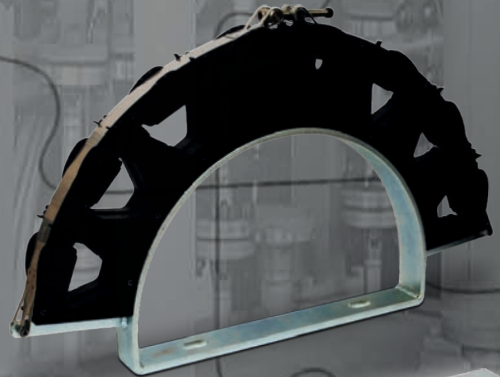
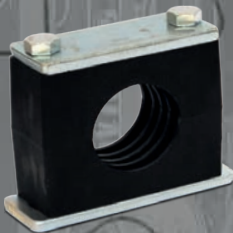
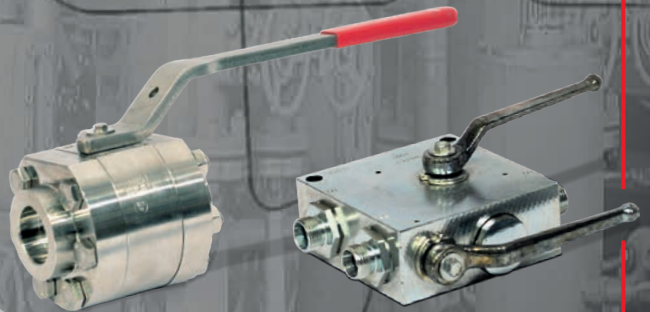


HYDAC

INTERNATIONAL

**HYDAC Accessories.
Product Catalogue.**



HYDAC Accessories, accessories for every sector ...

Wherever fluid power needs to be shut off, switched or controlled, where pipes and components are to be mounted and where screw connections, couplings or damping are called for, the extensive HYDAC Accessories range has just the right components in all standards – all from one supplier and off the shelf.

HYDAC Accessories is your expert for modifications and special solutions at all times, and especially when custom jobs are required because standard parts are unsuitable.

HYDAC's in-house engineering, coupled with our multidisciplinary approach and worldwide know-how, guarantees state-of-the-art technology and rapid development times.

With a broad range of standard and special components, HYDAC Accessories provides the final perfect touch to fluid power systems and units in almost all applications and industries:

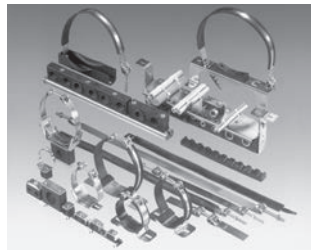
- Automotive industry
- Vehicle technology
- Construction machines
- Agricultural machines
- Lifting & material handling technology
- Rail technology
- Machine tools
- Plastic injection moulding machines
- Paint spraying plants
- Hydraulic presses
- Mechanical presses
- Steel industry
- Paper industry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



CX valves



Connecting systems



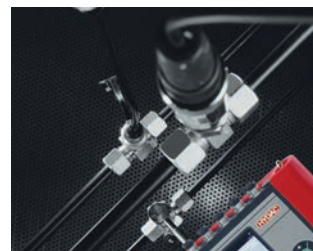
Mounting technology



Quick release couplings



Ball valves



Test points



Bell housing



Fluid level gauge/sensors



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.

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.

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BALL VALVES

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Standard ball valves; high-pressure ball valves; low-pressure ball valves; weld-on ball valves; flanged 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, sandwich plate CETOP; ball valve combinations

Ball valves with pneumatic/electrical actuator; lockable ball valves; ball valves with electrical end position indicators; levers

Three-way unloading valve DSV; compatibility list

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Quick release swivel bolt band clamps; swivel bolt clamping band; holder for mounting to cylinder; sensor clamp; corrugated tube clamp; pipe fittings; fastening clamps DIN 3016-1; hose clamps DIN 3017-1

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HYDAC Accessories GmbH

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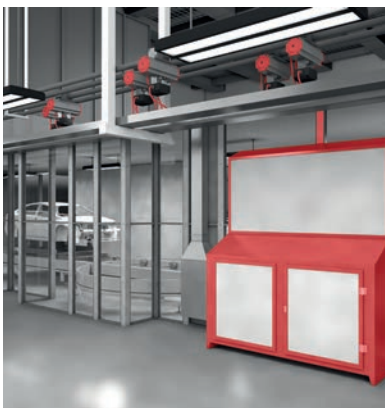
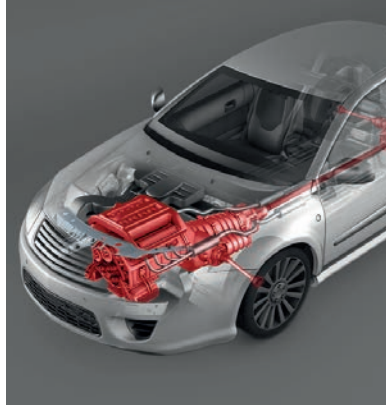
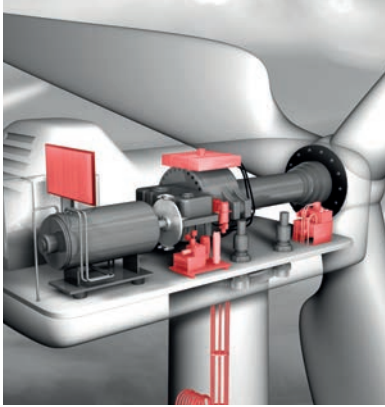
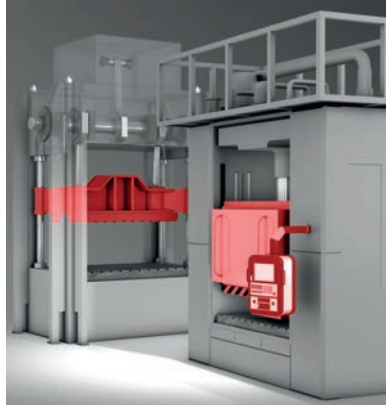
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E-Mail: accessories@hydac.com

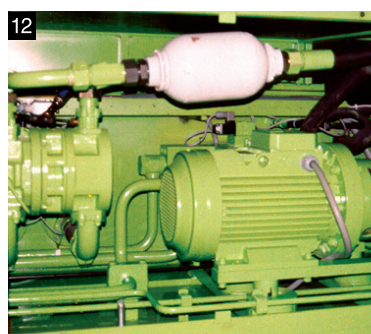
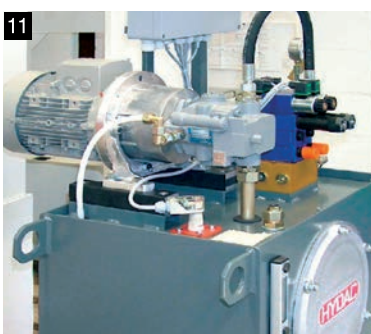
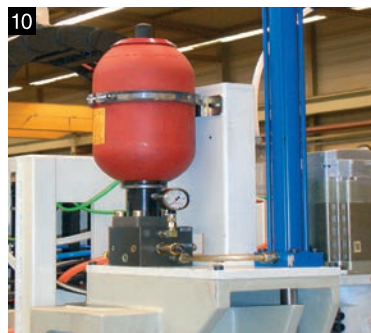
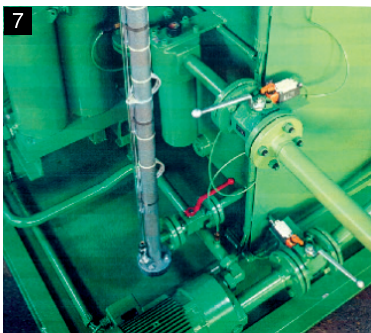
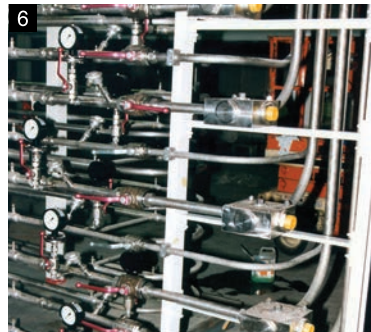
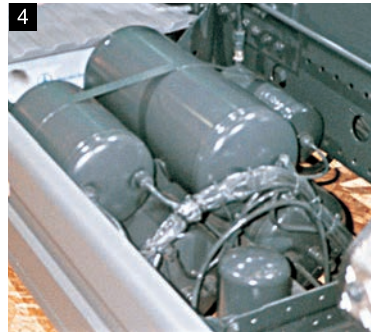
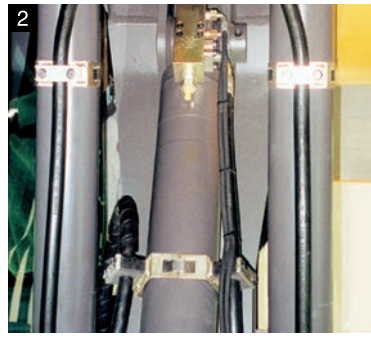
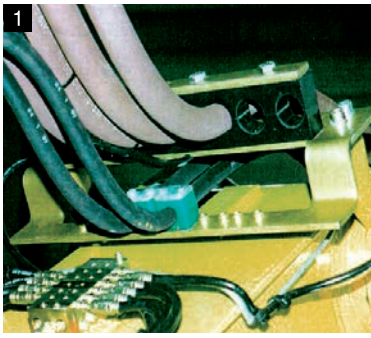


ACCESSORIES FOR EVERY SECTOR.

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 SINGLE CASE

- Mobile excavators (1, 2)
- Brake systems (3)
- Utility vehicles (4)
- Agricultural machines (5)
- Paint spraying plants (6, 9)
- Hydraulic systems (7, 11)
- Wind turbines (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 designed in response to problems encountered in everyday practice.

The requirements placed on the products are:

- Functionality
- Value for money
- Quality
- Safety
- Life expectancy
- Series 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 machinery enables both efficient series manufacture and 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 testing 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, Sulzbach

NOTE

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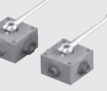






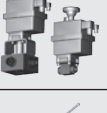

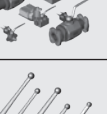

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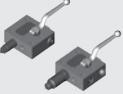

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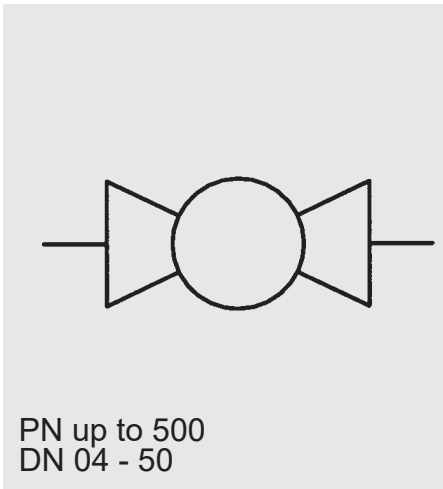
Catalogue overview

	Ball valves	KHB KHM	DN 04 - 25 DN 32 - 50	up to PN 500	13
	Ball valve with DKO port	KHB DKO	DN 04 - 25	up to PN 500	19
	Ultra-high pressure ball valves	KHBH KMHM	DN 04 - 25	up to PN 800	23
	Three-part high pressure ball valves	KHB3H	DN 13 - 40	PN 420	27
	Low pressure ball valves	KHNVN KHNVS KHN	DN 06 - 100	PN 4 - PN 50	31
	Stainless steel low pressure ball valves	KHNVN KHNVS	DN 04 - 100	PN 25 - PN 140	35
	Aluminium low pressure ball valves	KHR	DN 16 - 100	PN 17 - PN 30	39
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	Flanged ball valves	KHFF	DN 65 - 300	PN 10 - PN 40	57
	ANSI flanged ball valves	KHBF KMHF	DN 16 - 25 DN 32 - 50	ANSI class 150 - 2500	61
	SAE flanged ball valves	KHB-F3/6 KHM-F3/6	DN 16 - 25 DN 32 - 50	up to PN 420	65
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	SAE fixed flange ball valves	KHF3/6	DN 16 - 80	up to PN 420	79
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	Direct flange ball valves	KHZF3 KHZF6	DN 16 - 50	up to PN 420	87
	ISO 6164 flanged ball valves	KHF	DN 13 - 80	up to PN 400	89
	Change-over ball valves	KHB3K	DN 04 - 50	up to PN 500	93
	Change-over low pressure ball valves	KHN3K	DN 08 - 50	up to PN 55	99
	Multiway ball valves	KH3 KH4	DN 04 - 20	up to PN 500	101
	Multiway plate ball valves	KH3P KH4P	DN 06 - 20	up to PN 400	105
	Plate ball valves	KHP KHP3K	DN 06 - 50	up to PN 500	109
	Spring return isolator	HKHB	DN 13	up to PN 350	113
	Sandwich plate CETOP	KHZ	DN 06 DN 10	PN 315 PN 315	117
	Ball valve combinations		up to DN 32	up to PN 500	119
	Ball valves with pneumatic actuator		DN 04 - 50	up to PN 500	125
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	Lockable ball valves		DN 04 - 50	up to PN 500	129
	Ball valves with electrical limit controls		DN 04 - 50	up to PN 500	133
	Handles	SCHALTH.	Wrench size 06 - 22		137

	3-way safety block	DSV	DN 10	up to PN 350	141
	Fluid compatibility list for 2/2-, 3/2- and 4/2-way ball valves				153





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 pipe outer \varnothing 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
08	= stainless steel bolt-on handle, cranked	
09	= without handle	
26	= steel bolt-on handle, cranked, long	DN 32-50

Series

(determined by manufacturer)

Surface protection

A = zinc-plated, chrome (VI)-free (standard)
ZN = zinc-nickel, chrome (VI)-free

Option

TT = O-rings for low temperatures, temperature range from $-40\text{ }^{\circ}\text{C}$ to $+80\text{ }^{\circ}\text{C}$
(only for stainless steel version)
S0 940 = ball valve with 4 fixing holes (e.g. for switch panel installation)
S0 1073 = ball valve with 2 through-bores

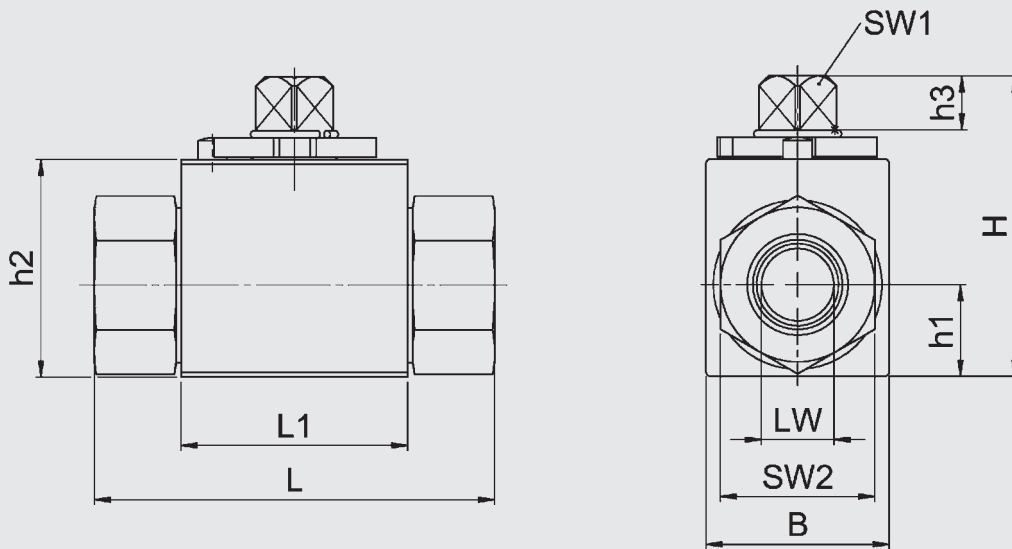
Delivery for non-standard valves is longer and the price is higher.

Technical specifications

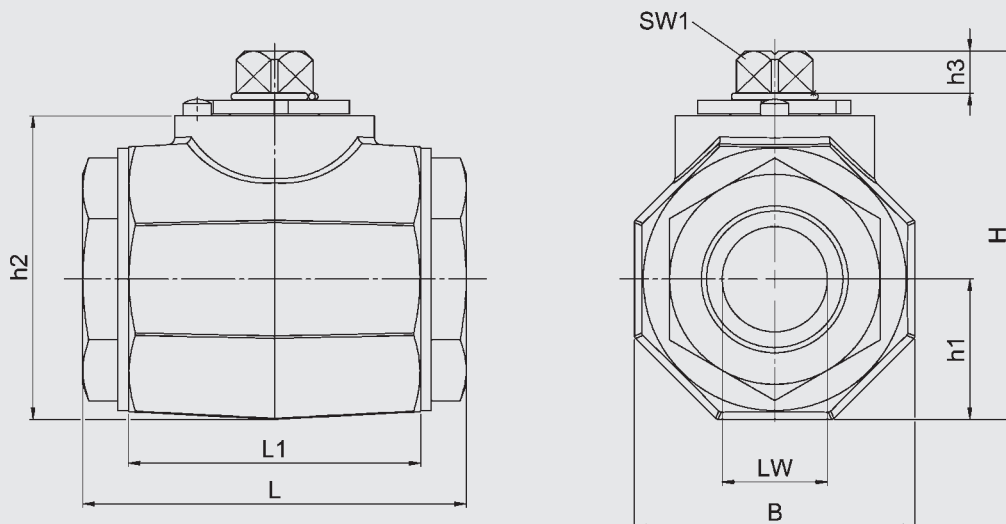
Type of construction:	Block type KHB DN 04 - 25 Sleeve type KHM DN 32 - 50
Types of connection:	Light and heavy threaded connection to DIN 2353 Whitworth internal thread to ISO 228 NPT SAE
Mounting position:	No orientation restrictions
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 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:	No orientation restrictions
Spare parts:	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Actuator Limit controls Lock

Dimensions

KHB



KHM

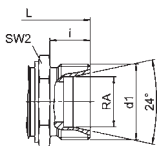
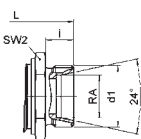
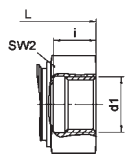


Steel

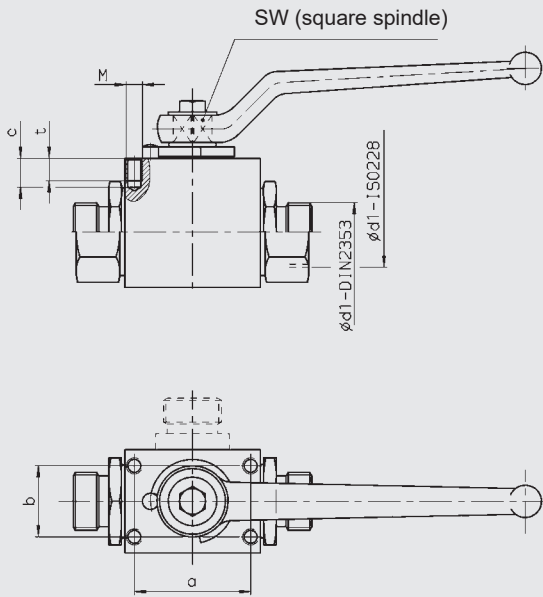
Type of connection	Type	DN	LW	RA	d1	I	L	L1	B	H	h1	h2	h3	SW1	SW2	Weight	Nom. pressure PN
		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[bar]
DIN ISO 228 Internal thread	KHB-G1/8	4	8	-	G1/8	10	69	37	28	44	14	33	7	9	22	0.29	500
	KHB-G1/4	6	8	-	G1/4	14	69	37	28	44	14	33	7	9	22	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
DIN 2353 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	16	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
	DIN 2353 Heavy range	KHB-08SR	4	5	8	M16x1.5	7	73	37	28	44	14	33	7	9	22	0.28
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		16	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
ANSI B1.20.1 NPT internal thread		KHB-06NPT	6	8	-	1/4 - 18 NPT	10.2	69	37	28	44	14	33	7	9	22	0.3
	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
	SAE J 514 UN/UNF Internal thread	KHB-06SAE	6	8	-	7/16 - 20 UNF	12	69	37	28	44	14	33	7	9	22	0.3
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

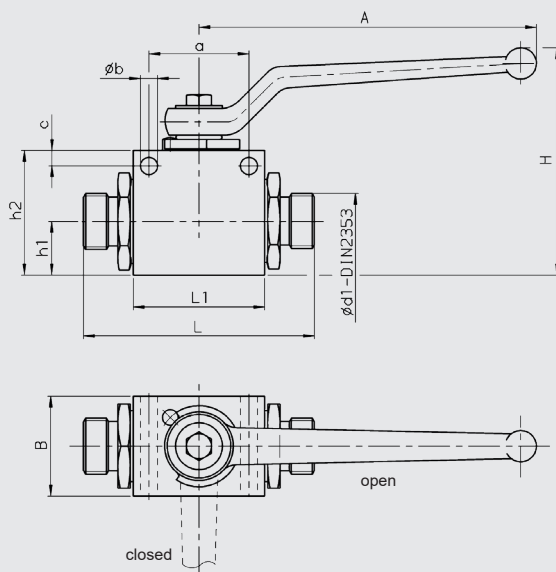
Type of connection	Type	DN	LW	RA	d1	I	L	L1	B	H	h1	h2	h3	SW1	SW2	Weight	Nom. pressure PN
		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[bar]
DIN ISO 228 Internal thread	KHB-G1/8	4	8	–	G1/8	10	69	37	28	44.7	14	33	6.7	9	22	0.36	500
	KHB-G1/4	6	8	–	G1/4	14	69	37	28	44.7	14	33	6.7	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
DIN 2353 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
DIN 2353 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)



Dimensions of through-bore (SO 1073)



DIN ISO 228

$\phi d1$	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	39	26	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

DIN ISO 228

$\phi d1$	DN	L	L1	B	H	h1	h2	a	ϕb	c	A
G 1/8	4	69	37	28	65	14	33	28	5.5	4.5	108
G 1/4	6	69	37	28	65	14	33	28	5.5	4.5	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	40	103	20	46	38	5.5	5	174
G 3/4	20	95	60	49	115	24.5	57	46	6.6	6	174
G 1	25	113	65	58	122	28.5	65	46	6.6	6	174

DIN 2353 Light Range

$\phi d1$	DN	L	L1	B	H	h1	h2	a	ϕb	c	A
08LR	6	67	37	28	65	14	33	28	5.5	4.5	108
10LR	8	74	37	28	65	14	33	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	40	103	20	46	38	5.5	5	174
18LR	16	82	47	40	103	20	46	38	5.5	5	174
22LR	20	101	60	49	115	24.5	57	46	6.6	6	174
28LR	25	108	65	58	123	29.5	65	46	6.6	6	174

DIN 2353 Heavy Range

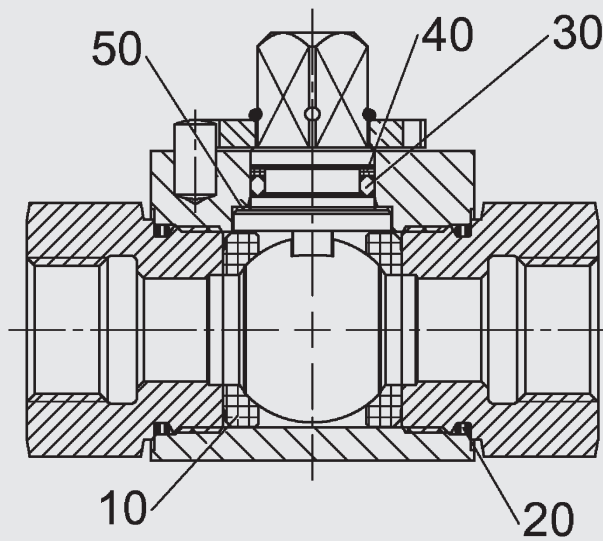
$\phi d1$	DN	L	L1	B	H	h1	h2	a	ϕb	c	A
08SR	4	73	37	28	65	14	33	28	5.5	4.5	108
10SR	6	73	37	28	65	14	33	28	5.5	4.5	108
12SR	8	76	42	32	68	17	40	32	5.5	5	108
14SR	10	80	42	32	68	17	40	32	5.5	5	108
16SR*	13	86	47	35	68	17	40	32	5.5	5	108
16SR	12	86	47	40	103	20	46	38	5.5	5	174
20SR*	13	90	47	35	68	17	40	32	5.5	5	108
20SR	16	90	47	40	103	20	46	38	5.5	5	174
25SR	20	109	60	49	115	24.5	57	46	6.6	6	174
30SR	25	120	65	58	123	29.5	65	46	6.6	6	174

* reduced bore

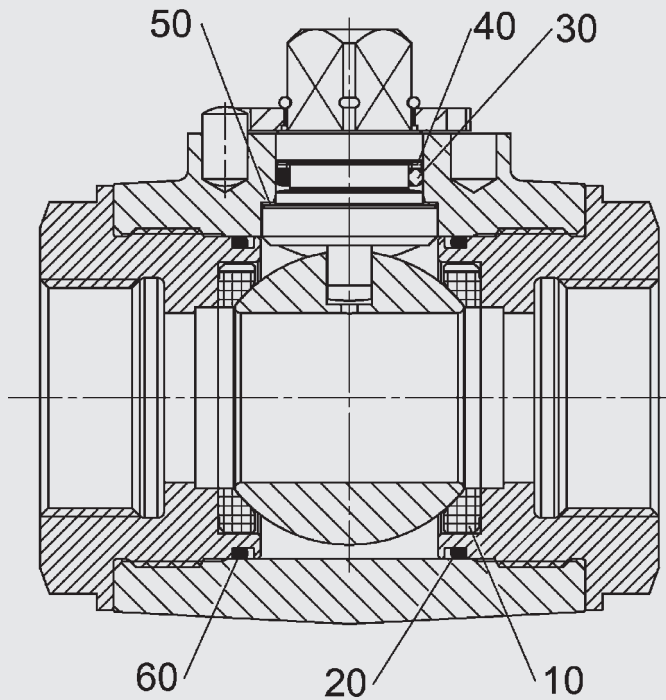
Spare parts

(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

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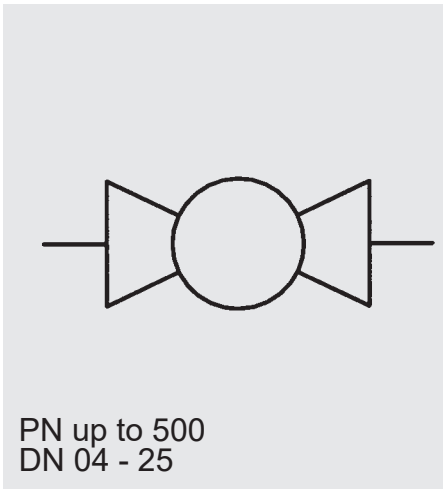
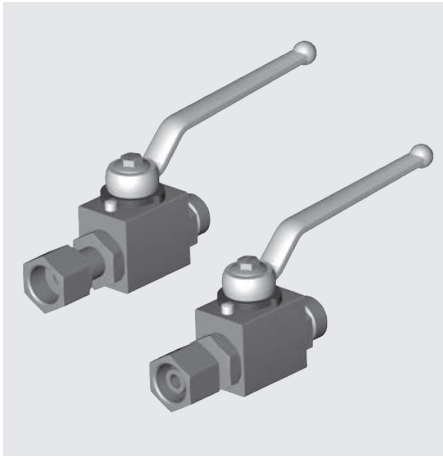
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Ball valve with DKO connection KHB DKO

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 outer \varnothing and type of connection

Materials

Housing, connection adapters

1 = steel

Ball, control spindle

1 = steel

Sealing cups

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

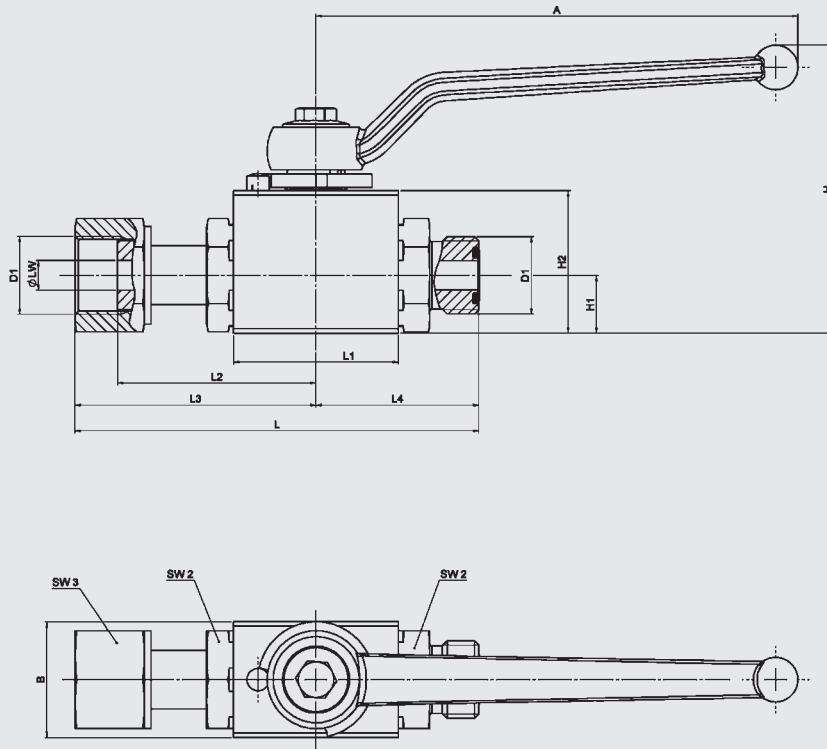
(determined by manufacturer)

Surface protection

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

Dimensions

KHB DKO ORFS



Type ORFS	OD pipe	DN	LW	D1	L	L1	L2	L3	L4	B	H	H1	H2	A	SW2	SW3	PN [bar]
9/16	6	6	4.4	9/16-18UNF	86.2	37	42.5	50.7	35.5	28	65.7	14	33	108	22	19	400
11/16	10	8	6.7	11/16-16UNF	90.5	37	44.5	54	36.5	28	65.7	14	33	108	22	22	400
13/16	12	10	9.6	13/16-16UN	104	42	53.7	64.7	39.6	32	72.7	17.2	40	108	27	27	400
1	16	13	12.3	1-14UNS	115	47	56.5	70	45	35	72.7	17.2	40	108	30	32	400
1-3/16	20	16	15.5	1-3/16-12UN	121.5	47	59	73.5	48	40	111	20	46	169	32	36	400
1-7/16	25	20	20.6	1-7/16-12UN	137.3	60	69	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

Type of construction		Block type KHB
Types of connection	Port 1*	DKO to DIN 2353 DKO to ISO 8434
	Port 2*	Light and heavy threaded pipe connection to DIN 2353 ORFS ISO 8434
* Both ports are configured according to the same standard.		
Mounting position		No orientation restrictions
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 ² /s

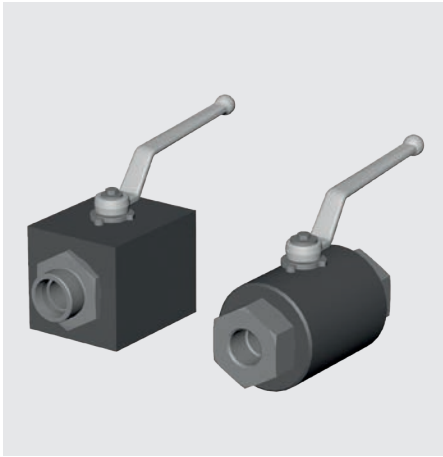
NOTE

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.

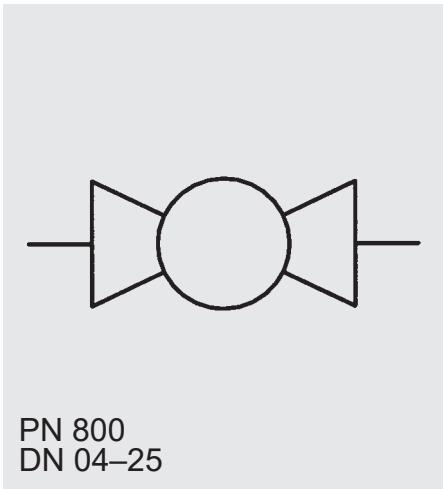
The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

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Ultra-high pressure ball valve KHBH / KMHM



Model code
(also order example)

KHBH 16 NPT 5384 06 X A

Designation

KHBH = ultra-high pressure block type ball valve (steel)
KMHM = ultra-high pressure sleeve type ball valve (stainless steel)

Nominal bore
(DN)

Type of connection

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

Materials

Housing, connection adapters

5 = steel
3 = stainless steel

Ball, control spindle

3 = stainless steel

Sealing cups

8 = PEEK

Control spindle seal and connection seal

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

Handle

06 = steel bolt-on handle, cranked
08 = stainless steel bolt-on handle, cranked

Series

(determined by manufacturer)

Surface protection

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

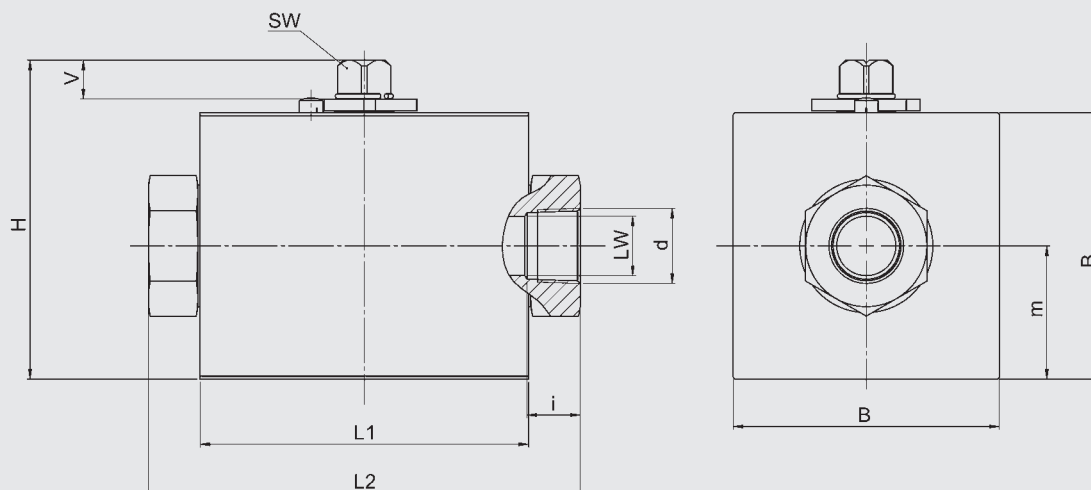
Technical specifications

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 NPT ANSI B1.20.1
Mounting position:	No orientation restrictions
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:	-10 °C to +80 °C
Viscosity range:	10 to 380 mm ² /s

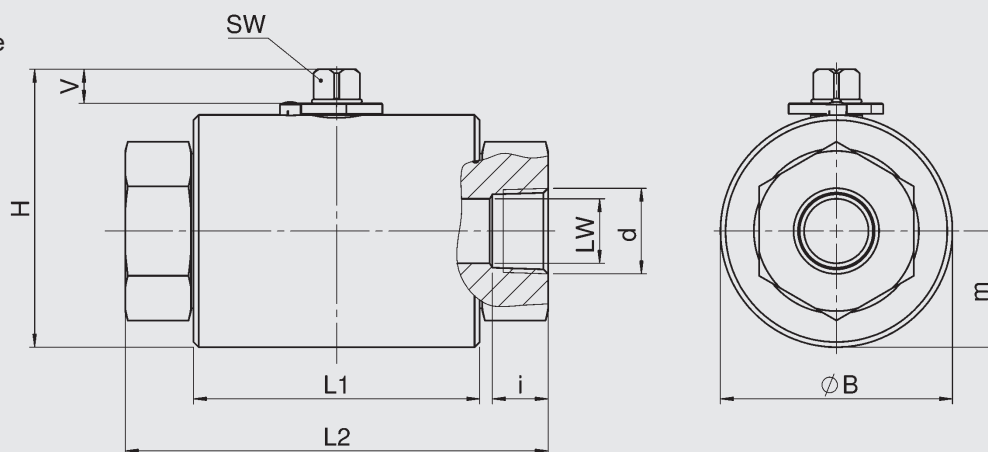
Dimensions

NPT ANSI B1.20.1

Block type



Sleeve type



Block type

Type	DN	LW	L1	L2	B	H	m	V	SW	i	d
KHBH-06NPT	6	6	76	130	50	63	25	11	9	13.7	1/4 NPT
KHBH-10NPT	10	10	76	130	50	63	25	11	9	13.5	3/8 NPT
KHBH-16NPT	13	13	76	130	50	63	25	11	9	17	1/2 NPT
KHBH-20NPT	20	20	111	161	90	107.7	45	14	14	18.3	3/4 NPT
KHBH-25NPT	25	25	111	164	90	107.7	45	14	14	21.6	1 NPT

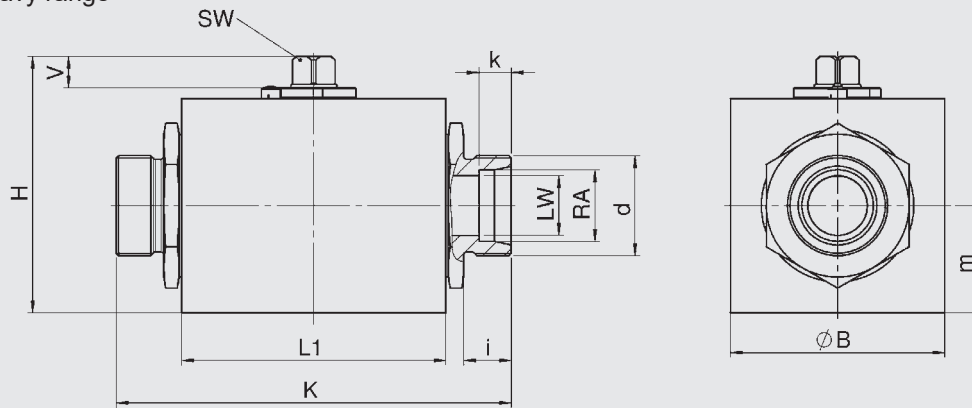
Sleeve type

Type	DN	LW	L1	L2	B	H	m	V	SW	i	d
KHMH-06NPT	6	6	76	130	50	63	25	11	9	13.7	1/4 NPT
KHMH-10NPT	10	10	76	130	50	63	25	11	9	13.5	3/8 NPT
KHMH-16NPT	13	13	76	130	50	63	25	11	9	17	1/2 NPT
KHMH-20NPT	20	20	111	161	90	107.7	45	14	14	18.3	3/4 NPT
KHMH-25NPT	25	25	111	164	90	107.7	45	14	14	21.6	1 NPT

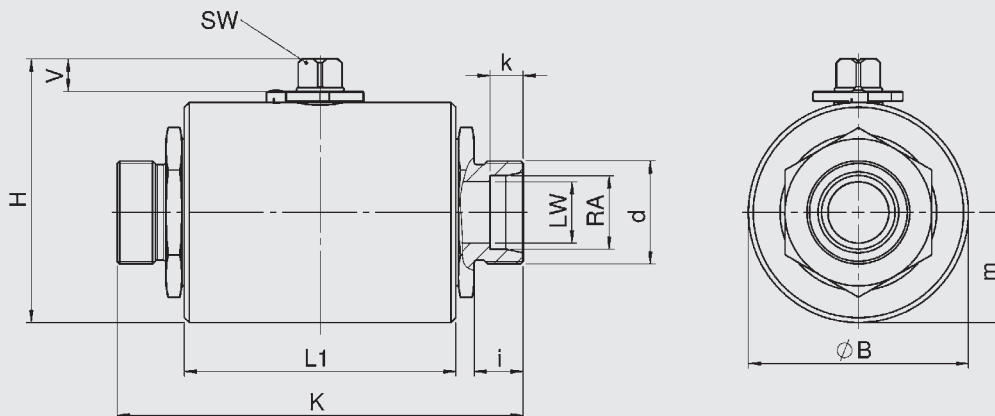
Dimensions

DIN 2353 heavy range

Block type



Sleeve type



Block type

Type	DN	RA	LW	L1	L2	B	H	m	V	SW	i	k	d
KHBH-08SR	4	8	5	76	110	50	63	25	11	9	12	7	M16x1.5
KHBH-10SR	6	10	6	76	114	50	63	25	11	9	12	7.5	M18x1.5
KHBH-12SR	8	12	8	76	114	50	63	25	11	9	12	7.5	M20x1.5
KHBH-14SR	10	14	10	76	114	50	63	25	11	9	14	7.5	M22x1.5
KHBH-16SR	13	16	13	76	114	50	63	25	11	9	14	8.5	M24x1.5
KHBH-20SR	13	20	13	76	118	50	63	25	11	9	16	10.5	M30x2
KHBH-25SR	20	25	20	111	162	90	107.7	45	14	14	18	12	M36x2
KHBH-30SR	25	30	25	111	166	90	107.7	45	14	14	20	13.5	M42x2

Sleeve type

Type	DN	RA	LW	L1	L2	B	H	m	V	SW	i	k	d
KHMH-08SR	4	8	5	76	110	50	63	25	11	9	12	7	M16x1.5
KHMH-10SR	6	10	6	76	114	50	63	25	11	9	12	7.5	M18x1.5
KHMH-12SR	8	12	8	76	114	50	63	25	11	9	12	7.5	M20x1.5
KHMH-14SR	10	14	10	76	114	50	63	25	11	9	14	7.5	M22x1.5
KHMH-16SR	13	16	13	76	114	50	63	25	11	9	14	8.5	M24x1.5
KHMH-20SR	13	20	13	76	118	50	63	25	11	9	16	10.5	M30x2
KHMH-25SR	20	25	20	111	162	90	107.7	45	14	14	18	12	M36x2
KHMH-30SR	25	30	25	111	166	90	107.7	45	14	14	20	13.5	M42x2

NOTE

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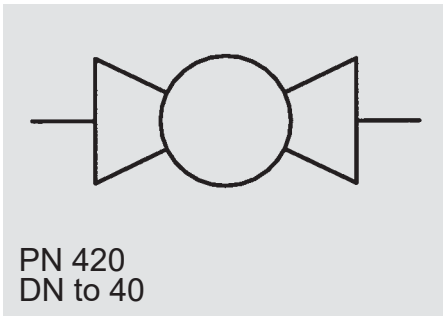
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Three-part high pressure ball valve KHB3H

Model code
(also order example)

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

Designation

KHB3H = three-part high pressure ball valve

Port size

1/2" to 2"

Type of connection

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 handle, cranked, fitted

Series

(determined by manufacturer)

Options

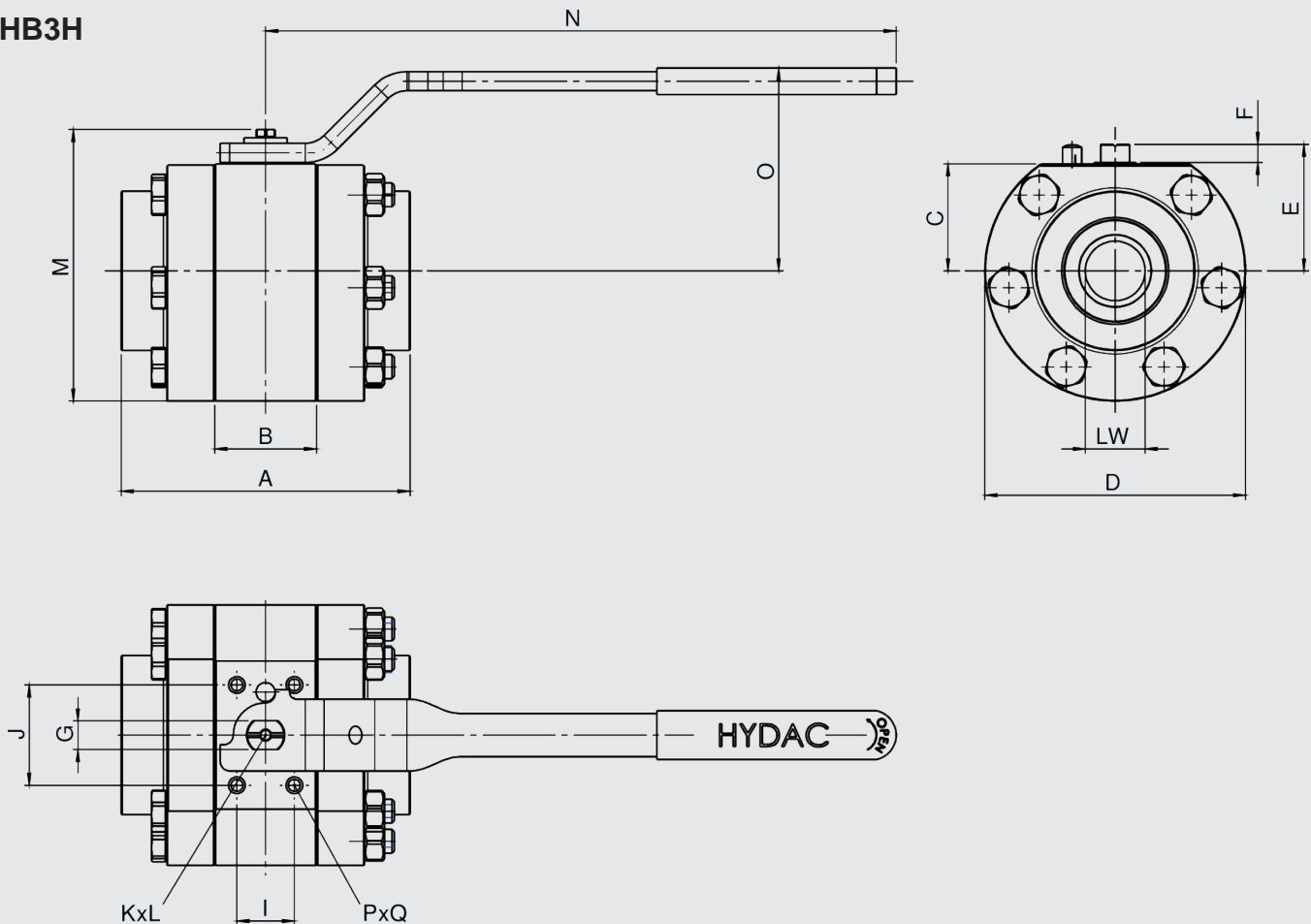
SO 940 = KH with 4 threaded holes

Technical specifications

Type of construction	Three-part high pressure ball valve in accordance with ASME B16.34, Standard Class 2500
Design	Shut-off device is a ball
Type of connection	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
Mounting position	No orientation restrictions
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

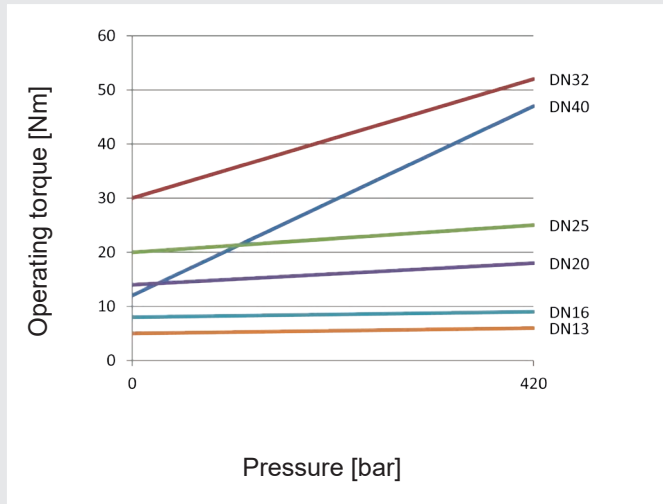


Type	AF	DN	Ø LW	A	B	C	Ø D	E	F	G	I	J	KxL*	M	N	O	PxQ*	PN		Weight
																		[bar]	[psi]	
KHB3H-1/2	1/2"	13	12	77.8	24.9	27	69.5	35.7	5.6	SW09	15	34	M5x9	78.95	183	63.6	M5x7	420	6000	1.7
KHB3H-3/4	3/4"	15	15	85	27.8	33	79	41.7	5.6	SW09	15	34	M5x9	89.7	183	69.6	M5x7	420	6000	3.0
KHB3H-1	1"	20	20	107.9	38.3	42	98	52.7	7.6	SW12	24	42	M5x9	110.2	263.5	84.6	M6x9	420	6000	5.0
KHB3H-1 1/4	1 1/4"	25	25	120.7	42.5	44.8	109	55.5	7.6	SW12	24	42	M5x9	118.5	263.5	87.4	M6x9	420	6000	6.5
KHB3H-1 1/2	1 1/2"	32	30	131.2	52.4	58	128	68.7	7.6	SW17	36	40	M8x15	144.8	378.5	99.1	M8x8	420	6000	10.5
KHB3H-2	2"	40	38	143	54.4	61.5	144.8	72.2	7.6	SW17	40	58	M8x15	159.2	378.5	106.6	M8x8	420	6000	14.1

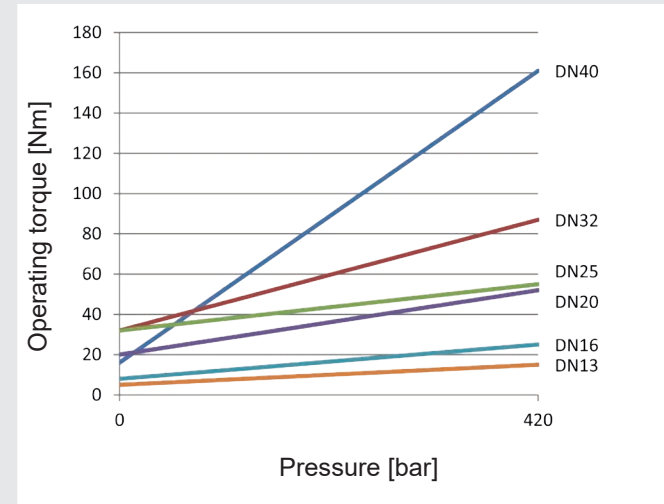
*optional

Operating torques (breakaway torques)

Short-term pressures \approx 1 min

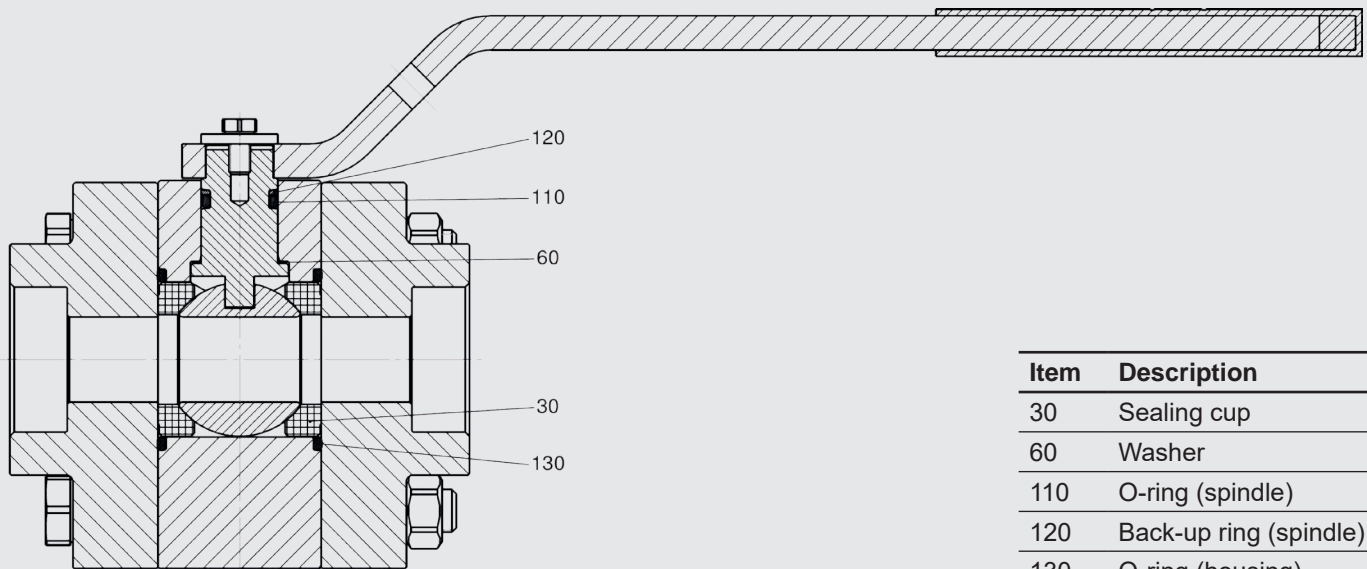


Long-term pressures > 2 days



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

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Subject to technical modifications and errors.

HYDAC Accessories GmbH

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66280 Sulzbach/Saar

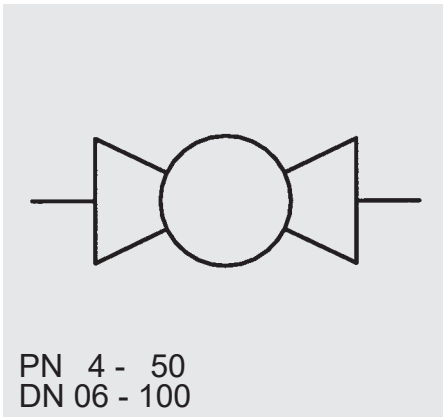
Tel.: +49 (0)6897 - 509-01

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

Internet: www.hydac.com

E-Mail: accessories@hydac.com





PN 4 - 50
DN 06 - 100

NOTICE

Because of their threaded connections, these ball valves are not suitable for use with GE screwed fittings. The thread depth of the threaded connections is in many cases not sufficient for this purpose. Furthermore, the required sealing surface for an EO seal is not provided.

Low pressure ball valves KHNVN / KHNVS / KHN

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

Type of connection

Thread size or pipe outer Ø and type of connection

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, fitted

Series

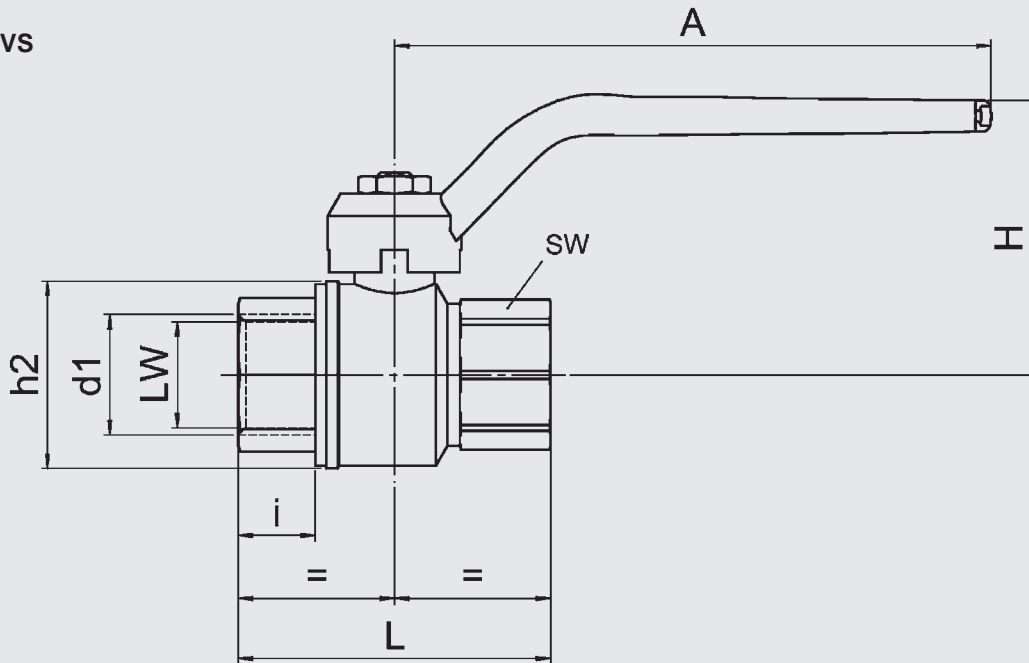
(determined by manufacturer)

Approval

DIN-DVGW (only KHN)

Dimensions

KHNVN / KHNVS

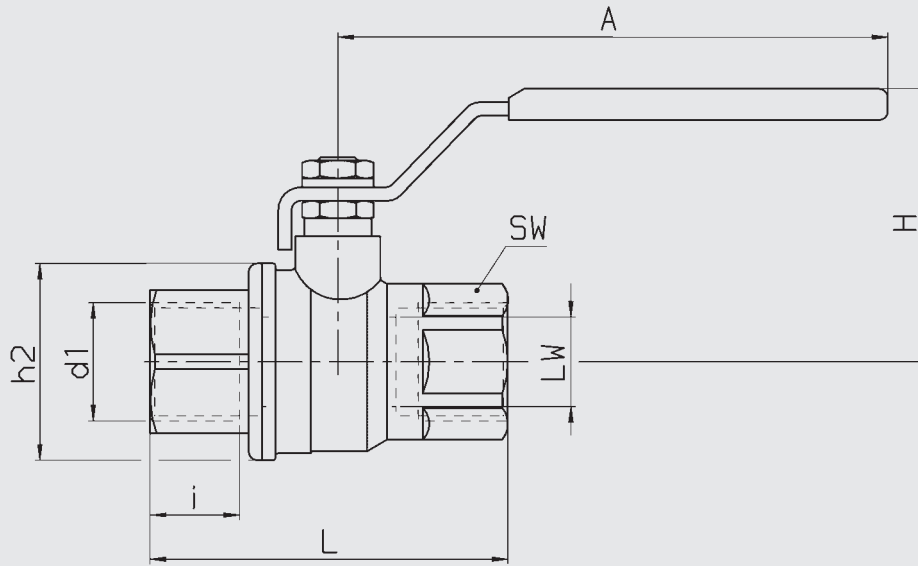


Type	d1	L [mm]	h2 [mm]	H [mm]	A [mm]	i [mm]	LW [mm]	SW [mm]	Nominal pressure PN [bar]
KHNVN	G 1/4	44.4	23.5	37	80	10	10	18	50
KHNVN	G 3/8	44.4	24	37	80	10	10	21	50
KHNVN	G 1/2	50.5	30.5	41	80	12	15	25	50
KHNVN	G 3/4	57.5	37.0	55	113	12.5	20	31	40
KHNVN	G 1	70	45.5	59	113	15	25	38	40
KHNVN	G 1 1/4	80.5	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 internal thread to ISO 228 (G) Whitworth internal thread to DIN 2999 (Rp)
Mounting position:	No orientation restrictions
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
Accessories:	All ball valves can be supplied with the following options: Actuator Limit controls Lock



Type DVGW	d1	Nominal bore DN	ØLW [mm]	Nominal pressure PN [bar]	i [mm]	L [mm]	Øh2 [mm]	H [mm]	A [mm]	SW [mm]	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	Rp1 1/4	32	32	4	21.4	96	59	78	160	48	0.97
KHN	Rp1 1/2	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:	No orientation restrictions
Certification:	DIN-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

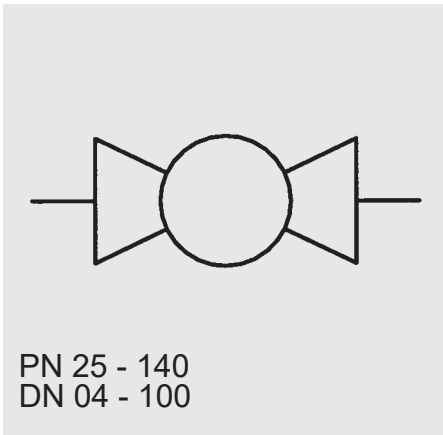
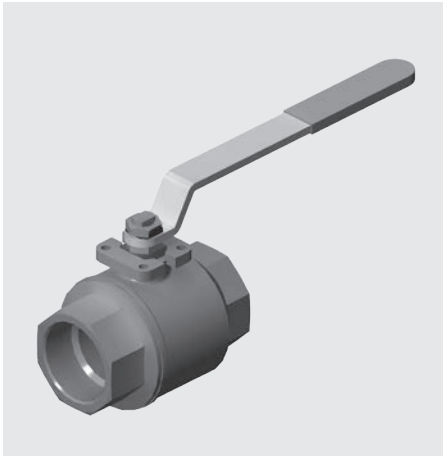
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NOTICE

Because of their threaded connections, these ball valves are not suitable for use with GE screwed fittings. The thread depth of the threaded connections is in many cases not sufficient for this purpose. Furthermore, the required sealing surface for an EO seal is not provided.

Stainless steel low pressure ball valves KHNVN / KHNVS

Model code

(also order example)

KHNVS **Rp** **1/2** **3333** **18** **X** **SO760**

Designation

KHNVN – low pressure ball valve – standard model
KHNVS – low pressure ball valve – heavy duty model

Type of connection

Rp
G
Notice: sealed via the thread.

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 bolt-on handle, cranked, fitted

Series

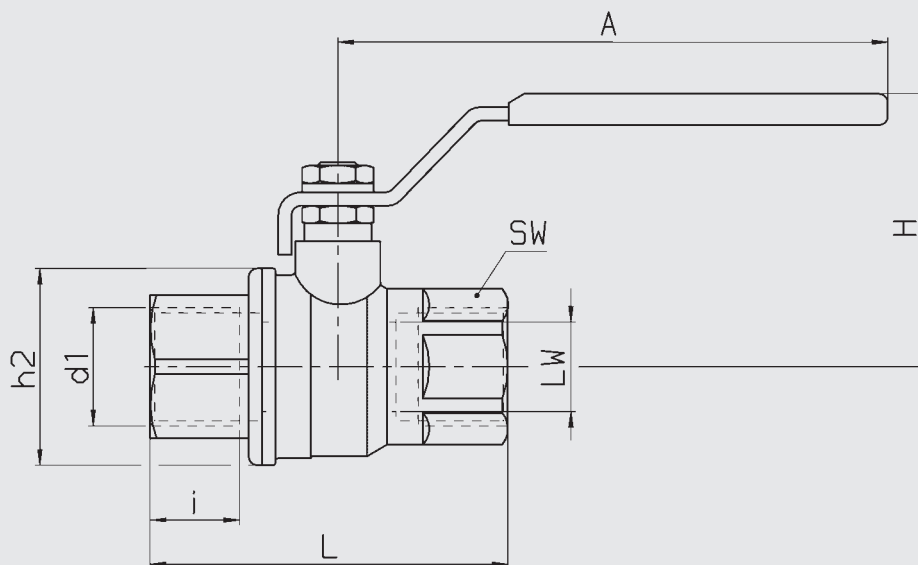
(determined by manufacturer)

Option

SO760 = ball valve can be locked in open and closed position using padlock, padlock not supplied
5211 = preparation for superstructures (DIN EN 5211)

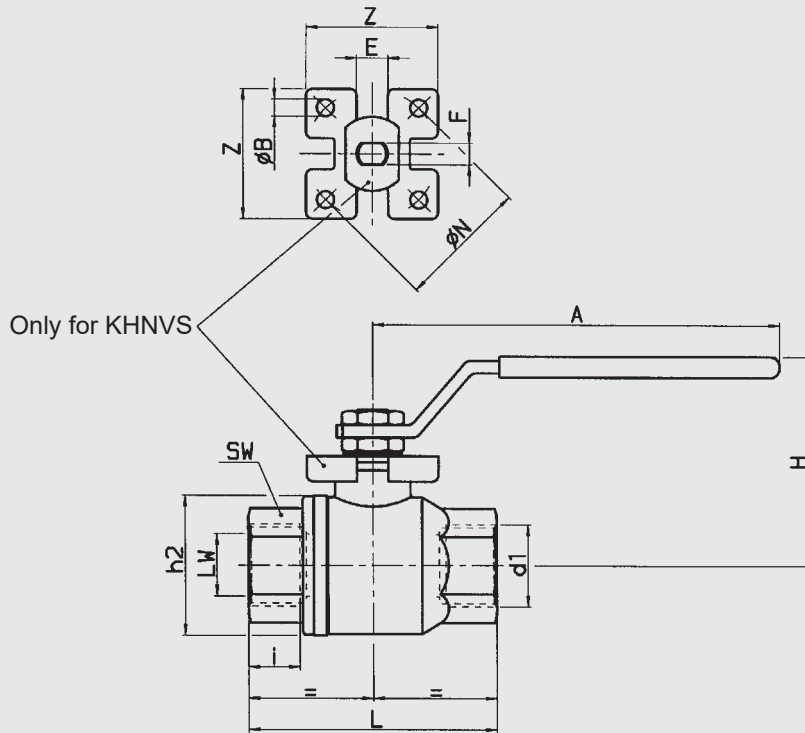
Dimensions

KHNVN



Type	d1	Nominal bore DN	ØLW [mm]	PN [bar]	i [mm]	L [mm]	H [mm]	h2 [mm]	A [mm]	SW [mm]	Weight [kg]
KHNVN	G1/4	6	9.2	63	10	50	49	26	83	19	0.27
KHNVN	G3/8	10	12.5	63	10.5	60	53	30	83	22	0.26
KHNVN	G1/2	15	15	63	13.5	75	60	35	103	26	0.32
KHNVN	G3/4	20	20	63	14.5	80	62	42	103	32	0.42
KHNVN	G1	25	25	50	17.5	90	77	48	151	38	0.67
KHNVN	G1 1/4	32	32	50	19	110	81	62	151	50	1.12
KHNVN	G1 1/2	40	38	40	19	120	91	72	194	54	1.73
KHNVN	G2	50	50	40	23.5	140	103	90	194	68	2.78

KHNVS



Type	d1	Nominal bore DN	ØLW [mm]	PN [bar]	i [mm]	L [mm]	Øh2 [mm]	H [mm]	A [mm]	SW [mm]	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	5.5	5	8	36F03	36
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	Rp1 1/4	5.5	8	12	42F04	42
KHNVS	Rp1 1/2	6.5	10	16	50F05	50
KHNVS	Rp2	6.5	10	16	50F05	50
KHNVS	Rp2 1/2	M8	14	20	70F07	64
KHNVS	Rp3	M8	14	20	70F07	64
KHNVS	Rp4	M10	18	24	102F10	92

Technical specifications

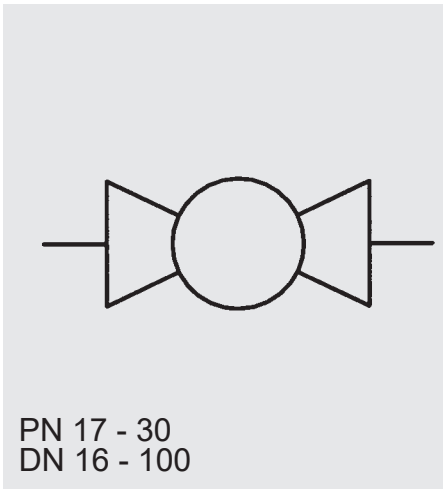
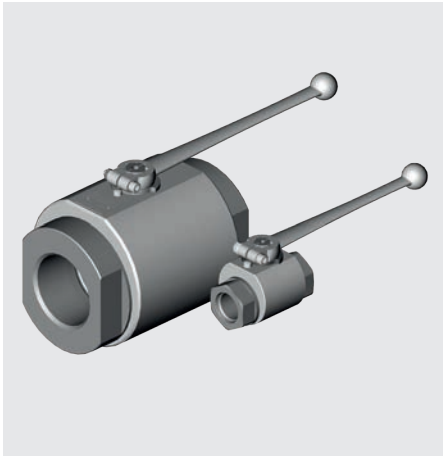
Type of connection:	Whitworth female thread to ISO 228 (G) Whitworth female thread to DIN 2999 (Rp)
Mounting position:	No orientation restrictions
Ambient temperature:	-20 °C to +160 °C
Nominal pressure:	up to PN 140
Operating media:	Mineral oil to DIN 51524 part 1 + 2, gaseous media, compressed air, water other media on request
Temperature of operating media:	-20 °C to +160 °C
Accessories:	All ball valves can be supplied with the following options on request: - Actuator - Limit controls - Lock

NOTE

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Subject to technical modifications and errors.



Low pressure ball valve KHR

Model code
(also order example)

KHR **G 11/4** **4112** **09** **X** **...**

Designation

KHR = ball valve, round design

Type of connection

Thread size or tube outer \varnothing and type of connection

Materials

Housing, connection adapters

4 = aluminium

Ball, control spindle

1 = steel

3 = stainless steel

Rounded seals

1 = POM

3 = PTFE

Control spindle seal and connection 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

26 = steel bolt-on handle, cranked, long

Series

(determined by manufacturer)

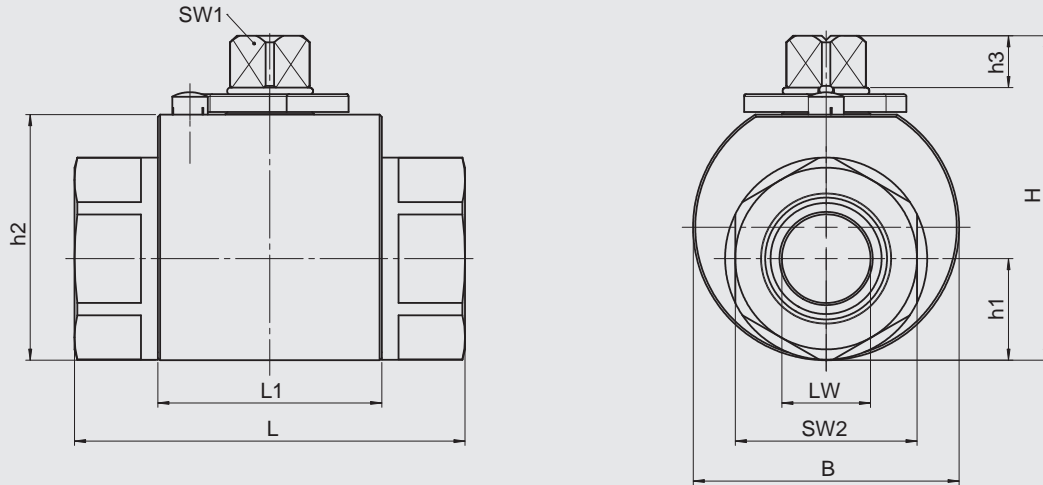
Options

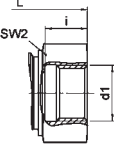
SO760 = ball valve can be locked in open and closed switching position using padlock, padlock not supplied

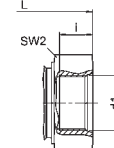
E-1.000 = limit switch DIN EN 50041 – type A monitor ball valve in open position

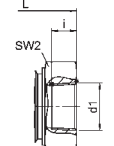
Dimensions

KHR



Type of connection	Type	DN [mm]	LW [mm]	d1	i [mm]	L [mm]	L1 [mm]	B [mm]	H [mm]	h1 [mm]	h2 [mm]	h3 [mm]	SW1 [mm]	SW2 [mm]	Weight [kg]	PN [bar]
DIN ISO 228 Female pipe thread 	KHR-G1/2	16	16	G1/2	16	78	42	50	61.7	18.5	44.5	11	12	32	0.36	30
	KHR-G3/4	20	20	G3/4	18	92.6	50.5	60	73.2	22.9	55.4	11.6	14	41	0.66	30
	KHR-G1	25	25	G1	20.5	102.7	54.5	70	80.1	27	62.5	11.6	14	46	0.90	30
	KHR-G1 1/4	32	32	G1 1/4	22	102	64	85	98.1	32.9	79.6	12	17	55	1.47	30
	KHR-G1 1/2	40	38	G1 1/2	24	110	73	95	109.7	38.5	91.2	12	17	65	2.05	30
	KHR-G2	50	48	G2	28	131	74	115	127.7	49	109.2	12	17	85	3.41	30
	KHR-G2 1/2	65	65	G2 1/2	35	183	125	139	153	63.5	134.5	12	17	100	6.31	17
	KHR-G3	80	80	G3	35	190	120	159	174.5	75.5	156	12	17	120	9.69	17
KHR-G4	100	100	G4	40	230	150	188	204.5	90.5	186	12	17	140	15.14	17	

Type of connection	Type	DN [mm]	LW [mm]	d1	i [mm]	L [mm]	L1 [mm]	B [mm]	H [mm]	h1 [mm]	h2 [mm]	h3 [mm]	SW1 [mm]	SW2 [mm]	Weight [kg]	PN [bar]
SAE J 514 UN/UNF Female thread 	KHR-16SAE	16	16	3/4 - 16 UNF	15	68	42	50	61.7	18.5	44.5	11	12	32	0.53	30
	KHR-20SAE	20	20	1 1/16 - 12 UN	20	88.1	50.5	60	73.2	22.9	55.4	11.6	14	41	0.58	30
	KHR-25SAE	25	25	1 5/16 - 12 UN	20	92.7	54.5	70	80.1	27	62.5	11.6	14	46	0.77	30
	KHR-32SAE	32	30	1 5/8 - 12 UN	20	102	64	85	98.1	32.9	79.6	12	17	55	1.36	30
	KHR-40SAE	40	38	1 7/8 - 12 UN	20	110	73	95	109.7	38.5	91.2	12	17	65	1.89	30
	KHR-50SAE	50	48	2 1/2 - 12 UN	20	125	74	115	127.7	49	109.2	12	17	85	3.36	30
	KHR-65SAE	65	65	3 - 12 UN	25.5	183	125	139	153	63.5	134.5	12	17	100	6.65	17
	KHR-80SAE	80	80	3 1/2 - 12UN	25.5	190	120	159	174.5	75.5	156	12	17	120	9.41	17
KHR-100SAE	100	100	4 1/2 - 12 UN	25.5	230	150	188	204.5	90.5	186	12	17	140	15.64	17	

Type of connection	Type	DN [mm]	LW [mm]	d1	i [mm]	L [mm]	L1 [mm]	B [mm]	H [mm]	h1 [mm]	h2 [mm]	h3 [mm]	SW1 [mm]	SW2 [mm]	Weight [kg]	PN [bar]
ANSI B1.20.1 NPT female thread 	KHR-16NPT	16	16	1/2 - 14 NPT	13.56	68	42	50	61.7	18.5	44.5	11	12	32		30
	KHR-20NPT	20	20	3/4 - 14 NPT	13.86	88.1	50.5	60	73.2	22.9	55.4	11.6	14	41		30
	KHR-25NPT	25	25	1 - 11 1/2 NPT	17.34	92.7	54.5	70	80.1	27	62.5	11.6	14	46		30
	KHR-32NPT	32	30	1 1/4 - 11 1/2 NPT	17.95	102	64	85	98.1	32.9	79.6	12	17	55		30
	KHR-40NPT	40	38	1 1/2 - 11 1/2 NPT	18.38	110	73	95	109.7	38.5	91.2	12	17	65		30
	KHR-50NPT	50	48	2 - 11 1/2 NPT	19.22	125	74	115	127.7	49	109.2	12	17	85		30
	KHR-65NPT	65	65	2 1/2 - 8 NPT	28.9	183	125	139	153	63.5	134.5	12	17	100	6.42	17
	KHR-80NPT	80	80	3 - 8 NPT	30.48	190	120	159	174.5	75.5	156	12	17	120	9.78	17
KHR-100NPT	100	100	4 - 8 NPT	33.02	230	150	188	204.5	90.5	186	12	17	140	15.32	17	

Technical specifications

Type of construction:	Round version
Types of connection:	Whitworth female thread to ISO 228 NPT SAE
Mounting position:	No orientation restrictions
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 30
Operating fluids:	Hydraulic oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Design:	Shut-off device is a ball
Weight:	See table
Flow direction:	No restrictions
Spare parts:	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Actuator Limit controls Lock

NOTE

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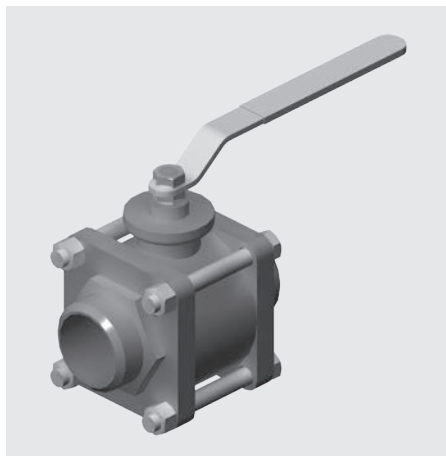
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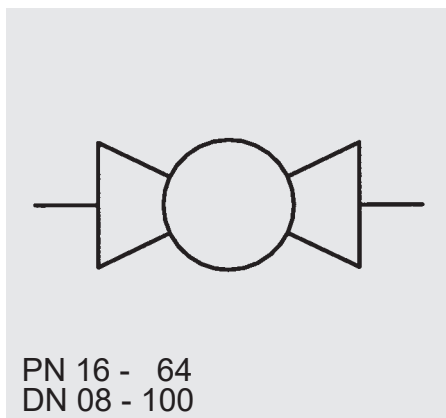
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Weld-on low pressure ball valves KHM3S



Model code

(also order example)

KHM3S 20 1333 16 X

Designation

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

Nominal bore

(DN)

Materials

Housing, butt weld

- 1 = steel
- 3 = stainless steel

Ball, spindle

- 3 = stainless steel

Ball seals

- 3 = PTFE

Seals

- 3 = PTFE

Handle

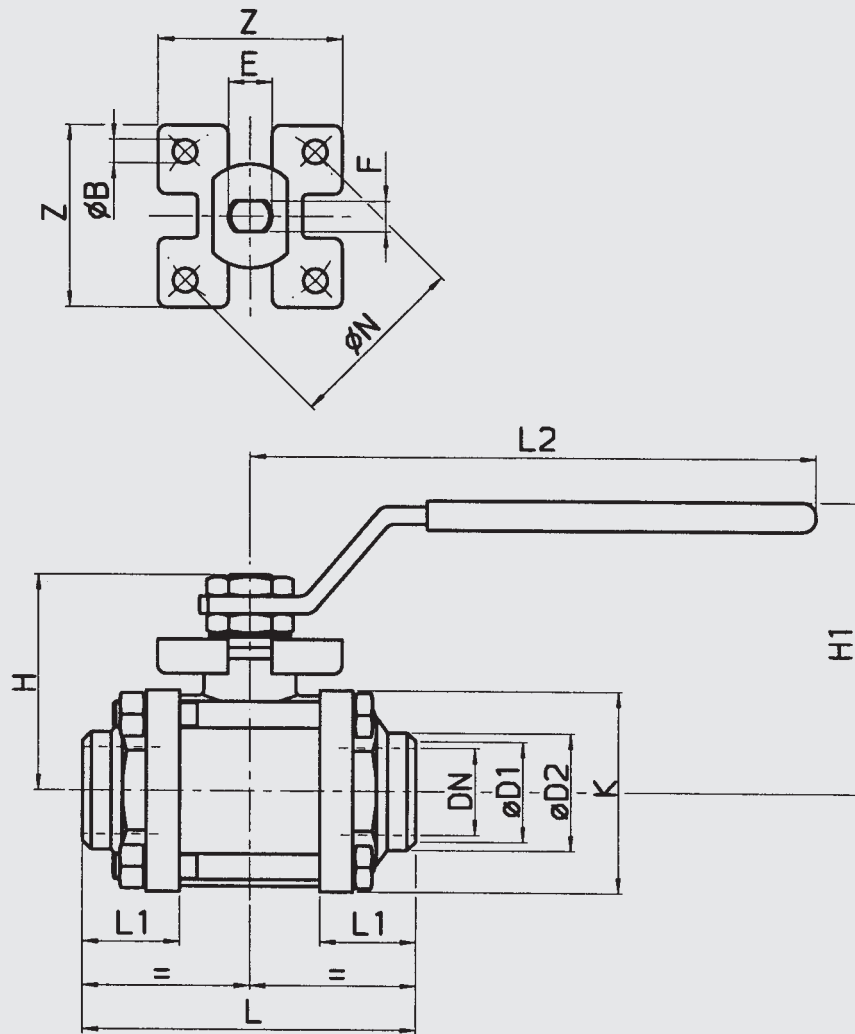
- 16 = steel bolt-on handle, cranked, fitted
 - 18 = stainless steel bolt-on handle, cranked, fitted
- DN 10 - 50

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:	No orientation restrictions
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
Spare parts:	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Actuator Limit controls Lock

NOTE

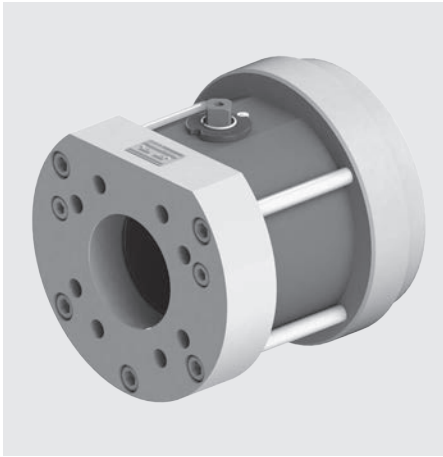
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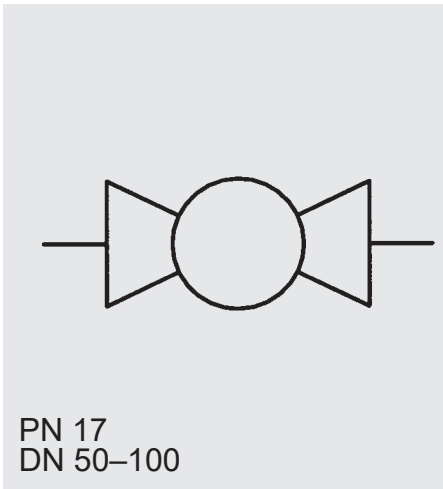
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Butt-weld flange ball valve KHF3S



Model code
(also order example)

KHF3S 50 41141 09 X SW14

Designation

KHF3S = three-part butt-weld flange ball valve

Nominal bore

DN

Materials

Housing, connection adapters

4 = aluminium

Ball, control spindle

1 = steel

*control spindle made from stainless steel

Rounded seals

1 = POM

3 = PTFE

Control spindle seal and connection seal

4 = FKM (Viton)

Weld-on ring

1 = steel

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

26 = steel bolt-on handle, cranked, long

Series

(determined by manufacturer)

AF width

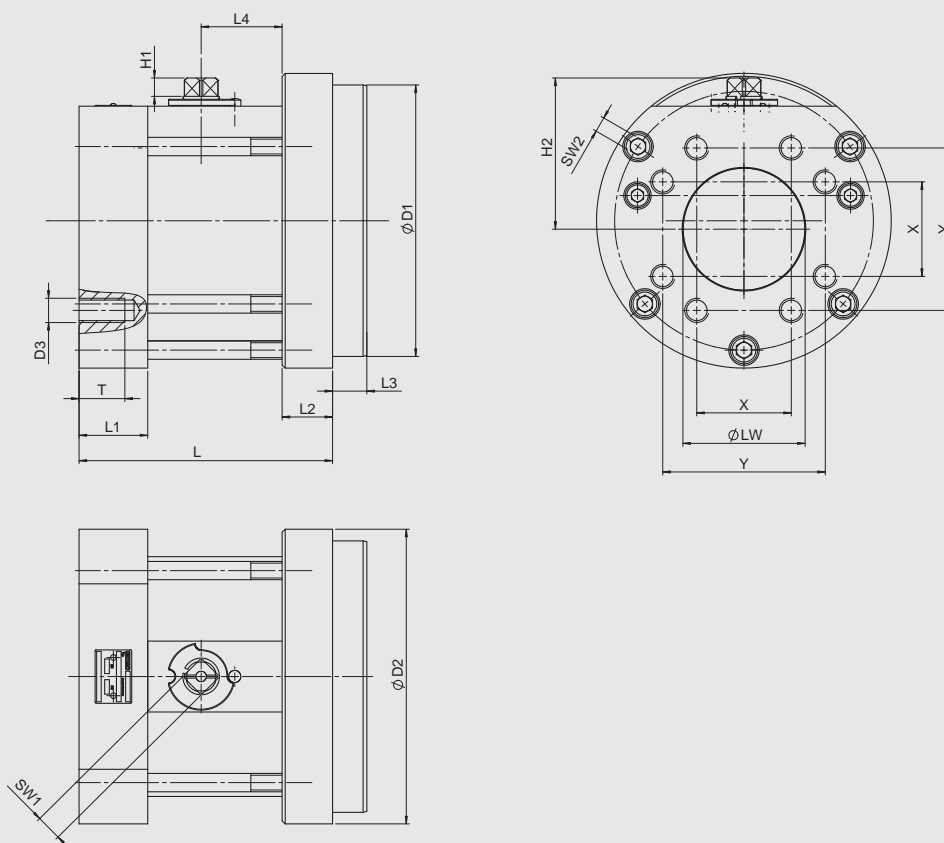
AF width of control spindle

Technical specifications

Nominal bore	DN 50 - 100
Nominal pressure	up to PN 17 / 250 psi
Type of connection	Weld-on ring (2" - 4" / DN 50 - DN 100) DIN ISO 6162 T1
Mounting position	No orientation restrictions
Operating media	Hydraulic oil to DIN 51524 Parts 1 and 2 (others on request)
Vacuum	Leakage rate $Q < 3.6 \times 10^{-8}$ mbar ³ /s
Viscosity range	10 to 380 mm ² /s
Temperature of the medium	-10 °C to +80 °C
Ambient temperature	-10 °C to +80 °C
Accessories	All ball valves can be supplied with the following options on request: - Limit controls - Lock

Dimensions

KHF3S



Type	DN [mm]	LW [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	D1 [mm]	D2 [mm]	D3	T [in]	H1 [mm]	H2 [mm]	SW1 [mm]	SW2 [mm]	X [mm]	Y [mm]	Weight [kg]
KHF3S-050	50	48	95	30	8	12.7	29.2	127	139.5	1/2 - 13 UNC	0.825	11.6	70.9	14	6	42.9	77.8	3.89
KHF3S-065	65	65	138	33	24	17.5	41	152.4	164	1/2 - 13 UNC	0.825	12	89.5	17	8	50.8	88.9	9.48
KHF3S-080	80	80	166	45	33	22.5	53	177.8	193	5/8 - 11 UNC	1.181	12	99	17	10	61.9	106.4	15.62
KHF3S-100	100	100	185	45	30	27.7	60	203.2	219	5/8 - 11 UNC	1.181	12	114	17	10	77.8	130.2	21.42

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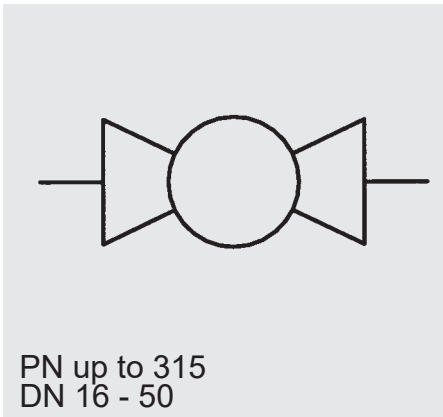
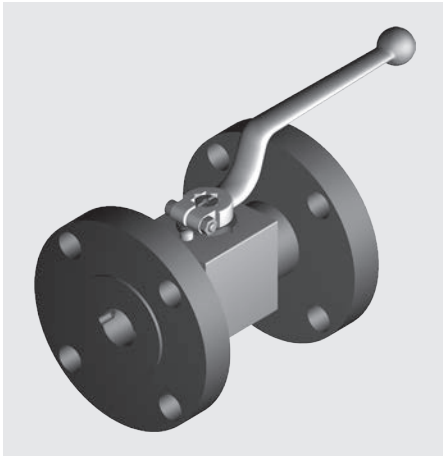
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Flanged ball valves KHBF / KHMF / KHMFF

Model code
(also order example)

KHBF 16 PN040 11141 02 X ...

Designation

KHBF	= block type ball valve	DN 16 - 25
KHMF	= sleeve type ball valve	DN 32 - 50
	long version –	DIN 3202 - F1
	DIN-EN 558-1, FTF, basic series 1	
KHMFF	= sleeve type ball valve	DN 32 - 50
	short version –	DIN 3202 - F4
	DIN-EN 558-1, FTF, basic series 14	

Nominal bore (DN)

Pressure range (to DIN EN 1092)

Materials

Housing, connection adapters

- 1 = steel
- 3 = stainless steel

Ball, control spindle

- 1 = steel
- 3 = stainless steel

Ball seal

- 1 = POM (polyacetal)
- 8 = PEEK

Soft seal

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

Flanges

- 1 = steel
- 3 = stainless steel

(other material combinations on request)

Handle

02	= aluminium clamped handle, cranked	DN 16 - 25
06	= steel bolt-on handle, cranked	DN 32 - 50

Series

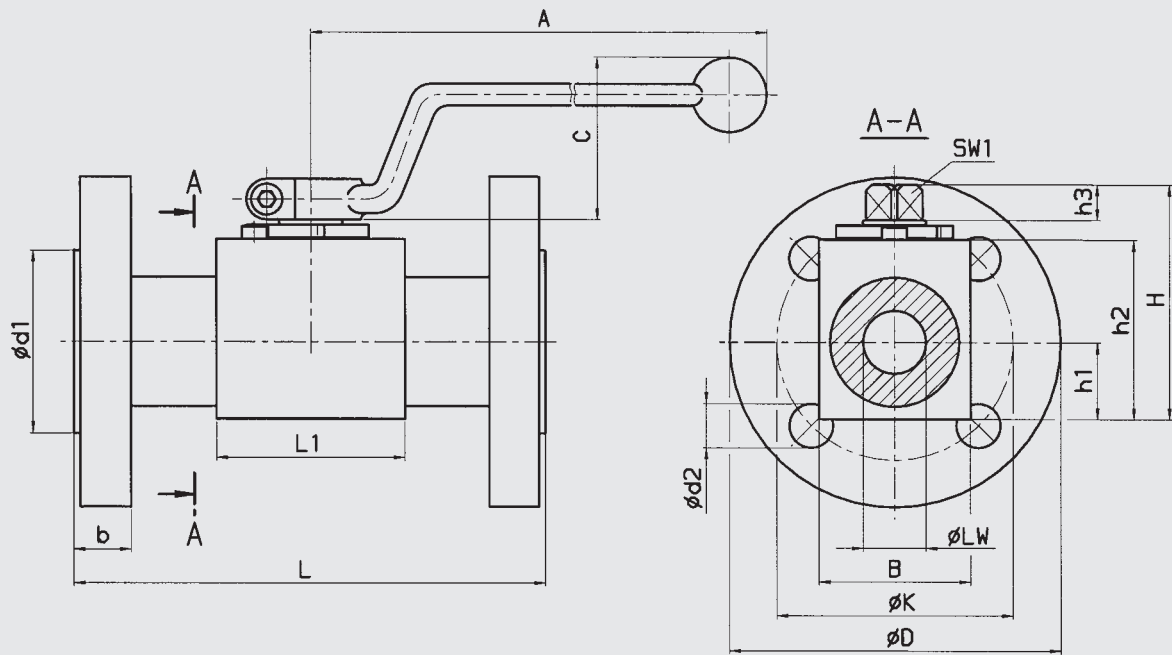
(determined by manufacturer)

Surface protection

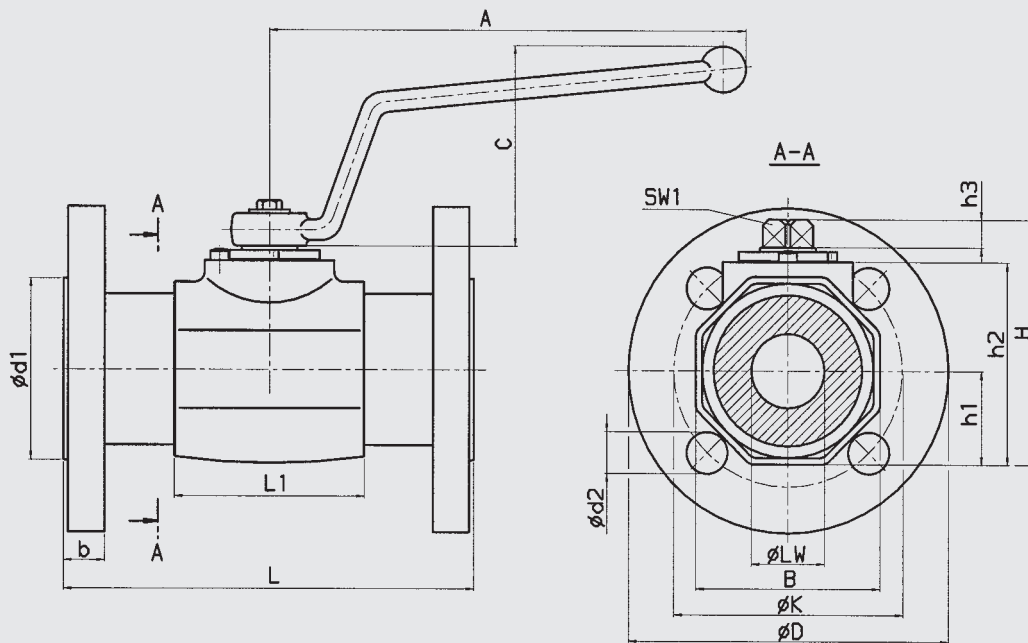
- A = zinc-plated, chrome (VI)-free
- ZN = zinc-nickel, chrome (VI)-free

Dimensions

KHBF



KHMF / KHMFF



Type of construction	Housing dimensions											PN (ball valve) [bar]
	DN	LW	L1	B	H	h1	h2	h3	SW1	A	C	
Block housing KHBF DN 16 - 25	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 DN 32 - 50	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. / sealing strip	Type	Pressure range PN [bar]	L	D	d1	d2	K	b	Z*	Weight [kg]	
F1 (FTF, basic series 1)	KHBF - 16	40	130	95	45	14	65	16	4	2.2	
		160	130	105	45	14	75	20	4	3.0	
		315	130	130	45	18	90	26	4	4.1	
	KHBF - 20	40	150	105	58	14	75	18	4	3.4	
		KHBF - 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	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	
	KHMF - 50	315	200	195	88	26	145	38	4	17.5	
		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		
KHMF - 50	250	230	200	102	26	150	38	8	28.5		
	315	230	210	102	26	160	42	8	31.0		
	Flange port DIN EN 1092, type B2 F4 (FTF, basic series 14)	KHMFF - 032	40	130	140	78	18	100	18	4	6.1
KHMFF - 040			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:	No orientation restrictions
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
Spare parts:	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Actuator Limit controls Lock

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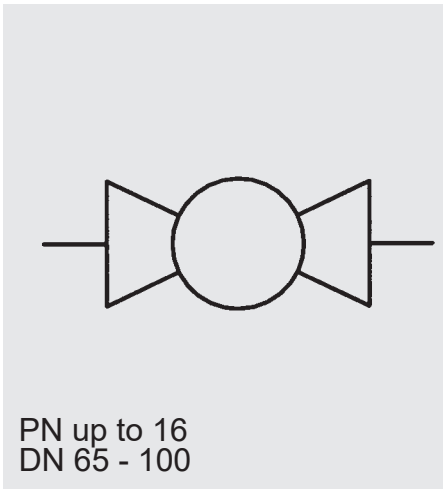
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Flanged ball valves DN 65 – 100 KHMFF



Model code
(also order example)

KHMFF 080 PN016 8834 02 X

Designation

KHMFF = flanged ball valve, socket form
(short version F4) DN 65 - 100

Nominal bore

(DN)

Pressure range

(to DIN EN 1092)

Materials

Housing, flange

8 = cast iron (GG25), steel spindle

Ball

8 = cast iron, hard chrome-plated

Ball seal

3 = PTFE

Housing and control spindle seal

4 = FKM (Viton)

Handle

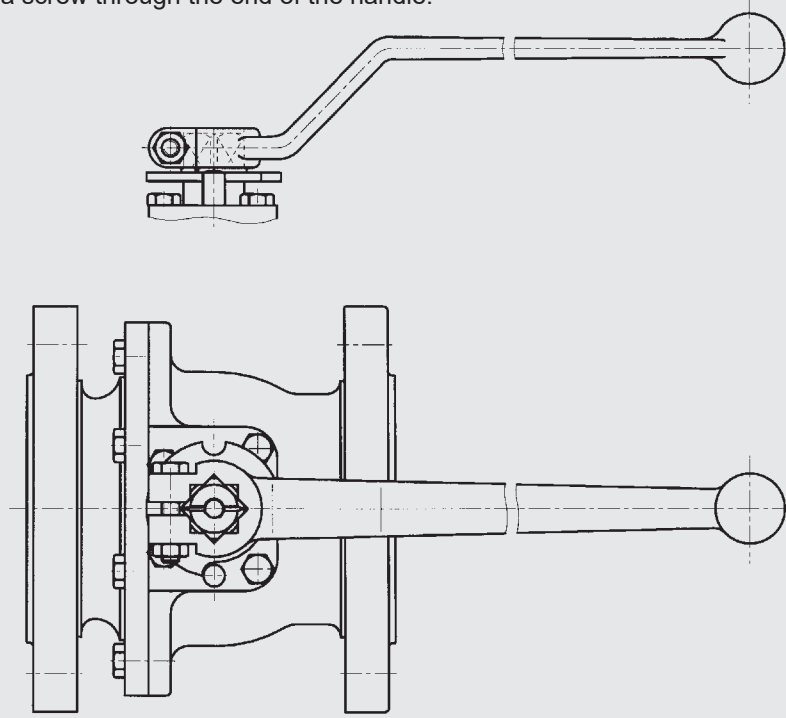
02 = aluminium clamped handle, cranked DN 65 - 100

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.



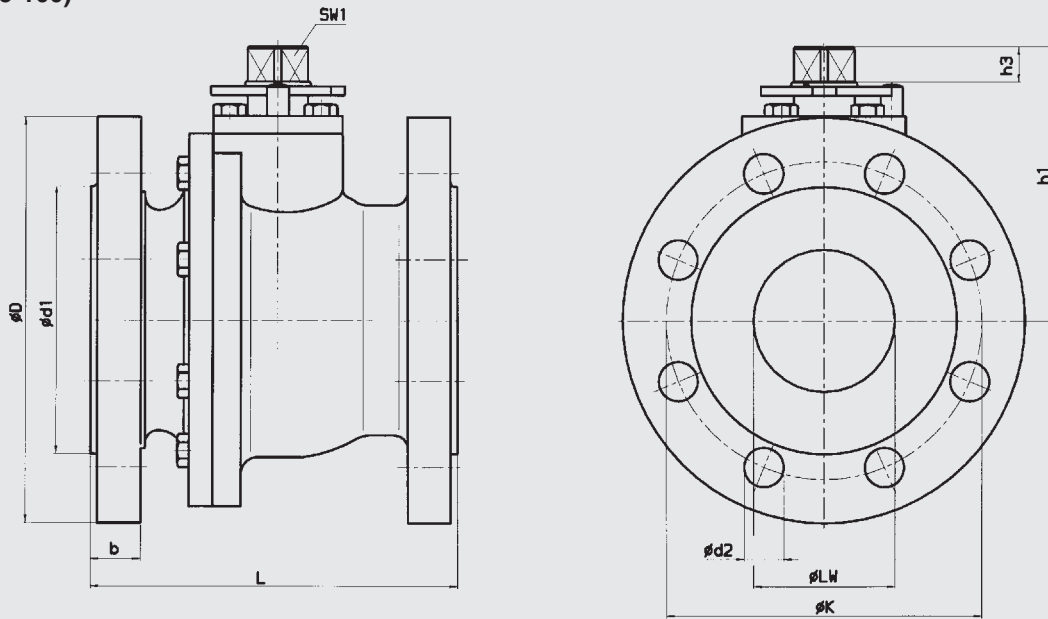
The handles can be displaced by 45° DN 65 -100.

AF width 22

Torque value

10 Nm

Dimensions
KHMFF (DN 65-100)



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

Z* = number of fixing holes

NOTE

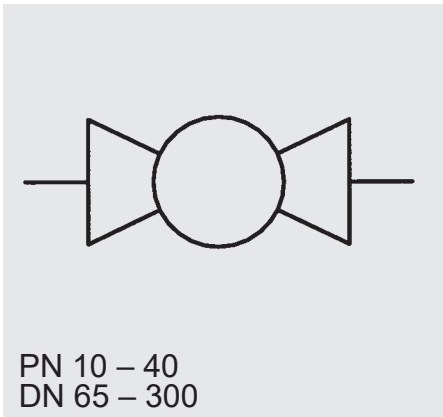
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Flanged ball valves KHFF

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

(DN)

Pressure range

(to DIN EN 1092)

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)

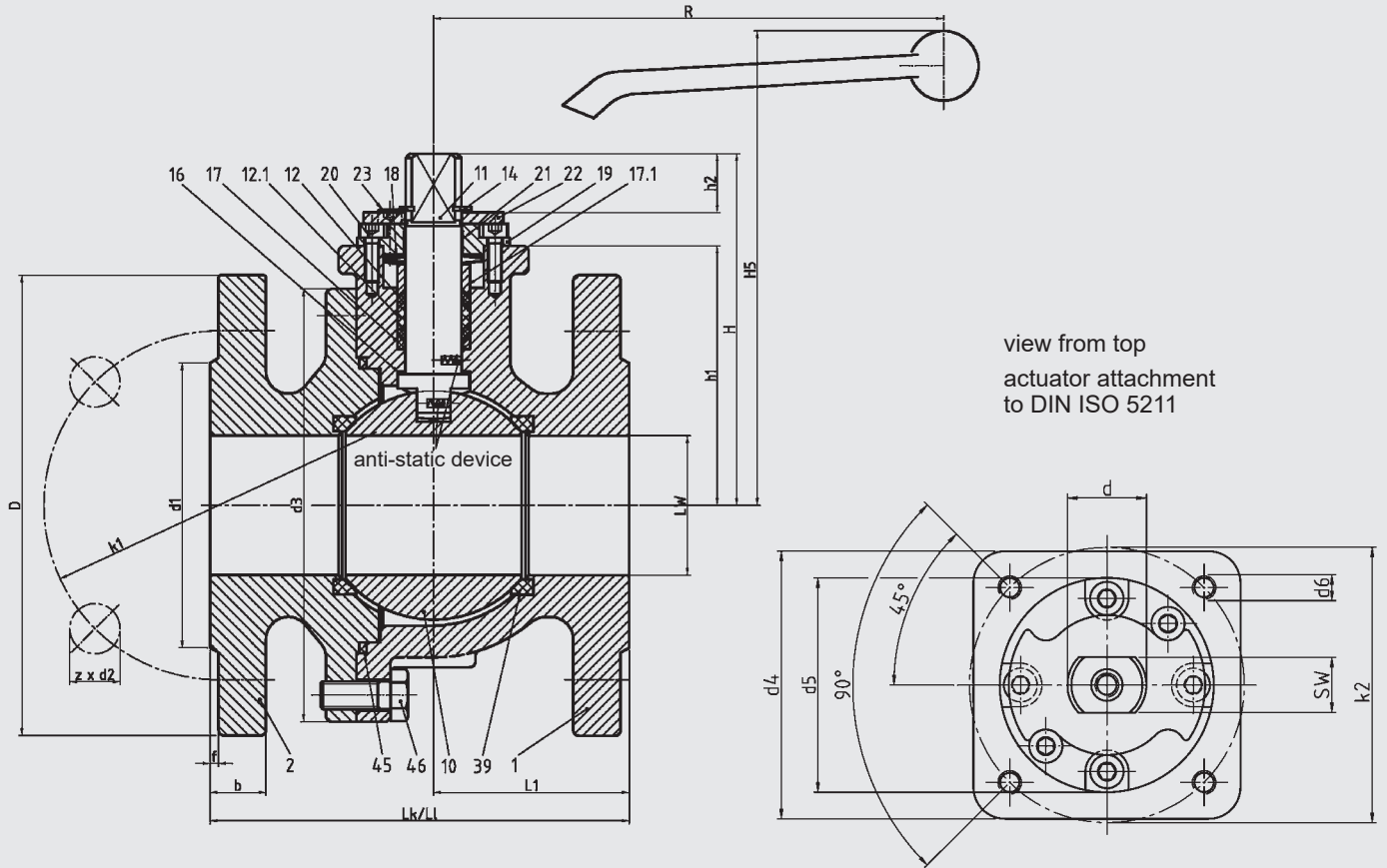
Handle

06 = steel bolt-on handle, cranked

Series

(determined by manufacturer)

KHFF



Item	Designation
1	Body 1
2	Body 2
10	Ball
11	Stem
12	Seal ring
12.1	Seal ring
14	Safety ring
16	Thrust ring
17	Pressure ring
17.1	Holder
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 _k *	L _l *	L1	d3	H	H5	h1	h2	d	SW	k1	d1	d2	d4	d5	d6	k2	R	D	b	f	z	Wt. kg L _k *	Wt. kg L _l *	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						235	24	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	106	112	F12	
200	10												240	212	22					340	26			161	173		
200	16	200	400	600	200	400	335	338	280	41.5	44	32	295	268	22	150	85	M12	125	800	340	26		2	164	176	F14
200	25												360	30	26					172	184						
200	40	250	450	-	225	492	390	-	330	51	48	36	320	285	30	175	100	M16	140	-	375	34		12	255	-	F14
250	10												350	320	22					405	26	257					
250	16	250	450	-	225	492	390	-	330	51	48	36	355	320	26	175	100	M16	140	-	405	26		12	272	-	F14
250	25												370	335	30					425	32	292					
250	40	300	500	-	250	575	425	-	365	51	48	36	385	345	33	175	100	M16	140	-	450	38		16	339	-	F14
300	10												400	370	22					445	26	340					
300	16	300	500	-	250	575	425	-	365	51	48	36	410	378	26	175	100	M16	140	-	460	28		16	340	-	F14
300	25												430	395	30					485	34	355					
300	40	300	500	-	250	575	425	-	365	51	48	36	450	410	33	175	100	M16	140	-	515	42		16	380	-	F14
300	40												450	410	33					515	42	380					

* L_k = short version - DIN EN 558-1 - series 27

* L_l = 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
Sealing surfaces:	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 washer. Belleville washers are completely encased and protected against ingress of dirt.
Operation:	By stem on two flats according to NAMUR recommendation.
Top flange:	DIN ISO 5211 for manual operation, pneumatic, electric or hydraulic rotary 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 Fire - Safe BS 6755, part 2 (DN 65 - DN 100) DIN DVGW Reg. No. NG-4313AP1147 DIN EN ISO 9001 - TÜV CERT -
Accessories:	Control spindle extension, locking and detented device, heating jackets and high quality sensors. (additional equipment on request)
Temperature range:	-50 °C to + 230 °C, depending on ball seats.
Areas of application:	Neutral gases and liquids, mineral oil products, alkalis, corrosive liquids and gases.

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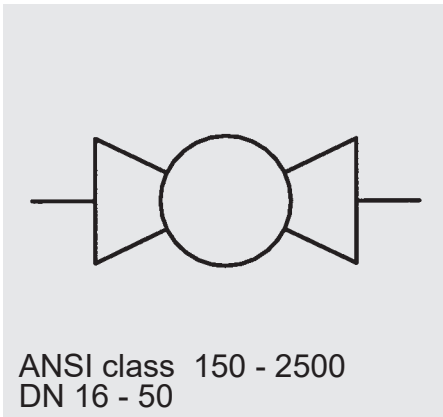
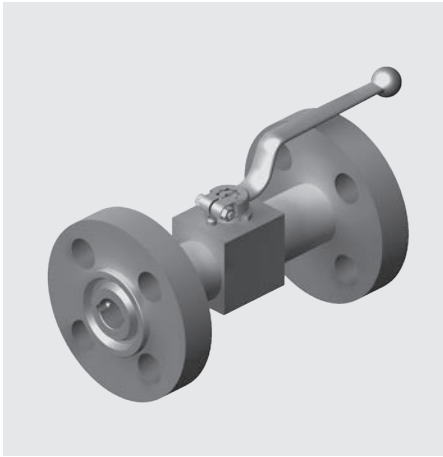
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ANSI flanged ball valve KHBF / KHMF

Model code

(also order example)

KHBF 20 A0150 ... 11141 02 X ...

Designation

KHBF = block type ball valve DN 16 – 25
KHMF = sleeve type ball valve DN 32 – 50

Nominal bore

(DN)

Pressure range

(to ASME / ANSI - B16.5)

Sealing surface

... = smooth seal face (need not be specified)
RTJ = seal face with O-ring

Materials

Housing, connection adapters

1 = steel
3 = stainless steel

Ball, control spindle

1 = steel
3 = stainless steel

Ball seal

1 = POM (polyacetal)
8 = PEEK

Soft seal

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

Flanges

1 = steel
3 = stainless steel

(other materials on request)

Handle

02 = aluminium clamped handle, cranked DN 16 - 25
06 = steel bolt-on handle, cranked DN 32 - 50

Series

(determined by manufacturer)

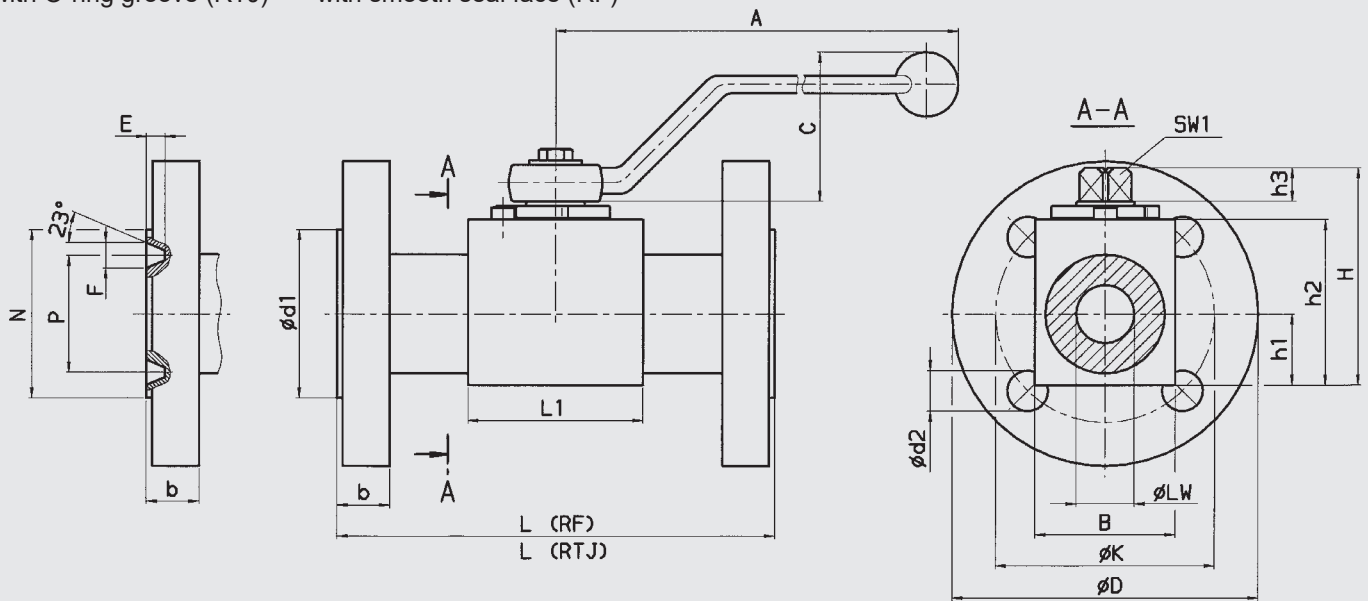
Surface protection

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

Dimensions

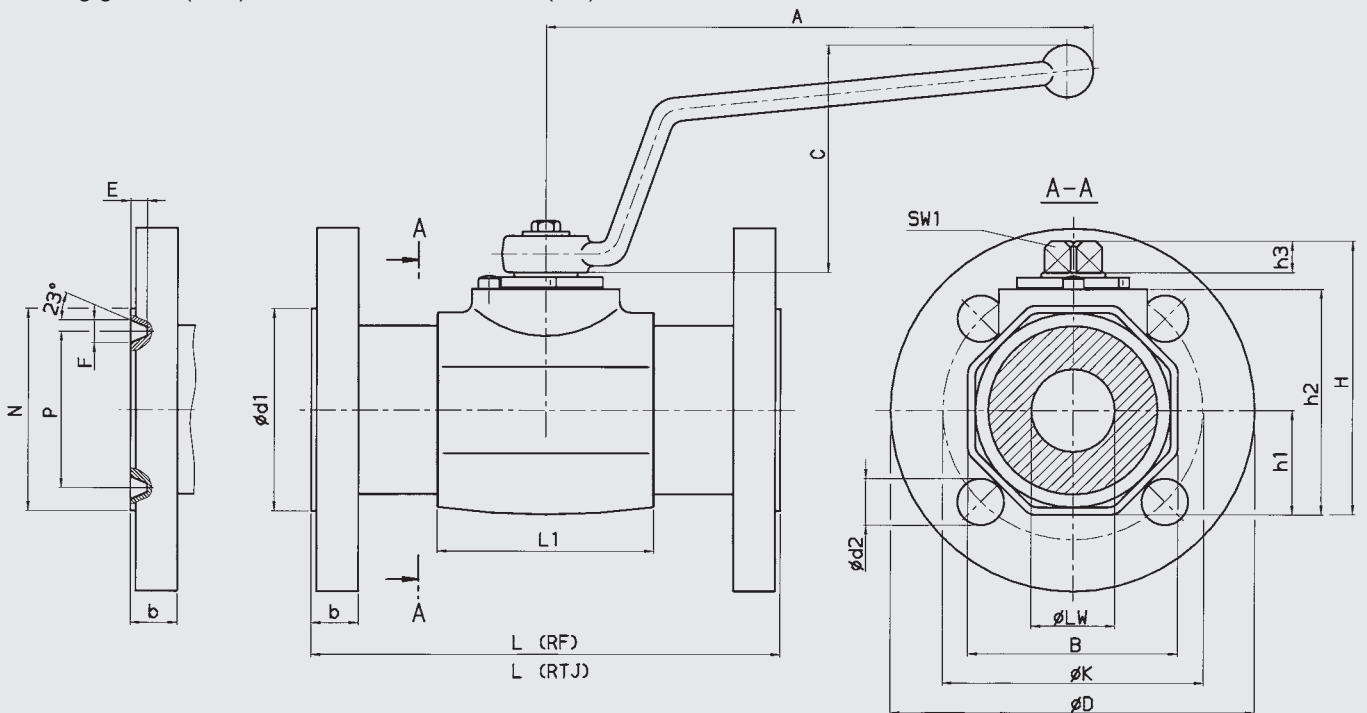
KHBF

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 [mm]												PN (ball valve) [bar]
	Type	DN	LW	L1	B	H	h1	h2	h3	SW1	A	C	
Block housing DN 16-25	KHBF-16	16 - 1/2"	15	47	38	62	19	45	11	12	169	59	400
	KHBF-20	20 - 3/4"	20	60	48	75	24.5	57	11	14	169	59	350
	KHBF-25	25 - 1"	25	65	57	81.5	28.5	64	11	14	169	59	350
Sleeve housing DN 32-50	KHMF-32	32 - 1 1/4"	30	84	75	103	38	85	12	17	228	80	350
	KHMF-40	40 - 1 1/2"	38	91	85	114	43	96	12	17	228	80	350
	KHMF-50	50 - 2"	48	100	105	131.5	53	113	12	17	228	80	350

Flange dimensions ANSI Class 150 [mm]

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 - 1 1/4"	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 - 1 1/2"	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 [mm]

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 - 1 1/4"	177.8	190.5	133.4	63.5	19	98.6	19	4	79.3	60.3	8.7	6.4	8.3
40 - 1 1/2"	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 [mm]

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 - 1 1/4"	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 - 1 1/2"	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 [mm]

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 - 1 1/4"	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 - 1 1/2"	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 [mm]

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 - 1 1/4"	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 - 1 1/2"	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

Face-to-face:	ASME / ANSI - B16.10
Flange dimensions:	ASME / ANSI - B16.5
Flange connections:	Rotating flanges
Mounting position:	No orientation restrictions
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to 400 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
Accessories:	All ball valves can be supplied with the following options: <ul style="list-style-type: none"> 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.

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

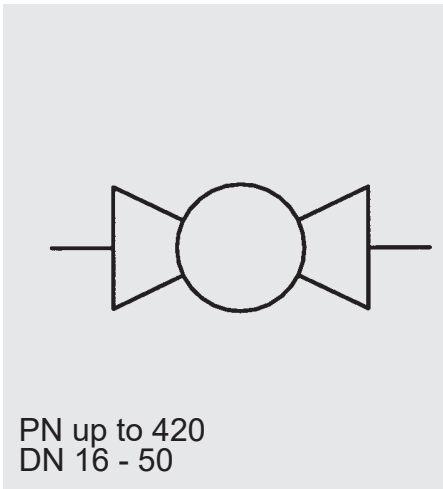
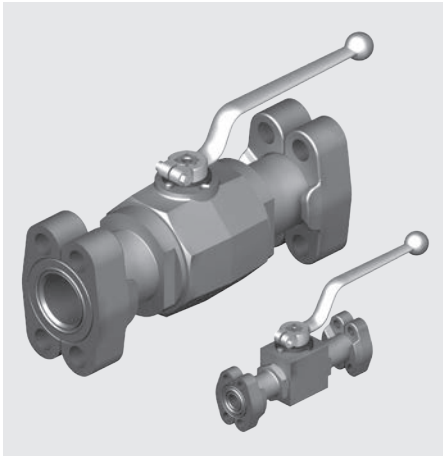
Tel.: +49 (0)6897 - 509-01

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

Internet: www.hydac.comE-Mail: accessories@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

(DN)

SAE - Flanged version

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

Sealing cups

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 (wrench size 17)

Series

(determined by manufacturer)

Surface protection

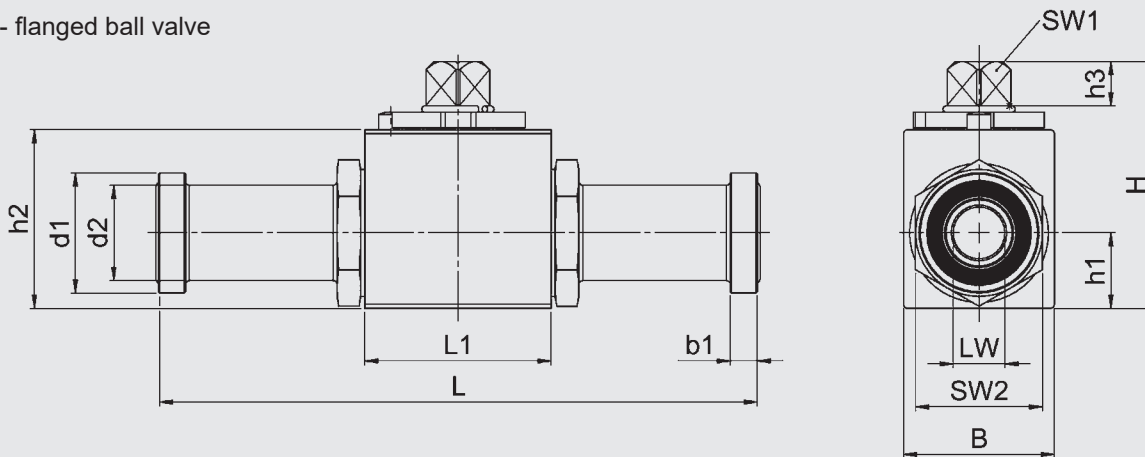
A = zinc-plated, chrome (VI)-free
ZN = zinc-nickel, chrome (VI)-free

Technical specifications

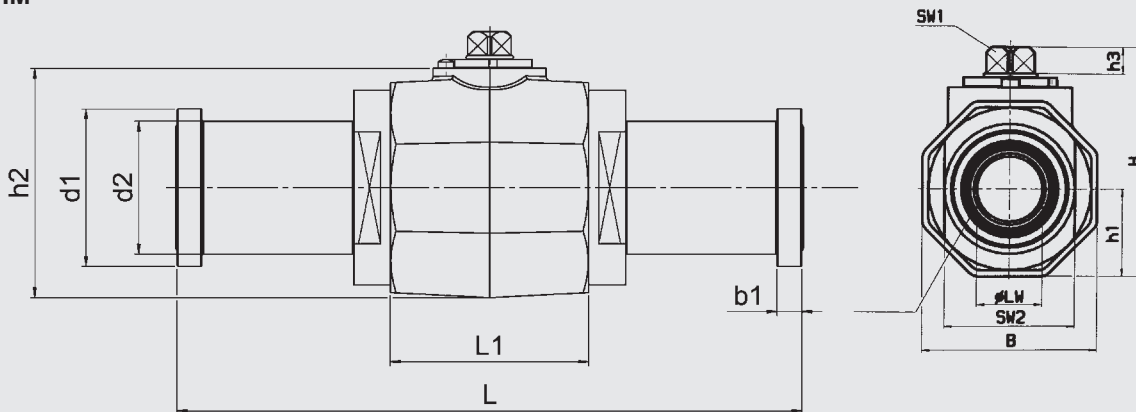
Type of construction:	Block type KHB DN 16 - 25 Sleeve type KHM DN 32 - 50
Flange dimensions:	SAE J518-1 + 2
Flange connections:	SAE split flanges
Mounting position:	No orientation restrictions
Ambient temperature, steel:	-10 °C to +80 °C
Temperature range NIRO/POM/Viton:	-20 °C to +80 °C
Temperature range NIRO/POM/NBR:	-25 °C to +80 °C
Temperature range NIRO/POM/NBR TT:	-40 °C to +80 °C
Nominal pressure:	up to 420 bar / 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

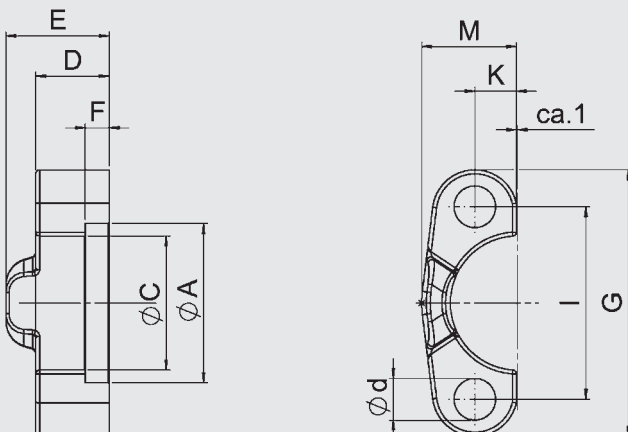
SAE - flanged ball valve
KHB



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	63.2	20	46	11	40	6.8	30.2	24	12	32	18.66x3.53
KHB-20-F3	3/4"	20	19	170	60	74.8	24.5	57	11.6	49	6.8	38.1	31.5	14	41	25x3.53
KHB-25-F3	1"	25	25	176.5	65	82.6	29.5	65	11.6	58	8	44.45	38	14	50	32.92x3.53
KHM-32-F3	1 1/4"	32	30	191.4	83.4	106.2	41	87.7	12	82	8	50.8	43	17	60	37.7x3.53
KHM-40-F3	1 1/2"	40	38	231	91	118.2	47	99.7	12	94	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	106.2	41	87.7	12	82	8	50.8	43	17	60	37.7x3.53
KHM-40-F3-XL	1 1/2"	40	38	320	91	118.2	47	99.7	12	94	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 [MPa]	Weight [kg]
KHB-16-F3	31	24.5	13	19	6.2	23	9	38.1	54	8.8	35	1.6
KHB-20-F3	38.9	32.1	14	22	6.2	26	11.1	47.6	65	10.5	35	2.1
KHB-25-F3	45.2	38.5	16	22	7.5	29.2	13.1	52.4	70	10.5	35	2.8
KHM-32-F3	51.6	43.7	14	22	7.5	36.3	15.1	58.7	80	12	28	4.7
KHM-40-F3	61.1	50.8	16	24	7.5	41.1	17.9	69.9	94	13.5	21	6.9
KHM-50-F3	72.2	62.7	16	26	9	48.2	21.4	77.8	102	13.5	21	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	63.2	20	46	11	40	7.8	31.8	24	12	32	18.66x3.53
KHB-20-F6	3/4"	20	19	170	60	74.8	24.5	57	11.6	49	8.8	41.3	32	14	46	25x3.53
KHB-25-F6	1"	25	25	198.5	65	82.6	29.5	65	11.6	58	9.5	47.6	38	14	50	32.92x3.53
KHM-32-F6	1 1/4"	32	30	223.4	83.4	106.2	41	87.7	12	82	10.3	54	44	17	60	37.7x3.53
KHM-40-F6	1 1/2"	40	38	281	91	118.2	47	99.7	12	94	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	106.2	41	87.7	12	82	10.3	54	44	17	60	37.7x3.53
KHM-40-F6-XL	1 1/2"	40	38	380	91	118.2	47	97.7	12	94	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

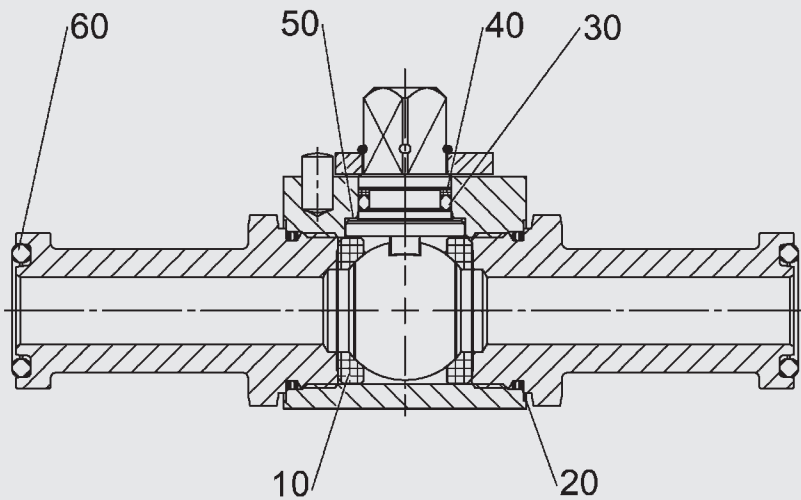
SAE split flanges - F6

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

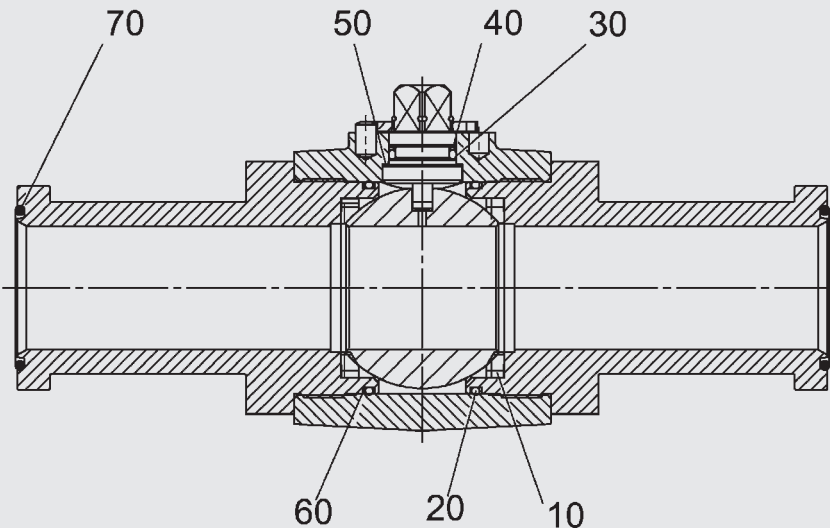
Spare parts

(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.

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.

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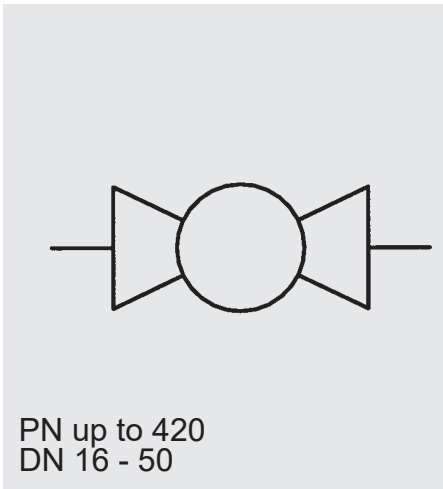
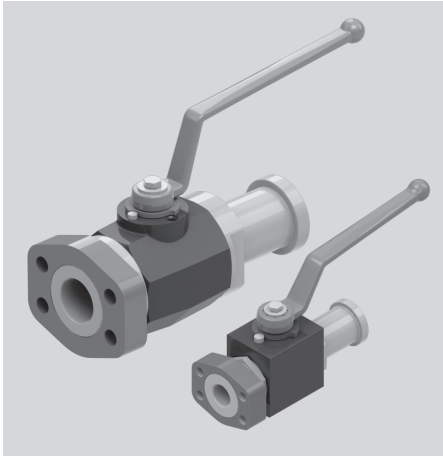
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Internet: www.hydac.com

E-Mail: accessories@hydac.com



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)

SAE flange type

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

Sealing cups

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 (wrench size 17)

Series

(determined by manufacturer)

Surface protection

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

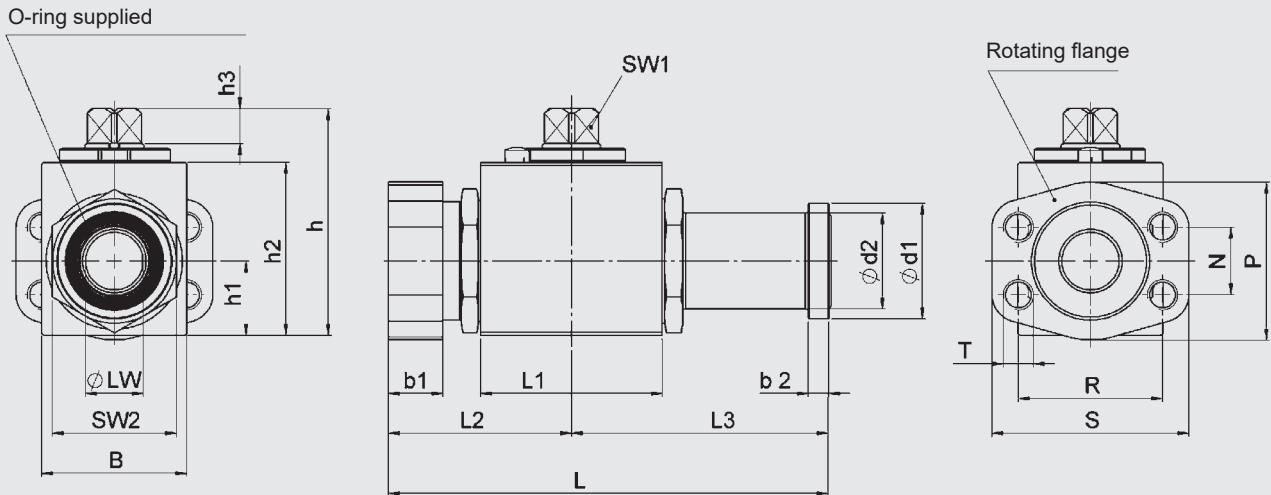
ZN = zinc-nickel, chrome (VI)-free

Technical specifications

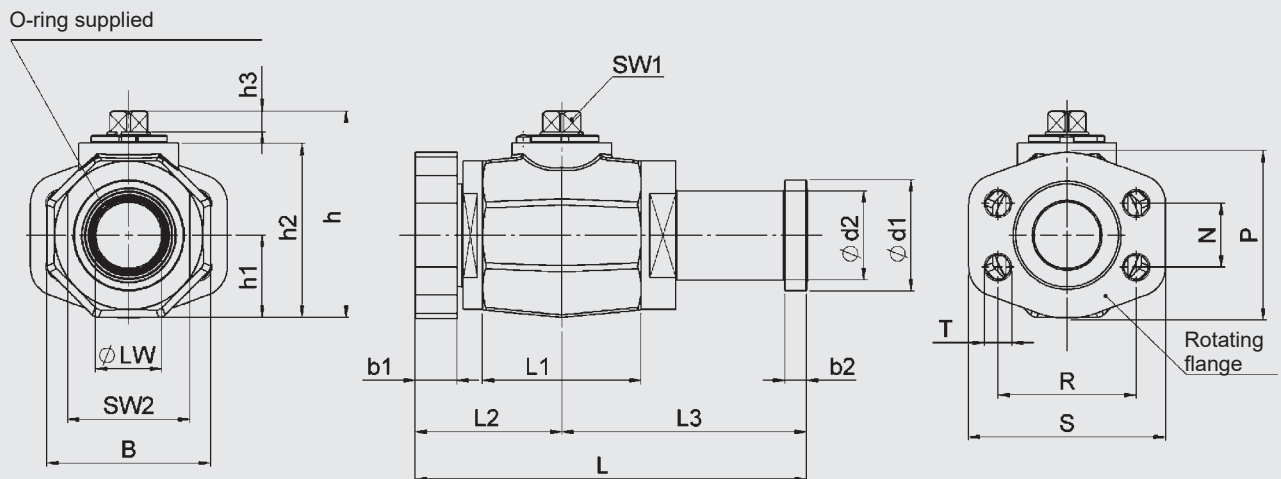
Type of construction:	Block type KHB DN 16 - 25 Sleeve type KHM DN 32 - 50
Flange dimensions:	SAE J518-1 + 2
Flange connections:	SAE threaded flange, SAE split flange
Mounting position:	No orientation restrictions
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to 420 bar / 6000 psi
Operating 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

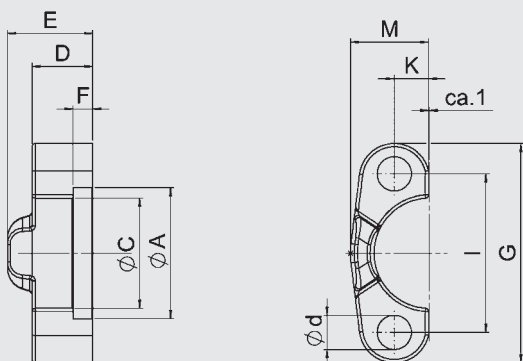
SAE threaded/split flange ball valve KHB



KHM



SAE split flange



KHBGS / KHMGS - F3

Type	SAE size	DN [mm]	LW [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	h [mm]	h1 [mm]	h2 [mm]	h3 [mm]	B [mm]	b1 [mm]	b2 [mm]	d1 [mm]	d2 [mm]	SW1 [mm]	SW2 [mm]	Weight [kg]
KHBGS-16-F3-XL	1/2"	16	13	137	47	52	85	63.2	20	46	11	40	16	6.8	30.2	24	12	32	1.5
KHBGS-20-F3-XL	3/4"	20	19	160.5	60	60.5	100	74.8	24.5	57	11.2	49	18	6.8	38.1	31.5	14	41	2.3
KHBGS-25-F3-XL	1"	25	25	181.5	65	74	107.5	82.6	29.5	65	11.2	58	19	8	44.45	38	14	50	3.2
KHMGS-32-F3-XL	1 1/4"	32	30	223	83.4	86	137	106.2	41	87.7	12	82	21	8	50.8	43	17	60	5.4
KHMGS-40-F3-XL	1 1/2"	40	38	248.5	91	88.5	160	118.2	47	99.7	12	94	25	8	60.35	50	17	70	7.5
KHMGS-50-F3-XL	2"	50	48	259.5	100	98	161.5	134.2	55.5	115.7	12	111	26	9.6	71.4	62	17	80	10.5

SAE split flange – F3

Type	A [mm]	C [mm]	D [mm]	E [mm]	F [mm]	M [mm]	K [mm]	I [mm]	G [mm]	d [mm]	Nominal pressure [MPa]	O-ring [mm]
KHBGS-16-F3-XL	31	24.3	13	19	6.2	21.8	8	38.1	53.1	9	35	18.66 x 3.53
KHBGS-20-F3-XL	38.9	32.1	14	22	6.2	26	11.1	47.6	65	10.5	35	25 x 3.53
KHBGS-25-F3-XL	45.2	38.5	16	22	7.5	29.2	13.1	52.4	70	10.5	35	32.92 x 3.53
KHMGS-32-F3-XL	51.6	43.7	14	22	7.5	36.3	15.1	58.7	80	12	28	37.7 x 3.53
KHMGS-40-F3-XL	61.1	50.8	16	24	7.5	41.1	17.9	69.9	94	13.5	21	47.22 x 3.53
KHMGS-50-F3-XL	72.2	62.7	16	26	9	48.2	21.4	77.8	102	13.5	21	56.74 x 3.53

SAE threaded flange – F3

Type	S [mm]	P [mm]	R [mm]	N [mm]	T	Nominal pressure [MPa]
KHBGS-16-F3-XL	54	46	38.1	17.5	M8	35
KHBGS-20-F3-XL	65	52	47.6	22.3	M10	35
KHBGS-25-F3-XL	70	59	52.4	26.2	M10	35
KHMGS-32-F3-XL	79.5	73	58.7	30.2	M10	28
KHMGS-40-F3-XL	93.8	83	69.9	35.7	M12	21
KHMGS-50-F3-XL	102	97	77.8	42.9	M12	21

KHBGS / KHMGS - F6

Type	SAE size	DN [mm]	LW [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	h [mm]	h1 [mm]	h2 [mm]	h3 [mm]	B [mm]	b1 [mm]	b2 [mm]	d1 [mm]	d2 [mm]	SW1 [mm]	SW2 [mm]	Weight [kg]
KHBGS-16-F6-XL	1/2"	16	13	142	47	52	90	63.2	20	46	11	40	16	7.8	31.8	24	12	32	1.7
KHBGS-20-F6-XL	3/4"	20	19	160.5	60	60.5	100	74.8	24.5	57	11.2	49	19	8.8	41.3	32	14	46	2.9
KHBGS-25-F6-XL	1"	25	25	199	65	74	125	82.6	29.5	65	11.2	58	24	9.5	47.6	38	14	50	4.3
KHMGS-32-F6-XL	1 1/4"	32	30	247	83.4	86	161	106.2	41	87.7	12	82	27	10.3	54	44	17	60	7.2
KHMGS-40-F6-XL	1 1/2"	40	38	278.5	91	88.5	190	118.2	47	99.7	12	94	30	12.6	63.5	51	17	70	10.5
KHMGS-50-F6-XL	2"	50	48	290.5	100	98	192.5	134.2	55.5	115.7	12	111	35	12.6	79.4	67	17	80	16.0

SAE split flange – F6

Type	A [mm]	C [mm]	D [mm]	E [mm]	F [mm]	M [mm]	K [mm]	I [mm]	G [mm]	d [mm]	Nominal pressure [MPa]		O-ring [mm]
											Steel	Stainless steel	
KHBGS-16-F6-XL	32.5	24.6	16	22	7.2	22.6	8	40.5	55.6	9	42	40	18.66 x 3.53
KHBGS-20-F6-XL	42	32.5	19	28	8.3	30	11.9	50.8	72	10.5	42	35	25 x 3.53
KHBGS-25-F6-XL	48.4	38.9	24	32	9	35	13.9	57.2	81	13	42	35	32.92 x 3.53
KHMGS-32-F6-XL	54.8	44.5	27	38	9.8	39	15.9	66.7	96	15	42	35	37.7 x 3.53
KHMGS-40-F6-XL	64.3	51.6	30	42	12.1	48	18.3	79.4	113	17	42	35	47.22 x 3.53
KHMGS-50-F6-XL	80.2	67.6	37	52	12.1	57	22.2	96.8	134	21	42	35	56.74 x 3.53

SAE threaded flange – F6

Type	S [mm]	P [mm]	R [mm]	N [mm]	T	Nominal pressure [MPa]	
						Steel	Stainless steel
KHBGS-16-F6-XL	56.5	48	40.5	18.2	M8	42	40
KHBGS-20-F6-XL	71.4	60	50.8	23.8	M10	42	35
KHBGS-25-F6-XL	81	70	57.2	27.8	M12	42	35
KHMGS-32-F6-XL	95.3	78	66.6	31.8	M14	42	35
KHMGS-40-F6-XL	113	95	79.3	36.5	M16	42	35
KHMGS-50-F6-XL	133	114	96.8	44.5	M20	42	35

NOTE

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Subject to technical modifications and errors.

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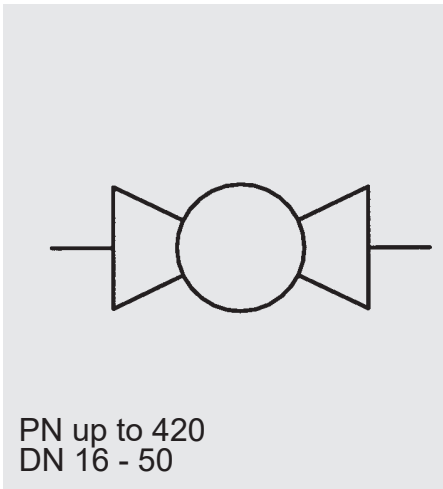
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Fax: +49 (0)6897 - 509-1009

Internet: www.hydac.com

E-Mail: accessories@hydac.com



SAE threaded flange ball valves

KHBG-F3/6 / KHMG-F3/6

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 (DN)

SAE flange type

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

Sealing cups

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 (wrench size 17)

Series

(determined by manufacturer)

Surface protection

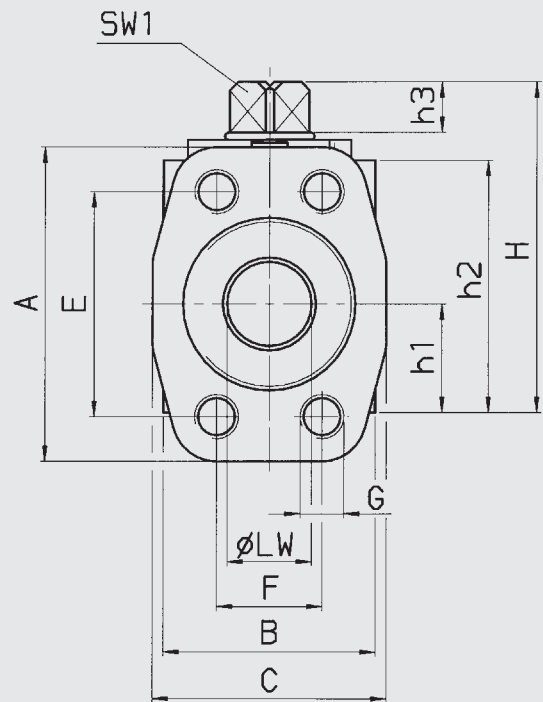
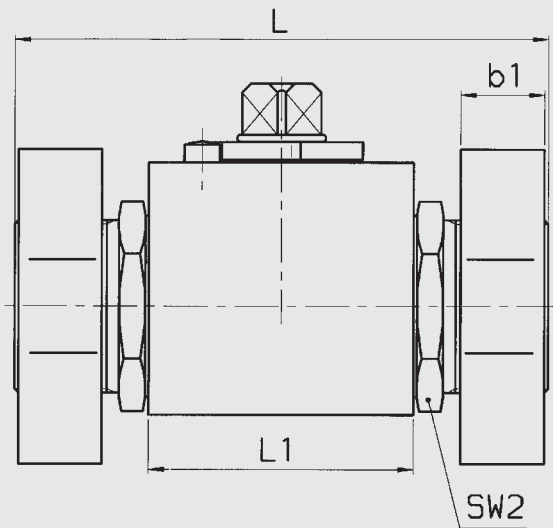
A = zinc-plated, chrome (VI)-free
ZN = zinc-nickel, chrome (VI)-free

Technical specifications

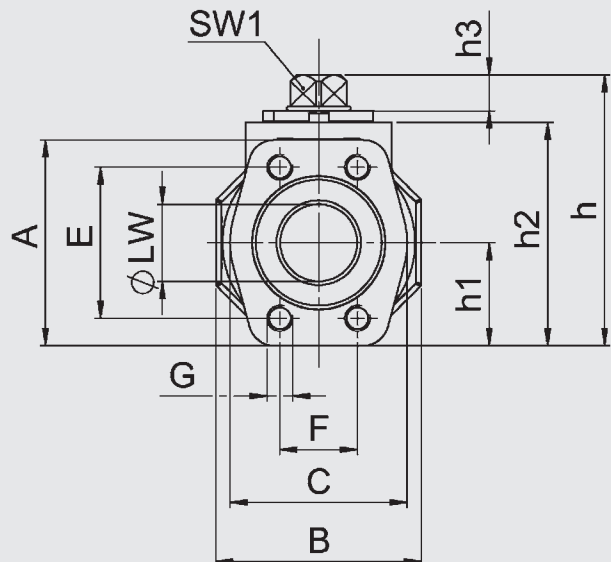
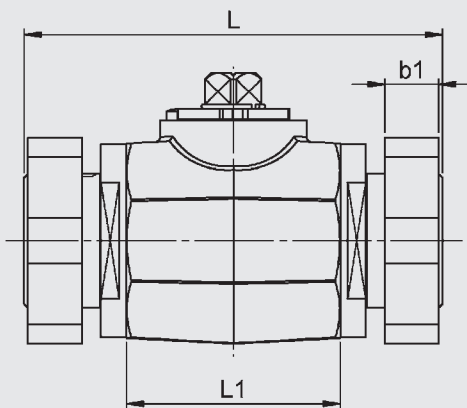
Type of construction:	Block type KHBG DN 16 - 25 Sleeve type KHMG DN 32 - 50
Type of connection:	SAE J518-1 + 2
Flange connections:	SAE threaded flange
Mounting position:	No orientation restrictions
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to 420 bar / 6000 psi
Operating fluids:	Mineral 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, 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	63.2	20	46	11	40	12	32
KHBG-20-F3	3/4"	20	19	121	60	74.8	24.5	57	11.6	49	14	41
KHBG-25-F3-XL	1"	25	25	148	65	82.6	29.5	65	11.6	58	14	50
KHMG-32-F3-XL	1 1/4"	32	30	172	83.4	106.2	41	87.7	12	82	17	60
KHMG-40-F3-XL	1 1/2"	40	38	177	91	118.2	47	99.7	12	94	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 [MPa]		Weight [kg]
							Steel	Stainless steel	
KHBG-16-F3	16	54	46	38.1	17.5	M8	35		1.1
KHBG-20-F3	18	65	52	47.6	22.3	M10	35		1.9
KHBG-25-F3-XL	19	70	59	52.4	26.2	M10	35		2.4
KHMG-32-F3-XL	21	79.5	73	58.7	30.2	M10	28		3.8
KHMG-40-F3-XL	25	93.8	83	69.9	35.7	M12	21		6.3
KHMG-50-F3-XL	26	102	97	77.8	42.9	M12	21		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	63.2	20	46	11	40	12	32
KHBG-20-F6	3/4"	20	19	121	60	74.8	24.5	57	11.6	49	14	46
KHBG-25-F6-XL	1"	25	25	148	65	82.6	29.5	65	11.6	58	14	50
KHMG-32-F6-XL	1 1/4"	32	30	172	83.4	106.2	41	87.7	12	82	17	60
KHMG-40-F6-XL	1 1/2"	40	38	177	91	118.2	47	99.7	12	94	17	70
KHMG-50-F6-XL	2"	50	48	196	100	134.2	55.5	115.7	12	111	17	80

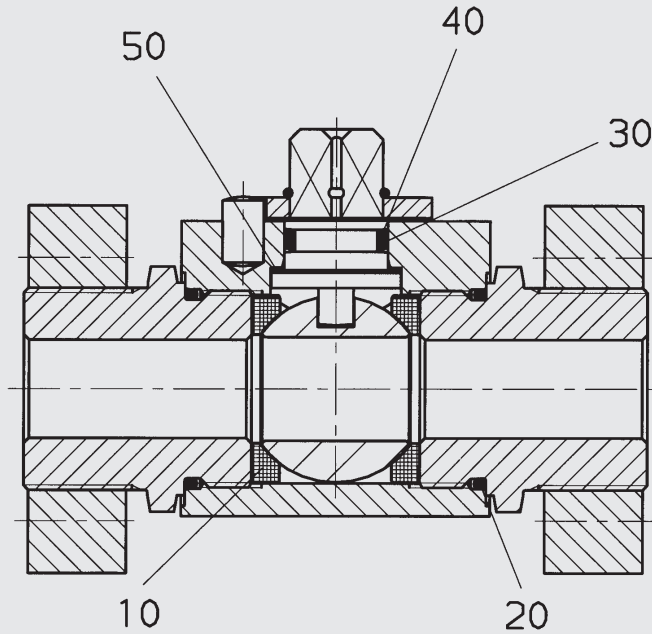
Flange F6

Type	b1	A	C	E	F	G	Nominal pressure [MPa]		Weight [kg]
							Steel	Stainless steel	
KHBG-16-F6	16	56.5	48	40.5	18.2	M8	42	40	1.2
KHBG-20-F6	19	71.4	60	50.8	23.8	M10	42	35	2.0
KHBG-25-F6-XL	24	81	70	57.2	27.8	M12	42	35	3.0
KHMG-32-F6-XL	27	95.3	78	66.6	31.8	M14	42	35	4.7
KHMG-40-F6-XL	30	113	95	79.3	36.5	M16	42	35	7.3
KHMG-50-F6-XL	35	133	114	96.8	44.5	M20	42	35	11.5

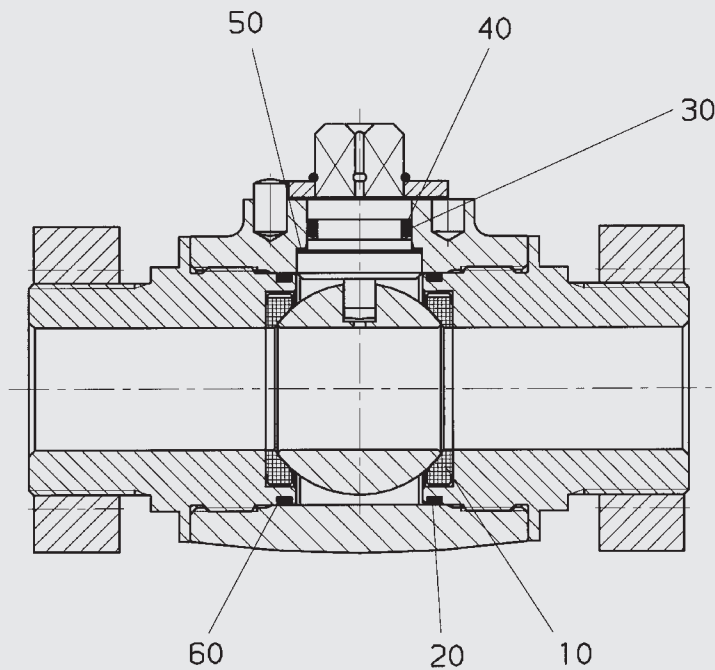
Spare parts

(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

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Subject to technical modifications and errors.

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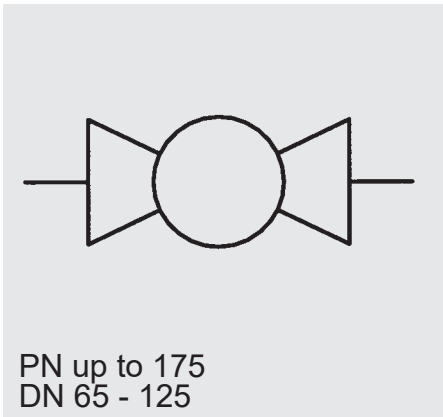
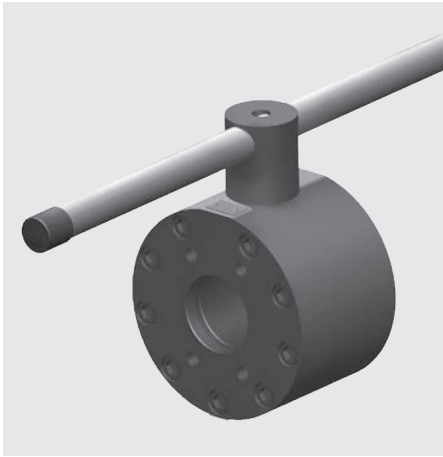
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E-Mail: accessories@hydac.com

SAE fixed flange ball valves KHF3



PN up to 175
DN 65 - 125

Model code (also order example)

KHF3 65 1114 05 X A ...

Designation

KHF3 = fixed flange ball valve - DN 65 - 125

Nominal bore

(DN)

Materials

Housing, housing flange

- 1 = steel
- 3 = stainless steel
- 5 = steel, ST52-3

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)

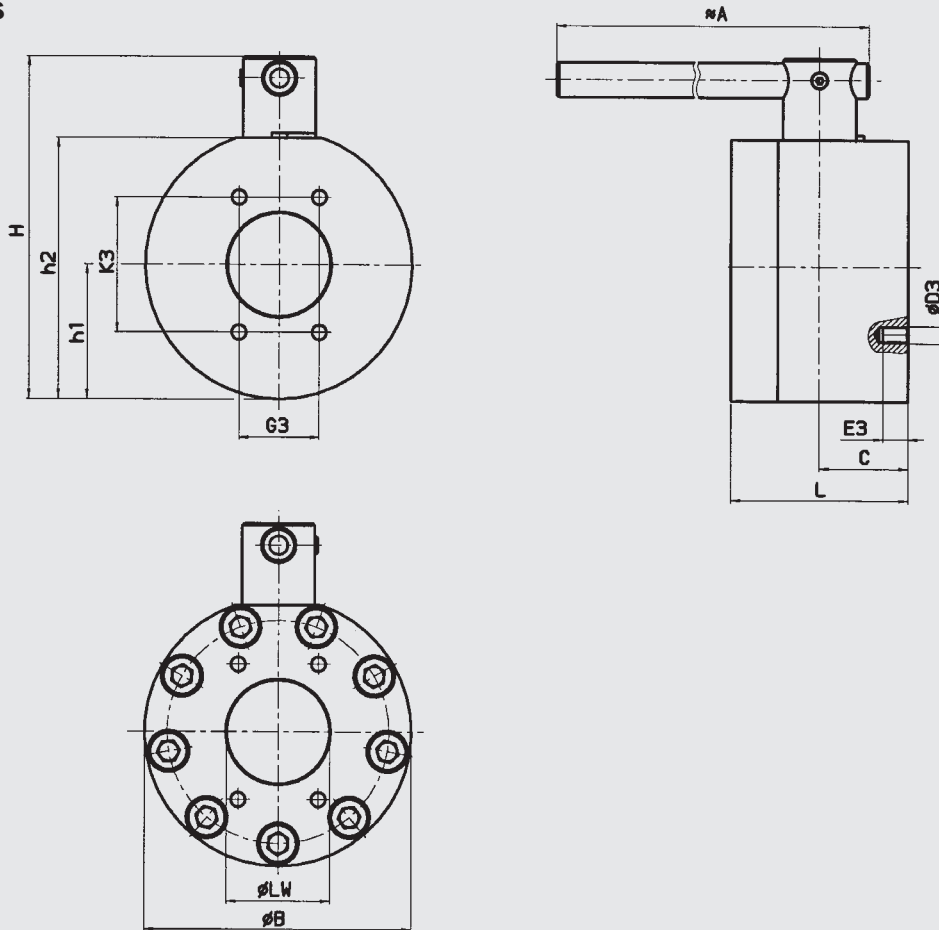
Surface protection

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

Version

- ... = metric connection thread (need not be specified)
- UNC = UNC connection thread

Dimensions KHF3



Type of connection			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) SAE - F3	65	2 1/2"	63	150	75	276.5	99	193	198	900	175	36
	80	3"	76	150	75	289	105	205	210	900	160	38.5
	100	4"	100	170	85	334.5	129	251	258	900	35	60.6
	125	5"	118	210	105	371	147.5	287.5	295	900	35	93.6

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	152.4	92.1	5/8-11 UNC	30

Technical specifications

Mounting position:	No orientation restrictions
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 175 (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 controls Lock

NOTE

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Subject to technical modifications and errors.

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Hirschbachstr. 2

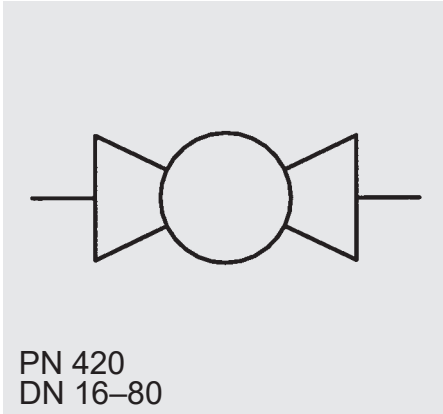
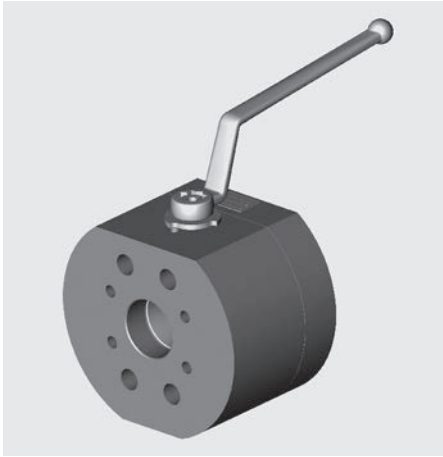
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PN 420
DN 16–80

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

(DN)

Materials

Housing, connection adapters

- 1 = steel
- 3 = stainless steel
- 5 = steel, ST 52-3

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

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

Technical specifications

Types of connection:	SAE fixed flanges to ISO 6162, tables 1 and 2 (SAE J 518 c), either with metric or UNC thread		
Mounting position:	No orientation restrictions		
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		
Accessories:	All ball valves can be supplied with the following options: Bypass Actuator Limit controls Lock		

Metric thread version

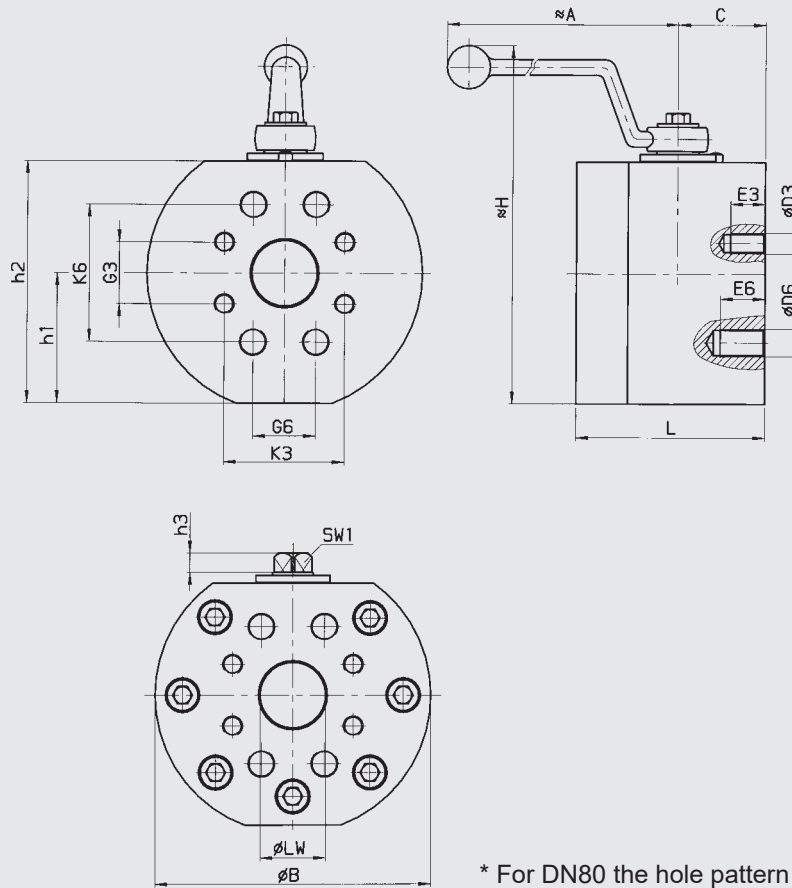
Type of connection	SAE Size	Nominal bore / Type	Nominal bore DN	Nominal pressure PN [bar] *	Weight [kg]
Fixed flange connection ISO 6162 tables 1+2 (SAE J 518 c) F3/F6	1/2 "	KHF3/6 - 16 - 1114-16X-A	16	420	2.5
	3/4 "	KHF3/6 - 20 - 1114-16X-A	20	420	3.9
	1 "	KHF3/6 - 25 - 1114-16X-A	25	420	6.0
	1 1/4 "	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

Type of connection	SAE Size	Nominal bore / Type	Nominal bore DN	Nominal pressure PN [bar] *	Weight [kg]
Fixed flange connection ISO 6162 tables 1+2 (SAE J 518 c) F3/F6	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

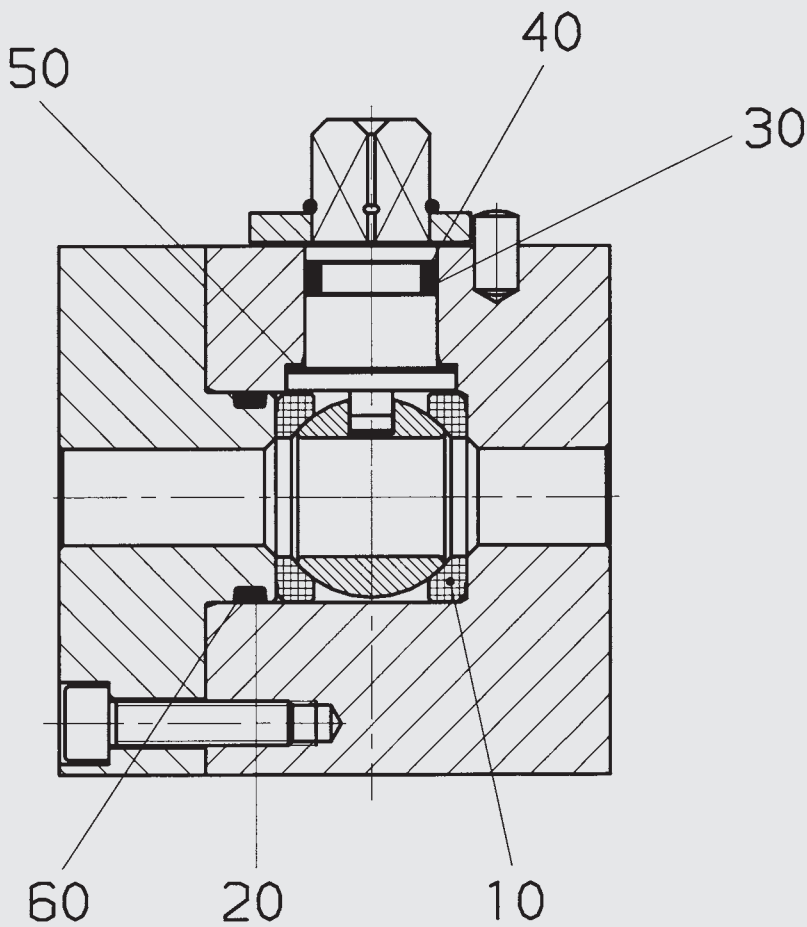
Type	K3	G3	D3	E3	K6	G6	D6	E6
KHF3/6-16	38.1	17.5	M8	16	40.5	18.2	M8	16
KHF3/6-20	47.6	22.3	M10	18	50.8	23.8	M10	18
KHF3/6-25	52.4	26.2	M10	18	57.2	27.8	M12	21
KHF3/6-32 / M12	58.7	30.2	M10	18	66.6	31.8	M12	21
KHF3/6-32 / M14	58.7	30.2	M10	18	66.6	31.8	M14	21
KHF3/6-40	69.9	35.7	M12	20	79.3	36.5	M16	26
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)



NOTE

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Subject to technical modifications and errors.

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

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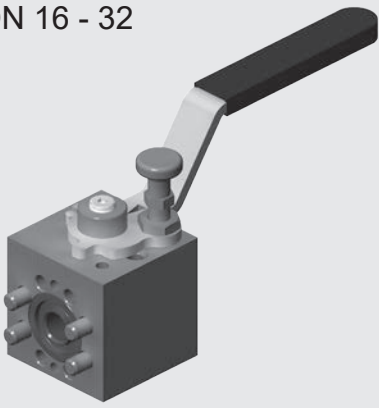
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Fax: +49 (0)6897 - 509-1009

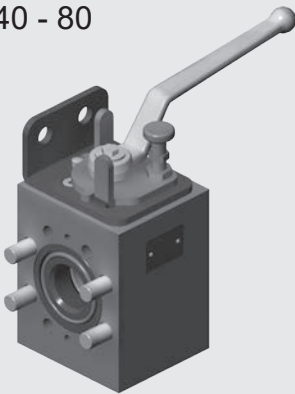
Internet: www.hydac.com

E-Mail: accessories@hydac.com

DN 16 - 32



DN 40 - 80



PN up to 420
DN 16 - 80

Direct flanged ball valve KHDF3 / KHDF6

Model code

(also order example)

KHDF3 16 1114 18X A ...

Designation

KHDF3 = direct flange ball valve 3000 psi
KHDF6 = direct flange ball valve 6000 psi

Nominal bore

(DN)

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 DN 16 - 32
- 16 = steel bolt-on handle, cranked DN 40 - 80

Surface protection

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

Option

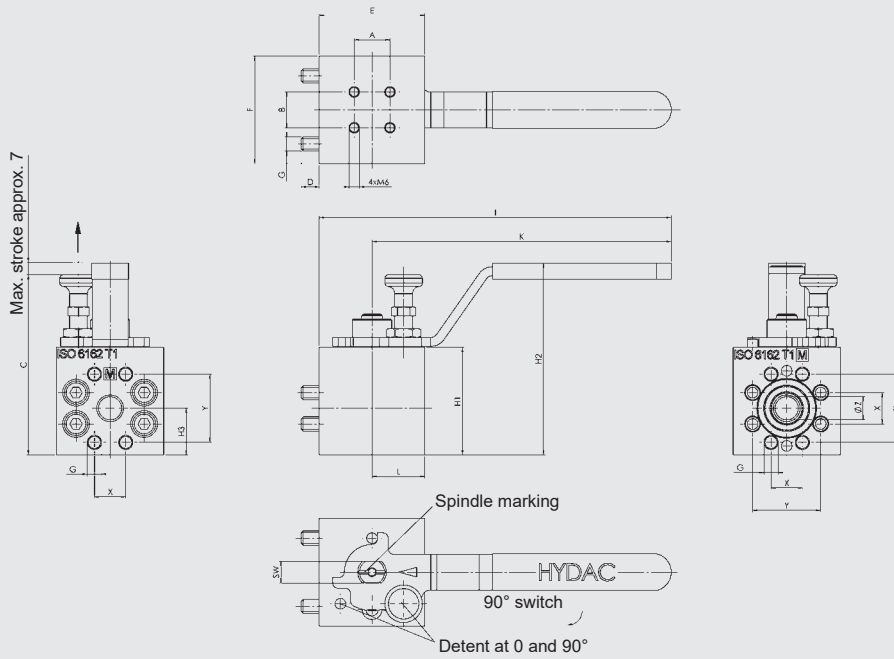
- SO 760 = ball valve can be locked in open and closed position using padlock, padlock not supplied
- I-1.300 = adapted for proximity switch M12, monitoring of ball valve in either open, closed or both positions
- I-1.200 = with standard M12 proximity switch, monitoring of ball valve in open position
- I-3.200 = with 2 standard M12 proximity switches, monitoring of ball valve in both positions

Note

For DN40-50-65 the ball has dual bearings (EASY SWITCH)
Detent on open and closed positions as standard
4 fastening screws supplied

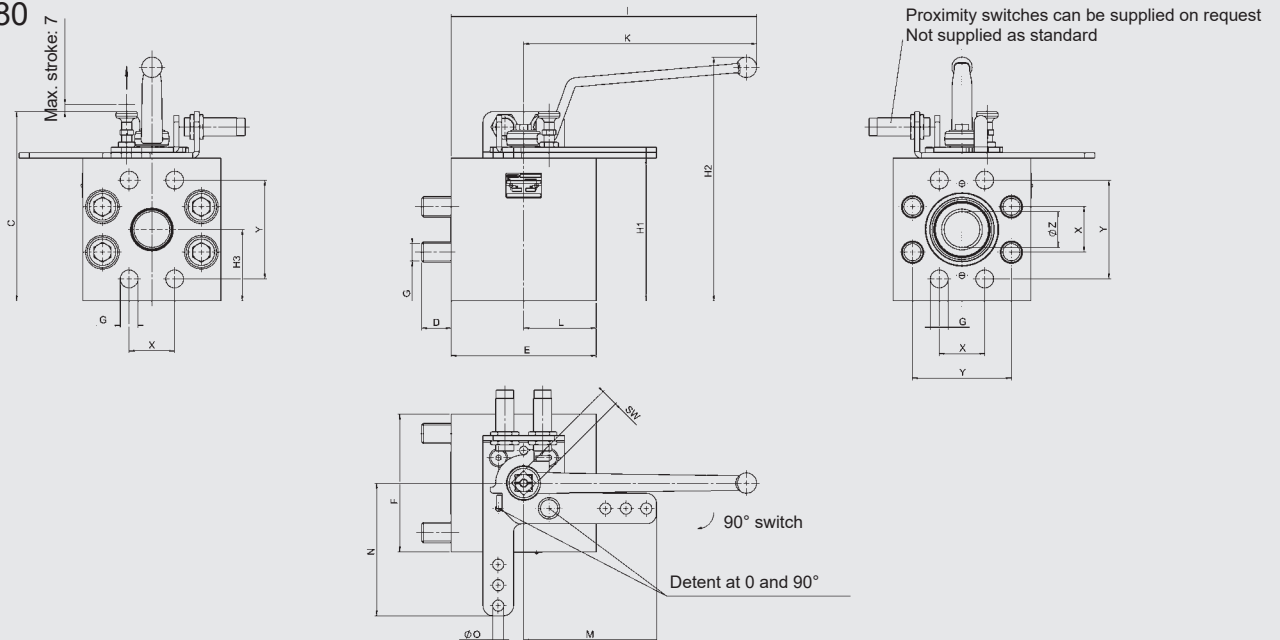
Dimensions

DN 16 - 32



Type	A	B	C	D	E	F	G	H1	H2	H3	I	K	L	X	Y	SW	Z	PN	
																		MPa	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	35	5000
KHDF3-20	20	20	111	12.6	68	70	M10	70	118	32.5	206	170	32	22.3	47.6	14	19	35	5000
KHDF3-25	25	25	116	11.6	69	75	M10	75	123	37.5	206	170	33	26.2	52.4	14	20	35	5000
KHDF3-32	25	25	126	12	81	85	M10	85	133	42.5	209	170	42	30.2	58.7	14	25	28	4000
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	42	6000
KHDF6-20	20	20	116	15	71	75	M10	75	123	37.5	206	170	35	23.8	50.8	14	19	42	6000
KHDF6-25	25	25	126	18	81	85	M12	85	133	42.5	209	170	42	27.8	57.2	14	25	42	6000
KHDF6-32	25	25	141	20	81	100	M12	100	147.5	49.5	209	170	42	31.8	66.6	14	25	42	6000
KHDF6-32	25	25	141	19	81	100	M14	100	147.5	49.5	209	170	42	31.8	66.6	14	25	42	6000

DN40 - 80



Type	C	D	E	F	G	H1	H2	H3	I	K	L	X	Y	SW	Z	PN		Proximity switch
																MPa	PSI	
KHDF3-40	165.5	19	84	94	M12	120	190.7	60	208	169	45	35.7	69.9	14	27	21	3000	M12
KHDF3-50	185.4	19	94	102	M12	140	238.7	70	275	228	47	42.9	77.8	17	35	21	3000	M12
KHDF3-65	200.4	19	114	120	M12	155	253.7	77.5	286	228	56	50.8	88.9	17	45	17.5	2500	M12
KHDF3-80	217.0	25.5	162	158	M16	171	258.0	85.5	381	300	81	61.9	106.4	22	55	16	2300	M18
KHDF6-40	165.4	27	120	115	M16	120	190.7	60	229	169	60	36.5	79.3	14	27	42	6000	M12
KHDF6-50	185.5	29	142	135	M20	140	238.8	70	299	228	71	44.5	96.8	17	35	42	6000	M12

Technical specifications

Types of connection	SAE fixed flanges to SAE J 518-1 + 2
Mounting position	No orientation restrictions
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

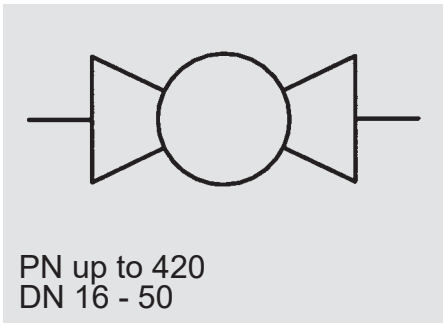
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Subject to technical modifications and errors.

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E-Mail: accessories@hydac.com





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 bore
(DN)

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 bolt-on handle, cranked, fitted

Series

(determined by manufacturer)

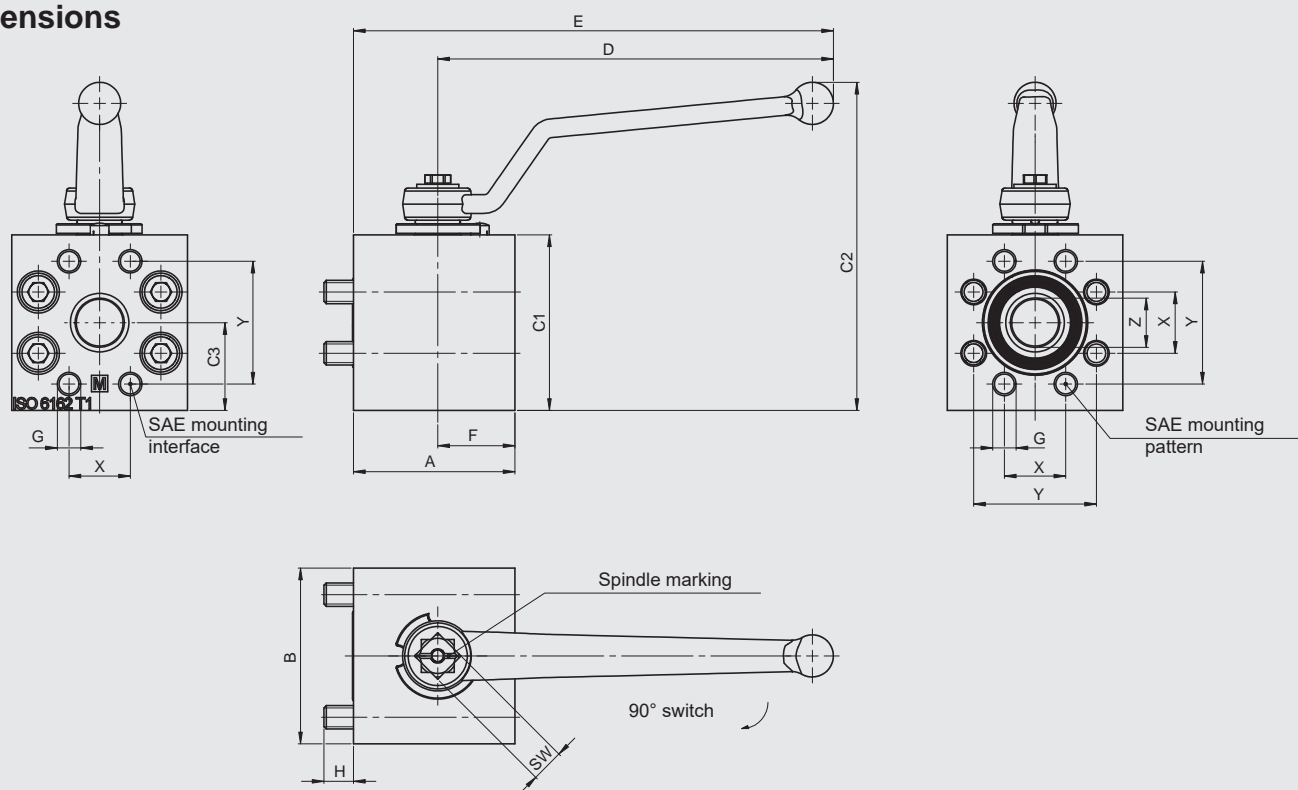
Surface protection

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

Technical specifications

Types of connection:	SAE fixed flanges to ISO 6162, Table 1 and 2 (SAE J 518c)
Mounting position:	No orientation positions
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up 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
Spare parts:	Seal kits available on request
Accessories:	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

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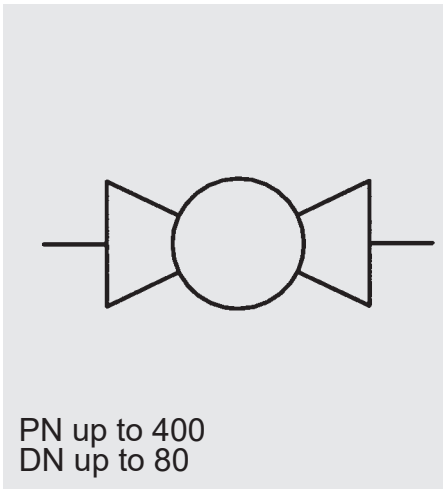
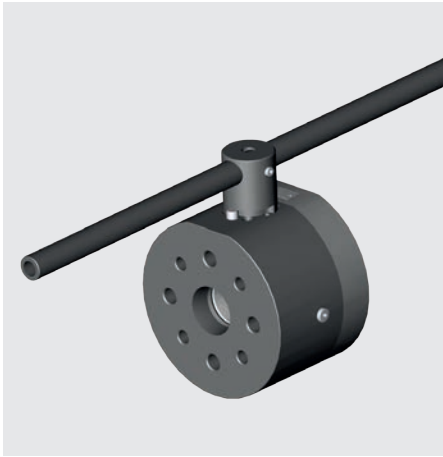
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Internet: www.hydac.com

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ISO flanged ball valves KHF



Model code

(also example order)

KHF 100 ISO400 DN80 5314 05 X A

Designation

KHF = fixed flange ball valve

Size

(BG)

Type of connection

ISO 400 = ISO6164, p_{max} 400 bar

ISO 250/400 = ISO6164, p_{max} 250/400 bar

Nominal bore

(DN)

Materials

Housing, housing flange

- | | | |
|---|-------------------|-------------|
| 1 | = steel | BG 16 - 50 |
| 3 | = stainless steel | BG 16 - 100 |
| 5 | = steel ST52-3 | BG 65 - 100 |

Ball, control spindle

- | | | |
|---|-------------------|-------------|
| 1 | = steel | BG 16 - 50 |
| 3 | = stainless steel | BG 65 - 100 |

Sealing cups

- | | |
|---|-------|
| 1 | = POM |
|---|-------|

Control spindle seal and connection seal

- | | |
|---|---------------|
| 4 | = FKM (Viton) |
|---|---------------|

Handle

- | | | |
|----|---|-------------|
| 05 | = steel bolt-on handle, straight | BG 65 - 100 |
| 16 | = steel bolt-on handle, cranked, fitted | BG 16 - 25 |
| 18 | = stainless steel bolt-on handle, cranked, fitted | BG 16 - 100 |
| 36 | = steel bolt-on handle, long, straight, fitted | BG 32 - 50 |

Series

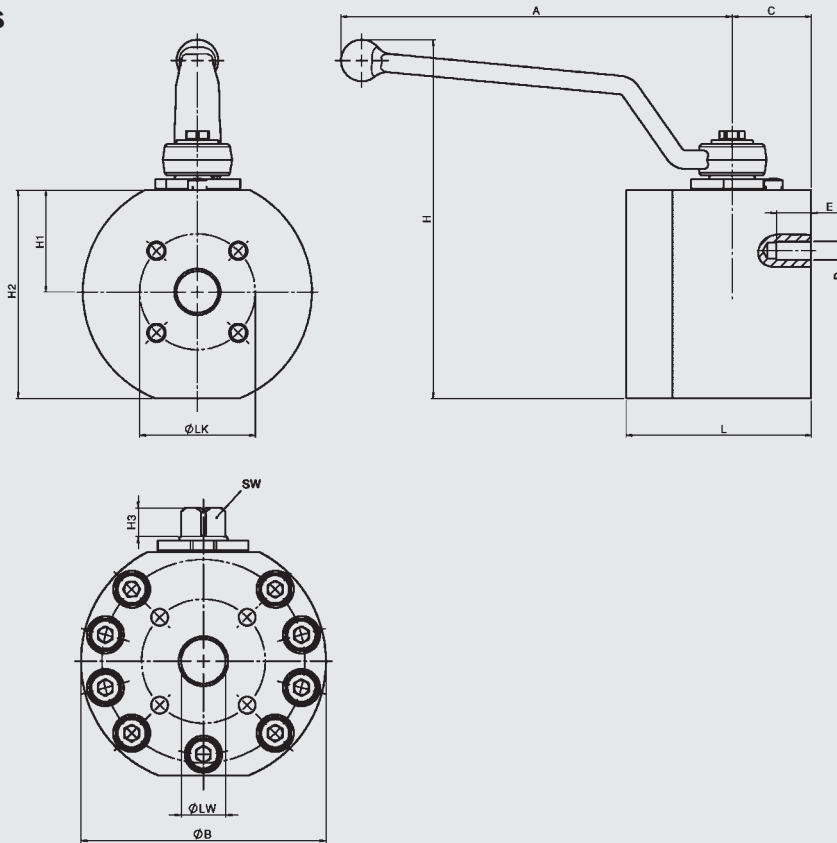
(determined by manufacturer)

Surface protection

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

Dimensions

DIN ISO 6164
BG 16 - 50



Type	DN [mm]	LW [mm]	L [mm]	C [mm]	H [mm]	h1 [mm]	h2 [mm]	h3 [mm]	$\varnothing B$ [mm]	SW1 [mm]	A [mm]
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

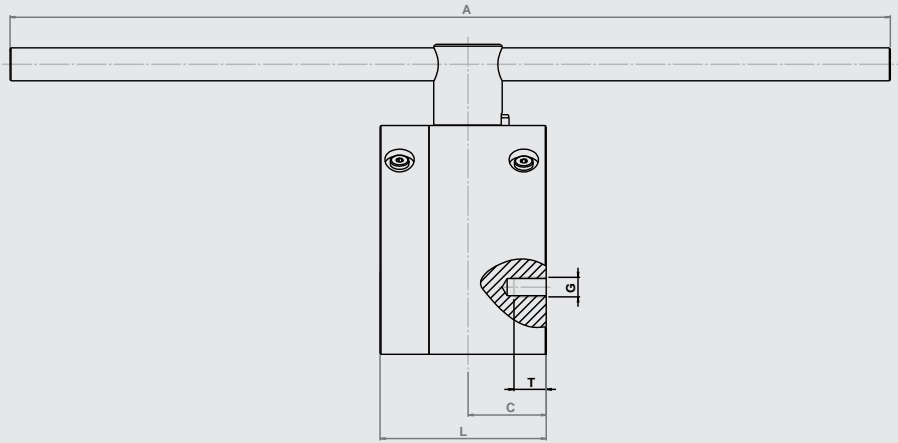
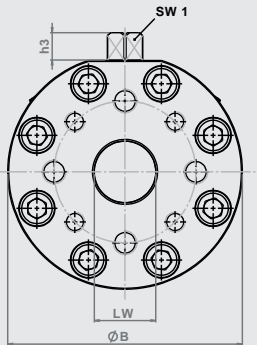
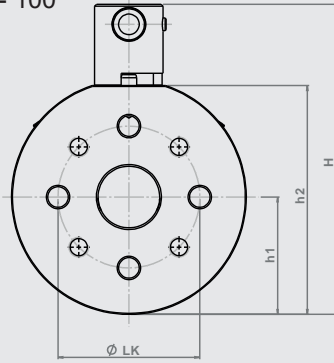
Flange dimensions

Type of connection	Type	DN [mm]	PN [bar]	$\varnothing LK$ [mm]	D	E [mm]
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

BG 65 - 100



Type	DN [mm]	LW [mm]	L [mm]	C [mm]	H [mm]	h1 [mm]	h2 [mm]	h3 [mm]	ØB [mm]	SW1 [mm]	A [mm]
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

Type of connection	Type	DN [mm]	PN [bar]	ØLK [mm]	G	T [mm]
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 flanges to ISO 6164
Mounting position:	No orientation restrictions
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 ² /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

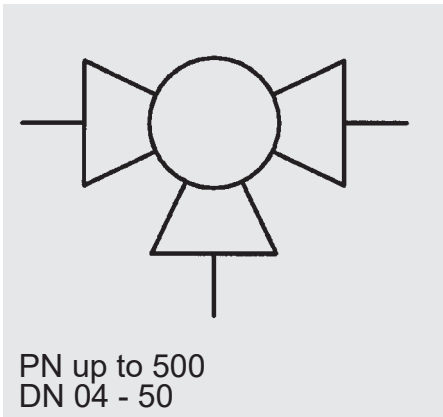
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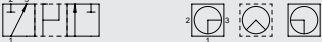


PN up to 500
DN 04 - 50

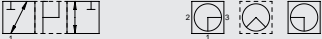
Function diagram

3/2-way change over ball valves

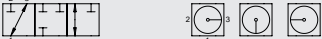
L-bore, 90° neg.



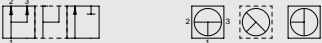
L-bore SO560, 90° neg.



L-bore SO560.1, 180° pos.



T-bore, 90° neg.



T-bore, 180° neg.



= undefined switching position

Change over ball valves KHB3K

Model code

(also order example)

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

Designation

KHB3K = change over ball valve

Type of connection

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

Ball bore

L
T

Materials

Housing, connection adapters

1 = steel
3 = stainless steel

Ball, control spindle

1 = steel
3 = stainless steel

Ball seal

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

Control spindle seal

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

A = zinc-plated, chrome (VI)-free (standard)
ZN = zinc-nickel, chrome (VI)-free

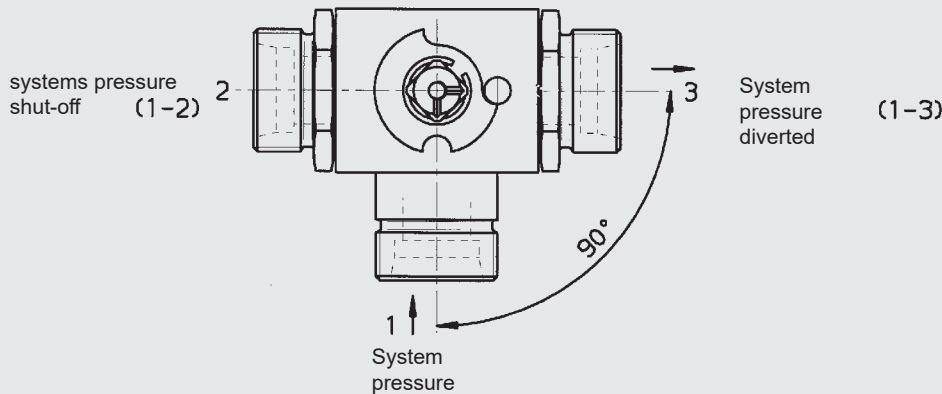
Option

SO560 = sealing on inlet side, negative switching overlap, switch 90°
SO560.1 = sealing on inlet side, positive switching overlap, switch 180°
TT = O-rings for low temperature, application range -40 °C to +80 °C
SO 940 = ball valve with 4 fixing holes (e.g. for switch panel installation)
SO 1073 = ball valve with 2 through-bores

Technical specifications

Types of connection:	Light and heavy threaded connection to DIN 2353 Whitworth internal thread to ISO 228 NPT SAE
Mounting position:	No orientation restrictions
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



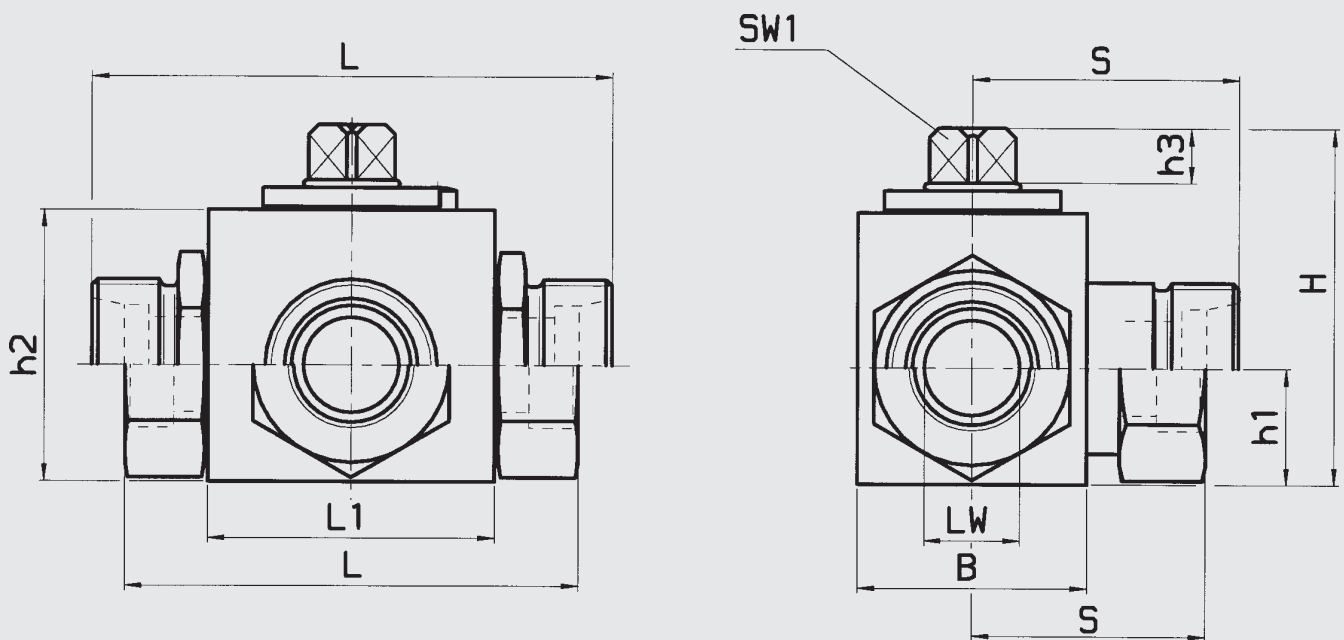
By turning the control spindle the flow is diverted, according to the ball bore, and the opposite side is shut off leakage-free.

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

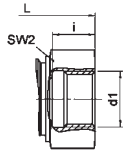
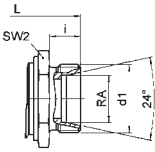
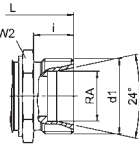
3/2-way ball valve



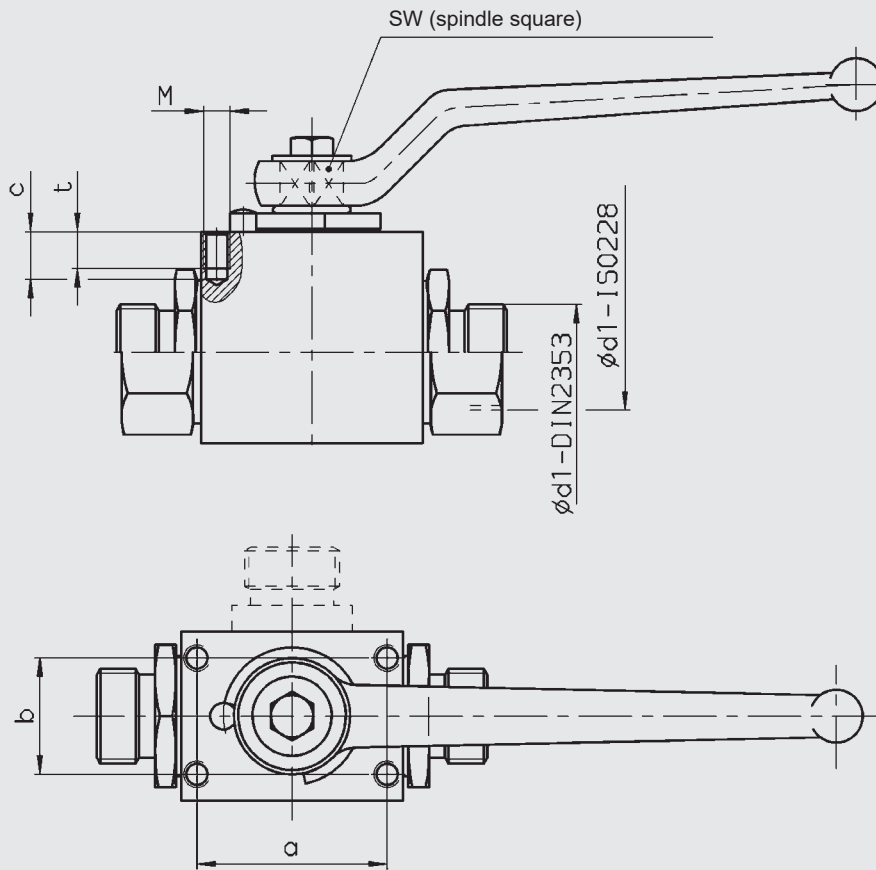
Steel

Type of connection	Type	DN	LW	RA	d1	I	L	L1	B	H	h1	h2	h3	S	SW1	SW2	Weight	Nom. pressure PN
		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[bar]
DIN ISO 228 Female thread	KHB3K-G1/8	4	8	-	G1/8	10	69	37	28	44.7	14	33	7	34.5	9	22	0.35	500
	KHB3K-G1/4	6	8	-	G1/4	14	69	37	28	44.7	14	33	7	34.5	9	22	0.36	500
	KHB3K-G3/8	10	10	-	G3/8	14	71.9	42	33	53.2	17.2	40	8.5	36	9	27	0.56	500
	KHB3K-G1/2	13	12	-	G1/2	15	84	47	35	53.2	17.2	40	8.5	41.5	9	30	0.71	500
	KHB3K-G1/2	16	15	-	G1/2	16	83	47	40	63.2	20	46	11	41.5	12	32	0.83	420
	KHB3K-G3/4	20	20	-	G3/4	18	94.9	60	49	77.8	27.5	60	11.6	47.5	14	41	1.67	420
	KHB3K-G1	25	25	-	G1	20.5	113.1	65	58	82.6	29.5	65	11.6	56.5	14	50	2.40	420
	KHB3K-G11/4	32	30	-	G11/4	22	110	76	110.5	108.5	43.3	90	12	70.5	17	65	5.62	350
	KHB3K-G11/2	40	35	-	G11/2	24	120	85	115.5	114.7	43.5	96.2	12	72	17	75	7.04	350
	KHB3K-G2	50	44	-	G2	28	150	120	135	138.5	59.8	120	12	75	17	80	13.48	350
DIN 2353 Light range	KHB3K-06LR	4	4	6	M12x1.5	7	67	37	28	44.7	14	33	7	33.5	9	22	0.30	500
	KHB3K-08LR	6	6	8	M14x1.5	7	67	37	28	44.7	14	33	7	33.5	9	22	0.30	500
	KHB3K-10LR	8	8	10	M16x1.5	11	73.9	42	33	53.2	17.2	40	8.5	37	9	27	0.48	500
	KHB3K-12LR	10	10	12	M18x1.5	11	73.9	42	33	53.2	17.2	40	8.5	37	9	27	0.48	500
	KHB3K-15LR	13	12	15	M22x1.5	12	82	47	35	53.2	17.2	40	8.5	41	9	30	0.71	500
	KHB3K-18LR	13	12	18	M26x1.5	12	82	47	35	53.2	17.2	40	8.5	41	9	30	0.66	500
	KHB3K-18LR	16	15	18	M26x1.5	12	82	47	40	63.2	20	46	11	41	12	32	0.76	420
	KHB3K-22LR	20	19	22	M30x2	14	100.9	60	49	77.8	27.5	60	11.6	50.5	14	41	1.54	420
	KHB3K-28LR	25	24	28	M36x2	14	107.9	65	58	82.6	29.5	65	11.6	54	14	50	2.00	420
	KHB3K-35LR	32	30	35.3	M45x2	16	128	76	80	108.5	43.3	90	12	69	17	65	4.48	350
DIN 2353 Heavy range	KHB3K-08SR	4	5	8	M16x1.5	7	73	37	28	44.7	14	33	7	36.5	9	22	0.31	500
	KHB3K-10SR	6	7	10	M18x1.5	7.5	73	37	28	44.7	14	33	7	36.5	9	22	0.34	500
	KHB3K-12SR	8	8	12	M20x1.5	12	75.9	42	33	53.2	17.2	40	8.5	38	9	27	0.50	500
	KHB3K-14SR	10	10	14	M22x1.5	14	79.9	42	33	53.2	17.2	40	8.5	40	9	27	0.53	500
	KHB3K-16SR	13	12	16	M24x1.5	14	85.9	47	35	53.2	17.2	40	8.5	43	9	30	0.80	500
	KHB3K-20SR	13	12	20	M30x2	16	90	47	35	53.2	17.2	40	8.5	45	9	30	0.73	500
	KHB3K-20SR	16	15	20	M30x2	16	90	47	40	63.2	20	46	11	45	12	32	0.82	420
	KHB3K-25SR	20	20	25	M36x2	18	108.9	60	49	77.8	27.5	60	11.6	54.5	14	41	1.66	420
	KHB3K-30SR	25	25	30	M42x2	20	119.9	65	58	82.6	29.5	65	11.6	60	14	50	2.17	420
	KHB3K-38SR	32	30	38.3	M52x2	22	140	76	80	108.5	43.3	90	12	74	17	65	2.48	350
ANSI B1.20.1 NPT female thread	KHB3K-06NPT	6	8	-	1/4-18 NPT	10.21	69	37	28	44.7	14	33	7	34.5	9	22	0.60	500
	KHB3K-10NPT	10	10	-	3/8-18 NPT	10.36	71.9	42	33	53.2	17.2	40	8.5	36	9	27	0.74	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	0.71	500
	KHB3K-16NPT	16	15	-	1/2-14 NPT	13.56	83	47	40	63.2	20	46	11	41.5	12	32	0.85	420
	KHB3K-20NPT	20	20	-	3/4-14 NPT	13.86	94.9	60	49	77.8	27.5	60	11.6	47.5	14	41	1.61	420
	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	2.39	420
	KHB3K-32NPT	32	30	-	1 1/4-11 1/2 NPT	17.95	115	76	110	108.5	43.3	90	12	70	17	65	5.78	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	7.60	350
SAE J 514 UN/UNF Female thread	KHB3K-06SAE	6	8	-	7/16-20 UNF	12	69	37	28	44.7	14	33	7	34.5	9	22	0.36	500
	KHB3K-10SAE	10	10	-	9/16-18 UNF	13	71.9	42	33	53.2	17.2	40	8.5	36	9	27	0.74	500
	KHB3K-16SAE	16	15	-	3/4-16 UNF	15	83	47	40	63.2	20	46	11	41.5	12	32	0.85	420
	KHB3K-20SAE	20	20	-	1 1/16-12 UN	20	94.9	60	49	77.8	27.5	60	11.6	47.5	14	41	1.54	420
	KHB3K-25SAE	25	25	-	1 5/16-12 UN	20	113	65	58	82.6	29.5	65	11.6	56.5	14	50	2.30	420
	KHB3K-32SAE	32	30	-	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	7.08	350
	KHB3K-50SAE	50	44	-	2 1/2-12 UN	20	150	120	145.5	138.5	59.8	120	12	85.5	17	80	14.32	350

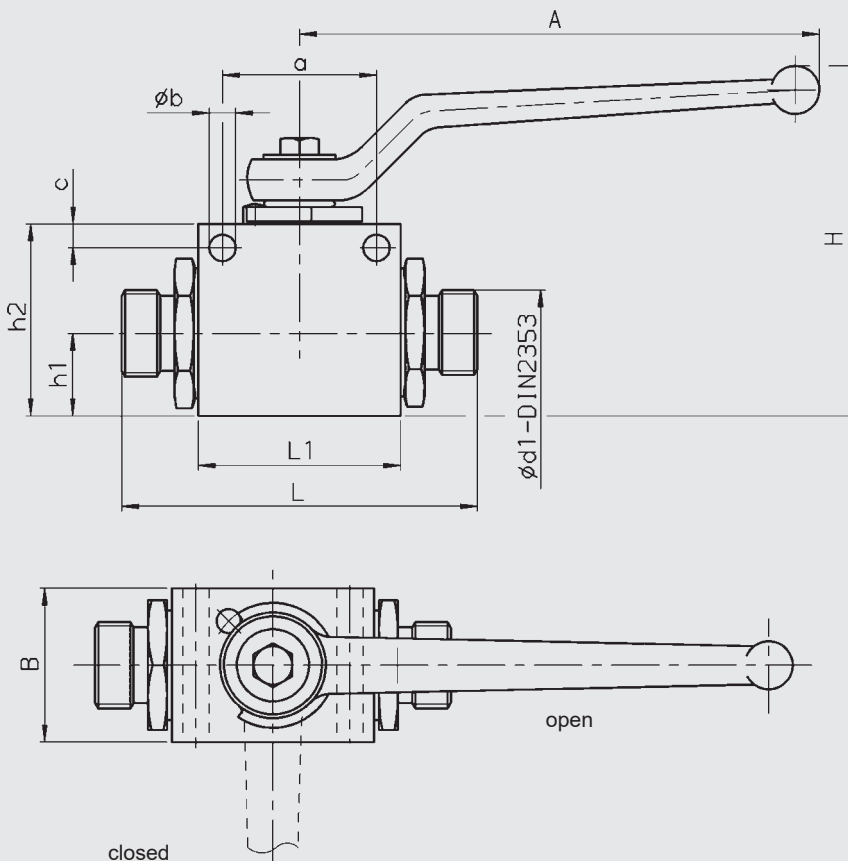
Stainless steel

Type of connection	Type	DN	LW	RA	d1	l	L	L1	B	H	h1	h2	h3	S	SW1	SW2	Weight	Nom. pressure PN
		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
DIN ISO 228 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	53.2	17.2	40	8.5	36	9	27	0.62	500
	KHB3K-G1/2	13	10	–	G1/2	16	84	42	35	53.2	17.2	40	8.5	41.5	9	30	0.80	500
	KHB3K-G1/2	16	15	–	G1/2	16	82.8	47	41	63.7	20.5	46.5	11	41.5	12	32	1.00	400
	KHB3K-G3/4	20	20	–	G3/4	18	95	60	49	77.8	27.5	60	11.6	47.5	14	41	1.90	350
	KHB3K-G1	25	25	–	G1	20.5	113.1	65	58	82.6	29.5	65	11.6	56.5	14	50	2.40	350
DIN 2353 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	73.9	42	35	53.2	17.2	40	8.5	37	9	27	0.72	500
	KHB3K-12LR	10	10	12	M18x1.5	11	73.9	42	35	53.2	17.2	40	8.5	37	9	27	0.73	500
	KHB3K-15LR	13	10	15	M22x1.5	12	77	42	35	53.2	17.2	40	8.5	41.5	9	30	0.90	500
	KHB3K-18LR	13	10	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	100.7	60	49	77.8	27.5	60	11.6	50.5	14	41	2.02	350
	KHB3K-28LR	25	24	28	M36x2	14	107.9	65	58	82.6	29.5	65	11.6	54	14	50	2.13	350
DIN 2353 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	75.9	42	35	53.2	17.2	40	8.5	38	9	27	0.74	500
	KHB3K-14SR	10	10	14	M22x1.5	14	79.9	42	35	53.2	17.2	40	8.5	40	9	27	0.77	500
	KHB3K-16SR	13	10	16	M24x1.5	14	80.9	42	35	53.2	17.2	40	8.5	40.5	9	30	0.92	500
	KHB3K-20SR	13	10	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	1.60	400
	KHB3K-25SR	20	20	25	M36x2	18	109	60	49	77.8	27.5	60	11.6	54.5	14	41	2.20	350
	KHB3K-30SR	25	25	30	M42x2	20	119.9	65	58	82.6	29.5	65	11.6	60	14	50	2.40	350

Fixing hole dimensions (SO 940)



Dimensions of through bore (SO 1073)



DIN ISO 228

$\phi d1$	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
G1	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*	13	9	36	22	M5	7	9
18LR*	13	9	36	22	M5	7	9
18LR	16	12	39	26	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*	13	9	36	22	M5	7	9
20SR*	13	9	36	22	M5	7	9
20SR	16	12	39	26	M5	7	9
25SR	20	14	45	28	M6	9	11
30SR	25	14	45	28	M6	9	11

DIN ISO 228

$\phi d1$	DN	L	L1	B	H	h1	h2	a	ϕb	c	A
G 1/8	4	69	37	28	65.7	14	33	28	5.5	4.5	108
G 1/4	6	69	37	28	65.7	14	33	28	5.5	4.5	108
G 3/8	10	71.9	42	33	72.7	17.2	40	32	5.5	5	108
G 1/2*	13	84	47	35	72.7	17.2	40	32	5.5	5	108
G 1/2	16	83	47	40	111	20	46	38	5.5	5	169
G 3/4	20	94.9	60	49	125	27.5	60	46	6.6	6	169
G1	25	113.1	65	58	130	29.5	65	46	6.6	6	169

DIN 2353 Light Range

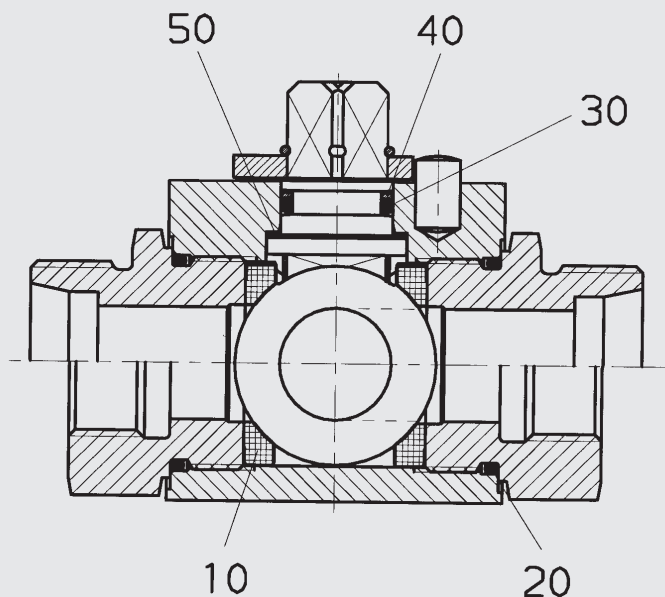
$\phi d1$	DN	L	L1	B	H	h1	h2	a	ϕb	c	A
08LR	6	67	37	28	65.7	14	33	28	5.5	4.5	108
10LR	8	73.9	42	33	72.7	17.2	40	28	5.5	4.5	108
12LR	10	73.9	42	33	72.7	17.2	40	32	5.5	5	108
15LR*	13	82	47	35	72.7	17.2	40	32	5.5	5	108
18LR	16	82	47	40	111	20	46	38	5.5	5	169
22LR	20	100.9	60	49	125	27.5	60	46	6.6	6	169
28LR	25	107.9	65	58	130	29.5	65	46	6.6	6	169

DIN 2353 Heavy Range

$\phi d1$	DN	L	L1	B	H	h1	h2	a	ϕb	c	A
08SR	4	73	37	28	65.7	14	33	28	5.5	4.5	108
10SR	6	73	37	28	65.7	14	33	28	5.5	4.5	108
12SR	8	75.9	42	33	72.7	17.2	40	32	5.5	5	108
14SR	10	79.9	42	33	72.7	17.2	40	32	5.5	5	108
16SR*	13	85.9	47	35	72.7	17.2	40	32	5.5	5	108
20SR*	13	90	47	35	72.7	17.2	40	32	5.5	5	108
20SR	16	90	47	40	111	20	46	38	5.5	5	169
25SR	20	108.9	60	49	125	27.5	60	46	6.6	6	169
30SR	25	119.9	65	58	130	29.5	65	46	6.6	6	169

* reduced nominal values

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

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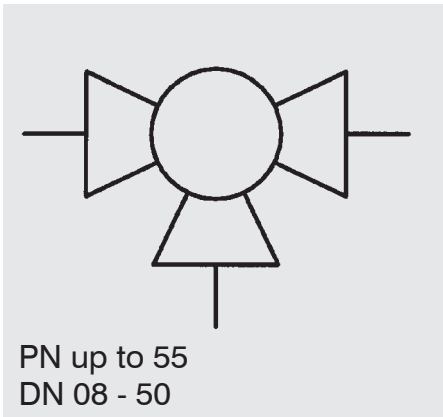
The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

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E-Mail: accessories@hydac.com



Change over low pressure ball valves KHN3K



PN up to 55
DN 08 - 50

Model code

(also order example)

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

Designation

KHN3K = change-over low pressure ball valve

Type of connection

Thread size or pipe outer Ø and type of connection

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

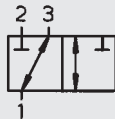
12 = aluminium bolt-on handle, cranked, fitted

Series

(determined by manufacturer)

Switching functions (as supplied)

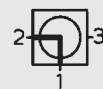
3/2-way change-over ball valve



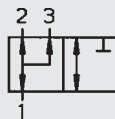
L-bore



90° switch



3/2-way change-over ball valve



T-bore

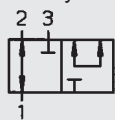


90° switch



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

3/2-way change-over ball valve



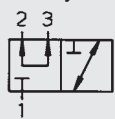
T-bore



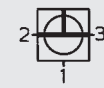
90° switch



3/2-way change-over ball valve



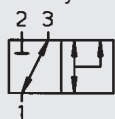
T-bore



90° switch



3/2-way change-over ball valve



T-bore



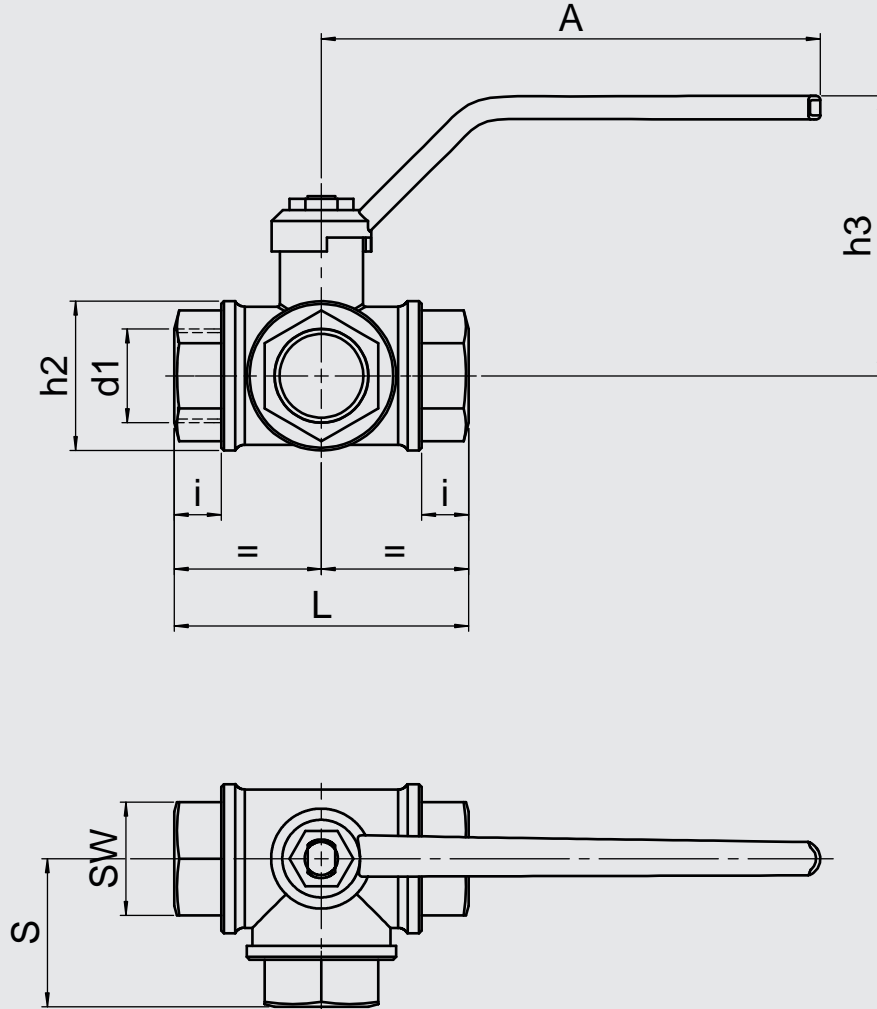
90° switch



Technical specifications

Connection:	Whitworth female thread to ISO 228
Mounting position:	No orientation restrictions
Ambient temperature:	-20 °C to +150 °C
Nominal pressure:	up to 55 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



Device type	Ball bore	Size d ₁	L [mm]	h ₂ [mm]	SW	A [mm]	i [mm]	Nominal bore DN	S [mm]	h ₃ [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	55	800	0.78
KHN3K-G3/8	L, T	3/8"	77	39	22	125	19	10	38.5	65.5	55	800	0.74
KHN3K-G1/2	L, T	1/2"	77	39	27	125	19	15	38.5	65.5	50	725	0.77
KHN3K-G3/4	L, T	3/4"	92	47	34	145	23	20	46.5	83.5	50	725	1.26
KHN3K-G1	L, T	1"	104	55	41	170	25	25	52.5	96.5	45	650	1.91
KHN3K-G1 1/4	L, T	1 1/4"	118	65	50	170	27	32	59.5	101.5	35	500	2.64
KHN3K-G1 1/2	L, T	1 1/2"	138	79	57	170	31	40	69.5	105.5	35	500	4.2
KHN3K-G2	L, T	2"	162	93	70	260	36	50	81.5	139.5	35	500	6.66

NOTE

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Subject to technical modifications and errors.

HYDAC Accessories GmbH

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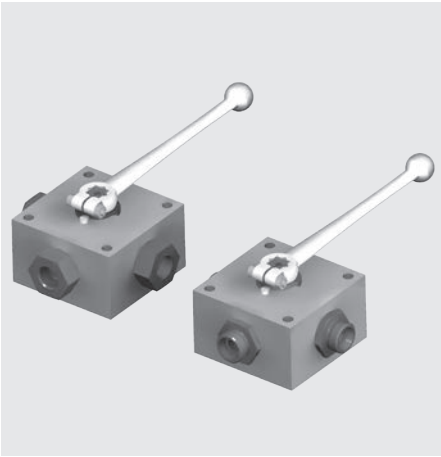
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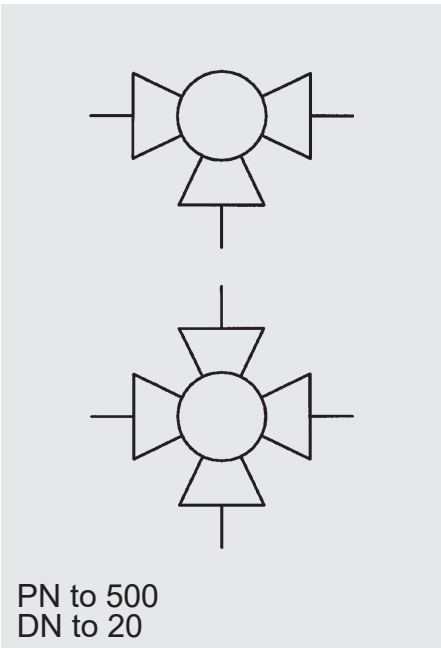
Fax: +49 (0)6897 - 509-1009

Internet: www.hydac.com

E-Mail: accessories@hydac.com



Multiway 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

Type of connection

G = Whitworth female thread ISO 228

LR = threaded connection - light range DIN 2353

SR = threaded connection - heavy range DIN 2353

NPT = female thread ANSI B 1.20.1

SAE = female thread SAE J 514 UN/UNF

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

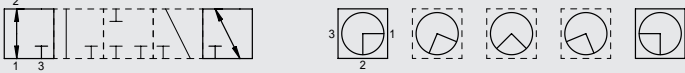
Series

(determined by manufacturer)

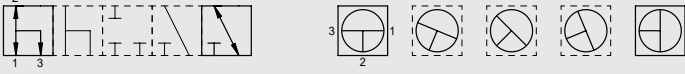
Standard model functions

(available as standard)

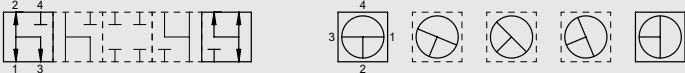
3-way ball valve L bore, 90°, pos.



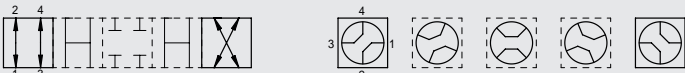
3-way ball valve T bore, 90°, pos.



4-way ball valve T bore, 90°, pos.



4-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.

3-way ball valve SO 926, 90°, pos.



3-way ball valve SO 376, 45°, neg.



3-way ball valve SO 377, 45°, neg.



3-way ball valve 180°, pos.



3-way ball valve SO 926.1, 180°, pos.



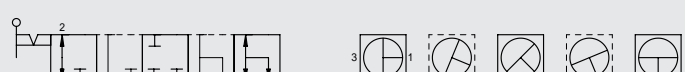
3-way ball valve SO 926.2, 180°, pos.



3-way ball valve SO 378, 90°, pos.



3-way ball valve SO 379, 90°, pos.



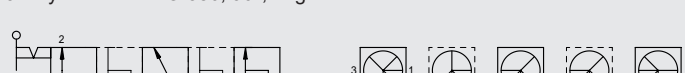
3-way ball valve SO 381, 90°, neg.



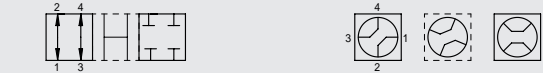
3-way ball valve SO 382, 90°, neg.



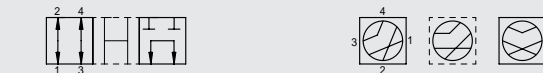
3-way ball valve SO 380, 90°, neg.



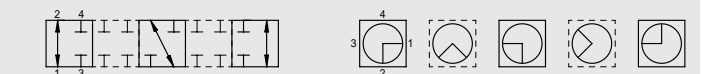
4-way ball valve SO 384, 45°, neg.



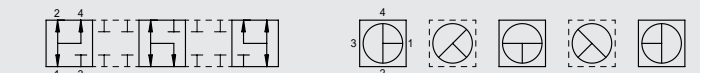
4-way ball valve SO 383, 45°, neg.



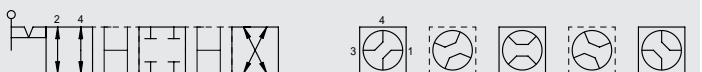
4-way ball valve 180°, pos.



4-way ball valve 180°, pos.



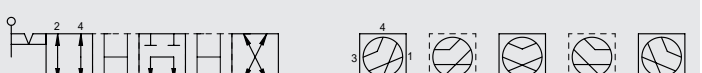
4-way ball valve SO 385, 90°, pos.



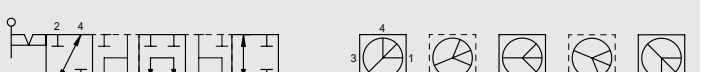
4-way ball valve SO 389, 90°, pos.



4-way ball valve SO 388, 90°, neg.



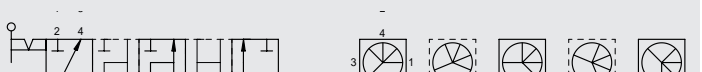
4-way ball valve SO 391, 90°, neg.



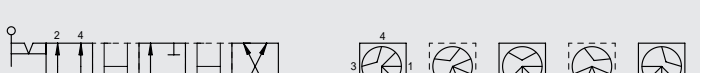
4-way ball valve SO 386, 90°, neg.



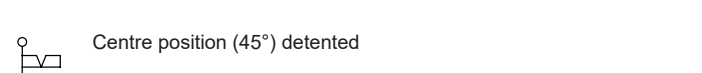
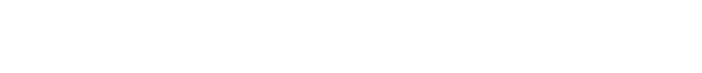
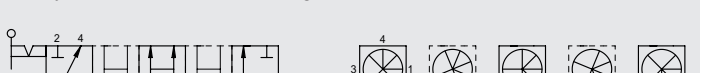
4-way ball valve SO 392, 90°, neg.



4-way ball valve SO 387, 90°, neg.



4-way ball valve SO 390, 90°, neg.



undefined switching position

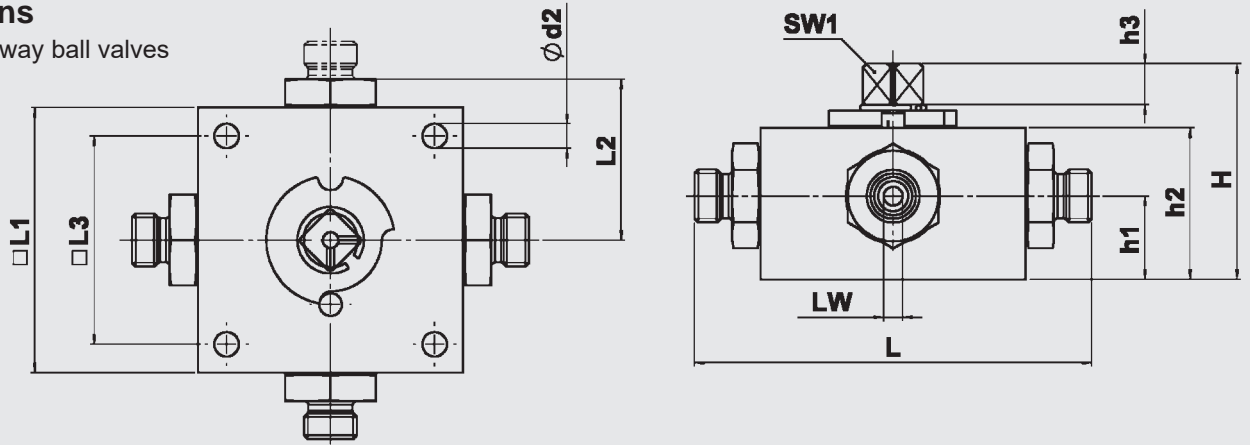
Centre position (45°) detented

Technical specifications

Types of connection:	Light and heavy threaded connection to DIN 2353 Whitworth female thread to ISO 228 NPT SAE
Mounting position:	No orientation restrictions
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. diam.				RA	d1	l	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nom. press. PN [bar]
		L	T	X																	
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	

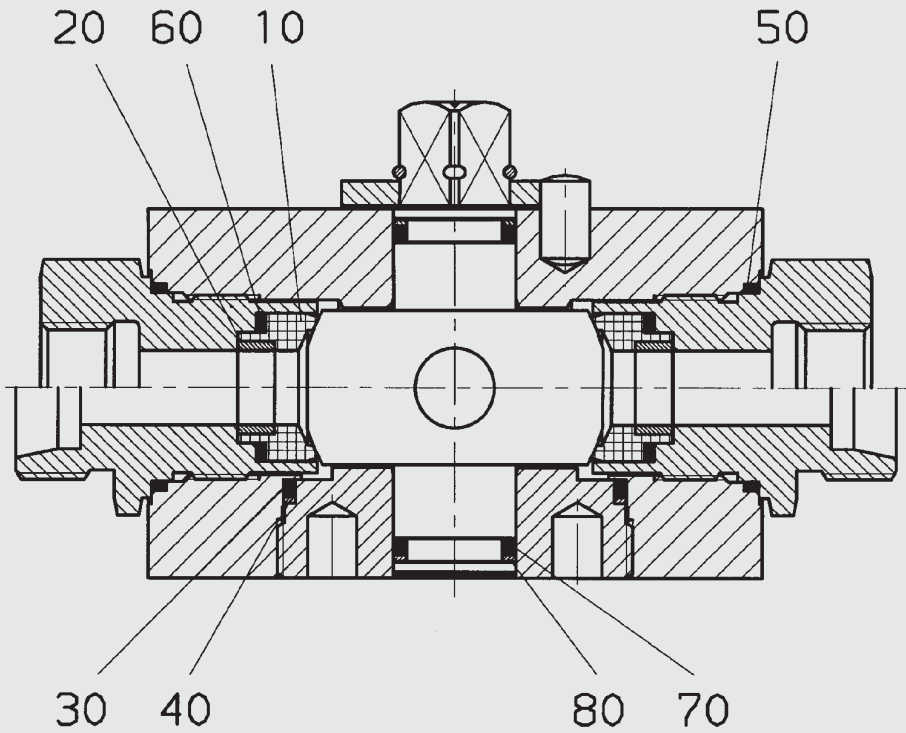
Type	DN	Bore int. diam.				RA	d1	l	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nom. press. PN [bar]
		L	T	X																	
KH3/4-06LR	4	6	6	4.5	6	M12x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500	
KH3/4-08LR	6	6	6	4.5	8	M14x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500	
KH3/4-10LR	8	9	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. diam.				RA	d1	l	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nom. press. PN [bar]
		L	T	X																	
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. diam.				RA	d1	l	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nom. press. PN [bar]
		L	T	X																	
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. diam.				RA	d1	l	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nom. press. PN [bar]
		L	T	X																	
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

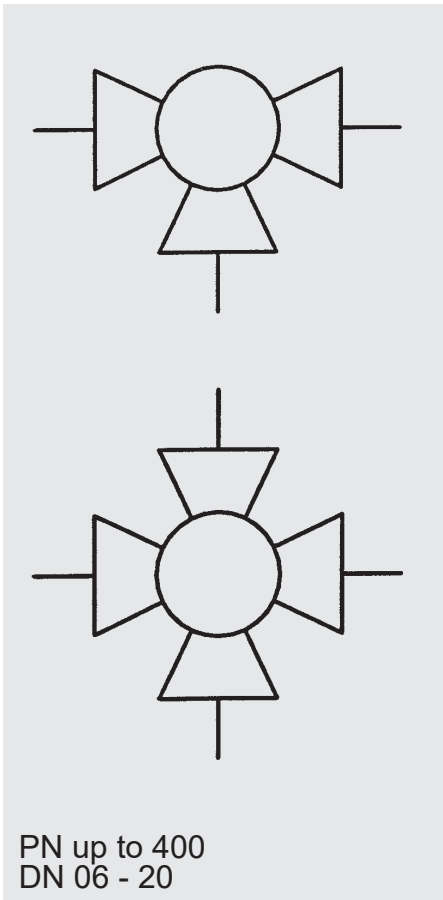
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Subject to technical modifications and errors.



Multiway manifold mounted ball valves KH3P / KH4P



PN up to 400
DN 06 - 20

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
(DN)

Ball bore

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

Materials

Housing, blanking plug, screw plug

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 to customer specifications
180° = 180° switch

(Please see examples on the next page)

Standard types

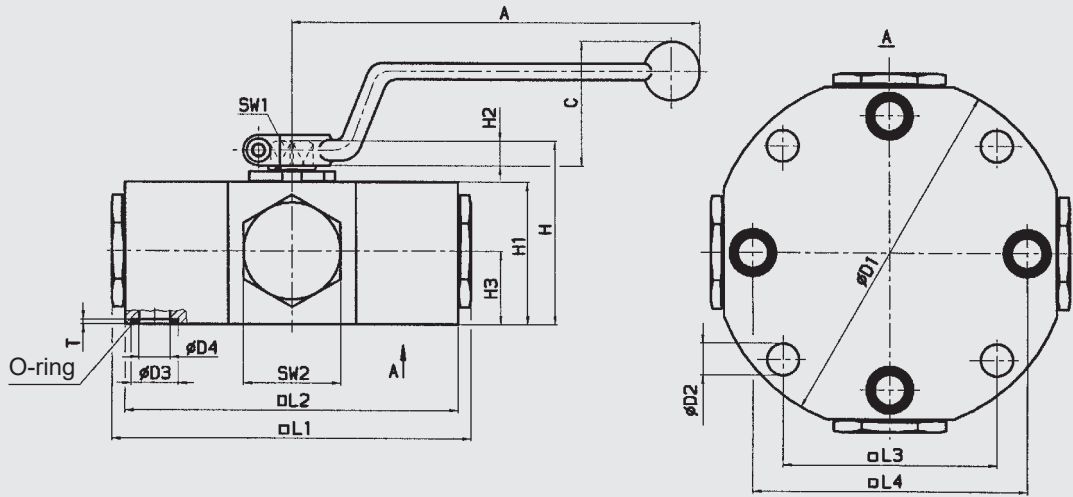
	Ball bore	Switch	Function diagram	SO ... Model	
KH3P	L	0° - 90°			-
	T	0° - 45°			45 Grad
	T	0° - 90°			-
	T	0° - 90° - 180°			180 Grad
	L	0° - 45° - 90°			SO 378
	T	0° - 45° - 90°			SO 379
KH4P	T	0° - 90°			-
	X	0° - 45°			45 Grad
	X	0° - 90°			-
	L	0° - 90° - 180°			180 Grad
	T	0° - 90° - 180°			180 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

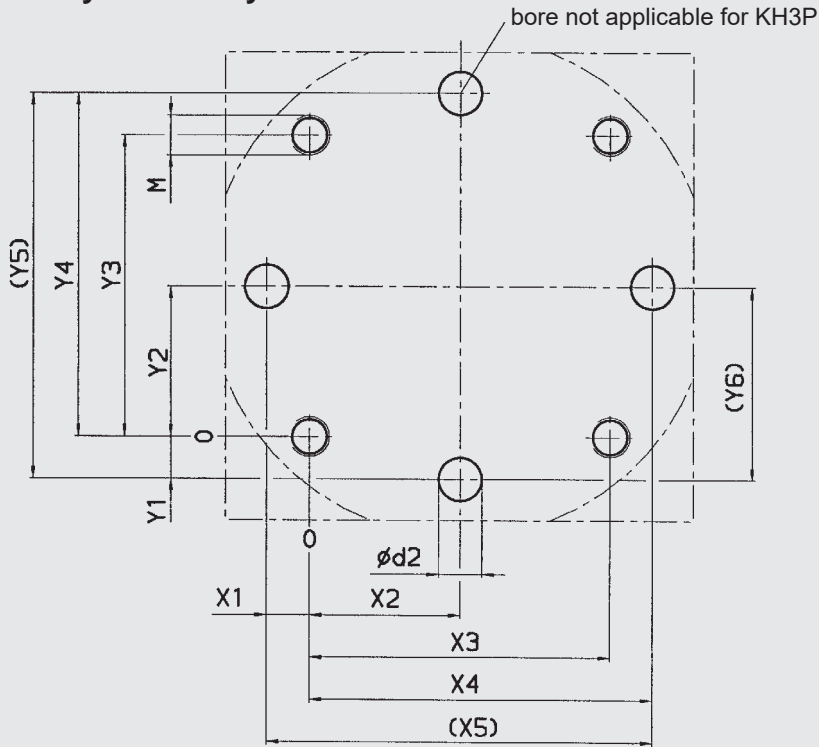
3-way and 4-way manifold mounted ball valve with cranked aluminium handle



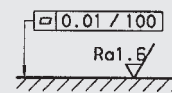
DN	Int. diam.			L1	L2	L3	L4	H	H1	H2	H3	D1	D2	D3	D4	SW 1	SW 2	T
	L	T	X															
06	5	5	4.5	103	90	70	68.6	57	40	11	22	--	6.5	11.7	6	12	27	1.9
10	9	9	6	113	100	80	81	67.5	50	11.5	27	--	9	14.7	8	14	30	1.9
16	12	12	10	152.5	140	90	115.4	77.5	60	11.5	31.5	150	13.5	19.7	13	14	41	2
20	18	18	14	184	170	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	Cheese-head screw ISO 4762 (property class)	Torque 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 μ 0.14

Technical specifications

Mounting position:	No orientation restrictions
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
Spare parts:	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Actuator Limit controls Lock

NOTE

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Subject to technical modifications and errors.

HYDAC Accessories GmbH

Hirschbachstr. 2

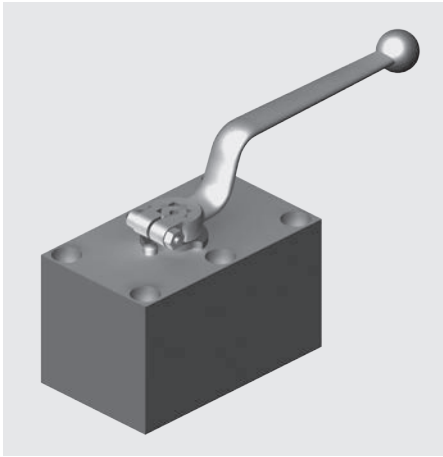
66280 Sulzbach/Saar

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

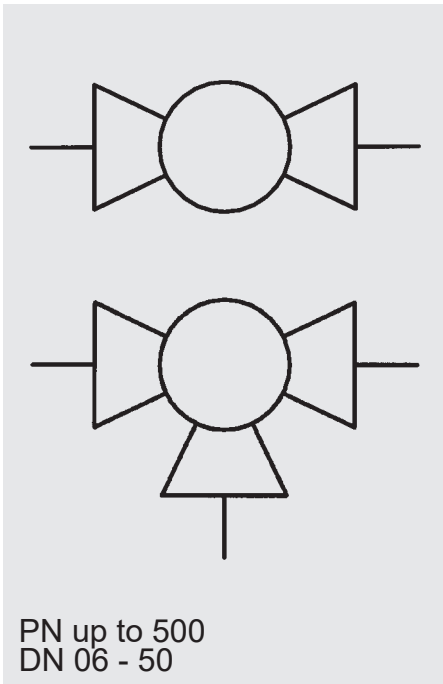
Fax: +49 (0)6897 - 509-1009

Internet: www.hydac.com

E-Mail: accessories@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 mounted ball valve (DN 06 - 50)
KHP3K = 3/2- or 3/3-way manifold mounted ball valve (DN 06 - 50)

Nominal bore
(DN)

Ball bore (not applicable for KHP)
L

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	DN 06
04	= zinc die-cast bolt-on handle, cranked	DN 10
02	= aluminium clamped handle, cranked	DN 16 - 25
06	= steel bolt-on handle, cranked	DN 32 - 50

Series

(determined by manufacturer)

Special model

T-bore on request

SO 560 = sealing on inlet side, negative switching overlap, switch 90°

SO 560.1 = sealing on inlet side, positive switching overlap, switch 180°

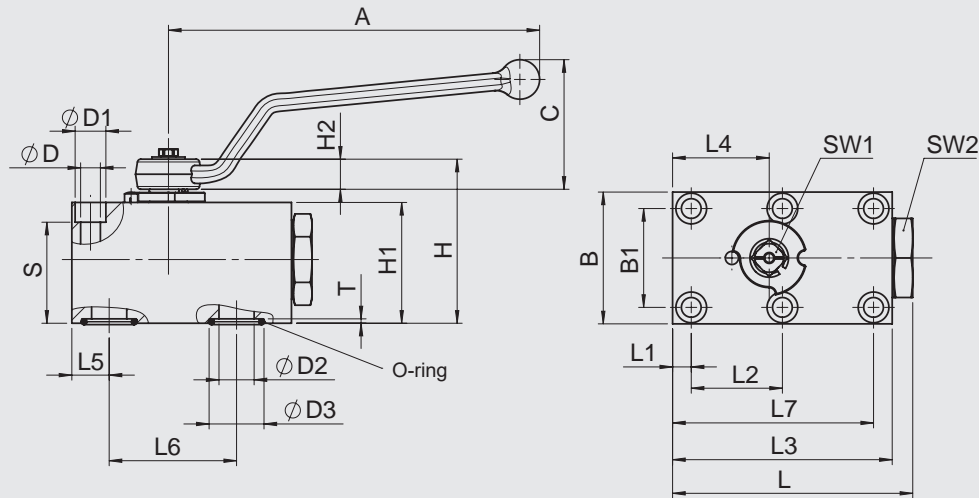
TT = O-rings for low temperature, application range -40 °C to +80 °C

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

Dimensions

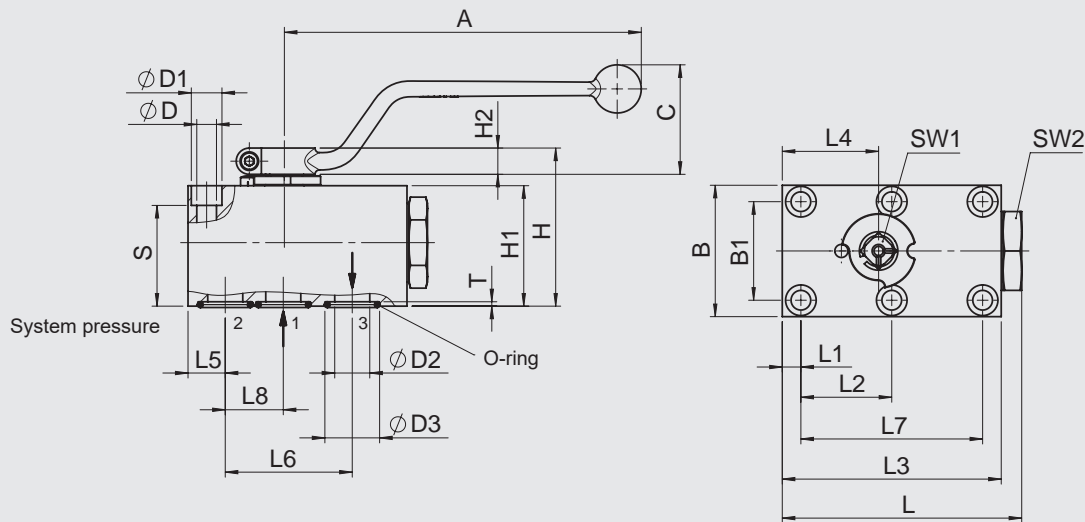
KHP

Manifold mounted ball valve with cranked bolt-on steel handle



KHP3K

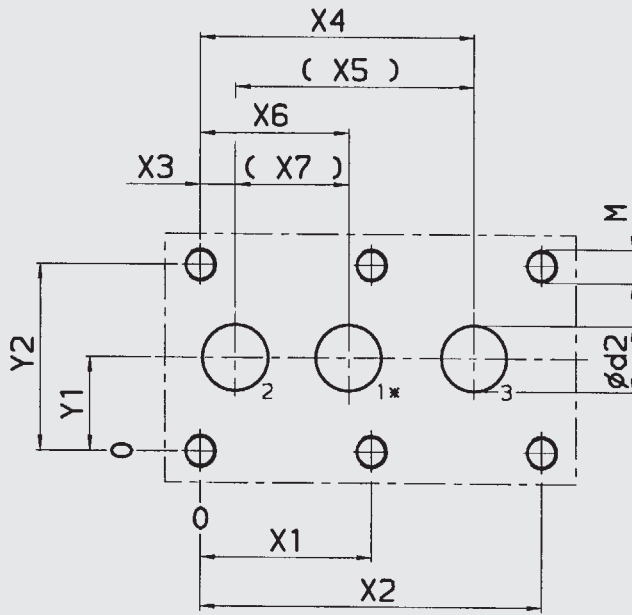
3-way manifold mounted ball valve with cranked clamped aluminium handle



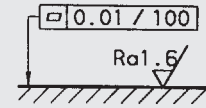
DN	LW	L	L1	L2	L3	L4	L5	L6	L7	L8	B	B1	SW1	A	C
06	6	64	8.5	17.5	59	25	8.5	35	35	17.5	40	27	6	60	23
10	9.5	80	7.5	27.5	70	29	10	44	55	19	55	40	9	108	28
16	16	109.4	8.5	41.5	100	44	17	58	83	26.5	60	45	12	163	50
20	20	127	10	48.5	117	51	20	69	97	31	70	51	14	169	59
25	23.5	145	10	57.5	135	62	24	81	115	38	80	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	86.3	68.6	11.6	10.5	16.5	20	30	3	58.1	23.39x3.53	3.9	3.8	350
25	50	96	78.4	11.6	10.5	17	23.5	35	3	67.4	28.17x3.53	5.7	5.6	350
32	65	116.2	98	12	13	19	32	39.4	2.9	83	32.92x3.53	10.9	10.8	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
of mounting plate



Dimensional tolerances
ISO 2768 m

* = bore 1 not applicable
for KHP

DN	Y1	Y2	X1	X2	X3	X4	X5	X6	X7	d2	M	Cheese-head screw ISO 4762 (property class)	Tightening torque 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 μ 0.14

Notice: data and drawings relating to the installation space are available on request.

Technical specifications

Mounting position:	KHP: No orientation restrictions
	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 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 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.

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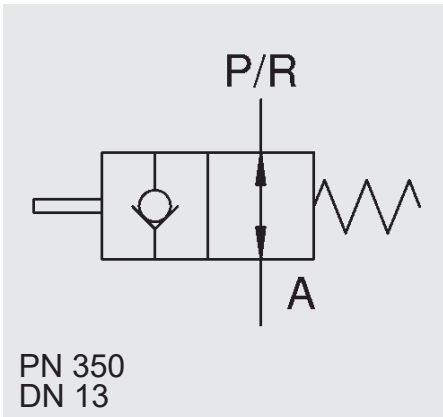
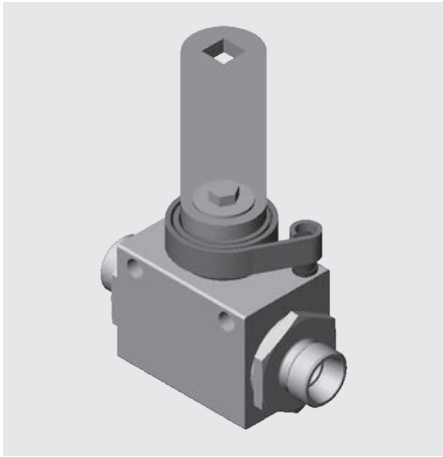
Tel.: +49 (0)6897 - 509-01

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

Internet: www.hydac.com

E-Mail: accessories@hydac.com

Spring return isolator HKHB



Model code
(also example order)

HKHB 12LR 1112 09X A CCW OK 0°

Designation

HKHB = block type 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 opening

O = open

C = closed

Handle

L = long

K = short

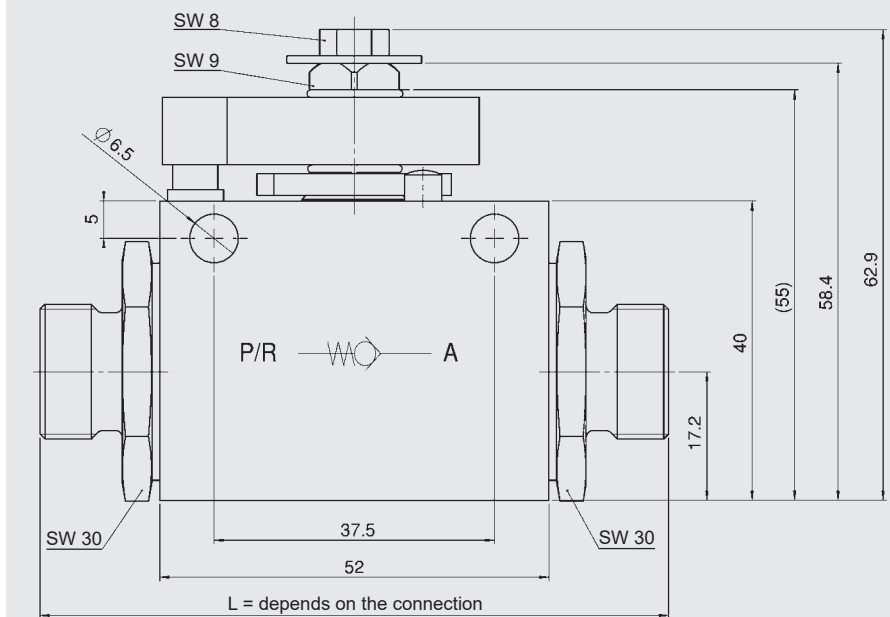
Handle position

0° to 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

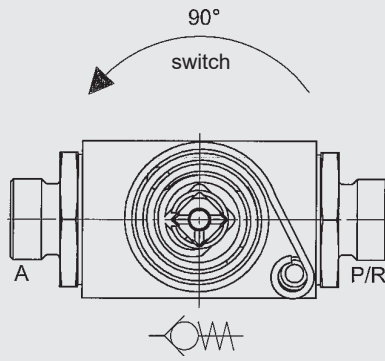
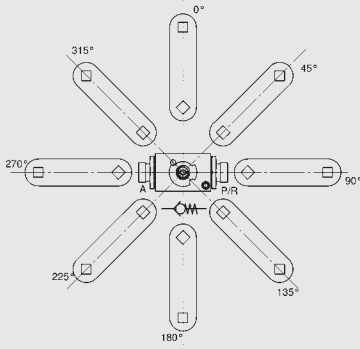


Technical specifications

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

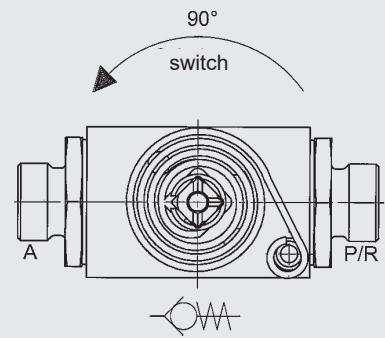
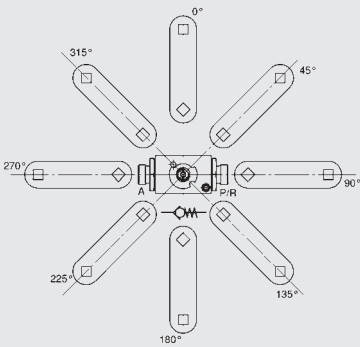
ORDER FORM

Handle position



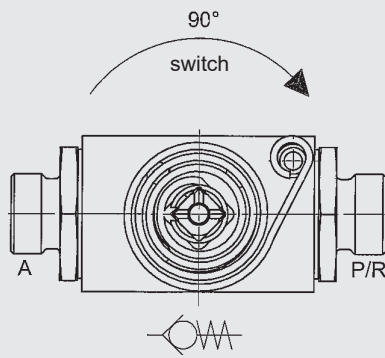
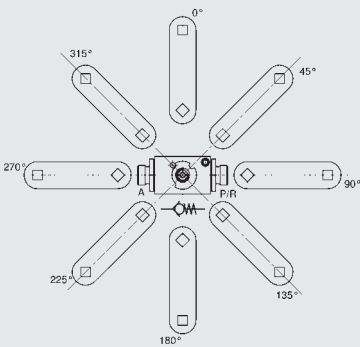
-
- Open
- Anti-clockwise CCW
- Connection: 10L
- 12L
- 15L
- 10SR
- Handle: short
- long
- Handle position:°

Handle position



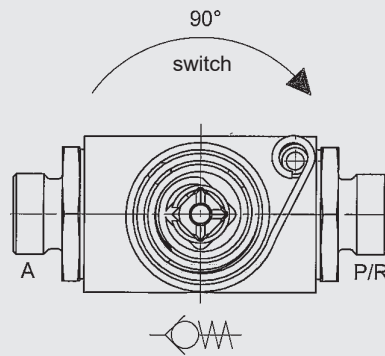
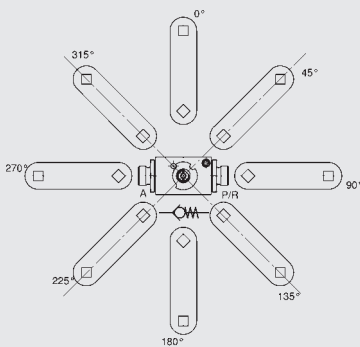
-
- Closed
- Anti-clockwise CCW
- Connection: 10L
- 12L
- 15L
- 10SR
- Handle: short
- long
- Handle position:°

Handle position



-
- Open
- Clockwise CW
- Connection: 10L
- 12L
- 15L
- 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.

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

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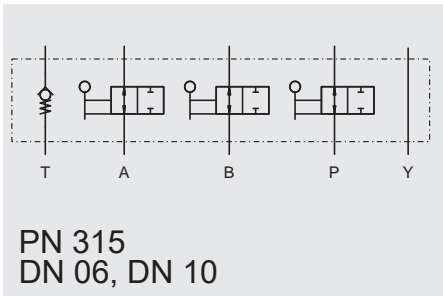
Fax: +49 (0)6897 - 509-1009

Internet: www.hydac.com

E-Mail: accessories@hydac.com



Sandwich plate CETOP KHZ



Model code
(also order example)

KHZ DN06 CETOP 1112 09 X A PABTY ...

Designation

KHZ = sandwich plate

Nominal bore
(DN)

Type of connection

CETOP = interface to DIN 24340 or ISO 4401

Materials

Housing

1 = steel

Ball, control spindle

1 = steel

Sealing cups

1 = POM

Control spindle seal and connection seal

2 = NBR (Perbunan)

4 = FKM (Viton)

Handle

09 = without handle

Series

(determined by manufacturer)

Surface protection

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

Ports

P = pressure port P, can be shut off

A = working port A, can be shut off

B = working port B, can be shut off

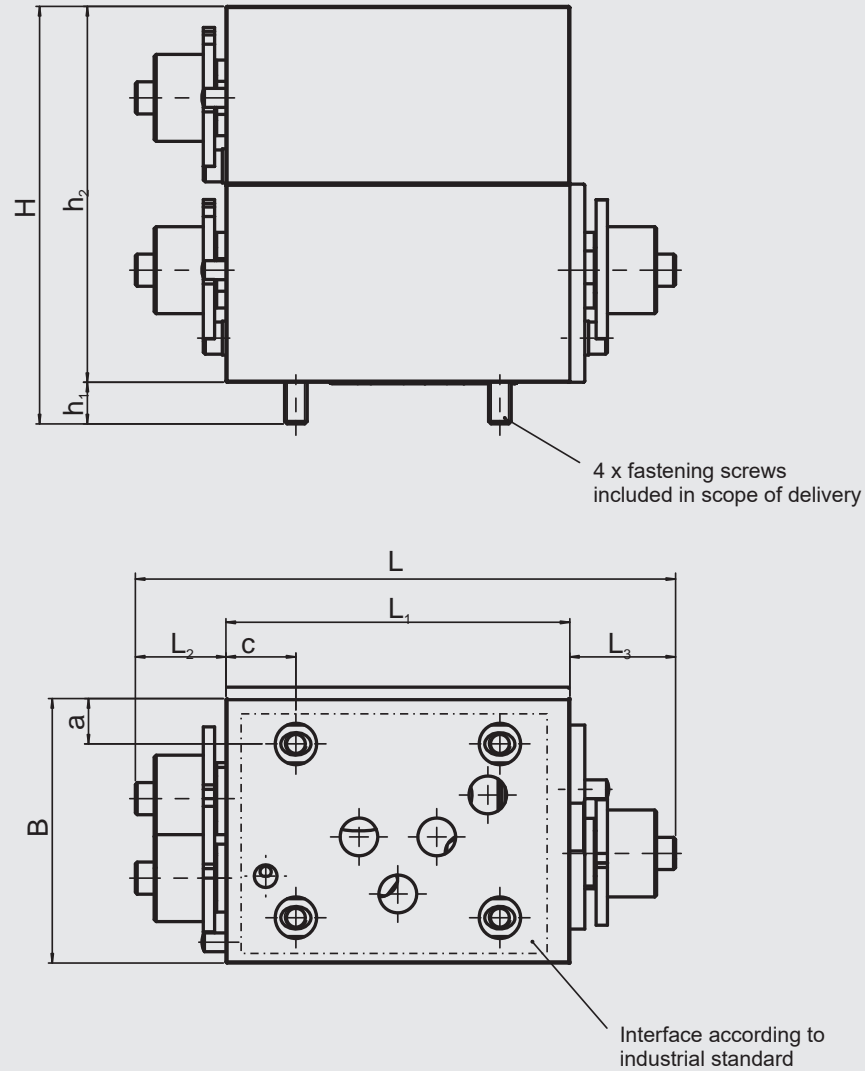
T = tank connection, with non-return valve

Y = pilot port

Options

SO760 = ball valve can be locked in open and closed position using padlock, padlock not supplied

Dimensions [mm]



DN	H	B	L	L1	L2	L3	a	c	h1	h2	Fastening screws
06	76.5	48	99.1	66.5	14.9	17.7	8.5	13	9	67.5	M5x55 - 10.9
10	110.5	70	143	91	24	28	12	18.5	11	99.5	M6x85 - 10.9

Technical specifications

Type of construction	Sandwich plate
Type of connection	CETOP, DIN 24340, DIN ISO 4401
Mounting position	No orientation restrictions
Ambient temperature	-10 °C to +80 °C
Nominal pressure	up to PN 315
Operating media	Mineral oil ISO VG 46
Temperature of operating media	-10 °C to +80 °C
Viscosity	10 to 380 mm ² /s

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

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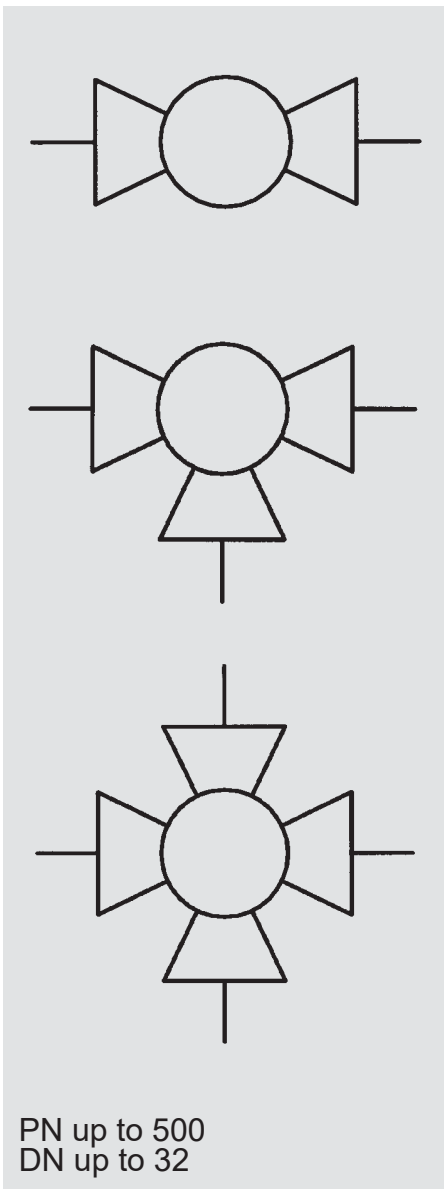
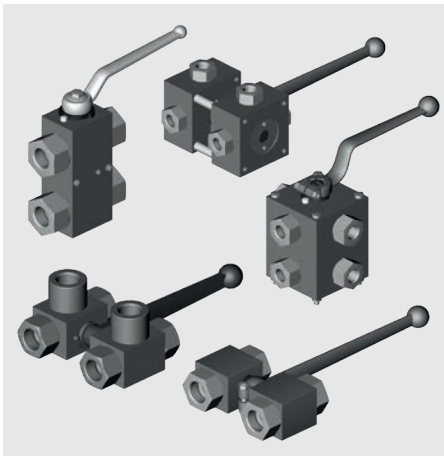
Tel.: +49 (0)6897 - 509-01

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

Internet: www.hydac.com

E-Mail: accessories@hydac.com

Ball valve combinations



Model code
(also order example)

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

Designation

Type of ball valve

Arrangement

KOMBI = combination
(ball valves mounted in tandem)

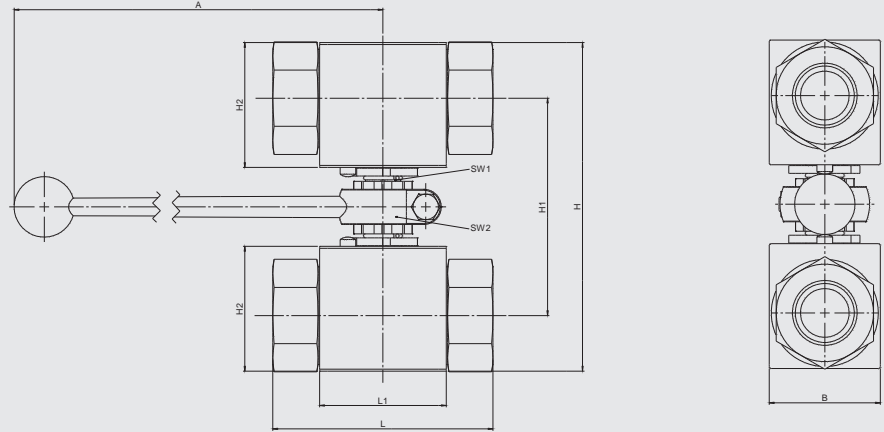
Number of ball valves

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

Options

SO241 = block combinations
SB = stackable design

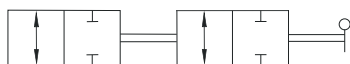
Dimensions 2/2-way combinations (KHB)



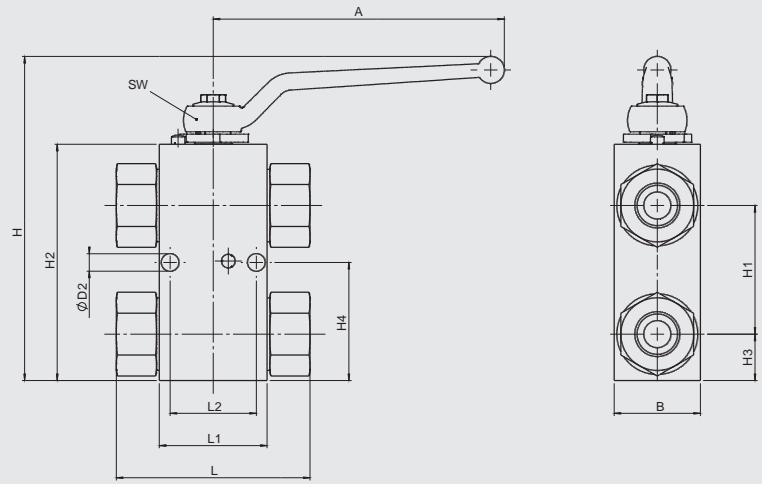
Type	DN	RA	D1	L	L1	B	H	H1	H2	SW1	SW2	A
KHB-G1/8	4	-	G1/8	69	37	28	93.5	65.5	33	9	9	160.5
KHB-G1/4	6	-	G1/4	69	37	28	93.5	65.5	33	9	9	160.5
KHB-G3/8	10	-	G3/8	72	42	32	107.5	73.5	40	9	9	160.5
KHB-G1/2	13	-	G1/2	84	47	35	107.5	73.5	40	9	9	160.5
KHB-G1/2	16	-	G1/2	83	47	40	128.0	88.0	46	12	17	240.0
KHB-G3/4	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



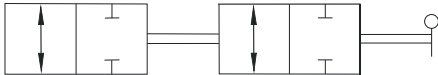
2/2-way block combinations (SO241)



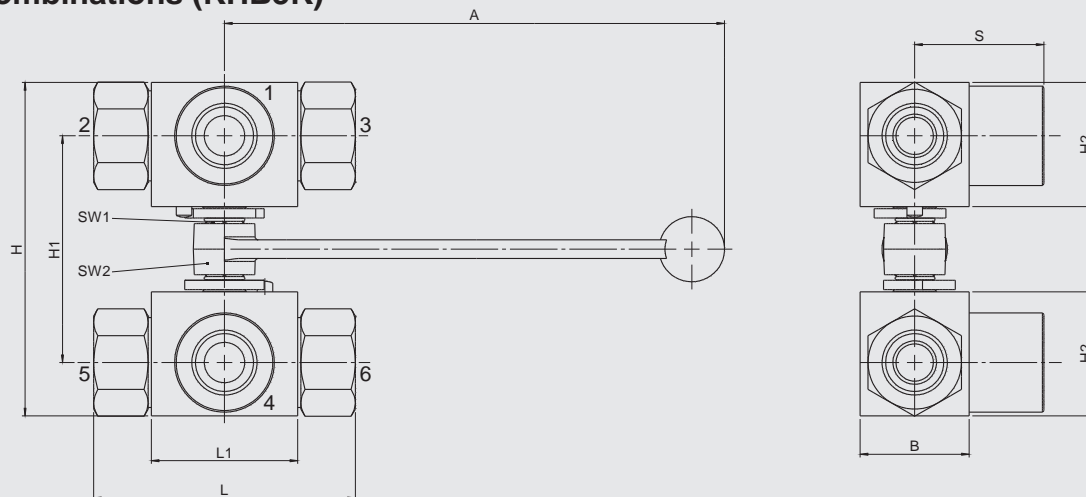
Type	DN	RA	D1	D2	i	L	L1	L2	B	H	H1	H2	H3	H4	SW	A
KHB-G3/8	10	-	G3/8	6.5	14	70	40	32	32	121	47.9	88	17.3	44	9	108
KHB-G1/2	13	-	G1/2	6.5	15	82	40	32	32	121	47.9	88	17.3	44	9	108
KHB-10LR	8	10	M16x1.5	6.5	11	72	40	32	32	121	47.9	88	17.3	44	9	108
KHB-12LR	10	12	M18x1.5	6.5	11	72	40	32	32	121	47.9	88	17.3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



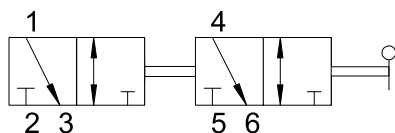
3/2-way combinations (KHB3K)



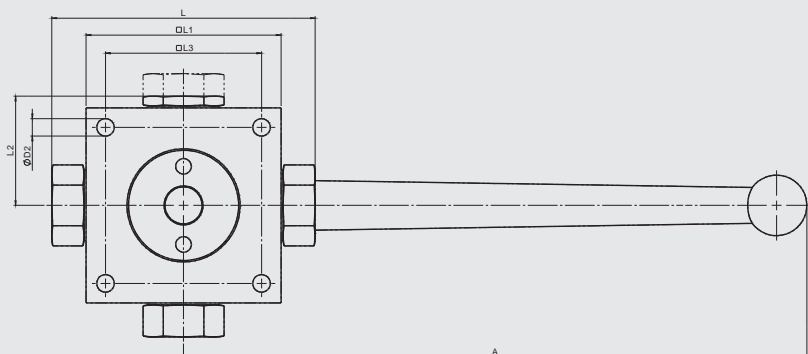
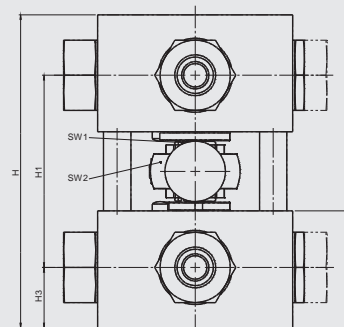
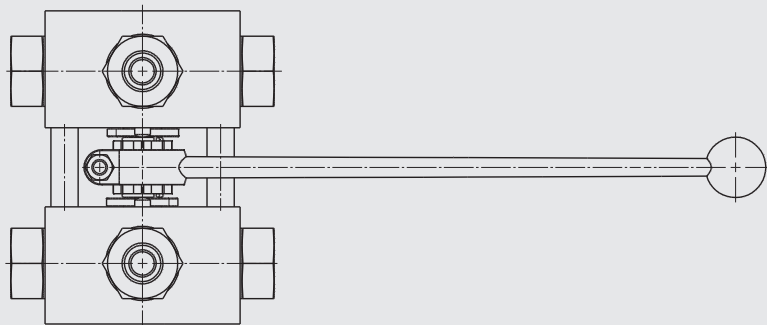
Type	DN	RA	D1	i	L	L1	B	H	H1	H2	S	SW1	SW2	A
KHB3K-G1/4	6	-	G1/4	14	69	37	28	93.5	65.5	33	34.5	9	9	160.5
KHB3K-G3/8	10	-	G3/8	14	72	42	32	107.5	73.5	40	36	9	9	160.5
KHB3K-G1/2	13	-	G1/2	15	84	47	35	107.5	73.5	40	41.5	9	9	160.5
KHB3K-G1/2	16	-	G1/2	16	83	47	40	128.0	88.0	46	41.5	12	17	240.0
KHB3K-G3/4	20	-	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 combinations

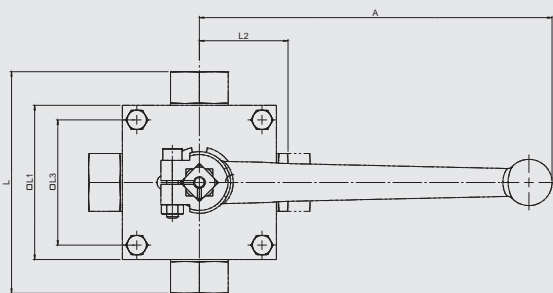
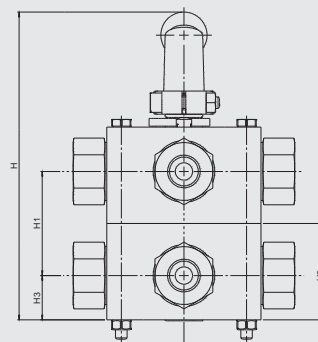
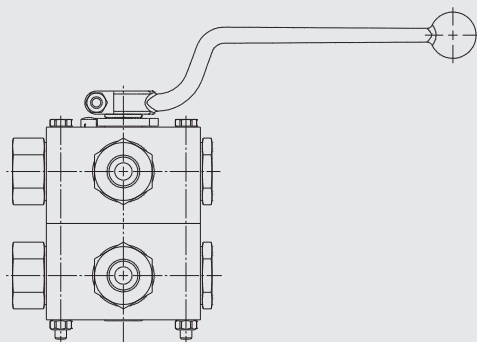


Type	DN	RA	D1	i	L	L1	L2	L3	H	H1	H2	H3	D2	SW1	SW2	A
KH3/4-G1/4	6	-	G1/4	14	100	70	42.5	55	116.0	72.0	40	22	6.5	12	17	240.0
KH3/4-G3/8	10	-	G3/8	14	115	80	46	65	140.5	86.5	50	27	6.5	14	22	319.5
KH3/4-G1/2	16	-	G1/2	16	135	100	56	80	160.5	98.5	60	31	9	14	22	319.5
KH3/4-G3/4	20	-	G3/4	18	144	100	58	85	186.5	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

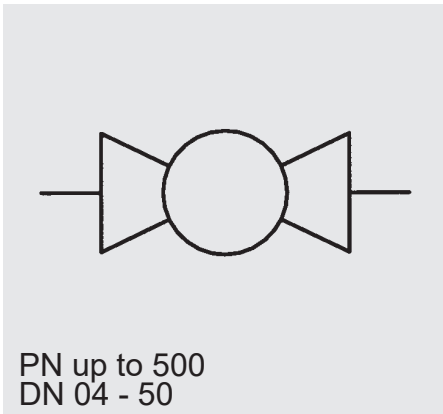
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Ball valves with pneumatic actuator



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 = single-acting 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, NO and NC switch
I = contactless (inductive), NO and NC switch

Dimensions

Ball valves with pneumatic actuator	Single-acting				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	

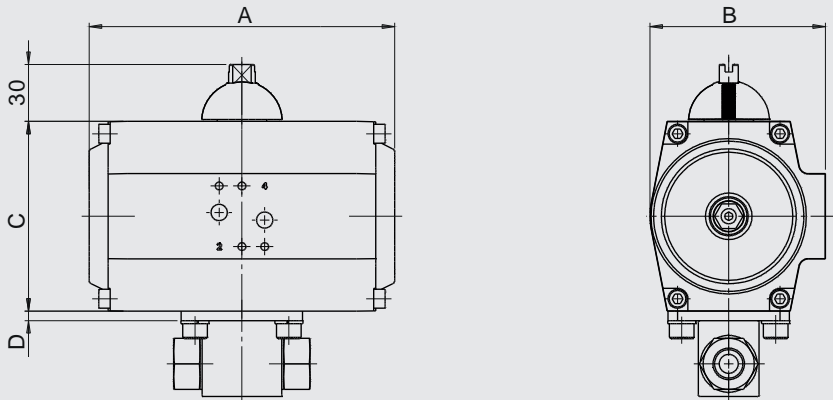
Note

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

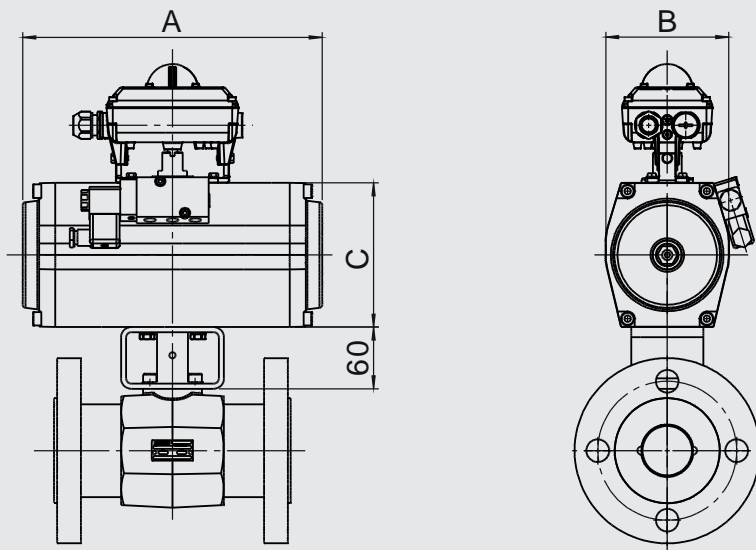
For flanged, manifold and 3-way and 4-way ball valves, a separate coupling is required for assembly.

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

Assembly using adapter plate



Assembly using separate coupling



Technical specifications

Mounting position	No orientation restrictions
Ambient temperature	max. +70 °C
Nominal pressure	up to PN 500 (see ball valve 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
Pilot pressure (actuator)	min. 5.5 bar (others on request)
Spare parts	Seal kits available on request

NOTE

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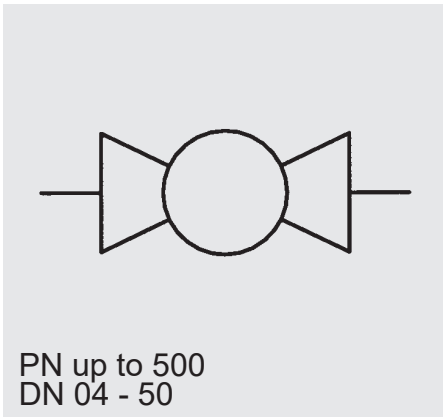
Subject to technical modifications and errors.



Electrically actuated ball valves

Model code
(also example order)

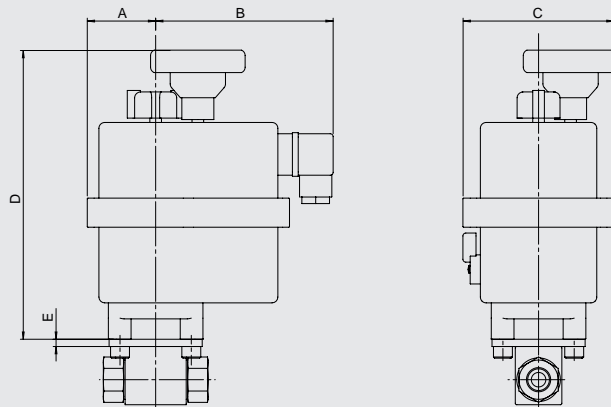
KHB-G1/4-1114 AE.24-240V



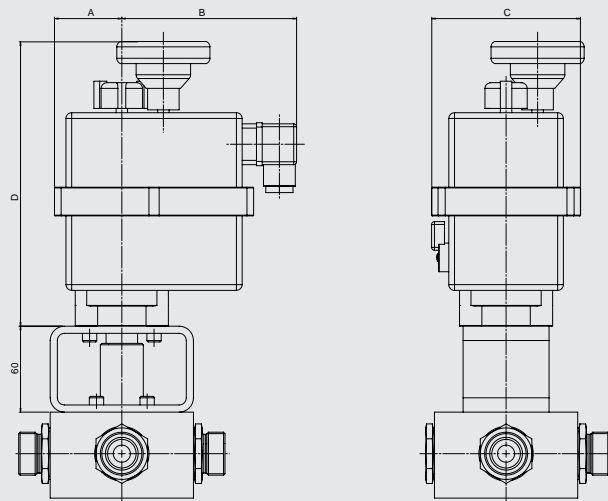
Designation
Type of ball valve

Actuation code
AE = electrically actuated
.24-240V = 24 - 240 V AC/DC (50/60 Hz)

Assembly using adapter plate



Assembly 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 rotary actuator (brushless motor technology)

Provided as standard:

- Manual override via hand wheel
- 2 additional volt-free limit switches
- Electronic torque limiter
- Automatic switch cabinet heating
- Multi-coloured status light
- Dome position indicator
- Freely configurable cam system (max. 340°)
- Standard 2 point open-loop control, 3 point closed-loop control
- Protection class IP 67

Optional:

- BSR (rechargeable safety pack)
- Additional centre position
- Circuit with continuous voltage
- Potentiometer
- 12 V model
- Bluetooth module
- Modbus

Technical specifications

Mounting position	Not above head height
Ambient temperature	-10 °C to +70 °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

NOTE

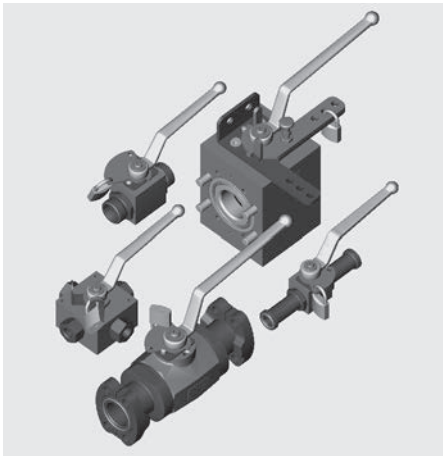
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Lockable ball valves



Model code
(also example order)

KHB-16SR-1114-16X SO 760

Designation

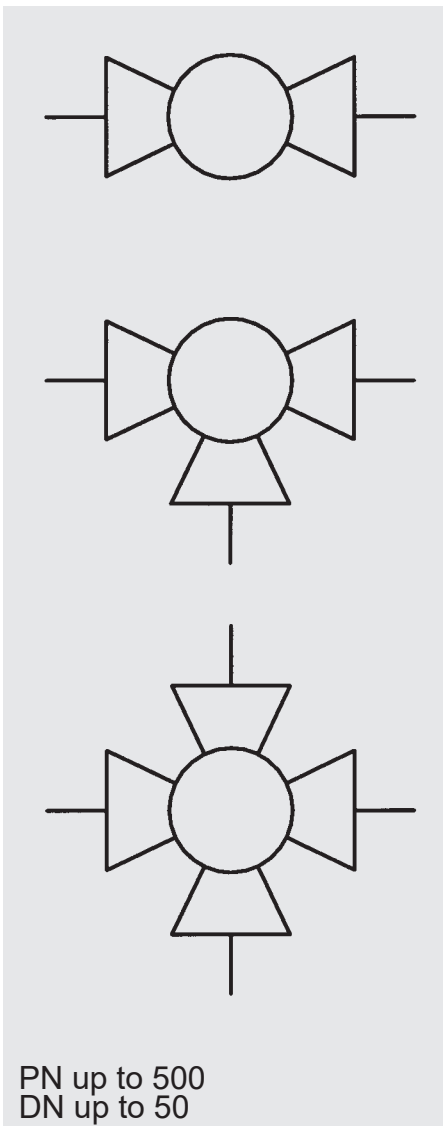
Type of ball valve

Lockable

SO 760 = ball valve can be locked in open and closed position using padlock, padlock not supplied

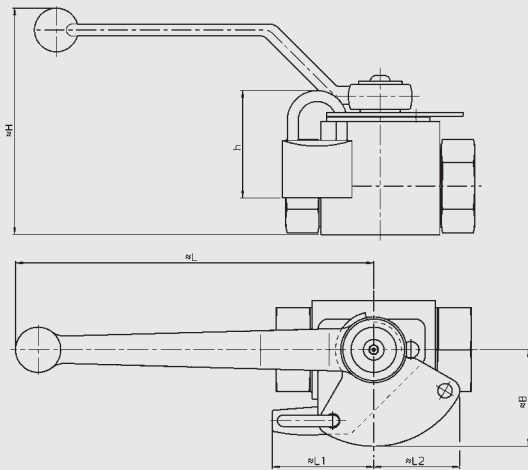
SO 770 = ball valve can be locked in open and closed position using padlock

SO 160 = ball valve can be locked in open and closed position using cylinder lock, key can be removed when locked



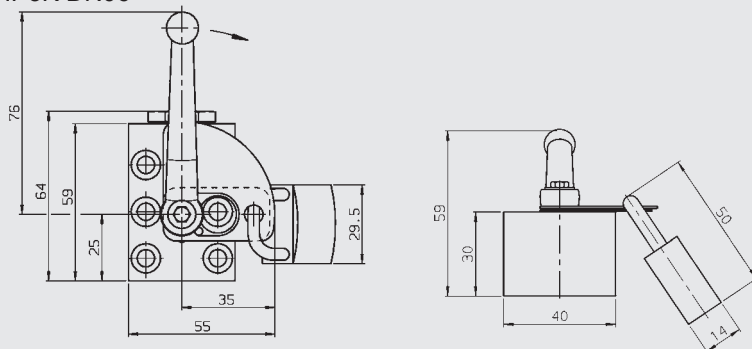
Lockable ball valves SO 760/770

KHB/KHM

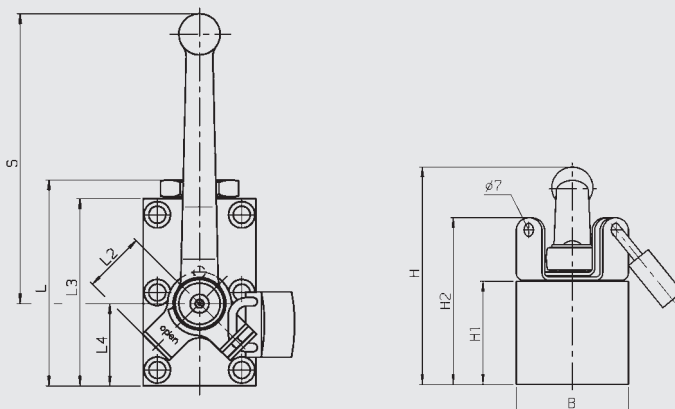


DN		L1	L2	h	B	H	L
04/06	M5	42	28.5	54	32	63.5	108
08/10/13	M5	42	28.5		32	68.5	108
12/16	M5	43	30.5		34	102	174
20	M6	50	41.7		47	114	174
25	M6	50	41.7		47	121	174
32	M8	47	37.9		42	158.5	213
40	M8	47	37.9		42	169.5	213
50	M8	47	37.9		42	186	213

KHP/KHP3K DN06



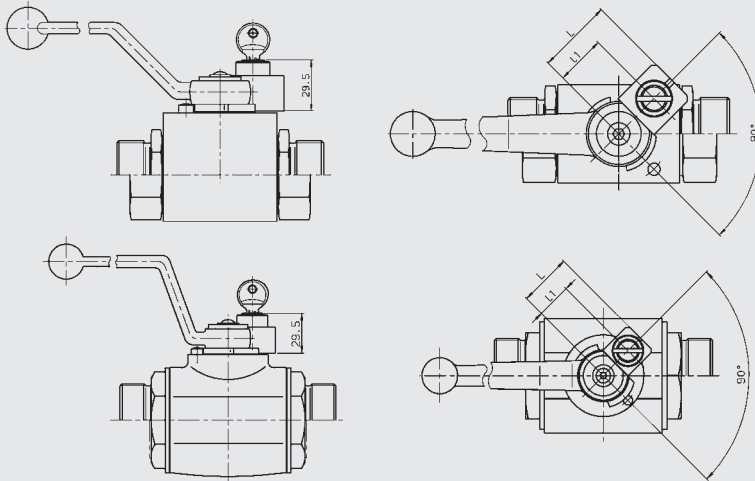
KHP/KHP3K DN10 - 50



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)

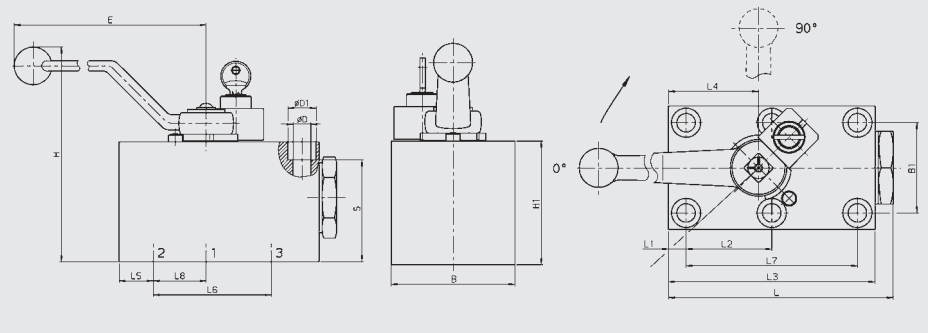
KHB - KHM



SO 160 - Ball valve can be locked in open and closed position using cylinder lock.
Key can be removed when 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

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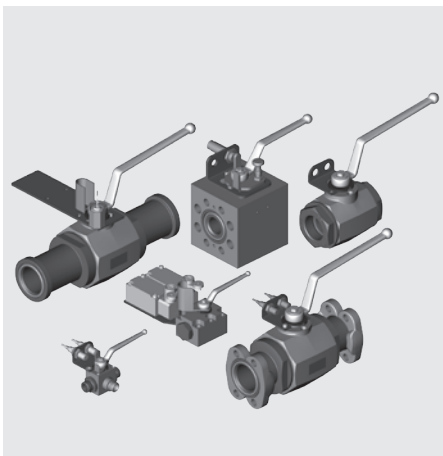
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Internet: www.hydac.com

E-Mail: accessories@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)

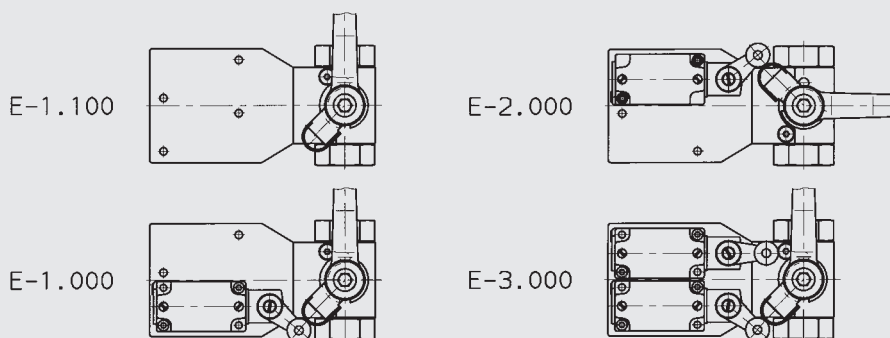
Monitored switching position

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

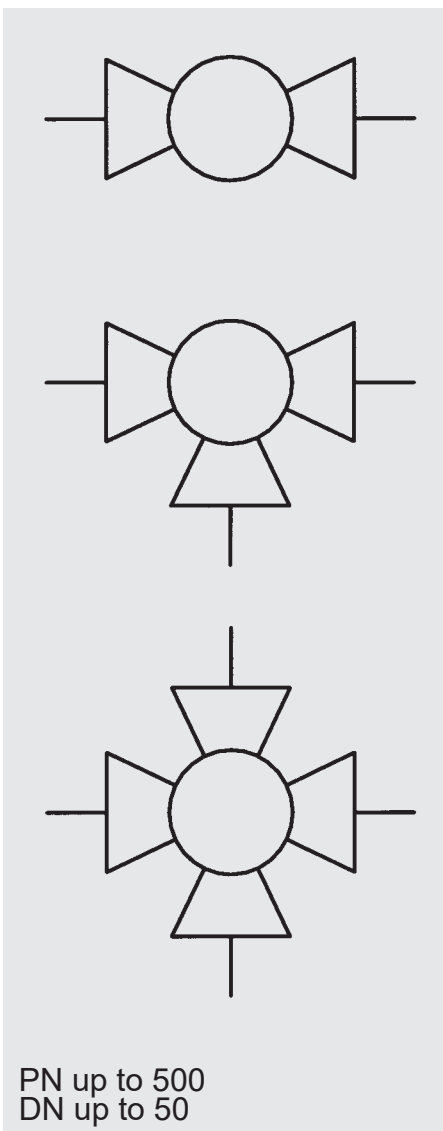
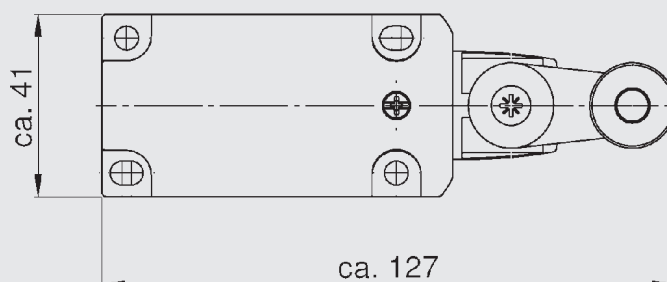
Limit switch code

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

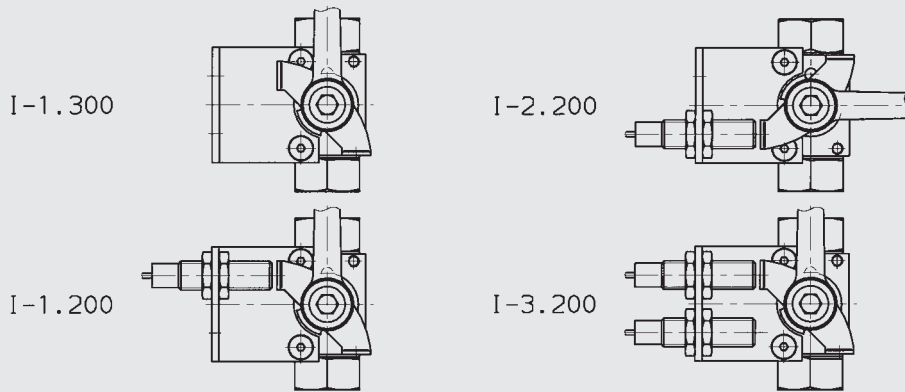
Monitored switching position

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

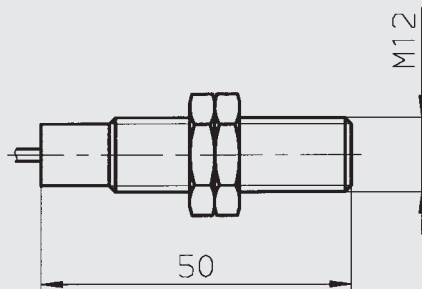
Proximity switch code

- 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 common commercial makes and protection types 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 handle
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 ⁶ switching cycles
Switching frequency:	6 x 10 ³ switching cycles / 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 class:	IP 67
Operating voltage:	10 - 30 V DC (including residual ripple)
Nominal voltage:	12 - 24 V DC
Switching current:	≤ 200 mA
Current consumption w/o 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

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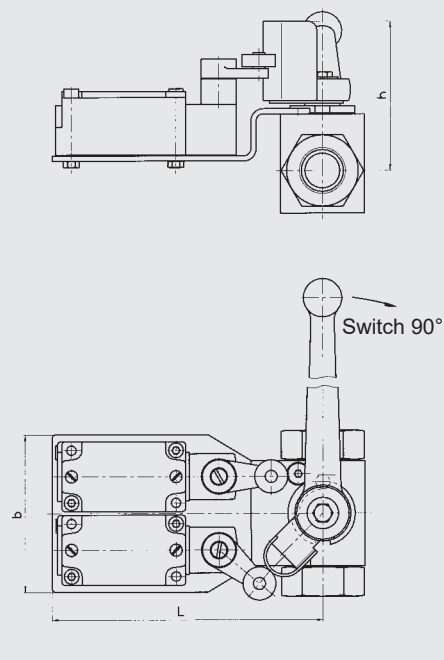
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DIMENSIONS

Ball valve with limit switch

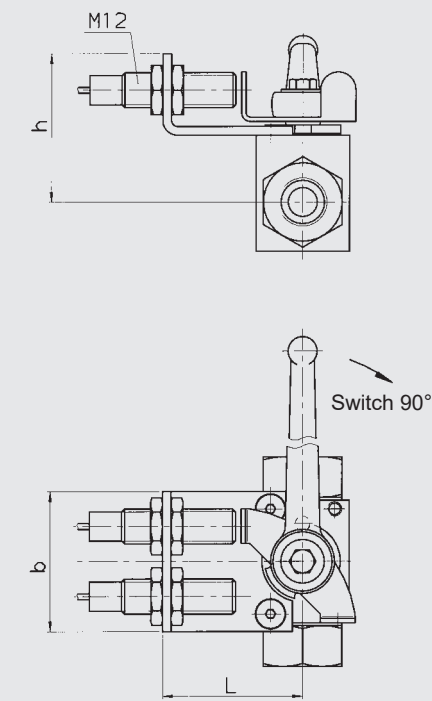
KHB - E-3.000



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

Ball valve with inductive proximity switch M12

KHB - I-3.200



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

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 E-Mail: accessories@hydac.com





Handles SW 06–22

Model code
(also order example)

SCHALTH. AG SW12

Designation

SCHALTH. = handle

Materials and type

- AG (01) = aluminium clamped handle, straight
- ZG (03) = zinc die-cast clamped handle, straight

- AK (02) = aluminium clamped handle, cranked
- ZK (04) = zinc die-cast bolt-on handle, cranked
- SK (06) = steel bolt-on handle, cranked
- SK (26) = steel bolt-on handle, cranked, long version (only SW 17)

Widths of control spindle square

- SW 06
- SW 09
- SW 12
- SW 14
- SW 17
- SW 22

Other handles (shape, size, material) 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 control spindle and is fixed with the screw at the side.

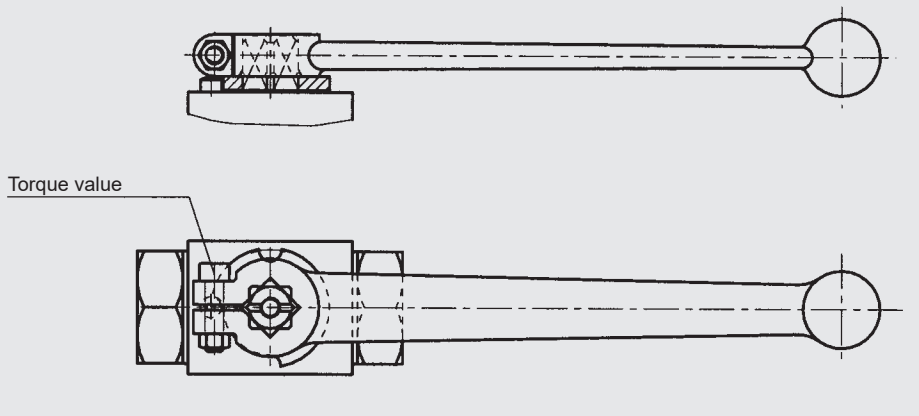
Bolt-on handle

The handle is pushed onto the ball valve control spindle and is fixed with a bolt from the top.

Both types of handle can be transposed by 45°.

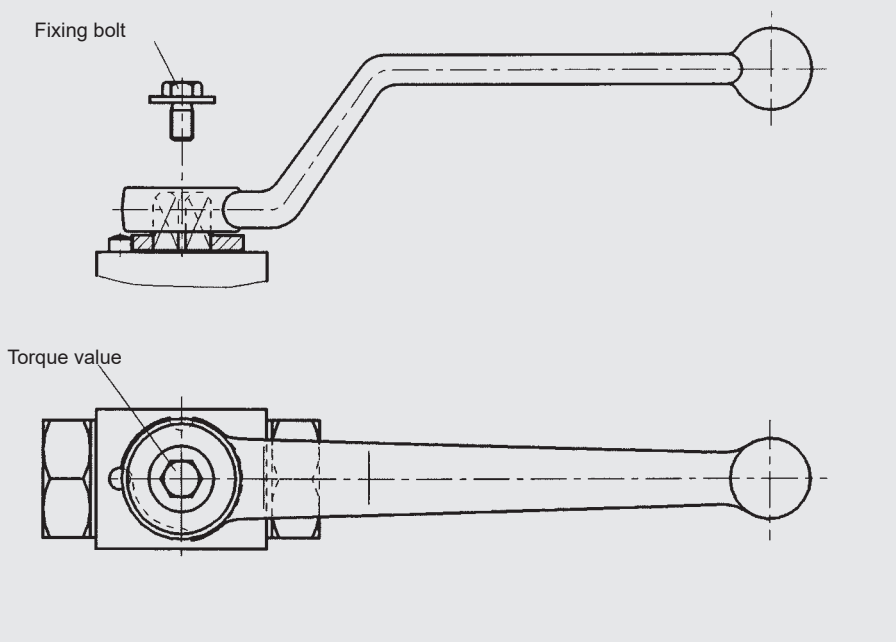
The fixing bolts for the bolt-on handles must be ordered separately.

CLAMPED HANDLE



	SW 09	SW 12	SW 14	SW 17	SW 22
Set-screw	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

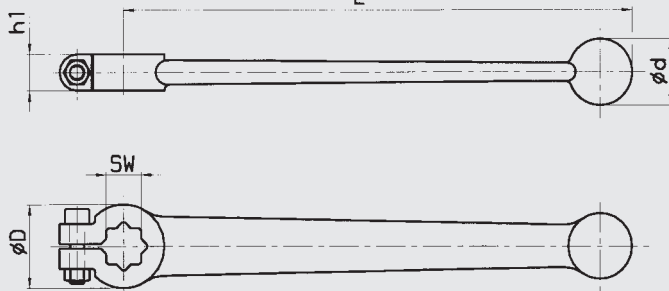
BOLT-ON HANDLE



	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

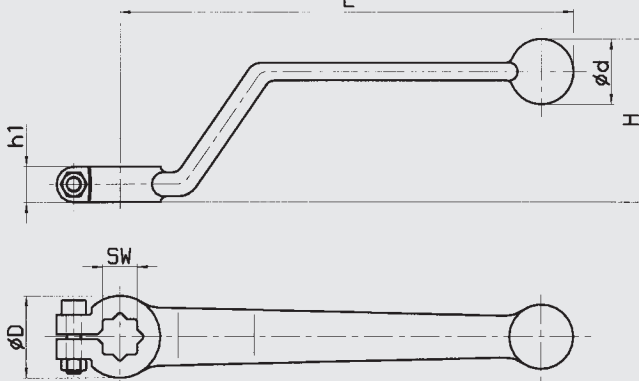
Dimensions

STRAIGHT HANDLE - CLAMPED HANDLE



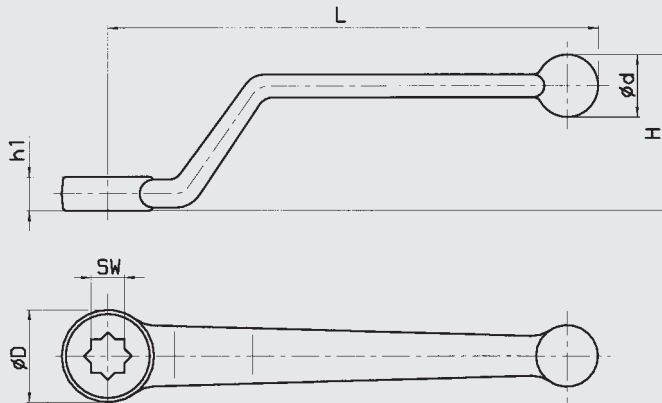
L	ϕD	ϕd	h_1	SW	Type	Part number	Weight (kg)
150	22	15	10	09	ZG (03)	559419	0.090
150	25	20	11	09	AG (01)	270099	0.054
175	28.5	22	12	12	AG (01)	270100	0.073
200	32	24	12	14	AG (01)	270101	0.096
245	36	25	13	17	AG (01)	270311	0.132

CRANKED HANDLE - CLAMPED HANDLE



L	H	ϕD	ϕd	h_1	SW	Type	Part number	Weight (kg)
140	46	25	20	10	09	AK (02)	271423	0.054
163	50	28	22	12	12	AK (02)	270381	0.072
180	60	32	24	12	14	AK (02)	270382	0.097
232	60	36	26	14	17	AK (02)	270383	0.150
367	85	44	32	18	22	AK (02)	281604	0.29

CRANKED HANDLE - BOLT-ON HANDLE



L	H	ϕD	ϕd	h_1	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

Sizes

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.

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.

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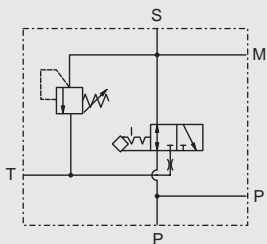
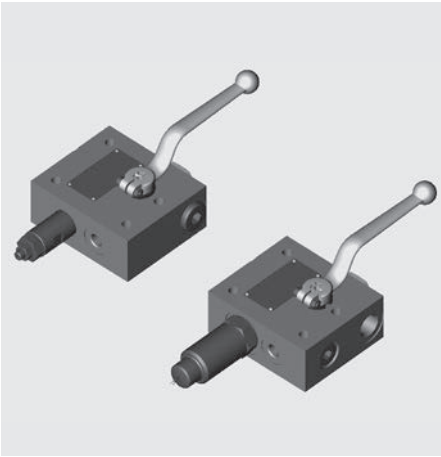
Fax: +49 (0)6897 - 509-1009

Internet: www.hydac.com

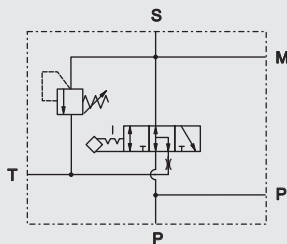
E-Mail: accessories@hydac.com



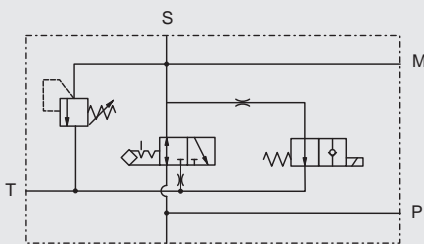
3-way safety block DSV



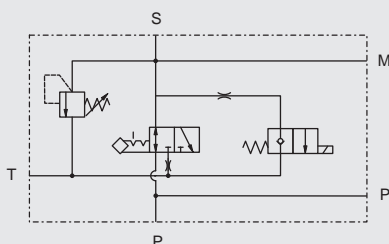
DSV 10 - M



DSV 10 - M - T-ball



DSV 10 - EY



DSV 10 - EZ

PN to 350
DN 10

1. DESCRIPTION

1.1. GENERAL

The 3-way safety block is used to shut off and discharge hydraulic accumulators or loads. 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 factory-set by the manufacturer as specified in 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:

- Notch on the control spindle gives visual indication of the switching position
- Switching limitation by means of stop pin and stop disc
- Sealing principle with floating ball, sealing on the inlet side
- Easy operation
- Two pump ports
- Optimised valve 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 almost all applications, e.g. for aggressive media.

On request we can supply test certificates to EN 10204 and quality test certificates to DIN 55350, Part 18.

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 briefly 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 3-way safety block DSV is used to protect, shut-off and discharge hydraulic accumulators and consumers.

Fields of application include:

- Hydraulic systems using accumulators
- Accumulator stations
- System engineering

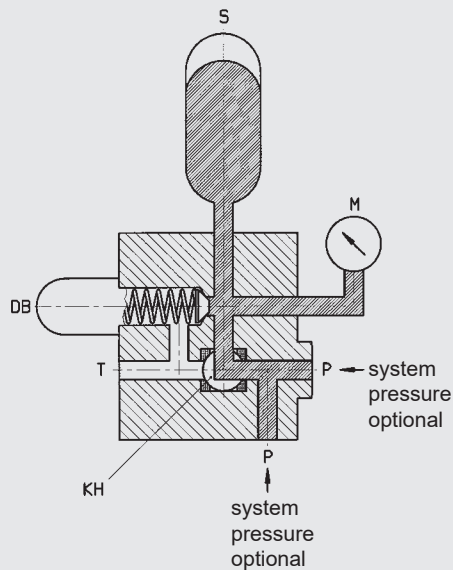
1.4. NOTES

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.

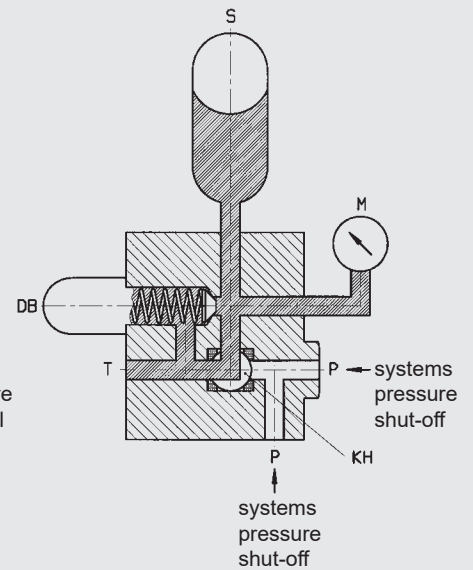
To ensure correct functioning, pressure and temperature specifications must be observed.

The handles are supplied loose.

Accumulator operation



Shutting off the system pressure and simultaneously discharging the accumulator

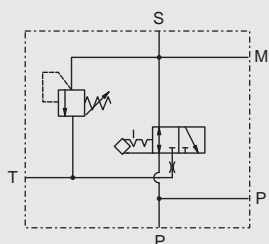


P	Pump port	S	Accumulator
KH	Change-over ball valve	DB	Pressure relief valve
M	Pressure gauge port	T	Tank port

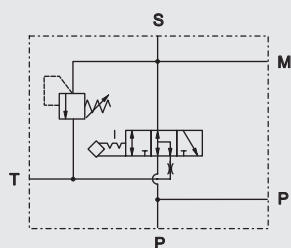
2. TECHNICAL SPECIFICATIONS

2.1. GENERAL

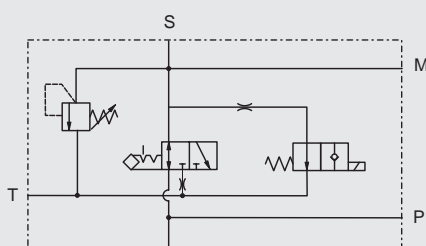
2.1.1 Designation and Symbol 3-way safety block DSV



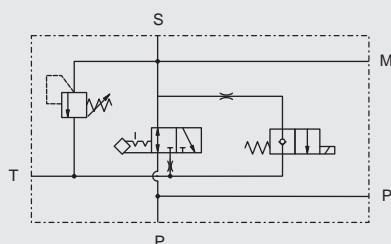
DSV 10 - M



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 manual/ solenoid-operated discharge, also indicate

Y = open when de-energised

Z = closed when de-energised

Model of pressure relief valve

4 = DB 12

2 = DB 4

0 = DBD 6 (on request)

With/without screwed-in 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)

Type of 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 = unspecified (for version 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 hole (180° action)

FKM (Viton) = O-ring seal

Please specify the part no. in your order. (see table 2.1.3)
Non standard types have longer delivery times.

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 poppet seat valve

Poppet valve is pilot-operated

2.1.5 Mounting position

No orientation restrictions

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-chrome-plated

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 cranked, SW 09

- Red anodised aluminium

2.2. HYDRAULIC CHARACTERISTICS

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 mm²/s

max. 380 mm²/s

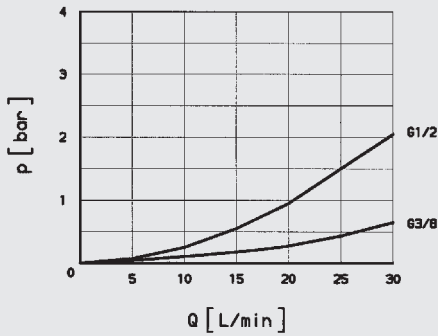
2.2.5 Filtration

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

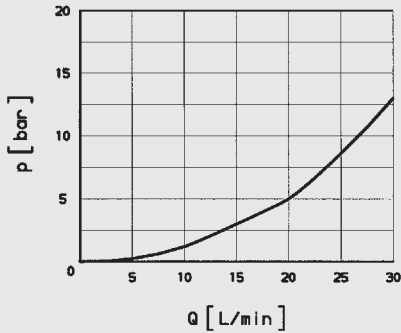
2.2.6 Δp - Q characteristic curve DSV - 10 with pressure relief valve DB 4

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

Flow rate P → S



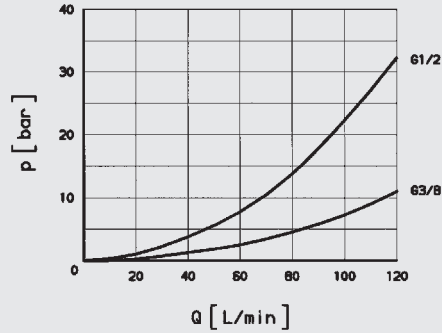
Flow rate S → T



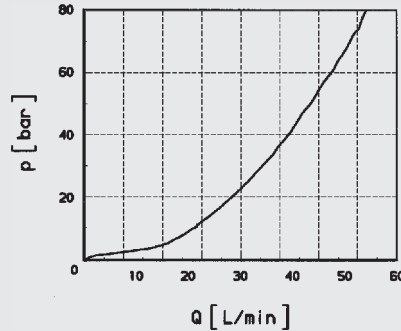
2.2.7 Δp - Q characteristic curve DSV - 10 with pressure relief valve DB 12

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

Flow rate P → S



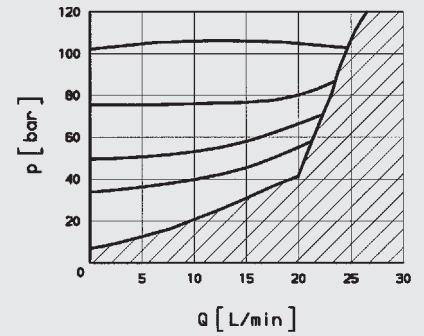
Flow rate S → T



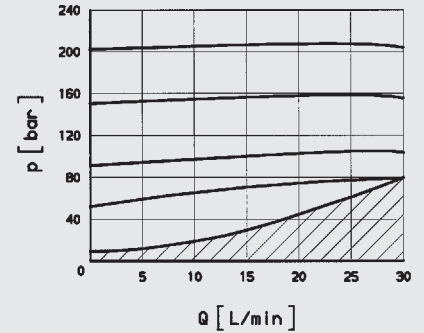
2.2.8 Pressure, dependent on flow rate DB 4

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

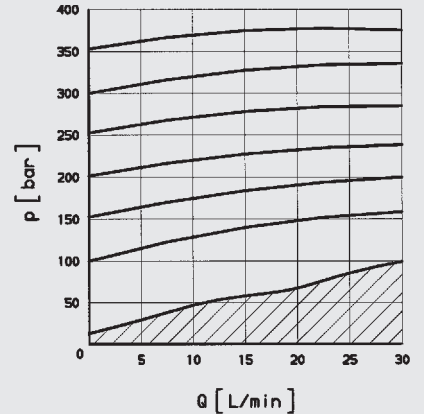
Pressure range ...100 bar



Pressure range ...200 bar



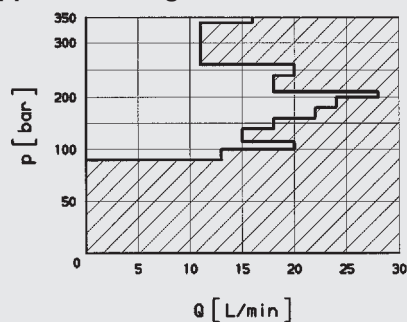
Pressure range ...350 bar



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



Qmax table for DB 4 - TÜV

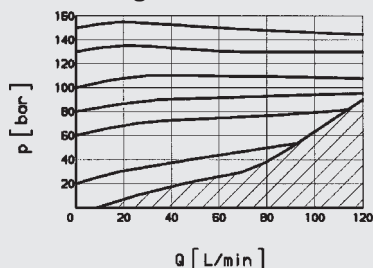
Max. permitted flow rate of the pump

Q _{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

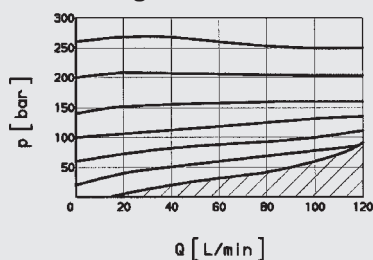
2.2.10 Pressure, dependent on flow rate DB 12

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

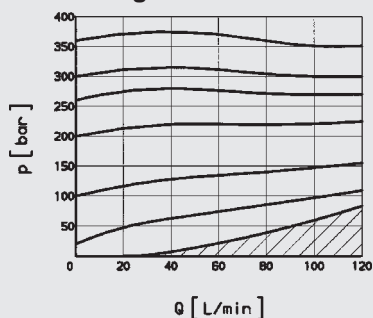
Pressure range ...150 bar



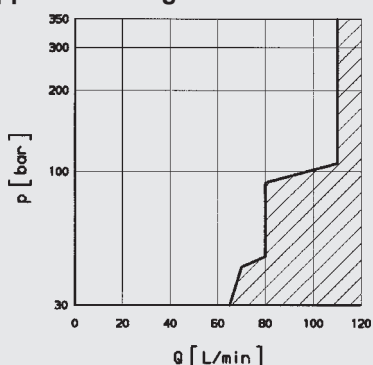
Pressure range ...250 bar



Pressure range ...350 bar



Application range of DB 12 - TÜV



Qmax table for DB 12 - TÜV

Max. permitted flow rate of the pump

Q _{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 rated voltage:
voltage type G: 24 V
voltage type W: 230 V

2.3.4 Voltage tolerance

- 5 %
+ 10 %

2.3.5 Nominal current

Depends 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

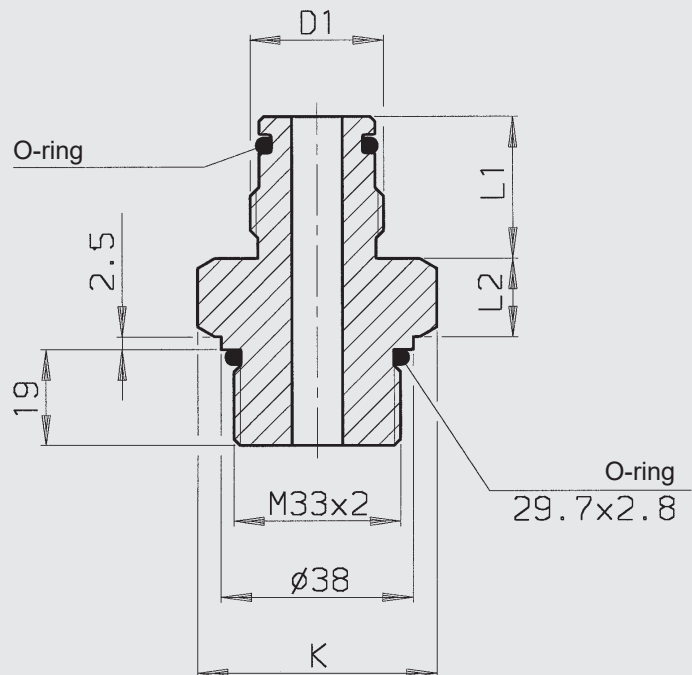
When ordering, please quote part number (see Table 3.3.)
Delivery is longer for non-standard models.

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

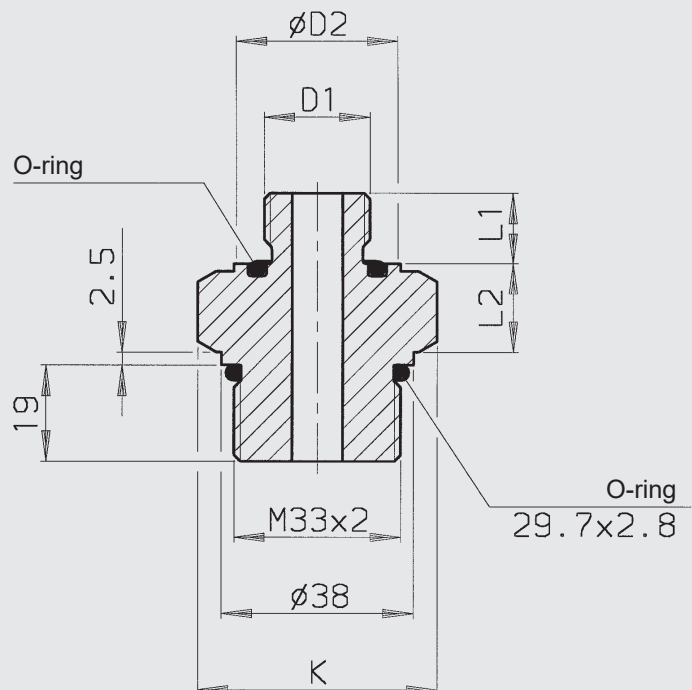
3.4. DIMENSIONS OF ADAPTERS

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 1 ¼ A	-	37	16.5	SW 46	30 x 3
S13	ISO 228 - G 2 A	-	44	20.5	SW 65	48 x 31

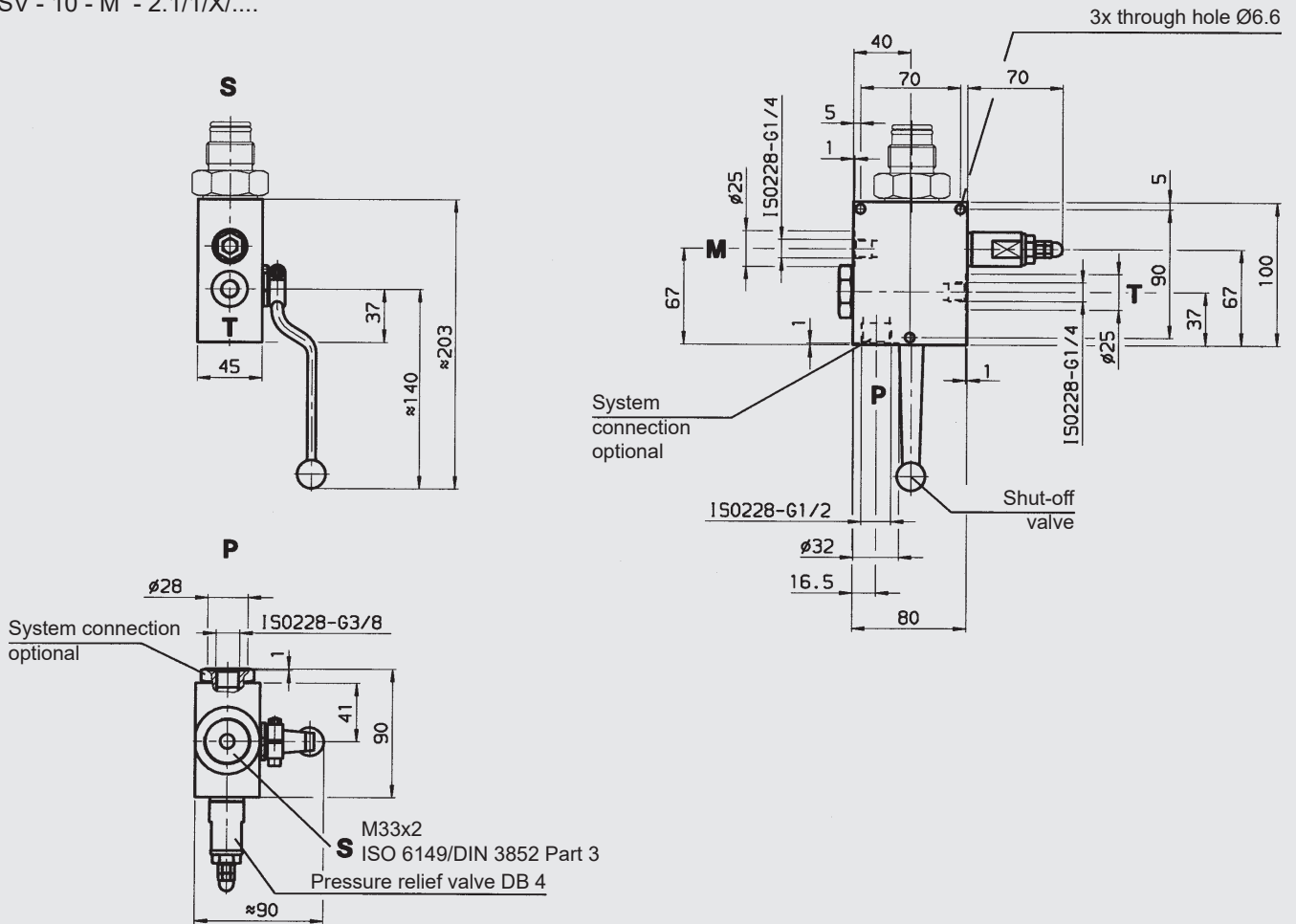
Adapter - M 33 x 2, Figure 2



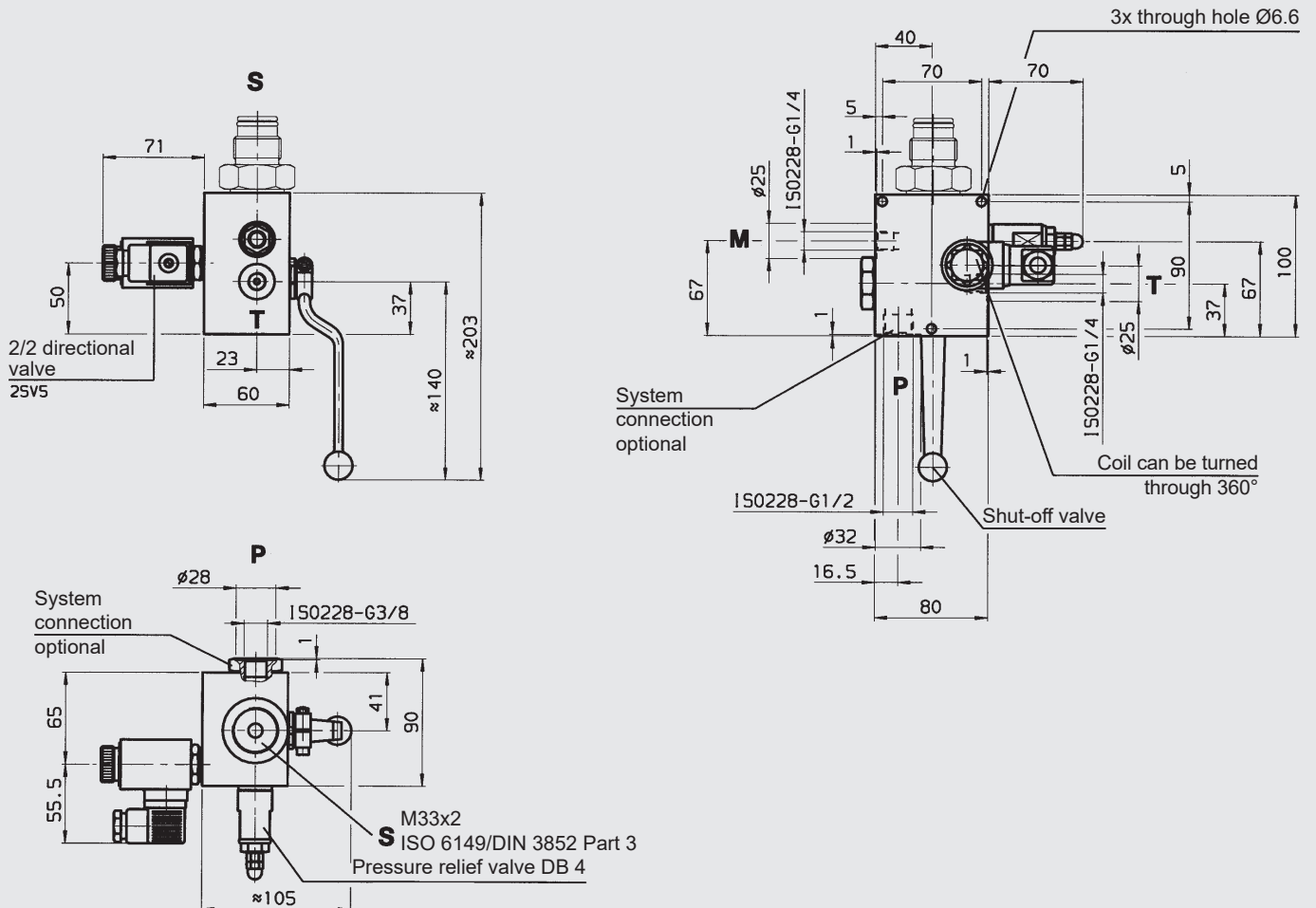
Type	Thread D1	D2	L1	L2	K	O-ring
S20	M 30 x 1.5	40	15	17.5	SW 41	32 x 2
S21	M 40 x 1.5	54	20	20.5	SW 55	43 x 3
S22	M 50 x 1.5	64	20	20.5	SW 65	53 x 3
S30	ISO 228 - G ½ A	33	14	17.5	SW 41	22 x 3
S31	ISO 228 - G ¾ A	40	16	17.5	SW 41	28 x 3
S32	ISO 228 - G 1 A	45	18	18.5	SW 46	35 x 3
S33	ISO 228 - G 1 ¼ A	55	20	18.5	SW 65	44 x 33

4. DIMENSIONS

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

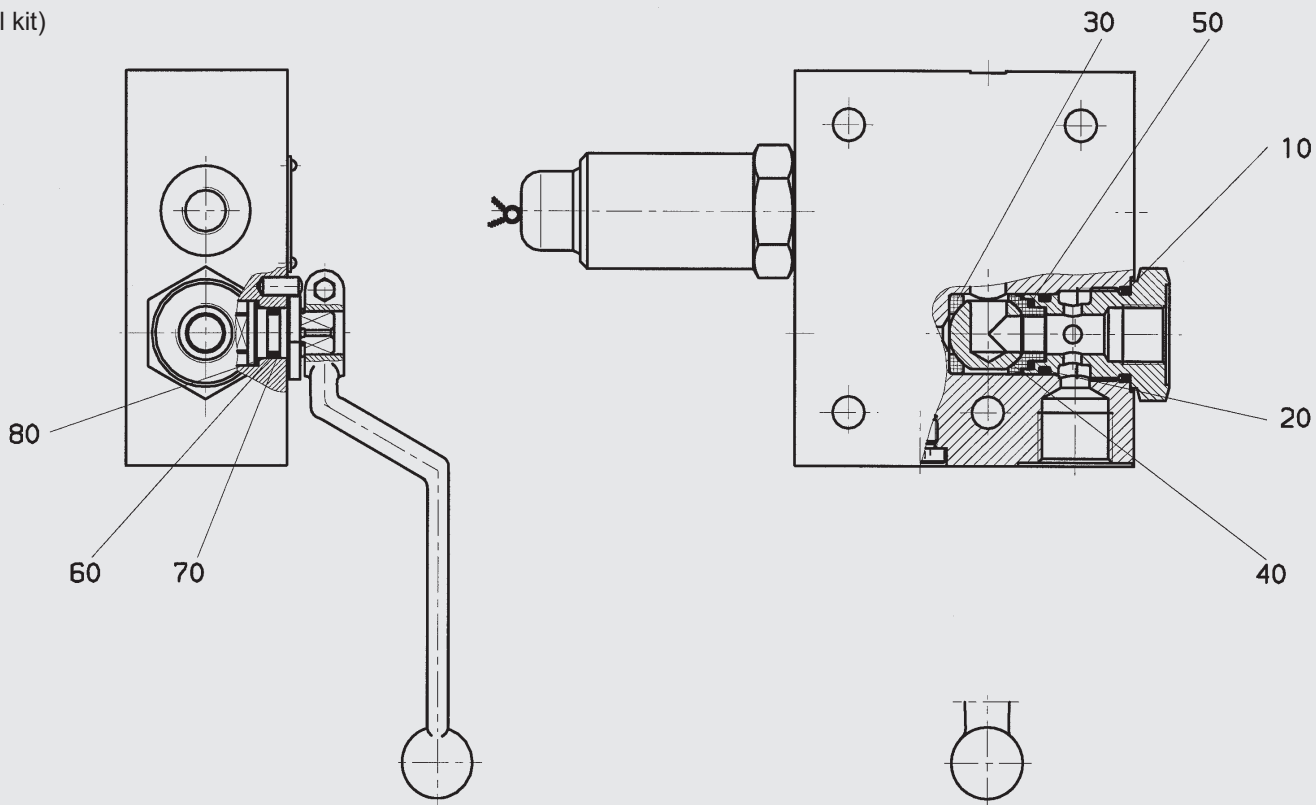


DSV - 10 - E - 2.1/1/X/....



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

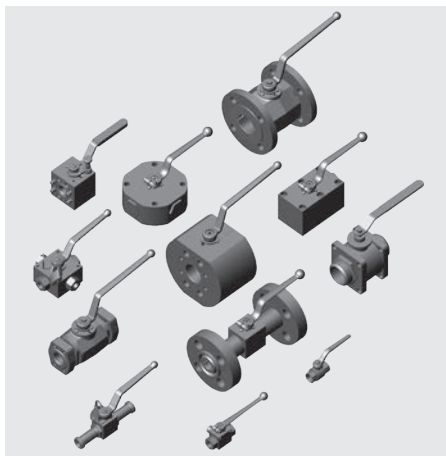
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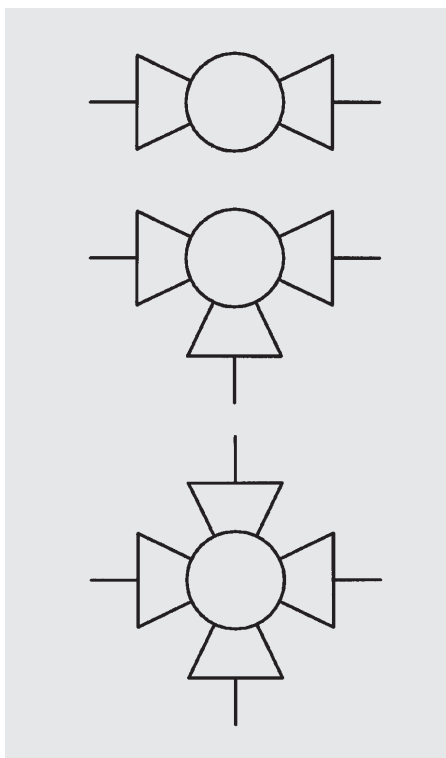
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Compatibility list For 2/2-, 3/2- and 4/2-way ball valves



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	Housing	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
		Ball						
A								
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								
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
C								
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	Housing	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
		Ball						
C								
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
D								
Diesel fuel	1	1	1	1	3	1	2	1
E								
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
F								
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
G								
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
H								
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
I								
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	Housing	Control spindle	GG, GS-C	NBR	FKM	POM	PTFE
		Ball						
I								
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
K								
Kerosene	2	2	2	1	2	1	1	1
Ketone	4	4	4	1	4	4	4	1
L								
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
M								
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
N								
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
O								
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
P								
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	Housing	Control spindle	GG, GS-C	NBR	FKM	POM	PTFE
		Ball						
P								
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
S								
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
T								
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
V								
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
V								
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
W								
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
X								
Xylenes	2	1	2	1	4	2	1	1
Z								
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

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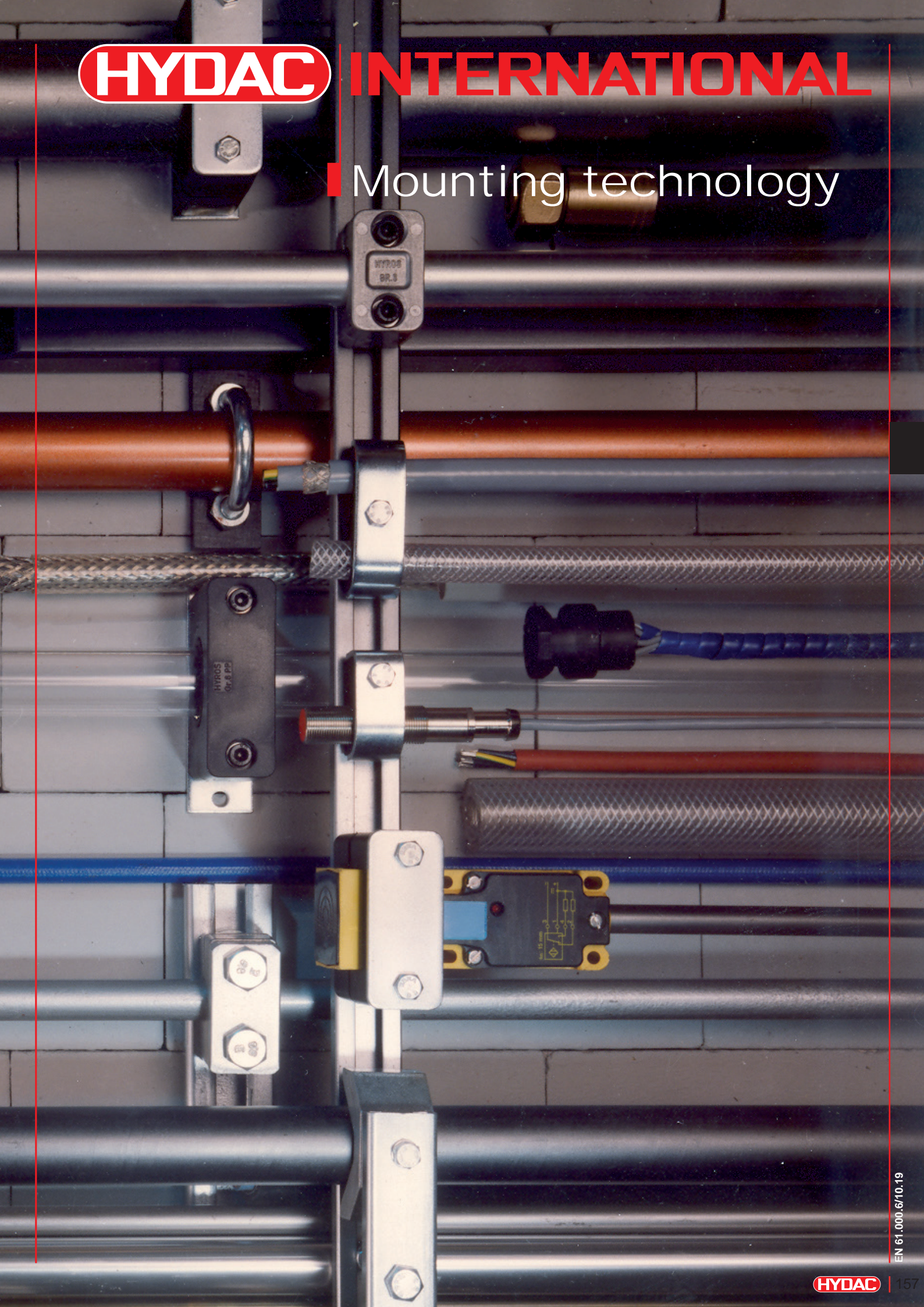
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Mounting technology



Introduction

The strategies taken for HY-ROS mounting technology from HYDAC and its practical foundations originate from the requirements of HYDAC system engineering. For the company's own interest, systems were developed that enabled efficient mounting of hydraulic tubes while guaranteeing long-term safety.

As the consulting and development engineers in the various HYDAC departments worked so closely with customers, it was inevitable that external demand for the user-friendly mounting elements and systems would arise. This meant that additional requirements had to be incorporated and the clamps originally geared towards hydraulics were transformed into modifications, combinations, custom-made devices and entire new solutions in series.

For attaching pipes, hoses, cables, sensors, switches and/or any other rounded or angular parts wherever you wish, the range from HY-ROS mounting technology offers perfect solutions for almost all fields of application – as a customised development and/or by order from stock.

Part for part, one step ahead:

- For pipes, tanks, machine parts, hoses and cables...
- For customised dimensioning
- Rapid and reliable mounting
- Space-saving
- Shock-absorbing, vibration-damping and noise-absorbing
- Resistant to chemical influences

The products:








- Clamps to DIN 3015: Part 1+2+3,
- HYDAC clamps: Buegu and oval clamps, diagonal clamps
- Series strips: Light range, heavy range
- Bolt clamps: Round and flat steel bolt clamps
- Swivel bolt clamps: Quick release swivel bolt band clamps
Swivel bolt prism clamps
Swivel bolt clamping band
Hose clamps, supports
Clamps for cylinders
- Other solutions: Sensor clamps
Corrugated tube clamps
Pipe fittings
Fastening clamps DIN 3016-1
Hose clamps DIN 3017-1
- HY-ROFLEX: Crescent
Star
Fixed Star
- Mounting elements for hydraulic accumulators

Apart from the standard clamps HYDAC offers a wide range of customer-specific solutions.



Plant HYDAC Accessories - Servicestelle Nord, Rheda-Wiedenbrück

Catalogue overview

		Mounting for ...	Pipes	Hoses, cables	Components	Page
Clamps to DIN 3015 (brochure 8.183) 	General					161
	Technical data					162
	Packing units					163
	Dimensions metric/imp.					164
	Light range DIN 3015 Part 1		●			165
	Heavy range DIN 3015 Part 2		●			175
	Light range DIN 3015 Part 1 with elastomer insert		●	●		173
	Heavy range DIN 3015 Part 2 with elastomer insert		●	●		181
	Twin clamps DIN 3015 Part 3		●			183
HYDAC clamps (brochure 8.184) 	General					189
	Buegu clamp		●	●	●	191
	Oval clamp		●	●		197
Series strips (brochure 8.185) 	General					199
	Series strips, light range		●			201
	Series strips, heavy range with elastomer insert		●	●		209
Bolt clamps (brochure 8.186) 	General					215
	U-bolt clamps similar to DIN 3570		●			217
	Flat steel bolt clamps DIN 3567		●			221
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	Swivel bolt clamping band				●	225
	Support, short, for air containers				●	229
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	Quick release swivel bolt band clamp				●	233
	Quick release swivel bolt band clamp "Multi"		●		●	237
	Swivel bolt prism clamp		●		●	243
	Clamps for mounting components to cylinders		●		●	245
Other solutions (brochure 8.188) 	General					247
	Sensor clamp				●	249
	Corrugated tube clamp			●		251
	Pipe fitting		●			253
	Fastening clamps DIN 3016 part 1		●	●	●	255
	Hose clamps DIN 3017 Part 1					257
	HY-ROFLEX (brochure 8.822) 	Crescent			●	
Star				●		259
Fixed Star				●		259
Supports for hydraulic accumulators (brochure 3.502)					●	265

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HYDAC Accessories GmbH

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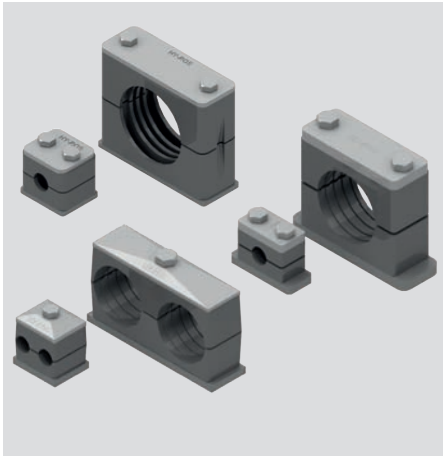
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Clamps to DIN 3015

DIN 3015-1 Light range

DIN 3015-2 Heavy range

DIN 3015-3 Twin clamps

General

Clamps to DIN 3015 are a sophisticated modular system for fixing pipes with static and dynamic loads.

It offers several advantages:

- Damping of shocks, vibrations and noise, as well as compensation of pipe tolerances through the use of elastomer inserts
- High strength ensured by ribbed clamp bodies
- Weld plate from a single pulled piece
- Steel parts with sufficient surface protection
- Secure overhead installation through clamping effect of the plastic parts
- Can be installed on C mounting rails, also available with weld struts
- Efficient plug/screw installation of the mounting rail nuts
- Optional:
 - Elimination of rust penetration due to all-round anti-corrosion coatings
 - Gentle component mounting with clamp bodies made of a thermoplastic element

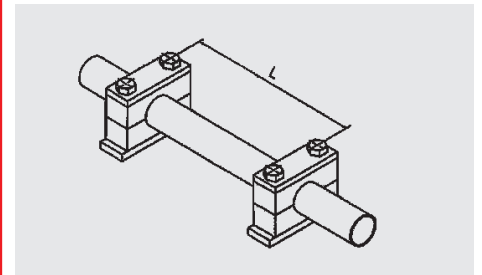
Assembly

All the pipe clamps in the HY-ROS range offer extremely impressive features: excellent resilience, optimal material resistance to tensile and tear stress, and high abrasion resistance.

The type of pipe clamp, size and material are selected depending on the application and type of stress (thermal / mechanical).

- For secure mounting, stable carrier units, such as base plates and mounting rails, are required according to the load requirements.
- The first clamp should be mounted directly after the threaded connection. This protects the connection from vibrations.
- Bends in the pipe should be clamped on both sides of the bend (pulsation direction must be taken into account).
- The prescribed material property limits must be observed.
- In the absence of any past experience, the recommended distance between pipe supports must be adhered to (see right).
- 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 diameter 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

Material properties of clamps to DIN 3015

Material	Density	Yield stress and/or tensile strength	Shore hardness	Temperature resistance	Fire protection
	ISO 1183	ISO 527-2	ISO 868		EN 45545-2
Polypropylene (PP)	0.9 g/cm ³	26 MPa	-	-30 to +90 °C	-
Polyamide (PA)	1.13 g/cm ³	tr. 90 / lf. 45 MPa	-	-40 to +120 °C	-
Polyamide, flame-retardant (PAFF)	1.14 g/cm ³	tr. 80 / lf. 40 MPa	-	-40 to +120 °C	R22, R23 / HL1, HL3, HL3
Thermoplastic elastomer (TPE)	0.97 g/cm ³	8.3 MPa	73 ±5° Shore A Others on request	-40 to +125 °C	-
Acrylonitrile butadiene elastomer (NBR)	1.35 g/cm ³	25 MPa	73 ±5° Shore A Others on request	-35 to +90 °C	-

Bolt torque rating to DIN 3015 Part 10

Standard	Thread	Nominal size	Torque rating [Nm] with clamp 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
	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
		9	200	370	500
M 30	10	270	470	600	
	M 6	1	5	6	-
		M 8	2 to 4	12	12
	5		8	8	-

Note: The specified bolt torque ratings relate to assembly with cover plates and hex. head bolts to ISO 4014 / 4017.

Packing details for light range DIN 3015 Part 1

Light range	Pairs of clamp jaws			Weld and cover plates			Bolts	
	Box (pairs)		Bag (pairs)	Box (pieces)		Bag (pieces)	Box (pieces)	Bag (pieces)
	PP, PA	AL		AP	DP			
0	1000	-	50	250	500	50	1000	50
1	1000	500	50	250	500	50	1000	50
2	1000	250	50	250	250	50	1000	50
3	500	250	50	250	250	50	1000	50
4	500	200	25	200	200	25	1000	50
5	250	100	25	100	200	25	500	50
6	250	100	25	100	200	25	500	50
TMV 6 / TM6				1000		50		
Washer				-		50		
Build-up bolt the same as normal bolts								

Packing details for heavy range DIN 3015 Part 2

Heavy range	Pairs of clamp jaws			Weld and cover plates		Bolts	
	Box (pairs)		Bag (pairs)	Box (pieces)	Bag (pieces)	Box (pieces)	Bag (pieces)
	PP, PA	AL					
1	500	250	25	100	25	250	50
2	250	150	25	100	25	250	50
3	250	100	25	100	25	250	50
4	250 (pieces)	-	-	25 (AP), 50 (DP)	-	100	-
5	120 (pieces)	-	-	25	-	25	-
TM 10				250	50		
TM 12				250	50		
Washer				-	50		
Build-up nut size 1 - 4				250	50		
Build-up nut size 5				100	-		
Stud size 1 - 3				250	50		
Stud size 4				250	-		
Stud size 5				100	-		

Packing details for twin clamps DIN 3015 Part 3

Twin clamp	Pairs of clamp jaws		Weld and cover plates			Bolts		
	Box (pairs)		Bag (pairs)	Box (pieces)		Bag (pieces)	Box (pieces)	Bag (pieces)
	PP, PA	AL		AP	DP			
1	1000		50	200	250	50	500	50
2	750		50	100	200	50	500	50
3	500		50	100	200	50	500	50
4	250		25	100	100	25	200	25
5	250		25	100	100	25	200	25
TMV 6 / TM6						50		
TM 8						25		
Build-up bolt the same as normal bolts								

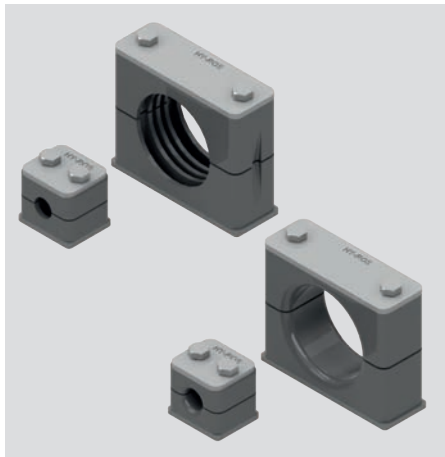
Note: Only available in given pack sizes

Comparison metrical / imperial measurements

Pipe outside Ø [mm]	Inches	Nominal bore
6	-	-
6.4	1/4	-
8	5/16	-
9.5	3/8	-
10	-	G 1/8
12	-	-
12.7	1/2	-
13.7	-	G 3/4
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	-	-

Pipe outside Ø [mm]	Inches	Nominal bore
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

Pipe outside Ø [mm]	Inches	Nominal bore
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	G 12
355.6	-	G 14
406.4	-	G 16



Light range to DIN 3015 Part 1

HRL, HRGL

Size	Pipe outside Ø [mm]
0	6.4
	8
	9.5
	10
	12
1	6
	6.4
	8
	9.5
	10
2	12
	12.7
	13.7
	14
	15
3	16
	17.1
	18
	19
	20
4	21.3
	22
	23
	25
	25.4
5	26.9
	28
	30
	32
	33.7
6	35
	38
	40
	42
	44.5
7	48.3
	50.8
	57.2
	60.3
	63.5
8	70.0
	73.0
	76.1
	88.9
	101.6

Model code

(also order example)

HRL 2 A 16 PP ST M BL

Range

HRL = HY-ROS clamp, light range with ribbed internal surface
 HRGL = HY-ROS clamp, light range with smooth internal surface

Size

0 = size 0
 1 = size 1
 2 = size 2
 up to size 8

Model for complete clamps

(pair of clamp jaws not mentioned)

A = with weld plate, cover plate and hex. head bolt
 AV = with extended weld plate, cover plate and hex. head bolt
 A1 = with cover plate and hex. head bolt
 A1TM = with cover plate, hex. head bolt and mounting rail nut
 B = with weld plate, hex. socket bolt and washer
 BV = with extended weld plate, hex. socket bolt and washer
 B1 = with hex. socket bolt and washer
 B1TM = with hex. socket bolt, washer and mounting rail nut
 C = with weld plate, slotted-head bolt and washer
 CV = with extended weld plate, slotted-head bolt and washer
 C1 = with slotted-head bolt and washer
 C1TM = with slotted-head bolt, washer and mounting rail nut
 D = with build-up bolt and locking plate

Pipe diameter

Material of clamp jaws

PP = polypropylene
 PA = polyamide
 PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3
 TPE = thermoplastic elastomer
 AL = aluminium (sizes 0, 7, 8 on request)

Material of steel parts

ST = steel
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

Thread type

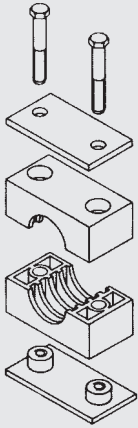
M = metric thread

Plating of steel parts

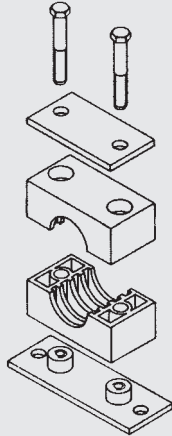
BL = weld plate unplated, cover plate zinc-plated, bolts zinc-plated
 ZN = weld plate zinc-plated, cover plate zinc-plated, bolts zinc-plated
 Others on request

Models for light range DIN 3015 Part 1

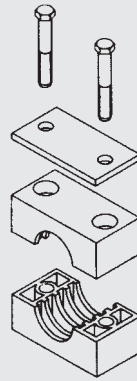
Model A
Size 0–8



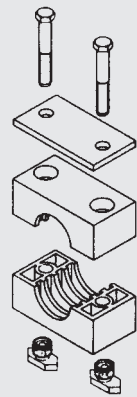
Model AV
Size 0–8



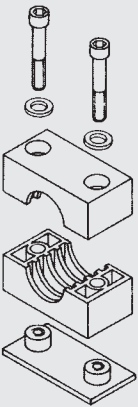
Model A1
Size 0–8



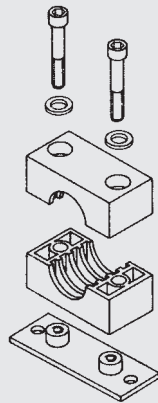
Model A1TM
Size 0–8



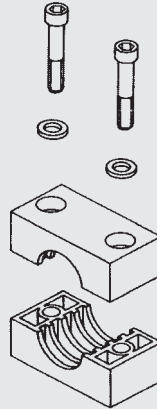
Model B
Size 0–8



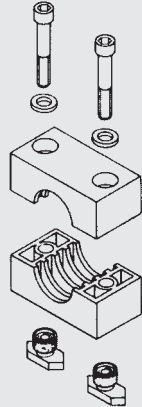
Model BV
Size 0–8



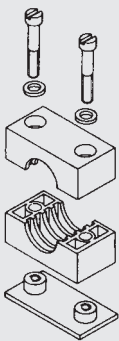
Model B1
Size 0–8



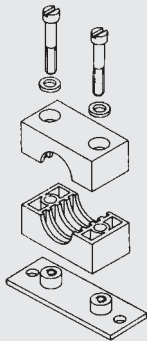
Model B1TM
Size 0–8



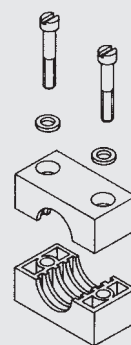
Model C
Size 0 - 6



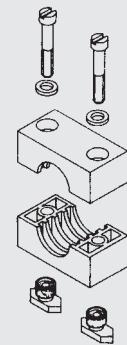
Model CV
Size 0 - 6



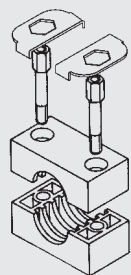
Model C1
Size 0 - 6



Model C1TM
Size 0 - 6

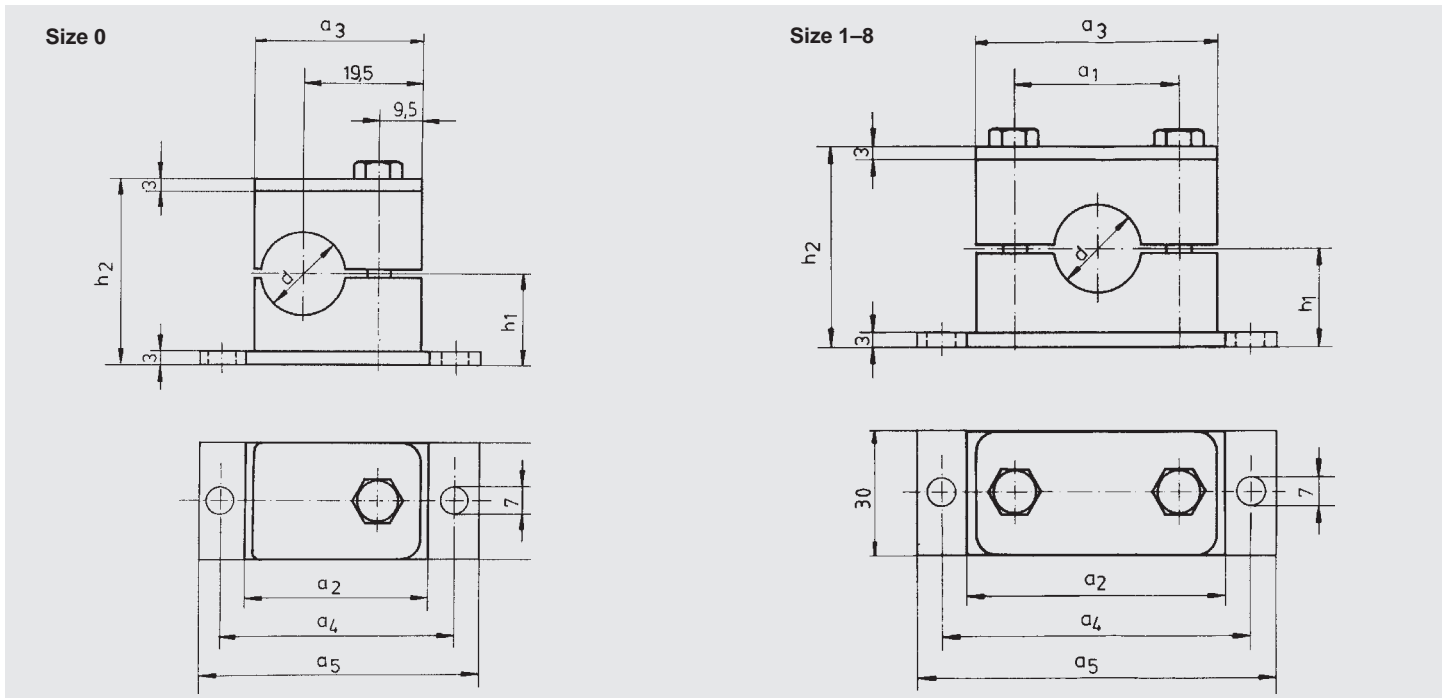


Model D
Size 0 - 6



Note:
No washers are required in the AL version for series B and C.

Dimensions for light range DIN 3015 Part 1

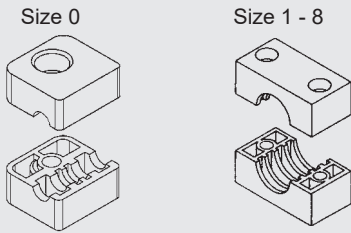


Size	Dimensions [mm]							Hex. head	Hex. socket	Stud	Slotted head
	a1	a2	a3	a4	a5	h1	h2	ISO 4014	ISO 4762	DIN 938	ISO 1207
0	-	30	28	44	58	16	32	M6 x 30	M6 x 20	M6 x 20	M6 x 20
1	20	36	36	50	64	16	32	M6 x 30	M6 x 20	M6 x 20	M6 x 20
2	26	42	40	56	70	19.5	39	M6 x 35	M6 x 25	M6 x 25	M6 x 25
3	33	50	48	64	78	20.5	41	M6 x 40	M6 x 30	M6 x 30	M6 x 30
4	40	60	57	73	87	24	48	M6 x 45	M6 x 35	M6 x 35	M6 x 35
5	52	72	70	86	100	32	64	M6 x 60	M6 x 50	M6 x 50	M6 x 50
6	66	88	86	100	116	36	72	M6 x 70	M6 x 60	M6 x 60	M6 x 60
7	94	122	121	136	150	51.5	103	M6 x 100	M6 x 85	-	-
8	120	148	147	162	178	64	128	M6 x 125	M6 x 110	-	-

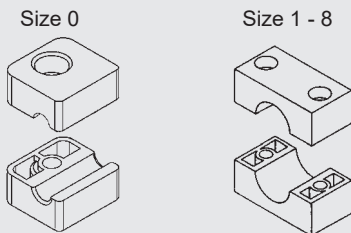
NOTE: For sizes 7 and 8, the cover plate and weld plate are 5 mm thick.

Individual parts for light range DIN 3015 Part 1

Pair of clamp jaws, ribbed (HRL...KP...)



Pair of clamp jaws, smooth (HRL...KP...)



Model code (also order example)

HRL 3 KP 23 PP

Range

HRL = HY-ROS clamp, light range with ribbed internal surface
 HRGL = HY-ROS clamp, light range with smooth internal surface

Size

(as per dimensions)

Designation

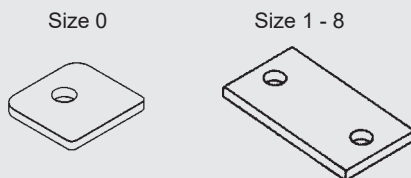
KP = pair of clamp jaws

Pipe diameter

Material of clamp jaws

PP = polypropylene
 PA = polyamide
 PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3
 TPE = thermoplastic elastomer
 AL = aluminium (sizes 0, 7, 8 on request)

Cover plate (DP)



Model code (also order example)

HRL 3 DP ST ZN

Range

HRL = HY-ROS light range

Size

(as per dimensions)

Designation

DP = cover plate

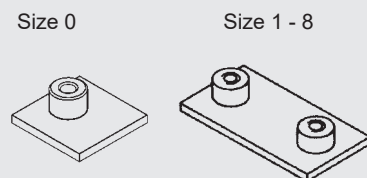
Material of steel parts

ST = steel
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

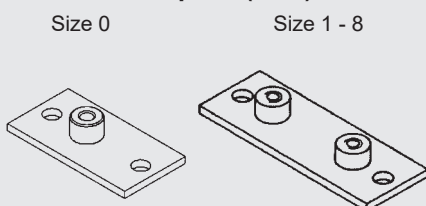
Plating of steel parts

BL = unplated
 Others on request

Weld plate (AP)



Extended weld plate (APV)



Model code (also order example)

HRL 2 AP ST M BL

Range

HRL = HY-ROS light range

Size

(as per dimensions)

Designation

AP = weld plate
 APV = extended weld plate

Material of steel parts

ST = steel
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

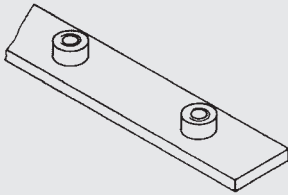
Thread type

M = metric thread

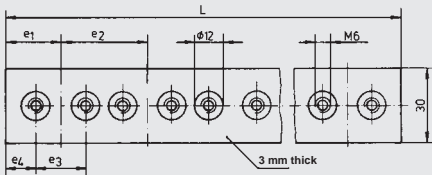
Plating of steel parts

BL = unplated
 Others on request

Interconnecting weld plate (RAP)



Dimensions



Model code

(also order example)

HRL 2a RAP ST M BL

Range

HRL = HY-ROS light range

Size

(as per dimensions)

Designation

RAP = interconnecting weld plate

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

M = metric thread

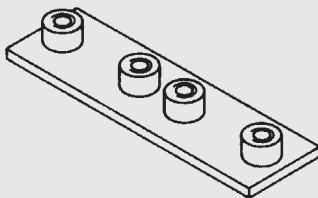
Plating of steel parts

BL = unplated

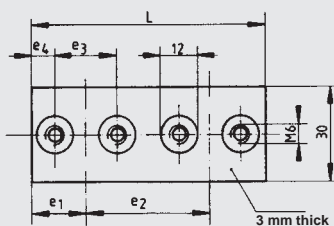
Others on request

Size	Number of clamps	Dimensions [mm]				
		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

Double weld plate (DAP)



Dimensions



Model code

(also order example)

HRL 2a DAP ST M BL

Range

HRL = HY-ROS light range

Size

(as per dimensions)

Designation

DAP = double weld plate

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

M = metric thread

Plating of steel parts

BL = unplated

Others on request

Size	Number of clamps	Dimensions [mm]				
		e1	e2	e3	e4	L
0	2	-	-	30	9.5	63
1b	2	18	40	20	8	75
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

Bolts

Hex. head bolt ISO 4014



Hex. socket cap bolt ISO 4762



Slotted-head bolt ISO 1207



Model code

(also order example)

6kt-shr.ISO4014 - M6 x 30 - 8.8 A3B

Range

6kt-shr.ISO4014 = hex. head bolt to ISO 4014
 Zyl-shr.ISO4762 = hex. socket bolt to ISO 4762
 Zyl-shr.ISO1207 = slotted-head bolt to ISO 1207

Size

ISO4014	ISO4762	ISO1207	for HRL size
M6 x 30	M6 x 20	M6 x 20	0+1
M6 x 35	M6 x 25	M6 x 25	2
M6 x 40	M6 x 30	M6 x 30	3
M6 x 45	M6 x 35	M6 x 35	4
M6 x 60	M6 x 50	M6 x 50	5
M6 x 70	M6 x 60	M6 x 60	6
M6 x 100	M6 x 85	-	7
M6 x 125	M6 x 110	-	8

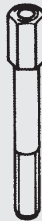
Bolt quality

8.8 = to ISO 4014, ISO 4762
 4.6 = to ISO 1207

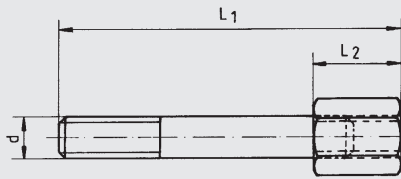
Bolt plating

A3B = zinc-plated
 Others on request

Build-up bolt (AF)



Dimensions



Size	Dimensions [mm]		
	L1	L2	L3
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

NOTE: Size 7 + 8 on request

Model code

(also order example)

HRL 4 AF ST M ZN

Range

HRL = HY-ROS light range

Size

(as per dimensions)

Designation

AF = build-up bolt

Material of steel parts

ST = steel
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

Thread type

M = metric thread

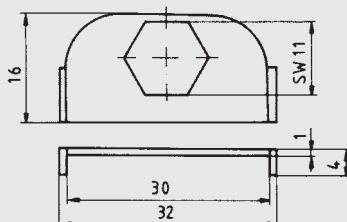
Plating of steel parts

ZN = zinc-plated
 Others on request

Locking plate (SIP)



Dimensions (for all sizes)



Model code

(also order example)

HRL 0 SIP ST ZN

Range

HRL = HY-ROS light range

Size

0 = for all sizes

Designation

SIP = locking plate

Material of steel parts

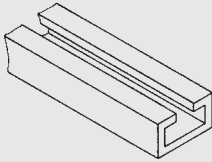
ST = steel
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

Plating of steel parts

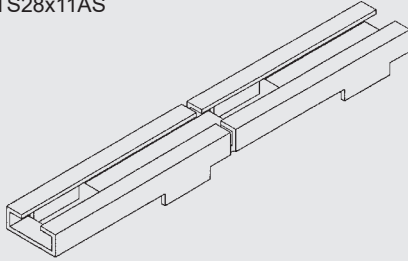
ZN = zinc-plated
 Others on request

C mounting rail (TS)

C mounting rail TS

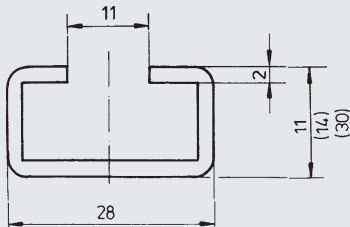


C mounting rail with weld struts
TS28x11AS

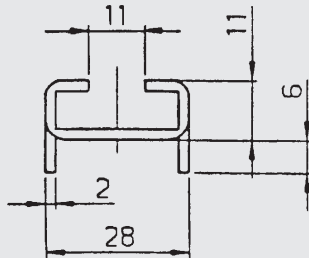


Dimensions

C mounting rail TS
available in 1 m and 2 m pieces



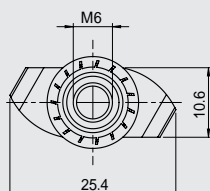
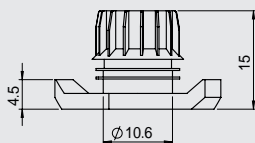
C mounting rail with weld struts
available in 1 m pieces



Mounting rail nut (TM)



Dimensions



Model code

(also order example)

HRL TS28x11 ST BL 1m

Range

HRL = HY-ROS light range

Model

TS28x11 = C mounting rail 28x11
 TS28x14 = C mounting rail 28x14
 TS28x30 = C mounting rail 28x30
 TS28x11AS = C mounting rail with weld struts 28x11

Material of steel parts

ST = steel
 AL = aluminium (on request)
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

Plating of steel parts

BL = unplated
 ZN = zinc-plated
 Others on request

Length

1 m
 2 m (not for C mounting rail with weld struts)
 Other lengths on request

Model code

(also order example)

HRL TMV6 ST ZN

Range

HRL = HY-ROS light range

Designation

TMV6 = mounting rail nut with anti-twist protection, size M6 (standard)
 TM6 = mounting rail nut without anti-twist protection, size M6

Material of steel parts

ST = steel
 A4 = stainless steel (on request)

Plating of steel parts

ZN = zinc-plated
 Others 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.

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.

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Internet: www.hydac.com

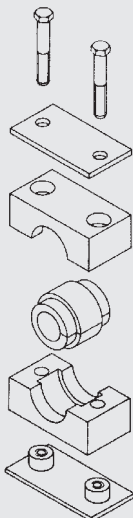
E-mail: accessories@hydac.com



Light range with elastomer insert to DIN 3015 Part 1 HREL, HRERL

Size	d internal surface smooth [mm]	d internal surface ribbed [mm]
4	6	-
	8	-
	10	10
	12	12
	12.7	-
	14	14
	15	15
	16	16
	17.2	17.2
	18	-
19	-	
6	20	20
	21.3	-
	22	22
	23	-
	25	25
	26.9	-
	28	28
	30	30
	32	-

Model A Size 4, 6



Model code (also order example)

HREL 4 A 16 PP ST M BL

Range

HREL = HY-ROS clamp, light range,
elastomer insert with smooth internal surface
HRERL = HY-ROS clamp, light range,
elastomer insert with ribbed internal surface

Size

4 = size 4
6 = size 6

Model for complete clamps

(pair of clamp jaws not mentioned)
A = with elastomer insert, weld plate,
cover plate and hex. head bolt

Pipe diameter

Material of clamp jaws

PP = polypropylene
PA = polyamide
PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

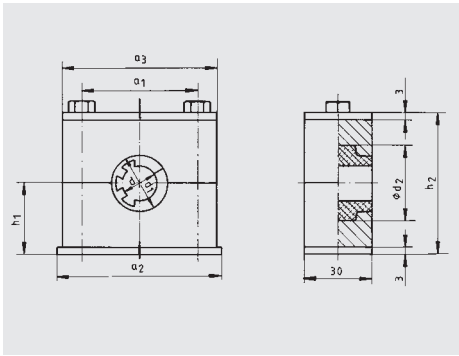
Thread type

M = metric thread

Plating of steel parts

BL = weld plate unplated, cover plate zinc-plated, bolts zinc-plated
Others on request

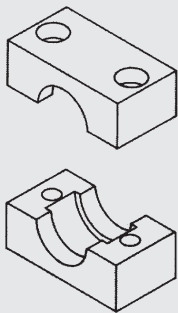
Dimensions



Size	Dimensions [mm]							Hex. head	Hex. socket	Stud	Slotted head
	d1	d2	a1	a2	a3	h1	h2	ISO 4014	ISO 4762	DIN 938	ISO 1207
4	25.5	31	40	59	57	23.5	47	M6 x 45	M6 x 35	M6 x 35	M6 x 35
6	39	46	66	88	86	35.5	71	M6 x 70	M6 x 60	M6 x 60	M6 x 60

Individual parts

Pair of clamp jaws (KP) Size 4, 6



Model code

(also order example)

HREL 4 KP PP

Range

HREL = HY-ROS clamp, light range, with elastomer insert

Size

4 = size 4
6 = size 6

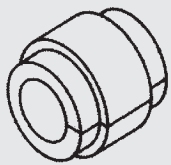
Designation

KP = pair of clamp jaws

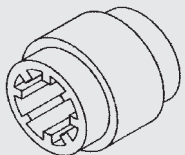
Material of clamp jaws

PP = polypropylene
PA = polyamide
PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

Elastomer insert smooth (HRES...EE...) Size 2/4L, 3/6L



Elastomer insert ribbed (HRERS...EE...) Size 2/4L, 3/6L



Model code

(also order example)

HRES 2/4L EE 16 TPE

Range

HRES = elastomer insert, internal surface smooth
HRERS = elastomer insert, internal surface ribbed

Size

2/4L = size 2 (HRS), size 4 (HRL)
3/6L = size 3 (HRS), size 6 (HRL)

Designation

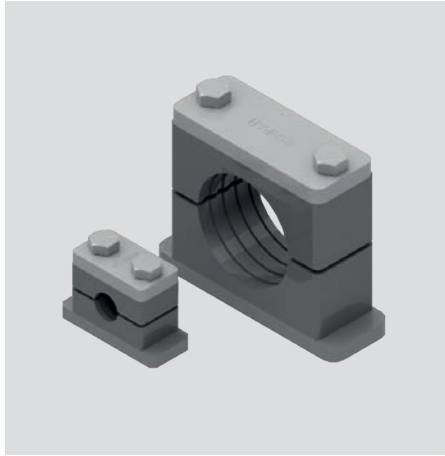
EE = elastomer insert

Pipe diameter

(as per dimensions)

Insert material

TPE = thermoplastic elastomer



Heavy range to DIN 3015 Part 2

HRS, HRGS

Size	Pipe outside Ø [mm]	
1	6	13.7
	6.4	14
	8	15
	9.5	16
	10	17.1
	12	18
2	12.7	
	19	25.4
	20	26.9
	21.3	28
3	22	30
	25	
	25	35
	30	38
4	32	40
	33.7	42
	30	55
	38	57
	42	60.3
5	44.5	63.5
	48.3	65
	50.8	70
	38	76.1
6	65	80
	70	88.9
	73	
7	65	114.3
	96	127
	101.6	
	108	
8	90	
	136	
	139.7	
	168	
9	168	
	177.8	
	193.7	
	219.1	
10	219.1	
	244.5	
	273	
	323.9	
	355.6	
	406.4	

Model code

(also order example)

HRS 2 A 30 PP ST M BL

Range

HRS = HY-ROS clamp, heavy range with ribbed internal surface

HRGS = HY-ROS clamp, heavy range with smooth internal surface (on request)

Size

1 = size 1

2 = size 2

3 = size 3

up to size 10

Model for complete clamps

(pair of clamp jaws not mentioned)

A = with weld plate, cover plate and hex. head bolt

AV = with extended weld plate, cover plate and hex. head bolt

A1 = with cover plate and hex. head bolt

A1TM = with cover plate, hex. head bolt and mounting rail nut
(only up to size 4)

B = with weld plate, hex. socket bolt and washer
(only up to size 7)

D = with build-up bolt and locking plate
(only up to size 7)

G = with double weld plate, double cover plate and hex. head bolt

Pipe diameter

Material of clamp jaws

PP = polypropylene

PA = polyamide

PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

TPE = thermoplastic elastomer

AL = aluminium

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

M = metric thread

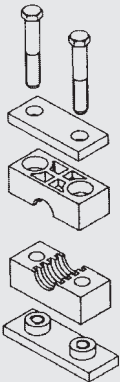
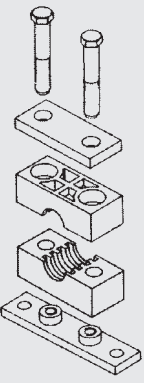
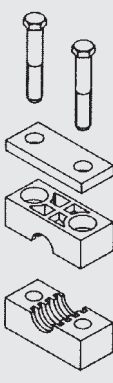
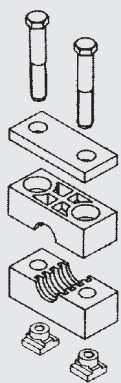
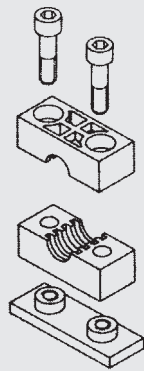
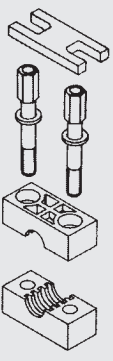
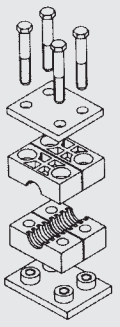
Plating of steel parts

BL = weld plate unplated, cover plate zinc-plated, bolts unplated
(from size 8 cover plate unplated)

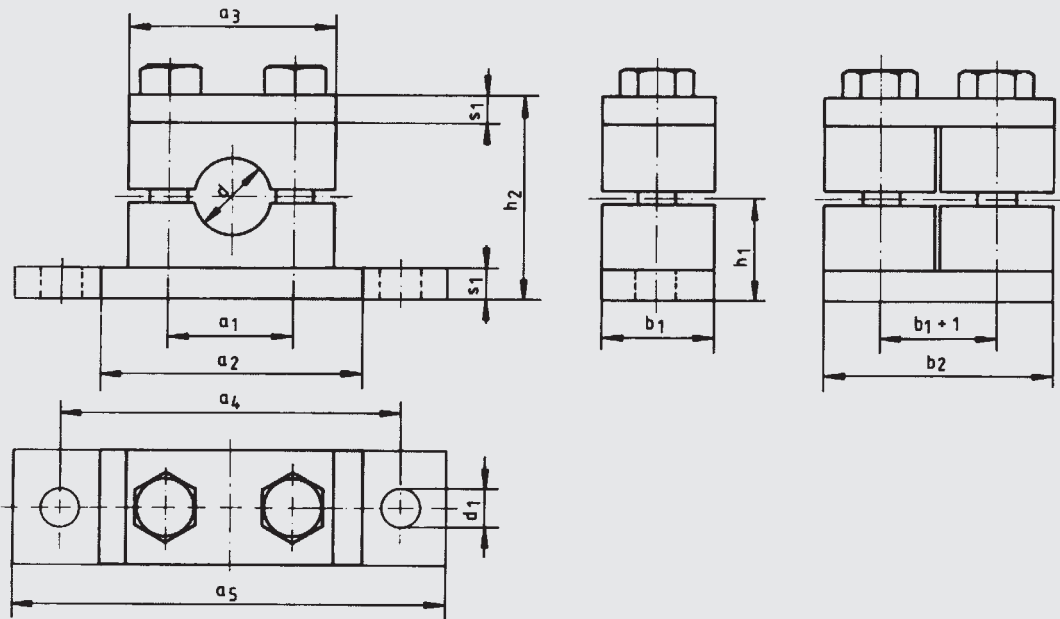
BL/ZN = weld plate unplated, cover plate zinc-plated, bolts zinc-plated

ZN = weld plate zinc-plated, cover plate zinc-plated, bolts zinc-plated

Models for heavy range DIN 3015 Part 2

Model A Size 1–10	Model AV Size 1–10	Model A1 Size 1–10	Model A1TM Size 1–4
			
Model B Size 1–7	<p>Notice: No washers are required in the AL version for series B.</p>		
			
Model D Size 1–7			
			
Model G Size 1–10			
			

Dimensions for heavy range DIN 3015 Part 2

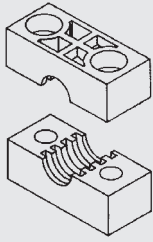


Size	Dimensions [mm]												Hex. head	Hex. socket
	a1	a2	a3 PA, PP	a3 AL	a4	a5	b1	b2	h1	h2	s1	s2	ISO 4014	ISO 4762
1	33	73	55	57	85	113	30	60	24	48	8	11	M10 x 45	M10 x 25
2	45	85	70	70	97	125	30	60	32	64	8	11	M10 x 60	M10 x 40
3	60	100	85	85	112	140	30	60	38	76	8	11	M10 x 70	M10 x 50
4	90.5	140	115	119	160	190	45	90	54.5	109	10	14	M12 x 100	M12 x 80
5	122	180	152	160	205	240	60	120	70	140	10	18	M16 x 130	M16 x 110
6	168	225	205	215	270	310	80	160	100	200	15	22	M20 x 190	M20 x 150
7	205	270	252	258	320	370	90	180	115	230	15	26	M24 x 220	M24 x 180
8	265	340	320	323	-	-	120	240	160	320	25	-	M30 x 300	-
9	395	520	466	475	-	-	160	324	235	470	30	-	M30 x 450	-
10	530	680	630	630	-	-	180	364	295	590	30	-	M30 x 560	-

Individual parts for heavy range DIN 3015 Part 2

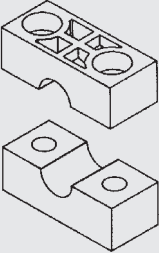
Pair of clamp jaws, ribbed (HRS...KP...)

Size 1 - 10



Pair of clamp jaws, smooth (HRGS...KP...)

Size 1 - 10



Model code

(also order example)

HRS 3 KP 23 PP

Range

HRS = HY-ROS clamp, heavy range with ribbed internal surface
HRGS = HY-ROS clamp, heavy range with smooth internal surface

Size

(as per dimensions)

Designation

KP = pair of clamp jaws

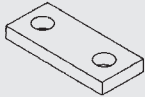
Pipe diameter

Material of clamp jaws

PP = polypropylene
PA = polyamide
PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3
TPE = thermoplastic elastomer
AL = aluminium (not for HRGS)

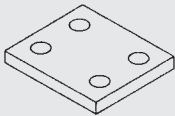
Cover plate (DP)

Size 1 - 10



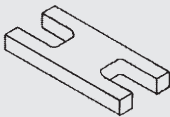
Double cover plate (DDP)

Size 1 - 10



Locking plate (SIP)

Size 1 - 7



Model code

(also order example)

HRS 2 DP ST BL

Range

HRS = HY-ROS heavy range

Size

(as per dimensions)

Designation

DP = cover plate
DDP = double cover plate
SIP = locking plate (only up to size 7)

Material of steel parts

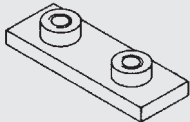
ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

Plating of steel parts

BL = unplated
ZN = zinc-plated (only up to size 7)

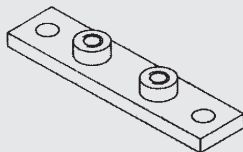
Weld plate (AP)

Size 1 - 10



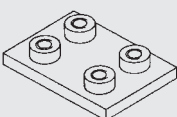
Extended weld plate (APV)

Size 1 - 10



Double weld plate (DAP)

Size 1 - 10



Model code

(also order example)

HRS 2 AVP ST M BL

Range

HRS = HY-ROS heavy range

Size

(as per dimensions)

Designation

AP = weld plate
APV = extended weld plate
DAP = double weld plate

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

Thread type

M = metric thread

Plating of steel parts

BL = unplated
ZN = zinc-plated

Bolts

Hex. head bolt ISO 4014
HRS size 1 -10



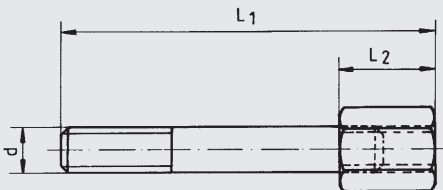
Hex. socket bolt ISO 4762
HRS size 1 -7



Build-up bolt (AF)



Dimensions



Size	Dimensions [mm]			d
	L1	L2		
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

* without washer

Model code

(also order example)

6kt-shr.ISO4014 - M10 x 70 - 8.8 A3B

Range

6kt-shr.ISO4014 = hex. head bolt to ISO 4014
Zyl-shr.ISO4762 = hex. socket bolt to ISO 4762

Size

ISO4014	ISO4762*	for HRS size
M10 x 45	M10 x 25	1
M10 x 60	M10 x 40	2
M10 x 70	M10 x 50	3
M12 x 100	M12 x 80	4
M16 x 130	M16 x 110	5
M20 x 190	M20 x 150	6
M24 x 220	M24 x 180	7
M30 x 300		8
M30 x 450		9
M30 x 560		10

* only AL version

Bolt quality

8.8 = to ISO 4014, ISO 4762

Bolt plating

no details = unplated
A3B = zinc-plated

Model code

(also order example)

HRS 5 AF16 ST M ZN

Range

HRS = HY-ROS heavy range

Size

(as per dimensions)

Designation

AF10 = build-up bolt M10
AF12 = build-up bolt M12
AF16 = build-up bolt M16
AF20 = build-up bolt M20
AF24 = build-up bolt M24

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

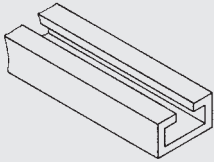
Thread type

M = metric thread

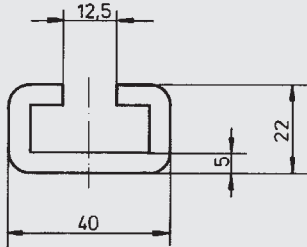
Plating of steel parts

BL = unplated
ZN = zinc-plated

C mounting rail (TS)

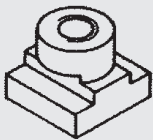


Dimensions



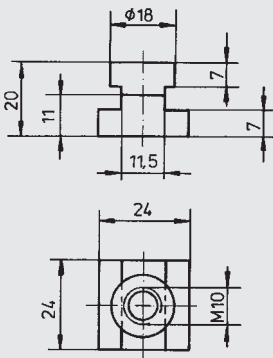
Notice:
available in 1 m and 2 m pieces

Mounting rail nut (TM)

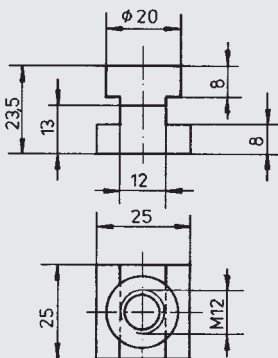


Dimensions

Mounting rail nut TM10



Mounting rail nut TM12



Model code (also order example)

HRS TS40x22 ST BL 2m

Range

HRS = HY-ROS heavy range

Model

TS40x22 = C mounting rail 40x22

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

Plating of steel parts

BL = unplated
ZN = zinc-plated

Length

1 m
2 m
Other lengths on request

Model code (also order example)

HRS TM10 ST M ZN

Range

HRS = HY-ROS heavy range

Designation

TM10 = mounting rail nut size M10
TM12 = mounting rail nut size M12

Material of steel parts

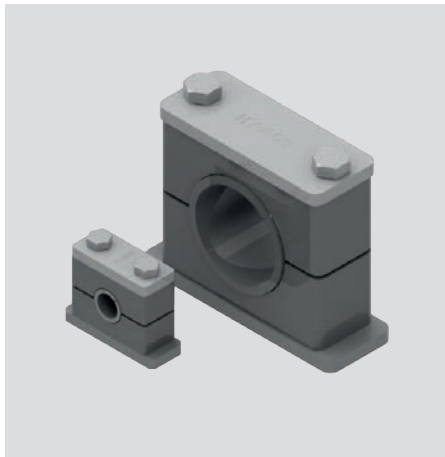
ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

Thread type

M = metric thread

Plating of steel parts

ZN = zinc-plated
Others on request



Heavy range with elastomer insert to DIN 3015 Part 2 HRES, HRERS

Size	d internal surface smooth [mm]	d internal surface ribbed [mm]
	2	6
8		-
10		10
12		12
12.7		-
14		14
15		15
16		16
17.2		17.2
18		-
19	-	
3	20	20
	21.3	-
	22	22
	23	-
	25	25
	26.9	-
	28	28
	30	30
32	-	
4	33.7	-
	35	-
	38	38
	40	-
	42	42
	45.5	44.5
	48	48
	51	-
	53.4	-
	56.4	57
5	60	-
	65	-
	70	-
	73	-
	76	76
6	83	-
	89	89
	94	-
	101	-
7	108	108
	114	-
	133	-
	140	-

Model code (also order example)

HRES 2 A 16 PP ST M BL

Range

HRES = HY-ROS clamp, heavy range,
elastomer insert with smooth internal surface
HRERS = HY-ROS clamp, heavy range,
elastomer insert with ribbed internal surface

Size

2 = size 2
3 = size 3
4 = size 4
5 = size 5
6 = size 6
7 = size 7

Model for complete clamps

(pair of clamp jaws not mentioned)
A = with elastomer insert, weld plate,
cover plate and hex. head bolt

Pipe diameter

Material of clamp jaws

PP = polypropylene
PA = polyamide
PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

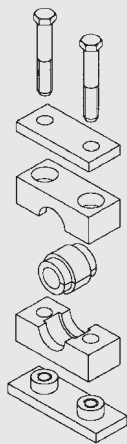
Thread type

M = metric thread

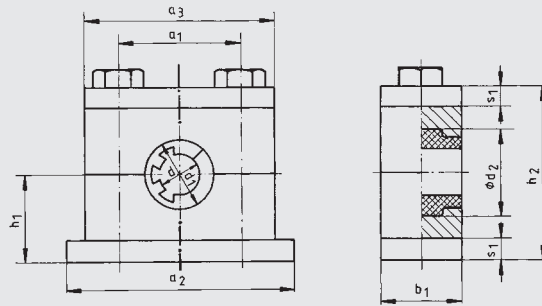
Plating of steel parts

BL = weld plate unplated, cover plate zinc-plated, bolts unplated
BL/ZN = weld plate unplated, cover plate zinc-plated, bolts zinc-plated
ZN = weld plate zinc-plated, cover plate zinc-plated, bolts zinc-plated

Model A
Size 2-7



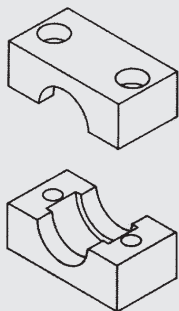
Dimensions



Size	Dimensions [mm]									Hex. head ISO 4014
	d1	d2	b1	h1	h2	a1	a2	a3	s1	
2	25.5	31	30	31	62	45	85	70	8	M10 x 60
3	39	46	30	37	74	60	100	85	8	M10 x 70
4	65	74	45	53.5	107	90.5	140	115	10	M12 x 100
5	89	98	60	68.5	137	122	180	152	10	M16 x 130
6	116	132	80	98.5	197	168	225	205	15	M20 x 190
7	154	168	90	113.5	227	205	270	252	15	M24 x 220

Individual parts

Pair of clamp jaws (KP)
Size 2 - 7



Model code

(also order example)

HRES 4 KP PP

Range

HRES = HY-ROS clamp, heavy range, with elastomer insert

Size

- 2 = size 2
- 3 = size 3
- 4 = size 4
- 5 = size 5
- 6 = size 6
- 7 = size 7

Designation

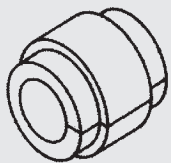
KP = pair of clamp jaws

Material of clamp jaws

- PP = polypropylene
- PA = polyamide
- PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

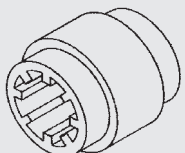
Elastomer insert smooth (HRES...EE...)

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



Elastomer insert ribbed (HRERS...EE...)

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



Model code

(also order example)

HRES 2/4L EE 16 TPE

Range

- HRES = elastomer insert, internal surface smooth
- HRERS = elastomer insert, internal surface ribbed

Size

- 2/4L = size 2 (HRS), size 4 (HRL)
- 3/6L = size 3 (HRS), size 6 (HRL)
- 4 = size 4
- 5 = size 5
- 6 = size 6
- 7 = size 7

Designation

EE = elastomer insert

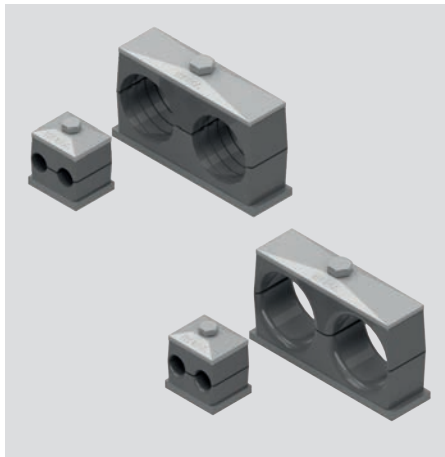
Pipe diameter

(as per dimensions)

Insert material

- TPE = thermoplastic elastomer
- NBR* = acrylonitrile butadiene elastomer

* only sizes 5 - 7



Twin clamps to DIN 3015 Part 3

HRZ, HRGZ

Size	Pipe outside Ø [mm]
1	6
	6.4
	8
	9.5
	10
	12
2	12.7
	13.7
	14
	15
	16
	17.1
3	18
	19
	20
	21.3
	22
	23
4	25
	25.4
	26.9
	28
5	30
	32
	33.7
	35
	38
	40
	42

Model code

(also order example)

HRZ 2 A 16-16 PP ST M BL

Range

HRZ = HY-ROS twin clamp with ribbed internal surface

HRGZ = HY-ROS twin clamp with smooth internal surface

Size

1 = size 1

2 = size 2

up to size 5

Model for complete clamps

(pair of clamp jaws not mentioned)

A = with weld plate, cover plate and hex. head bolt

A1 = with cover plate and hex. head bolt

A1TM = with cover plate, hex. head bolt and mounting rail nut

D = with build-up bolt and locking plate

Pipe diameter

(specification of each Ø as per pipe outside Ø)

Material of clamp jaws

PP = polypropylene

PA = polyamide

PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

TPE = thermoplastic elastomer

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

M = metric thread

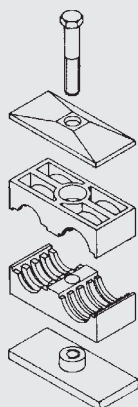
Plating of steel parts

BL = weld plate unplated, cover plate zinc-plated, bolts zinc-plated (only model A)

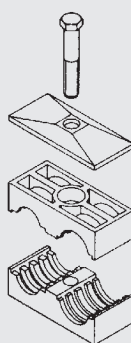
ZN = weld plate zinc-plated, cover plate zinc-plated, bolts zinc-plated

Models for twin clamps to DIN 3015 Part 3

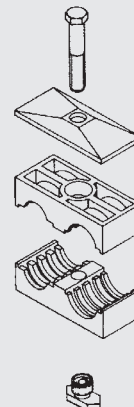
Model A
Size 1 - 5



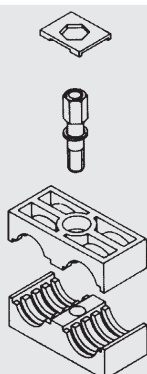
Model A1
Size 1 - 5



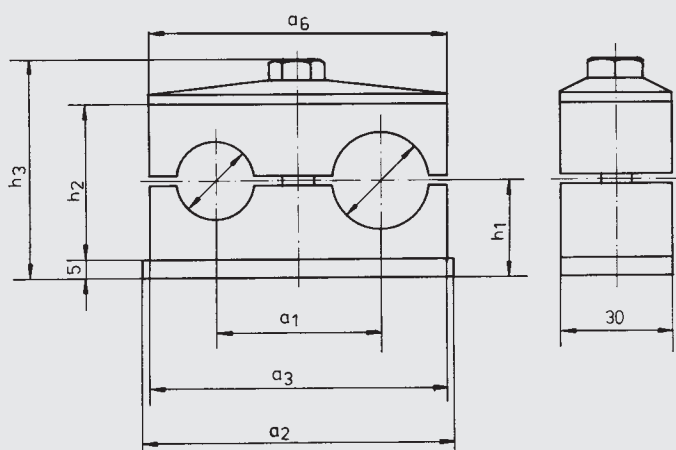
Model A1TM
Size 1 - 5



Model D
Size 1 - 5



Dimensions

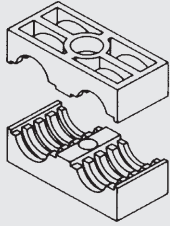


Size	Dimensions [mm]							Hex. head bolt ISO 4014
	a1	a2	a3	a6	h1	h2	h3	
1	20	37	36	34	18.5	27	43	M6 x 35
2	29	55	53	51	18	26	43.5	M8 x 35
3	36	70	67	64	23.5	37	54.5	M8 x 45
4	45	85	82	78	26	42	59.5	M8 x 50
5	56	110	106	102	32	54	71.5	M8 x 60

Individual parts for twin clamps DIN 3015 Part 3

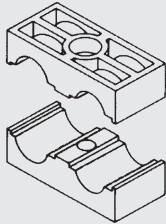
Pair of clamp jaws, ribbed (HRZ...KP...)

Size 1 - 5



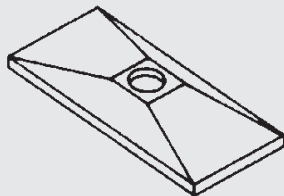
Pair of clamp jaws, smooth (HRGZ...KP...)

Size 1 - 5



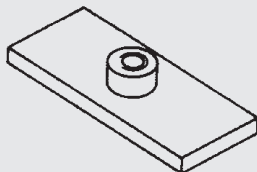
Cover plate (DP)

Size 1 - 5



Weld plate (AP)

Size 1 - 5



Model code

(also order example)

HRZ 3 KP 23-23 PP

Range

HRZ = HY-ROS twin clamp with ribbed internal surface
HRGZ = HY-ROS twin clamp with smooth internal surface

Size

1 = size 1
2 = size 2
up to size 5

Designation

KP = pair of clamp jaws

Pipe diameter

(specification of each \varnothing as per pipe outside \varnothing)

Material of clamp jaws

PP = polypropylene
PA = polyamide
PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3
TPE = thermoplastic elastomer
Others on request

Model code

(also order example)

HRZ 3 DP ST BL

Range

HRZ = HY-ROS twin clamp

Size

(as per dimensions)

Designation

DP = cover plate

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

Plating of steel parts

BL = unplated
Others on request

Model code

(also order example)

HRZ 2 AP ST M BL

Range

HRZ = HY-ROS twin clamp

Size

(as per dimensions)

Designation

AP = weld plate

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

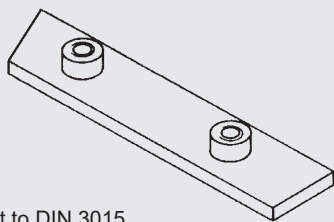
Thread type

M = metric thread

Plating of steel parts

BL = unplated
Others on request

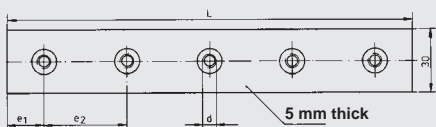
Interconnecting weld plate (RAP)*



*not to DIN 3015

Dimensions

Size	Number of clamps	Dimensions [mm]			
		L1	L2	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



Model code

(also order example)

HRZ 2 RAP ST M BL

Range

HRZ = HY-ROS twin clamp

Size

(as per dimensions)

Designation

RAP = interconnecting weld plate

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

M = metric thread

Plating of steel parts

BL = unplated

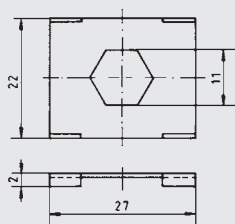
Others on request

Locking plate (SIP)

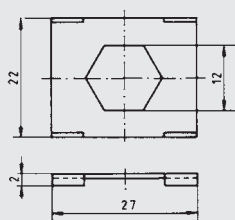


Dimensions

Size 1



Size 2 - 5



Model code

(also order example)

HRZ 2-5 SIP ST ZN

Range

HRZ = HY-ROS twin clamp

Size

1 = size 1

2-5 = size 2-5

Designation

SIP = locking plate

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

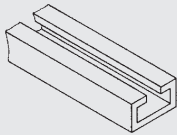
Plating of steel parts

ZN = zinc-plated

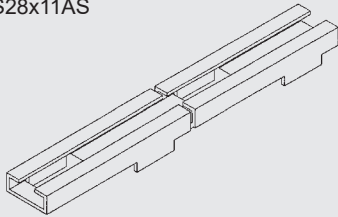
Others on request

C mounting rail (TS)

C mounting rail TS

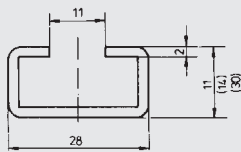


C mounting rail with weld struts
TS28x11AS

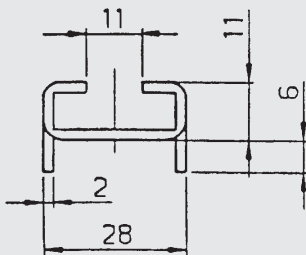


Dimensions

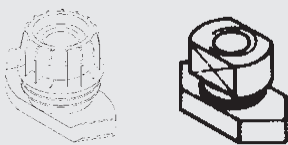
C mounting rail TS
available in 1 m and 2 m pieces



C mounting rail with weld struts
available in 1 m pieces



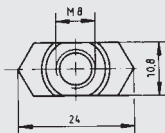
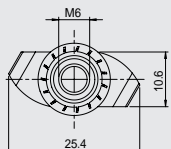
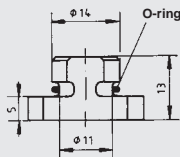
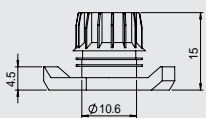
Mounting rail nut (TM)



Dimensions

Size 1 (TMV6)

Size 2 - 5 (TM8)



Model code

(also order example)

HRL TS28x11 ST BL 1m

Range

HRL = HY-ROS light range

Model

TS28x11 = C mounting rail 28x11
 TS28x14 = C mounting rail 28x14
 TS28x30 = C mounting rail 28x30
 TS28x11AS = C mounting rail with weld struts 28x11

Material of steel parts

ST = steel
 AL = aluminium (on request)
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

Plating of steel parts

BL = unplated
 ZN = zinc-plated
 Others on request

Length

1 m
 2 m (not for C mounting rail with weld struts)
 Other lengths on request

Model code

(also order example)

HRL TMV6 ST ZN

Range

HRL = HY-ROS light range, for size 1
 HRZ = HY-ROS twin clamp, from size 2

Designation

TMV6 = mounting rail nut with anti-twist protection, M6 (only size 1)
 TM6 = mounting rail nut without anti-twist protection, M6 (only size 1)
 TM8 = mounting rail nut M8 (from size 2)

Material of steel parts

ST = steel
 A4 = stainless steel (on request)

Plating of steel parts

ZN = zinc-plated
 Others on request

Bolts

Hex. head bolt ISO 4014
HRZ size 1 - 5



Model code

(also order example)

6kt-shr.ISO4014 - M6 x 35 - 8.8 A3B

Range

6kt-shr.ISO4014 = hex. head bolt to ISO 4014

Size

ISO4014	for HRZ size
M6 x 35	1
M8 x 35	2
M8 x 45	3
M8 x 50	4
M8 x 60	5

Bolt quality

8.8 = to ISO 4014

Bolt plating

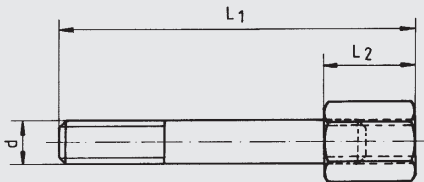
no details = unplated
A3B = zinc-plated

Build-up bolt (AF)

HRZ size 1 - 5



Dimensions



Size	Dimensions [mm]		
	L1	L2	d
1	34	14	M6
2	33	13	M8
3	44	15	M8
4	49	15	M8
5	62	15	M8

Model code

(also order example)

HRZ 4 AF ST M ZN

Range

HRL = HY-ROS light range, for size 1
HRZ = HY-ROS twin clamp, from size 2

Size

	for HRZ size
0+1	1
2	2
up to size 5	

Designation

AF = build-up bolt

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

Thread type

M = metric thread

Plating of steel parts

ZN = zinc-plated
Others 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.

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.

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E-mail: accessories@hydac.com



HYDAC clamps

Buegu clamp HRBGS

Oval clamp HROS

General

Special operating conditions require special mounting options.

HYDAC clamps enable efficient fastening of hydraulic pipes, hoses and lines, and simultaneously guarantee long-term safety.

Buegu clamp

The Buegu clamp is designed for single lines and pairs of lines with a diameter from 6 to 32 mm.

The clamp can also be used for pairs of lines with different diameters.

Its rubber body makes the clamp particularly sound-absorbing and vibration-damping.

The steel parts of the clamp are also available in stainless steel.

Due to the special design of the clamp, a permanent torque and therefore defined compression of the rubber body is guaranteed.

Oval clamp

The Oval clamp is an inexpensive solution for fastening cables, hoses, and gas, oil and lubrication lines.

The special design requires little installation space and ensures rapid installation. The pipes/lines are clamped securely due to pre-tensioning, and the cover plate ensures a high level of stability. A film hinge connects the two clamp halves. It is fastened using bolts or weld studs M6.

Available in diameters from 6 to 22 mm, different pipe diameters can be combined in the Oval clamp.

Metallic parts are also available in stainless steel.

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.

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Buegu clamp HRBGS

Size	Pipe outside Ø d1 - d2* [mm]
0A	6
	8
	10
	12
0B	10
	12
	14
	15
	16
	18
	19
	20
0C	21.3
	22
	23
	25
	25.4
	28
	30
	32
1	6 - 6
	8 - 8
	10 - 10
	12 - 12
2	10 - 10
	12 - 12
	15 - 15
	16 - 16
	17.1 - 17.1
	18 - 18
	19 - 19
20 - 20	
3	21.3 - 21.3
	22 - 22
	23 - 23
	25 - 25
	25.4 - 25.4
	28 - 28
	30 - 30
	32 - 32

* Other Ø combinations on request

Model code

(also order example)

HRBGS 1 A1 12-12 TPE ST M BL

Range

HRBGS = HY-ROS Buegu clamp

Size

0A = size 0A
 0B = size 0B
 0C = size 0C
 1 = size 1
 2 = size 2
 3 = size 3

Model for complete clamps

A = with weld plate, rubber body, sleeve, stirrup and hex. head bolt
 A1 = with rubber body, sleeve, stirrup und hex. head bolt
 A1TM = with rubber body, sleeve, stirrup, hex. head bolt and mounting rail nut
 (C mounting rail not included with this model)

Diameter

Specification of each Ø as per pipe outside Ø
 (size 0 one specification, size 1-3 two specifications)

Material of rubber body

TPE = thermoplastic elastomer (standard: 73° Shore A)

Material of steel parts

ST = steel
 A4 = stainless steel (on request)

Thread type

M = metric thread

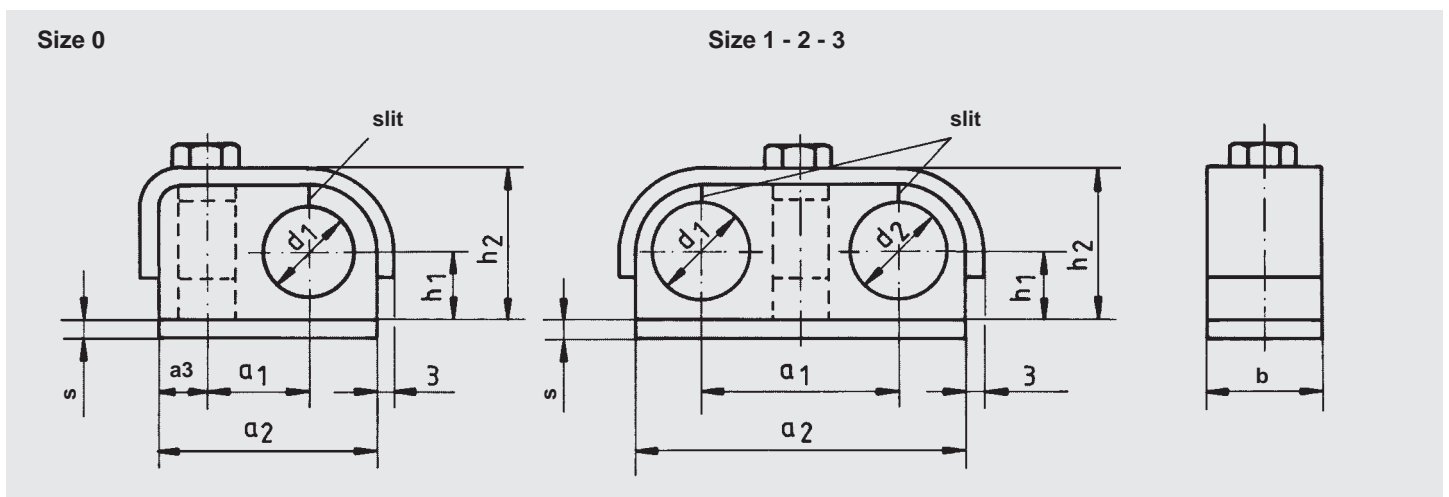
Plating of steel parts

BL = weld plate unplated; stirrup, sleeve and bolt zinc-plated
 ZN = zinc-plated

Models for Buegu clamp

Size	Model A with weld plate	Model A1 for mounting on base	Model A1TM with mounting rail nut for installation on C mounting rail
0A, 0B, 0C			
1, 2, 3			

Dimensions

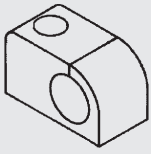


Size	Dimensions [mm]							Hex. head for model			Sleeve height for model [mm]		
	a1	a2	a3	b	h1	h2	s	A	A1	A1TM	A	A1	A1TM
0A	15	34	9	20	10	23	3	M6 x 25	M6 x 30	M6 x 25	11.5	18	11.5
0B	18	39	9	20	12	27	3	M6 x 25	M6 x 35	M6 x 30	15.5	22	15.5
0C	23.5	57.5	15	30	20	43	5	M8 x 45	M8 x 50	M8 x 45	32	38	32
1	30	50	-	20	10	23	3	M6 x 25	M6 x 30	M6 x 25	11.5	18	11.5
2	35	59	-	20	12	27	3	M6 x 25	M6 x 35	M6 x 30	15.5	22	15.5
3	47	86	-	30	20	43	5	M8 x 45	M8 x 50	M8 x 45	32	38	32

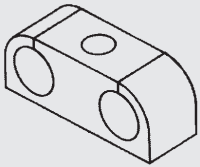
Individual parts for Buegu clamp

Rubber body (GT)

Size 0A, 0B, 0C



Size 1, 2, 3



Model code

(also order example)

HRBGS 0A GT 12 TPE

Range

HRBGS = HY-ROS Buegu clamp

Size

0A, 0B, 0C, 1, 2, 3

Designation

GT = rubber body

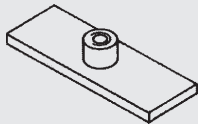
Diameter

Specification of each \varnothing as per pipe outside \varnothing
(size 0 one specification, size 1-3 two specifications)

Material of clamp body

TPE = thermoplastic elastomer (standard: 73° Shore A)

Weld plate (AP)



Model code

(also order example)

HRBGS 0A AP ST M BL

Range

HRBGS = HY-ROS Buegu clamp

Size

0A, 0B, 0C, 1, 2, 3

Designation

AP = weld plate

Material of steel parts

ST = steel

A4 = stainless steel (on request)

Thread type

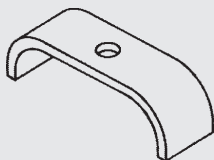
M = metric thread

Plating of steel parts

BL = unplated

ZN = zinc-plated

Stirrup (BUE)



Model code

(also order example)

HRBGS 3 BUE ST ZN

Range

HRBGS = HY-ROS Buegu clamp

Size

0A, 0B, 0C, 1, 2, 3

Designation

BUE = stirrup

Material of steel parts

ST = steel

A4 = stainless steel (on request)

Plating of steel parts

ZN = zinc-plated

Sleeve (HUE)



Model code

(also order example)

HRBGS HUE 11.5 ST ZN

Range

HRBGS = HY-ROS Buegu clamp

Designation

HUE = sleeve

Length

(length depends on size and model of Buegu clamp)

Material of steel parts

ST = steel

A4 = stainless steel (on request)

Plating of steel parts

ZN = zinc-plated

Hex. head bolt

(hex. head bolt ISO 4014 / 4017)



Model code

(also order example)

6kt-shr.ISO4014 - M6 x 30 - 8.8 A3B

Range

6kt-shr.ISO4014 = hex. head bolt to ISO 4014

6kt-shr.ISO4017 = hex. head bolt to ISO 4017

Size

ISO4014	ISO4017
M6 x 30	M6 x 25
M6 x 35	
M8 x 45	
M8 x 50	

Bolt quality

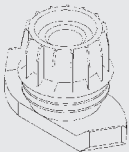
8.8 = to ISO 4014, ISO 4017

Bolt plating

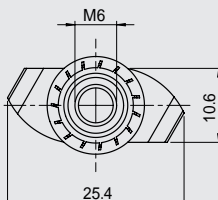
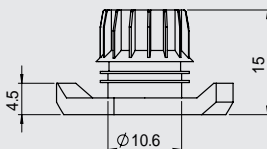
A3B = zinc-plated

Others on request

Mounting rail nut (TM)



Dimensions



Model code

(also order example)

HRL TMV6 ST ZN

Range

HRL = HY-ROS light range

Designation

TMV6 = mounting rail nut with anti-twist protection, size M6 (standard)

TM6 = mounting rail nut without anti-twist protection, size M6

Material of steel parts

ST = steel

A4 = stainless steel (on request)

Plating of steel parts

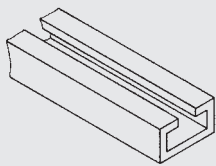
ZN = zinc-plated

Others on request

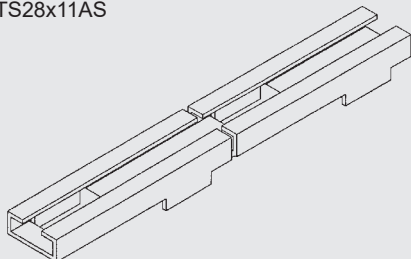
Accessories

C mounting rail (TS)

C mounting rail TS

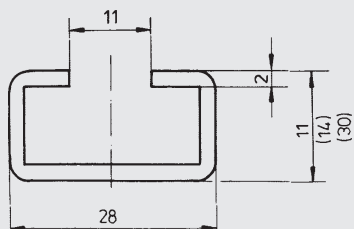


C mounting rail with weld struts
TS28x11AS

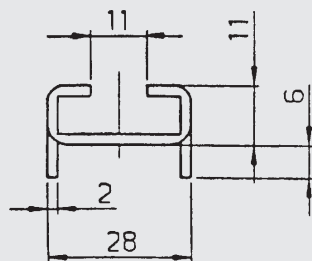


Dimensions

C mounting rail TS
available in 1 m and 2 m pieces



C mounting rail TS with weld struts AS
available in 1 m pieces



Model code (also order example)

HRL TS28x11 ST BL 1m

Range

HRL = HY-ROS light range

Model

TS28x11 = C mounting rail 28x11
 TS28x14 = C mounting rail 28x14
 TS28x30 = C mounting rail 28x30
 TS28x11AS = C mounting rail with weld struts 28x11

Material of steel parts

ST = steel
 AL = aluminium (on request)
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

Plating of steel parts

BL = unplated
 ZN = zinc-plated
 Others on request

Length

1 m
 2 m (not for C mounting rail with weld struts)
 Other lengths on request

NOTE

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Subject to technical modifications and errors.

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Oval clamp HROS

Size	Pipe outside Ø d1 - d2* [mm]
0a	6
	6.4
	8
0b	8
	9.5
	10
	12
0c	12.7
	10
	12
	12.7
	13.5
	14
0d	15
	16
	14
	15
	16
	17.2
	18
	19
1	20
	21.3
	22
	6
2	6.4
	8
	8
3	9.5
	10
	12
	12.7
4	10
	12
	12.7
	13.5
	14
	15
4	16
	14
	15
	16
	17.2
	18
	19
	20
	21.3
	22
25	
25.4	

* different Ø possible in sizes 1-4

Model code (also order example)

HROS 3 KP 15-15 PP

Range

HROS = HY-ROS Oval clamp

Size

0a = size 0a
 0b = size 0b
 0c = size 0c
 0d = size 0d
 1 = size 1
 2 = size 2
 3 = size 3
 4 = size 4

Model for complete clamps

KP = pair of clamp jaws

Diameter

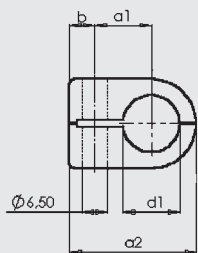
Specification of each Ø as per pipe outside Ø
 (size 0 one specification, size 1-4 two specifications)

Material of clamp jaws

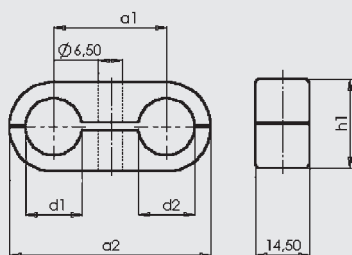
PP = polypropylene
 PA = polyamide

Dimensions

Size 0



Size 1 - 4



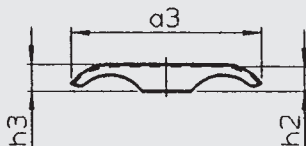
Size	Dimensions [mm]				
	d1, d2*	a1	a2	b	h1
0a	6 ... 8	9	23	7	13.5
0b	8 ... 12.7	11	27	7	18.5
0c	10 ... 16	15	34	7	23.5
0d	14 ... 22	19	40	6	30.5
1	6 ... 8	18	32	-	13.5
2	8 ... 12.7	22	41	-	18.5
3	10 ... 16	30	54	-	23.5
4	14 ... 22	38	69	-	30.5

* \triangleq pipe outside \varnothing

Accessories

Cover plate (DP)

Size 1 - 4



Size	Dimensions [mm]		
	a3	h2	h3
1	29	4	4.5
2	40	4	4.5
3	50.5	7.6	8.2
4	63	7.6	8.2

Model code

(also order example)

HROS 3 DP ST ZN

Range

HROS = HY-ROS Oval clamp

Size

1, 2, 3, 4

Designation

DP = cover plate

Material of steel parts

ST = steel

A4 = stainless steel (on request)

Plating of steel parts

ZN = zinc-plated

NOTE

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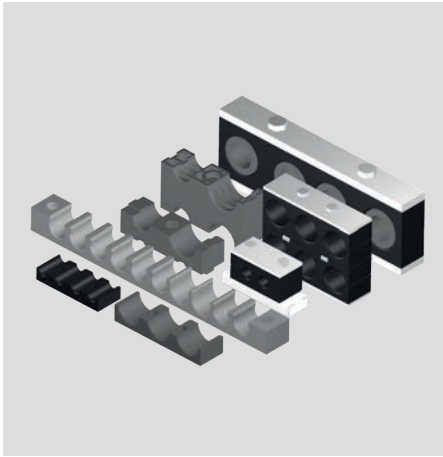
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Series strips

Light range HRRL

Heavy range with elastomer insert

HRRLE

General

HY-ROS series strips are an in-house development, derived from the needs of the market.

They enable rapid and secure installation of hose groups and (dynamically loaded) pipe groups.

The accumulation of individual clamps is thus avoided.

HY-ROS series strips offer many advantages:

- Bundled, clear and safe system of laying
- Space-saving and compact arrangement
- Simple and rapid installation
- Reduced installation times
- Vibration, shock and noise damping
- Protection of sensitive components
- Compensation of pipe and cable tolerances
- Different diameters in one series strip

Depending on the application, series strips with a smooth internal surface or with elastomer inserts are used.

Up to 10 pipes/hoses with diameters from 6 mm to 56.4 mm can be fastened as standard in each of the 3 sizes of the various models.

On request ...

... customised solutions in numerous shapes and designs, also with different diameters, can be supplied in addition to the standard series strips.

This allows you to make the most of your time and the available space.

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Series strip Light range HRRL

Size	Pipe outside Ø D [mm]
1L	6
	6.4
	8
	9.5
	10
	12
2L	12.7
	13.7
	14
	15
	16
	17.1
3L	18
	19
	20
	21.3
	22
	25.4

Model code

(also order example)

HRRL 1L A 4x12 PP 76/2 ST M6 BL

Range

HRRL = HY-ROS series strip

Size

1L = size 1L

2L = size 2L

3L = size 3L

Model

A = with weld plate, cover plate and hex. head bolt

A1 = with cover plate and hex. head bolt

A1TM = with cover plate, hex. head bolt and mounting rail nut

D = with build-up bolt and locking plate

Number of pipes x pipe outside Ø D

(as per models)

Material of clamp jaws

PP = polypropylene

PA = polyamide

PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

Component length / Number of fixing bolts

(as per models)

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

M6 = metric thread M6

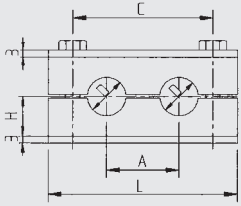
Plating of steel parts

BL = weld plate unplated, cover plate zinc-plated, bolts zinc-plated

ZN = weld plate zinc-plated, cover plate zinc-plated, bolts zinc-plated

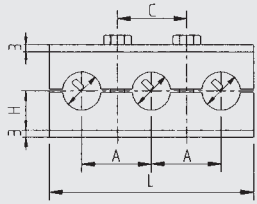
Dimensions [mm]

2 pipes with 2 fixing bolts



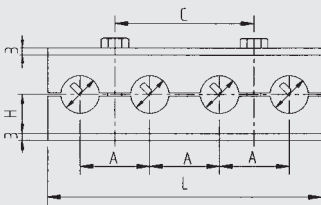
Size	A	C	H	L
1L	20	40	13.5	60.5
2L	29	58	16.5	78.5
3L	36	72	18.5	92.5

3 pipes with 2 fixing bolts



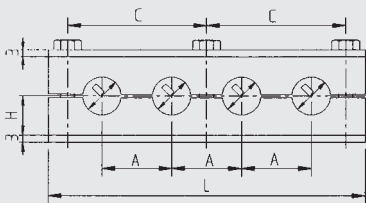
Size	A	C	H	L
1L	20	20	13.5	56
2L	29	29	16.5	85
3L	36	36	18.5	106

4 pipes with 2 fixing bolts



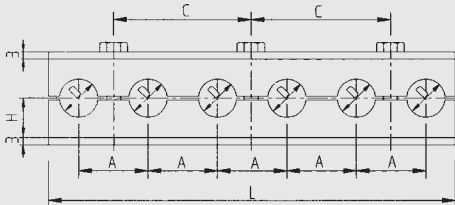
Size	A	C	H	L
1L	20	40	13.5	76
2L	29	58	16.5	114
3L	36	72	18.5	142

4 pipes with 3 fixing bolts



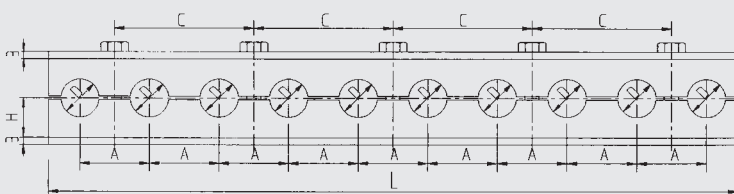
Size	A	C	H	L
1L	20	40	13.5	100.5
2L	29	58	16.5	136.5
3L	36	72	18.5	164.5

6 pipes with 3 fixing bolts



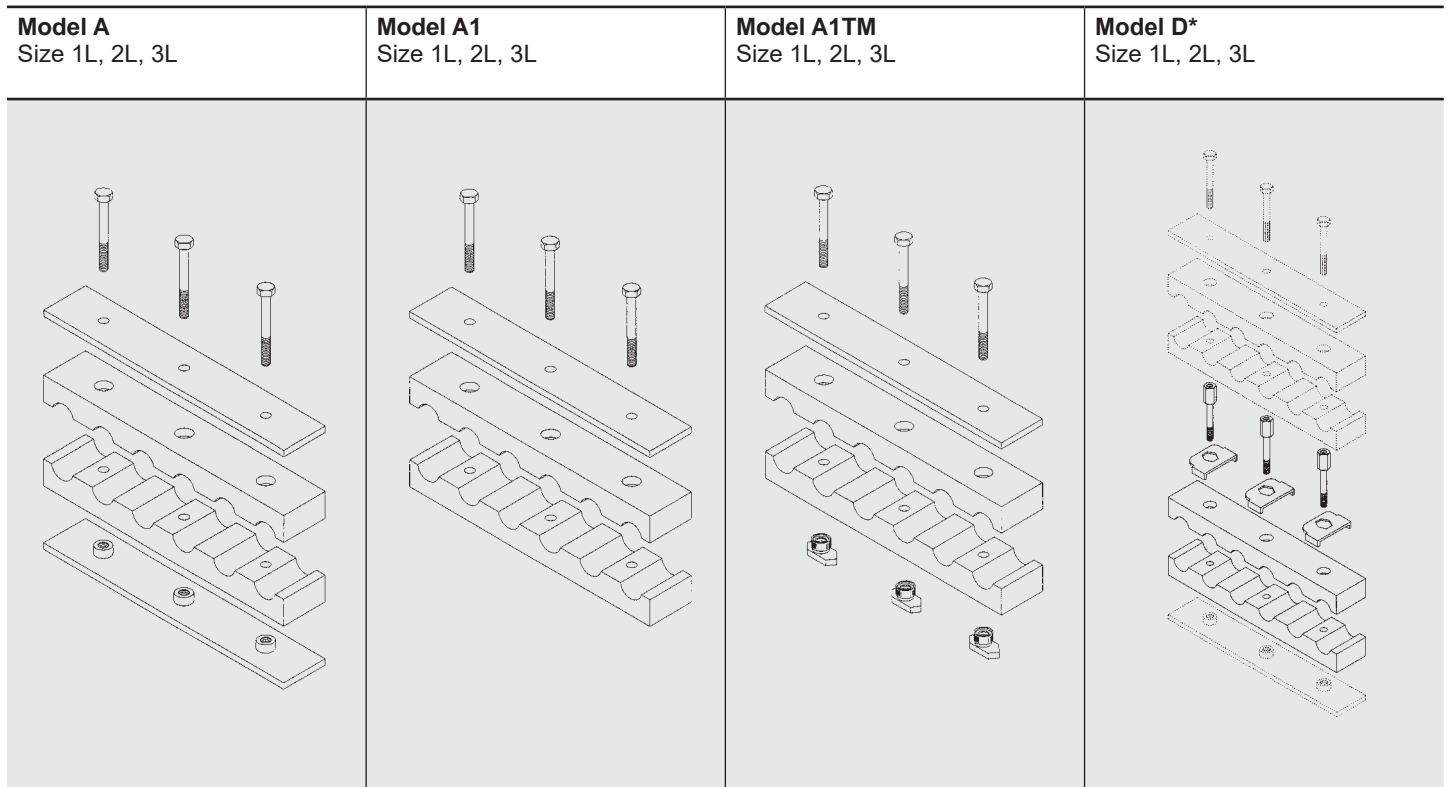
Size	A	C	H	L
1L	20	40	13.5	116
2L	29	58	16.5	172
3L	36	72	18.5	214

10 pipes with 5 fixing bolts



Size	A	C	H	L
1L	20	40	13.5	196
2L	29	58	16.5	288
3L	36	72	18.5	358

Models for series strip



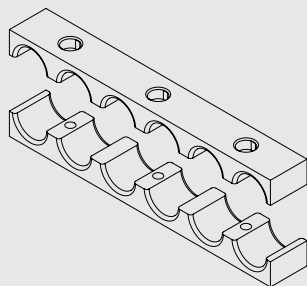
* Note for model D

One pair of clamp jaws along with the appropriate number of locking plates and build-up bolts are supplied as standard. Other clamp jaws, weld plates, cover plates and bolts must be ordered separately.

Size	Number and Ø of pipes	Component length L [mm]	/	Number of fixing bolts
1L	2 x D	60.5	/	2
	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
	4 x D	136.5	/	3
	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
	4 x D	164.5	/	3
	6 x D	214	/	3
	10 x D	358	/	5

Individual parts

Pair of clamp jaws (HRRL...KP...) Size 1L, 2L, 3L



Model code

(also order example)

HRRL 1L KP 3x12 PP 56/2 M6

Range

HRRL = HY-ROS series strip

Size

(as per dimensions)

Designation

KP = pair of clamp jaws

Number and Ø of pipes

(as per models)

Material of clamp jaws

PP = polypropylene

PA = polyamide

PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

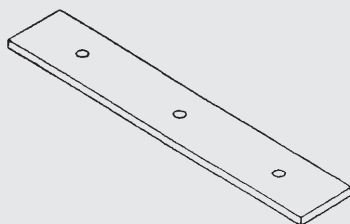
Component length / Number of fixing bolts

(as per models)

Hole

M6 = through-bore for M6 bolts

Cover plate (HRRL...DP...) Size 1L, 2L, 3L



Model code

(also order example)

HRRL 3L DP 30 x 3 x 106/2 ST D7 ZN

Range

HRRL = HY-ROS series strip

Size

(as per dimensions)

Designation

DP = cover plate

Component width

30 = 30 mm

Component thickness

3 = 3 mm

Component length / Number of fixing bolts

(as per models)

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

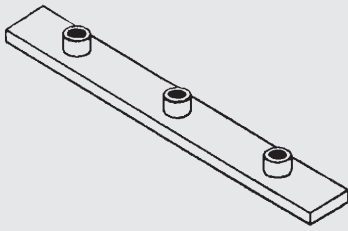
Hole

D7 = through-bore Ø 7 mm

Plating of steel parts

ZN = zinc-plated

**Weld plate
(HRRL...AP...)**
Size 1L, 2L, 3L



Model code

(also order example)

HRRL 3L AP 30 x 3 x 214/3 ST M BL

Range

HRRL = HY-ROS series strip

Size

(as per dimensions)

Designation

AP = weld plate

Component width

30 = 30 mm

Component thickness

3 = 3 mm

Component length / Number of fixing bolts

(as per models)

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

M = metric thread

Plating of steel parts

BL = unplated

ZN = zinc-plated

**Hex. head bolt ISO 4014
(6kt-shr. ISO 4014)**
Size 1L, 2L, 3L



Model code

(also order example)

6kt-shr.ISO4014 - M6 x 30 - 8.8 A3B

Range

6kt-shr.ISO4014 = hex. head bolt to ISO 4014

Size

	for HRRL size
M6 x 30	1L
M6 x 35	2L
M6 x 40	3L

Bolt quality

8.8 = to ISO 4014

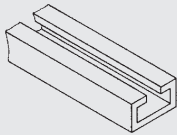
Bolt plating

A3B = zinc-plated

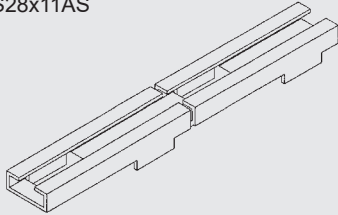
Others on request

C mounting rail (TS)

C mounting rail TS

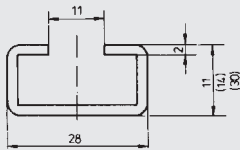


C mounting rail with weld struts
TS28x11AS

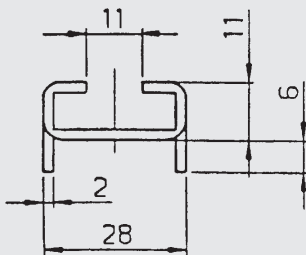


Dimensions

C mounting rail TS
available in 1 m and 2 m pieces



C mounting rail with weld struts
available in 1 m pieces



Model code

(also order example)

HRL TS28x11 ST BL 1m

Range

HRL = HY-ROS light range

Model

TS28x11 = C mounting rail 28x11
 TS28x14 = C mounting rail 28x14
 TS28x30 = C mounting rail 28x30
 TS28x11AS = C mounting rail with weld struts 28x11

Material of steel parts

ST = steel
 AL = aluminium (on request)
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

Plating of steel parts

BL = unplated
 ZN = zinc-plated
 Others on request

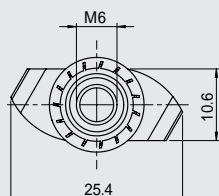
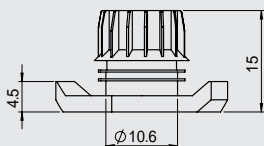
Length

1 m
 2 m (not for C mounting rail with weld struts)
 Other lengths on request

Mounting rail nut (TM)



Dimensions



Model code

(also order example)

HRL TMV6 ST ZN

Range

HRL = HY-ROS light range

Designation

TMV6 = mounting rail nut with anti-twist protection, M6
 TM6 = mounting rail nut without anti-twist protection, M6

Material of steel parts

ST = steel
 A4 = stainless steel (on request)

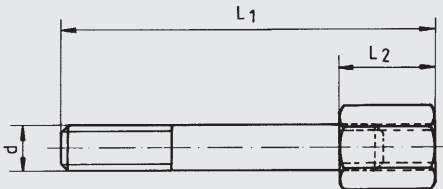
Plating of steel parts

ZN = zinc-plated
 Others on request

Build-up bolt (AF)



Dimensions



Size	Dimensions [mm]		
	L1	L2	d
0+1	34	14	M6
2	39	14	M6
3	44	14	M6

Model code (also order example)

HRL 3 AF ST M ZN

Range

HRL = HY-ROS light range

Size

for HRRL size
 0+1 1L
 2 2L
 3 3L

Designation

AF = build-up bolt

Material of steel parts

ST = steel
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

Thread type

M = metric thread

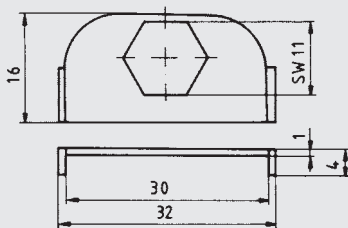
Plating of steel parts

ZN = zinc-plated
 Others on request

Locking plate (SIP)



Dimensions (for all sizes)



Model code (also order example)

HRL 0 SIP ST ZN

Range

HRL = HY-ROS light range

Size

0 = for all sizes

Designation

SIP = locking plate

Material of steel parts

ST = steel
 A2 = stainless steel (on request)
 A4 = stainless steel (on request)

Plating of steel parts

ZN = zinc-plated
 Others on request

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Series strip

Heavy range with elastomer insert HRRLE

Size	Pipe outside Ø D [mm]
2	6
	8
	10
	12
	12.7
	14
	15
	16
	17.2
	18
3*	19
	6
	8
	10
	12
	12.7
	14
	15
	16
	17.2
3	18
	19
	20
	21.3
	22
	23
	25
	26.9
	28
	30
4	32
	33.7
	35
	38
	40
	42
	45.5
	48
51	
53.4	
56.4	

* Only with reducing piece

Model code

(also order example)

HRRLE 2 A 2x15 PP 107/2 ST M10 BL

Range

HRRLE = HY-ROS series strip with elastomer insert

Size

2 = size 2
3 = size 3
4 = size 4

Model

A = with weld plate, cover plate and hex. head bolt
A1 = with cover plate and hex. head bolt
A1TM = with cover plate, hex. head bolt and mounting rail nut

Number of pipes x pipe outside Ø D

(as per models)

Material of clamp jaws

PP = polypropylene
PA = polyamide
PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

Component length / number of fastening bolts

(as per models)

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

Thread type

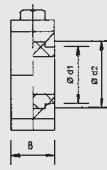
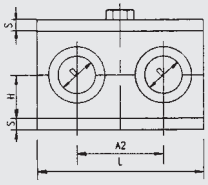
M10 = metric thread M10 (for size 2+3)
M12 = metric thread M12 (for size 4)

Plating of steel parts

BL = weld plate unplated, cover plate zinc-plated, bolts zinc-plated
ZN = weld plate zinc-plated, cover plate zinc-plated, bolts zinc-plated

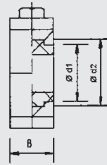
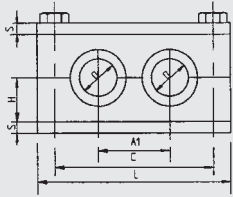
Dimensions [mm]

2 pipes with 1 fixing bolt



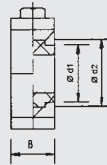
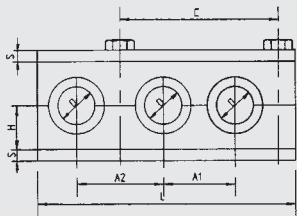
Size	d1	d2	A1	A2	B	L	H	C	S
2	25.5	31	-	46	30	83	23	-	8
3	39	46	-	60	30	115	30	-	8
4	65	74	-	93	45	173	40	-	10

2 pipes with 2 fixing bolts



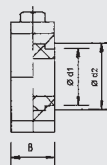
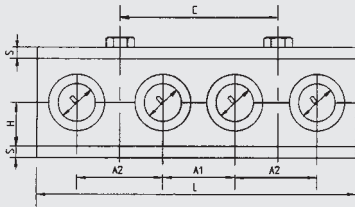
Size	d1	d2	A1	A2	B	L	H	C	S
2	25.5	31	34	-	30	107	23	80	8
3	39	46	50	-	30	134	30	110	8
4	65	74	80	-	45	199	40	173	10

3 pipes with 2 fixing bolts



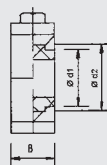
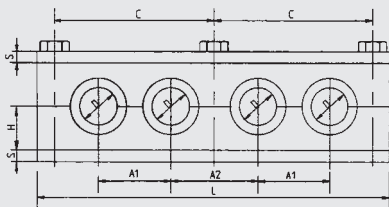
Size	d1	d2	A1	A2	B	L	H	C	S
2	25.5	31	34	46	30	135	23	80	8
3	39	46	50	60	30	179.5	30	110	8
4	65	74	80	93	45	273	40	173	10

4 pipes with 2 fixing bolts



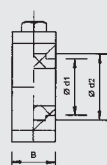
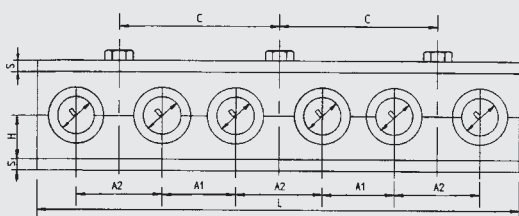
Size	d1	d2	A1	A2	B	L	H	C	S
2	25.5	31	34	46	30	163	23	80	8
3	39	46	50	60	30	225	30	110	8
4	65	74	80	93	45	346	40	173	10

4 pipes with 3 fixing bolts



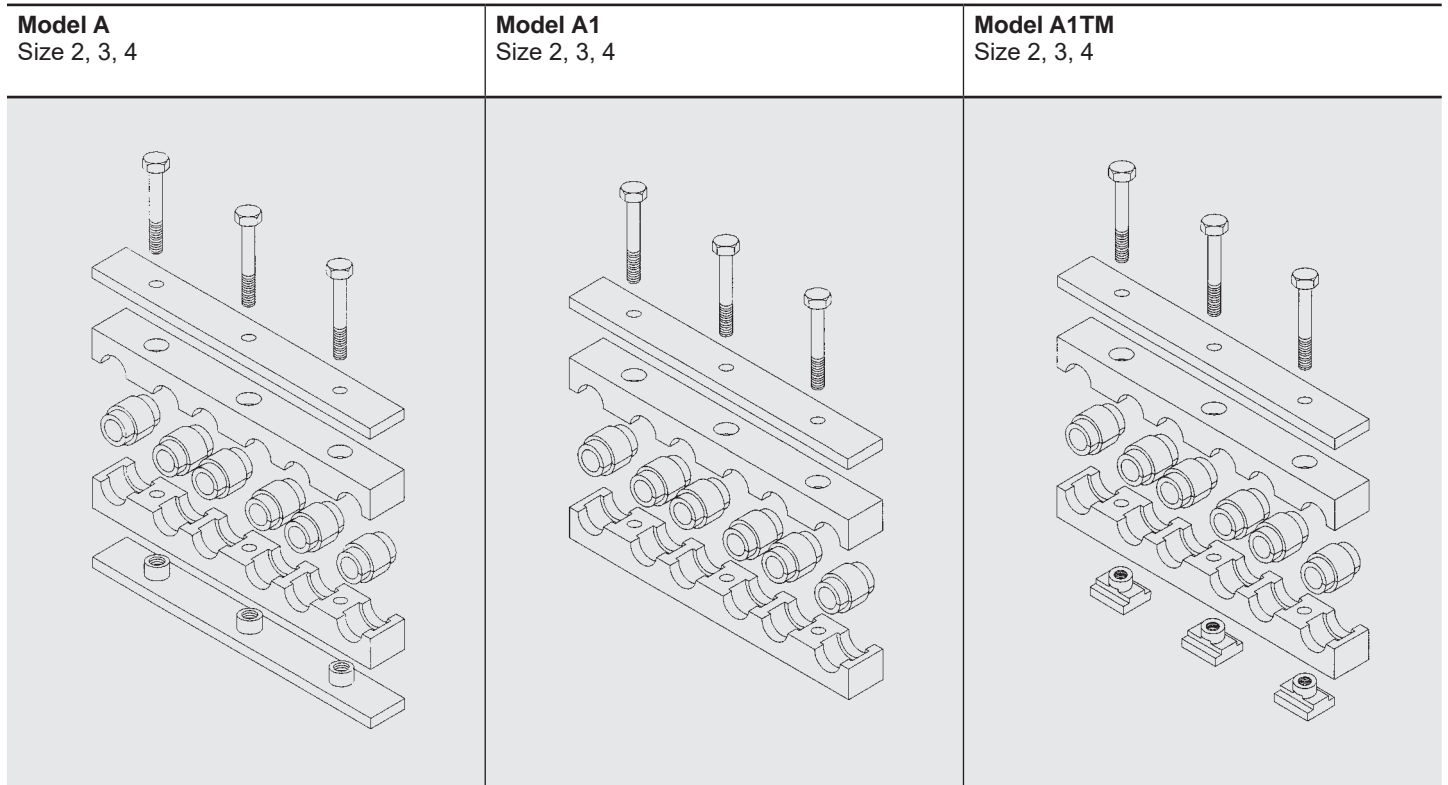
Size	d1	d2	A1	A2	B	L	H	C	S
2	25.5	31	34	46	30	187	23	80	8
3	39	46	50	60	30	244	30	110	8
4	65	74	80	93	45	373	40	173	10

6 pipes with 3 fixing bolts



Size	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

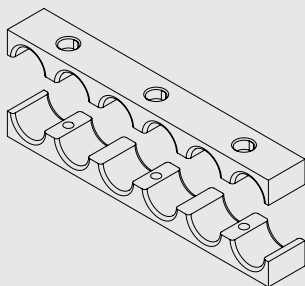
Models for series strip, heavy range



Size	Number and Ø of pipes	Component length L [mm]	Number of fixing bolts
2	2 x D	83 /	1
	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
3	2 x D	115 /	1
	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
4	2 x D	199 /	2
	3 x D	273 /	2
	4 x D	373 /	3
	6 x D	519 /	3

Individual parts

Pair of clamp jaws
(HRRLE...KP...)
Size 2, 3, 4



Model code
(also order example)

HRRLE 4 KP 4x65 PP 346/2

Range

HRRLE = HY-ROS series strip with elastomer insert

Size

(as per dimensions)

Designation

KP = pair of clamp jaws

Number of pipes x diameter d1

(as per models)

Material of clamp jaws

PP = polypropylene

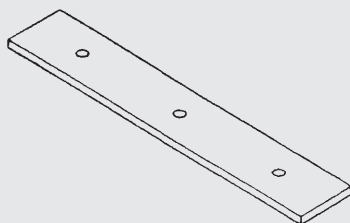
PA = polyamide

PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3

Component length / Number of fixing bolts

(as per models)

Cover plate
(HRRLE...DP...)
Size 2, 3, 4



Model code

(also order example)

HRRLE 4 DP 45x10x519 / 3 ST ZN

Range

HRRLE = HY-ROS series strip with elastomer insert

Size

(as per dimensions)

Designation

DP = cover plate

Component width B x component thickness S x component length L

(as per dimensions)

Number of fixing bolts

(as per models)

Material of steel parts

ST = steel

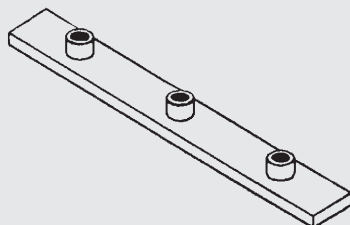
A2 = stainless steel (on request)

A4 = stainless steel (on request)

Plating of steel parts

ZN = zinc-plated

Weld plate
(HRRLE...AP...)
Size 2, 3, 4



Model code

(also order example)

HRRLE 3 AP 30x8x225 / 2 ST M10 BL

Range

HRRLE = HY-ROS series strip with elastomer insert

Size

(as per dimensions)

Designation

AP = weld plate

Component width B x component thickness S x component length L

(as per dimensions)

Number of fixing bolts

(as per models)

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

M10 = metric thread M10 (for size 2+3)

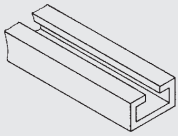
M12 = metric thread M12 (for size 4)

Plating of steel parts

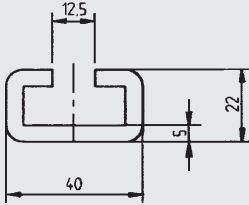
BL = unplated

ZN = zinc-plated

C mounting rail (TS)



Dimensions



Note:
Available in 1 m and 2 m pieces

Model code (also order example)

HRS TS40x22 ST BL 2m

Range

HRS = HY-ROS heavy range

Model

TS40x22 = C mounting rail 40x22

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

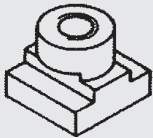
Plating of steel parts

BL = unplated
ZN = zinc-plated

Length

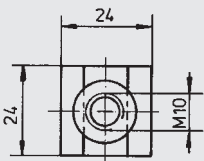
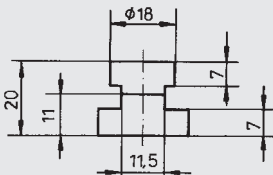
1 m
2 m
Other lengths on request

Mounting rail nut (TM)

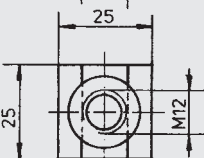
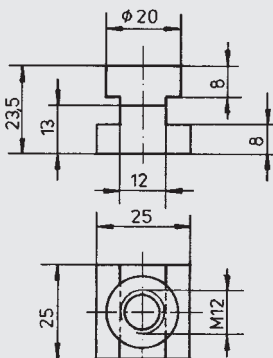


Dimensions

Mounting rail nut TM10



Mounting rail nut TM12



Model code (also order example)

HRS TM10 ST M ZN

Range

HRS = HY-ROS heavy range

Designation

TM10	= mounting rail nut size M10	<u>for HRRLE size</u> 2+3
TM12	= mounting rail nut size M12	4

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

Thread type

M = metric thread

Plating of steel parts

ZN = zinc-plated
Others on request

**Hex. head bolt ISO 4014
(6kt-shr. ISO 4014)**



Model code

(also order example)

6kt-shr.ISO4014 - M10 x 70 - 8.8 A3B

Range

6kt-shr.ISO4014 = hex. head bolt to ISO 4014

Size

	for HRRLE size
M10 x 60	2
M10 x 70	3
M12 x 100	4

Bolt quality

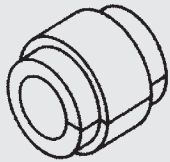
8.8 = to ISO 4014

Bolt plating

no details = unplated
A3B = zinc-plated

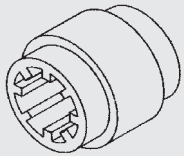
**Elastomer insert, smooth
(HRES...EE...)**

Size 2/4L, 3/6L, 4



**Elastomer insert, ribbed
(HRERS...EE...)**

Size 2/4L, 3/6L, 4



Model code

(also order example)

HRES 2/4L EE 16 TPE

Range

HRES = elastomer insert, internal surface smooth
HRERS = elastomer insert, internal surface ribbed

Size

2/4L = size 2
3/6L = size 3
4 = size 4

Designation

EE = elastomer insert

Pipe diameter

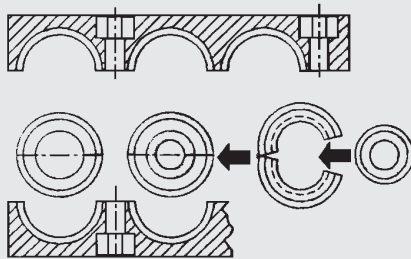
(as per dimensions)

Insert material

TPE = thermoplastic elastomer

**Reducing piece
(HRES...RE...)**

Size 3/2



Elastomer insert Reducing piece with elastomer insert

Model code

(also order example)

HRES 3/2 RE PP

Range

HRES = elastomer insert

Size

3/2 = size 3 is reduced to size 2

Designation

RE = reducing piece

Material of reducing piece

PP = polypropylene
PA = polyamide

NOTE

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Subject to technical modifications and errors.

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Bolt clamps

U-bolt clamps HRRBS

Flat steel bolt clamps HRFBS

General

U-bolt clamps similar to DIN 3570 are particularly suitable for fastening pipes with thermal expansion and large tanks.

The pipes can either be fastened firmly or with some clearance for sliding.

HY-ROS U-bolt clamps are made up of a round steel U-bolt with nuts and pipe support. The parts are also available as individual units.

Pipe supports are available in short or long versions.

U-bolt clamps are available in 23 sizes for pipe diameters from 17.1 to 762 mm.

DIN 3567 flat steel bolt clamps are used as mounting elements for pipe systems outside hydraulic applications.

They are available in 32 sizes from 20 to 500 mm.

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U-bolt clamps sim. to DIN 3570 HRRBS

Size	Pipe outside Ø D [mm]
1	17.1
	21.3
2	25
	26.9
3	30
	33.7
4	38
	42.4
5	44.5
	48.3
6	57
	60.3
7	76.1
	88.9
8	108
	114.3
9	133
	139.7
10	159
	168.3
11	(191)
	193.7
12	216
	219.1
13	267
	273
14	318
	323.9
15	355.6
	368
16	406.4
	419
17	508
	521
18	558
	609
19	660
	711
20	762

Note: sizes given in parentheses should be avoided where possible.

Model code (also order example)

HRRBS 10 L 139,7 PP ST ZN

Range

HRRBS = HY-ROS U-bolt clamp

Size

1 = size 1
2 = size 2
up to size 23

Model for complete clamps

A = clamp with four hex nuts
K = clamp with four hex nuts and pipe support, short
L = clamp with four hex nuts and pipe support, long

Pipe diameter D*

Material of pipe support*

PP = polypropylene
PA = polyamide
PAFF = polyamide flame-retardant to EN 45545-2 R22, R23, HL3

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)
Others on request

Plating of steel parts

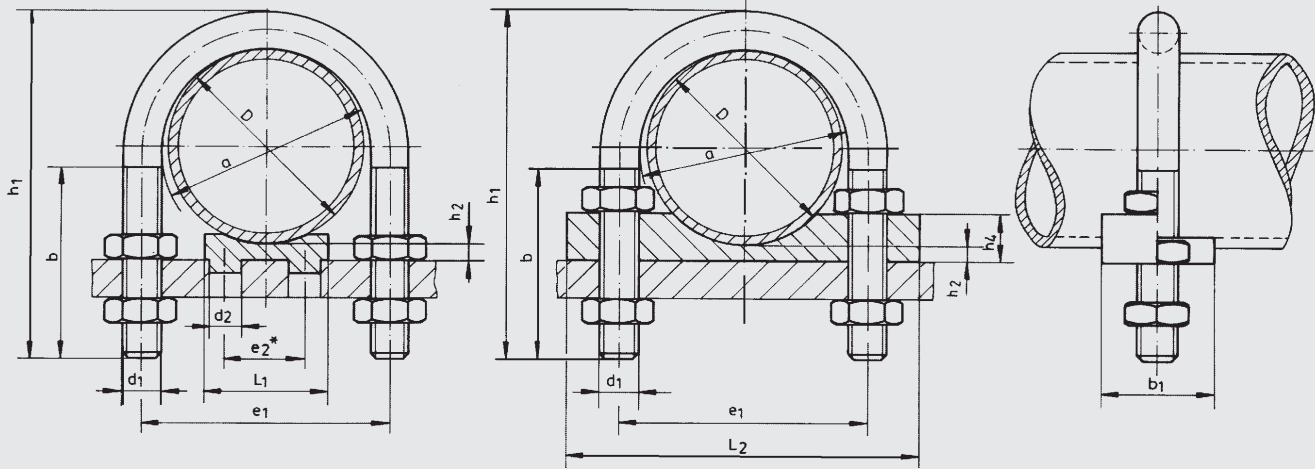
ZN = zinc-plated
Others on request

* Not applicable for version A

Dimensions [mm]

Short version

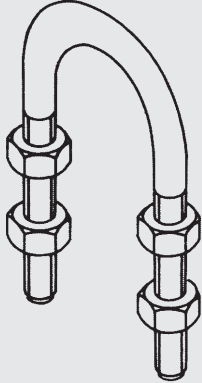
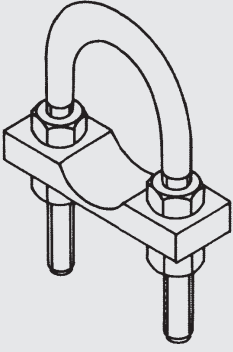
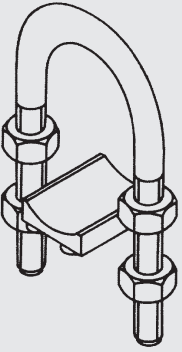
Long version



For pipe support size 1–4, e_2 is drawn with a 90° offset

Size	U-bolt BUE					Pipe support short version RUK					Pipe support long version RUL			
	a [mm]	b [mm]	d ₁	e ₁ [mm]	h ₁ [mm]	d ₂ [mm]	e ₂ [mm]	h ₂ [mm]	L ₁ [mm]	b ₁ [mm]	h ₂ [mm]	h ₄ [mm]	L ₂ [mm]	b ₁ [mm]
1	23	30	M10	33	60	8	25	5	24	35	5	10	60	25
2	30	40	M10	40	70	8	25	5	24	35	5	12	75	30
3	38	40	M10	48	75	8	25	5	24	35	5	12	80	30
4	46	50	M10	56	86	8	25	5	24	35	5	12	90	30
5	52	50	M10	62	92	10	25	5	38	50	5	15	95	35
6	64	60	M12	76	109	10	25	5	38	50	5	15	110	35
7	82	60	M12	94	125	10	25	5	38	50	5	15	135	35
8	94	60	M12	106	138	10	25	5	38	50	10	20	145	40
9	120	80	M16	136	171	20	81	9	110	80	10	20	190	40
10	148	80	M16	164	191	20	81	9	110	80	10	20	220	40
11	176	80	M16	192	217	20	81	9	110	80	12	25	250	50
12	202	80	M16	218	249	20	81	9	110	80	12	25	270	50
13	228	100	M20	248	283	25	130	9	175	110	12	25	315	50
14	282	100	M20	302	334	25	130	9	175	110	12	25	370	50
15	332	100	M20	352	385	25	130	9	175	110	15	30	420	60
16	378	100	M24	402	435	30	210	9	250	130	15	30	480	60
17	428	100	M24	452	487	30	210	9	250	130	15	30	540	60
18	530	100	M24	554	589	30	210	9	250	130	15	30	640	60
19	570	150	M30	600	650	30	210	9	250	130	20	40	700	70
20	622	150	M30	652	700	30	210	9	250	130	20	40	750	70
21	680	150	M30	710	760	30	210	9	250	130	20	40	810	70
22	730	150	M30	760	810	30	210	9	250	130	20	40	870	70
23	785	150	M30	815	870	30	210	9	250	130	20	40	910	70

Models

Model A Clamp with four hex. nuts	Model L Clamp with four hex. nuts and short pipe support	Model K Clamp with four hex. nuts and long pipe support
		

Individual parts

U-bolt (BUE)
Size 1-23



Model code
(also order example)

HRRBS 10 BUE ST ZN

Range
HRRBS = HY-ROS U-bolt clamp

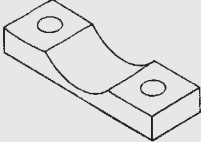
Size
1 = size 1
2 = size 2
up to size 23

Designation
BUE = U-bolt

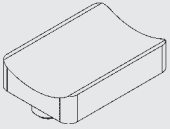
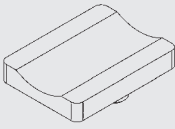
Material of steel parts
ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)
Others on request

Plating of steel parts
ZN = zinc-plated
Others on request

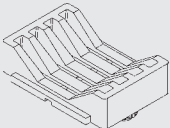
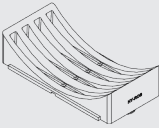
Pipe support long (RUL)
Size 1-23



Pipe support, short (RUK)
Size 1 - 4 Size 5 - 8

Size 9 - 12 Size 13 - 23

Model code
(also order example)

HRRBS 10 RUL 139,7 PP

Range
HRRBS = HY-ROS U-bolt clamp

Size
1 = size 1
2 = size 2
up to size 23

Designation
RUL = pipe support, long
RUK = pipe support, short

Pipe diameter D
(in acc. with dimensions)

Materials of pipe support
PP = polypropylene
PA = polyamide (on request)
PAFF = polyamide flame-retardant to EN 45545-2 R22, R23, HL3 (on request)
Others on request

NOTE

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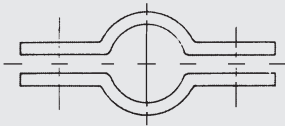


Flat steel bolt clamps in acc. with DIN 3567 HRFBS

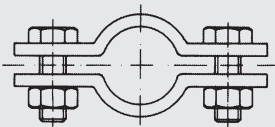
Clamp form

Form A

Size 1 - 32
Nom. width 20 - 500



Model A1
(without bolts and nuts)



Model A
(with bolts and nuts)

Model code

(also order example)

HRFBS 12 A1 89 ST ZN Form A

Range

HRFBS = HY-ROS flat steel bolt clamp

Size

1 = size 1
2 = size 2
up to size 32

Model for complete clamps

A1 = flat steel clamp pair
A = flat steel clamp pair with hex. head bolts and nuts

Pipe diameter d_1

(in acc. with dimensions)

Material of steel parts

ST = steel
A2 = stainless steel (on request)
A4 = stainless steel (on request)

Plating of steel parts

BL = unplated
ZN = zinc-plated

Clamp form

Form A

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NOTE

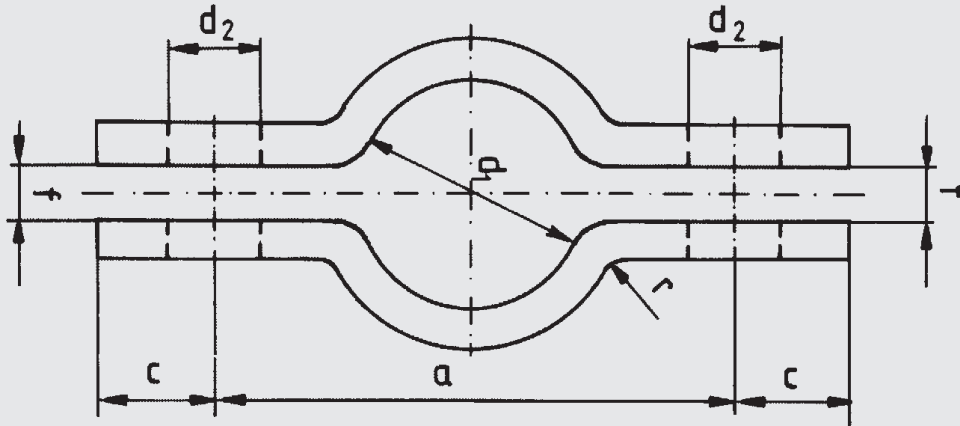
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Dimensions

Form A



d ₁ [mm]	Size	To be used for nom. width		Dimensions [mm]					Flat steel to DIN 1017 [mm]	Hex. head bolt to ISO 4017	Weight [kg/100 pcs.]						
				a	c	d ₂	f	r									
25	1	20		62	15	11.5	7	4	30 x 5	M10 x 30MU	21.37						
27	2		3/4"	66							22.57						
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	58.20												
77	11	65	2 1/2"	122	66.30												
89	12	80	3"	136	75.30												
108	13	100		172	24	18	11	6	50 x 8	M16 x 45MU							159.10
115	14		4"	178							163.40						
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

Note: sizes given in parentheses should be avoided where possible.



Swivel bolt clamps

Swivel bolt clamping band

Quick release swivel bolt band clamps

Swivel bolt prism clamp

Clamps for cylinders

General

HY-ROS swivel bolt clamps are used to mount large-volume containers or components of various shapes (round and/or square) and materials such as air reservoir, plastic containers, steel and plastic tanks or accumulators.

Various production and shaping methods together with different base materials and dimensions cater to virtually every requirement.

Advantages

- Simple installation through fold-open locking system
- Simple installation and subsequent correction of position
- Unrestricted positioning of fastening system
- Flexibility thanks to individual shaping of the clamping bands
- Insulation from noise and electrostatic thanks to additional plastic or rubber inserts
- Suitable supports for every container through selection of shaped parts and plastics
- Customer-specific and inexpensive solutions through modification of clamping bands and supports.

Notice

Mounting technology is safety technology, particularly in the case of swivel bolt bands. For this reason, our fastening equipment must only be attached and installed by trained personnel.

We assume warranty responsibility and liability only against defects in our delivered items as such. We bear no responsibility for the suitability of the surrounding conditions and for proper assembly.

Swivel bolt clamping band

The flexible steel band, used in conjunction with a large selection of mounting systems optimised to suit requirements, is the basis element of all HY-ROS swivel bolt clamps and it can be used with or without a support.

For the band-eyelet connection with mechanical attachment, the band ends are bent to form eyelets and closed up with projection welding connections or by joining processes.

The eyelet straps are fastened to the outside of the bent band so that the band has a smooth inner surface.

Adapted profile inserts made from PE or EPDM are used to protect surface and component, while resistance to flame and high temperatures is achieved by PTFE plastic inserts.

Suitable supports for air reservoir mounting are available for practically all requirements.

Quick release swivel bolt clamping band, round

The bent swivel bolt clamping band is particularly suitable for mounting heavy, smooth-walled hoses with a high tightening torque.

The fold-open locking system enables rapid radial mounting.

Fitted with strap or rubber profile inlay to prevent injuries and component damage.

Quick release swivel bolt band clamps

To mount round components on a base surface, the swivel bolt clamping band is combined with a support. The support has two elongated holes for effortless clamp adjustment.

The "Multi" quick release swivel bolt band clamp has been specifically designed for high dynamic loads, thermal stresses, changes in diameter and force effects.

The component geometry also enables freely selectable positioning of the fastening system.

The support is reinforced with web plates or side walls for greater load capacity.

Swivel bolt prism clamp

The combination of swivel bolt clamping band and functionally formed support has been developed for mounting accumulators in confined spaces.

Clamps for cylinders

The combination of swivel bolt prism clamp and standard DIN 3015 clamp is predominantly used to mount hydraulic lines to the cylinder. This prevents weld metal and heat from entering the hydraulic cylinder.

Maximum static loads, HY-ROS clamping bands (welded stainless steel)

Width x thickness [mm]	Material	Designation	Yield strength Rp0.2 material [N/mm ²]	Yield strength Rp0.2 clamping band [kN]	Max. permitted load [kN]	Minimum length [mm]
20 x 0.8	1.4510	Stainless steel, ferritic	220	3.52	2.9	70
20 x 0.8	1.4301	Stainless steel, austenitic	210	3.36	2.9	70
25 x 1.0	1.4510	Stainless steel, ferritic	220	5.5	4.5	100
25 x 1.0	1.4301	Stainless steel, austenitic	210	5.25	4.5	100
30 x 1.0	1.4510	Stainless steel, ferritic	220	6.6	5.5	120
30 x 1.0	1.4301	Stainless steel, austenitic	210	6.3	5.5	120
30 x 1.0	1.4571	Stainless steel, austenitic	220	6.6	5.5	120
30 x 1.5	1.4510	Stainless steel, ferritic	220	9.9	8.3	120
30 x 1.5	1.4301	Stainless steel, austenitic	210	9.45	8.0	120
30 x 1.5	1.4571	Stainless steel, austenitic	220	9.9	8.0	120
40 x 1.5	1.4510	Stainless steel, ferritic	220	13.2	11.0	120
40 x 1.5	1.4301	Stainless steel, austenitic	210	12.6	10.6	120

Maximum static loads, HY-ROS clamping bands (joined Fe steel)

Width x thickness [mm]	Material	Designation	Yield strength Rp0.2 material [N/mm ²]	Yield strength Rp0.2 clamping band [kN]	Max. permitted load [kN]	Surface treatment	Minimum length [mm]
20 x 1.0	1.0529	Fe steel / S350GD	350	7.00	3.6	Z600 (600g/m ²)	200
30 x 1.0	1.0529	Fe steel / S350GD	350	10.50	5.5	Z600 (600g/m ²)	200
30 x 1.5	1.0934	Fe steel / HX380LAD	380	17.10	8.3	Z600 (600g/m ²)	200
40 x 1.5	1.0934	Fe steel / HX380LAD	380	22.80	11.0	Z600 (600g/m ²)	200

Notice: Other materials on request.

NOTE

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Swivel bolt clamping band Stretched form HR(S)GBL...

Delivery state:
stretched out

Band width:
20–40 mm

Clamping range:
39–619 mm

Model code (also order example)

HRGBLP 25 A1 169 F1ZN

Designation

HRGBLP	=	HY-ROS swivel bolt clamping band, light series, welded
HRGBLF	=	HY-ROS swivel bolt clamping band, light series, joined
HRGBLPU	=	HY-ROS swivel bolt clamping band, light series, welded, with profile
HRGBLFU	=	HY-ROS swivel bolt clamping band, light series, joined, with profile
HRSGBLP	=	HY-ROS swivel bolt clamping band, heavy series, welded
HRSGBLF	=	HY-ROS swivel bolt clamping band, heavy series, joined
HRSGBLPU	=	HY-ROS swivel bolt clamping band, heavy series, welded, with profile
HRSGBLFU	=	HY-ROS swivel bolt clamping band, heavy series, joined, with profile

Band width

HRGBLP, HRGBLPU

20	=	20 x 0.8 mm (on request)
25	=	25 x 1.0 mm
30	=	30 x 1.0 mm

HRSGBLP, HRSGBLPU

30	=	30 x 1.5 mm
40	=	40 x 1.5 mm

HRGBLF, HRGBLFU

20	=	20 x 1.0 mm (on request)
30	=	30 x 1.0 mm

HRSGBLF, HRSGBLFU

20	=	20 x 1.0 mm (on request)
30	=	30 x 1.5 mm
40	=	40 x 1.5 mm

Model

A1	=	with hex head bolt
B1	=	with hex socket bolt
S1	=	with quick release fastener
Others on request		

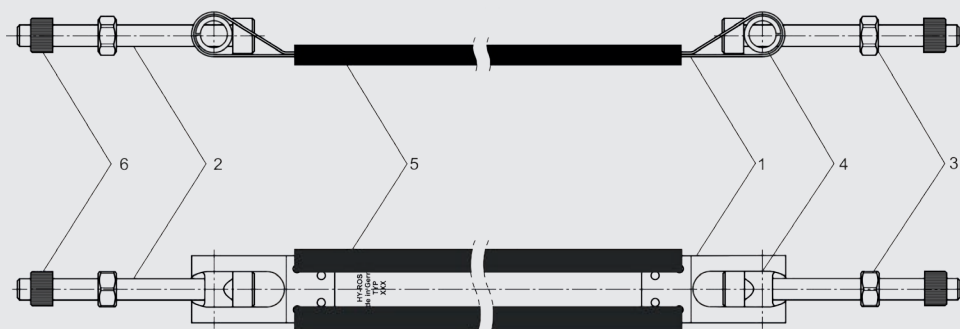
Type

(According to dimensions)

Material of steel parts

F1ZN	=	clamping band F1, closing parts steel, zinc-plated
A2A2	=	clamping band A2, closing parts A2
A4A4	=	clamping band A4, closing parts A4 (on request)
M09ZN	=	clamping band hot-dip zinc-plated, closing parts steel, zinc-plated
Others on request		

Technical specifications



Item	Designation
1	Clamping band
2	Bolt
3	Nut
4	Swivel sleeve, swivel bolt
5	Profile
6	Transport restraint

Band and bolt dimensions *

Band size [mm]	Bolt size
20 x 0.8 / 1.0	M6 x 50
25 x 1.0	M8 x 80
30 x 1.0	M10 x 90
30 x 1.5	M10 x 90
40 x 1.5	M10 x 90

Welding certificates (welding certificate DIN EN 15085 possible)

Internally manufactured clamping bands of size 20x0.8, 25x1.0, 30x1.0, 30x1.5 and 40x1.5

Certificate level	CL1
Weld performance class	CP-C3
Test class	CT4
Surface finish	Level 3

Materials

Clamping band	Steel, stainless steel		
Bolt, nut	Steel, zinc-plated *		
Swivel sleeve, swivel bolt	Steel, zinc-plated *		
Profile	EPDM	Temperature resistance	-35 °C to +120 °C
	NBR	Temperature resistance	-40 °C to +85 °C
	PE	Temperature resistance	-60 °C to +70 °C

Torque values

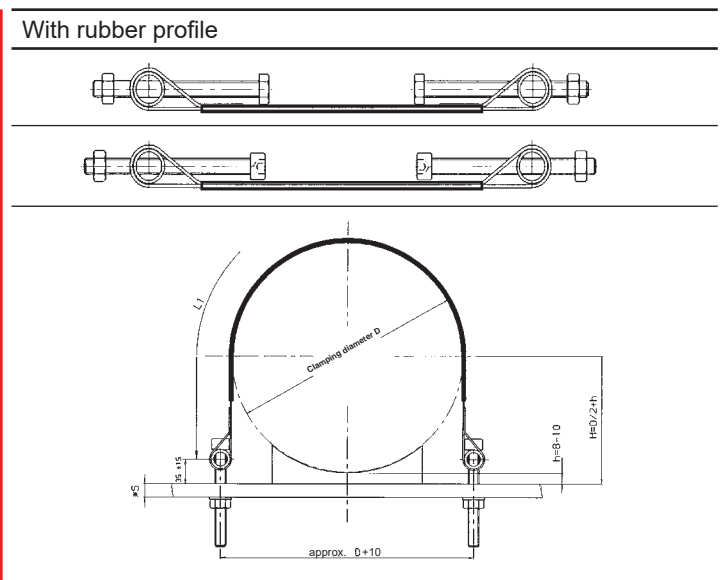
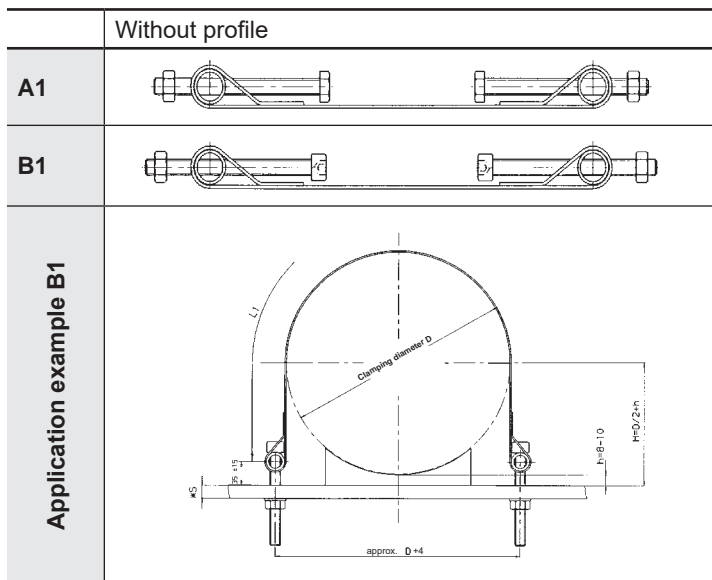
Band size [mm]	Tightening torque [Nm]
20 x 0.8	8
25 x 1.0	13
30 x 1.0	15
30 x 1.5	23
40 x 1.5	28

Delivery state

Clamping band	Stretched out Customised shapes on request
---------------	---

* others on request

Dimensions of swivel bolt clamping band, model A1 and B1



Band and bolt size
25 x 1 mm, M8 x 80

Type	Dimensions [mm]	
	D (range)	L1
62	78 - 84	181
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

Band and bolt size
30 x 1 mm, M10 x 90
30 x 1.5 mm, M10 x 90
40 x 1.5 mm, M10 x 90

Type	Dimensions [mm]	
	D (range)	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

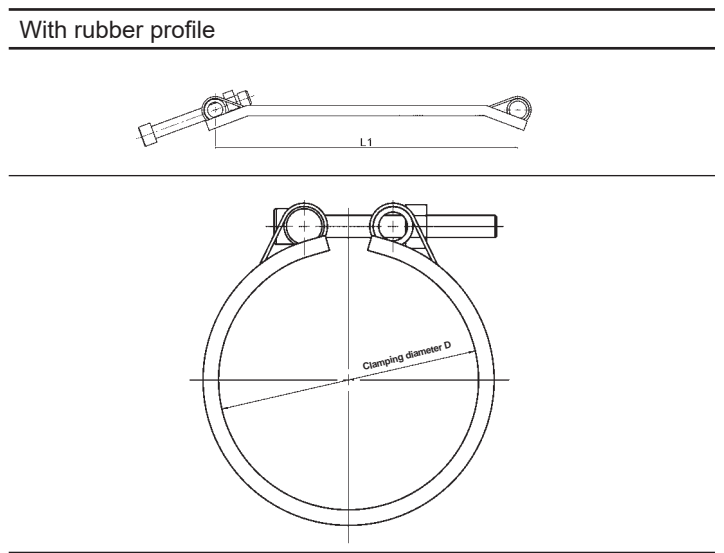
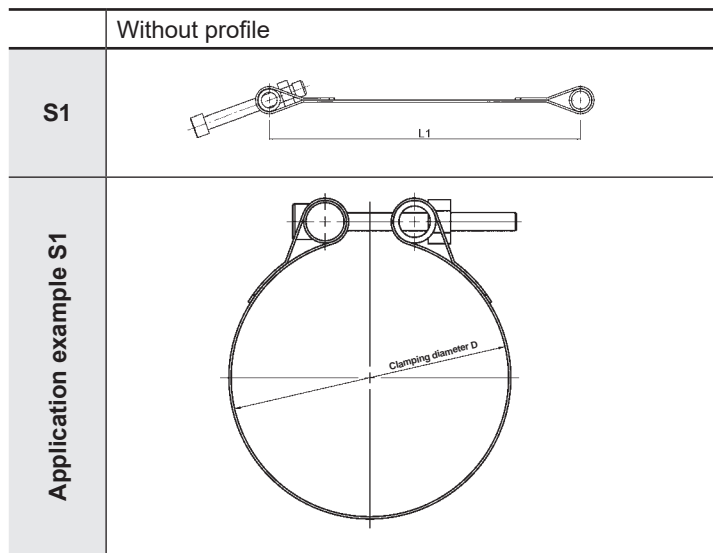
Band and bolt size
25 x 1 mm, M8 x 80

Type	Dimensions [mm]	
	D (range)	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

Band and bolt size
30 x 1 mm, M10 x 90
30 x 1.5 mm, M10 x 90
40 x 1.5 mm, M10 x 90

Type	Dimensions [mm]	
	D (range)	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 - 423	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

Dimensions of swivel bolt clamping band, model S1



Band and bolt size
 30 x 1 mm, M10 x 90
 30 x 1.5 mm, M10 x 90
 40 x 1.5 mm, M10 x 90
 20 x 0.8 mm, M6 x 50 (on request)
 25 x 1 mm, M8 x 80 (on request)

Band and bolt size
 30 x 1 mm, M10 x 90
 30 x 1.5 mm, M10 x 90
 40 x 1.5 mm, M10 x 90
 20 x 0.8 mm, M6 x 50 (on request)
 25 x 1 mm, M8 x 80 (on request)

Type	Dimensions [mm]		L1
	D (range)		
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	- 445	1348
451	448	- 459	1388
464	461	- 472	1429
477	474	- 485	1470
490	487	- 498	1511
503	500	- 511	1552

Type	Dimensions [mm]		L1
	D (range)		
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



Support, short for mounting air reservoirs HRLBB BUK

Support, short (BUK) for air reservoirs in conjunction with HY-ROS swivel bolt clamping band model A1 and B1

Model code
(also order example)

HRLBB BUK 240-350 PA

Range

HRLBB = HY-ROS air reservoir mount

Designation

BUK = support, short, for air reservoir

Clamping range

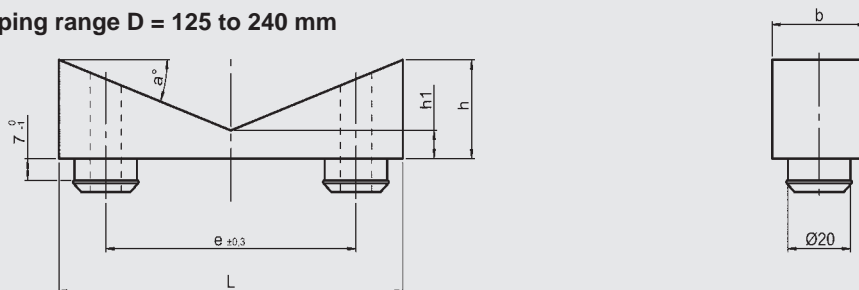
(according to dimensions)

Material

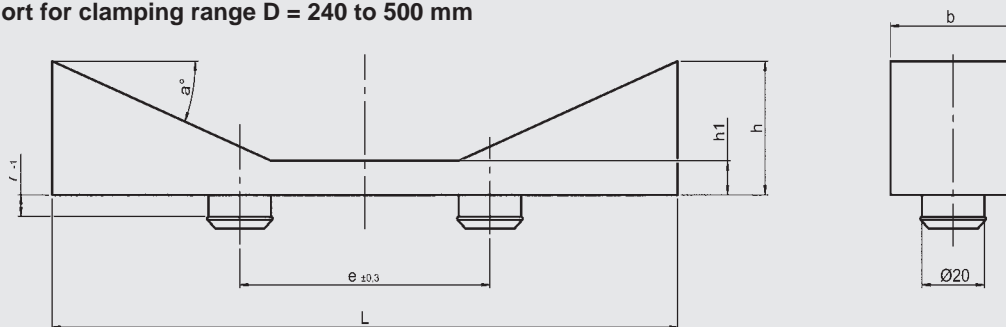
PP = polypropylene
PA = polyamide

Dimensions

Support short for clamping range D = 125 to 240 mm



Support short for clamping range D = 240 to 500 mm



Clamping diameter D [mm]	Dimensions						Weight [g/piece]	
	b [mm]	L [mm]	h [mm]	e [mm]	h1 [mm]	α	PP	PA
125–240	30	110	28	80	8	20°	49	63
240–350	30	110	17.6	80	8	14°	32	43
350–420	40	200	38	80	10	22°	82	106
420–500	40	200	32	80	10	17.5°	65	83

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Swivel bolt clamping band
Round shape with quick
release fastener

HRGB...S1...

Delivery state:

bent

Band width:

25 mm

Clamping range:

54–301 mm

Model code

(also order example)

HRGBP 25 S1 203-211 / 205 F1ZN

Designation

- HRGBP = HY-ROS swivel bolt clamping band, welded
- HRGBPM = HY-ROS swivel bolt clamping band, welded, with strap
- HRGBPU = HY-ROS swivel bolt clamping band, welded, with rubber profile (EPDM)

Band width

- 25 = 25 mm
- Others on request

Model

- S1 = with quick release fastener

Clamping range

(according to dimensions)

Type

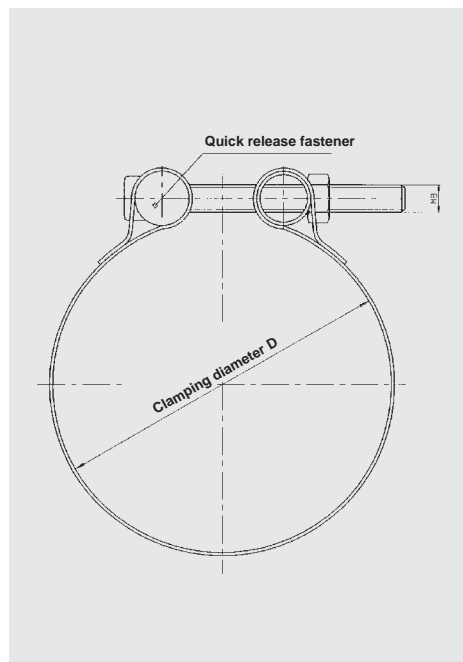
(according to dimensions)

Material of steel parts

- F1ZN = clamping band F1, closing parts steel, zinc-plated
- A2A2 = clamping band A2, closing parts A2
- A4A4 = clamping band A4, closing parts A4 (on request)
- M09ZN = clamping band steel, hot-dip zinc-plated, closing parts steel, zinc-plated
- Others on request

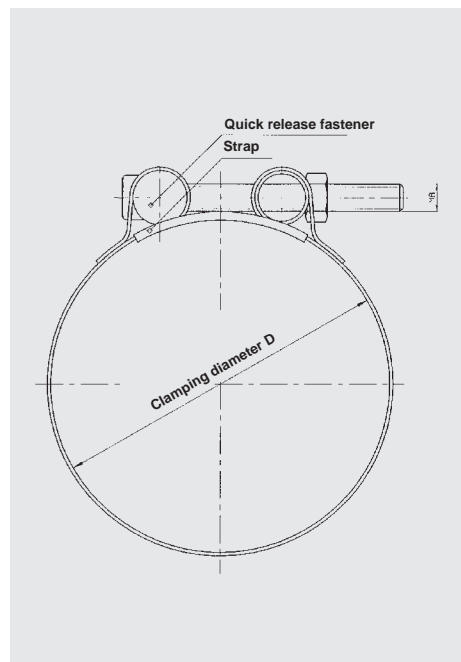
Models

Basic (HRGBP)



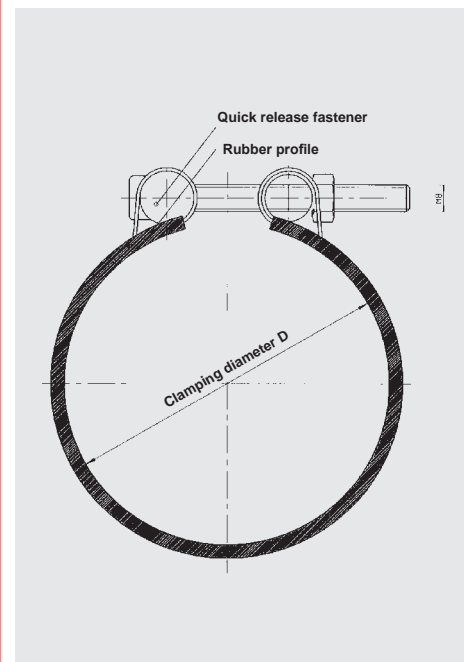
Type	Clamping diameter (range) D [mm]
62	60 – 65
64	62 – 67
70	68 – 73
76	74 – 79
82	80 – 85
88	86 – 91
94	92 – 97
100	98 – 103
106	104 – 112
115	113 – 121
124	122 – 130
133	131 – 139
142	140 – 148
151	149 – 157
160	158 – 166
169	167 – 175
178	176 – 184
187	185 – 193
196	194 – 202
205	203 – 211
214	212 – 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

With strap (HRGBPM)



Type	Clamping diameter (range) D [mm]
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

With rubber profile (HRGBPU)



Type	Clamping diameter (range) D [mm]
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

NOTE

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Quick release swivel bolt band clamp HRGKS

Clamping range:

100–230 mm

Band width:

25 mm

Model code

(also order example)

HRGKS 1 A 124-132 / 133 H3 ZN

Designation

HRGKS = HY-ROS quick release swivel bolt band clamp

Size

(according to dimensions)

Model

A = standard

Clamping range

(according to dimensions)

Type

(according to dimensions)

Height of pipe support

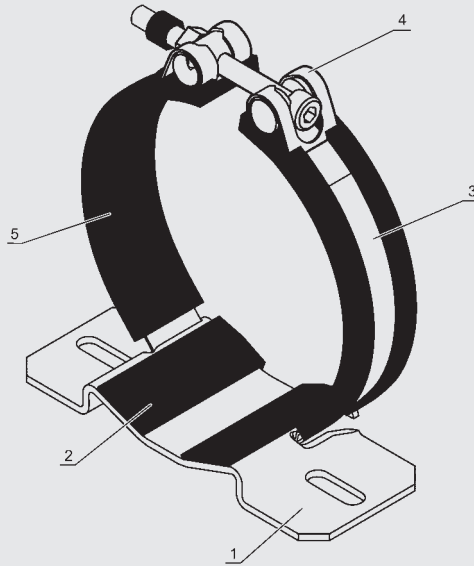
H3 = 3 mm

H5 = 5 mm

Material of steel parts

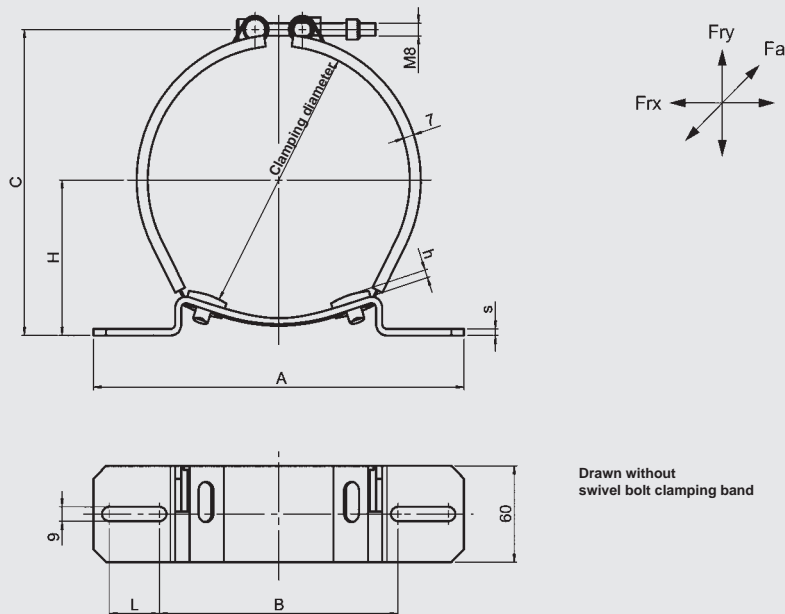
ZN = steel, zinc-plated

Material of individual parts



Item	Designation	Material/surface	Abbreviation
1	Support	Steel, zinc-plated	ZN
2	Pipe support	Polyethylene	PE
3	Swivel bolt clamping band, round	Stainless steel	F1
4	Quick release fastening	Steel, zinc-plated	ZN
5	Rubber profile	Ethylene propylene diene monomer rubber	EPDM

Dimensions



Drawn without
swivel bolt clamping band

Size	Type	Clamping diameter (range) [mm]	H* (range) [mm]	Dimensions [mm]					Weight [kg]	
				h	B	L	A	C _{max}		s
1	106	100 - 105	59.0 - 61.5	3	100	18	156	131	3	0.40
	115	106 - 114	62.0 - 66.0	3				140		0.41
	124	115 - 123	66.5 - 71.0	3				150		0.42
	133	124 - 132	71.5 - 76.0	3				159		0.43
	142	133 - 142	76.5 - 81.0	3				170		0.44
	151	143 - 151	82.0 - 86.0	3				179		0.45
	160	152 - 159	86.5 - 90.0	3				187		0.46
2	169	160 - 167	92.0 - 95.5	5	152	32	236	195	4	0.70
	178	167 - 175	95.5 - 99.5	5				203		1.72
	187	176 - 185	100.0 - 104.5	5				214		0.75
	196	186 - 194	105.0 - 109.0	5				224		0.76
	205	195 - 203	109.5 - 113.5	5				233		0.76
	214	204 - 213	112.0 - 116.5	3				243		0.77
	223	214 - 222	117.0 - 121.0	3				251		0.77
	231	223 - 230	121.5 - 125.0	3				259		0.78

* Dimension "H" dependent on clamping diameter

Clamp size with stress factors

Size	Diameter [mm]	F _{ry} [N]	F _{rx} [N]	F _a [N]	Tightening torque [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

NOTE

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Subject to technical modifications and errors.

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Quick release swivel bolt band clamp "Multi"

HRGKSM, HRVMS, HRVMW

Clamping range:

44–506 mm

Band width:

20–30 mm

Model code

(also order example)

HRGKSM 2 R 186-194 / 192 ST GS O.PE

Designation

HRGKSM = HY-ROS swivel band console clamp "Multi"

HRVMS = HY-ROS swivel band console clamp "Multi" with rib

HRVMW = HY-ROS swivel band console clamp "Multi" with side plate

Size

(according to dimensions)

Model

R = standard

Clamping range

(according to dimensions)

Type

(according to dimensions)

Material of steel parts

ST = steel, zinc-plated

A2 = stainless steel (on request)

A4 = stainless steel (on request)

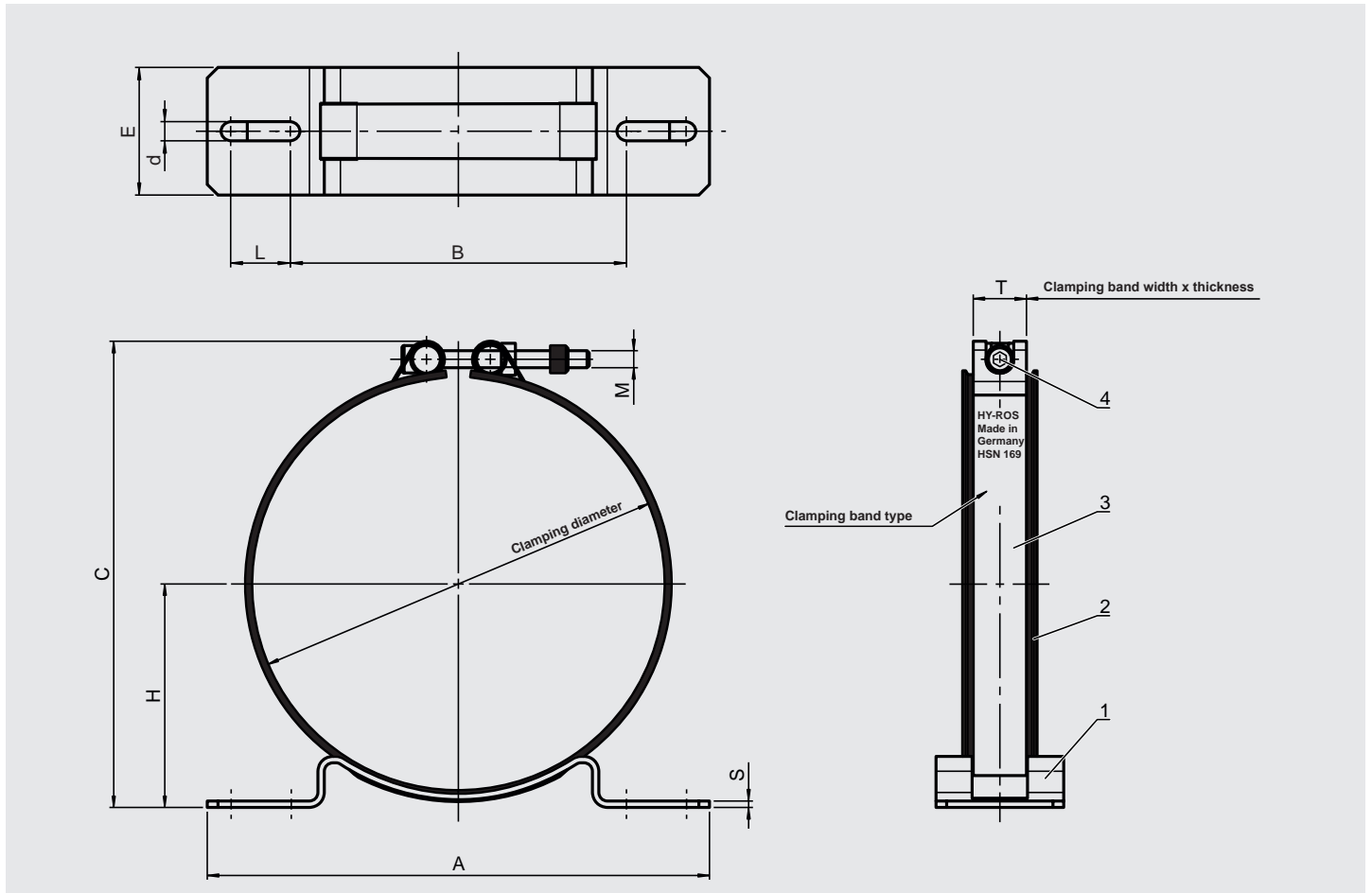
Special design

GS = with slide rail (only HRVMW, size 3 and above)

O.PE = without plastic profile

HL3 = fire protection support to EN 45545 HL3

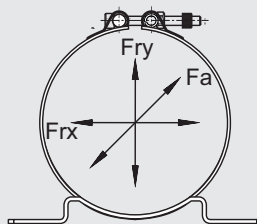
Model: standard (HRGKSM)



Material of individual parts

Item	Designation	Material/surface	Abbreviation
1	Support	Steel, zinc-plated	ZN
2	Synthetic material profile	Polyethylene	PE
3	Swivel bolt clamping band, round	Stainless steel	F1
4	Quick release fastening	Steel, zinc-plated	ZN

Maximum static load values



Size	Clamping diameter (range) [mm]	Fry [N]	Frx [N]	Fa [N]	Tightening torque [Nm]		Clamping band
					Closing parts zinc-plated (frictional value 0.12–0.18 μ)	Closing parts in A2 (thread lubricated with Gleitmo 805)	
0	40 - 100	400	250	250	8 ⁺²	7 ⁺²	20x0.8 / M6
1	101 - 163	550	350	350	17 ⁺²	9 ⁺²	25x1.0 / M8
2	163 - 234	1200	630	630	17 ⁺²	9 ⁺²	25x1.0 / M8
3	235 - 337	2200	1150	500	23 ⁺²	18 ⁺²	30x1.0 / M10
4	339 - 506	2000	700	350	30 ⁺²	28 ⁺²	30x1.5 / M10

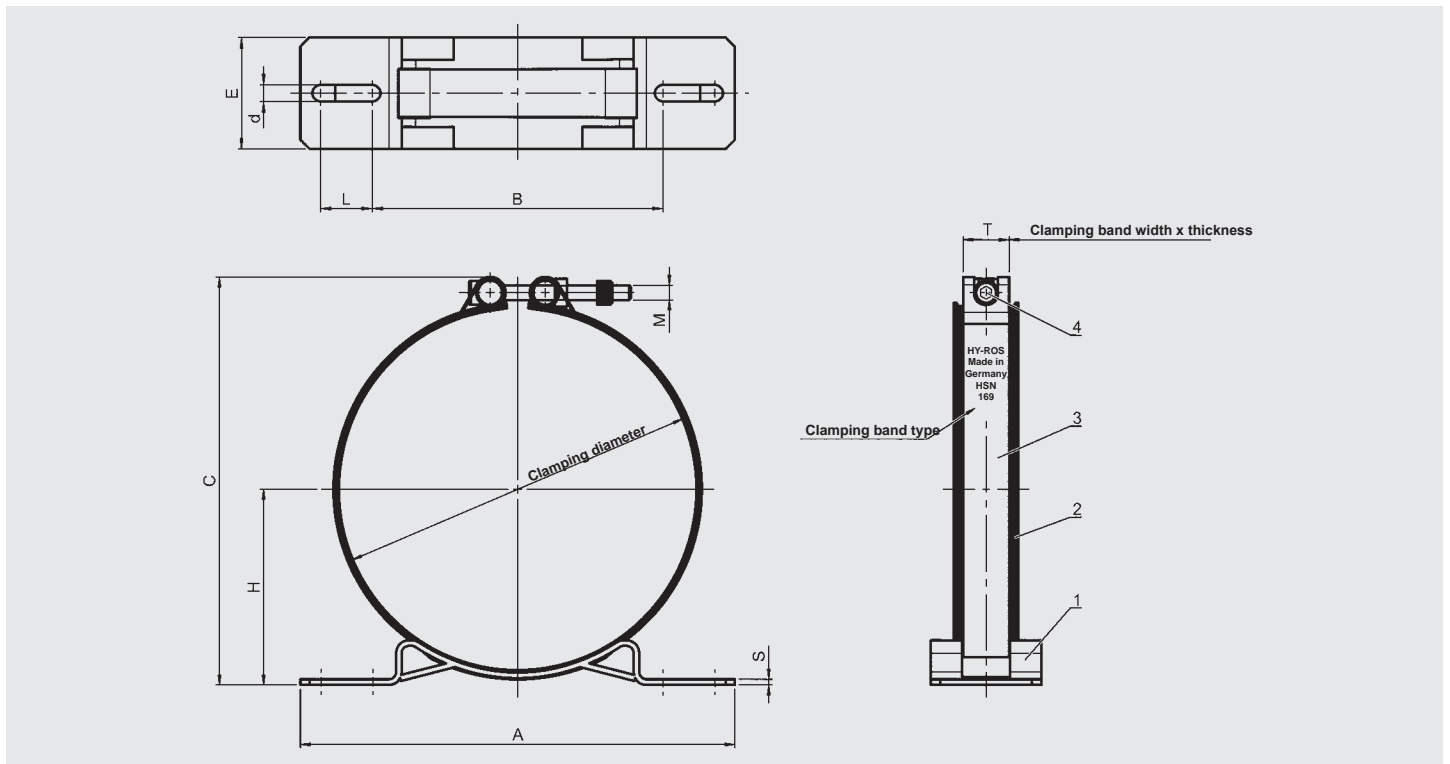
Notice: For self-locking nuts, the tightening torque must be increased by approx. 3–5 Nm.

Dimensions HRGKSM

Size	Clamping diameter (range) [mm]	Type	H [mm]	C _{max} [mm]	M	T [mm]	A [mm]	s [mm]	L [mm]	B [mm]	E [mm]	d [mm]	Material	Weight [kg/piece]
0	44 - 46	47	29.8 - 32.3	67	M6x50	20x0.8	120	3	8	85	40	9	ST	0.15
	47 - 50	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	101 - 109	106	58.5 - 62.5	137	M8x80	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	163 - 171	169	90.1 - 94.1	200	M8x80	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	235 - 246	243	129.0 - 134.5	279	M10x90	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	339 - 350	347	181.2 - 186.7	385	M10x90	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										1.58
	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

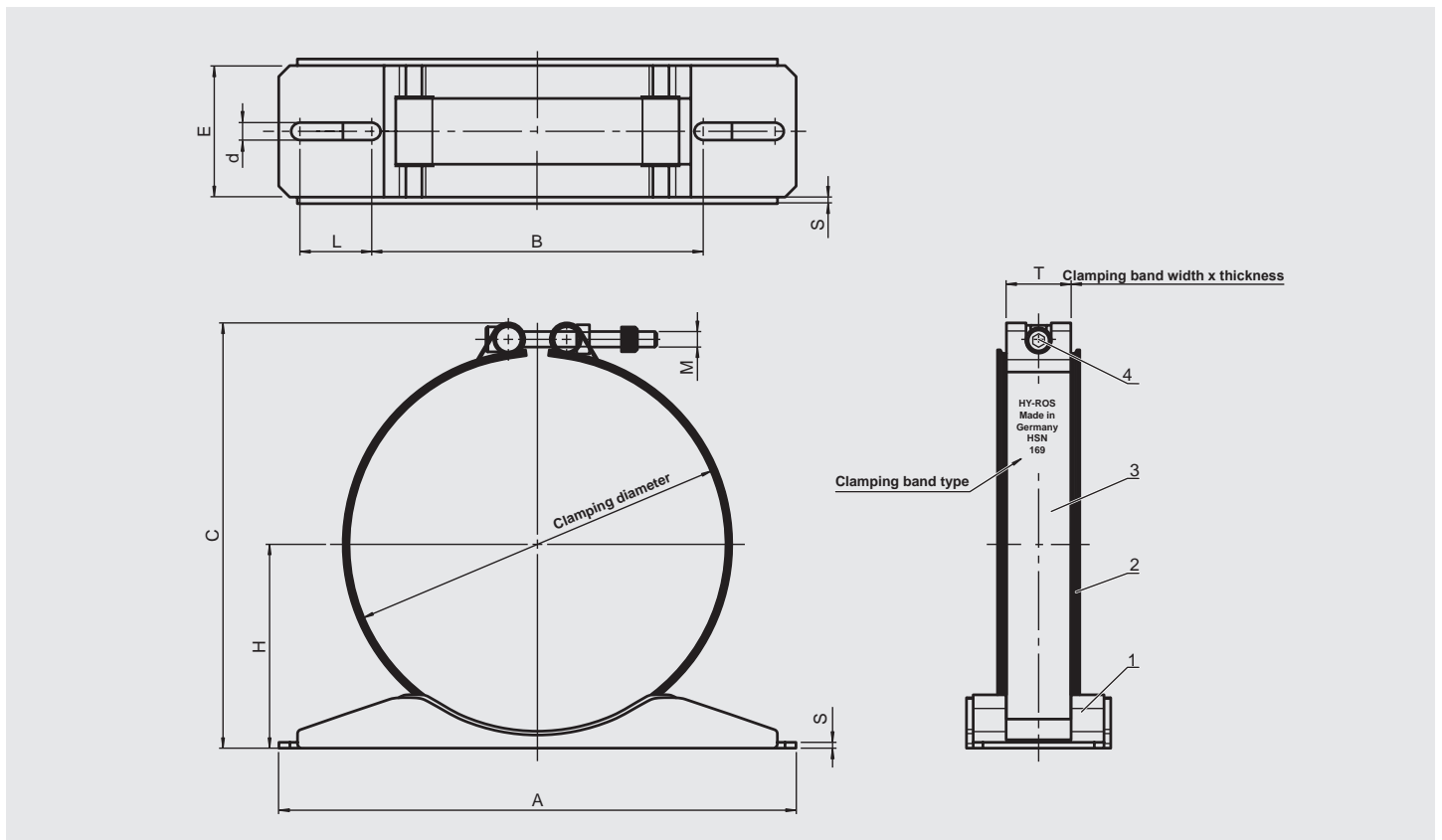
Model: with web plate (HRVMS)

Size 2 and above



Model: with side wall (HRVMW)

Size 2 and above



Material of individual parts

Item	Designation	Material/surface	Abbreviation
1	Support	Steel, zinc-plated	ZN
2	Synthetic material profile	Polyethylene	PE
3	Swivel bolt clamping band, round	Stainless steel	F1
4	Quick release fastening	Steel, zinc-plated	ZN

Dimensions HRVMS, HRVMW

Size	Clamping diameter (range) [mm]	Type	H [mm]	C _{max} [mm]	M	T [mm]	A [mm]	s [mm]	L [mm]	B [mm]	E [mm]	d [mm]	Material	Weight [kg/piece]	
														HRVMS	HRVMW
2	159 - 167	165	88.1 - 92.1	197	M10x90	30x1.5	236	3	28	158	60	11	ST	0.73	0.85
	165 - 173	171	91.1 - 95.1	203										0.73	0.86
	172 - 180	178	94.2 - 98.2	210										0.74	0.87
	178 - 186	184	97.6 - 101.6	216										0.74	0.87
	185 - 193	191	101.1 - 105.1	223										0.75	0.88
	192 - 200	198	103.9 - 107.9	229										0.76	0.89
	198 - 206	204	106.9 - 110.9	235										0.77	0.90
	204 - 212	210	109.9 - 113.9	241										0.77	0.90
	211 - 219	217	112.7 - 116.7	248										0.78	0.91
	217 - 225	223	115.7 - 119.7	254										0.79	0.92
224 - 232	230	119.2 - 125.2	263	0.79	0.92										
3	235 - 246	243	129.0 - 134.5	279	M10x90	30x1.5	300	4	28	222	60	11	ST	1.06	1.43
	248 - 259	256	135.5 - 141.0	292										1.07	1.45
	261 - 272	269	140.9 - 146.4	304										1.08	1.46
	274 - 285	282	147.4 - 152.9	317										1.10	1.48
	287 - 298	295	153.9 - 159.4	330										1.11	1.49
	300 - 311	308	159.4 - 164.9	342										1.13	1.51
	313 - 324	321	165.9 - 171.4	355										1.14	1.52
	326 - 337	334	172.4 - 177.9	368										1.16	1.54
4	339 - 350	347	181.2 - 186.7	385	M10x90	30x1.5	400	4	28	322	60	11	ST	1.53	2.08
	352 - 363	360	187.7 - 193.2	398										1.55	2.10
	365 - 376	373	194.2 - 199.7	411										1.57	2.12
	378 - 389	386	200.7 - 206.2	424										1.58	2.13
	391 - 402	399	205.2 - 210.7	435										1.60	2.15
	404 - 415	412	211.7 - 217.2	448										1.62	2.17
	417 - 428	425	218.2 - 223.7	461										1.64	2.19
	430 - 441	438	224.7 - 230.2	474										1.66	2.21
	443 - 454	451	229.4 - 234.9	485										1.68	2.23
	456 - 467	464	235.9 - 241.4	498										1.69	2.24
	469 - 480	477	242.4 - 247.9	511										1.71	2.26
	482 - 493	490	248.9 - 254.4	524										1.73	2.28
	495 - 506	503	255.4 - 260.9	537										1.76	2.30

NOTE

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Swivel bolt prism clamp HRGPS, HRGPST

Clamping range:

67–300 mm

Band width:

25 mm

Model code

(also order example)

HRGPS 0 AV 91-96 / 94 ST

Designation

HRGPS = HY-ROS swivel bolt prism clamp

HRGPST = HY-ROS swivel bolt prism clamp with PE insert

Size

(according to dimensions)

Prism model

A = support as weld plate

AV = support with mounting holes (only size 0)

Clamping range

(according to dimensions)

Type

(according to dimensions)

Material of steel parts

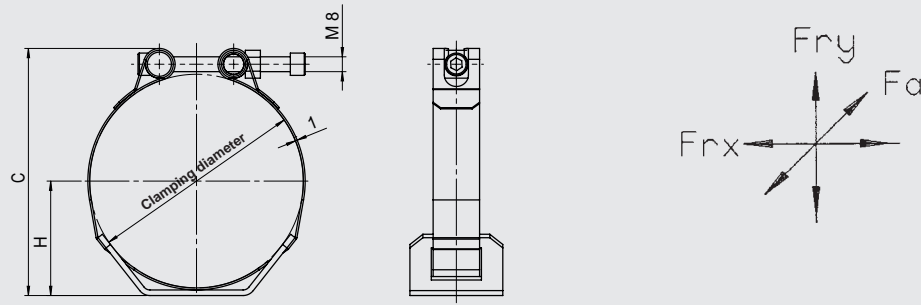
ST = steel, zinc-plated

A2 = stainless steel (on request)

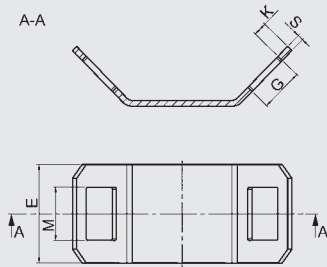
A4 = stainless steel (on request)

Models

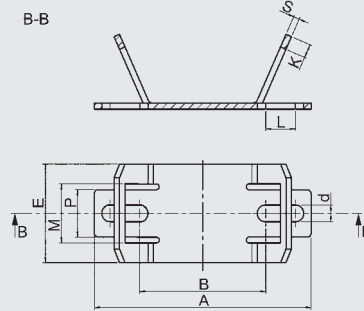
Model A



Prism model A



Prism model AV



Stress factors

Size	Clamping diameter [mm]	Fry [N]	Fr _x [N]	Fa [N]	Tightening torque [Nm]*
0	67 - 138	450	450	350	max. 17
1	139 - 300	1000	630	630	max. 17

* Notice: double security against deformation

Dimensions

Size	Model	Clamping diameter (range) [mm]	Type	H [mm]	C _{max} [mm]	E [mm]	M [mm]	S [mm]	K [mm]	G [mm]	A [mm]	B [mm]	d [mm]	L [mm]	P [mm]	Material	Weight [kg/piece]		
																	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
1	A	139 - 147	142	73.5 - 77.5	168	50	27	3	13	22	-	-	-	-	-	ST	0.41		
		148 - 156	151	78.0 - 82.0	177												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															

Clamps for cylinders HRHZ, HRHZZ



Band width:

25 mm

Cylinder diameter:

67–299 mm

Pipe diameter:

6–70 mm

Model code

(also order example)

HRHZ 12 / 3S A 172 / 33,7 PP ST M ZN

Designation

HRHZ = HY-ROS clamp for cylinders

HRHZZ = HY-ROS clamp for cylinders with PE insert

Size

(according to dimensions)

Size of clamp

...L = clamp DIN 3015 Part 1, size 1–6

...S = clamp DIN 3015 Part 2, size 1–4

...Z = clamp DIN 3015 Part 3, size 1–5

Model

A = standard

Diameter, cylinder

Diameter, pipe

Material of clamp jaws

PP = polypropylene

PA = polyamide

Material of steel parts

ST = steel, zinc-plated

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

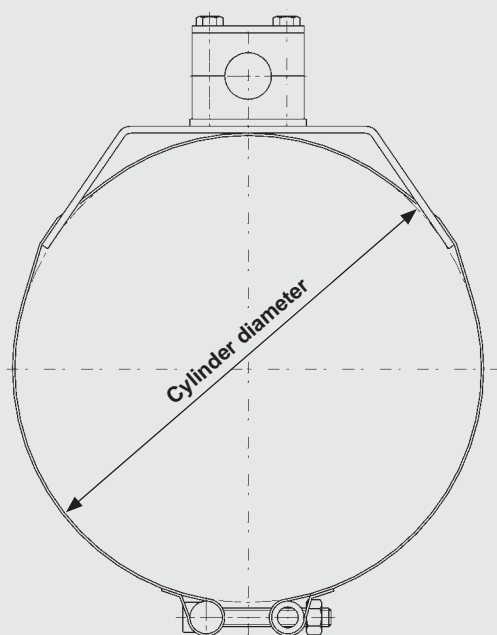
M = metric thread

Plating of steel parts

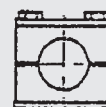
ZN = zinc-plated

Standard model A

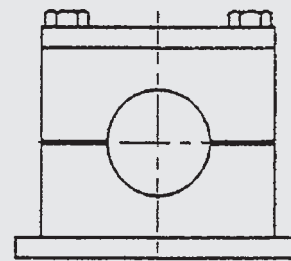
HRGBP + DIN 3015 clamp



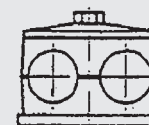
DIN 3015 Part 1: size 1–6



DIN 3015 Part 2: size 1–4



DIN 3015 Part 3: size 1–5



Notice: For clamp dimensions, see 8.183
Others on request

Dimensions

Size	Cylinder diameter (range) [mm]
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

Notice: Other materials on request.

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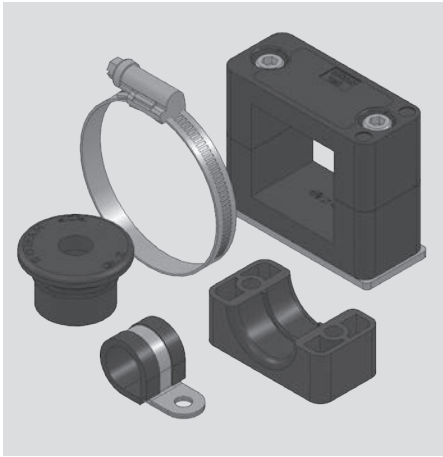
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E-mail: accessories@hydac.com

Other solutions



Sensor clamp

The sensor clamp is used to mount sensors or proximity switches with a square design.

Because they are mounted on C mounting rails, the sensors or proximity switches can slide in a 2-dimensional direction.

For cylindrical housing, clamp bodies from the light range with a smooth internal surface (DIN 3015) with a corresponding diameter can be used.

Corrugated tube clamp

A solution for the secure mounting of plastic corrugated tubes has been available in HYDAC Accessories' extensive range of modular mounting technology since 2008.

Based on the standard clamps DIN 3015 Part 1 and Part 3, they have a circumferential rib inside the clamp jaw that prevents axial displacement of the protective tubes inside the clamp.

Rubber tank bush

The rubber tank bush that is a rubber part is used as vibration isolation (with simultaneous splash-proof and dust-proof sealing) of pipes at pipe feedthrough points, e.g. on containers for hydraulic systems, driver's cabs for tug boats and panelling in machine engineering.

The rubber tank bush is available in five sizes, for pipe diameters from 6 to 60.5 mm.

The standard material is TPE and NBR.

The special design of the rubber part provides a defined press connection between pipe, rubber part and housing wall.

Fastening clamps DIN 3016-1

The fastening clamps with tongues are used to hold pipes and flexible lines, cables and devices, for example.

They are made up of an adjustable steel band with a form-locking connection and reinforced band ends. The ends prevent the clamp from being pulled out or coming loose under extremely high mechanical loads.

The optional elastomer profile improves the form-locking connection between clamp and fastened element. It also has a silencing effect, dampens vibrations and impacts and protects from contact corrosion.

The fastening clamps are delivered in an expanded state.

Hose clamps DIN 3017-1

The high-quality hose clamps with worm gear drive make it possible to reliably fasten hoses to rigid connections, primarily in mobile and stationary plants and in ship building.

When equipped with combination cross-slot, flexibility during installation is also increased.

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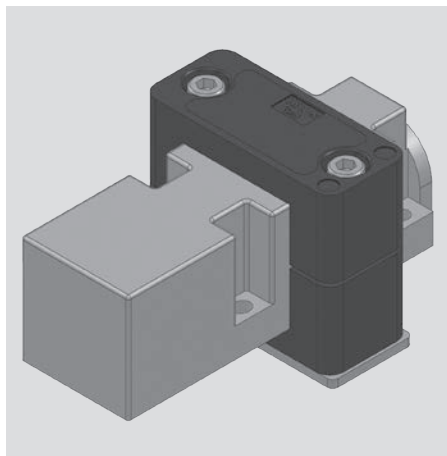
Tel.: +49 (0)6897 - 509-01

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

Internet: www.hydac.com

E-mail: accessories@hydac.com

Sensor clamp HRSEN



Sensor size:
40 mm x 40 mm

Notice:

For sensors with cylindrical design, clamp bodies from the light range with a smooth internal surface (DIN 3015 1) with a corresponding diameter can be used.

(See brochure 8.183)

Model code

(also order example)

HRSEN 5 B 40x40 PP ST M BL

Designation

HRSEN = HY-ROS sensor clamp

Size

5 = size 5

Model for complete clamps

(pair of clamp jaws not mentioned)

B = with weld plate, hex. socket bolt and washer

B1TM = with hex. socket bolt, washer and mounting rail nut

Dimensions of sensor

40x40 = 40 mm x 40 mm

Material of clamp jaws

PP = polypropylene

PA = polyamide

AL = aluminium

Material of steel parts

ST = steel

A2 = stainless steel (on request)

A4 = stainless steel (on request)

Thread type

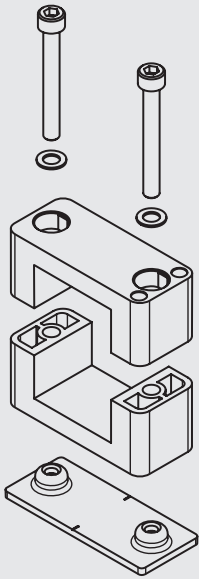
M = metric thread

Plating of steel parts

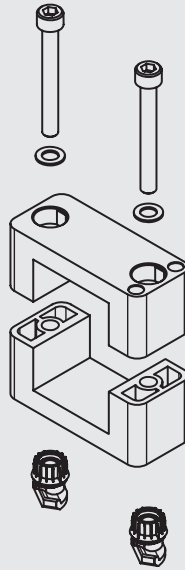
BL = weld plate unplated, bolts zinc-plated

Models

Model B



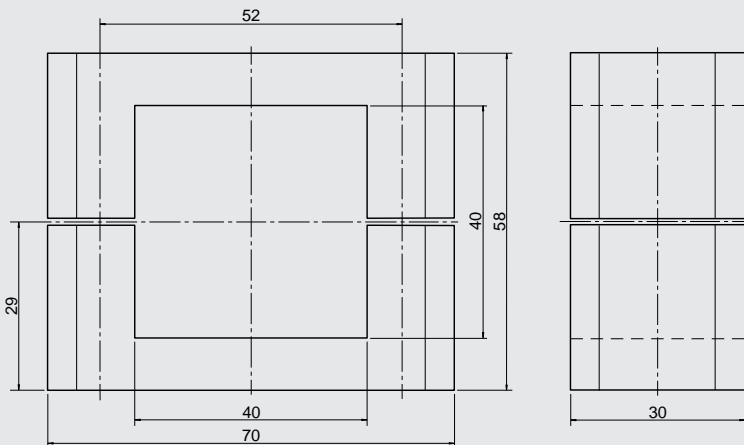
Model B1TM



Note:

No washers are required in the aluminium version

Dimensions [mm]

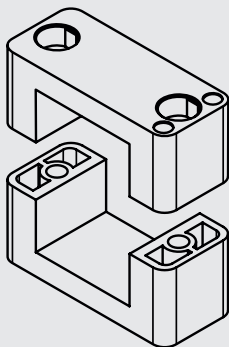


Notice:

Further individual parts have same design and prices as the light range (standard); see section clamps to DIN 3015 (brochure 8.183)

Individual parts

Pair of clamp jaws (KP)



Model code

(also order example)

HRSEN 5 KP 40x40 PP

Range

HRSEN = HY-ROS sensor clamp

Size

5 = size 5

Designation

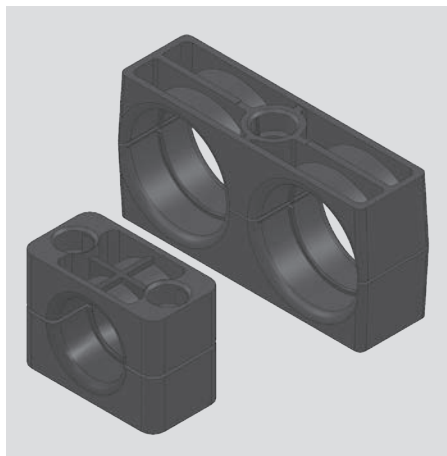
KP = pair of clamp jaws

Dimensions of sensor

40x40 = 40 mm x 40 mm

Material of clamp jaws

PP = polypropylene
 PA = polyamide
 AL = aluminium



Corrugated tube clamp based on DIN 3015

Diameter range:
16–55 mm
Others on request

Notice:
Installation is similar to the installation
variants of DIN 3015 clamps.
(See brochure 8.183)

Model code

(also order example)

HRGL 4 KP 28,5 PAFF FEDER D25,2

Range

HRGL = HY-ROS clamp, light range with smooth internal surface
HRGZ = HY-ROS clamp, twin clamp with smooth internal surface

Size

(according to dimensions)

Designation

KP = pair of clamp jaws

Pipe diameter

Material of clamp jaws

PAFF = polyamide, flame-retardant to EN 45545-2 R22, R23, HL3
PP = polypropylene
PA = polyamide

Model

FEDER = clamp jaws with circumferential rib

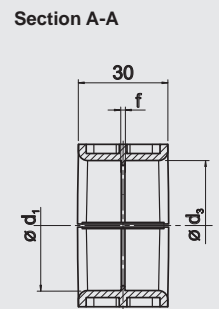
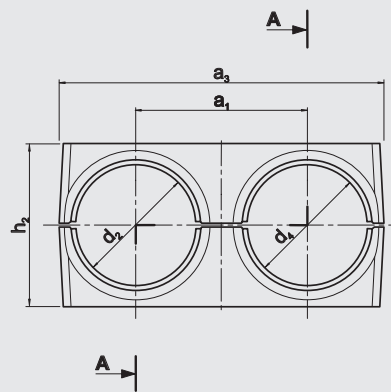
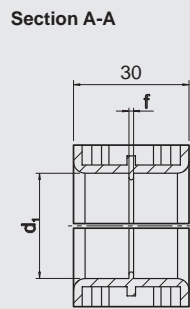
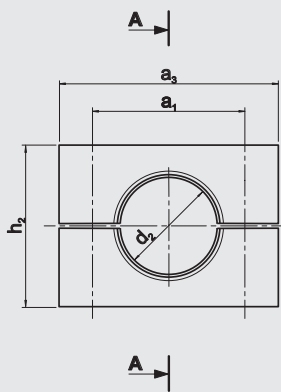
Internal diameter (rib)

(acc. to dimensions)

Dimensions

HRGL...KP...FEDER

HRGZ...KP...FEDER



Notice:

Further individual parts have same design and prices as the light range (standard)/twin clamp; see section clamps to DIN 3015 (brochure 8.183)

Range	Size	Ø d1	Ø d2	Ø d3	Ø d4	h2	a3	a1	f
HRGL	2	15.8	14.0	-	-	33.0	41	26	0.8
	3	21.2	18.2	-	-	37.0	48	33	
		22.0	20.0	-	-				
	4	28.5	25.2	-	-	42.0	57	40	1.2
	5	34.4	31.0	-	-	58.0	70	52	
		42.4	39.2	-	-				
6	42.4	39.2	-	-	65.2	86	66		
	54.4	50.6	-	-					
HRGZ	5	34.4	31.0	34.4	31.0	54.0	106	56	1.2
		42.4	39.2	42.4	39.2				

NOTE

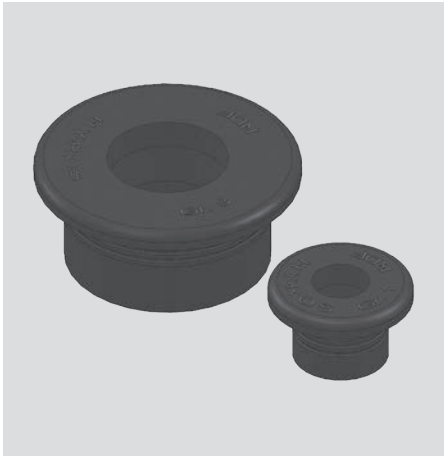
The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department.

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Rubber tank bush HRRDF

Diameter range:
6–50.5 mm

Model code

(also order example)

HRRDF 3 GT 30 TPE64

Range

HRRDF = HY-ROS rubber tank bush

Size

1 = size 1
2 = size 2
(up to size 5)

Designation

GT = synthetic material profile

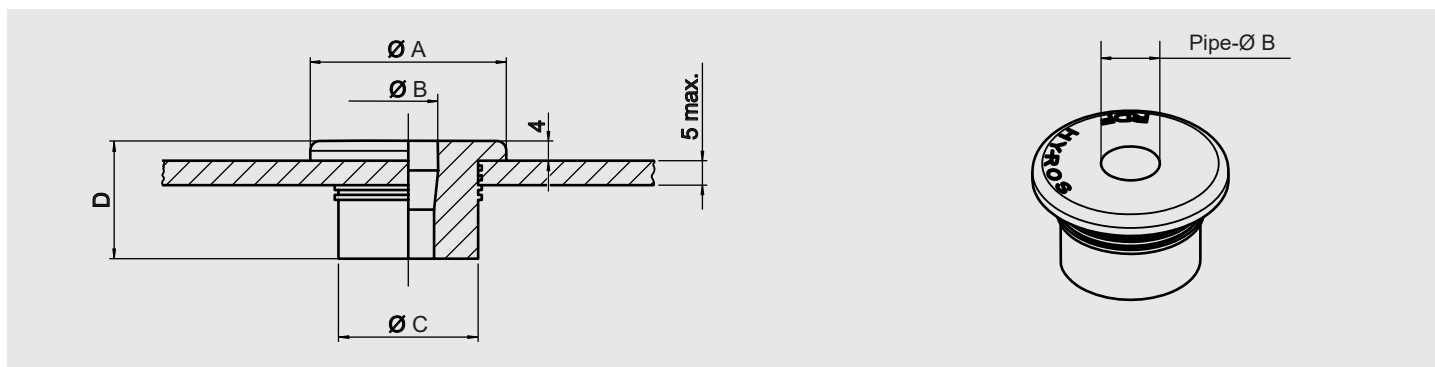
Pipe diameter B

(acc. to dimensions)

Material

TPE64 = thermoplastic elastomer TPE 64 (except for size 4)
NBR = nitrile butadiene rubber (only size 4)

Dimensions



Size	Ø B in stock	Ø B on request	Ø A	Ø C	D
1	6		30	18	18
	8				
		9			
		9.5			
	10				
	12				
2	14		40	28	24
	15				
	16				
	17				
	18				
		19			
	20				
	21.3				
22					
3	25		55	42	24
	27				
	28				
	30				
		31.5			
	34				
	35				
4	38		70	58	24
	42				
	42.5				
	48.5				
	50.5				
5	60.5		80	67	24

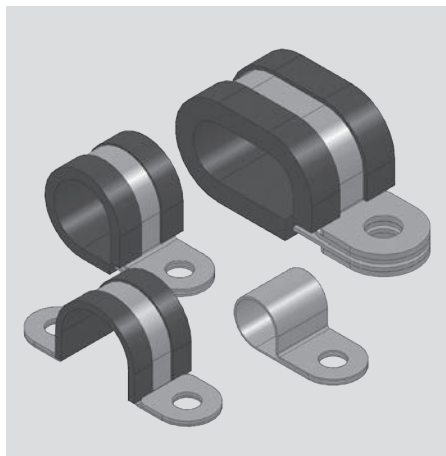
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Diameter range:
4–150 mm

Fastening clamp acc. to DIN 3016-1

Model code

(also order example)

Schelle DIN3016 - D1 - 34x20 - W1 2 CR

Designation

Schelle = fastening clamp

Standard number

DIN3016 = DIN 3016-1

Shape

A1, D1, D2, E1, F1 (acc. to DIN 3016-1)
Others on request

Nominal diameter x band width

(acc. to dimensions)

Material of steel parts

W1 = steel with burst strength of min. 400 N/mm²
W3 = stainless steel
W4 = stainless steel A2
W5 = stainless steel A4
Others on request

Surface protection

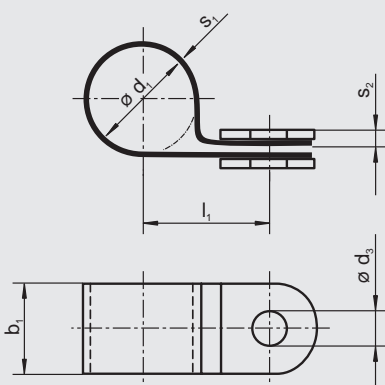
No details = unplated
2 = zinc-plated
3 = aluminium-zinc-plated

Material of elastomer profile

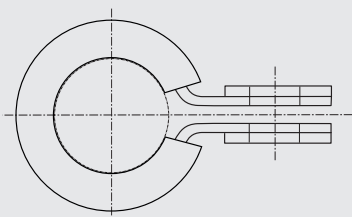
CR = chlorinated rubber
NBR = nitrile butadiene rubber
EPDM = ethylene propylene diene monomer
MVQ = silicone rubber
Others on request

Models

Model A1

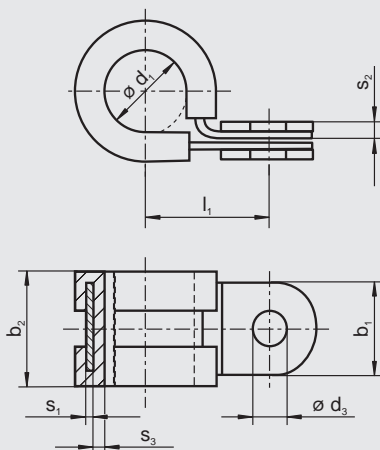


Model E1

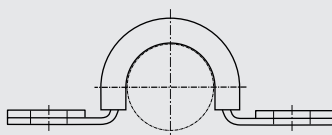


Other dimensions as for D1

Model D1

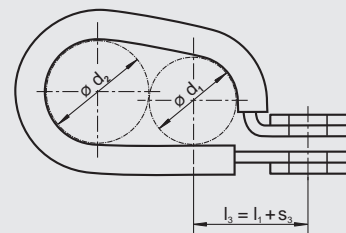


Model F1



Other dimensions as for D1

Model D2



Other dimensions as for D1

Dimensions [mm]*

Nom. $\varnothing d_1/d_2$		Band width	Band thickness s_1				Band thickness s_2					Profile width	Profile thickness		
Shape A	Shape D, E, F	b_1	W1	W3	W4	W5	W1	W3	W4	W5	d_3	b_2	s_3	l_1	
5 - 20	4 - 20	9	0.4				1.4				4.3	13	1	$\frac{d_1}{2} +$	
5 - 25	4 - 25	12	0.5				1.5				5.3	15	1.2		4.7
8 - 14	5 - 14	15	0.6				1.6				6.4	19	1.5		6.8
15 - 30	15 - 45		0.8	0.6			1.8	1.6							9.7
15 - 25	10 - 25	20	0.8				2.3				8.4	25	2		12.5
26 - 60	26 - 50		1.0	0.8			2.5	2.3							
20 - 49	15 - 49	25	1.0				2.5				10.5	31	3	14.5	
50 - 150	50 - 150		1.25	1.0			2.75	2.5							

* Tolerances acc. to DIN 3016-1

Notice: d_1 and d_2 correspond to the external diameter of the held part. The fastening clamps do not have any clamping range. The increment within the specified diameter range is 1 mm. If d_2 is greater than d_1 , the dimensions apply in accordance with the larger diameter.

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 E-mail: accessories@hydac.com



Hose clamp with worm gear drive acc. to DIN 3017-1

Clamping range:
8–160 mm
Others on request

Band width:
9 mm, 13 mm

Model code

(also order example)

Schlauchschr. DIN3017 - A - 16-27 x 9 - W2 - 2

Designation

Schlauchschr. = hose clamp

Standard number

DIN3017 = DIN 3017-1

Shape

A = hose clamp with worm gear drive

Clamping range

(according to dimensions)

Band width

9 = 9 mm

13 = 13 mm

Others on request

Materials of steel parts

W1 = steel, zinc-plated

W2 = band and housing stainless steel, bolt steel zinc-plated

W4 = stainless steel A2

W5 = stainless steel A4

Others on request

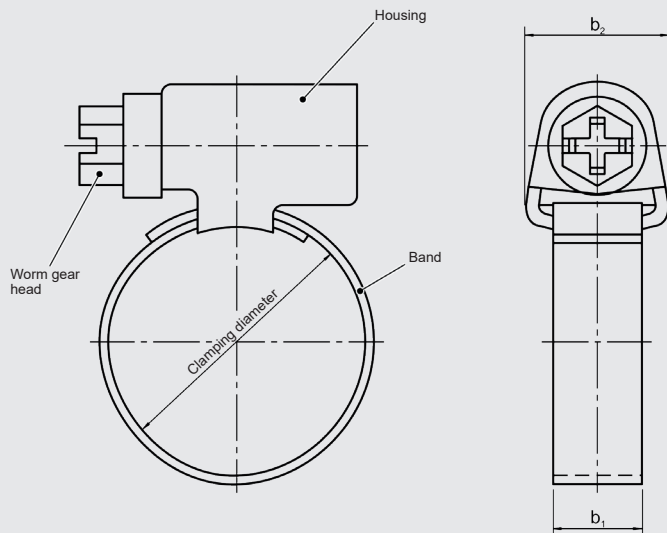
Surface protection

2 = zinc-plated

3 = aluminium-zinc-plated

Dimensions

Model A



Notice:
House and drive design may differ from those shown.

b_1 [mm]	b_2 [mm]	Clamping diameter (range) [mm]	Pack. unit (qty.)
9 ±1	≤ 14	8 - 12	50
		10 - 16	
		12 - 20	
		12 - 22	
		16 - 27	
		20 - 32	
		23 - 35	
		25 - 40	
		30 - 45	
		32 - 50	25
		40 - 60	
		50 - 70	
		60 - 80	
		70 - 90	
		80 - 100	
		90 - 110	
		100 - 120	
		110 - 130	
		120 - 140	
130 - 150			
140 - 160			

b_1 [mm]	b_2 [mm]	Clamping diameter (range) [mm]	Pack. unit (qty.)
13 ±1	≤ 20	16 - 27	50
		20 - 32	
		23 - 35	
		25 - 40	
		30 - 45	
		32 - 50	
		40 - 60	25
		50 - 70	
		60 - 80	
		70 - 90	
		80 - 100	
		90 - 110	
		100 - 120	15
		110 - 130	
		120 - 140	
		130 - 150	
		140 - 160	

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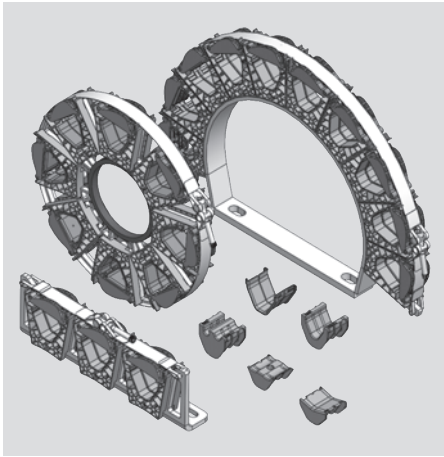
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HY-ROFLEX

Mounting technology in wind turbines, towers and high-rise buildings

General

The HY-ROFLEX series cable harness mounts are part of a system of various mounting supports, primarily used to secure power cables developed for wind power.

Different cable groupings are catered for by customised adaptations.

The basic frame is formed by a steel support structure. This allows the clamping system to be fixed to the tower and provides the frame for mounting the individual cable clamp segments, which are arranged on the support structure in a circular or linear formation. The pivoting, spring-action fastenings are snap closures to prevent the components from jumping out. When it is fastened, the side-mounted or wrap-around clamping bands protect against any potential short-circuit forces.

Always on top thanks to "towering" advantages

- Large standard range of products
- Designed to meet your needs
- Fast delivery
- Rapid and secure installation
- Free choice of support surfaces
- Economical materials
- Clear system of laying cables
- Cable protection due to round cable clamps in the mounting stirrups

Notice

Mounting technology is safety technology, particularly in the case of swivel bolt clamps. For this reason, our fastening equipment must only be attached and installed by trained personnel.

We assume warranty responsibility and liability only against defects in our delivered items as such. We bear no responsibility for the suitability of the surrounding conditions and for proper assembly.

Crescent

Mounted on the inner tower wall, the crescent fastens/routes the cable from the loop to the periphery.

The semicircular support structure with up to 12 cable clamp segments enables fast and rapid installation of the cables in both the horizontal and the vertical tower.

The flexible design of the individual segments for mounting cable harnesses offers numerous combination options for the type, number and arrangement of cables.

For maintenance or servicing work in existing systems, opening and closing of clamping band and changing the cables is made easier thanks to the outstanding accessibility of the individual cables in just one click per segment.

Series strip

In this special form of the crescent, the cable segments are arranged in a straight substructure.

Star

As a spacer for power cables, incl. in the loop, the star provides perfect spacing between the cable bundles. This not only minimises the eddy current loss but also achieves optimum cooling of the three-cable bundles.

The qualities and the design of the cable clamps ensures that the cables are held securely with minimised abrasion of the cable insulation.

Fixing the cables in a radial direction combined with routing them in an axial direction makes knot formation a thing of the past.

This ensures optimum cable guiding from the nacelle to the tower.

Fixed Star

The fixed star, which is fastened to a substructure or mounted to the inner tower wall with cords, is used to compensate for the torsion of the cable bundles and stop the cable bundles from becoming twisted at the transition to the riser cables.

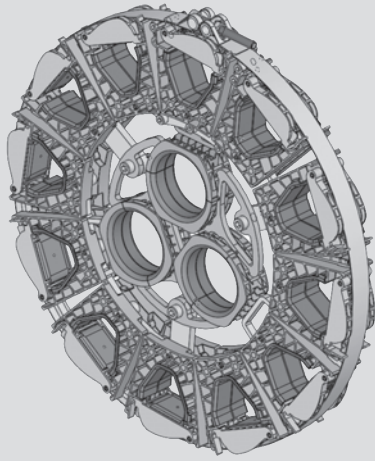
Inserts

Additional inserts are available for customised adaptation to the cables used. They can be inserted into the segments.

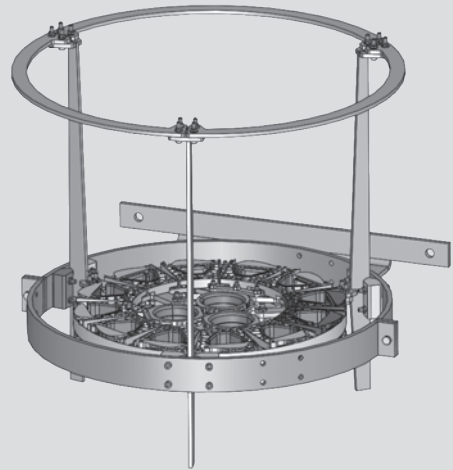
Not in the slipstream, but ahead of it

... with HY-ROS mounting technology for all forms of pipes and components.

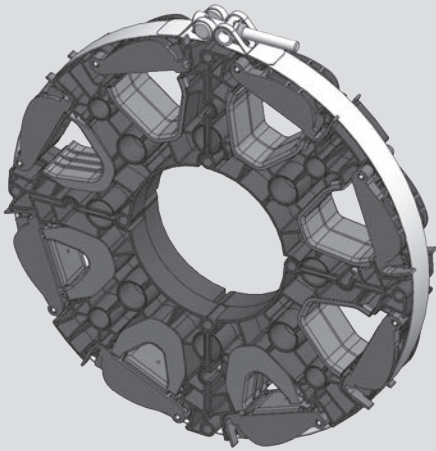
Selected customised solutions



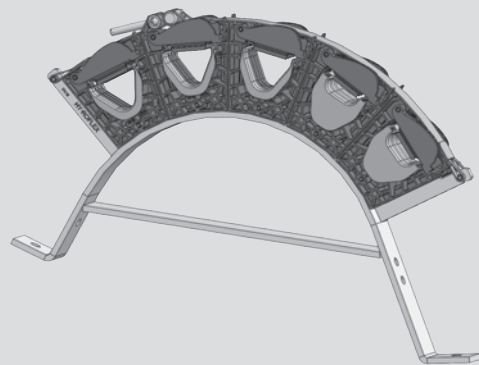
Spacer star with three inner segments for inserting additional cables



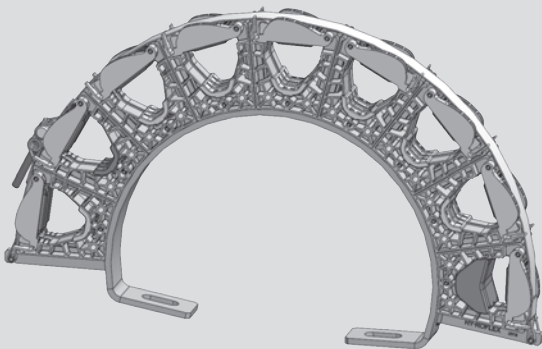
Fixed star with ring and guide rails



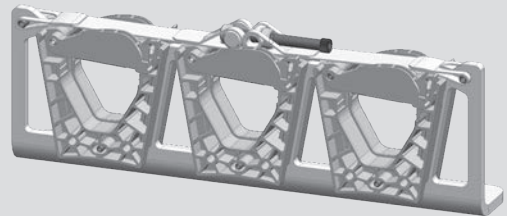
Spacer star without steel frame



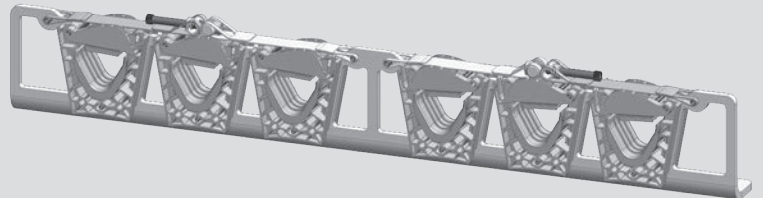
Crescent, five-compartment, with customised frame for connection to the tower wall



Crescent, nine-compartment, with customised frame for connection to the tower wall



Series strip, three-compartment



Series strip, six-compartment

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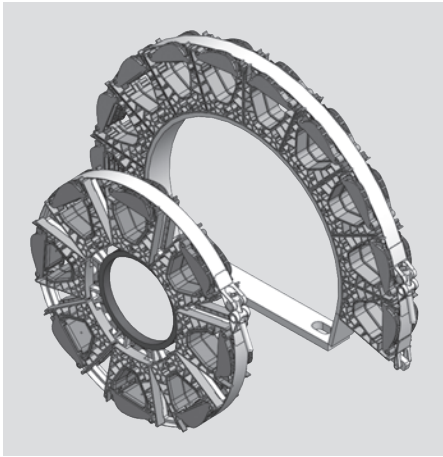
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Fax: +49 (0)6897 - 509-1009

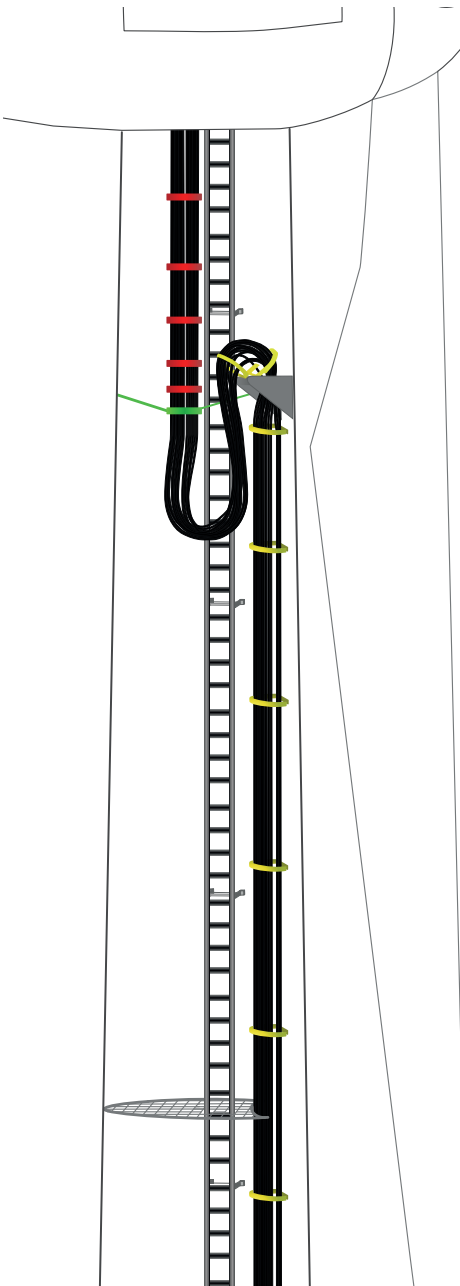
Internet: www.hydac.com

E-mail: accessories@hydac.com

Cable clamps for wind turbines HRFLEX



Installation situation



- Star
- Fixed star
- Crescent

Model code

(also order example)

HRFLEX 5 M 0001 PPV0 ST ZN 8F

Designation

HRFLEX = HY-ROFLEX clamp type

Size

5 = width 55 mm (incl. inserts)

Model

M = crescent
S = star
SF = fixed star

Cable configuration

(combination number specified by manufacturer)

Material of plastic parts

PPV0 = polypropylene; fire protection class V0 acc. to UL 94

Material of steel parts

ST ZN = steel, zinc-plated
F1A2 = stainless steel

Number of cable clamps

(x)F = (x) cable clamps

Technical specifications

Operating temperature range:	min: -40 °C (survival) max: +100 °C
Fire protection of plastic parts:	V0 acc. to UL94
Plating of steel parts:	Galvanised (other coatings on request)
Clamping band material:	Steel, zinc-plated
Closure bolt material:	Stainless steel

Short circuit protection:

Calculation:	Acc. to IEC61914 trefoil formation				
Comparative test for calculation:	HYDAC test set up				
Test results:	Max. spacing between supports [m]	0.75	1.0	1.5	2.0
	Short-circuit value [kA]	25.00	21.7	17.7	15.3

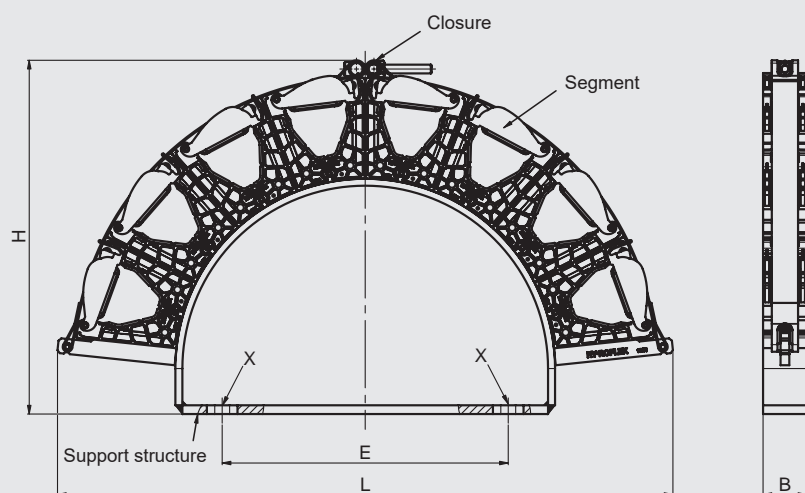
Area of application:

Max. cable diameter	1 x Ø 73 mm (single cable) 3 x Ø 38 mm (without inserts)
---------------------	---

Notice: smaller diameters and other combinations can be realised by means of interchangeable inserts.

Dimensions

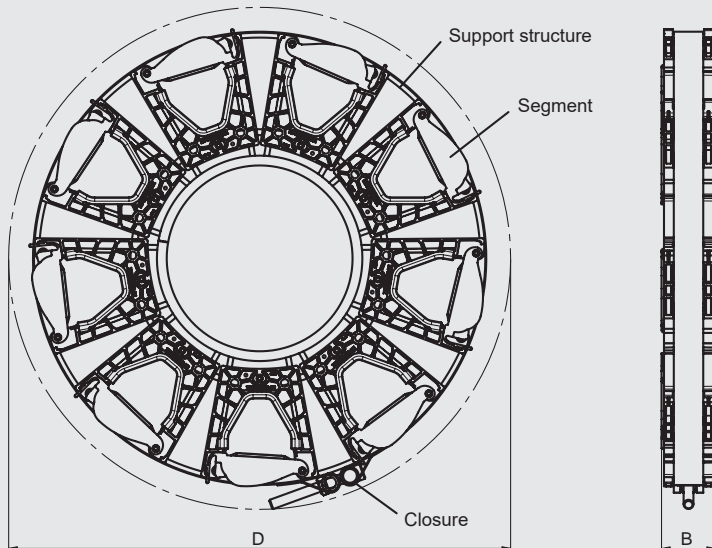
Riser cable fastening – HY-ROFLEX crescent Basic frame closed (eight-compartment shown)



Notice: other closure positions on request

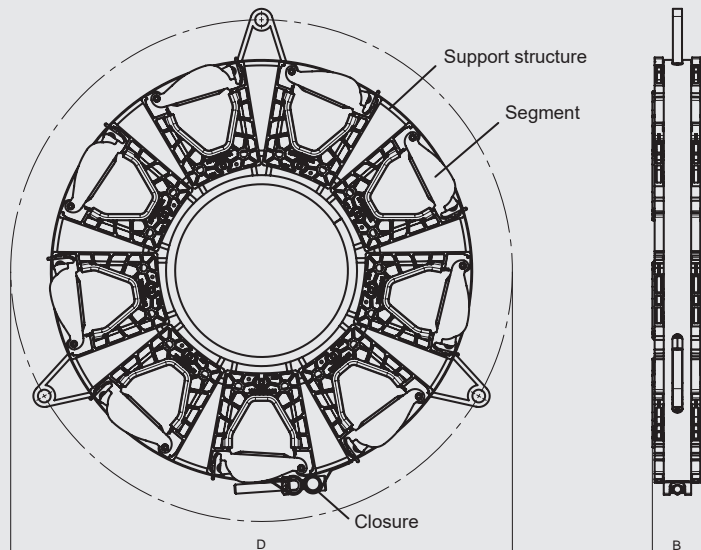
Number of cable clamps	Max. weight [kg]	Max. height H [mm]	Max. length L [mm]	Hole spacing E [mm]	Width B [mm]	Fastening screw X
1	1.4	131	200	175	55	M10
3	4.7	203	450	400	55	M16
4	4.6	242	494	200	55	M16
5	5.4	277	580	260	55	M16
6	6.2	291	639	280	55	M16
7	6.9	346	687	330	55	M16
8	8.0	405	704	327	55	M16
9	8.5	423	700	300	55	M16
10	9.4	471	686	300	55	M20

Loop fastening – HY-ROFLEX star (nine-compartment shown)



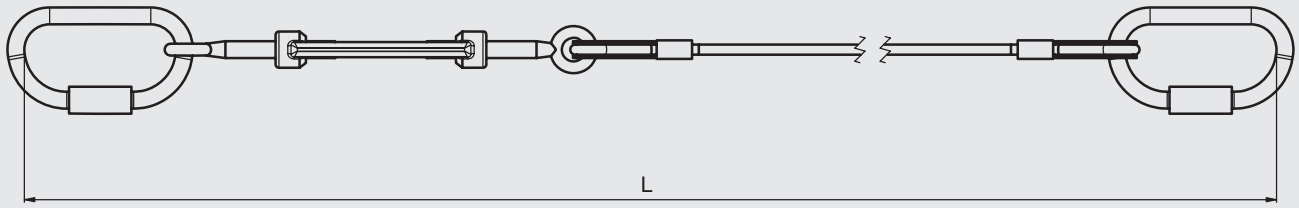
Number of cable clamps	Max. weight [kg]	External diameter D_{max} [mm]	Width B [mm]
5	2.6	414	55
6	3.3	447	55
7	3.6	465	55
8	4.0	491	55
9	4.6	512	55
10	5.0	540	55

Loop fastening – HY-ROFLEX fixed star (nine-compartment shown)



Number of cable clamps	Max. weight [kg]	External diameter D_{max} [mm]	Width B [mm]
5	2.6	414	55
6	3.3	447	55
7	3.6	465	55
8	4.0	491	55
9	4.6	512	55
10	5.0	540	55

Cord for HY-ROFLEX fixed star



Notice: the cord length L is dependent on the tower design.

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

Internet: www.hydac.com

E-mail: accessories@hydac.com

Supports for hydraulic accumulators



1. DESCRIPTION

1.1. GENERAL

HYDAC supports enable simple and secure mounting of all hydraulic accumulators. In addition to the standard product range, mounting technology for specific customer requirements and applications is available on request. For detailed information and notes, see:

- HYDAC Accessories product catalogue No. 61.000

Quick and easy – Accu-MOUNT

You can use our tool to find the matching accumulator mount, see: [www.hydac.com/Service/Online tools](http://www.hydac.com/Service/Online%20tools)

1.2. USE

The optimum mounting type strongly depends on the use, the type and the size of the accumulator. Clamps, consoles and accumulator sets are all possible options. As they are safety equipment, our supports must only be attached and installed by trained staff.

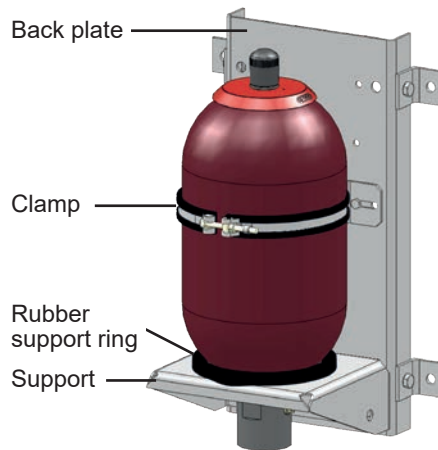
The clamp quantities for bladder and piston accumulators given in the following overviews are HYDAC recommendations that take into account static use and vertical mounting including the corresponding support (e.g. HYDAC consoles).

More information on HYDAC hydraulic accumulators is available in the following catalogue sections:

- Bladder accumulators Low Pressure No. 3.202
- Bladder accumulators Standard No. 3.201
- Piston accumulators Standard No. 3.301
- Piston accumulators SK280 No. 3.303
- Diaphragm accumulators No. 3.100
- Hydraulic accumulators with back-up nitrogen bottles No. 3.553

1.2.1 Bladder accumulators

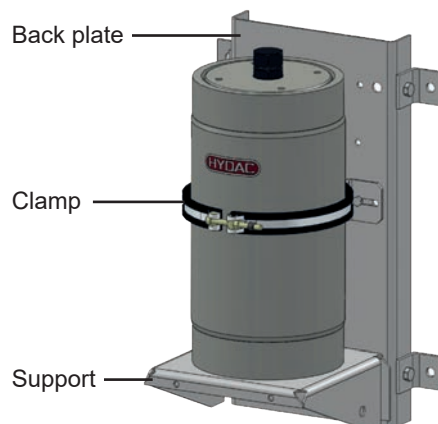
Clamps, consoles and accumulator sets can be used for optimum mounting of the bladder accumulator. The console of the bladder accumulator is equipped with a rubber support ring.



1.2.2 Piston accumulators

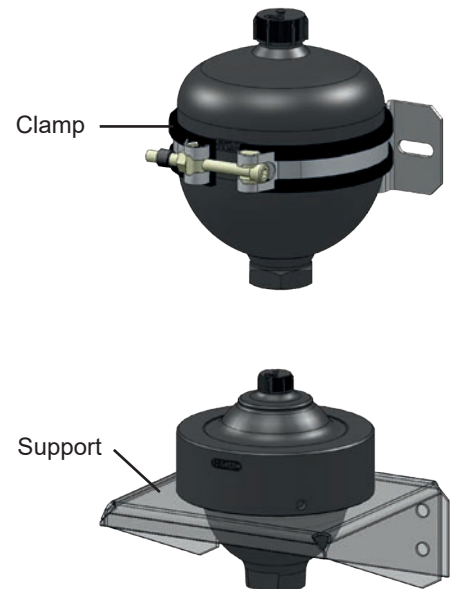
Clamps, consoles and accumulator sets can also be used for piston accumulators. In this case, the console is not equipped with a rubber support ring.

Please request the accumulator set for piston accumulators separately, as the design may vary considerably depending on the accumulator's nominal volume.



1.2.3 Diaphragm accumulators

Weld-type diaphragm accumulators are fastened with an accumulator clamp and screw-type diaphragm accumulators with a console. Accumulator sets are not used for diaphragm accumulators.



1.3. MATERIALS

The following materials are available as standard:

Clamp

Fastening, foot	zinc-plated
Clamping band	stainless steel
Insert	PE/PP/NBR
	see Point 3.1.

Support

Rubber support ring ¹⁾	zinc-plated
	NBR

Accumulator set

Clamp	see above
Support	see above
Back plate	zinc-plated

Other materials (e.g. stainless steel) are available on request.

¹⁾ only for bladder accumulators

2.2. PISTON ACCUMULATORS

The following table shows the recommended mounting type for each piston accumulator type. The clamp is selected on the basis of the accumulator's external diameter. The number of clamps can vary depending on the requirements and on the length of the hydraulic accumulator and is a HYDAC recommendation (see Point 1.2.).

To prevent deformation of the cylinder, clamps should preferably be mounted near the end caps.

Designation	Part no.	Piston diameter [mm]																											
		Accumulator external diameter [mm]																											
		50	60	80	100	125	150	180	200	250	> 250	60	75	80	95	100	120	125	150	160	175	180	210	220	235	286	300	> 300	
Clamps SK280 *																					on request								
HRGKSM 0 R 58-61/62 ST	3018442	●																											
HRGKSM 0 R 73-76/76 ST	444912		●																										
HRGKSM 0 R 92-95/96 ST	444995				●																								
HRGKSM 1 R 119-127/124 ST	444505						●																						
HRGKSM 1 R 146-154/151 ST	444321										●																		
HRGKSM 2 R 172-180/178 ST	444402													●															
Clamps SK 210/350																					on request								
HRGKSM 0 R 77-80/80 ST	3018445			●																									
HyRac 96-100/100 ST	445041					●																							
HyRac 121-129/133 H8 ST	444906							●																					
HyRac 160-167/169 H5 ST	444910										●																		
HyRac 176-185/187 H5 ST	445044												●																
HyRac 209-217/223 H10 ST	445046													●															
HyRac 216-224/226 H5 ST	445047														●														
on request	–																										●		
HSS 286	237395																											●	
HSS 310	237389																											●	
Supports																					on request								
KBK 126	290530										1																		
KBK 167	238526																		1										
KBK 219	238042																						1	1					
KBK 310	238043																										1	1	
on request	–																									1			

● = the recommended number of clamps is available on request or from our online tool Accu-MOUNT

2.3. DIAPHRAGM ACCUMULATORS

2.3.1 Weld type

Clamps	Part no.	Type of accumulator
HyRac 62-65/65 ST	445037	SBO250-0.075E
HyRac 73-76/76 ST	445038	SBO210-0.16E
HRGKSM 0 R 77-80/80 ST	3018445	SBO160-0.16E
		SBO300-0.16E
HyRac 92-95/96 ST	445040	SBO210-0.32E
		SBO300-0.32E
HyRac 100-105/106 H3 ST	444904	SBO160-0.5E
		SBO210-0.5E
HyRac 106-114/115 H3 ST	444905	SBO100-0.7E
HyRac 110-118/124 H10 ST	445042	SBO140-0.75E
		SBO330-0.6E
HyRac 121-129/133 H8 ST	444906	SBO210-0.75E
		SBO250-0.75E
		SBO250-1E
		SBO330-0.75E
		SBO330-1E
HyRac 133-142/142 H3 ST	444907	SBO350-0.6E
		SBO200-1E
HyRac 143-151/151 H3 ST	444908	SBO140-1.4E
		SBO210-1.4E
HyRac 152-159/160 H3 ST	444909	SBO250-1.4E
		SBO250-2E
		SBO330-1.4E
HyRac 160-167/169 H5 ST	444910	SBO100-2E
		SBO210-2E
HyRac 167-175/178 H5 ST	445043	SBO210-2.8E
		SBO250-2.8E
		SBO330-2E
		SBO330-2.8E
		SBO330-3.5E

2.3.2 Screw type

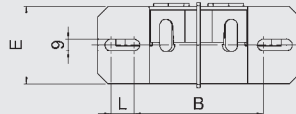
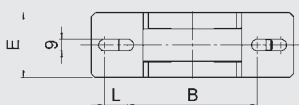
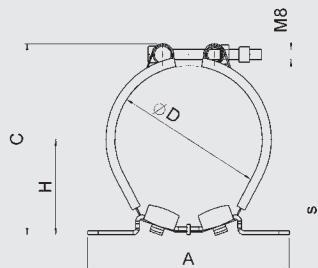
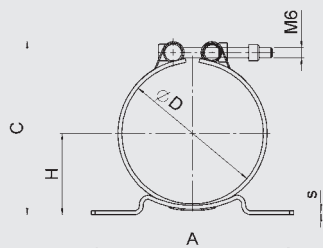
Supports	Part no.	Type of accumulator
KMS 210	358989	SBO400-1.3A6
KMS 220	359922	SBO100-2A6
		SBO250-2A6
KMS 280	359925	SBO400-2.8A6
KMS 310	359927	SBO400-4A6

3. TECHNICAL SPECIFICATIONS

3.1. CLAMPS

HRGKSM
HyRac (ØD ≤ 100 mm)

HyRac (ØD ≥ 100 mm)



Fastening, foot zinc-plated
Clamping band stainless steel
Insert PE

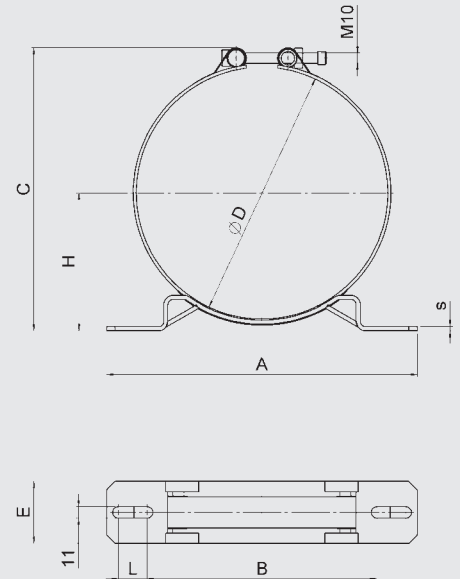
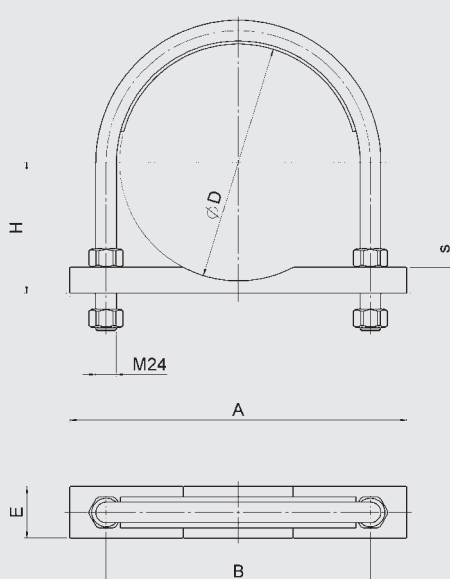
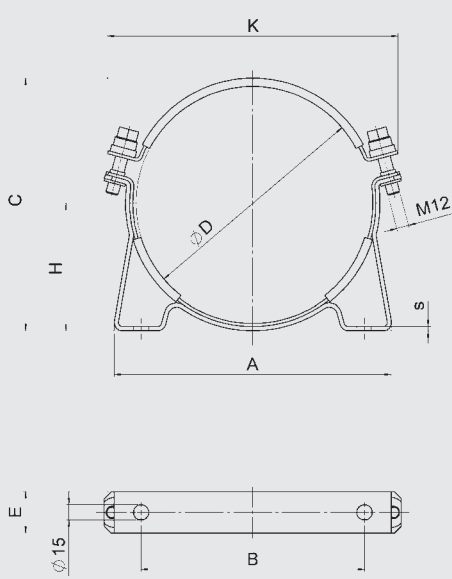
Fastening, foot zinc-plated
Clamping band stainless steel
Insert PE, NBR

Designation	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]
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 73-76/76 ST	444912			96	73 - 76	43.5 - 45					0.22
HRGKSM 0 R 77-80/80 ST	3018445			100	77 - 80	45.5 - 47					0.22
HRGKSM 0 R 92-95/96 ST	444995			115	92 - 95	52.5 - 54					0.24
HRGKSM 1 R 119-127/124 ST	444505	156	100	154	119 - 127	66.8 - 70.8	50	18	3	-	0.36
HRGKSM 1 R 146-154/151 ST	444321			181	146 - 154	80.5 - 84.5					50
HRGKSM 2 R 172-180/178 ST	444402	236	152	209	172 - 180	94.6 - 98.6	60	32	3	-	0.53
HRGKSM 3 R 242-253/250 ST	3302566	300	222	280	242 - 253	133.5 - 139	60	28	4	-	0.99
HRGKSM 4 R 352-363/360 ST	444795	400	322	398	352 - 363	187.7 - 193.2	60	28	4	-	1.4
HyRac 62-65/65 ST	445037	120	85	85	62 - 65	38 - 39.5	40	8	3	-	0.16
HyRac 73-76/76 ST	445038			96	73 - 76	43.5 - 45					0.16
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	-	0.4
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 - 93	60	32	4	-	0.7
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 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

HSS

HRRBS

HRVMS



Clamp zinc-plated
Insert NBR

Clamp zinc-plated
Insert PP

Clamp zinc-plated
Clamping band stainless steel
Insert PE

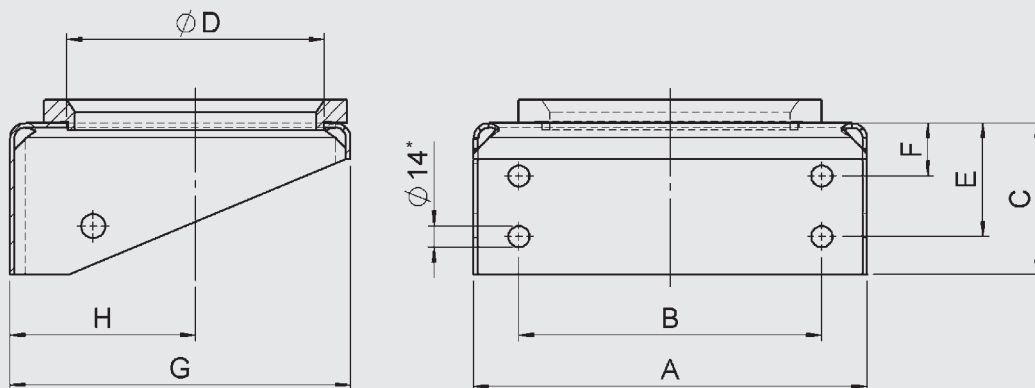
Designation	Part no.	A [mm]	B [mm]	C max [mm]	ØD (from - to) [mm]	H (from - to) [mm]	E [mm]	L [mm]	S [mm]	K max. [mm]	Weight [kg]
HSS 222/229	235224 *	270	216	244	226	123	40	-	4	295	1.7
HSS 242	362712	268	216	265	242	136				305	1.7
HSS 286	237395	332	280	314	286	163				355	2.1
HSS 310	237389	332	280	333	310	170				380	2.1
HRRBS 14 L 267 PP ST ZN	431645	370	302	-	267 - 273	121.5 - 124.5	50	-	25	-	2.66
HRRBS 17 B1L 406 PP ST M ZN B145 H525	3434519	540	440	-	406.4 - 419	401.4 - 405	60	-	30	-	6.15
HRVMS 3 R 248-259/256 ST	3489871	300	222	292	248 - 259	135.5 - 141	60	28	4	-	1.05
HRVMS 3 R 268-279/276 ST	3559057			311	268 - 279	144.8 - 150.9					1.1

* Alternative to part no. 445048 and 445049

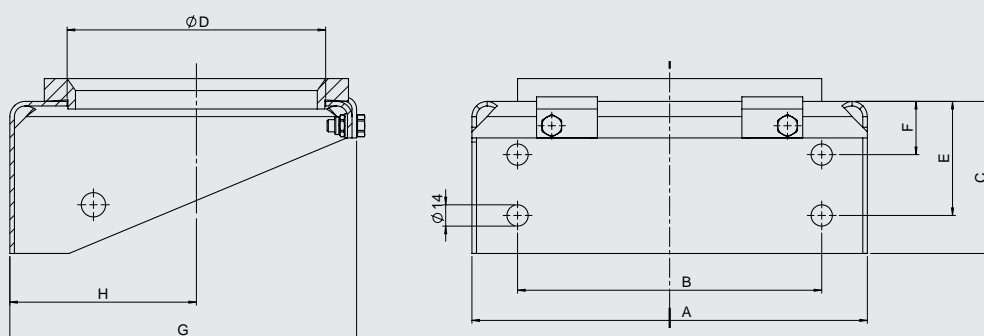
3.2. CONSOLES

3.2.1 KBK consoles for bladder accumulators and gas pressure vessels

KBK



KHF



* $\varnothing 22$ for KBK 360/G

Designation	Part no.	A [mm]	B [mm]	C [mm]	$\varnothing D$ [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [kg]
KBK 167/G	2107989	260	200	100	120	75	35	225	92	2.5
KBK 222/G	2100651	260	200	100	170	75	35	225	123	2.4
KBK 360/G	2107990	390	270	240	211	180	60	390	195	20.1
KHF 210/G ¹⁾	3111594	260	200	100	170	75	35	230	123	2

Spare parts

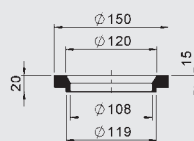
Designation	Part no.
KBK 167	238526
G 167	236997
KBK 222	3002160
G 222 ²⁾	236996
KBK 360	357959
G 360	355966
KHF 210	239965

¹⁾ See also Point 3.3., SEHB

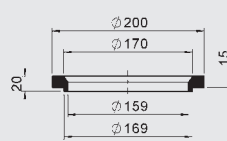
²⁾ Also for KHF 210

Rubber support ring

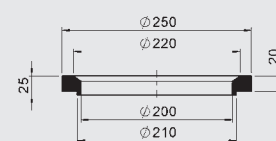
G 167



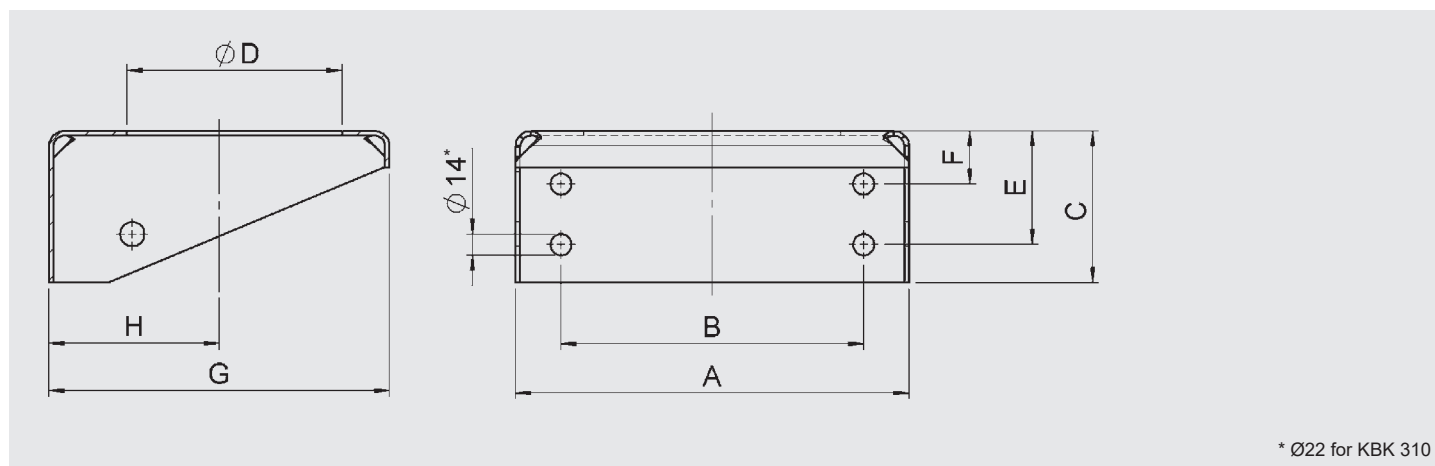
G 222



G 360



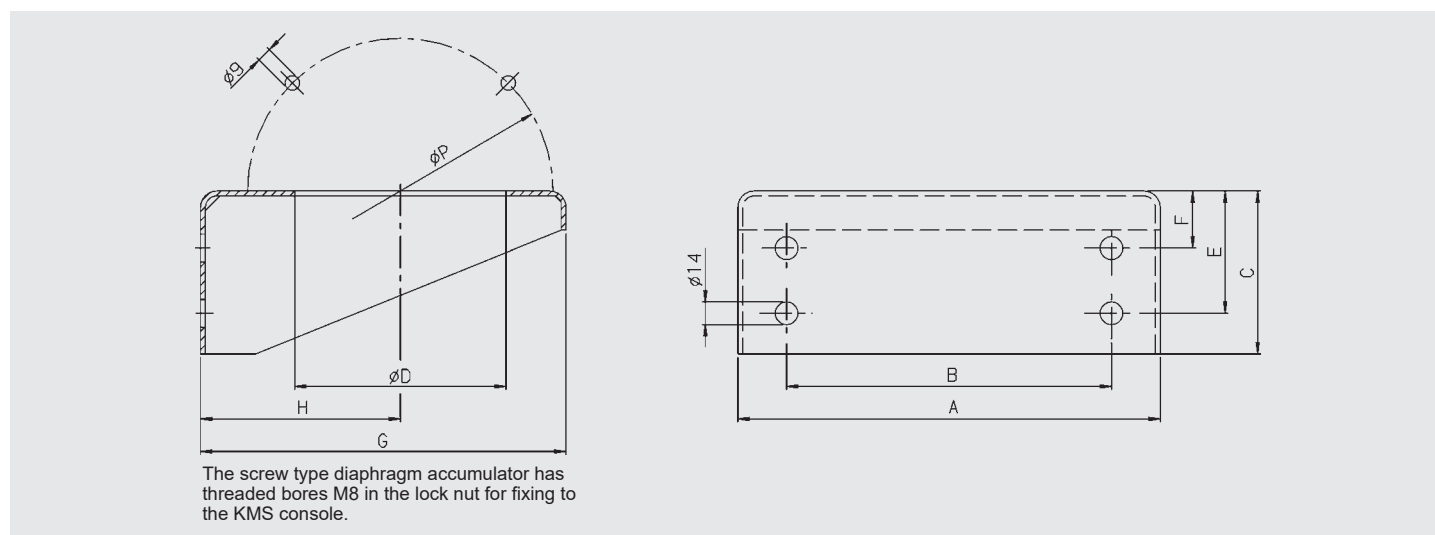
3.2.2 KBK consoles for piston accumulators



* Ø22 for KBK 310

Designation	Part no.	A [mm]	B [mm]	C [mm]	ØD [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [kg]
KBK 126	290530	175	100	60	65	36	—	150	77	1.1
KBK 167	238526	260	200	100	120	65	25	225	92	2.4
KBK 219	238042	270	180	100	135	80	40	250	123	6.5
KBK 310	238043	330	220	200	190	140	60	340	170	18.3

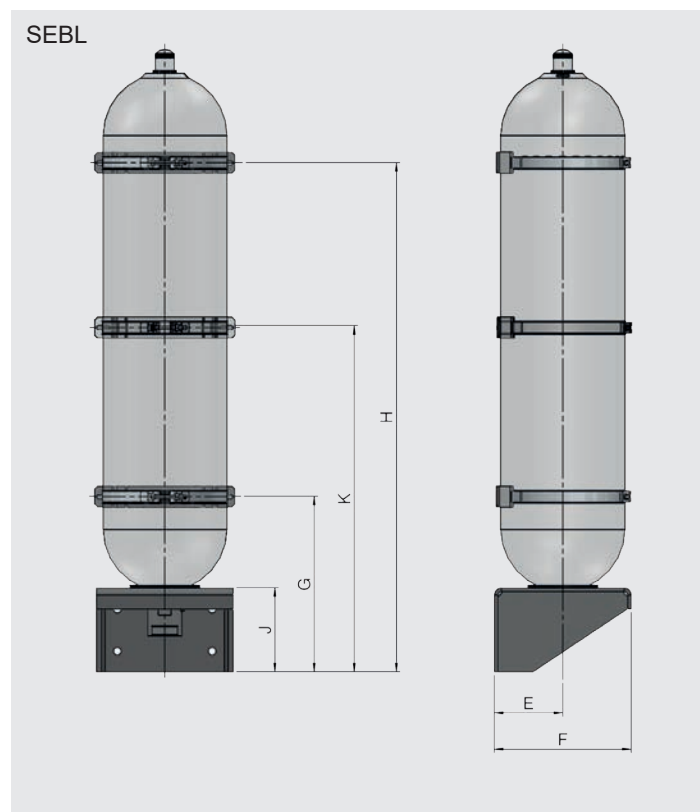
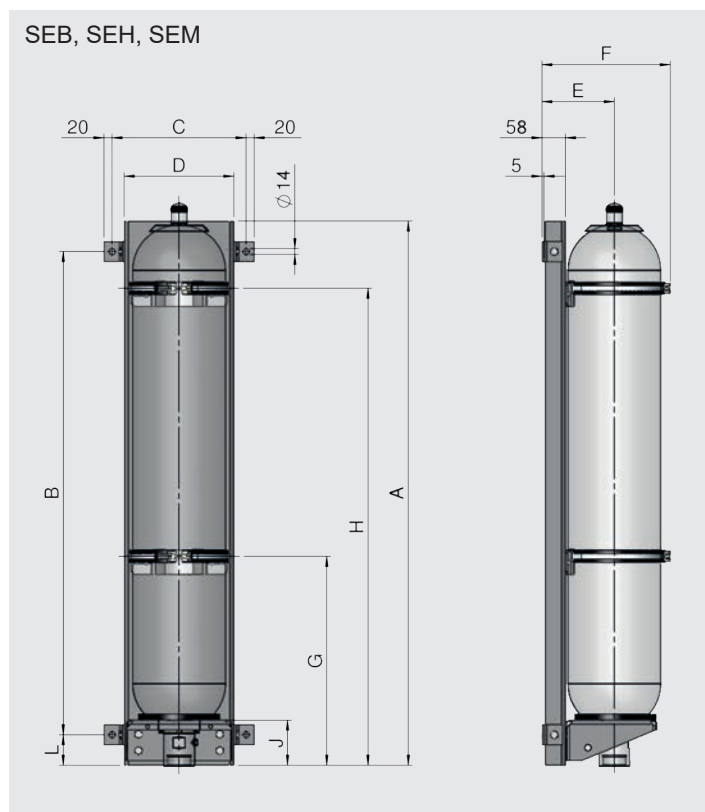
3.2.3 KMS consoles for screw-type diaphragm accumulators



The screw type diaphragm accumulator has threaded bores M8 in the lock nut for fixing to the KMS console.

Designation	Part no.	A [mm]	B [mm]	C [mm]	ØD [mm]	ØP [mm]	E [mm]	F [mm]	G [mm]	H [mm]	ØI [mm]	Weight [kg]
KMS 210	358989	260	200	100	170	180	75	35	225	123	14	2.4
KMS 220	359922				170	188						
KMS 280	359925	330	220	200	215	230	140	60	340	170	22	18.3
KMS 310	359927				245	265						

3.3. ACCUMULATOR SET FOR BLADDER ACCUMULATORS



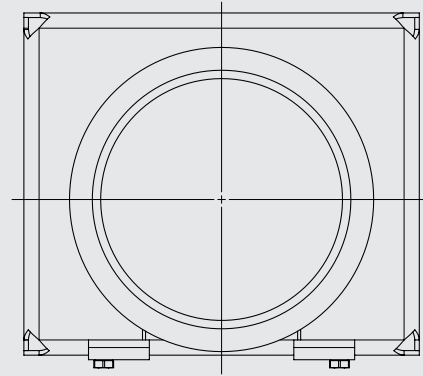
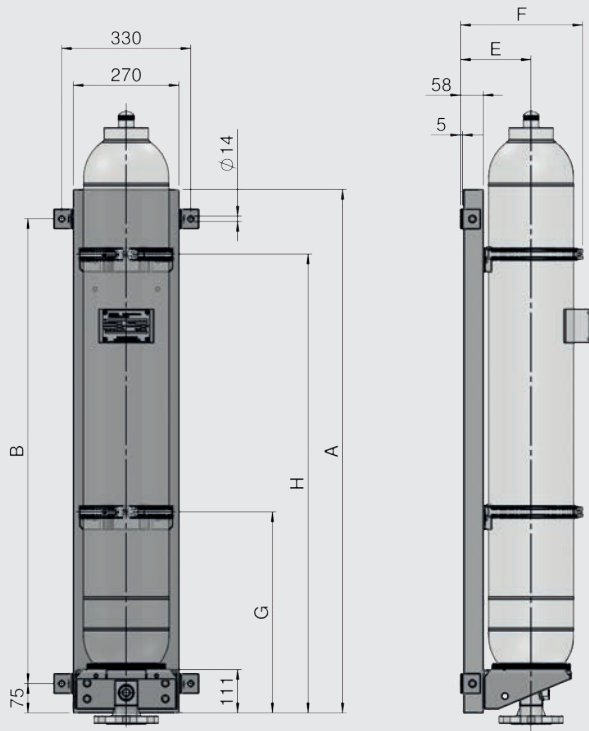
Designation	Part no.	Vol. [l]	A [mm]	B [mm]	C [mm]	D [mm]	E max. [mm]	F max. [mm]	G [mm]	H [mm]	K [mm]	L [mm]	J [mm]
SEB/SEBL for SB330/440													
SEB 2.5	290787	2.5	460	310	198	138	134	209	220	410		75	–
SEB 4	238403	4	410	320						270		45	95
SEB 6	2115851	6	570	420			154	285		415			
SEB 10 slimline	4189835	10	1340	1190	330	270			500	1160		75	111
SEB 10	238407		580							330			
SEB 13-20	240598	13	570	420			185	318		500			
		20								1160			
SEB 32	238409	32	1340	1190						1160			
SEB 50	240599	50								930			
SEBL 60-80	3605561	60					195	390	500	1200			240
		80				1450				950			
SEBL 100-130	372132	100								1750	1100		
		130											
SEH for SB500/550/600													
SEH 2.5	2105194	2.5	460	310	198	138	136	215	220	410			–
SEH 5	2105195	5	750	600						650			
SEH 10	378952	10	570	420	330	270	197	326		330		75	111
SEH 20	298181	20								500			
SEH 32	298182	32	1340	1190						500			
SEH 50	298183	50								1160			
SEM for SB40													
SEM 2.5	3007402	2.5	460	310	198	138	123	194	220	410			–
SEM 5	3007423	5	750	600						650			
SEM 10	3007424	10	570	420	330	270	179	307		330		75	111
SEM 20	3007425	20								500			
SEM 32	3007426	32	1340	1190						500			
SEM 50	3007427	50								1160			

Accumulator set SEB is also available with an SAF and SB330 as a compact unit (ACCUSET SB330).

See catalogue section:

- ACCUSET SB
No. 3.503

SEHB



Notice: The console (KHF 210/G) included in the SEHB accumulator sets is opened at the front for easier mounting of the bladder accumulator.

Designation	Part no.	Vol. [l]	A [mm]	B [mm]	C [mm]	ØD [mm]	E max. [mm]	F max. [mm]	G [mm]	H [mm]	L [mm]	J [mm]	Weight [kg]
Accumulator set SEHB for SB35HB													
SEHB 20	3007431	20	570	420	-	-	184	312	-	500	-	-	-
SEHB 32	3007432	32	1340	1190	-	-	184	312	500	1160	75	111	-
SEHB 50	3007433	50	1340	1190	-	-	184	312	500	1160	75	111	-

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 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 undergoes a time deterioration process.

Subject to technical modifications and errors.

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 E-mail: speichertechnik@hydac.com

Bell housings and accessories



Introduction

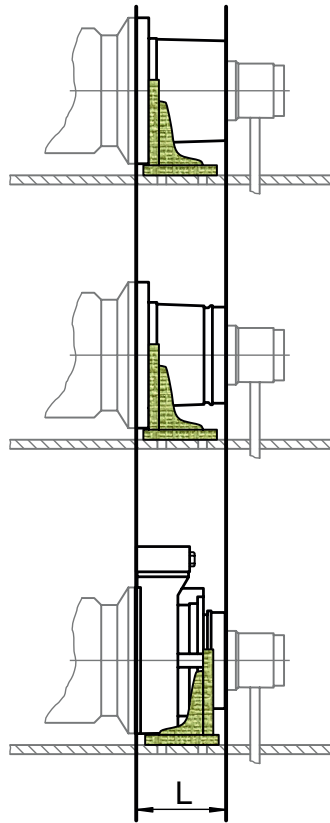
To connect drive motors and hydraulic pumps, HYDAC Accessories has an extensive standard range of conventional bell housings.

- Rigid bell housing (PTS)
- Flexible bell housing (PT)
- Flexible bell housing with oil-air cooler (PTK)




They are made from an aluminium alloy, in dimensions according to VDMA 24561. Both connection flanges are supplied ready for installation.

Using a bell housing from HYDAC Accessories eliminates costly alignment work.

Having the same length L for PTS, PT and PTK enables interchangeability without having to alter the installation space.



Overview of bell housings

				
kW	Size	PTS	PT	PTK
0.25 - 0.37	160	x		
0.55 - 1.5	200	x	x	x
2.2 - 4	250	x	x	x
5.5 - 7.5	300	x	x	x
11 - 22	350	x	x	x
30	400	x	x	
37 - 45	450	x	x	
55 - 90	550	x	x	
110 - 200	660	x	x	
250 - 400	800	x		

Flexible drive (spider) and curved-tooth gear couplings, bell housing foot brackets and mounting plates, damping rails and rings and the tank set complement the bell housing product range.

HYDAC Accessories also offers a full range of bell housing sets to suit HYDAC pumps to ensure simple and efficient connection to drive motors. Depending on the requirements, the sets include the appropriate bell housings and couplings. As an option, bell housing foot brackets and damping rails are also available.

PT Web light

<https://www.hydac.com/de-en/service/online-tools/pt-web-light.html>

Plan, calculate and design with greater ease, precision and speed with the new dimensioning software PT Web light!

The PT Web light configuring program enables you to find out which bell housing you need for your particular application.











In addition to the short text and the part number, you are also shown the corresponding drawing with all major dimensions of the bell housing, incl. the accessory components.

If you are only looking for suitable accessories or a suitable tank set, a few clicks is all it takes for you to find the corresponding information.

Furthermore, HYDAC Accessories has a comprehensive product range to complement and refine fluid power plants and systems.

- Mounting equipment for pipes, hoses, cables, containers and components
- Coaxial valves
- Ball valves as standard, change-over, multiway, flange and plate valves
- Fluid level gauges, fluid level sensors
- Pressure-test and quick-release couplings, screwed fittings

Catalogue overview

			Brochure	Page
	Bell housings with rigid/flexible pump mounting	PTS, PT	5.615	279
	Bell housings with flexible pump mounting and oil/air cooler	PTK	5.601	283
	Bell housing set		5.617	287
	Tank set	Tank set	6.192	291
	Bell housing accessories		5.616	293
	Flexible drive (spider) couplings			295
	Curved-tooth gear coupling			298
	Bell housing foot brackets	PF		299
	Bell housing mounting plate	PP		300
	Damping rails	MDS		301
		FDS		302
	Damping rings	DFR		303

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.

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Bell housings with rigid/flexible pump mounting PTS / PT

1. DESCRIPTION

1.1. DESCRIPTION

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

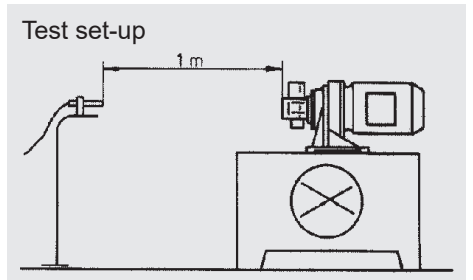
2.1. GENERAL

2.1.1 Mounting position
No orientation restrictions.

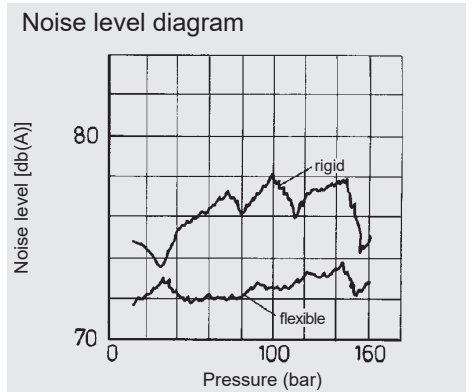
2.1.2 Operating temperature
-20 °C to +100 °C

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.



Bell housing with foot bracket mounted on the oil tank cover plate.



2.1.4 Notes on mounting

The 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. Bolts that are too short may damage the thread and thereby the entire unit.

2.1.5 Weight loading

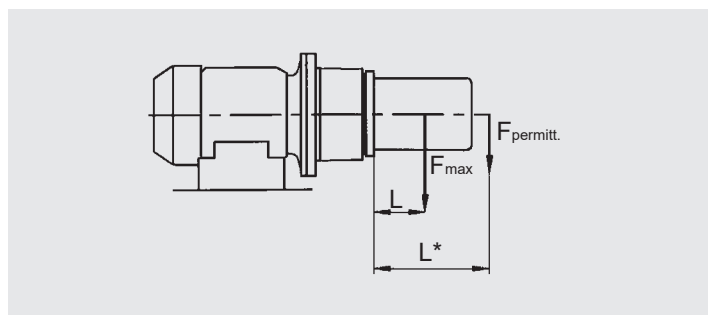
The permitted radial or axial load of the bell housing with flexible and rigid pump mounting, allowing for an operating temperature of +60 °C:

Bell housing nom. size	Model damping ring	Permitted force due to gravity F_{max} [N]	Centre of gravity distance for radial loads 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_{max} in the table.



2.2. SPECIFICATIONS

2.2.1 Permitted fluids

Mineral oil as per 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.

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.

3. MODEL CODE

PT - 250 / M / 120 / FB092 - E / MB / F3

(Also order example)

Designation

PTS = rigid bell housing
PT = flexible bell housing

Nominal size for IEC standard motor (model B5, B35, V1, V15)

Nom. size	Model rigid flexible		Electric motor size	Power at n = 1500 rpm
	PTS	PT		
160	x		71	0.25 - 0.37 kW
200	x	x	90	1.1 - 1.5 kW
250	x	x	100/112	2.2 - 4 kW
300	x	x	132	5.5 - 7.5 kW
350	x	x	160	11 - 15 kW
400	x	x	200	30 kW
450	x	x	225	37 - 45 kW
550	x	x	250	55 kW
660	x	x	315	110 - 200 kW
800	x		335/400	250 - 400 kW

Mineral oil resistance

M = mineral oil to DIN 51524
(others on request)

Bell housing length N

Bore template code for pump connection

(see our sizing program PT-Web light)

Type of damping ring (only for flexible bell housings)*

E = standard (60 Shore A)
K = damping ring for higher loads (75 Shore A)

Model with additional boreholes

MB = mounting hole
LB = leakage oil hole
GI = grille for MB

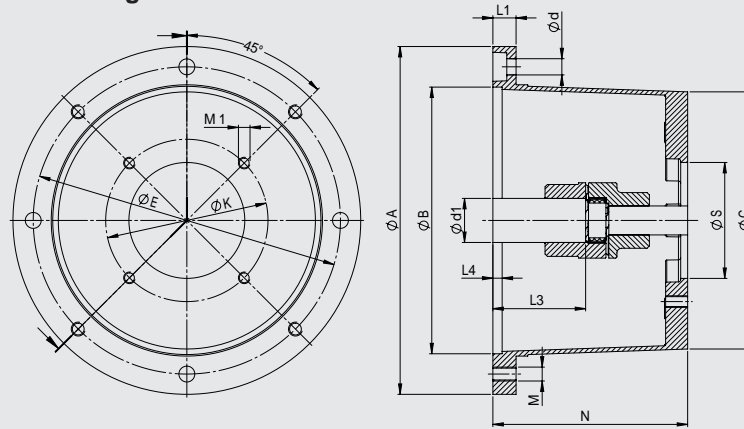
Accessories

... = no accessories (no details)
F3 = with bell housing foot bracket (light range)
F4 = with bell housing foot bracket (heavy range)

* See point 2.1.5 Weight loading

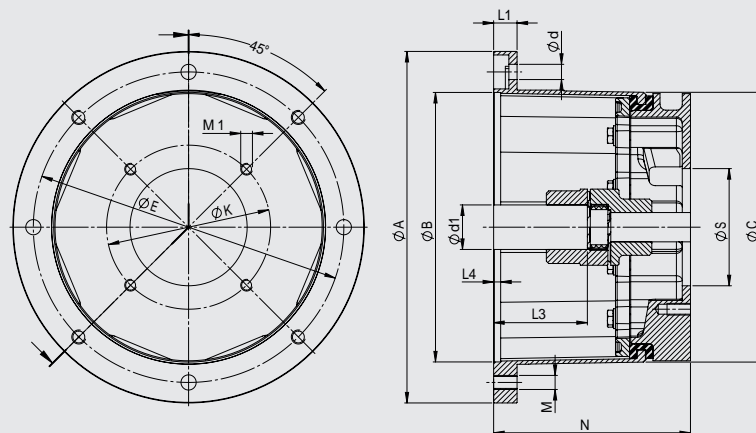
3.1. DIMENSIONS

3.1.1 Dimensions of rigid bell housing PTS



Size of electric motor	KW at n = 1500 rpm	Shaft end $\phi d_1 \times L_3$	Bell housing	ϕA	ϕB	ϕC	E	M	ϕd	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



Size of electric motor	KW at n = 1500 rpm	Shaft end $\phi d_1 \times L_3$	Bell housing	ϕA	ϕB	ϕC	E	M	ϕd	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, please use our free-of-charge dimensioning program PT Web light when possible or ask at our Head Office.

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 at www.hydac.com.

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Bell housings with flexible pump mounting and 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

No orientation restrictions.

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.

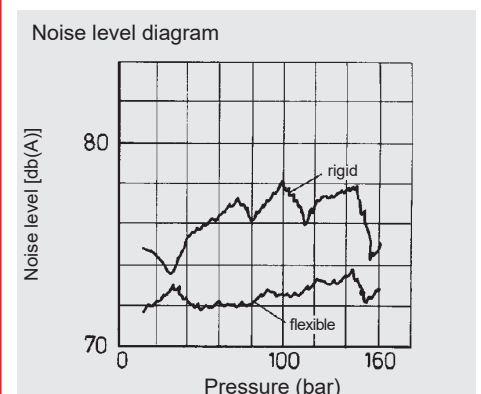
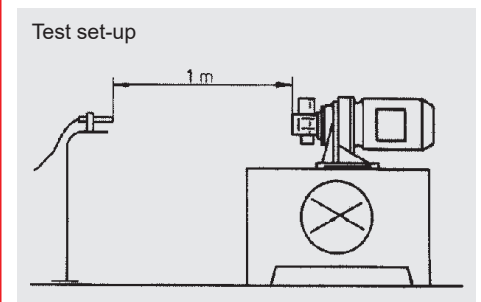
The additional use of flexible damping rails reduces the noise level still further.

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 bolts used for mounting the motor to the pump must be long enough to fill the available thread depth on the bell housing.

Bolts that are too short may damage the thread and thereby the entire unit.

2.1.5 Weight loading

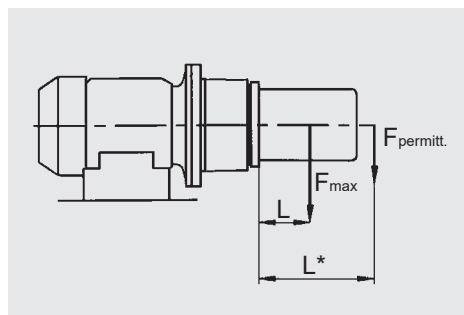
The permitted radial or axial load of the PTK with flexible pump mounting, allowing for an operating temperature of +60 °C:

PTK nom. size	Model damping ring	Permitted force due to gravity F_{max} [N]	Centre of gravity distance for radial load L [mm]
200/2001	E	400	200
	K	500	
250	E	600	200
	K	800	
300	E	1000	200
	K	1300	
350/3501	E	1500	200
	K	2000	

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_{max} in the table.



2.2. SPECIFICATIONS

2.2.1 Coolant

Mineral oil as per DIN 51524, other fluids on request

2.2.2 Nominal rpm for drive

$n = 1500$ rpm

(Base rpm for the stated technical data)

(up to 3000 1/min possible)

2.2.3 Direction of rotation

When looking at pump shaft clockwise

2.2.4 Air flow rate

Nom. size	Volume
PTK-200	approx. 72 m ³ /h
PTK-2001	approx. 72 m ³ /h
PTK-250	approx. 260 m ³ /h
PTK-300	approx. 435 m ³ /h
PTK-350	approx. 780 m ³ /h
PTK-3501	approx. 780 m ³ /h

2.2.5 Power requirement for fan

Nom. size	Rot. speed	
	1500 rpm	1800 rpm
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 as per DIN 45635 Part 1)

Nom. size	Power electric motor at 1500 rpm	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 ≤ 16 bar and a temperature ≤ 50 °C, 2 million cycles (2 Hz) are achieved. At higher operating pressures and/or temperatures, the life expectancy is reduced.

– Maximum operating pressure at static pressure resistance is 40 bar.

Installation

When installing/removing cooler input/output connection screw, torque must be locked (protects cooling element from warping). Please also observe included installation instructions.

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.

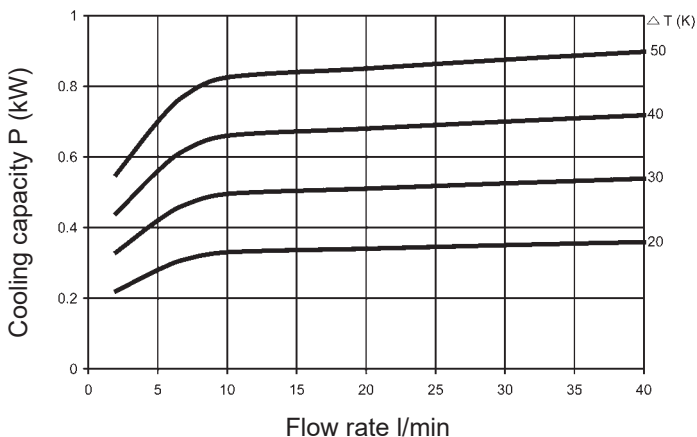
The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

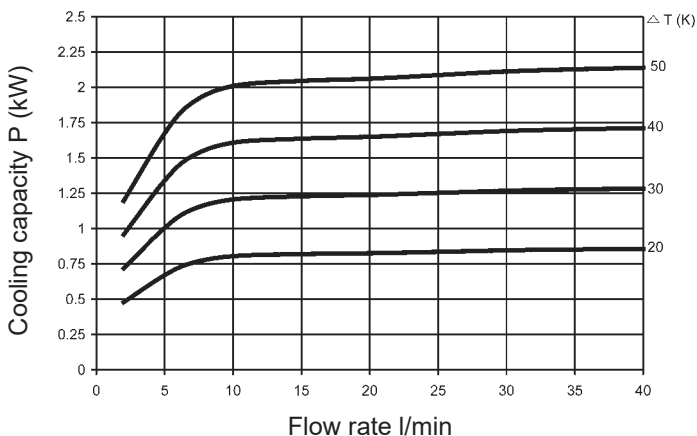
2.3.2 Cooling capacity

Cooling capacity against oil flow rate for different temperature differentials ΔT between oil inlet and air inlet (motor speed 1500 rpm).

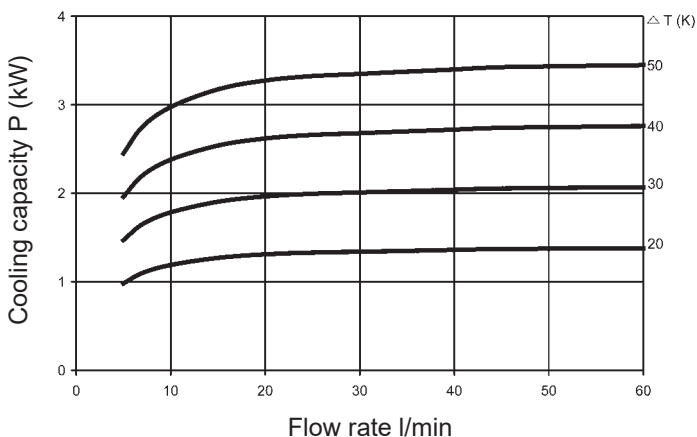
PTK-200/PTK-2001



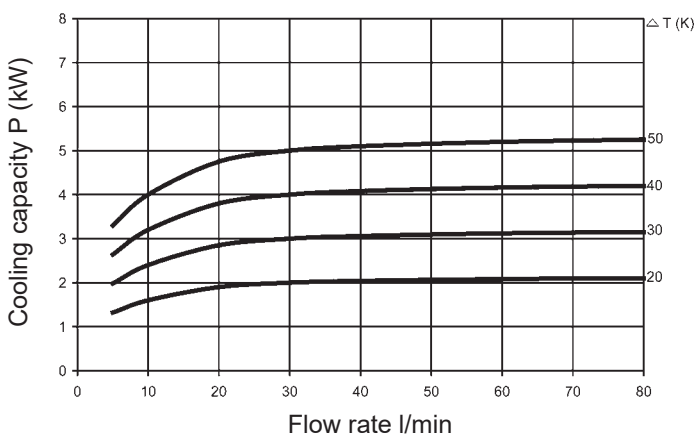
PTK-250



PTK-300



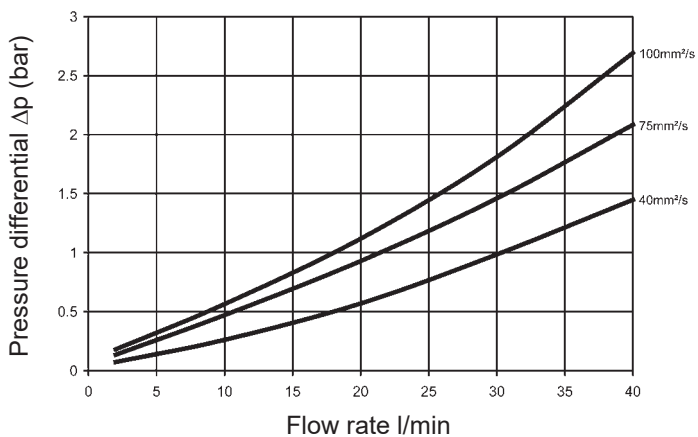
PTK-350/PTK-3501



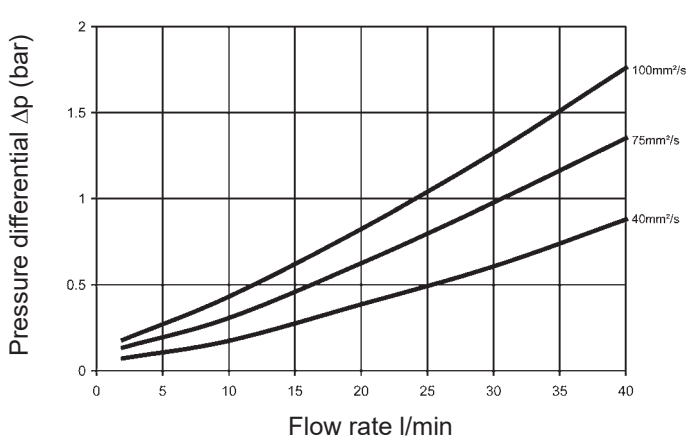
2.3.3 Pressure drop Δp in the cooler element

Flow direction is optional. The differential pressure Δp is shown against flow rate for different viscosities.

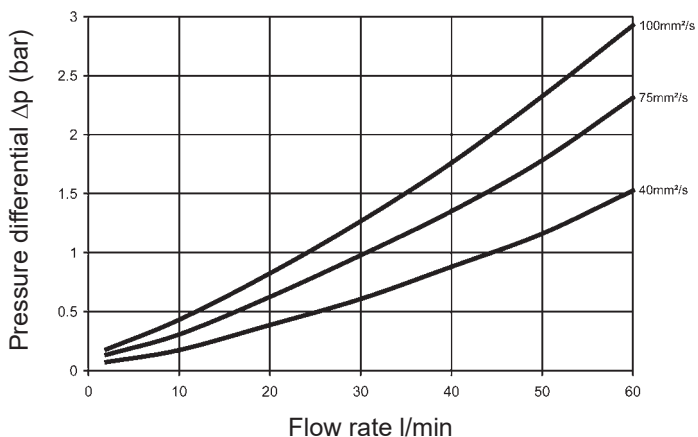
PTK-200/PTK-2001



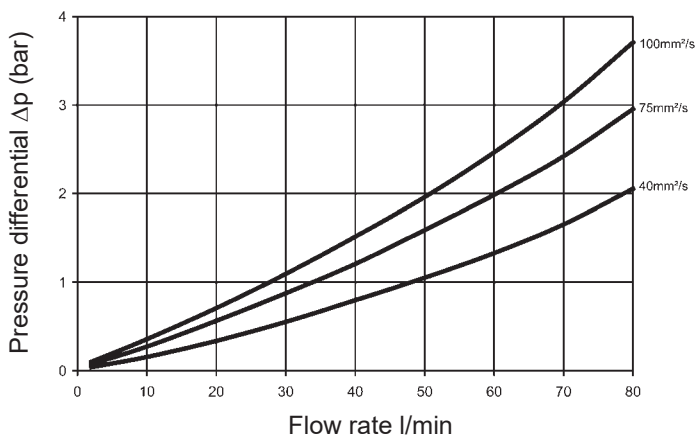
PTK-250



PTK-300



PTK-350/PTK-3501



3. MODEL CODE

(also order example)

PTK - 250 / M / 140 / FB092 - E / F3

Designation

PTK = bell housing with flexible pump mounting and built-in oil/air cooler

Nominal size for IEC standard motor (design B5, B35, V1, V15)

Nom. size	Electric motor size	Power at n = 1500 rpm
2001	80	0.55 - 0.75 kW
200	90	1.1 - 1.5 kW
250	100/112	2.2 - 4 kW
300	132	5.5 - 7.5 kW
350	160	11 - 15 kW
3501	180	18.5 - 22 kW

Mineral oil resistance

M = mineral oil to DIN 51524 (others on request)

Bell housing length N

Bore template code for pump connection

(see our sizing program PT-Web light)

Model of damping ring *

E = standard (60 Shore A)

K = damping ring for higher loads (75 Shore A)

Accessories

... = no accessories (no details)

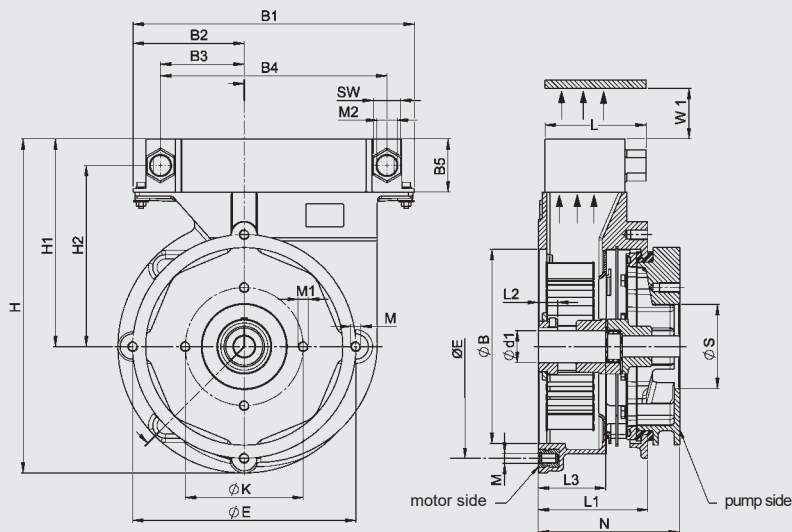
F3 = bell housing foot bracket (light range)

F4 = bell housing foot bracket (heavy range)

SO = special version

* See point 2.1.5 Weight loading

3.1. DIMENSIONS



Electric Motor	Output at 1500 rpm	Electric motor Drive end	PTK	PTK	PTK																	min. W1
						Nominal size	Foot bracket	Mounting plate	H	H1	H2	B	E	M	B1	B2	B3	B4	B5	SW	M2	
80	0.55	19 x 40	PTK-2001	PTFL-200	PP200	276	175	143.5	130	165	M10	260	110	77.5	195	63	32	G3/4	81	80	21	120
80	0.75																					
90 S	1.1	24 x 50	PTK-200	PTFL-200	PP200	328	198	166.5	180	215	M12	334	156	123.5	269	63	32	G3/4	120	105	23	160
90 L	1.5																					
100 L	2.2	28 x 60	PTK-250	PTFL-250	PP250	396	246	214.5	230	265	M12	334	132	99.5	269	63	32	G3/4	120	130	23	200
112 M	4																					
132 S	5.5	38 x 80	PTK-300	PTFL-300	PP-300	438	263	231.5	250	300	M16	334	102	69.5	269	63	32	G3/4	146	170	31	240
132 M	7.5																					
160 M	11	42 x 110	PTK-350	PTFL-350	-	438	263	231.5	250	300	M16	334	102	69.5	269	63	32	G3/4	146	170	31	240
160 L	15																					
180 M	18.5	48 x 110	PTK-3501	PTFL-350	-	438	263	231.5	250	300	M16	334	102	69.5	269	63	32	G3/4	146	170	31	240
180 L	22																					

To identify the bore template code, please use our free-of-charge dimensioning program PT Web light when possible or ask at our Head Office.

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.

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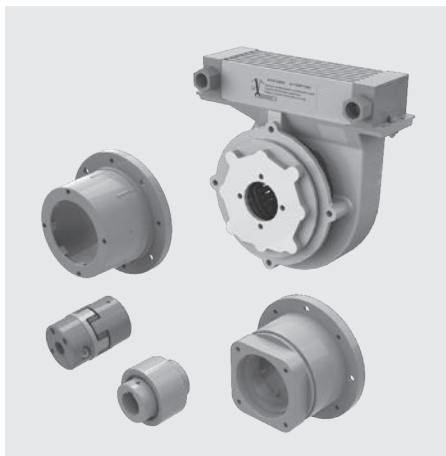
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E-Mail: accessories@hydac.com

Bell housing set



1. DESCRIPTION

To be able to easily and effectively connect HYDAC pumps to their drive motors, HYDAC Accessories offers bell housing sets.

Depending on the requirements, they contain corresponding bell housings and couplings, optionally also a base for the bell housing and damping rails.

2. MODELS OF THE BELL HOUSINGS

Bell housings are connecting parts between drive motors and hydraulic pumps.

They are made in an aluminium alloy, dimensioned according to VDMA 24561.

Both connecting flanges are supplied ready for installation.

Using a HYDAC bell housing eliminates costly alignment work.

Possible models:

- Rigid bell housing (PTS)
- Flexible bell housing (PT)
- Elastic 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 model		
			PTS rigid	PT elastic	PTK elastic 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 / M / PPV100 / 016 / S F00 - 00

Model of the bell housing

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

M = mineral-oil resistant

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, constant

PVF101 vane pump as double pump

PVV100 vane pump, adjustable, pilot-operated

PVV101 vane pump, adjustable, direct-acting

PGE101-PGE104 gear pump

Set designation

HYDAC issues the designation of the set.

4. ACCESSORIES

To complement the bell housing set, HYDAC Accessories also offers foot brackets and damping rails.

Detailed information is given in our brochure "Bell Housing Accessories" (EN 5.616), which can be downloaded from our website www.hydac.com.

BELL HOUSING FOOT BRACKETS

HYDAC bell housing foot brackets serve as an easy way to fasten the motor pump unit to the unit.

- Bell housing foot brackets to VDMA 24561
- Lightweight and heavy series available off the shelf
- Motor stock-keeping can be limited to the IMB5/IMV1 motors
- Simple replacement of the electric motor
- It is also possible to set up the hydraulic pump and pipework without an electric motor
- Available sizes:
 - Light duty series: PF-160/3 to PF-350/3
 - Heavy duty 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 bear weight with horizontal installation
- 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.

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
E-Mail: accessories@hydac.com



Tank set



COMPONENTS:

- Tank (aluminium)
- Feet (aluminium)
- Cover seal
- Cover (steel, black primer)
- Fluid level gauge FSA
- Return line filter RF
- Breather filter BFP
- Screw set

Model code

(also example order)

Tankset HYNH 30 - 120

Designation

Tankset = tank set

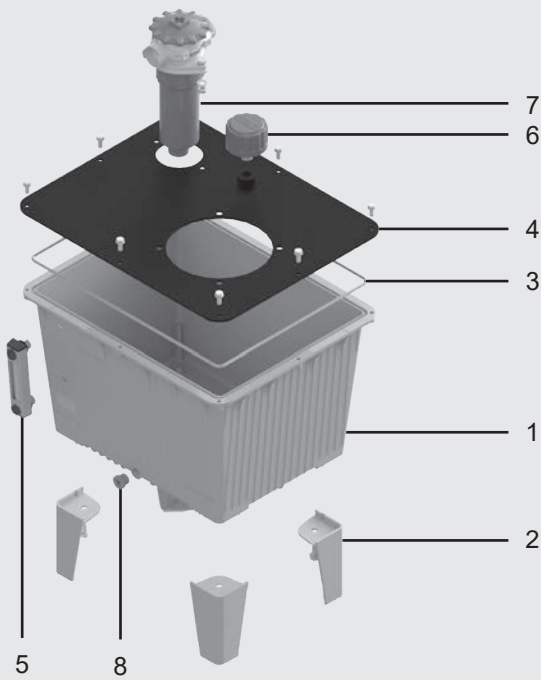
Tank type

HYNH 6,5 = nominal size 6.5
 HYNH 12 = nominal size 12
 HYNH 20 = nominal size 20
 HYNH 30 = nominal size 30
 HYNH 44 = nominal size 44
 HYNH 70 = nominal size 70
 HYNH 130 = nominal size 130

Size of bell housing

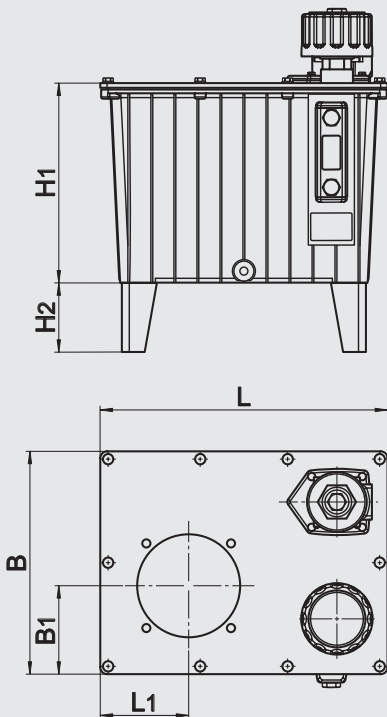
140 = nominal size 140
 160 = nominal size 160
 200 = nominal size 200
 250 = nominal size 250
 300 = nominal size 300
 (others on request)

Design



Item	Designation	Quantity
1	Oil tank	1
2	Tank foot	4
3	Cover seal	1
4	Tank cover	1
5	Fluid level gauge	1
6	Breather filter	1
7	Return line filter	1
8	Screw plug	1

Dimensions [mm]



Type	Tank size LxWxH1/H2 [mm]	Coordinates L1/B1 [mm]	Part number	Effec- tive capac- ity (l)	Fluid level gauge	Return line filter with filter cartridge 10µm	Breather filter
HYNG 6.5-140	260x220x176/10	85/85	3102944	6	FSA 076	RF 30	BFP3G10W3.0
HYNG 12-140	312x242x217/75	81/86	3104404	10	FSA 076	RF 30	BFP3G10W3.0
HYNG 12-160	312x242x217/75	96/96	3102945	10	FSA 076	RF 30	BFP3G10W3.0
HYNG 20-160	369x291x246/75	99/100	3102946	17	FSA 076	RFM 75	BFP3G10W3.0
HYNG 20-200	369x291x246/75	119/120	3104405	17	FSA 076	RFM 75	BFP3G10W3.0
HYNG 30-200	490x341x280/150	125/120	3104406	27	FSA 076	RFM 165	BFP3G10W3.0
HYNG 30-250	490x341x280/150	150/145	3102947	27	FSA 076	RFM 165	BFP3G10W3.0
HYNG 44-200	525x424x310x150	170/170	3104407	40	FSA 127	RFM 165	BFP3G10W3.0
HYNG 44-250	525x424x310x150	170/170	3103018	40	FSA 127	RFM 165	BFP3G10W3.0
HYNG 70-250	615x474x360/150	170/170	3103019	63	FSA 127	RFM 165	BFP3G10W3.0
HYNG 70-300	615x474x360/150	170/170	3104428	63	FSA 127	RFM 165	BFP3G10W3.0
HYNG 130-xxx	760x600x396/150	x/x	3932175	123	FSA 127	RFM 185	BFP3G10W3.0

NOTE

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Bell housing Accessories



FLEXIBLE DRIVE (SPIDER) COUPLINGS

Features
Model code
Dimensions



CURVED-TOOTH GEAR COUPLINGS

Features
Model 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





Flexible drive (spider) couplings

FEATURES

- Torsionally flexible and vibration-damping due to elastomer toothed insert (spider) with 98 Shore A (polyurethane) (standard)
- 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)

Kupplung 24/28 - 28 / 22,22 F ALU

Coupling size

Version of motor hub

28 = 28H7 cylindrical hole with key to DIN 6885

Version of pump hub

22,22F = 22.22 code F imperial hole *

B17...TN2A = tapered holes *

SAE ... = profiled holes / spline shafts *

Special design

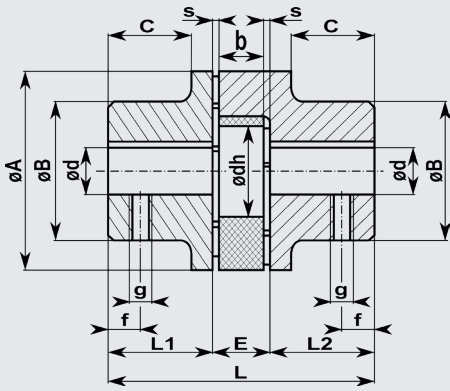
... = coupling in cast iron or steel (no details required)

ALU = coupling in aluminium

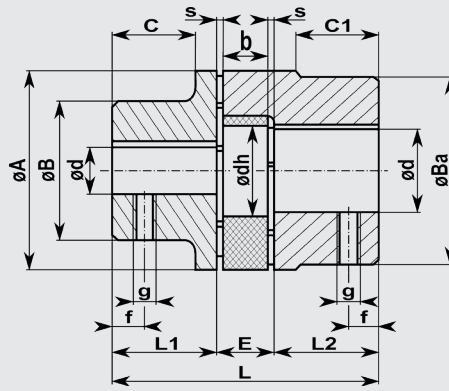
ATEX = with ATEX approval

* See holes table

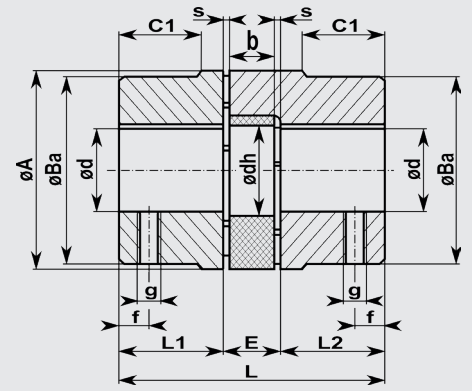
DIMENSIONS



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: Kupplung 19/24-24/14 ALU

Type	max. kW at 1000 rpm	max. kW at 1500 rpm	Holes						Dimensions [mm]											Weight [kg]						
			A-hub			B-hub			Pilot hole	Finished hole Ø d	Pilot hole	Finished hole 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: Kupplung 24/28-20/24

Type	max. kW at 1000 rpm	max. kW at 1500 rpm	Holes						Dimensions [mm]											Weight [kg]						
			A-hub			B-hub			Pilot hole	Finished hole Ø d	Pilot hole	Finished hole 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	Ø d mm	Ø d 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	46.1
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 22 x 19	SAE 3/4" - 16/32 - Z11
N 30 x 2 x 14 x 9 G	A 28 x 25	SAE 7/8" - 16/32 - Z13
N 35 x 2 x 16 x 9 G	A 30 x 27	SAE 1" - 16/32 - Z15
N 40 x 2 x 18 x 9 G	A 35 x 31	SAE 1-1/8" - 16/32 - Z17
N 45 x 2 x 21 x 9 G	A 40 x 36	SAE 1-1/4" - 12/24 - Z14
N 50 x 2 x 24 x 9 G	A 45 x 41	SAE 1-3/8" - 16/32 - Z21
N 55 x 2 x 24 x 9 G	A 48 x 44	SAE 1-1/2" - 12/24 - Z17
N 60 x 2 x 28 x 9 G	A 50 x 45	SAE 1-1/2" - 16/32 - Z23
N 70 x 3 x 22 x 9 G	A 58 x 53	SAE 1-3/4" - 16/32 - Z27
N 80 x 3 x 25 x 9 G	A 70 x 64	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			
	Ø d	b	t2	l
TN1	9.75	2.40	10.70	17.00
TN1C	11.60	3.00	12.90	16.50
TN1E	13.00	2.40	13.80	21.00
TN1D	14.00	3.00	15.50	17.50
TN1B	14.30	3.20	15.70	19.50
TN2	17.20	3.20	18.30	24.00
TN2A	17.29	4.00	18.94	24.00
TN2B	17.20	3.00	18.30	24.00
TN3	22.00	4.00	23.40	28.00
TN4	25.46	4.78	27.80	36.00
TN4B	25.46	5.00	28.20	36.00
TN4A	27.00	4.78	28.80	32.50
TN4G	28.45	6.00	29.30	38.50
TN5	33.17	6.38	35.40	44.00
TN5A	33.17	7.00	35.40	44.00
TN6	43.06	7.95	46.46	51.00
TN6A	41.15	8.00	44.25	42.00

Order code	Cone 1:5			
	Ø d	b	t2	l
A10	9.85	2.00	10.90	11.50
As12	11.85	3.00	13.65	16.50
B17	16.85	3.00	18.90	18.50
C20	19.85	4.00	22.00	21.50
Cs22	21.95	3.00	23.80	21.50
D25	24.85	5.00	27.90	26.50
E30	29.85	6.00	32.50	31.50
F35	34.85	6.00	37.50	36.50
G40	39.85	6.00	45.50	41.50

 = Standard



Curved-tooth 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)

Kuplung **B** **24** **24H7** / **20H7**

Curved-tooth gear coupling

Coupling size

Version of motor hub

24H7 = cylindrical hole with key to DIN 6885

Version of pump hub

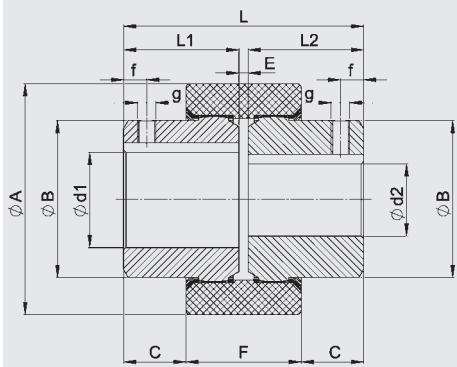
20H7 = cylindrical hole with key to DIN 6885

22.22F = 22.22 Code F (7/8") imperial hole*

B17/TN2A = tapered hole*

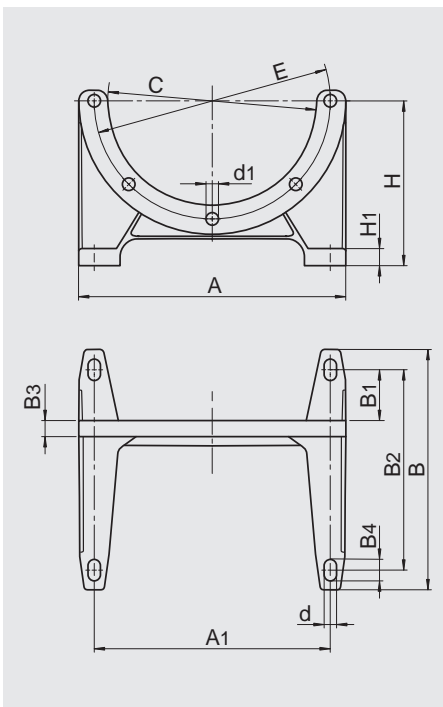
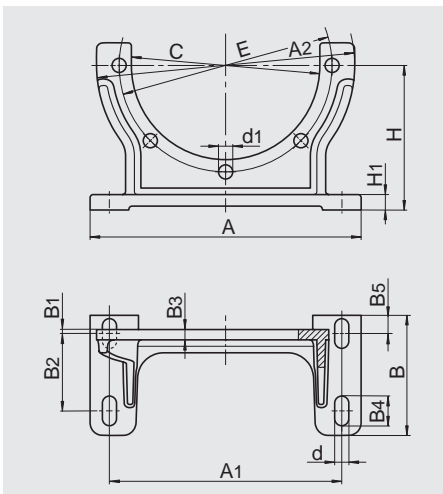
* see tables under flexible drive couplings

DIMENSIONS



Type	max. kw for 1000 rpm	max. kw for 1500 rpm	Pilot hole	Finished bores d [mm]		Dimensions [mm]										Weight [kg]
				Min.	Max.	A	B	L	L1 + L2	E	C	F	g	f		
B 14	0.25	0.37	5	6	14	40	25	50	23	4	6.50	37	M5	6	0.175	
B 19	0.55	0.75	8	9	19	48	30	54	25	4	8.50	37	M5	6	0.320	
B 24	1.10	1.50	9	10	24	52	36	56	26	4	7.50	41	M5	6	0.316	
B 28	2.20	4.00	9	10	28	66	44	84	40	4	19.00	46	M8	10	0.739	
B 32	4.00	5.50	11	12	32	76	50	84	40	4	18.00	48	M8	10	0.950	
B 38	5.50	7.50	12	14	38	83	58	84	40	4	18.00	48	M8	10	1.220	
B 42	11.00	15.00	16	20	42	92	65	88	42	4	19.00	50	M8	10	1.490	
B 48	15.00	22.00	16	20	48	100	68	104	50	4	27.00	50	M8	10	1.810	
B 55	22.00	30.00	-	25	55	125	83	124	60	4	29.50	65	M10	20	3.450	
B 65	37.00	55.00	0/30	10/32	65	140	96	144	70	4	36.00	72	M10	20	5.180	
B 80	75.00	110.00	-	30	80	175	124	186	90	6	46.50	93	M10	20	11.500	
B 100	132.00	200.00	35	40	100	210	152	228	110	8	63.00	102	M12	30	20.500	

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 countersink 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	57	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	80	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

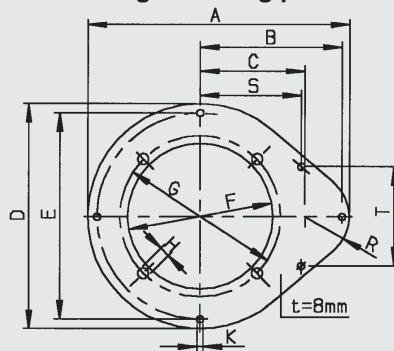
Bell housing mounting plate for bell housings type PT, PTK, PTS



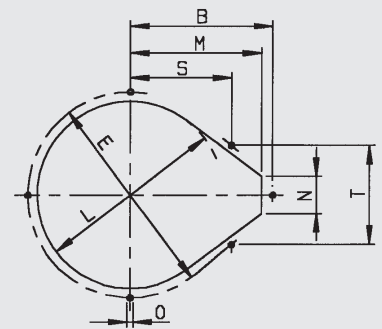
FEATURES

- 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

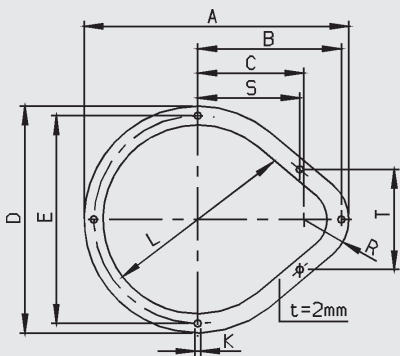


Oil tank cut-out



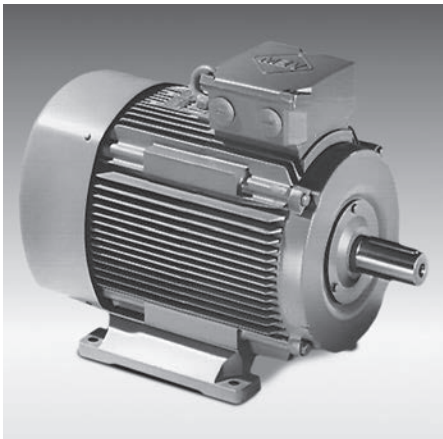
Size	Part no.	A	B	C	D	E	F	G	H	K	R	L	M	N	O	S	T
PP 200	273931	325	190	140	250	225	146	165	11	9.5	60	200	175	50	M8	84	168
PP 250	272058	350	190	140	300	275	194	215	14	9.5	60	250	175	50	M8	135	134
PP 300	272059	423	225	150	350	330	246	265	14	14.5	98	300	200	100	M12	160	190
PP 350	637939	475	225	160	410	380	262	300	18	14	110	350	200	136	M12	112	307.5

Seal for bell housing mounting plate



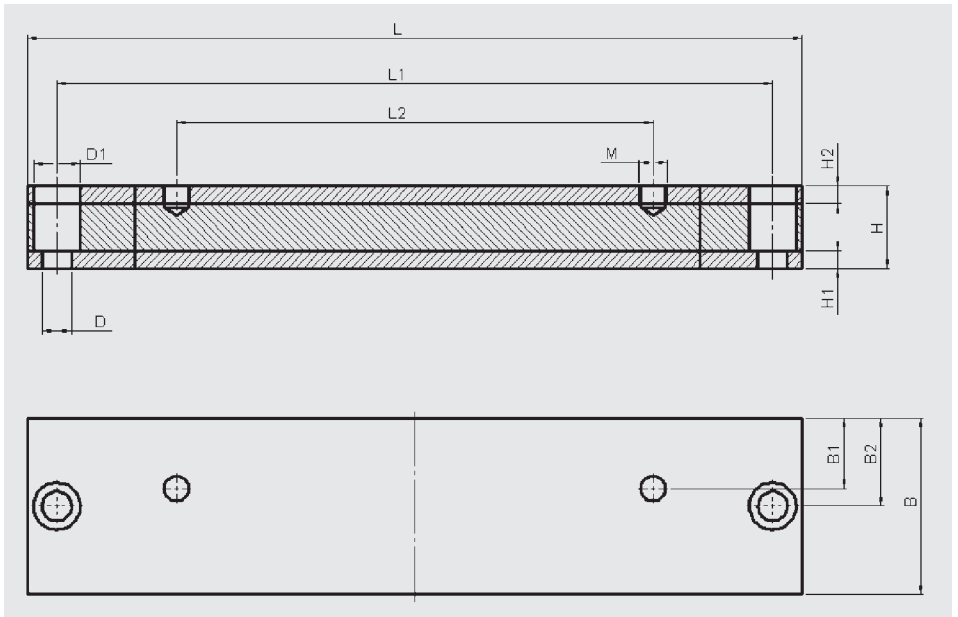
Size	Part no.	A	B	C	D	E	K	R	L	S	T
PPD 200	952788	325	190	140	250	225	10	60	200	84	168
PPD 250	952789	350	190	140	300	275	10	60	250	135	134
PPD 300	952812	420	225	150	360	330	15	90	300	160	190
PPD 350	3159093	475	225	160	410	380	20	110	350	112	307.5

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, 60±5 shore A
- Special lengths and models are possible on request



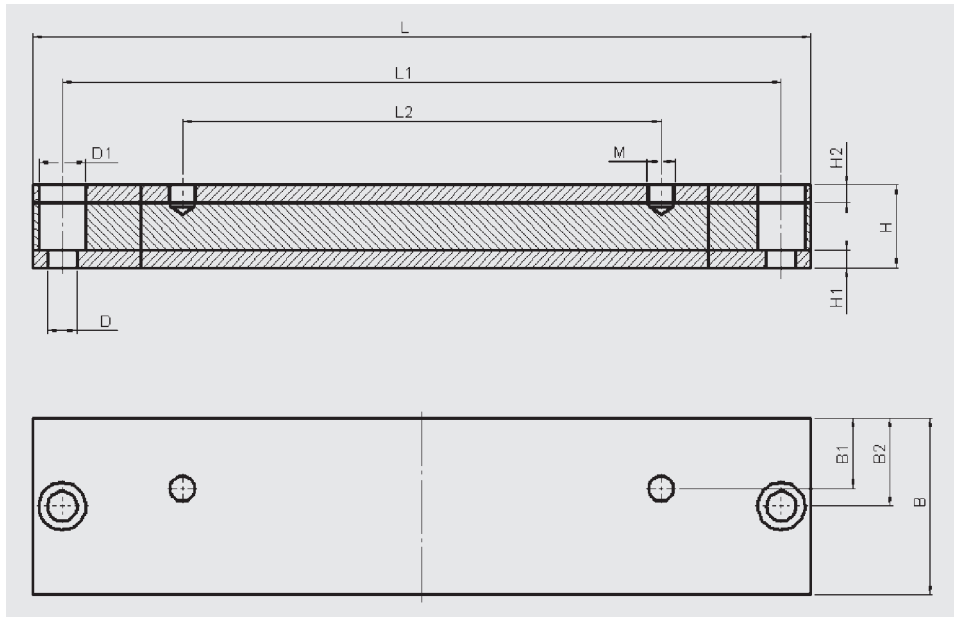
Damping rails	For type	Part no.	L	L1	L2	H	H1	H2	B	B1	B2	D	D1	M
MDS 080	80	3134999	176	146	100	40	8	12	50	22	25	14	20	M8
MDS 090S	90S	721987	196	156	100	40	8	12	50	22	25	14	20	M8
MDS 090L	90L	721988	240	205	125	40	8	12	50	24	25	14	20	M8
MDS 100L	100L	721989	240	205	140	40	8	12	50	24	25	14	20	M10
MDS 112M	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 brackets



FEATURES

- Horizontal base mounting (not overhead mounted)
- Ready machined for bell housing foot brackets
- Noise reduction due to decoupling
- Resistant to mineral oil due to NBR rubber compound, 60±5 shore A
- 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 brackets for the light-duty range
FDS .../4 for bell housing foot brackets for heavy-duty range

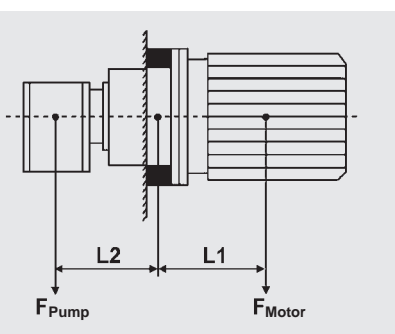
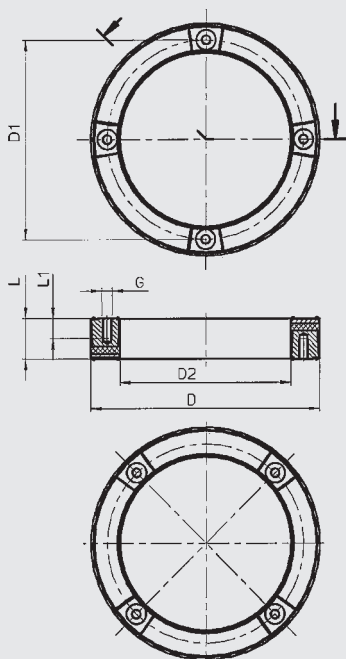
Damping rings



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
- Version DFR...-VS with countersinks to simplify IM V1 installation

Standard design



DIMENSIONS

Damping ring type	IEC motor size	Part no.	Dimensions [mm]							
			D	D1	D2	G	L1	L	d	d ₁
DFR-V1/B5 200	80, 90S / 90L	3026885	200	165	146	4xM10	18	40	-	-
DFR-V1/B5 250	100L / 112M	3026886	250	215	191	4xM12	22	45	-	-
DFR-V1/B5 300	132S / 132M	3026887	300	265	235	4xM12	22	50	-	-
DFR-V1/B5 350	160M / 160L 180M / 180L	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	4 x 18	4 x 26
DFR-V1/B5-400-VS	200L	3870297	400	350	301	4xM16	29	50	4 x 18	4 x 26
DFR-V1/B5-450-VS	225S / 225M	3870298	450	400	352	8xM16	32	60	4 x 18	4 x 26

Permitted radial weight load and bending stress, allowing for an operating temperature of +60 °C:

Maximum permitted force: $F_{\text{pump}} + F_{\text{motor}} \leq F_{\text{perm.}}$

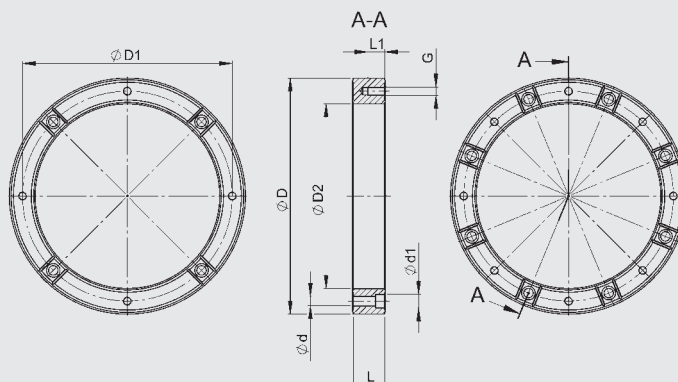
Maximum permitted bending moment: $F_{\text{motor}} \times L1 - F_{\text{pump}} \times L2 \leq Mb_{\text{perm.}}$

Damp. ring type	200	250	300	350	400	450	550	660
F _{perm.} [N]	385	755	1520	3780	5040	6800	13390	24720
Mb _{perm.} [Nm]	32	68	184	770	1135	1650	4530	9270

VS version

up to size 400

size 450 and above



Notice: for size 450 and above, the number increases to eight 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.

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.

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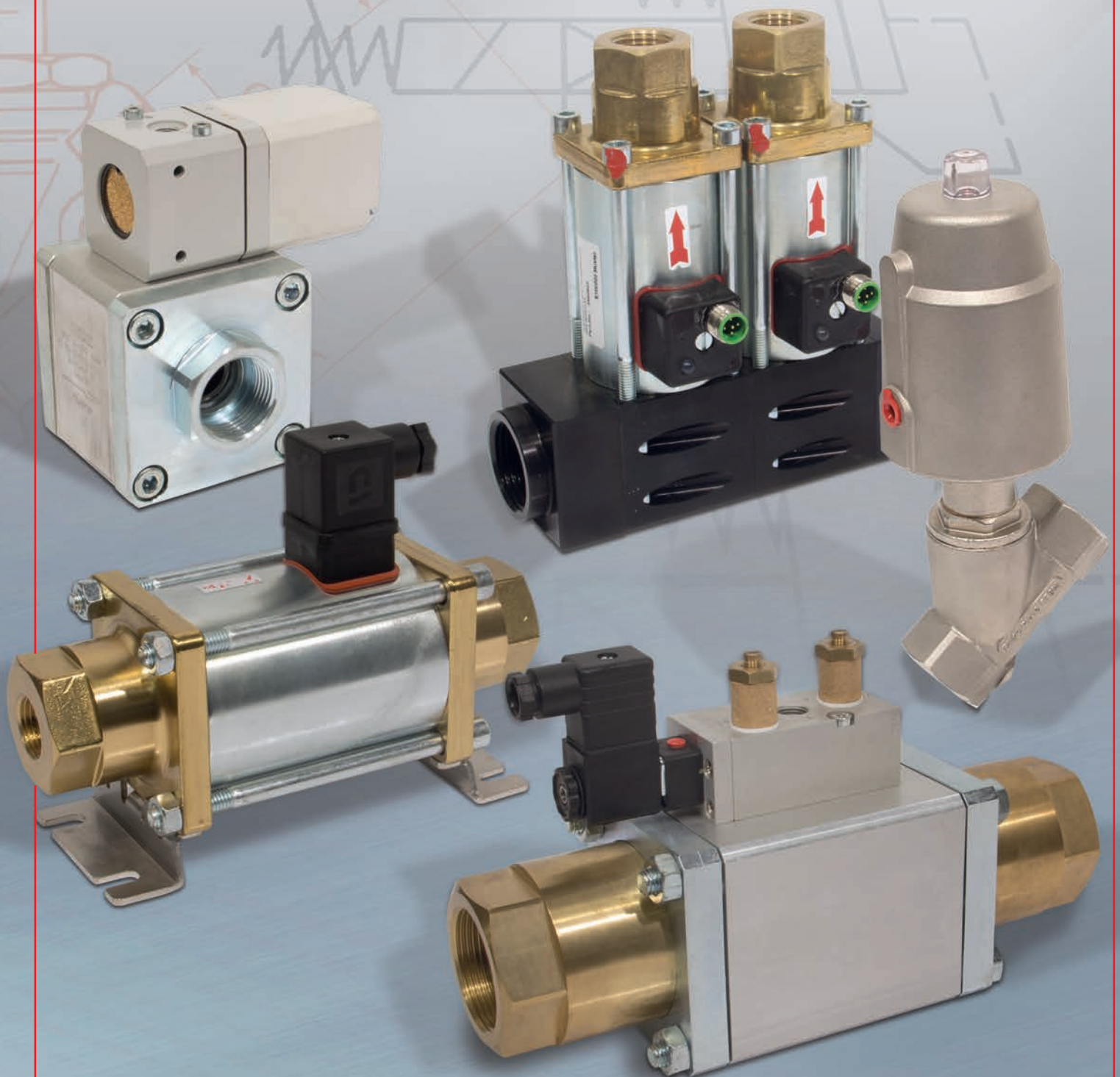
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E-Mail: accessories@hydac.com

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.

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.

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.






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Catalogue overview

	Valve type	Control system	Series / brochure no.	Page
Overview of switching cycles and switching times				309
	2/2-way Piston valves	Pilot operated	CXK01, CXK02 6.175	311
	2/2-way Coaxial valves	Direct acting	CX02, CX03, CX04, CX05 6.176	317
		Pilot operated	CX06, CX07, CX08, CX09 6.178	321
	3/2-way Coaxial valves	Direct acting	CX03, CX04 6.180	327
		Pilot operated	CX06, CX07 6.181	331
	2/2-way Coaxial valves Flange design	Direct acting	CX02F, CX03F, CX05F 6.183	335
		Pilot operated	CX06F, CX07F, CX08F 6.184	339
	2/2-way Coaxial valves Modular design	Direct acting	CX03M, CX04M, CX05M 6.177	343
		Pilot operated	CX06M, CX07M, CX08M 6.179	349
	2/2-way Coaxial valves Compact	Pilot operated	CXR 6.188	355
	2/2-way Coaxial valves Compact, modular design	Pilot operated	CX RM 6.189	359
	2/2-way Coaxial valves Compact, modular design	Pilot operated	CXC 6.190	365
	2/2-way Coaxial valves High pressure	Direct acting	CXH1, CXH2 6.182	369

Catalogue overview (continued)

	2/2-way Coaxial valves ATEX	Direct acting	CX EX D 6.186	373
	2/2-way Coaxial valves ATEX, modular design	Direct acting	CX MEX D 6.185	377
	3/2-way Coaxial valves ATEX	Direct acting	CX EX D 6.191	381
	2/2-way Pressure relief valves Coaxial design	Pilot operated	CX CBV D 6.172	385
	2/2-way Pressure relief valves Right angle design	Pilot operated	CX DBV D 6.173	391

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

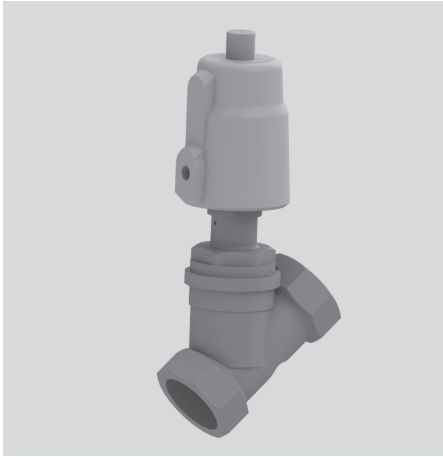
Overview of switching cycles and switching times for coaxial valves, pilot operated

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

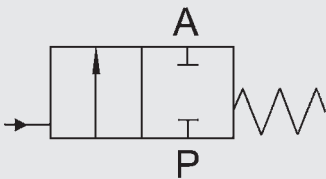
CX06M	2/2	0 - 64	Pilot operated	10	680	30 - 3000	50 - 3000
		0 - 64		15	600	50 - 3000	50 - 3000
		0 - 64		20	600	50 - 3000	50 - 3000
		0 - 64		25	600	50 - 3000	50 - 3000
		0 - 64		32	400	75 - 3000	75 - 3000
CX07M	2/2	0 - 120	Pilot operated	10	680	30 - 3000	50 - 3000
		0 - 120		15	600	50 - 3000	50 - 3000
		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

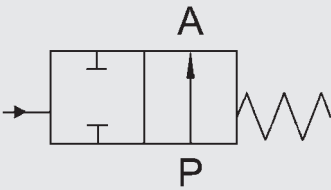


2/2-way piston valve CXX01 and CXX02

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

! 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)

CXX01 2/2 F C 3 15 025 012 PP

Designation

CXX01 = series CXX01 - closes with the flow
CXX02 = series CXX02 - closes against the flow

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

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 material (spindle/seat)

Red bronze
PP = PTFE / PTFE
Stainless steel
PF = PTFE / FKM

Technical specifications

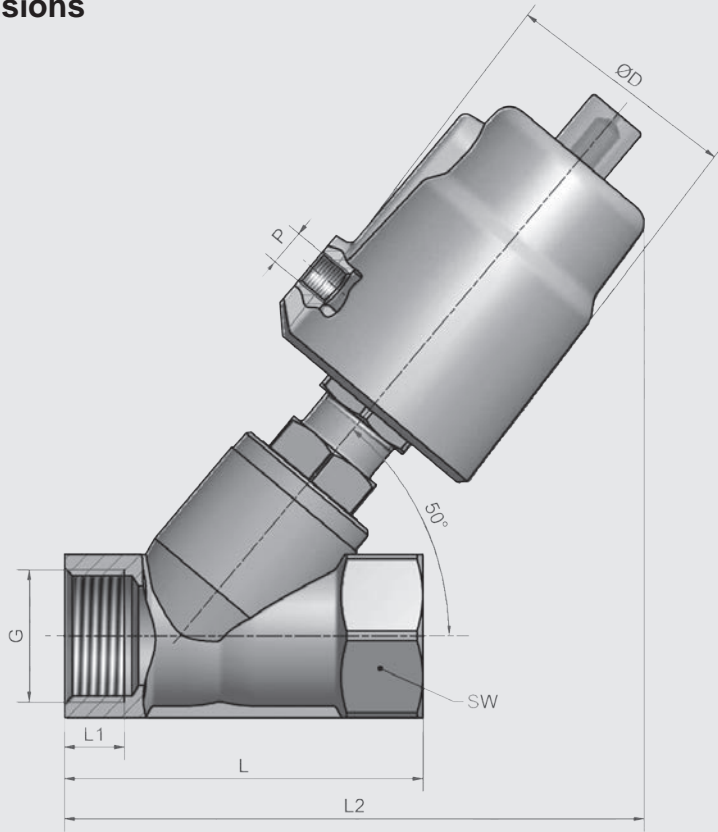
Nominal size	DN15 to DN50		
Pressure range	PN0 to PN25 (see table)		
Body material	Red bronze, stainless steel		
Seal material	Red bronze	Seat seal:	PTFE
		Spindle seal:	PTFE, optionally NBR
	Stainless steel	Seat seal:	FKM, optionally PTFE
		Spindle seal:	PTFE, optionally NBR
Flow rate	0 – approx. 792 l/min		
Medium temperature	-10 °C to +80 °C for NBR -40 °C to +200 °C for PTFE		
Ambient temperature	max. +60 °C		
Connections	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 ² /s	
Control medium	Medium	Neutral gases	
	Volume	Actuator size 50 mm 0.035 dm ³ Actuator size 80 mm 0.131 dm ³	
Control pressure	4 to 10 bar		
Pilot valve	optional 3/2-way pilot valve, with M12x1 connection possible		
Mounting position	No orientation restrictions		

Series	DN [mm]	Pressure		Connection	Kv value [m ³ /h]	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

⚠ The material specifications refer exclusively to the valve connection parts in contact with the medium.

Dimensions



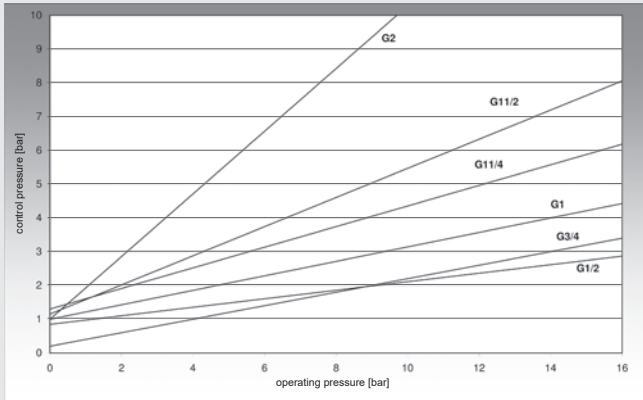
	Actuator Ø 50							Actuator Ø 80		
	G	1/2	3/4	1	1 1/4	1 1/2	2	1 1/4	1 1/2	2
Red bronze	ØD	62	62	62	62	62	62	94	94	94
	P	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8
	L	57	68	80	97	107	124	97	107	124
	L1	8	9	10.5	12.5	14.5	16.5	12.5	14.5	16.5
	L2	135	140	145	150	155	160	195	205	215
	SW	27	33	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
Stainless steel	ØD	62	62	62	62	62	62	94	94	94
	P	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	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

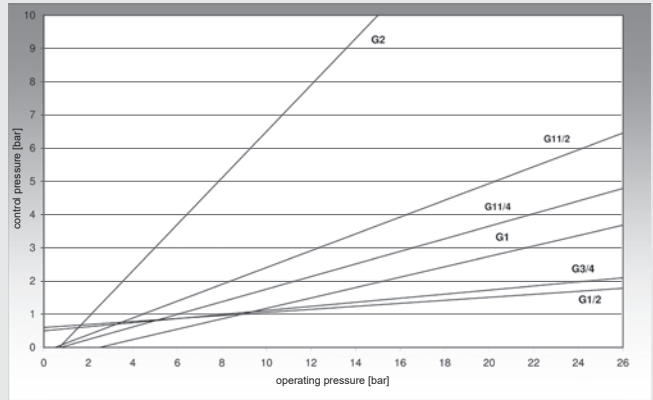
! The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

Operating pressure / control pressure graph

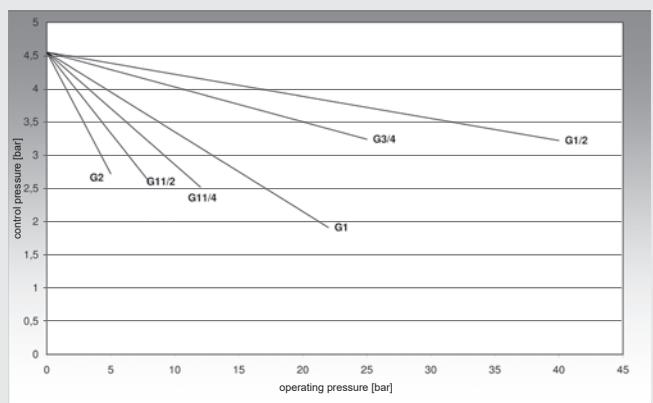
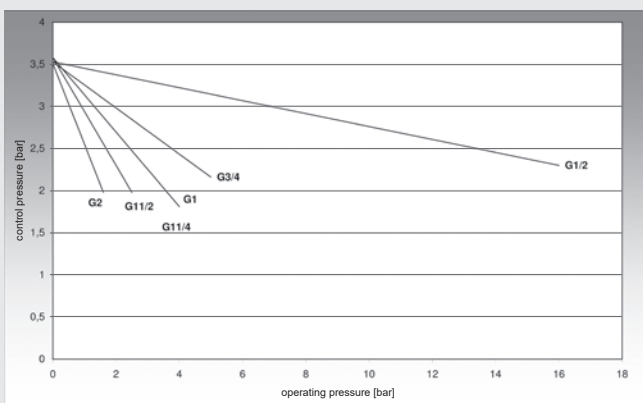
Actuator Ø 50 mm



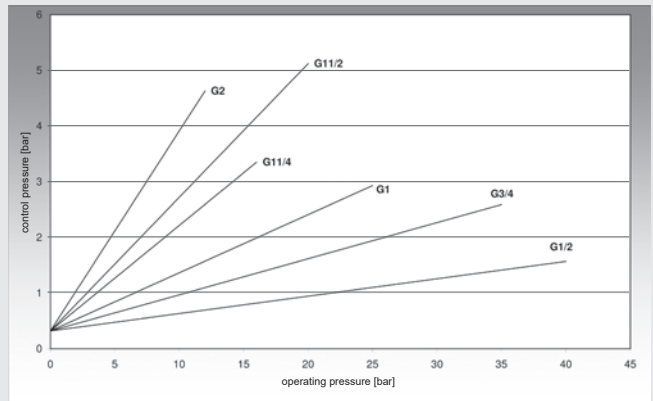
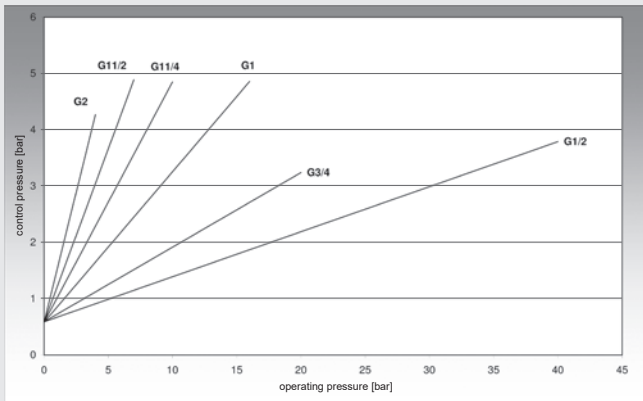
Actuator Ø 80 mm



CXK01 NC closes with the flow, normally closed

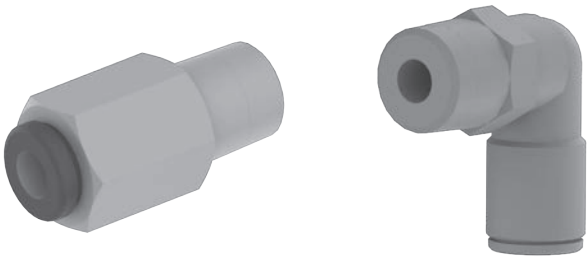
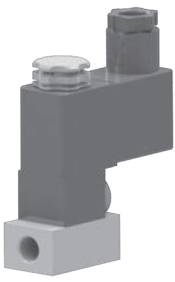


CXK02 NC closes against the flow, normally closed



CXK02 NO closes against the flow, normally open

Accessories

Threaded connections	
3/2-way pilot valve	

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

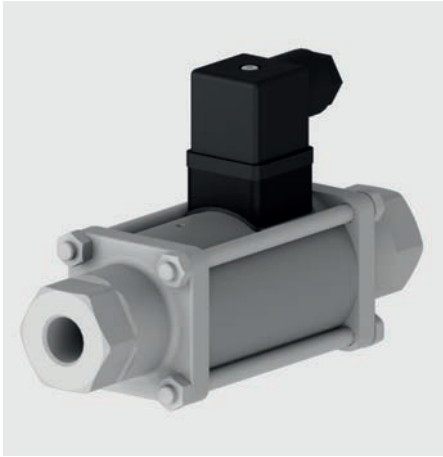
66280 Sulzbach/Saar

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

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

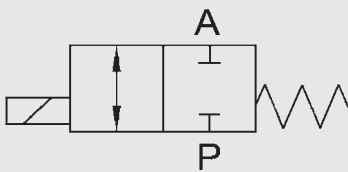
Internet: www.hydac.com

E-Mail: accessories@hydac.com

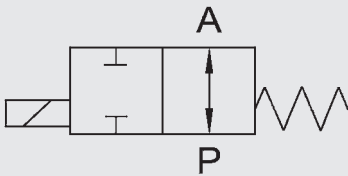


2/2-way coaxial valve CX02 to CX05 direct acting

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 = series CX02
CX03 = series CX03
CX04 = series CX04
CX05 = series CX05

Ways

2/2 = number of ways

Control

D = direct

Switching function

C = NC - closed when de-energised
O = NO - open when de-energised

Body material

1 = free from non-ferrous metals*
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 specifications

Control	2/2-way valve, direct acting	
Nominal size	DN 10 to DN 50	
Pressure range (see table)	CX02 – 2/2 DN10 - 32	PN 0 to PN 20
	CX03 – 2/2 DN10 - 32	PN 0 to PN 40
	CX03 – 2/2 DN40 - 50	PN 0 to PN 16
	CX04 – 2/2 DN10 - 32	PN 0 to PN 64
	CX05 – 2/2 DN10 - 32	PN 0 to PN 100
Connections (see table)	Threaded sleeve	
	Flange on request	
Body material	Sleeve version	Brass, nickel-coated brass, 1.4305, 1.4571 on request
	Flange version	
Valve seat (plastic on metal)	FKM	CX02 / CX03 / CX04
	PTFE	CX05
Material of seals	static:	FKM
	dynamic:	PTFE
Back-pressure resistant	up to 16 bar	
Vacuum	Leakage rate <10 ⁻⁶ mbar•l/s *	
Media	Gaseous, liquid, contaminated	
Abrasive operating fluids	On request	
Direction of flow	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

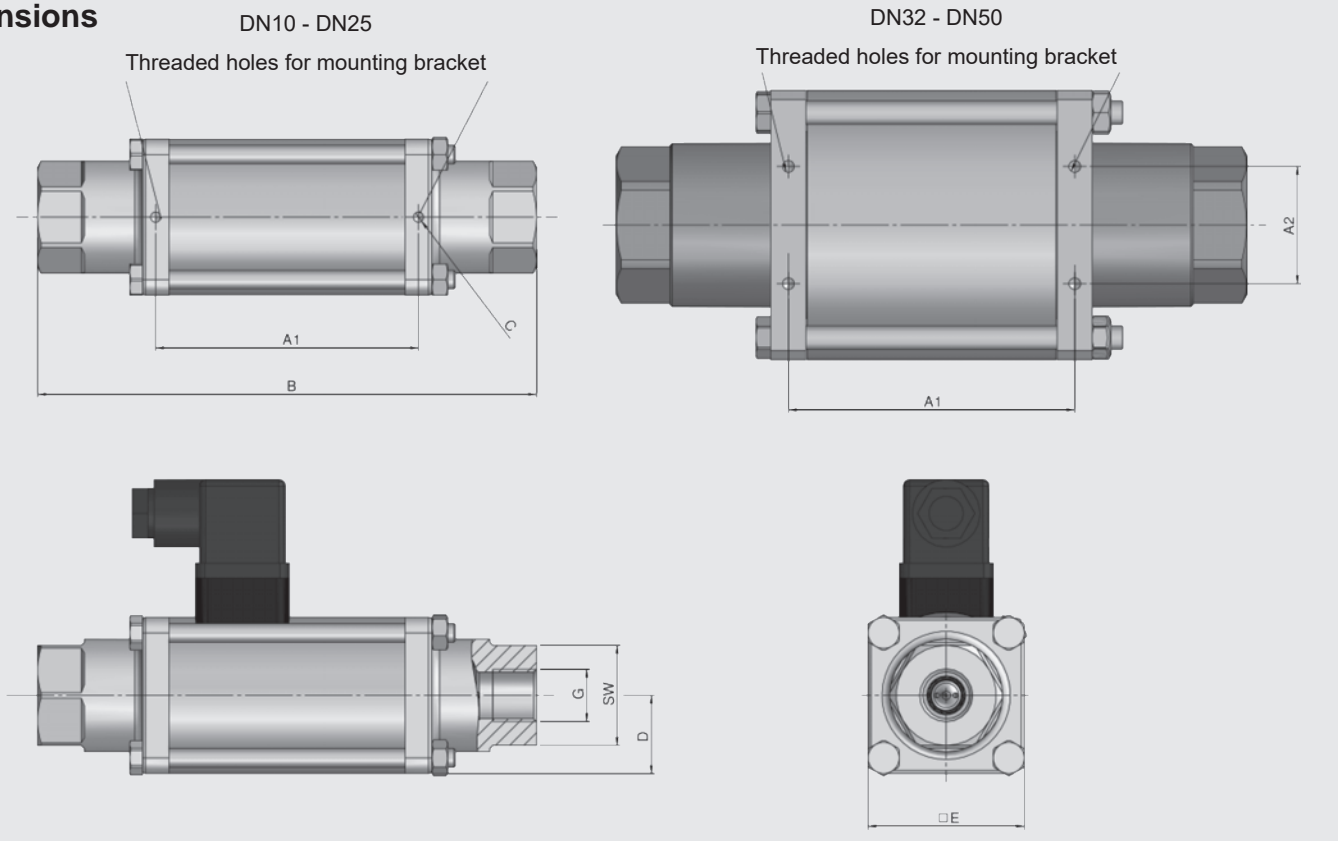
Supply voltage	DC: 24 V
	AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet
	AC: DC magnet with integrated rectifier
Connection	Connector plug to DIN EN 175301-803 type A
	Connector plug to DESINA M12x1 *
	illuminated plug with varistor *
Voltage tolerance	±10 % to VDE 0580
Duty cycle	100 % duty cycle
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.


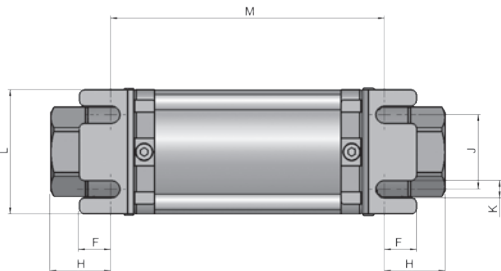
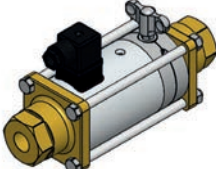
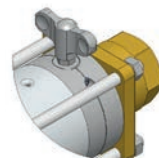
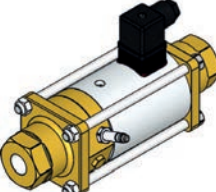
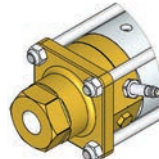
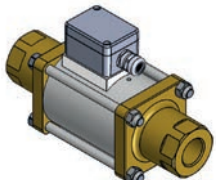
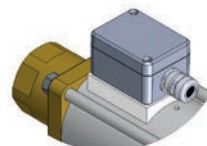
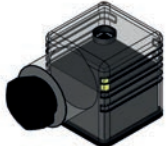
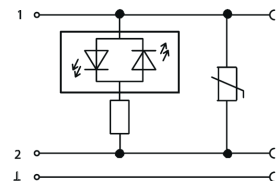
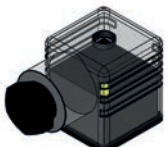

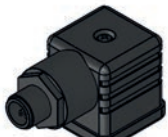
Series	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
CX02	10	0 – 20	G¼, G¾, G½	2.5	25	29	1.7
	15	0 – 20	G¾, G½, G¾	5.2	30	32	3.6
	20	0 – 20	G½, G¾, G1	7.0	34	42	5.4
	25	0 – 20	G¾, G1, G1¼	12.3	51	60	7.1
	32	0 – 20	G1, G1¼, G1½	20.0	73	76	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 (AF width)	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>Mounting bracket 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	
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	<p>Manual override mechanical option = HT</p>																																																									
	<p>Position indicator, inductive electrical option = 1I (open or closed) electrical option = 2I (open and closed)</p>																																																									
	<p>Terminal box Protection class: IP 65 PG11-screw connection electrical option = PG</p>																																																									
	<p>Female connector with LED electrical option = LED</p>																																																									
	<p>Female connector with power reduction 24 V DC Form A electrical option = LS</p>																																																									
	<p>Female connector M12x1 electrical option = M12</p>																																																									

We would be happy to discuss your requirements for further options and accessories.

NOTE

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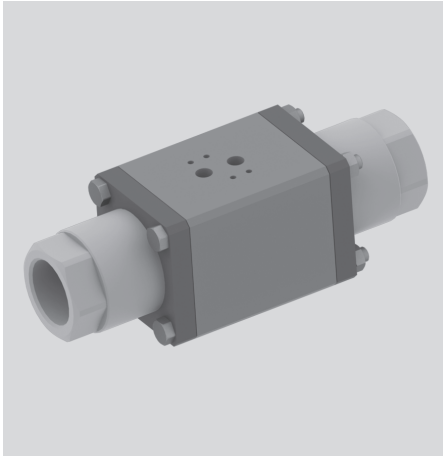
Tel.: +49 (0)6897 - 509-01

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

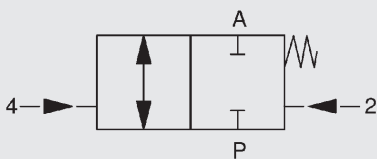
Internet: www.hydac.com

E-Mail: accessories@hydac.com

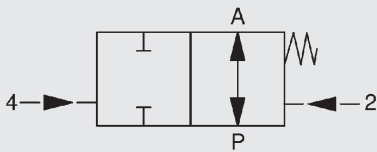
2/2-way coaxial valve CX06 to CX09 pilot operated



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 = series CX06
CX07 = series CX07
CX08 = series CX08
CX09 = series CX09

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 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 specifications


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 PN120
	CX07 – 2/2	DN 32 to DN 50	PN 0 to PN100
	CX08 – 2/2	DN 10 to DN 25	PN 0 to PN160
	CX09 – 2/2	DN 15	PN 0 to PN200
Connections (see table)	Threaded sleeve Flange on request		
Body material	Sleeve version Flange version	Brass, nickel-coated brass, 1.4305, 1.4571 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 ⁻⁶ mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	On request		
Direction of flow	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 ³ / stroke
Pilot ports 2+4	G ¹ / ₈ at DN 10
	G ¹ / ₄ 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 exhaust air throttle

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 specifications refer exclusively to the valve connection parts in contact with the medium. *optional

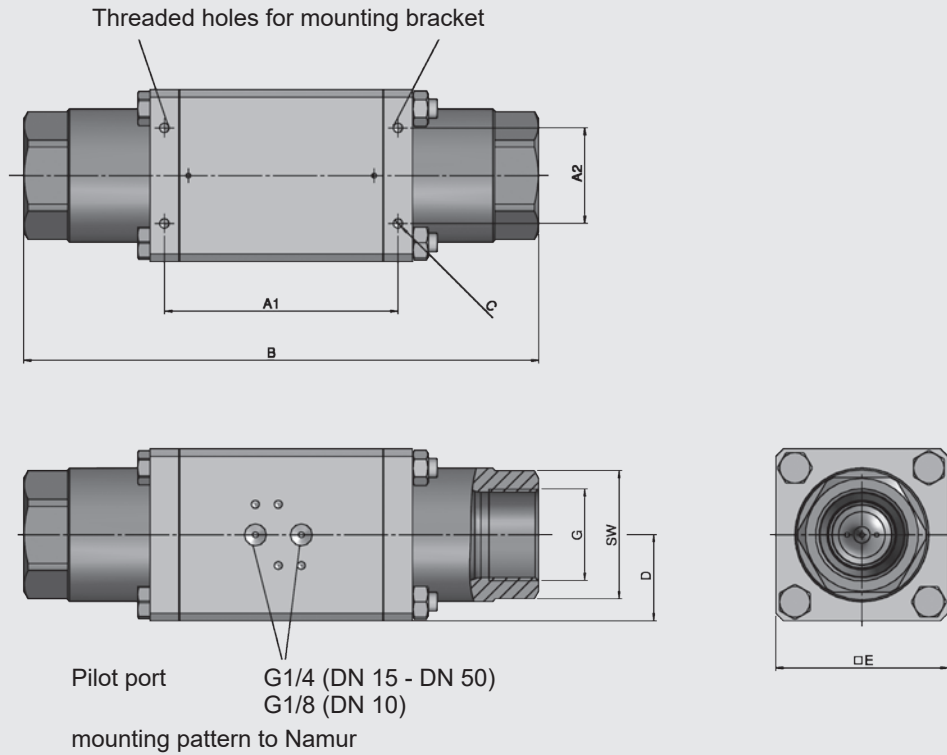
 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

Series	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h]	Weight [kg]
CX06	10	0 – 64	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.7	1.6
	15	0 – 64	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	7.2	2.8
	20	0 – 64	G ¹ / ₂ , G ³ / ₄ , G1	9.4	4.0
	25	0 – 64	G ³ / ₄ , G1, G1 ¹ / ₄	14.5	5.3
	32	0 – 64	G1, G1 ¹ / ₄ , G1 ¹ / ₂	20.0	6.9
	40	0 – 64	G1 ¹ / ₂	45.7	11.7
	50	0 – 64	G2	47.2	11.7
CX07	10	0 – 120	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.7	1.6
	15	0 – 120	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	7.2	2.8
	20	0 – 120	G ¹ / ₂ , G ³ / ₄ , G1	9.4	4.0
	25	0 – 120	G ³ / ₄ , G1, G1 ¹ / ₄	14.5	5.3
	32	0 – 100	G1, G1 ¹ / ₄ , G1 ¹ / ₂	20.0	6.9
	40	0 – 100	G1 ¹ / ₂	45.7	11.7
	50	0 – 100	G2	47.2	11.7
CX08	10	0 – 160	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.7	1.6
	15	0 – 160	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	7.2	2.8
	20	0 – 160	G ¹ / ₂ , G ³ / ₄ , G1	9.4	4.0
	25	0 – 160	G ³ / ₄ , G1, G1 ¹ / ₄	14.5	5.3
CX09	15	0 – 200	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	7.2	3.2

NOTICE: Inserting a maintenance unit upstream will increase the service life of the devices.

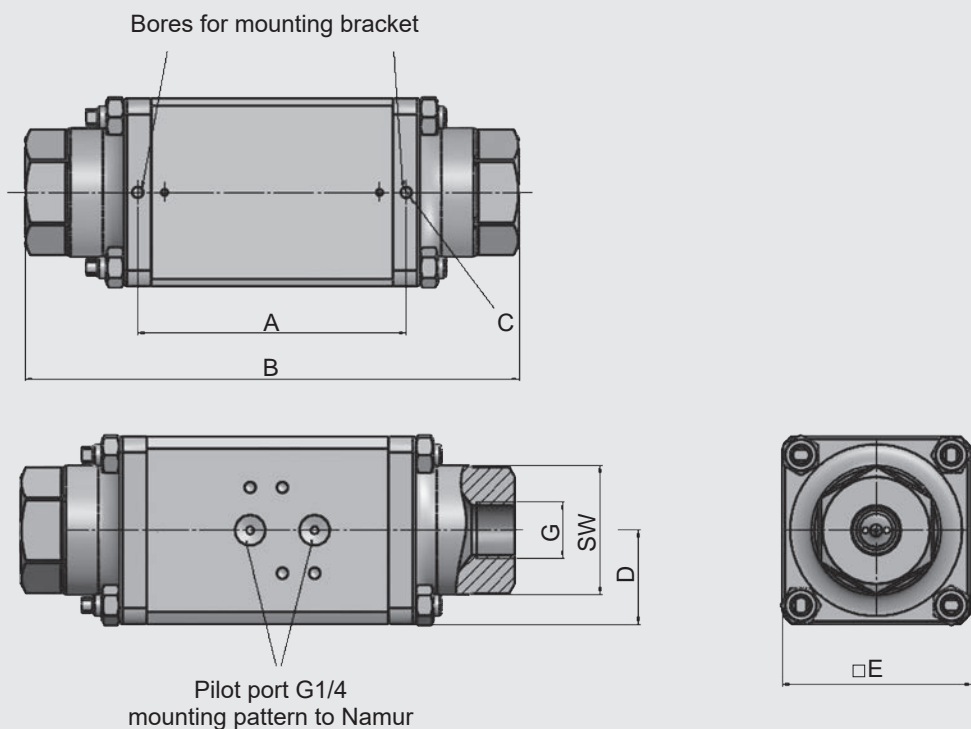
Dimensions

CX06 - CX08



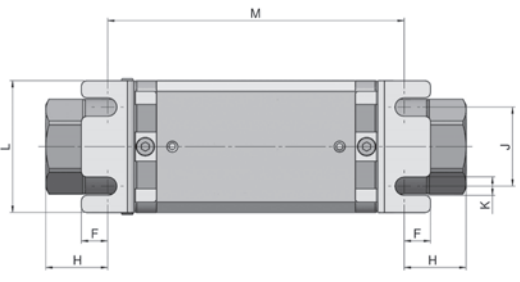
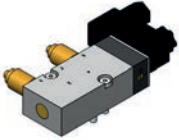
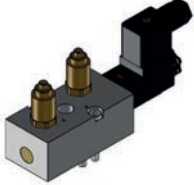
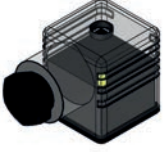
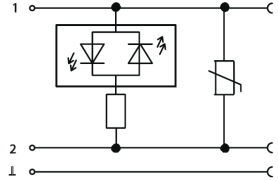
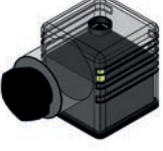

DN	G	SW (AF width)	A ₁ [mm]	A ₂ [mm]	B [mm]	C	D [mm]	E [mm]
10	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	32	84	–	159.5	M4	25	50
15	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	41	100	–	184	M5	35	70
20	G ¹ / ₂ , G ³ / ₄ , G1	46	108	–	215	M5	40	80
25	G ³ / ₄ , G1, G1 ¹ / ₄	55	121	–	246	M5	45	90
32	G1, G1 ¹ / ₄ , G1 ¹ / ₂	60	122	50	269	M6	45	90
40	G1 ¹ / ₂	75	131	60	304	M6	55	110
50	G2	75	131	60	304	M6	55	110

CX09



DN	G	SW (AF width)	A [mm]	B [mm]	C	D [mm]	E [mm]
15	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	50	100	184	M5	35	70

Accessories

	<p>Mounting bracket 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	
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	<p>Exhaust air throttle = DR</p>	<p>G1/8 G1/4</p>																																																								
	<p>Silencer in sintered bronze = SD</p>	<p>G1/8 G1/4</p>																																																								
	<p>Female connector with LED electrical option = LED</p>																																																									
	<p>Female connector with power reduction 24 V DC Form A electrical option = LS</p>																																																									
	<p>Special explosion protection II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = EX</p>	<p>Notice: 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.

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.

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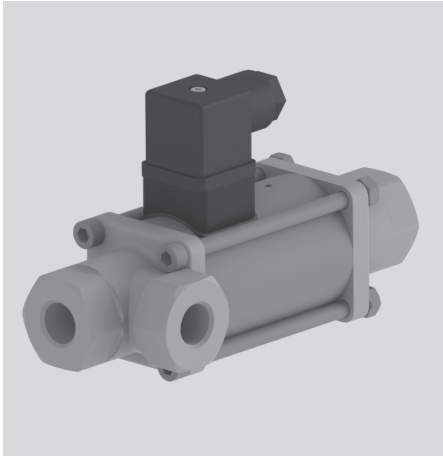
Tel.: +49 (0)6897 - 509-01

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

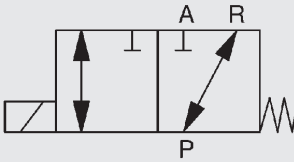
Internet: www.hydac.com

E-Mail: accessories@hydac.com

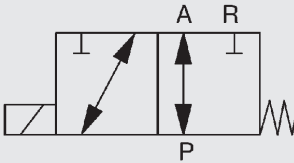
3/2-way coaxial valve CX03 and CX04 direct acting



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 = series CX03
CX04 = series CX04

Ways

3/2 = number of ways

Control

D = direct

Switching function

C = NC - closed when de-energised
O = NO - open when de-energised

Body material

1 = free from non-ferrous metals*
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 specifications

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
Connection (see table)	Female threaded connection		
Body 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 ⁻⁶ mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	On request		
Direction of flow	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

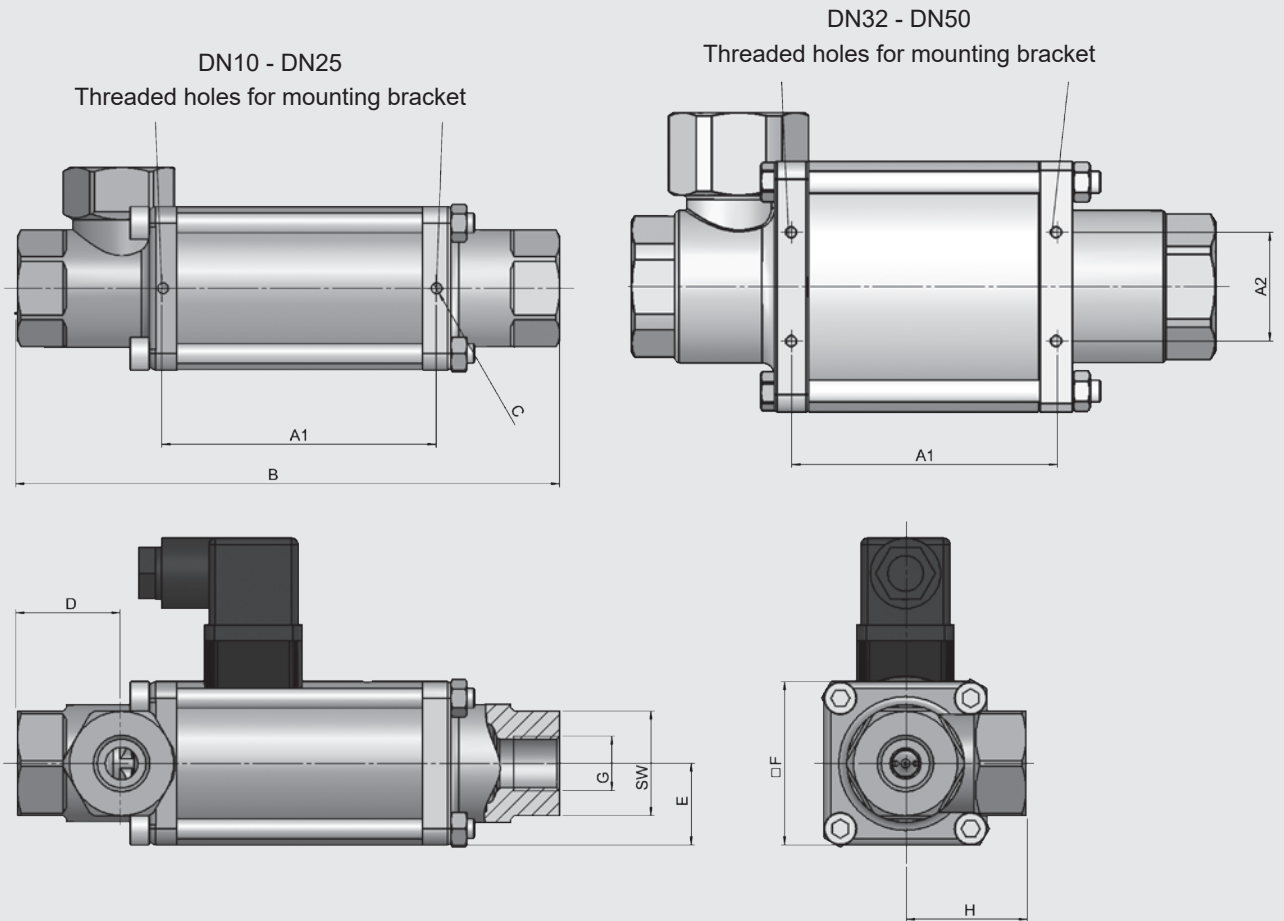
Supply voltage	DC: 24 V AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet AC: DC magnet with integrated rectifier
Connection	Connector plug to DIN EN 175301-803 type A Connector plug to DESINA M12x1 * illuminated plug with varistor *
Voltage tolerance	±10 % to VDE 0580
Duty cycle	100 % duty cycle
Protection class	IP 65 when fitted with connector plug

 The material specifications refer 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.


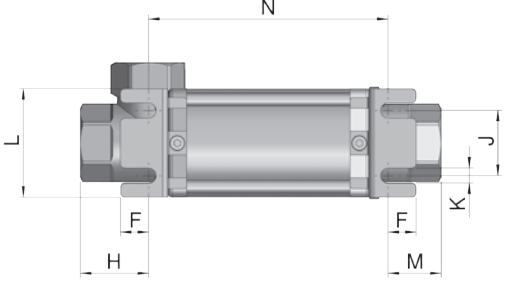
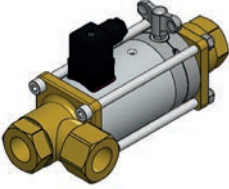
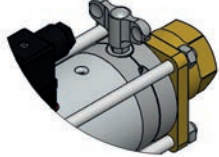
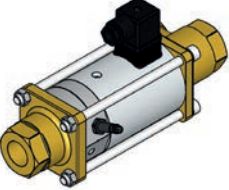
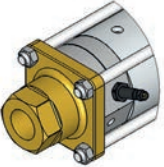
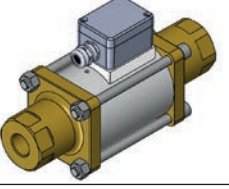
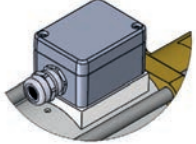
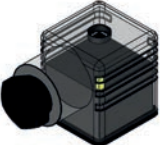
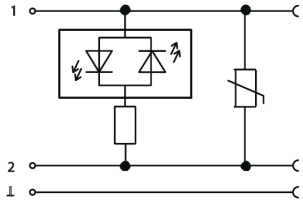
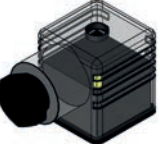


Series	DN [mm]	Pressure [bar]	Connection	Kv value [m ³ /h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
CX03	10	0 - 40	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.0	35	41	1.9
	15	0 - 40	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	5.6	40	45	4.0
	20	0 - 40	G ¹ / ₂ , G ³ / ₄ , G1	8.0	45	53	6.0
	25	0 - 40	G ³ / ₄ , G1, G1 ¹ / ₄	11.5	60	68	7.5
	32	0 - 40	G1, G1 ¹ / ₄ , G1 ¹ / ₂	17.9	73	76	13.4
	40	0 - 16	G1 ¹ / ₂	41.5	73	90	18.7
	50	0 - 16	G2	43.0	73	90	18.5
CX04	10	0 - 64	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.0	44	53	1.9
	15	0 - 64	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	5.6	50	55	4.0
	20	0 - 64	G ¹ / ₂ , G ³ / ₄ , G1	8.0	53	59	6.0
	25	0 - 64	G ³ / ₄ , G1, G1 ¹ / ₄	11.5	77	85	7.5
	32	0 - 64	G1, G1 ¹ / ₄ , G1 ¹ / ₂	17.9	73	76	13.4

Dimensions



DN	Connection	SW (AF width)	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>Mounting bracket 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	
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	<p>Manual override mechanical option = HT</p>																																																									
	<p>Position indicator, inductive electrical option = 1I (open or closed) electrical option = 2I (open and closed)</p>																																																									
	<p>Terminal box Protection class: IP 65 PG11-screw connection electrical option = PG</p>																																																									
	<p>Female connector with LED electrical option = LED</p>																																																									
	<p>Female connector with power reduction 24 V DC Form A electrical option = LS</p>																																																									
	<p>Female connector M12x1 electrical option = M12</p>																																																									

We would be happy to discuss your requirements for further options and accessories.

NOTE

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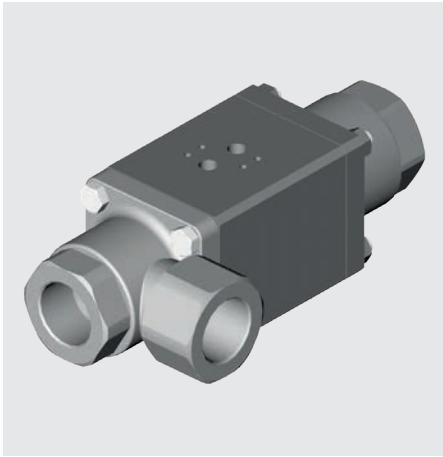
Tel.: +49 (0)6897 - 509-01

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

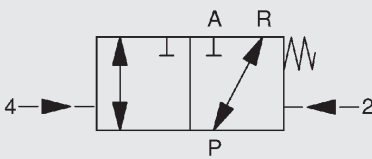
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E-Mail: accessories@hydac.com

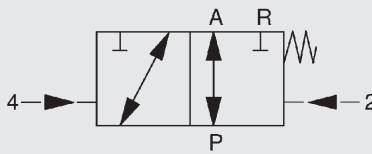
3/2-way coaxial valve CX06 and CX07 pilot operated



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
- Temperature of fluid
- 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 = series CX06
CX07 = series CX07

Ways

3/2 = 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 (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 specifications


Control	3/2-way valve, pilot operated		
Nominal size	DN 10 to DN 50		
Pressure range (see table)	CX06 – 3/2 CX07 – 3/2	PN 0 to PN 64 PN 0 to PN 100	
Connection	Female threaded connection		
Body material	Brass, nickel-coated brass, 1.4305, 1.4571 on request		
Material of seals	Static:	FKM	
	Dynamic:	FKM CX06 PTFE CX07	
	Seat seal:	PTFE	
Back-pressure resistant	up to 16 bar		
Vacuum	Leakage rate <10 ⁻⁶ mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	on request		
Direction of flow	P → A max. 100 bar P → R max. 100 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		
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 ³ / stroke		
Pilot ports 2+4	G ¹ / ₈ at DN 10 G ¹ / ₄ 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 exhaust air throttle		

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 specifications refer exclusively to the valve connection parts in contact with the medium. *optional

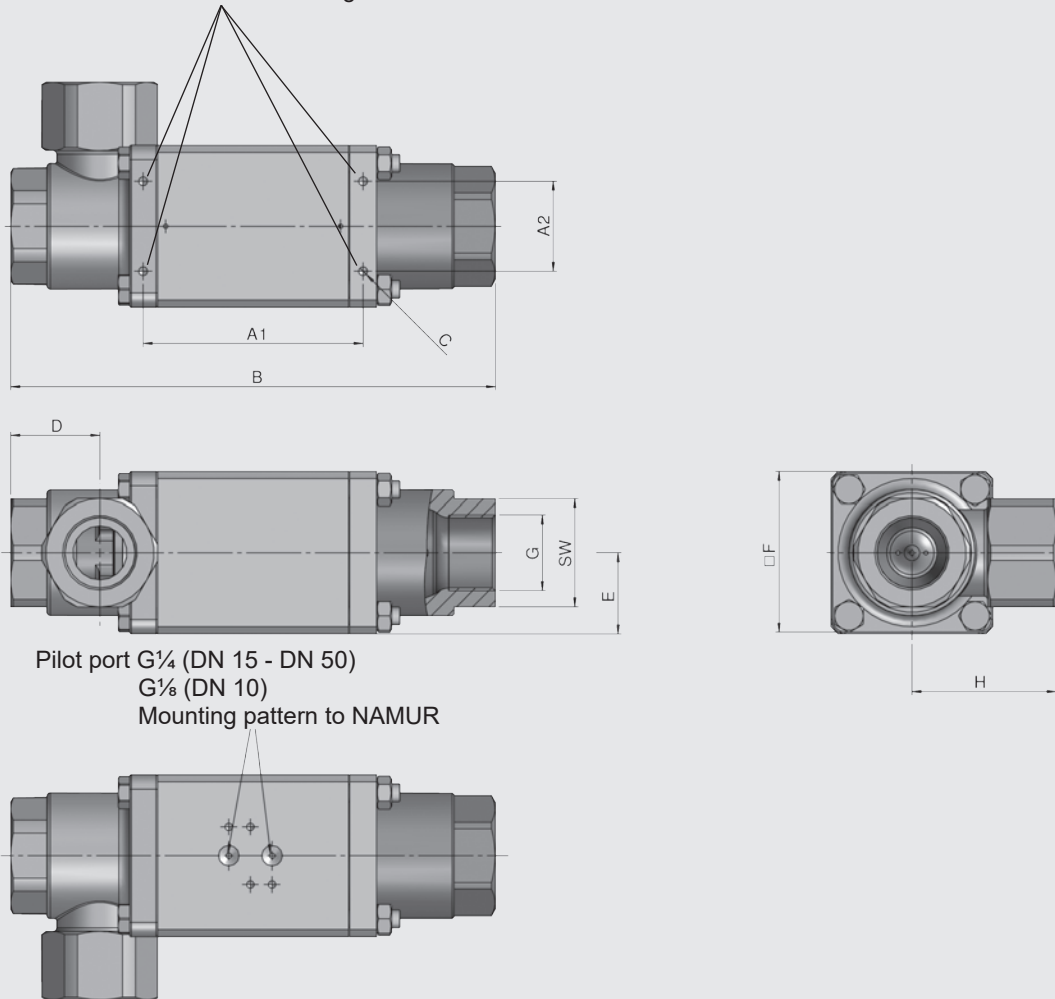
 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

Series	DN [mm]	Pressure [bar]	Connection	Kv value [m ³ /h]	Weight [kg]
CX06	10	0 – 64	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.5	1.8
	15	0 – 64	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	6.6	3.2
	20	0 – 64	G ¹ / ₂ , G ³ / ₄ , G1	10.0	4.6
	25	0 – 64	G ³ / ₄ , G1, G1 ¹ / ₄	12.2	6.5
	32	0 – 64	G1, G1 ¹ / ₄ , G1 ¹ / ₂	17.9	7.6
	40	0 – 64	G 1 ¹ / ₂	41.5	12.1
CX07	10	0 – 100	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.5	1.8
	15	0 – 100	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	6.6	3.2
	20	0 – 100	G ¹ / ₂ , G ³ / ₄ , G1	10.0	4.6
	25	0 – 100	G ³ / ₄ , G1, G1 ¹ / ₄	12.2	6.5
	32	0 – 100	G1, G1 ¹ / ₄ , G1 ¹ / ₂	17.9	7.6
	40	0 – 100	G 1 ¹ / ₂	41.5	12.1
	50	0 – 100	G 2	43.0	12.1

NOTICE: Inserting a maintenance unit upstream will increase the service life of the devices.


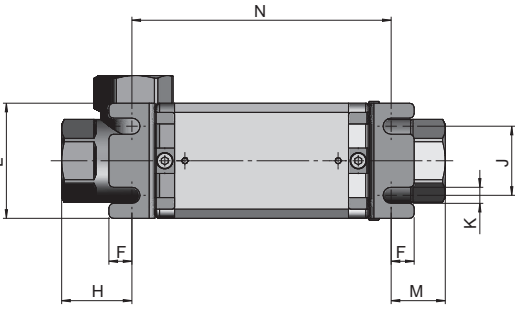
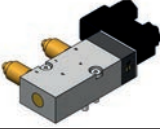
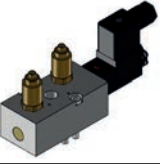




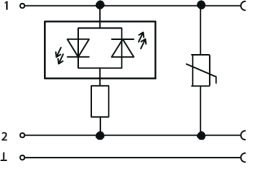



Dimensions

Threaded holes for mounting bracket



DN	G	SW (AF width)	A ₁ [mm]	A ₂ [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]
10	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	32	84	–	166.5	M4	32	25	50	37
15	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	41	100	–	200	M5	38.5	35	70	60
20	G ¹ / ₂ , G ³ / ₄ , G1	46	108	–	228	M5	45.5	40	80	72
25	G ³ / ₄ , G1, G1 ¹ / ₄	55	121	–	252	M5	48	45	90	80
32	G1, G1 ¹ / ₄ , G1 ¹ / ₂	60	122	50	269	M6	49.5	45	90	80
40	G1 ¹ / ₂	75	131	60	304	M6	56.5	55	110	84
50	G2	75	131	60	304	M6	56.5	55	110	84

Accessories

	<p>Mounting bracket 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]																																																				
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25	16	40	60	8.5	90	178																																																				
32	6	37	78	6.5	115	195																																																				
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	<p>Exhaust air throttle = DR</p>	<p>G1/8 G1/4</p>																																																								
	<p>Silencer in sintered bronze = SD</p>	<p>G1/8 G1/4</p>																																																								
	<p>Female connector with LED electrical option = LED</p>																																																									
	<p>Female connector with power reduction 24 V DC Form A electrical option = LS</p>																																																									
	<p>Special explosion protection II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = EX</p>	<p>Notice: 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.

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.

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Hirschbachstr. 2

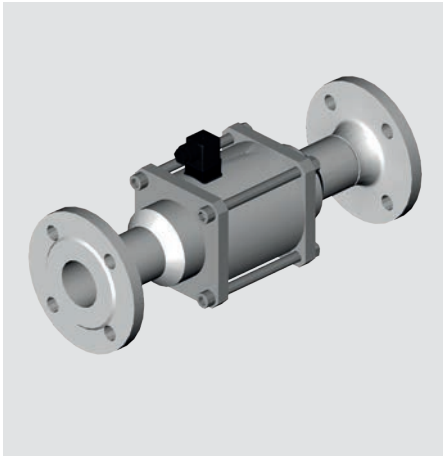
66280 Sulzbach/Saar

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

Internet: www.hydac.com

E-Mail: accessories@hydac.com



2/2-way coaxial valve

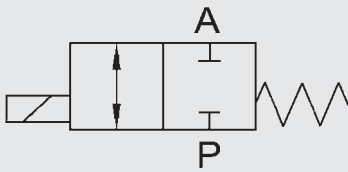
CX03F to CX05F direct acting

Flange version

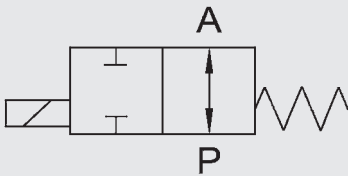
Model code
(also example order)

CX03F 2/2 D C 2 20 016 24V ...

Switching function



NC (closed when de-energised)



NO (open when de-energised)

Order data

- Nominal size
- Connection
- NC/NO function
- Operating pressure
- Flow rate
- Fluid
- Temperature of fluid
- 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 = series CX03F
CX05F = series CX05F

Ways

2/2 = number of ways

Control

D = direct

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 = PN16 CX03F
- 040 = PN40 CX03F
- 100 = PN100 CX05F

Supply voltage

- 24V = 24 V DC
 - 230V = 230 V AC 40 - 60 Hz
- Special voltages on request!

Options

see accessories


*optional

Technical specifications

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
Connection	Flange
Body 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^{-6} 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*

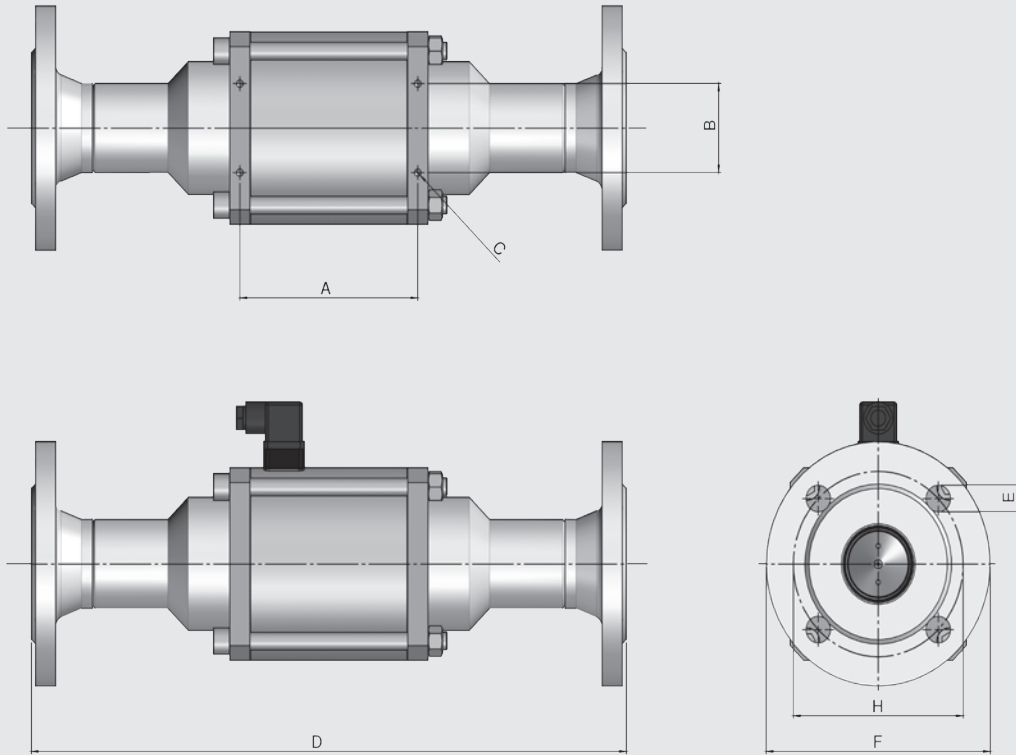
Electrical part

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 % duty cycle
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

Dimensions


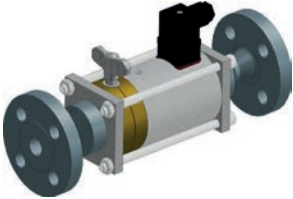
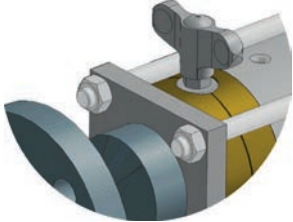
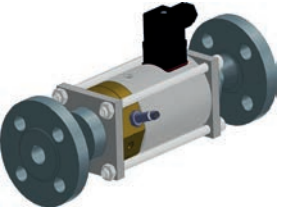
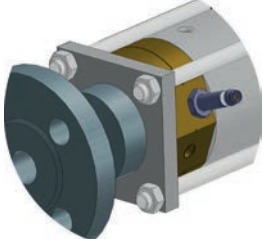
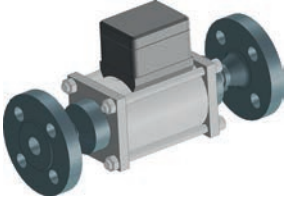
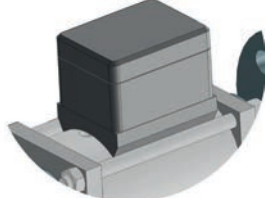
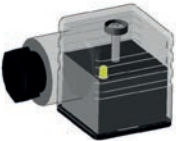
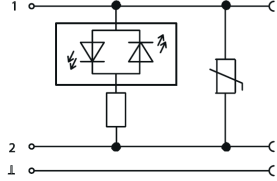
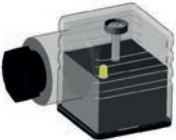
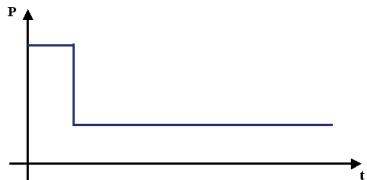
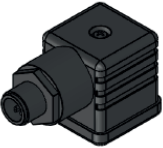


Series	Flange standard		PN	DN (Flange)	DN (Valve)	Pressure [bar]	Kv value [m³/h]	Power consumption [W]		A [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]	Weight [kg]
	DIN	EN						24 V DC	230 V 50 Hz								
CX03F	2633	-	16	15	15	0 - 16	5.2	40	45	100	-	M5	242	14	95	65	4.4
	2633	-	16	20	20	0 - 16	7.0	45	53	108	-	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

Notice: 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>Mounting brackets (on request) mechanical option = HW</p>	
	<p>Manual override mechanical option = HT</p>	
	<p>Position indicator, inductive electrical option = 1I (open or closed) electrical option = 2I (open and closed)</p>	
	<p>Terminal box Protection class: IP 65 PG11 gland electrical option = PG</p>	
	<p>Female connector with LED electrical option = LED</p>	
	<p>Female connector with power reduction 24 V DC Form A electrical option = LS</p>	
	<p>Female connector M12x1 electrical option = M12</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.

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.

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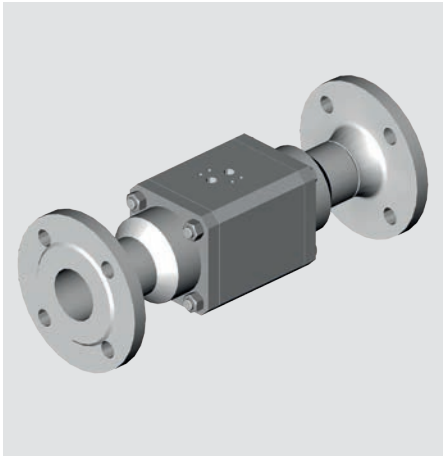
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E-Mail: accessories@hydac.com



2/2-way coaxial valve

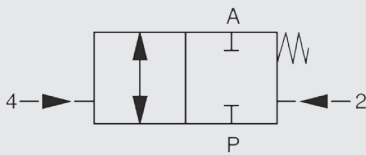
CX06F to CX08F pilot operated

Flange version

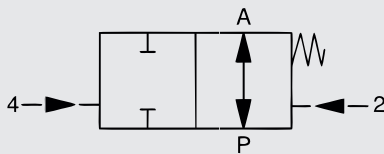
Model code
(also example order)

CX06F 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
- Fluid
- Fluid 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 = series CX06F
CX07F = series CX07F
CX08F = series CX08F

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 = PN16 CX06F
040 = PN40 CX06F
063 = PN63 CX06F
064 = PN64 CX06F
100 = PN100 CX07F
160 = PN160 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		
Body 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 < 10 ⁻⁶ mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	On request		
Direction of flow	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 ³ / stroke
Pilot ports 2+4	G ¹ / ₄ (DN 15 - 50), G ¹ / ₈ (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 exhaust air throttle

Note: Connecting an air line filter / water trap upstream will extend the service life of the valves

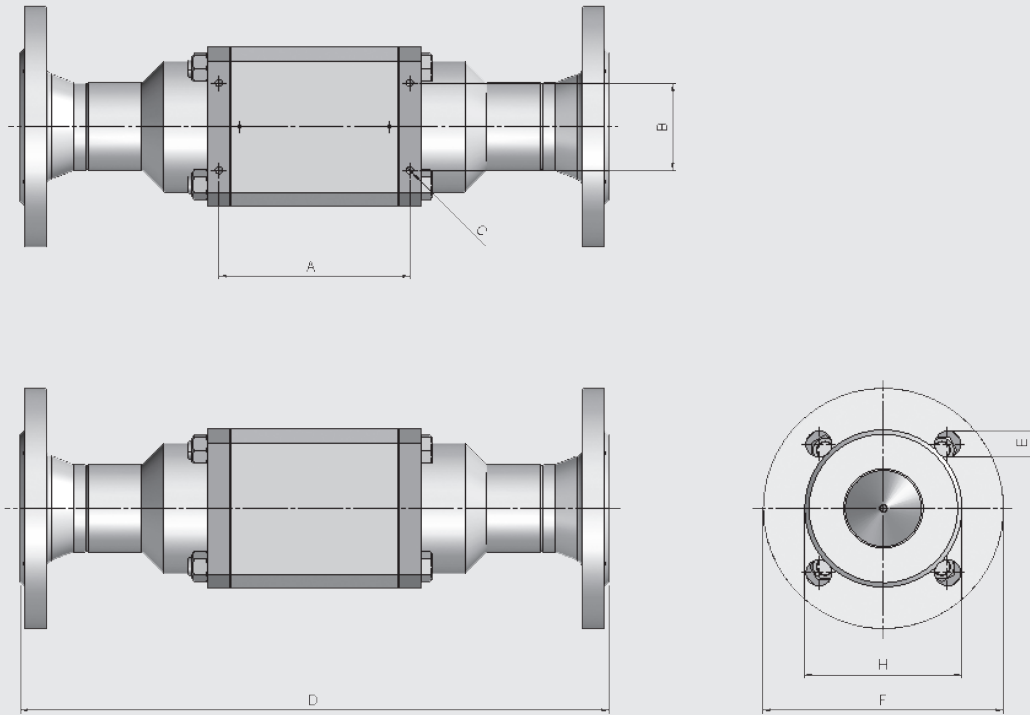
Electrical part

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 % duty cycle
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

Dimensions


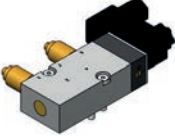
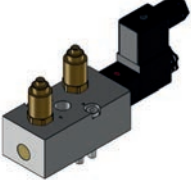
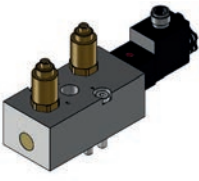


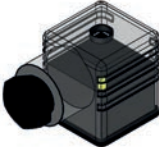
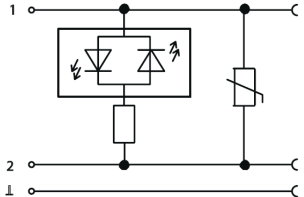
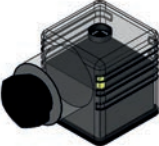




Series	Flange standard		PN	DN (Flange)	DN (Valve)	Pressure [bar]	Kv value [m³/h]	a [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]	Weight [kg]
	DIN	EN													
CX06F	2633	-	16	15	15	0 - 16	6.6	100	-	M5	242	14	95	65	3.6
	2633	-	16	20	20	0 - 16	9.4	108	-	M5	269	14	105	75	5.4
	2633	-	16	25	25	0 - 16	14.5	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>Mounting bracket mechanical option = HW</p>	<p>On request</p>
	<p>5/2-way pilot valve (NAMUR) for flange-mounting = PV</p>	<p>Connections on side 24V DC 230V 50Hz</p>
	<p>5/2-way pilot valve (NAMUR) for flange-mounting = PV</p>	<p>Connections on top 24V DC 230V 50Hz</p>
	<p>5/2-way pilot valve (NAMUR) for flange-mounting = PV</p>	<p>Connections on top Solenoid M12x1 24V DC 230V 50Hz</p>
	<p>Exhaust air throttle = DR</p>	<p>G$\frac{1}{8}$ G$\frac{1}{4}$</p>
	<p>Silencer in sintered bronze = SD</p>	<p>G$\frac{1}{8}$ G$\frac{1}{4}$</p>
	<p>Female connector with LED electrical option = LED</p>	
	<p>Female connector with power reduction 24 V DC Form A electrical option = LS</p>	
	<p>Special explosion protection II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = EX</p>	<p>Note: 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.

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.

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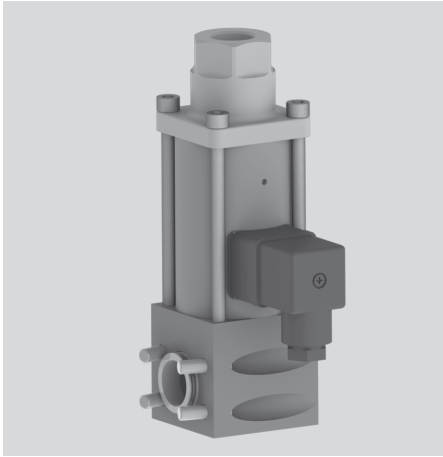
Tel.: +49 (0)6897 - 509-01

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

Internet: www.hydac.com

E-Mail: accessories@hydac.com

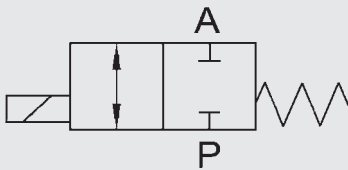
2/2-way coaxial valve CX03M to CX05M direct acting



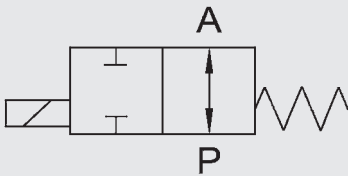
Model code
(also example order)

CX03M 2/2 D C 2 10 040 014 24V

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.

Designation

CX03M = modular series CX03M
CX04M = modular series CX04M
CX05M = modular series CX05M

Ways

2/2 = number of ways

Control

D = direct

Switching function

C = NC - closed when de-energised
O = NO - open when de-energised*

Body 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 = 24 V DC
230V = 230 V AC 40-60 Hz
Special voltage on request


*optional


Technical specifications

Control	2/2-way valve, direct acting	
Nominal size	DN 10 to DN 50	
Pressure range (see table)	CX03M – 2/2 CX04M – 2/2 CX05M – 2/2	PN 0 to PN 40 PN 0 to PN 64 PN 0 to PN 100
Connections	Valve: Block:	G ¼ - G 2 G ½ - G 2½
Body material	Single valve: Block:	Brass Aluminium
Valve seat (plastic on metal)	FKM PTFE	CX03M / CX04M CX05M
Material of seals	static: dynamic:	FKM PTFE
Back-pressure resistant	up to 16 bar	
Vacuum	Leakage rate < 10 ⁻⁶ mbar•l/s *	
Media	Gaseous, liquid, contaminated	
Abrasive operating fluids	On request	
Direction of flow	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

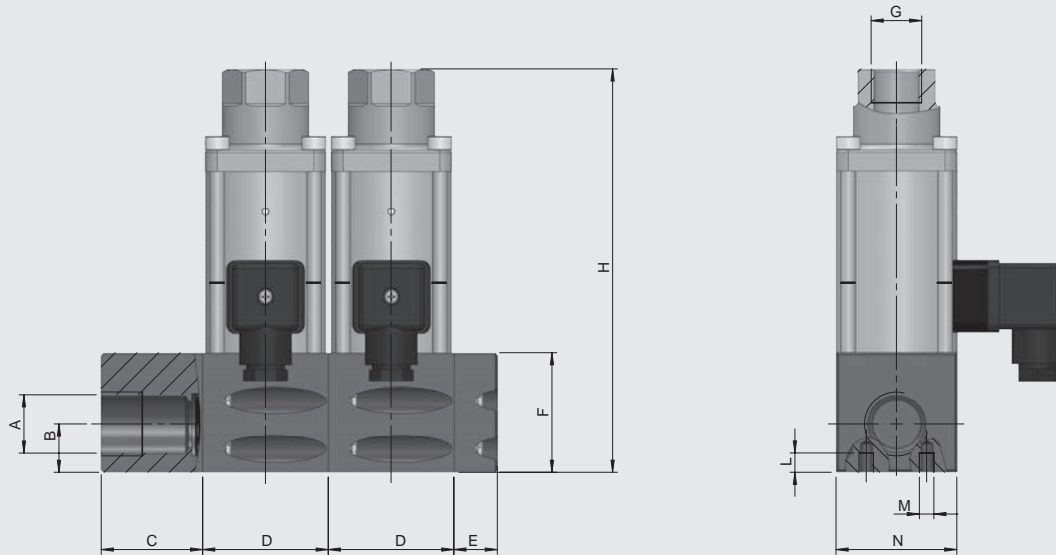
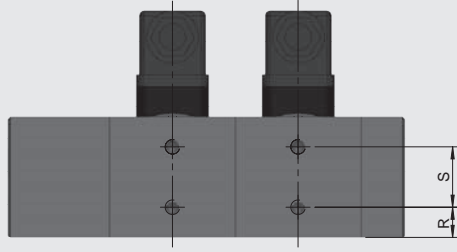
Supply voltage	DC: 24 V AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet AC: DC magnet with integrated rectifier
Connection	Connector plug to DIN EN 175301-803 type A Connector plug to DESINA M12x1 * illuminated plug with varistor *
Voltage tolerance	±10 % to VDE 0580
Duty cycle	100 % duty cycle
Protection 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.





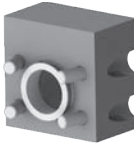
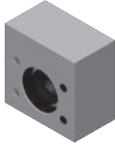

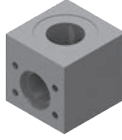
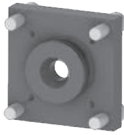
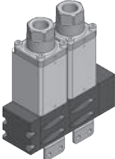

Series	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h]	Power consumption [W]		Weight [kg]
					24V	230 V 50 Hz	
CX03M	10	0 - 40	G¼, G¾, G½	2.5	35	41	1.7
	15	0 - 40	G¾, G½, G¾	5.2	40	45	3.6
	20	0 - 40	G½, G¾, G1	7.0	45	53	5.4
	25	0 - 40	G¾, G1, G1¼	12.3	60	68	7.1
	32	0 - 40	G1, G1¼, G1½	20.0	73	76	12.6
	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

Dimensions




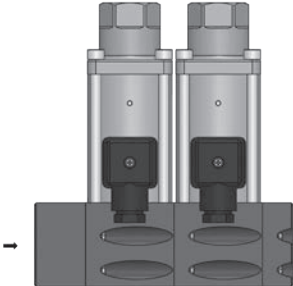
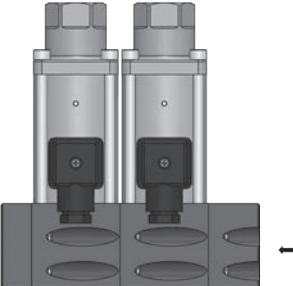
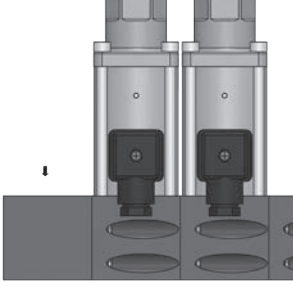
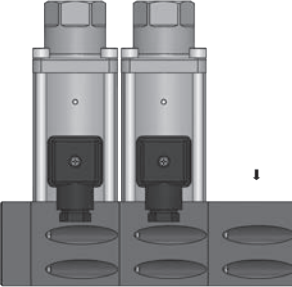
DN	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	G	L [mm]	M [mm]	N [mm]	R [mm]	S [mm]
10	G $\frac{1}{2}$, G $\frac{3}{4}$, G1	20	42	52	18	49.5	167	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	8	M6	50	13	25
15	G $\frac{1}{2}$, G $\frac{3}{4}$, G1, G1 $\frac{1}{4}$	28	42	72	27	69.5	207	G $\frac{3}{8}$, 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

Joining parts	Separating plate	
	Spacer	
End caps	End cap, right	
	End cap, left	
Connecting blocks	Connecting block, right	
	Connecting block, left	
	Connecting block, right angled version G1 on top DN10	
	Connecting block, left angled version G1 on top DN10	
Reducing adapter	Reducing adapter	
Mounting bracket		

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.

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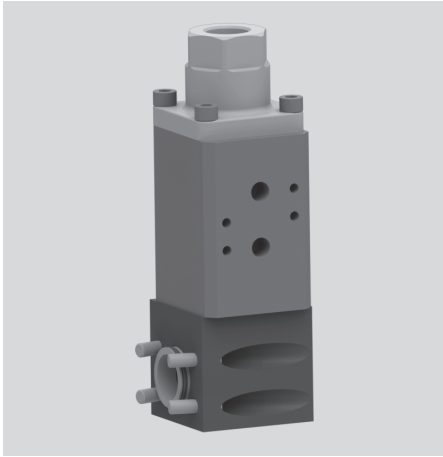
Tel.: +49 (0)6897 - 509-01

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

Internet: www.hydac.com

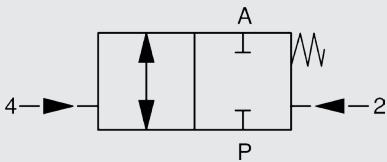
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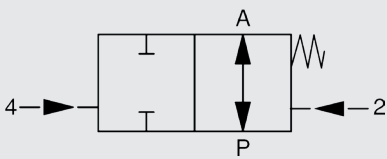


2/2-way coaxial valve CX06M to CX08M pilot operated

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 = modular series CX06M
CX07M = modular series CX07M
CX08M = modular series CX08M

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

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 specifications


Control	2/2-way valve, pilot operated		
Nominal size	DN10 to DN50		
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
Connections	Valve:	G $\frac{1}{4}$ - G2	
	Block:	G $\frac{1}{2}$ - G2 $\frac{1}{2}$	
Body material	Single valve:	brass	
	Block:	aluminium	
Material of seals	Static:	FKM	
	Dynamic:	FKM / CX06M PTFE / CX07M, CX08M	
	Seat seal:	PTFE	
Back-pressure resistant	Up to 16 bar		
Vacuum	Leakage rate < 10 ⁻⁶ mbar•l/s *		
Media	Gaseous, liquid, contaminated		
Abrasive operating fluids	On request		
Direction of flow	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 ³ / stroke
Pilot ports 2+4	G $\frac{1}{8}$ at DN10
	G $\frac{1}{4}$ at DN15 to DN50
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 exhaust air throttle (option)

Electrical part (for pilot valve option)

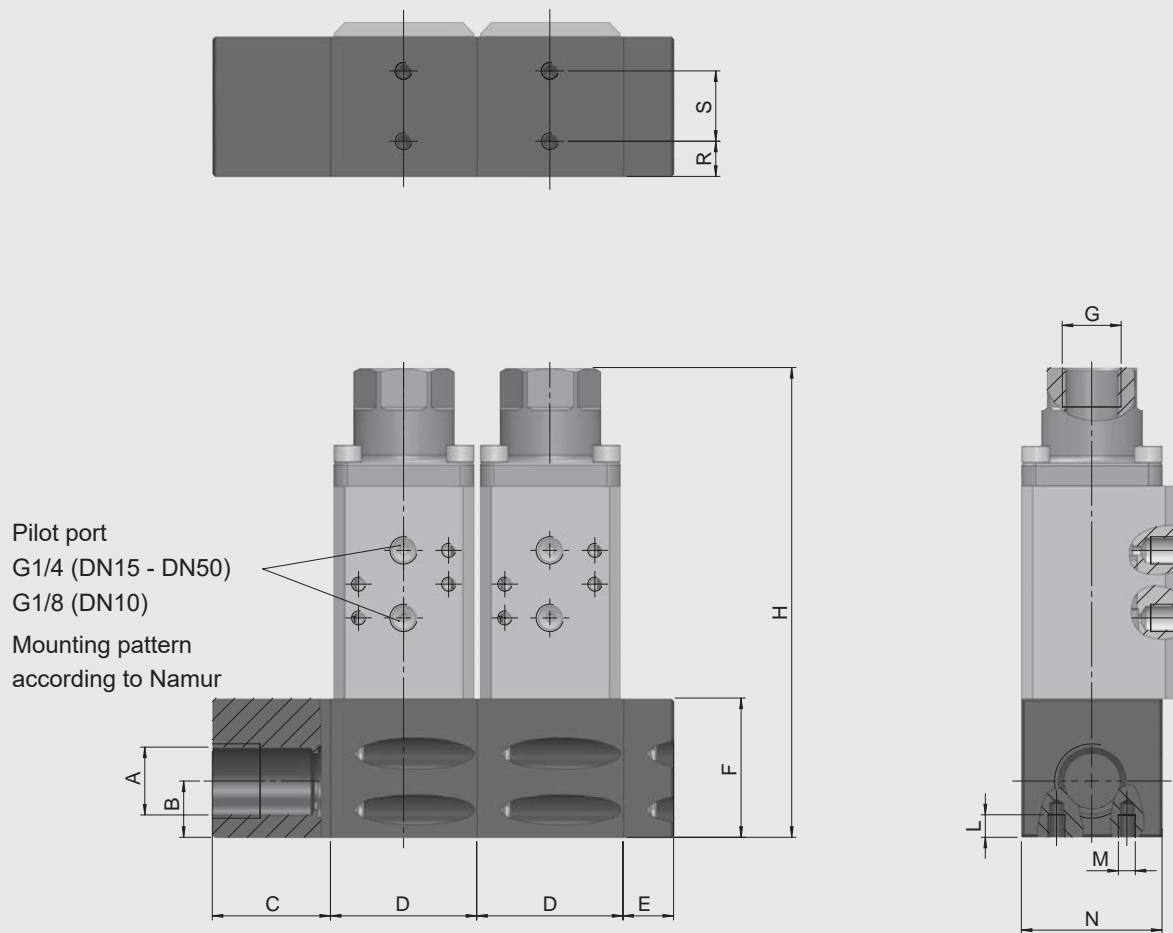
Supply voltage	DC: 24 V
	AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet
	AC: DC magnet with integrated rectifier
Connection	Connector plug to industrial standard, model B
	Connector plug to DESINA M12x1 *
	Connector with LED (transparent housing) with varistor*
Voltage tolerance	±10 % to VDE 0580
Duty 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.





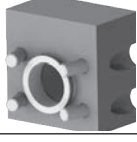
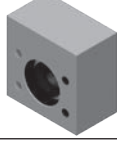

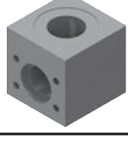
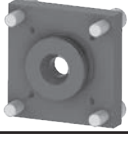
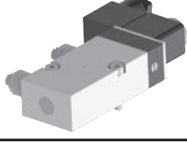
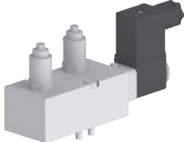
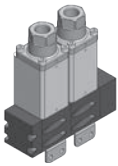

Series	DN [mm]	Pressure [bar]	Connection	Kv value [m ³ /h]	Weight [kg]
CX06M	10	0 - 64	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.7	1.5
	15	0 - 64	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	7.2	3.2
	20	0 - 64	G ¹ / ₂ , G ³ / ₄ , G1	9.4	4.0
	25	0 - 64	G ³ / ₄ , G1, G1 ¹ / ₄	14.5	5.3
	32	0 - 64	G1, G1 ¹ / ₄ , G1 ¹ / ₂	20.0	6.9
	40	0 - 64	G1 ¹ / ₂	45.7	11.7
	50	0 - 64	G2	47.2	11.7
CX07M	10	0 - 120	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.7	1.5
	15	0 - 120	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	7.2	3.2
	20	0 - 120	G ¹ / ₂ , G ³ / ₄ , G1	9.4	4.0
	25	0 - 120	G ³ / ₄ , G1, G1 ¹ / ₄	14.5	5.3
	32	0 - 100	G1, G1 ¹ / ₄ , G1 ¹ / ₂	20.0	6.9
	40	0 - 100	G1 ¹ / ₂	45.7	11.7
	50	0 - 100	G2	47.2	11.7
CX08M	10	0 - 160	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.7	1.5
	15	0 - 160	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	7.2	3.2
	20	0 - 160	G ¹ / ₂ , G ³ / ₄ , G1	9.4	4.0
	25	0 - 160	G ³ / ₄ , G1, G1 ¹ / ₄	14.5	5.3

Dimensions




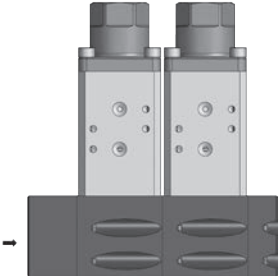
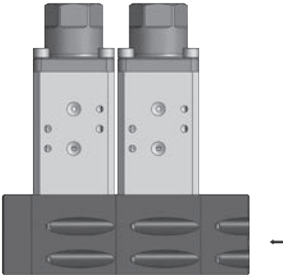
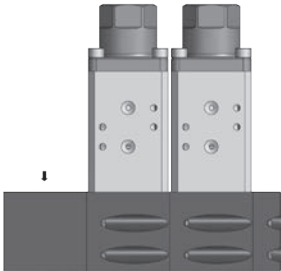
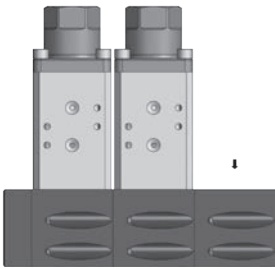
DN	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	G	L [mm]	M [mm]	N [mm]	R [mm]	S [mm]
10	G $\frac{1}{2}$, G $\frac{3}{4}$, G1	20	42	52	18	49.5	167	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	8	M6	50	13	25
15	G $\frac{1}{2}$, G $\frac{3}{4}$, G1, G1 $\frac{1}{4}$	28	42	72	27	69.5	207	G $\frac{3}{8}$, 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

Joining parts	Separating plate		
	Spacer		
End caps	End cap, right		
	End cap, left		
Connection block	Connection block, right		
	Connection block, left		
	Connecting block right angled version G1 on top DN10		
	Connecting block left angled version G1 on top DN10		
Reducing adapter	Reducing adapter	DN15 to DN10 DN25 to DN10 DN25 to DN15 DN32 to DN20	
5/2-way pilot valve (NAMUR)	To use flange connection connections at side 24 V DC 230 V 50 Hz		
5/2-way pilot valve (NAMUR)	To use flange connection connections on top 24 V DC 230 V 50 Hz		
Mounting bracket			

We would be happy to discuss your requirements for further options and accessories.

Examples of ordering codes

	<p>Basic valve</p>	<p>CX06M-2/2-F/C-2/10/064/014/24V</p>
	<p>Connecting block, left</p>	<p>CX06M-2/2-F/C-2/10/064/014/24V - 2XL</p>
	<p>Connecting 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

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66280 Sulzbach/Saar

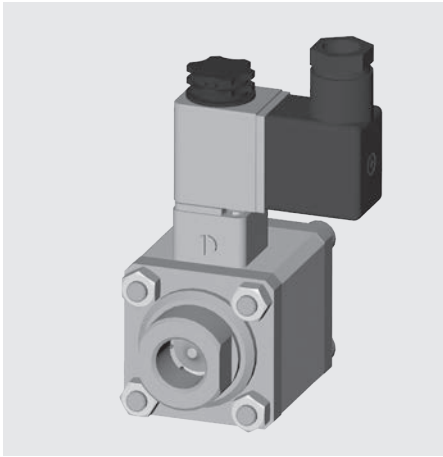
Tel.: +49 (0)6897 - 509-01

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

Internet: www.hydac.com

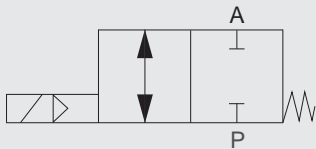
E-Mail: accessories@hydac.com

2/2-way coaxial valve CXR compact, pilot operated



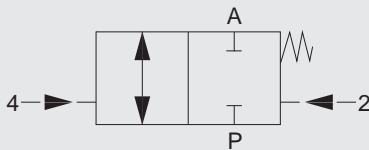
Switching function

Standard

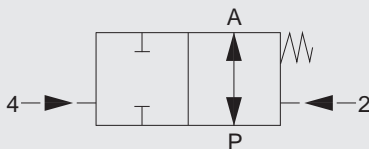


NC (closed when de-energised)

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.

Model code

(also example order)

CXR 2/2 F C 2 08 040 038 PV ...

Designation

CXR = series CXR

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

2 = brass

Nominal size

08 = DN 08

Pressure range

040 = > 0 - 40 bar

Connection

038 = G^{3/8}

Pilot valve

PV = 3/2-way pilot valve

Options

see accessories

*optional

Technical specifications

Control	2/2-way valve, pilot operated	
Nominal size	DN 08	
Pressure range	PN 0 to PN 40	
Connection	Female threaded connection	
Body material	Brass	
Seal material	Static:	FKM
	Dynamic:	PTFE
	Seat seal	FKM
Back-pressure resistant	max. 40 bar	
Vacuum	Leakage rate < 10 ⁻⁶ 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	Double acting piston with return spring	
Mounting position	No orientation 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 ³ / 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

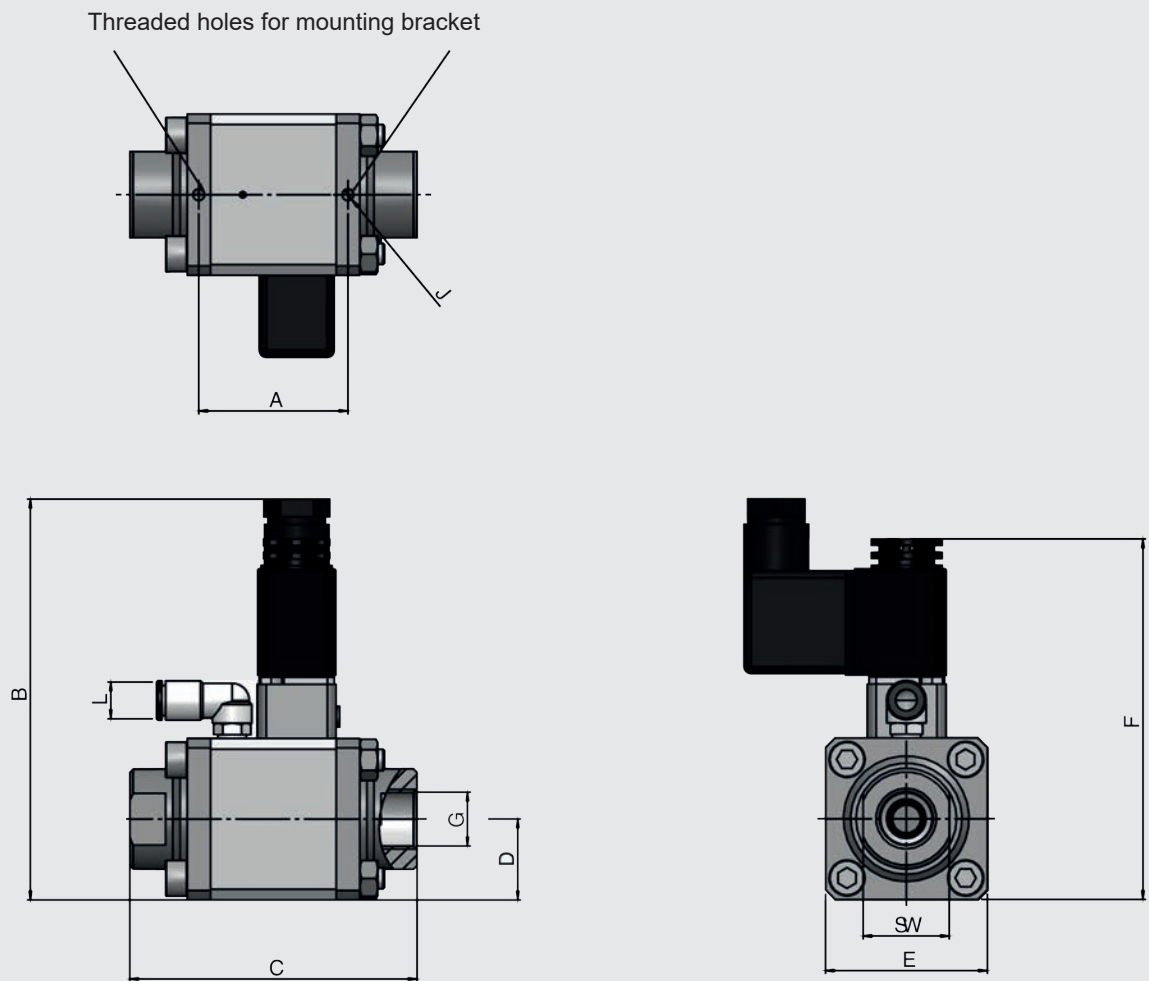
Series	DN [mm]	Pressure [bar]	Connection	Kv value [m ³ /h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
CXR	08	0 - 40	G ³ / ₈	1.7	6	9.2	0.7

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.

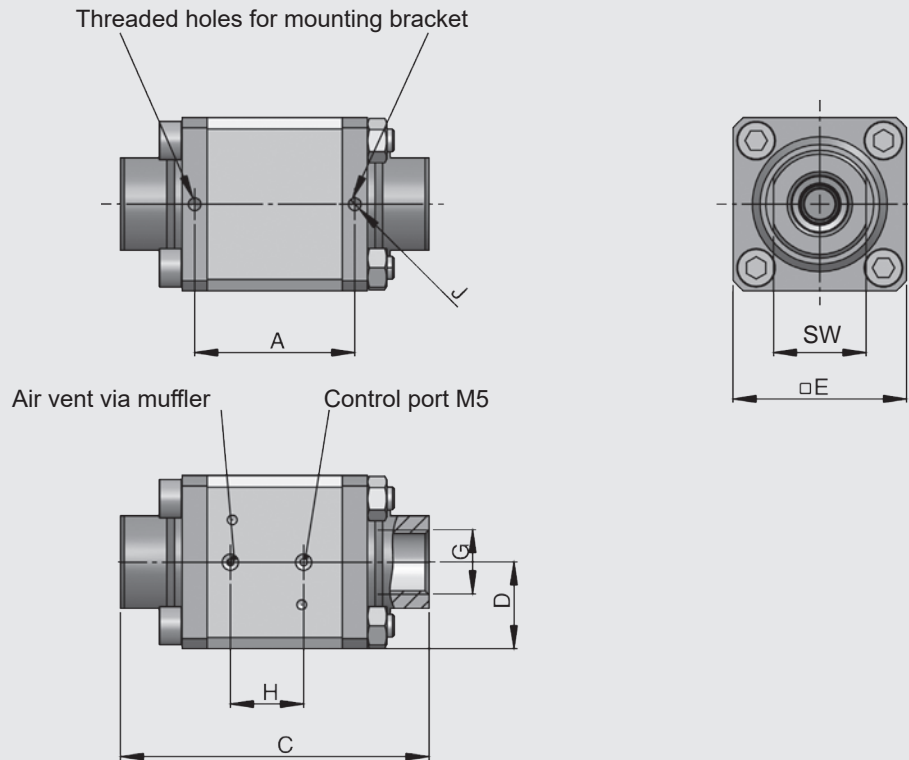
Dimensions

CXR compact with 3/2-way pilot valve



DN	G	SW (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


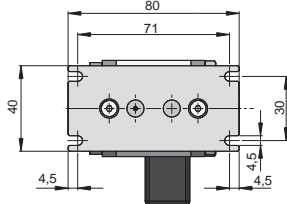
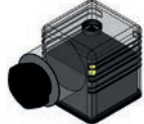
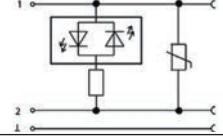


CXR compact with control-air ports for external 3/2-way pilot valve



DN	G	SW (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>Mounting bracket mechanical option = HW</p>	
	<p>Connector plug with LED electrical option = LED</p>	
	<p>Screw connections</p>	
	<p>Special explosion protection II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = EX</p>	<p>Notice: 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.

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

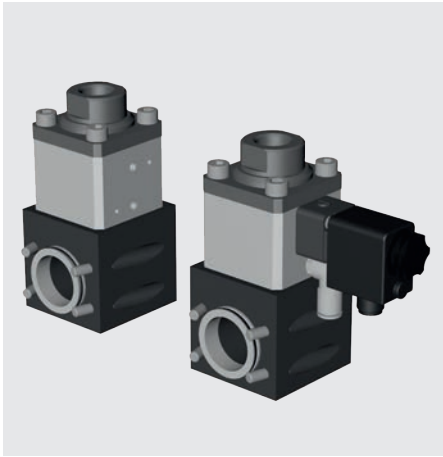
66280 Sulzbach/Saar

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

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

Internet: www.hydac.com

e-mail: accessories@hydac.com

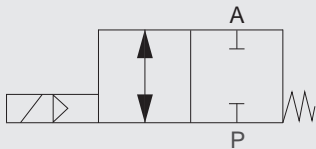


2/2-way coaxial valve

CX RM compact, pilot operated
Modular design

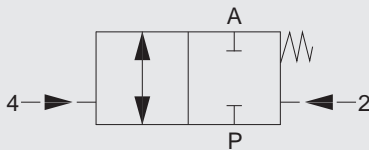
Switching function

Standard

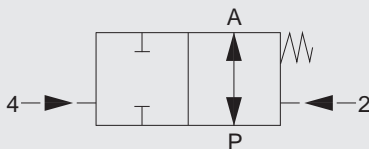


NC (closed when de-energised)

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)

CX RM 2/2 F C 2 08 040 038 PV ...

Designation

CX RM= modular series CX RM

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

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 specifications

Control	2/2-way valve, pilot operated	
Nominal size	DN 08	
Pressure range	PN 0 to PN 40	
Connections	Valve: G ³ / ₈ Block: G1	
Body material	Brass	
Seal material	Static: FKM Dynamic: PTFE Seat seal: FKM	
Back-pressure resistant	max. 40 bar	
Vacuum	Leakage rate < 10 ⁻⁶ 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 ³ / 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

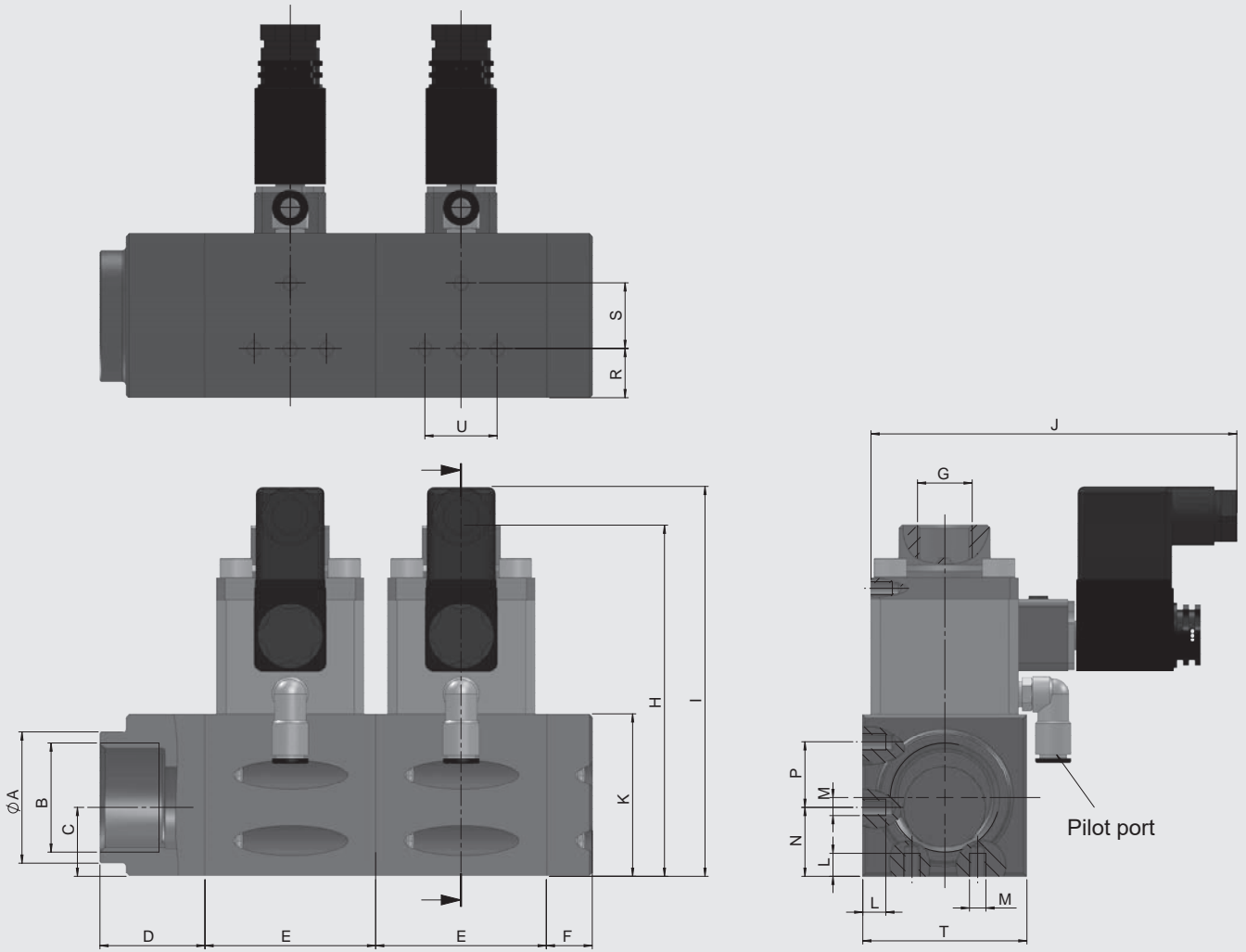
Series	DN [mm]	Pressure [bar]	Connection	Kv value [m ³ /h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
CX RM	08	0 - 40	G ³ / ₈	1.7	6	9.2	0.7

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.

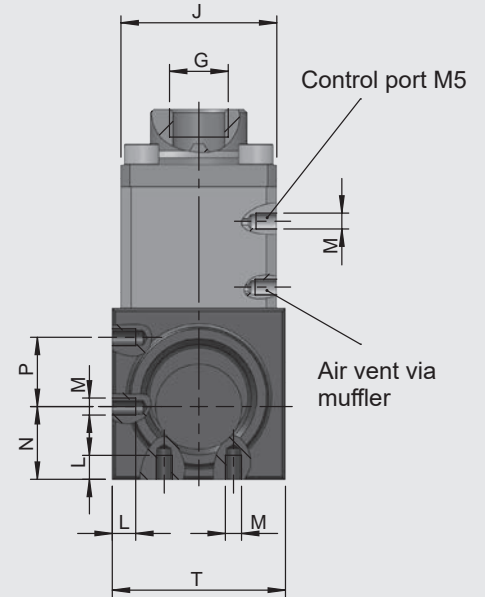
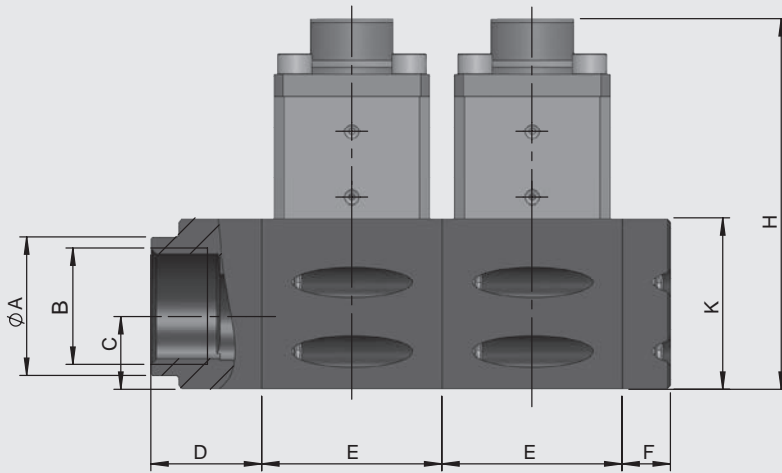
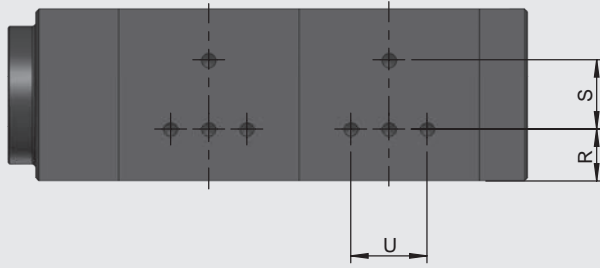
Dimensions

CX RM 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




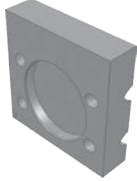


DN	A [mm]	B	C [mm]	D [mm]	E [mm]	F [mm]	G	H [mm]	I [mm]	J [mm]	K [mm]	L [mm]	M	N [mm]	P [mm]	R [mm]	S [mm]	T [mm]	U [mm]
8	40	G1	21	32	52	14	G $\frac{3}{8}$	107	-	45	49.5	7	M5	21	20	15	20	50	22

Notice: Mounting brackets are not included with the standard model.

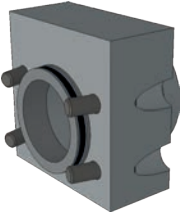
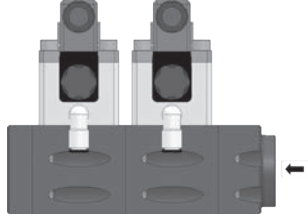
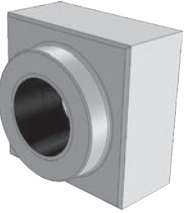
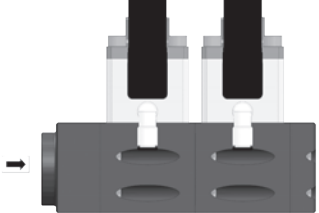
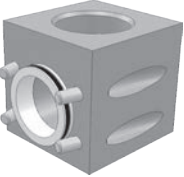
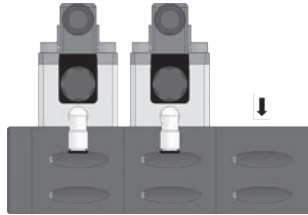

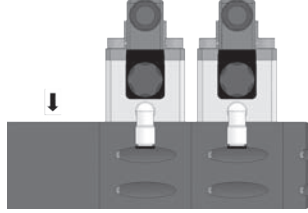
Ordering code

DN	Version	Switching function	Pressure [bar]	Connection	Model code
08	for 3/2-way pilot valve	NC	0–40	G $\frac{3}{8}$	CX RM-2/2-F/C-2/08/040/038/PV-230V-WS-1X CX RM-2/2-F/C-2/08/040/038/PV-24V-WS-1X
08	for external 3/2-way pilot valve	NC	0–40	G $\frac{3}{8}$	CX RM-2/2-F/C-2/08/040/038-1X-SA
08	for external 3/2-way pilot valve	NO	0–40	G $\frac{3}{8}$	CX RM-2/2-F/O-2/08/040/038-1X-SA

Accessories


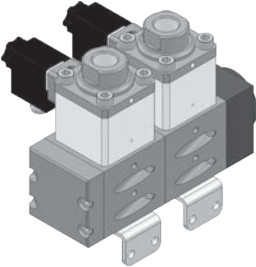

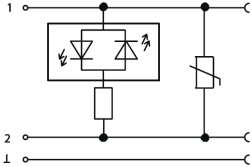
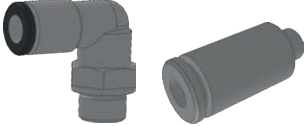

Joining parts		End caps	
	Separating plate		End cap, right
	Spacer		End cap, left

Connectors

	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>Mounting bracket mechanical option = HW</p>	
	<p>Connector plug with LED electrical option = LED</p>	
	<p>Screwed fittings</p>	
	<p>Special explosion protection II 2G Ex m II T4 II 3D IP65 T130 °C electrical option = EX</p>	<p>Notice: 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

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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.

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2/2-way coaxial valve

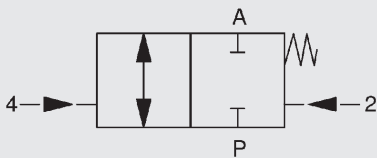
CXC pilot operated

Cartridge series

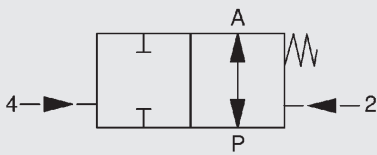
Model code
(also example order)

CXC - 2/2 - F / C - 6 / 15 / 200 / 012 - F / PV...

Switching function



NC (closed when de-energised)



NO (open when de-energised)

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

CXC = cartridge series

Ways

2/2 = number of ways

Control

F = external pilot

Switching function

C = NC – closed when de-energised

Body 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)

*for CXC without valve body

Technical specifications


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 ³ / ₈ to G ³ / ₄	
Body material	Socket version:	Aluminium
	Cartridge version:	Brass, V2A
Seal material	Static:	FKM
	Dynamic:	FKM, PTFE
	Seat seal:	PTFE
Back-pressure resistant	up to max. 20 bar	
Vacuum	Leakage rate < 10 ⁻⁶ 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*
Mounting pattern	Namur
Control pressure	NC: 4 to 8 bar NO: 3 to 8 bar
Air requirement	approx. 7 cm ³ / stroke
Pilot ports 2+4	G ¹ / ₈
Switching times	Open/close 50–1000 ms depending on control pressure, pilot valve* and exhaust air throttle*
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 ³ /h]	Weight [kg]	
					Cartridge version	Socket version
CXC	15	0 – 200	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	6.0	1.0	1.5

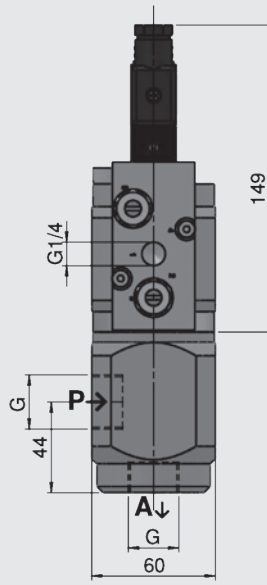
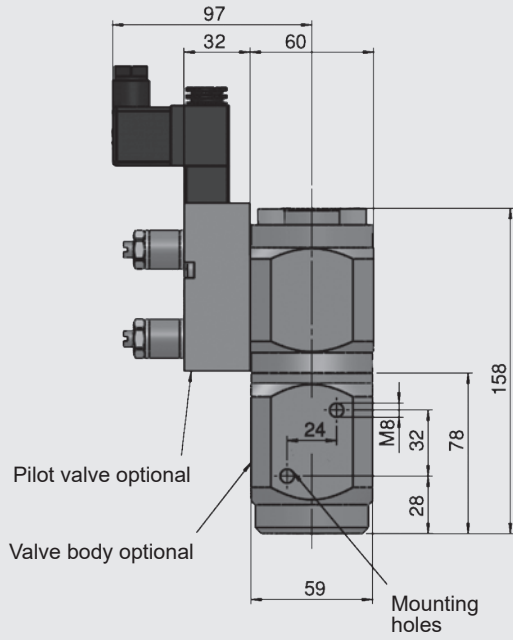
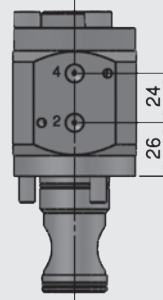
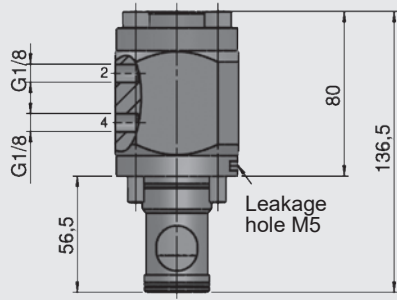
NOTICE: Inserting a maintenance unit upstream will increase the service life of the unit.

 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.

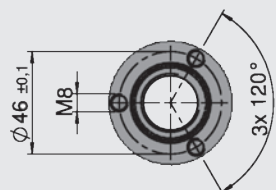
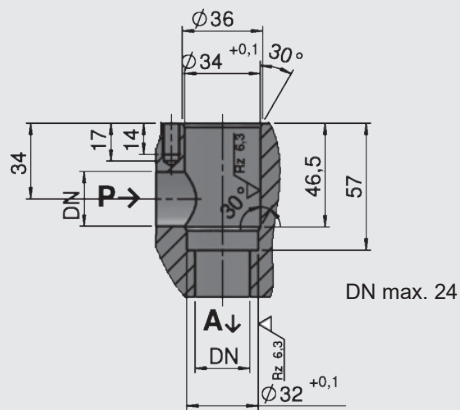
Dimensions

Closed when de-energised (NC)

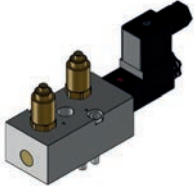
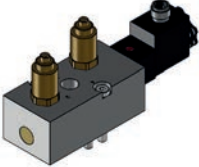


Open when de-energised (NO)



Drilling template for cartridge



Accessories

	<p>5/2-way pilot valve (NAMUR) for flange-mounting = PV</p>	<p>Connections on top 24V DC 230V 50Hz</p>
	<p>5/2-way pilot valve (NAMUR) for flange-mounting = PV</p>	<p>Connections on top Solenoid M12x1 24V DC 230V 50Hz</p>
	<p>Exhaust air throttle = DR</p>	<p>G$\frac{1}{8}$ G$\frac{1}{4}$</p>
	<p>Silencer in sintered bronze = SD</p>	<p>G$\frac{1}{8}$ G$\frac{1}{4}$</p>

We would be happy to discuss your requirements for further options and accessories

NOTE

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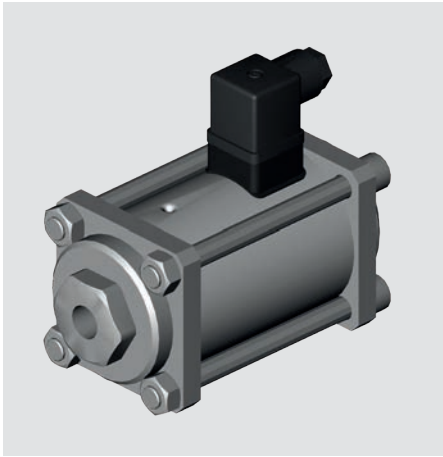
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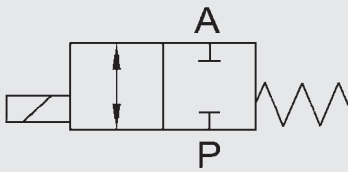


2/2-way coaxial valve

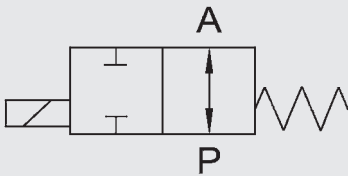
CXH direct acting

High-pressure valve

Switching function



NC (closed when de-energised)



NO (open when de-energised)

Ordering data

- Nominal size
- Connection
- NC / NO function
- Operating pressure
- Flow rate
- Fluid
- Temperature of fluid
- Ambient temperature
- Supply voltage

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Model code

(also example order)

CXH1 2/2 D C 6 06 010 038 24V ...

Designation

CXH1 = series CXH1
 CXH2 = series CXH2

Ways

2/2 = number of ways

Control

D = direct

Switching function

C = NC - closed when de-energised
 O = NO - open when de-energised

Body 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 (see table)

010 = 0 - 10 bar
 016 = 0 - 16 bar
 : :
 : :
 270 = 0 - 270 bar
 300 = 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 - 60 Hz

Options

see accessories


*optional

Technical specifications


Control	2/2-way valve, direct acting
Nominal size	DN01 to DN06
Pressure range (see table)	CXH1 - 2/2 DN02 to DN06 PN0 to PN100 CXH2 - 2/2 DN01 to DN06 PN0 to PN 300
Connection (see table)	Female threaded connection
Body material	Zinc-plated steel, nickel-plated steel
Seal material	Static: FKM Seat seal: PTFE
Back-pressure resistant	See table
Vacuum	Leakage rate < 10 ⁻⁶ 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

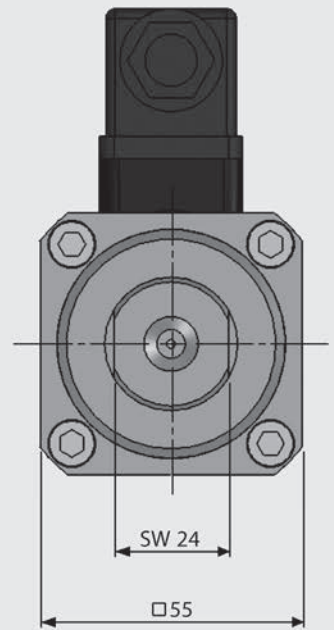
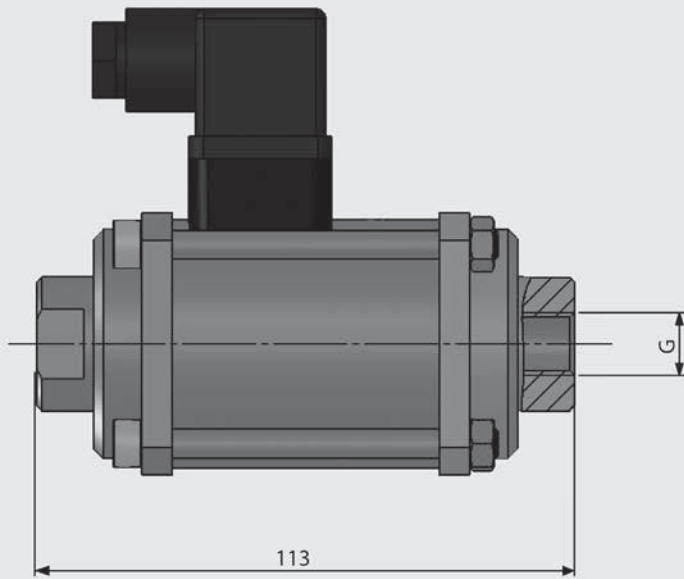
Supply voltage	DC: 24 V AC: 230 V 50 Hz Special voltages on request
Electrical part	DC: DC solenoid AC: DC solenoid with integrated rectifier
Connection	Female connector DIN EN 175301-803, Form A, for AC operation with integrated rectifier
Voltage tolerance	±10 % to VDE 0580
Duty cycle	100 % duty cycle
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 ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	2.5	35	41	1.7
	3	0 - 40	0 - 80	70	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	3.7	35	41	1.7
	4	0 - 20	0 - 40	34	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	6.5	35	41	1.7
	5	0 - 16	0 - 30	25	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	8.0	35	41	1.7
	6	0 - 10	0 - 18	15	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	9.5	35	41	1.7
CXH2	1	0 - 300	0 - 300	100	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	0.7	58	55	4.0
	2	0 - 300	0 - 300	50	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	1.9	58	55	4.0
	2.5	0 - 300	0 - 220	30	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	2.7	58	55	4.0
	3	0 - 270	0 - 150	24	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	4.6	58	55	4.0
	4	0 - 135	0 - 90	9	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	7.3	58	55	4.0
	5	0 - 90	0 - 60	3	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	8.2	58	55	4.0
	6	0 - 60	0 - 40	2	G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈	10.7	58	55	4.0

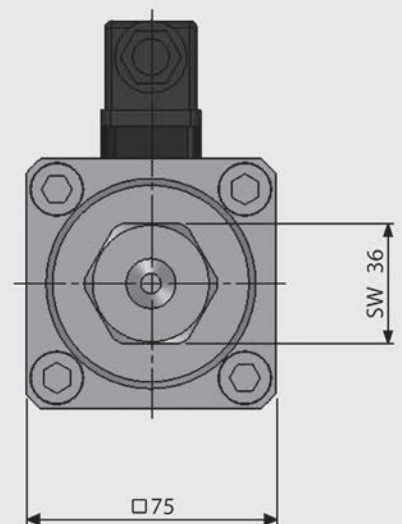
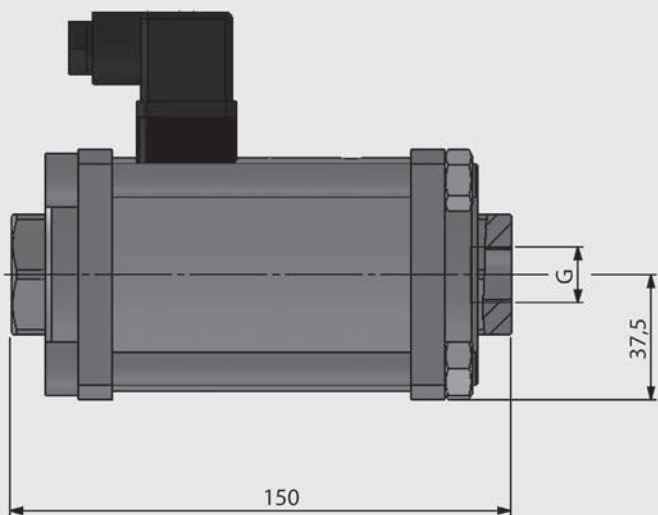
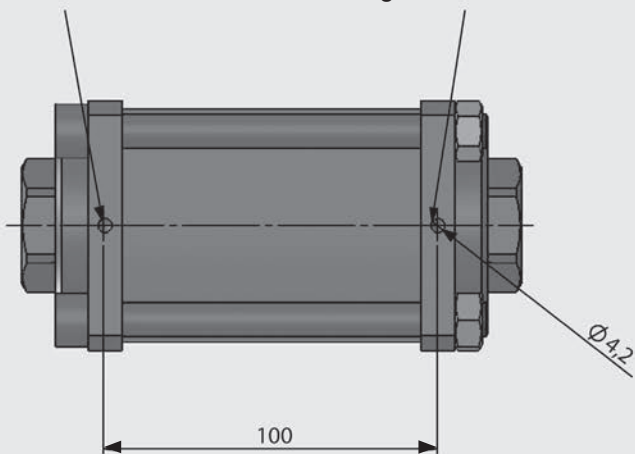
 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

Dimensions CXH1

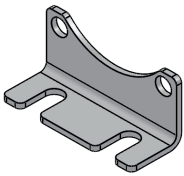
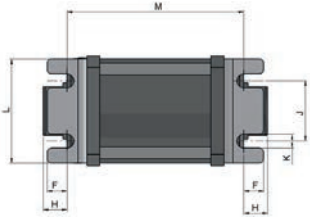

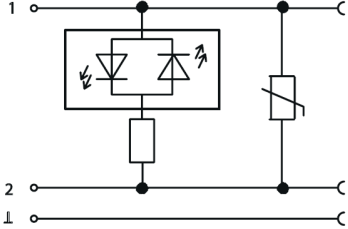

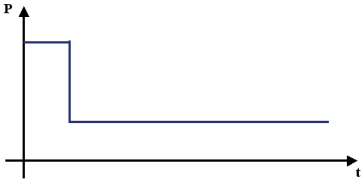


CXH2

Threaded holes for mounting bracket



Accessories

	<p>Mounting bracket mechanical option = HW</p> <table border="1"> <thead> <tr> <th>Type</th> <th>DN [mm]</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>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 [mm]	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	CXH1	2-6	10	12	30	7	52	89	CXH2	1-6	10.5	-	45	7	70	139	
Type	DN [mm]	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]																			
CXH1	2-6	10	12	30	7	52	89																			
CXH2	1-6	10.5	-	45	7	70	139																			
	<p>Female connector with LED electrical option = LED</p>																									
	<p>Female connector with power reduction 24 V DC Form A electrical option = LS</p>																									

We would be happy to discuss your requirements for further options and accessories.

NOTE

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Subject to technical modifications and errors.

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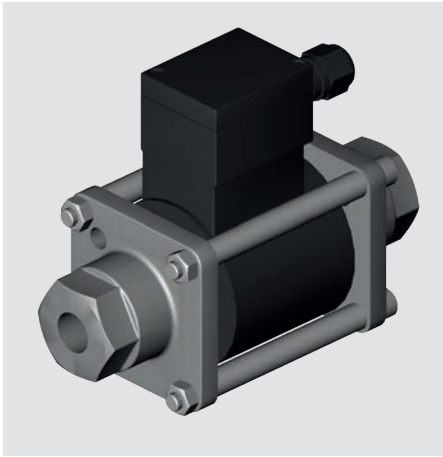
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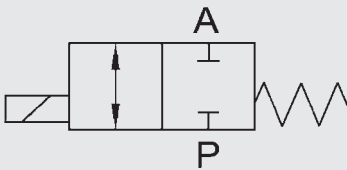
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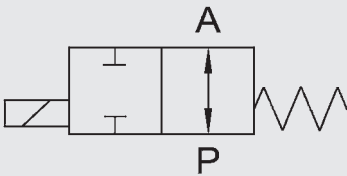


2/2-way coaxial valve CX EX direct acting

Switching function



NC (closed when de-energised)



NO (open when de-energised)

Ordering data

- Nominal size
- Connection
- NC / NO function
- Operating pressure
- Flow rate
- Fluid
- Temperature of fluid
- Ambient temperature
- Supply voltage

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Model code

(also example order)

CX EX 2/2 D C 2 10 020 012 24V ...

Designation

CX EX = series CX EX

Ways

2/2 = number of ways

Control

D = direct

Switching function

C = NC - closed when de-energised

O = NO - open when de-energised

Body 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 $\frac{1}{2}$ DN 15

Supply voltage

24V = 24 V DC

230V = 230 V AC 40–60 Hz

Options

see accessories


*optional

Technical specifications

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)
Connection (see table)	Female threaded connection
Body 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 ⁻⁶ 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 % duty cycle
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.

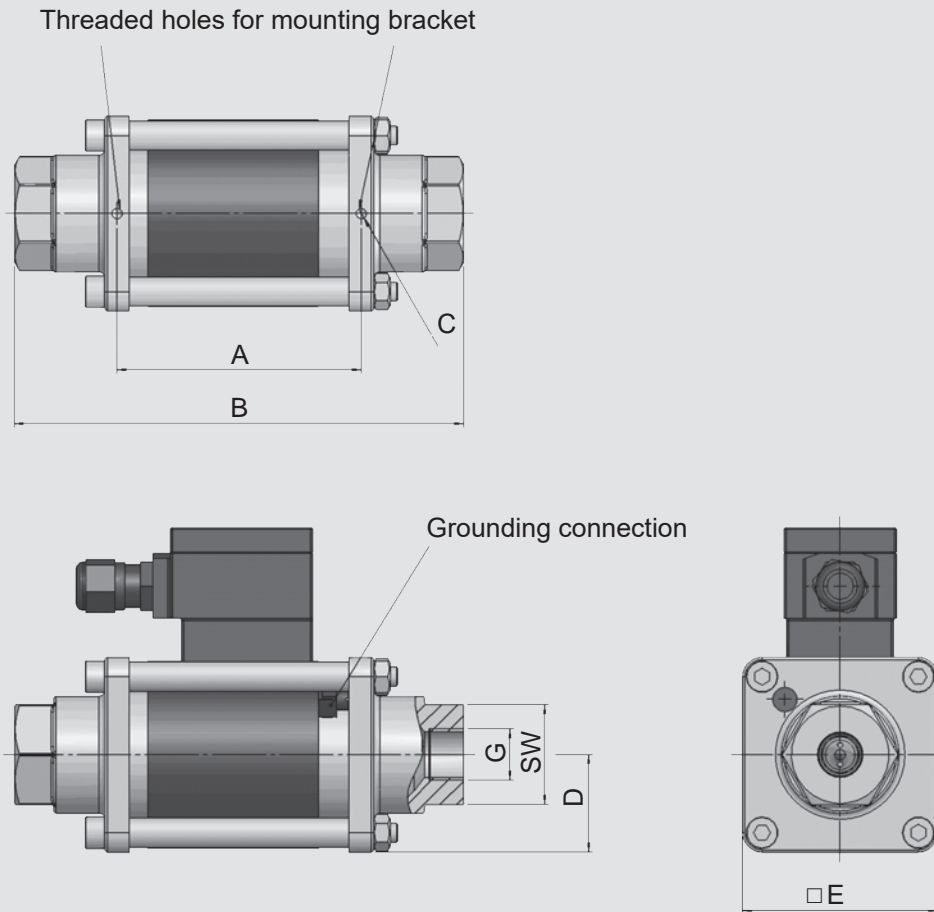
*optional

Series	DN [mm]	Pressure [bar]	Connection (Valve)	Kv value [m ³ /h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
CX EX	10	0 - 20	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.5	23	23	2.3
	15	0 - 20*	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	5.2	30	30	4.3

*Higher pressures on request

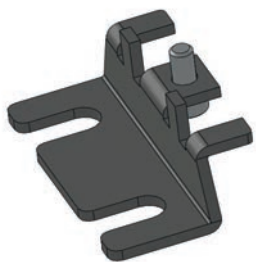
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Dimensions



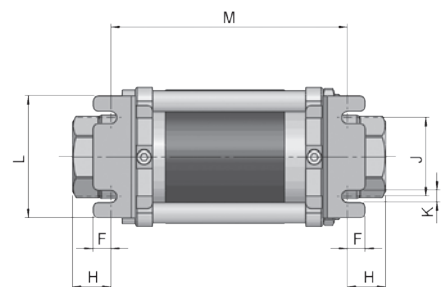
DN	G	SW (AF width)	A [mm]	B [mm]	C	D [mm]	E [mm]
10	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	32	84	159.5	M4	32.5	65
15	G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	41	100	184	M5	40	80

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



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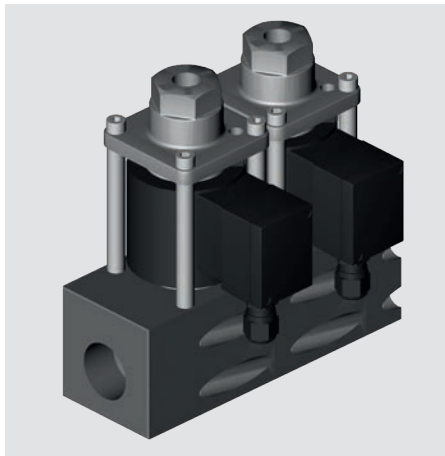
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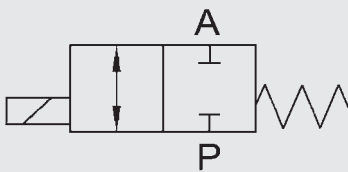
2/2-way coaxial valve CX MEX direct acting Modular

Model code

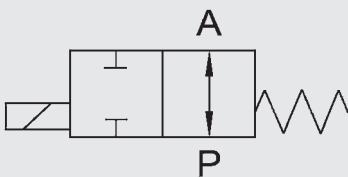
(also example order)

CX MEX 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
- Fluid
- Temperature of fluid
- Ambient temperature
- Supply voltage
- Number of module blocks

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Designation

CX MEX= modular series CX MEX

Ways

2/2 = number of ways

Control

D = direct

Switching function

C = NC - closed when de-energised

O = NO - open when de-energised

Body 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 specifications

Control	2/2-way valve, direct acting		
Nominal size	DN 10, DN 15		
Pressure range (see table)	CX MEX - 2/2 DN 10	PN 0 to PN 20	
	CX MEX - 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 $\frac{1}{2}$	
Body 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 ⁻⁶ 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 fluid	-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 % duty cycle	
Explosion protection	II 2G Ex em II T4 II 2 D td A21 IP65 T130 °C	

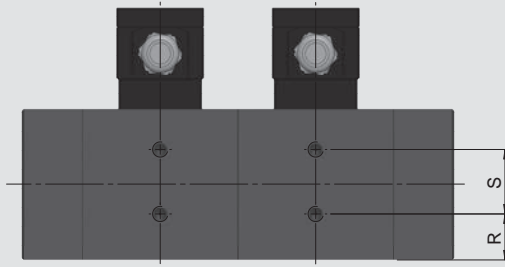
 The material specification refers exclusively to the valve connection parts in contact with the medium. *optional

Series	DN [mm]	Pressure [bar]	Connection (Valve)	Kv value [m ³ /h]	Power consumption [W]		Weight [kg]
					24 V DC	230 V 50 Hz	
CX MEX	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

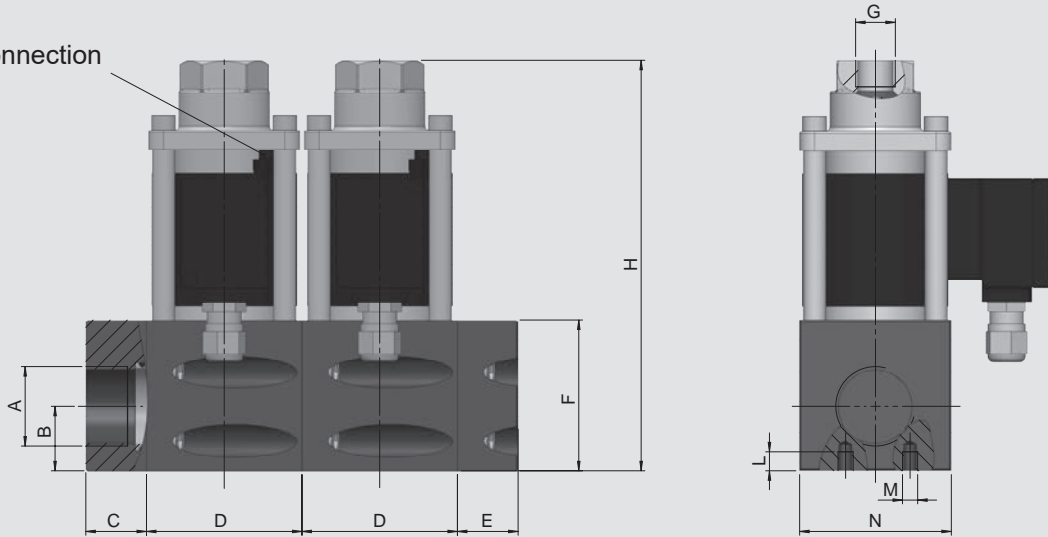
*Higher pressures on request

 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.

Dimensions



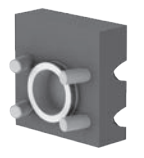

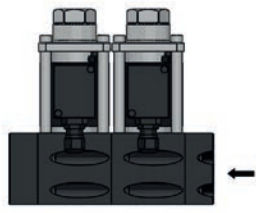
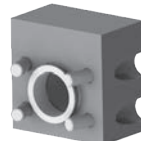
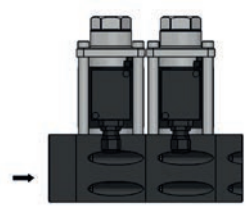
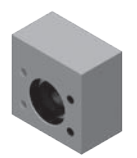
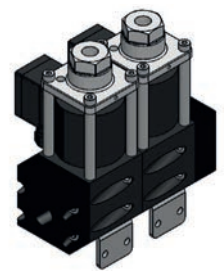



Grounding connection



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

Joining parts	Separating plate		
	Spacer		
End caps	End cap, right		
	End cap, left		
Connecting blocks	Connecting block, right		
	Connecting block, left		
Mounting bracket	Mechanical option = HW		

We would be happy to discuss your requirements for further options and accessories

NOTE

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Subject to technical modifications and errors.

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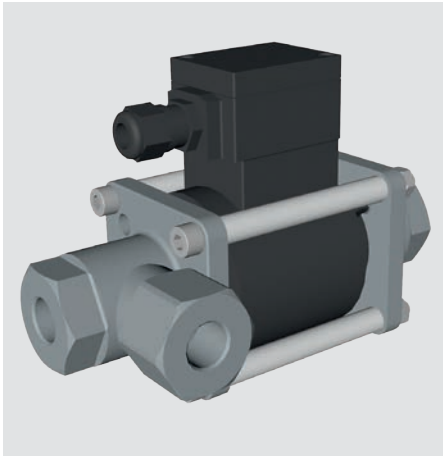
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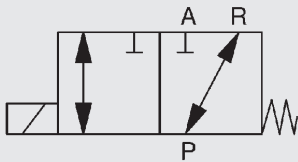
Internet: www.hydac.com

E-Mail: accessories@hydac.com

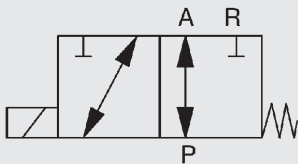


3/2-way coaxial valve CX EX direct acting

Switching function



NC (closed when de-energised)



NO (open when de-energised)

Ordering 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 = series CX EX

Ways

3/2 = number of ways

Control

D = direct

Switching function

C = NC - closed when de-energised

O = NO - open when de-energised

Body material

2 = brass

4 = 1.4305*

5 = 1.4571*

Valve sizes

10 = DN 10

15 = DN 15

Pressure range

016 = > 0 - 16 bar DN15

020 = > 0 - 20 bar DN10

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 specifications


Control	3/2-way valve, direct acting
Nominal size	DN 10, DN 15
Pressure range (see table)	PN 0 to PN 20
Connection (see table)	Female threaded connection
Body 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 ⁻⁶ 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

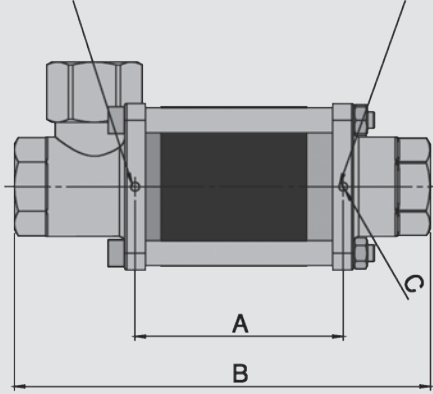
 The material information relates exclusively to valve connection parts that come into contact with medium. *optional

Series	DN [mm]	Pressure [bar]	Connection (Valve)	Kv value [m ³ /h]	Power consumption [W]		Weight [kg]
					24 V DC	230V 50Hz	
CX EX	10	0–20	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.5	23	23	2.7
	15	0–16	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	5.6	30	30	4.4

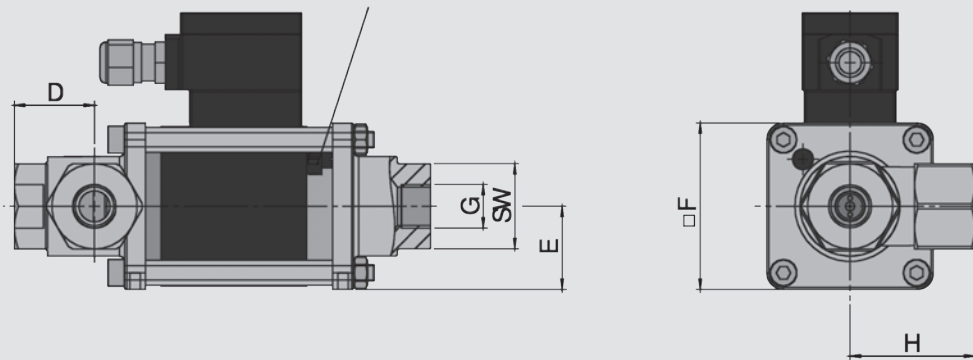
 The valves are technically configured for specific media and applications. This may result in deviations from the general information given in the data sheet in terms of the design, sealing materials and specifications.

Dimensions

Threaded holes for mounting bracket

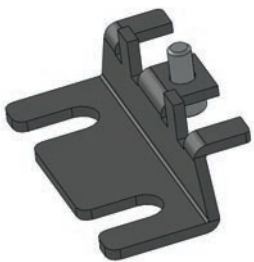


Grounding connection



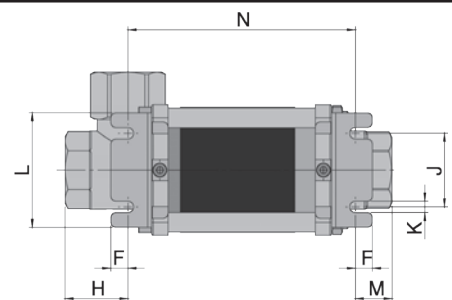
DN [mm]	G	SW (AF width)	A [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]
10	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	32	84	166.5	M4	32	32.5	65	37
15	G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	41	100	200	M5	38.5	40	80	60

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

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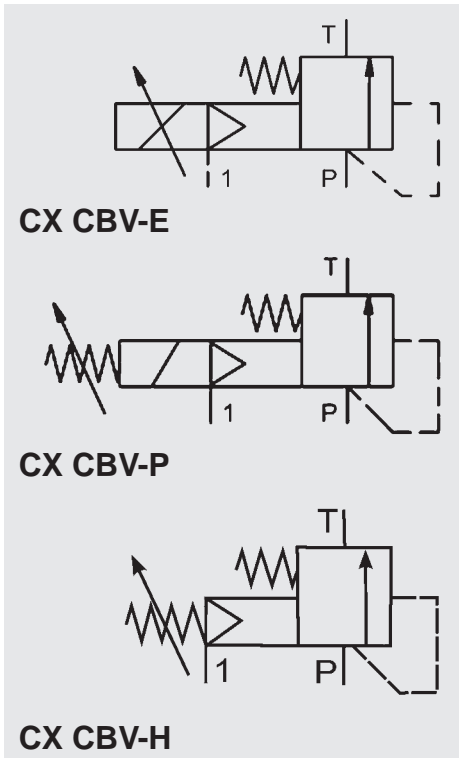
e-mail: accessories@hydac.com



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 specifications

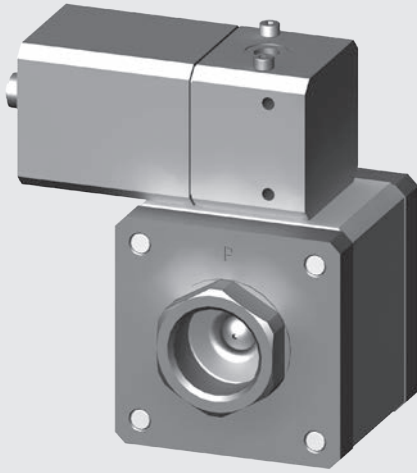
Model	E: Smooth electrical control of pressure P: Smooth manual control of pressure with a pilot valve for unpressurised flow H: Smooth manual control of pressure
Media	fluid - high-viscosity - contaminated
Nominal size	DN 15
Pressure range	5 – 120 bar
Flow rate	max. 6 m ³ /h
Body material	Steel, zinc-plated
Seal material	FKM
Temperature of fluid	0 °C to +60 °C
Ambient temperature	0 °C to +50 °C
Connection	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 watts 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

T-line should be connected without pressure to tank.

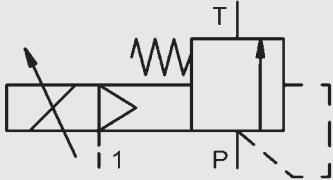
Further options and accessories available on request.

 The material specifications refer exclusively to the valve connection parts in contact with the medium.

CX CBV-E

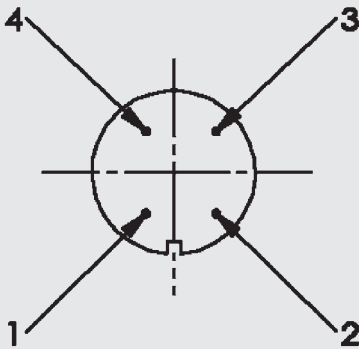


Switching function



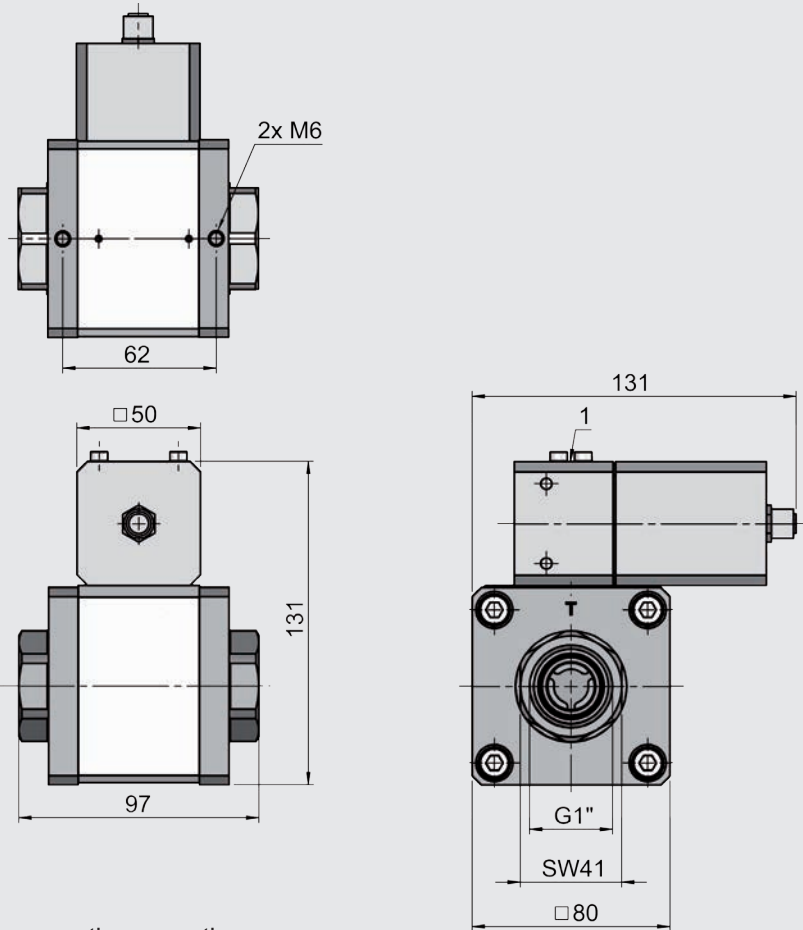
Electrical connection

(M12x1)



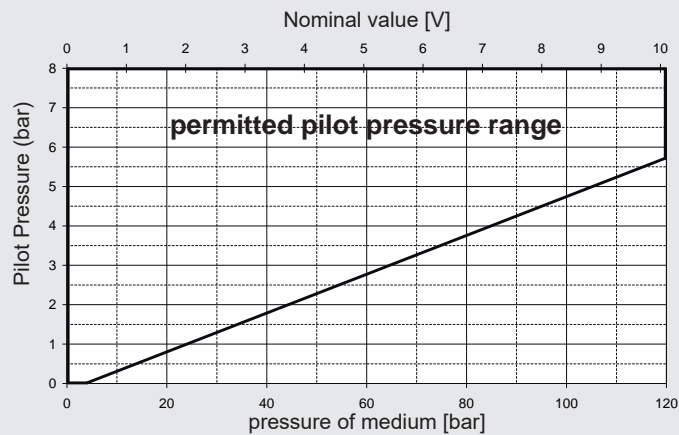
1	Supply
2	Set value (-)
3	GND (-)
4	Set value (+) 0-10V

Dimensions

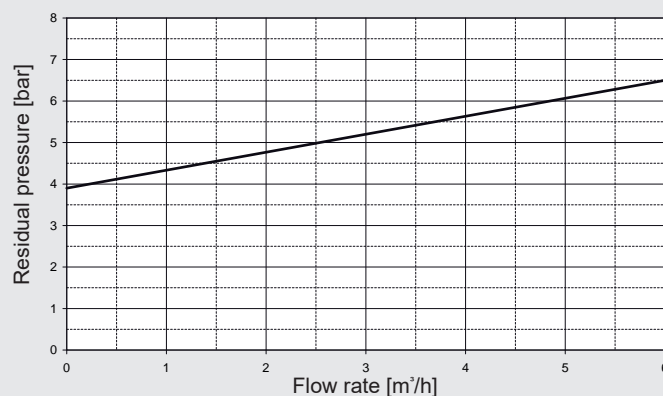


1: 1/8" pneumatic connection

Control pressure graphs

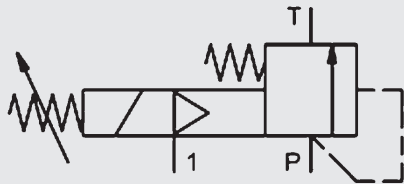
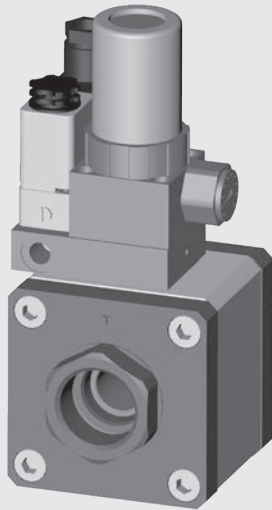


Pressure drop against flow (pressure minimisation)



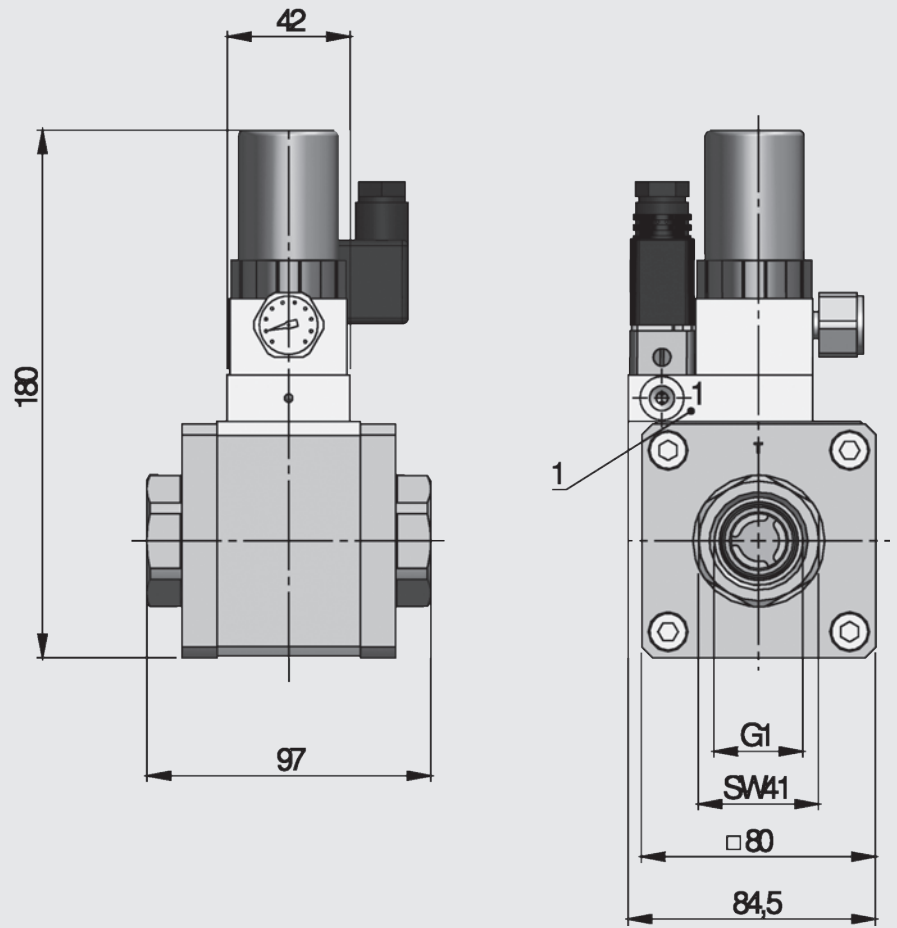
Noise level approx. 70 dBA
(measured at a residual pressure of 6.5 bar and a flow rate of 6 m³/h)

CX CBV-P



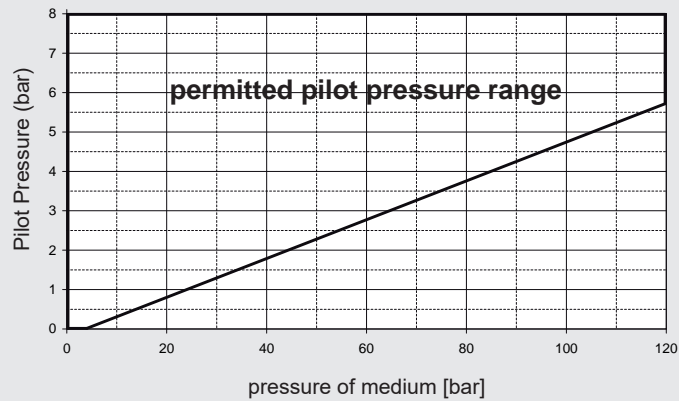
Switching function

Dimensions

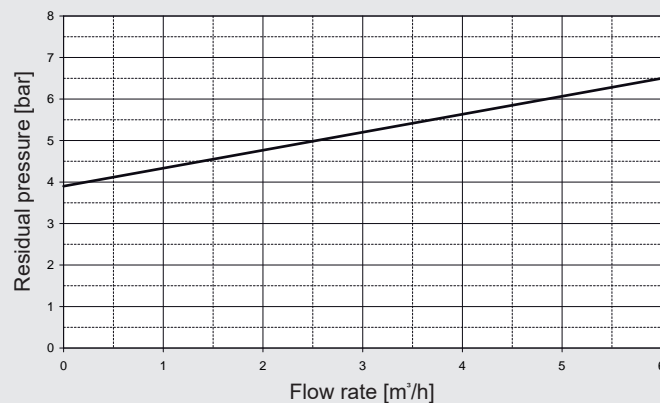


1: 1/8" pneumatic connection

Control pressure graphs

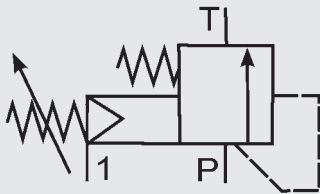
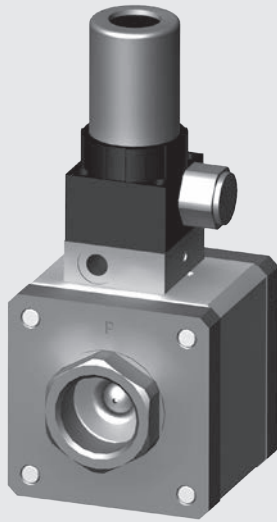


Pressure drop against flow (pressure minimisation)



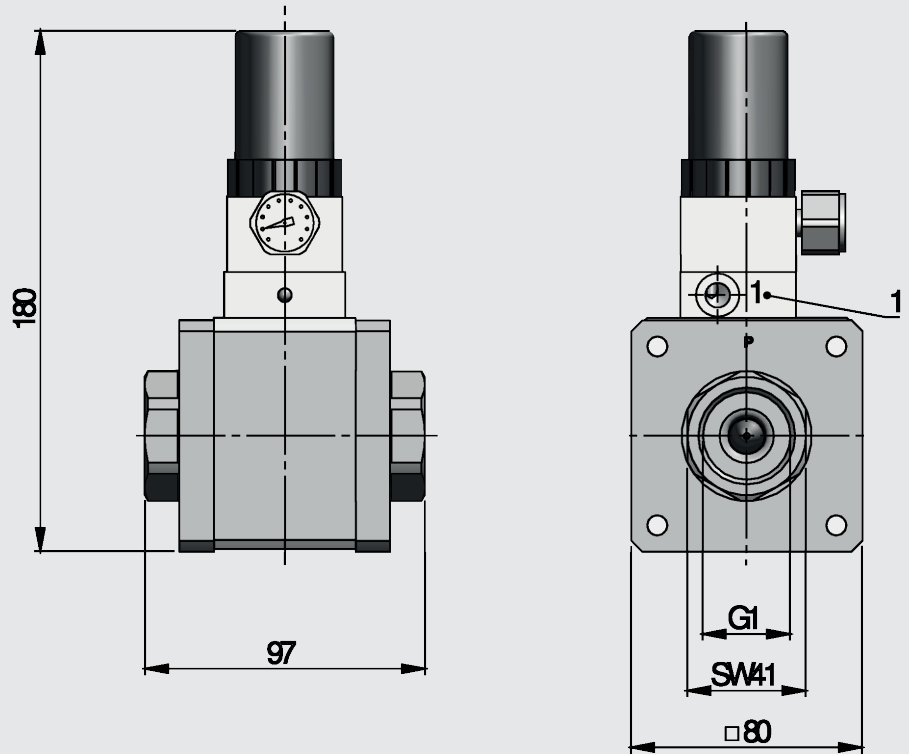
Noise level approx. 70 dBA
(measured at a residual pressure of 6.5 bar and a flow rate of 6 m³/h)

CX CBV-H



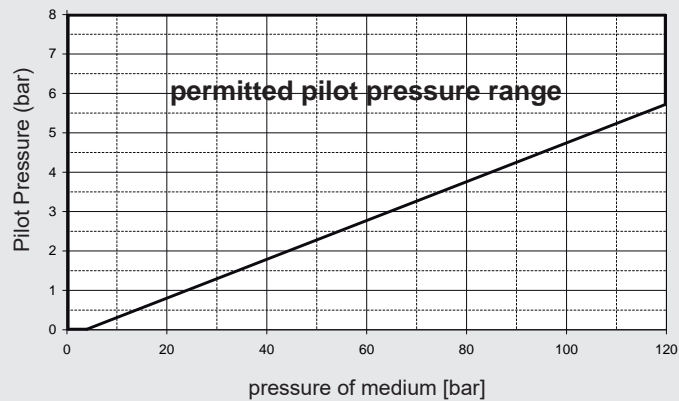
Switching function

Dimensions

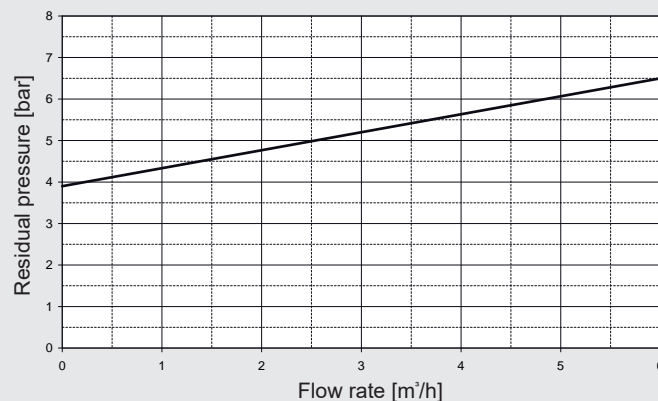


1: 1/8" pneumatic connection

Control pressure graphs



Pressure drop against flow (pressure minimisation)



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

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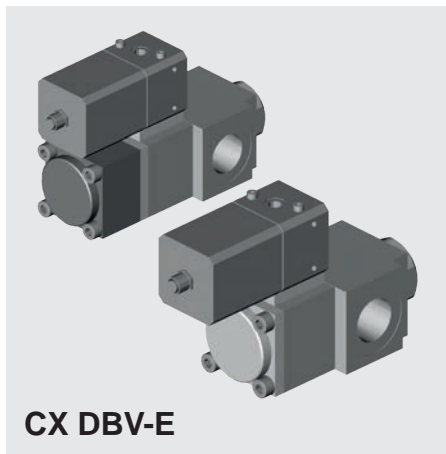
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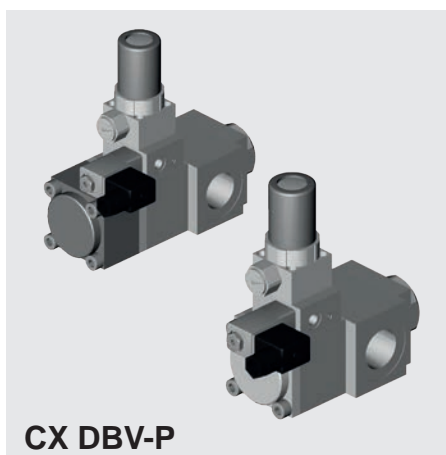
Internet: www.hydac.com

E-Mail: accessories@hydac.com

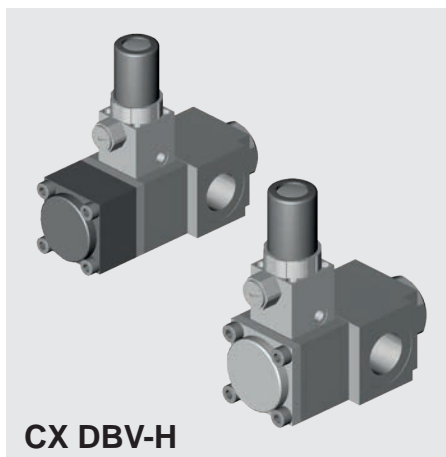
2/2-way pressure relief valve CX DBV (right-angle design)



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

24V = 24 V DC (not for 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 specifications

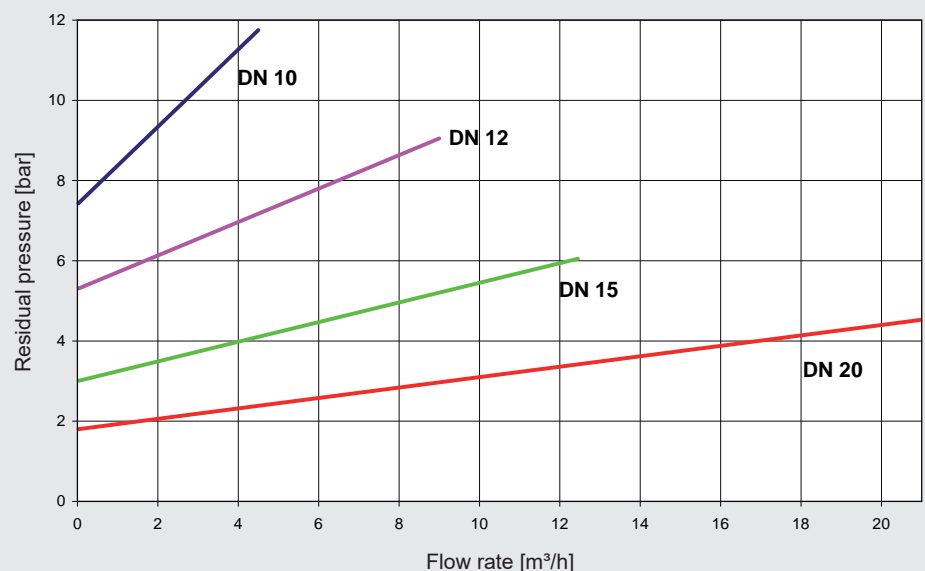
Model	E: Stepless closed loop pressure control via electrical setpoints 0 - 10 V P: Stepless, manually adjustable control via solenoid valve which limits system pressure H: Stepless, manually adjustable control of pressure
Media	fluid - high-viscosity - contaminated
Nominal size	DN 10, DN 12, DN 15, DN 20
Pressure range	up to max. 200 bar
Flow rate	See table
Body material	1.4305
Seal material	FKM
Temperature of fluid	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 watts 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 on top
Control air	40 µ filtered, max. 8 bar

NOTICE: Further options and accessories available on request.

⚠ The material specifications refer exclusively to the valve connection parts in contact with the medium.

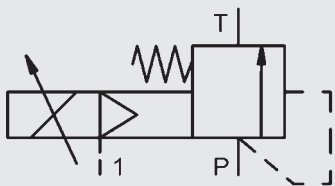
DN [mm]	Version	Pressure control range [bar]	Connection	Max. flow rate [m³/h]
10	EK	12 – 160	G 1	3.0
12	EK	10 – 120	G 1	6.0
15	EK	5 – 64	G 1	8.3
20	EK	3 – 40	G 1	14.1
12	DK	10 – 200	G 1	6.0
15	DK	5 – 140	G 1	8.3
20	DK	3 – 80	G 1	14.1

Pressure minimization



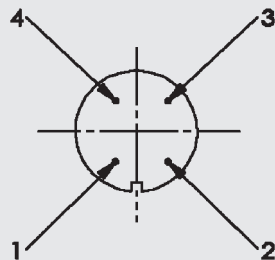
Model CX DBV-E

Switching function



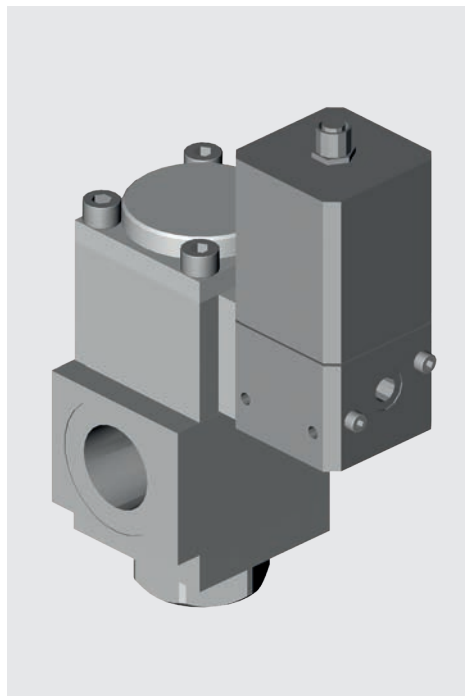
NC (closed when de-energised)

Electrical connection (M12x1)

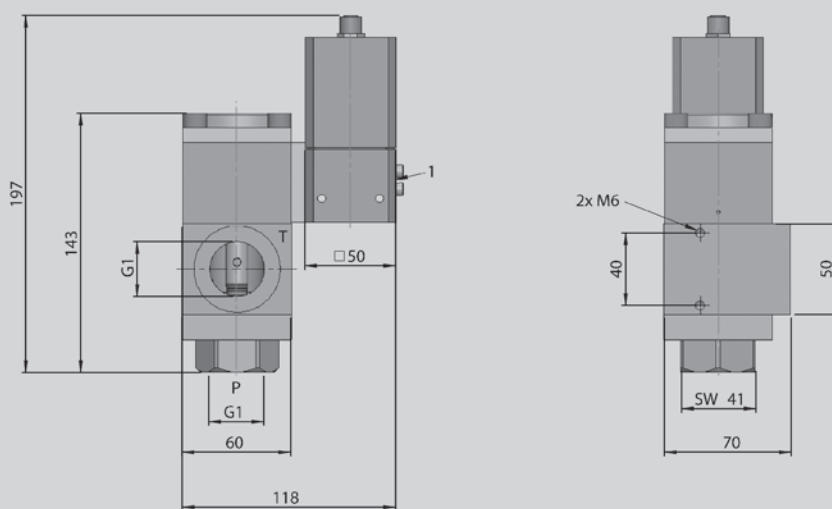


1	Supply
2	Setpoint (-)
3	GND (-)
4	Setpoint (+) 0-10V

Single piston version (EK)

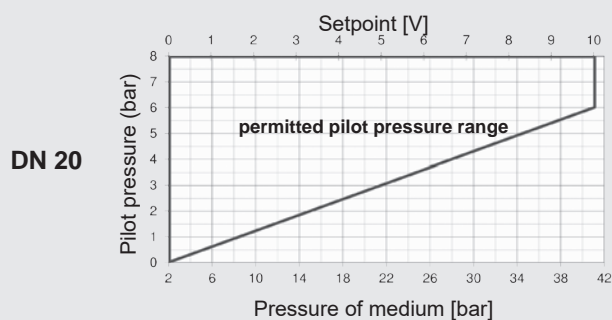
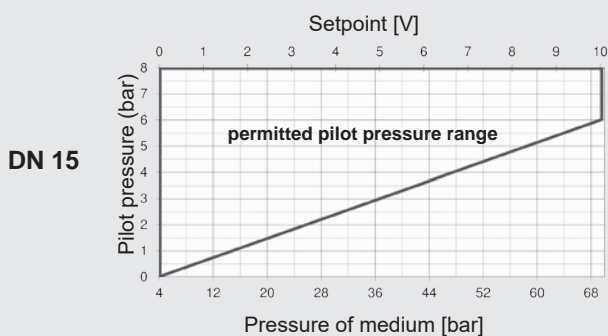
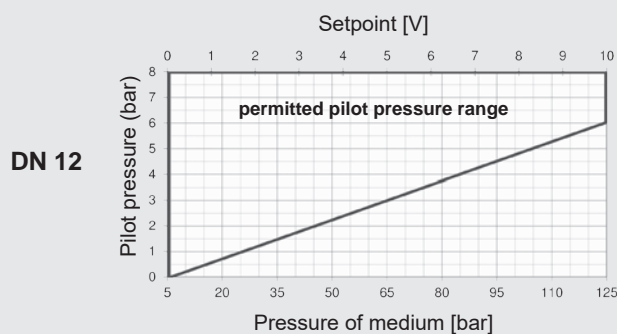
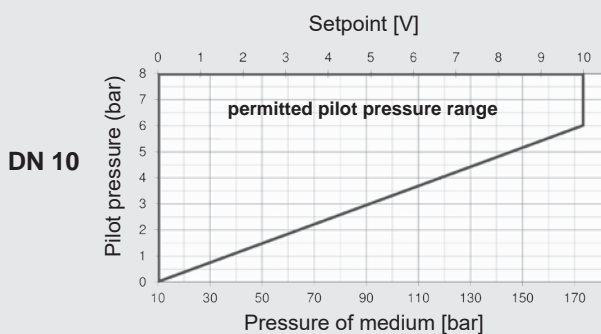


Dimensions

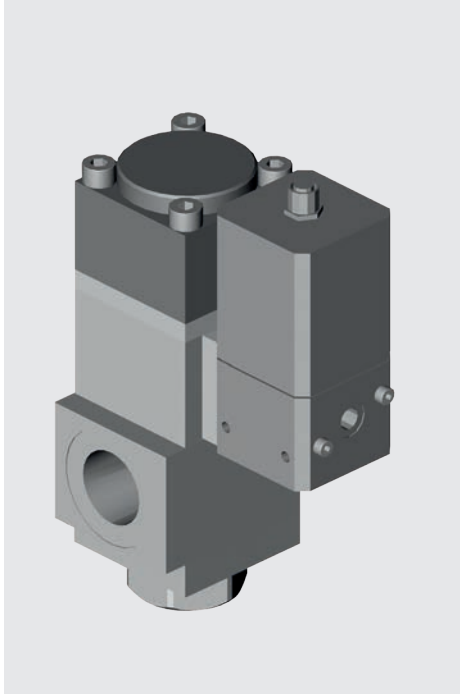


1: 1/8" pneumatic connection

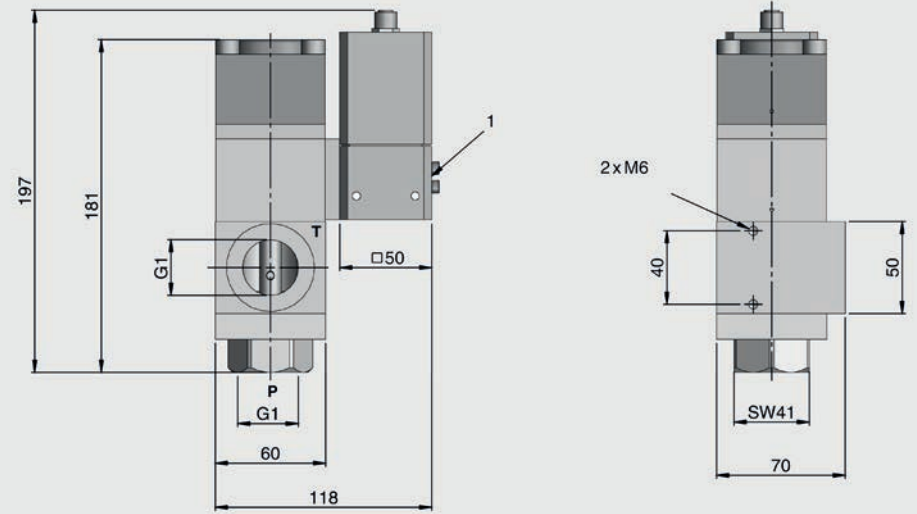
Control pressure graphs



Double piston version (DK)



Dimensions

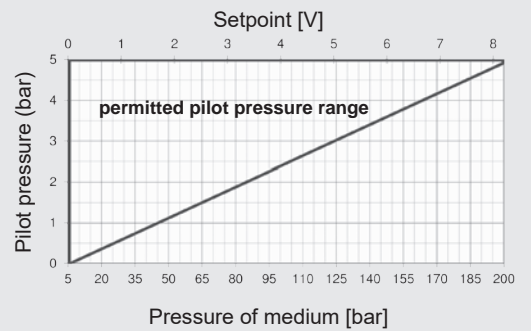


1: 1/8" pneumatic connection

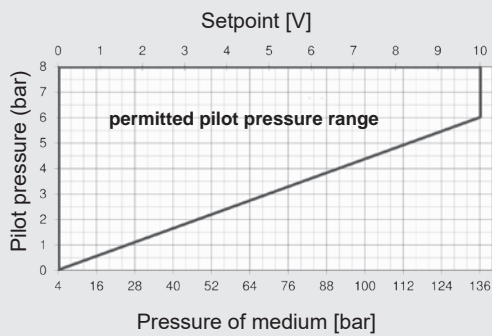
Control pressure graphs

DN 10 not available in double piston version DK

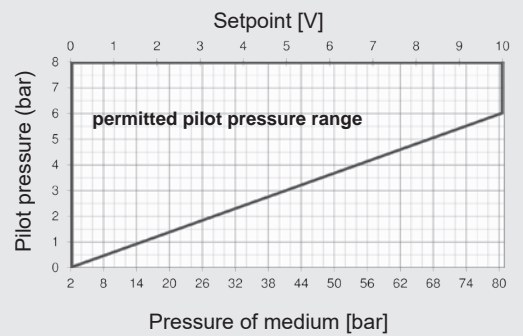
DN 12



DN 15

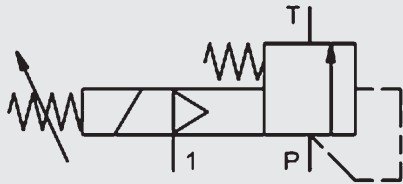


DN 20



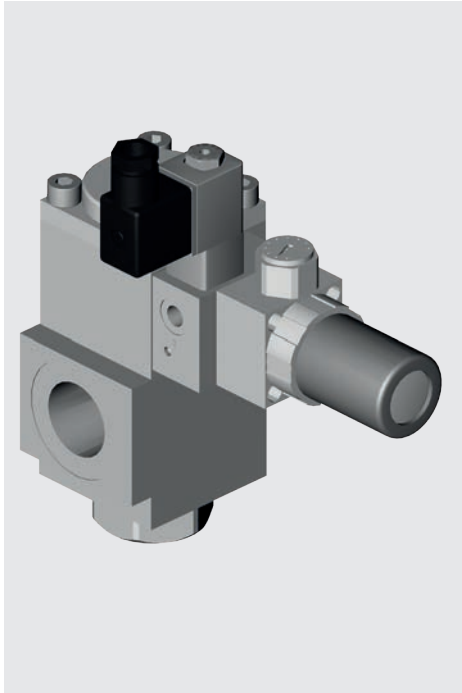
Model CX DBV-P

Switching function

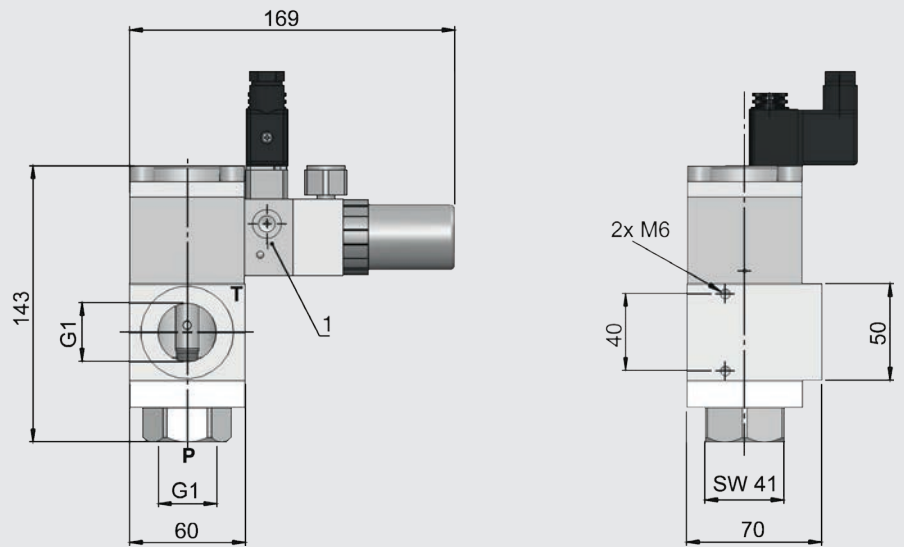


NC (closed when de-energised)

Single piston version (EK)



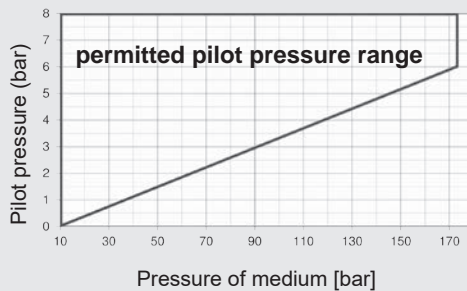
Dimensions



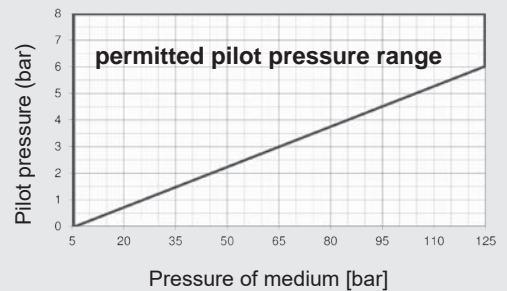
1: 1/8" pneumatic connection

Control pressure graphs

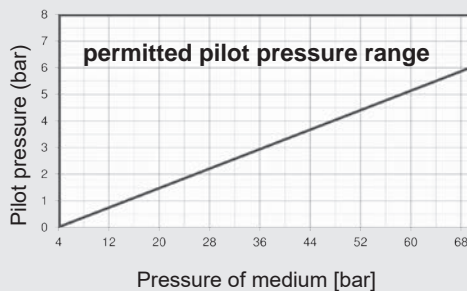
DN 10



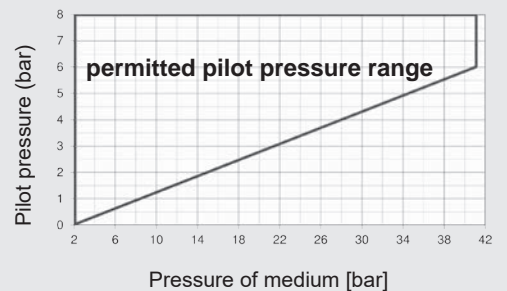
DN 12



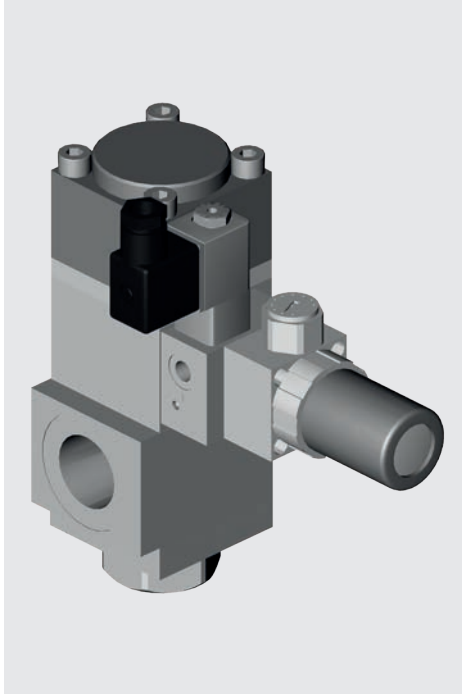
DN 15



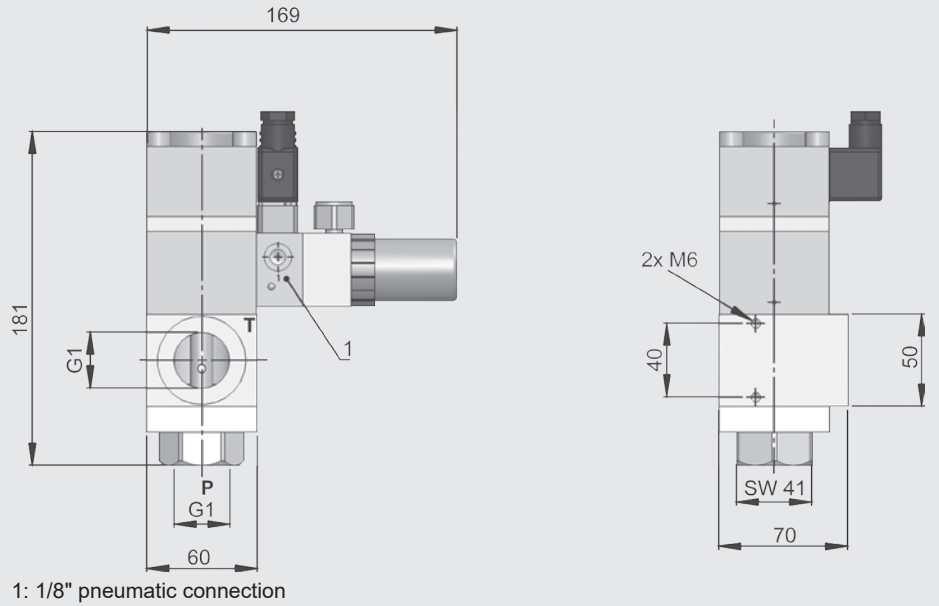
DN 20



Double piston version (DK)



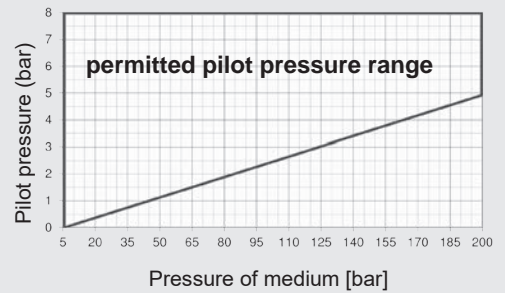
Dimensions



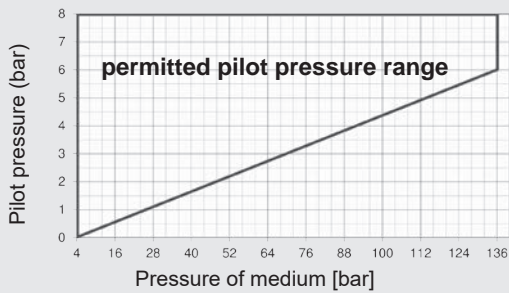
Control pressure graphs

DN 10 not available in double piston version DK

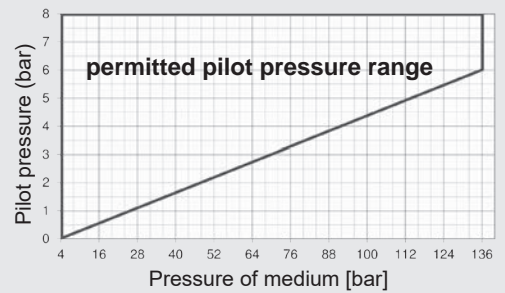
DN 12



DN 15

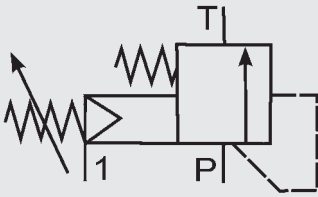


DN 20



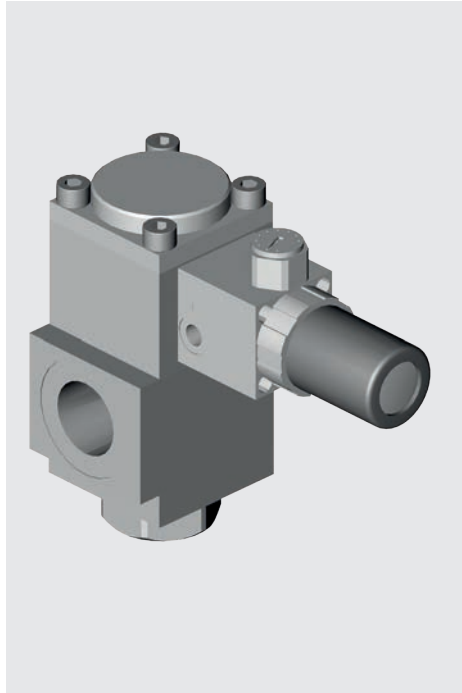
Model CX DBV-H

Switching function

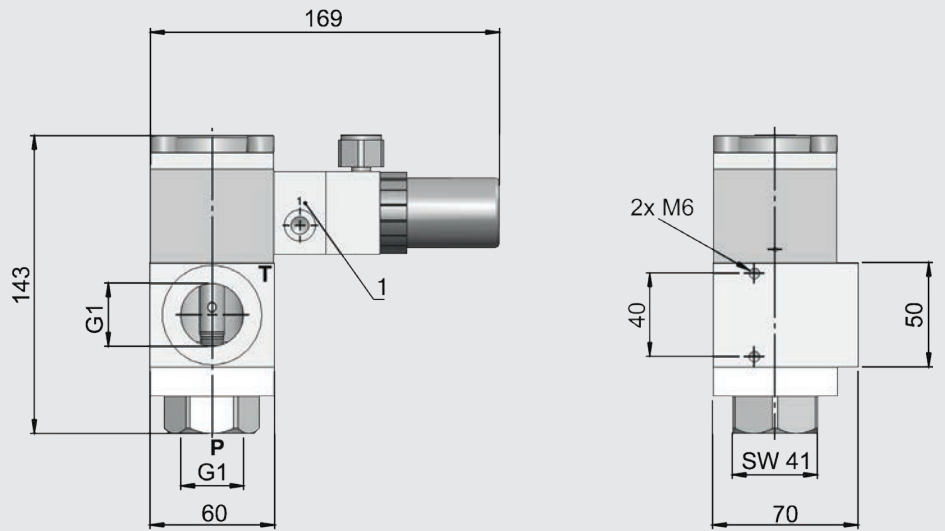


NC (closed when de-energised)

Single piston version (EK)

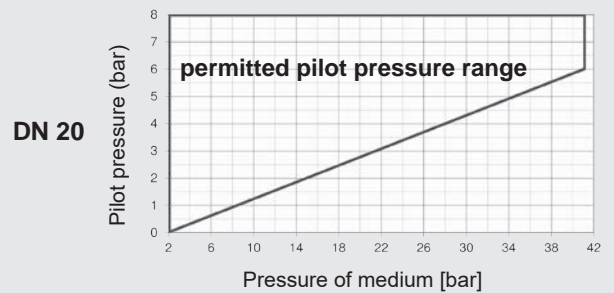
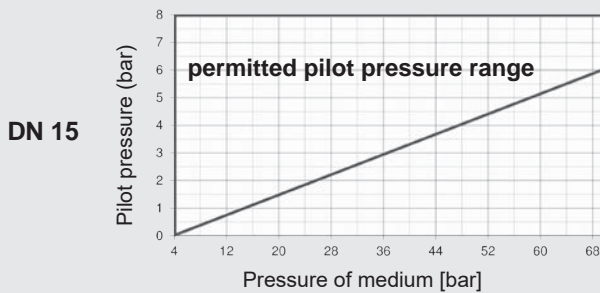
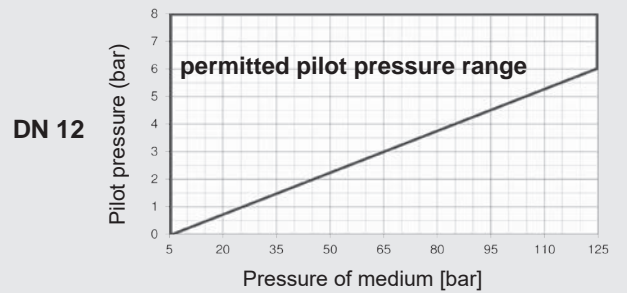
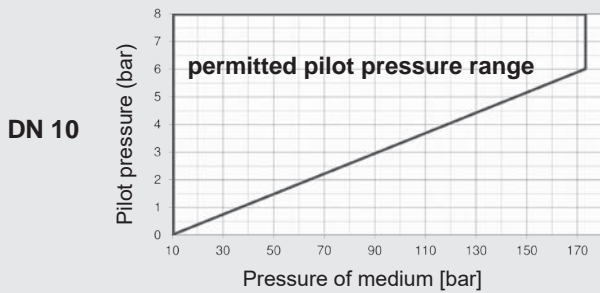


Dimensions

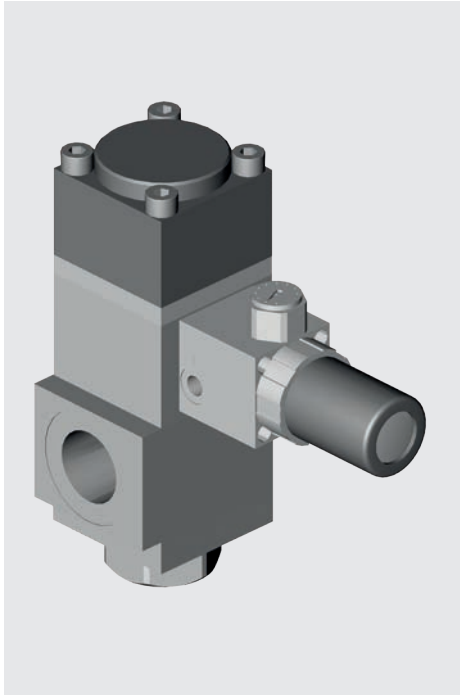


1: 1/8" pneumatic connection

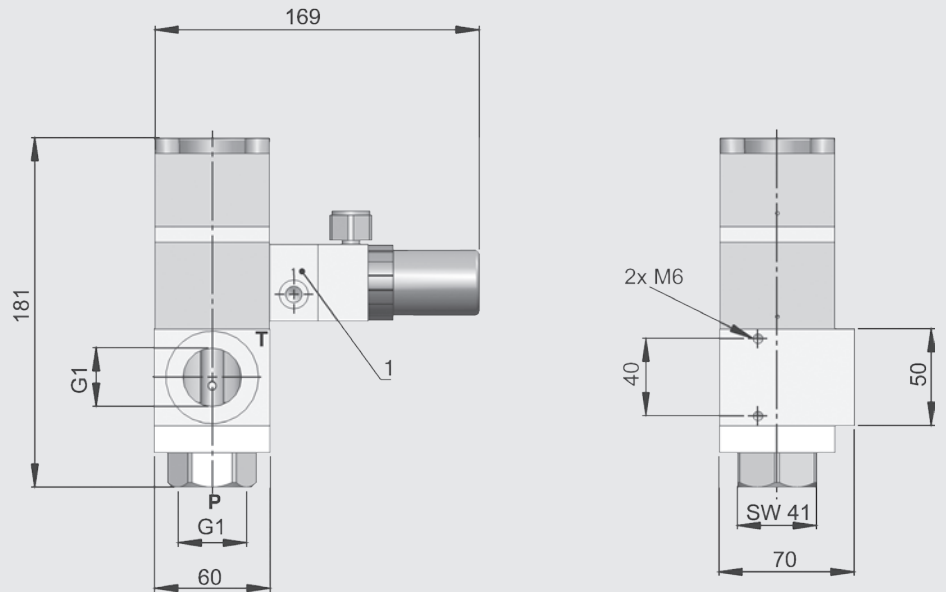
Control pressure graphs



Double piston version (DK)



Dimensions

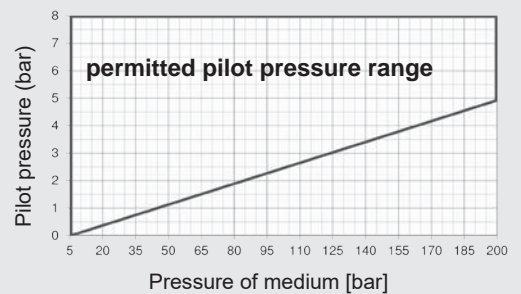


1: 1/8" pneumatic connection

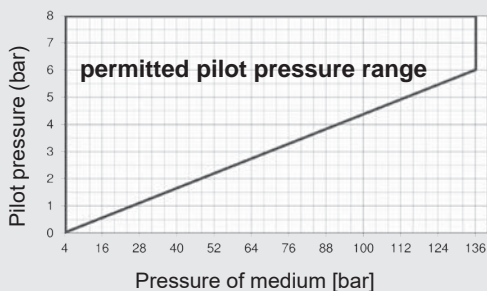
Control pressure graphs

DN 10 not available in double piston version DK

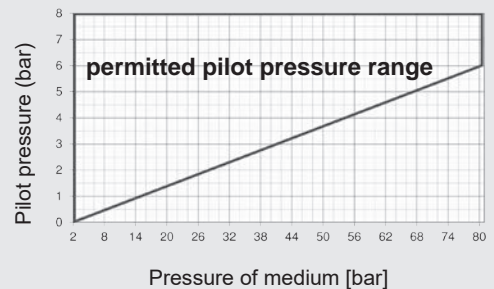
DN 12



DN 15



DN 20



! 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 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.

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Internet: www.hydac.com

E-Mail: accessories@hydac.com

HYDAC

INTERNATIONAL

TestPoint.
The compact, quick fastening
measurement coupling



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.



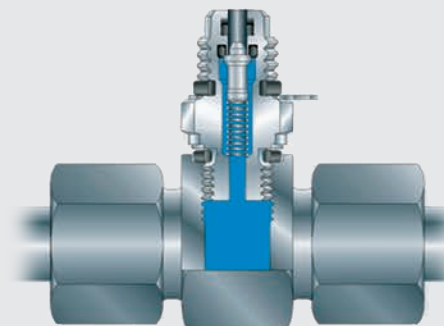
Portable measuring unit HMG ...



Pressure transmitter



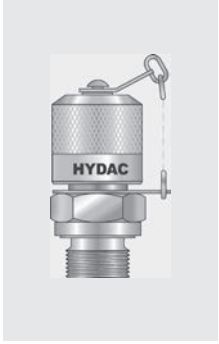
Adaptor



NOTE:

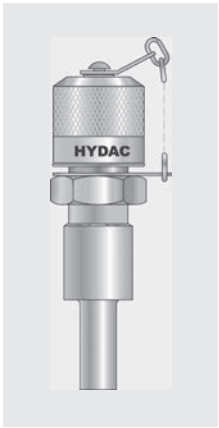
Only available in given pack sizes.

Guide to the TestPoint Product Range

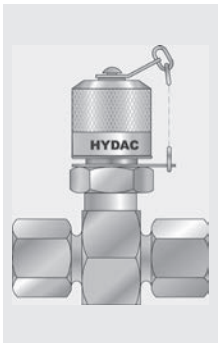


TestPoint screw coupling

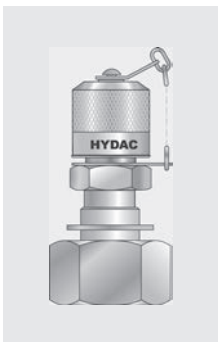
- with metal cap
- or plastic cap



Standpipe Adaptor



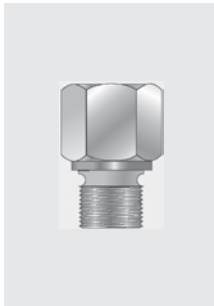
T-piece, screw-type



DKO adaptor



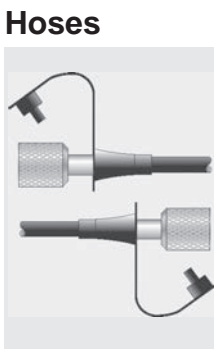
Standpipe adaptor 37° edged cone SAE J 514



Reducer

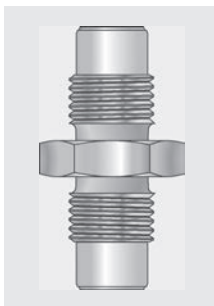


Weld adaptor



Hoses

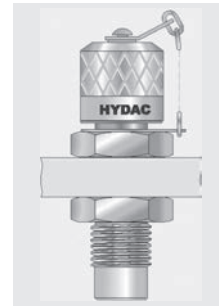
Microbore hose DN 2



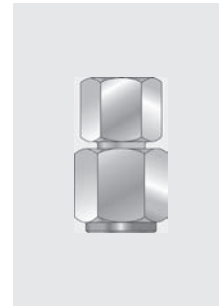
Connecting adaptor for hoses



TestPoint adaptor for connecting different thread series 1620-1615-1215



Bulkhead coupling with TestPoint screw coupling

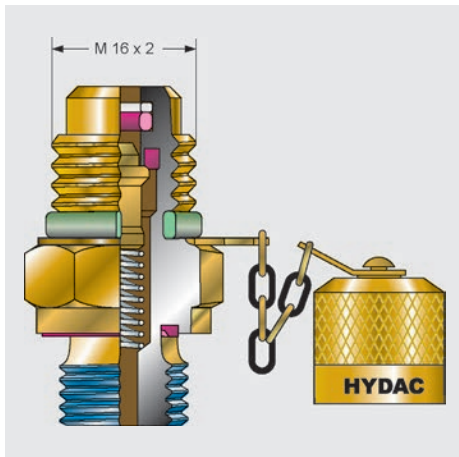


Direct gauge connection



Pressure gauge connection for bulkhead pipe fitting

Technical specifications 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)

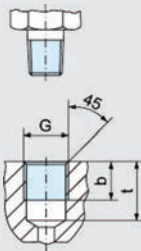
When used with plastic cap (option)

for both sealing materials:

-20 °C to +100 °C (-4 °F to +212 °F)

Hole dimensions and sealing details

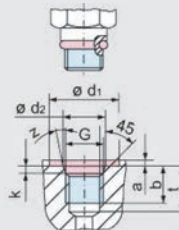
Form C



G	b	t
ISO 7 / I-R1/8	5.5	9.5
ISO 7 / I-R1/4	8.5	13.5

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)

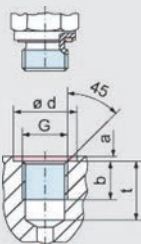
G	d ₁	d ₂	b	k	t	a	z°
7/16-20 UNF	21	12.4	11.5	2.4	14	1.6	12
9/16-18 UNF	25	15.6	12.7	2.5	15.5	1.6	12

ISO 6149-1

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

Hole dimensions according to SAE J 514 (UNF) or according to ISO 6149-1 (sealing by O-ring)

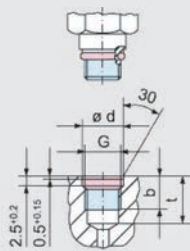
Form F



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

Hole dimensions (apart from Ø d) according to DIN 3852 part 1 and part 2, form X (square section seal)

Form G

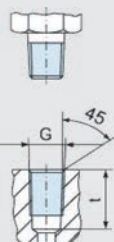


G	d	b	t
M 10 x 1	11.5	9	13
M 8 x 1	9.5	9	13

Drill bit on request

Hole dimensions according to HYDROTECHNIK factory standard N 901-01-14 (sealing by O-ring)

Form H

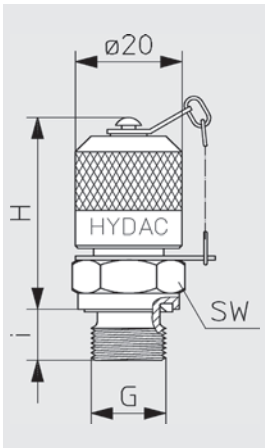


G	t		
1/8 NPTF	12		
1/4 NPTF	17.5		

Hole dimensions according to ANSI/ASME B 1.20.1-1983 (self sealing thread)

TestPoint 1620 Series

Standard design: Screw-on metal cap



Thread	Sealing details	p_{max}	Torque [Nm]	H [mm]	i [mm]	SW**	Order number with metal cap
G							
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	Gi-Ring/Form F square section seal	63 MPa (9000 psi)	30	36	10	17	00632615
M 14 x 1.5			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	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	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 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 - for spares only, please do not use for new designs

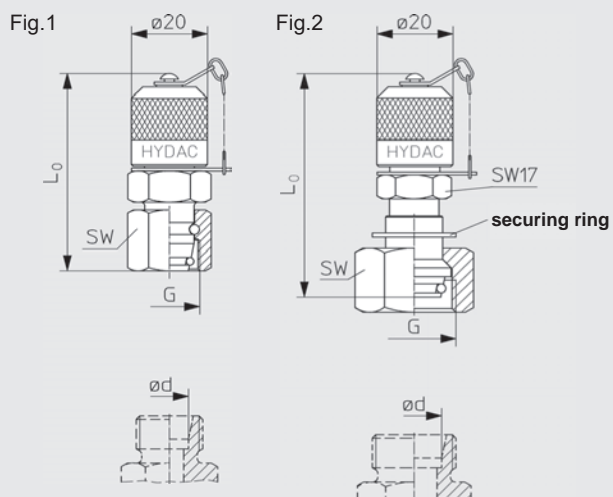
** AF width

**Threaded couplings with EPDM seal for brake fluid
or for other media on request.**

We reserve the right to make technical modifications.

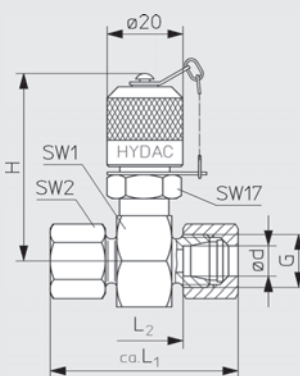
DKO adaptor, T-piece (screw-type), Standpipe adaptor for solder-free screw-in pipe connections to DIN 2353

DKO adaptor



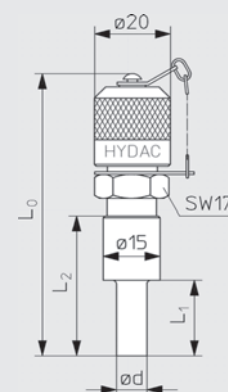
DKO adaptor with 24 ° sealing cone and coupling fitted.
Elastic NBR O-ring on sealing cone.

T-piece, screw-type



T-piece with coupling fitted and
cutting rings with union nuts.

Standpipe adaptor



DKO adaptor

Model ø d	p max	Thread G
L 6	31.5 MPa 4500 psi	M 12 x 1.5
L 8		M 14 x 1.5
L 10		M 16 x 1.5
L 12		M 18 x 1.5
L 15		M 22 x 1.5
L 18		M 26 x 1.5
L 22	16 MPa 2300 psi	M 30 x 2
L 28		M 36 x 2
L 35		M 45 x 2
L 42		M 52 x 2

Fig.	L ₀	SW	Order number
1	52	14	06003774
	52	17	06003775
	52	19	06003776
	52	22	00637510
	52	27	06003777
	52	32	06003778
2	60	36	06003779
	61	41	06003780
	63	50	06003781
	63	60	06003782

S 6	63 MPa 9000 psi	M 14 x 1.5
S 8		M 16 x 1.5
S 10		M 18 x 1.5
S 12		M 20 x 1.5
S 14		M 22 x 1.5
S 16	40 MPa 5800 psi	M 24 x 1.5
S 20		M 30 x 2
S 25		M 36 x 2
S 30	31.5 MPa 4500 psi	M 42 x 2
S 38		M 52 x 2

1	52	17	06003045
	52	19	06003044
	52	22	06003783
	52	24	06003784
2	63	27	06003785
1	52	30	00625518
	63	36	06003787
	64.5	46	06003788
	66	50	06003789
	69	60	06003790

T-piece, screw-type

L ₁	L ₂	H	SW ₁	SW ₂	Order 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

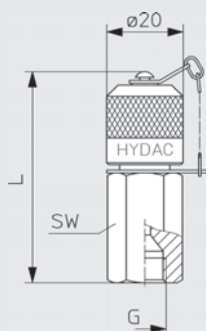
54.5	24.5	49.5	24	17	06003755
54.5	24.5	49.5	24	19	06003756
56.5	23.5	49.5	24	22	06003757
56.5	23.5	49.5	24	24	00689069
62.5	26.5	51	27	27	06003758
62.5	25.5	52.5	30	30	06003759
68.5	25.5	55.5	36	36	00689245
74.5	26.5	58	41	46	06003770
80.5	27.5	60.5	46	50	06003771
91	29	65	55	60	06003772

Standpipe adaptor

L ₁	L ₂	L ₀	Order 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

Standpipe adaptor 37° edged cone SAE J514

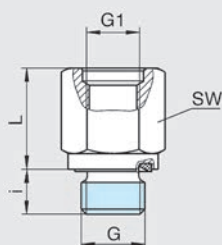


Thread G	p max	Pipe \varnothing	Pipe \varnothing	L	SW**	Order number
		[mm]	in inches			
7/16-20 UNF	60 MPa (8700 psi)	6	1/4"	55	17	06003792
1/2 -20 UNF	42 MPa (6000 psi)	8	5/16"	56.5	17	06003793
9/16-18 UNF	31.5 MPa (4500 psi)	10	3/8"	57.5	19	06003794
3/4- 16 UNF		12	1/2"	60.5	22	06003795

Further threads on request

** AF width

Reducer

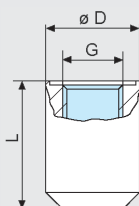


Ext. thread G	Type of seal	p max	L [mm]	i [mm]	SW**	Order number
M 12 x 1.5	Form F	63 MPa (9000 psi)	19	10	17	06003797
M 16 x 1.5			19	10	22	06003798
ISO 228-G 1/8		40 MPa (9000 psi)	19	8	17	06003799
ISO 228-G 1/2		63 MPa (9000 psi)	10	14	27	06003800
ISO 228-G 3/4			13	12	32	06003765
1/2 NPTF	Form H		10	18	24	06003766

Thread in reducer G1: M 10 x 1, form G, acc. to HYDROTECHNIK company standard N 901-01-14

** AF width

Weld adaptor



Thread G	Hole	p max	L [mm]	$\varnothing D$ [mm]	Order number
M 14 x 1.5	Form F	63 MPa (9000 psi)	30	22	06003796
ISO 228-G 1/4					0683922

Micro bore flexible hoses DN 2

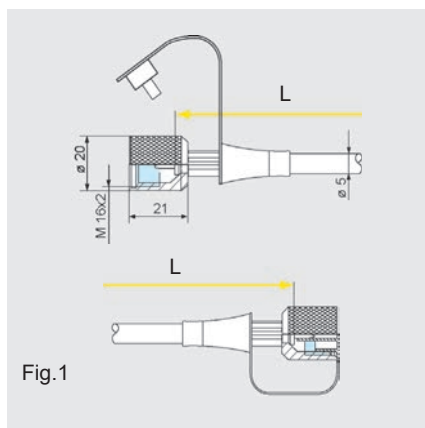


Fig. 1

Technical specifications:

Bending radius:

min. 20 mm
(lower than -20 °C: 30 mm)

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 %

Hose construction:

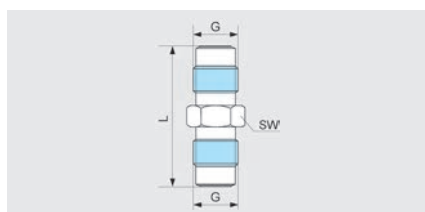
Hose core and hose cover
Polyamid

Inner reinforcement:
Polyester fibre

L [mm]	p max	Order number (Fig. 1)	p max	Order number (Fig. 1)
200	40 MPa 5800 psi	00680606	63 MPa 9000 psi	06003723
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

TestPoint Connection, Hydrotechnik "AC".
Other combinations on request.

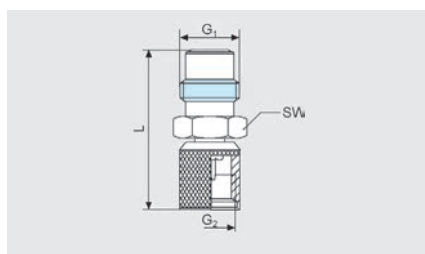
Adaptor for connection of measurement hoses



Thread G	L [mm]	SW [AF width]	p max	Order number
M 16 x 2	42	17	63 MPa (9000 psi)	00687889

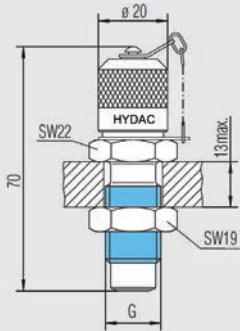
Note: without check value

Adaptor for connection of measurement hoses different thread series: 1620-1615-1215



Thread G ₁	Thread G ₂	L [mm]	SW [AF width]	Order number
retaining thread 12	M 16 x 2	25.2	17	—
M 16 x 2	retaining thread 12	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

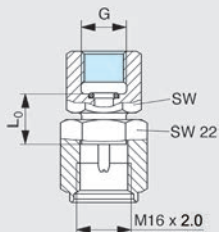
Bulkhead coupling



For solderfree screw-in pipe connection acc. to DIN 2353, opposite end: TestPoint 1620 connection (M16 x 2)

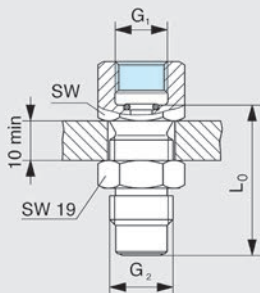
Thread G	p max	Connection	Order number
M 16 x 2	63 MPa (9000 psi)	both ends for series 1620	06003767

Direct gauge connection



Internal thread G	p max	L ₀ [mm]	SW [AF width]	Order 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

Pressure gauge connection for bulkhead pipe fitting



Internal thread G ₁	External thread G ₂	L ₀ [mm] (approx.)	SW [AF width]	Order 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

Note: without check valve

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.

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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 for 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.

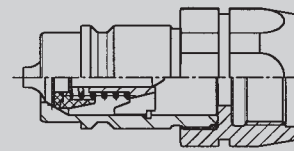
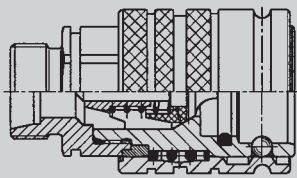
Special agreements are possible.

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.

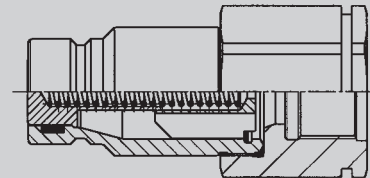
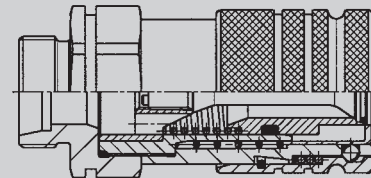
A test will be required to make a definite statement in each case. Apart from the standard couplings, custom versions can also be supplied.

If you have a particular problem to solve, please get in touch with us.

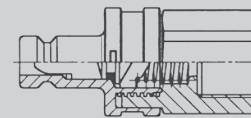
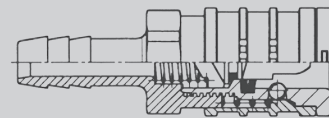
As part of our process of continuous improvement, we reserve the right to make technical changes.



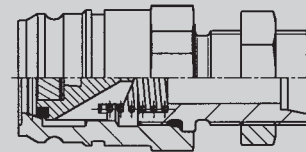
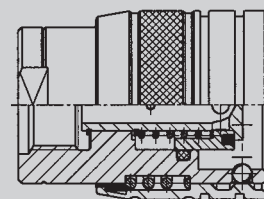
Push fit coupling ISO7241



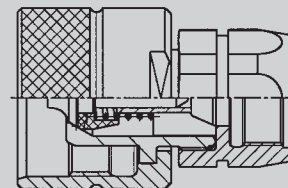
Push fit coupling ISO16028, flat face



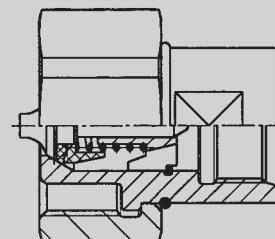
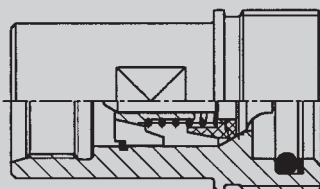
Push fit coupling, plastic



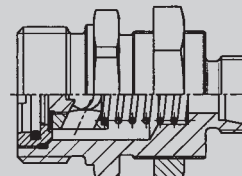
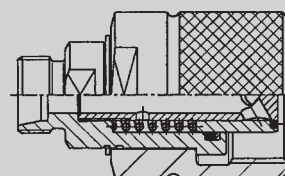
Locking couplings for hydraulic braking systems



Screw coupling

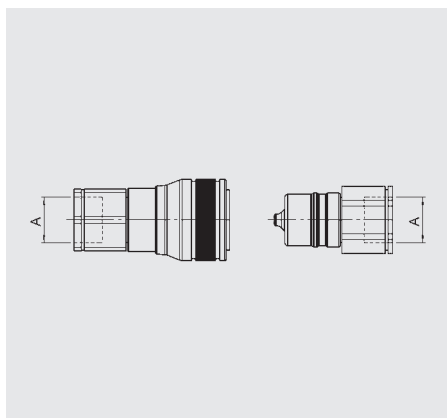


Screw coupling, for high pressure



Pipe coupling

Push fit couplings



Selection of available push fit couplings

	Connection A	Pipe Ø	P _{max} [bar]	Size according to ISO 7241-1, series A				
				6.3	10	12.5	20	25
Female thread DIN 3852	G ¹ / ₄	-	250	x	x			
	G ³ / ₈	-	250		x	x		
	G ¹ / ₂	-	250			x		
	G ³ / ₄	-	250				x	x
	G1	-	250					x
	M16x1.5	-	250		x	x		
	M18x1.5	-	250			x		
	M22x1.5	-	250			x	x	
	NPTF ¹ / ₄ -18	-	250	x				
	NPTF ³ / ₈ -18	-	250		x	x		
NPTF ¹ / ₂ -14	-	250					x	
NPTF ³ / ₄ -14	-	250						x
NPTF 1-11 ¹ / ₂	-	250						x
UNF ³ / ₄ -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 ³ / ₈	-	250		x	x		
	G ¹ / ₂	-	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 building machines. Thanks to their modular design, a large variety of connections is available, which conform to international standards.

Technical specifications

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 _{coupled} P _{female} P _{male}	1000 bar 1000 bar 1000 bar (except for size G25 → here max. 700 bar)	
Connections	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.

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.

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

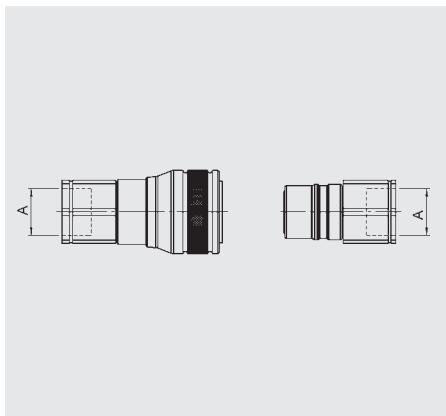
Tel.: +49 (0)6897 - 509-01

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

Internet: www.hydac.com

E-Mail: accessories@hydac.com

Push fit couplings flat face



Selection of available push fit couplings

	Connection A	Pipe Ø	P _{max} [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 specifications

Dimensions	to ISO/DIS 16028						
Housing material	Steel corresponding to EN 10277						
Material of seals	NBR / PTFE ISO 3601						
Operating pressure	P _{max}	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 _{coupled}	2000	1500	1500	1200	1450	800
	P _{female}	1220	1100	1050	1200	1050	800
	P _{male}	1850	1100	1050	1100	1050	800
Connections	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.

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.

Accessories

Dust protection parts

- Dust cap for connector (male)
- Dust cap for connector (female)

HYDAC Accessories GmbH
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Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: accessories@hydac.com

Spare Parts

- O-ring material: NBR
- Support ring material: PTFE
- Brake ring material: NBR
- Valve seal material: NBR
- Locknut material: steel, zinc-plated

Dimensions according to the size concerned

Overview of couplings

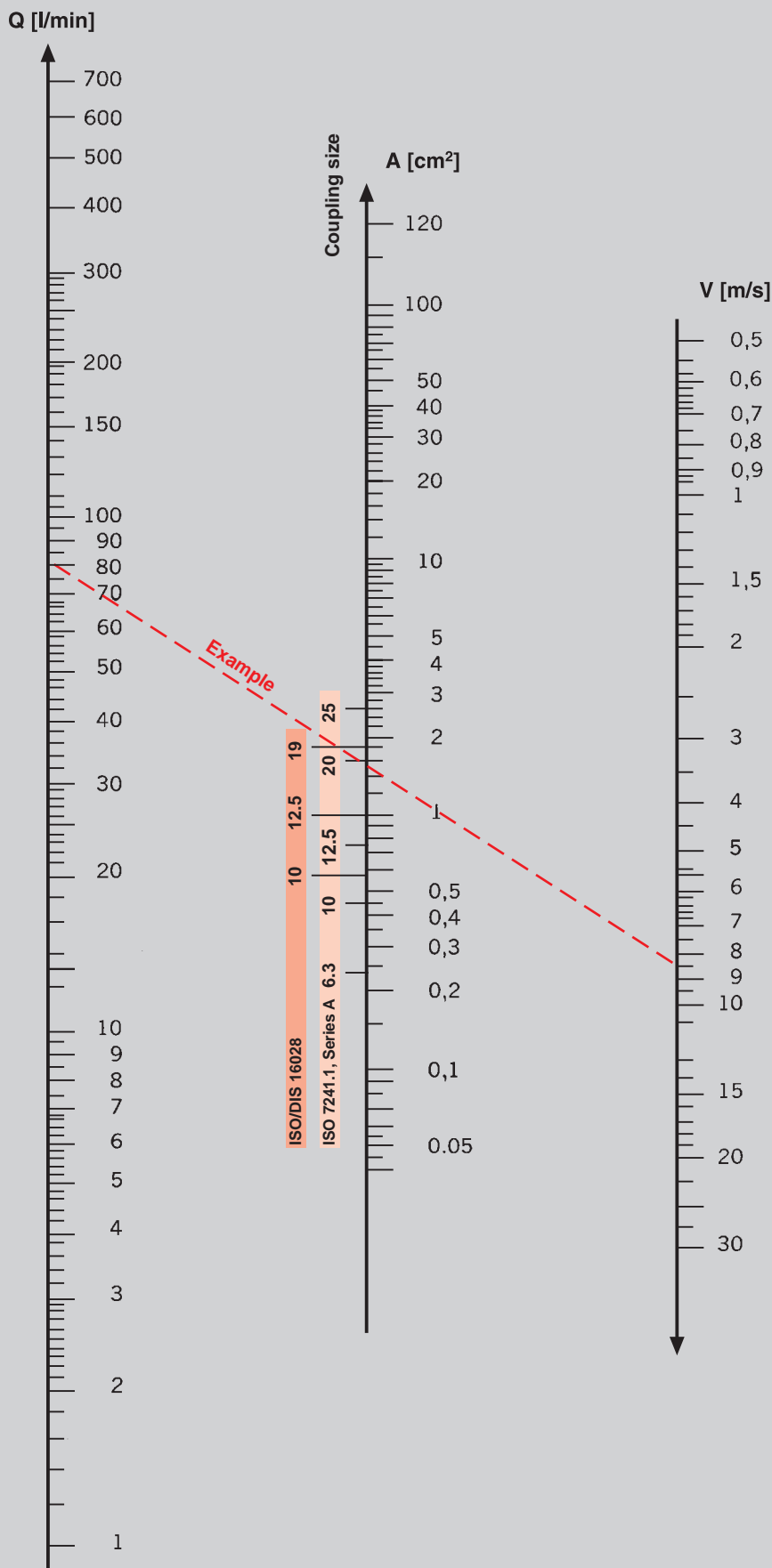
Designation Function	Size	DN [Inch]	A _{min} [mm ²]	Q _{max} [mm ²]	Operating pressure [bar]	Burst pressure			Leakage oil [ml]
						coupled [bar]	female [bar]	male [bar]	
Push fit coupling Corresponds to ISO 7241-1, series A	6.3	¼	24	20	250	1000	1000	1000	0.8
	10	⅜	45	40	250	1000	1000	1000	1.2
	12.5	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
Flat face couplings 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
Brake line couplings Low-leakage flat face corresponding to ISO5676	12.5	½		70	150	315	75	150	
Screw couplings 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	
Screw coupling for high pressure	12.5	½	76	80	350/465*	2000	1850	1750	
	16	¾	256	160	350/465*	1800	2000	1750	
Screw coupling 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	
Pipeline coupling 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	
Screw coupling For hammer operation	12	½	130	160	400	1500	1200	1200	
	20	¾	130	180	400	1500	1200	1200	
	32	1 ¼	467	660	380	1520	1520	1520	
Plastic coupling 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!

Making the wrong choice of, or improperly handling, 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, locking 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 locking 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 locking connectors, 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 locking 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 locking 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 locking 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 locking 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

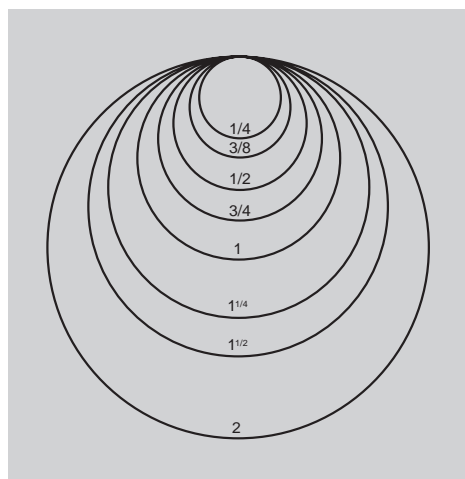
Strongly heating above the recommended operating temperature, by welding or soldering on the couplings, can produce hazardous gases. Apart from that, the surface protection (zinc plating) can be damaged. This can interfere with proper functioning.

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

Size	DN	Flange		Metric		Inch	BSP	JIC	ORS	NPTF
		3000 psi	6000 psi	Light range	Heavy range					
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.

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.

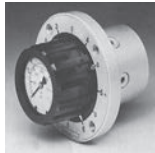
HYDAC Accessories GmbH
 Hirschbachstr. 2
 66280 Sulzbach/Saar
 Tel.: +49 (0)6897 - 509-01
 Fax: +49 (0)6897 - 509-1009
 Internet: www.hydac.com
 E-Mail: accessories@hydac.com



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

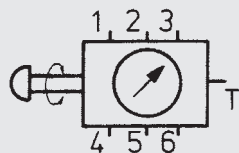
to VDI 3267

2.1. GENERAL

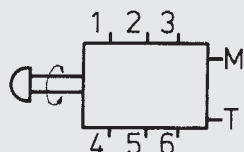
2.1.1 Designation and Symbol

Multi-station gauge isolator

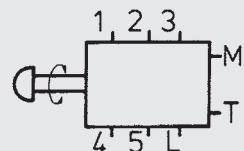
Type MS 2/MSL 2



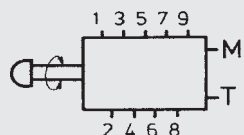
Type MS 4



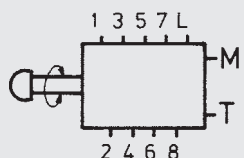
Type MS 5



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

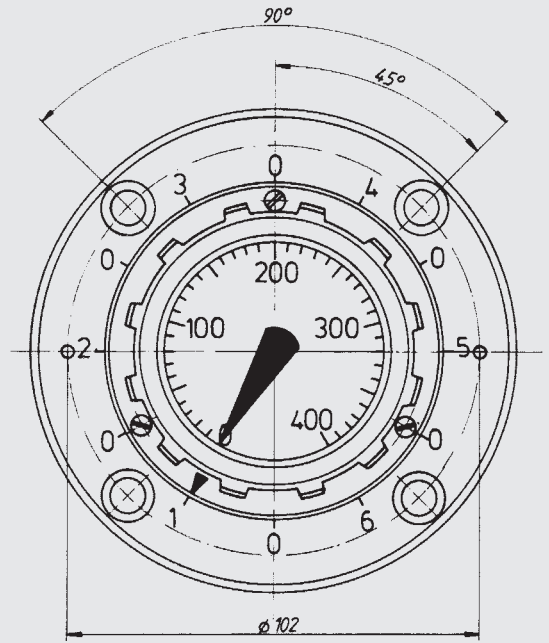
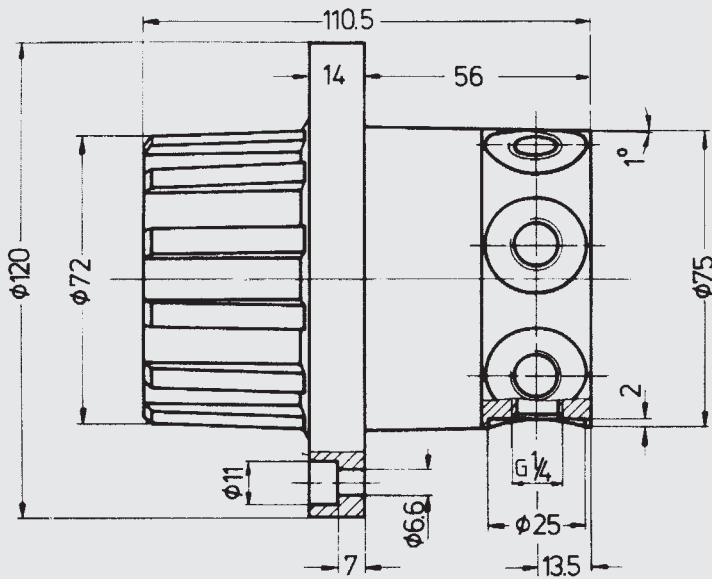
2.2.3 Gauge accuracy

MS 2/MSL 2

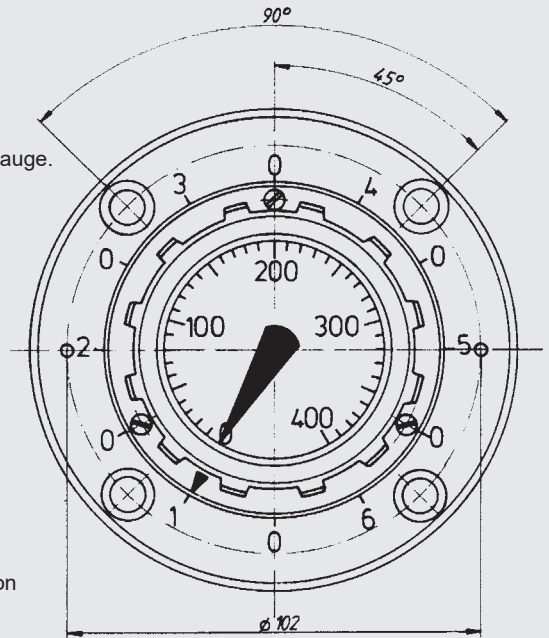
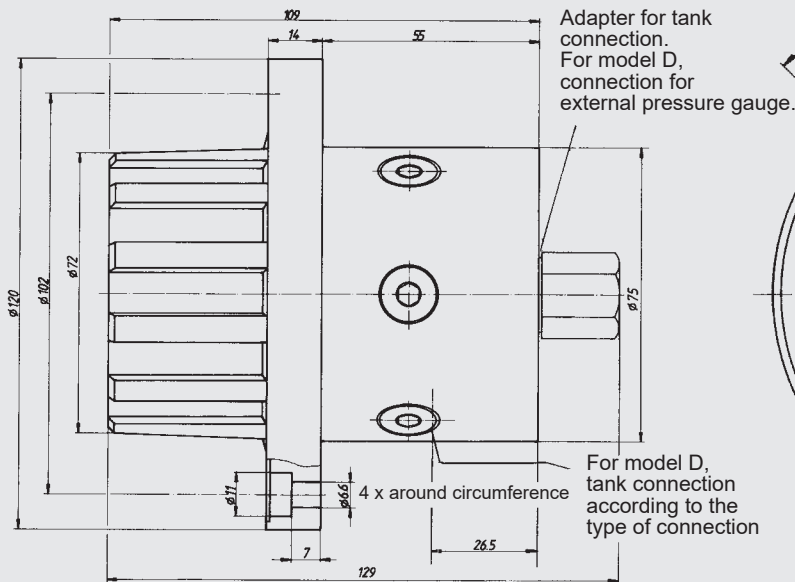
The accuracy of the built-in gauge is 1.6% of the red scale value at 20 °C. Inaccuracy per 10 °C temperature increase approx. +0.3% and per 10 °C temperature decrease approx. -0.3% of the red scale value.

3. DIMENSIONS

TYPE MS 2



TYP MSL 2



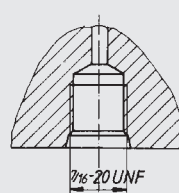
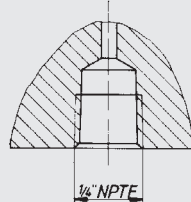
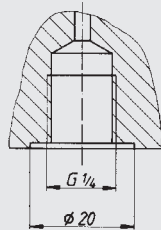
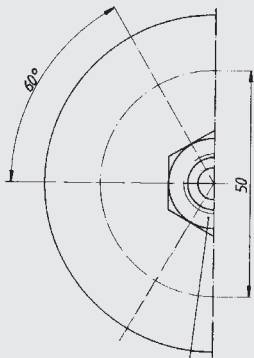
Type of connection:
A/G/H

Connections:

A

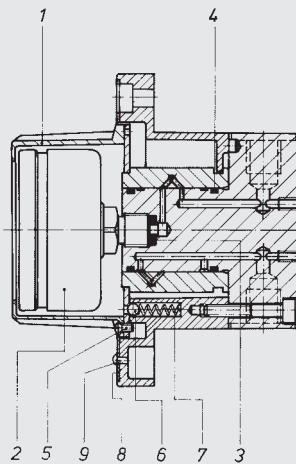
G

H



Adapter
for tank connection.
For model D,
connection for external
pressure gauge

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

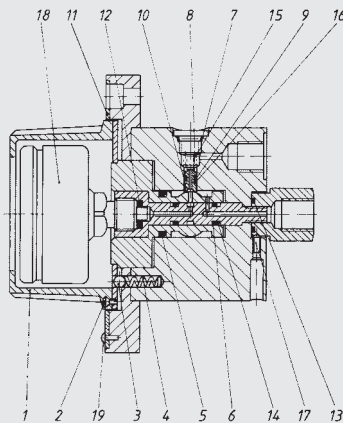
ORDER EXAMPLE

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

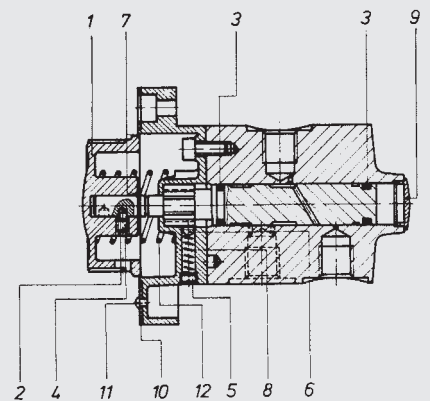
ORDER EXAMPLE

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

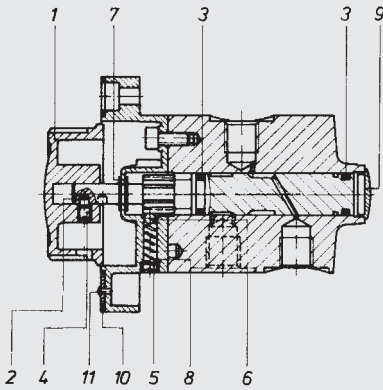
ORDER EXAMPLE

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

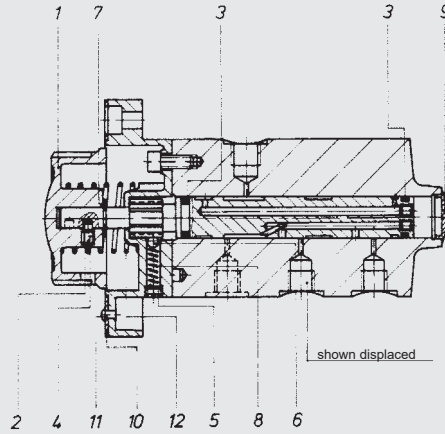
ORDER EXAMPLE

Type MS 5 A 2 . 0 / .

1 off quad ring, item 3

(When ordering, always quote the whole model code of the unit)

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

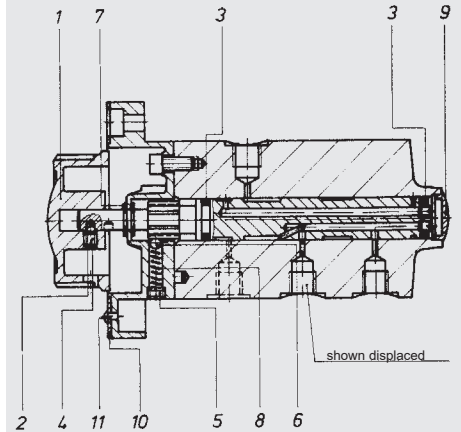
ORDER EXAMPLE

Type MS 6 A 2 . 0 / .

1 off quad ring, item 3

(when ordering, always quote the whole model code of the unit)

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)

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.

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

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: accessories@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.

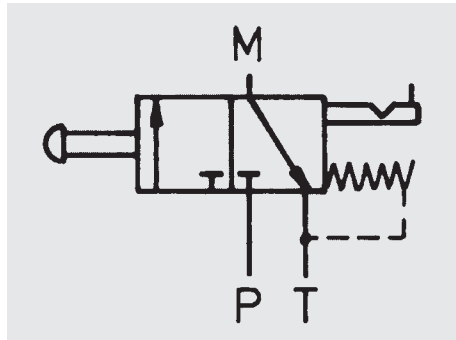
It can be operated in two ways:

- 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

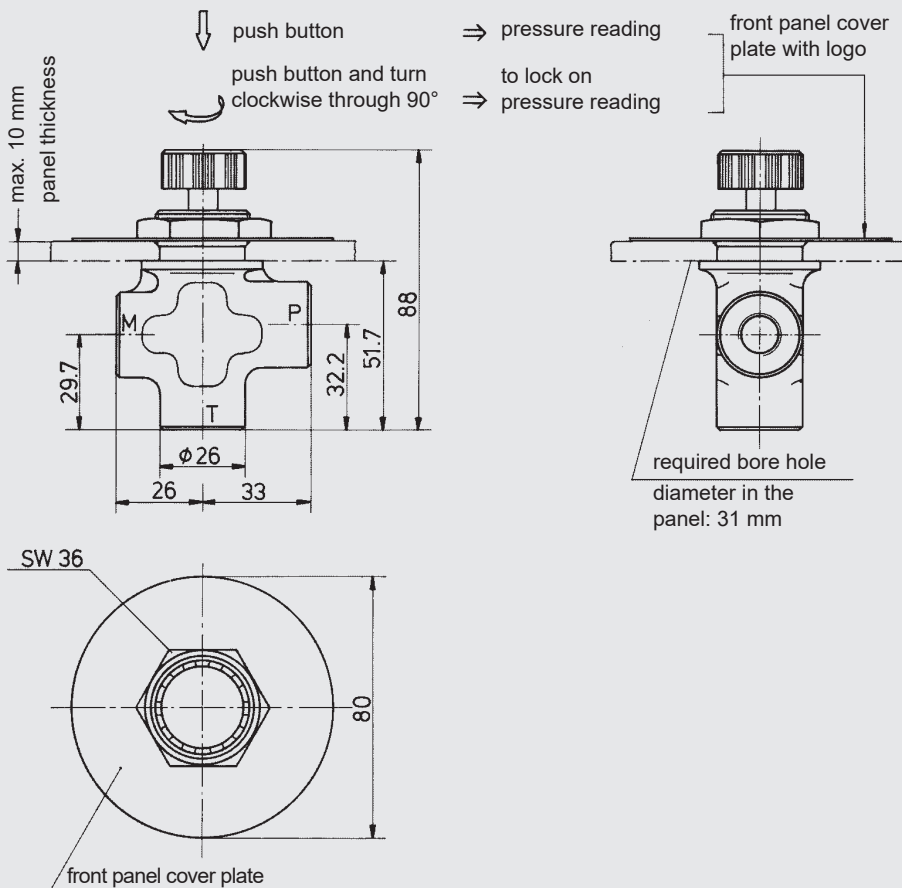
max. 350 bar

(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 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.

Pressure switch

Type DV7.1

With one adjustable change-over switch

Functional principle

Piston type hydromechanical pressure switch with one change-over switch, easily adjustable over the entire pressure range, with scale for presetting of the pressure switching point.

7 pressure ranges for the optimal adaptation to any operating pressure.

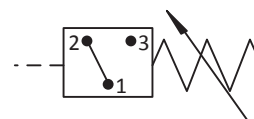
Features

- Designed for rough operating conditions
- Insensitive to hydraulic overloads
- Specially developed piston seal
- Housing made of anodized aluminium
- Degree of protection IP 65
- Instrument plug according DIN 43650
- Rotatable under pressure around the longitudinal axis
- Very high operational safety
- Insensitive to EMV and no power supply is necessary



Damping

For the protection of the pressure switch we recommend the installation of a damping element as for example a throttle screw with double fitting according to the table below.



Technical specifications

Hydraulic fluid	Mineral oil according to DIN 51524 (other media on request)
Temperature range Medium	-20 to 80 °C
Ambient temperature range	-30 to 50 °C
Viscosity range	5 to 400 mm ² / s
DIN appliance plug connection (3P + GND)	According to EN 175301-803
Mounting position	Arbitrarily
Appliance plug	Rotatable about 3 x 90°
Switching hysteresis of the scale end value	2 - 10%
Repeat accuracy of the scale value	1%
Degree of protection	IP 65
Class of insulation	I
Accuracy class	4.0
Materials	Housing: Aluminium anodized

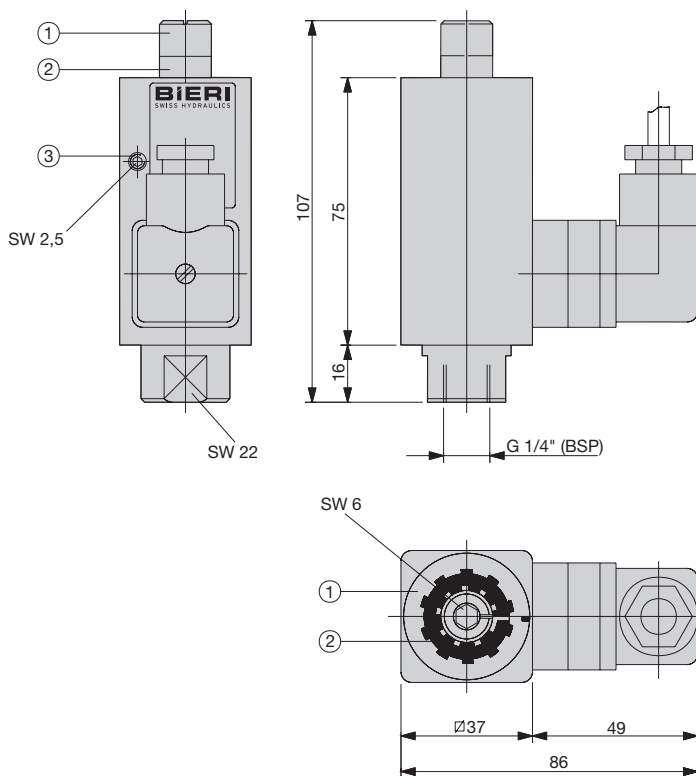
Type DV7.1

With one adjustable
change-over switch

Product information

Type		Pressure [bar]	Overload max. [bar]	Part no.	Double fitting G 1/4" - G 1/4"		Double fitting G 1/2" - G 1/4"	
					Part no. 3683718	Part no. 3683678		
					Throttle screw		Throttle screw	
					mm	Part no.	mm	Part no.
DV7.	60.33006	60	130	3658044	0.5	3688099	0.5	3688096
DV7.	100.33010	100	360	3658055	0.5	3688099	0.5	3688096
DV7.	180.33018	180	360	3665354	0.5	3688099	0.5	3688096
DV7.	250.33025	250	500	3658058	0.5	3688099	0.5	3688096
DV7.	400.33040	400	800	3665378	0.2	3688087	0.2	3688059
DV7.	600.33060	600	1200	3665379	0.2	3688087	0.2	3688059
DV7.	1000.33100	1000	1200	3641450	0.2	3688087	0.2	3688059

Dimension drawing



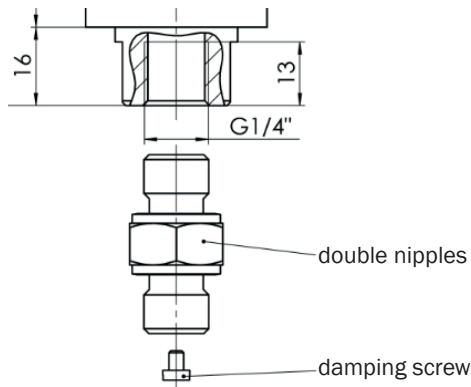
Setting of the switching point

- (1) Bright scale-/spindle part
 - (2) Dark scale-/spindle part
 - (3) Spindle locking
- Loosen the spindle locking (3)
 - Combine the dark scale part (2) with the dark spindle part (2) for lower pressure setting and the bright scale part (1) with the bright spindle part (1) for upper pressure setting
 - Tighten the spindle locking (3)



Type DV7.1
 With one adjustable
 change-over switch

Hydraulic connection



Changeover contact switch

Contacts

Material switch contacts	Pure silver (Ag 999)
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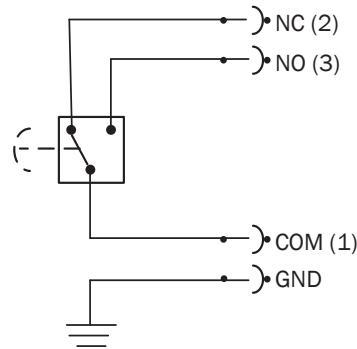
electrical switching capacity

According to	EN IEC 60947-5-1 : 2004 + A1 : 09
AC-15	2 A / 125 V... 250 V
DC-13	2 A / 30 V (ind.)
DC-12	4 A / 30 V (ohm)

ENEC	250 VAC 10 (3) A, 1E4 A
UL/CSA	250 VAC 10.1 A

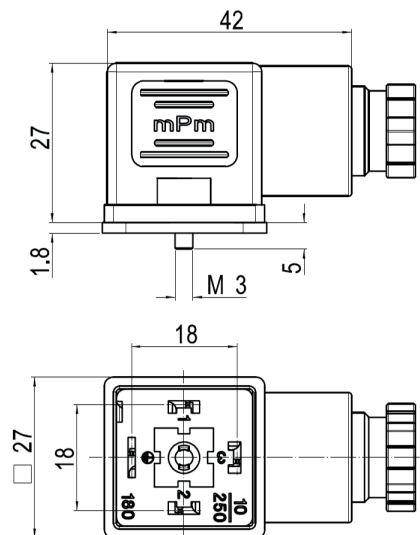
Cable plug according to DIN EN 175301 - 803

PIN assignment of the connector



General information

Connecting lead - Ø	6.00 - 8.00 mm
Connection cross section max.	1.5 mm ²
Position ground contact	H12
Material connector casing	PA6 black
Material flat gasket	NBR
Material plug contacts	Silver (Ag)
Cable gland	PG 9
Outlets	3 poles + GND

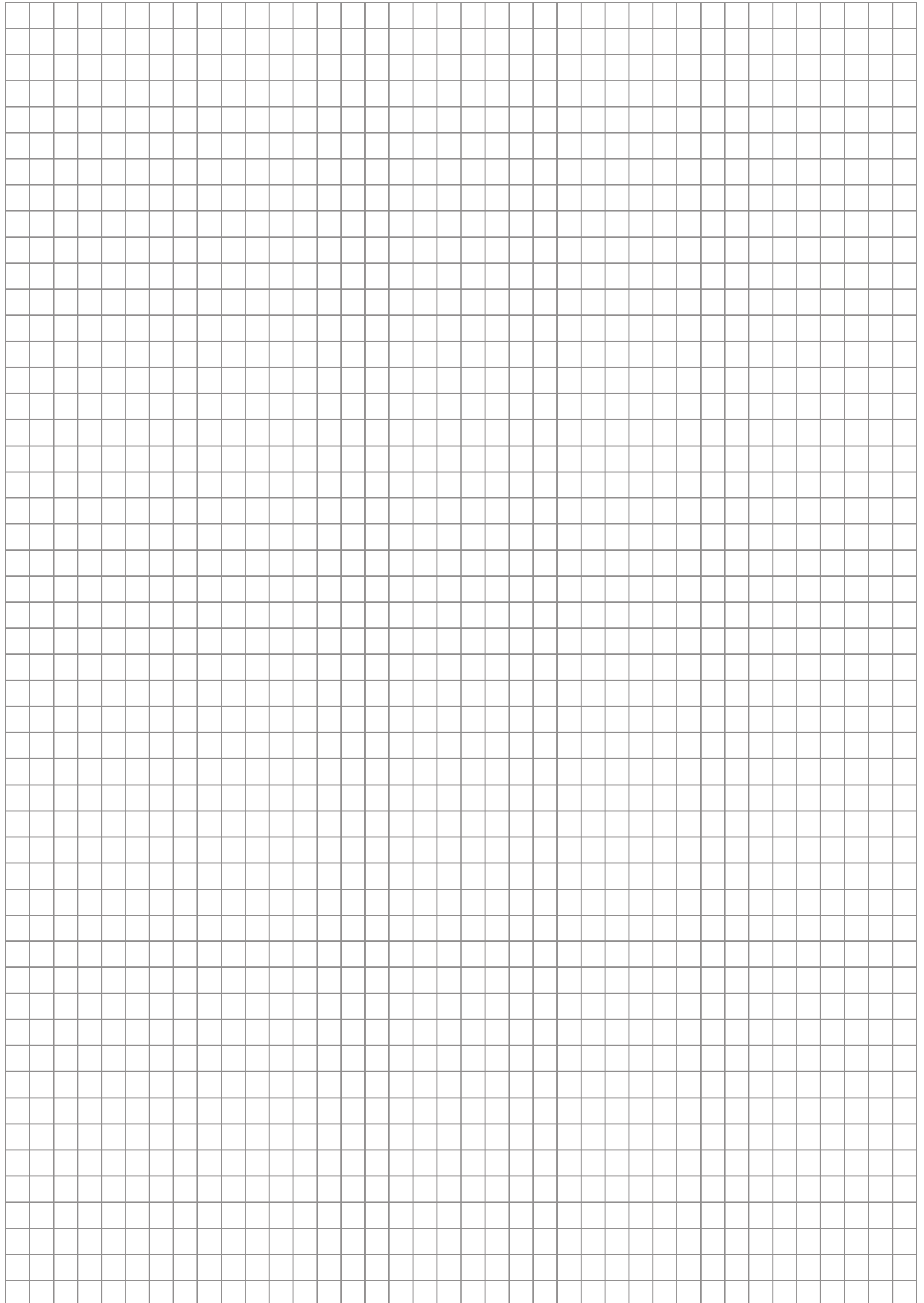


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The information in this brochure relates to the operating conditions and applications described.
 For applications and operating conditions not described, please contact the relevant technical department.
 Subject to technical modifications.

DV7-1_1804

Notes



Pressure switch

Type DV7.2

With two adjustable change-over switch

Functional principle

Piston type hydromechanical pressure switch with one change-over switch, easily adjustable over the entire pressure range, with scale for presetting of the pressure switching point.

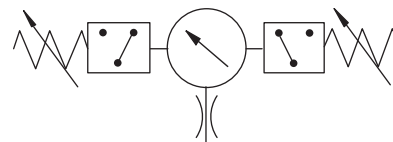
7 pressure ranges for the optimal adaptation to any operating pressure.

Features

- Designed for rough operating conditions
- Insensitive to hydraulic overloads
- Specially developed piston seal
- Housing made of anodized aluminium
- Degree of protection IP 54
- Instrument plug according DIN 43650
- Rotatable under pressure around the longitudinal axis
- Very high operational safety
- Insensitive to EMV and no power supply is necessary

Damping

A damping screw is fitted as standard to protect the pressure switch.



Technical specifications

Hydraulic fluid	Mineral oil according to DIN 51524 (other media on request)
Temperature range Medium	-20 to 80 °C
Ambient temperature range	-30 to 50 °C
Viscosity range	5 to 400 mm ² / s
DIN appliance plug connection (3P + GND)	According to EN 175301-803
Mounting position	Arbitrarily
Appliance plug	Rotatable about 4 x 90°
Switching hysteresis of the scale end value	2 - 10%
Repeat accuracy of the scale value	1%
Degree of protection	IP 54
Class of insulation	I
Accuracy class	4.0
Materials	Housing: Aluminium anodized Front scale: PC (Polycarbonat)

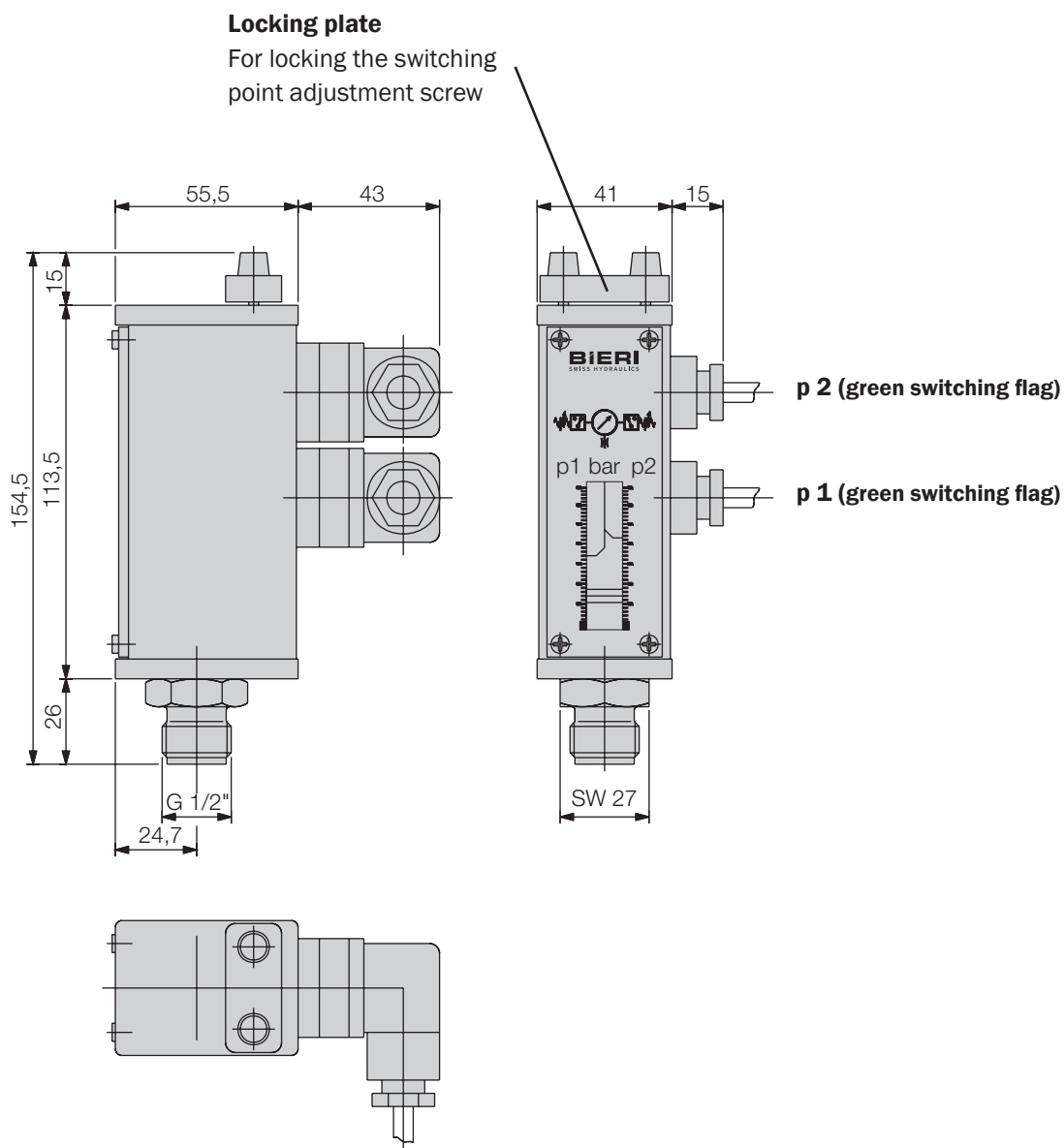
Type DV7.2

With two adjustable
change-over switch

Product information

Type		Pressure [bar]	pressure peak [bar]	Part No.
DV7.	70.29007	70	150	3646012
DV7.	100.29010	100	300	3682681
DV7.	160.29016	160	300	3674639
DV7.	250.29025	250	1200	3665347
DV7.	400.29040	400	1200	3661924
DV7.	600.29060	600	1200	3682754
DV7.	1000.29100	1000	1200	3658057

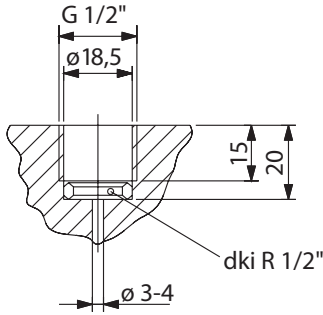
Dimension drawing



Hydraulic connection

Up to 640 bar

Gauges according DIN 2353.
 Above 640 bar connection thread as shown below,
 with seal ring dki 1/2" BSP (f.e. Ermeto).



Changeover contact switch

Contacts

Material switch contacts	pure silver (Ag 999)
--------------------------	----------------------

electrical switching capacity

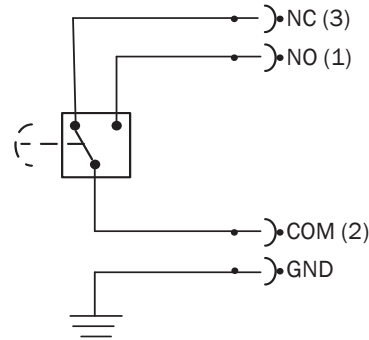
According to	EN IEC 60947-5-1 : 2004 + A1 : 09
AC-15	2 A / 125 V... 250 V
DC-13	2 A / 30 V (ind.)
DC-12	4 A / 30 V (ohm)
ENEC	250 VAC 10 (3) A, 1E4 A
UL/CSA	250 VAC 10.1 A

Cable plug according to DIN EN 175301 - 803

PIN assignment of the connector

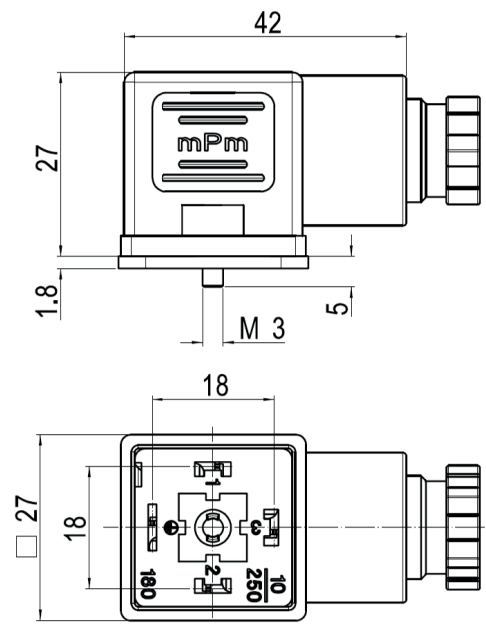
p 1 and p 2

p 1: green switching flag
 p 2: red switching flag



General information on the cable plug

Connecting lead - Ø	6.00 - 8.00 mm
Connection cross section max.	1.5 mm ²
Position ground contact	H12
Material connector casing	PA6 black
Material flat gasket	NBR
Material plug contacts	Silver (Ag)
Cable gland	PG 9
Outlets	3 poles + GND



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 Subject to technical modifications.



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 check valves.
Display of the current level by simultaneously pressing the upper and lower buttons on the check 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 mm²/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.

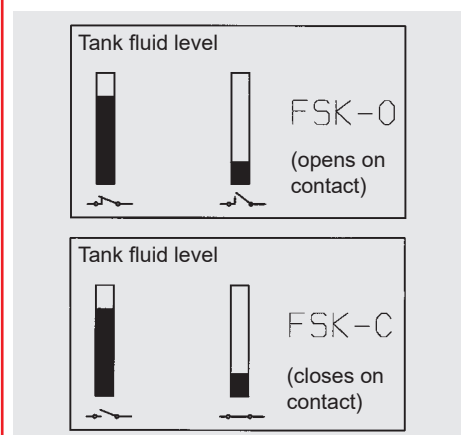
FSA/FSK

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.

The display tube must not be brought into direct contact with cleaning agents or solvents which are used to clean containers / tanks. Prior damage/new damage of the display tube may lead to failure of the FSA/FSK.

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.

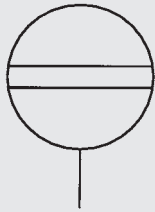
With inductive or capacitive loads, suitable protective circuits must be used.

2. TECHNICAL CHARACTERISTICS

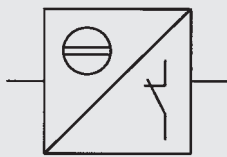
2.1. GENERAL

2.1.1 Designation and Symbol

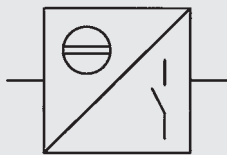
Fluid level gauge FSA



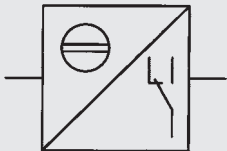
Fluid level sensor FSK



O - N/C contact

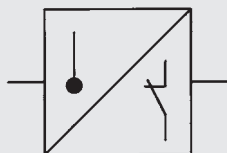


C - N/O contact



W - N/O or N/C contact

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 centre distance of bolts)

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, mounting bolts and nuts made from stainless steel*

SO8 = mounting bolts and nuts made from stainless steel*

SO14 = with glass tube, plastic connectors (PA)

SO19 = with green hollow ball, without contrast sheet

SO32 = with glass tube (round design), aluminium connectors; frame, mounting bolts and nuts made from stainless steel*

SO65 = FSA – standard, but without mounting nuts or sealing washers

SO67 = FSA – standard, but without mounting nuts

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 centre distance of bolts)

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, mounting 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 centre distance of bolts)

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

... = flat seal (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 function

- = hollow ball Ø 10

Installation conditions (pipe connection)

12LR = 12LR on both sides

Quantity of viewing windows

4SF = viewable from 4 sides

Design

No entry = without mounting nut

MUTTER = with mounting 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 centre distance of bolts)

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 entry = 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 centre distance of bolts)

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 point
 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

(also order example)

FSK - 1000 - 1 . 0 / W / - / 12 2SP Ø19 ...

Designation

FSK = fluid level sensor

Nominal size (≅ centre distance of bolts)

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 entry = 3-pole M8x1 male (standard)

Special designs

SO2 = with glass tube (round design), aluminium connectors

2.1.9 Model code for TS

(also order example)

TS - 70 / X / 12

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 Form 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 (Ø 13, Ø 11).

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 Installation

FSA – vertically on the tank wall

FSK – vertically on the container wall (connection plug at bottom of the container)

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 Ø 19

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 Ø 19

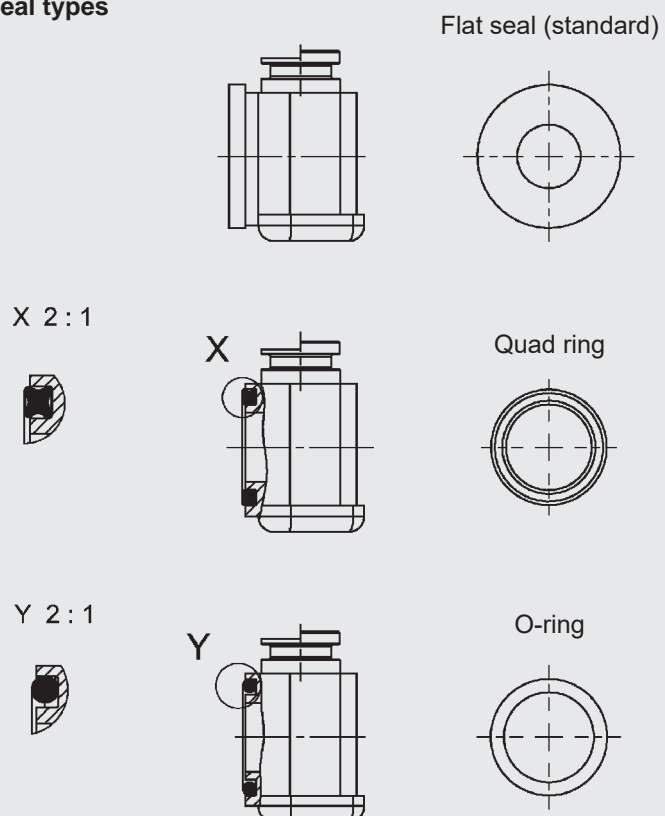
FSK-V

- Housing frame made of stainless steel
- Connectors made of aluminium / polyamide
- Riser tube made of glass Ø 19

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

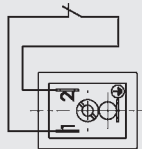
Thermometer FT for FSA / FSK:

0 °C to +100 °C

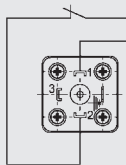
2.3. ELECTRICAL CHARACTERISTICS FSK

2.3.1 Electrical functions

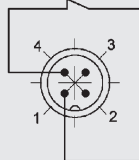
Type O / normally closed



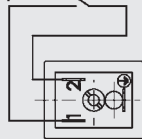
Type O / normally closed
(plug Z4 and form B)



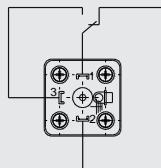
Type O / normally closed
(plug - SEW)



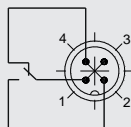
Type C / normally open



Type W / change over
(plug Z4 and form B)



Type W / change over
(plug - SEW)

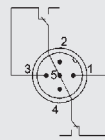


FSK-2SP

Type W / change over

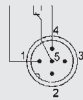
As delivered, switching point at bottom activated by magnetic field.

Size 127, 254, 381

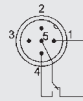


Contact assignment	bottom	top
Float setting		
Minimum	5 - 4	5 - 3
Maximum	5 - 1	5 - 2

Size 176



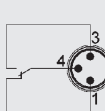
Contact assignment	top
Float setting	
Maximum	5 - 4



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: In the case of just 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

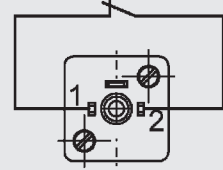
2.3.6 Viscosity range

max. 2000 mm²/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

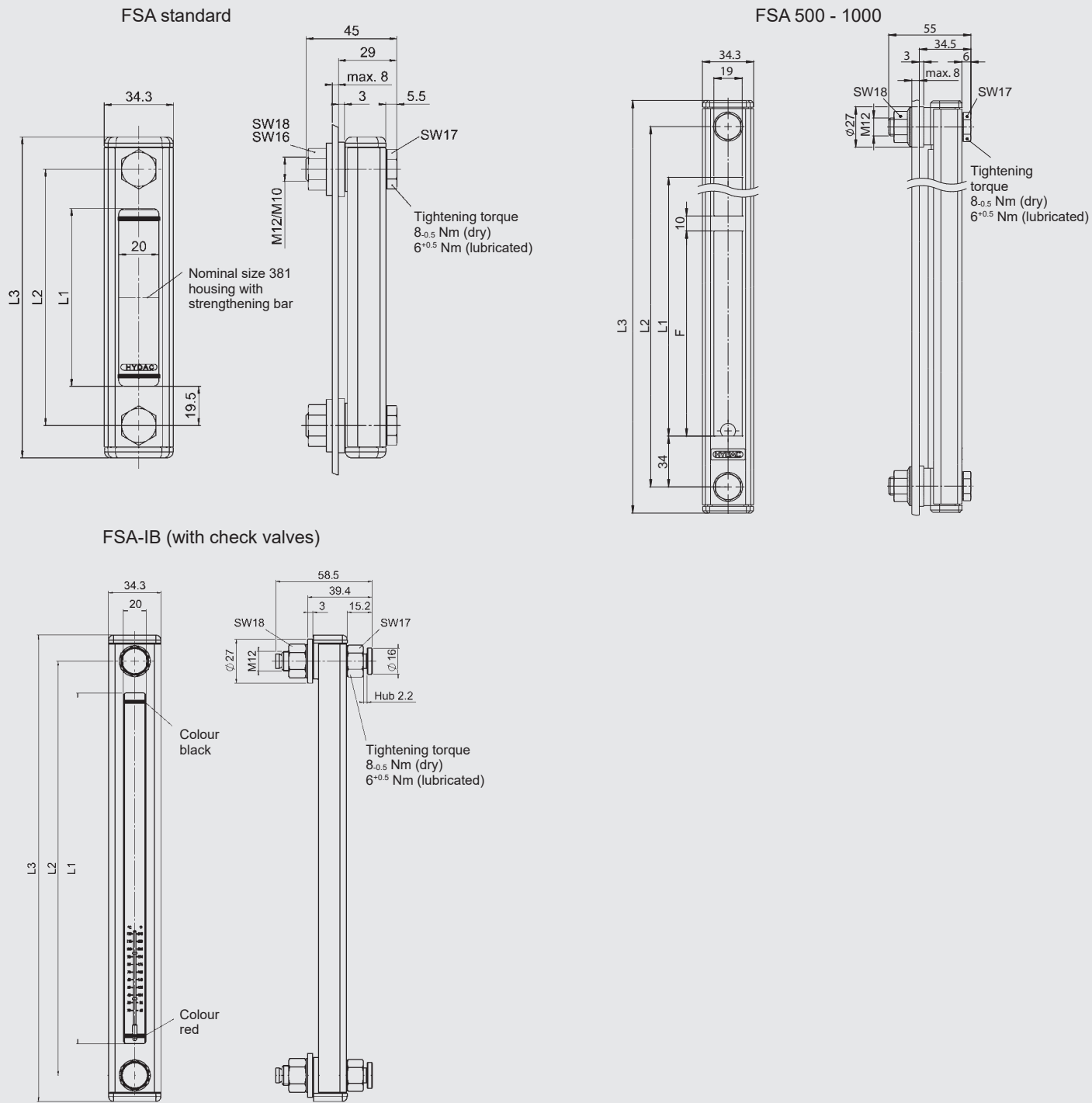
60 °C - 10-15 K

70 °C - 10-15 K

80 °C - 10-20 K

3. DIMENSIONS

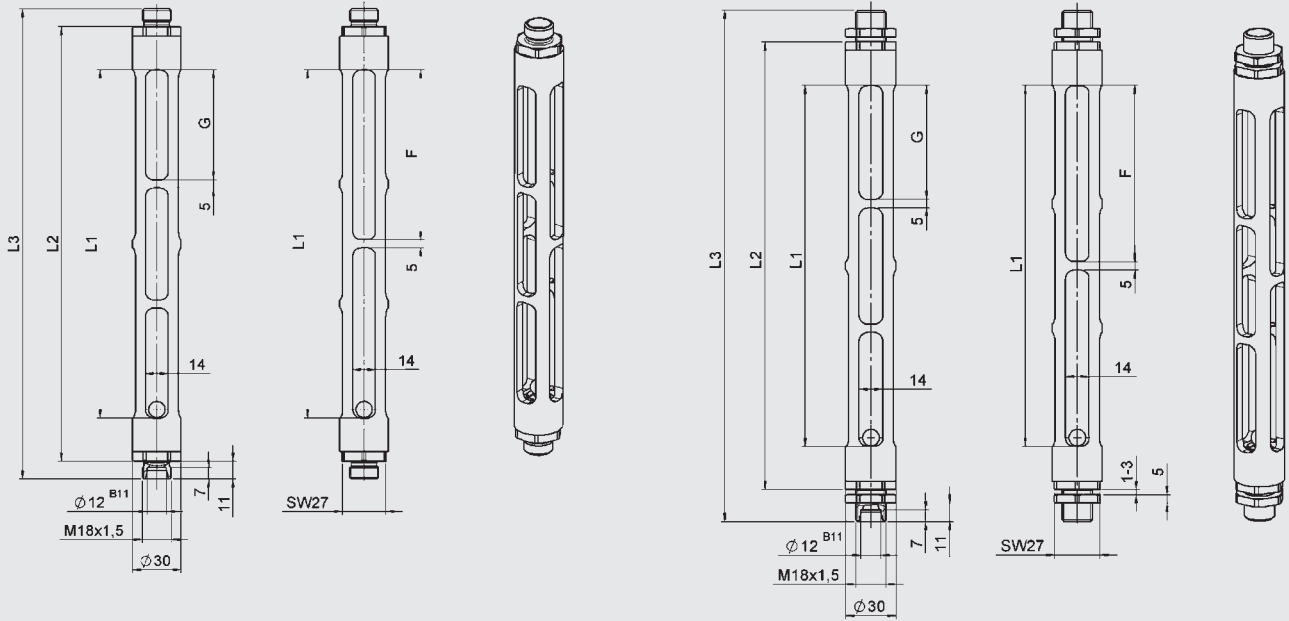
3.1. FLUID LEVEL GAUGE FSA



Nominal size \cong Centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]	F [mm]	Quantity F
76	37	76	108	-	-
127	88	127	159	-	-
176	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

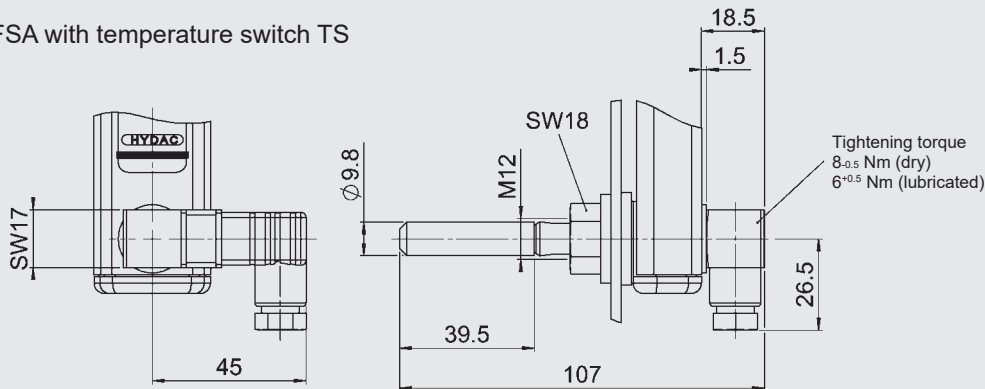
FSAR without mounting nut

FSAR with mounting nut



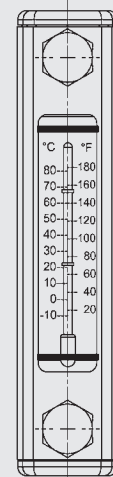
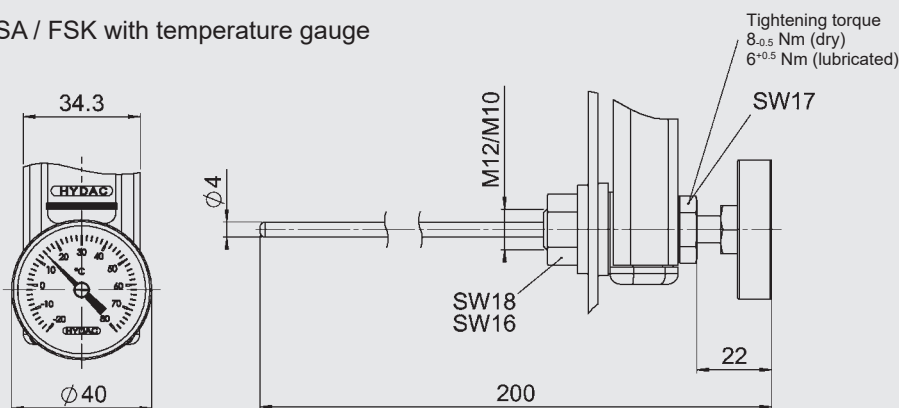
Design	Nominal size \approx Centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]	F [mm]	G [mm]
Without nut	FSAR-088	88	141.5	163.5	88	88
	FSAR-137	137	190.5	212.5	137	137
	FSAR-215	215	268.5	290.5	2x 105	3x 68
	FSAR-342	342	395.5	417.5	3x 110.5	4x 82
With nut	FSAR-088	88	139.5	177.5	88	88
	FSAR-137	137	188.5	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



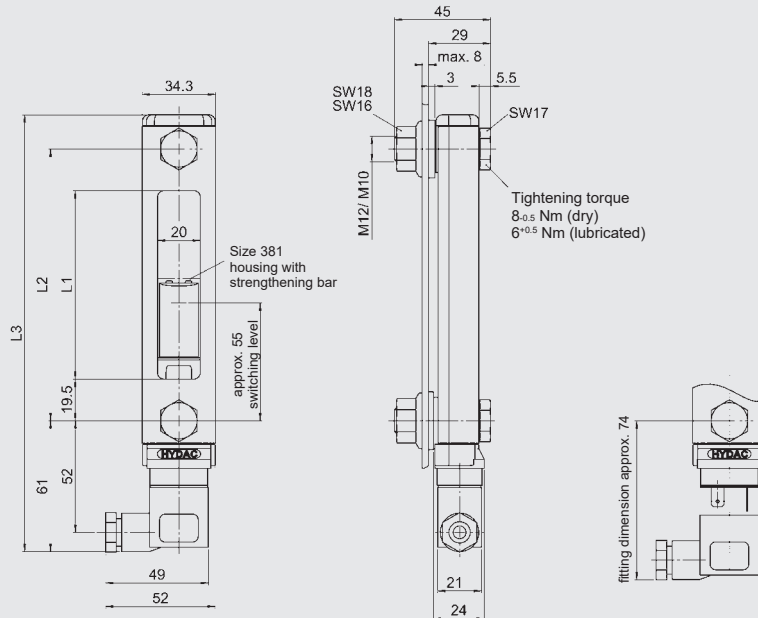
FSA with temperature gauge

FSA / FSK with temperature gauge

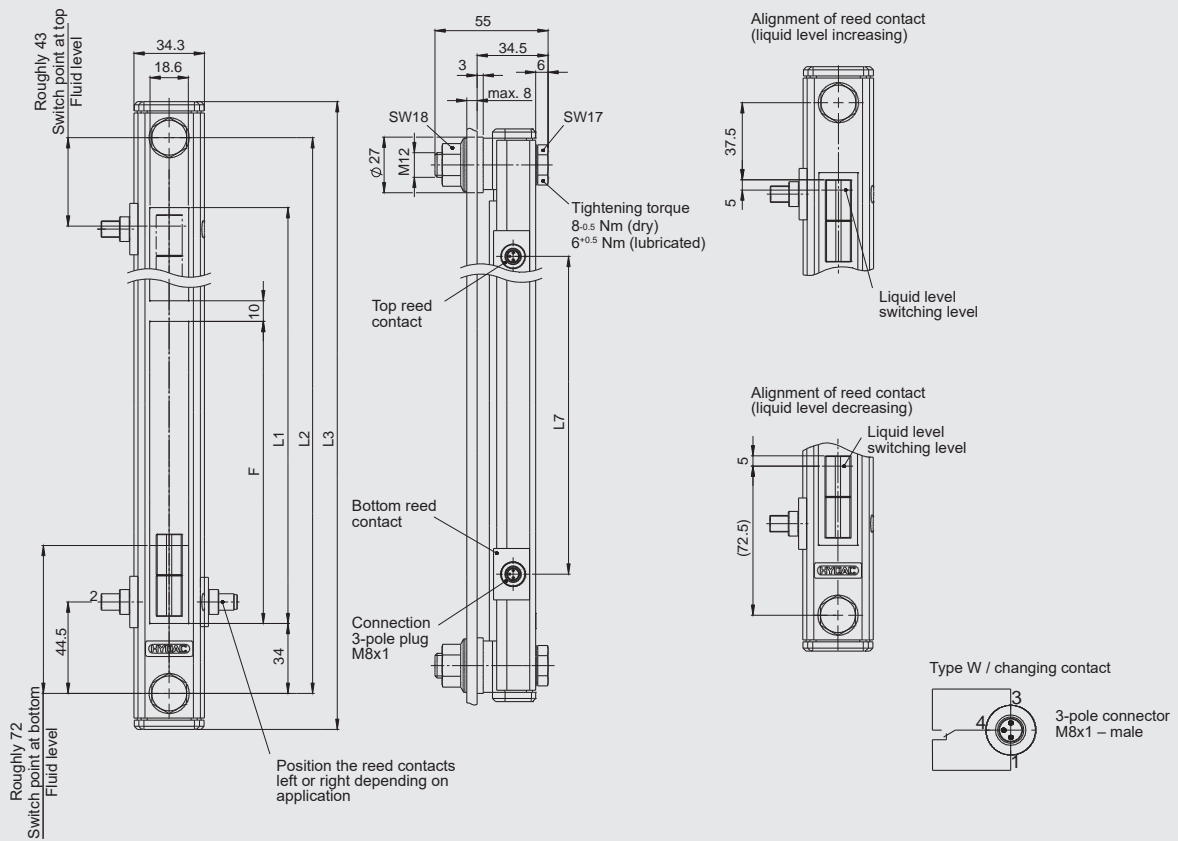


3.2. FLUID LEVEL SENSOR FSK

FSK standard

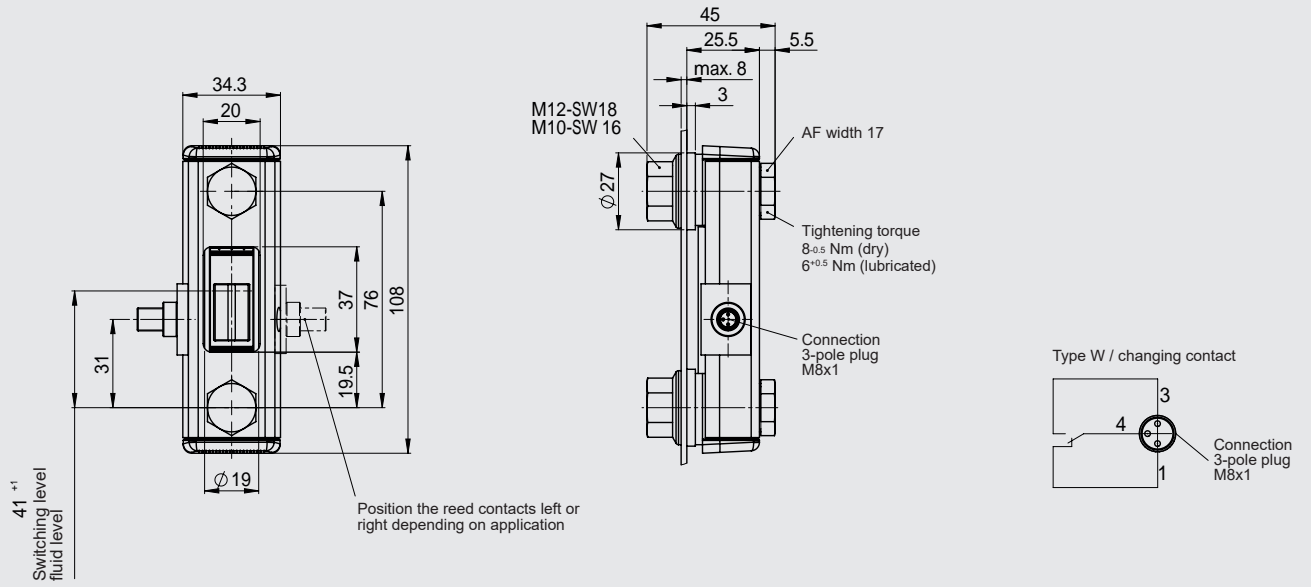


FSK 500 - 1000

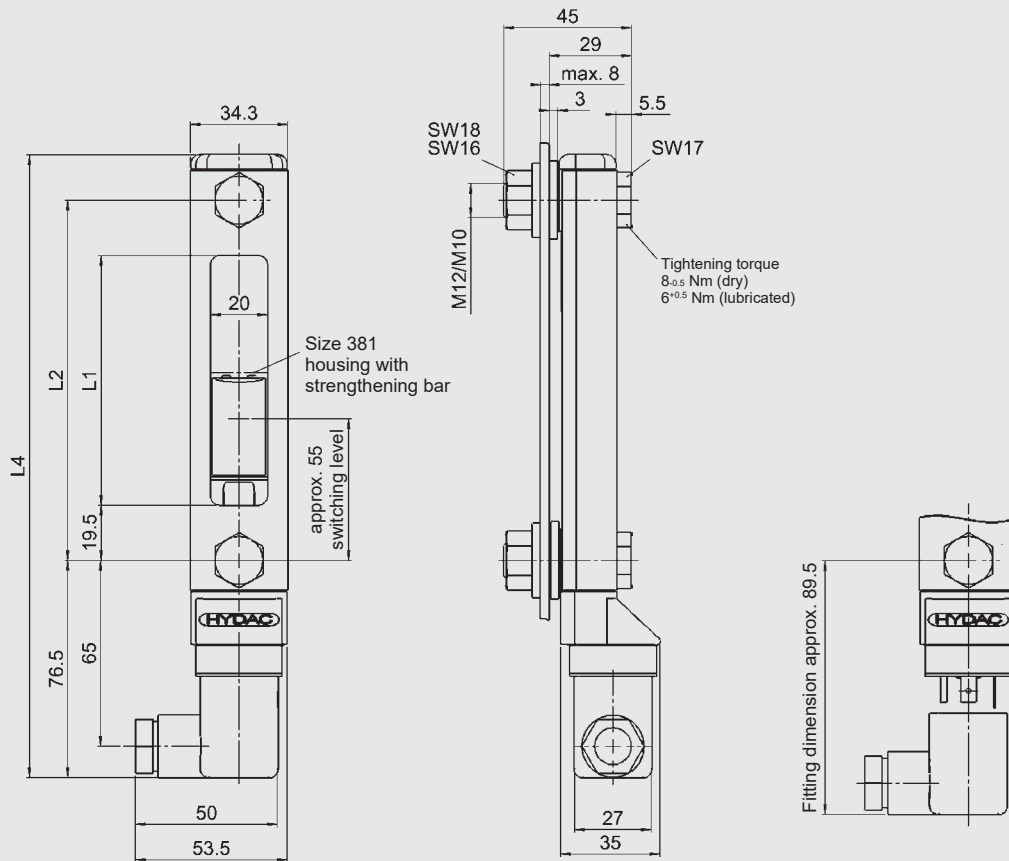


Nominal size \approx Centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]	L7 [mm]	F [mm]	Quantity F
127	88	127	204	203	-	-
176	137	176	253	252	-	-
254	215	254	331	330	-	-
381	342	381	458	457	-	-
500	432	500	535	411	137	3
600	532	600	635	511	170	3
700	632	700	735	611	150	4
800	732	800	835	711	175	4
900	832	900	935	811	158	5
1000	932	1000	1035	911	147	6

FSK 076

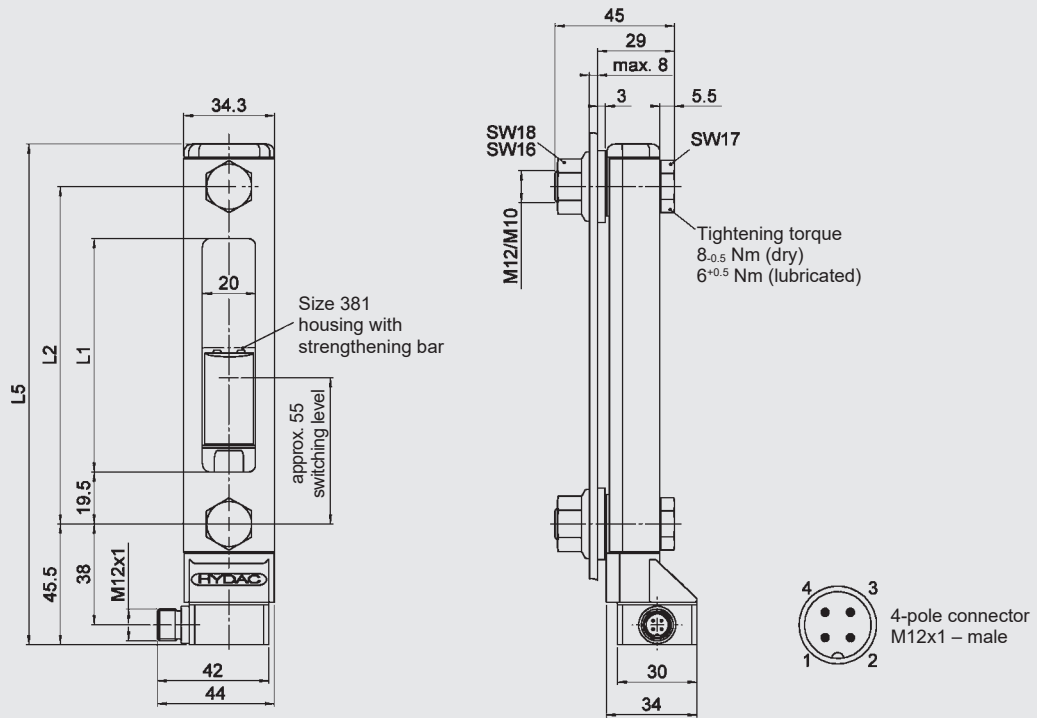


FSK plug Z4

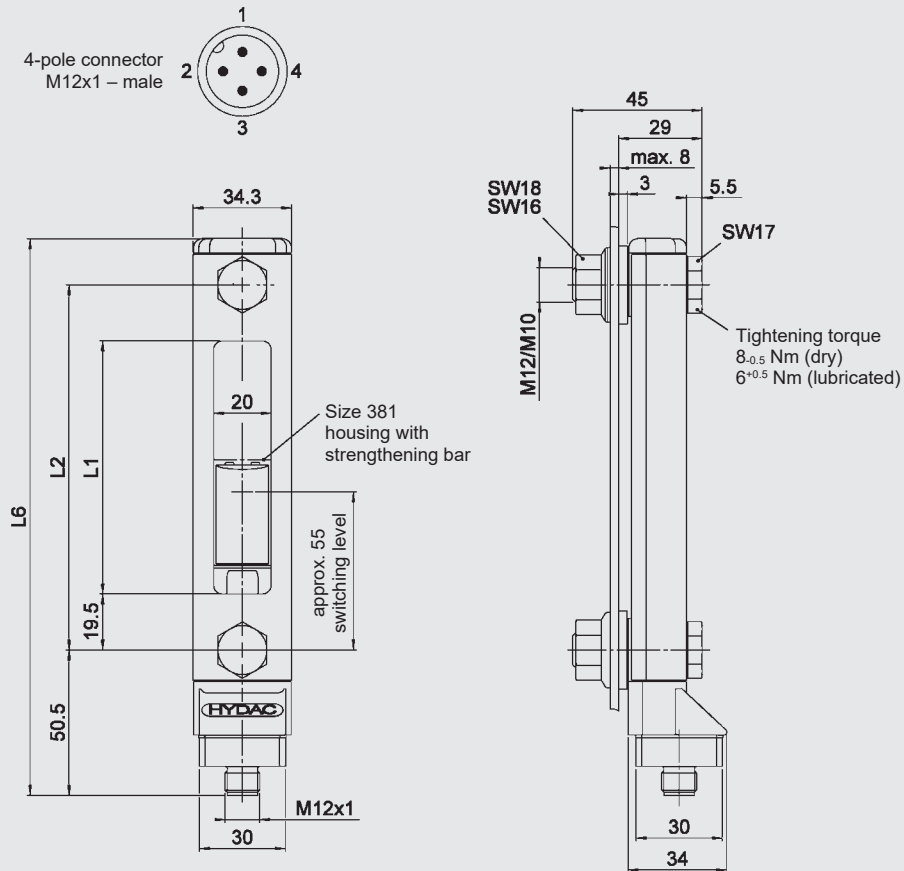


Nominal size \cong Centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]
127	88	127	219.5
176	137	176	268.5
254	215	254	346.5
381	342	381	473.5

FSK sensor connection SEW-M12x1 horizontal

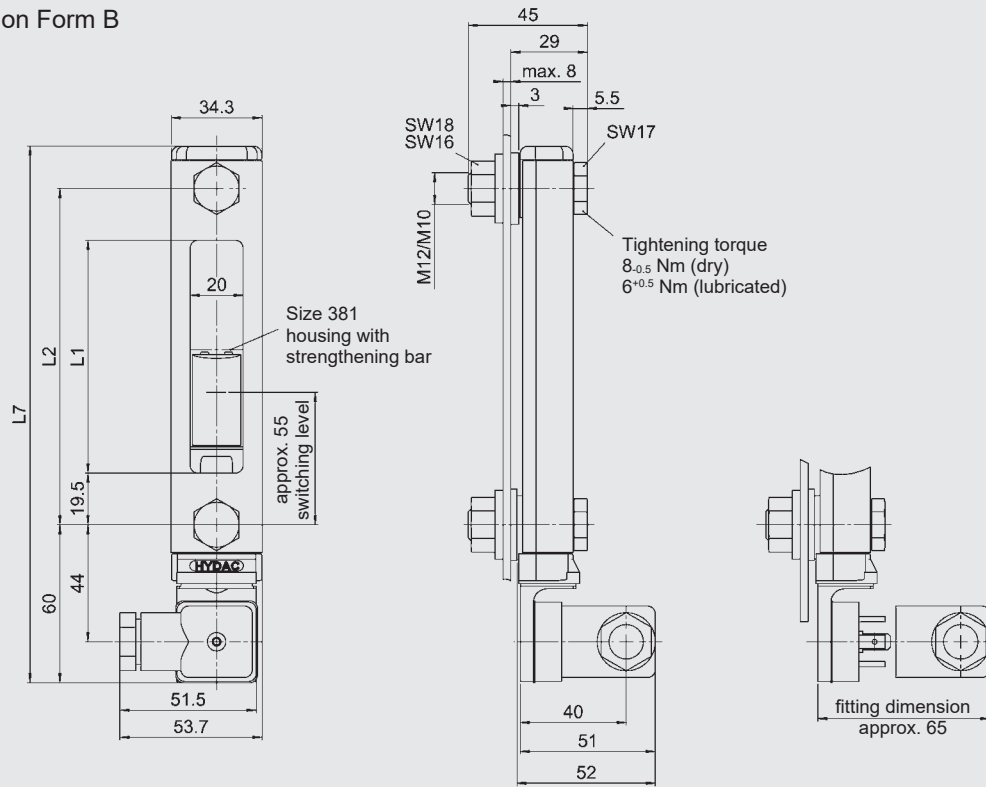


FSK sensor connection SES-M12x1 vertical



Nominal size \cong	L1 [mm]	L2 [mm]	L5 [mm]	L6 [mm]
Centre distance of bolts				
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

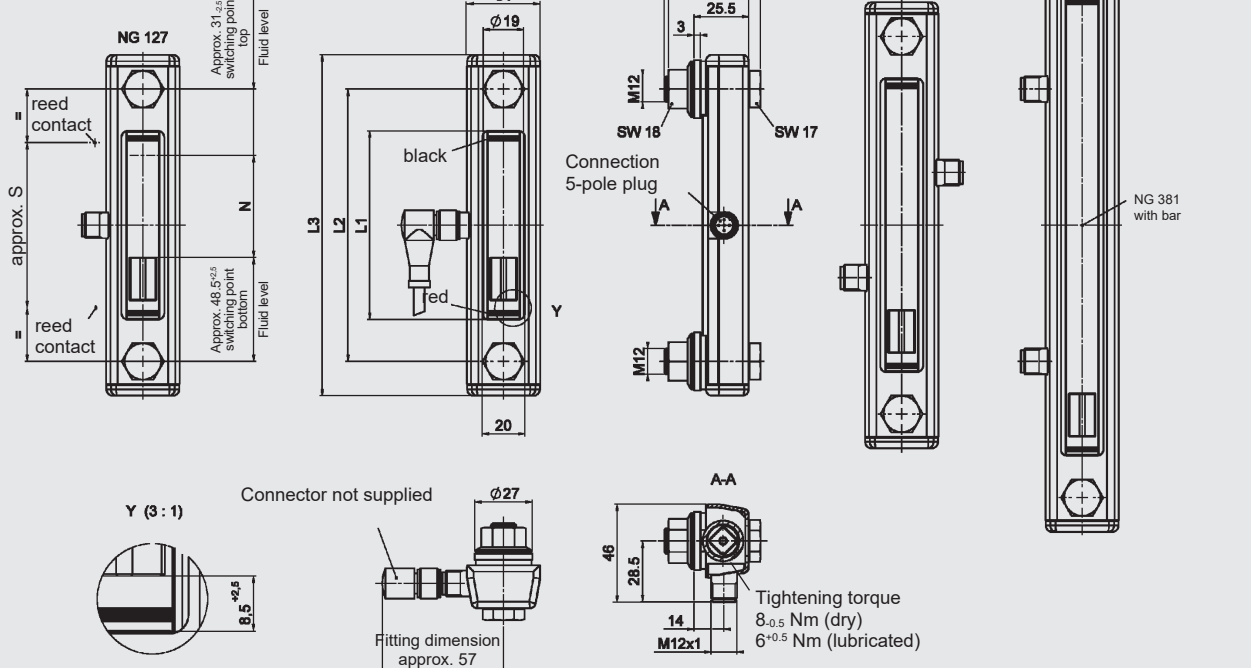
FSK male connection Form B



Nominal size \cong 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

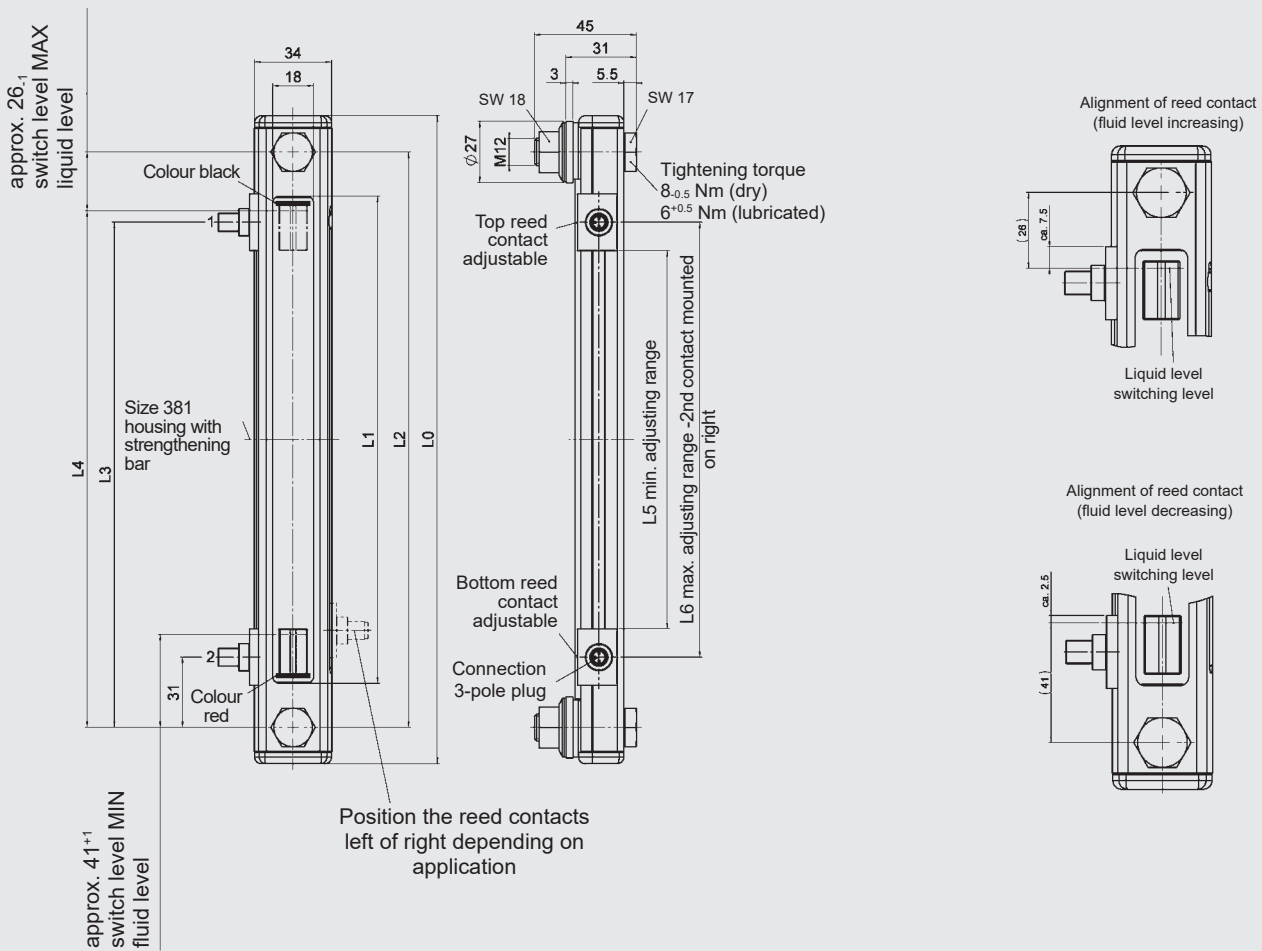
FSK with two switch points

View of switching level
MIN-MAX



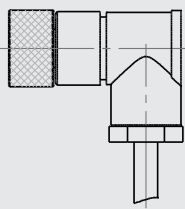
Type	Nominal size \cong Centre distance of bolts	L1 [mm]	L2 [mm]	L3 [mm]	N [mm]	Approx. S [mm]
FSK-127-1.0/W/-/12/2SP	127	88	127	159	47.5	77
FSK-176-1.0/W/-/12/2SP	176	137	176	208	96.5	126
FSK-254-1.0/W/-/12/2SP	254	215	254	286	174.5	204
FSK-381-1.0/W/-/12/2SP	381	342	381	413	301.5	331

FSK with variable switch points

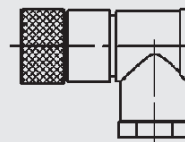


Type	Nominal size \approx Centre distance of bolts	L0 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]
FSKV-127	127	159	88	127	96	101	40	65
FSKV-176	176	208	137	176	145	150	89	114
FSKV-254	254	286	215	254	223	228	167	192
FSKV-381	381	413	342	381	350	355	294	319

Angled connector M8x1 for FSKV



non-adjustable
with cable
L = 2m

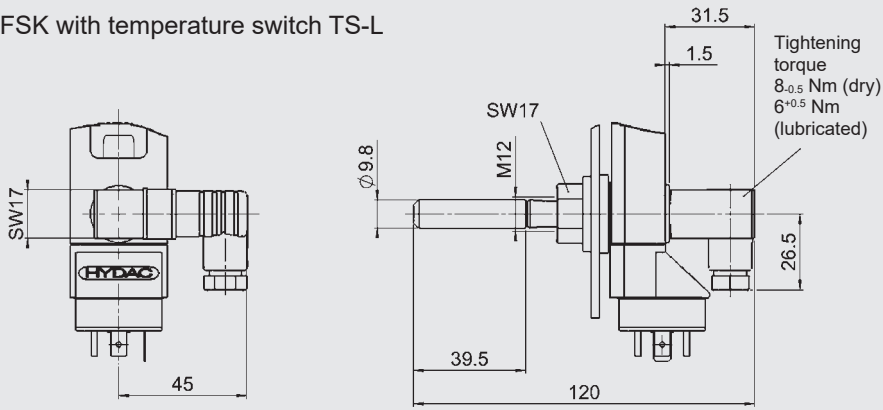


adjustable
without cable

Order no.: 6105865

6105866

FSK with temperature switch TS-L

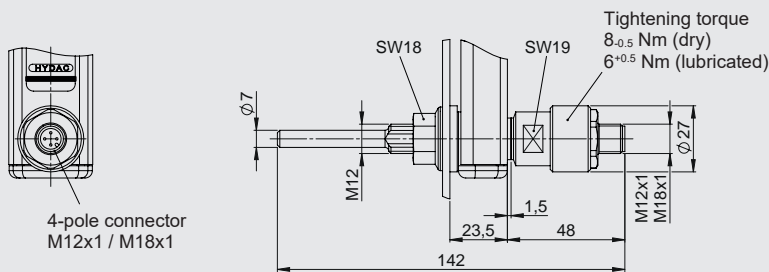


3.3. TEMPERATURE SWITCH TS / TS-L

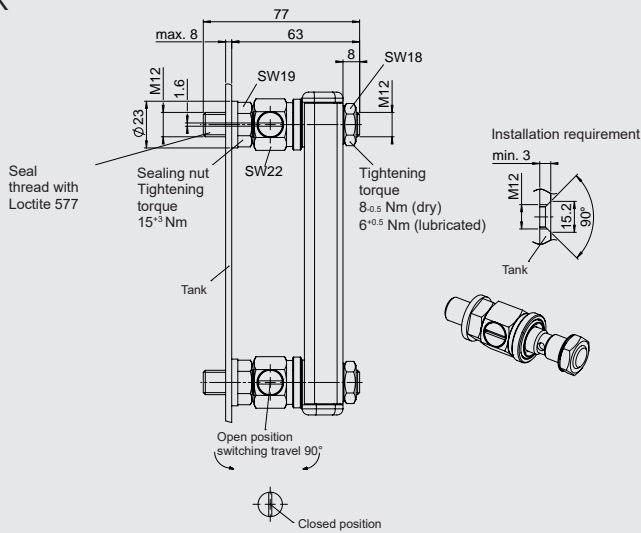
See FSA with TS fitted
See FSK with TS-L fitted

3.4. ACCESSORIES

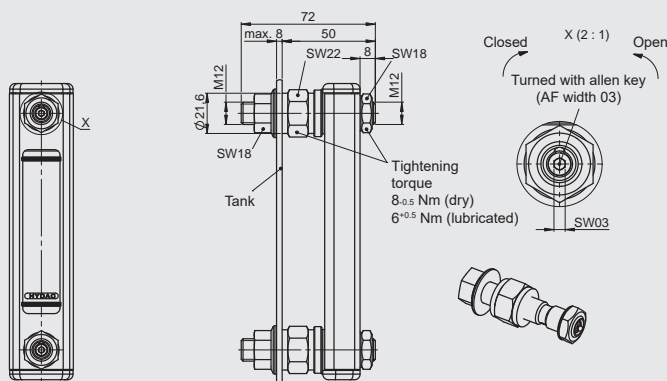
Temperature sensor TFP



ABK



ABV



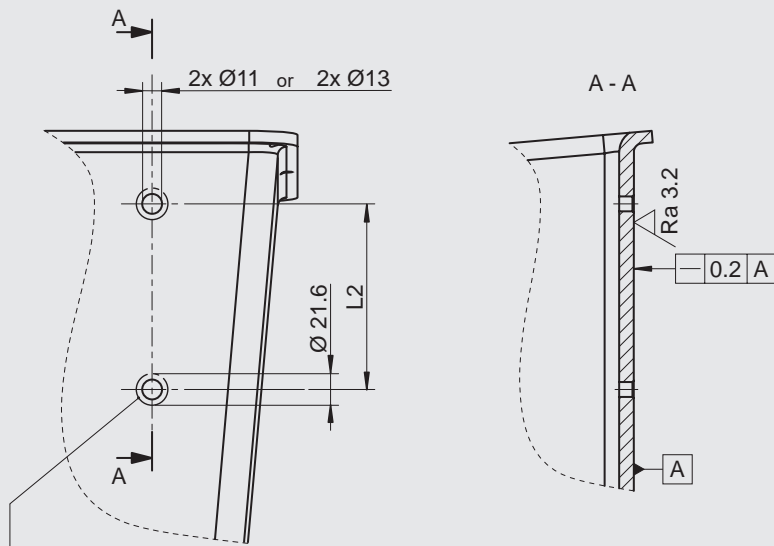
4. SPARE PARTS

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

5. INSTALLATION INFORMATION

5.1. THROUGH-BORE

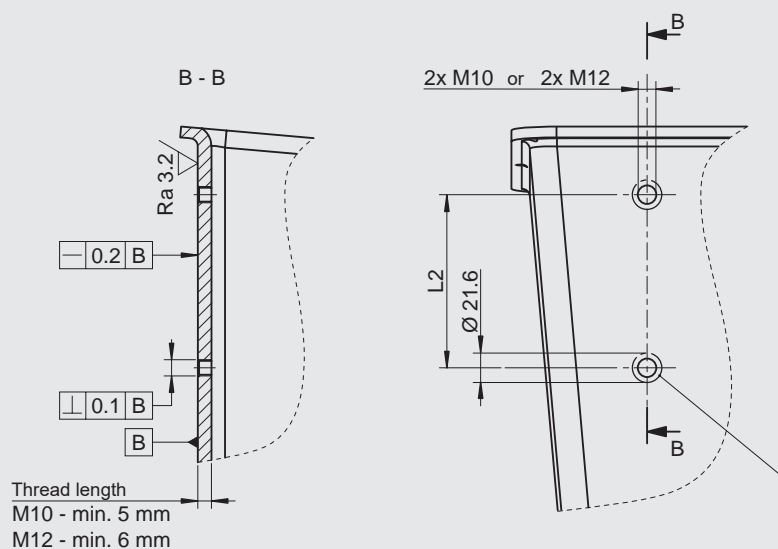


In sealing surface area $\text{Ø } 21.6 \text{ Ra } 3.2$.
Sealing surface free from contamination,
welding beads, scale, varnish etc.

L2 [mm]
for through-bore
 $\text{Ø } 11$ or $\text{Ø } 13$

076 ± 0.3
127 ± 0.5
176 ± 0.5
254 ± 0.5
381 ± 0.5
500 ± 0.8
600 ± 0.8
700 ± 0.8
800 ± 0.8
900 ± 0.8
1000 ± 0.8

5.2. THREADED HOLE



Thread length
M10 - min. 5 mm
M12 - min. 6 mm

In sealing surface area $\text{Ø } 21.6 \text{ Ra } 3.2$.
Sealing surface free from contamination,
welding beads, scale, varnish etc.

L2 [mm]
for threaded bore
M10 or M12

076 ± 0.2
127 ± 0.3
176 ± 0.3
254 ± 0.3
381 ± 0.3
500 ± 0.5
600 ± 0.5
700 ± 0.5
800 ± 0.5
900 ± 0.5
1000 ± 0.5

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.

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

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66280 Sulzbach/Saar

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

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

Internet: www.hydac.com

E-Mail: accessories@hydac.com

Oil level switch

Type FS

Temperature up to 90 ° C
Length up to 1200 mm



Features

- Guaranteed potential free switching
- Can be dismantled without removing the tank cap
- Suitable with many different fluids
- Very good price/performance ratio

Design

- Smallest dimensions
- Direct mounting on tank lid with a thread

Applications

- Level and temperature control in the tank

Technical data

Thread size	M20 x 1,5 mm
Mounting position	Vertical ± 10°
Instrument plug	DIN 43650
Degree of protection	IP 65
Switching voltage	Level: max. 230 VAC/230 VDC Temperature: max. 250 VAC/250 VDC
Switching current	Level: max. 0,8 A/0,8 A ind. Temperature: max. 2,5 A/1,6 A ind. Temperature: max. 50 mA
Switching capacity (level)	Max. 20 W/26 VA
Temperature hysteresis	Max. 25 °C
Temperature accuracy	± 10%
Temperature switching point	Normally closed: + 55/60/70/80/90 °C Normally open: + 60/70/80/90 °C
Contact functions	Normally closed or normally open
Medium	Mineral oil

Type FS

Temperature up to 90 ° C
Length up to 1200 mm

Ordering code

ordering example **FS - 2 - 34206 - 156 - 62 - 60**

Oil level switch

1 = 1 Point
2 = 2 Point

Type 34200
see product information 34201
34202
34203
34209
34204
34205
34206
34207
34208

Temperatur switching point
Closer 60, 70, 80, 90 °C
Opener 55, 60, 70, 80, 90 °C
without switching point X

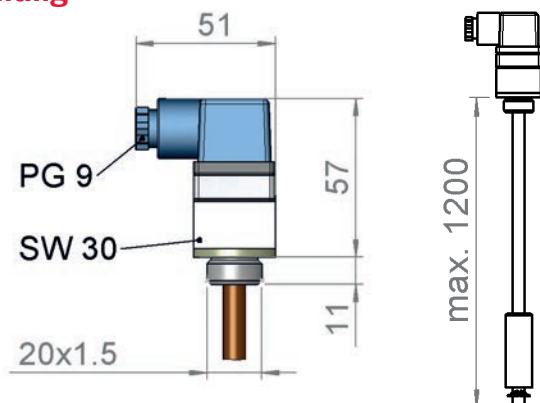
switching point max. oil level L2 [mm] für 2 Punkt
(only for 2 Point) X für 1 Punkt

Switching point min. oil level L1 [mm]

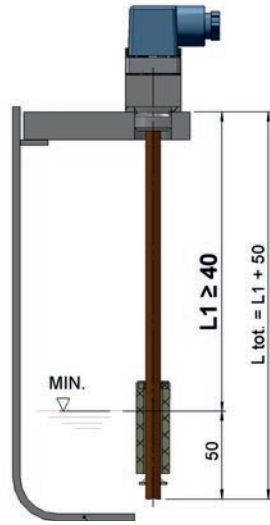
Product information

Type	Contact function	Level	Temperature switching point [°C]	Weight ca. [kg]
34200	Normally open	Minimum	-	0,20
34202	Normally open	Minimum	60, 70, 80, 90	0,20
34204	Normally open	Maximum + Minimum	-	0,20
34206	Normally open	Maximum + Minimum	60, 70, 80, 90	0,20
34201	Normally closed	Minimum	-	0,20
34203	Normally closed	Minimum	55, 60, 70, 80, 90	0,20
34205	Normally closed	Maximum + Minimum	-	0,20
34207	Normally closed	Maximum + Minimum	55, 60, 70, 80, 90	0,20
34209	Normally open/closed	Minimum	55, 60, 70, 80, 90	0,20
34208	Normally closed/open	Maximum + Minimum	-	0,20

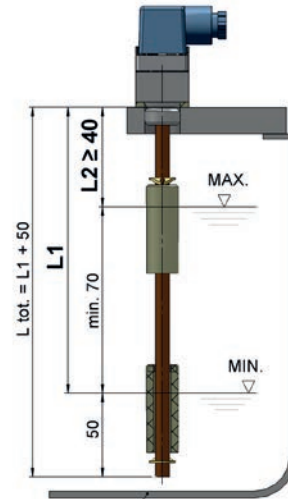
Mounting



1 Point oil level switch



2 Point oil level switch



Type	34200	34201	34202	34203	34209
Temperature switching point	X	X	60 °C 70 °C 80 °C 90 °C	55 °C 60 °C 70 °C 80 °C 90 °C	55 °C 60 °C 70 °C 80 °C 90 °C
Contact function	Closer	Opener	Closer	Opener	Closer / Opener
Home position (oil level o.K.)					
Switched (oil level too low)					
Switched (oil level too high)	X	X	X	X	X

Type	34204	34205	34206	34207	34208
Temperature switching point	X	X	60 °C 70 °C 80 °C 90 °C	55 °C 60 °C 70 °C 80 °C 90 °C	X
Contact function	Closer	Opener	Closer	Opener	Closer / Opener
Home position (oil level o.K.)					
Switched (oil level too low)					
Switched (oil level too high)					

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

HYDAC INTERNATIONAL



HYDAC Accessories: Buyer's guide

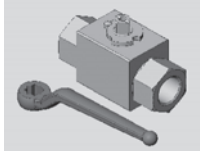


Order direct
by phone, fax or email.

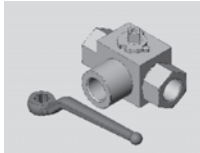
The benefits to you:

- Products immediately available,
- Easy to order using part number,
- Renowned "Made in Germany" quality,
- Over 50 years of experience in hydraulics.

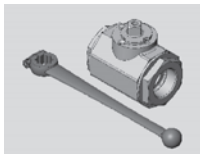
HYDAC Accessories: Product range overview



High pressure ball valves,
steel



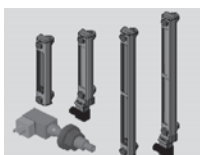
Change-over ball valves,
steel



High pressure ball valves,
stainless steel



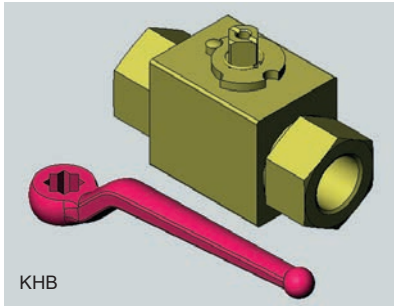
Low pressure ball valves



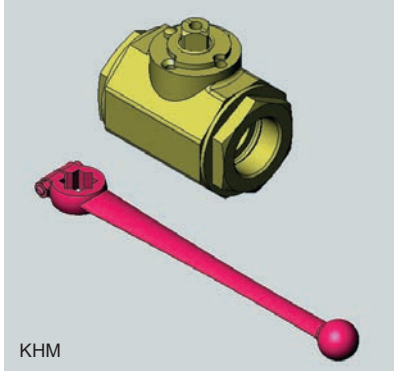
Gauges, switches



Mounting clamps,
overview



KHB



KHM

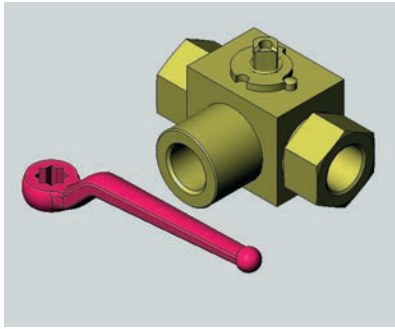
HYDAC Accessories: High pressure ball valves, steel

2/2-way ball valves **KHB / KHM** Steel

Features:

- ▄ Seals: Ball (POM), O-ring (NBR)
- ▄ High pressure version up to 500 bar
- ▄ Full port
- ▄ Zinc-plated
- ▄ Connections in G, LR, SR
- ▄ Temperature resistant from -10 °C to +80 °C
- ▄ Handle in aluminium (straight 01), Zinc die-cast (cranked 04)

Type of connection	DN	Designation	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	84	500
	16	KHB-G1/2	01	855871	83	420
	20	KHB-G3/4	01	552762	95	420
	25	KHB-G1	01	850711	113	420
	32	KHM-G1 1/4	01	704244	110	420
	40	KHM-G1 1/2	01	707867	130	420
	50	KHM-G2	01	851964	140	420
	LR	04	KHB-06LR	04	3288754	67
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	420
20		KHB-22LR	01	707868	101	420
25		KHB-28LR	01	707869	108	420
32		KHM-35LR	01	851670	141	420
40		KHM-42LR	01	707870	162	420
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	420
	20	KHB-25SR	01	700819	109	420
	25	KHB-30SR	01	707722	120	420
	32	KHM-38SR	01	850700	153	420



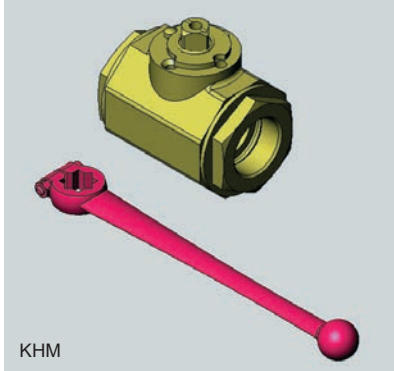
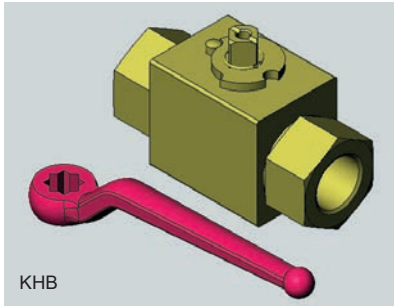
HYDAC Accessories: Change-Over ball valves, steel

3/2-way ball valves **KHB3K-L** Steel

Features:

- ▮ Seals: Ball (POM), O-ring (NBR)
- ▮ High pressure version up to 500 bar
- ▮ Full port
- ▮ Zinc-plated
- ▮ Connections in G, LR, SR
- ▮ Temperature resistant from -10 °C to +80 °C
- ▮ Handle in aluminium (straight 01), Zinc die-cast (cranked 04)

Type of connection	DN	Designation	Handle	Part no.	Length in mm	PN in bar
G	06	KHB3K-G1/4-L	04	3398119	69	500
	10	KHB3K-G3/8-L	04	703308	72	500
	13	KHB3K-G1/2-L	04	703309	84	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
LR	08	KHB3K-10LR-L	04	3007101	74	500
	10	KHB3K-12LR-L	04	703307	74	500
	13	KHB3K-15LR-L	04	703373	82	500
SR	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



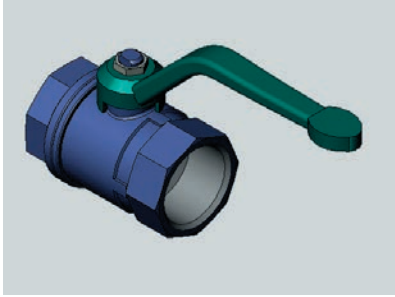
HYDAC Accessories: High pressure ball valves, stainless steel

2/2-way ball valves **KHB / KHM** Stainless steel

Features:

- High pressure version up to 500 bar
- Full port
- Connections in G, LR, SR
- Temperature resistant from -20 °C to +80 °C
- Handle in aluminium (straight 01)
- Seals: Ball (POM), O-ring (VITON)

Type of connection	DN	Designation	Handle	Part no.	Length in mm	PN in bar	
G	06	KHB-G1/4	01	3778924	69	500	
	10	KHB-G3/8	01	3778925	72	500	
	16	KHB-G1/2	01	3778927	83	400	
	20	KHB-G3/4	01	3778928	95	350	
	25	KHB-G1	01	3778929	113	350	
	32	KHM-G11/4	01	851547	110	350	
	40	KHM-G11/2	01	851548	130	350	
	50	KHM-G2	01	398246	140	350	
	LR	04	KHB-06LR	01	3778930	67	500
		06	KHB-08LR	01	3778931	67	500
08		KHB-10LR	01	3778932	74	500	
10		KHB-12LR	01	3778933	74	500	
13		KHB-15LR	01	3778934	82	500	
16		KHB-18LR	01	3778955	82	400	
20		KHB-22LR	01	3778956	101	350	
25		KHB-28LR	01	3778959	108	350	
32		KHM-35LR	01	398243	141	350	
40		KHM-42LR	01	855253	162	350	
SR	04	KHB-08SR	01	3778960	73	500	
	06	KHB-10SR	01	3778961	73	500	
	08	KHB-12SR	01	3778962	76	500	
	13	KHB-16SR	01	3778964	86	500	
	16	KHB-20SR	01	3778965	90	400	
	20	KHB-25SR	01	3778966	109	350	
	25	KHB-30SR	01	33778967	120	350	
	32	KHM-38SR	01	851550	153	350	



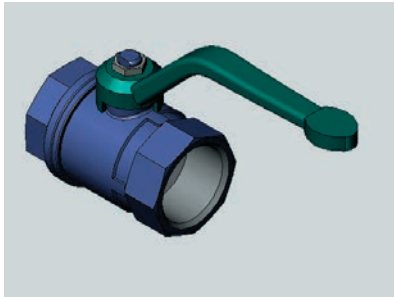
HYDAC Accessories: Low pressure ball valves

2/2-way low pressure ball valves **KHNVN / KHNVS** Brass

Features:

- Cost-competitive version
- Handle in aluminium (cranked 12°)
- With PTFE sealing cups
- Suitable for water, air and nitrogen

Type of connection	DN	Designation	Part no.	Length in mm	PN in bar
G	16	KHNVN-G1/2-2233-12X	702152	50.5	50
	20	KHNVN-G3/4-2233-12X	702153	57.5	40
	25	KHNVN-G1-2233-12X	702154	70	40
	32	KHNVN-G1 1/4-2233-12X	702155	80.5	30
	40	KHNVN-G1 1/2-2233-12X	702156	94	30
	50	KHNVN-G2-2233-12X	702157	112.5	25
Rp	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-Rp1 1/4-2233-12X	551096	99.5	30
	40	KHNVS-Rp1 1/2-2233-12X	551097	109	30
	50	KHNVS-Rp2-2233-12X	551098	130	25
	65	KHNVS-Rp2 1/2-2233-12X	702172	152	25
	80	KHNVS-Rp3-2233-12X	702173	177	25



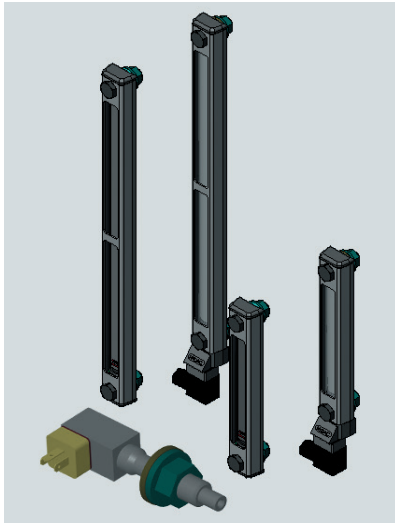
HYDAC Accessories: Low pressure ball valves

2/2-way low pressure ball valves **KHNVN / KHNVS** Stainless steel

Features:

- Cost-competitive version
- Handle in stainless steel (cranked 18)
- With PTFE sealing cups
- Suitable for water, air and nitrogen

Type of connection	DN	Designation	Part no.	Length in mm	PN in bar	
G	06	KHNVN-G1/4-3333-18X	398344	53.5	63	
	10	KHNVN-G3/8-3333-18X	398345	53.5	63	
	16	KHNVN-G1/2-3333-18X	398346	60	63	
	20	KHNVN-G3/4-3333-18X	398347	70	63	
	25	KHNVN-G1-3333-18X	398348	79	50	
	32	KHNVN-G11/4-3333-18X	398349	91	50	
	40	KHNVN-G11/2-3333-18X	397686	103	40	
	50	KHNVN-G2-3333-18X	398350	124	40	
	Rp	04	KHNVS-Rp1/8-3333-18X	702434	55	140
		06	KHNVS-Rp1/4-3333-18X	702402	55	140
10		KHNVS-Rp3/8-3333-18X	702403	55	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

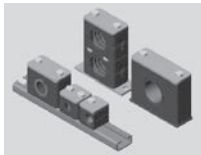
Fluid level gauge **FSA**
 Fluid level sensor **FSK**
 Temperature switch **TS/TS-L**

Features:

- Impact and scratch resistant
- Highly resistant to leakage
- Precise fluid level gauge
- Very easy to see fluid level
- Working temperature up to 80 °C
- Highly reliable due to potted connector in protection class IP64

Type	Size = centre distance of bolts	Designation	Part no.	
FSA	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	
	TS	M 12	TS-60/X/12	3233817
		M 12	TS-70/X/12	3233820
M 12		TS-80/X/12	3243251	
FSK	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	
	TS-L	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



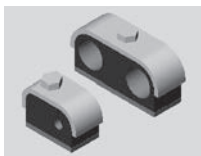
Light range DIN 3015
Part 1



Heavy range DIN 3015
Part 2



Twin clamps DIN 3015
Part 3



Buegu clamp



HYDAC Accessories: Mounting clamps

Light range **HRL**
DIN 3015 Part 1
Type: Internal surface ribbed

Features:

- I International standard
- I Worldwide availability

Size	Pipe diameter Ø in mm	Designation	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
3	18	HRL 2 A 18 PP ST M BL	423139
	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
4	25	HRL 3 A 25 PP ST M BL	423145
	25.4	HRL 3 A 25.4 PP ST M BL	423146
	26.9	HRL 4 A 26.9 PP ST M BL	423147
	28	HRL 4 A 28 PP ST M BL	423148
5	30	HRL 4 A 30 PP ST M BL	423149
	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
6	42	HRL 5 A 42 PP ST M BL	423155
	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 **HRGL**
DIN 3015 Part 1
Type: Internal surface smooth

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Designation	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



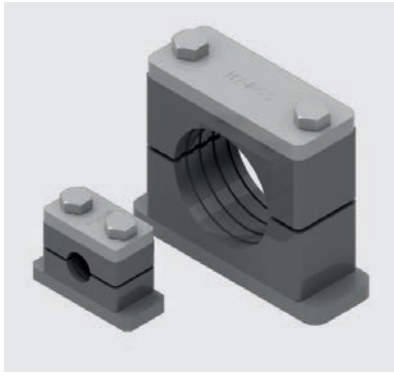
HYDAC Accessories: Mounting clamps

Light range **HREL**
DIN 3015 Part 1
Type: With elastomer insert

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Designation	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	



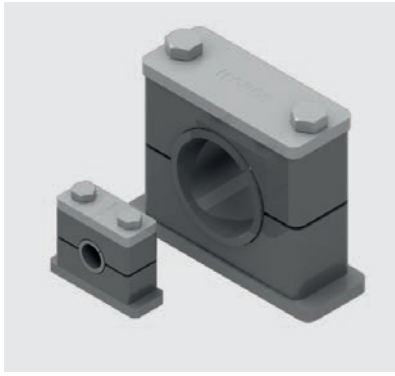
HYDAC Accessories: Mounting clamps

Heavy range HRS DIN 3015 Part 2 Type: Internal surface ribbed

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Designation	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
	26.9	HRS 2 S 26.9 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
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
4	42	HRS 3 S 42 PP ST M BL	420028
	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	3784247
	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	



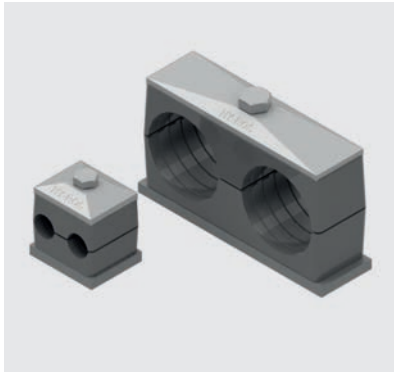
HYDAC Accessories: Mounting clamps

Heavy range HRES DIN 3015 Part 2 Type: With elastomer insert

Features:

- I International standard
- I Worldwide availability

Size	Pipe diameter Ø in mm	Designation	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	
	19	HRES 2 S 19 PP ST M BL	433466	
	3	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 clamp HRZ
DIN 3015 Part 3
Type: Internal surface ribbed

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Designation	Part no.
1	6	HRZ 1 A 6-6 PP ST M BL	430608
	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
	26.9	HRZ 4 A 26.9-26.9 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



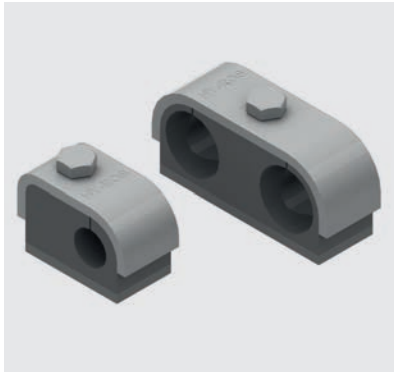
HYDAC Accessories: Mounting clamps

Twin clamp HRGZ
DIN 3015 Part 3
Type: Internal surface smooth

Features:

- I International standard
- I Worldwide availability

Size	Pipe diameter Ø in mm	Designation	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
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	26.9	HRGZ 4 A 26.9-26.9 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
	42	HRGZ 5 A 42-42 PP ST M BL	3886390



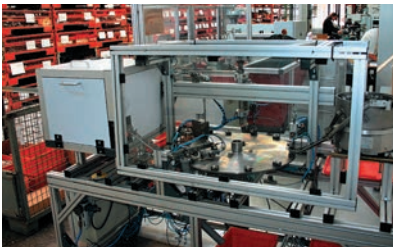
HYDAC Accessories: Mounting clamps

Buegu clamp **HRBGS**

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Designation	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	441492
	8 - 8	HRBGS 1 A 8-8 TPE ST M BL	441985
	9.5 - 9.5	HRBGS 1 A 9.5-9.5 TPE ST M BL	444867
	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



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E-mail: accessories@hydac.com

You will find a local contact on our web site.

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.

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../..

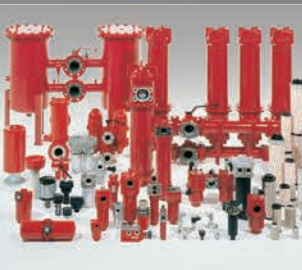


OPERATING MANUAL
Fluid Level Sensor FSK-2 SP
Fluid Level Sensor FSKV
D/E/F 5.050.2.B../..

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Box 6550 Sawah 11813 Cairo Tel.: +202 (2) / 4520192, 4530922 Fax: +202 (2) / 4530638 E-mail: yasserf@yf-hydraulic.com.eg SPAIN HYDAC Technology SL C/ Solsones 54 – Pol. Ind. Pla de la Bruquera 08211 Castell del Valles Tel.: +34 93 / 747 36 09 Fax: +34 93 / 715 95 42 E-mail: a.masoliver@hydac.es 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 FRANCE HYDAC S.à.r.l. Technopôle Forbach Sud B.P. 30280 57064 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 Martigues Tel.: +33 4 / 42 49 61 35 Agence Centre-Est Tel.: +33 3 / 81 63 01 65 GREAT BRITAIN HYDAC Technology Limited De Havilland Way, Windrush Park Witney, Oxfordshire OX29 OYG Tel.: +44 1993 86 63 66 Fax: +44 1993 86 63 65 E-mail: info@hydac.co.uk Internet: www.hydac.co.uk GREECE 38, Amfipoleos Str. 11855 Athens Tel.: +30 210 341 0181 Fax: +30 210 341 0183 E-mail: info@delta-p.gr 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 HUNGARY HYDAC Hidraulika és Szűrőtechnika Kft. 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Vossenbeemd 109 5705 CL Helmond Tel.: +31 (0)88 0597 001 Fax: +31 (0)88 0597 020 E-mail: info@hydac.nl NORWAY HYDAC AS Berntegårn 4 1405 Langhus Tel.: +47 64 85 86 00 Fax: +47 64 85 86 01 E-mail: firmapost@hydac.no 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 POLAND (Latvia, Lithuania) HYDAC SP.Z O.O. ul. Reymonta 17 43-190 Mikołow 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 PORTUGAL HYDAC TECNOLOGIA, UNIPESSOAL, LDA. 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Novokonstantinovskaya 9 Korpus 13, 2 Etage 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 / 286 01 00 Fax: +1 610 / 286 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. 165 Van der Bijl Street Edenvale 1614, Johannesburg Tel.: +27 11 / 723 90 80 Fax: +27 11 / 453 72 37 E-mail: hydacza@hydac.com	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: accessories@hydac.com
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Accumulators 30.000



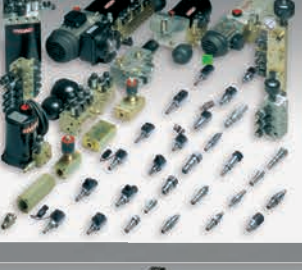
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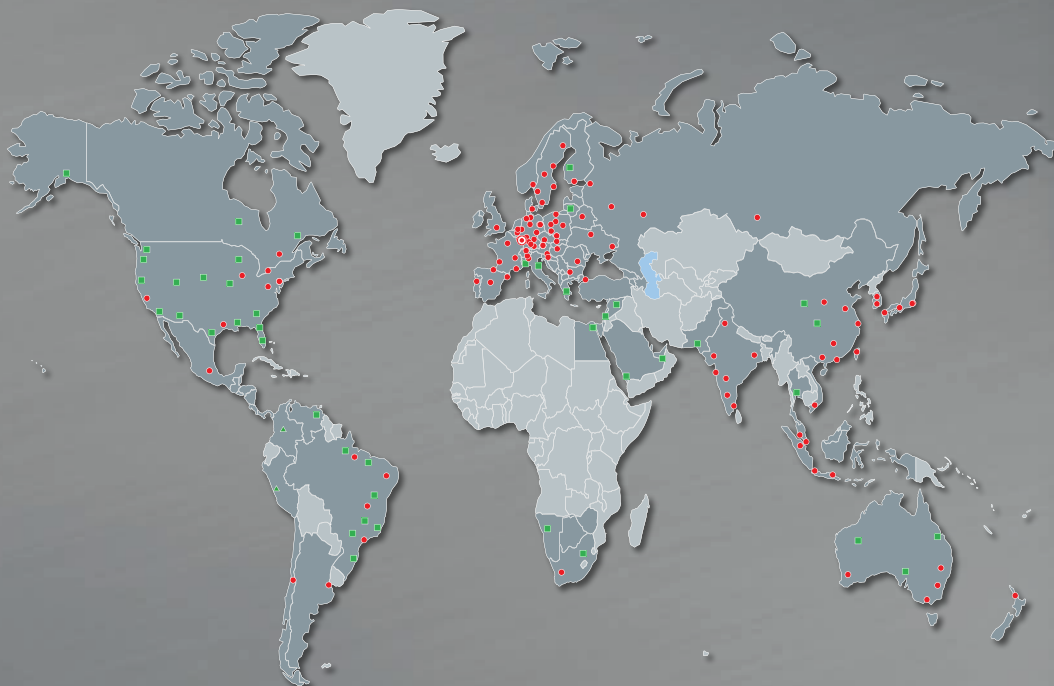


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