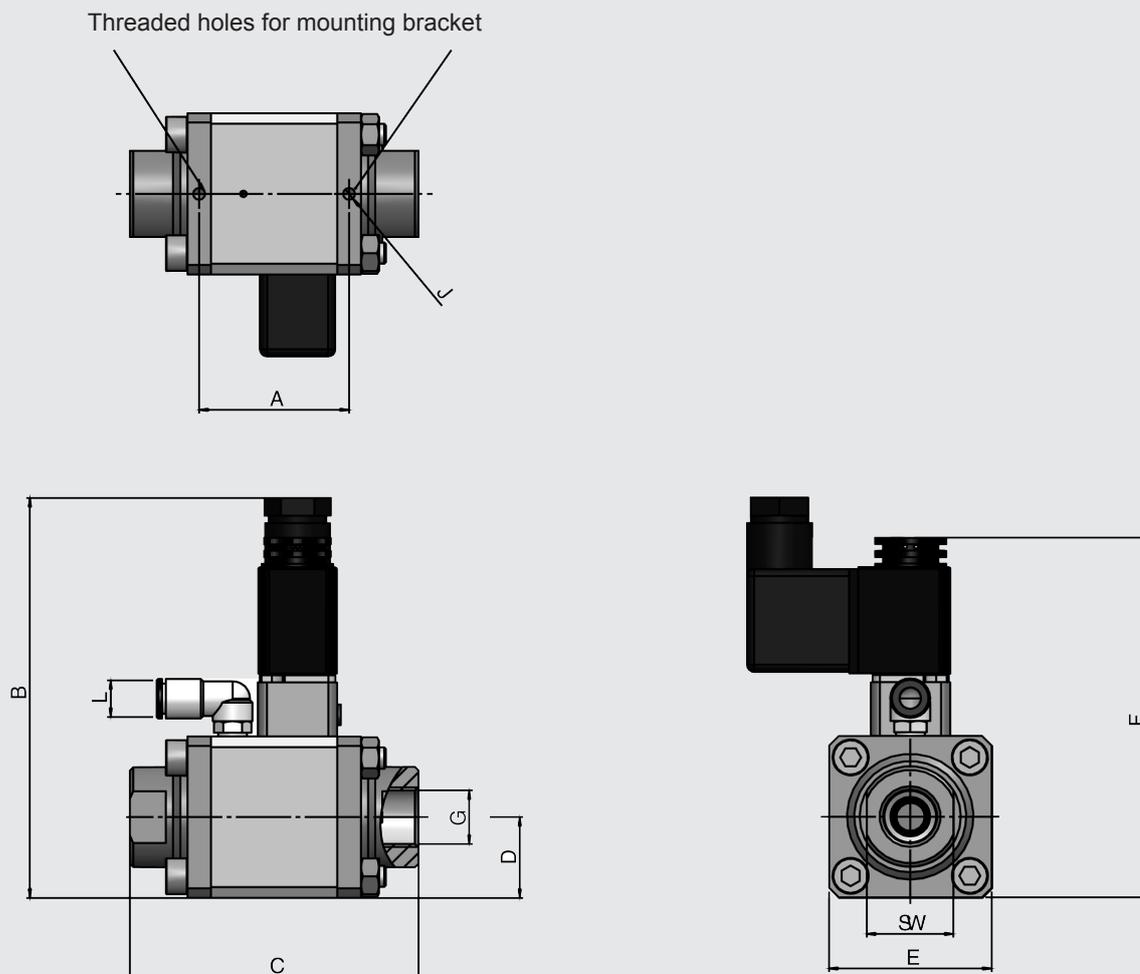
## External 3/2-way pilot valve



Item	Designation	Qty.
1	2/2-way connector	2
2	2/2-way valve seat	1
3	Piston / control tube	1
4	Actuation disc	1
5	3/2-way pilot valve	1
6	Manual override	1
7	Control port	1
8	Spring	1
9	PTFE rod seal	2

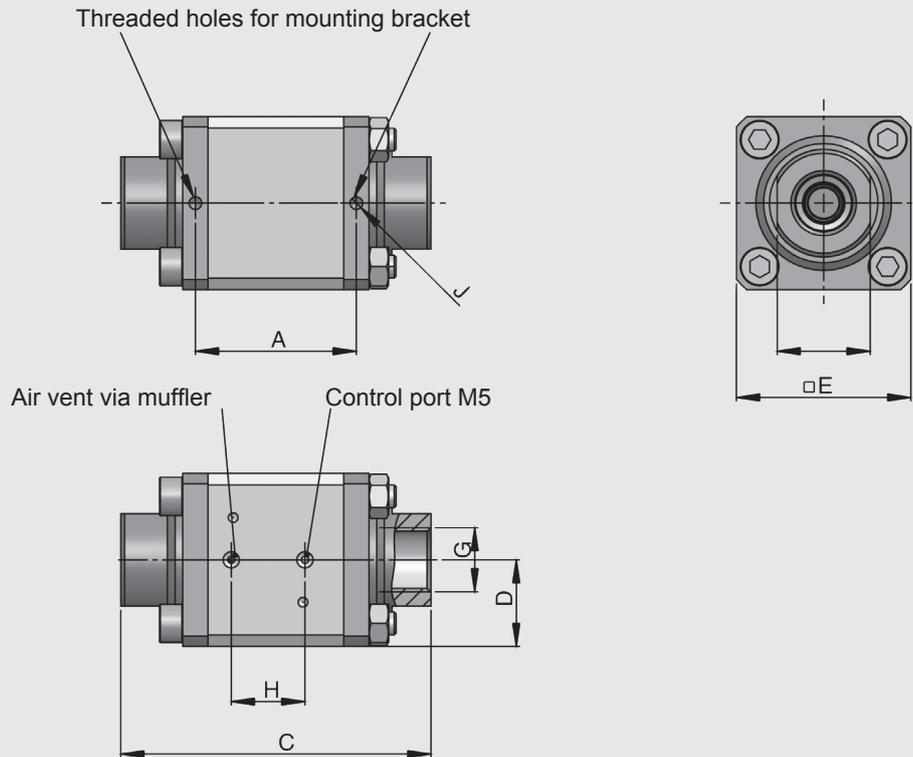
## Dimensions

### CXR compact with 3/2-way pilot valve



DN	G	AF width	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	J	L [mm]
08	G $\frac{3}{8}$	24	41.5	112	80	22.5	45	101	M4	6

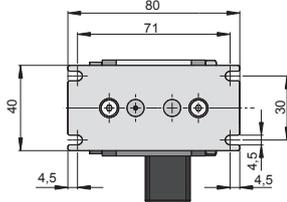
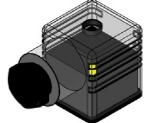
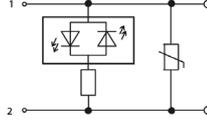
## CXR compact with control-air ports for external 3/2-way pilot valve



DN	G	AF width	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	J
08	G $\frac{3}{8}$	24	41.5	-	80	22.5	45	-	19	M4

Notice: Mounting brackets are not included with the standard model.

### Accessories

	<p><b>Mounting bracket</b> mechanical option = HW</p>	
	<p><b>Connector plug with LED</b> electrical option = LED</p>	
	<p><b>Screw connections</b></p>	
	<p><b>Special explosion protection</b> II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = EX</p>	<p><b>Notice:</b> The operating pressure is reduced by approx. 20% on the Ex version.</p>

We would be happy to discuss your requirements for further options and accessories

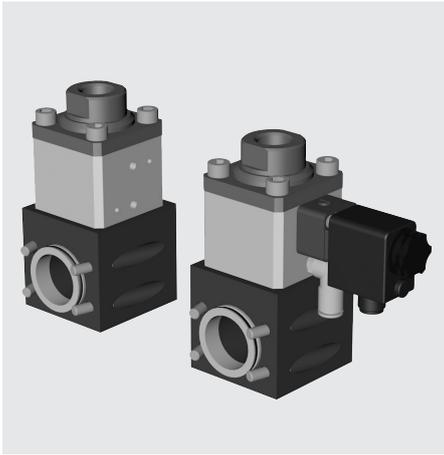
### NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department.

Users bear the responsibility in all cases for determining the product's suitability in the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Errors and technical changes excepted.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
e-mail: [info@hydac.com](mailto:info@hydac.com)



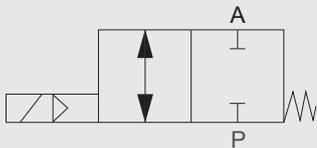
## 2/2 way coaxial valve

### CXRM compact, pilot operated

### Modular design

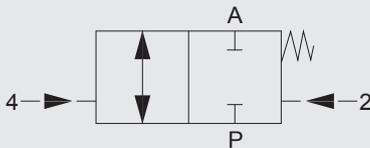
#### Switching function

##### Standard

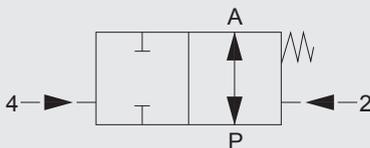


NC (closed when de-energised)

##### With external 3/2-way pilot valve



NC (closed when de-energised)



NO (open when de-energised)

#### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage
- Number of module blocks

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

#### Model code

(also example order)

CXRM 2/2 F C 2 08 040 038 PV ...

#### Designation

CXRM = Modular series CXRM

#### Ways

2/2 = Number of ways

#### Control

F = External pilot

#### Switching function

C = NC – closed when de-energised

O = NO – open when de-energised\*

#### Housing material

2 = Brass

#### Nominal size

08 = DN 08

#### Pressure range

040 = >0–40 bar

#### Connection

038 = G $\frac{3}{8}$

#### Pilot valve

PV = 3/2-way pilot valve

#### Options

See accessories

\*optional

## Technical data

Control	2/2 way valve, pilot operated	
Nominal size	DN 08	
Pressure range	PN 0 to PN 40	
Connections	Valve: G $\frac{3}{8}$	Block: G1
Housing material	Brass	
Seal material	Static:	FKM
	Dynamic:	PTFE
	Seat seal:	FKM
Back-pressure resistant	Max. 40 bar	
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *	
Media	Emulsions, oils, neutral gases (other media on request)	
Flow direction	P → A	max. 40 bar
	A → P	max. 40 bar
Temperature of medium	-10 °C to +100 °C	
Ambient temperature	-10 °C to +50 °C	
Actuating part	Piston with return spring	
Mounting position	No orientation restrictions	
Fixing	Mounting bracket*	

## Pneumatic part (pilot valve)

Control	3/2-way pilot valve
Mounting pattern	Flange
Control pressure	3 to 10 bar
Connection, control air	Connector for hose with external diameter 6 mm
Air requirement	Approx. 7 cm <sup>3</sup> / stroke
Switching times	Opening/closing 21–40 ms depending on control pressure
Switching function	NC closed when de-energised

## Optional external 3/2-way pilot valve

Ports, control air	M5
Switching function	NC/NO

## Electrical part (pilot valve)

Supply voltage	DC: 24 V AC: 230 V 40–60 Hz Special voltages on request
Electrical part	DC: DC linear solenoid AC: DC linear solenoid with integrated rectifier
Connection	Connector plug to industry standard Form B for AC operation with integrated rectifier
Voltage tolerance	+/- 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when connector plug is fitted

 The material specifications refer exclusively to the valve connection parts in contact with the medium. \*optional

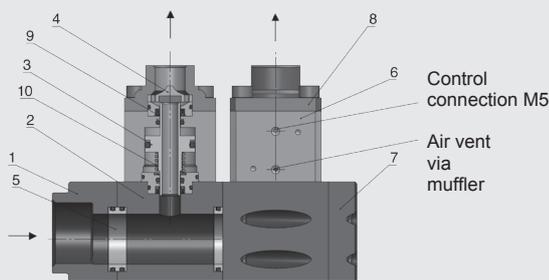
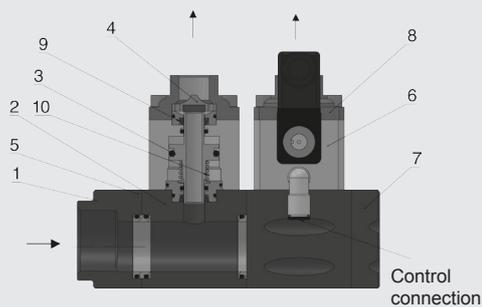
Series	DN [mm]	Pressure [bar]	Connection	Kv value [m <sup>3</sup> /h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
<b>CXRM</b>	08	0 - 40	G $\frac{3}{8}$	1.7	6	9.2	0.7

**NOTICE:** Inserting a maintenance unit upstream will increase the service life of the unit.

 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

## Sectional drawing 3/2-way pilot valve

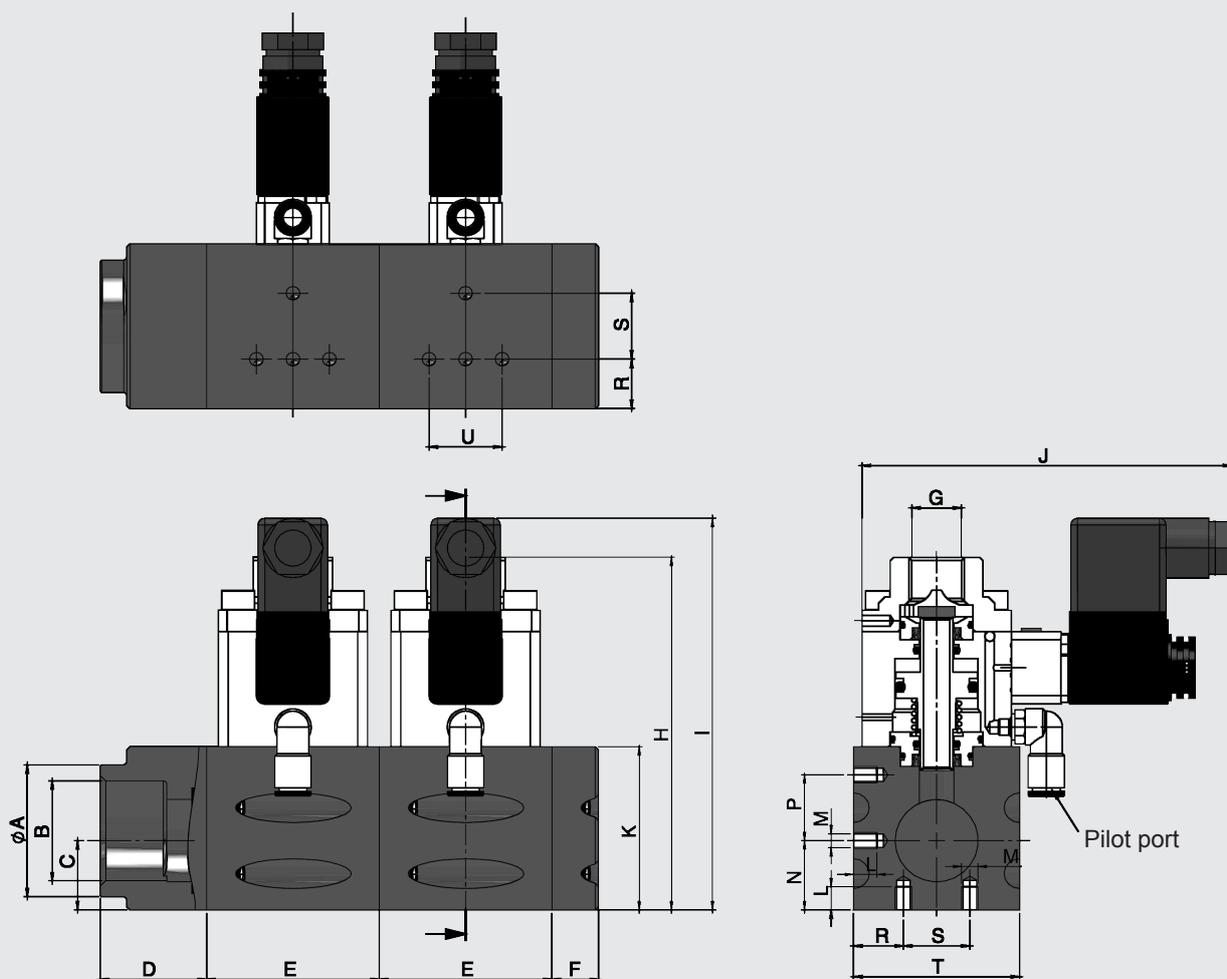
## External 3/2-way pilot valve



Item	Designation	Qty.
1	Connector, left	1
2	Block module	2
3	Piston	2
4	Valve seat	2
5	Spacer	3
6	Cylinder	2
7	End cap	1
8	Connector	2
9	PTFE rod seal	2
10	Spring	2

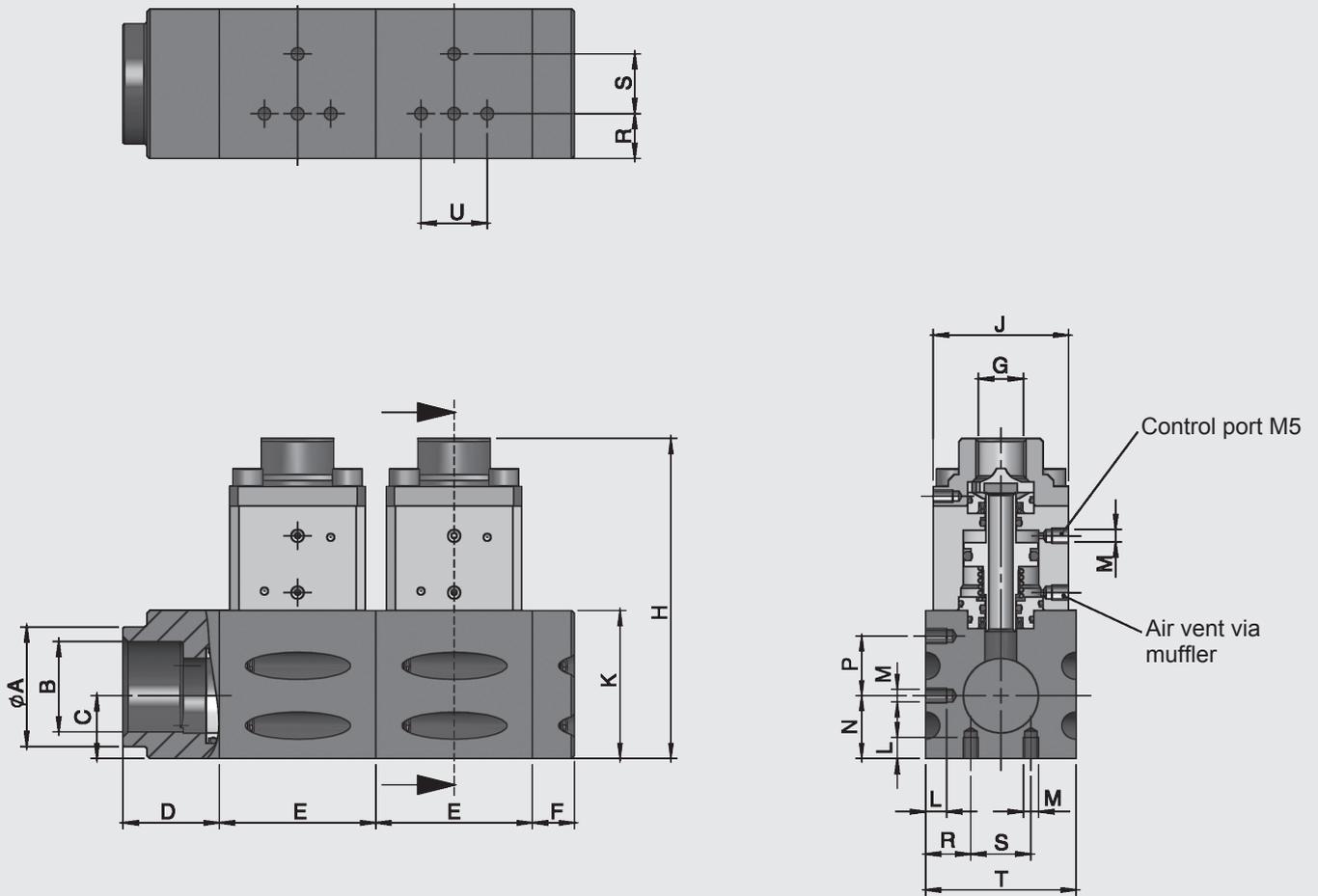
## Dimensions

### CXRM compact with 3/2-way pilot valve



DN	A [mm]	B	C [mm]	D [mm]	E [mm]	F [mm]	G	H [mm]	I [mm]	J [mm]	K [mm]	L [mm]	M	N [mm]	P [mm]	R [mm]	S [mm]	T [mm]	U [mm]
8	40	G1	21	32	52	14	G $\frac{3}{8}$	107	118	115	49.5	7	M5	21	20	15	20	50	22

## CXR compact with control-air ports for external 3/2-way pilot valve



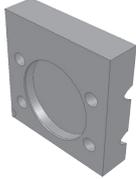
DN	A [mm]	B	C [mm]	D [mm]	E [mm]	F [mm]	G	H [mm]	I [mm]	J [mm]	K [mm]	L [mm]	M	N [mm]	P [mm]	R [mm]	S [mm]	T [mm]	U [mm]
8	40	G1	21	32	52	14	G <sup>3/8</sup>	107	-	45	49.5	7	M5	21	20	15	20	50	22

Notice: Mounting brackets are not included with the standard model.

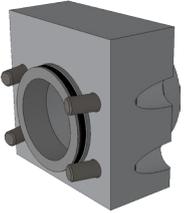
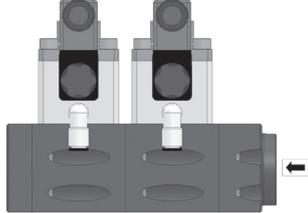
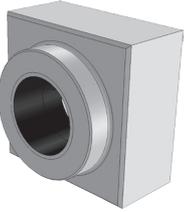
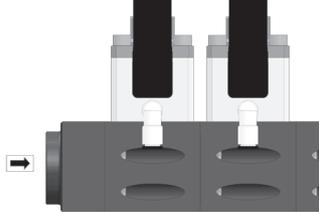
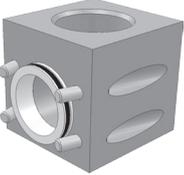
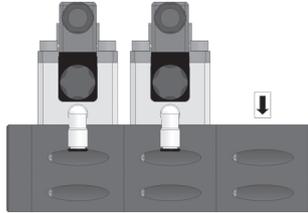
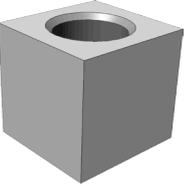
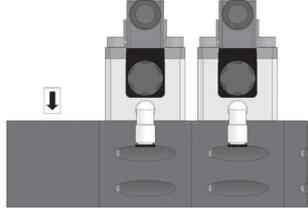
### Ordering code

DN	Version	Switching function	Pressure [bar]	Connection	Model code
08	for 3/2-way pilot valve	NC	0–40	G <sup>3/8</sup>	CXRM-2/2-F/C-2/08/040/038/PV-230V-WS-1X CXRM-2/2-F/C-2/08/040/038/PV-24V-WS-1X
08	for external 3/2-way pilot valve	NC	0–40	G <sup>3/8</sup>	CXRM-2/2-F/C-2/08/040/038-1X-SA
08	for external 3/2-way pilot valve	NO	0–40	G <sup>3/8</sup>	CXRM-2/2-F/O-2/08/040/038-1X-SA

## Accessories

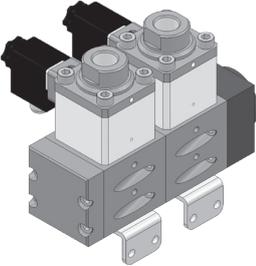
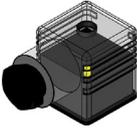
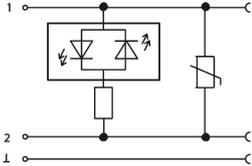
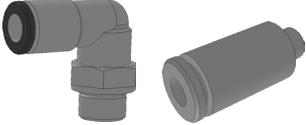
Joining parts		End caps	
	Separating plate		End cap, right
	Spacer		End cap, left

## Connecting blocks

	Connecting block, right	
	Connecting block, left	
	Connecting block, right Angled version G1 Outlet on top	
	Connecting block, left Angled version G1 Outlet on top	

We would be happy to discuss your requirements for further options and accessories

## Further options

	<p><b>Mounting bracket</b> mechanical option = <b>HW</b></p>	
	<p><b>Connector plug with LED</b> electrical option = <b>LED</b></p>	
	<p><b>Screwed fittings</b></p>	
	<p><b>Special explosion protection</b> II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = <b>EX</b></p>	<p><b>Notice:</b> The operating pressure is reduced by approx. 20% on the Ex version.</p>

We would be happy to discuss your requirements for further options and accessories.

### NOTICE

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
e-mail: [info@hydac.com](mailto:info@hydac.com)



## 2/2 way coaxial valve

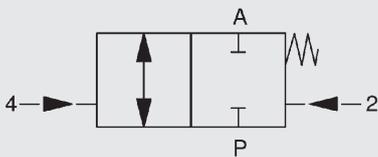
### CXC pilot operated

### Cartridge series

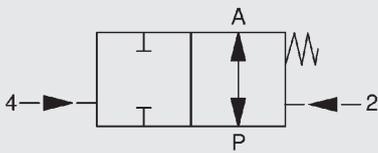
**Model code**  
(also example order)

**CXC - 2/2 - F / C - 6 / 15 / 200 / 012 - F / PV...**

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Designation

CXC = Cartridge series

### Ways

2/2 = Number of ways

### Control

F = External pilot

### Switching function

C = NC – closed when de-energised

### Housing material

6 = Aluminium

### Nominal size

15 = DN 15

### Pressure range

200 = >0–200 bar

### Connection

000 = without valve body

034 = G $\frac{3}{4}$

038 = G $\frac{3}{8}$

### Sealing material

F = FKM

### Option\*

PV ... = Pilot valve (... acc. to accessories)

### Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

\*for CXC without valve body

## Technical data

Control	2/2-way cartridge valve, pilot operated	
Nominal size	DN 15	
Pressure range (see table)	PN 0 to PN 200	
Connections (see table)	G $\frac{3}{8}$ to G $\frac{3}{4}$	
Housing material	Socket version:	Aluminium
	Cartridge version:	Brass, V2A
Seal material	Static:	FKM
	Dynamic:	FKM, PTFE
	Seat seal:	FKM
Back-pressure resistant	Up to max. 20 bar	
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *	
Media	Gaseous, fluid, high-viscosity, gelatinous, paste-like	
Abrasive operating fluids	On request	
Flow direction	P → A max. 200 bar A → P max. 20 bar	
Temperature of medium	-10 °C to +100 °C	
Ambient temperature	-10 °C to +50 °C	
Actuating part	Double acting piston with return spring	
Mounting position	No orientation restrictions	

## Pneumatic part (for pilot valve option)

Control	5/2-way pilot valve*
Porting pattern	Namur
Control pressure	NC: 4 to 8 bar NO: 3 to 8 bar
Air requirement	Approx. 7 cm <sup>3</sup> / stroke
Pilot ports 2+4	G $\frac{1}{8}$
Switching times	Open/close 50–1000 ms depending on control pressure, pilot valve* and meter-out control*
Switching function	NC – closed when de-energised

## Electrical part (for pilot valve option)

Supply voltage	DC: 24 V AC: 230 V 50 Hz Special voltages on request
Electrical part	DC: DC linear solenoid AC: DC linear solenoid with integrated rectifier
Connection	Connector plug to industry standard Form B for AC operation with integrated rectifier
Voltage tolerance	+/- 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when connector plug is fitted

 The material specifications refer exclusively to the valve connection parts in contact with the medium. \*optional

Series	DN [mm]	Pressure [bar]	Connection	Kv value [m <sup>3</sup> /h]	Weight [kg]	
					Cartridge version	Socket version
<b>CXC</b>	15	0–200	G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	6.0	1.0	1.5

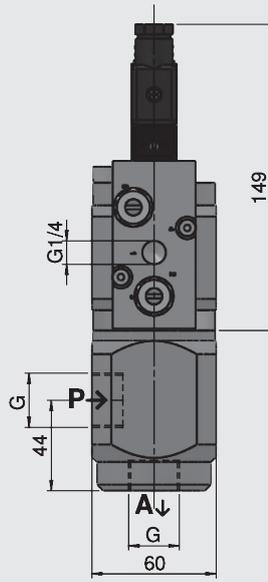
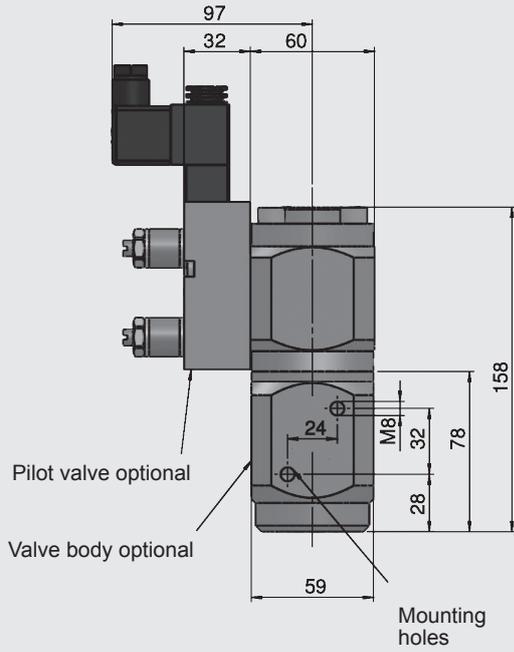
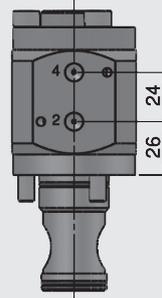
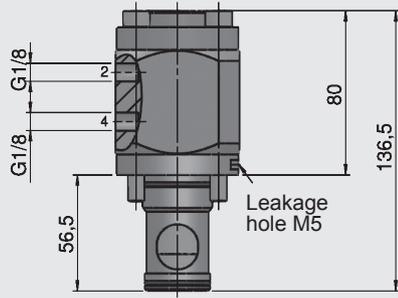
**NOTICE:** Inserting a maintenance unit upstream will increase the service life of the unit.

 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

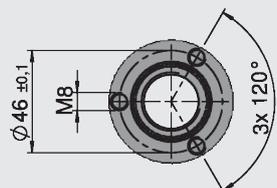
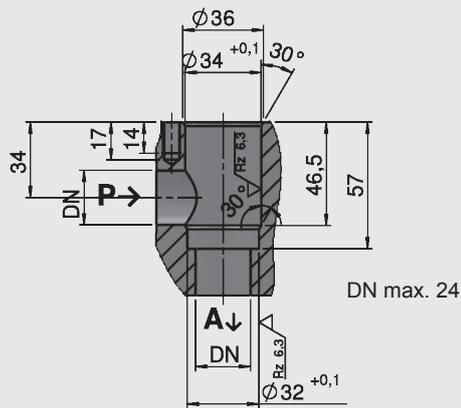
# Dimensions

Closed when de-energised (NC)

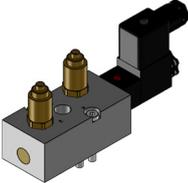
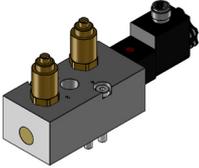
Open when de-energised (NO)



## Drilling template for cartridge



## Accessories

	<p><b>5/2-way pilot valve (NAMUR) for flange-mounting = PV</b></p>	<p>Connections on top 24V DC 230V 50Hz</p>
	<p><b>5/2-way pilot valve (NAMUR) for flange-mounting = PV</b></p>	<p>Connections on top Solenoid M12x1 24V DC 230V 50Hz</p>
	<p><b>Exhaust air throttle = DR</b></p>	<p>G<math>\frac{1}{8}</math> G<math>\frac{1}{4}</math></p>
	<p><b>Silencer in sintered bronze = SD</b></p>	<p>G<math>\frac{1}{8}</math> G<math>\frac{1}{4}</math></p>

We would be happy to discuss your requirements for further options and accessories

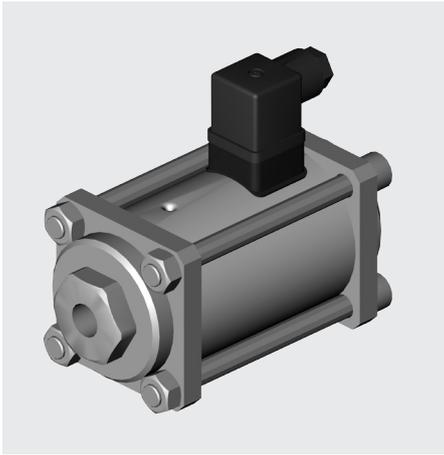
### NOTICE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

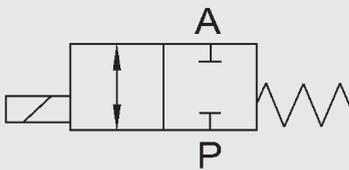
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
e-mail: [info@hydac.com](mailto:info@hydac.com)



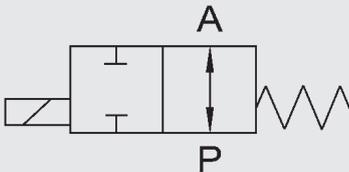
## 2/2-way Coaxial Valve

CXH direct acting  
High-pressure valve

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- NC / NO function
- Operating pressure
- Flow rate
- Media
- Temperature of medium
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

**Model code**  
(also example order)

CX H1 2/2 D C 6 06 010 038 24 V ...

### Designation

CXH1 = CXH1 series

CXH2 = CXH2 series

### Ways

2/2 = Number of ways

### Control

D = Direct

### Switching function

C = NC - closed when de-energised

O = NO - open when de-energised

### Housing material

6 = Zinc-plated steel

7 = Nickel-plated steel

### Valve sizes

01 = DN 1

02 = DN 2

025 = DN 2.5

03 = DN 3

04 = DN 4

05 = DN 5

06 = DN 6

### Pressure range

010 = >0 - 10 bar

016 = >0 - 16 bar

020 = >0 - 20 bar

030 = >0 - 30 bar

040 = >0 - 40 bar

060 = >0 - 60 bar

090 = >0 - 90 bar

100 = >0 - 100 bar

135 = >0 - 135 bar

270 = >0 - 270 bar

030 = >0 - 300 bar

### Connection

018 = G $\frac{1}{8}$

014 = G $\frac{1}{4}$

038 = G $\frac{3}{8}$

### Supply voltage

24V = 24 V DC

230V = 230 V AC 40 - 60Hz

### Options

See accessories

\*optional

## Technical data

Control	2/2 way valve, direct acting
Nominal size	DN 01 to DN 06
Pressure range (see table)	CXH1 - 2/2      DN 02 to DN 06 PN 0 to PN 100 CXH2 - 2/2      DN 01 to DN 06 PN 0 to PN 300
Connections (see table)	Female threaded connection
Housing material	Zinc-plated steel, nickel-plated steel
Seal material	Static: FKM Seat seal: PTFE
Back-pressure resistant	See table
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *
Media	Gaseous, liquid
Flow direction P → A	CXH1 max. 100 bar CXH2 max. 300 bar
Temperature of medium	-10 °C to +100 °C
Ambient temperature	-10 °C to +50 °C
Mounting position	No orientation restrictions

## Electrical part

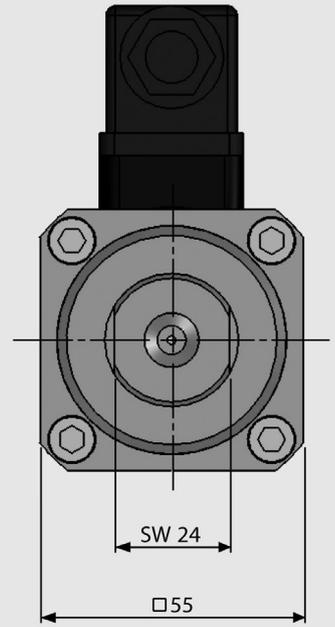
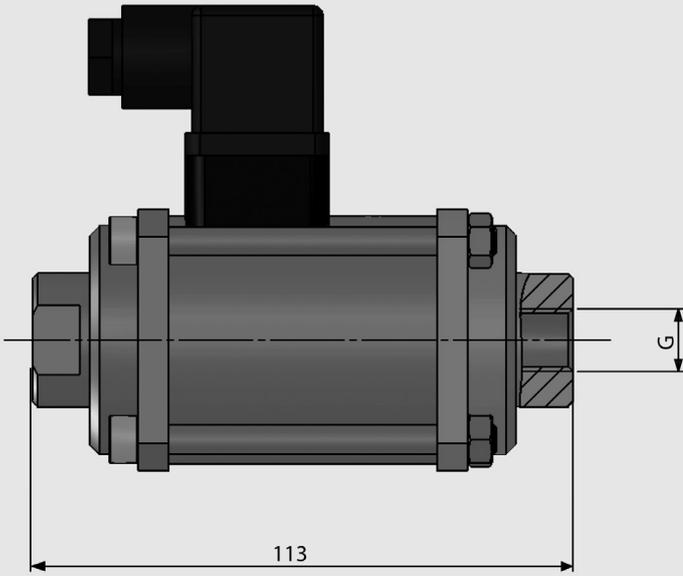
Supply voltage	DC: 24 V AC: 230 V 50 Hz Special voltages on request
Electrical part	DC: DC solenoid AC: DC solenoid with integrated rectifier
Connection	Female connector DIN EN 175301-803, Form A, for AC operation with integrated rectifier
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100%
IP class	IP 65 when connector is fitted

 The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

Series	DN [mm]	Pressure [bar]		Back pressure A → P [bar]	Connection	Kv value [l/min]	Power consumption [W]		Weight [kg]
		NC	NO				24 DC	230 V 50 Hz	
CXH1	2	0 - 100	0 - 100	100	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	2.5	35	41	1.7
	3	0 - 40	0 - 80	70	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	3.7	35	41	1.7
	4	0 - 20	0 - 40	34	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	6.5	35	41	1.7
	5	0 - 16	0 - 30	25	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	8.0	35	41	1.7
	6	0 - 10	0 - 18	15	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	9.5	35	41	1.7
CXH2	1	0 - 300	0 - 300	100	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	0.7	58	55	4.0
	2	0 - 300	0 - 300	50	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	1.9	58	55	4.0
	2.5	0 - 300	0 - 220	30	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	2.7	58	55	4.0
	3	0 - 270	0 - 150	24	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	4.6	58	55	4.0
	4	0 - 135	0 - 90	9	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	7.3	58	55	4.0
	5	0 - 90	0 - 60	3	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	8.2	58	55	4.0
	6	0 - 60	0 - 40	2	G <sup>1</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub>	10.7	58	55	4.0

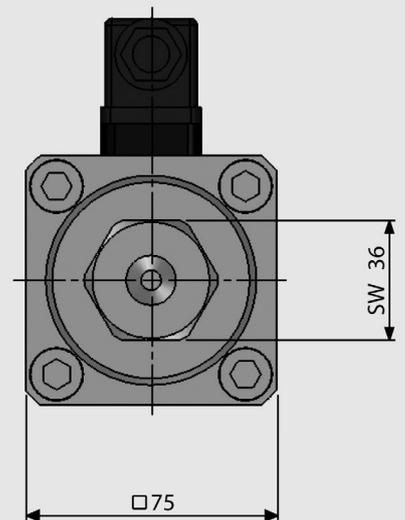
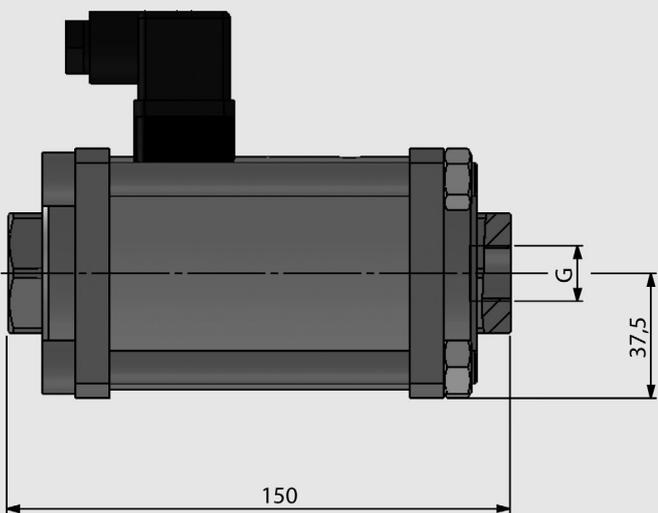
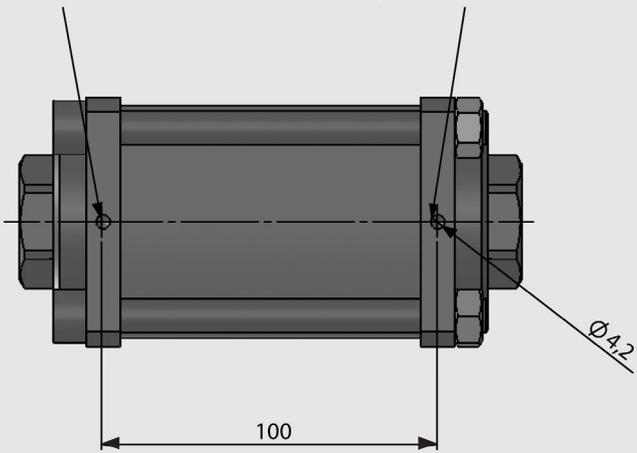
 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

**Dimensions  
CXH1**



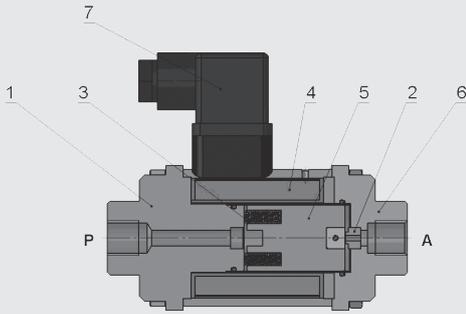
**CXH2**

Threaded holes for mounting bracket



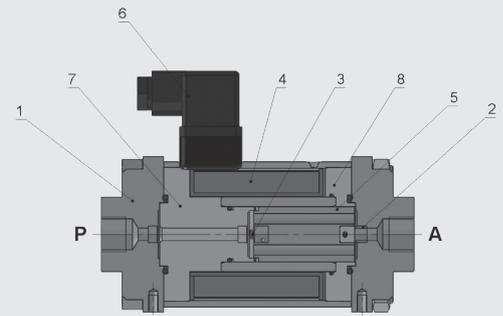
## Sectional drawing

### CXH1



Item	Description	Qty.
1	Solenoid core	1
2	Orifice	1
3	Spring	2
4	Coil	1
5	Solenoid armature	1
6	Connection	1
7	Female connector	1

### CXH2



Item	Description	Qty.
1	Connection	2
2	Orifice	1
3	Spring	2
4	Coil	1
5	Solenoid armature	1
6	Female connector	1
7	Solenoid core	1
8	Solenoid cap	1

## Accessories

	<p><b>Mounting bracket</b> mechanical option = HW</p> <table border="1"> <thead> <tr> <th>Type</th> <th>DN</th> <th>F</th> <th>H</th> <th>J</th> <th>K</th> <th>L</th> <th>M</th> </tr> <tr> <td></td> <td>[mm]</td> <td>[mm]</td> <td>[mm]</td> <td>[mm]</td> <td>[mm]</td> <td>[mm]</td> <td>[mm]</td> </tr> </thead> <tbody> <tr> <td>CXH1</td> <td>2-6</td> <td>10</td> <td>12</td> <td>30</td> <td>7</td> <td>52</td> <td>89</td> </tr> <tr> <td>CXH2</td> <td>1-6</td> <td>10.5</td> <td>-</td> <td>45</td> <td>7</td> <td>70</td> <td>139</td> </tr> </tbody> </table>	Type	DN	F	H	J	K	L	M		[mm]	CXH1	2-6	10	12	30	7	52	89	CXH2	1-6	10.5	-	45	7	70	139							
Type	DN	F	H	J	K	L	M																											
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]																											
CXH1	2-6	10	12	30	7	52	89																											
CXH2	1-6	10.5	-	45	7	70	139																											
	<p><b>Female connector with LED</b> electrical option = LED</p>																																	
	<p><b>Female connector with power reduction</b> 24 V DC Form A electrical option = LS</p>																																	

We would be happy to discuss your requirements for further options and accessories

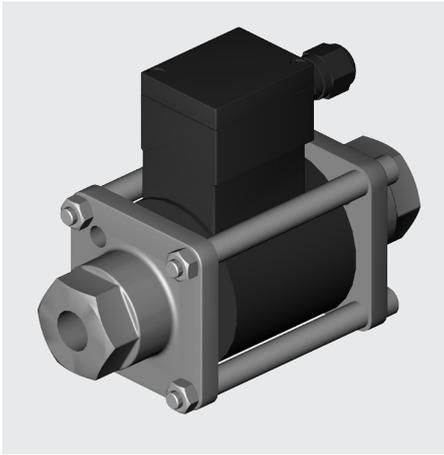
## NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



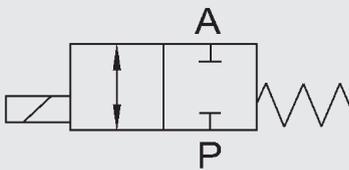
## 2/2-way Coaxial Valve

### CX EX direct acting

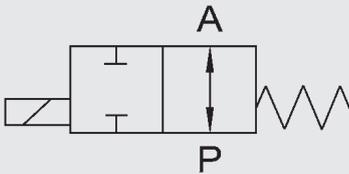
**Model code**  
(also example order)

CX EX 2/2 D C 2 10 020 012 24 V ...

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- NC / NO function
- Operating pressure
- Flow capacity
- Media
- Media temperature
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Designation

CX EX = CX EX series

### Ways

2/2 = Number of ways

### Control

D = Direct

### Switching function

C = NC - closed when de-energised

O = NO - open when de-energised

### Housing material

2 = Brass

4 = 1.4305\*

5 = 1.4571\*

### Nominal size

10 = DN 10

15 = DN 15

### Pressure range

020 = >0 - 20 bar

### Connection

014 = G $\frac{1}{4}$  DN 10

038 = G $\frac{3}{8}$  DN 10, DN 15

012 = G $\frac{1}{2}$  DN 10, DN 15

034 = G $\frac{3}{4}$  DN 15

### Supply voltage

24V = 24V DC

230V = 230V AC 40–60 Hz

### Options

See accessories

\*optional

## Technical data

Control	2/2-way valve, direct acting
Nominal size	DN 10, DN 15
Pressure range (see table)	PN 0 to PN 20 (higher pressures on request)
Connections (see table)	Female threaded connection
Housing material	Brass, 1.4305*, 1.4571*
Seal material	Static: FKM Dynamic: PTFE Seat seal: FKM
Back-pressure resistant	Up to 16 bar
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *
Media	Gaseous, fluid, high-viscosity, gelatinous, contaminated
Abrasive operating fluids	On request
Flow direction	P → A max. 20 bar A → P max. 16 bar
Temperature of medium	-20 °C to +40 °C
Ambient temperature	-30 °C to +40 °C
Mounting position	No orientation restrictions

## Electrical part

Supply voltage	DC: 24 V AC: 230 V 50 Hz
Connection	Cable gland M16 x 1.5
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100%
Explosion protection	II 2G Ex em II T4 II 2 D td A21 IP65 T130°C

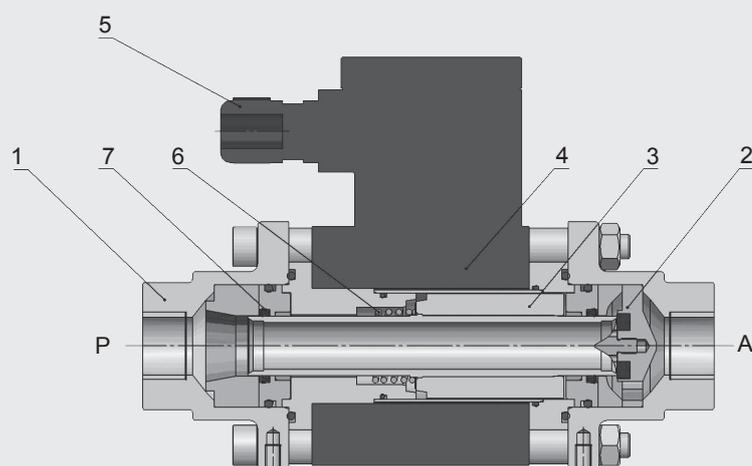
 The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

Series	DN [mm]	Pressure [bar]	Connection (Valve)	Kv value [m <sup>3</sup> /h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
CX EX	10	0 - 20	G <sup>1</sup> / <sub>4</sub> , G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub>	2.5	23	23	2.3
	15	0 - 20*	G <sup>3</sup> / <sub>8</sub> , G <sup>1</sup> / <sub>2</sub> , G <sup>3</sup> / <sub>4</sub>	5.2	30	30	4.3

\*Higher pressures on request

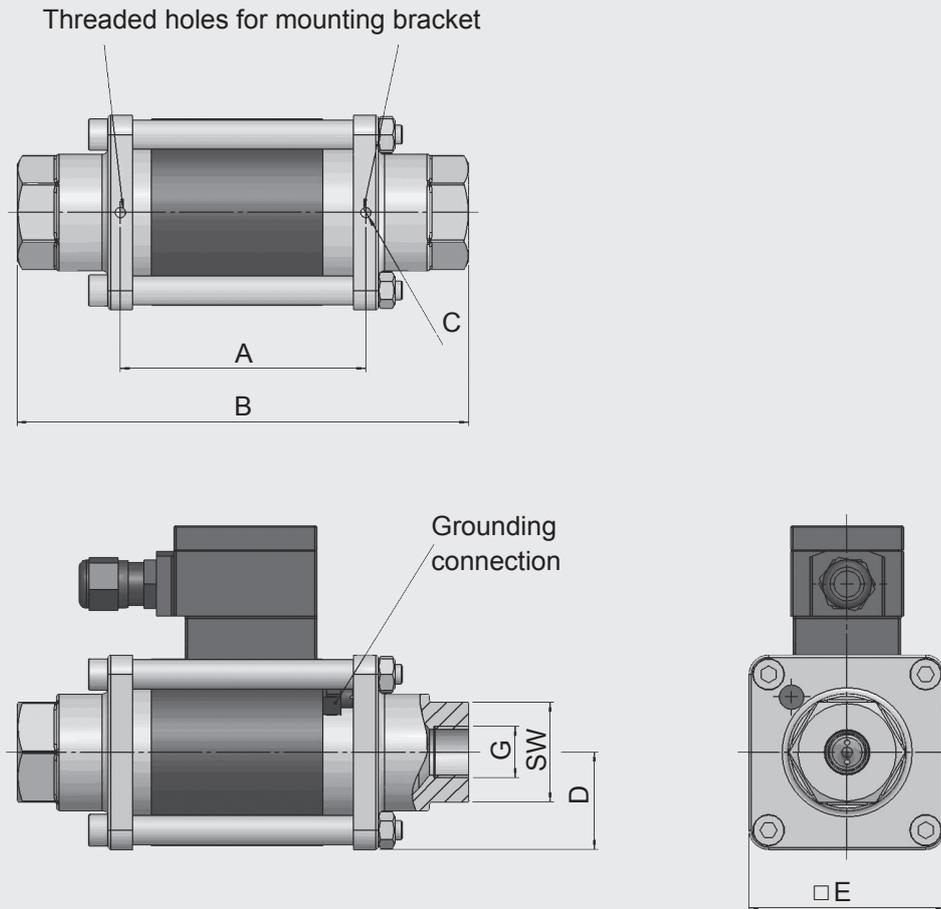
 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

## Sectional drawing



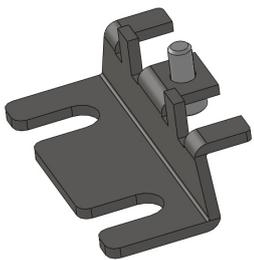
Item	Description	Qty.
1	Connection	2
2	Valve seat	1
3	Solenoid armature	1
4	Solenoid	1
5	Cable gland	1
6	Spring	1
7	PTFE rod seal	2

## Dimensions



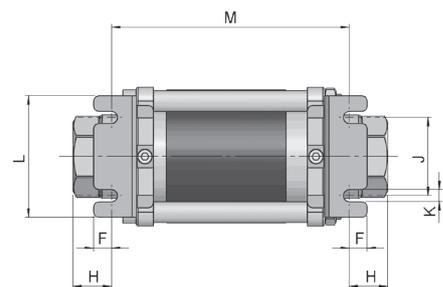
DN	G	SW [mm]	A [mm]	B [mm]	C	D [mm]	E [mm]
10	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$	32	84	159.5	M4	32.5	65
15	G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	41	100	184	M5	40	80

## Accessories



**Mounting bracket**  
mechanical option = HW

DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]
10	10	23.5	30	7	50	112.5
15	10.5	22.5	45	7	70	139



We would be happy to discuss your requirements for further options and accessories

## NOTE

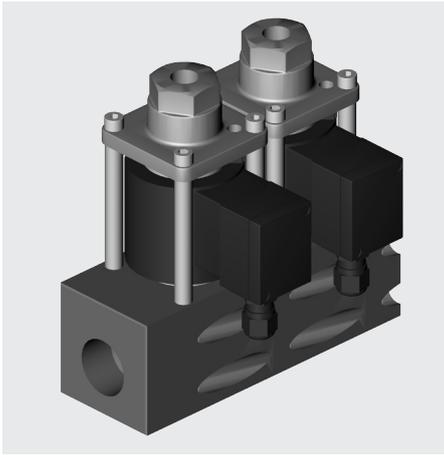
The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)





## 2/2-way Coaxial Valve

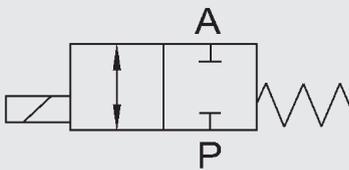
### CXMEX direct acting

### Modular

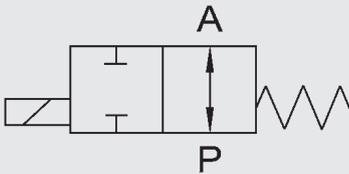
**Model code**  
(also example order)

**CXMEX 2/2 D C 2 10 020 012 24V 2XL**

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- NC / NO function
- Operating pressure
- Flow rate
- Medium
- Temperature of medium
- Ambient temperature
- Supply voltage
- Number of module blocks

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Designation

CXMEX = CXMEX series

### Ways

2/2 = Number of ways

### Control

D = Direct

### Switching function

C = NC - closed when de-energised

O = NO - open when de-energised

### Housing material (valve)

2 = Brass

4 = 1,4305\*

5 = 1,4571\*

### Valve sizes

10 = DN 10

15 = DN 15

### Pressure range

020 = >0 - 20 bar

### Connection

014 = G $\frac{1}{4}$  DN 10

038 = G $\frac{3}{8}$  DN 10, DN 15

012 = G $\frac{1}{2}$  DN 10, DN 15

034 = G $\frac{1}{2}$  DN 15

### Supply voltage

24 V = 24 V DC

230 V = 230 V AC 40 - 60 Hz

### Number of module blocks

2XL = Double block with G $\frac{3}{4}$  connecting block, left, and end cap, right

\*optional

## Technical data

Control	2/2-way valve, direct acting		
Nominal size	DN 10, DN 15		
Pressure range (see table)	CXMEX - 2/2 DN 10	PN 0 to PN 20	
	CXMEX - 2/2 DN 15	PN 0 to PN 20	
Connections (see table)	Valve:	G $\frac{1}{4}$ - G $\frac{3}{4}$	
	Block:	G $\frac{1}{2}$ - G1 $\frac{1}{2}$	
Housing material	Single valve:	Brass, 1,4305*, 1,4571*	
	Block:	Aluminium	
Seal material	Static:	FKM	
	Dynamic:	PTFE	
	Seat seal:	FKM	
Back-pressure resistant	Up to 16 bar		
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *		
Media	Gaseous, liquid, high-viscosity, gelatinous, contaminated		
Abrasive operating fluids	On request		
Flow direction	P → A	max. 20 bar	
	A → P	max. 16 bar	
Temperature of medium	-20 °C to +40 °C		
Ambient temperature	-30 °C to +40 °C		
Mounting position	No orientation restrictions		

## Electrical part

Supply voltage	DC: 24 V
	AC: 230 V 50 Hz
Connection	Cable gland M16 x 1.5
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100%
Explosion protection	II 2G Ex em II T4 II 2 D td A21 IP65 T130°C

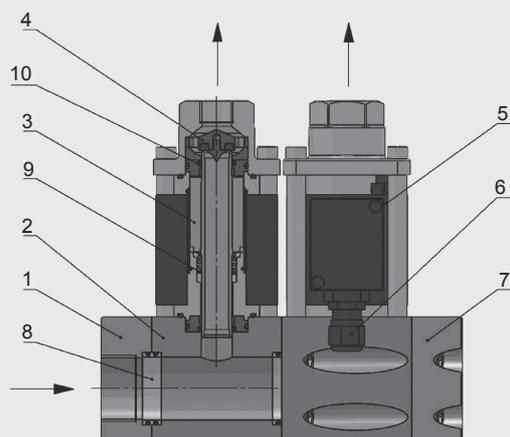
 The material specification refers exclusively to the valve connection parts in contact with the medium. \*optional

Series	DN [mm]	Pressure [bar]	Connection (Valve)	Kv value [m <sup>3</sup> /h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
CXMEX	10	0 - 20	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$	2.5	23	23	2.3
	15	0 - 20*	G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	5.2	30	30	4.3

\*Higher pressures on request

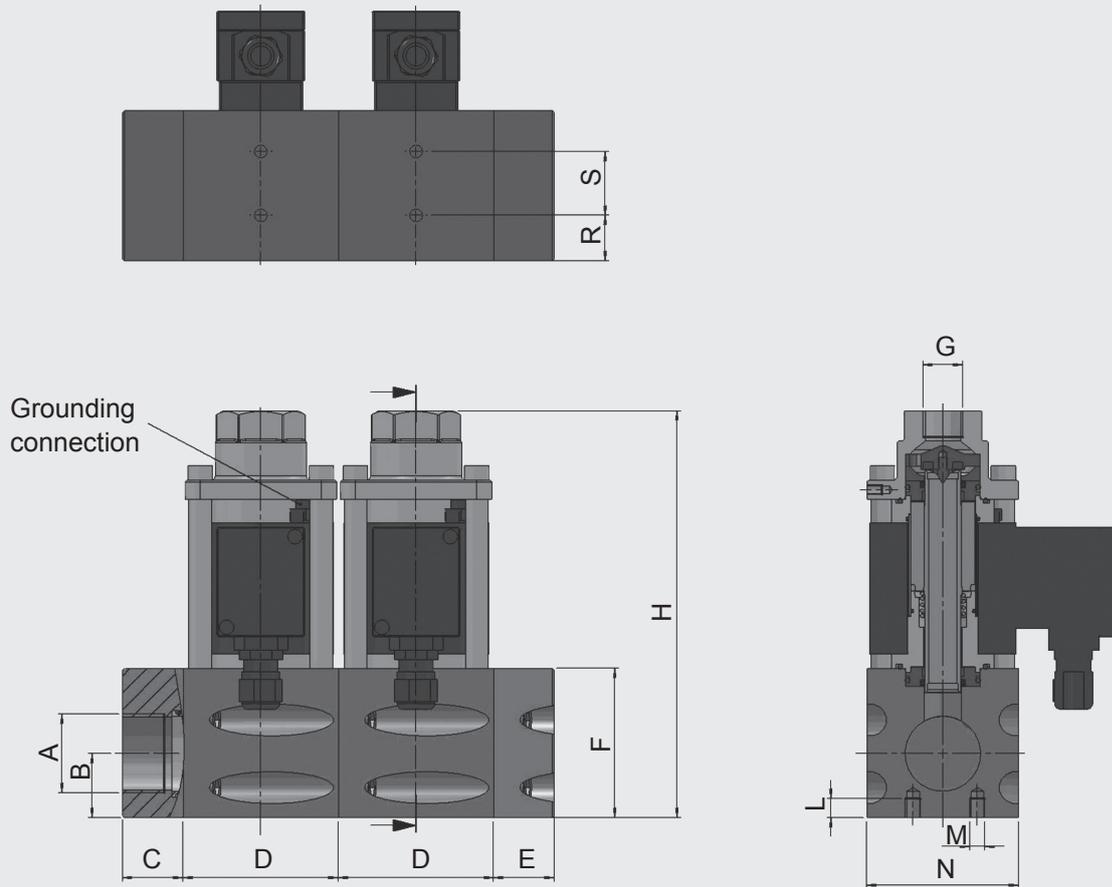
 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

## Sectional drawing



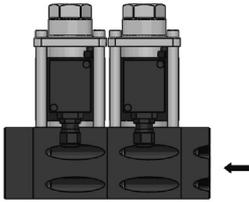
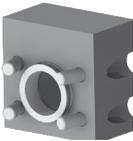
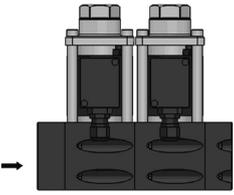
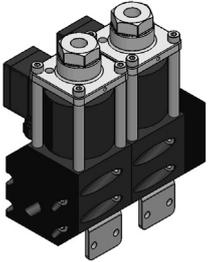
Item	Designation	Qty.
1	Connecting block, left	1
2	Block module	2
3	Solenoid armature	2
4	Valve seat	2
5	Solenoid	2
6	Cable gland	2
7	End cap	1
8	Spacer	3
9	Spring	2
10	PTFE rod seal	4

## Dimensions



DN	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	G	L [mm]	M	N [mm]	R [mm]	S [mm]
10	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$	28	42	67	27	69.5	187	$\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$	8	M6	70	21	28
15	G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	34	32	82	32	79.5	216.5	$\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$	10	M8	80	25	34

## Accessories

<b>Joining parts</b>	Separating plate		
	Spacer		
<b>End caps</b>	End cap, right		
	End cap, left		
<b>Connecting blocks</b>	Connecting block, right		
	Connecting block, left		
<b>Mounting bracket</b>	Mechanical option = HW		

We would be happy to discuss your requirements for further options and accessories

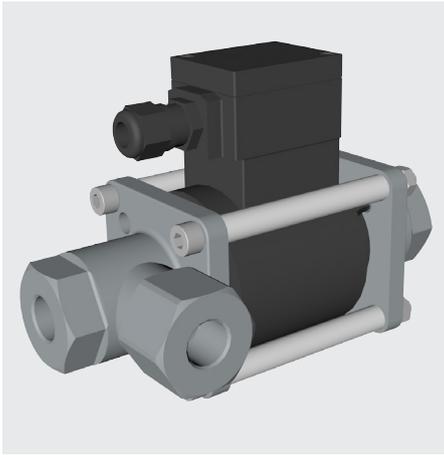
### NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Figures given for product characteristics are average values for a new product which are subject to an ageing process.

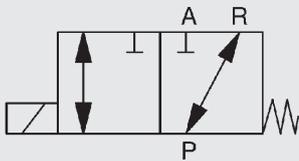
Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

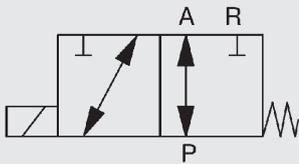


## 3/2-way Coaxial Valve CX EX direct acting

### Switching function



NC (closed when de-energised)



NO (open when de-energised)

### Order data

- Nominal size
- Connection
- NC / NO function
- Operating pressure
- Flow rate
- Media
- Temperature of medium
- Ambient temperature
- Supply voltage

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.

### Model code

(also example order)

**CX EX 3/2 D C 2 10 020 012 24V ...**

#### Designation

CX EX = CX EX series

#### Ways

3/2 = Number of ways

#### Control

D = Direct

#### Switching function

C = NC - closed when de-energised

O = NO - open when de-energised

#### Housing material

2 = Brass

4 = 1.4305\*

5 = 1.4571\*

#### Valve sizes

10 = DN 10

15 = DN 15

#### Pressure range

016 = >0–16 bar DN 15

020 = >0–20 bar DN 10

#### Connection

014 = G $\frac{1}{4}$  DN 10

038 = G $\frac{3}{8}$  DN 10, DN 15

012 = G $\frac{1}{2}$  DN 10, DN 15

034 = G $\frac{3}{4}$  DN 15

#### Supply voltage

24V = 24 V DC

230V = 230 V AC 40–60 Hz

#### Options

See accessories

\*optional

## Technical data

Control	3/2-way valve, direct acting
Nominal size	DN 10, DN 15
Pressure range (see table)	PN 0 to PN 20
Connections (see table)	Female threaded connection
Housing material	Brass, 1.4305*, 1.4571*
Seal material	Static: FKM Dynamic: PTFE Seat seal: FKM
Back-pressure resistant	Up to max. 16 bar
Vacuum	Leakage rate <10 <sup>-6</sup> mbar•l/s *
Media	Gaseous, fluid, high-viscosity, gelatinous, contaminated
Abrasive operating fluids	On request
Flow direction	P → A max. 20 bar A → P max. 16 bar
Temperature of medium	-20 °C to +40 °C
Ambient temperature	-30 °C to +40 °C
Mounting position	No orientation restrictions

## Electrical part

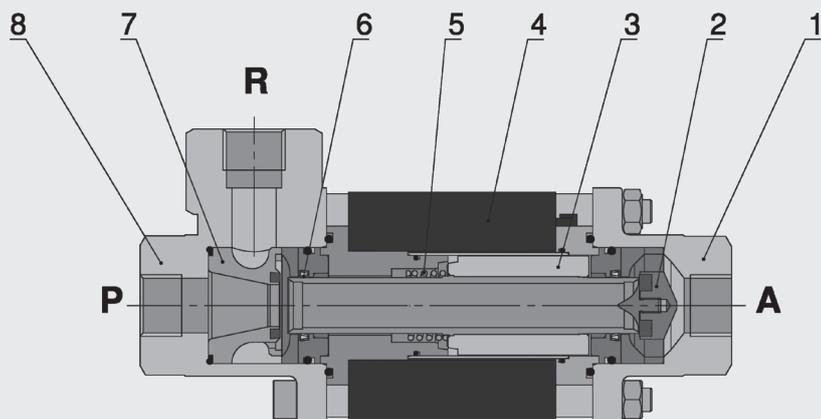
Supply voltage	DC: 24 V AC: 230 V 50 Hz
Connection	Screw type conduit fitting M16 x 1.5
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Explosion protection	II 2G Ex em II T4 II 2 D td A21 IP65 T130°C

 The material information relates exclusively to valve connection parts that come into contact with medium. \*optional

Series	DN [mm]	Pressure [bar]	Connection (Valve)	Kv value [m³/h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50Hz	
CX EX	10	0–20	G¼, G¾, G½	2.5	23	23	2.7
	15	0–16	G¾, G½, G¼	5.6	30	30	4.4

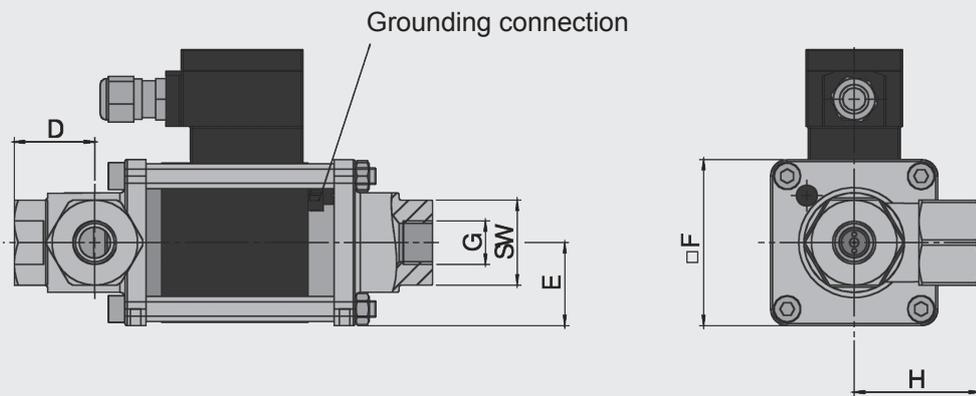
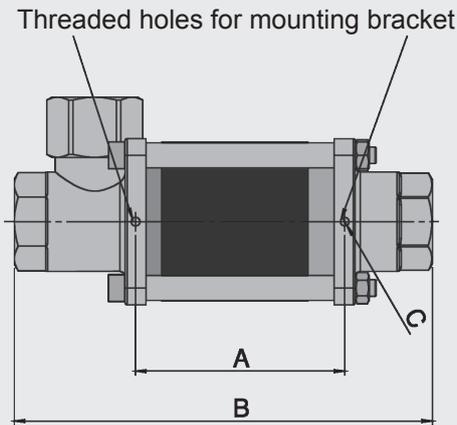
 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

## Sectional drawing



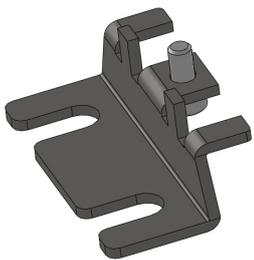
Item	Designation	Qty.
1	2/2-way connecting block	1
2	2/2-way valve seat	1
3	Solenoid armature	1
4	Solenoid	1
5	Spring	1
6	PTFE rod seal	2
7	3/2-way valve seat	1
8	3/2-way connecting block	1

## Dimensions



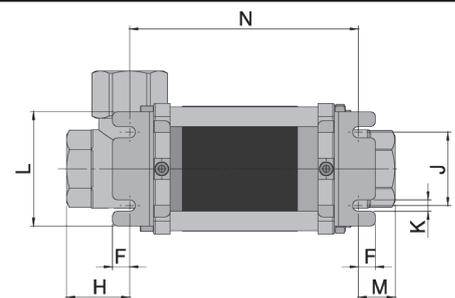
DN [mm]	G	AF width	A [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]
10	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$	32	84	166.5	M4	32	32.5	65	37
15	G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	41	100	200	M5	38.5	40	80	60

## Accessories



### Mounting bracket mechanical option = HW

DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	N [mm]
10	10	30.5	30	7	50	23.5	112.5
15	10.5	38.5	45	7	70	22.5	139



We would be happy to discuss your requirements for further options and accessories

## NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. For applications or operating conditions not described please contact the relevant technical department.

Users bear the responsibility in all cases for determining the product's suitability in the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Errors and technical changes excepted.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
e-mail: [info@hydac.com](mailto:info@hydac.com)

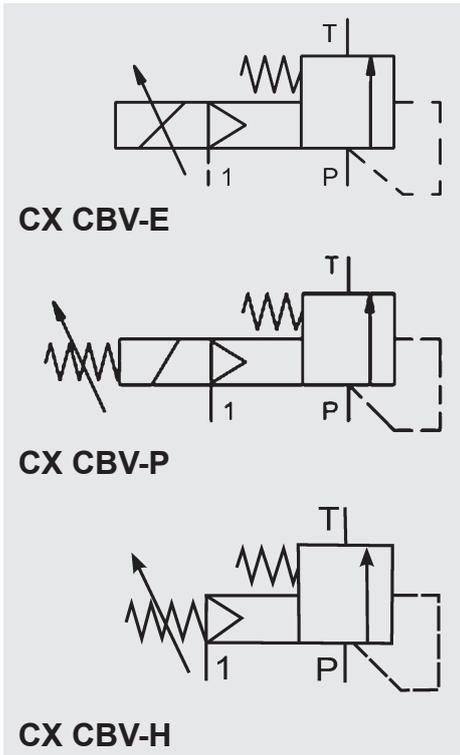




## 2/2-Way Pressure Relief Valve CX CBV

**Model code**  
(also order example)

CX CBV 15 120 G1 F E 24V



**Designation**

CX CBV = Pressure relief valve

**Nominal size**

15 = DN 15

**Pressure range**

120 = 5 - 120 bar

**Connection**

G1 = Female threaded connection G1"

**Seal**

F = FPM (Viton)

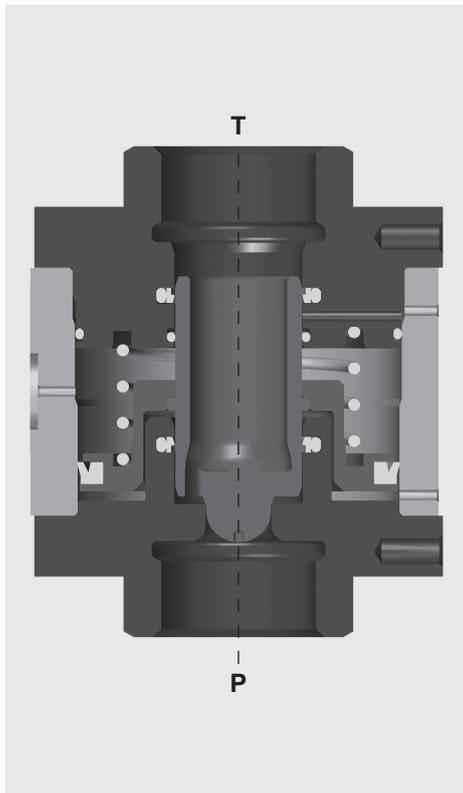
**Control**

- E = Electrical control with proportional control valve
- P = Smooth manual control with pilot valve to reduce pressure
- H = Smooth manual control of pressure

**Supply voltage**

24 V = 24 V DC (not for CX CBV - H)

**!** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.



## Design

Essentially this valve consists of a valve body with integrated valve seat, and a hardened and ground closing cone. The pre-set force is produced by a spring and a pressurized piston. On the coaxial type, the inlet and outlet are in line.

## Functional description

The compressed air with the spring produces a pre-charge force on the closing cone and this is pressed onto the valve seat. Hydraulic compressive force is exerted on the opposite side of the closing cone. If this is below the pre-set pre-load force, the valve is closed. If the hydraulic compressive force exceeds the pre-set pre-load force, then the closing cone is lifted away from the valve seat and operating fluid flows from pressure port P to tank port T. This has the effect of limiting the pressure at port P. The hydraulic energy used is converted to heat and the operating fluid is drained to tank.

## Technical data

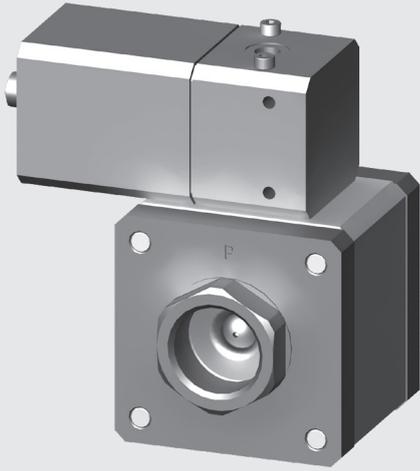
Control	E: Smooth electrical control of pressure
	P: Smooth manual control of pressure with a pilot valve for unpressurised flow
	H: Smooth manual control of pressure
Media	Fluid - high-viscosity - contaminated
Nominal size	DN 15
Pressure range	5 - 120 bar
Flow rate	Max. 6 m <sup>3</sup> /h
Housing material	Steel, zinc-plated
Material of seals	FKM
Temperature of medium	0 °C to +60 °C
Ambient temperature	0 °C to +50 °C
Ports	Female threaded connection G1"
Electrical connection	E: M12x1 connector (LED indicator)
	P: DIN EN 175301-803 socket optional: M12 x 1 coil with LED
Supply voltage	E: 24 V DC (max. residual ripple 10 %)
	P: 24 V DC, 230 V AC, special voltages
Voltage tolerance	E / P: ± 10 % to VDE 0580
Power consumption	E: 2.5 Watt
	P: 230 V 50 Hz: 9,2 VA   24 V DC: 6 W
Duty cycle	E / P: 100 %
Protection class	E / P: IP 65 when fitted with connector
Mounting position	E: M12 connection preferably uppermost
	H / P: pressure gauge preferably uppermost
Control air	40 µ filtered, max. 8 bar

Put the T-line into the tank while unpressurised.

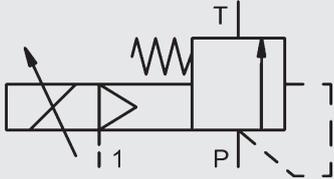
Further options and accessories available on request.

**⚠** The material specification refers exclusively to the valve connection parts in contact with the medium.

## CX CBV-E

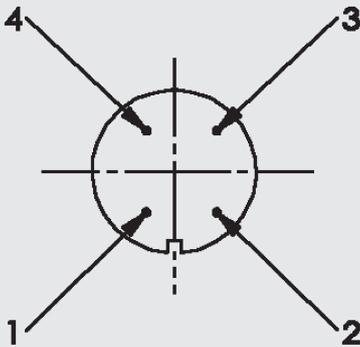


### Switching function



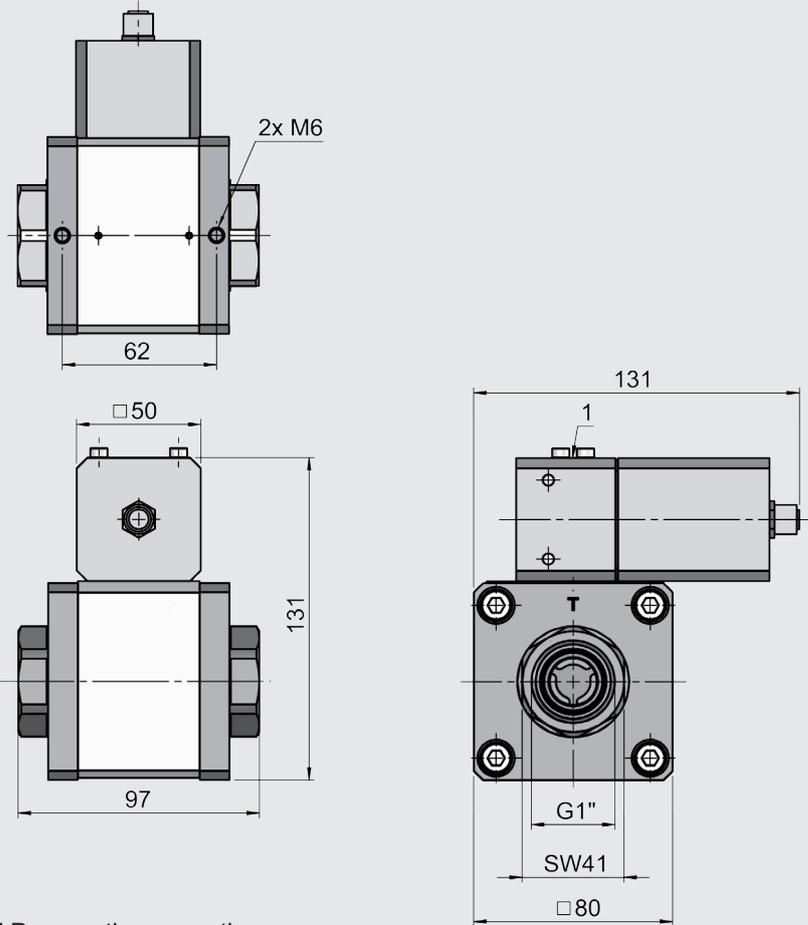
### Electrical connection

(M12x1)



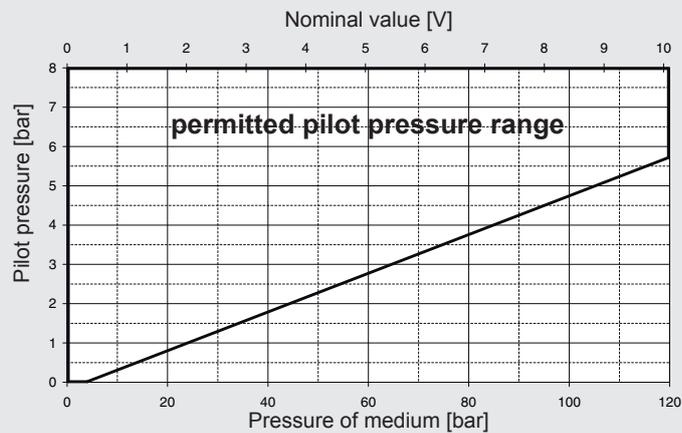
1	Supply
2	Set value (-)
3	GND (-)
4	Set value (+) 0-10V

## Dimensions

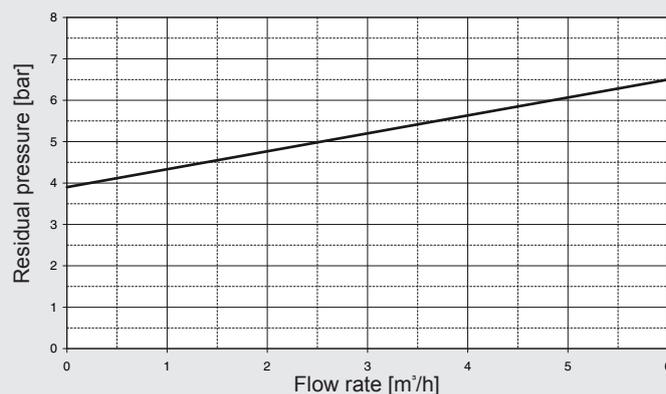


1: 1/8" Pneumatic connection

### Control pressure graphs

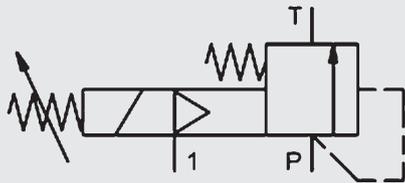
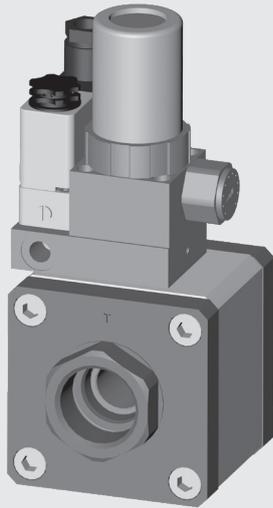


### Pressure loss due to flow through (Pressure minimization)



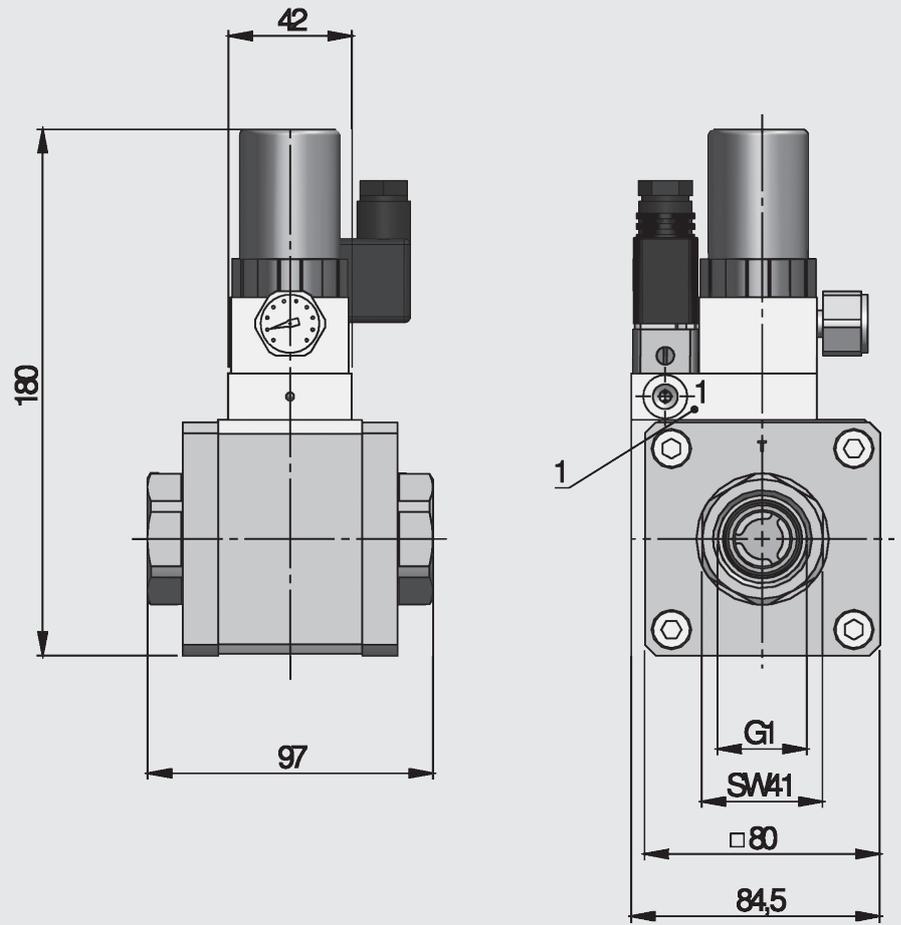
Noise level approx. 70 dBA  
(measured at a residual pressure of 6.5 bar and a flow rate of 6 m³/h)

## CX CBV-P



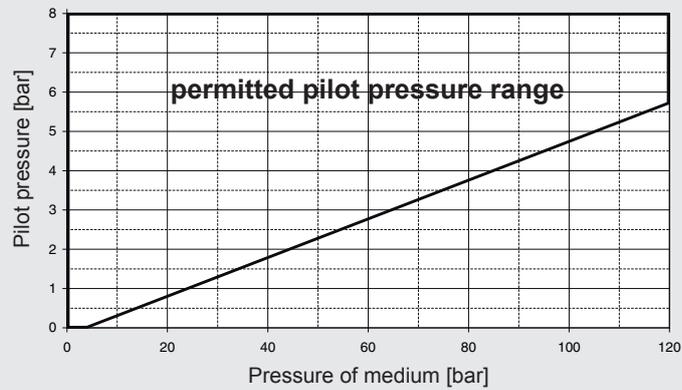
Switching function

## Dimensions

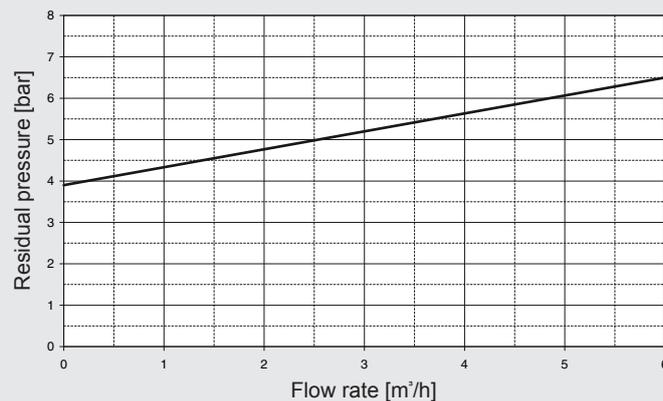


1: 1/8" Pneumatic connection

## Control pressure graphs

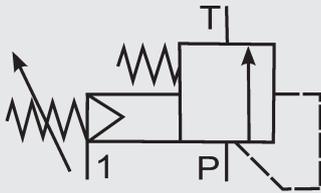
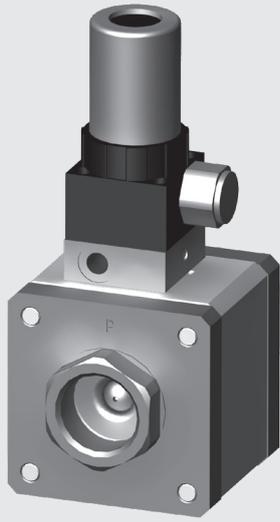


## Pressure loss due to flow through (Pressure minimization)



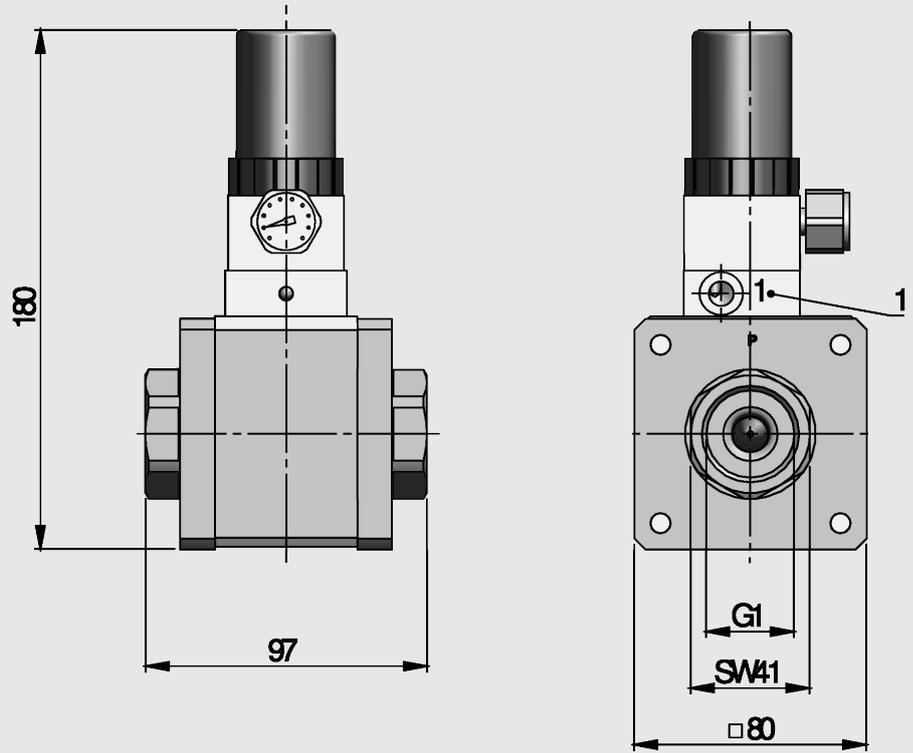
Noise level approx. 70 dBA  
(measured at a residual pressure of 6.5 bar and a flow rate of 6 m³/h)

## CX CBV-H



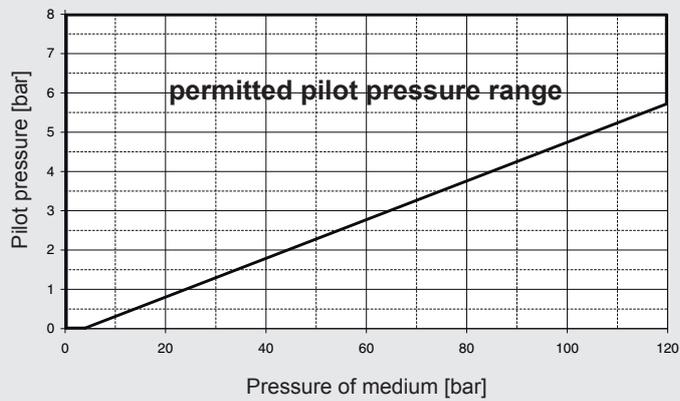
Switching function

## Dimensions

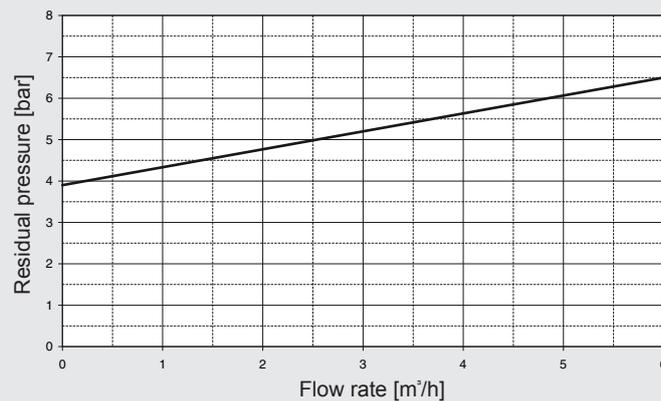


1: 1/8" Pneumatic connection

## Control pressure graphs



## Pressure loss due to flow through (Pressure minimization)



Noise level approx. 70 dBA  
(measured at a residual pressure of 6.5 bar and a flow rate of 6 m³/h)

**!** The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

**NOTE**

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the proper HYDAC department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

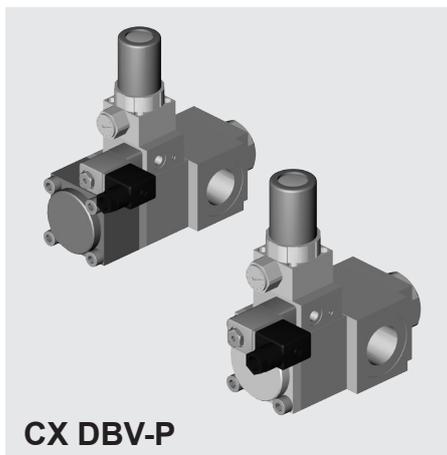
Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

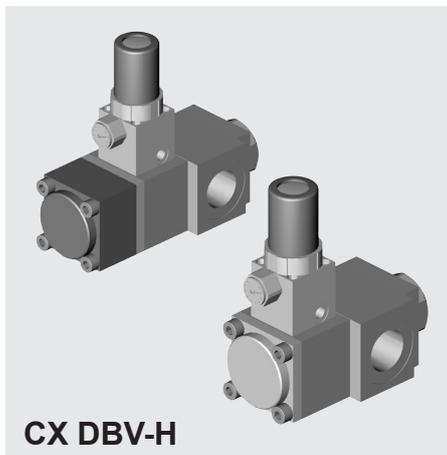
## 2/2-Way - Pressure Relief Valve CX DBV (Right-Angle Design)



**CX DBV-E**



**CX DBV-P**



**CX DBV-H**

**Model code**  
(also example order)

**CX DBV 12 120 G1 F P 24V ...**

**Designation**

CX DBV = Pressure relief valve

**Nominal size**

10 = DN 10  
12 = DN 12  
15 = DN 15  
20 = DN 20

**Pressure range**

040 = 3 - 40 bar  
064 = 5 - 64 bar  
080 = 3 - 80 bar  
120 = 10 - 120 bar  
140 = 5 - 140 bar  
160 = 12 - 160 bar  
200 = 10 - 200 bar

**Connection**

G1 = Female threaded connection G1"

**Seal**

F = FKM (Viton)

**Control**

E = Electrical proportional control of pilot pressure reducing valve  
P = Stepless, manually adjustable control via solenoid valve to limit system pressure  
H = Stepless, manually adjustable control of pilot pressure reducing valve

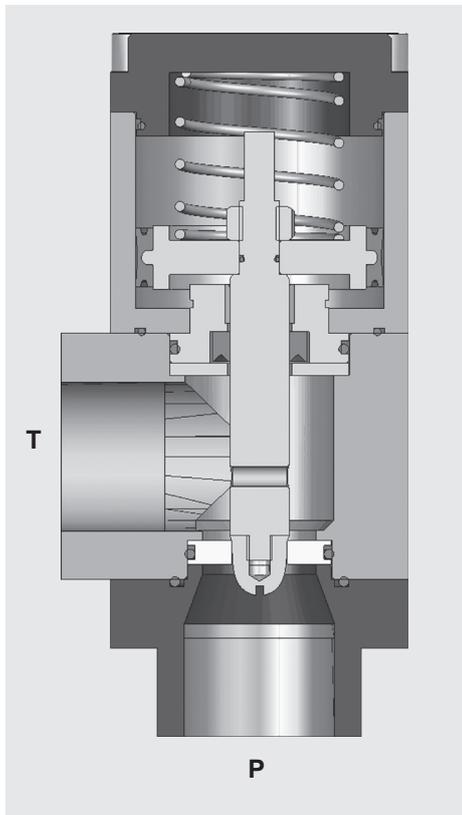
**Supply voltage**

24 V = 24 V DC (not with CX DBV - H)

**Version**

EK = Single piston  
DK = Double piston

**⚠** If order details or application data are inaccurate or incomplete, there is a risk that the technical configuration of the valves may not be correct for the desired use. This may result in the physical and/or chemical characteristics of the materials or seals used not being adequate for the intended use.



## Design

Essentially this valve consists of a valve body with integrated valve seat, and a hardened and ground cone poppet. The pre-set force is produced by a spring and a pressurised piston.

## Functional description

The compressed air with the spring exerts a force on the cone poppet and this is pressed onto the valve seat. The hydraulic force is applied to the opposing side of the cone poppet. If this is below the pre-set force, the valve will be closed. If the hydraulic force exceeds the pre-set force, then the cone poppet will be lifted away from the valve seat and operating fluid will flow from pressure port P to tank port T. This has the effect of limiting the pressure at port P. The hydraulic energy used is converted to heat and the operating fluid is drained to tank.

## Piping

To prevent turbulence reaching the valve, straight pipe sections are required in the following minimum lengths:

Upstream of the valve (P side):

A length equivalent to 3 times the pipe diameter.

Downstream of the valve (T side):

A length equivalent to 5 times the pipe diameter.

At outlet T there must be no restriction, no pressure head and as little flow resistance as possible.

## Technical data

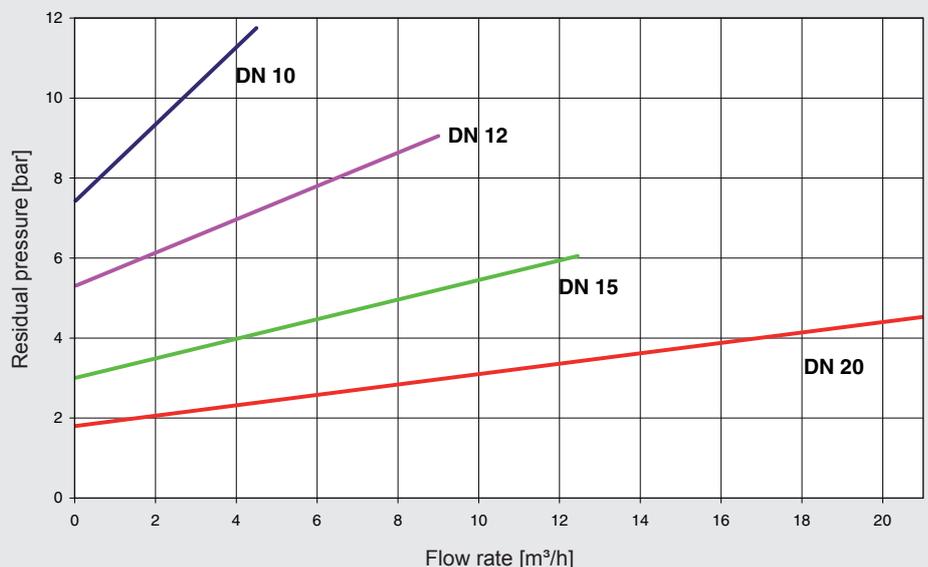
Design	E: Stepless closed loop pressure control via electrical setpoints 0 - 10 V P: Stepless, manually adjustable control via solenoid valve which limits system pressure H: Stepless, manually adjustable control of pressure
Media	Fluid - high-viscosity - contaminated
Nominal size	DN 10, DN 12, DN 15, DN 20
Pressure range	Up to max. 200 bar
Flow rate	See table
Housing material	1.4305
Seal material	FKM
Temperature of medium	0 to +60 °C
Ambient temperature	0 to +50 °C
Connection	Female threaded connection G1"
Electrical connection	E: male connection M12 x 1 P: Female connector to industry standard Form B, for AC operation with integrated rectifier
Supply voltage	E: 24 V DC (max. residual ripple 10 %) P: 24 V DC, 230 V AC, special voltages
Voltage tolerance	E / P: ± 10 % to VDE 0580
Power consumption	E: 2.5 Watt P: 230 V 50 Hz: 9.2 VA   24 V DC: 6 W
Duty cycle	E / P: 100 %
IP class	E / P: IP 65 when connector is fitted
Mounting position	E: M12 connection preferably on top H / P: pressure gauge preferably on top
Control air	40 µ filtered, max. 8 bar

**NOTE:** Further options and accessories available on request.

**⚠** The material specification refers exclusively to the valve connection parts in contact with the medium.

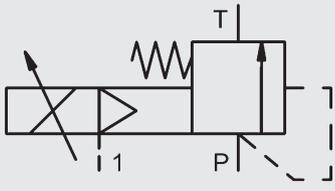
DN [mm]	Version	Pressure control range [bar]	Connection	Max. flow rate [m³/h]
10	EK	12 – 160	G 1	3.0
12	EK	10 – 120	G 1	6.0
15	EK	5 – 64	G 1	8.3
20	EK	3 – 40	G 1	14.1
12	DK	10 – 200	G 1	6.0
15	DK	5 – 140	G 1	8.3
20	DK	3 – 80	G 1	14.1

## Pressure minimization



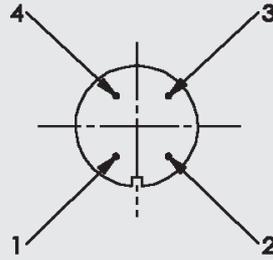
## Series CX DBV-E

### Switching function



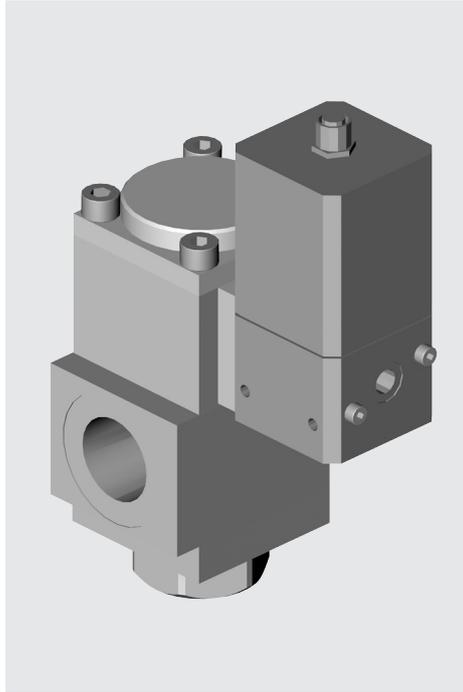
NC (closed when de-energised)

### Electrical connection (M12x1)

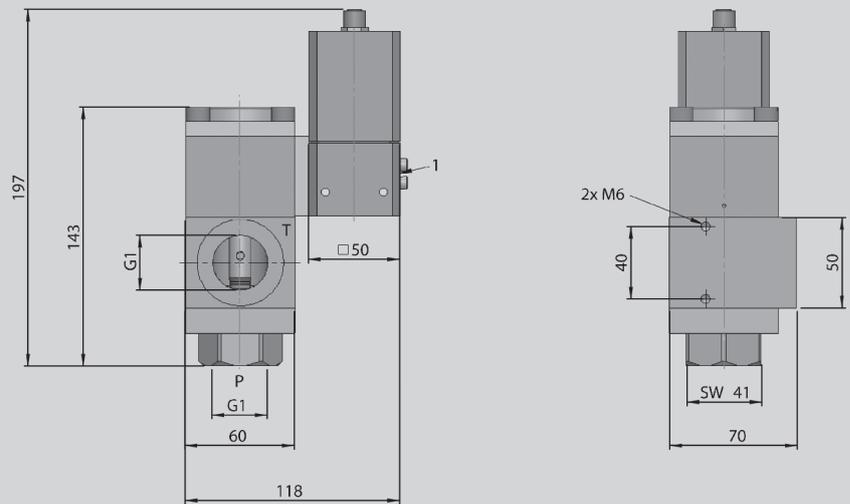


1	Supply
2	Setpoint (-)
3	GND (-)
4	Setpoint (+) 0-10V

## Single piston version EK

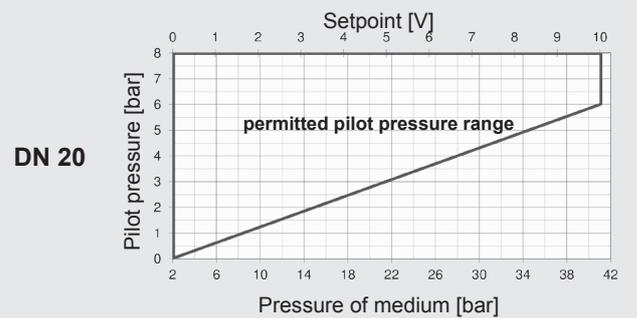
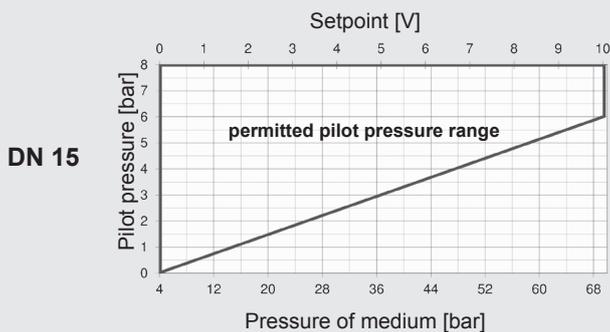
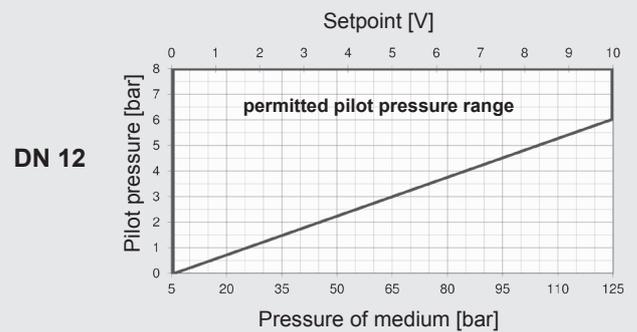
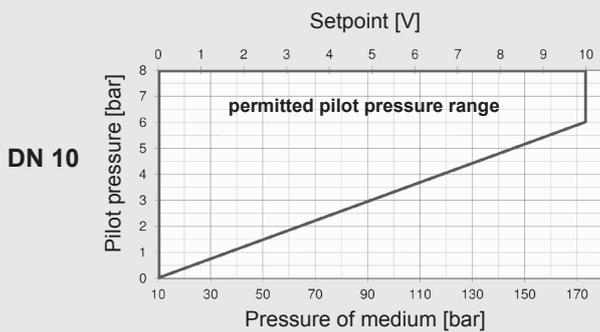


### Dimensions

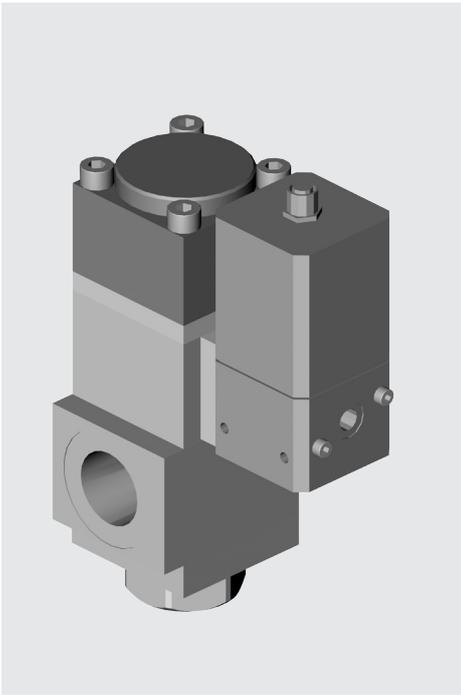


1: 1/8" Pneumatic connection

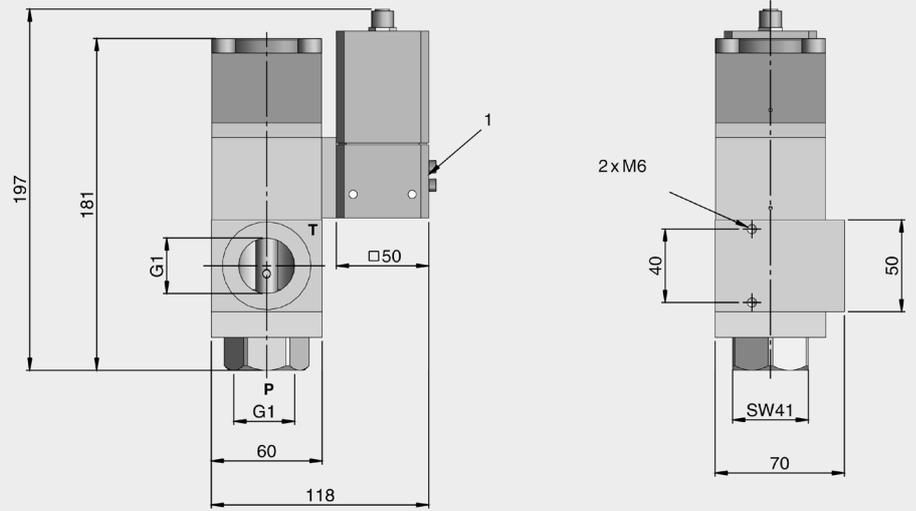
## Control pressure graphs



# Double piston version DK



## Dimensions

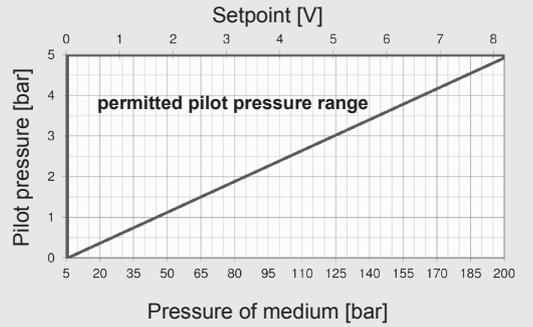


1: 1/8" Pneumatic connection

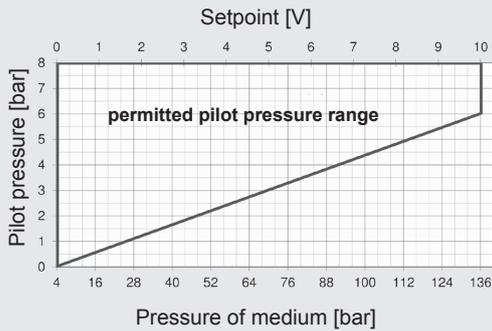
## Control pressure graphs

DN 10 not available in double piston version DK

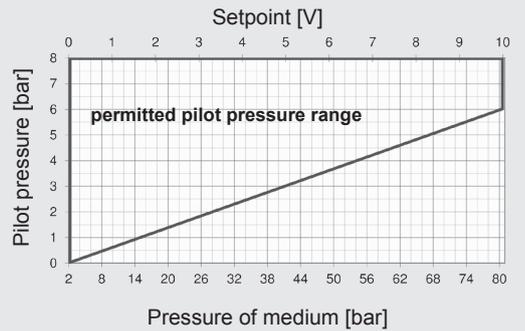
DN 12



DN 15

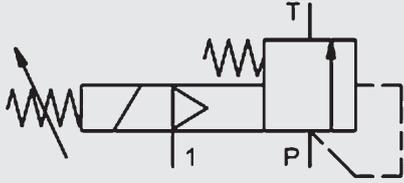


DN 20



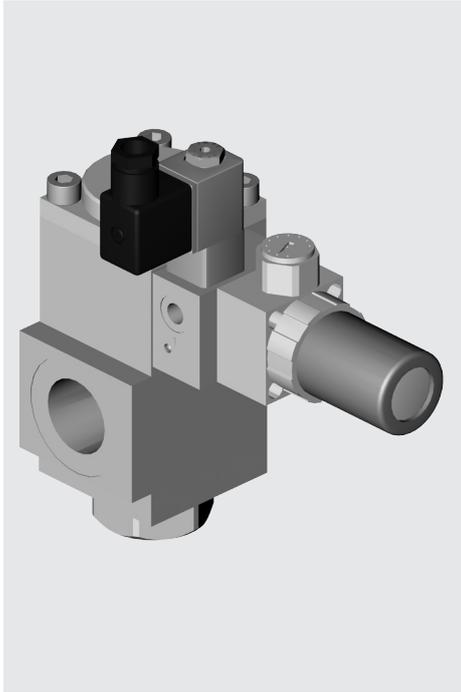
## Series CX DBV-P

### Switching function

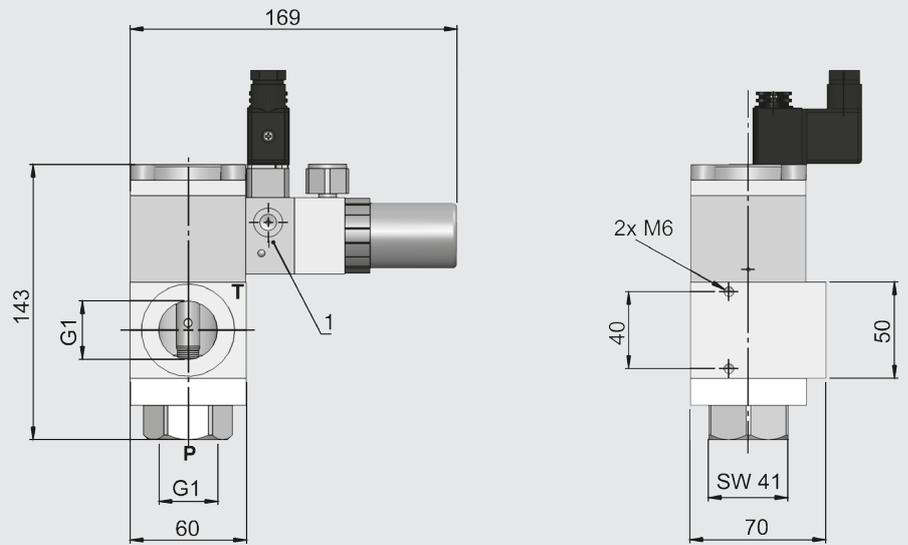


NC (closed when de-energised)

### Single piston version EK



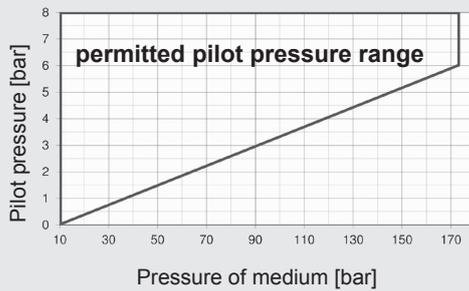
### Dimensions



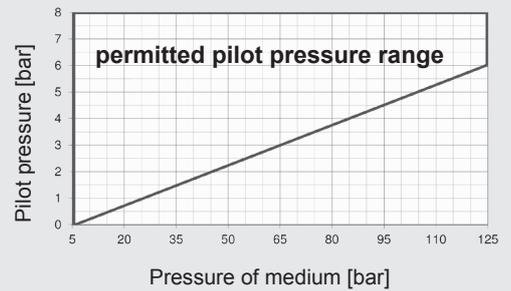
1: 1/8" Pneumatic connection

### Control pressure graphs

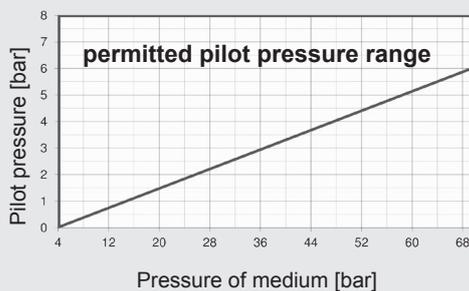
DN 10



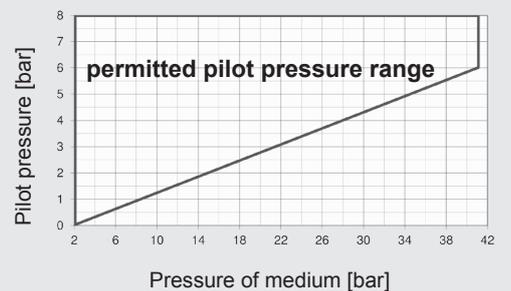
DN 12



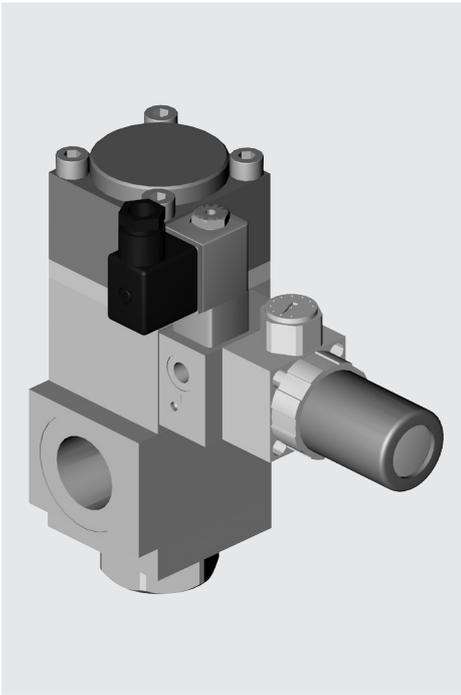
DN 15



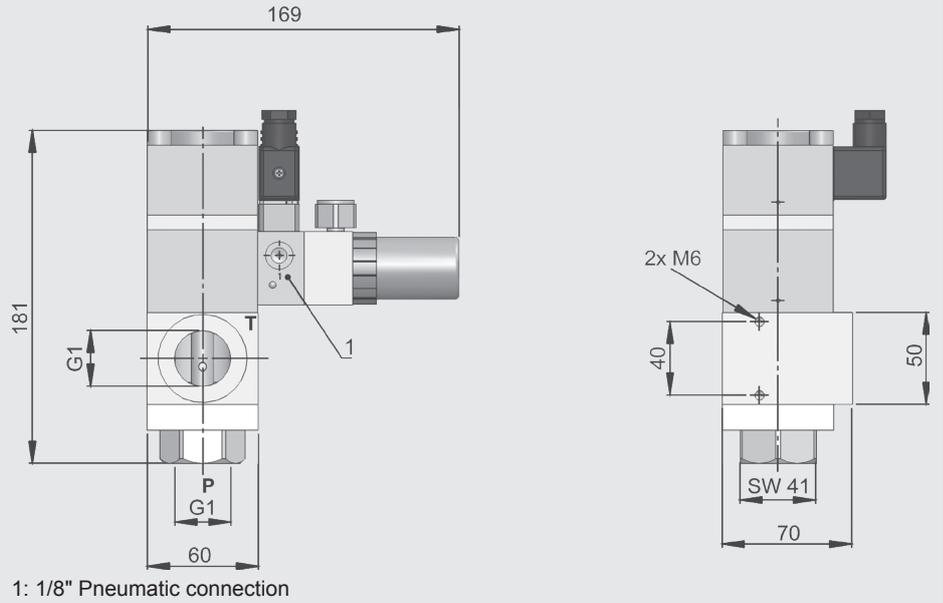
DN 20



## Double piston version DK



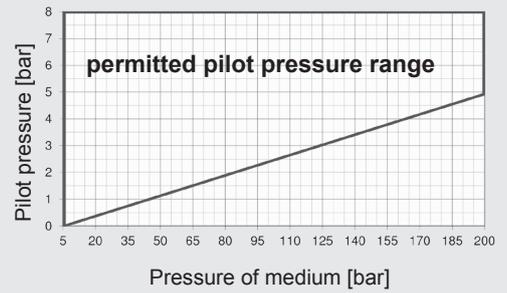
### Dimensions



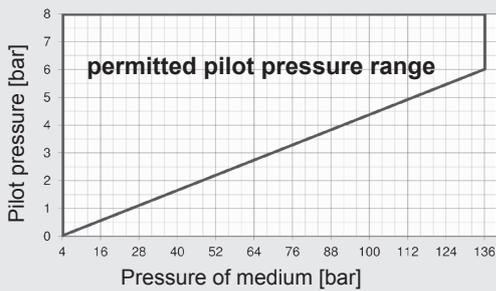
### Control pressure graphs

DN 10 not available in double piston version DK

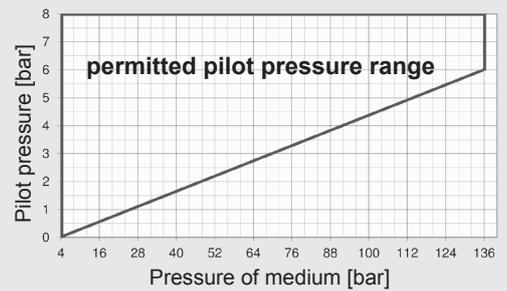
DN 12



DN 15

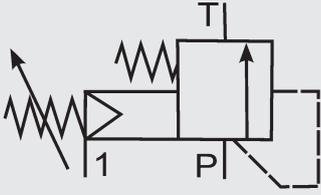


DN 20



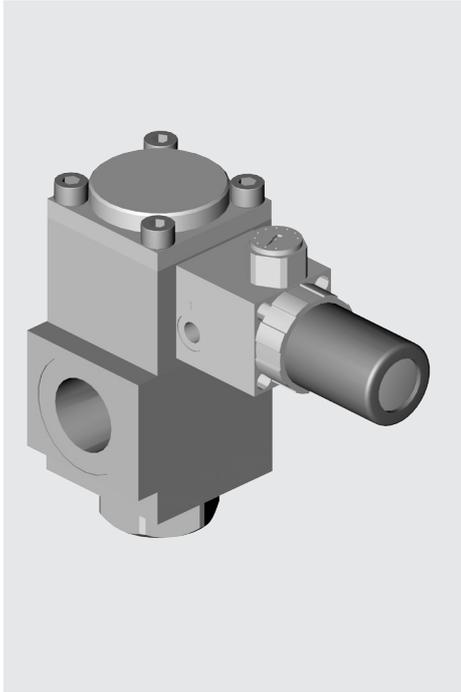
## Series CX DBV-H

### Switching function

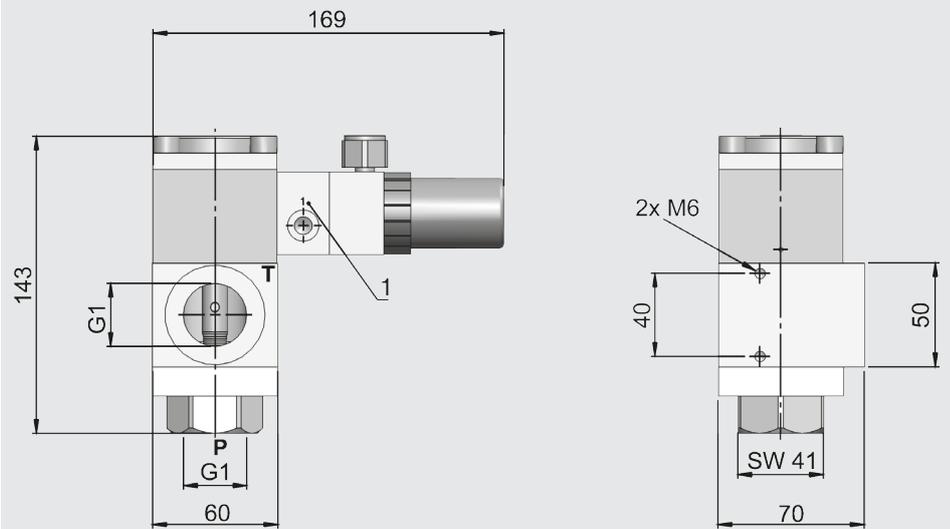


NC (closed when de-energised)

### Single piston version EK

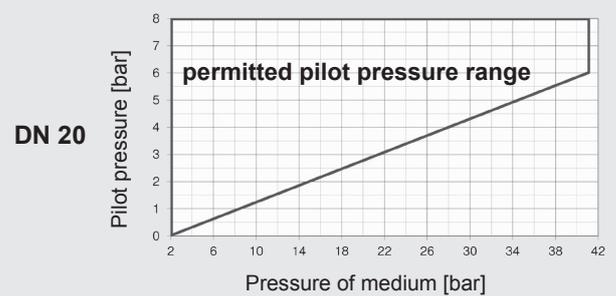
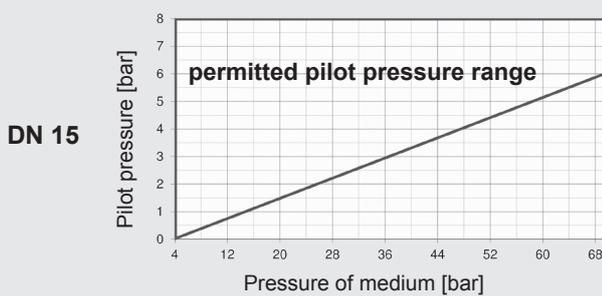
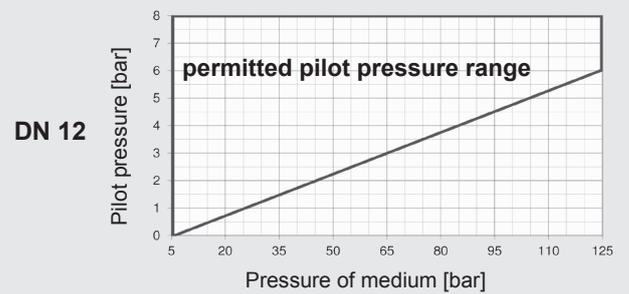
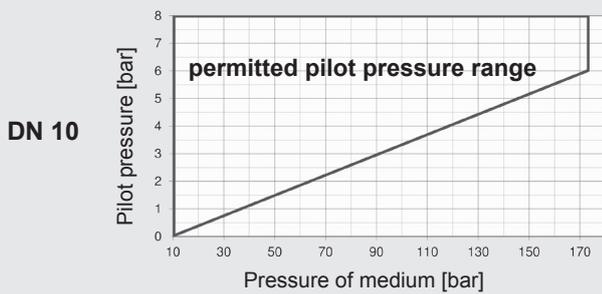


### Dimensions

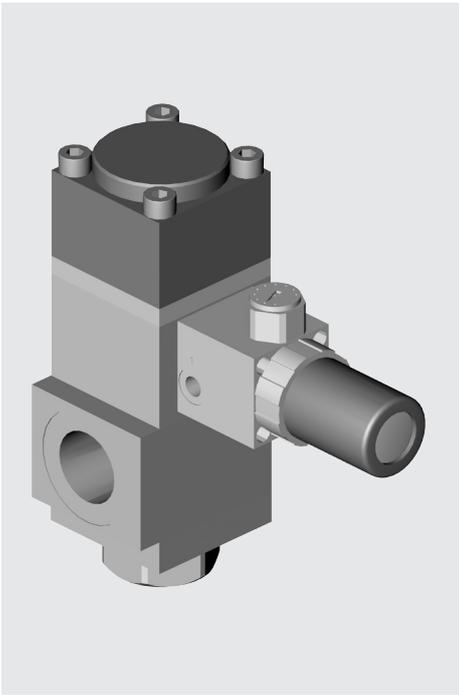


1: 1/8" Pneumatic connection

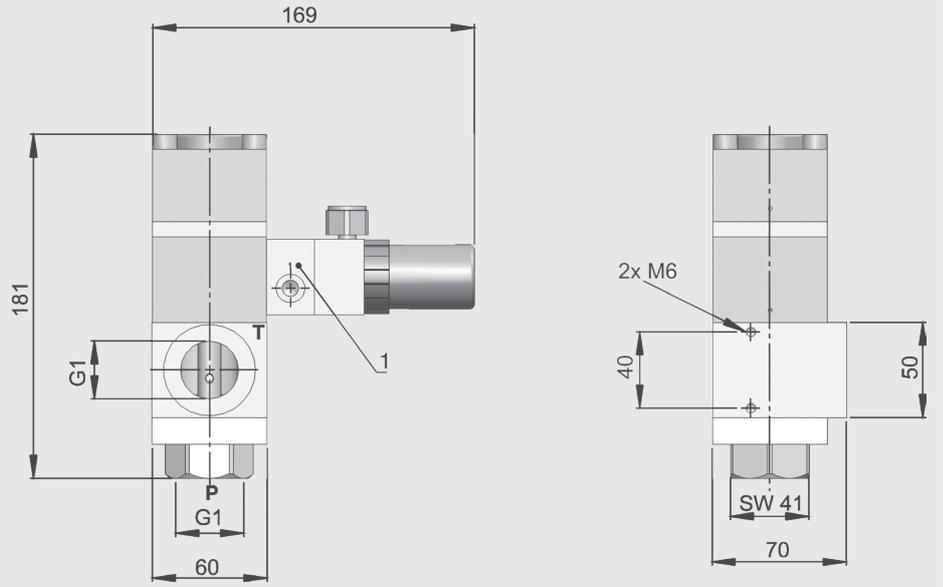
### Control pressure graphs



## Double piston version DK



### Dimensions

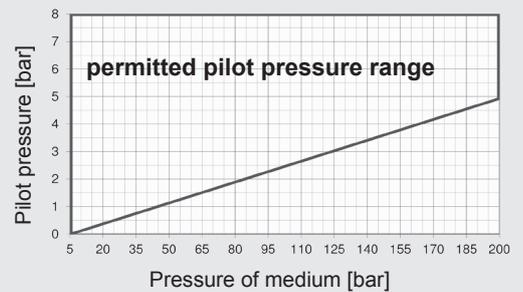


1: 1/8" Pneumatic connection

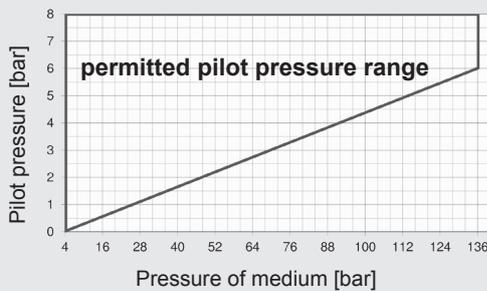
### Control pressure graphs

DN 10 not available in double piston version DK

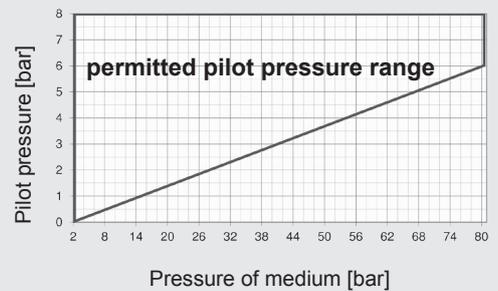
DN 12



DN 15



DN 20



### NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process. Subject to technical modifications and errors.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

**HYDAC**

**INTERNATIONAL**

**TestPoint.**

Die kleine, schnelle  
Messkupplung

**TestPoint.**

The compact, quick fastening  
measurement coupling



## TestPoint verbindet...

Unter TestPoint als Messpunkt versteht man eine Messkupplung kleinster Nennweite mit Rückschlagventil. Die Öffnungsarmatur für die Messkupplung befindet sich z.B. als Kopfstück an Schläuchen oder als Adapter an Drucksensoren. Beim Anschrauben an die Messkupplung öffnet sich das Rückschlagventil und es entsteht eine direkte Verbindung zum Medium.

Die wesentlichen Vorteile sind:

- Kuppeln und Entkuppeln ohne Anlagenstillstand.
- Druck- und Druckspitzenmessungen mit Drucksensoren.
- Systementlüftungen und Probenentnahmen.

Die Verantwortung gegenüber unseren Kunden beschleunigte die Entscheidung, eine leckagefreie Messkupplung zu entwickeln und den bisherigen Stand der Technik, d.h. Abdichtung durch Kugelrückschlagventil, zu verlassen.

Eine saubere Handhabung für den Anwender unter Einbeziehung der Umweltschonung führte zur neuen, patentierten, leckagefreien Messkupplung mit Tellersitzabdichtung.

Unter dem Begriff „Neue Dichttechnik“ wurde diese erfolgreich in den Markt eingeführt.

Gestützt auf diese konsequente Weiterentwicklung konnten folgende Zulassungen erreicht werden:

- Kupplungszulassung der Bundesanstalt für Materialprüfung (BAM) in Feuerlöschern für das Medium Halon.
- Wehrtechnische Zulassung der Kupplung in Stickstoffspeichern.
- DVGW-Registrierungen für differenzierte Messkupplungen durch den Deutschen Verein des Gas- und Wasserfaches e.V. für wiederkehrende Messungen in Gasdruckregelanlagen.

## TestPoint connects...

TestPoints are test couplings with a very small nominal bore and a check valve. The opening valve for the test coupling is located on hose ends or as adaptors on pressure sensors. When connecting the test coupling, the check valve opens and gives direct contact to the fluid.

The most important features of the TestPoint are:

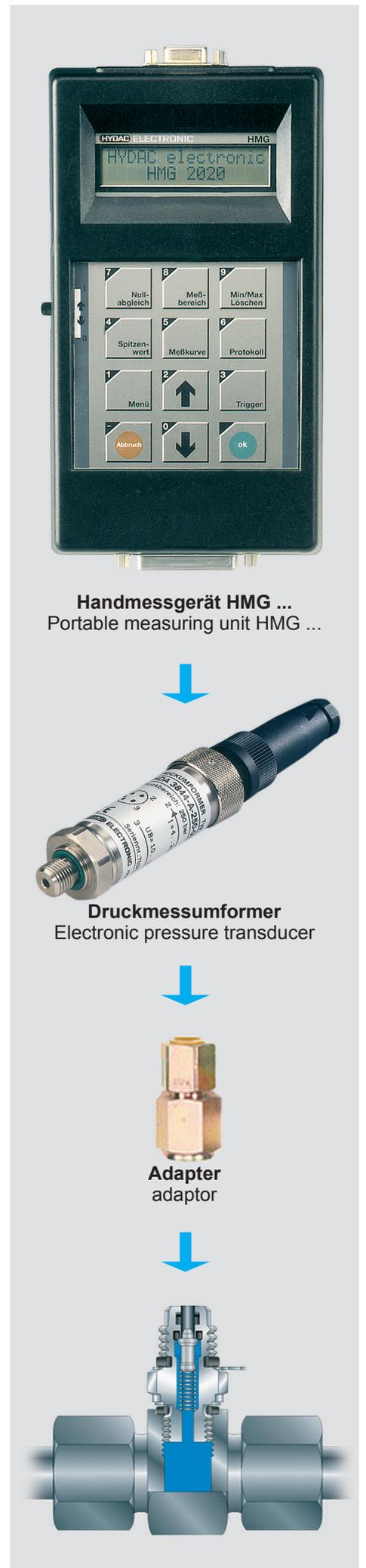
- Coupling and uncoupling without system shut down
- Pressure and pressure peaks can be measured using pressure sensors.
- Systems can be vented and samples taken.

Dedication to our customers has been the catalyst to developing a leak-free test point and to moving away from conventional technology, i.e. sealing by means of ball check valves.

The need for clean handling for the user whilst also protecting the environment resulted in a new, patented, leak-free test point using plate seat technology.

Since the successful launch of the "new sealing technology", the advanced design has achieved the following approvals as a result of further product development:

- Approval by the German Federal Institute for Material Testing (Bundesanstalt für Materialprüfung) for use with halon in fire extinguishers.
- Military standard approval for use with nitrogen accumulators.
- Approval of the gas coupling by the German Gas & Water Association (DVGW). The gas coupling is used for repeat testing in gas pressure regulation plants.



## Wegweiser durch das TestPoint Programm / Guide to the TestPoint Product Range

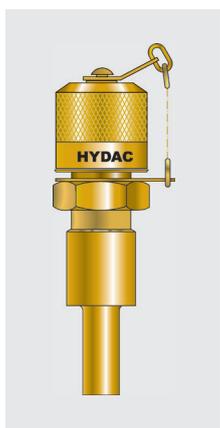


### TestPoint Schraubkupplung

- mit Metallkappe
- oder Kunststoffkappe

TestPoint screw coupling

- with metal cap
- or plastic cap



### Messstutzen Standpipe Adaptor



### T-Verschraubung

T-piece, screw-type



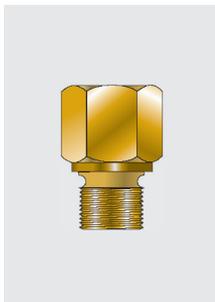
### DKO-Messstutzen

DKO adaptor



### Messstutzen 37°-Bördelverschraubung SAE J 514

Standpipe adaptor 37° edged cone

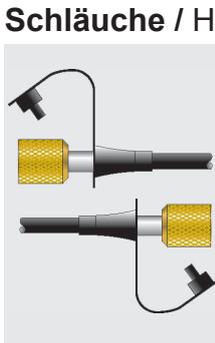


### Gewindestutzen Reducer



### Anschweißstutzen

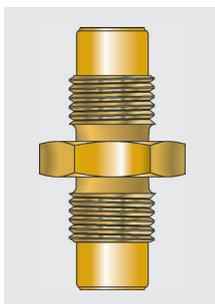
Weld adaptor



### Schläuche / Hoses

### Messschläuche DN 2

Microbore hose DN 2



### Adapter zur Verbindung von Messschläuchen

Connecting adaptor for hoses



### Adapter zum Anschluss auf verschiedene Schraubreihen 1620-1615-1215

TestPoint adaptor for connecting different thread series 1620-1615-1215



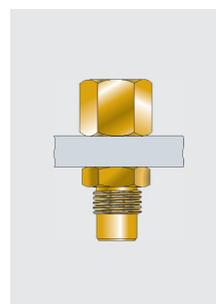
### Messschottkupplung

Bulkhead coupling with TestPoint screw coupling



### Manometerdirektanschluss

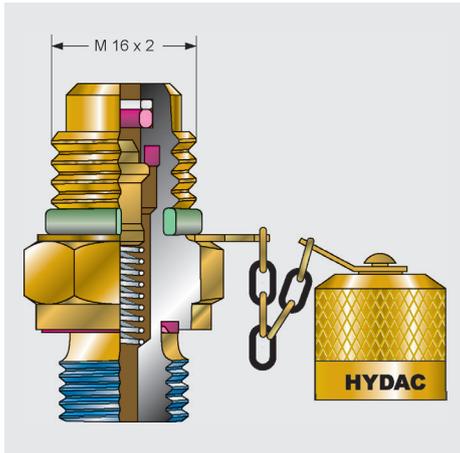
Direct gauge connection



### Manometeranschluss für Schottwand

Pressure gauge connection for bulkhead pipe fitting

## Technische Daten TestPoint 1620



**Max. Betriebsdruck 63 MPa**

**Medieneinsatz für Hydraulik- und sonstige Öle auf Mineralölbasis**

**Werkstoff**

**Kupplungskörper und Metallkappe  
Stahl 1.0718**

**Hinweis:**

**Alle in diesem Katalog aufgeführten Produkte sind aus Automatenstahl 1.0718, wenn nicht anders angegeben**

**Dichtungen**

**Interne Primär- und Sekundärdichtung sowie Einschraubdichtung aus Perbunan. Option in Viton**

**Einschraubgewinde**

**Verschiedene Gewindeanschlüsse stehen zur Auswahl.**

**Option: Vibrationssicherung**

**Zusätzlicher O-Ring aus Perbunan gegen Lösen der Metallkappe.**

**Temperatureinsatzbereiche**

**Einsatz mit Metallkappe (Standard)**

**Dichtungen in Perbunan:**

**-25 °C bis + 100 °C, kurzzeitig bis +120 °C**

**Dichtungen in Viton (Option):**

**-20 °C bis +200 °C**

**Einsatz mit Kunststoffkappe (Option)**

**für beide Dichtungsmaterialien:**

**-20 °C bis +100 °C**

### Technical data TestPoint 1620

**Max. operating pressure 63 MPa (9000 psi)**

**Fluids**

**Suitable for hydraulic and other mineral based oils**

**Material**

**Coupling body and metal cap in steel 1.0718**

**Note:**

**Unless stated otherwise, all products shown in this catalogue are made from free-cutting steel 1.0718**

**Seals**

**Internal primary and secondary seals and seals for screw thread in NBR. Option: Viton.**

**Screw-thread**

**Different kinds of thread are available**

**Option: Safety devices against vibration**

**Additional NBR O-ring to prevent the metal cap from loosening.**

**Temperature ranges**

**When used with metal cap (standard)**

**Seals in NBR.**

**-25 °C to +100 °C (-13 °F to +212 °F)**

**short-term to +120 °C (+248 °F)**

**Seals in Viton (option):**

**-20 °C to +200 °C (-4 °F to +392 °F)**

**When used with plastic cap (option)**

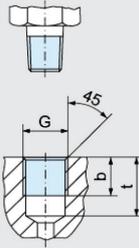
**for both sealing materials:**

**-20 °C to +100 °C (-4 °F to +212 °F)**

## Einschraublöcher und Abdichtungsarten

Hole dimensions and sealing details

### Form C

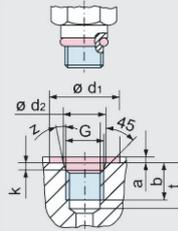


G	b	t
ISO 7 / I-R1/8	5,5	9,5
ISO 7 / I-R1/4	8,5	13,5

**Einschraubloch nach DIN 3852 Teil 1 und Teil 2. Form Z (Abdichtung durch geeignete Dichtmittel)**

Hole dimensions according to DIN 3852 part 1 and part 2, form Z (sealing by means of suitable sealant)

### Form E



#### SAE J 514 (UNF)

G	d <sub>1</sub>	d <sub>2</sub>	b	k	t	a	z°
7/16-20 UNF	21	12,4	11,5	2,4	14	1,6	12
9/16-18 UNF	25	15,6	12,7	2,5	15,5	1,6	12

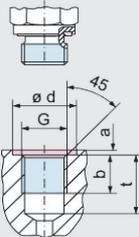
#### ISO 6149-1

G	d <sub>1</sub>	d <sub>2</sub>	b	k	t	a	z°
M 10 x 1	19	11,1	10	1,6	11,5	1	12
M 12 x 1,5	19	13,8	11,5	2,4	14	1,5	15
M 14 x 1,5	21	15,8	11,5	2,4	14	1,5	15
M 16 x 1,5	24	17,8	13	2,4	15,5	1,5	15

**Einschraubloch nach SAE J 514 (UNF) oder nach ISO 6149-1 Abdichtung durch O-Ring**

Hole dimensions according to SAE J 514 (UNF) or according to ISO 6149-1 (sealing by O-ring)

### Form F

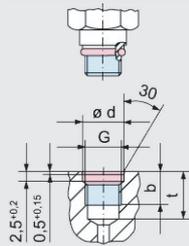


G	d	a	b	t
ISO 228-G 1/8	15	1	8	13
ISO 228-G 1/4	20	1,5	12	18,5
M 12 x 1,5	18	1,5	12	18,5
M 14 x 1,5	20	1,5	12	18,5

**Einschraubloch bis auf ød nach DIN 3852 Teil 1 und Teil 2. Form X (Abdichtung durch Gi-Ring)**

Hole dimensions (apart from Ø d) according to DIN 3852 part 1 and part 2, form X (square section seal)

### Form G



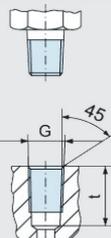
G	d	b	t
M 10 x 1	11,5	9	13
M 8 x 1	9,5	9	13

**Einschraubloch nach HYDROTECHNIK Werknorm N 901-01- 14 (Abdichtung durch O-Ring)**

**Stufenbohrwerkzeug auf Anfrage  
Drill bit on request**

Hole dimensions according to HYDROTECHNIK factory standard N 901-01-14 (sealing by O-ring)

### Form H



G	t		
1/8 NPTF	12		
1/4 NPTF	17,5		

**Einschraubloch nach ANSI/ASME B 1.20.1-1983 (Selbstdichtendes Gewinde)**

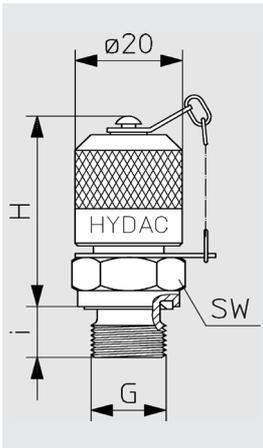
Hole dimensions according to ANSI/ASME B 1.20.1-1983 (self sealing thread)

## TestPoint 1620 Schraubkupplung

### TestPoint 1620 Series

#### Standardausführung: Schraubkappe in Metall

Standard design: Screw-on metal cap



Gewinde Thread	Abdichtungsart Sealing details	$p_{max}$	Anzugsdreh- moment Torque [Nm]	H [mm]	i [mm]	SW [mm]	Bestell-Nummer mit Metall-Kappe Part number with metal cap
M 8 x 1 *	O-Ring/Form G	25 MPa (3600 psi)	6	41	8,5	17	06003731
M 10 x 1			15	37,5	8,5	17	00629237
M 12 x 1,5			30	36	10	17	00632615
M 14 x 1,5	Gi-Ring/Form F square section seal	63 MPa (9000 psi)	40	36	10	19	00632248
M 16 x 1,5			60	36	10	22	06003732
ISO 228-G 1/8	Gi-Ring/Form F square section seal	40 MPa (5800 psi)	18	38	8	17	00689901
ISO 228-G 1/4			40	36	10	19	00680107
ISO 228-G 3/8			60	36	10	22	06003733
1/8 NPTF	Selbstdichtendes Gewinde/Form H self sealing thread/form H	40 MPa (5800 psi)	–	33	9,5	17	06003734
1/4 NPTF			–	33	16,5	17	00639645
7/16-20 UNF	O-Ring/Form E	63 MPa (9000 psi)	20	37	9	17	06003735
9/16-18 UNF			35	36	10	19	06003737
ISO 7/I-R 1/8	Geeignete Dicht- mittel/Form C Sealing by suitable sealant	40 MPa (5800 psi)	–	33	13	17	06003738
ISO 7/I-R 1/4			–	33	13	17	06003739
M 10 x 1	O-Ring/Form E nach / to ISO 6149-2	63 MPa (9000 psi)	12	38	9,5	17	06003740
M 12 x 1,5			30	35,5	11	17	06003741
M 14 x 1,5			45	35,5	11	19	06003742
M 16 x 1,5			55	35,5	12,5	22	06003743

\* M 8 x 1 - bitte nicht für Neukonstruktionen verwenden

#### Schraubkupplungen mit EPDM-Dichtung für Bremsflüssigkeit bzw. für andere Medien auf Anfrage.

#### Technische Änderungen vorbehalten

\* M 8 x 1 - for spares only, please do not use for new designs

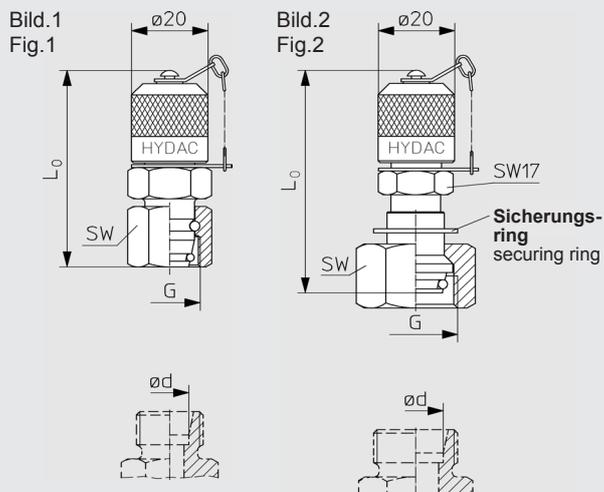
Screw couplings with EPDM seal for brake fluid and other fluids on request.

We reserve the right to make technical modifications.

# DKO-Messstutzen, T-Verschraubungen, Messstutzen für lötlöse Rohrverschraubungen nach DIN 2353

DKO adaptor, T-piece (screw-type), Standpipe adaptor  
for solder-free screw-in pipe connections to DIN 2353

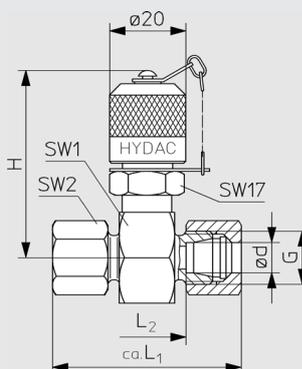
## DKO-Messstutzen DKO adaptor



**DKO-Messstutzen mit 24°-Dichtkegel und montierter Kupplung.  
Elastischer Perbunan-O-Ring am Dichtkegel.**

DKO adaptor with 24 ° sealing cone and coupling fitted.  
Elastic NBR O-ring on sealing cone.

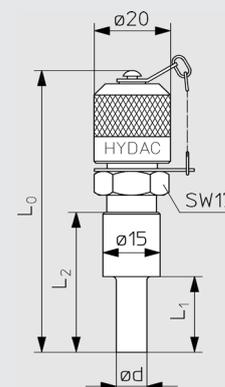
## T-Verschraubungen T-piece, screw-type



**T-Verschraubungen mit montierter Kupplung und Schneidring mit Überwurfmutter.**

T-piece with coupling fitted and cutting rings with union nuts.

## Messstutzen Standpipe adaptor



## DKO-Messstutzen DKO-adaptor

Reihe model ø d	p max	Gewinde thread G	Bild fig.	L <sub>0</sub>	SW	Bestell Nr. Part Number
L 6	31,5 MPa 4500 psi	M 12 x 1,5	1	52	14	06003774
L 8		M 14 x 1,5		52	17	06003775
L 10		M 16 x 1,5		52	19	06003776
L 12		M 18 x 1,5		52	22	00637510
L 15		M 22 x 1,5		52	27	06003777
L 18		M 26 x 1,5		52	32	06003778
L 22	16 MPa 2300 psi	M 30 x 2	2	60	36	06003779
L 28		M 36 x 2		61	41	06003780
L 35		M 45 x 2		63	50	06003781
L 42		M 52 x 2		63	60	06003782
S 6	63 MPa 9000 psi	M 14 x 1,5	1	52	17	06003045
S 8		M 16 x 1,5		52	19	06003044
S 10		M 18 x 1,5		52	22	06003783
S 12		M 20 x 1,5		52	24	06003784
S 14	40 MPa 5800 psi	M 22 x 1,5	2	63	27	06003785
S 16		M 24 x 1,5		1	52	30
S 20		M 30 x 2	2	63	36	06003787
S 25		M 36 x 2		64,5	46	06003788
S 30		M 42 x 2		66	50	06003789
S 38		M 52 x 2		69	60	06003790

## T-Verschraubungen T-piece, screw-type

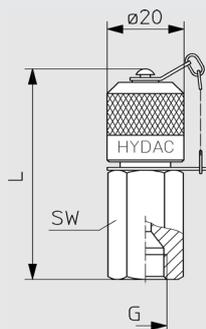
L <sub>1</sub>	L <sub>2</sub>	H	SW <sub>1</sub>	SW <sub>2</sub>	Bestell Nr. Part Number
50,5	20,5	49,5	24	14	06003747
50,5	20,5	49,5	24	17	06003748
52,5	22,5	49,5	24	19	00632341
52,5	22,5	49,5	24	22	00638340
54,5	24,5	52,5	30	27	06003749
56,5	23,5	53,5	32	32	00689068
60,5	27,5	55,5	36	36	06003750
60,5	27,5	58	41	41	06003751
68,5	25,5	60,5	46	50	06003752
70,5	24,5	65	55	60	06003753
54,5	24,5	49,5	24	17	06003755
54,5	24,5	49,5	24	19	06003756
56,5	23,5	49,5	24	22	06003757
56,5	23,5	49,5	24	24	00689069
62,5	26,5	51	27	27	06003758
62,5	25,5	52,5	30	30	06003759
68,5	25,5	55,5	36	36	00689245
74,5	26,5	58	41	46	06003770
80,5	27,5	60,5	46	50	06003771
91	29	65	55	60	06003772

## Messstutzen Standpipe adaptor

L <sub>1</sub>	L <sub>2</sub>	L <sub>0</sub>	Bestell Nr. Part Number
20	37	74,5	06003744
20	37	74,5	00617881
22	39	76,5	06003745
22	39	76,5	00632922
-	28	65,5	06003746
20	37	74,5	06003744
20	37	74,5	00617881
22	39	76,5	06003745
22	39	76,5	00632922

## Messstutzen 37°-Bördelverschraubung SAE J514

### Standpipe adaptor 37° edged cone



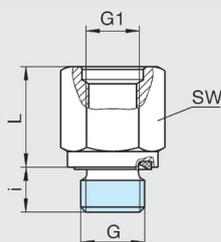
Gewinde Thread	G	p max	Rohr ø Pipe ø [mm]	Rohr ø Pipe ø in Zoll in inches	L [mm]	SW [mm]	Bestell-Nummer Part Number
7/16-20 UNF		60 MPa (8700 psi)	6	1/4"	55	17	06003792
1/2 -20 UNF		42 MPa (6000 psi)	8	5/16"	56,5	17	06003793
9/16-18 UNF		31,5 MPa (4500 psi)	10	3/8"	57,5	19	06003794
3/4- 16 UNF			12	1/2"	60,5	22	06003795

#### Weitere Anschlussgewinde auf Anfrage

Further threads on request

## Gewindestutzen

### Reducer



Außengewinde Ext. thread	G	Abdichtungsart Type of seal	p max	L [mm]	i [mm]	SW [mm]	Bestell-Nummer Part Number
M 12 x 1,5		Form F	63 MPa (9000 psi)	19	10	17	06003797
M 16 x 1,5				19	10	22	06003798
ISO 228-G 1/8			40 MPa (9000 psi)	19	8	17	06003799
ISO 228-G 1/2				10	14	27	06003800
ISO 228-G 3/4			63 MPa (9000 psi)	13	12	32	06003765
1/2 NPTF		Form H		10	18	24	06003766

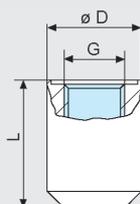
#### Anschlussgewinde G1:

M10 x 1; Form G, nach HYDROTECHNIK-Werknorm N901-01-14

Thread in reducer G1: M 10 x 1, form G, acc. to  
HYDROTECHNIK company standard N 901-01-14

## Anschweißstutzen

### Weld adaptor



Gewinde Thread	G	Einschraubloch Hole	p max	L [mm]	ø D [mm]	Bestell-Nummer Part Number
M 14 x 1,5		Form F	63 MPa (9000 psi)	30	22	06003796
ISO 228-G 1/4						0683922

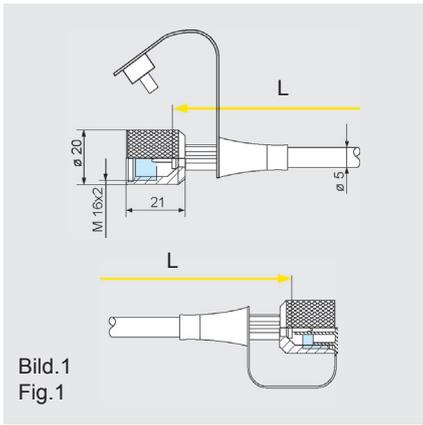


Bild.1  
Fig.1

**Techn. Daten:**  
Technical Data:

**Biegeradius:**

Bending radius:

min. 20 mm  
(unter -20 °C: 30 mm  
under -4 °F: 30 mm)

**Druckausnutzungsgrad:**

Pressure utilization factor:

Temperature	Pressure utilization factor
0 °C	122 %
30 °C	110 %
50 °C	100 %
80 °C	86 %
100 °C	77 %
120 °C	68 %

**Schlauchaufbau:**

Hose construction:

**Schlauchseele und Oberdecke**

Hose core and hose cover

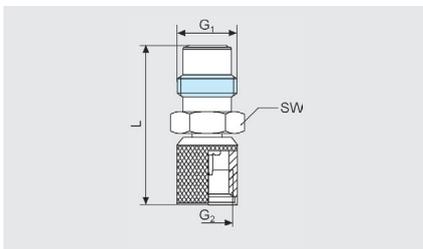
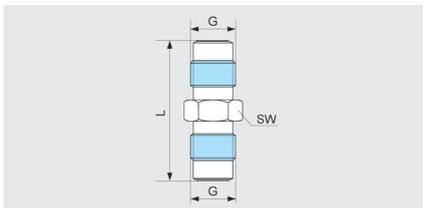
Polyamid

**Druckträger:**

Inner reinforcement:

**Polyesterfaser**

Polyester fibre



**Messschläuche DN 2**  
Micro bore flexible hoses

L in mm	p max	Bestell-Nummer Part Number	Bild/ fig. 1	p max	Bestell-Nummer Part Number	Bild/ fig. 1
200	40 MPa 5800 psi	00680606	Bild/ fig. 1	63 MPa 9000 psi	06003723	Bild/ fig. 1
300		06003715			06003724	
400		00680607			00632633	
500		06003716			06003725	
630		06003717			06003726	
800		06003718			00682857	
1000		00687886			00632634	
1250		06003719			06003727	
1500		00637338			00682858	
2000		00685962			00682859	
2500	00688088	00682860				
3200	06003720	06003728				
4000	06003721	06003729				
5000	06003722	06003730				

**Schraubanschluss, Hydrotechnik "AC".**

Andere Schraubanschlusskombinationen auf Anfrage.

TestPoint Connection, Hydrotechnik "AC".

Other combinations on request.

**Adapter zur Verbindung von Messschläuchen**

Adaptor for connection of hoses

Gewinde Thread	G	L [mm]	SW [mm]	p max	Bestell-Nummer Part Number
M 16 x 2		42	17	63 MPa (9000 psi)	00687889

Anm.: Ohne Rückschlagventil

Note: without check valve

**Adapter zum Anschluss auf unterschiedliche**

**Schraubreihen: 1620-1615-1215**

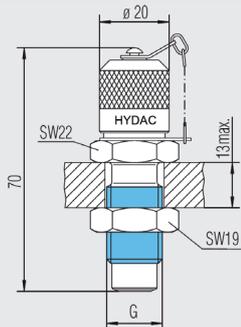
Adaptor for connecting different thread series:

1620-1615-1215

Gewinde Thread	G <sub>1</sub>	Gewinde Thread	G <sub>2</sub>	L [mm]	SW [mm]	Bestell-Nummer Part Number
Hemmgew. 12 retaining thread		M 16 x 2		25,2	17	—
M 16 x 2		Hemmgew. 12 retaining thread		32		00629635
M 16 x 1,5		M 16 x 2		31,4		—
M 16 x 2		M 16 x 1,5		31,4		00629636

## Messschott-Kupplung Bulkhead coupling

Gewinde Thread <b>G</b>	p max (9000 psi)	Anschluss Connection	Bestell-Nummer Part Number
M 16 x 2	63 MPa (9000 psi)	beidseitig Serie 1620 / both ends for series 1620	06003767

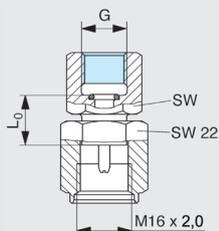


### Für lötlöse Rohrverschraubung nach DIN 2353, Gegenseite TestPoint-1620- Anschluss (M 16 x 2)

For solderfree screw-in pipe connection  
acc. to DIN 2353, opposite end:  
TestPoint 1620 connection (M16 x 2)

## Manometerdirektanschluss Direct gauge connection

Innengewinde Internal thread <b>G</b>	p max	L <sub>0</sub> [mm]	SW [mm]	Bestell-Nummer Part Number
ISO 228-G 1/4	63 MPa (9000 psi)	14,5	19	06003824
ISO 228-G 1/2		17	27	06003825
1/4 NPT		–	19	06003769



## Manometeranschluss für Schottwand Pressure gauge connection for bulkhead pipe fitting

Innengewinde Internal thread <b>G<sub>1</sub></b>	Außengewinde External thread <b>G<sub>2</sub></b>	L <sub>0</sub> [mm] (ca.)	SW [mm]	Bestell-Nummer Part Number
ISO 228-G 1/4	1620 / M 16 x 2	38	19	06003822
ISO 228-G 1/2		42,5	27	06003823
1/4 NPT		–	19	06003768

Anmerkung: Ohne Rückschlagventil  
Note: Without check valve

## ANMERKUNG

Die Angaben in diesem Prospekt  
beziehen sich auf die beschriebenen  
Betriebsbedingungen und Einsatzfälle.  
Bei abweichenden Einsatzfällen und/  
oder Betriebsbedingungen wenden  
Sie sich bitte an die entsprechende  
Fachabteilung.  
Technische Änderungen sind  
vorbehalten.

## NOTE

The information in this brochure relates to  
the operating conditions and applications  
described.  
For applications or operating conditions  
not described, please contact the relevant  
technical department.  
Subject to technical modifications.

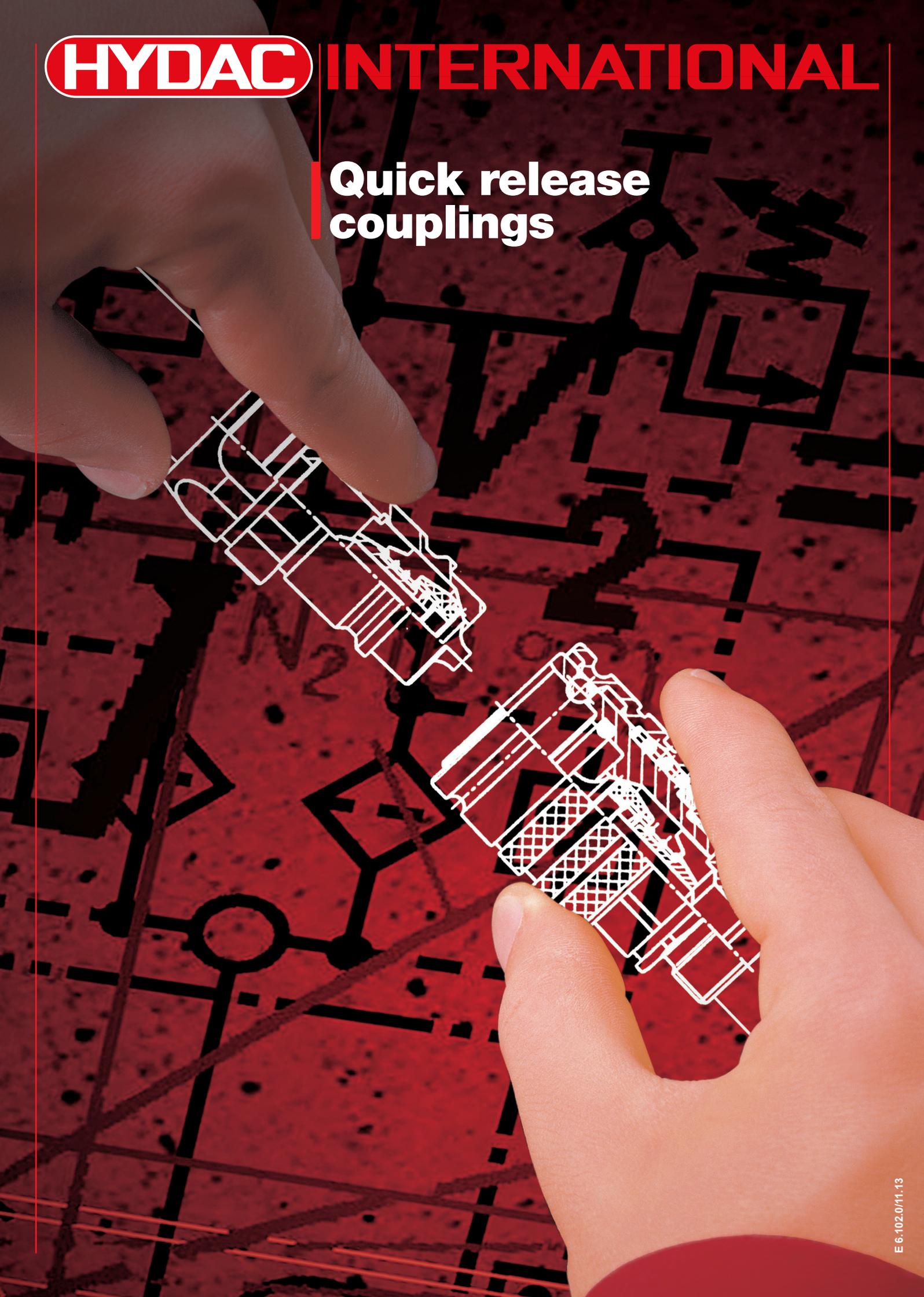
**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: www.hydac.com  
E-Mail: info@hydac.com



**HYDAC**

**INTERNATIONAL**

**Quick release  
couplings**



# Introduction

HYDAC couplings have proved their worth over many years of practical use in hydraulics. The high quality of the couplings is the result of constantly improving the products, while also taking account of users' experience. Their high manufacturing standard, combined with quality management to EN ISO 9001, guarantees the quality of our products.

The following characteristics apply to the couplings in our catalogue.

## Housing material:

Steel corresponding to EN 10277, zinc-plated

## Seals:

NBR/PTFE

## Operating temperature:

-30 °C to +100 °C

## Other applicable standards:

EN ISO 8330:2000, ISO 5675, ISO 5676, ISO 7241, ISO/DIS 16028

Please enquire about other material combinations.

Our range includes:

- Push fit couplings to ISO 7241-1, series A
- Push fit couplings, flat face, to ISO/DIS 16028
- Push fit couplings in plastic
- Locking couplings for hydraulic braking systems to ISO 5676
- Screw couplings
- Screw couplings for high pressures
- Pipe couplings

We are showing you a selection of these in this catalogue.

The operating pressures given in our catalogue relate to the strength of the housing components. Standardised connector shapes can have other nominal pressures, which do not have to apply to the type of coupling concerned.

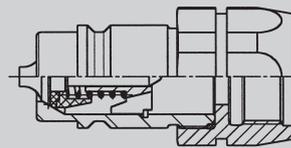
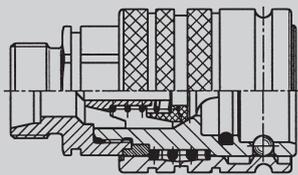
Special agreements are possible.

It is not possible to make a general statement about the compatibility of our couplings to bio-oils. It can however be presumed that the compatibility will be the same as for rubber hoses.

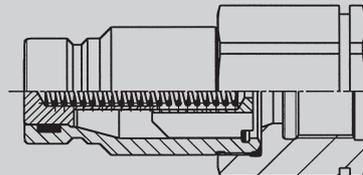
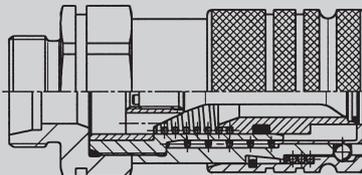
A test will be required to make a definite statement in each case. Apart from the standard couplings, custom versions can also be supplied.

If you have a particular problem to solve, please get in touch with us.

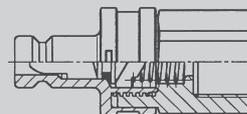
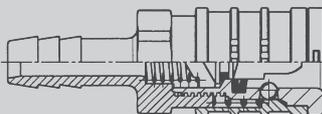
As part of our process of continuous improvement, we reserve the right to make technical changes.



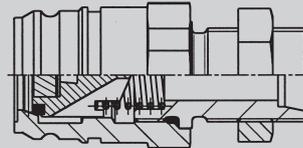
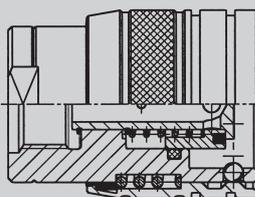
Push fit coupling ISO7241



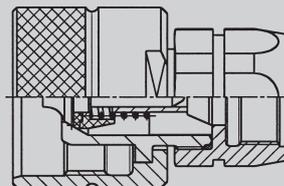
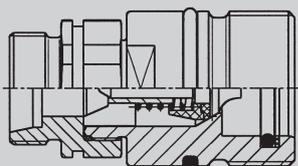
Push fit coupling ISO16028, with gasket



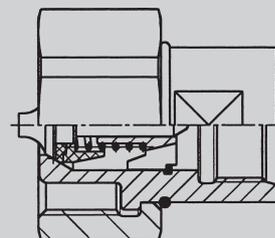
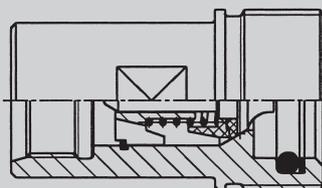
Push fit coupling, plastic



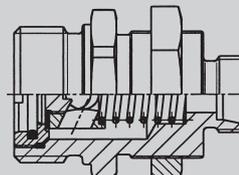
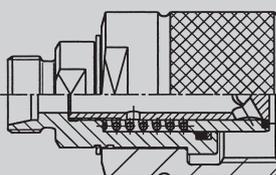
Locking couplings for hydraulic braking systems



Screw coupling

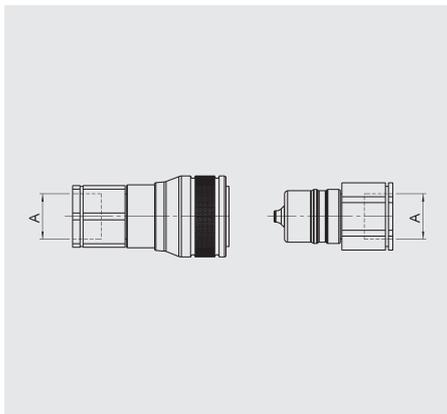


Screw coupling for high pressure



Pipe coupling

## Push fit couplings



### Selection of available push fit couplings

	Connection A	Pipe Ø	P <sub>max</sub> [bar]	Size according to ISO 7241-1, series A				
				6.3	10	12.5	20	25
Female thread DIN 3852	G <sup>1</sup> / <sub>4</sub>	-	250	x	x			
	G <sup>3</sup> / <sub>8</sub>	-	250		x	x		
	G <sup>1</sup> / <sub>2</sub>	-	250			x		
	G <sup>3</sup> / <sub>4</sub>	-	250				x	x
	G1	-	250					x
	M16x1.5	-	250		x	x		
	M18x1.5	-	250			x		
	M22x1.5	-	250			x	x	
	NPTF <sup>1</sup> / <sub>4</sub> -18	-	250	x				
	NPTF <sup>3</sup> / <sub>8</sub> -18	-	250		x	x		
	NPTF <sup>1</sup> / <sub>2</sub> -14	-	250					x
NPTF <sup>3</sup> / <sub>4</sub> -14	-	250						x
UNF <sup>3</sup> / <sub>4</sub> -16	-	250				x		
Male stud with type W bore (24") DIN 3861	M14x1.5	8L	250	x	x	x		
	M16x1.5	10L	250		x	x		
	M18x1.5	12L	250		x	x	x	
	M22x1.5	15L	250			x	x	
	M26x1.5	18L	250			x	x	x
	M30x2	22L	250				x	x
	M36x2	28L	250					x
	M45x2	35L	250					x
	M16x1.5	8S	250		x			
	M18x1.5	10S	250		x	x		
	M20x1.5	12S	250		x	x		
	M22x1.5	14S	250			x		
	M24x1.5	16S	250			x	x	
	M30x2	20S	250				x	x
	M36x2	25S	250					x
M42x2	30S	250					x	
Male stud with type W bore (24") DIN 3861 Bulkhead	M12x1.5	6L	250		x			
	M14x1.5	8L	250	x	x	x		
	M16x1.5	10L	250		x	x		
	M18x1.5	12L	250		x	x	x	
	M22x1.5	15L	250			x	x	
	M26x1.5	18L	250			x	x	x
	M30x2	22L	250				x	x
	M36x2	28L	250					x
	M16x1.5	8S	250		x			
	M18x1.5	10S	250		x	x		
	M20x1.5	12S	250		x	x		
	M22x1.5	14S	250			x		
	M24x1.5	16S	250			x	x	
	M30x2	20S	250				x	x
	M36x2	25S	250					x
M42x2	30S	250					x	
Male thread DIN 3852	G <sup>3</sup> / <sub>8</sub>	-	250		x	x		
	G <sup>1</sup> / <sub>2</sub>	-	250			x		
	M22x1.5	-	250			x		

### Order data

- Nominal size
- Pipe Ø
- Threaded connection
- Size
- Operating pressure
- Material

Apart from the standard couplings, custom versions can also be supplied. Contact us for more information.

## Description

HYDAC offers a wide range of products for agricultural machinery as well as for hydraulic systems in vehicles and construction machines. Thanks to their modular design, a large variety of connections is available, which conform to international standards.

## Technical Data

Dimensions	According to ISO 7241-1, series A, as well as ISO 5675		
Housing material	Steel corresponding to EN 10277		
Material of seals	NBR / PTFE ISO 3601		
Operating pressure	$P_{\max}$	250 bar	With standard threaded connections, the operating pressure is governed by the highest rated pressure of the connection.
Burst pressure	$P_{\text{coupled}}$ $P_{\text{female}}$ $P_{\text{male}}$	1000 bar 1000 bar 1000 bar (except size 25 → here max. 700 bar)	
Ports	Male thread DIN 3852 Female thread DIN 3852 Male stud with type W bore (24°) to DIN 3861 Male stud with type W bore (24°) to DIN 3861, bulkhead		
Operating temperature	-30 °C to +100 °C		

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

## Accessories

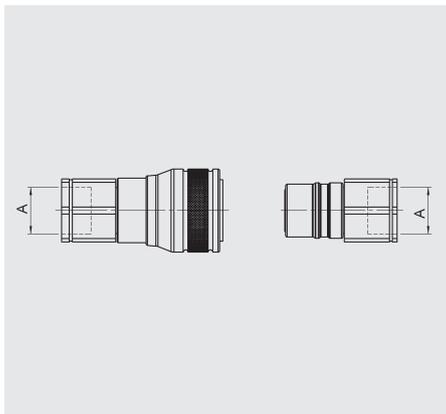
### Dust protection parts

These dust caps and dust plugs can be retrofitted to the connectors.

Colour: red

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

## Push fit couplings, flat face



### Selection of available push fit couplings

	Connection A	Pipe Ø	P <sub>max</sub> [bar]	Size according to ISO 16028					
				6.3	10	12	16	19	25
Female thread DIN 3852	G $\frac{1}{4}$	-	400	x					
	G $\frac{3}{8}$	-	350		x				
	G $\frac{1}{2}$	-	350		x	x			
	G $\frac{3}{4}$	-	350			x	x	x	
	G1	-	350					x	
	G1 $\frac{1}{4}$	-	350 / 300**					x	x
	G1 $\frac{1}{2}$	-	300						x
	M22x1.5	-	350		x				
	NPTF $\frac{1}{4}$ -18	-	400	x					
	NPTF $\frac{3}{8}$ -18	-	350		x				
	NPTF $\frac{1}{2}$ -14	-	350		x				
	NPTF $\frac{3}{4}$ -14	-	350				x		
	NPTF $\frac{3}{4}$ -16	-	350					x	
	NPTF 1-11 $\frac{1}{2}$	-	350						x
	NPTF 1 $\frac{1}{2}$ -11 $\frac{1}{2}$	-	300						x
	UNF 9/16-18	-	400	x					
	UNF $\frac{3}{4}$ -16	-	350		x				
	UNF 7/8-14	-	350				x		
UNF 11/16-12	-	350				x	x	x	
UNF 15/16-12	-	350						x	
UNF 15/8-12	-	300						x	
Male stud with type W bore (24") DIN 3861	M14x1.5	8L	400	x					
	M16x1.5	10L	400* / 350	x	x				
	M18x1.5	12L	350		x	x			
	M22x1.5	15L	350		x	x	x		
	M26x1.5	18L	350			x	x	x	
	M30x2	22L	350				x	x	
	M36x2	28L	350					x	
	M16x1.5	8S	400	x					
	M18x1.5	10S	400	x					
	M20x1.5	12S	350		x				
	M24x1.5	16S	350		x	x	x		
	M30x2	20S	350			x	x	x	
	M36x2	25S	350				x	x	
	M42x2	30S	350						x
Male stud with type W bore (24") DIN 3861 Bulkhead	M14x1.5	8L	400	x					
	M16x1.5	10L	400* / 350	x	x				
	M18x1.5	12L	350		x	x			
	M22x1.5	15L	350		x	x	x		
	M26x1.5	18L	350			x	x	x	
	M30x2	22L	350				x	x	
	M36x2	28L	350					x	
	M16x1.5	8S	400	x					
	M18x1.5	10S	400	x					
	M20x1.5	12S	350		x				
	M24x1.5	16S	350		x	x	x		
	M30x2	20S	350			x	x	x	
	M36x2	25S	350				x	x	
	M42x2	30S	350						x
M36x2	25S	250						x	
M42x2	30S	250						x	

### Order data

- Nominal size
- Pipe Ø
- Threaded connection
- Size
- Operating pressure
- Material

Apart from the standard couplings, custom versions can also be supplied. Contact us for more information.

\* for size 6.3  
\*\* for size 25

## Description

During coupling and releasing, the design of the flat face push fit couplings ensures minimal oil loss and minimal air incursion. Due to the fixed valve tappet in the coupling, backflow is effectively prevented.

The couplings are also designed for easy cleaning and to keep dirt out.

Their main applications are for machines which work in environmentally sensitive areas and hydraulic tools. Thanks to their modular design, HYDAC can make a large variety of connections available which conform to international standards.

## Technical Data

Dimensions	to ISO/DIS 16028						
Housing material	Steel corresponding to EN 10277						
Material of seals	NBR / PTFE ISO 3601						
Operating pressure	P <sub>max</sub>	Up to 400 bar (see table) With standard threaded connections, the operating pressure is governed by the highest rated pressure of the connection.					
Burst pressure [bar]	Size	6.3	10	12	16	19	25
	P <sub>coupled</sub>	2000	1500	1500	1200	1450	800
	P <sub>female</sub>	1220	1100	1050	1200	1050	800
	P <sub>male</sub>	1850	1100	1050	1100	1050	800
Ports	Female thread DIN 3852 Male stud with type W bore (24°) to DIN 3861 Male stud with type W bore (24°) to DIN 3861, bulkhead						
Operating temperature	-30 °C to +100 °C						

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

## Accessories

### Dust protection parts

- Dust cap for connector (male)
- Dust cap for connector (female)

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)

# Spare Parts

- O-ring material: NBR
- Back-up ring material: PTFE
- Brake ring material: NBR
- Valve seal material: NBR
- Lock nut material: steel, zinc-plated

Dimensions according to the size concerned

## Overview of couplings

Designation Function	Size	DN [Inch]	A <sub>min</sub> [mm <sup>2</sup> ]	Q <sub>max</sub> [mm <sup>2</sup> ]	Operating pressure [bar]	Burst pressure			Leakage oil [ml]
						coupled [bar]	Sleeve [bar]	Connector [bar]	
<b>Push fit coupling</b> Corresponds to ISO 7241-1, series A	6.3	¼	24	20	250	1000	1000	1000	0.8
	10	⅜	45	40	250	1000	1000	1000	1.2
	12.5	½	76	80	250	1000	1000	1000	1.7
	20	¾	130	120	250	1000	1000	700	8
	25	1	256	160	250	1000	1000	700	12
<b>Flat face couplings</b> Corresponds to ISO 16028	6.3	¼	29	40	400	2000	1220	1850	0.01
	10	⅜	63	80	350	1500	1100	1100	0.015
	12	½	147	120	350	1500	1050	1050	0.02
	16	¾	127	140	350	1200	1200	1100	0.02
	19	1	156	180	350	1450	1050	1050	0.032
	25	1 ¼	251	260	300	800	800	800	0.03
can be coupled under pressure	10	⅜	63	80	350	1700		1500	0.015
	12	½	147	120	350	1500		1400	0.02
	19	1	156	180	350	1600		1600	0.032
<b>Brake line couplings</b> Low-leakage gasket corresponding to ISO5676	12.5	½		70	150	315	75	150	
<b>Screw couplings</b> Can be coupled under pressure with/without a tool	6.3	¼	24	20	450	1800	1400	1400	
	10	⅜	45	40	450	1600	1750	1550	
	12.5	½	76	80	400	1400	1200	1200	
	19	¾	130	120	400	1500	1600	1200	
	25	1	256	160	300	1180	1500	1100	
	32	1 ¼	660	220	300	1800	1600	1200	
<b>Screw coupling</b> For high pressure	12.5	½	76	80	350/465*	2000	1850	1750	
	16	¾	256	160	350/465*	1800	2000	1750	
<b>Screw coupling</b> Flat face screw coupling	10	⅜	63	80	550	1800	1000	1400	
	12	½	147	120	550	1700	1000	1300	
	19	1	156	180	550	1400	1000	1400	
<b>Pipeline coupling</b> Flat face screw coupling	10	⅜	55	40	420	1800	1680	1200	
	12.5	½	105	70	420	1600	1600	900	
	19	¾	160	105	320	1150	1280	1280	
	20	1	285	120	350	1200	1250	700	
	32	1 ¼	620	250	420	1150	1100	900	
<b>Screw coupling</b> For hammer operation	12	⅜	130	160	400	1500	1200	1200	
	20	⅜	130	180	400	1500	1200	1200	
	32	1 ¼	467	660	380	1520	1520	1520	
<b>Plastic coupling</b> Also without valve	6.3	¼	26.4	20	20	80	60	80	

\* Static pressure

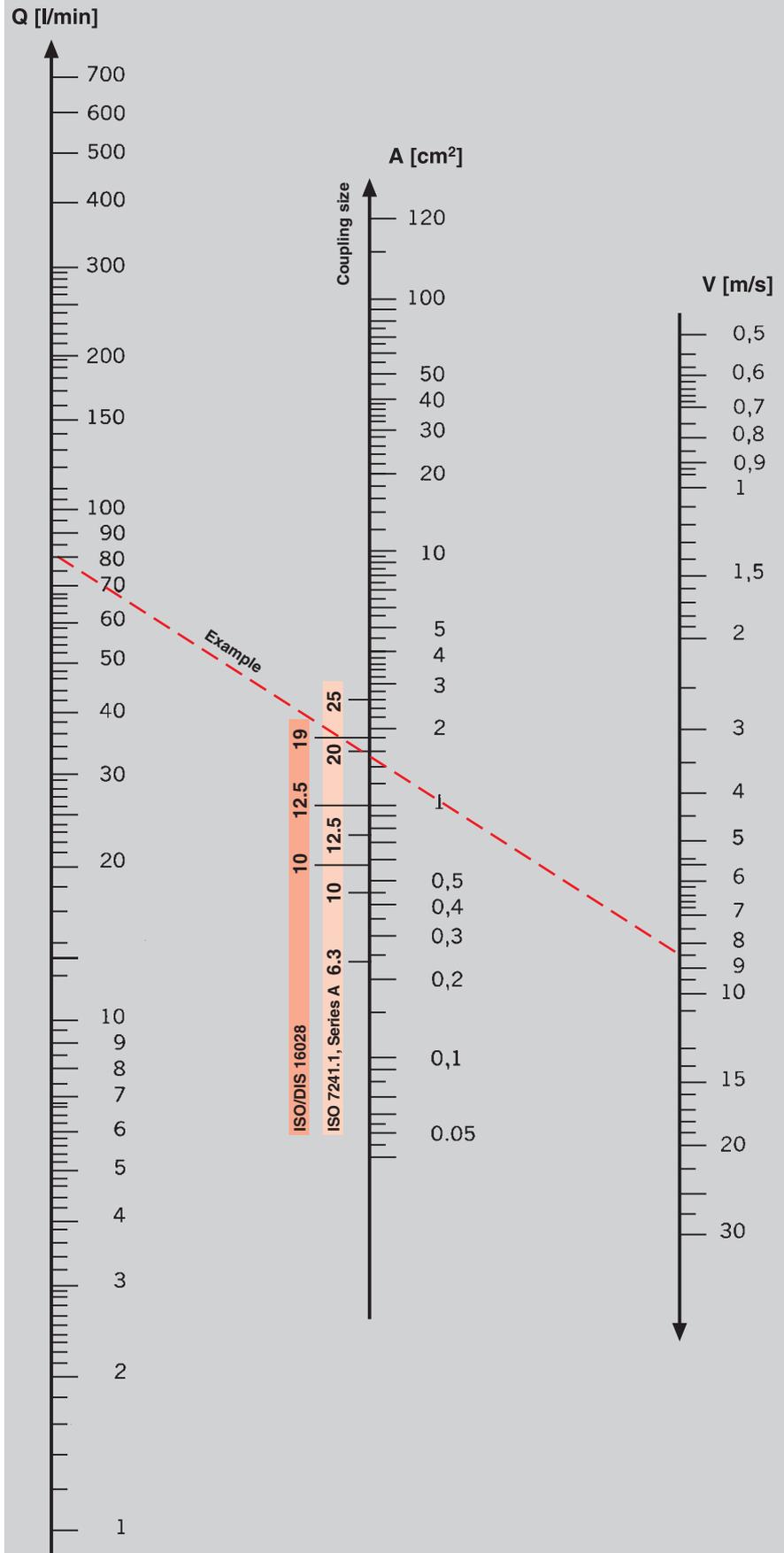
# Determining the coupling size

Nomographic chart to determine the coupling size

**Q** = Flow rate

**A** = Cross-section of the coupling

**V** = Oil velocity



# Safety precautions for the handling of quick release couplings and the corresponding accessories

## Important !

Incorrect selection or incorrect and inexperienced handling of couplings and accessories can lead to material damage and personal injury.

- Escape of hydraulic fluids under high pressure
- Explosion or ignition of the fluid used
- Collision with parts starting to move or fall, caused by the failure of the hydraulic circuit
- Dangerous lashing of the hydraulic hoses (so-called whipping effect)
- Risk of injury due to contact with hot or cold fluids or fluids which are dangerous for other reasons

Before you select and use a quick release coupling or the corresponding accessories, it is vital that you comply with the following instructions.

## 1. General information

### 1.1 General

This section contains instructions on the choice and handling (installation, coupling and disconnecting procedure and maintenance). This is to be understood as additional safety information and must be considered when using the products.

### 1.2 Safety precautions

Under certain circumstances, couplings can unexpectedly fail. Take account of this when planning your system or plant, using safety devices.

### 1.3 Information for the user

Pass these safety instructions on to the persons who are responsible for the selection or handling. Only use the couplings after you have received and understood the product-specific information.

### 1.4 The user's responsibility

Owing to the large variety of applications for quick release couplings, it is not possible to consider every application and each technical detail.

The user is responsible for

- The final selection of the product
- The operator's compliance with the requirements
- The safety of persons and plant
- The safety precautions which are necessary when using couplings

Should you have any other questions, please contact our sales team.

## 2. Notes for the correct choice of coupling

### 2.1 Pressure range

The couplings must be chosen so that their maximum permissible operating pressure is greater than or equal to the system pressure. Pressure peaks in the system, which exceed the operating pressure will reduce the coupling's service life and must thus be considered when making the selection.

### 2.2 Media resistance

The sealing materials in the locking couplings are suitable for numerous pressurised media.

Your product manager will supply you with information about compatibility with a fluid on request.

### 2.3 Working temperature

The working temperatures in the specifications are maximum values. These values must not be exceeded with a stationary or a circulating circuit. During actuation, the natural heating of the coupling must be considered.

### 2.4 Size

The choice of size and type of connection depends upon the required level of power transmission. The corresponding diagrams are to be used for this.

Flow rates, pressure drops and flow speeds must be considered when choosing the correct size.

If these values are exceeded during operation, faults may occur in the function of the coupling.

### 2.5 Mechanical connection

The connection of two halves of a coupling depends on the model. Here care should be taken that push-fit couplings completely engage and that screw-fit couplings are fully screwed on, until the stop is reached.

Forcefully and improperly undoing locking couplings will lead to faults.

### 2.6 Thermal loading

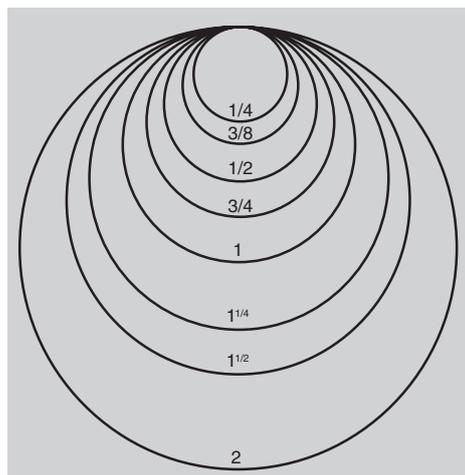
Strongly heating above the recommended operating temperature, by welding or soldering on the couplings, can produce hazardous gases. Apart from that, the surface protection (zinc plating) can be damaged. This can interfere with proper functioning.

### 2.7 Guidelines

All of the specifications and standards applicable for the area of application must be complied with when making a choice.

## Technical information

		Flange		Metric						
Size	DN	3000 psi	6000 psi	Light range	Heavy range	Inch	BSP	JIC	ORS	NPTF
03	05			M12x1.5-6	M16x1.5-8	1/16	G1/8"	3/8-24		1/8-27
04	06			M14x1.5-8	M18x1.5-10	1/4	G1/4"	7/16-20	9/16-18	1/4-18
05	08			M16x1.5-10	M20x1.5-12	5/16		1/2-20		
06	10			M18x1.5-12	M22x1.5-14	3/8	G3/8"	9/16-18	11/16-16	3/8-18
08	12	1/2"	1/2"	M22x1.5-15	M24x1.5-16	1/2	G1/2"	3/4-16	13/16-16	1/2-14
10	16			M26x1.5-18	M30x2-20	5/8	G5/8"	7/8-14	1-14	
12	20	3/4"	3/4"	M30x2-20	M36x2-25	3/4	G3/4"	1 3/16-12	1 3/16-12	3/4-14
16	25	1"	1"	M36x2-25	M42x2-30	1	G1"	1 5/16-12	1 7/16-12	1-11.5
20	32	1 1/4"	1 1/4"	M45x2-35	M52x2-38	1 1/4	G1 1/4"	1 5/8-12		1 1/4-11.5
24	40	1 1/2"	1 1/2"	M52x2-42		1 1/2	G1 1/2"	1 7/8-12		1 1/2-11.5
32	50	2"	2"			2	G2	2 1/2-12		2-11.5
40	65	2 1/2"				2 1/2		3-12		
48	80	3"				3		3 1/2-12		
56	90	3 1/2"				3 1/2				
64	100	4"				4				



### American threaded connections (NPTF and NPSM)

To determine the nominal size of the NPTF thread, hold the end of the thread against the matching circle.

### NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
 Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
 Tel.: +49 (0)6897 - 509-01  
 Fax: +49 (0)6897 - 509-1009  
 Internet: [www.hydac.com](http://www.hydac.com)  
 E-Mail: [info@hydac.com](mailto:info@hydac.com)

## Multi-Station Gauge Isolator MS / MSL



MS 2



MSL 2



MS 4



MS 6



MS 5



MS 7

### 1. DESCRIPTION

#### 1.1. GENERAL

Multi-station gauge isolators are designed to check different pressures in a hydraulic system.

There are models with a built-in pressure gauge for different pressure ranges or models to which a separate pressure gauge can be connected.

If it is necessary for the system pressure to be retained during the measuring process, the leakage-free model must be used.

#### 1.2. MULTI-STATION GAUGE ISOLATORS TYPE MS 2

with built-in pressure gauge, are designed to check up to 6 different pressures in a hydraulic system. The gauge is built directly into the selector knob, therefore eliminating the need for a separate gauge. The pressure can be read when the arrow on the rotary knob is pointing to one of the six measuring positions. By turning the knob each of the six measuring positions can be selected. Between each measuring position there is a zero position to relieve the gauge pressure. A built-in detent locks any selected position. Different gauges are available for different pressure ranges. The gauges are filled with a special damping fluid to prolong the gauge life.

#### 1.3. MULTI-STATION GAUGE ISOLATORS TYPE MSL 2

with built-in pressure gauge, fulfil the same function as Type MS 2, however the measuring points are shut off leakage-free. The MSL 2 is suitable for hydraulic systems where the pressure must be retained and therefore a leakage-free gauge isolator must be used.

#### 1.4. MULTI-STATION GAUGE ISOLATORS TYPE MS 4 / MS 6

without pressure gauge, are designed to check up to 6 or 9 different pressures in a hydraulic system. The gauge has to be mounted separately and must be connected to port M of the gauge isolator by means of a pipe or hose. The pressure can be read when the arrow on the rotary knob is turned to one of the measuring positions and pushed against a spring force in an axial direction. When the knob is released it returns to its original position and the gauge is connected to the tank port. A built-in detent locks any of the selected positions.

#### 1.5. MULTI-STATION GAUGE ISOLATORS TYPE MS 5 / MS 7

without pressure gauge, are designed to check up to 5 or 8 different pressures in a hydraulic system. The gauge has to be mounted separately and must be connected to port M of the gauge isolator by means of a pipe or hose. The pressure can be read when the arrow on the rotary knob is pointing to one of the measuring positions. By turning the rotary knob each of the measuring positions can be selected. An additional 0 position allows pressure from the gauge to be released to the tank. A built-in detent locks any of the selected positions.

## 2. TECHNICAL SPECIFICATIONS

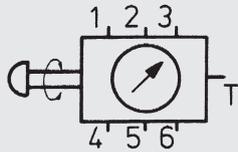
to VDI 3267

### 2.1. GENERAL

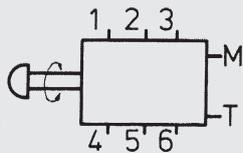
#### 2.1.1 Designation and Symbol

Multi-station gauge isolator

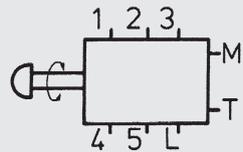
#### Type MS 2/MSL 2



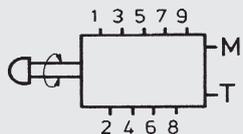
#### Type MS 4



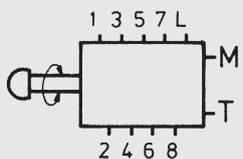
#### Type MS 5



#### Type MS 6



#### Type MS 7



#### 2.1.2 Model code (also order example)

**MSL 2 A 2 . 0 / 315 .**

Multi-station gauge isolator

MS

MSL

with built-in pressure gauge

Type of connection

A = G 1/4

G = 1/4 NPTF

H = 7/16 - 20 UNF

only for MSL

Type code

Modification number

Scale

40 = max. eff. indication range 40 bar / 570 psi (Scale 63 bar / 900 psi)

63 = max. eff. indication range 63 bar / 900 psi (Scale 100 bar / 1400 psi)

100 = max. eff. indication range 100 bar / 1400 psi (Scale 160 bar / 2300 psi)

180 = max. eff. indication range 180 bar / 2600 psi (Scale 250 bar / 3600 psi)

315 = max. eff. indication range 315 bar / 4500 psi (Scale 400 bar / 5700 psi)

Supplementary details

V = Viton seals

D = Connection for external pressure gauge

(only for MSL without built-in pressure gauge)

Multi-station gauge isolator

**MS 4 A 2 . 0 / .**

Type

4 = turn and press to read (6 positions)

5 = turn to read (5 positions)

6 = turn and press to read (9 positions)

7 = turn to read (8 positions)

Type of connection

A = threaded connections for inline mounting

Type code

Modification number

Supplementary details

V = Viton seals

12 = 7/16 x 20 UNF - MS 4/5

#### 2.1.3 Mounting method

Flange mounting

4 screws M 6 ISO 4762

#### 2.1.4 Connections

**MS 2/MSL 2/MS 4/MS 5**

G 1/4 (ISO 228)

**MS 6/MS 7**

G 1/8 (ISO 228)

**MS 2/MSL 2**

6 measuring points

1 tank connection

**MS 4/MS 6**

6/9 measuring points

1 gauge connection = M

1 tank connection = T

**MS 5/MS 7**

5/8 measuring points

1 gauge connection = M

1 tank connection = T

1 leakage connection = L

#### 2.1.5 Weight

MS 2/MSL 2: 1.7 kg

MS 4/MS 5: 1.4 kg

MS 6/MS 7: 1.9 kg

#### 2.1.6 Mounting position

Optional

#### 2.1.7 Operating fluid

Mineral oil to DIN 51524

and DIN 51525

Special fluids on request.

## 2.2. HYDRAULIC TECHNICAL DATA

### 2.2.1 Operating pressure range

#### MS 2/MSL 2

Max. permitted operating pressure at measuring points 1 to 6: depending on permitted indicator range of gauge

=  $p_{max}$  up to 315 bar

Tank connection =  $p_{max}$  10 bar.

#### MS 4/MS 5/MS 6/MS 7

Max. permitted operating pressure at the measuring points

=  $p_{max}$  315 bar

Tank connection and leakage connection =  $p_{max}$  10 bar.

### 2.2.2 Temperature range of operating medium

-20 °C... +70 °C

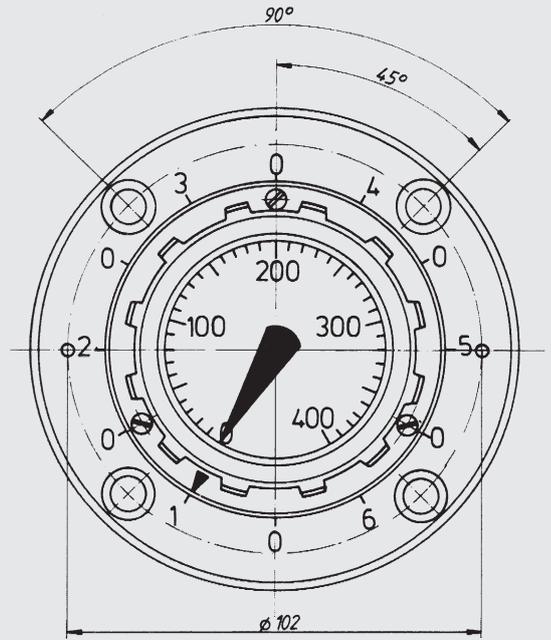
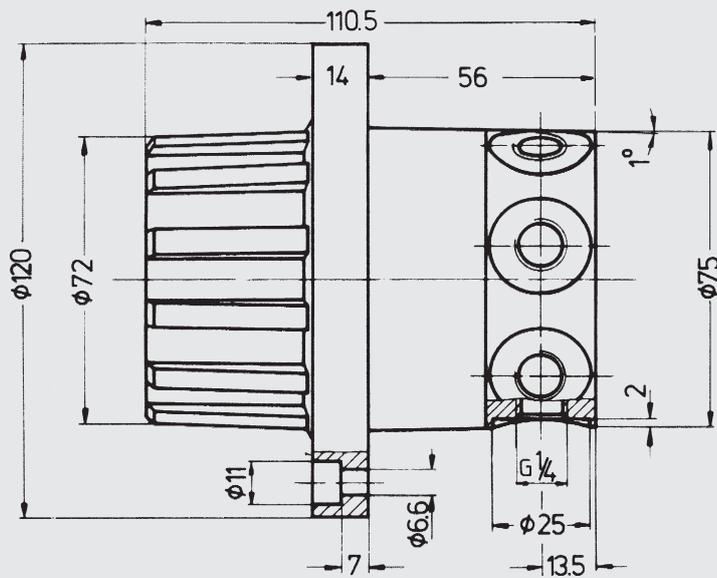
### 2.2.3 Gauge accuracy

#### MS 2/MSL 2

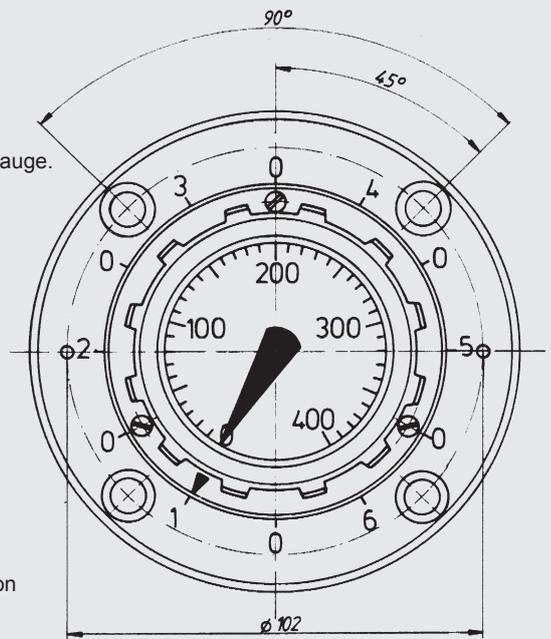
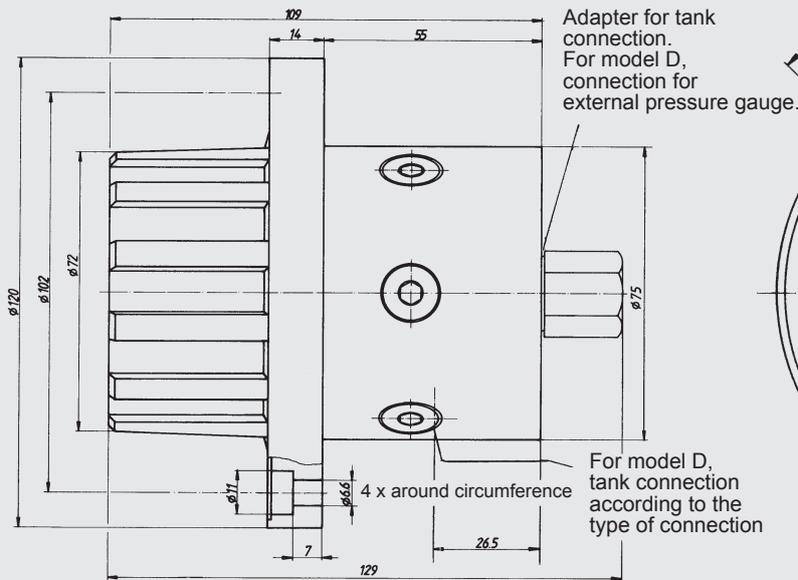
The accuracy of the built-in gauge is 1.6% of the red scale value at 20 °C. Inaccuracy per 10 °C temperature increase approx. +0.3% and per 10 °C temperature decrease approx. -0.3% of the red scale value.

### 3. DIMENSIONS

#### TYPE MS 2

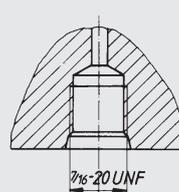
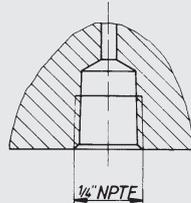
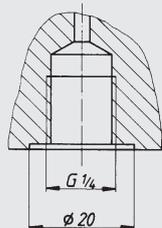
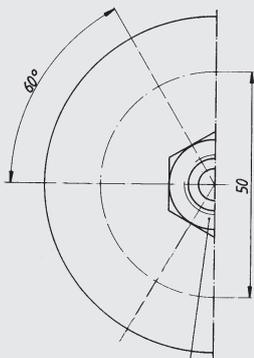


#### TYP MSL 2



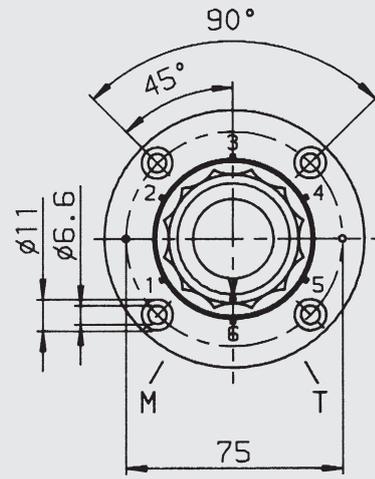
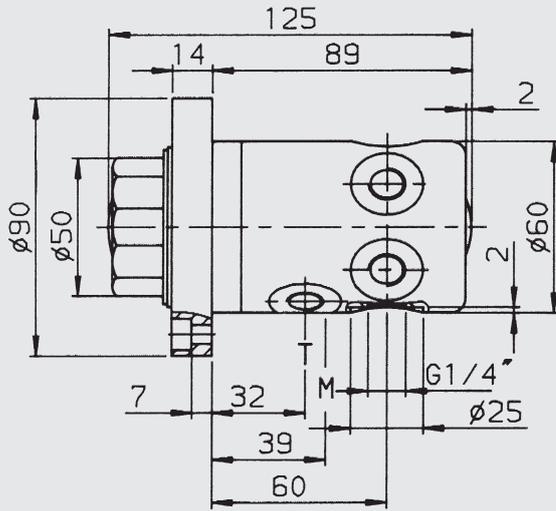
Type of connection:  
A/G/H

Connections:  
A G H

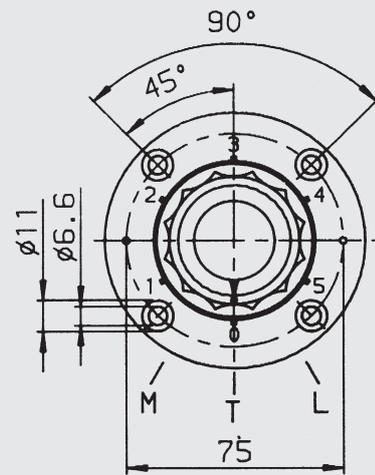
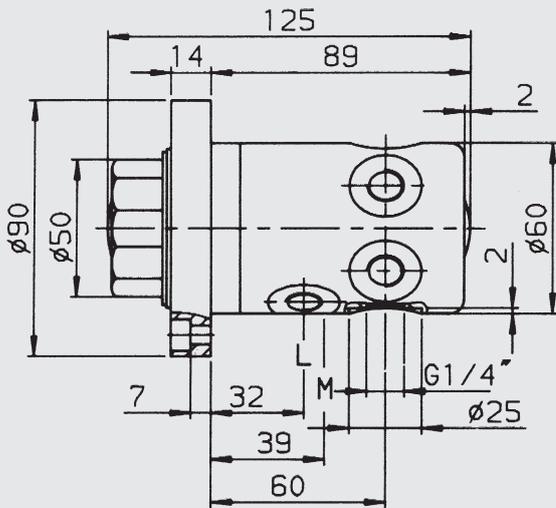


Adapter  
for tank connection.  
For model D,  
connection for external  
pressure gauge

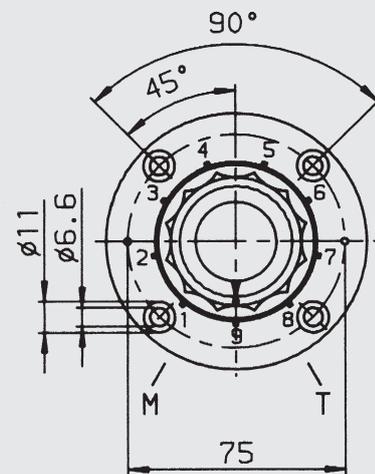
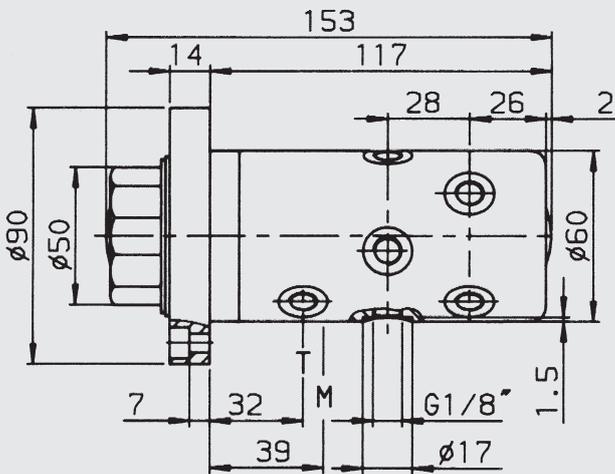
### TYPE MS 4



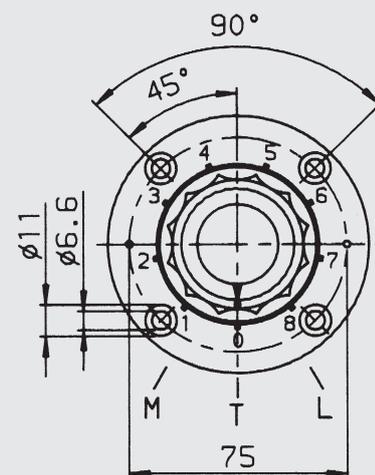
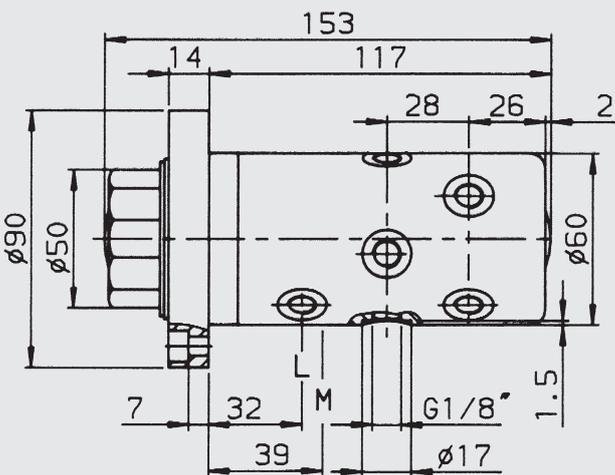
### TYPE MS 5



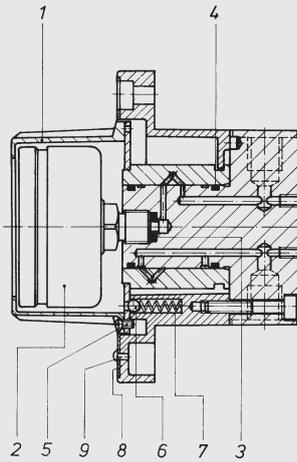
### TYPE MS 6



### TYPE MS 7



#### 4. SPARE PARTS MS 2

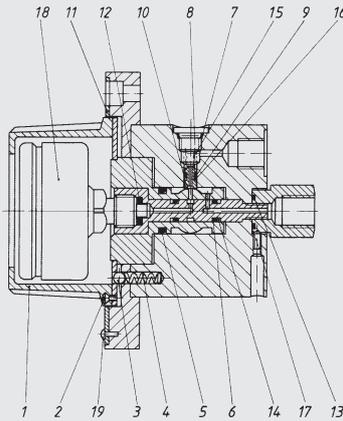


Item	Qty.	Description
1	1	Rotary knob
2	1	Gauge
3	1	Seal ring
4	2	Quad rings
5	3	Slotted head screws M3 x 6 DIN 964 - 5.8
6	1	Ball 5 mm DIN 5401 Class III
7	1	Spring
8	1	Scale plate
9	2	Rivets 2 x 6 DIN 1476

##### ORDER EXAMPLE

Type MS 2 A 2 . 0 / 315 .  
1 off seal ring, item 3  
(When ordering, always quote the whole  
model code of the unit)

#### SPARE PARTS MSL 2

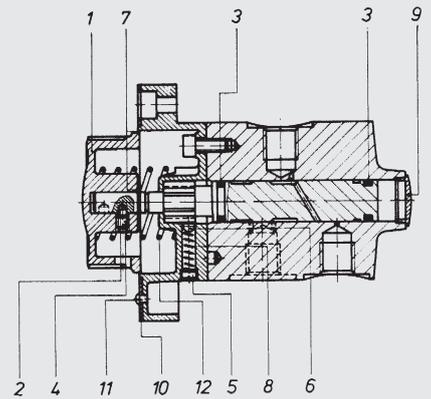


Item	Qty.	Description
1	1	Rotary knob
2	3	Slotted head screws M 3 x 5 DIN 964
3	1	Ball 5 mm DIN 5401 Class III
4	1	Spring
5	1	O-ring 15 x 2.5
6	2	O-ring 6 x 2
7	6	O-ring 8.5 x 1.5
8	6	Locking screws G 1/8 DIN 908
9	6	O-ring 2 x 1.6
10	6	Seals
11	1	Scale plate
12	1	Seal ring
13	1	O-ring 9.25 x 1.78
14	2	Support rings
15	6	Springs
16	6	Support rings
17	1	Grub screw M 4 x 10 DIN 914
18	1	Pressure gauge
19	2	Rivets 2 x 6 DIN 1476

##### ORDER EXAMPLE

Type MSL 2 A 2 . 0 / 315 .  
1 off seal ring, item 12  
(When ordering, always quote the whole  
model code of the unit)

#### SPARE PARTS MS 4

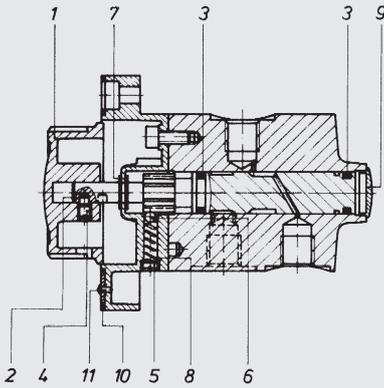


Item	Qty.	Description
1	1	Rotary knob
2	1	Disc
3	2	Quad rings
4	1	Grub screw M 5 x 8 DIN 417
5	1	Grub screw M 6 x 4 DIN 557
6	1	Ball 5 mm DIN 5401 Class III
7	1	Retainer 8 x 0.8 DIN 471
8	1	Spring
9	1	End cap
10	1	Scale plate
11	2	Rivets 2 x 6 DIN 1476
12	1	Spring

##### ORDER EXAMPLE

Type MS 4 A 2 . 0 / .  
1 off quad ring item 3  
(When ordering, always quote the whole  
model code of the unit)

## SPARE PARTS MS 5



Item	Qty.	Description
1	1	Rotary knob
2	1	Disc
3	2	Quad rings
4	1	Grub screw M 5 x 8 DIN 417
5	1	Grub screw M 6 x 4 DIN 557
6	1	Ball 5 mm DIN 5401 Class III
7	2	Retainers 8 x 0.8 DIN 471
8	1	Spring
9	1	End cap
10	1	Scale plate
11	2	Rivets 2 x 6 DIN 1476

### ORDER EXAMPLE

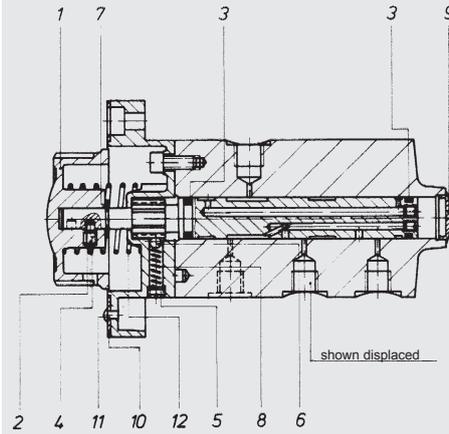
Type MS 5 A 2 . 0 / .  
1 off quad ring, item 3  
(When ordering, always quote the whole  
model code of the unit)

### MOUNTING INSTRUCTIONS

Taking into account the operating forces,  
it is recommended that measuring points  
with pressures of more than 100 bar  
are arranged symmetrically. Ports not  
required should be plugged.

Required oil cleanliness class for MSL:  
NAS 1638-9 ISO DIS 4406-18/14

## SPARE PARTS MS 6



Item	Qty.	Description
1	1	Rotary knob
2	1	Disc
3	2	Quad rings
4	1	Grub screw M 5 x 8 DIN 417
5	1	Grub screw M 6 x 4 DIN 557
6	1	Ball 5 mm DIN 5401 Class III
7	1	Retainer 8 x 0.8 DIN 471
8	1	Spring
9	1	End cap
10	1	Scale plate
11	2	Rivets 2 x 6 DIN 1476
12	1	Spring

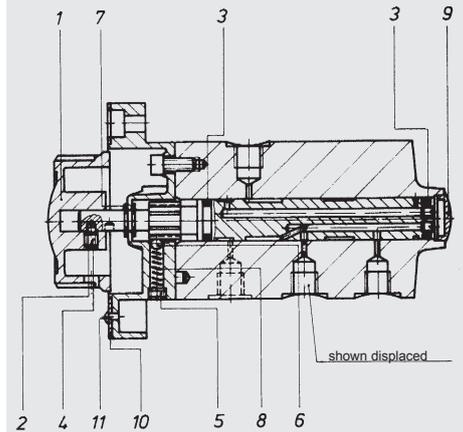
### ORDER EXAMPLE

Type MS 6 A 2 . 0 / .  
1 off quad ring, item 3  
(when ordering, always quote the whole  
model code of the unit)

### NOTE

The information in this brochure relates to  
the operating conditions and applications  
described. For applications or operating  
conditions not described, please contact  
the relevant technical department. Subject  
to technical modifications.

## SPARE PARTS MS 7



Item	Qty.	Description
1	1	Rotary knob
2	1	Disc
3	2	Quad rings
4	1	Grub screw M 5 x 8 DIN 417
5	1	Grub screw M 6 x 4 DIN 557
6	1	Ball 5 mm DIN 5401 Class III
7	2	Retainers 8 x 0.8 DIN 471
8	1	Spring
9	1	End cap
10	1	Scale plate
11	2	Rivets 2 x 6 DIN 1476

### ORDER EXAMPLE

Type MS 7 A 2 . 0 / .  
1 off quad ring item 3  
(When ordering, always quote the whole  
model code of the unit)

### HYDAC Accessories GmbH

Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: www.hydac.com  
E-Mail: info@hydac.com



## Single Station Gauge Isolator MA

### 1. DESCRIPTION

Long life and continuous accuracy can be achieved if pressure gauges are only pressurised for the time it takes to read the pressure. For the rest of the time the gauge isolator isolates the pressure gauge and the gauge is automatically vented to the tank. This then protects the gauge from possible pressure surges from the system.

This is possible with the HYDAC Single Station Gauge Isolator.

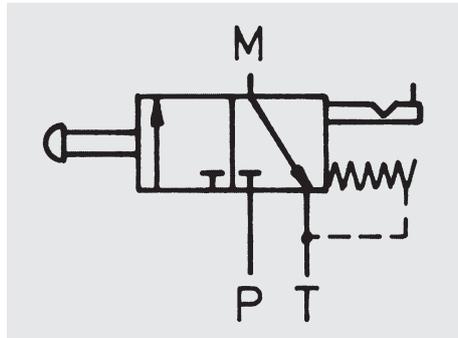
It can be operated in two ways:

- A) Push button:  
the pressure is indicated as long as the button is depressed.
- B) Push button and turn clockwise through 90°:  
this locks the pressure indication until the button is released.

### 2. TECHNICAL SPECIFICATIONS

#### 2.1. GENERAL

2.1.1 **Designation/Symbol**  
Single Station Gauge Isolator



#### 2.1.2 **Mounting method**

Panel mounting  
(max. 10 mm panel thickness)

#### 2.1.3 **Connections**

G 1/4" (for M, P, T)

#### 2.1.4 **Weight**

Approx. 0.4 kg

#### 2.1.5 **Mounting position**

Optional

#### 2.1.6 **Operating fluid**

Mineral oil

Other fluids on request

Special models and surface treatments on request

Oil cleanliness class

NAS 1638-9

ISO DIS 4406-18/14

**2.1.7 Model code**  
(order example)

**MA 1 A 1 0 / V**

**Single Station Gauge Isolator** —————

**Design** —————

1 = push & turn button

**Type of connection** —————

A = threaded connection

**Type code** —————

**Modification number** —————

**Supplementary details** —————

5 = NPT thread 1/4"

V = Viton seals

(no code for standard = Perbunan)

**2.2. HYDRAULIC DATA**

**2.2.1 Operating pressure**

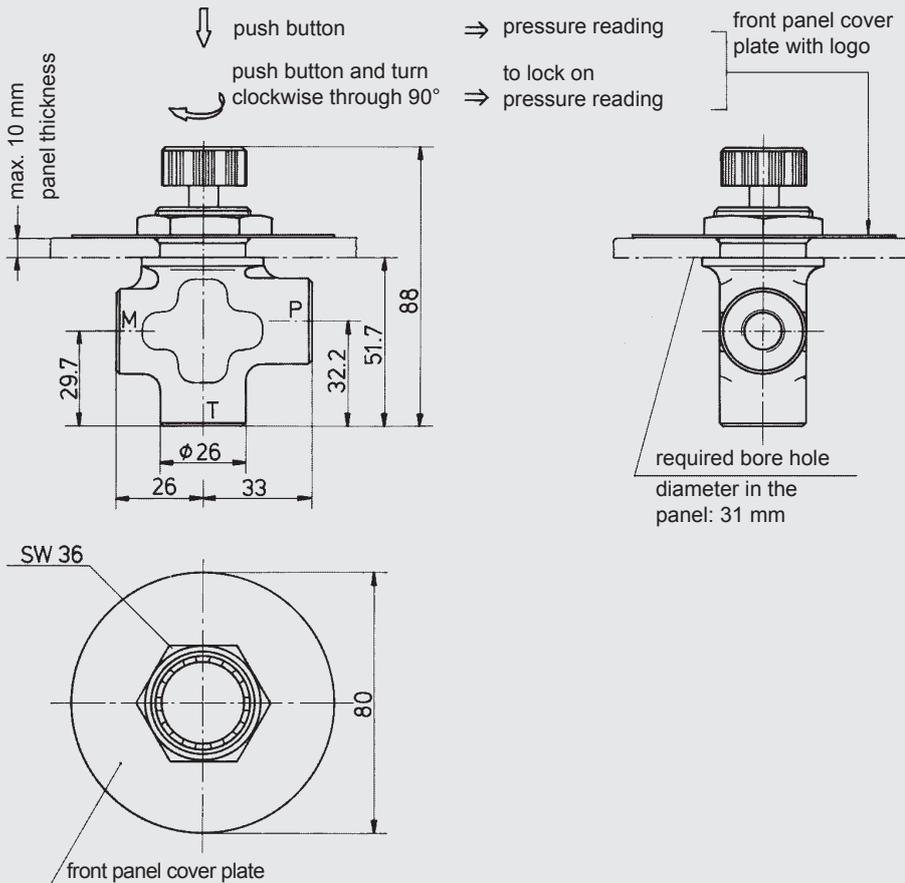
max. 350 bar

(port T: max. 10 bar)

**2.2.2 Temperature range of operating fluid**

- 20 °C ... + 80 °C

**3. DIMENSIONS**



**4. NOTE**

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Fluid Level Gauge Fluid Level Sensor Temperature Switch

FSA / FSK / TS

up to NG1000; up to PN 0.5; T = -40 °C to +160 °C

### 1. DESCRIPTION

#### 1.1. GENERAL

FSA fluid level gauges, FSK fluid level sensors and TS temperature switches are designed to monitor and control the level of operating fluid.

The flexible product range means that many combinations are possible:

- **FSA:** Range of eleven evenly spaced sizes.  
Visual thermometer with °C and °F scale.  
Temperature gauge which measures the temperature of the operating fluid in the tank in °C. Dual scale in °C and °F available on request.  
Simple standardised installation conditions.
- **FSA-IB:** shut-off of the fluid to the fluid level gauge via non-return valve.  
Display of the current level by simultaneously pressing the upper and lower buttons on the non-return valves.  
With the optional use of a thermometer, the current temperature of the fluid will also be shown.  
Certified by Bureau Veritas (BV approval) and by American Bureau of Shipping (ABS approval).
- **FSAR:** Fluid level gauge in round design with pipe connections on both sides.  
Thanks to the principle of communicating vessels, the gauge can be attached externally even at greater distances.
- **FSK:** Monitor the fluid level via an electrical signal.  
Range of eleven evenly spaced sizes.  
Simple standardised installation conditions.  
Switching contact (sizes 127-381) designed as optionally normally closed (type O), normally open (type C) or changing (type W) contact – as changing contact (W) in sizes 076 and 500-1000.  
Temperature gauge which measures the temperature of the operating fluid in the tank in °C and °F.  
Option: line marking on sight tube and float.  
Better visual fluid level monitoring possible with red float.
- **FSK-2SP:** Monitoring of the minimum or maximum fluid level.  
Two additional alternative switching points for size 254 and above.  
Optional: line markings on inspection tube.
- **FSK-V:** Switch points can be positioned variably, additional alternative switch points possible.  
Switching contact designed as changing contact, opens or closes at switching level.  
Riser tube made of glass.  
Optional, 3-pole AMP plug (Super Seal).  
Optional: line markings on inspection tube.
- **TS:** three nominal temperatures possible: 60 °C, 70 °C and 80 °C.  
Can be easily fitted into the FSA and FSK.  
Simple, standardised mounting (FSA/K).  
Non-corroding surfaces.
- **Accessories**  
**TFP 100:** Temperature sensor with a measurement range of -40 °C to +125 °C.  
Measuring resistor designed as 4-conductor with standardised electrical connection.  
**ABK / ABV:** These shut-off elements allow the connections to be blocked for maintenance work or for making changes to the display system (FSA/FSK), without any tank draining required.

## 1.2. FUNCTION

### FSA

By using the FSA, the fluid level can be easily seen on the outside of the tank. The fluid enters the unit via the lower connection bore and is clearly visible in the tube. By selecting the right size, the particular fluid level can be monitored.

### FSK

By using the FSK, the fluid level is monitored via an electrical switching signal. This switch signal can be used for a warning or to control the level. The fluid enters the unit via the lower connection bore and pushes a float up the tube. The float now shows the level of the fluid in the tank. If the level of the fluid drops again, the float will activate a switch contact. For the NO switch (type C) the circuit will then be closed, for the NC switch (type O) the circuit will be opened.

The special dual switching model (type W) offers two possibilities. It can be used either to close on contact or to open on contact.

### TS

The TS is a very useful additional option to the FSA and FSK products. However, it also has a useful application as a separate accessory for systems.

Once fitted, the temperature sensor of the TS is surrounded by operating fluid. When the nominal temperature is reached, a contact opens and the circuit is broken.

This switching process can be used either as an alarm or to monitor the temperature.

When the temperature of the fluid drops by approx. 15 K, the circuit closes again.

### TFP

Based on the principle of voltage drop, the sensor provides an electrical signal as a value for the temperature.

A constant measurement flow is fed to the temperature sensor. The voltage change is roughly proportional to the change in resistance caused by the temperature – the higher the temperature, the greater the resistance.

Measurement errors caused by longer feed lines are avoided by using the 4-conductor connection.

## ABK

This stop cock specially designed for the FSA/FSK has a plug that is guided in a valve casing and that can be turned from the outside. Turning it by 90° closes the connection opening of the FSA/FSK.

It is operated by screwdriver, from the side, above or below depending on the position of the ABK.

## ABV

Screwing the adjusting screw deeper into the valve casing closes the connection opening of the FSA/FSK (the screw can be loosened again subsequently).

The screw is adjusted by means of an allen key (AF width 3).

## 1.3. APPLICATION

Fluid level gauges FSA, fluid level sensors FSK and temperature switches TS are used to monitor and control levels of operating fluid.

Areas of application are for example: Machine tools, system engineering, tanks for hydraulic, lubricating and cutting oils, and gearboxes.

## 1.4. NOTES

The upper viscosity limit is 2,000 mm<sup>2</sup>/s. It is not possible to combine a TS temperature switch with an FT temperature gauge.

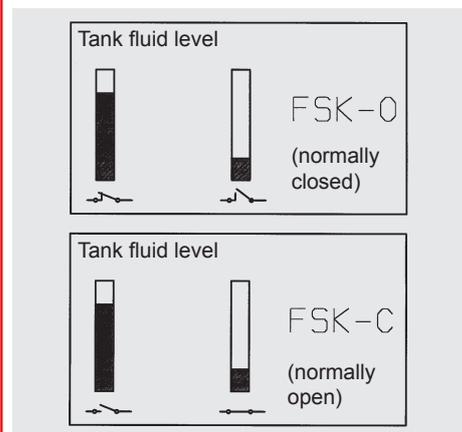
To ensure correct functioning, pressure, viscosity and temperature specifications must be observed.

### FSA/FSK

In the standard design not suitable for use with glycol and fluids containing glycol – the special design SO14 is recommended as a solution variant in such cases.

### FSK

Depending on the fluid level of the tank, the following switching logic applies for the fluid level monitor with NC and NO contacts.



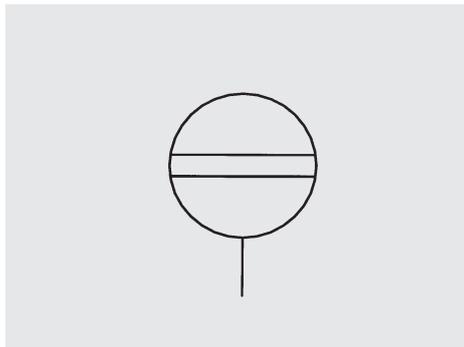
In each case the switching logic of the fluid level sensor starts with a full tank. For the NC version the switching contact opens when the fluid level drops below the switching level. Correspondingly, in the NO version, the switching contact closes when the fluid level drops below the switching level.

## 2. TECHNICAL CHARACTERISTICS

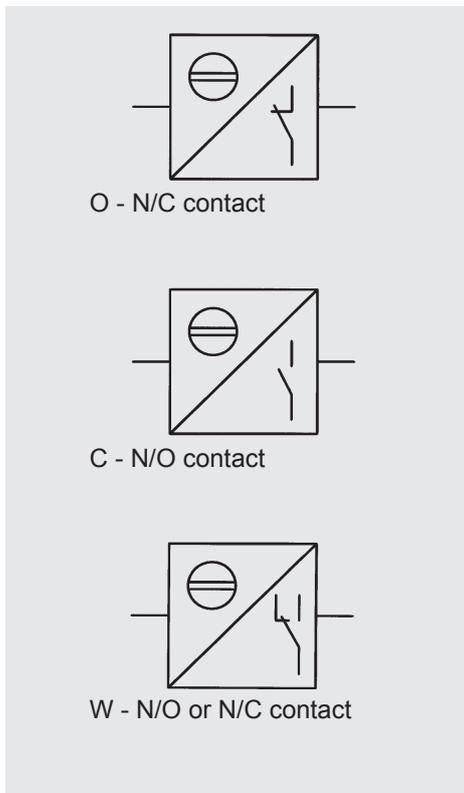
### 2.1. GENERAL

#### 2.1.1 Designation and Symbol

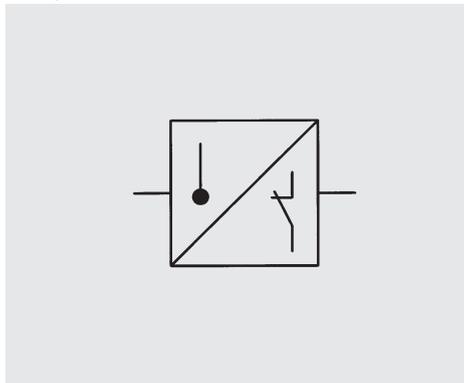
Fluid level gauge FSA



Fluid level sensor FSK



Temperature switch TS



#### 2.1.2 Model code for FSA (also order example)

FSA - 076 - 2 . X / FT200 / 12 ...

##### Designation

FSA = fluid level gauge

##### Nominal size ( $\cong$ bolt centre spacing)

076; 127; 176; 254; 381

##### Seal material

1 = NBR (Perbunan)  
2 = FKM (Viton)  
5 = EPDM (on request)

##### Series

(specified by manufacturer)

##### Additional thermometer function

- = no additional function  
T = thermometer in display tube  
FF = prepared for temperature probe  
FT 100 = temperature probe 100 mm  
FT 200 = temperature probe 200 mm  
FT 300 = temperature probe 300 mm  
TS 60 = temperature switch nominal temperature 60 °C  
TS 70 = temperature switch nominal temperature 70 °C  
TS 80 = temperature switch nominal temperature 80 °C  
TFP 100 = temperature probe -40 °C to +125 °C

##### Installation conditions (Banjo bolt thread)

12 = M12 (standard)  
10 = M10 (not on TS)

##### Special designs

SO2 = with glass tube (round design), aluminium connectors  
SO7 = frame, fastening bolts and nuts made from stainless steel\*  
SO8 = fastening bolts and nuts made from stainless steel\*  
SO14 = with glass tube, plastic connectors (PA)  
SO19 = with green hollow ball, no contrast washer  
SO32 = with glass tube (round design), aluminium connectors; frame, fastening bolts and nuts made from stainless steel\*  
SO65 = FSA – standard, but without fastening bolts or sealing washers  
SO67 = FSA – standard, but without sealing washers  
SO79 = with side viewing window

\* only for size M12

#### 2.1.3 Model code for FSA-IB (also order example)

FSA - 254 - 2 . 0 / T / 12 SO7/SO78 2xIB ...

##### Designation

FSA = fluid level gauge

##### Nominal size ( $\cong$ bolt centre spacing)

076; 127; 176; 254; 381;  
500; 600; 700; 800; 900; 1000

##### Seal material

1 = NBR (Perbunan)  
2 = FKM (Viton)

##### Design of riser tube

0 = round

##### Additional thermometer function

- = no additional function  
T = thermometer

##### Installation conditions (Banjo bolt thread)

12 = M12

##### Special designs

SO2 = with glass tube, aluminium connectors and round design  
SO7 = frame, fastening bolts and nuts made from stainless steel  
SO78 2xIB = with 2x bolts FSA/K-M12 V ISOLATOR bolt

##### Certification

BV = BV approval (sizes 076–1000)  
ABS = ABS approval (sizes 076–381)

#### 2.1.4 Model code for FSA 500-1000

FSA - 1000 - 2 . 0 / - / 12 ... Ø19 ...

(also order example)

##### Designation

FSA = fluid level gauge

##### Nominal size ( $\cong$ bolt centre spacing)

500; 600; 700; 800; 900; 1000

##### Seal material

1 = NBR (Perbunan)

2 = FKM (Viton)

##### Design of riser tube

0 = round

##### Additional thermometer function

- = no additional function

FT = temperature probe

##### Installation conditions (Banjo bolt thread)

12 = M12 (standard)

##### Tank seal

... = gasket (no entry required)

OR = O-ring

##### Diameter of riser tube

Ø19 = 19 mm

##### Special designs

SO2 = with glass tube (round design), aluminium connectors

#### 2.1.5 Model code for FSAR

FSAR - 137 - 1 . 0 / - / 12LR - 4SF ...

(also order example)

##### Designation

FSAR = fluid level gauge with pipe connection

##### Nominal size ( $\cong$ indication range)

088; 137; 215; 342

##### Seal material

1 = NBR (Perbunan)

2 = FKM (Viton)

##### Design of riser tube

0 = round

##### Additional functions

- = hollow ball Ø10

##### Installation conditions (pipe connection)

12LR = 12LR on both sides

##### Quantity of viewing windows

4SF = viewable from 4 sides

##### Design

No details = no fastening nut

MUTTER = with fastening nut

2.1.6 **Model code for FSK**  
(also order example)

FSK - 127 - 2 . X / O / FT200 / 12 / ...

**Designation**

FSK = Fluid level sensor

**Nominal size** ( $\cong$  bolt centre spacing)

127; 176; 254; 381

**Seal material**

2 = FKM (Viton)

**Series**

(specified by manufacturer)

**Switching function**

O = normally closed opens at the switching level  
 C = normally open closes at the switching level  
 W = changing opens or closes at the switching level (connector Z4 = standard)

**Additional thermometer function**

- = no additional function  
 FT 100 = thermometer probe 100 mm  
 FT 200 = thermometer probe 200 mm  
 FT 300 = thermometer probe 300 mm  
 TSL 60 = temperature switch nominal temperature 60 °C  
 TSL 70 = temperature switch nominal temperature 70 °C  
 TSL 80 = temperature switch nominal temperature 80 °C  
 TFP 100 = temperature probe -40 °C to +125 °C

**Installation conditions** (Banjo bolt thread)

12 = M12 (standard)  
 10 = M10 (not on TS)

**Connector**

No details = 3-pole MPM (standard)  
 Z4 = 4-pole Hirschmann (standard for changing contact)  
 SEW = 4-pole M12x1 (sensor connector, horizontal)  
 SO75 = 3-pole MPM, mounted at top (only size 127)  
 SES = 4-pole M12x1 (sensor connector, vertical)  
 Form B = special connection for device connector

2.1.7 **Model code for FSK-076 / FSK-2SP / FSK-V**  
(also order example)

FSK - 127 - 1 . O / W / - / 12 / 2SP

**Designation**

FSK = fluid level sensor  
 FSKV = fluid level sensor with variable switching points

**Nominal size** ( $\cong$  bolt centre spacing)

076; 127; 176; 254; 381

**Seal material**

1 = NBR (Perbunan)

**Series**

(specified by manufacturer)

**Switching function**

W = changing contact, opens or closes at switching level

**Additional thermometer function**

- = no additional function (standard)

**Installation conditions** (Banjo bolt thread)

12 = M12

**Switch points**

1SP = 1 switch points  
 2SP = 2 switch points (1x minimum, 1x maximum) (size 127 and above)  
 Additional switch points on request

**Connector**

FSK-076-1SP: 3-pole M8x1 male  
 FSK-2SP: 5-pole M12x1 male  
 FSK-V: 3-pole M8x1 male

### 2.1.8 Model code for FSK 500-1000

FSK - 1000 - 1 . 0 / W / - / 12 2SP Ø19 ... ..

(also order example)

#### Designation

FSK = Fluid level sensor

#### Nominal size (≡ bolt centre spacing)

500; 600; 700; 800; 900; 1000

#### Seal material

1 = NBR (Perbunan)

#### Series

(determined by manufacturer)

#### Switching function

W = changing contact, opens or closes at switching level

#### Additional thermometer function

- = no additional function

FT = temperature probe

#### Installation conditions (Banjo bolt thread)

12 = M12 (standard)

#### Switch points

1SP = 1 switch point

2SP = 2 switch points (1x minimum, 1x maximum)

Additional switch points on request

#### Diameter of riser tube

Ø19 = 19 mm

#### Connector

No details = 3-pole M8x1 male (standard)

#### Special designs

SO2 = with glass tube (round design), aluminium connectors

### 2.1.9 Model code for TS

TS - 70 / X / 12

(also order example)

#### Designation

TS = temperature switch (for FSA)

TS-L = temperature switch long (for FSK)

#### Nominal temperature

60 = 60 °C

70 = 70 °C

80 = 80 °C

#### Series

(specified by manufacturer)

#### Installation conditions (Banjo bolt thread)

12 = M12 (standard)

### 2.1.10 Type of construction

The devices are designed to be mounted directly on to the operating fluid tank.

### 2.1.11 Type of connection

#### FSA / FSK

The device is mounted using two banjo bolts. The connection bores can be either threaded holes or through holes (Ø13, Ø11).

#### FSAR

The device is mounted via a 12LR pipe connection on both sides, piping clamp or retaining plate.

#### TS

The temperature switch can be fitted to the FSA/FSK in place of the lower banjo bolt.

### 2.1.12 Mounting position

**FSA** – vertically on the tank wall

**FSK** – vertically on the tank wall (connection plug at bottom of the tank)

**TS** – instead of lower banjo bolt M12 (FSA)

**TS-L** – instead of lower banjo bolt M12 (FSK)

**TFP** – instead of lower banjo bolt M12 (FSA/FSK)

### 2.1.13 Weight

FSK076 - 0.22 kg	FSK500 - 0.69 kg
FSK127 - 0.21 kg	FSK600 - 0.79 kg
FSK176 - 0.23 kg	FSK700 - 0.85 kg
FSK254 - 0.26 kg	FSK800 - 0.93 kg
FSK381 - 0.30 kg	FSK900 - 1.00 kg
	FSK1000 - 1.14 kg
FSA076 - 0.17 kg	FSA500 - 0.68 kg
FSA127 - 0.19 kg	FSA600 - 0.75 kg
FSA176 - 0.21 kg	FSA700 - 0.84 kg
FSA254 - 0.24 kg	FSA800 - 0.92 kg
FSA381 - 0.29 kg	FSA900 - 0.99 kg
	FSA1000 - 1.13 kg

TS-...	- 0.11 kg
TS-L-...	- 0.13 kg
FT 200	- 0.03 kg
FT 300	- 0.04 kg
TFP 100	- 0.20 kg

### 2.1.14 Flow direction

Any

### 2.1.15 Ambient temperature

-20 °C to +80 °C

### 2.1.16 Materials

#### FSA / FSK

- Connectors and tube in high quality synthetic material
- Housing frame made from aluminium (steel or stainless steel on request)
- Soft seals in Viton (FKM) or Perbunan (NBR)
- Bolts, nuts and washers in steel (zinc-plated)
- Plug connections in high quality synthetic material (FSK)

#### FSA-IB

- Housing frame, bolts and nuts made of stainless steel
- Riser tube made of glass Ø19

#### FSAR

- Frame made of aluminium
- Riser tube made of glass or plastic

#### FSA / FSK 500 - 1000

- Connectors made of aluminium
- Float gauge made from NBR

#### FSK-2SP

- Connectors made of aluminium / polyamide
- Frame made of aluminium
- Riser tube made of glass Ø19

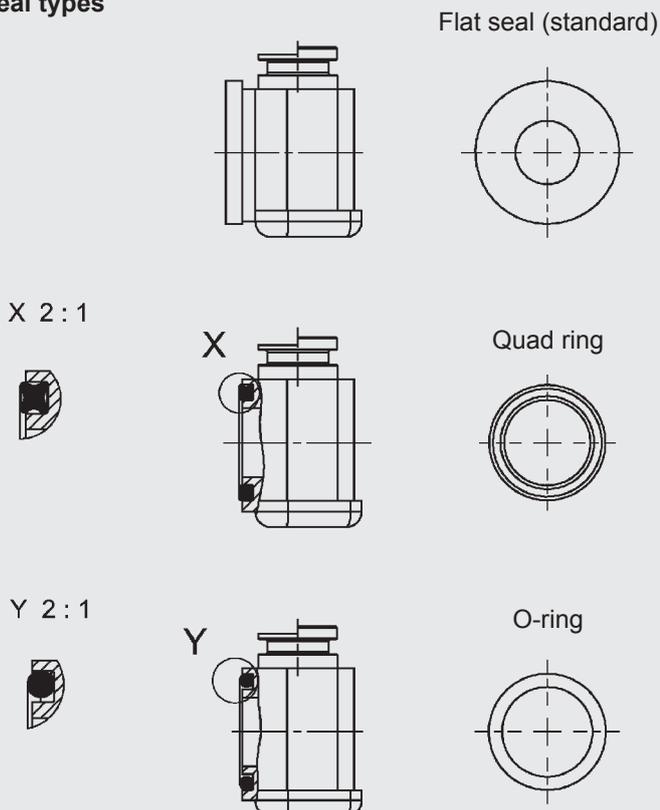
### FSK-V

- Housing frame made of stainless steel
- Connectors made of aluminium / polyamide
- Riser tube made of glass Ø19

### TS / TS-L / TFP

- Housing with temperature sensor, washer and nut in steel (zinc-plated)
- Plug connections in high quality synthetic material

### 2.1.17 FSA seal types



## 2.2. HYDRAULIC DATA

### 2.2.1 Nominal pressure

max. 0.5 bar

### 2.2.2 Operating fluids

Mineral oil to DIN 51524 Part 1 and 2, water-oil emulsions and synthetic fluids, such as hydraulic fluids based on phosphate ester.

(other fluids on request)

### 2.2.3 Temperature of operating fluid

-20 °C to +80 °C

### 2.2.4 Range of thermometer scale

#### FSA / FSK

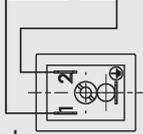
Thermometer T for FSA :  
+ 20 °C to + 80 °C

Thermometer FT for FSA / FSK :  
0 °C to + 100 °C

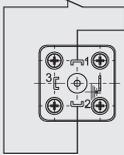
## 2.3. ELECTRICAL CHARACTERISTICS FSK

### 2.3.1 Electrical functions

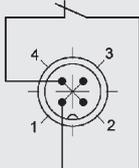
Type O / normally closed



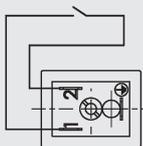
Type O / normally closed  
(plug Z4 and type B)



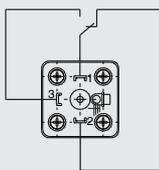
Type O / normally closed  
(plug - SEW)



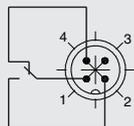
Type C / normally open



Type W / change over  
(connector Z4 and type B)



Type W / change over  
(plug - SEW)



## FSK-2SP

Type W / change over

As delivered, switching point at bottom activated by magnetic field.

Size 127, 254, 381

	Contact assignment	bottom	top
	Float setting		
	Minimum	5 - 4	5 - 3
Maximum	5 - 1	5 - 2	

Size 176

	Contact assignment	top
	Float setting	
Maximum	5 - 4	
	Contact assignment	bottom
	Float setting	
Minimum	5 - 4	

## FSK-V

Type W / change over

	Contact assignment	bottom	top
	Float setting		
	Minimum	3 - 4	1 - 4
Maximum	1 - 4	3 - 4	

NOTICE: With only one reed contact, the switch point is at the top or at the bottom.

### 2.3.2 Contact load

max. 8 W

### 2.3.3 Switching voltage

1-48 V AC/DC

### 2.3.4 Switching current

max. 0.2 A

### 2.3.5 Protection class

IP 65

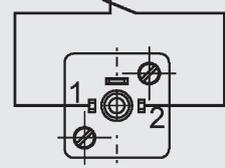
### 2.3.6 Viscosity range

max. 2000 mm<sup>2</sup>/s

## 2.4. ELECTRICAL CHARACTERISTICS TS / TS-L

### 2.4.1 Electrical function

N/C contact



### 2.4.2 Switching power

2.5 A/50 V - 10,000 switching operations

0.5 A/50 V - 100,000 switching operations

### 2.4.3 Minimum switching current

50 mA

### 2.4.4 Switching tolerance

± 5 K

### 2.4.5 Switching hysteresis

Normally closed

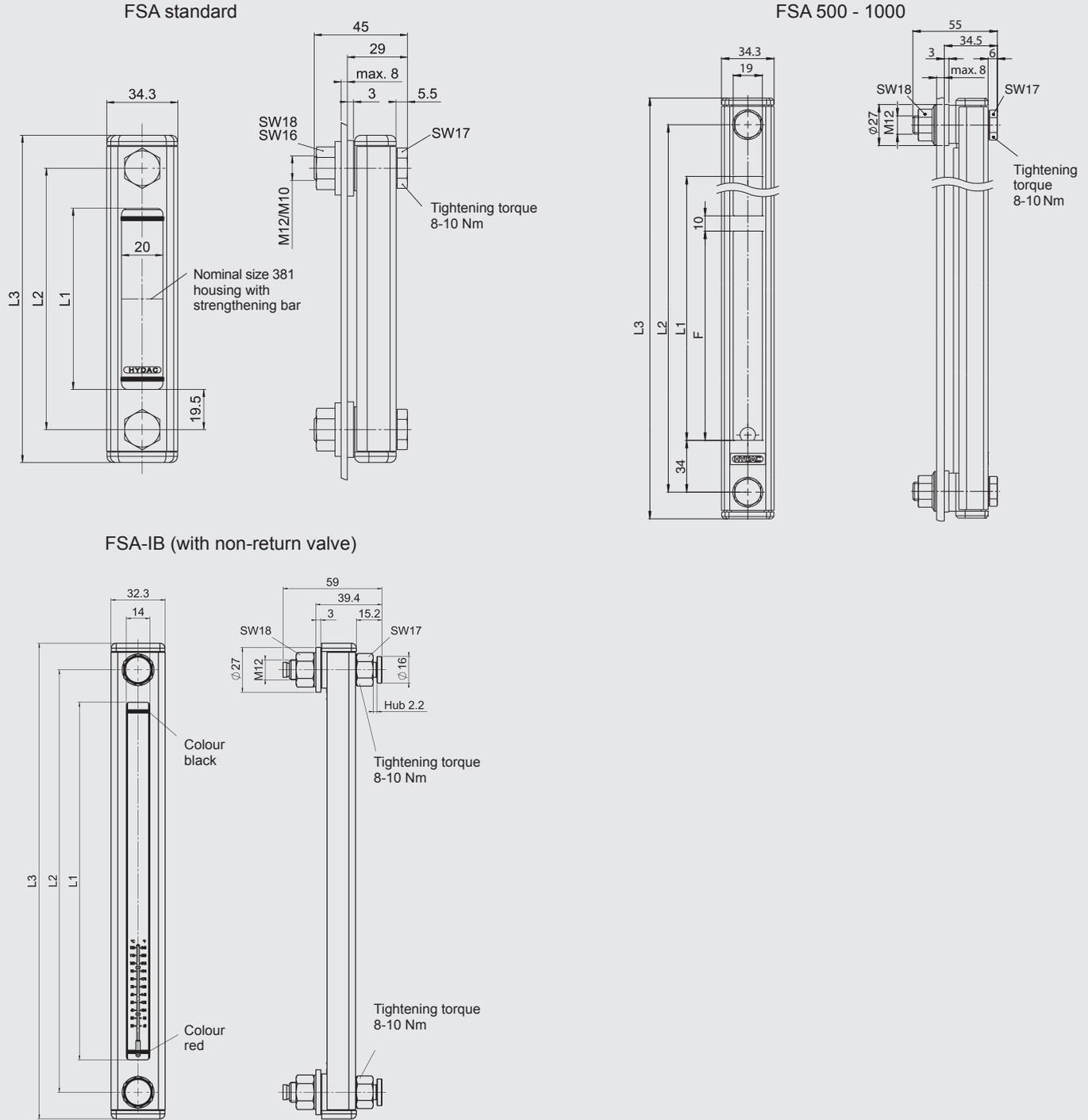
60 °C - 10-15 K

70 °C - 10-15 K

80 °C - 10-20 K

### 3. DIMENSIONS

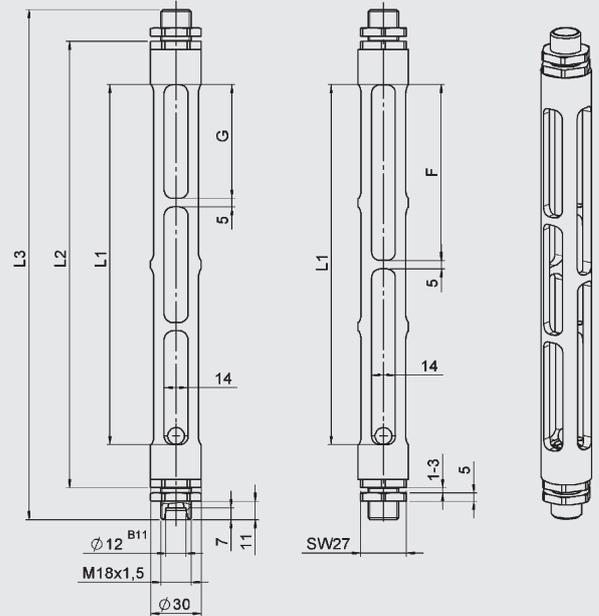
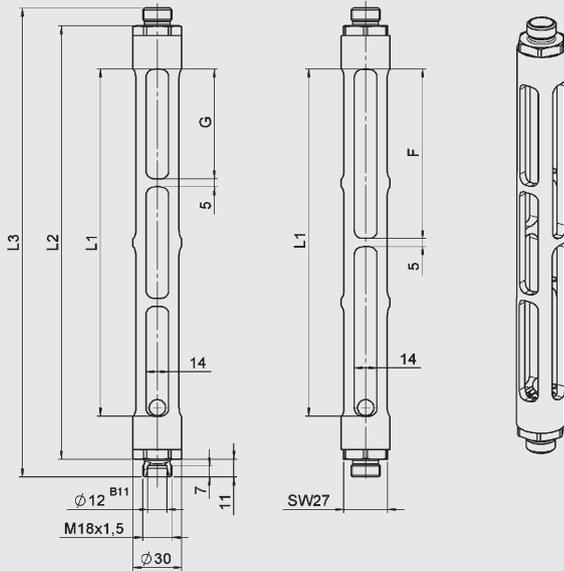
#### 3.1. FLUID LEVEL GAUGE FSA



Nominal size = centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]	F [mm]	Quantity F
76	37	76	108	-	-
127	88	127	159	-	-
175	137	176	208	-	-
254	215	254	286	-	-
381	342	381	413	-	-
500	432	500	535	137	3
600	532	600	635	170	3
700	632	700	735	150	4
800	732	800	835	175	4
900	832	900	935	158	5
1000	932	1000	1035	147	6

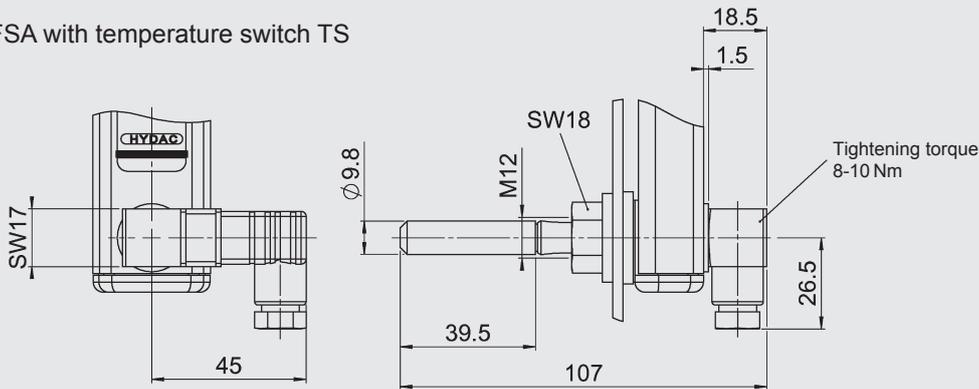
FSAR without fastening nut

FSAR with fastening nut



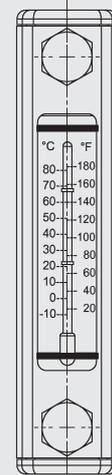
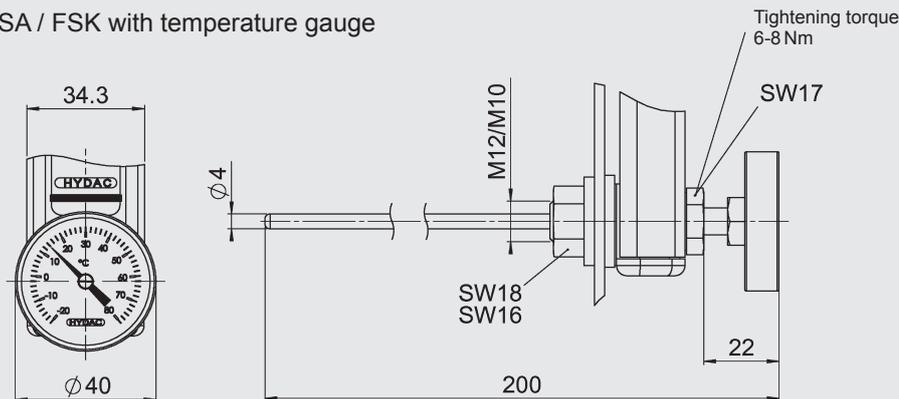
Design	Nominal size = centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]	F [mm]	G [mm]
Without nut	FSAR-088	88	141.5	163.5	88	88
	FSAR-137	137	190.5	212.5	137	137
	FSAR-215	215	268.5	290.5	2x 105	3x 68
	FSAR-342	342	395.5	417.5	3x 110.5	4x 82
With nut	FSAR-088	88	139.5	177.5	88	88
	FSAR-137	137	188.5	226.5	137	137
	FSAR-215	215	266.5	304.5	2x 105	3x 68
	FSAR-342	342	393.5	431.5	3x 110.5	4x 82

FSA with temperature switch TS



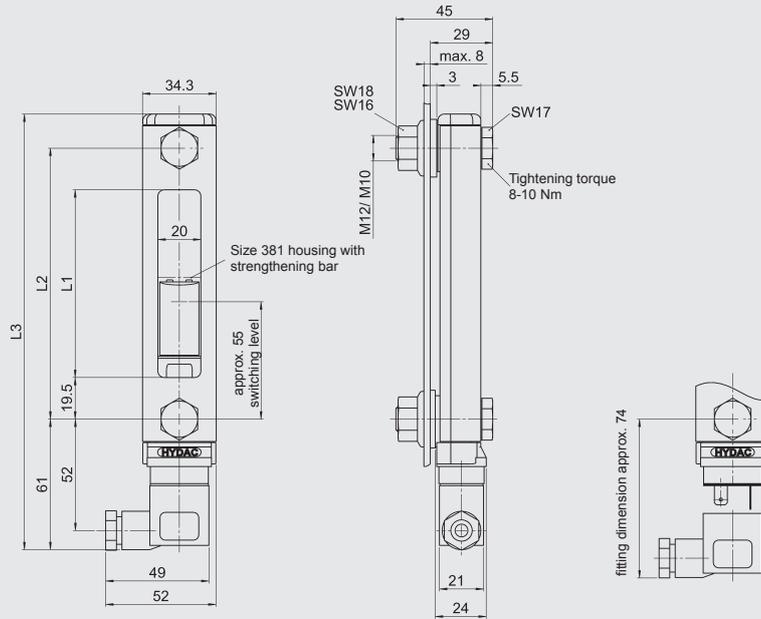
FSA with temperature gauge

FSA / FSK with temperature gauge

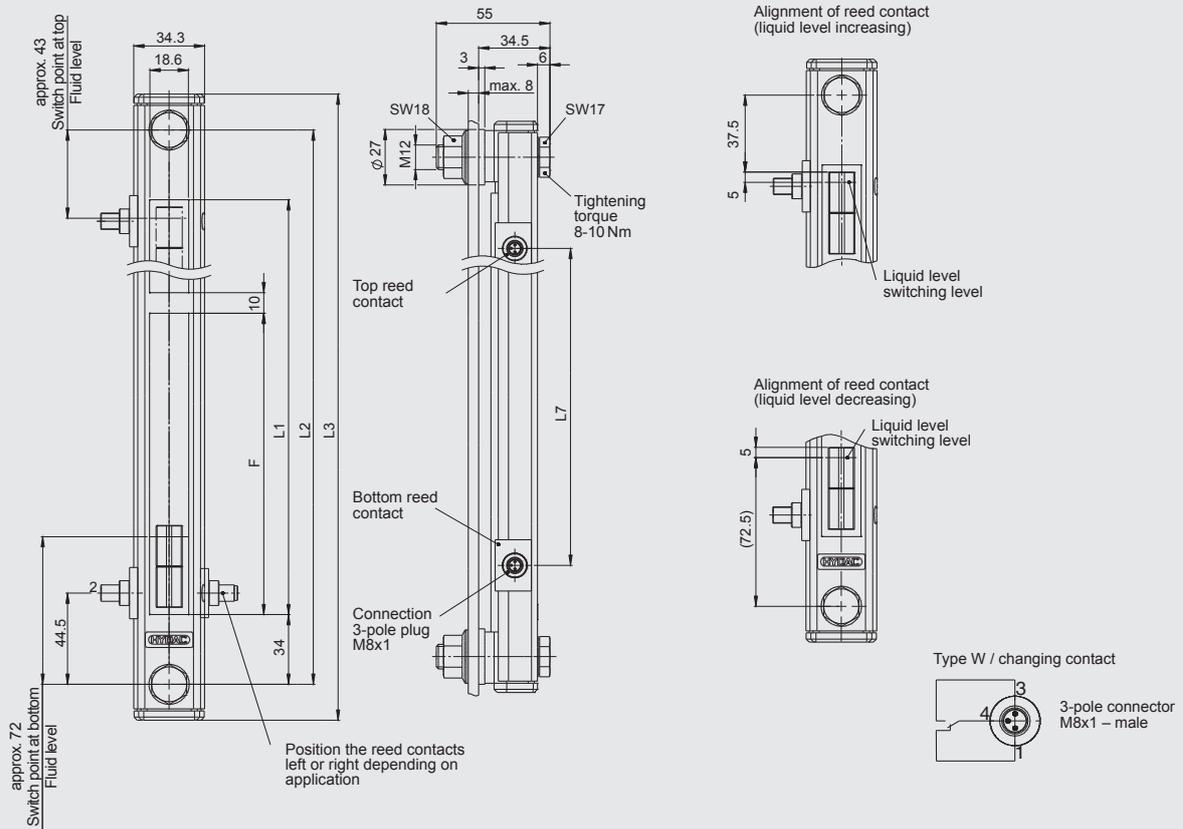


### 3.2. FLUID LEVEL SENSOR FSK

FSK standard

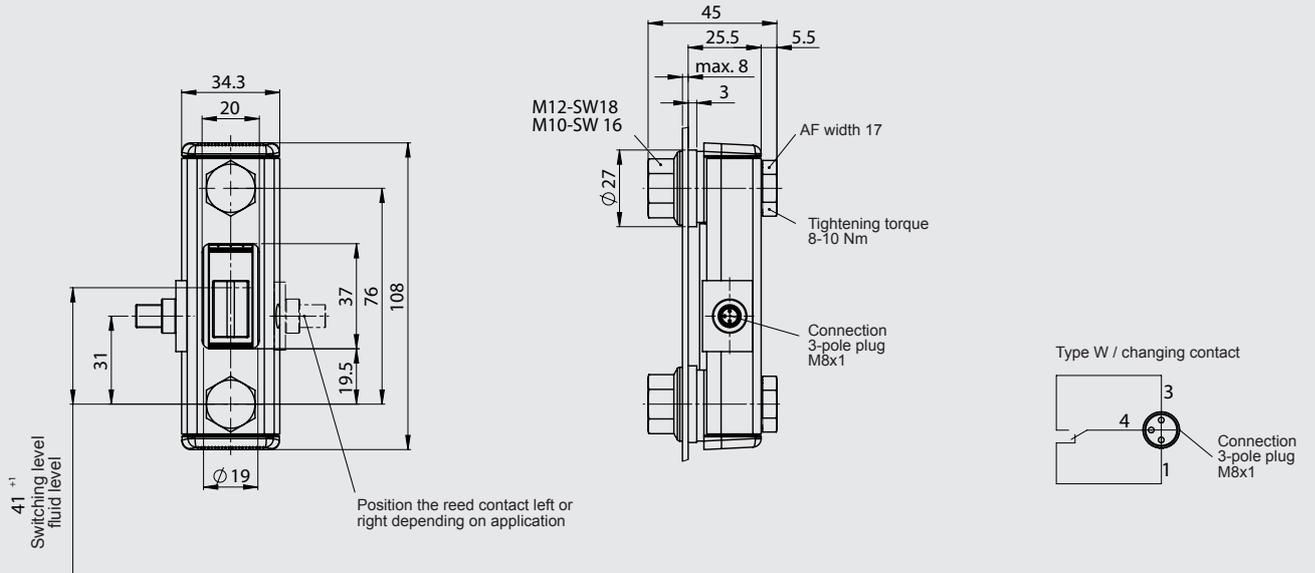


FSK 500 - 1000

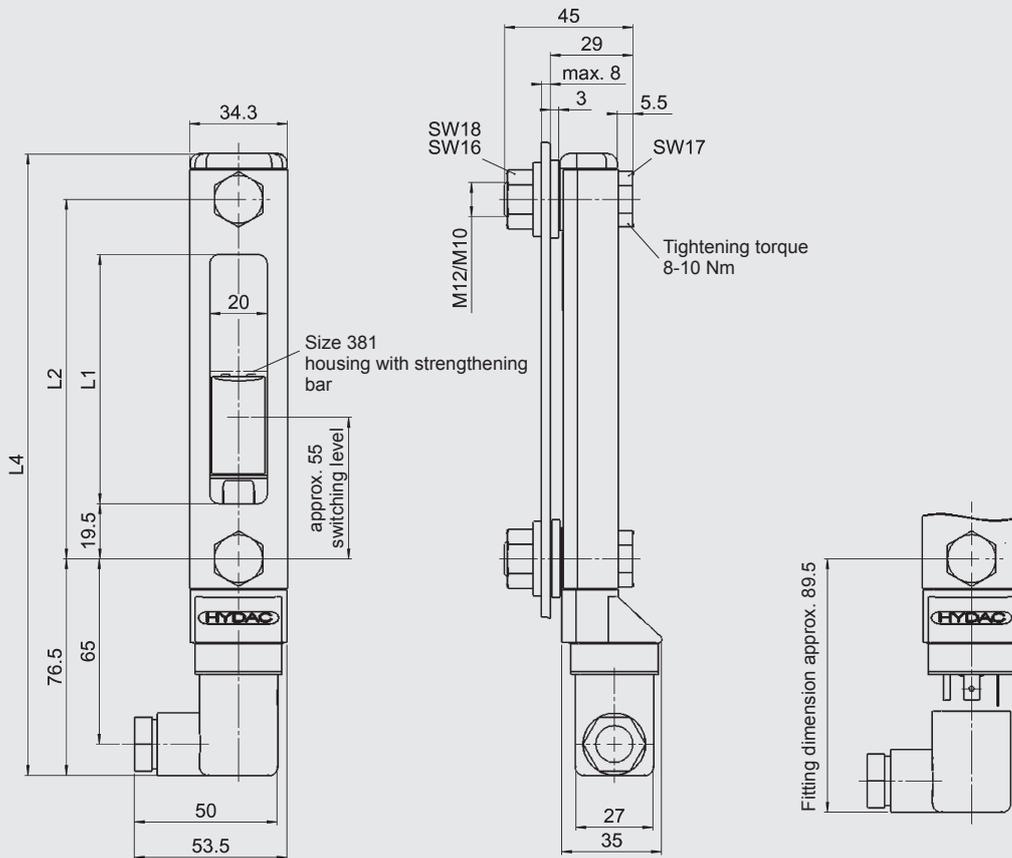


Nominal size = centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]	L7 [mm]	F [mm]	Quantity F
127	88	127	204	203	-	-
176	137	176	253	252	-	-
254	215	254	331	330	-	-
381	342	381	458	457	-	-
500	432	500	535	411	137	3
600	532	600	635	511	170	3
700	632	700	735	611	150	4
800	732	800	835	711	175	4
900	832	900	935	811	158	5
1000	932	1000	1035	911	147	6

FSK 076

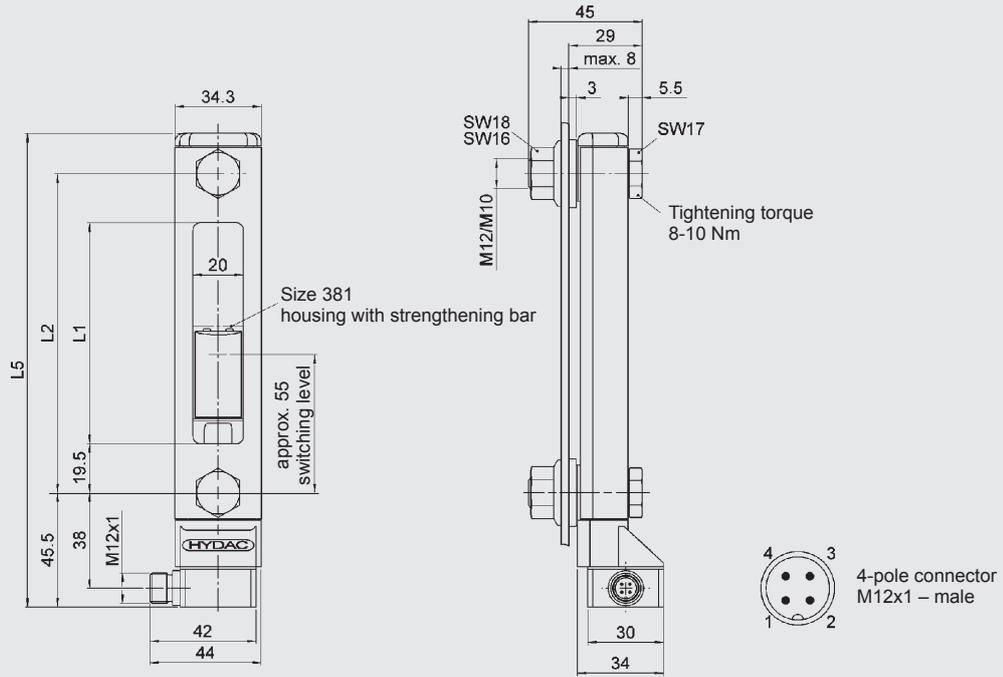


FSK plug Z4

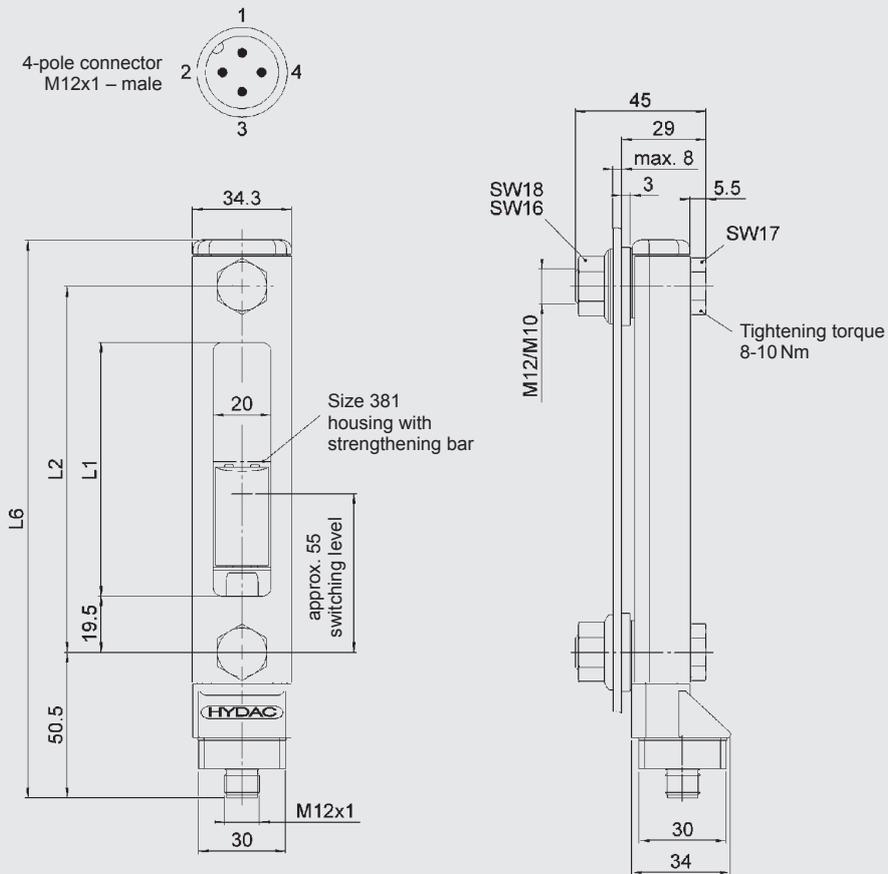


Nominal size = centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]
127	88	127	219.5
176	137	176	268.5
254	215	254	346.5
381	342	381	473.5

FSK sensor connection SEW-M12x1 horizontal

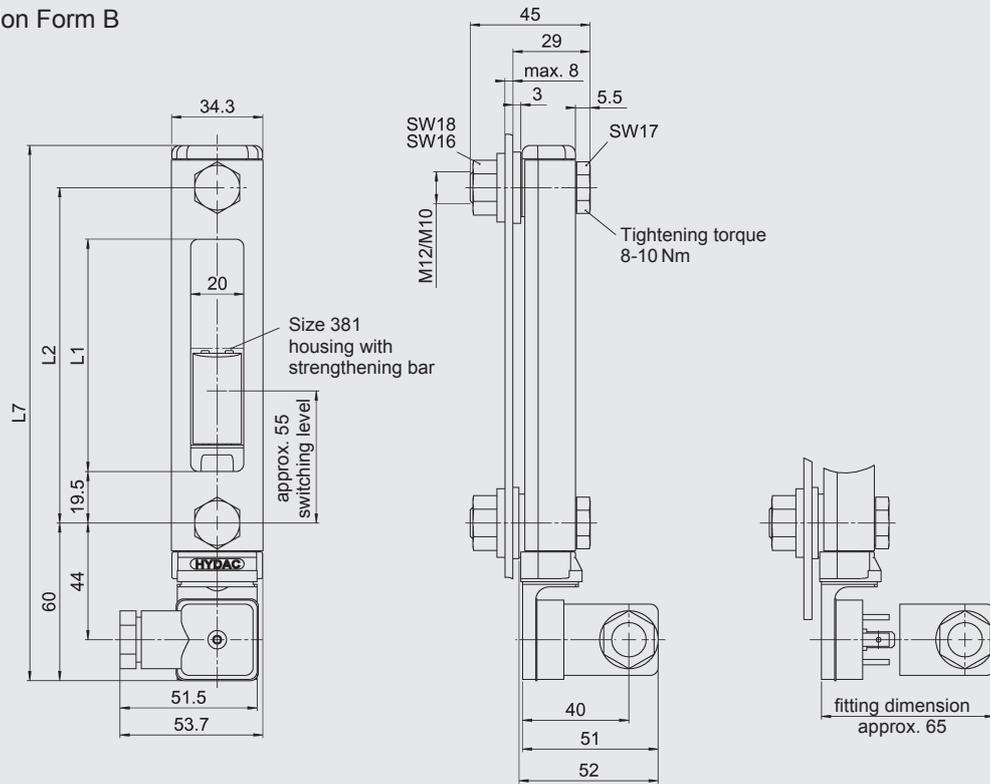


FSK sensor connection SES-M12x1 vertical



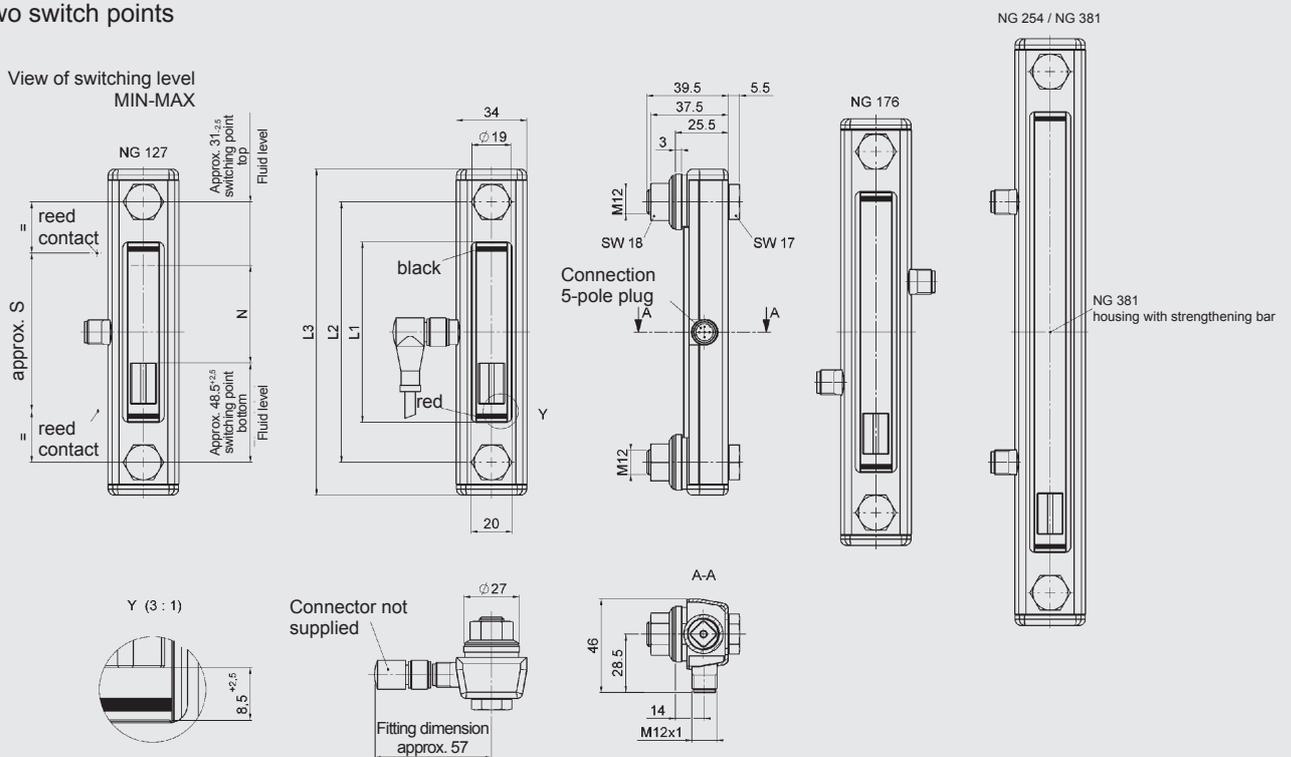
Nominal size = centre distance of bolts	L1 [mm]	L2 [mm]	L5 [mm]	L6 [mm]
127	88	127	188.5	193.5
176	137	176	237.5	242.5
254	215	254	315.5	320.5
381	342	381	442.5	447.5

## FSK male connection Form B



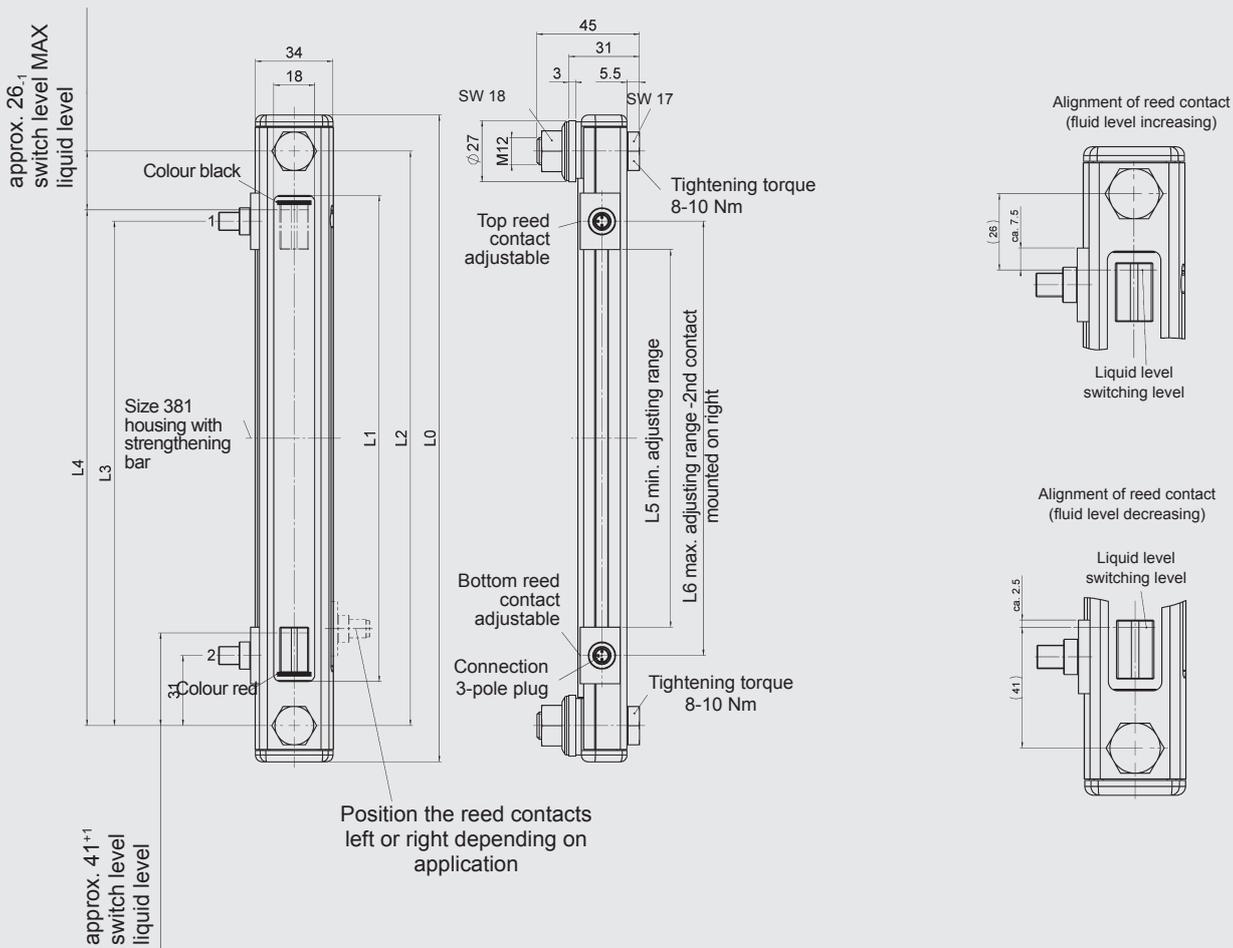
Nominal size = centre distance of bolts	L1 [mm]	L2 [mm]	L7 [mm]
127	88	127	203
176	137	176	252
254	215	254	330
381	342	381	457

## FSK with two switch points



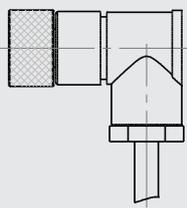
Type	Size = centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]	N [mm]	Approx. S [mm]
FSK-127-1.0/WI-/12/2SP	127	88	127	159	47.5	77
FSK-176-1.0/WI-/12/2SP	176	137	176	208	96.5	126
FSK-254-1.0/WI-/12/2SP	254	215	254	286	174.5	204
FSK-381-1.0/WI-/12/2SP	381	342	381	413	301.5	331

## FSK with variable switch points

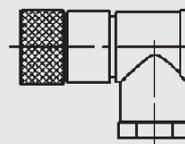


Type	Nominal size	L0	L1	L2	L3	L4	L5	L6
FSKV-127	127	159	88	127	96	101	40	65
FSKV-176	176	208	137	176	145	150	89	114
FSKV-254	254	286	215	254	223	228	167	192
FSKV-381	381	413	342	381	350	355	294	319

## Angled connector M8x1 for FSKV



adjustable  
with cable  
L = 2m

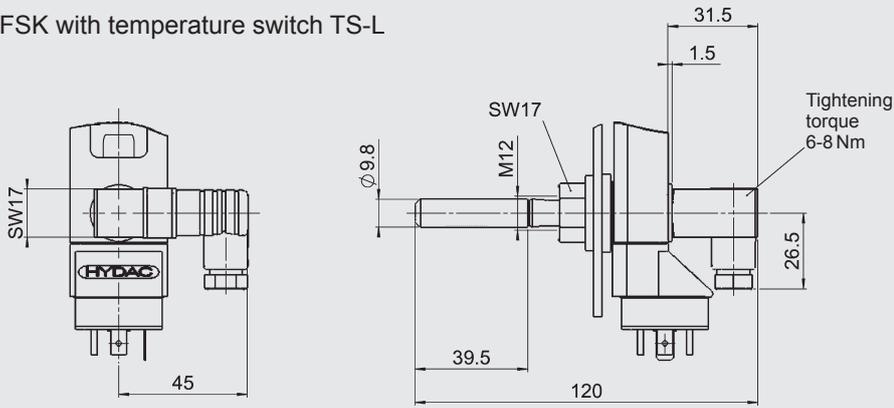


adjustable  
without cable

Order no.: 6105865

6105866

### FSK with temperature switch TS-L

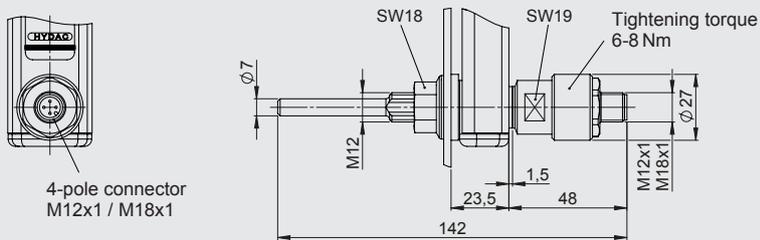


### 3.3. TEMPERATURE SWITCH TS / TS-L

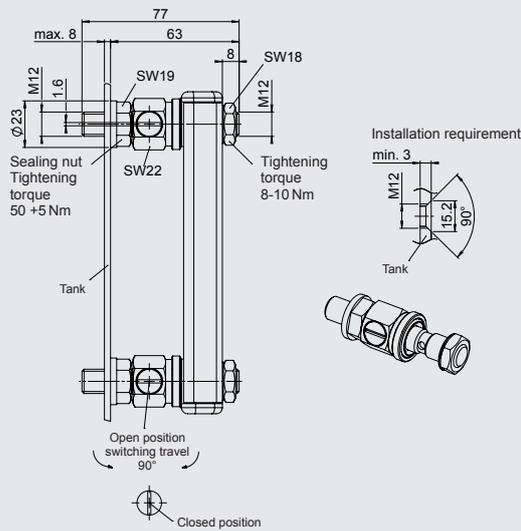
See FSA with TS fitted  
See FSK with TS-L fitted

### 3.4. ACCESSORIES

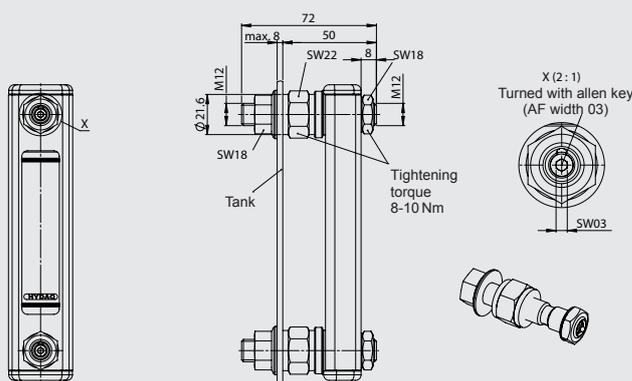
#### Temperature sensor TFP



### ABK

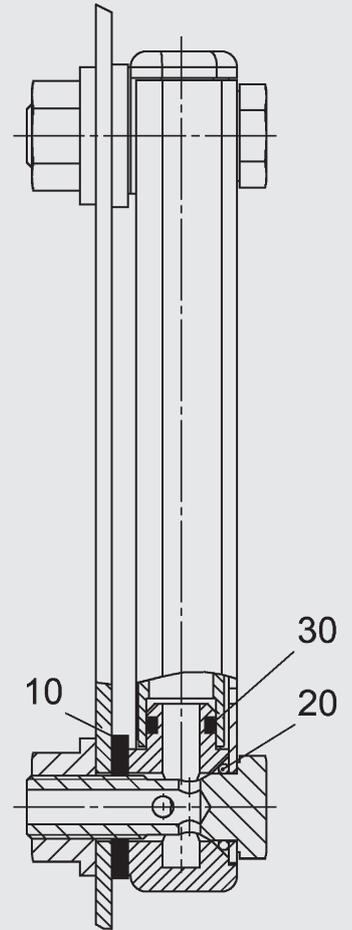


### ABV



## 4. SPARE PARTS

### 4.1. SEAL KIT



Seal kit	Order no.= Part number
FSA - 76 - 381 - 1.X / - /12 NBR	704 616
FSA - 76 - 381 - 2.X / - /12 FKM	704 627
FSA - 76 - 381 - 1.X / - /10 NBR	3248767
FSA - 76 - 381 - 2.X / - /10 FKM	3395614

### NOTICE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: [www.hydac.com](http://www.hydac.com)  
E-Mail: [info@hydac.com](mailto:info@hydac.com)





## **HYDAC Accessories: Buyer's Guide**

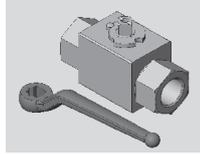


**Order direct  
by phone, fax or email.**

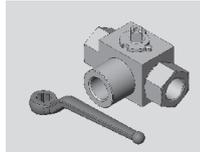
**The Benefits to You:**

- **Products immediately available,**
- **Easy to order using Part Number,**
- **Renowned "Made in Germany" quality,**
- **Over 50 years' experience in hydraulics.**

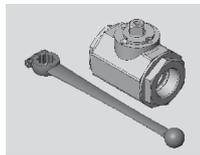
**HYDAC Accessories:  
Product Range Overview**



High pressure ball valves,  
Steel



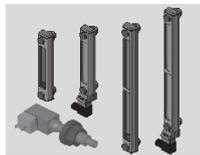
Change-Over Ball Valves,  
Steel



High pressure ball valves,  
Stainless steel



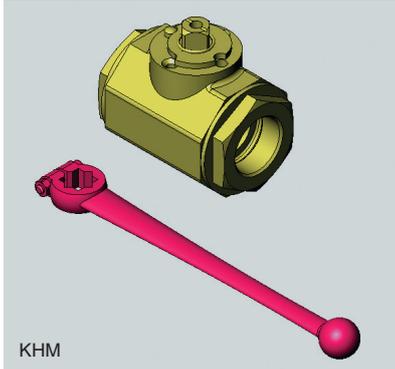
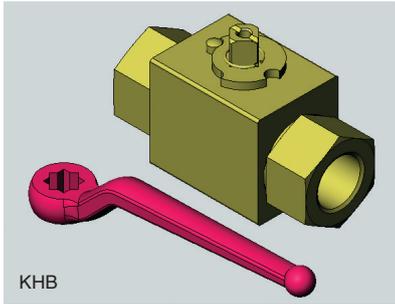
Low Pressure Ball Valves



Gauges, Switches



Mounting Clamps,  
Overview



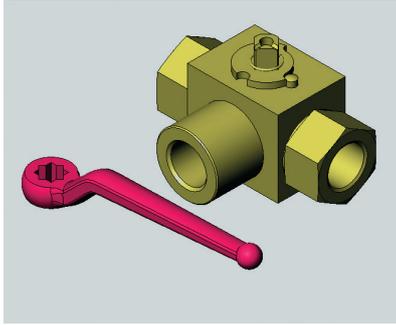
## HYDAC Accessories: High Pressure Ball Valves, Steel

### 2/2-Way Ball Valve KHB / KHM Steel

#### Features:

- Seals: Ball (POM), O-ring (NBR)
- High pressure version up to 500 bar
- Full port
- Zinc-plated DN 04-25, Phosphate-plated DN 32-50
- Connections in G, LR, SR
- Temperature resistant from -10 °C – +80 °C
- Hand lever in aluminium (straight 01), Zinc die-cast (cranked 04)

Type of connection	DN	Type	Handle	Part No.	Length in mm	PN in bar	
G	06	KHB-G1/4	04	3288786	69	500	
	10	KHB-G3/8	04	700950	72	500	
	13	KHB-G1/2	04	851728	83	500	
	16	KHB-G1/2	01	855871	83	400	
	20	KHB-G3/4	01	552762	95	315	
	25	KHB-G1	01	850711	113	315	
	25	KHB-G1 1/4	01	562730	120	315	
	32	KHM-G1 1/4	01	700721	110	315	
	40	KHM-G1 1/2	01	700724	130	315	
	50	KHM-G2	01	700727	140	315	
	LR	04	KHB-06LR	04	3288754	67	500
		06	KHB-08LR	04	3288813	67	500
		08	KHB-10LR	04	855967	74	500
10		KHB-12LR	04	704200	74	500	
13		KHB-15LR	04	704800	82	500	
16		KHB-18LR	01	851913	82	400	
20		KHB-22LR	01	707868	101	315	
25		KHB-28LR	01	707869	108	315	
32		KHM-35LR	01	700573	141	315	
40		KHM-42LR	01	700576	162	315	
SR	04	KHB-08SR	04	3288829	73	500	
	06	KHB-10SR	04	3288837	73	500	
	08	KHB-12SR	04	855414	76	500	
	13	KHB-16SR	04	854996	86	500	
	16	KHB-20SR	01	700602	90	400	
	20	KHB-25SR	01	700819	109	315	
	25	KHB-30SR	01	707722	120	315	
	32	KHM-38SR	01	700658	153	315	



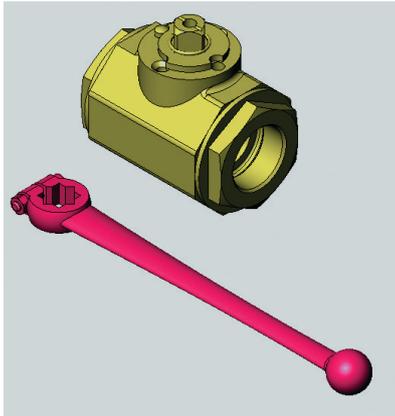
## HYDAC Accessories: Change-Over Ball Valves, Steel

### 3/2-Way Ball Valve KHB3K-L Steel

#### Features:

- ▮ Seals: Ball (POM), O-ring (NBR)
- ▮ High pressure version up to 500 bar
- ▮ Full port
- ▮ Zinc-plated DN 04-25, Phosphate-plated DN 32-50
- ▮ Connections in G, LR, SR
- ▮ Temperature resistant from -10 °C – +80 °C
- ▮ Hand lever in aluminium (straight 01), Zinc die-cast (cranked 04)

Type of connection	DN	Type	Handle	Part No.	Length in mm	PN in bar
<b>G</b>	06	KHB3K-G1/4-L	04	3248008	69	500
	10	KHB3K-G3/8-L	04	703308	72	500
	13	KHB3K-G1/2-L	04	703309	83	500
	16	KHB3K-G1/2-L	01	557811	83	400
	20	KHB3K-G3/4-L	01	702891	95	315
	25	KHB3K-G1-L	01	398948	113	315
<b>LR</b>	08	KHB3K-10LR-L	04	3007101	74	500
	10	KHB3K-12LR-L	04	703307	74	500
	13	KHB3K-15LR-L	04	703373	82	500
<b>SR</b>	04	KHB3K-08SR-L	04	3289217	73	500
	06	KHB3K-10SR-L	04	3288900	73	500
	08	KHB3K-12SR-L	04	3015948	76	500
	13	KHB3K-16SR-L	04	3015950	86	500



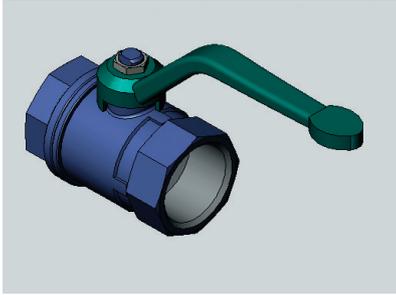
## HYDAC Accessories: High Pressure Ball Valves, Stainless Steel

### 2/2-Way Ball Valves KHM Stainless steel

#### Features:

- High pressure version up to 500 bar
- Full port
- Connections in G, LR, SR
- Temperature resistant from -20 °C – +80 °C
- Handle in aluminium (straight 01)
- Seals: Ball (POM), O-ring (VITON)

Type of connection	DN	Type	Handle	Part No.	Length in mm	PN in bar
G	06	KHM-G1/4	01	3146514	69	500
	10	KHM-G3/8	01	854863	72	500
	16	KHM-G1/2	01	398245	83	400
	20	KHM-G3/4	01	851545	95	315
	25	KHM-G1	01	851546	113	315
	32	KHM-G11/4	01	851547	110	315
	40	KHM-G11/2	01	851548	130	315
	50	KHM-G2	01	398246	140	315
LR	04	KHM-06LR	01	3289261	67	500
	06	KHM-08LR	01	3289263	67	500
	08	KHM-10LR	01	3178451	74	500
	10	KHM-12LR	01	3178452	74	500
	12	KHM-15LR	01	398238	82	400
	16	KHM-18LR	01	398239	82	400
	20	KHM-22LR	01	398240	101	315
	25	KHM-28LR	01	398242	108	315
SR	32	KHM-35LR	01	398243	141	315
	40	KHM-42LR	01	855253	162	315
	04	KHM-08SR	01	3289264	73	500
	06	KHM-10SR	01	3289275	73	500
	08	KHM-12SR	01	3178457	76	500
	12	KHM-16SR	01	851742	86	400
	16	KHM-20SR	01	700648	90	400
	20	KHM-25SR	01	851549	109	400
25	KHM-30SR	01	397753	120	315	
32	KHM-38SR	01	851550	153	315	



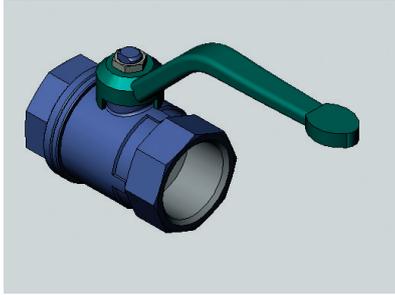
## HYDAC Accessories: Low Pressure Ball Valves

### 2/2-Way Low Pressure Ball Valve KHNVN / KHNVS Brass

#### Features:

- Cost-competitive version
- Cranked handle in aluminium
- With PTFE sealing cups
- Suitable for water, air and nitrogen

DN	Type	Part No.	Length in mm	PN in bar
16	KHNVN-G1/2-2233-12X	70215	50.5	50
20	KHNVN-G3/4-2233-12X	702153	57.5	40
25	KHNVN-G1-2233-12X	702154	70	40
32	KHNVN-G11/4-2233-12X	702155	80.5	30
40	KHNVN-G11/2-2233-12X	702156	94	30
50	KHNVN-G2-2233-12X	702157	112.5	25
06	KHNVS-Rp1/4-2233-12X	702164	49.5	50
10	KHNVS-Rp3/8-2233-12X	702165	52.5	50
16	KHNVS-Rp1/2-2233-12X	551093	61	50
20	KHNVS-Rp3/4-2233-12X	551094	68	40
25	KHNVS-Rp1-2233-12X	551095	85	40
32	KHNVS-Rp11/4-2233-12X	551096	99.5	30
40	KHNVS-Rp11/2-2233-12X	551097	109	30
50	KHNVS-Rp2-2233-12X	551098	130	25
65	KHNVS-Rp21/2-2233-12X	702172	152	16
80	KHNVS-Rp3-2233-12X	702173	177	16
100	KHNVS-Rp4-2233-12X	702174	214	16



## HYDAC Accessories: Low Pressure Ball Valves

### 2/2-Way Low Pressure Ball Valve KHNVN / KHNVS Stainless steel

#### Features:

- Cost-competitive version
- Cranked handle in stainless steel
- With PTFE sealing cups
- Suitable for water, air and nitrogen

DN	Type	Part No.	Length in mm	PN in bar
06	KHNVN-G1/4-3333-18X	398344	53.5	64
10	KHNVN-G3/8-3333-18X	398345	53.5	64
16	KHNVN-G1/2-3333-18X	398346	60	64
20	KHNVN-G3/4-3333-18X	398347	70	40
25	KHNVN-G1-3333-18X	398348	79	40
32	KHNVN-G11/4-3333-18X	398349	91	25
40	KHNVN-G11/2-3333-18X	397686	103	25
50	KHNVN-G2-3333-18X	398350	124	25
04	KHNVS-Rp1/8-3333-18X	702434	55.5	140
06	KHNVS-Rp1/4-3333-18X	702402	55.5	140
10	KHNVS-Rp3/8-3333-18X	702403	55.5	140
16	KHNVS-Rp1/2-3333-18X	702404	66	140
20	KHNVS-Rp3/4-3333-18X	702405	79	105
25	KHNVS-Rp1-3333-18X	702406	93	105
32	KHNVS-Rp11/4-3333-18X	702407	100	64
40	KHNVS-Rp11/2-3333-18X	702408	110	64
50	KHNVS-Rp2-3333-18X	702409	131	64



## HYDAC Accessories: Gauges, Switches

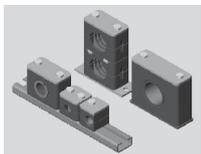
Fluid level gauge **FSA**  
 Fluid level sensor **FSK**  
 Temperature Switch **TS/TS-L**

### Features:

- ▮ Impact and scratch resistant
- ▮ Highly resistant to leakage
- ▮ Precise fluid level gauge
- ▮ Very easy to see fluid level
- ▮ Operating temperature up to 80 °C
- ▮ Highly reliable due to potted connector in protection class IP64

Type	Size = centre distance of bolts	Order code	Part No.	
<b>FSA</b>	NG 76	FSA-076-1.X/-/12	700000	
	NG 76	FSA-076-1.X/T/12	700004	
	NG 127	FSA-127-1.X/-/12	700036	
	NG 127	FSA-127-1.X/T/12	700040	
	NG 176	FSA-176-1.X/-/12	700113	
	NG 176	FSA-176-1.X/T/12	700116	
	NG 254	FSA-254-1.X/-/12	700072	
	NG 254	FSA-254-1.X/T/12	700076	
	NG 381	FSA-381-1.X/-/12	700095	
	NG 381	FSA-381-1.X/T/12	700125	
	<b>TS</b>	M 12	TS-60/X/12	3233817
		M 12	TS-70/X/12	3233820
		M 12	TS-80/X/12	3243251
	<b>FSK</b>	NG 127	FSK-127-2.5/C/-/12	3112276
NG 127		FSK-127-2.5/O/-/12	3070285	
NG 176		FSK-176-2.5/C/-/12	3112299	
NG 176		FSK-176-2.5/O/-/12	3112231	
NG 254		FSK-254-2.5/C/-/12	3112303	
NG 254		FSK-254-2.5/O/-/12	3112302	
NG 381		FSK-381-2.5/C/-/12	3112307	
NG 381		FSK-381-2.5/O/-/12	3112306	
<b>TS-L</b>		M 12	TS-L-60/X/12	3252752
		M 12	TS-L-70/X/12	3252766
		M 12	TS-L-80/X/12	3252767

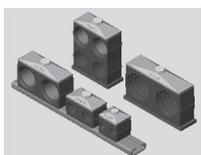
**HYDAC Accessories:  
Mounting Clamps,  
Overview**



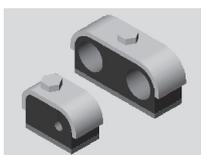
Light Range DIN 3015  
Part 1



Heavy range DIN 3015  
Part 2



Twin Clamps DIN 3015  
Part 3



Buegu clamp



## HYDAC Accessories: Mounting Clamps

Light range  
DIN 3015 Part 1  
Type: Internal surface ribbed

### Features:

- I International standard
- I Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
1	6	HRL 1 A 6 PP ST M BL	423127
	6.4	HRL 1 A 6.4 PP ST M BL	423128
	8	HRL 1 A 8 PP ST M BL	423129
	9.5	HRL 1 A 9.5 PP ST M BL	423130
	10	HRL 1 A 10 PP ST M BL	423131
	12	HRL 1 A 12 PP ST M BL	423132
2	12.7	HRL 2 A 12.7 PP ST M BL	423133
	13.7	HRL 2 A 13.7 PP ST M BL	423134
	14	HRL 2 A 14 PP ST M BL	423135
	15	HRL 2 A 15 PP ST M BL	423136
	16	HRL 2 A 16 PP ST M BL	423137
	17.1	HRL 2 A 17.1 PP ST M BL	423138
	18	HRL 2 A 18 PP ST M BL	423139
3	19	HRL 3 A 19 PP ST M BL	423140
	20	HRL 3 A 20 PP ST M BL	423141
	21.3	HRL 3 A 21.3 PP ST M BL	423142
	22	HRL 3 A 22 PP ST M BL	423143
	23	HRL 3 A 23 PP ST M BL	423144
	25	HRL 3 A 25 PP ST M BL	423145
	25.4	HRL 3 A 25.4 PP ST M BL	423146
4	26.9	HRL 4 A 26.9 PP ST M BL	423147
	28	HRL 4 A 28 PP ST M BL	423148
	30	HRL 4 A 30 PP ST M BL	423149
5	32	HRL 5 A 32 PP ST M BL	423150
	33.7	HRL 5 A 33.7 PP ST M BL	423151
	35	HRL 5 A 35 PP ST M BL	423152
	38	HRL 5 A 38 PP ST M BL	423153
	40	HRL 5 A 40 PP ST M BL	423154
	42	HRL 5 A 42 PP ST M BL	423155
6	44.5	HRL 6 A 44.5 PP ST M BL	423156
	48.3	HRL 6 A 48.3 PP ST M BL	423157
	50.8	HRL 6 A 50.8 PP ST M BL	423158



## HYDAC Accessories: Mounting Clamps

Light range  
DIN 3015 Part 1  
Type: Internal surface smooth

### Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
1	6	HRGL 1 A 6 PP ST M BL	439815
	8	HRGL 1 A 8 PP ST M BL	439817
	9.5	HRGL 1 A 9.5 PP ST M BL	439818
	10	HRGL 1 A 10 PP ST M BL	439819
	12	HRGL 1 A 12 PP ST M BL	439820
2	12.7	HRGL 2 A 12.7 PP ST M BL	439875
	13.7	HRGL 2 A 13.7 PP ST M BL	439876
	14	HRGL 2 A 14 PP ST M BL	439877
	15	HRGL 2 A 15 PP ST M BL	439878
	16	HRGL 2 A 16 PP ST M BL	439879
	17.1	HRGL 2 A 17.1 PP ST M BL	439880
	18	HRGL 2 A 18 PP ST M BL	439881
3	19	HRGL 3 A 19 PP ST M BL	439945
	20	HRGL 3 A 20 PP ST M BL	439946
	21.3	HRGL 3 A 21.3 PP ST M BL	439947
	22	HRGL 3 A 22 PP ST M BL	439948
	23	HRGL 3 A 23 PP ST M BL	439949
	25	HRGL 3 A 25 PP ST M BL	439950
	25.4	HRGL 3 A 25.4 PP ST M BL	439951
4	26.9	HRGL 4 A 26.9 PP ST M BL	440015
	28	HRGL 4 A 28 PP ST M BL	440016
	30	HRGL 4 A 30 PP ST M BL	440017
5	32	HRGL 5 A 32 PP ST M BL	440045
	33.7	HRGL 5 A 33.7 PP ST M BL	440046
	35	HRGL 5 A 35 PP ST M BL	440047
	38	HRGL 5 A 38 PP ST M BL	440048
	40	HRGL 5 A 40 PP ST M BL	440049
	42	HRGL 5 A 42 PP ST M BL	440050
6	44.5	HRGL 6 A 44.5 PP ST M BL	440105
	48.3	HRGL 6 A 48.3 PP ST M BL	440106
	50.8	HRGL 6 A 50.8 PP ST M BL	440107



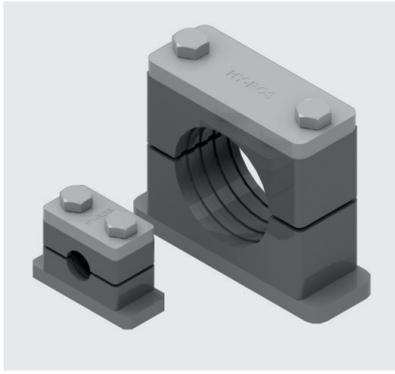
## HYDAC Accessories: Mounting Clamps

Light range  
DIN 3015 Part 1  
Type: With elastomer insert

### Features:

- I International standard
- I Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
4	6	HREL 4 A 6 PP ST M BL	435001
	8	HREL 4 A 8 PP ST M BL	435002
	10	HREL 4 A 10 PP ST M BL	435003
	12	HREL 4 A 12 PP ST M BL	435004
	12.7	HREL 4 A 12.7 PP ST M BL	435005
	14	HREL 4 A 14 PP ST M BL	435006
	15	HREL 4 A 15 PP ST M BL	435007
	16	HREL 4 A 16 PP ST M BL	435008
	17.2	HREL 4 A 17.2 PP ST M BL	435009
	18	HREL 4 A 18 PP ST M BL	444515
	19	HREL 4 A 19 PP ST M BL	435010
6	20	HREL 6 A 20 PP ST M BL	435641
	21.3	HREL 6 A 21.3 PP ST M BL	3001709
	22	HREL 6 A 22 PP ST M BL	435642
	23	HREL 6 A 23 PP ST M BL	445027
	25	HREL 6 A 25 PP ST M BL	435643
	26.9	HREL 6 A 26.9 PP ST M BL	435644
	28	HREL 6 A 28 PP ST M BL	435645
	30	HREL 6 A 30 PP ST M BL	435646
	32	HREL 6 A 32 PP ST M BL	435647



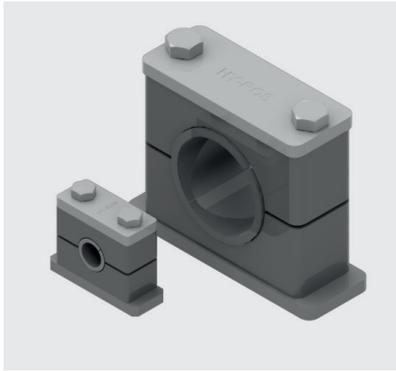
## HYDAC Accessories: Mounting Clamps

Heavy range  
DIN 3015 Part 2  
Type: Internal surface ribbed

### Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.	
1	6	HRS 1 S 6 PP ST M BL	420000	
	6.4	HRS 1 S 6.4 PP ST M BL	420001	
	8	HRS 1 S 8 PP ST M BL	420002	
	9.5	HRS 1 S 9.5 PP ST M BL	420003	
	10	HRS 1 S 10 PP ST M BL	420004	
	12	HRS 1 S 12 PP ST M BL	420006	
	12.7	HRS 1 S 12.7 PP ST M BL	420007	
	13.7	HRS 1 S 13.7 PP ST M BL	420008	
	14	HRS 1 S 14 PP ST M BL	420009	
	15	HRS 1 S 15 PP ST M BL	420010	
	16	HRS 1 S 16 PP ST M BL	420011	
	17.1	HRS 1 S 17.1 PP ST M BL	420012	
	18	HRS 1 S 18 PP ST M BL	420013	
	2	19	HRS 2 S 19 PP ST M BL	420014
		20	HRS 2 S 20 PP ST M BL	420015
		21.3	HRS 2 S 21.3 PP ST M BL	420016
		22	HRS 2 S 22 PP ST M BL	420017
		25	HRS 2 S 25 PP ST M BL	420018
25.4		HRS 2 S 25.4 PP ST M BL	420019	
26.7		HRS 2 S 26.7 PP ST M BL	420020	
28		HRS 2 S 28 PP ST M BL	420021	
30		HRS 2 S 30 PP ST M BL	441349	
3		30	HRS 3 S 30 PP ST M BL	420022
		32	HRS 3 S 32 PP ST M BL	420023
		33.7	HRS 3 S 33.7 PP ST M BL	420024
	35	HRS 3 S 35 PP ST M BL	420025	
	38	HRS 3 S 38 PP ST M BL	420026	
	40	HRS 3 S 40 PP ST M BL	420027	
	42	HRS 3 S 42 PP ST M BL	420028	
	4	38	HRS 4 S 38 PP ST M BL	420030
42		HRS 4 S 42 PP ST M BL	420031	
44.5		HRS 4 S 44.5 PP ST M BL	420032	
48.3		HRS 4 S 48.3 PP ST M BL	420033	
50.8		HRS 4 S 50.8 PP ST M BL	420034	
55		HRS 4 S 55 PP ST M BL	441571	
57		HRS 4 S 57 PP ST M BL	420036	
60.3		HRS 4 S 60.3 PP ST M BL	420037	
63.5		HRS 4 S 63.5 PP ST M BL	441578	
65		HRS 4 S 65 PP ST M BL	420038	
70		HRS 4 S 70 PP ST M BL	420039	



## HYDAC Accessories: Mounting Clamps

Heavy range  
DIN 3015 Part 2  
Type: With elastomer insert

### Features:

- I International standard
- I Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.	
2	6	HRES 2 S 6 PP ST M BL	433457	
	8	HRES 2 S 8 PP ST M BL	433458	
	10	HRES 2 S 10 PP ST M BL	433459	
	12	HRES 2 S 12 PP ST M BL	433460	
	12.7	HRES 2 S 12.7 PP ST M BL	433461	
	14	HRES 2 S 14 PP ST M BL	433462	
	15	HRES 2 S 15 PP ST M BL	433463	
	16	HRES 2 S 16 PP ST M BL	433464	
	17.2	HRES 2 S 17.2 PP ST M BL	433465	
	18	HRES 2 S 18 PP ST M BL	443460	
3	19	HRES 2 S 19 PP ST M BL	433466	
	20	HRES 3 S 20 PP ST M BL	433577	
	22	HRES 3 S 22 PP ST M BL	433578	
	25	HRES 3 S 25 PP ST M BL	433579	
	26.9	HRES 3 S 26.9 PP ST M BL	433580	
	28	HRES 3 S 28 PP ST M BL	433581	
	30	HRES 3 S 30 PP ST M BL	433582	
	32	HRES 3 S 32 PP ST M BL	433583	
	4	33.7	HRES 4 S 33.7 PP ST M BL	433661
		35	HRES 4 S 35 PP ST M BL	433662
38		HRES 4 S 38 PP ST M BL	433663	
40		HRES 4 S 40 PP ST M BL	433664	
42		HRES 4 S 42 PP ST M BL	433665	
45.5		HRES 4 S 45.5 PP ST M BL	433666	
48		HRES 4 S 48 PP ST M BL	433667	
51		HRES 4 S 51 PP ST M BL	433668	
53.4		HRES 4 S 53.4 PP ST M BL	433669	
56.4		HRES 4 S 56.4 PP ST M BL	433670	
5	60	HRES 5 S 60 PP ST M BL	433781	
	65	HRES 5 S 65 PP ST M BL	436239	
	70	HRES 5 S 70 PP ST M BL	433782	



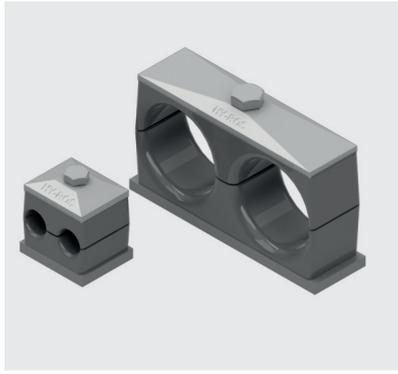
## HYDAC Accessories: Mounting Clamps

Twin clamps  
DIN 3015 Part 3  
Type: Internal surface ribbed

### Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
1	6	HRZ 1 A 6-6 PP ST M BL	43060
	6.4	HRZ 1 A 6.4-6.4 PP ST M BL	430609
	8	HRZ 1 A 8-8 PP ST M BL	430610
	9.5	HRZ 1 A 9.5-9.5 PP ST M BL	430611
	10	HRZ 1 A 10-10 PP ST M BL	430612
	12	HRZ 1 A 12-12 PP ST M BL	430613
2	12.7	HRZ 2 A 12.7-12.7 PP ST M BL	430614
	13.7	HRZ 2 A 13.7-13.7 PP ST M BL	430615
	14	HRZ 2 A 14-14 PP ST M BL	430616
	15	HRZ 2 A 15-15 PP ST M BL	430617
	16	HRZ 2 A 16-16 PP ST M BL	430618
	17.1	HRZ 2 A 17.1-17.1 PP ST M BL	430619
3	18	HRZ 2 A 18-18 PP ST M BL	430620
	19	HRZ 3 A 19-19 PP ST M BL	430621
	20	HRZ 3 A 20-20 PP ST M BL	430622
	21.3	HRZ 3 A 21.3-21.3 PP ST M BL	430623
	22	HRZ 3 A 22-22 PP ST M BL	430624
	23	HRZ 3 A 23-23 PP ST M BL	430625
4	25	HRZ 3 A 25-25 PP ST M BL	430626
	25.4	HRZ 3 A 25.4-25.4 PP ST M BL	430627
	26.6	HRZ 4 A 26.6-26.6 PP ST M BL	430628
	28	HRZ 4 A 28-28 PP ST M BL	430629
5	30	HRZ 4 A 30-30 PP ST M BL	430630
	32	HRZ 5 A 32-32 PP ST M BL	430631
	33.7	HRZ 5 A 33.7-33.7 PP ST M BL	430632
	35	HRZ 5 A 35-35 PP ST M BL	430633
	38	HRZ 5 A 38-38 PP ST M BL	430634
	40	HRZ 5 A 40-40 PP ST M BL	430635
	42	HRZ 5 A 42-42 PP ST M BL	430636



## HYDAC Accessories: Mounting Clamps

Twin clamps  
DIN 3015 Part 3  
Type: Internal surface smooth

### Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
1	6	HRGZ 1 A 6-6 PP ST M BL	3283242
	8	HRGZ 1 A 8-8 PP ST M BL	3283306
	10	HRGZ 1 A 10-10 PP ST M BL	3283307
	12	HRGZ 1 A 12-12 PP ST M BL	3283308
2	13.5	HRGZ 2 A 13.5-13.5 PP ST M BL	3358223
	15	HRGZ 2 A 15-15 PP ST M BL	3094885
	16	HRGZ 2 A 16-16 PP ST M BL	443268
	17.1	HRGZ 2 A 17.1-17.1 PP ST M BL	3553271
	18	HRGZ 2 A 18-18 PP ST M BL	443660
3	19	HRGZ 3 A 19-19 PP ST M BL	444032
	20	HRGZ 3 A 20-20 PP ST M BL	443266
	22	HRGZ 3 A 22-22 PP ST M BL	443659
	23	HRGZ 3 A 23-23 PP ST M BL	443552
	25	HRGZ 3 A 25-25 PP ST M BL	3255780
4	26.6	HRGZ 4 A 26.6-26.6 PP ST M BL	3142660
	30	HRGZ 4 A 30-30 PP ST M BL	3056357
5	32	HRGZ 5 A 32-32 PP ST M BL	3204419



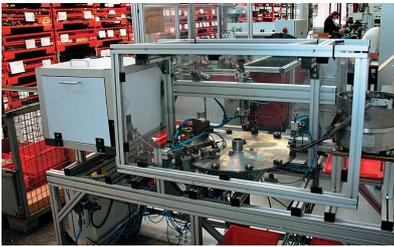
## HYDAC Accessories: Mounting Clamps

### Buegu clamp

#### Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
0a	6	HRBGS 0a A 6 TPE ST M BL	441418
	8	HRBGS 0a A 8 TPE ST M BL	441419
	9.5	HRBGS 0a A 9.5 TPE ST M BL	444868
	10	HRBGS 0a A 10 TPE ST M BL	441420
	12	HRBGS 0a A 12 TPE ST M BL	441421
0b	12.7	HRBGS 0b A 12.7 TPE ST M BL	444876
	14	HRBGS 0b A 14 TPE ST M BL	441422
	15	HRBGS 0b A 15 TPE ST M BL	441480
	16	HRBGS 0b A 16 TPE ST M BL	441423
	18	HRBGS 0b A 18 TPE ST M BL	441732
	19	HRBGS 0b A 19 TPE ST M BL	442666
	20	HRBGS 0b A 20 TPE ST M BL	444344
	1	6 - 6	HRBGS 1 A 6-6 TPE ST M BL
8 - 8		HRBGS 1 A 8-8 TPE ST M BL	441985
10 - 10		HRBGS 1 A 10-10 TPE ST M BL	441425
12 - 12		HRBGS 1 A 12-12 TPE ST M BL	441427
2	14 - 14	HRBGS 2 A 14-14 TPE ST M BL	3087396
	15 - 15	HRBGS 2 A 15-15 TPE ST M BL	441486
	16 - 16	HRBGS 2 A 16-16 TPE ST M BL	441430
	18 - 18	HRBGS 2 A 18-18 TPE ST M BL	441431
	19 - 19	HRBGS 2 A 19-19 TPE ST M BL	444869
	20 - 20	HRBGS 2 A 20-20 TPE ST M BL	441432



## HYDAC Accessories: Your Contacts

### HYDAC Accessories GmbH

Hirschbachstraße 2  
66280 Sulzbach / Saar  
Germany

Phone: +49 (0) 6897 509-01

Fax: +49 (0) 6897 509-1009

E-mail: [accessories@hydac.com](mailto:accessories@hydac.com)

Internet: [www.hydac.com](http://www.hydac.com)

You will find a local contact on the "Company / Locations" page on our web site.





## Operating Manuals



### OPERATING MANUAL

Ball Valves DN04 – DN200  
D/E/F 5.500.B../..



### OPERATING MANUAL

Fluid Level Sensor FSK  
D/E/F 5.050.B../..

**HYDAC INTERNATIONAL**

**Bedienungsanleitung.  
Operating Manual.  
Notice d'utilisation.**

**Flüssigkeitsstandkontrolle  
2 Schaltpunkte FSK-2SP**  
Fluid Level Sensor with  
2 switching points FSK-2SP  
*Contrôleur de niveau 2 points  
de commutation FSK-2SP*

**Flüssigkeitsstandkontrolle  
verstellbar FSKV**  
Fluid Level Sensor  
adjustable - FSKV  
*Contrôleur de niveau  
reglable FSKV*



**OPERATING MANUAL**  
**Fluid Level Sensor FSK-2 SP**  
**Fluid Level Sensor FSKV**  
D/E/F 5.050.2.B../..









**AUSTRIA**  
(Slovenia, Croatia, Bosnia-Herzegovina, Serbia and Montenegro, Macedonia)  
HYDAC Hydraulik Ges.m.b.H.  
Industriest. 3  
**4066 Pasching**  
Tel.: +43 7229 / 6 18 11-10  
Fax: +43 7229 / 6 18 11-35  
E-mail: vl\_a@hydac.com

**AUSTRALIA**  
HYDAC PTY. LTD.  
109 Doherty's Road  
**Altona North, VIC 3025**  
Postal address:  
P.O. Box 224  
**Altona North, VIC 3025**  
Tel.: +61 3 / 92 72 89 00  
Fax: +61 3 / 98 360 80 70  
E-mail: info@hydac.com.au  
Internet: hydac.com.au

**BELGIUM**  
HYDAC A.S./N.V.  
Overhaemlaan 33  
**3700 Tongeren**  
Tel.: +32 12 / 26 04 00  
Fax: +32 12 / 26 04 09

**BULGARIA**  
HYDAC EOOD  
Business Center Iskar-Yug  
München Str. 14  
**1528 Sofia**  
Tel.: +359 2 / 9706070  
Fax: +359 2 / 9706075  
E-mail: office@hydac.bg  
Internet: www.hydac.bg

**BELARUS**  
HYDAC Belarus  
ul. Timirjazeva 65a, Biura 504-505  
**220035 Minsk**  
Tel.: +375 17 209 01 32  
Fax: +375 17 209 01 35  
E-Mail: info@hydac.com.by  
Internet: www.hydac.com.by

**BRAZIL**  
HYDAC Technologica Ltda.  
Estrada Fukutaro Yida, 225  
Bairro Cooperativa, 09652-060  
**Sao Bernardo do Campo**  
**São Paulo**  
Tel.: +55 11 / 43 93 66 00  
Fax: +55 11 / 43 93 66 17  
E-mail: hydac@hydac.com.br  
Internet: www.hydac.com.br

**CANADA**  
HYDAC Corporation  
14 Federal Road  
**Welland, Ontario**  
**L3B 3P2**  
Tel.: +1 905 / 714 93 22  
Fax: +1 905 / 714 66 84  
E-mail: sales@hydac.ca  
Internet: www.hydac.ca

**SWITZERLAND**  
HYDAC Engineering AG  
Allmendstr. 11  
**6312 Steinhausen/Zug**  
Tel.: +41 41 / 747 03 21  
Fax: +41 41 / 747 03 29  
E-mail: hydac-engineering-AG@hydac.com  
Internet: www.hydac.ch

HYDAC S.A.  
Zona Industriale 3, Via Scerera  
**6805 Mezzovico**  
Tel.: +41 91 / 935 57 00  
Fax: +41 91 / 935 57 01  
E-mail: info.coolingsystems@hydac.ch  
Internet: www.hydac.ch

**CZECH REPUBLIC**  
HYDAC spol. S.R.O.  
Kanaďská 734  
**391 11 Planá nad Lužnicí**  
Tel.: +420 381 / 20 17 11  
Fax: +420 381 / 29 12 70  
E-mail: hydac@hydac.cz  
Internet: www.hydac.cz

**GERMANY**  
HYDAC-Büro Berlin  
BH Ingenieur- und  
Handelsvertretung Hammer GmbH  
Kaiser-Wilhelm-Str. 17  
**12247 Berlin**  
Tel.: +49 (0)30 / 772 80 50  
Fax: +49 (0)30 / 773 80 80

HYDAC-Büro Südost  
Wiesestr. 189  
**07551 Gera**  
Tel.: +49 (0)365 / 73 97 5320  
Fax: +49 (0)365 / 73 97 5310

HYDAC-Büro Nordost  
Zum Kiesberg 16  
**14979 Großbeeren**  
Tel.: +49 (0)33701 / 3389-0  
Fax: +49 (0)33701 / 3389-4499

HYDAC-Büro Bremen  
Riedemannstr. 1  
**27572 Bremerhaven**  
Tel.: +49 (0)471 / 700572-4200  
Fax: +49 (0)471 / 700572-4242

HYDAC-Büro Hamburg  
Mühlenweg 131-139  
**22344 Norderstedt**  
Tel.: +49 (0)40 / 52 60 07-0  
Fax: +49 (0)40 / 52 60 07-15

HYDAC-Büro Nord  
Oldenburger Allee 41  
**30659 Hannover**  
Tel.: +49 (0)511 / 56 35 35-0  
Fax: +49 (0)511 / 56 35 35-56

HYDAC-Büro West  
Münchener Str. 61  
**45145 Essen**  
Tel.: +49 (0)201 / 320 89 51-00  
Fax: +49 (0)201 / 320 89 52-22

HYDAC-Büro Mitte  
Dieselstr. 9  
**64293 Darmstadt**  
Tel.: +49 (0)6151 / 81 45-0  
Fax: +49 (0)6151 / 81 45-22

HYDAC-Büro Südwest  
Rehgrabenstr. 3  
**66125 Saarbrücken-Dudweiler**  
Tel.: +49 (0)6897 / 509-01  
Fax: +49 (0)6897 / 509-1422

HYDAC-Büro Süd  
Dieselstr. 30  
**71546 Aspach**  
Tel.: +49 (0)7191 / 34 51-0  
Fax: +49 (0)7191 / 34 51-4033

HYDAC-Büro München  
Am Anger 8  
**82237 Würthsee/Ettersschlag**  
Tel.: +49 (0)8153 / 987 48-0  
Fax: +49 (0)8153 / 987 48-4822

HYDAC-Büro Nürnberg  
Reichswaldstr. 52  
**90571 Schweig**  
Tel.: +49 (0)911 / 24 46 43-0  
Fax: +49 (0)911 / 24 46 43-4260

**DENMARK**  
HYDAC A/S  
Havretøften 5  
**5550 Langeskov**  
Tel.: +45 70 27 02 99  
Fax: +45 63 13 25 40  
E-mail: hydac@hydac.dk

**SPAIN**  
HYDAC Technology SL  
C/ Solsones  
54 - Pol. Ind. Pla de la Bruguera  
08211 Castell del Valles  
Tel.: +34 93 / 747 36 09  
Fax: +34 93 / 715 95 42  
E-mail: a.masoliver@hydac.es

**EGYPT**  
Yasser Fahmy Hydraulic Eng.  
65-66-68 Saudi Building, Kobba  
P.O. Box 6550 Sawah 11813  
**Cairo**  
Tel.: +202 (2) / 4520192, 4530922  
Fax: +202 (2) / 4530638  
E-mail: yasserf@yf-hydraulic.com.eg

**FRANCE**  
HYDAC S.à.r.l.  
Technopôle Forbach Sud  
B.P. 30260  
**57604 Forbach Cedex**  
Tel.: +33 3 / 87 29 26 00  
Fax: +33 3 / 87 85 90 81  
E-mail: hydac\_france@hydac.com

Agence de **Paris**  
Tel.: +33 1 / 60 13 97 26  
Agence de **Lyon**  
Tel.: +33 4 / 78 87 83 02  
Agence de **Bordeaux**  
Tel.: +33 5 / 57 54 25 25  
Agence de **Martignes**  
Tel.: +33 4 / 42 49 61 35  
Agence **Centre-Est**  
Tel.: +33 3 / 81 63 01 65

**FINLAND**  
(Estonia)  
HYDAC OY  
Kisällintie 5  
**01730 Vantaa**  
Tel.: +358 10 773 7100  
Fax: +358 10 773 7120  
E-mail: hydac@hydac.fi  
Internet: www.hydac.fi

**GREAT BRITAIN**  
HYDAC Technology Limited  
De Havilland Way, Windrush Park  
**Witney, Oxfordshire**  
OX29 0YG  
Tel.: +44 1993 86 63 66  
Fax: +44 1993 86 63 65  
E-mail: info@hydac.co.uk  
Internet: www.hydac.co.uk

**GREECE**  
Delta-P Fluid Technologies S.A.  
7, Grevenon Street  
**11855 Athens**  
Tel.: +30 210 341 0181  
Fax: +30 210 341 0183  
E-mail: delta\_pi@otenet.gr

**HUNGARY**  
HYDAC Hidraulika és Szűrőtechnikai Kft.  
Ezred u. 16  
**1044 Budapest**  
Tel.: +36 1 359 93 59  
Fax: +36 1 239 73 02  
E-mail: hydac@hydac.hu  
Internet: www.hydac.hu

**HONG KONG**  
HYDAC Technology (Hongkong) Ltd.  
Room 602, 6/F, Silvercord Tower 1  
30 Canton Road, Tsim Sha Tsui  
**Kowloon, Hong Kong**  
Tel.: +852 23 69 35 68  
Fax: +852 23 69 35 67

**ITALY**  
HYDAC S.p.A.  
Via Archimede 76  
**20864 Agrate Brianza (MB)**  
Tel.: +39 039 / 64 22 11  
Fax: +39 039 / 68 99 682  
E-mail: hydac@hydac.it  
Internet: www.hydac.it

**INDIA**  
HYDAC INDIA PVT. LTD.  
A-58 TTC Industrial Area, MIDC, Mahape  
**Navi Mumbai 400 701**  
Tel.: +91 22 / 411 18-888  
Fax: +91 22 / 2778 11 80  
E-mail: k.venkat@hydacindia.com

**JAPAN**  
HYDAC CO. LTD.  
KSK Bldg. Main-2F  
3-25-7 Hatchobori, Chuo-ku  
**Tokyo 104-0032**  
Tel.: +81 3 / 35 37-3620  
Fax: +81 3 / 35 37-3622

**LUXEMBURG**  
Friedrich-Hydropart S.à.r.l.  
Route d'Esch, C.P. 38  
**3801 Schifflange**  
Tel.: +352 54 52 44  
Fax: +352 54 52 48

**MALAYSIA**  
HYDAC Technology Sdn. Bhd.  
16, Jalan Pengacara U1 / 48  
Temasya Industrial Park  
40150 Shah Alam  
**Selangor Darul Ehsan**  
Tel.: +60 3 / 5567 0250, 0251, 0253  
Fax: +60 3 / 5567 0252  
E-mail: query@hydac.com.my

**MEXICO**  
HYDAC International SA de CV  
Calle Alfredo A. Nobel No. 35  
Colonia Puente de Vigas  
**Tlalneapantla**  
Edo. De México, CP 54090  
Bergaguan 4  
Tel.: +52 55 4777 1272 al 65  
Fax: +52 55 5390 2334  
Internet: www.hydacmex.com

**NORWAY**  
HYDAC AS  
Bergaguan 4  
**1405 Langhus**  
Tel.: +47 64 85 86 00  
Fax: +47 64 85 86 01  
E-mail: firmapost@hydac.no

**NETHERLANDS**  
HYDAC B.V.  
Vossenbeemd 109  
**5705 CL Helmond**  
Tel.: +31 (0)88 0597 001  
Fax: +31 (0)88 0597 020  
E-mail: info@hydac.nl

**NEW ZEALAND**  
HYDAC LTD.  
108A Penrose Road  
Mount Wellington 1060  
**Auckland**  
Tel.: +64 9271 4120  
Fax: +64 9271 4124  
E-mail: info@hydac.co.nz  
Internet: www.hydac.co.nz

**PORTUGAL**  
CUDELL - Engenharia & Serviços, Lda.  
Rua Eng.º Ferreira Dias, 954  
**4149-008 Porto**  
Tel.: +351 226 158 029  
Fax: +351 226 158 011  
E-mail: info-e+s@cudellengenharia.pt  
Internet: www.cudellengenharia.pt

**MOVICONTROL S.A.**  
Rua Prof. Henrique Barros, 5B  
2685-339 Prior Velho  
**1801 Lisboa Codex**  
Tel.: +351 21 94 2 9900  
Fax: +351 21 94 1 3500  
E-mail: geral@movicontrol.pt  
Internet: www.movicontrol.pt

**POLAND**  
(Latvia, Lithuania)  
HYDAC SPZ O.O.  
ul. Reymonta 17  
**43-190 Mikotow**  
Tel.: +48 32 / 226 26 55, 326 01 10  
Fax: +48 32 / 226 40 42  
E-mail: info@hydac.com.pl  
Internet: www.hydac.com.pl

**CHINA**  
HYDAC Technology (Shanghai) Ltd.  
28 Zhongpin Lu  
Shanghai Minhang Economic &  
Technological Development Zone  
**Shanghai 200245**  
Tel.: +86 21 / 64 63 35 10  
Fax: +86 21 / 64 30 02 57  
E-mail: hydacsh@hydac.com.cn

**RUSSIA**  
HYDAC International  
ul. 4, Magistralnaja 5, office 31  
**123007 Moscow**  
Tel.: +7 495 / 980 80 01  
Fax: +7 495 / 980 70 20  
E-mail: info@hydac.com.ru  
Internet: www.hydac.com.ru

Technical Office St. Petersburg  
Nab. Obwodnogo kanala 138  
**190020 St. Petersburg**  
Tel.: +7 812 / 495 9452  
Fax: +7 812 / 495 9463  
E-mail: petersb@hydac.com.ru

Technical Office Novokuznetsk  
ul. Niewskogo 1, office 300  
**654079 Novokuznetsk**  
Tel.: +7 3843 99 1346  
Fax: +7 3843 99 1345  
E-mail: novokuz@hydac.com.ru

Technical Office Ulyanovsk  
ul. Efremova 29, office 418  
**432042 Ulyanovsk**  
Tel.: +7 8422 61 3453  
Fax: +7 8422 61 3452  
E-mail: uljan@hydac.com.ru

**ARGENTINA**  
HYDAC Technology Argentina S.R.L.  
Av. Belgrano 2729  
(B1611DVG) Don Torcuato  
**Tigre / Buenos Aires**  
Tel.: +54 11 4727-1155/-0770/-2323  
E-mail: argentina@hydac.com

**CHILE**  
HYDAC Tecnologia Chile Ltda.  
Las Araucarias 9080-9110 / módulo F  
Parque Industrial Las Araucarias  
**8720041 Quilicura / Santiago**  
Tel.: +56 2 / 5 84 67 54  
Fax: +56 2 / 5 84 67 55  
E-mail: guillermo.viertel@hydac.com

**INDONESIA**  
PT HYDAC Technology Indonesia PMA  
Jalur Sutera Niaga 16 A No.1, 2, 3  
Alam Sutera - Serpong  
**Tangerang 15144**  
Tel.: +62 21 2921 1671 / 2921 1672  
Fax: +62 21 2921 1653  
E-mail: info@hydac.co.id  
Internet: www.hydac.co.id

**KOREA**  
HYDAC Korea Co. Ltd.  
6th floor Daewon Bldg.  
175 Bangbae Jungang-ro, Seocho-gu  
**Seoul 137-829**  
Tel.: +82 2 / 591 09 31  
Fax: +82 2 / 591 09 32  
E-mail: johnkim@hydacorea.co.kr

**ROMANIA**  
HYDAC SRL  
12 Soseaua Vestului Street, Et 2  
**100298, Ploiesti, Prahova county**  
Prahova county  
Tel.: +40 244 575 778  
Fax: +40 244 575 779  
E-mail: hydac@hydac.ro  
Internet: www.hydac.ro

**SWEDEN**  
HYDAC Fluidteknik AB  
Domnarvsgatan 29  
**16353 Spånga**  
Tel.: +46 8 / 445 29 70  
Fax: +46 8 / 445 29 90  
E-mail: hydac@hydac.se  
Internet: www.hydac.se

**SINGAPORE**  
HYDAC Technology Pte Ltd.  
2A Second Chin Bee Road  
**Singapore 61871**  
Tel.: +65 67 41 74 58  
Fax: +65 67 41 04 34  
E-mail: thomas.lek@hydac.com.sg  
Internet: www.hydac.com.sg

**SLOVAKIA**  
HYDAC S.R.O.  
Gorkého 4  
**036 01 Martin**  
Tel.: +421 43 / 413 58 93, 423 73 94,  
422 08 75  
Fax: +421 43 / 422 08 74  
E-mail: hydac@hydac.sk  
Internet: www.hydac.sk

**SLOVENIA**  
HYDAC d.o.o.  
Zagrebska Cesta 20  
**2000 Maribor**  
Tel.: +386 2 / 460 15 20  
Fax: +386 2 / 460 15 22  
E-mail: info@hydac.si  
Internet: www.hydac.si

**THAILAND**  
AEROFLOUID CO. LTD.  
169/4, 169/5, Moo 1  
Rangsit-Nakhonnayok Rd.  
**Patumthanhue 12110**  
Tel.: +66 2 / 577 2999  
Fax: +66 2 / 577 2700  
E-mail: info@aerofluid.com

**TURKEY**  
HYDAC AKIŞKAN KONTROL  
SİSTEMLERİ SAN. VE TİC. LTD. ŞTİ.  
Namik Kemal Mahallesi  
Adile Naşit Bulvanı, 174 Sok. No. 9  
**34513 Esenyurt - İstanbul**  
Tel.: +90 212 / 429 25 25  
Fax: +90 212 / 428 70 37  
E-mail: info@hydac.com.tr  
Internet: www.hydac.com.tr

**TAIWAN**  
HYDAC Technology Ltd.  
No. 18, Shude 1st Lane, South District  
**Taichung City 40242**  
Tel.: +886 4 / 2260 2278  
Fax: +886 4 / 2260 2352  
E-mail: kc.chen@hydac.com.tw  
Internet: www.hydac.com.tw

**UKRAINE**  
HYDAC Kiew  
ul. Novokonstantinovskaya 9  
Korpus 13, 2 Etagge  
**04080 Kiev**  
Tel.: +38 044 / 495 33 96, 495 33 97  
Fax: +38 044 / 495 33 98  
E-mail: info@hydac.com.ua  
Internet: www.hydac.com.ua

**USA**  
HYDAC Technology Corporation  
HYDAC Corp.  
2260 & 2280 City Line Road  
**Bethlehem, PA 18017**  
Tel.: +1 610 / 266 01 00  
Fax: +1 610 / 266 35 40  
E-mail: sales@hydacusa.com  
Internet: www.hydacusa.com

**VIETNAM**  
HYDAC International  
E-Town Building, Mezzanine Floor  
Executive office, Room 7  
364 Cong Hoa Street, Tan Binh District  
**Ho Chi Minh City**  
Tel.: +84 88 120 545 Ext. 215  
Fax: +84 88 120 546

**SOUTH AFRICA**  
(Namibia, Zimbabwe)  
HYDAC Technology Pty Ltd.  
Postnet Suite 304, Private Bag X10020  
**Edenvale 1610, Johannesburg**  
Tel.: +27 11 / 723 90 80  
Fax: +27 11 / 453 72 37  
E-mail: hydacza@hydac.com  
HYTEC S.A.  
P.O. Box 538  
110 Koornhof Str., Meadowdale  
**Edenvale 1610, Johannesburg**  
Tel.: +27 11 / 573 54 00  
Fax: +27 11 / 573 54 01  
E-mail: olivern@hytec.co.za

**HYDAC Accessories GmbH**  
Hirschbachstr. 2  
**66280 Sulzbach/Saar**  
Tel.: +49 (0)6897 - 509-01  
Fax: +49 (0)6897 - 509-1009  
Internet: www.hydac.com  
E-Mail: info@hydac.com