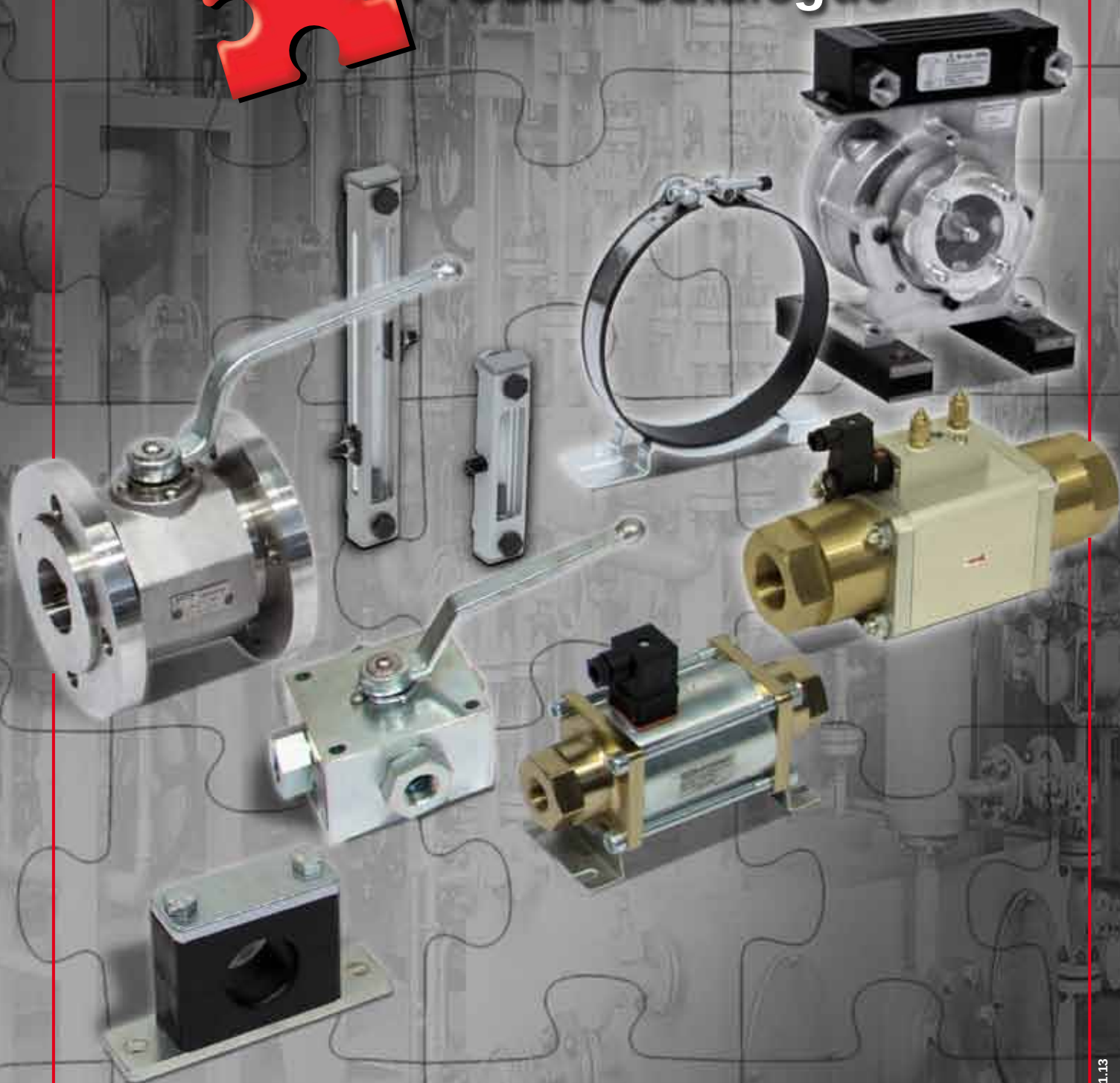


HYDAC

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HYDAC Accessories. Product Catalogue



HYDAC Accessories, for every application ...

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

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

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

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



CX valves



Fitting systems



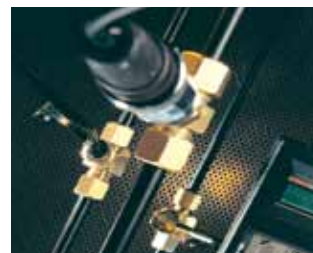
Mounting technology



Quick release couplings



Ball valves



Test points



Bell housings and dampers



Fluid level gauge/sensor



Tank sets



Multi-station gauge isolators

NOTE

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

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

Subject to technical modifications.

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E-Mail: info@hydac.com

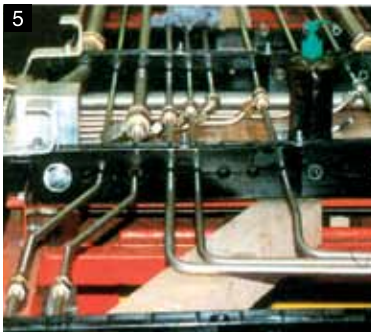
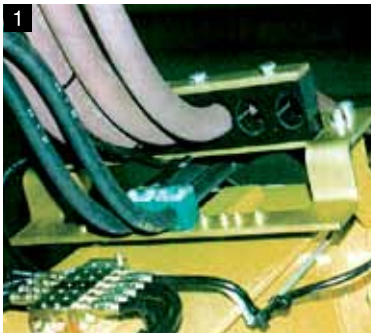


ACCESSORIES FOR EVERY SECTOR.

Your professional partner for...

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

HYDAC



HYDAC ACCESSORIES

FOR ALMOST EVERY APPLICATION

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

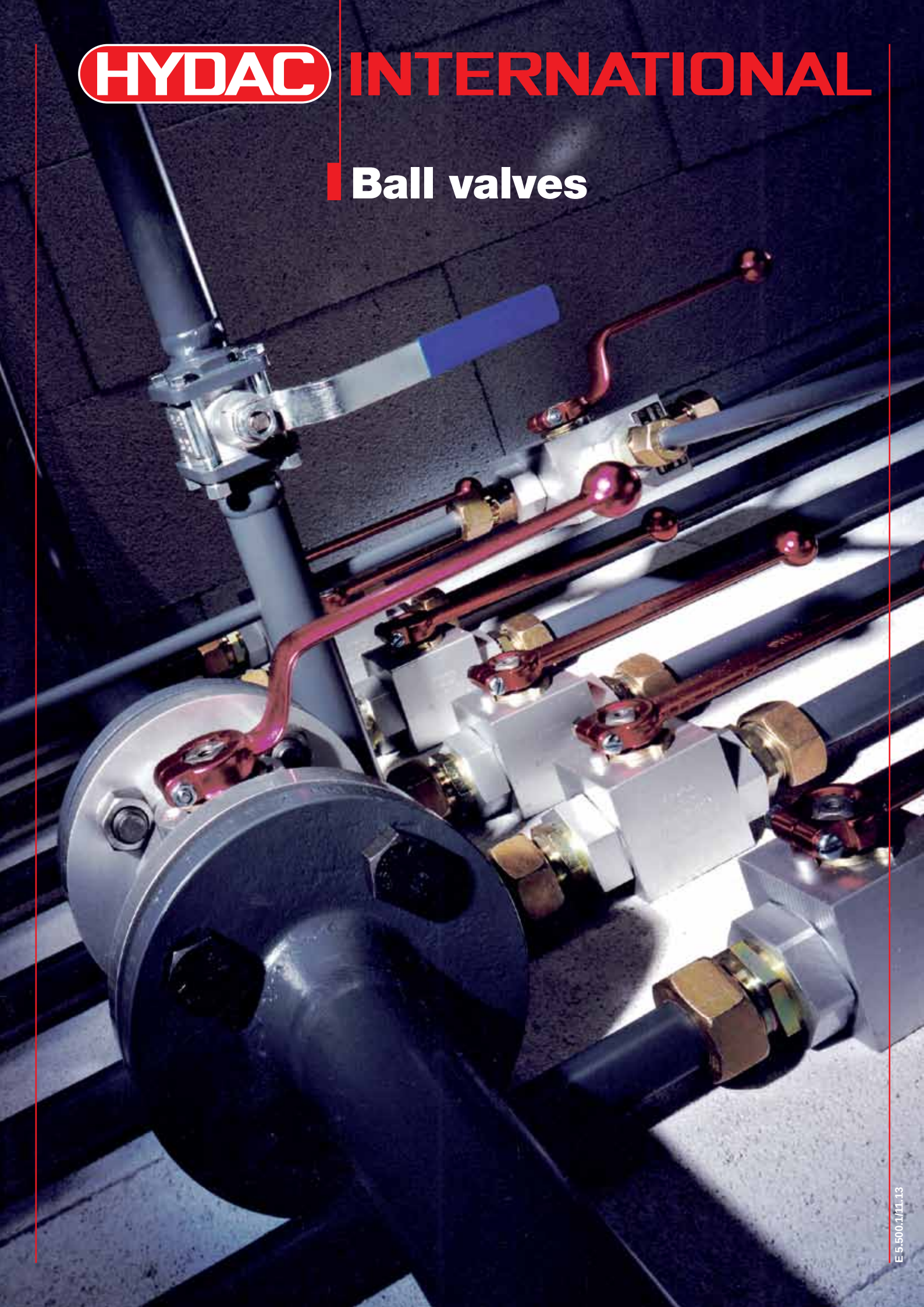
Extensive information is available on applications and products.



HYDAC

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Ball valves



Introduction

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

The requirements placed on the products are:

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

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

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

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

HYDAC ball valves offer you the following benefits:

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

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

HYDAC is certified to DIN ISO 9001 11.



HYDAC Accessories plant, Sulzbach

NOTE

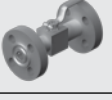
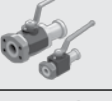
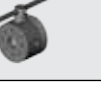
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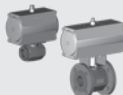
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Subject to technical modifications.

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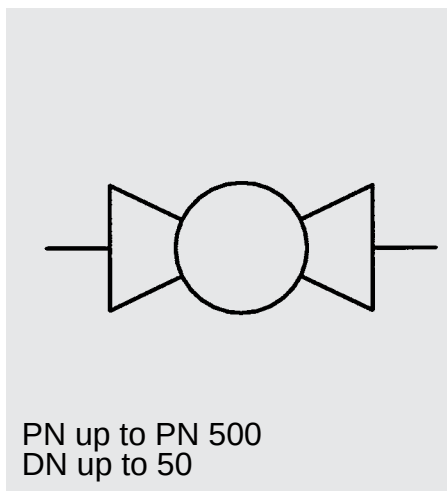
Catalogue overview

	Ball Valves	KHB KHM	DN04 - 25 DN32 - 50	up to PN500	11
	Ball Valve with DKO connection	KHB DKO	DN04 - 25	up to PN500	17
	Ultra-high Pressure Ball Valves	KHBH KMHM	DN04 - 25	up to PN800	21
	Low Pressure Ball Valves	KHNVN KHNVS KHN	DN06 - 100	PN4 - PN50	25
	Stainless Steel Low Pressure Ball Valves	KHNVN KHNVS	DN04 - 80	PN25 - PN140	29
	Weld-Type Low Pressure Ball Valves	KHM3S	DN08 - 100	PN16 - PN64	33
	Flanged Ball Valves	KHBF KHMF KHMFF	DN16 - 50	up to PN315	37
	Flange Type Ball Valves DN65 - 125	KHMFF	up to DN125	up to PN16	41
	Flanged Ball Valves	KHFF	DN65 - 300	PN10 - PN40	45
	ANSI Flange Ball Valves	KHBF KHMF	DN16 - 50	ANSI class 150 - 2500	49
	SAE Flanged Ball Valves	KHB-F3/6 KHM-F3/6	up to DN50	up to PN420	53
	SAE Threaded / Split Flange Ball Valves	KHBGS-F3/6 KHMGS-F3/6	up to DN50	up to PN420	57
	SAE Threaded Flange Ball Valve	KHBG-F3/6 KHMG-F3/6	up to DN50	up to PN420	61
	SAE Fixed Flange Ball Valves	KHF3	DN65 - 125	up to PN160	65
	SAE Fixed Flange Ball Valves	KHF3/6	up to DN80	up to PN420	67
	Direct Flange Ball Valves	KHDF3 KHDF6	up to DN80	up to PN420	71
	ISO 6164 Flanged Ball Valves	KHF	DN13 - 80	up to PN400	75

	3/2 Way Ball Valves	KHB3K	up to DN50	up to PN500	79
	Change-Over Low Pressure Ball Valves	KHN3K	up to DN45	up to PN25	85
	3-Way and 4-Way Ball Valves	KH3 KH4	up to DN20	up to PN500	87
	3-Way and 4-Way Manifold Mounted Ball Valves	KH3P KH4P	DN06 - 20	up to PN400	91
	Manifold Mounted Ball Valves	KHP KHP3K	DN06 - 50	up to PN500	95
	Spring Return Isolator	HKHB	DN13	up to PN350	99
	Isolator Sandwich Plate	KHB4K KHB6K	DN06 DN10	PN315 PN315	103
	Ball Valves with Pneumatic Actuator		DN04 - 50	up to PN500	107
	Electrically Actuated Ball Valves		DN04 - 50	up to PN500	109
	Lockable Ball Valves		up to DN50	up to PN500	111
	Ball Valves with Electrical Limit Controls		up to DN50	up to PN500	115
	Handles	SW06 - 22			119
	3-Way Safety Block	DSV	DN10	up to PN350	123
	Compatibility List for 2/2-, 3/2- and 4/2-Way Ball Valves				135

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 (steel)
KHM = Sleeve type ball valve DN 32-50 (steel)
DN 04-50 (stainless steel)

Type of connection

Thread size or outside diameter of pipe and type of connection

Materials

Housing, connection adapters

1 = Steel
3 = Stainless steel

Ball, control spindle

1 = Steel
3 = Stainless steel
11 = Hardened steel

Sealing cups

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

Control spindle seals and connection seals

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

Handle

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

Series

(determined by manufacturer)

Surface protection

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

Option

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

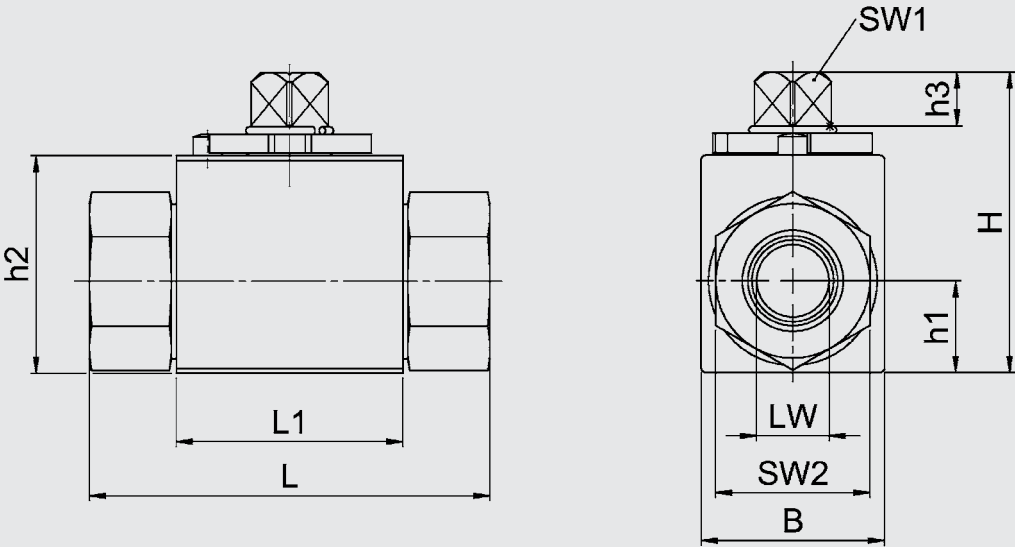
Delivery for non-standard valves is longer and the price is higher.

Technical specifications

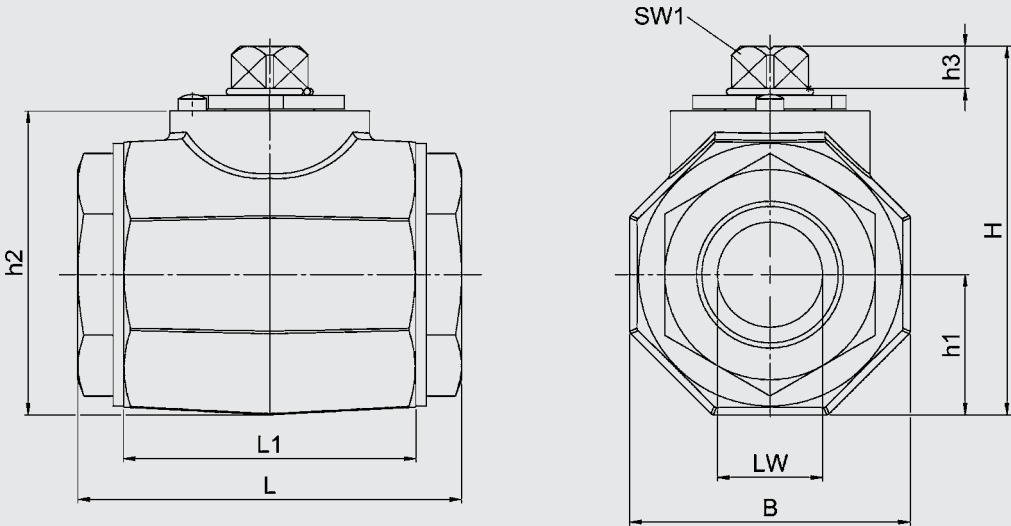
Type of construction:	Block type KHB DN 04 - 25 Sleeve type KHM DN 32 - 50	
Types of connection:	Light and heavy threaded pipe connection to DIN 2353 Whitworth female thread to ISO 228 NPT SAE	
Mounting position:	Optional	
Ambient temperature:	-10 °C to +80 °C	
Nominal pressure:	up to PN 500 / 7250 PSI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

Dimensions

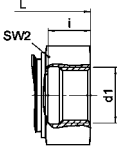
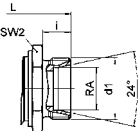
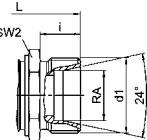
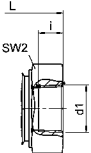
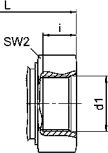
KHB



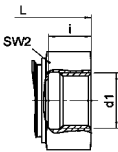
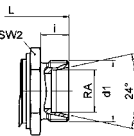
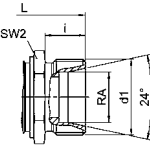
KHM



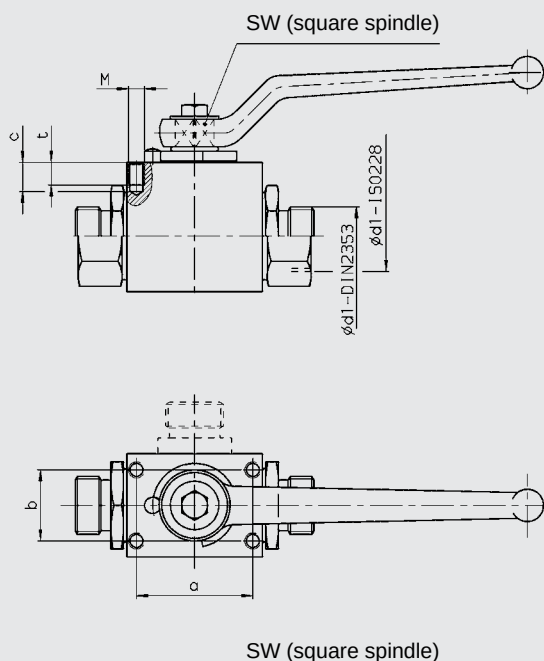
Steel

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

Stainless steel

Connection type	Type	DN	LW	RA	d1	I	L	L1	B	H	h1	h2	h3	SW1	SW2	Weight [kg]	Nom. pressure PN [bar]
DIN ISO 228 Female thread 	KHB-G1/8	4	8	–	G1/8	10	69	37	28	44.7	14	33	6.7	9	22	0.36	500
	KHB-G1/4	6	8	–	G1/4	14	69	37	28	44.7	14	33	6.7	9	22	0.43	500
	KHB-G3/8	10	10	–	G3/8	14	71.9	42	32	53.2	17.2	40	8.2	9	27	0.59	500
	KHB-G1/2	13	12	–	G1/2	15	84.2	47	35	53.2	17.2	40	8.2	9	30	0.66	500
	KHB-G1/2	16	15	–	G1/2	16	82.8	47	40	63.2	20	46	11	12	32	1.82	400
	KHB-G3/4	20	20	–	G3/4	18	95	60	49	74.8	24.5	57	11.4	14	41	1.82	350
	KHB-G1	25	25	–	G1	20.5	113.1	65	58	82.6	29.5	65	11.4	14	50	2.97	350
	KHM-G11/4	32	30	–	G11/4	22	109.4	83.4	80	105.2	40	86.7	12	17	60	3.29	350
	KHM-G11/2	40	38	–	G11/2	24	130	91	90	116.2	45	97.7	12	17	70	4	350
	KHM-G2	50	48	–	G2	28	140	100	111	134.2	55.5	115.7	12	17	80	6.82	350
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)



DIN ISO 228

** NOTE: Dimensions changed

$\varnothing d1$	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

$\varnothing d1$	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

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

DIN ISO 228

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

DIN 2353 Light Range

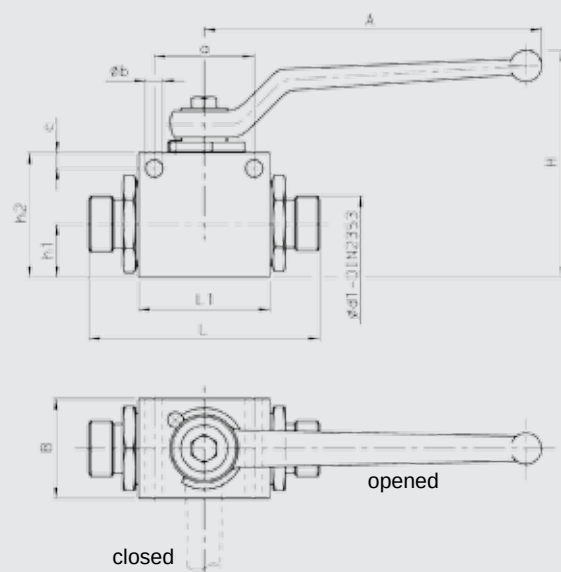
$\varnothing d1$	DN	L	L1	B	H	h1	h2	a	$\varnothing b$	c	A
08LR	6	67	37	26	64	13	32	28	5.5	4.5	108
10LR	8	71	37	26	64	13	32	28	5.5	4.5	108
12LR	10	74	42	32	68	17	40	32	5.5	5	108
15LR*	13	82	47	35	68	17	40	32	5.5	5	108
15LR	12	82	47	38	102	19	45	38	5.5	5	174
18LR	16	82	47	38	102	19	45	38	5.5	5	174
22LR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

DIN 2353 Heavy Range

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

* reduced bore

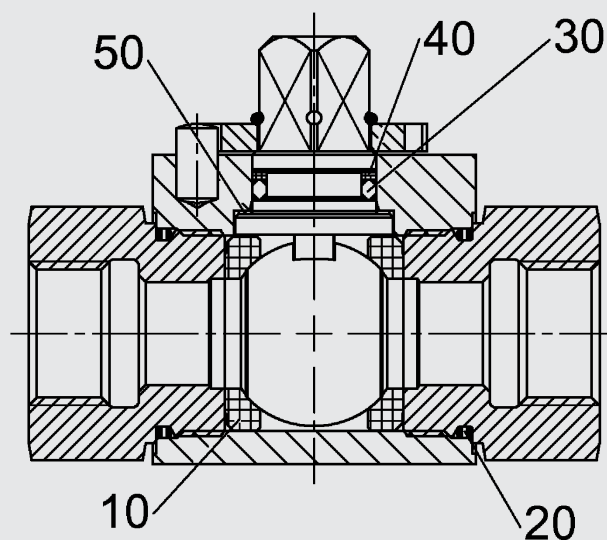
Fixing hole dimensions (SO 1073)



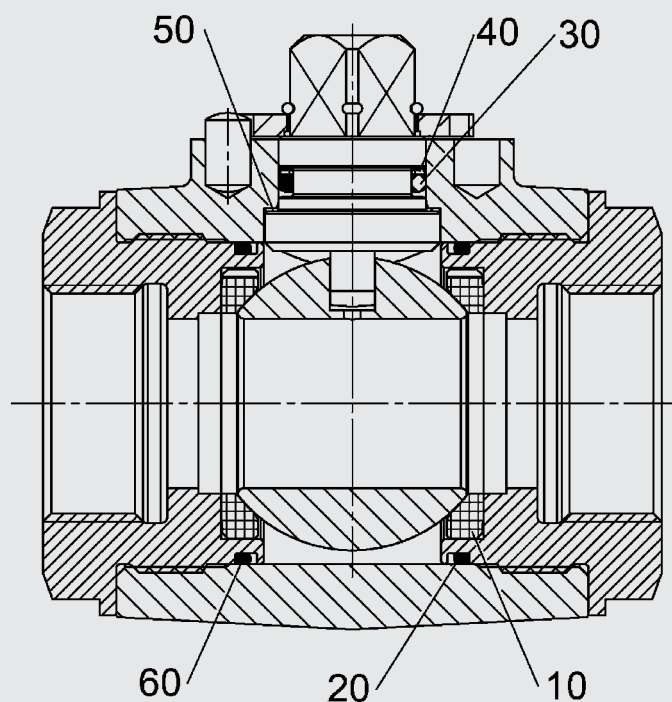
Spare Parts

(Seal kit)

KHB, DN 04 - 25



KHM, DN 32 - 50



NOTE

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

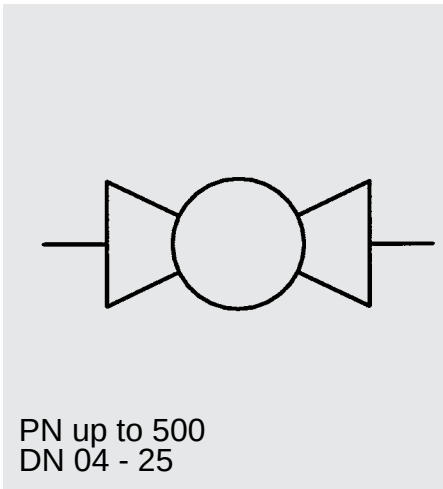
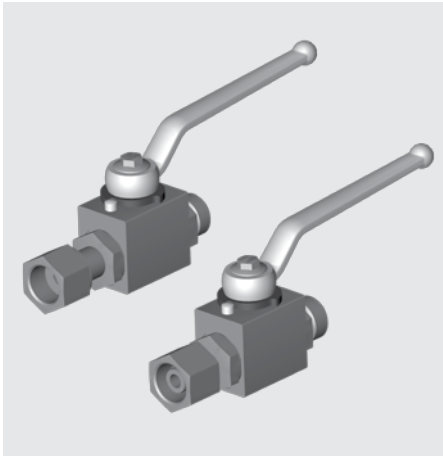
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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.

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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 O/D and connection code

Materials

Housing, connection adapters

1 = Steel

Ball, control spindle

1 = Steel

Ball seals

1 = POM

Control spindle seal and connection seal

2 = NBR

Handle

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

16 = Steel bolt-on handle, cranked, fitted

Series

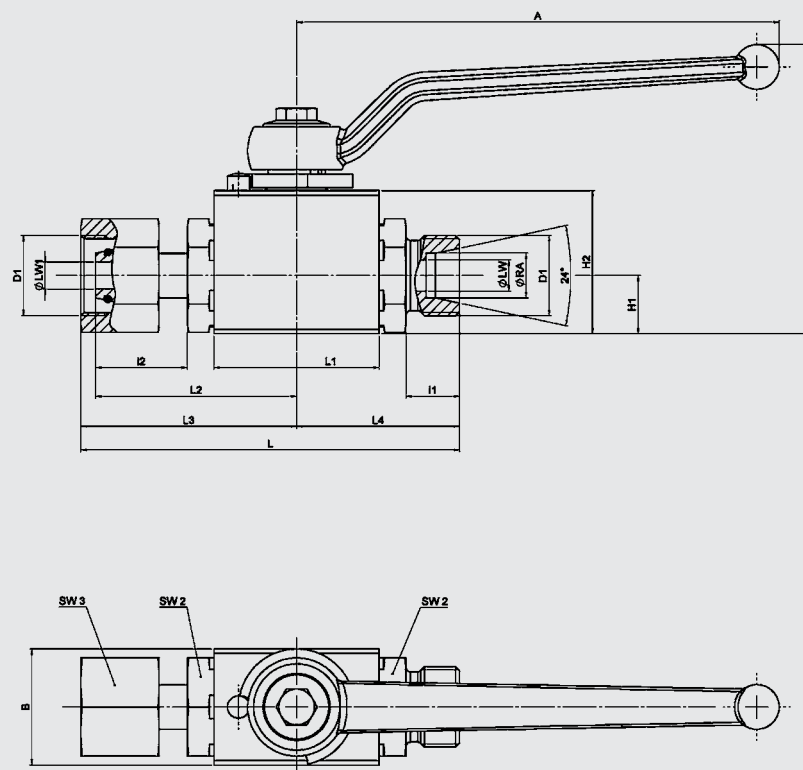
(determined by manufacturer)

Surface protection

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

Dimensions

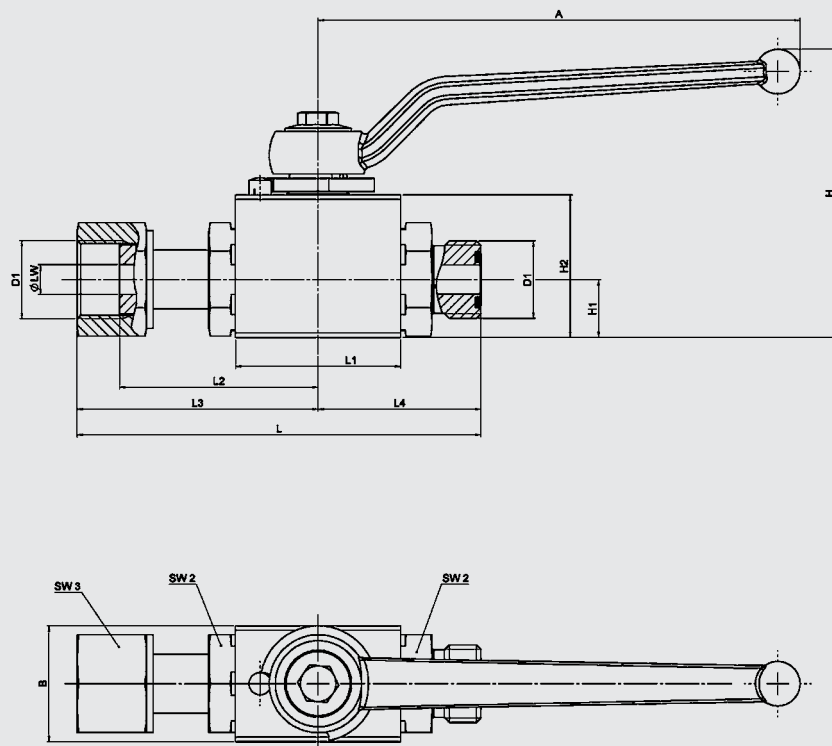
KHB DKO LR/SR



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

Dimensions

KHB DKO ORFS



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

Technical specifications

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

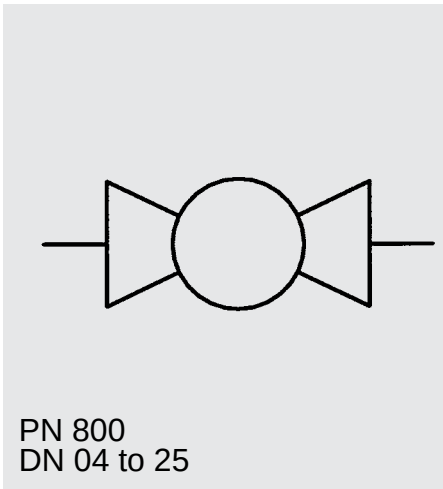
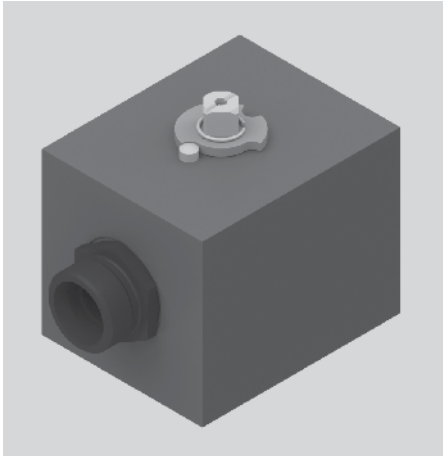
NOTE

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Subject to technical modifications.

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Ultra-High Pressure Ball Valve KHBH / KHMH

Model code
(also order example)

KHBH 16 NPT 1114 04 X A

Designation

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

Nominal bore (DN)

Type of connection

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

Materials

Housing, connection adapters

1 = Steel
3 = Stainless steel

Ball, control spindle

1 = Steel
3 = Stainless steel

Sealing cups

1 = POM

Control spindle seal and connection seal

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

Handle

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

Series

(determined by manufacturer)

Surface protection

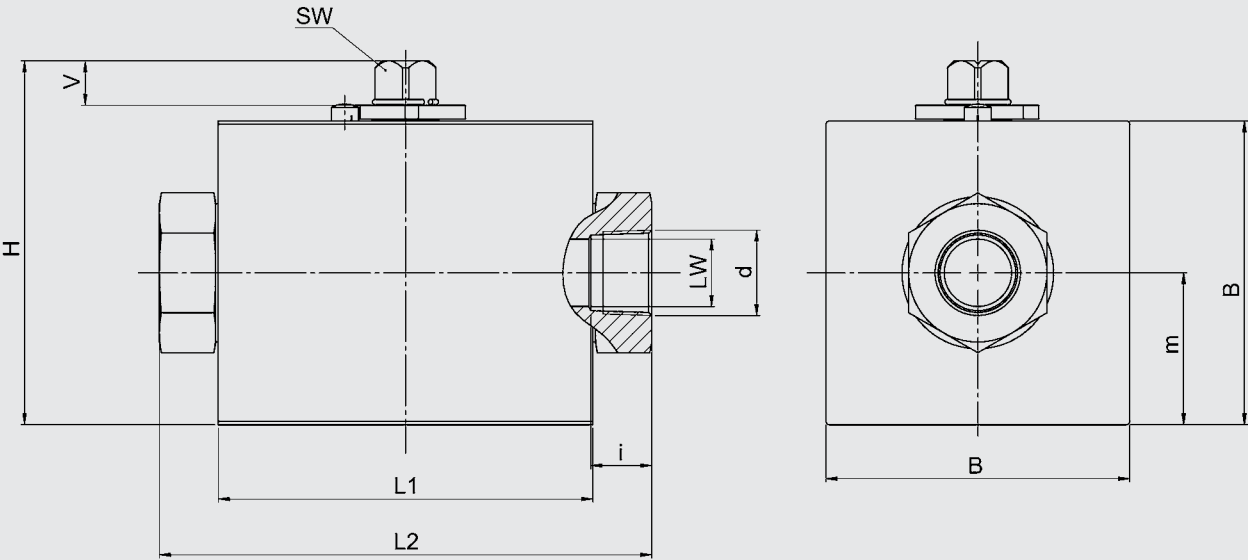
A = Zinc-plated, chrome (VI)-free

Technical specifications

Type of construction:	Block type KHBH DN 04 - 25 Sleeve type KMH DN 04 - 25, stainless steel
Types of connection:	Heavy threaded pipe connection to DIN 2353 NP ANSI B1.20.1
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	PN 800
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2
Temperature of operating fluid:	-20 °C to +100 °C
Viscosity range:	10 to 380 mm²/s

Dimensions

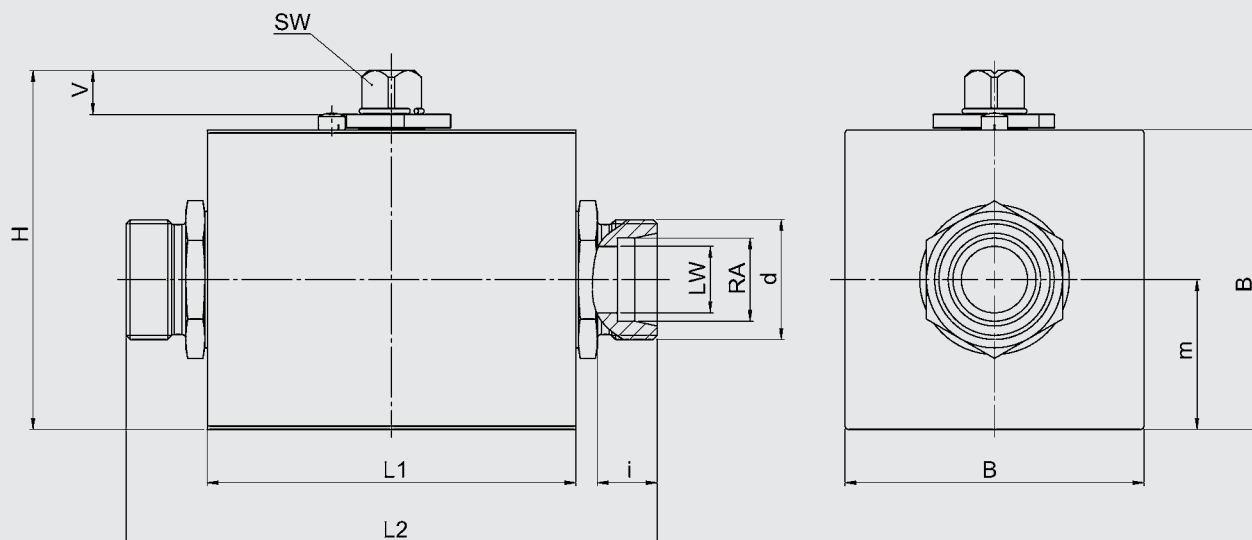
NPT ANSI B1.20.1



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

Dimensions

DIN 2353 heavy range



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

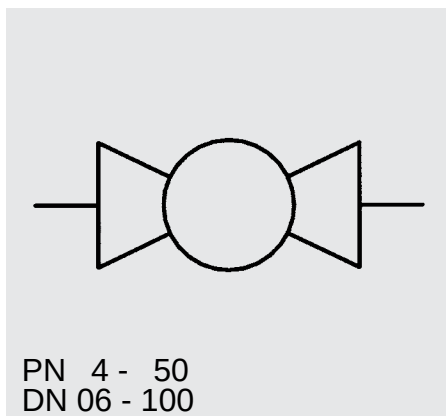
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Low Pressure Ball Valves

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

Connection type

Thread size

Materials

Housing

2 = Nickel-plated brass

Ball, control spindle

2 = Chrome-plated brass

Ball seals

3 = PTFE

Soft seals

3 = PTFE

Handle

12 = Aluminium clamped handle, cranked, supplied fitted

Series

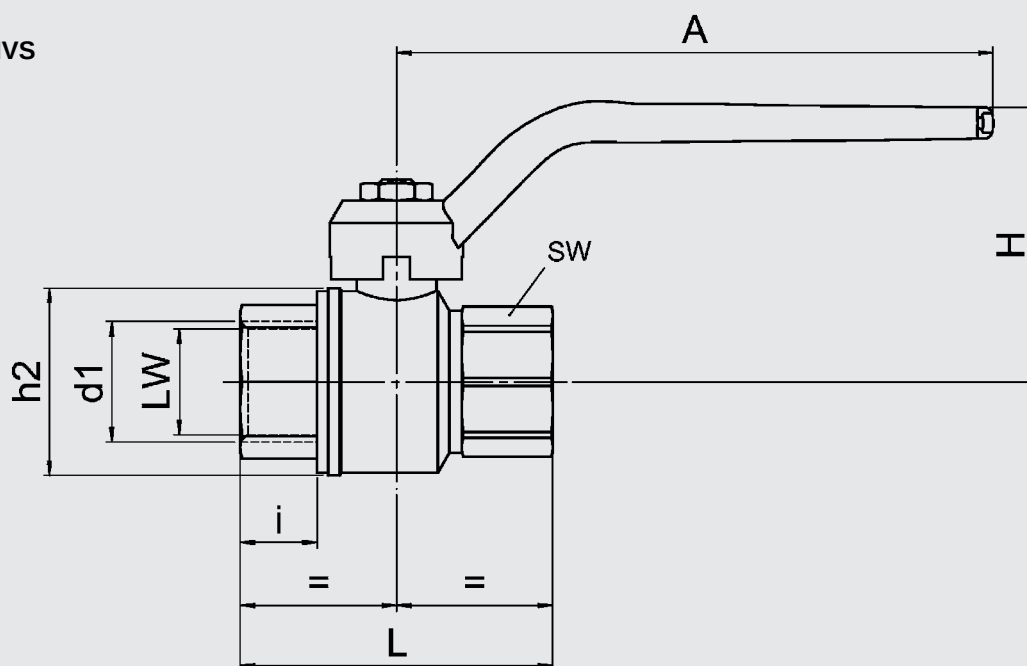
(determined by manufacturer)

Approval

DIN-DVGW (only KHN)

Dimensions

KHNVN / KHNVS

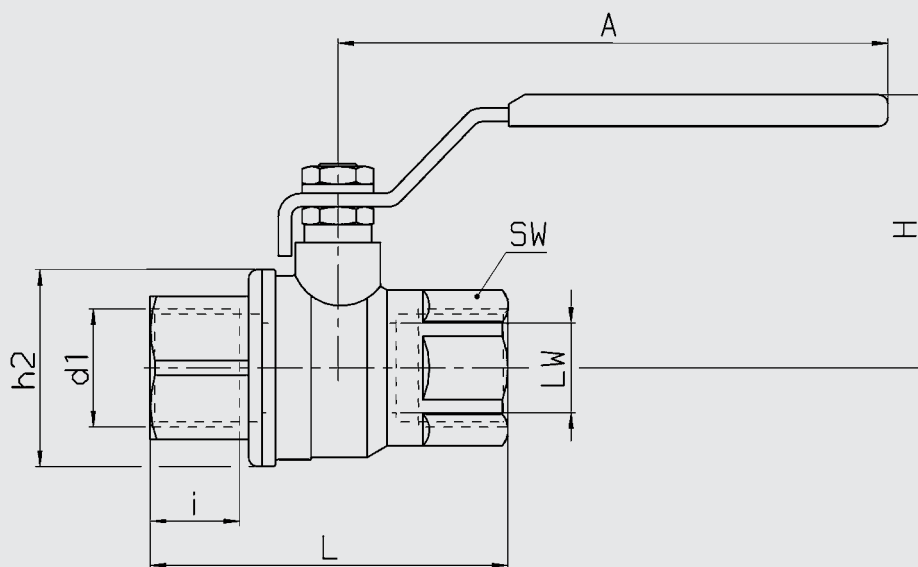


Type	d1	L [mm]	h2 [mm]	H [mm]	A [mm]	i [mm]	LW [mm]	SW [mm]	Nominal pressure PN [bar]
KHNVN	G 1/4	44.4	23.5	37	80	10	10	18	50
KHNVN	G 3/8	44.4	24	37	80	10	10	21	50
KHNVN	G 1/2	50.5	30.5	41	80	12	15	25	50
KHNVN	G 3/4	57.5	37.0	55	113	12.5	20	31	40
KHNVN	G 1	70	45.5	59	113	15	25	38	40
KHNVN	G 1 1/4	80.5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

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

Technical specifications

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



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

Technical specifications

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

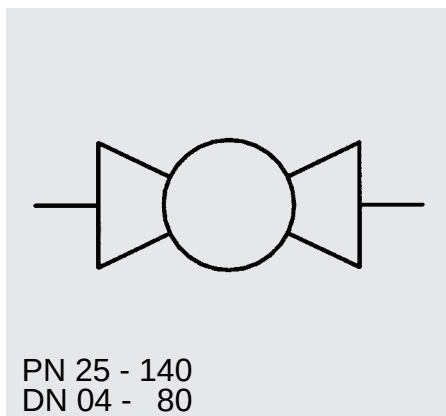
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Stainless Steel Low Pressure Ball Valves KHNVN / KHNVS

Model code
(also order example)

KHNVS Rp 1/2 3333 18 X

Designation

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

Type of connection

Rp
G

Thread size

Materials

Housing

3 = Stainless steel (1.4408)

Ball, control spindle

3 = Stainless steel (1.4408)

Ball seals

3 = PTFE

Seals

3 = PTFE

Handle

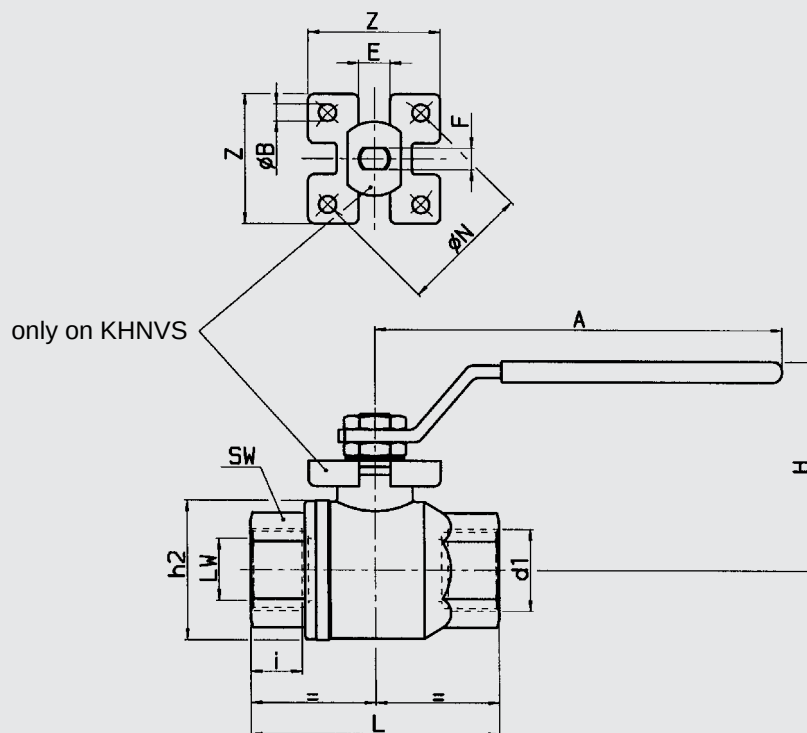
18 = Stainless steel handle, cranked, supplied fitted

Series

(determined by manufacturer)

Dimensions

KHNVN / KHNVS



Type	d1	Nominal bore DN	ϕLW Int. diam.	PN [bar]	i	L	H	A	SW	Weight [kg]
KHNVN	G1/4	6	9.2	64	10	48.6	47.5	81	19	0.24
KHNVN	G3/8	10	12.5	64	12	52.5	52	87	22	0.25
KHNVN	G1/2	16	15	64	14.5	59	56.5	100	26	0.29
KHNVN	G3/4	20	20	64	16	65	58.5	100	32	0.44
KHNVN	G1	25	25	50	18	76	74	148	41	0.72
KHNVN	G1 1/4	32	32	50	20	90	78	148	50	1.20
KHNVN	G1 1/2	40	38	40	20	108	92	190	55	1.82
KHNVN	G2	50	50	40	22	122	103	190	70	2.74
KHNVN	G2 1/2	65	65	25	30	164	118	280	85	5.15
KHNVN	G3	80	80	25	32	176	127	280	100	7.20

Type	d1	Nominal bore DN	ϕLW Int. diam.	PN [bar]	i	L	$\phi h2$	H	A	SW	Weight [kg]
KHNVS	Rp1/8	04	8	140	7.4	55.5	30	50	111	22	0.25
KHNVS	Rp1/4	06	10	140	11	55.5	30	50	111	22	0.24
KHNVS	Rp3/8	10	10	140	11.4	55.5	30	50	111	22	0.22
KHNVS	Rp1/2	16	15	140	15	66	36	53	111	27	0.30
KHNVS	Rp3/4	20	20	105	16.3	79	45	68	132	32	0.50
KHNVS	Rp1	25	25	105	19.1	93	54	77	175	41	0.95
KHNVS	Rp1 1/4	32	32	64	21.4	100	64	83	175	50	1.30
KHNVS	Rp1 1/2	40	40	64	21.4	110	80	100	250	55	2.10
KHNVS	Rp2	50	50	64	25.7	131	95	108	250	70	3.30

Type	d1	ØB	F	E	ØN	Z
KHNVS	Rp1/8	–	5	8	–	–
KHNVS	Rp1/4	5.5	5	8	36F03	36
KHNVS	Rp3/8	5.5	5	8	36F03	36
KHNVS	Rp1/2	5.5	5	8	36F03	36
KHNVS	Rp3/4	5.5	7	10	42F04	42
KHNVS	Rp1	5.5	8	12	42F04	42
KHNVS	Rp1 1/4	5.5	8	12	42F04	42
KHNVS	Rp1 1/2	6.5	10	16	50F05	50
KHNVS	Rp2	8.5	10	16	50F05	50

Technical specifications

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

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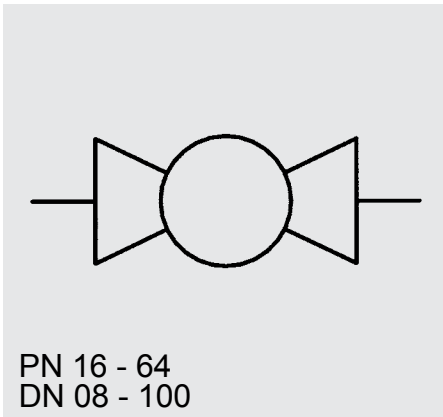


Weld-Type Low Pressure Ball Valves

KHM3S

Model code
(also order example)

KHM3S 20 1333 16 X



Designation

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

Nominal bore

Materials

Housing, butt weld

1 = Steel

3 = Stainless steel

Ball, spindle

3 = Stainless steel

Ball seals

3 = PTFE

Seals

3 = PTFE

Handle

16 = Steel bolt-on handle, cranked, supplied fitted

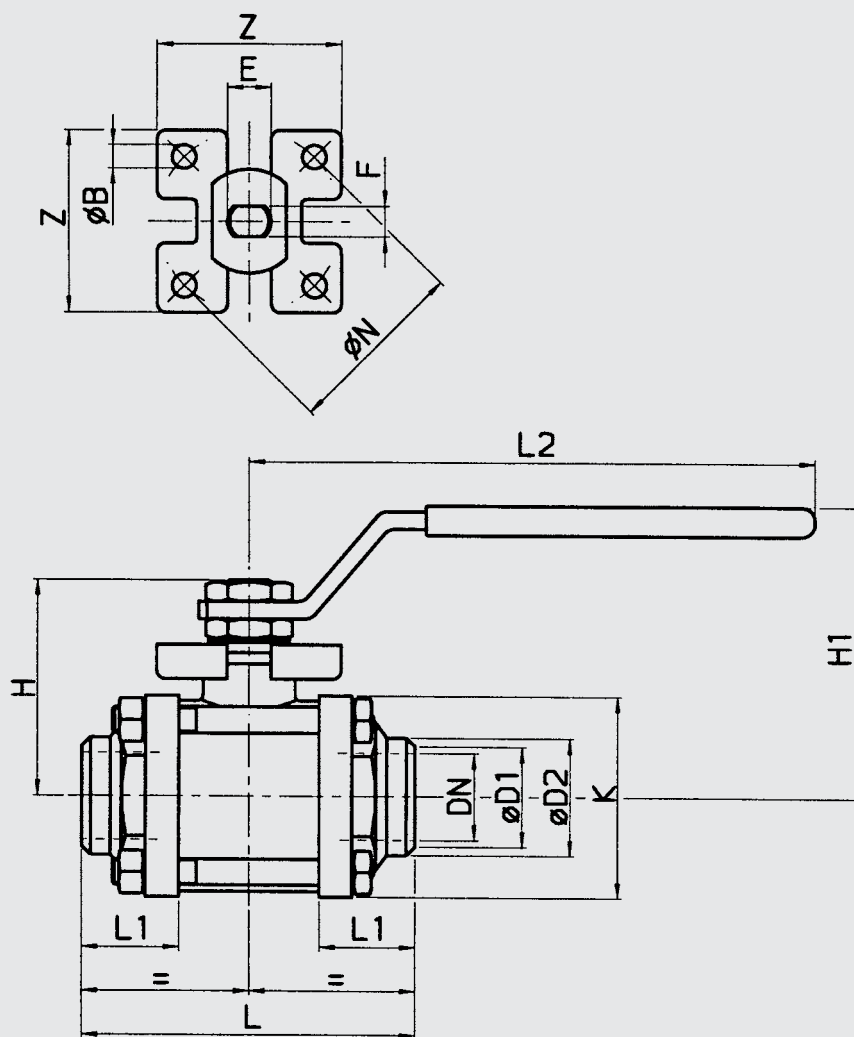
18 = Stainless steel bolt-on handle, cranked, supplied fitted DN 10 - 50

Series

(determined by manufacturer)

Dimensions

KHM3S



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

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

Technical specifications

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

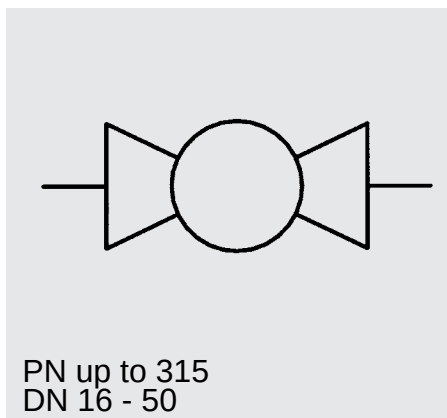
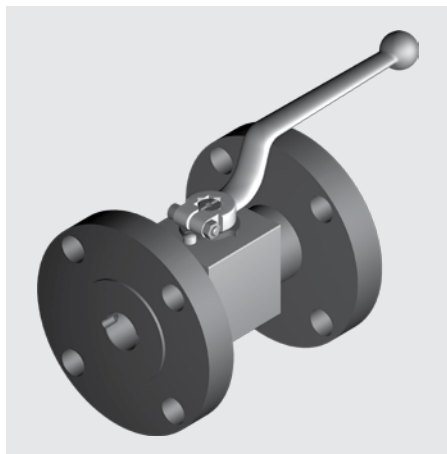
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Flanged Ball Valves

KHBF / KHMFF / KHMFF

Model code

(also order example)

KHBF 16 PN040 11141 02 X ...

Designation

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

Nominal bore

(DN)

Pressure range

(to DIN 2401)

Materials

Housing, connection adapters

1 = Steel
3 = Stainless steel (1.4571)

Ball, control spindle

1 = Steel
3 = Stainless steel (1.4571)

Ball seal

1 = POM (polyacetal)

Soft seal

4 = FKM (Viton)

Flanges

1 = Steel
3 = Stainless steel (1.4571)

(other material combinations on request)

Handle

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

Series

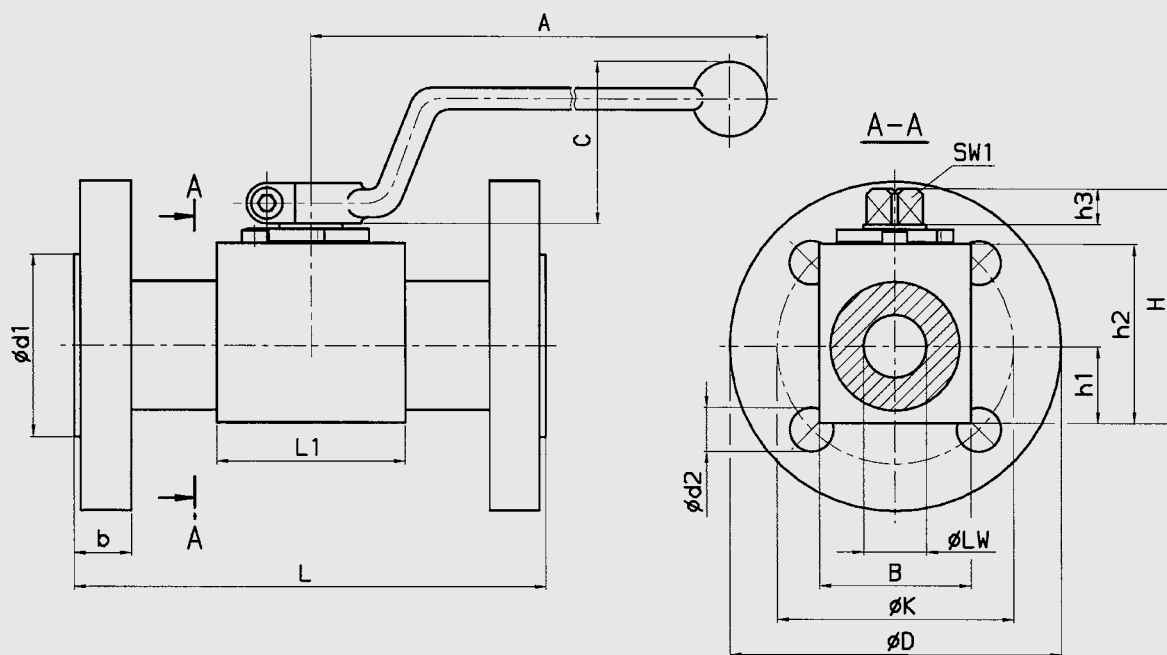
(determined by manufacturer)

Surface protection

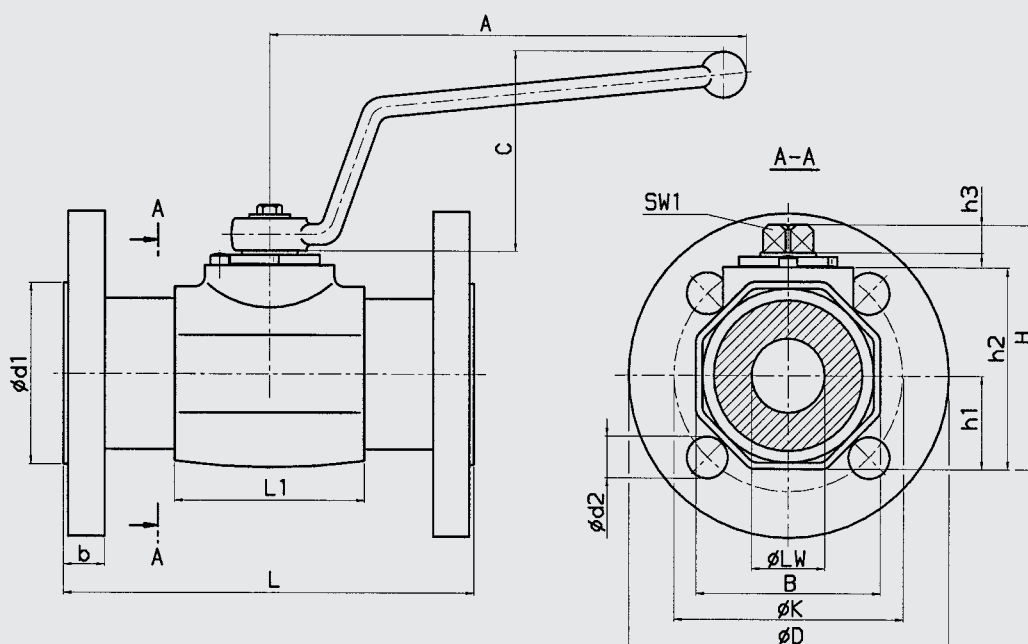
... = Phosphate-plated (no details required)
A = Zinc-plated, chrome (VI)-free

Dimensions

KHBF



KHMF / KHMFF



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

Type of conn. / Seal face	Type	Pressure range PN [bar]	L	D	d1	d2	K	b	Z*	Weight [kg]
F1 (FTF, basic range 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 KHMFF - 20	40	150	105	58	14	75	18	4	3.4
		160	160	140	68	18	100	24	4	7.1
	KHBF - 25 KHMFF - 25	250	160	150	68	22	105	28	4	8.6
		315	160	160	68	22	115	34	4	9.2
		40	180	140	78	18	100	18	4	7.3
		160	180	155	78	22	110	26	4	10.0
	KHMFF - 40	40	200	150	88	18	110	18	4	9.5
		160	200	170	88	22	125	28	4	13.0
		250	200	185	88	26	135	34	4	15.5
		315	200	195	88	26	145	38	4	17.5
	KHMFF - 50	40	230	165	102	18	125	20	4	13.1
		63	230	180	102	22	135	26	4	18.0
		160	230	195	102	26	145	30	4	23.5
		250	230	200	102	26	150	38	8	28.5
		315	230	210	102	26	160	42	8	31.0
F4 (FTF, basic range 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:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 315 (see pressure range)
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Spare parts:	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Actuator Limit switch Lock

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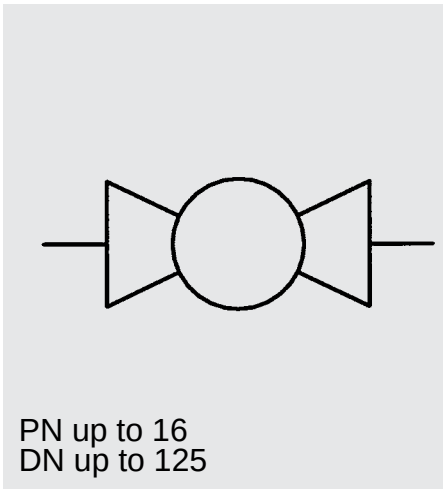
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Flange Type Ball Valve DN 65 – 125 KHMFF

Model code
(also order example)

KHMFF 080 PN016 8834 02 X



Designation

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

Nominal bore

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

Pressure range to DIN EN 1092

Materials

Housing, flange

8 = Cast iron (GG25), spindle in steel

Ball

2 = Brass

8 = Cast iron, hard-chromed

Ball seal

3 = PTFE

Housing seal and control spindle seal

2 = NBR (Perbunan)

4 = FKM (Viton)

Handle

02 = Aluminium clamped handle, cranked DN 16 - 100

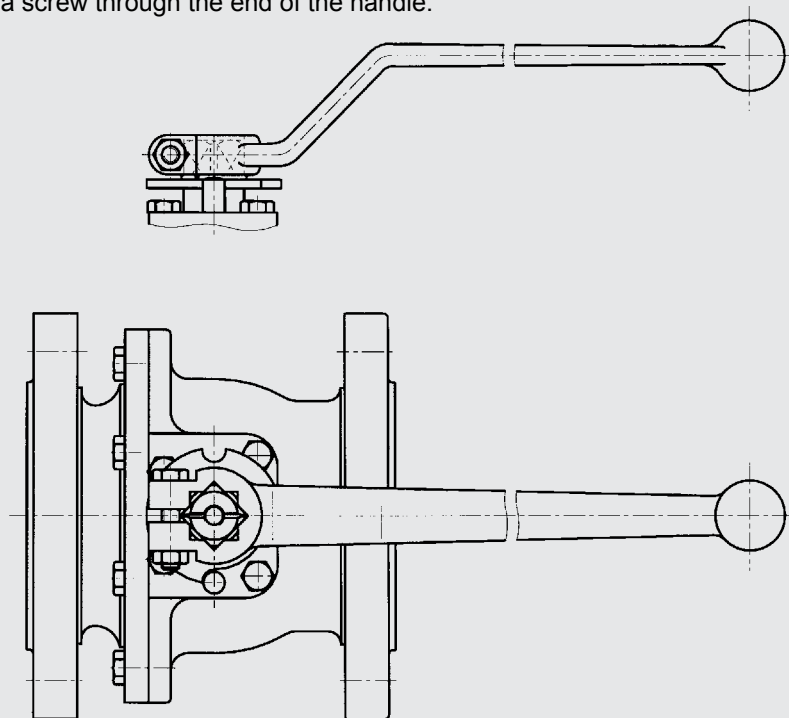
16 = Steel bolt-on handle, cranked, supplied loose
reduced nominal bores DN 65 - 125

Series

(determined by manufacturer)

Notes on assembly

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



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

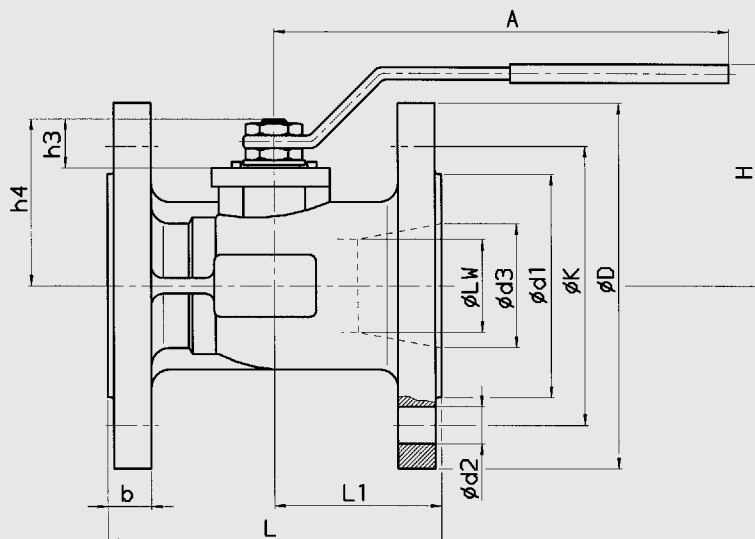
SW 22

Torque value

10 Nm

Dimensions

KHMF (reduced)

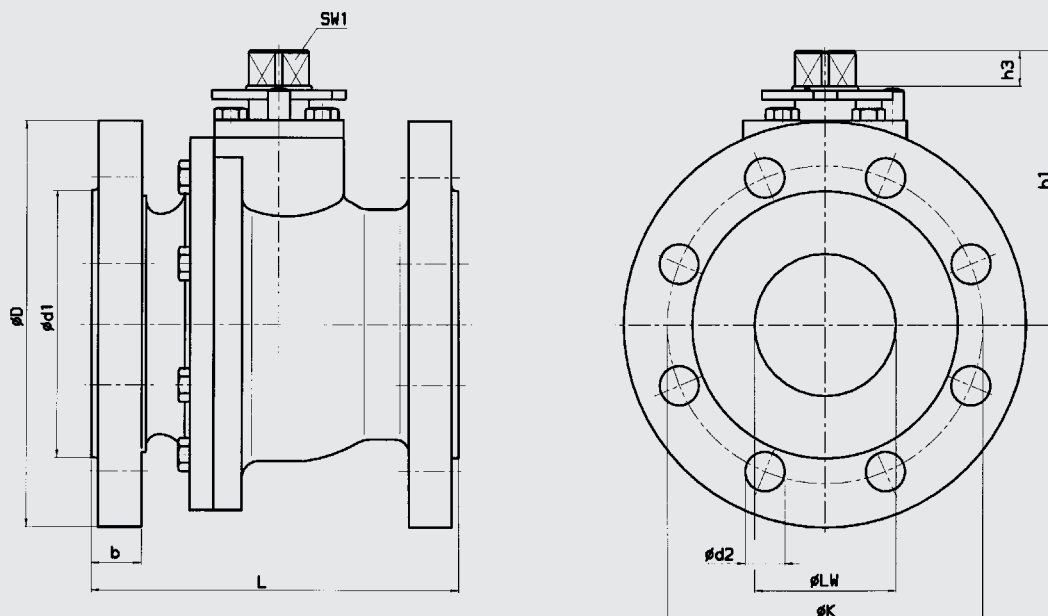


Type of conn. / sealing face	Type	Pressure range	LW	A	L	L1	D	d1	d2	d3	K	b	H	h3	h4	Z*	Weight [kg]	Length DIN 3202
F4 Flange connection DIN EN 1092, Form B2	KHMF - 065	16	50.2*	250	170	85	185	122	18	65	145	18	112	23	86.5	4	10.5	F4
	KHMF - 080	16	64*	321	180	90	200	138	18	80	160	20	128	29	105	8	15	F4
	KHMF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

* = reduced nominal bore

Z* = number of fixing holes

KHMFF (DN 65-100)



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

Z* = number of fixing holes

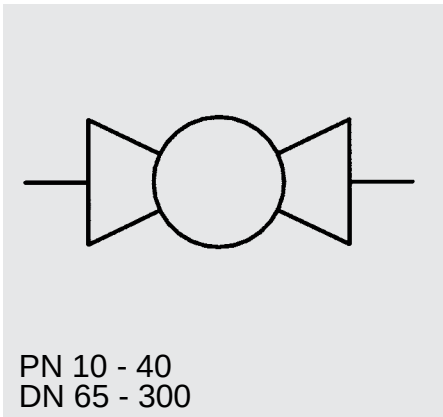
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Flanged Ball Valves KHFF

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

Pressure range

Materials

Housing

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

Ball

3 = Stainless steel (1.4408 / 1.4308)

Ball seal

3 = PTFE + 25% glass fibre reinforced

Stem seal

3 = PTFE

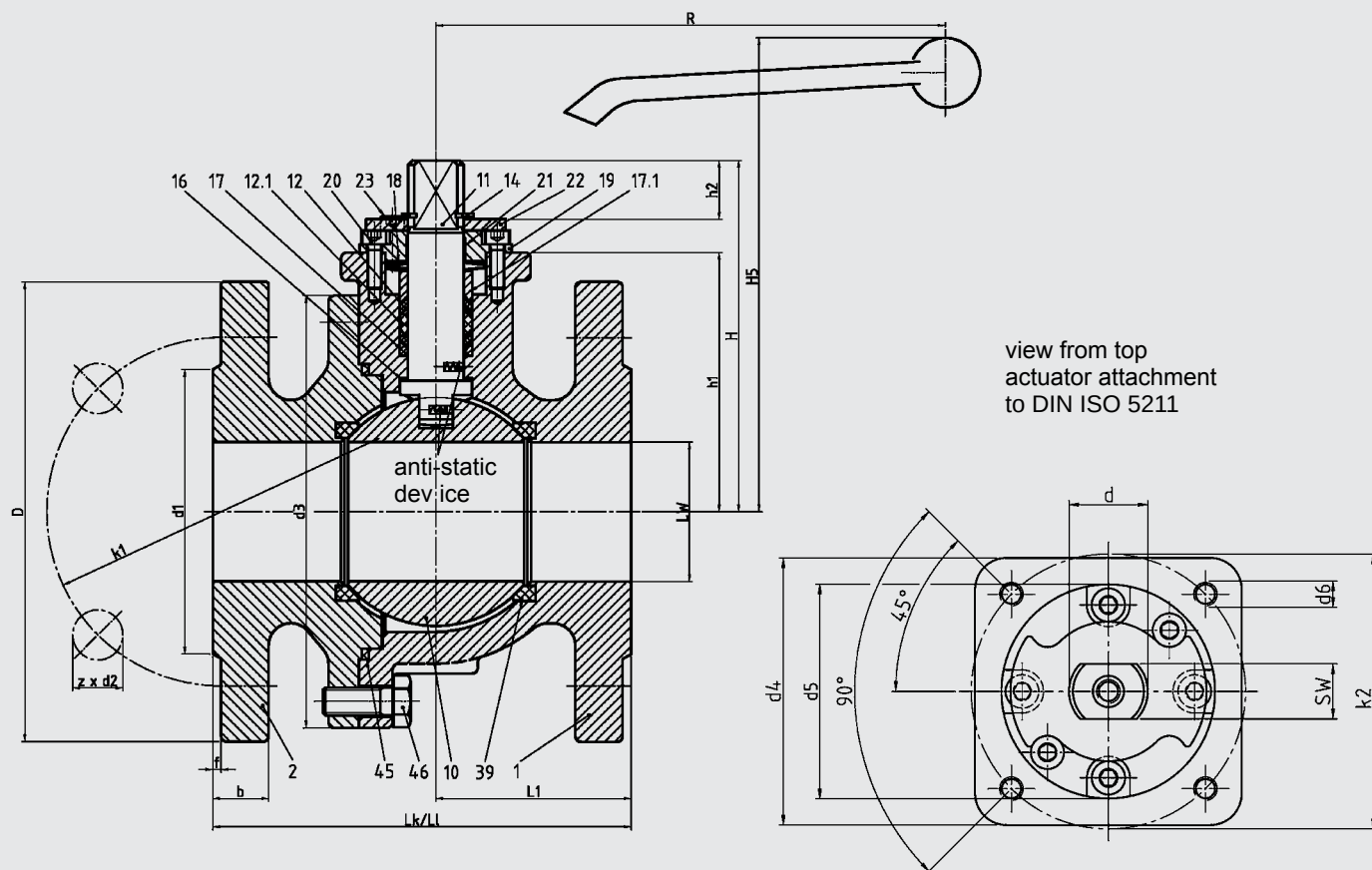
(other materials on request)

Handle

06 = Steel bolt-on handle, cranked

Series

(determined by manufacturer)



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

Dimensions

DN	PN	LW	L _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			20	21.5	F10	
80	40	80	180	310	86	208	161	211	124	20	25	19.3	160	138						25	27.5							
100	40	100	190	350	94.5	242	178	228	141				190	162						22	190	162			33.5	37.5		
125	16	125	325	400	162.5	290	265	270	222	30	35	25.5	210	188	18						635	250	22	8	67	72		
125	40												220	26	270							26	72		77			
150	16	150	350	480	175	327	297.5	301	242.5				240	212	22										100	106	F 12	
150	40												250	218	26										106	112		
200	10	200	400	600	200	400	335	338	280	41.5	44	32	295	268	22	150	85	M12	125	800	340	24	2		161	173		
200	16												26	26	173													
200	25												310	278	26						176							
200	40												320	285	30										172	184		
250	10	250	450	-	225	492	390	-	330				350	320	22										12	255		F 14
250	16												26	26	257													
250	25												370	335	30											272		
250	40												385	345	33											292		
300	10	300	500	-	250	575	425	-	365	51	48	36	400	370	22	175	100	M16	140	-	445	26			339			
300	16												410	378	26						340							
300	25												430	395	30						485	34			355			
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
Raised face:	DIN EN 1092 - 1 : 2000 Form B1 (others on request)
Face-to-face:	DIN EN 558- 1 Series 27 (F4/F5), DIN EN 558- 1 Series 1 (F1)
Stem seal:	PTFE or graphite stuffing box, supported by Belleville-type washer. Belleville-type washers are completely enclosed and protected against ingress of dirt.
Operation:	By stem on two flats according to NAMUR recommendation.
Top flange:	DIN ISO 5211 for hand-operation by worm gear, pneumatic, electric or hydraulic actuator.
Test certificates:	EN 10204 2.2 or 3.1 B/C/A
Certification according to:	PED 97/23/EC Manufactured to AD-2000 TA - Luft 2002 (Technical Instructions on Air Quality Control) Fire - safe BS 6755, part 2 (DN 65 - DN 100) DIN DVGW Reg. no. NG-4313AP1147 (German Technical and Scientific Association for Gas and Water) DIN EN ISO 9001 - TÜV CERT -
Accessories:	Stem extension, locking and positioning device, heating jackets and high quality sensors. (additional equipment on request)
Temperature range:	-50 °C to + 230 °C, depending on ball seals.
Application:	Neutral gases and fluids, mineral oil products, alkalis, corrosive fluids and gases.

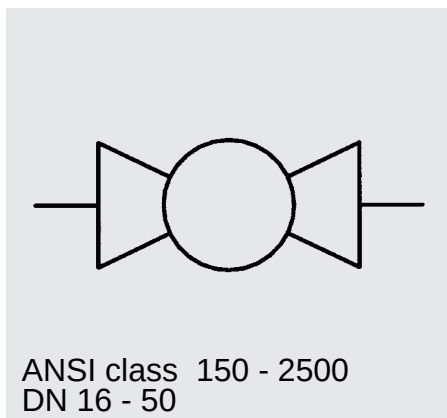
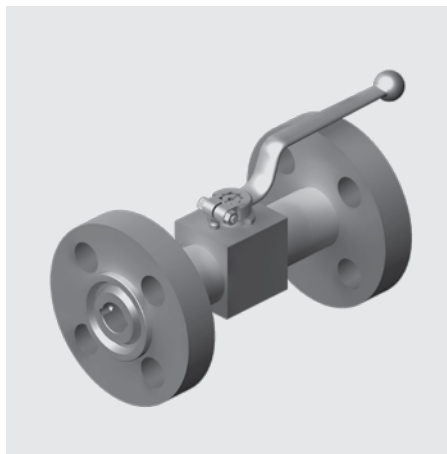
NOTE

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

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

Subject to technical modifications.

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ANSI Flange Ball Valve KHBF / KHMF

Model code

(also order example)

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

Designation

KHBF = Block-type ball valve DN 16 – 25 (steel)
KHMF = Sleeve-type ball valve DN 32 – 50 (steel)
DN 16 – 50 (stainless steel)

Nominal size

Pressure range ANSI class

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

Sealing surface

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

Materials

Housing, connection adapters

1 = Steel
3 = Stainless steel (1.4571)

Ball, control spindle

1 = Steel
3 = Stainless steel (1.4571)

Ball seal

1 = POM (polyacetal)

Soft seal

4 = FKM (Viton)

Flanges

1 = Steel
3 = Stainless steel (1.4571)

(other materials on request)

Handle

06 = Steel bolt-on handle, cranked

Series

(determined by manufacturer)

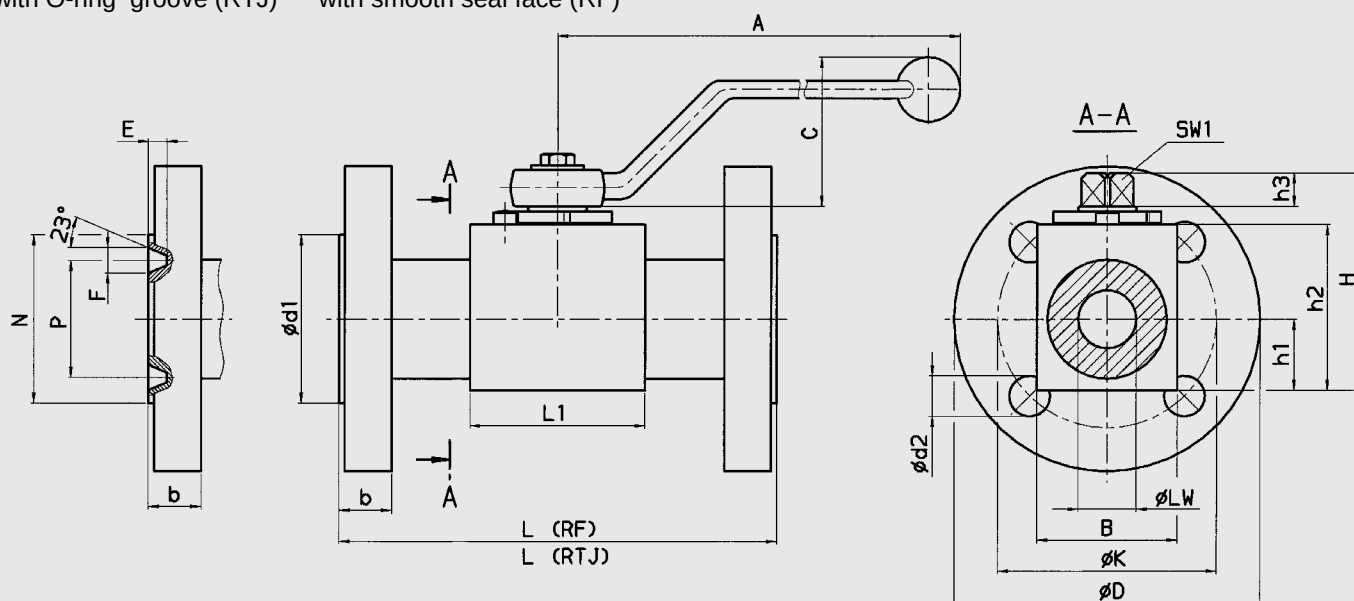
Surface protection

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

Dimensions

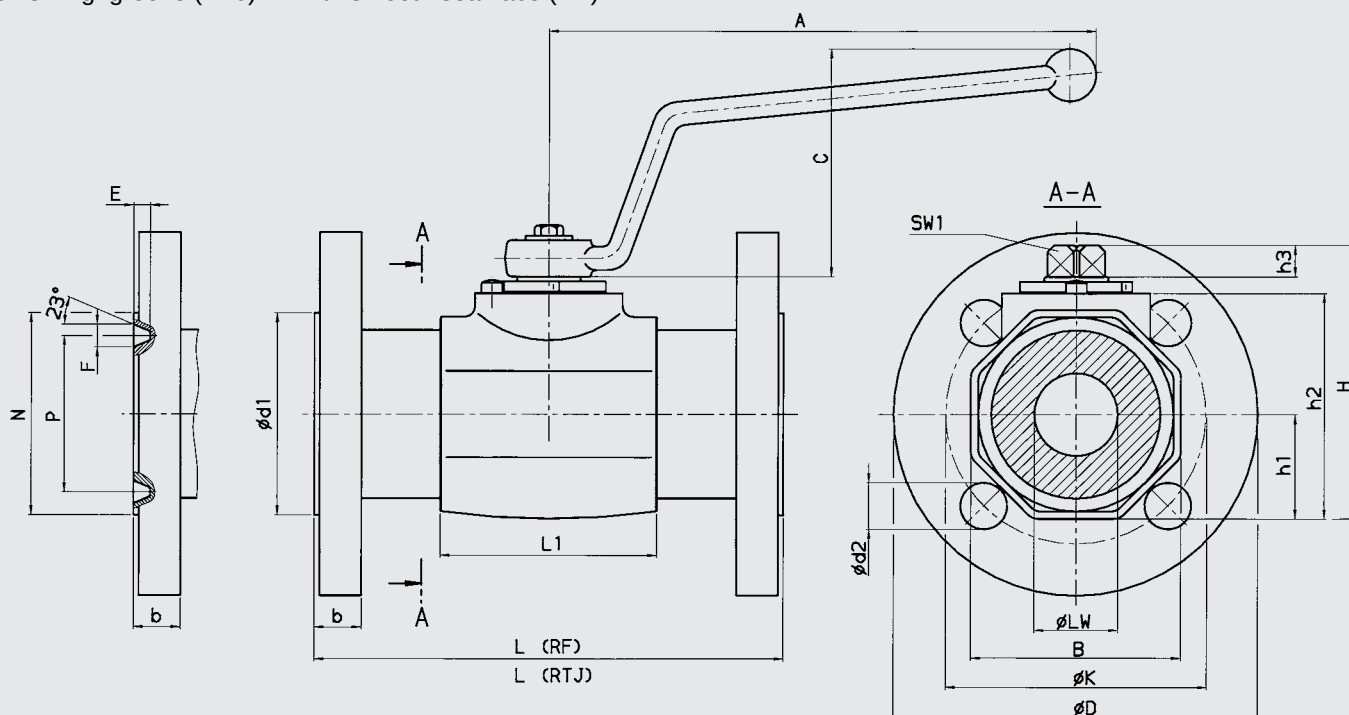
KHBF

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



KHMF

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



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

Flange dimensions ANSI class 150

DN	L (RF)	L (RTJ)	D	d1	d2	k	b	z*	N	P	F	E	Weight (kg)
16 - 1/2"	108	–	88.9	35.1	15.8	60.5	11.2	4	–	–	–	–	1.8
20 - 3/4"	117.4	–	98.6	42.9	15.8	69.9	12.7	4	–	–	–	–	2.9
25 - 1"	127	139.7	108	50.8	15.8	79.2	14.2	4	63.5	47.6	8.7	6.4	4.0
32 - 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

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

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

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

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

Length:	ASME / ANSI - B16.10												
Flange dimensions:	ASME / ANSI - B16.5												
Flange connections:	Rotating flanges												
Mounting position:	Optional												
Ambient temperature:	-10 °C to +80 °C												
Nominal pressure:	up to PN 337 (see pressure range)												
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)												
Temperature of operating fluid:	-10 °C to +80 °C												
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.

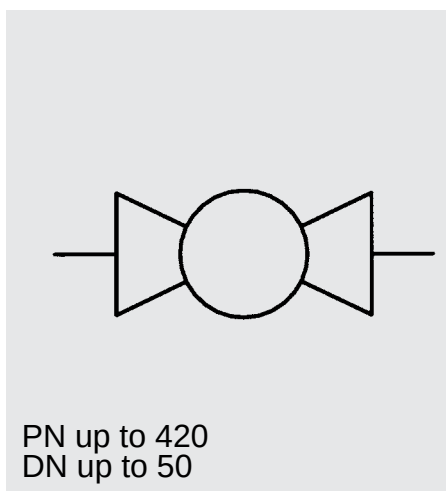
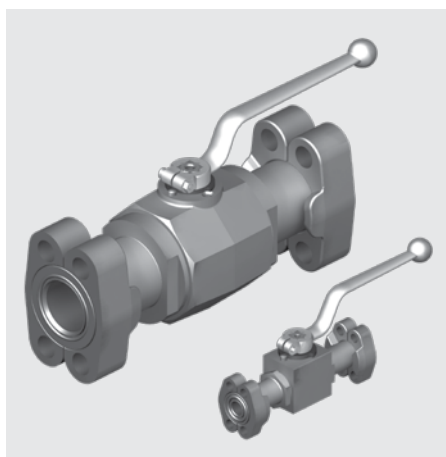
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SAE Flanged Ball Valves

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 (steel)
KHM = Sleeve type ball valve DN 32-50 (steel)
DN 16-50 (stainless steel)

Nominal bore

Type of SAE flange

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

Materials

Housing, connection adapters

1 = Steel
3 = Stainless steel

Ball, control spindle

1 = Steel
3 = Stainless steel

Ball seals

1 = POM

Control spindle seal and connection seal

2 = NBR
4 = FKM (Viton)

SAE split flange

1 = Steel
3 = Stainless steel

Handle

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

Series

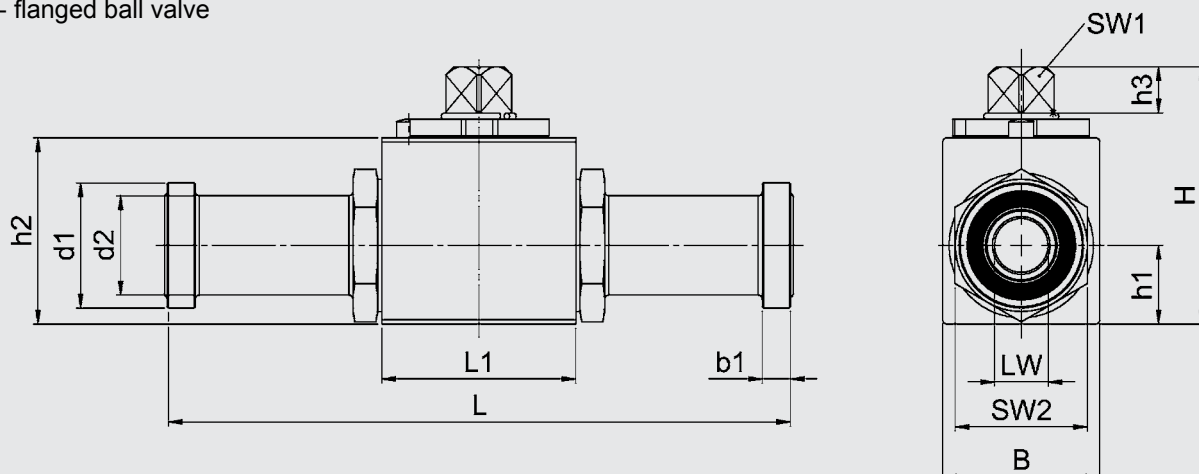
(determined by manufacturer)

Technical specifications

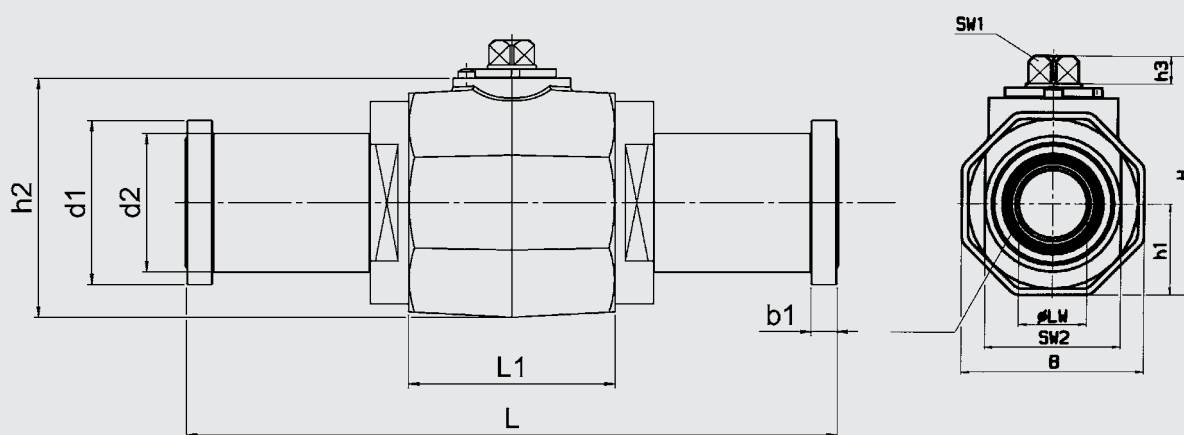
Type of construction:	Block type KHB DN 16 - 25 Sleeve type KHM DN 32 - 50
Flange dimensions:	ISO 6162, Table 1 and 2 (SAE J 518 c)
Flange connections:	SAE split flanges
Mounting position:	Optional
Ambient temperature steel:	-10 °C to +80 °C
Temperature range NIRO/POM/Viton:	-20 °C to +80 °C
Temperature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

Dimensions

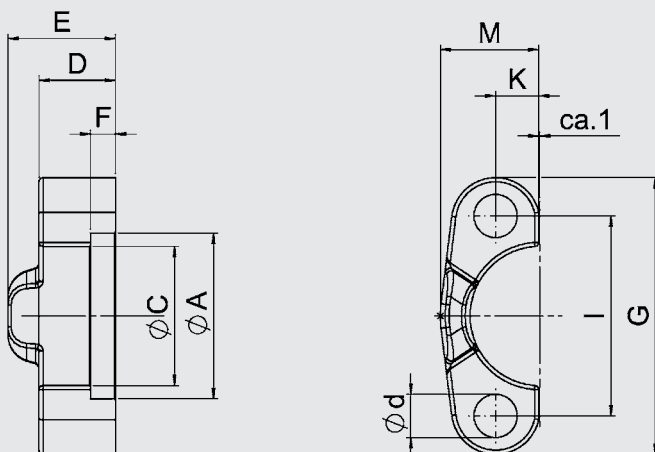
SAE - flanged ball valve
KHB



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	62	20	46	11	38	6.8	30.2	24	12	32	18.66x3.53
KHB-16/20-F3	3/4"	16	16	170	47	62	20	46	11	38	6.8	38.1	31.5	12	32	25x3.53
KHB-20-F3	3/4"	20	19	170	60	75	24.5	57	11.6	48	6.8	38.1	31.5	14	41	25x3.53
KHB-25-F3	1"	25	25	176.5	65	82	28.5	64	11.6	57	8	44.45	38	14	50	32.92x3.53
KHM-32-F3	1 1/4"	32	30	191.4	83.4	105.2	40	86.7	12	80	8	50.8	43	17	60	37.7x3.53
KHM-40-F3	1 1/2"	40	38	231	91	116.2	45	97.7	12	90	8	60.35	50	17	70	47.22x3.53
KHM-50-F3	2"	50	48	234	100	134.2	55.5	115.7	12	111	9.6	71.4	62	17	80	56.74x3.53

KHB / KHM – F3 – XL

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

SAE split flanges - F3

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

KHB / KHM – F6

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

KHB / KHM – F6 – XL

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

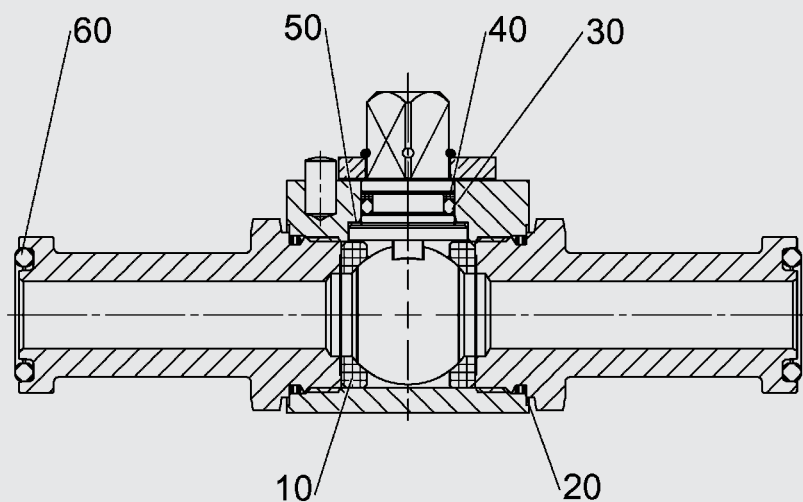
SAE split flanges - F6

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

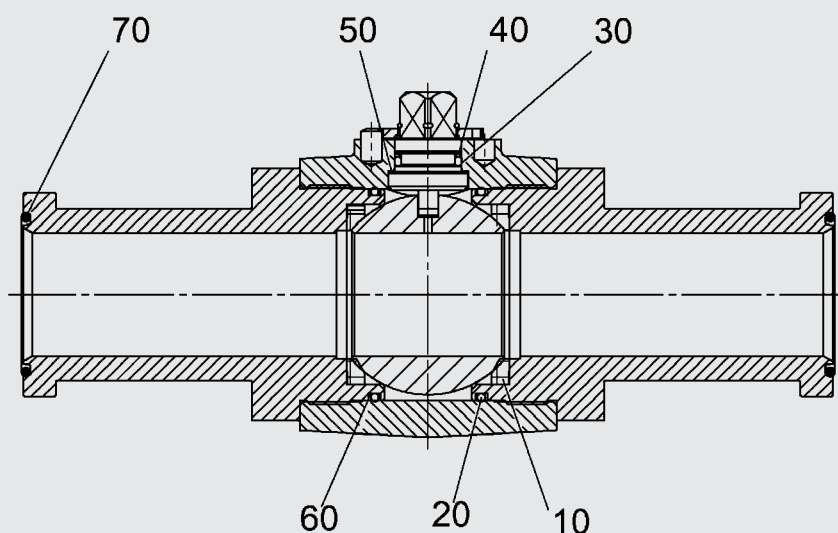
Spare Parts

(Seal kit)

KHB, DN 16 - 25



KHM, DN 32 - 50



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

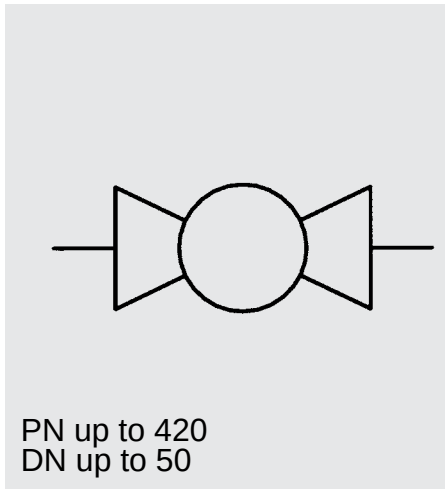
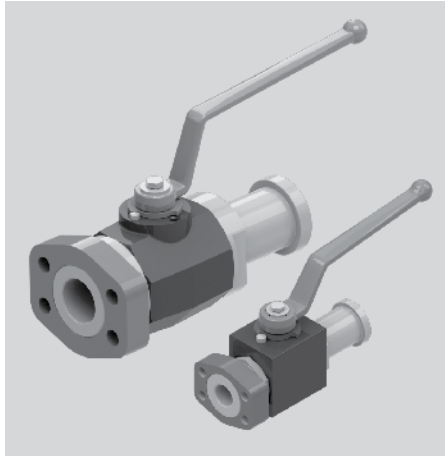
The parts indicated by numbers in the above drawing are contained in the seal kit.

NOTE

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

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

Subject to technical modifications.



SAE Threaded / Split flange Ball Valves

KHBGS-F3/6 / KHMGS-F3/6

Model code
(also order example)

KHBGS 16 F3 11141 06 X ...

Designation

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

KHMGS = Sleeve-type ball valve - threaded/split flange
DN 32 - 50 (steel)
DN 16 - 50 (stainless steel)

Nominal bore
(DN)

Type of SAE flange

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

Materials

Housing, connection adapters

1 = Steel
3 = Stainless steel

Ball, control spindle

1 = Steel
3 = Stainless steel

Ball seals

1 = POM

Control spindle seal and connection seal

2 = NBR
4 = FKM (Viton)

SAE flanges

1 = Steel
3 = Stainless steel

Handle

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

Series

(determined by manufacturer)

Surface protection

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

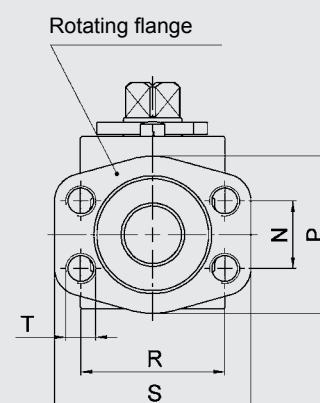
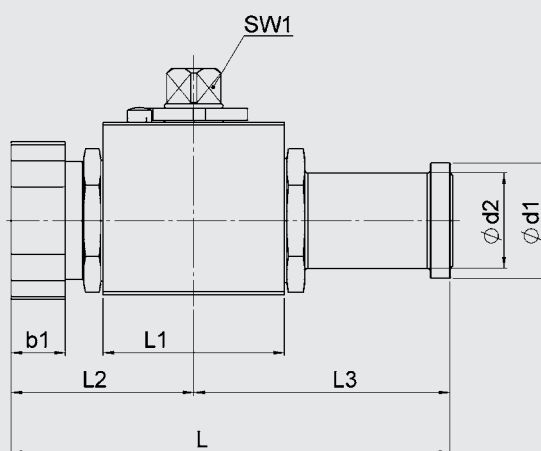
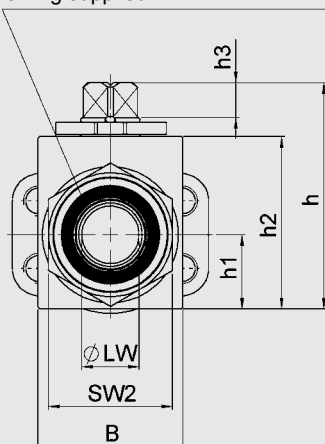
Technical specifications

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

Dimensions

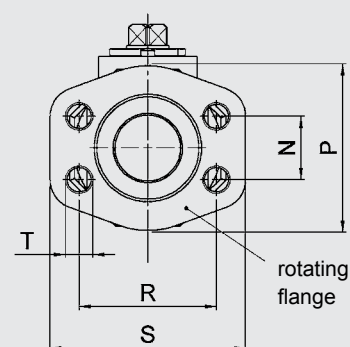
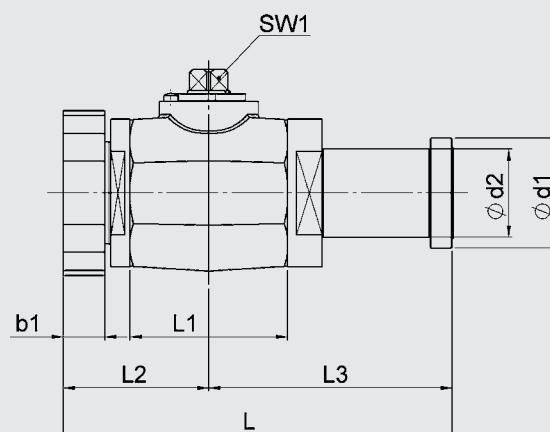
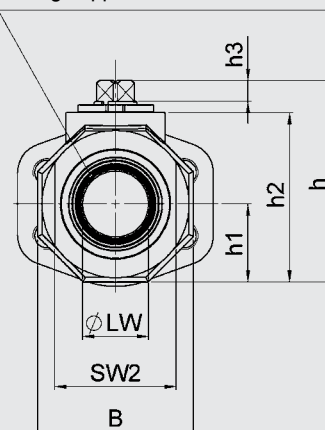
SAE threaded/split flange ball valve KHB

O-ring supplied

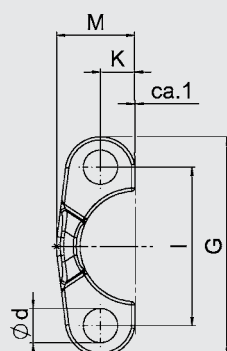
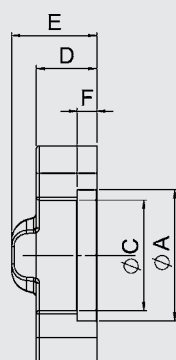


KHM

O-ring supplied



SAE split flange



KHBGS / KHMGS - F3

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

SAE split flanges - F3

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

SAE threaded flanges - F3

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

KHBGS / KHMGS - F6

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

SAE split flanges - F6

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

SAE threaded flanges - F6

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

NOTE

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

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

Subject to technical modifications.

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E-Mail: info@hydac.com

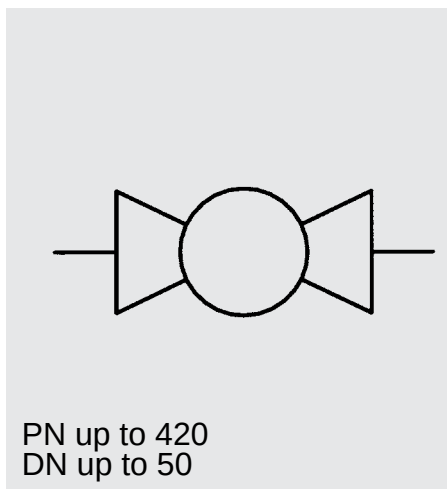


SAE Threaded Flange Ball Valves

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 (steel)

KHMG = Sleeve-type ball valve - threaded flange
DN 32 - 50 (steel)
DN 16 - 50 (stainless steel)

Nominal bore

Type of SAE flange

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

Materials

Housing, connection adapters

1 = Steel
3 = Stainless steel

Ball, control spindle

1 = Steel
3 = Stainless steel

Ball seals

1 = POM

Control spindle seal and connection seal

4 = FKM (Viton)

SAE threaded flange

1 = Steel
3 = Stainless steel

Handle

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

Series

(determined by manufacturer)

Surface protection

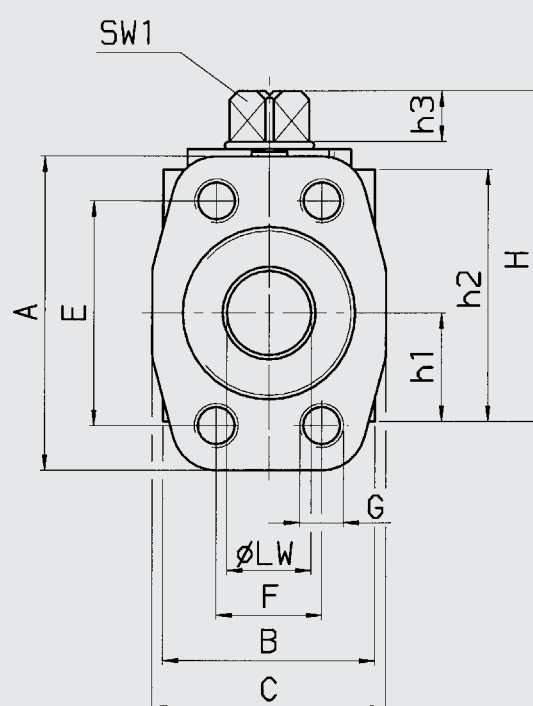
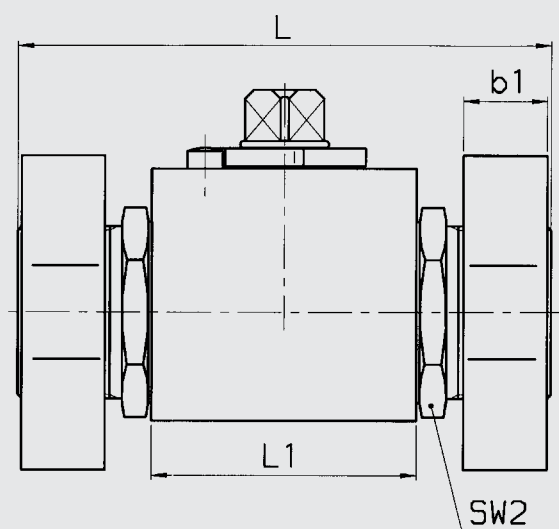
... = Phosphate-plated (no details required)
A = Zinc-plated, chrome (VI)-free

Technical specifications

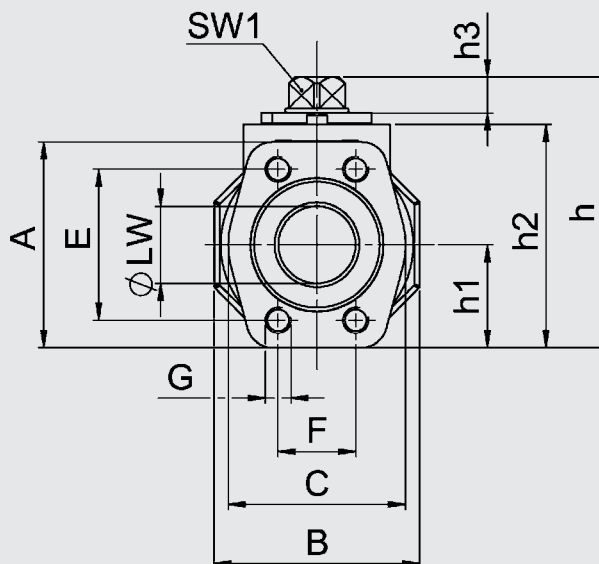
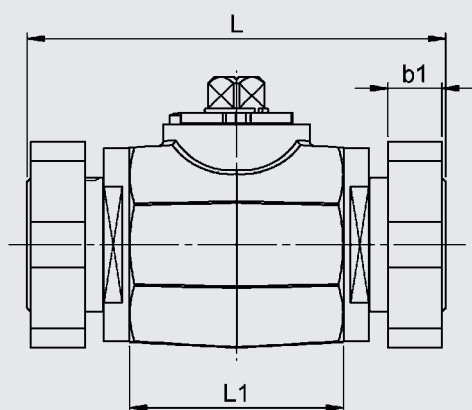
Type of construction:	Block type KHBG DN 16 - 25 Sleeve type KHBG DN 32 - 50
Type of connection:	ISO 6162, Table 1 and 2 (SAE J 518 c)
Flange connections:	SAE threaded flange
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 420/6000 PSI
Operating fluids:	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
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	62	20	46	11	39	12	32
KHBG-20-F3	3/4"	20	19	121	60	75	24.5	57	11.6	48	14	41
KHBG-25-F3	1"	25	25	133	65	82	28.5	64	11.6	57	14	50
KHMg-32-F3	1 1/4"	32	30	163	83.4	105.2	40	86.7	12	80	17	60
KHMg-40-F3-XL	1 1/2"	40	38	177	91	116.2	45	97.7	12	90	17	70
KHMg-50-F3-XL	2"	50	48	196	100	134.2	55.5	115.7	12	111	17	80

Flange F3

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

KHBG / KHMg - F6

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

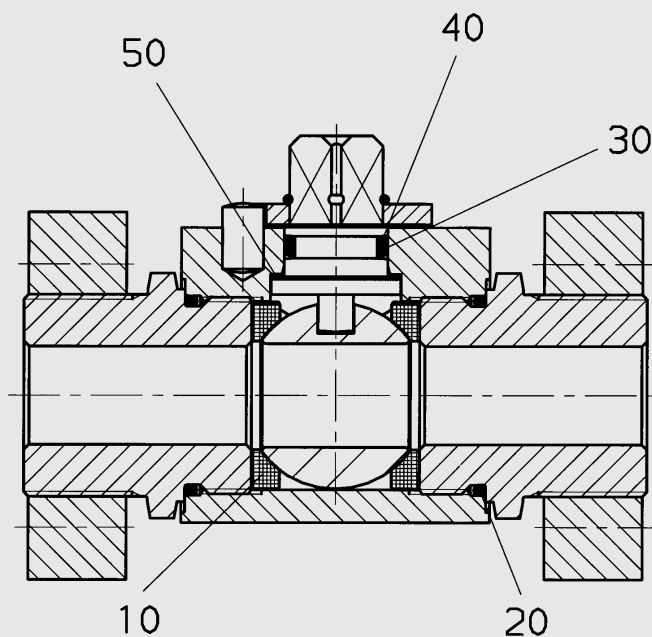
Flange F6

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

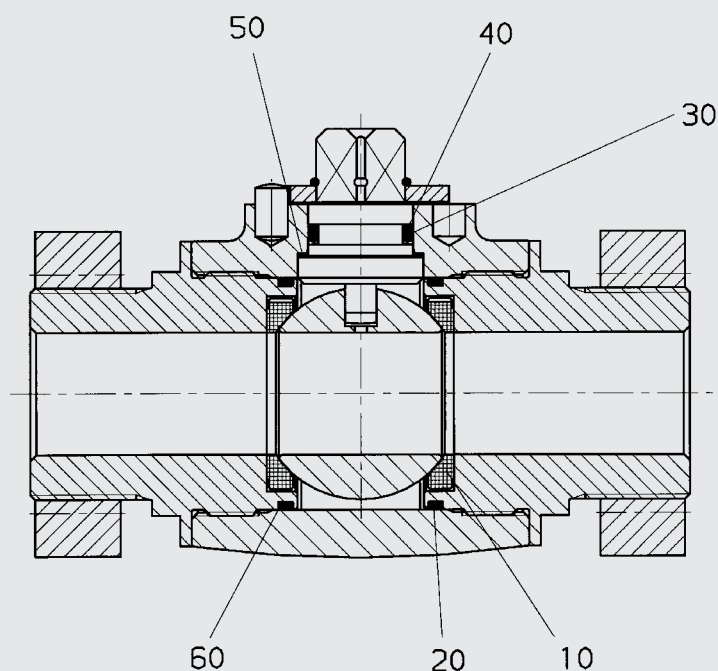
Spare Parts

(Seal kit)

KHBG, DN 16 - 25



KHMG, DN 32 - 50



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

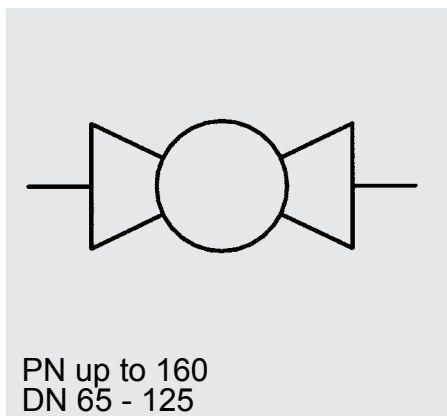
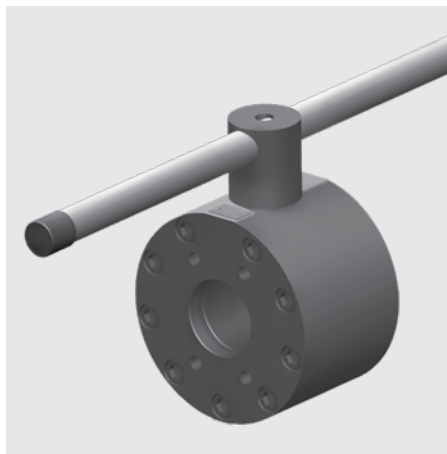
NOTE

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Subject to technical modifications.

SAE Fixed Flange Ball Valves KHF3



Model code
(also order example)

KHF3 65 1114 05 X A ...

Designation

KHF3 = Fixed flange ball valve DN 65 - 125

Nominal bore

Materials

Housing, housing flange

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

Ball, control spindle

- 1 = Steel
- 3 = Stainless steel

Ball seal

- 1 = POM (polyacetal)

Soft seal

- 4 = FKM (Viton)

(other materials on request)

Handle

- 05 = Steel bolt-on handle, straight

Series

(determined by manufacturer)

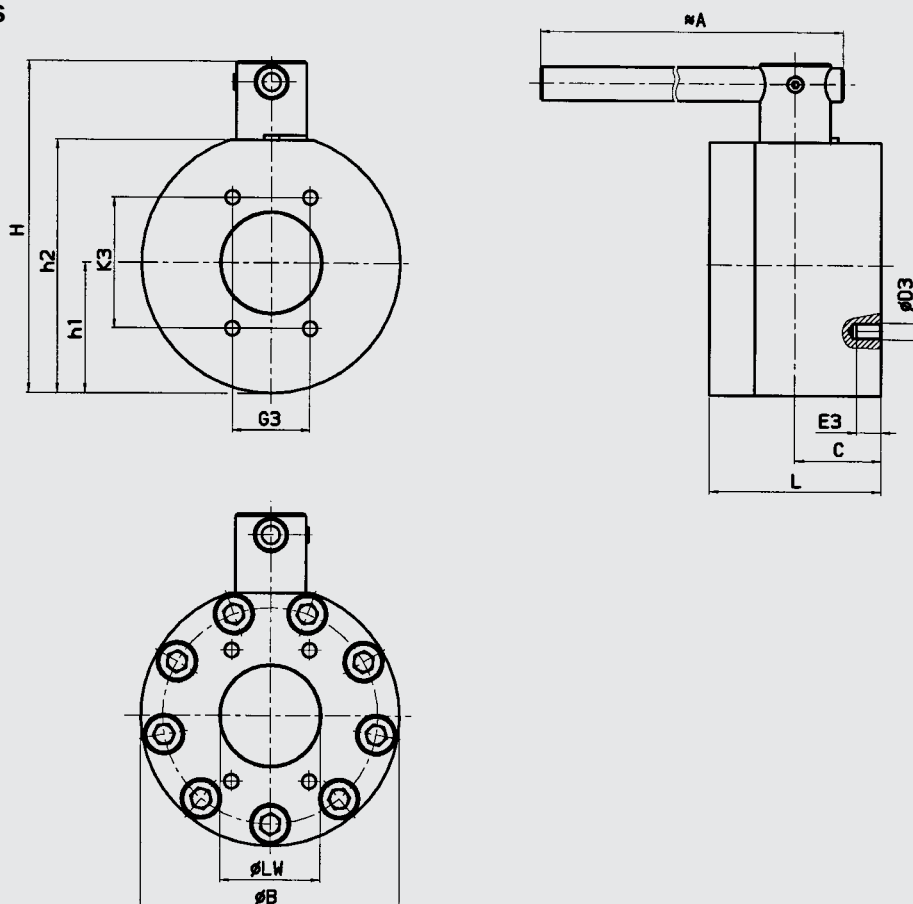
Surface protection

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

Version

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

Dimensions KHF3



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

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

Technical specifications

Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 160 (see pressure range)
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Spare Parts	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Actuator Limit switch Lock

NOTE

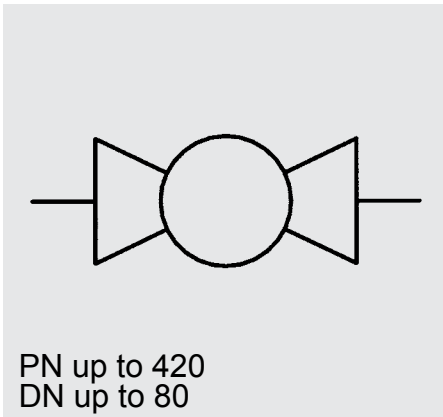
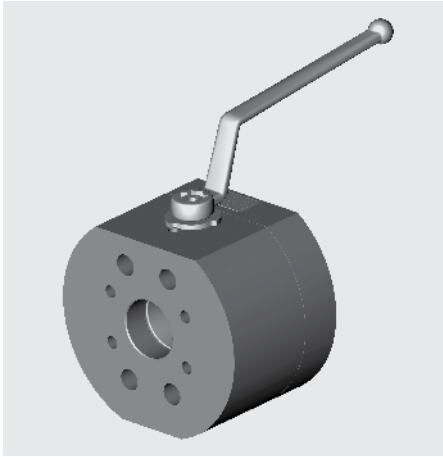
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Subject to technical modifications.

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SAE Fixed Flange Ball Valves KHF3/6



Model code

(also order example)

KHF3/6 20 1114 16 X A

Designation

KHF3/6 = Fixed flange ball valve

Nominal bore

Materials

Housing, connection adapters

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

Ball, control spindle

- 1 = Steel
- 3 = Stainless steel

Ball seal

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

Control spindle seal

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

Handle

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

Series

(determined by manufacturer)

Surface protection

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

Technical specifications

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

Metric thread version

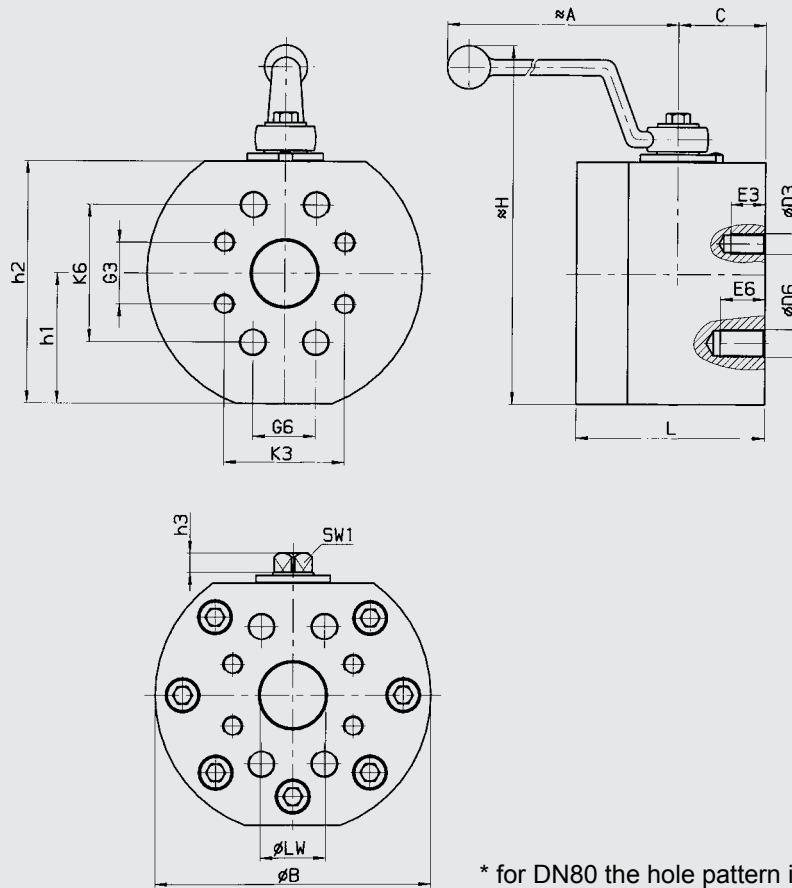
Connection type	SAE Size	Nominal bore / Type	Nominal bore DN	Nominal pressure PN [bar] *	Weight [kg]
Fixed flange connection ISO 6162 Table 1+2 (SAE J 518 c) F3/F6	1/2 "	KHF3/6 - 16 - 1114-16X-A	16	420	2.5
	3/4 "	KHF3/6 - 20 - 1114-16X-A	20	420	3.9
	1 "	KHF3/6 - 25 - 1114-16X-A	25	420	6.0
	1 1/4 "	KHF3/6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

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

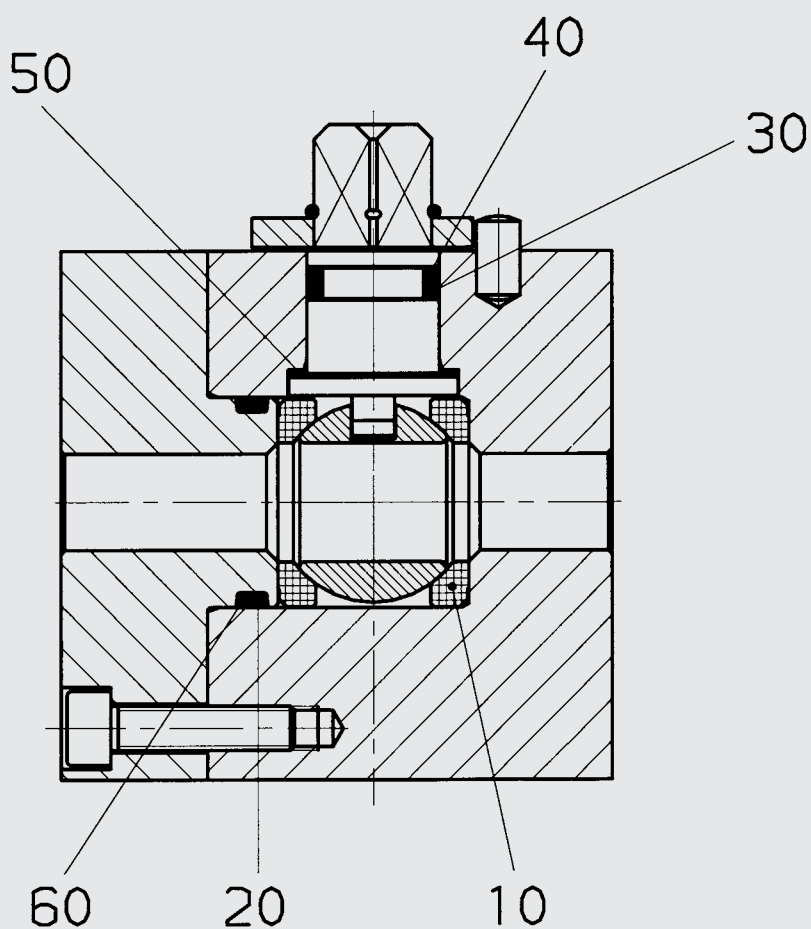
Type	K3	G3	D3	E3	K6	G6	D6	E6
KHF3/6-16	38.1	17.5	M8	16	40.5	18.2	M8	16
KHF3/6-20	47.6	22.3	M10	18	50.8	23.8	M10	18
KHF3/6-25	52.4	26.2	M10	18	57.2	27.8	M12	21
KHF3/6-32 / M12	58.7	30.2	M10	18	66.6	31.8	M12	21
KHF3/6-32 / M14	58.7	30.2	M10	18	66.6	31.8	M14	21
KHF3/6-40	69.9	35.7	M12	20	79.3	36.5	M16	26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

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

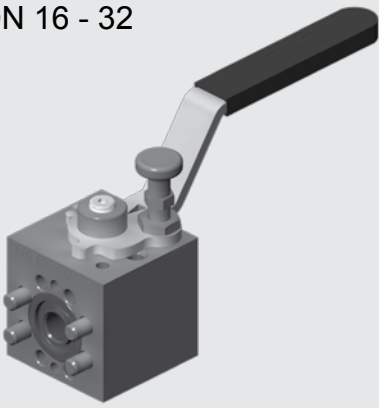
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

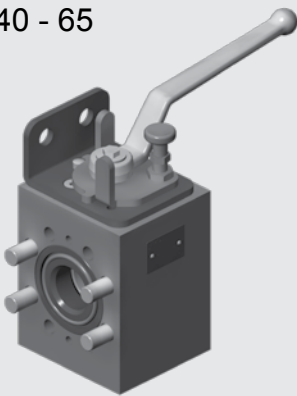
Seal kit	Order no. = part no.
DN 16	3015691
DN 20	3015694
DN 25	3015695
DN 32	3015696
DN 40	3015697
DN 50	3015698
DN 65	3791490
DN 80	3791492

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DN 16 - 32



DN 40 - 65



PN up to 420
DN up to 80

Direct Flange Ball Valve KHDF3 / KHDF6

Model code

(also order example)

KHDF3 16 1114 18X A X

Designation

KHDF3 = Direct flange ball valve 3000 PSI

KHDF6 = Direct flange ball valve 6000 PSI

Nominal bore

Materials

Housing, connection adapters

1 = Steel (standard)

3 = Stainless steel

Ball, control spindle

1 = Steel (standard)

3 = Stainless steel

Ball seal

1 = POM

Control spindle seal

2 = NBR (Perbunan)

4 = FKM (Viton) (standard)

Handle

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

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

Surface protection

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

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

Option

SO 760 = Can be locked in open and closed position using padlock.

Padlock not supplied

I-1.300 = Adapted for proximity switch M12,

Monitoring of ball valve in either open, closed or both positions

I-1.200 = With standard proximity switch M12,

Monitoring of ball valve in open position

I-3.200 = With 2 standard proximity switches M12,

Monitoring of ball valve in open and closed positions

Note

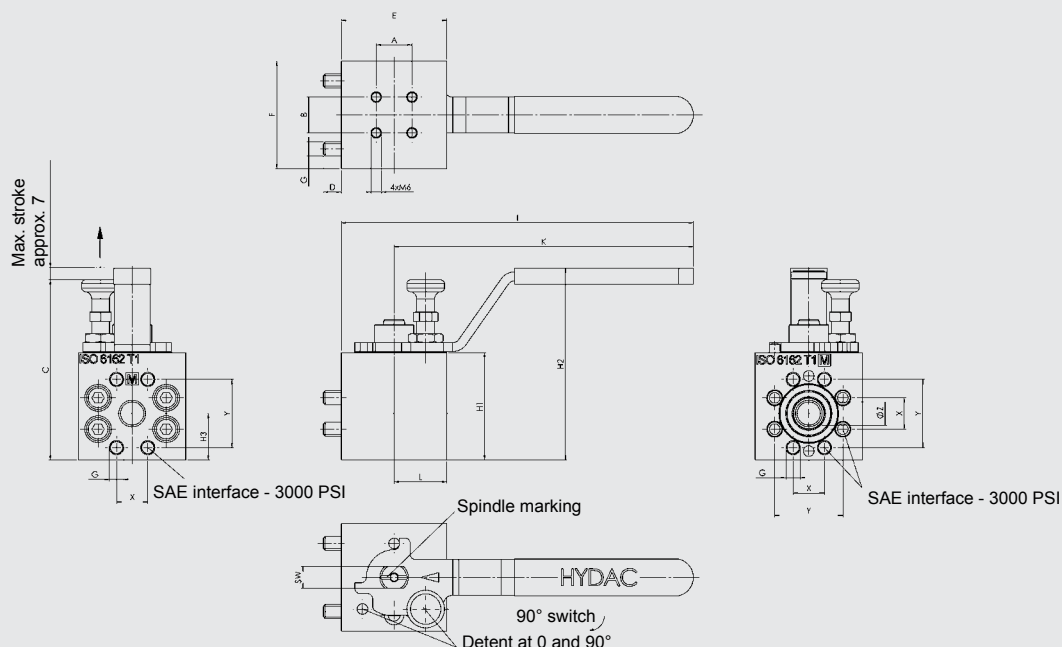
For DN40-50-65 the ball is trunnion mounted (double bearing, easy operation)

Detent on open and closed positions as standard

4 mounting bolts are supplied

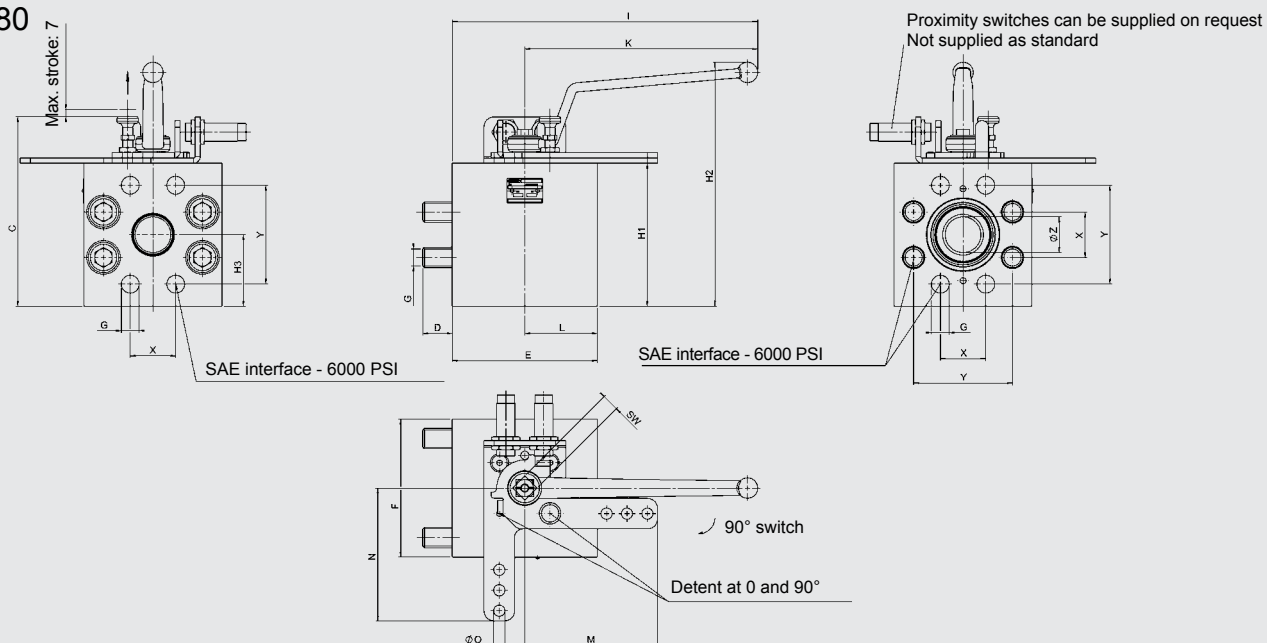
Dimensions

DN16 - 32



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

DN40 - 80



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

Technical specifications

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

NOTE

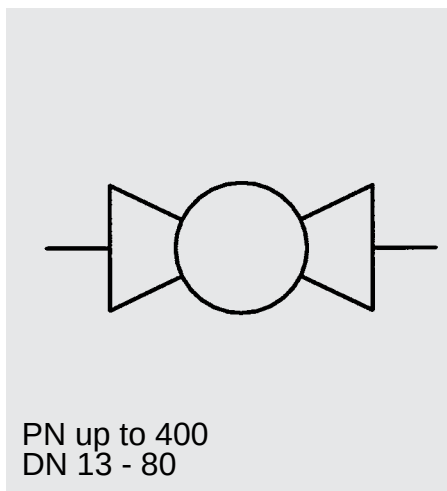
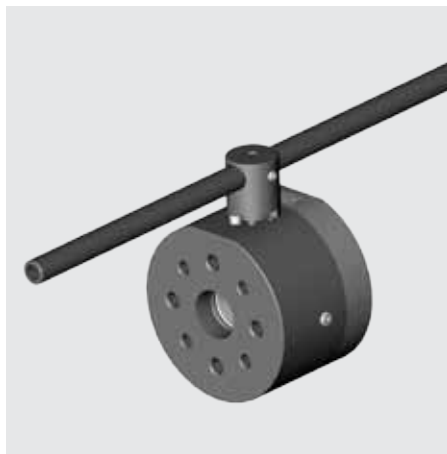
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Subject to technical modifications.

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ISO - Flanged Ball Valve KHF



Model code

(also example order)

KHF 100 ISO400 DN80 5314 05 X A

Designation

KHF = Fixed flange ball valve

Size

Type of connection

ISO 400 = ISO6164, p_{max} 400 bar

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

Nominal bore

(DN)

Materials

Housing, housing flange

5 = Steel

Ball, control spindle

3 = Stainless steel

Ball seal

1 = POM

Control spindle seal and connection seal

4 = FKM (Viton)

Handle

05 = Steel bolt-on handle, straight

Series

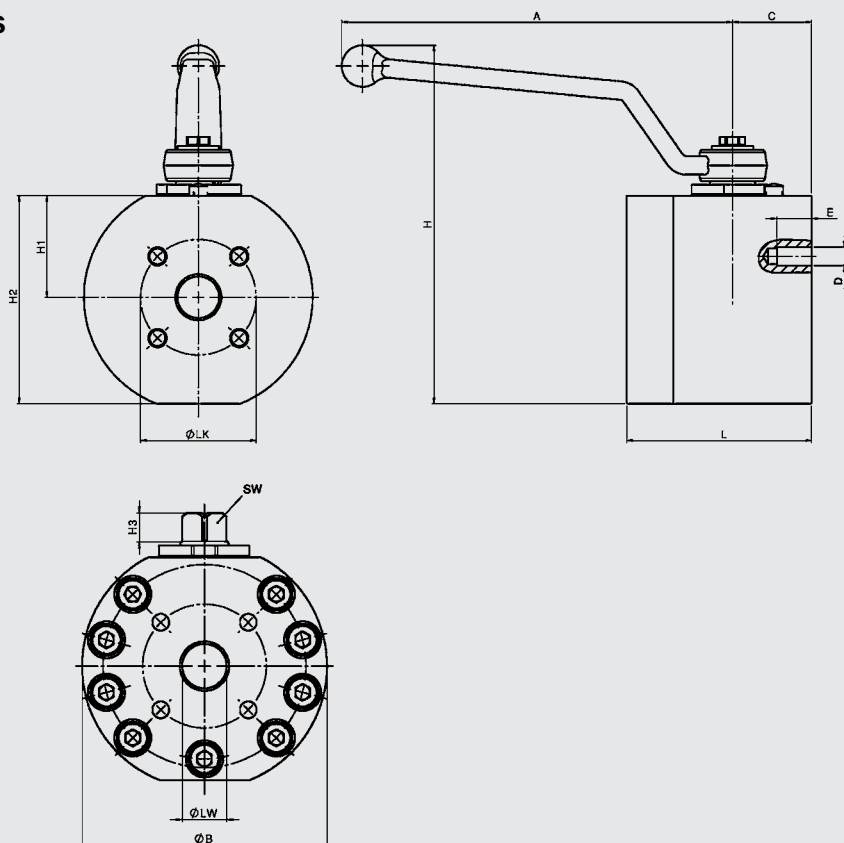
(determined by manufacturer)

Surface protection

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

Dimensions

DIN ISO 6164
Size 16 - 50



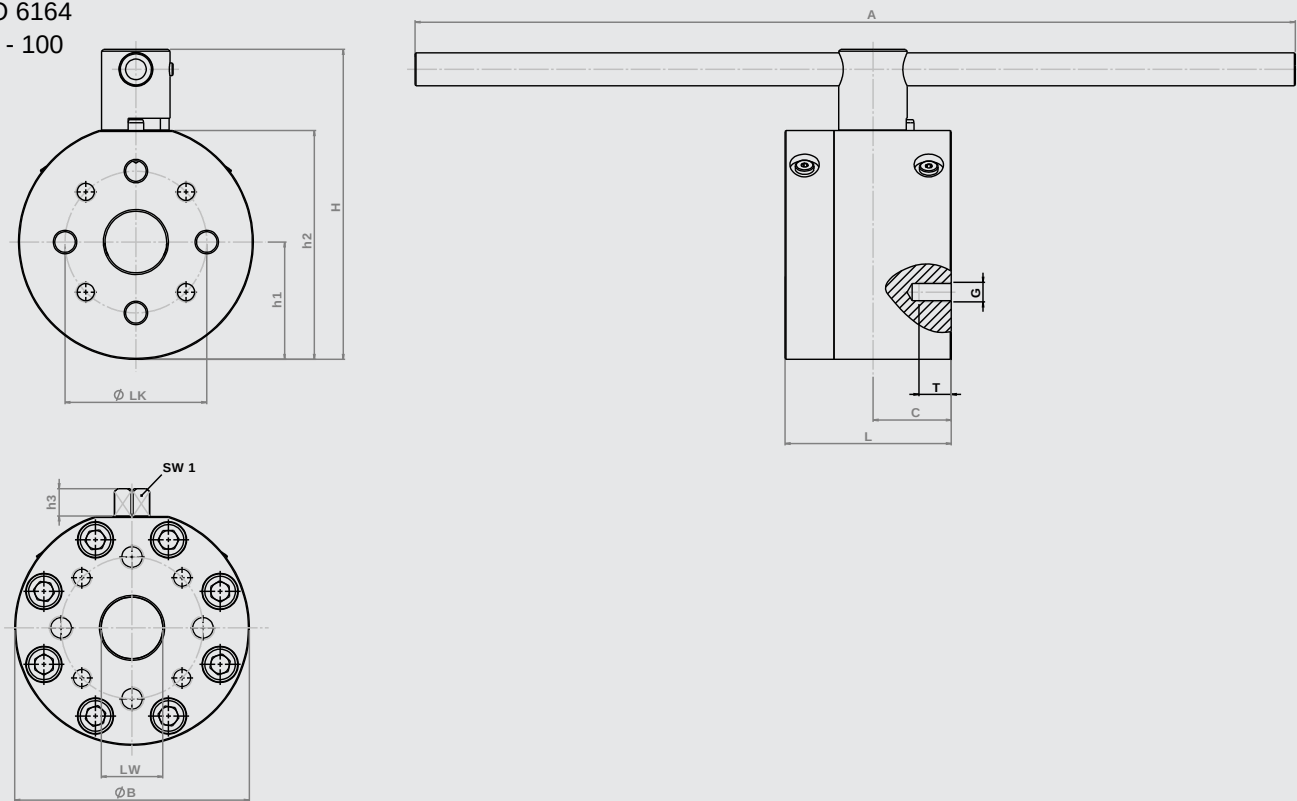
Type	DN	LW	L	C	H	h1	h2	h3	$\varnothing B$	SW1	A
KHF 016	13	14	75	32.5	137	34.0	71.5	11	79	12	169
KHF 020	19	18	80	34.3	155	44.0	90.0	11	99	14	169
KHF 025	25	22	88	38.0	167	46.8	102.0	11	119	14	169
KHF 032	32	29	100	44.0	220	59.0	124.0	12	139	17	306
KHF 040	38	35	110	51.0	240	65.0	145.0	12	169	17	306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

Flange dimensions

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

Dimensions

DIN ISO 6164
Size 65 - 100



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

Flange dimensions

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

Technical specifications

Connections:	Fixed flange to ISO 6164
Mounting position:	Optional
Housing material:	Steel, zinc-plated
Ambient temperature range:	-10 °C to +80 °C
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Temperature of operating fluid:	-10 °C to +80 °C
Viscosity range:	10 to 380 mm 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

NOTE

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3/2 Way Ball Valves KHB3K

Model code

(also order example)

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

Designation

KHB3K = 3/2 way ball valve

Type of connection

G = Whitworth female thread ISO 228
LR = Pipe connection light range DIN 2353
SR = Pipe connection heavy range DIN 2353
NPT = Female thread ANSI B 1.20.1

Ball bore

Materials

Housing, connection adapters

1 = Steel
3 = Stainless steel

Ball, control spindle

1 = Steel
3 = Stainless steel

Ball seals

1 = POM
3 = PTFE
8 = PEEK

Control spindle seal

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

Handle

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

Series

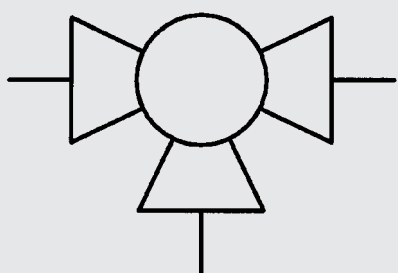
(determined by manufacturer)

Surface protection

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

Option

SO560 Seals on inlet side, negative switching overlap, switch 90°
SO560.1 Seals on inlet side, positive switching overlap, switch 180°
TT O-rings for low temperature, temperature range -40 °C to +80 °C

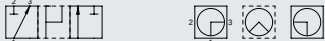


PN up to 500
DN up to 50

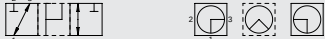
Function diagram

3/2-way change over ball valves

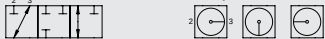
L-bore, 90° neg.



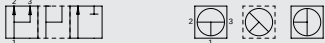
L-bore SO560, 90° neg.



L-bore SO560.1, 180° pos.



T-bore, 90° neg.



T-bore, 180° neg.

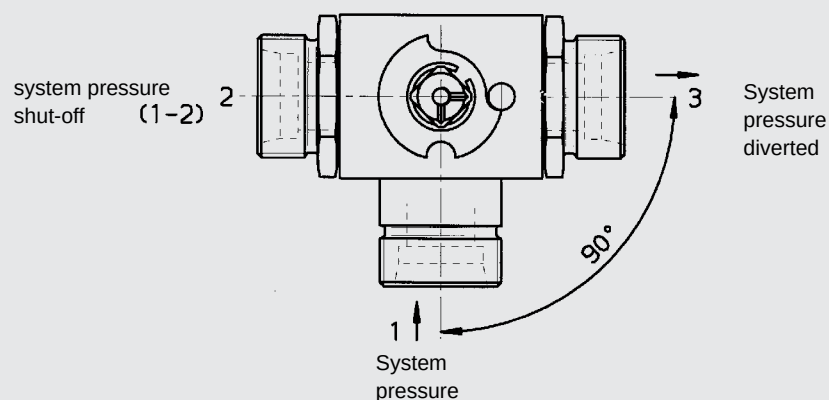


= undefined switching position

Technical specifications

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

Function



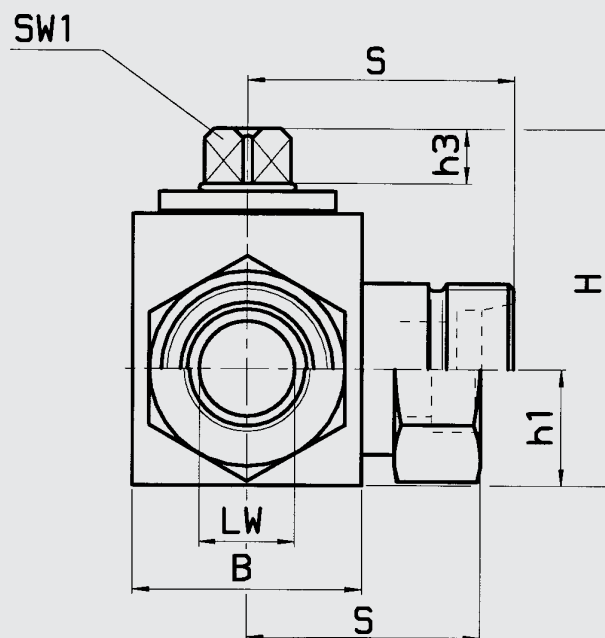
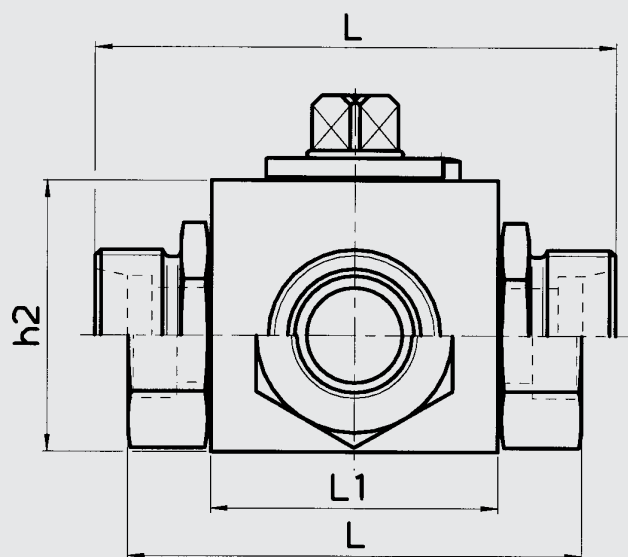
By turning the control spindle the flow is diverted, according to the ball bore, and the opposite side is shut off leakage-free.

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

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

Dimensions

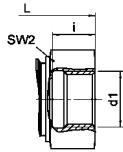
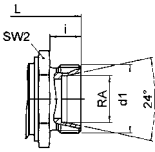
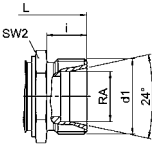
3/2 way ball valve



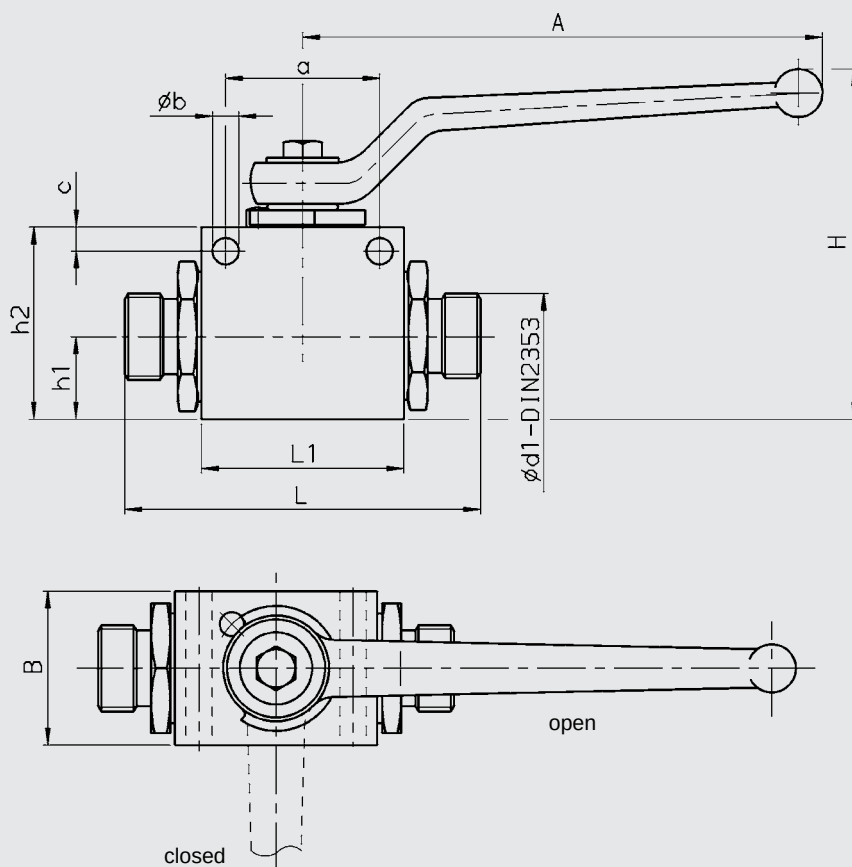
Steel

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

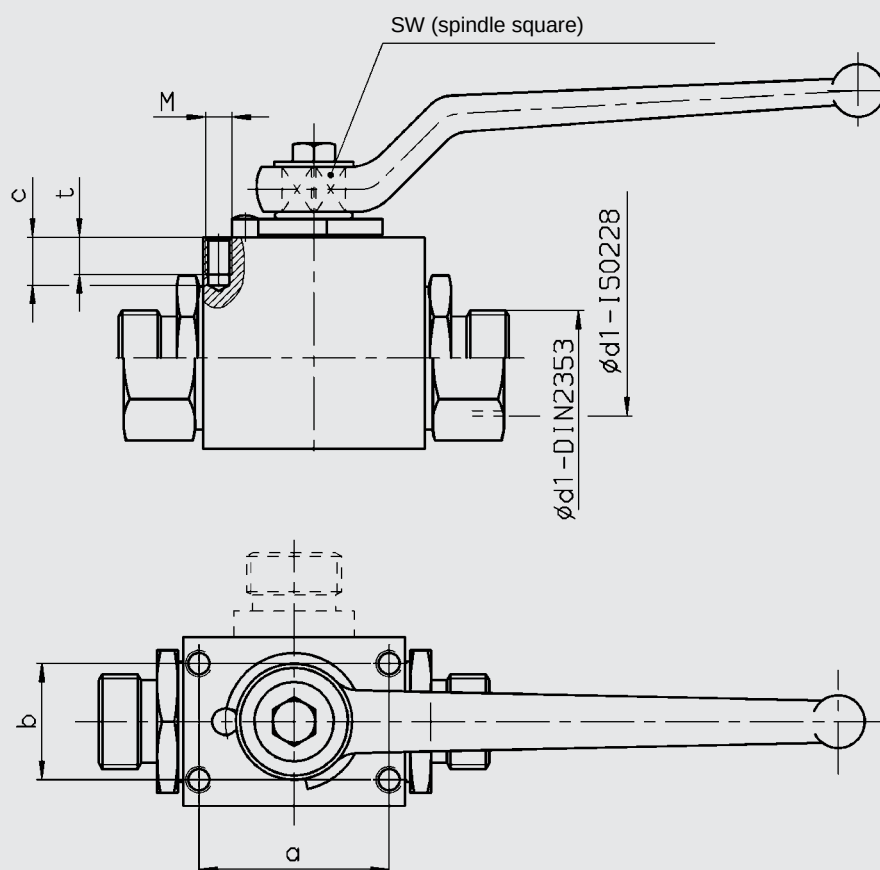
Stainless steel

Connection type	Type	DN	Int. Ø LW	RA	d1	l	L	L1	B	H	h1	h2	h3	S	SW1	SW2	Weight [kg]	Nom. pressure PN [bar]
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	50.7	17.2	40	8.5	36	9	27	0.62	500
	KHB3K-G1/2	13	12	–	G1/2	16	84	42	35	53.2	17.2	40	8.5	41.5	9	30	0.8	500
	KHB3K-G1/2	16	15	–	G1/2	16	82.8	47	41	63.7	20.5	46.5	11	41.5	12	32	1	400
	KHB3K-G3/4	20	20	–	G3/4	18	95	60	49	77.8	27.5	60	11.6	47.5	14	41	1.9	315
	KHB3K-G1	25	25	–	G1	20.5	113	65	58	82.6	29.5	65	11.6	56.5	14	50	2.4	315
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	74	42	35	53.2	17.2	40	8.5	37	9	27	0.72	500
	KHB3K-12LR	10	10	12	M18x1.5	11	74	42	35	53.2	17.2	40	8.5	37	9	27	0.73	500
	KHB3K-15LR	13	12	15	M22x1.5	12	82	42	35	53.2	17.2	40	8.5	41	9	30	0.9	500
	KHB3K-18LR	13	12	18	M26x1.5	12	82	42	35	53.2	17.2	40	8.5	41	9	30	0.92	500
	KHB3K-18LR	16	15	18	M26x1.5	12	81.8	47	41	63.7	20.5	46.5	11	41	12	32	0.95	400
	KHB3K-22LR	20	19	22	M30x2	14	101	60	49	77.8	27.5	60	11.6	50.5	14	41	2.02	315
	KHB3K-28LR	25	24	28	M36x2	14	108	65	58	82.6	29.5	65	11.6	54	14	50	2.13	315
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	76	42	35	53.2	17.2	40	8.5	38	9	27	0.74	500
	KHB3K-14SR	10	10	14	M22x1.5	14	80	42	35	53.2	17.2	40	8.5	40	9	27	0.77	500
	KHB3K-16SR	13	12	16	M24x1.5	14	81	42	35	53.2	17.2	40	8.5	40.5	9	30	0.92	500
	KHB3K-20SR	13	12	20	M30x2	16	85	42	35	53.2	17.2	40	8.5	42.5	9	32	1.02	500
	KHB3K-20SR	16	15	20	M30x2	16	89.8	47	41	63.7	20.5	46.5	11	45	12	32	1.6	400
	KHB3K-25SR	20	20	25	M36x2	18	109	60	49	77.8	27.5	60	11.6	54.5	14	41	2.2	315
	KHB3K-30SR	25	25	30	M42x2	20	120	65	58	82.6	29.5	65	11.6	60	14	50	2.4	315

Dimensions, Mounting bore (SO 1073)



Dimensions, Mounting bore (SO 940)



DIN ISO 228

$\phi d1$	DN	L	L1	B	H	h1	h2	a	ϕb	c	A
G 1/8	4	69	37	26	64	13	32	28	5.5	4.5	108
G 1/4	6	69	37	26	64	13	32	28	5.5	5	108
G 3/8	10	72	42	32	68	17	40	32	5.5	5	108
G 1/2*	13	84	47	35	68	17	40	32	5.5	5	108
G 1/2	16	83	47	38	102	19	45	38	5.5	5	174
G 3/4	20	95	60	48	115	24.5	57	46	6.6	6	174
G1	25	113	65	57	122	28.5	64	46	6.6	6	174

DIN 2353 Light Range

$\phi d1$	DN	L	L1	B	H	h1	h2	a	ϕb	c	A
08LR	6	67	37	26	64	13	32	28	5.5	4	108
10LR	8	71	37	26	64	13	32	28	5.5	4	108
12LR	10	74	42	32	68	17	40	32	5.5	5	108
15LR*	13	82	47	35	68	17	40	32	5.5	5	108
15LR	12	82	47	38	102	19	45	38	5.5	5	174
18LR	16	82	47	38	102	19	45	38	5.5	5	174
22LR	20	101	60	48	115	24.5	57	46	6.6	6	174
28LR	25	108	65	57	122	28.5	64	46	6.6	6	174

DIN 2353 Heavy Range

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

DIN ISO 228

$\phi d1$	DN	SW	a	b	M	t	c
G 1/8	4	9	28	18	M4	6	8
G 1/4	6	9	28	18	M4	6	8
G 3/8	10	9	36	22	M5	7	9
G 1/2*	13	9	36	22	M5	7	9
G 1/2	16	12	36	22	M5	7	9
G 3/4	20	14	45	28	M6	9	11
G1	25	14	45	28	M6	9	11

DIN 2353 Light Range

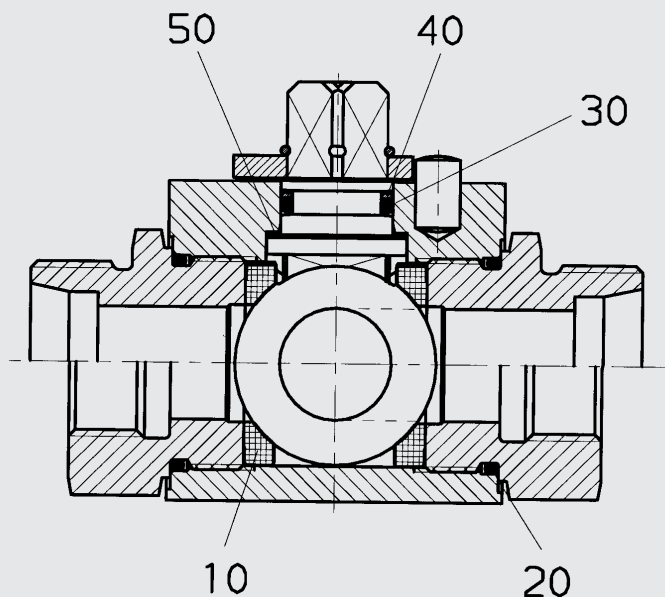
$\phi d1$	DN	SW	a	b	M	t	c
06LR		9	28	18	M4	6	8
08LR	6	9	28	18	M4	6	8
10LR	8	9	36	22	M5	7	9
12LR	10	9	36	22	M5	7	9
15LR*	12	12	36	22	M5	7	9
15LR	13	9	36	22	M5	7	9
18LR	16	12	36	22	M5	7	9
18LR*	13	9	36	22	M5	7	9
22LR	20	14	45	28	M6	9	11
28LR	25	14	45	28	M6	9	11

DIN 2353 Heavy Range

$\phi d1$	DN	SW	a	b	M	t	c
08SR	4	9	28	18	M4	6	8
10SR	6	9	28	18	M4	6	8
12SR	8	9	36	22	M5	7	9
14SR	10	9	36	22	M5	7	9
16SR	12	12	36	22	M5	7	9
16SR*	13	9	36	22	M5	7	9
20SR	16	12	36	22	M5	7	9
20SR*	13	9	36	22	M5	7	9
25SR	20	14	45	28	M6	9	11
30SR	25	14	45	28	M6	9	11

* reduced bore

SPARE PARTS (SEAL KIT)



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

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

NOTE

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

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

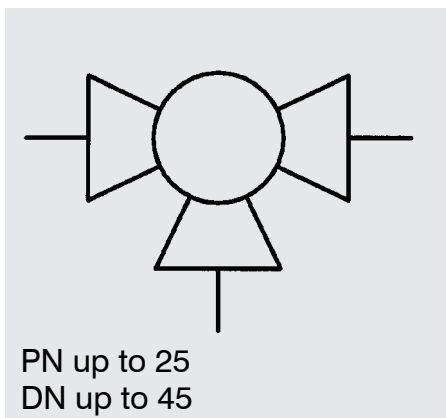
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Change-Over Low Pressure Ball Valves

KHN3K



Model code

(also order example)

KHN3K G1/2 L 2233 12 X

Designation

KHN3K = change-over low pressure ball valve

Connection type

Thread size

Ball bore

L

T

Materials

Housing, connection adapters

2 = Nickel-plated brass

Ball, control spindle

2 = Brass, hard-chromed

Ball seal

3 = PTFE (Teflon)

Control spindle seal

3 = PTFE (Teflon)

Handle

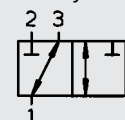
12 = Aluminium clamped handle, cranked, fitted

Series

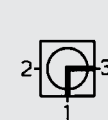
X = Determined by manufacturer

Switching functions (as supplied)

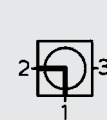
3/2 way change-over ball valve



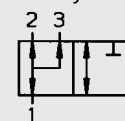
L-bore



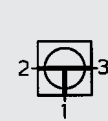
90° switch



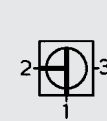
3/2 way change-over ball valve



T-bore

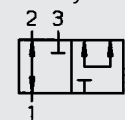


90° switch

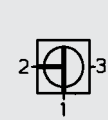


By moving the control spindle through 90°, the following switching positions can also be achieved.

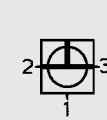
3/2 way change-over ball valve



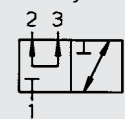
T-bore



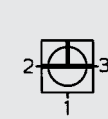
90° switch



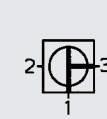
3/2 way change-over ball valve



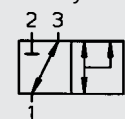
T-bore



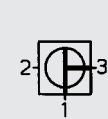
90° switch



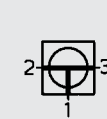
3/2 way change-over ball valve



T-bore



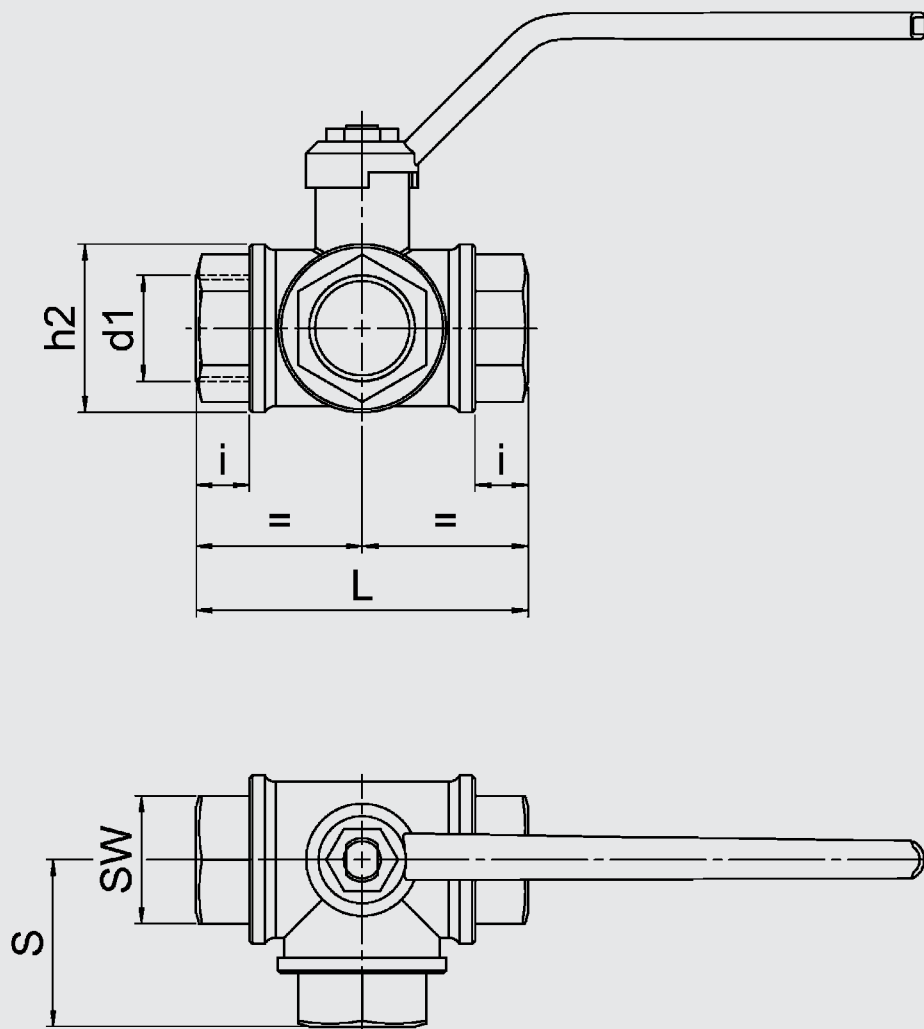
90° switch



Technical specifications

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

DIMENSIONS



Type	Ball bore	Size	L [mm]	h2 [mm]	SW	A [mm]	i [mm]	Nominal bore DN	S [mm]	h3 [mm]	Nominal pressure PN [bar]	Weight [kg]
KHN3K-G1/4	L, T	1/4"	77	39	22	125	16	10	38.5	65	25	0.78
KHN3K-G3/8	L, T	3/8"	77	39	22	125	16	12	38.5	65	25	0.74
KHN3K-G1/2	L, T	1/2"	77	39	27	125	16	14	38.5	65	25	0.77
KHN3K-G3/4	L, T	3/4"	92	47	34	145	20	18	46	83	25	1.26
KHN3K-G1	L, T	1"	104	55	41	170	22	23	52	86	25	1.91
KHN3K-G1 1/4	L, T	1 1/4"	118	65	50	170	24	29	59	102	25	2.64
KHN3K-G1 1/2	L, T	1 1/2"	138	79	57	170	28	36	69	109	25	4.2
KHN3K-G2	L, T	2"	162	93	70	260	33	45	81	139	25	6.66

NOTE

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

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

Subject to technical modifications.

HYDAC Accessories GmbH

Hirschbachstr. 2

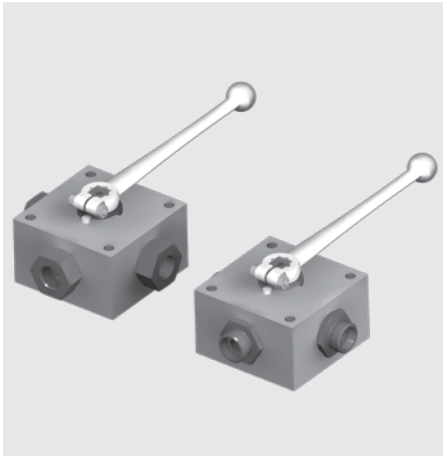
66280 Sulzbach/Saar

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

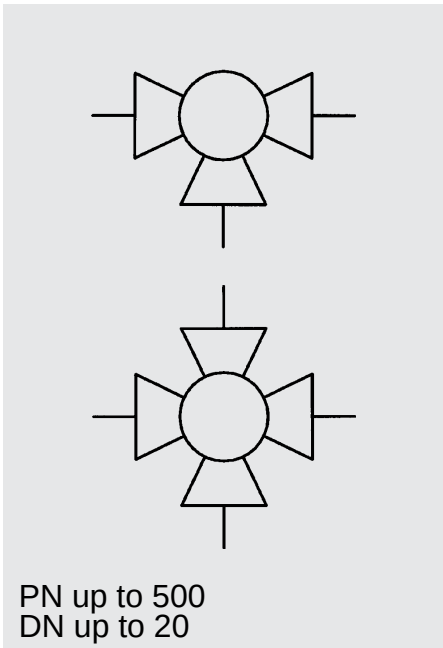
Internet: www.hydac.com

E-Mail: info@hydac.com



3-Way and 4-Way Ball Valves

KH3 / KH4



Model code

(also order example)

KH3 G1/2 L 1114 06 X

Designation

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

Nominal bore

Ball bore

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

Materials

Housing, connection adapters

1 = Steel
3 = Stainless steel

Ball, control spindle

1 = Steel
3 = Stainless steel

Ball seal

1 = POM
3 = PTFE
8 = PEEK

Control spindle seal

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

Handle

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

Series

(determined by manufacturer)

(available as standard)

2 4

3 4 1

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

2

3 1

Which of the following diagrams shows the correct way to draw the front view of the object shown in the top view?

Options:

1 2 3 4

Centre position (45°) detented

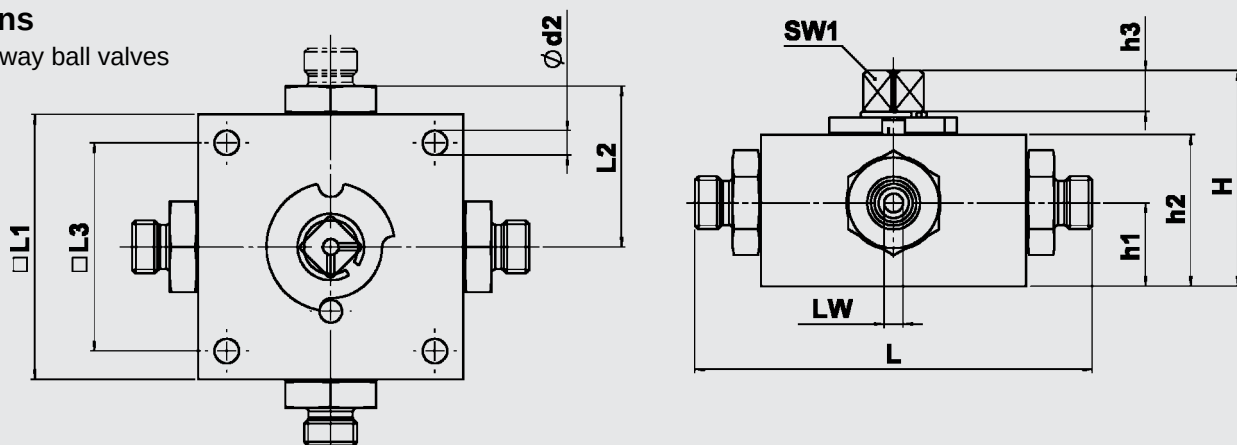
Centre position (45°) detented

Technical specifications

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

Dimensions

3-way and 4-way ball valves



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

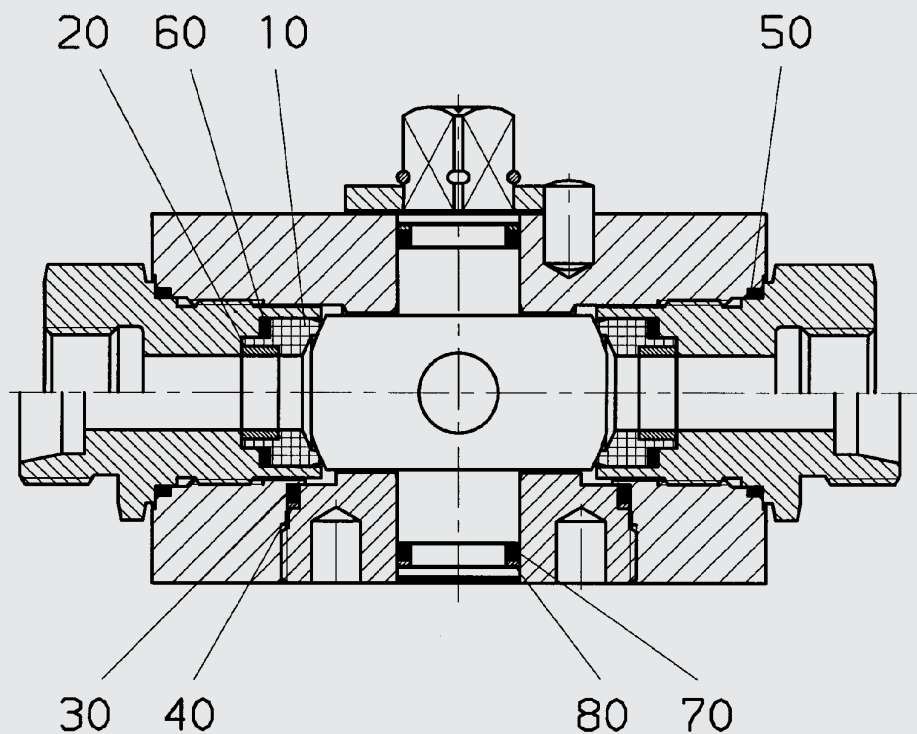
Type	DN	Bore int. Ø LW				RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nominal pressure PN [bar]
KH3/4-06LR	4	6	6	4.5	6		M12x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-08LR	6	6	6	4.5	8		M14x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-10LR	8	9	9	6	10		M16x1.5	11	114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

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

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

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

Spare parts (seal kit)



NOTE

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

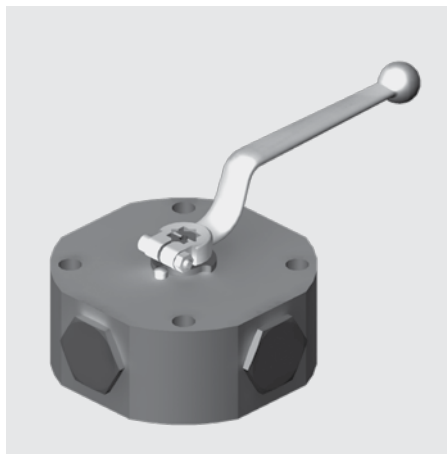
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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.

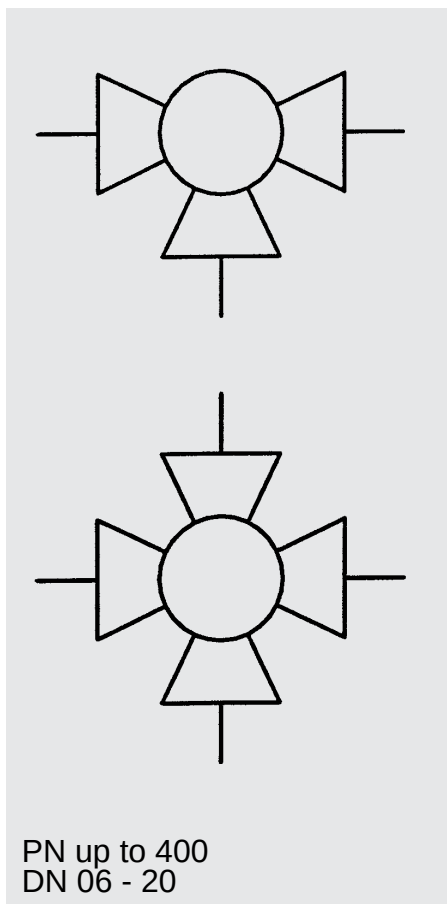
HYDAC Accessories GmbH
Hirschbachstr. 2
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3-Way and 4-Way Manifold Mounted Ball Valves KH3P / KH4P

Model code
(also order example)

KH3P 16 L 1114 02 X ...



Designation

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

Nominal bore

Ball bore

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

Materials

Housing, blanking plug, locking screw

1 = Steel
3 = Stainless steel

Ball spindle

1 = Steel
3 = Stainless steel

Ball seal

1 = POM (polyacetal)

Soft seal

4 = FKM (Viton)

(other materials on request)

Handle

09 = Without handle
02 = Aluminium clamped handle, cranked

Series

(determined by manufacturer)

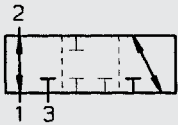
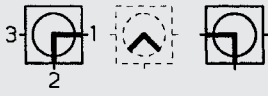
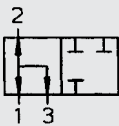
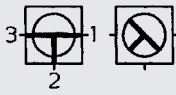
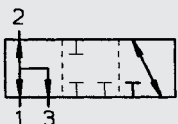
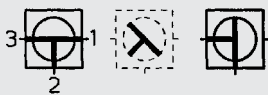
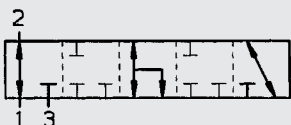
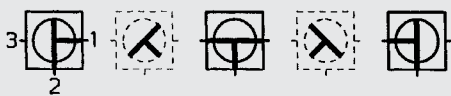
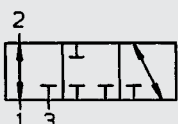
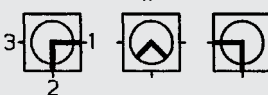
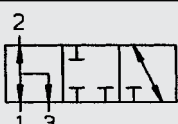
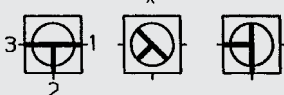
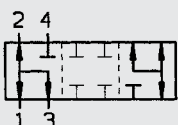
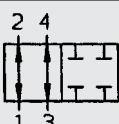
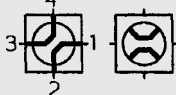
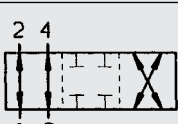
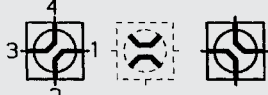
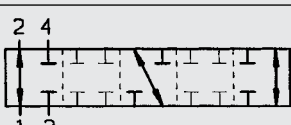
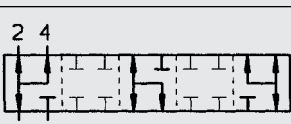
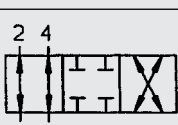
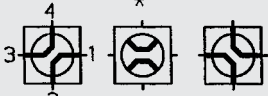
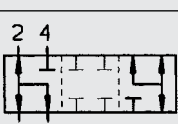
Special model

SO ... = Special model according to customer specifications

180 Grad = 180° switch

(Please see examples on the next page)

Standard models

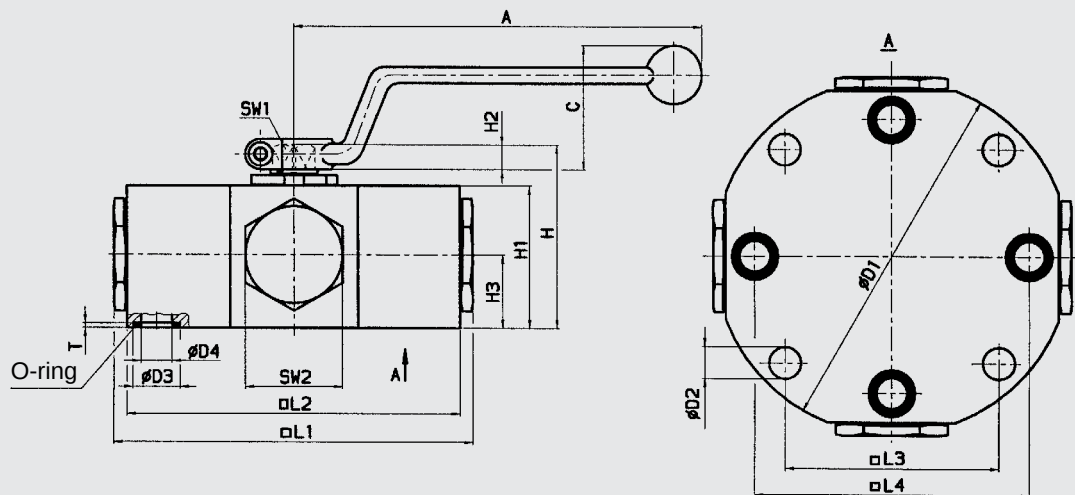
	Ball bore	Switch movement	Function diagram	SO ... Model
KH3P	L	0° - 90°	 	—
	T	0° - 45°	 	45 Grad
	T	0° - 90°	 	—
	T	0° - 90° - 180°	 	180 Grad
	L	0° - 45° - 90°	 	SO 378
	T	0° - 45° - 90°	 	SO 379
KH4P	T	0° - 90°	 	—
	X	0° - 45°	 	45 Grad
	X	0° - 90°	 	—
	L	0° - 90° - 180°	 	180 Grad
	T	0° - 90° - 180°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

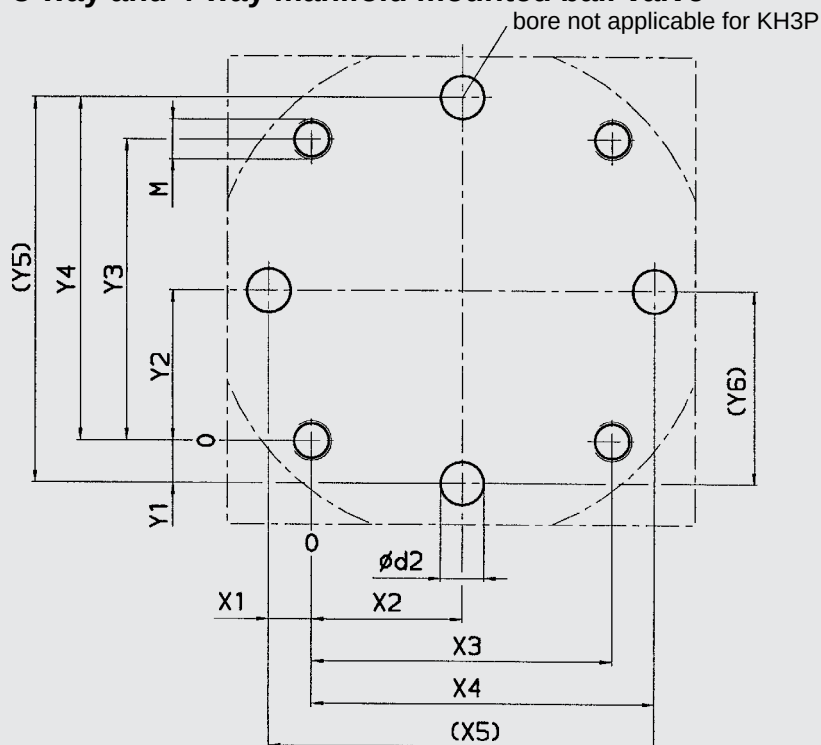
3-way and 4-way manifold mounted ball valve with cranked aluminium handle



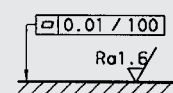
DN	Int. diam. L - T - X			L1	L2	L3	L4	H	H1	H2	H3	D1	D2	D3	D4	SW 1	SW 2	T
06	5	5	4.5	103	90	70	68.6	57	40	11	22	--	6.5	11.7	6	12	27	1.9
10	9	9	6	113	100	80	81	67.5	50	11.5	27	--	9	14.7	8	14	30	1.9
16	12	12	10	152.5	140	90	115.4	77.5	60	11.5	31.5	150	13.5	19.7	13	14	41	2
20	18	18	14	184	170	100	137	92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

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

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



Required surface finish
on interface area



Dimensional tolerances
ISO 2768 m

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

* Standard values for friction coefficient μ 0.14

Technical specifications

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

NOTE

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

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

Subject to technical modifications.

HYDAC Accessories GmbH

Hirschbachstr. 2

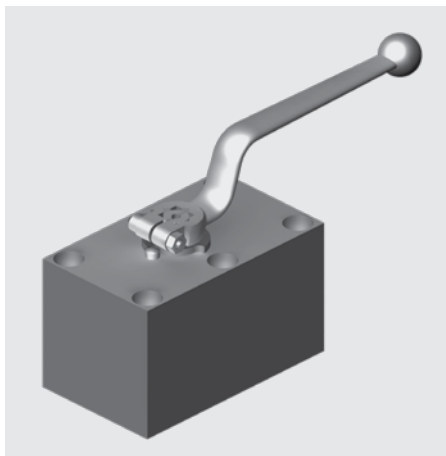
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E-Mail: info@hydac.com



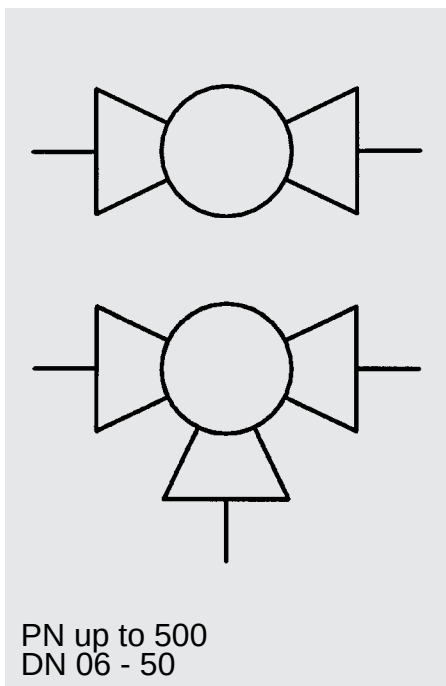
Manifold Mounted Ball Valves

KHP / KHP3K

Model code

(also order example)

KHP3K 16 L 1114 06 X ...



Designation

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

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

Nominal bore

Ball bore (not applicable for KHP)

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

Materials

Housing, locking screw

1 = Steel

3 = Stainless steel

Ball, control spindle

1 = Steel

3 = Stainless steel

Ball seal

1 = POM (polyacetal)

Soft seal

4 = FKM (Viton)

(other materials on request)

Handle

09 = Without handle

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

DN06

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

DN10

02 = Aluminium clamped handle, cranked

DN16 - 25

06 = Steel bolt-on handle, cranked

DN32 - 50

Series

(determined by manufacturer)

Special model

T-bore on request

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

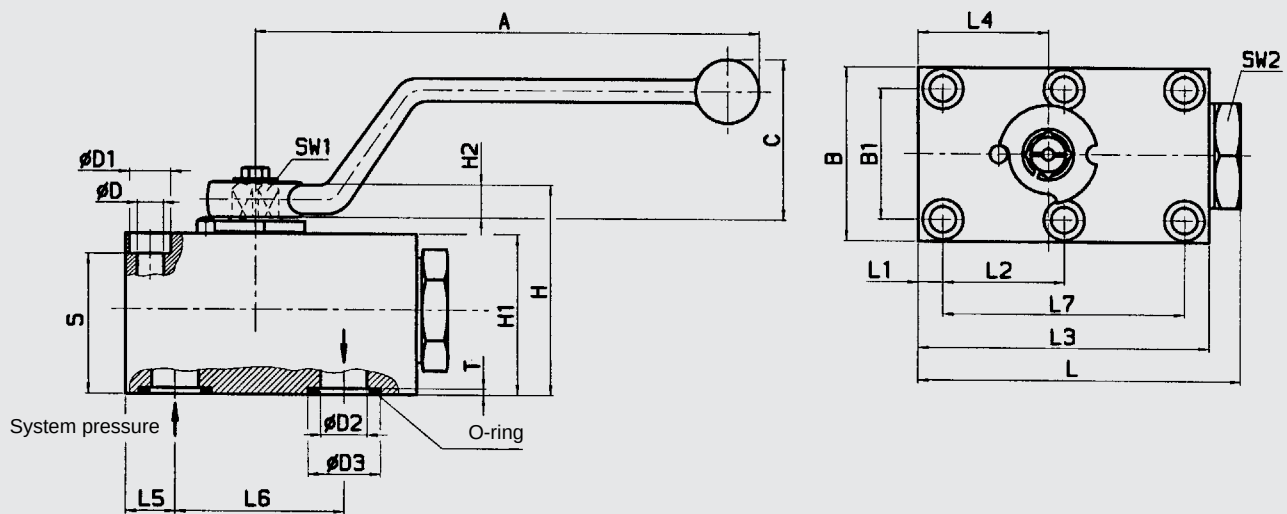
SO560.1 = Seals on inlet side, negative switching overlap, switch 180°

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

Dimensions

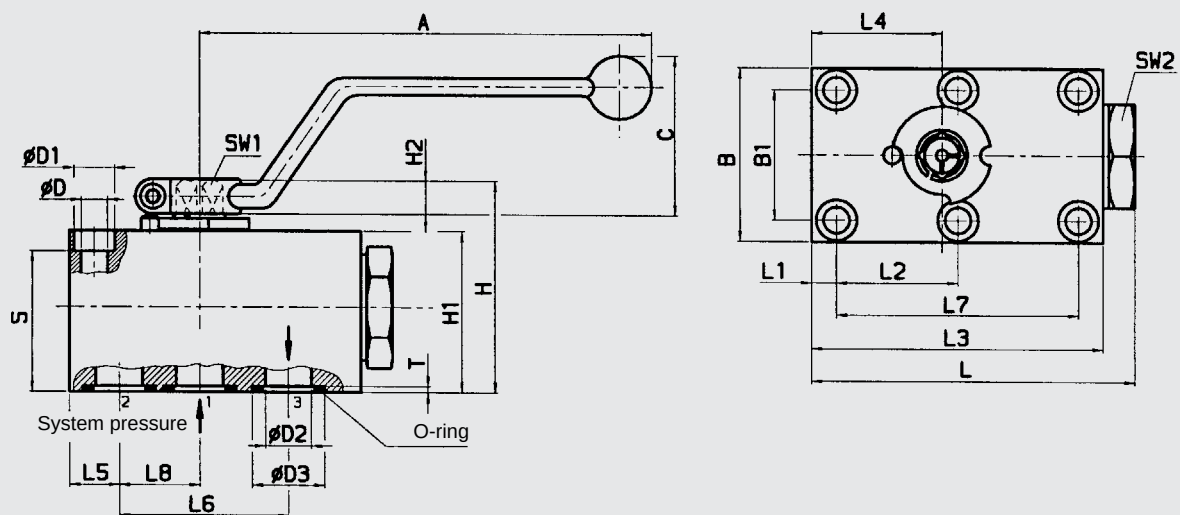
KHP

Manifold mounted ball valve with cranked bolt-on steel handle



KHP3K

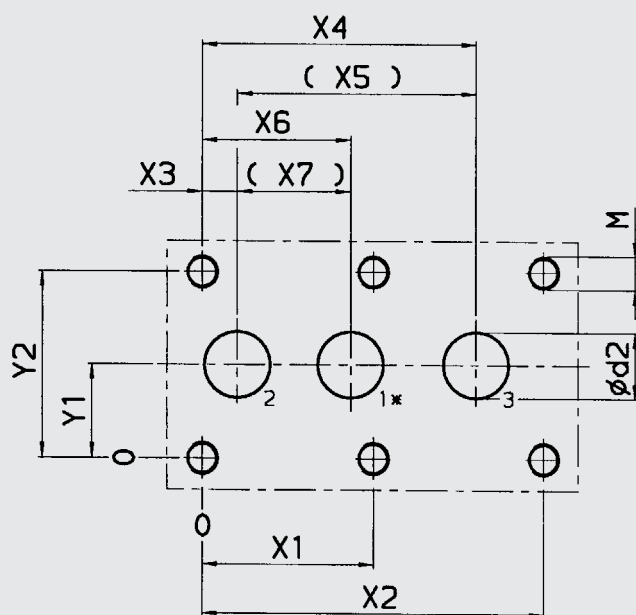
3-way manifold mounted ball valve with cranked clamped aluminium handle



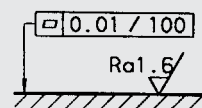
DN	int. Ø	L	L1	L2	L3	L4	L5	L6	L7	L8	B	B1	SW1	A	C
06	6	64	8.5	17.5	59	25	8.5	35	35	17.5	40	27	6	60	23
10	9.5	80	7.5	27.5	70	29	10	44	55	19	55	40	9	108	28
16	16	109.4	8.5	41.5	100	44	17	58	83	26.5	60	45	12	163	50
20	20	127	10	48.5	117	51	20	69	97	31	70	51	14	169	59
25	23.5	145	10	57.5	135	62	24	81	115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

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

Interface for (3-way) manifold mounted ball valve



required surface finish
on interface area



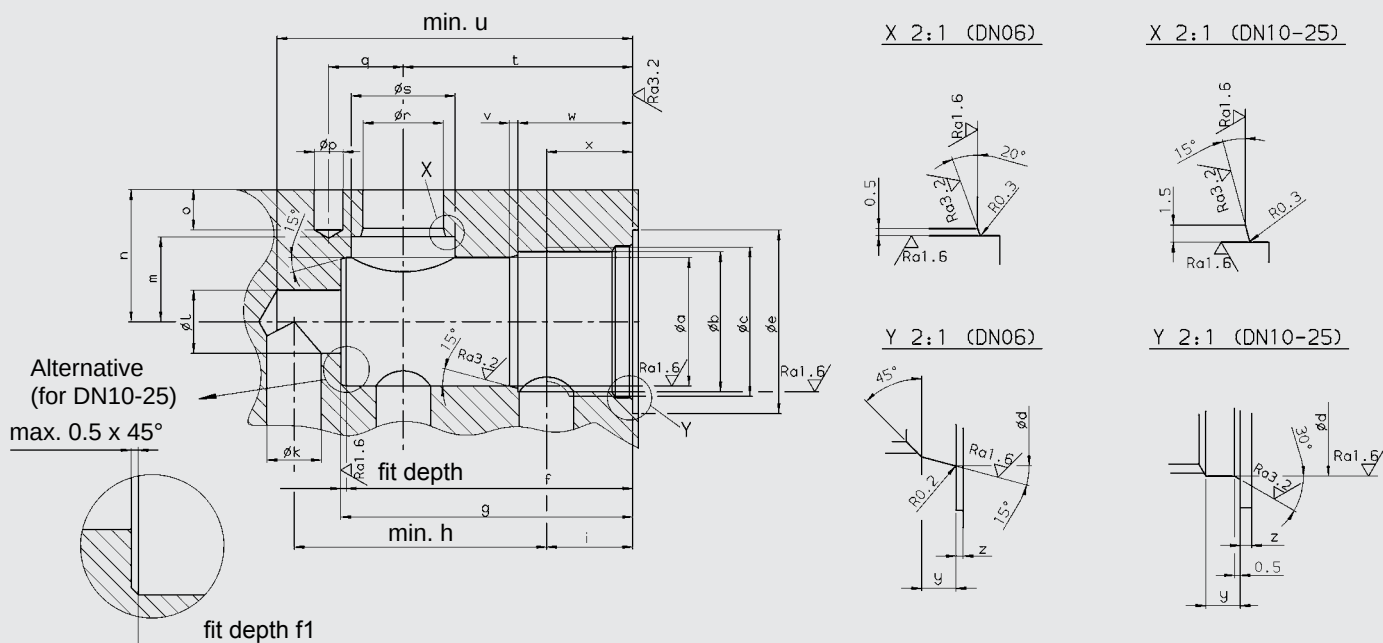
Dimensional tolerances
ISO 2768 m

* = bore 1 not applicable
for KHP

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

* = standard values for friction coefficient μ 0.14

Cavity



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

Technical specifications

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

NOTE

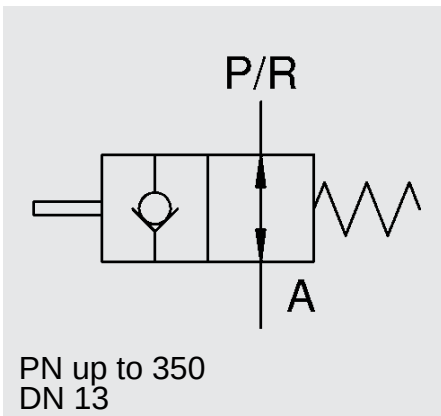
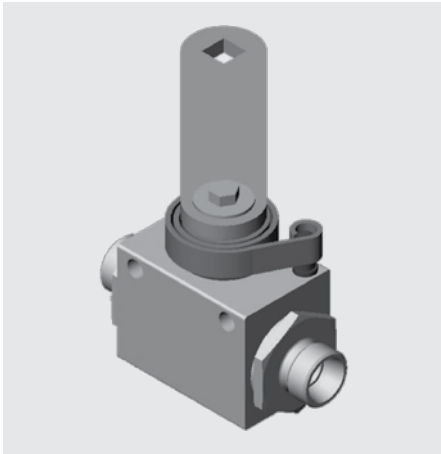
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Subject to technical modifications.

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E-Mail: info@hydac.com

Spring Return Isolator HKHB



Model code
(also example order)

HKHB 12LR 1112 09X A CCW OK 0°

Designation

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

Type of connection

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

Materials

Housing, connection adapters

1 = Steel

Ball, control spindle

1 = Steel

Ball seal

1 = POM

Control spindle seal

2 = NBR (Perbunan)

Handle

15 = Steel bolt-on handle, straight, fitted

09 = Without handle

Surface protection

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

Switching direction

CW = Clockwise

CCW = Anti-clockwise

Ball valve

Ball valve port

O = Open

C = Closed

Handle

L = Long

K = Short

Handle position

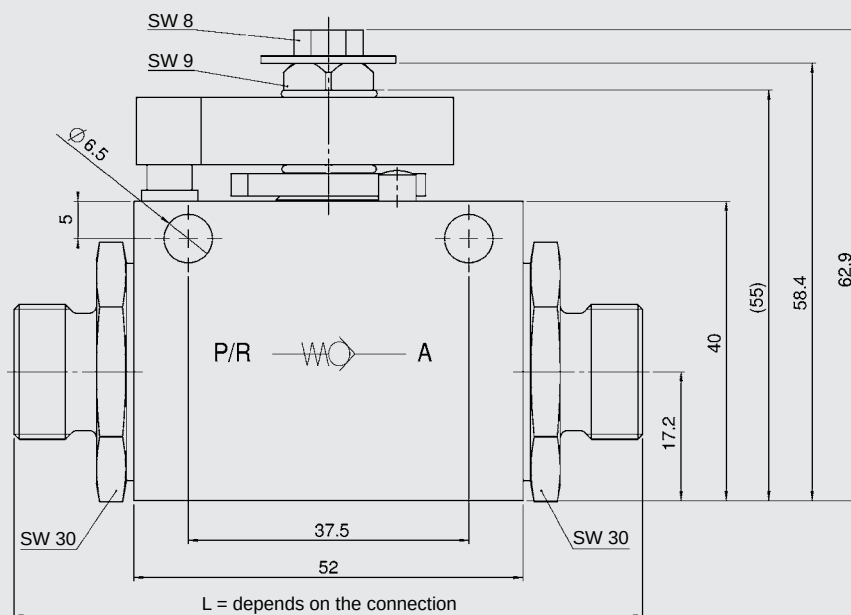
0° 315°

(see order form)

APPLICATION

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

DIMENSIONS

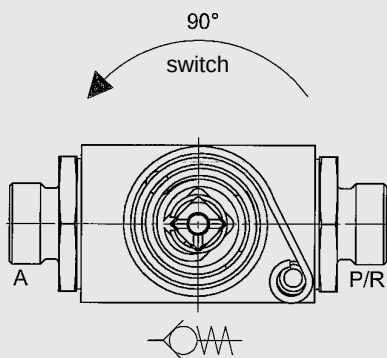
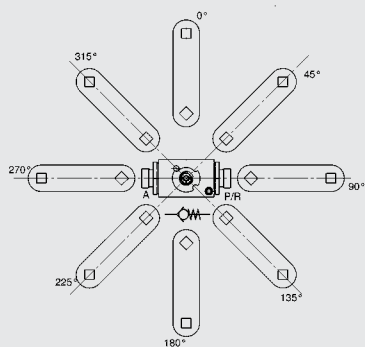


Technical specifications

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

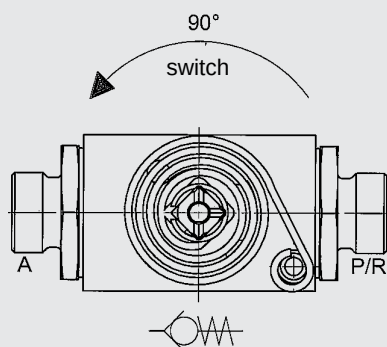
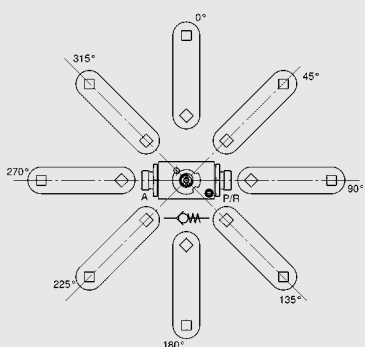
ORDER FORM

Handle position



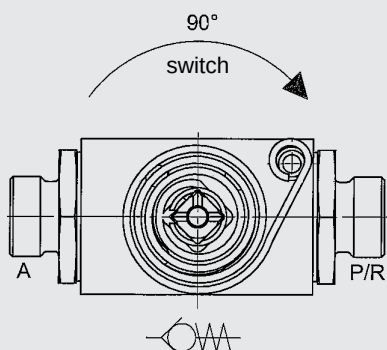
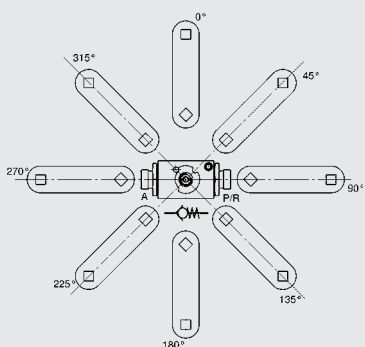
- Open
- Anti-clockwise CCW
- Connection: 10L ☐
- 12L ☐
- 15L ☐
- 10SR ☐
- Handle: short ☐
- long ☐
- Handle position:° ☐

Handle position



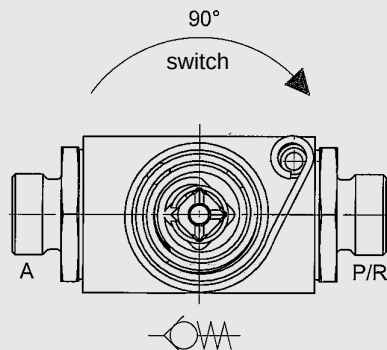
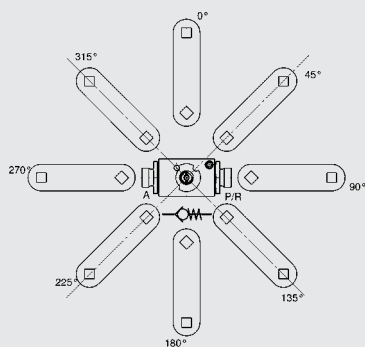
- Closed
- Anti-clockwise CCW
- Connection: 10L ☐
- 12L ☐
- 15L ☐
- 10SR ☐
- Handle: short ☐
- long ☐
- Handle position:° ☐

Handle position



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

Handle position



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

NOTE

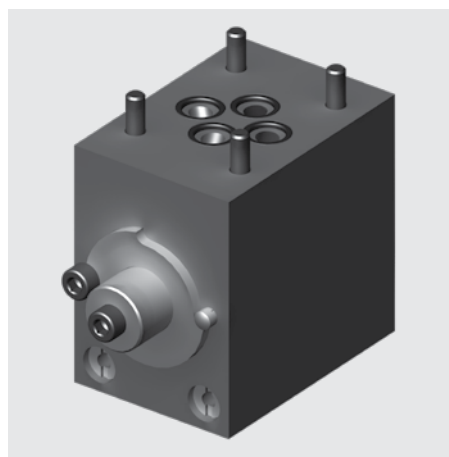
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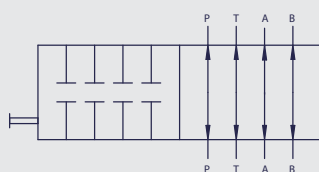


Isolator Sandwich Plate CETOP

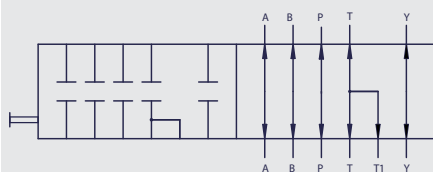
Model code
(also order example)

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

Symbol DN 06



Symbol DN 10



PN up to 315
DN 06 - 10

Designation

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

Nominal bore

DN06
DN10

Connection type

CETOP

Materials

Housing

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

Spindle

3 = Stainless steel 1.4462

Gasket

0 = Metal

O-ring

2 = NBR

Handle

09 = Without handle

Series

(determined by manufacturer)

Function

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

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

Advantages

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

Technical specifications

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

KHB4K-DN06-CETOP-1302-09X

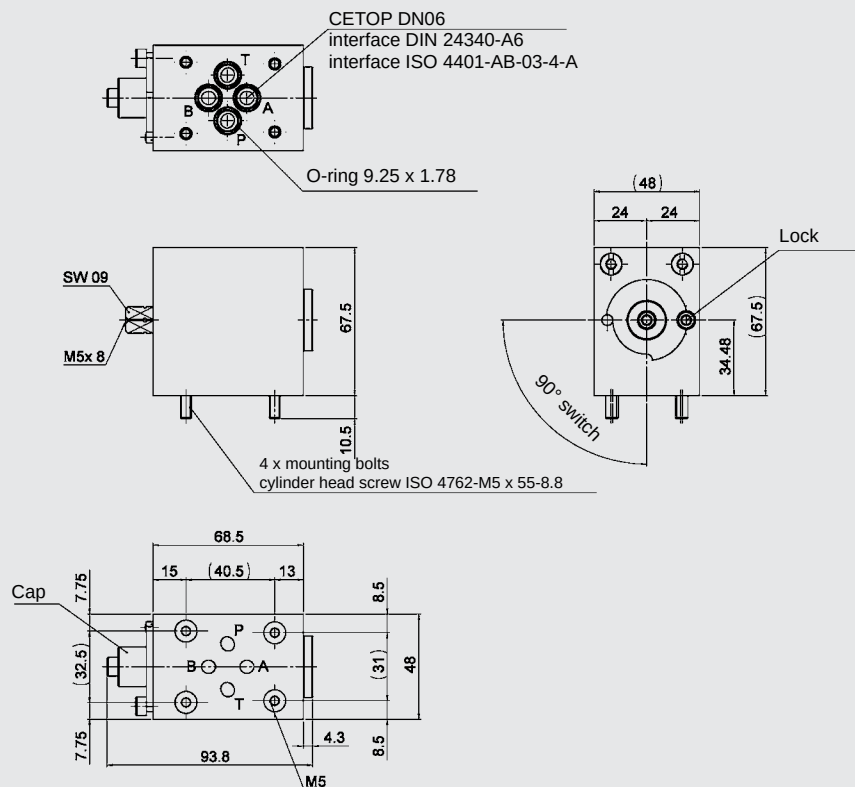
Connection type	CETOP DN06
Interface	DIN 24340-A6 ISO 4401
Temperature of the medium	–10 °C to + 70 °C
Ambient temperature	–10 °C to + 70 °C
Nominal pressure	PN 315
Max. operating pressure PB	315 bar

KHB6K-DN10-CETOP-5302-09X

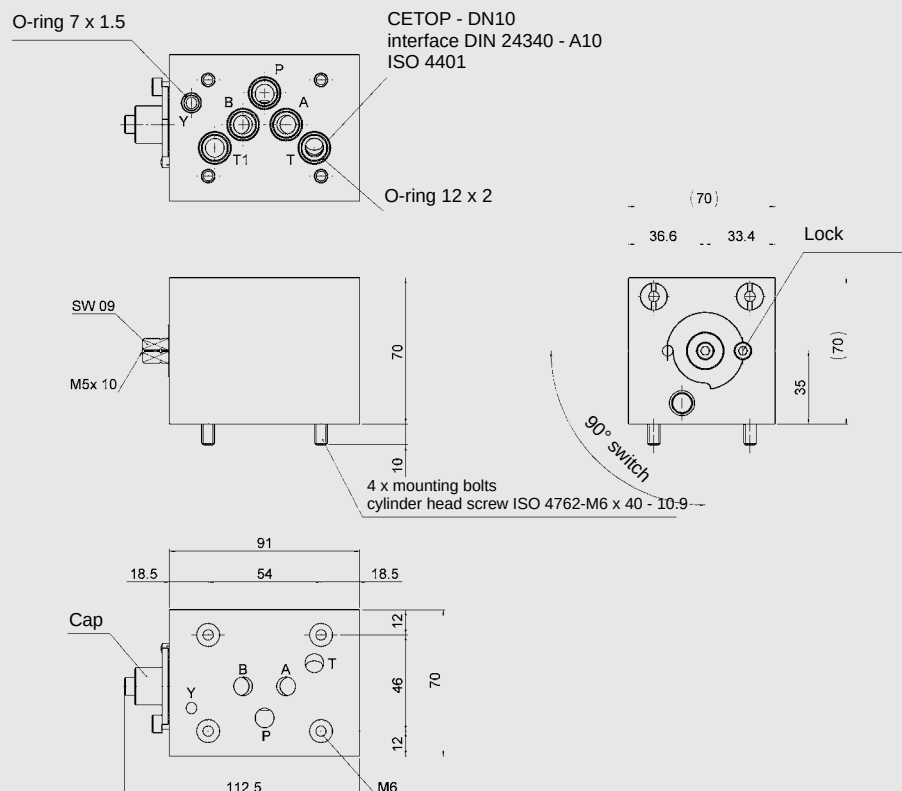
Connection type	CETOP DN10
Interface	DIN 24340-A10 ISO 4401
Temperature of the medium	+30 °C to + 60 °C
Ambient temperature	–20 °C to + 70 °C
Nominal pressure	PN 315
Max. operating pressure PB	315 bar

Dimensions

KHB4K-DN06-CETOP



KHB6K-DN10-CETOP



NOTE

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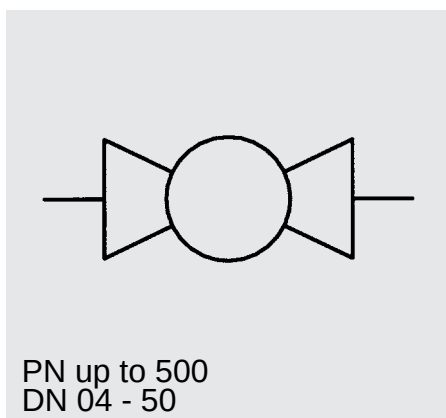
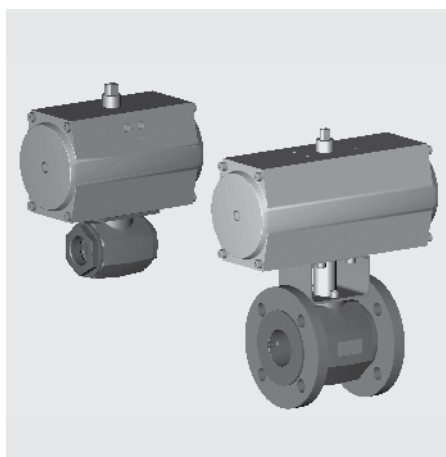
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Ball Valves with Pneumatic Actuator



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 = Spring return actuator
.D = Double-acting actuator

Directional valve options

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

Limit switch box options

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

Dimensions

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

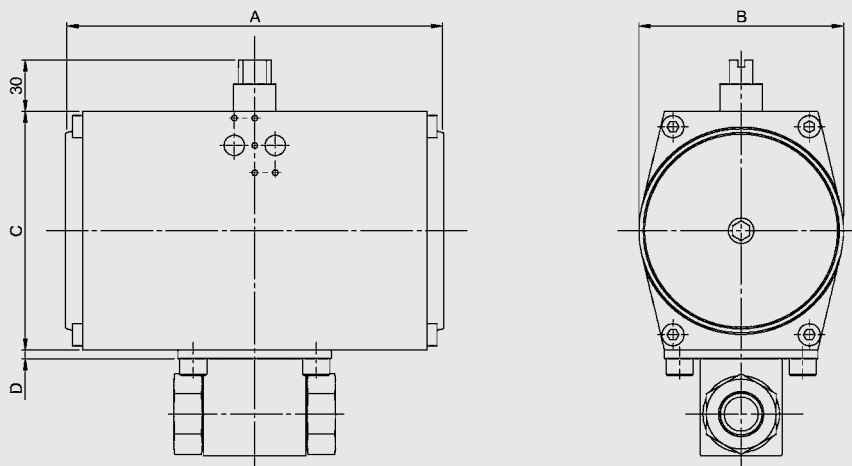
Note

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

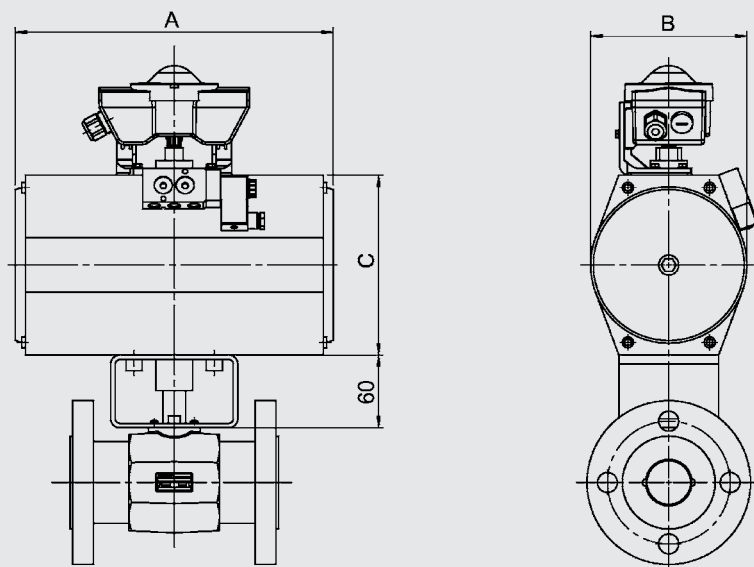
For flanged, manifold and 3-way and 4-way ball valves, a separate coupling is required for installation.

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

Installation using adapter plate



Installation using separate coupling



Technical specifications

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

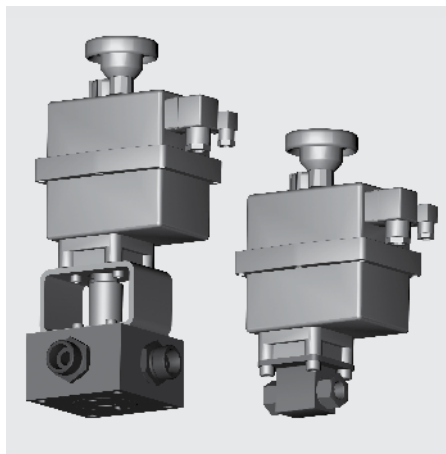
NOTE

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Subject to technical modifications.

Electrically Actuated Ball Valves



Model code
(also example order)

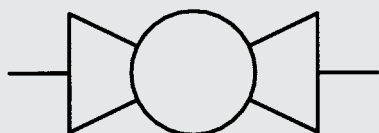
KHB-G1/4-1114 AE.24V

Designation

Type of ball valve

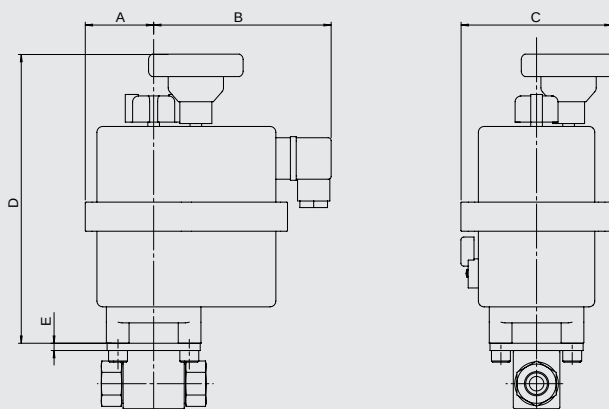
Actuator code

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

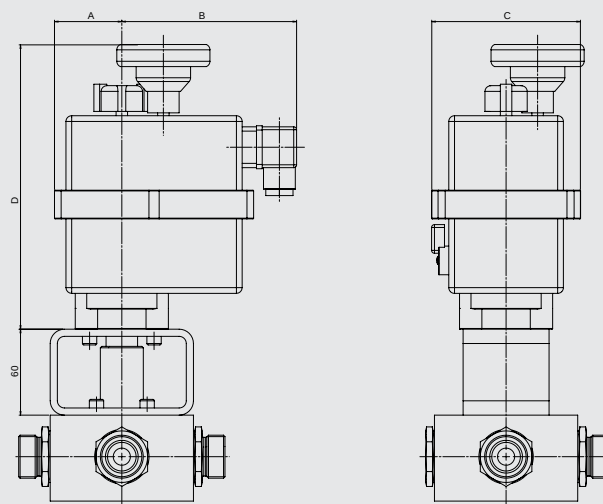


PN up to 500
DN 04 - 50

Installation using adapter plate



Installation using separate coupling



Dimensions

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

Note

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

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

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

Equipment

Electrical actuator

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

Technical specifications

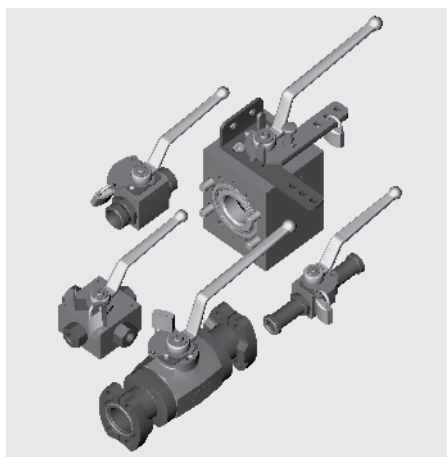
Mounting position	Optional
Ambient temperature	-10 °C to +80 °C
Nominal pressure	Up to PN 500 (see pressure level)
Operating fluids	Mineral oil to DIN 51524 part 1 and part 2 (other fluids on request)
Temperature of operating fluid	-10 °C to +80 °C
Spare Parts	Seal kits available on request

NOTE

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Subject to technical modifications.



Lockable Ball Valves

Model code
(also example order)

KHB-16SR-1114-16X SO 760

Designation

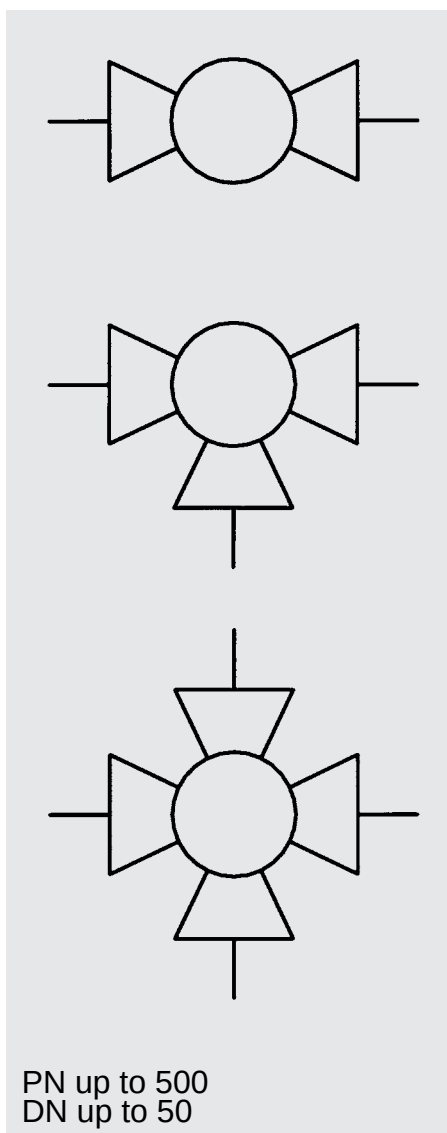
Type of ball valve

Lockable

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

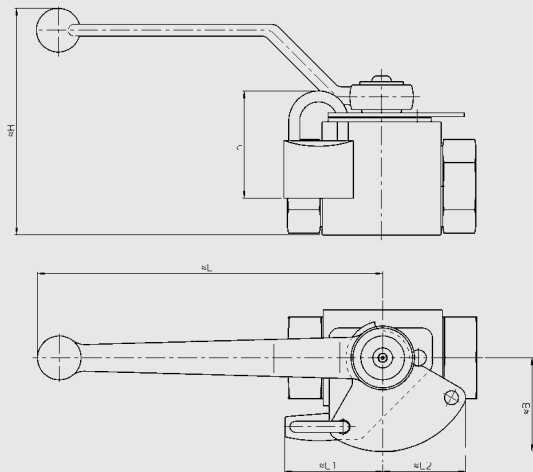
SO 770 = Ball valve can be locked in open and closed position using padlock.

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



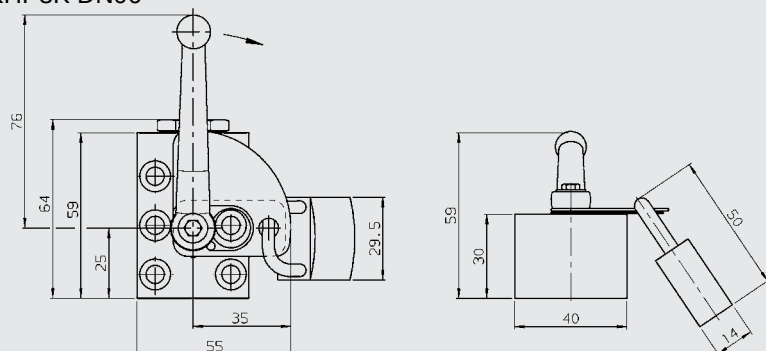
Lockable ball valves SO 760/770

KHB/KHM

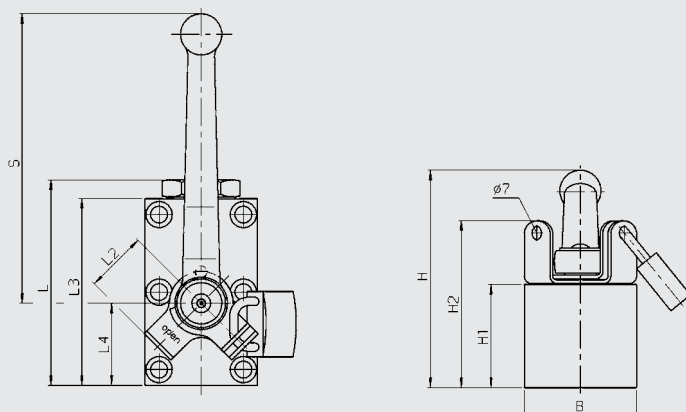


DN		L1	L2	h	B	H	L
04/06	M5	42	28.5	54	32	63.5	108
08/10/13	M5	42	28.5		32	68.5	108
12/16	M5	43	30.5		34	102	174
20	M6	50	41.7		47	114	174
25	M6	50	41.7		47	121	174
32	M8	47	37.9		42	158.5	213
40	M8	47	37.9		42	169.5	213
50	M8	47	37.9		42	186	213

KHP/KHP3K DN06



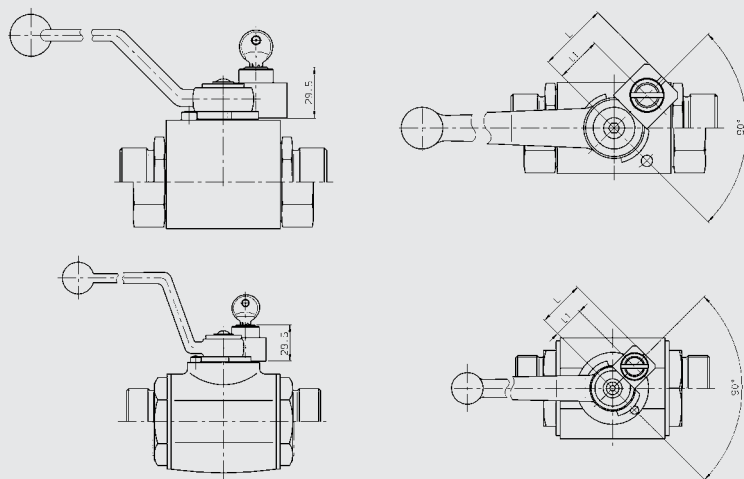
KHP/KHP3K DN10 - 50



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

Lockable ball valve SO 160 (cylinder lock)

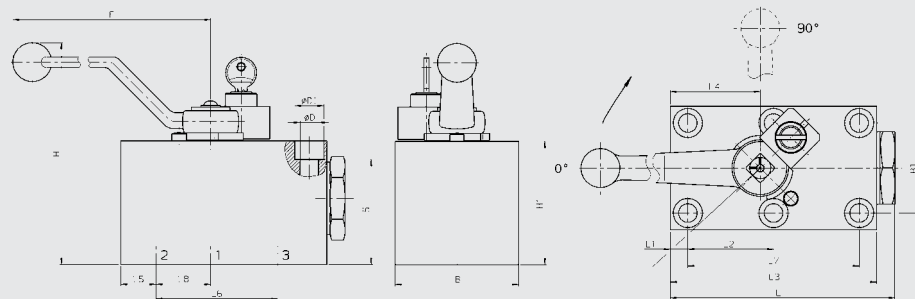
KHB - KHM



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

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

KHP3K 16-25



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

NOTE

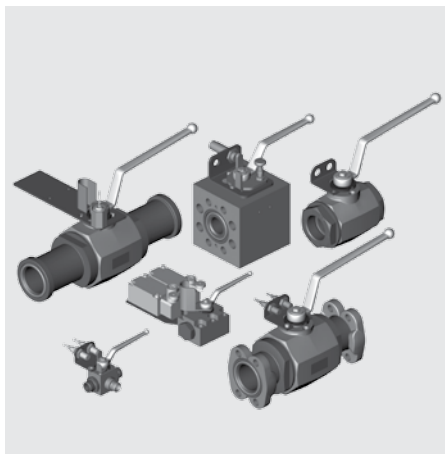
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Ball Valves with Electrical Limit Controls



Model code (Limit switch)
(also example order)

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

Designation

Type of ball valve

Limit control

E = Limit switch (position switch)

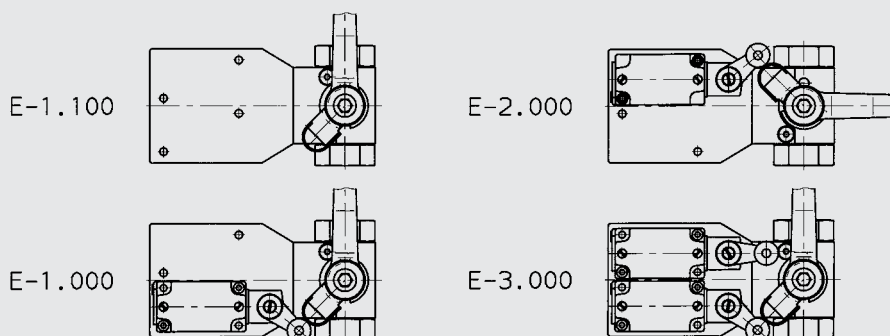
Monitored switching position

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

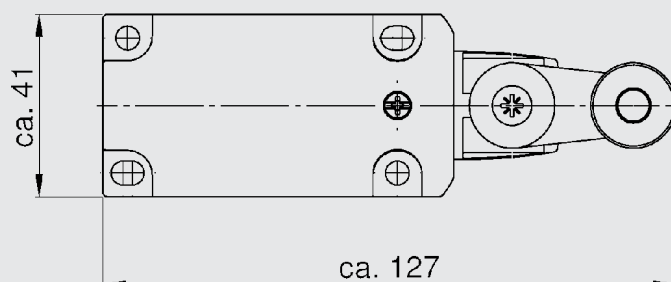
Limit switch code

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

Examples of different models



Limit switch



PN up to 500
DN up to 50

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

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

Designation

Type of ball valve

Limit control

I = Inductive proximity switch

Monitored switching position

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

Proximity switch code

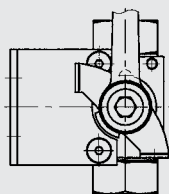
200 = With built-in cylindrical proximity switch M12
to DIN EN 60947 type: IA

300 = Adapted for cylindrical proximity switch M12
to DIN EN 60947 Type: IA.

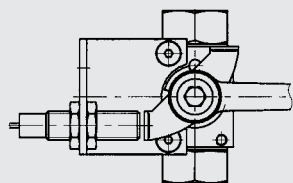
... = On request; almost all commercially available makes and protection
classes can be supplied.

Examples of different models

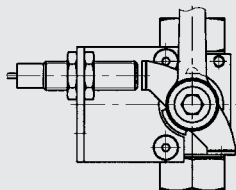
I-1.300



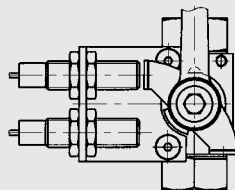
I-2.200



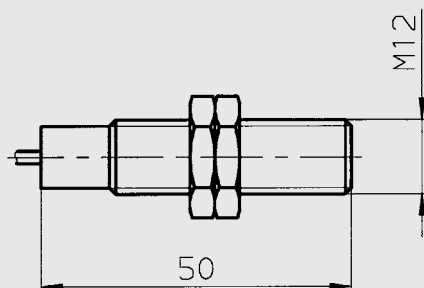
I-1.200



I-3.200



inductive proximity switch



Technical specifications

Limit switch:

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

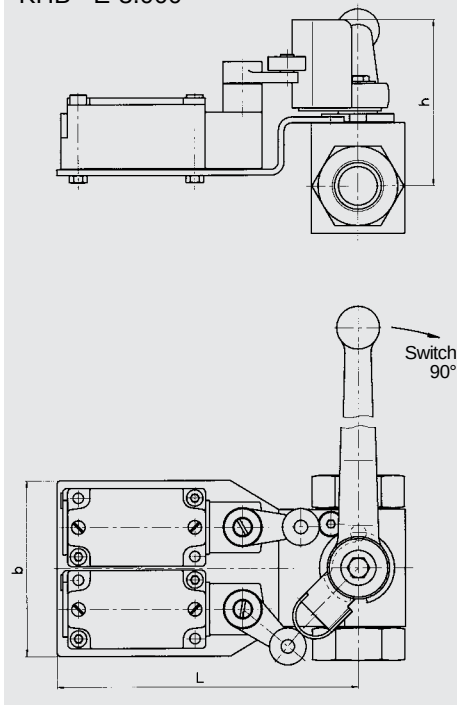
Inductive proximity switch:

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

DIMENSIONS

BALL VALVE WITH LIMIT SWITCH

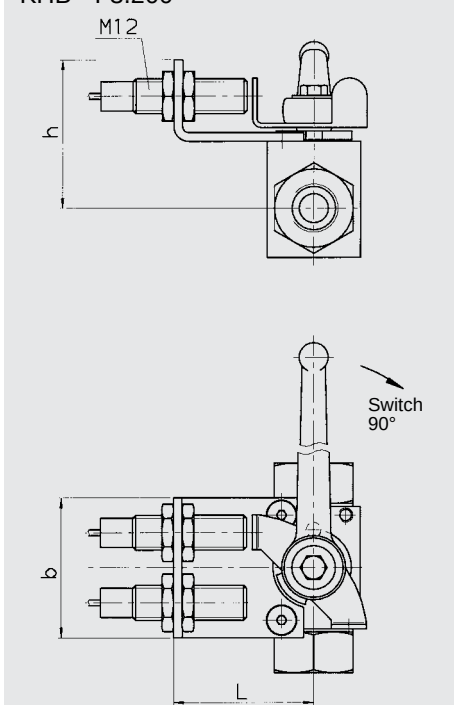
KHB - E-3.000



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

Spare Parts

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

NOTE

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

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

Subject to technical modifications.

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



Handles SW 06–22

Model code
(also order example)

	Handle	AG	SW12
Designation			
Handle			
Materials and type			
AG (01) = Aluminium clamped handle, straight			
ZG (03) = Zinc die-casting clamped handle, straight			
AK (02) = Aluminium clamped handle, cranked			
ZK (04) = Zinc die-casting bolt-on handle, cranked			
SK (06) = Steel bolt-on handle, cranked			
SK (26) = Steel bolt-on handle, cranked, long (only SW 17)			
Widths of control spindle square			
SW 06			
SW 09			
SW 12			
SW 14			
SW 17			
SW 22			
Other handles (e.g. stainless steel) on request			

Description

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

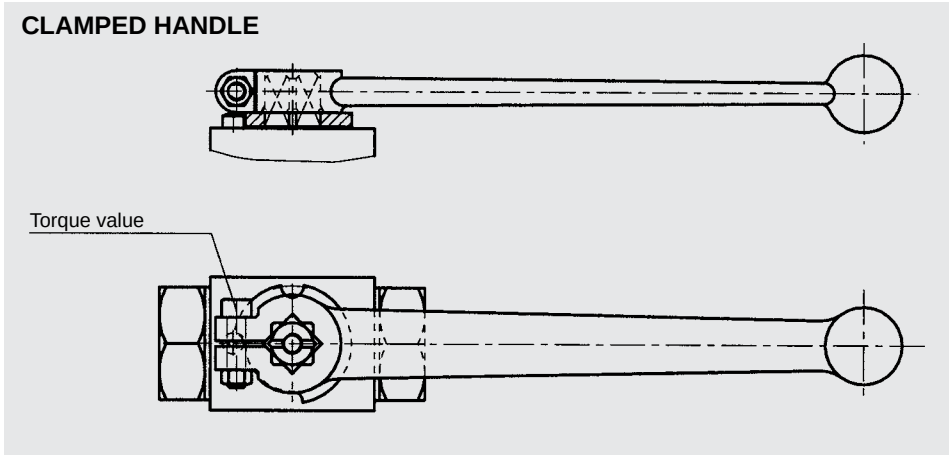
Clamped handle

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

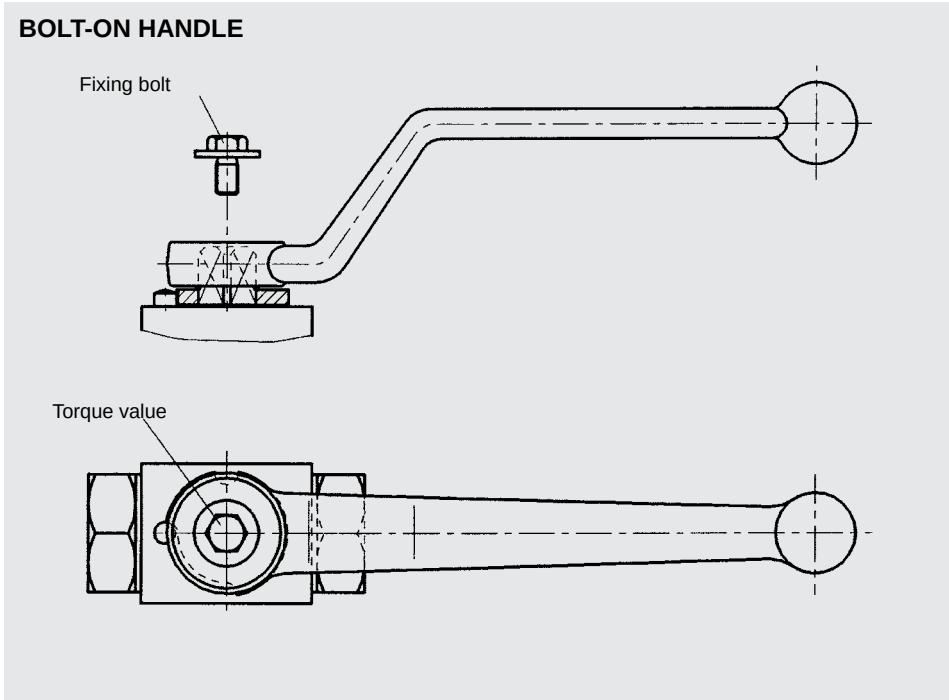
Bolt-on handle

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

Both types handle can be displaced by 45°.
The fixing bolts for the bolt-on handles must be ordered separately.



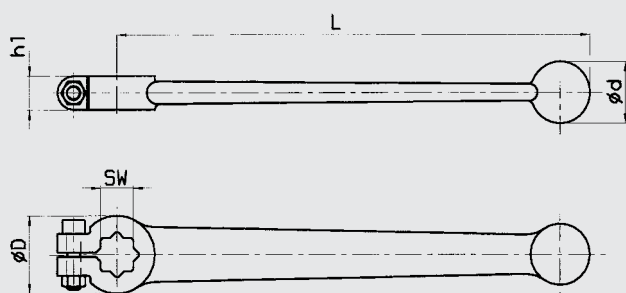
	SW 09	SW 12	SW 14	SW 17	SW 22
	M 5 x 20	M 5 x 20	M 6 x 30	M 6 x 30	M 8 x 40
Torque value	3 Nm	3 Nm	5 Nm	7 Nm	10 Nm



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

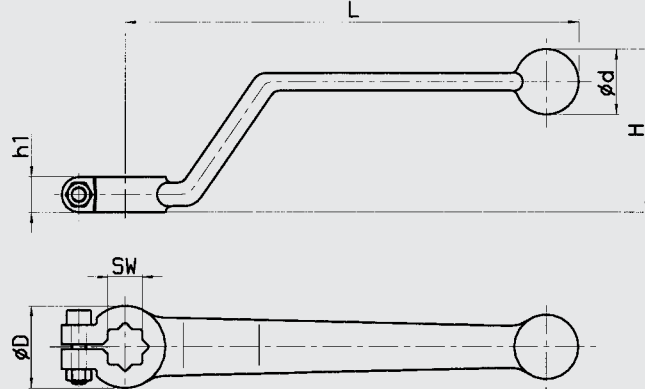
Dimensions

STRAIGHT HANDLE - CLAMPED HANDLE



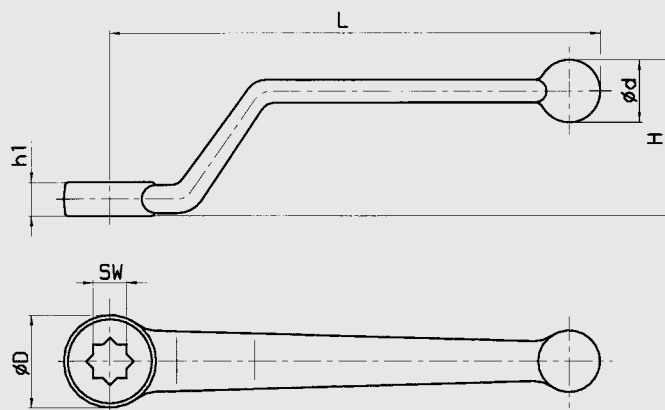
L	ØD	Ød	h1	SW	Type	Part number	Weight (kg)
150	22	15	10	09	ZG (03)	559419	0.090
150	25	20	11	09	AG (01)	270099	0.054
175	28	22	12	12	AG (01)	270100	0.073
200	32	24	12	14	AG (01)	270101	0.096
240	36	26	14	17	AG (01)	270311	0.120

CRANKED HANDLE - CLAMPED HANDLE



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

CRANKED HANDLE - BOLT-ON HANDLE



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

Technical specifications

Material:

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

Widths of control spindle square

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

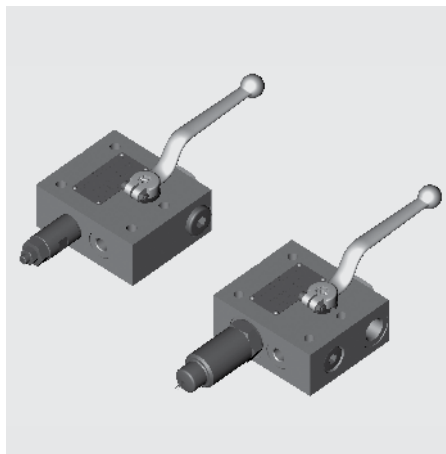
NOTE

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

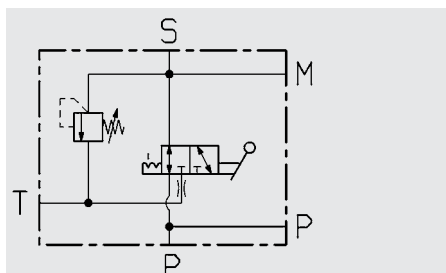
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

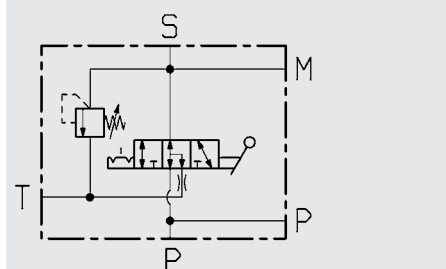
HYDAC Accessories GmbH
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Internet: www.hydac.com
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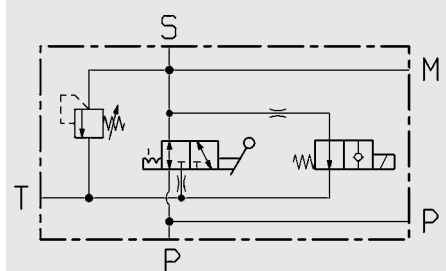
3-Way Safety Block DSV



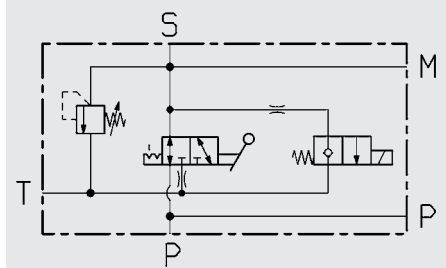
DSV 10 - M



DSV 10 - M - T-ball



DSV 10 - EY



DSV 10 - EZ

PN up to 350
DN 10

1. DESCRIPTION

1.1. GENERAL

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

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

There are four different models:

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

Benefits of the accumulator block:

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

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

1.2. FUNCTION

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

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

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

1.3. APPLICATION

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

Areas of application:

- Hydraulic systems using accumulators
- Accumulator stations
- System engineering

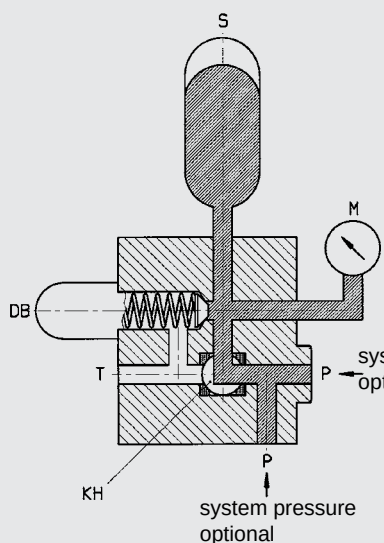
1.4. NOTES

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

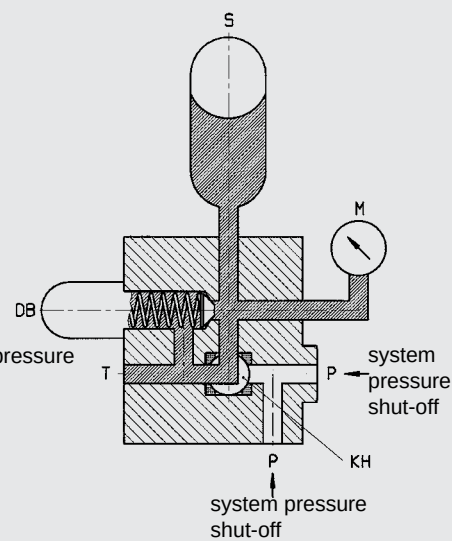
To ensure correct functioning, pressure and temperature specifications must be observed.

The handles are supplied loose.

Accumulator operation



Shutting off the system pressure and simultaneously discharging the accumulator



P	Pump port
KH	Change-over ball valve
M	Pressure gauge port

S	Accumulator
DB	Pressure relief valve
T	Tank port

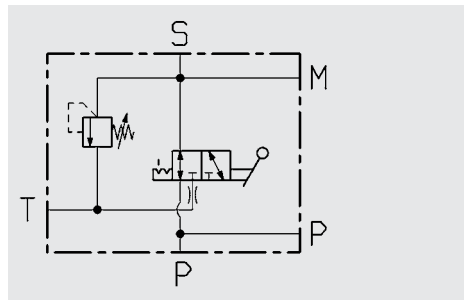
2. SPECIFICATIONS

2.1. GENERAL

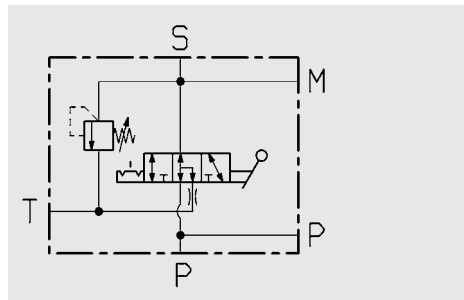
2.1.1 Designation and Symbol

3-way safety block DSV

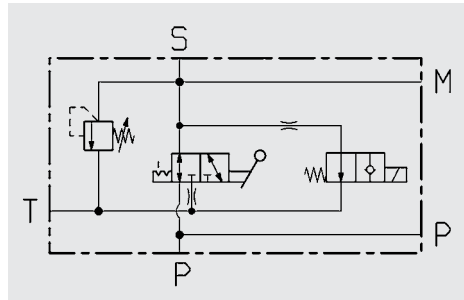
DSV 10 - M



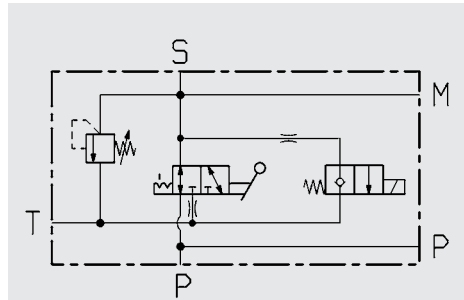
DSV 10 - M - T-ball



DSV 10 - EY



DSV 10 - EZ



2.1.2 Model code (also order example)

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

3-way safety block

Nominal bore
10

Discharge

M = Manual

E = Manual / solenoid-operated

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

Y = Open when de-energised

Z = Closed when de-energised

Type of pressure relief valve

4 = DB 12

2 = DB 4

0 = DBD 6 (on request)

**With/without fitted
pressure relief valve**

1 = With pressure relief valve

0 = Without pressure relief valve

Accumulator connection

1 = M 33 x 2

(M 20 x 1.5 - DBD6, on request)

Series

(determined by manufacturer)

Setting of pressure relief valve

T = TÜV certificate (pressure set & lead sealed)

V = Adjustable using tool

F = Preset by manufacturer

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

Pressure setting

... = Customer-specified opening pressure

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

Pressure setting range

DB 4 – 100 bar

DB 12 – 150 bar

DB 4 – 200 bar

DB 12 – 250 bar

DB 4 / 12 – 350 bar

Type of voltage for solenoid (see 2.3.2)

G = DC

W = AC

Nominal voltage for solenoid (see 2.3.2)

24 = 24 Volt DC (for type G voltage)

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

Type of connection for solenoid

Z4 = Connector to DIN 43650 - AF2 - PG11

Supplementary details

T-Ball = Ball bore (180° switch)

FKM (Viton) = O-ring seal

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

Delivery is longer for non-standard models.

2.1.3 Standard models

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

2.1.4 Type of construction

Ball valve isolating device

Pressure relief valve is a direct-acting cone poppet valve

Poppet valve is pilot-operated

2.1.5 Mounting position

Optional

2.1.6 Weight

See table 2.1.3

2.1.7 Flow direction

According to symbol

2.1.8 Ambient temperature

- 10 °C to + 80 °C

2.1.9 Materials

Housing and blanking plug

- Steel
- Surface protection: phosphate-plated

Ball

- Steel
- Hard-chromed

Pressure relief valve and poppet valve

Valve body:

- High tensile steel

Closing element:

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

Ball seal

- High quality synthetic material (POM)

Soft seals

- Perbunan (NBR)

Clamped handle SW 09, cranked

- Red anodised aluminium

2.2. HYDRAULIC SPECIFICATIONS

2.2.1 Nominal pressure PN 350

2.2.2 Operating fluids

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

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

2.2.4 Viscosity range

min. 10 mm²/s
max. 380 mm²/s

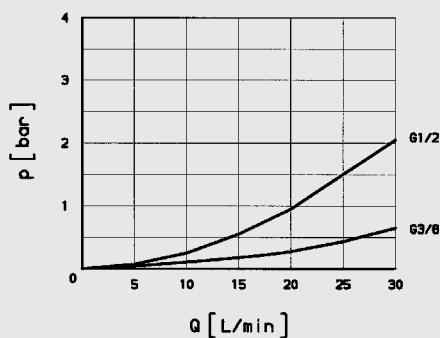
2.2.5 Filtration

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

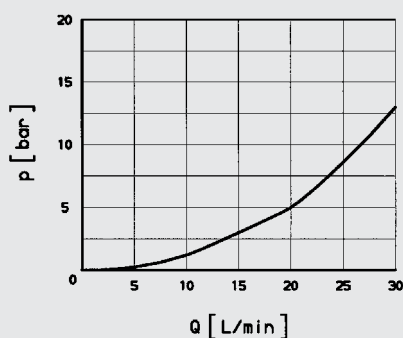
2.2.6 Δp - Q Graph curve DSV - 10 with pressure relief valve DB 4

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

Flow rate P → S



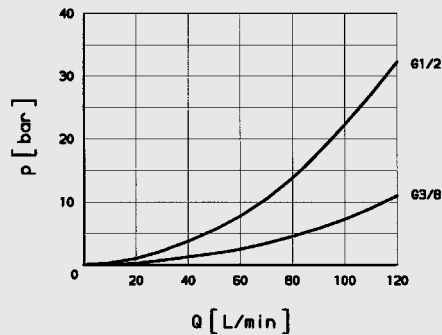
Flow rate S → T



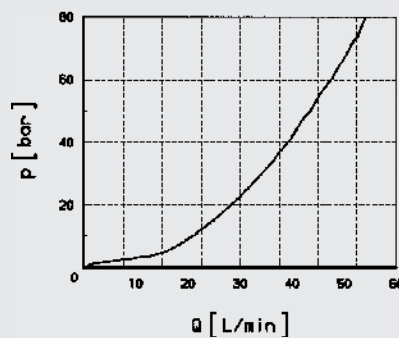
2.2.7 Δp - Q Graph curve DSV - 10 with pressure relief valve DB 12

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

Flow rate P → S



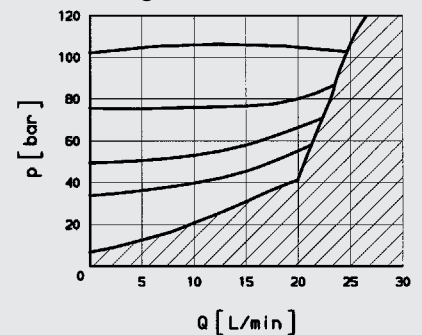
Flow rate S → T



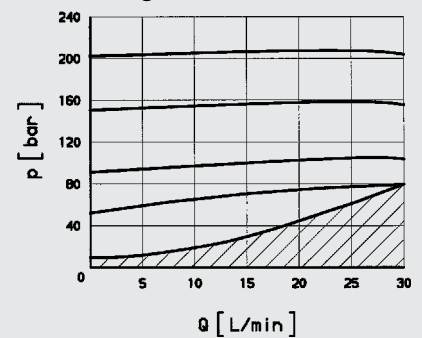
2.2.8 Pressure, dependent on flow rate DB 4

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

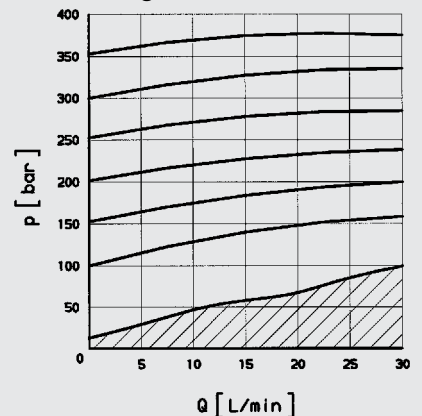
Pressure range ...100 bar



Pressure range ...200 bar



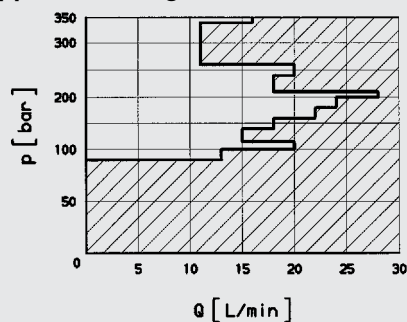
Pressure range ...350 bar



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



Q_{max} table for DB 4 - TÜV

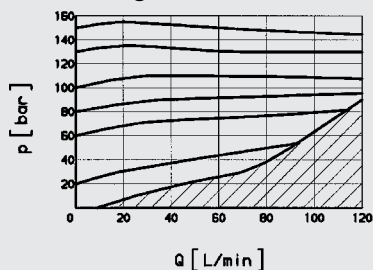
Max. permitted flow rate of the pump

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

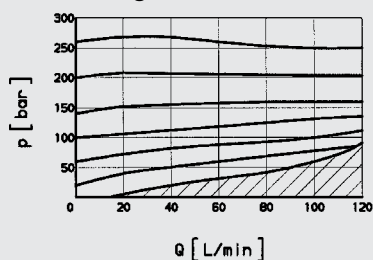
2.2.10 Pressure, dependent on flow rate DB 12

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

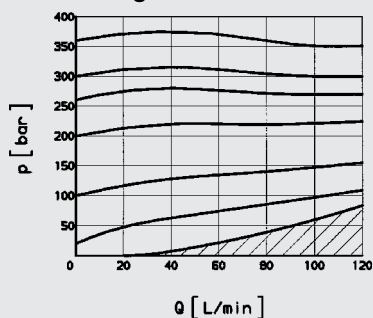
Pressure range ...150 bar



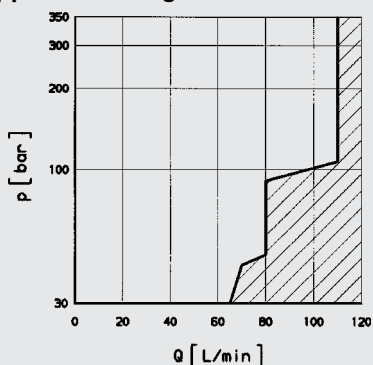
Pressure range ...250 bar



Pressure range ...350 bar



Application range of DB 12 - TÜV



Q_{max} 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 nominal voltages :

Voltage type G : 24 V

Voltage type W : 230 V

2.3.4 Voltage tolerance

- 5 %

+ 10 %

2.3.5 Nominal current

Dependent on the nominal voltage

G 24 V : 1.04 A

W 230 V : 0.13 A

2.3.6 Power consumption

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

2.3.7 Duty cycle

100% = continuous operation

2.3.8 Switching time

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

2.3.9 Protection class

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

2.3.10 Ambient temperature range

- 10 °C to + 40 °C

3. ADAPTERS

3.1. GENERAL

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

3.2. MODEL CODE

(also order example)

UEBERG-ST - S30 - NBR

Adapter

Type

- S10 = M 33 x 2 / G 3/4 A
- S11 = M 33 x 2 / G 1 A
- S12 = M 33 x 2 / G 1 1/4 A
- S13 = M 33 x 2 / G 2 A
- S20 = M 33 x 2 / M 30 x 1.5
- S21 = M 33 x 2 / M 40 x 1.5
- S22 = M 33 x 2 / M 50 x 1.5
- S30 = M 33 x 2 / G 1/2 A
- S31 = M 33 x 2 / G 3/4 A
- S32 = M 33 x 2 / G 1 A
- S33 = M 33 x 2 / G 1 1/4 A
- (M 20 x 1.5 / ... on request)

Seal

NBR = Perbunan

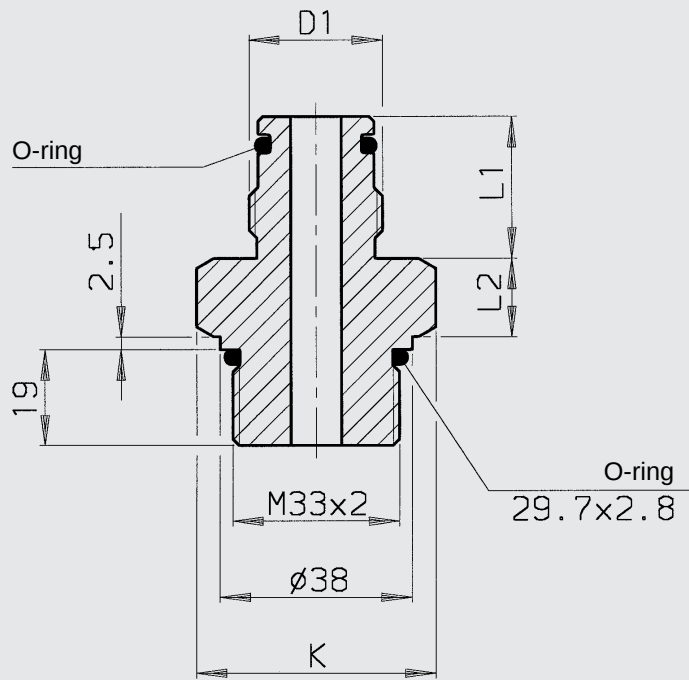
When ordering, please quote part number (see Table 3.3.)
Delivery is longer for non-standard models.

3.3. STANDARD MODELS

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

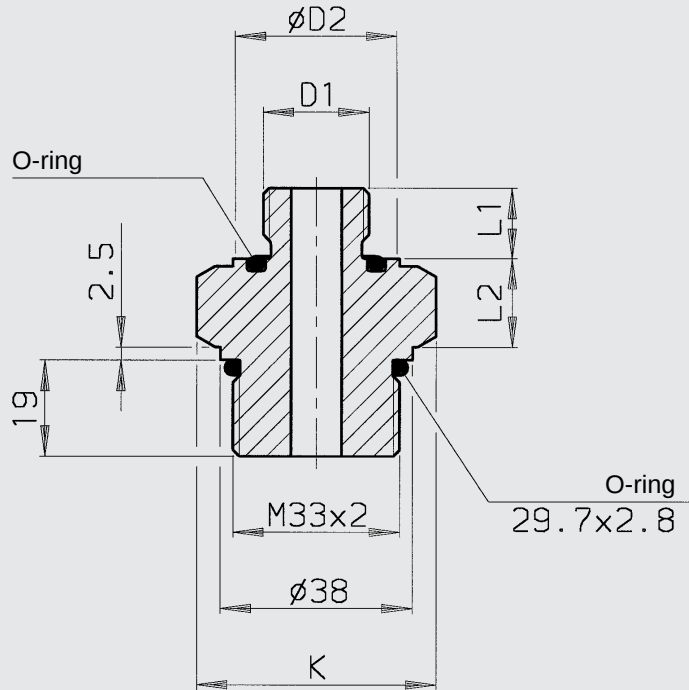
3.4. DIMENSIONS OF ADAPTERS

Adapter - M 33 x 2, Figure 1



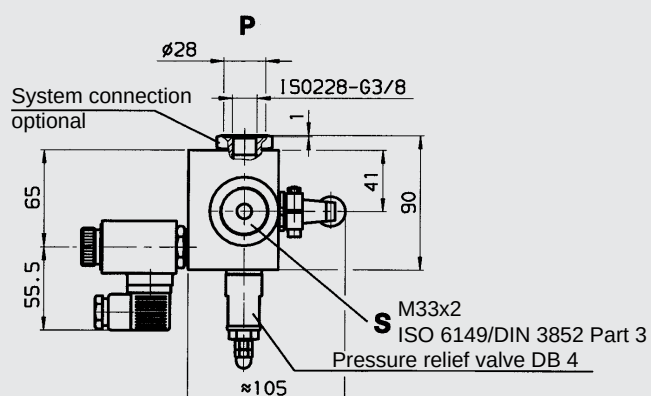
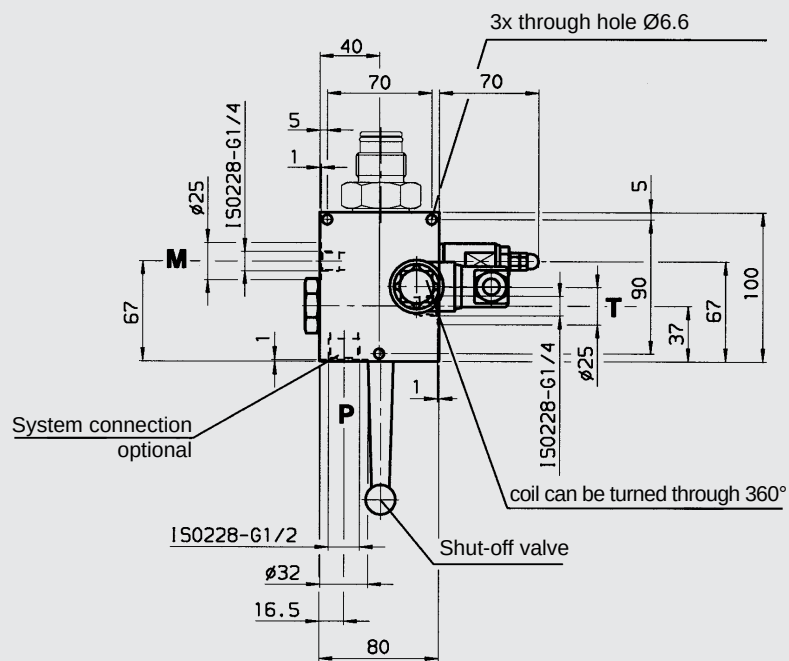
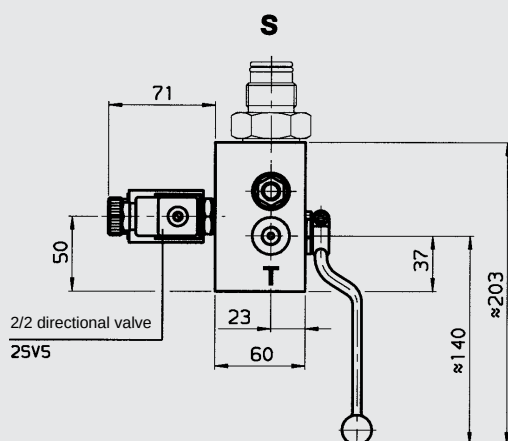
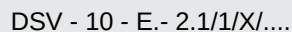
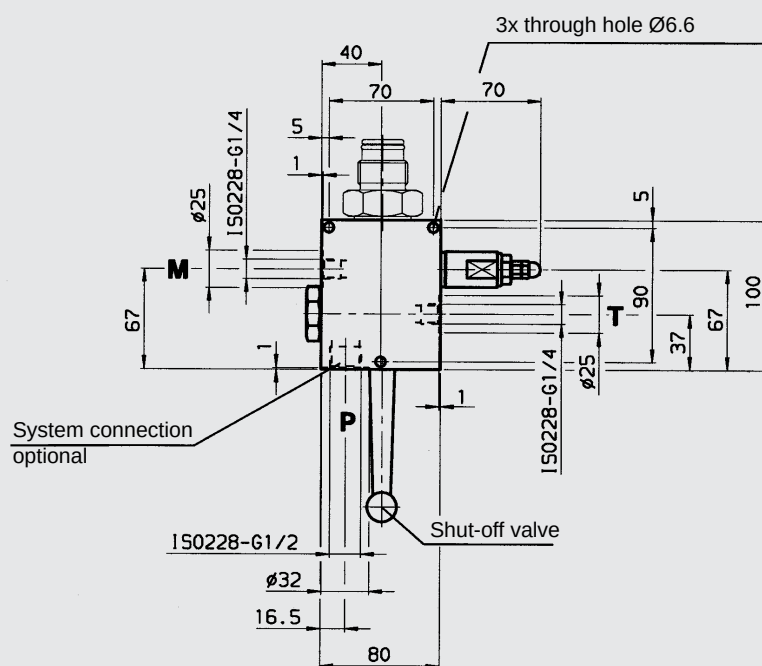
Type	Thread D1	D2	L1	L2	K	O-ring
S10	ISO 228 - G 3/4 A	-	28	15.5	SW 41	17 x 3
S11	ISO 228 - G 1 A	-	34	16.5	SW 46	22 x 3
S12	ISO 228 - G 1 1/4 A	-	37	16.5	SW 46	30 x 3
S13	ISO 228 - G 2 A	-	44	20.5	SW 65	48 x 31

Adapter - M 33 x 2, Figure 2



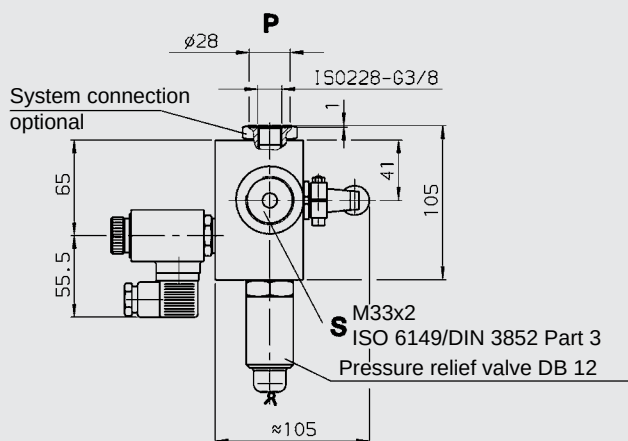
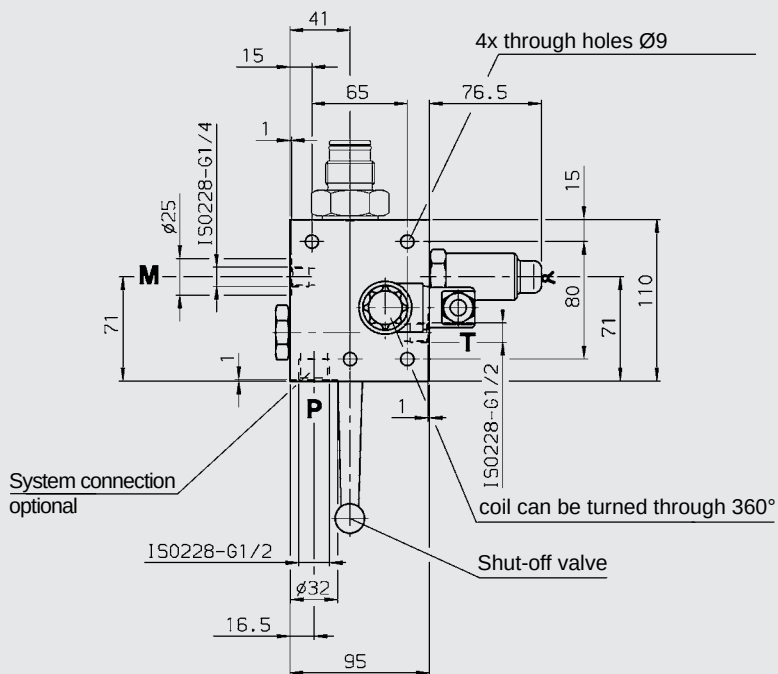
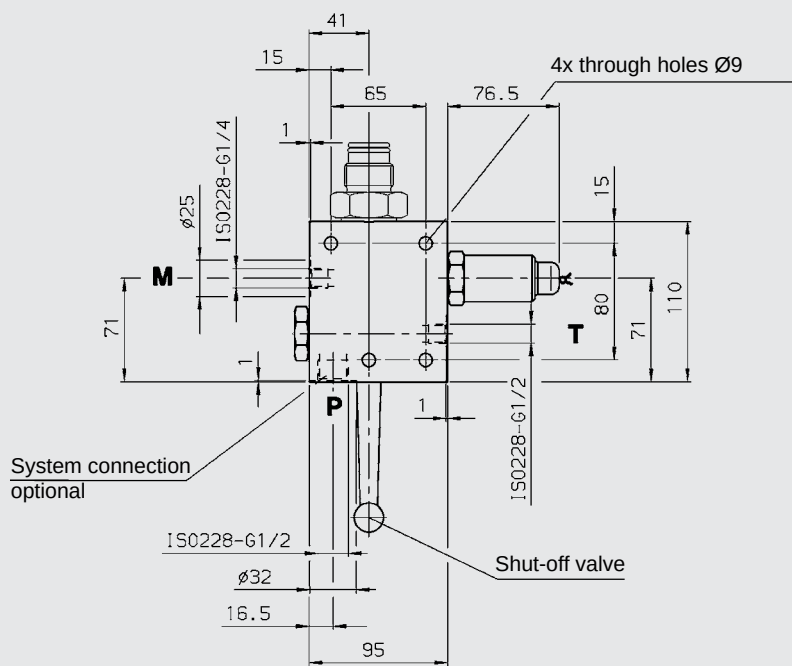
Type	Thread D1	D2	L1	L2	K	O-ring
S20	M 30 x 1.5	40	15	17.5	SW 41	32 x 2
S21	M 40 x 1.5	54	20	20.5	SW 55	43 x 3
S22	M 50 x 1.5	64	20	20.5	SW 65	53 x 3
S30	ISO 228 - G 1/2 A	33	14	17.5	SW 41	22 x 3
S31	ISO 228 - G 3/4 A	40	16	17.5	SW 41	28 x 3
S32	ISO 228 - G 1 A	45	18	18.5	SW 46	35 x 3
S33	ISO 228 - G 1 1/4 A	55	20	18.5	SW 65	44 x 33

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



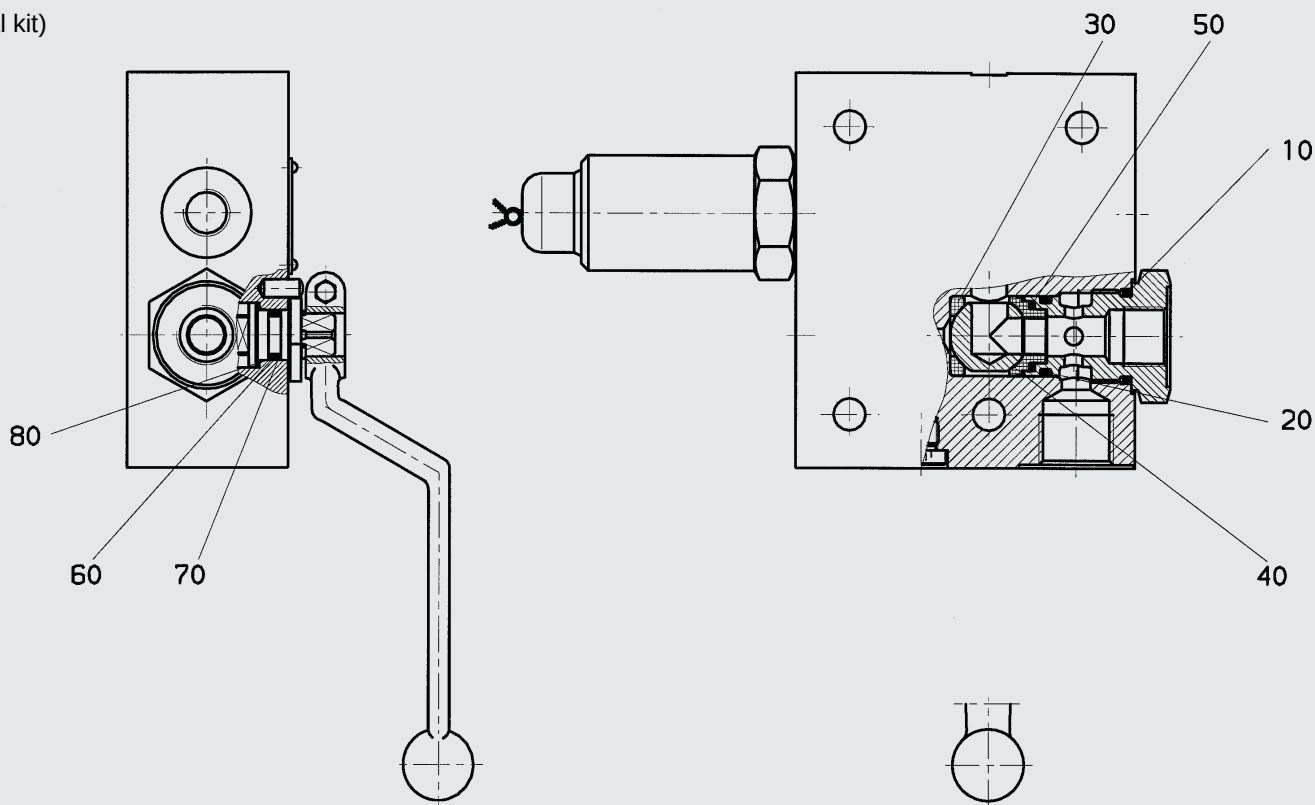
Technical drawing of a vertical cable gland (S) with dimensions:

- Total height: ≈ 213 mm
- Mounting bracket height: 37 mm
- Cable entry length: ≈ 140 mm
- Main body width: 45 mm
- Mounting hole offset: 33 mm
- Cable diameter: $\varnothing 10$ mm



5. SPARE PARTS

(Seal kit)



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

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

NOTE

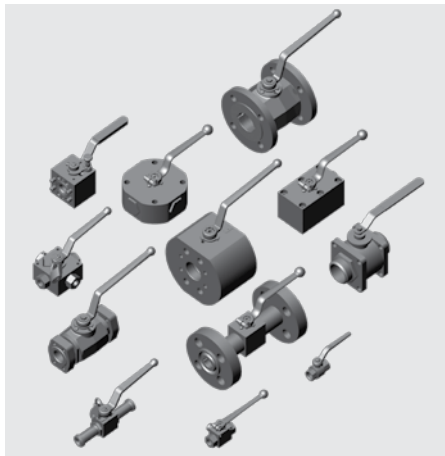
The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.

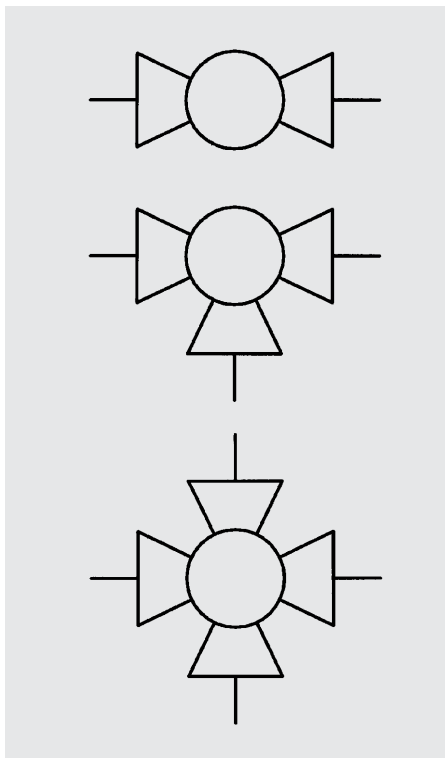
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Compatibility List

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	Control spindle	GG, GS-C	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	
	Housing	Ball	Control spindle	1.4571	NBR	FKM	POM	PTFE
	Steel	Brass	GG, GSC					
C								
Copper nitrate, aqueous	4	4	4	2	2	1	2	1
Copper sulphate, aqueous	4	4	4	2	2	1	2	1
Cresolyl, 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	1.4571	NBR	FKM	POM	PTFE
		Ball						
		Brass						
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	1.4571	NBR	FKM	POM	PTFE
		Ball						
		Brass						
GG, GS-C								
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	9SMnPb28K	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 + 100 °C. Operating pressure up to max. 500 bar. Not resistant to aggressive media.
2	Perbunan (NBR)	Primarily for pneumatics and gas applications (DVGW, German Technical Association for Gas and Water). Temperature range from - 5 °C to + 70 °C. Operating pressure up to max. 100 bar. Not resistant to aggressive media.
3	PTFE	Given the excellent chemical and thermal properties, the application ranges are varied. Temperature range from - 200 °C to + 250 °C. Operating pressure up to max. 100 bar.
8	Victrex-Peek	Good chemical and thermal properties. Temperature range from - 150 °C to + 200 °C. Operating pressure up to max. 500 bar.

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

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

NOTE

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

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

Subject to technical modifications.

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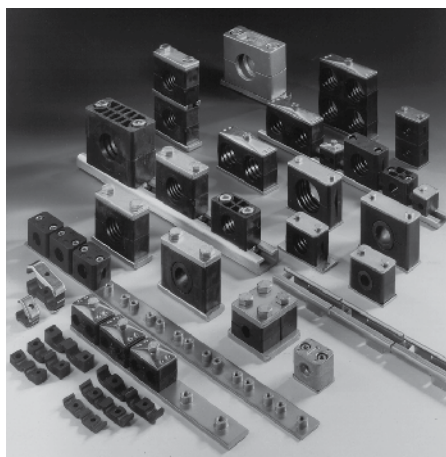
HY-ROS Mounting Technology for ...

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

HY-ROS Mounting Technology for ...



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



Schellen nach DIN 3015

Clamps to DIN 3015

Colliers selon DIN 3015



BT 1.1 Leichte Reihe DIN 3015 Teil 1

BT 1.1 Light range DIN 3015 part 1

BT 1.1 Série légère selon DIN 3015 chap. 1



BT 1.2 Schwere Reihe DIN 3015 Teil 2

BT 1.2 Heavy range DIN 3015 Part 2

BT 1.2 Série lourde selon DIN 3015 chap. 2



BT 1.3 Leichte Reihe DIN 3015 Teil 1 mit Elastomereinsatz

BT 1.3 Light range DIN 3015 part 1 with elastomer insert

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



BT 1.4 Schwere Reihe DIN 3015 Teil 2 mit Elastomereinsatz

BT 1.4 Heavy range DIN 3015 Part 2 with elastomer insert

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



BT 1.5 Zweiroherschelle DIN 3015 Teil 3

BT 1.5 Twin clamps DIN 3015 Part 3

BT 1.5 Collier double selon DIN 3015 chap. 3

BT 1.6 Technische Daten

BT 1.6 Technical Details

BT 1.6 Caractéristiques techniques

BT 1.7 Verpackungseinheiten

BT 1.7 Packing details

BT 1.7 Conditionnement

BT 1.8 Maße Metrisch / Zoll

BT 1.8 Comparison metric / imperial measurements

BT 1.8 Correspondance métrique/pouce

HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

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

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ANMERKUNG

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

NOTE

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

REMARQUE

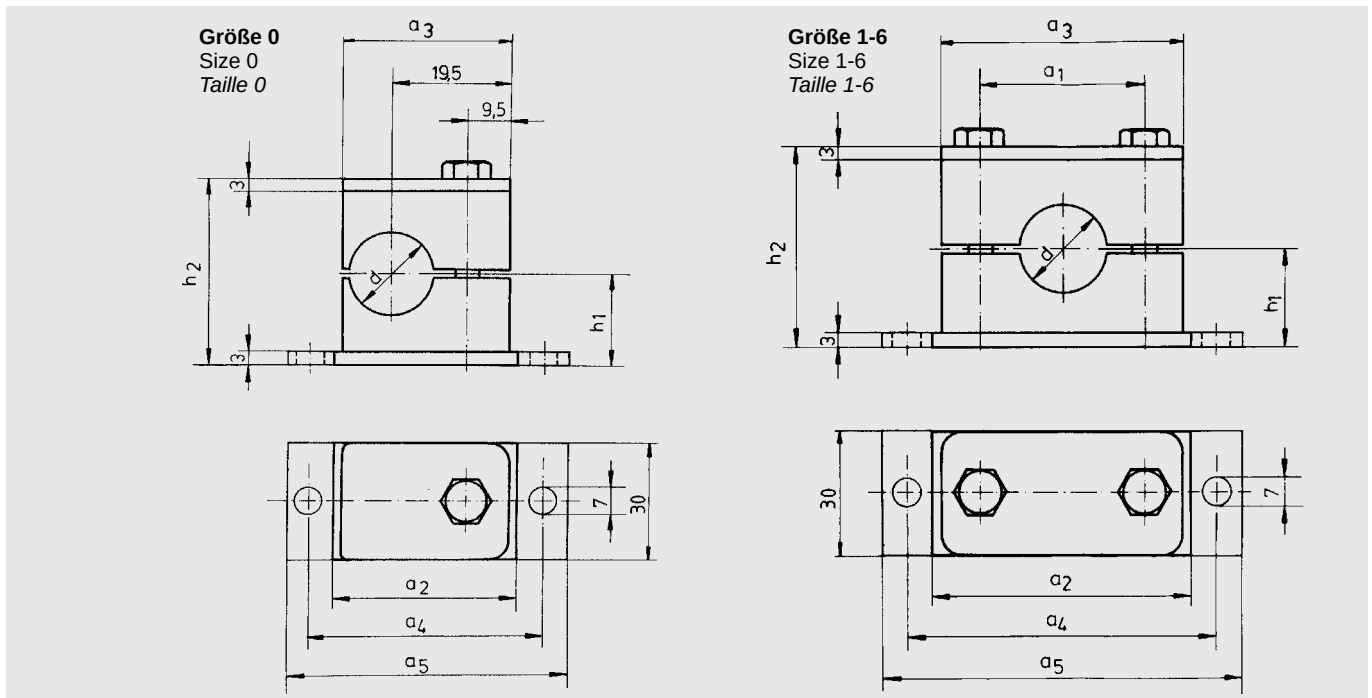
Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.

1.1 Leichte Reihe DIN 3015 Teil 1

1.1 Light range DIN 3015 part 1

1.1 SERIE LEGERE selon DIN 3015 chap. 1

BT 1

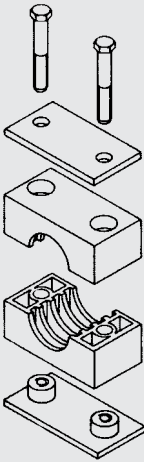


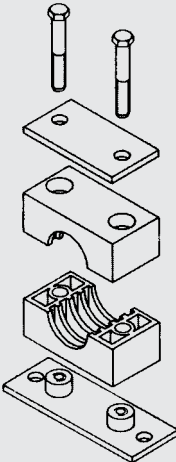
Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Abmessungen Dimensions Dimensions							ASKT ISO 4014 Ext. hex. ISO 4014 Vis H ISO 4014	ISKT ISO 4762 Int. hex. ISO 4762 Vis CHc ISO 4762	STIFT DIN 938 STUD DIN 938 Goujon DIN 938	SCHLITZ ISO 1207 SLOTTED HEAD ISO 1207 Vis tête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

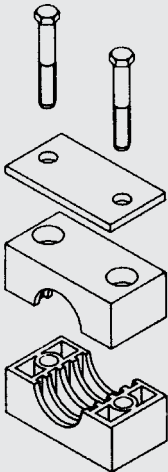
1.1 Leichte Reihe DIN 3015 Teil 1

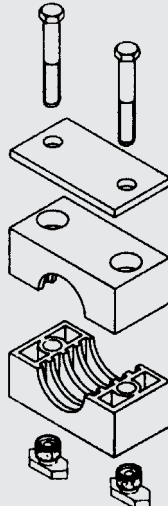
1.1 Light range DIN 3015 part 1

1.1 SERIE LEGERE selon DIN 3015 chap. 1

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

Ausführung AV Model AV Exécution AV


Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Ausführung A1 Model A1 Exécution A1
6 .. 12	0	
6 .. 12	1	
12,7 .. 18	2	
19 .. 25,4	3	
26,9 .. 30	4	
32 .. 42	5	
44,5 .. 50,8	6	

Ausführung A1TM Model A1TM Exécution A1TM


Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRL
HRGL

Baugröße / size / taille

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

Ausführung / model / exécution

A / A1 / A1TM / AV

Durchmesser / O/D / diamètre

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

PP / PA / PAFF / TPE / AL

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

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

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

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

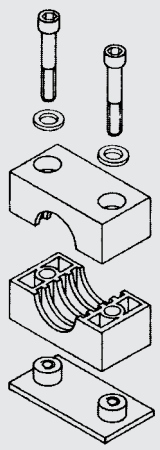
HRL 2 A 16 PP ST M BL

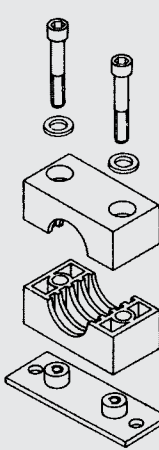
1.1 Leichte Reihe DIN 3015 Teil 1

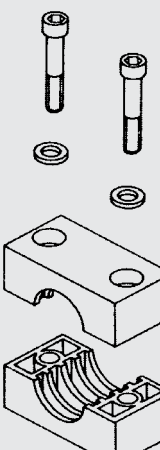
1.1 Light range DIN 3015 part 1

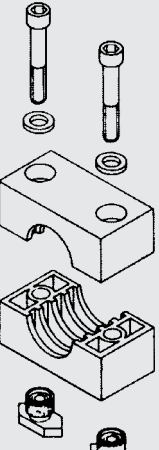
1.1 SERIE LEGERE selon DIN 3015 chap. 1

BT 1

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

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

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

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

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRL
HRGL

Baugröße / size / taille

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

Ausführung / model / exécution

B / B1 / B1TM / BV

Durchmesser / O/D / diamètre

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

PP / PA / PAFF / TPE / AL

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

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

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

BL blank / unplated / sans revêtement

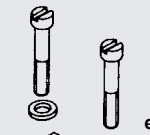
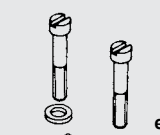
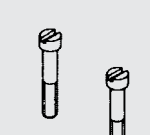
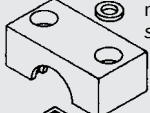
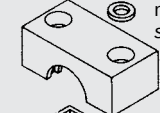
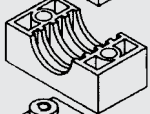
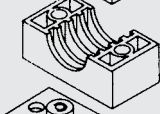
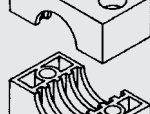
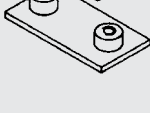
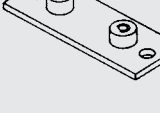
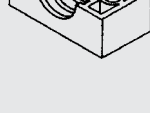
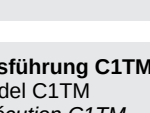
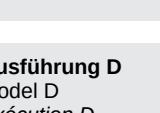
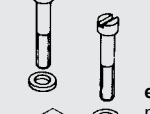
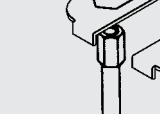
ZN verzinkt / zinc plated / zingué

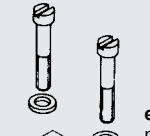
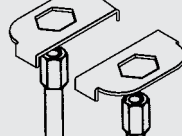
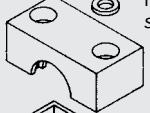
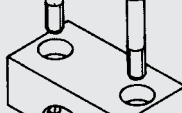
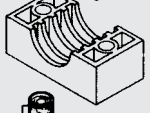
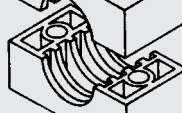
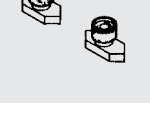
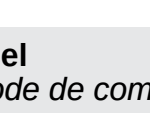
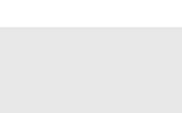
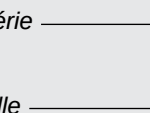
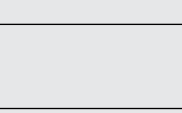
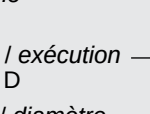
HRL 2 B 16 PP ST M BL

1.1 Leichte Reihe DIN 3015 Teil 1

1.1 Light range DIN 3015 part 1

1.1 SERIE LEGERE selon DIN 3015 chap. 1

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

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

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRL
HRGL

Baugröße / size / taille

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

Ausführung / model / exécution

C / C1 / C1TM / CV / D

Durchmesser / O/D / diamètre

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

PP / PA / PAFF / TPE / AL

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

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

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

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

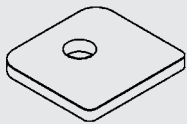
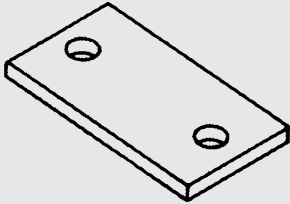
HRL 2 C 16 PP ST M BL

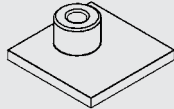
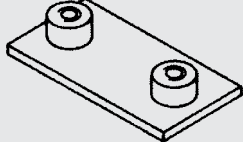
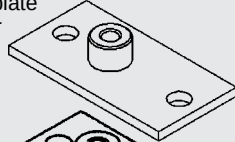
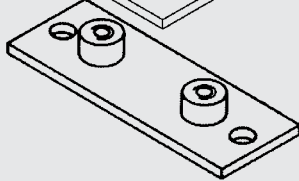
1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

1.1 Light range DIN 3015 part 1, individual parts

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

BT 1

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

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

Bestellschlüssel

Order code / Code de commande

	HRL	3	DP	ST	ZN
Baureihe / range / série HRL					
Baugröße / size / taille 0 / 1 / 2 / 3 / 4 / 5 / 6					
Ausführung / model / exécution DP					
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier ST A2 / A4 auf Anfrage / on request / sur demande					
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier ZN verzinkt / zinc plated / zingué					

Bestellschlüssel

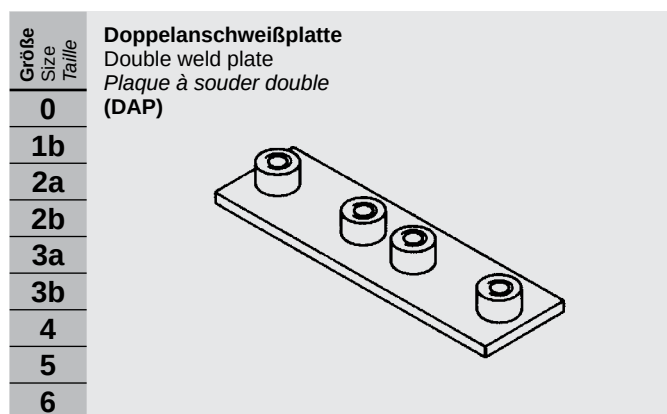
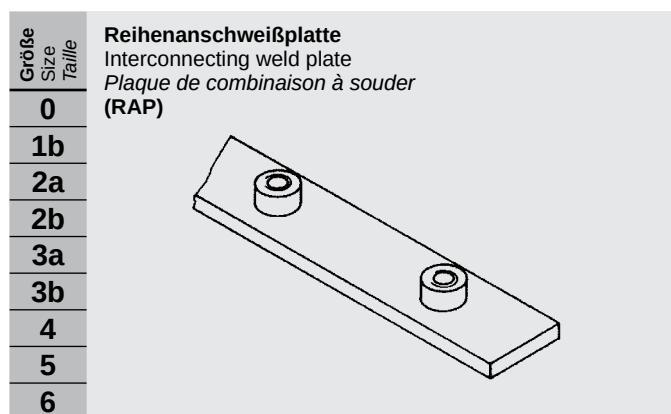
Order code / Code de commande

	HRL	2	AP	ST	M	BL
Baureihe / range / série HRL						
Baugröße / size / taille 0 / 1 / 2 / 3 / 4 / 5 / 6						
Ausführung / model / exécution AP / APV						
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier ST A2 / A4 auf Anfrage / on request / sur demande						
Metrisches Gewinde / metric thread / filet métrique						
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier ZN verzinkt / zinc plated / zingué BL blank / unplated / sans revêtement						

1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

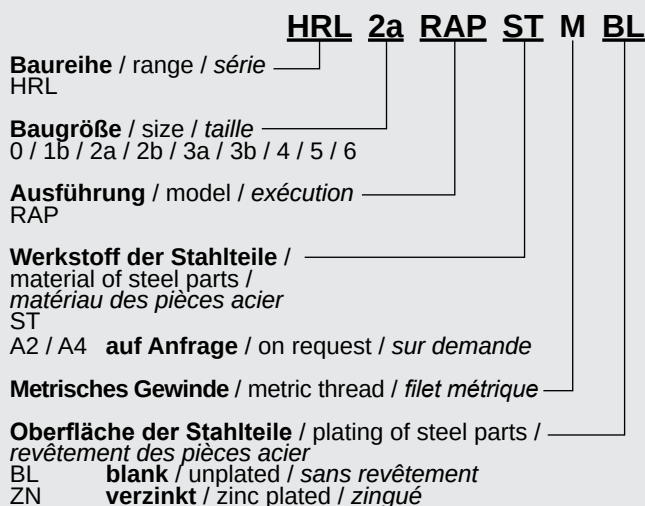
1.1 Light range DIN 3015 part 1, individual parts

1.1 SERIE LEGERE DIN 3015 chap. 1, pièces individuelles



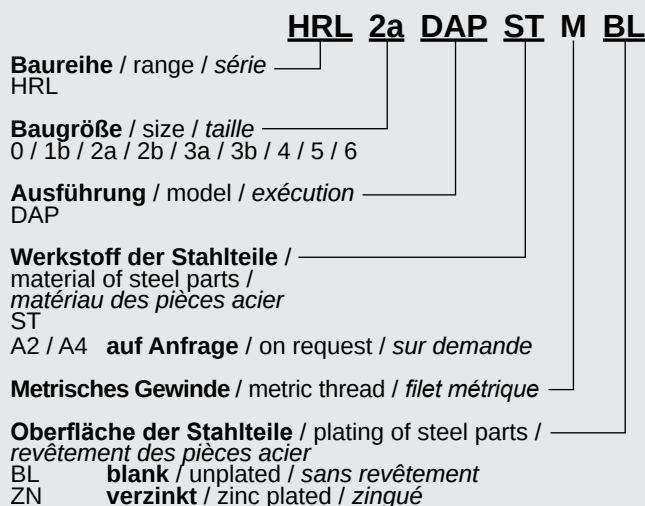
Bestellschlüssel

Order code / Code de commande



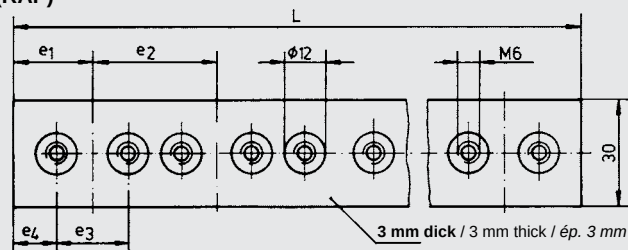
Bestellschlüssel

Order code / Code de commande



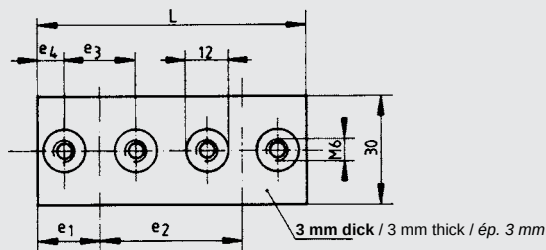
Reihenanschweißplatte

Interconnecting weld plate
Plaque de combinaison à souder
(RAP)



Doppelanschweißplatte

Double weld plate
Plaque à souder double
(DAP)



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

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

1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

1.1 Light range DIN 3015 part 1, individual parts

1.1 SERIE LEGERE DIN 3015 chap. 1, pièces individuelles

BT 1

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

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

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRL
HRGL

Baugröße / size / taille

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

Ausführung / model / exécution

KP

Durchmesser / O/D / diamètre

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

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

HRL 3 KP 23 PP

* nicht für Größe 0

not for size 0

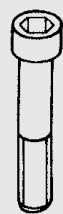
pas pour la taille 0

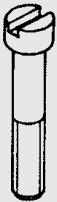
1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

1.1 Light range DIN 3015 part 1, individual parts

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

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

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

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

Bestellschlüssel

Order code / Code de commande

6kt-shr. ISO4014 - M6 x 30 - 8.8 - A4B

Bauart / design / série

6kt-shr. ISO4014

zyl-shr.ISO4762

zyl-shr.ISO1207

Baugröße / size / taille

ISO4014|ISO4762|ISO1207

M6 x 30 M6 x 20 M6 x 20

M6 x 35 M6 x 25 M6 x 25

M6 x 40 M6 x 30 M6 x 30

M6 x 45 M6 x 35 M6 x 35

M6 x 60 M6 x 50 M6 x 50

M6 x 70 M6 x 60 M6 x 60

Schraubenqualität / bolt quality / qualité de vis

ISO4014, ISO4762 = 8.8

ISO 1207 = 5.6

Oberfläche der Schraube / bolt plating / revêtement de vis

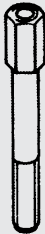
A4B verzinkt / zinc plated / zingué

1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

1.1 Light range DIN 3015 part 1, individual parts

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

BT 1

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

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

Bestellschlüssel

Order code / Code de commande

HRL 4 AF ST M ZN

Baureihe / range / série **HRL**

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

Ausführung / model / exécution **AF**

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

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

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

Bestellschlüssel

Order code / Code de commande

HRL 0 SIP ST ZN

Baureihe / range / série **HRL**

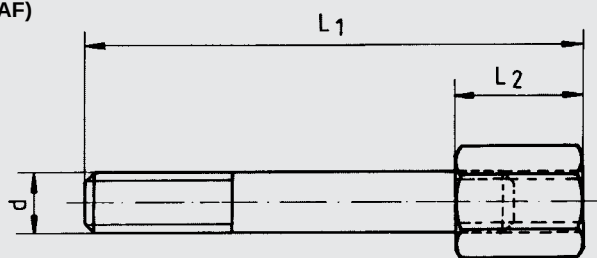
Baugröße / size / taille **0**

Ausführung / model / exécution **SIP**

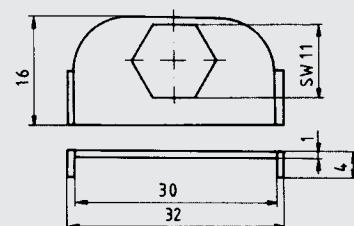
Werkstoff / material / matériau **ST**
A4 **auf Anfrage** / on request / sur demande

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

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



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



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

für alle Größen

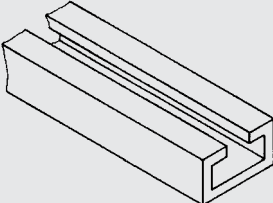
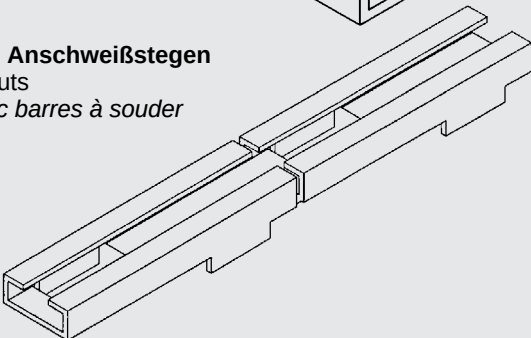
for all sizes

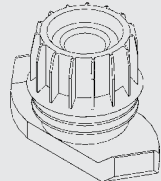
pour toutes les tailles

1.1 Leichte Reihe DIN 3015 Teil 1, Einzelteile

1.1 Light range DIN 3015 part 1, individual parts

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

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

Abmessungen Dimensions Dimensions	Tragschienenmutter Bayonet nut Erou rail porteur (TMV6)	
TMV6		

Bestellschlüssel

Order code / Code de commande

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

* auf Anfrage / on request / sur demande

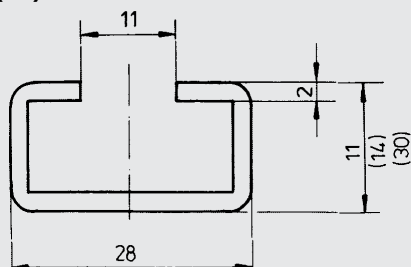
Bestellschlüssel

Order code /
Code de commande

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

C-Tragschiene

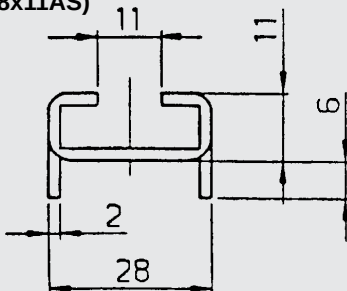
C-rail
C-Rail porteur
(TS)



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

C-Tragschiene m. Anschweißstegen

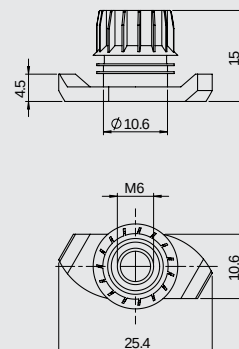
C-rail with weld struts
C-Rail porteur avec barres à souder
(TS28x11AS)



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

Tragschienenmutter M6

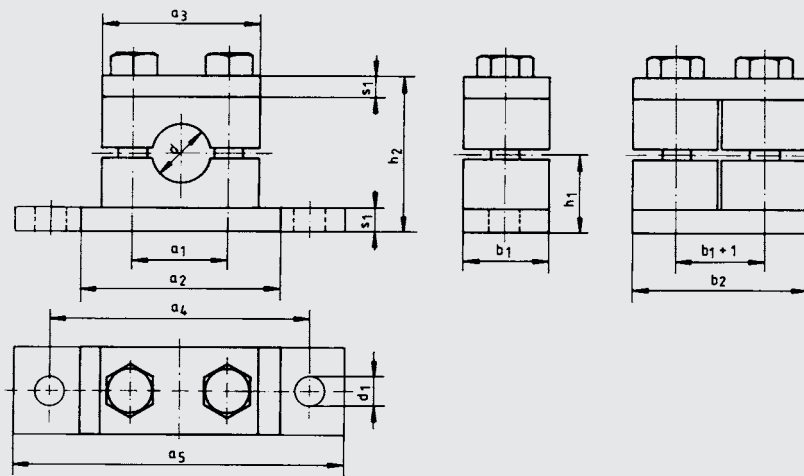
Bayonet nut M6
Erou rail porteur M6
(TMV6)



1.2 SCHWERE REIHE DIN 3015 Teil 2

1.2 HEAVY RANGE DIN 3015 part 2

1.2 SERIE LOURDE selon DIN 3015 chap. 2

BT 1


Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	Abmessungen Dimensions Dimensions												ASKT ISO 4014 Ext. hex. 4014 Vis H ISO 4014	ISKT ISO 4762 Int. hex. 4762 Vis CHc ISO 4762
			a1	a2	a3	a4	a5	b1	b2	h1	h2	s1	d1		
6 6,4 8 9,5 10 12 12,7	13,7 14 15 16 17,1 18	1	33	73	55	85	113	30	60	24	48	8	11	M10 x 45	M10 x 25
19 20 21,3 22 25	25,4 26,9 28 30	2	45	85	70	97	125	30	60	32	64	8	11	M10 x 60	M10 x 40
25 30 32 33,7 35	38 40 42	3	60	100	85	112	140	30	60	38	76	8	11	M10 x 70	M10 x 50
30 38 42 44,5 48,3 50,8	55 57 60,3 63,5 65 70	4	90,5	140	115	160	190	45	90	54,5	109	10	14	M12 x 100	M12 x 80
38 65 70 73	76,1 80 88,9	5	122	180	152	205	240	60	120	70	140	10	18	M16 x 130	M16 x 110
65 96 101,6 108	114,3 127,0	6	168	225	205	270	310	80	160	100	200	15	22	M20 x 190	M20 x 150
90 136 139,7 168		7	205	270	252	320	370	90	180	115	230	15	26	M24 x 220	M24 x 180
168 177,8 193,7 219,1		8	265	340	320	—	—	120	240	160	320	25	—	M30 x 300	—
219,1 244,5 273	323,9	9	395	520	466	—	—	160	324	235	470	30	—	M30 x 450	—
355,6 406,4		10	530	680	630	—	—	180	364	295	590	30	—	M30 x 560	—

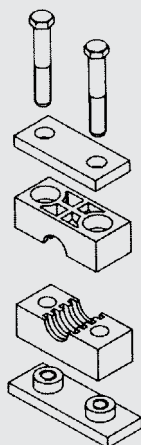
1.2 SCHWERE REIHE DIN 3015 Teil 2

1.2 HEAVY RANGE DIN 3015 part 2

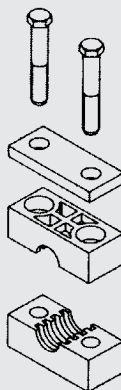
1.2 SERIE LOURDE selon DIN 3015 chap. 2

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

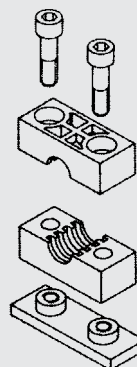
Ausführung S
Model S
Exécution S



Ausführung S1
Model S1
Exécution S1

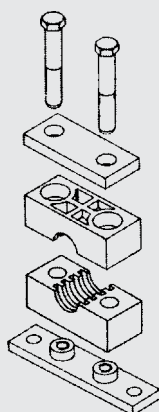


Ausführung I
Model I
Exécution I

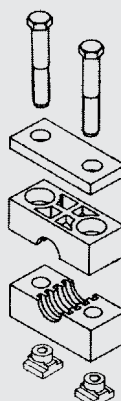


Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 18	1
19 .. 30	2
25 .. 42	3
30 .. 70	4
38 .. 88,9	5
65 .. 114,3	6
90 .. 168	7
168 .. 219,1	8
219,1 .. 323,9	9
355,6 .. 406,4	10

Ausführung SV
Model SV
Exécution SV



Ausführung S1TM
Model S1TM
Exécution S1TM



Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRS

HRGS (auf Anfrage / on request / sur demande)

Baugröße / size / taille

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

Ausführung / model / exécution

S / SV / S1 / S1TM / I

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

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

Durchmesser / O/D / diamètre

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

PP / PA / PAFF / TPE / AL

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

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

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

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

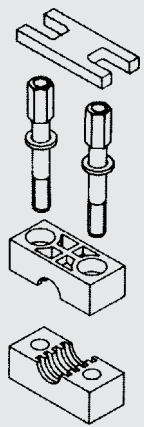
HRS 2 S 30 PP ST M BL

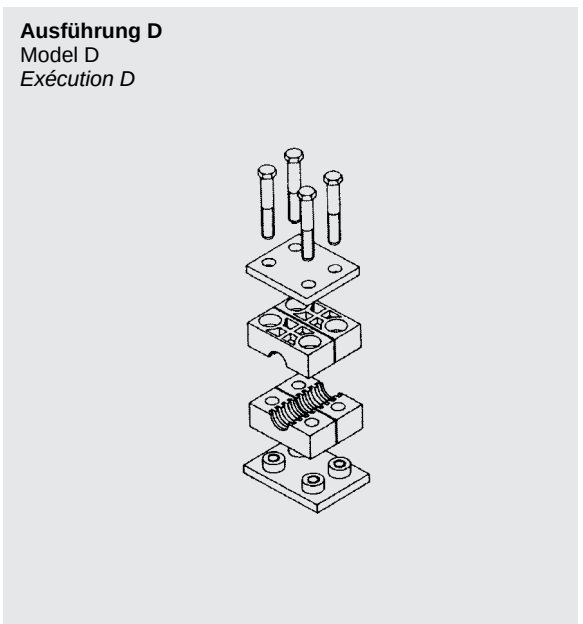
1.2 SCHWERE REIHE DIN 3015 Teil 2

1.2 HEAVY RANGE DIN 3015 part 2

1.2 SERIE LOURDE selon DIN 3015 chap. 2

BT 1

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



Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRS

HRGS (auf Anfrage / on request / sur demande)

Baugröße / size / taille

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

Ausführung / model / exécution

A / D

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

Durchmesser / O/D / diamètre

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

PP / PA / PAFF / TPE / AL

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

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

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

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

HRS 5 D 76.1 PP ST M BL

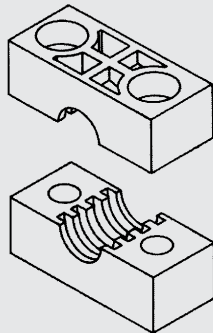
1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

1.2 HEAVY RANGE DIN 3015 part 2, individual parts

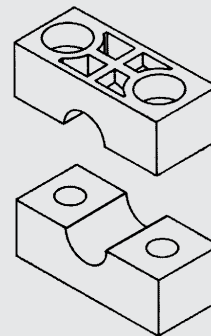
1.2 SERIE LOURDE selon DIN 3015 chap. 2, pièces individuelles

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

Klemmbackenpaar gerippt
Pair of clamp jaws, ribbed
Paire de pièces de serrage, rainurée
(HRS ... KP ...)



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



nicht in AL
not in AL
ne pas en AL

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série _____

HRS

HRGS (auf Anfrage / on request / sur demande)

Baugröße / size / taille _____

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

Ausführung / model / exécution _____

KP

Durchmesser / O/D / diamètre _____

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

PP / PA / PAFF / TPE / AL

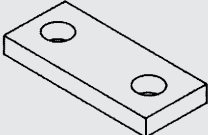
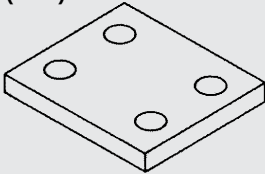
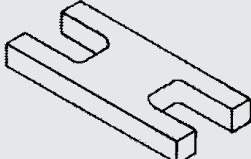
HRS 2 KP 30 PP

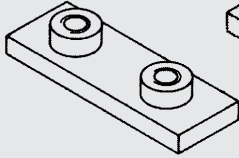
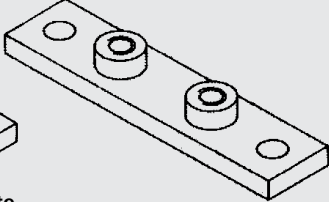
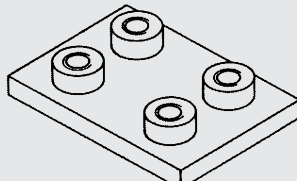
1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

1.2 HEAVY RANGE DIN 3015 part 2, individual parts

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

BT 1

Größe Size Taille	Deckplatte Cover plate Plaque de protection (DP)	Doppeldeckplatte Double cover plate Plaque de protection double (DDP)
1		
2		
3		
4		
5	Sicherungsblech* Locking plate* Plaque intermédiaire* (SIP)	
6		
7		
8		
9		
10		

Größe Size Taille	Anschweißplatte Weld plate Plaque à souder (AP)	Anschweißplatte verlängert Extended weld plate Plaque à souder rallongée (APV)
1		
2		
3		
4		
5	Doppelanschweißplatte Double weld plate Plaque à souder double (DAP)	
6		
7		
8		
9		
10		

Bestellschlüssel

Order code / Code de commande

	HRS	2	DP	ST	BL
Baureihe / range / série HRS					
Baugröße / size / taille 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10					
Ausführung / model / exécution DP / DDP / SIP*					
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier ST A2 / A4 auf Anfrage / on request / sur demande					
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier BL blank / unplated / sans revêtement ZN verzinkt / zinc plated / zingué					

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

Bestellschlüssel

Order code / Code de commande

	HRS	2	APV	ST	M	BL
Baureihe / range / série HRS						
Baugröße / size / taille 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10						
Ausführung / model / exécution AP / APV / DAP						
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier ST A2 / A4 auf Anfrage / on request / sur demande						
Metrisches Gewinde / metric thread / filet métrique						
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier BL blank / unplated / sans revêtement ZN verzinkt / zinc plated / zingué						

1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

1.2 HEAVY RANGE DIN 3015 part 2, individual parts

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

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

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

Bestellschlüssel

Order code / Code de commande

6kt-shr. ISO4014 - M10 x 70 - 8.8 - A4B

Bauart / design / série

6kt-shr. ISO4014

zyl-shr.ISO4762

Baugröße / size / taille

ISO4014 ISO4762

M10 x 45 M10 x 25

M10 x 60 M10 x 40

M10 x 70 M10 x 50

M12 x 100 M12 x 80

M16 x 130 M16 x 110

M20 x 190 M20 x 150

M24 x 220 M24 x 180

M30 x 300

M30 x 450

M30 x 560

Schraubenqualität / bolt quality / qualité de vis

8.8

Oberfläche der Schraube / bolt plating / revêtement de vis

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

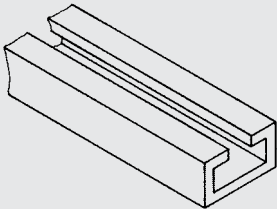
A4B **verzinkt** / zinc plated / zingué

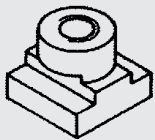
1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

1.2 HEAVY RANGE DIN 3015 part 2, individual parts

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

BT 1

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

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

Bestellschlüssel

Order code / Code de commande

HRS	TS40x22	ST	BL	2m
Baureihe / range / série HRS	Ausführung / model / exécution TS 40 x 22	Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier ST A2 / A4 auf Anfrage / on request / sur demande	Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier BL blank / unplated / sans revêtement ZN verzinkt / zinc plated / zingué	Baulänge / length / longueur 1 m / 2 m

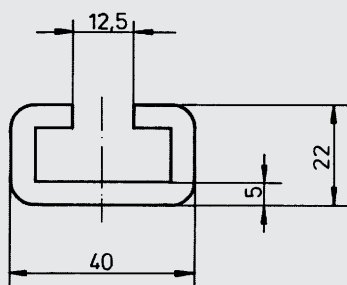
Bestellschlüssel

Order code / Code de commande

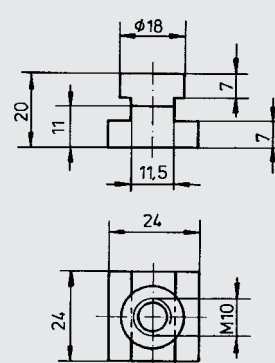
HRS	TM10	ST	M	ZN
Baureihe / range / série HRS	Ausführung / model / exécution TM10 / TM12	Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier ST A2 / A4 auf Anfrage / on request / sur demande	Metrisches Gewinde / metric thread / filet métrique M	Oberflächenbeschichtung / plating / revêtement ZN verzinkt / zinc plated / zingué

C-Tragschiene

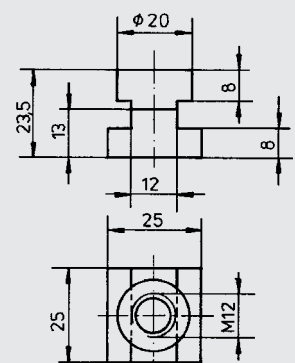
C-rail
C-Rail porteur
(TS)



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



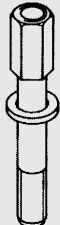
Tragschienenmutter M12
Bayonet nut M12
Ecroû pour rail porteur M12
(TM12)



1.2 SCHWERE REIHE DIN 3015 Teil 2, Einzelteile

1.2 HEAVY RANGE DIN 3015 part 2, individual parts

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

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

Bestellschlüssel

Order code / Code de commande

HRS 5 AF16 ST M ZN

Baureihe / range / série
HRS

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

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

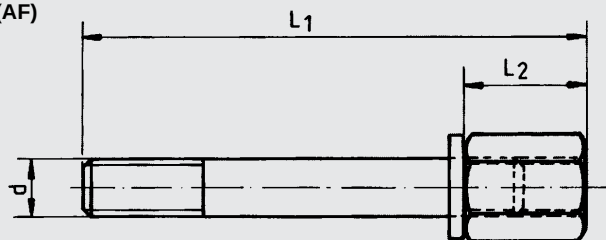
Werkstoff / material / matériau
ST
A2 / A4 **auf Anfrage / on request / sur demande**

Metrisches Gewinde / metric thread / filet métrique

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

Aufbauschraube Gr. 1-7S

Build-up bolt size 1-7S
Goujon-écrou taille 1-7S
(AF)



Größe Size Taille	Abmessungen Dimensions Dimensions		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

* ohne U-Scheibe
without washer
sans rondelle

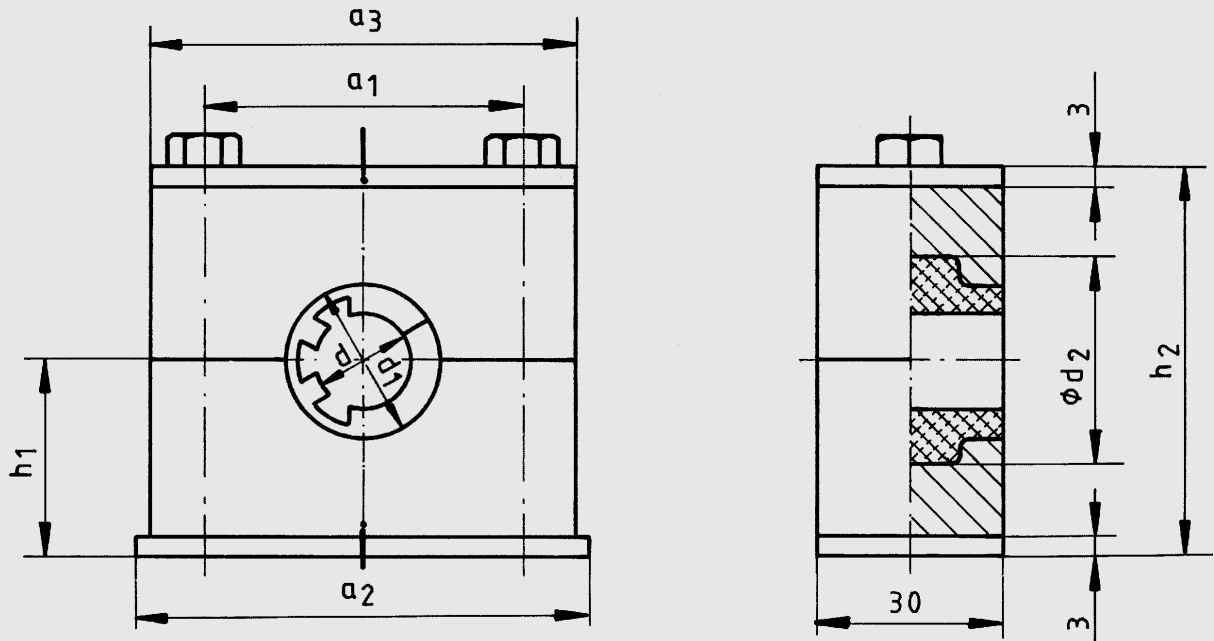
1.3 Leichte Reihe mit Elastomereinsatz DIN 3015 Teil 1

1.3 Light range with elastomer insert DIN 3015 part 1

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

BT 1

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

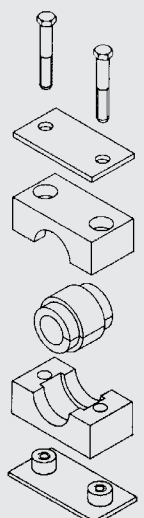


d	Innenfläche glatt Intern. surface smooth Portée lisse	d	Innenfläche gerippt Intern. surface ribbed Portée rainurée	Größe Size Taille	Abmessungen Dimensions Dimensions	d1	d2	a1	a2	a3	h1	h2	ASKT ISO 4014 Ext. hex. ISO 4014 Vis H ISO 4014	ISKT ISO 4762 Int. hex. ISO 4762 Vis CHc ISO 4762	STIFT DIN 938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

1.3 Leichte Reihe mit Elastomereinsatz DIN 3015 Teil 1

1.3 Light range with elastomer insert DIN 3015 part 1

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

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

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HREL
HRERL

Baugröße / size / taille

4 / 6

Ausführung / model / exécution

A

Durchmesser / O/D / diamètre

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

PP / PA / PAFF

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

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

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

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

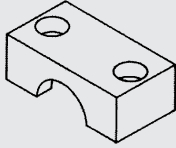
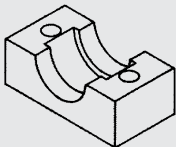
HREL 4 A 16 PP ST M BL

1.3 Leichte Reihe mit Elastomereinsatz DIN 3015 Teil 1, Einzelteile

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

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

BT 1

Größe Size Taille	Klemmbackenpaar Pair of clamp jaws Paire de pièces de serrage (KP)
4	
6	

Bestellschlüssel

Order code / Code de commande

HREL 4 KP PP

Baureihe / range / série _____
HREL

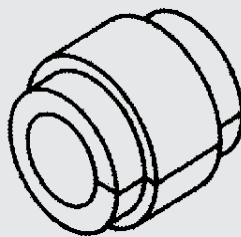
Baugröße / size / taille _____
4 / 6

Ausführung / model / exécution _____
KP

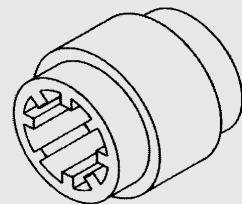
Werkstoff der Klemmbacken / _____
material of clamp jaws / matériau de la garniture élastomère
PP / PA / PAFF

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

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



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



Bestellschlüssel

Order code / Code de commande

HRES 2/4L EE 16 TPE

Baureihe / range / série _____
HRES / HRERS

Baugröße / size / taille _____
2/4L / 3/6L

Ausführung / model / exécution _____
EE

Durchmesser / O/D / diamètre _____

Werkstoff des Einsatzes / insert material / matériau de la garniture élastomère _____
TPE

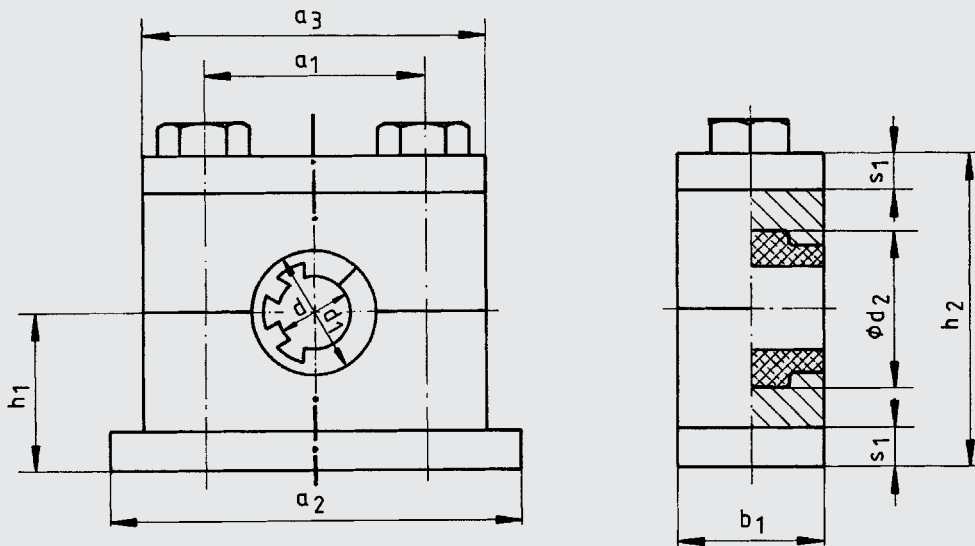
1.4 SCHWERE REIHE mit Elastomereinsatz DIN 3015 Teil 2, Einzelteile

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

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

BT 1

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

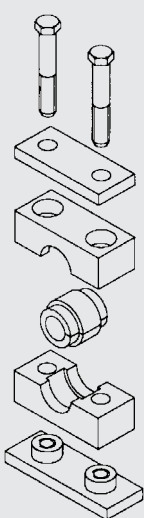


d Innenfläche glatt Intern. surface smooth Portée lisse	d Innenfläche gerippt Intern. surface ribbed Portée rainurée	Größe Size Taille	Abmessungen Dimensions Dimensions								s1	ASKT ISO 4014 Ext. hex ISO 4014 Vis H ISO 4014
			d1	d2	b1	h1	h2	a1	a2	a3		
6	-	2	25,5	31	30	31	62	45	85	70	8	M10 x 60
8	-											
10	10											
12	12											
12,7	-											
14	14											
15	15											
16	16											
17,2	17,2											
18	-											
19	-											
20	20	3	39	46	30	37	74	60	100	85	8	M10 x 70
21,3	-											
22	22											
23	-											
25	25											
26,9	-											
28	28											
30	30											
32	-											
33,7	-											
35	-	4	65	74	45	53,5	107	90,5	140	115	10	M12 x 100
38	38											
40	-											
42	42											
45,5	44,5											
48	48											
51	-											
53,4	-											
56,4	57											
60	-											
65	-	5	89	98	60	68,5	137	122	180	152	10	M16 x 130
70	-											
73	-											
76	76											
83	-											
89	89	6	116	132	80	98,5	197	168	225	205	15	M20 x 190
94	-											
101	-											
108	108											
114	-	7	154	168	90	113,5	227	205	270	252	15	M24 x 220
133	-											
140	-											

1.4 SCHWERE REIHE mit Elastomereinsatz DIN 3015 Teil 2

1.4 HEAVY RANGE with elastomer insert DIN 3015 part 2

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

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

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRES
HRERS

Baugröße / size / taille

2 / 3 / 4 / 5 / 6 / 7

Ausführung / model / exécution

S

Durchmesser / O/D / diamètre

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

PP / PA / PAFF

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

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

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

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

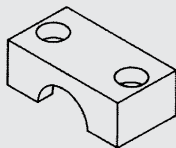
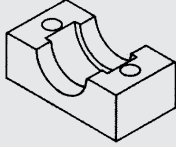
HRES 2 S 16 PP ST M BL

1.4 SCHWERE REIHE mit Elastomereinsatz DIN 3015 Teil 2, Einzelteile

BT 1

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

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

Größe Size Taille	Klemmbackenpaar Pair of clamp jaws Paire de pièces de serrage (KP)
2	
3	
4	
5	
6	
7	

Bestellschlüssel

Order code / Code de commande

HRES 4 KP PP

Baureihe / range / série _____
HRES

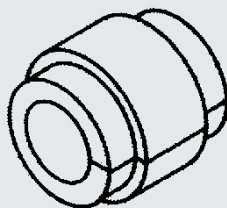
Baugröße / size / taille _____
2 / 3 / 4 / 5 / 6 / 7

Ausführung / model / exécution _____
KP

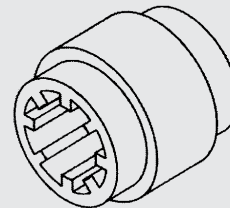
Werkstoff der Klemmbacken / _____
material of clamp jaws / matériau de la garniture élastomère
PP / PA / PAFF

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

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



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



Bestellschlüssel

Order code / Code de commande

HRES 2/4L EE 16 TPE

Baureihe / range / série _____
HRES / HRERS

Baugröße / size / taille _____
2/4L / 3/6L / 4 / 5 / 6 / 7

Ausführung / model / exécution _____
EE

Durchmesser / O/D / diamètre _____

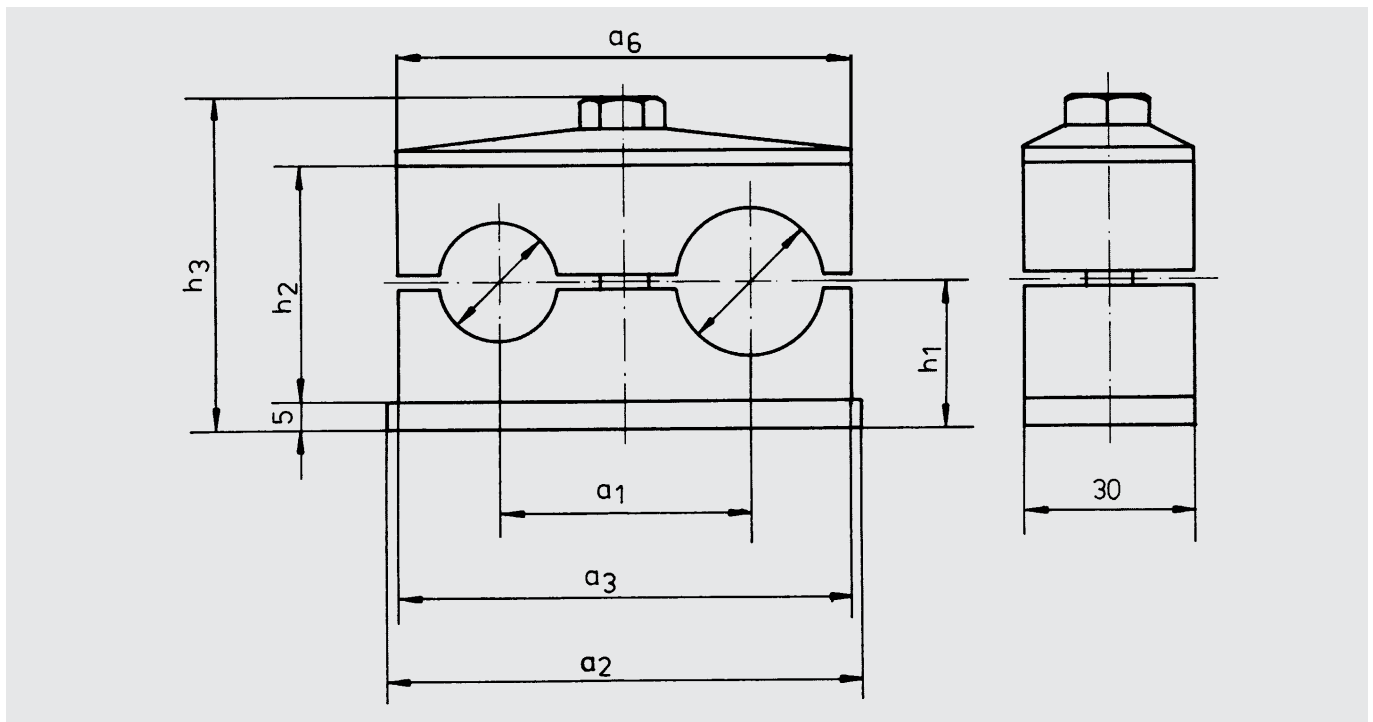
Werkstoff des Einsatzes / insert material / matériau de la garniture élastomère _____
TPE / NBR (Größe 5 ... 7 / Size 5 ... 7 / Taille 5 ... 7)

1.5 Zweirohrschele DIN 3015 Teil 3

1.5 Twin clamp DIN 3015 part 3

1.5 Collier double selon DIN 3015 chap. 3

BT 1



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

1.5 Zweirohrschelle DIN 3015 Teil 3

1.5 Twin clamp DIN 3015 part 3

1.5 Collier double selon DIN 3015 chap. 3

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

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

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRZ / HRGZ

Baugröße / size / taille

1 / 2 / 3 / 4 / 5

Ausführung / model / exécution

A / A1 / A1TM / D

Durchmesser / O/D / diamètre

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

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

PP / PA / PAFF / TPE

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

ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

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

BL blank / unplated / sans revêtement

ZN verzinkt / zinc plated / zingué

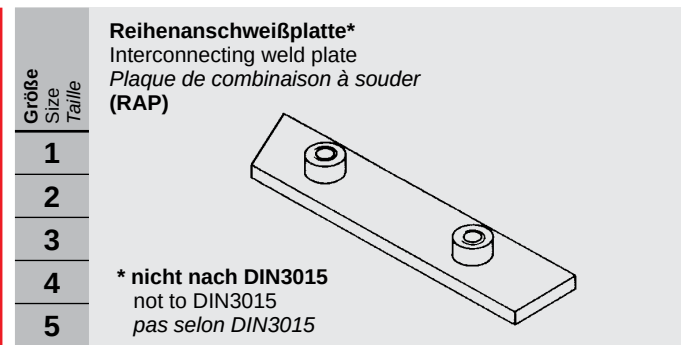
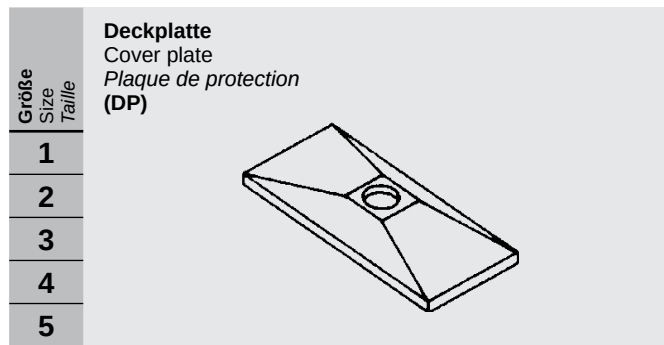
HRZ 2 A 16-16 PP ST M BL

1.5 Zweiroherschelle DIN 3015 Teil 3, Einzelteile

1.5 Twin clamp DIN 3015 part 3, individual parts

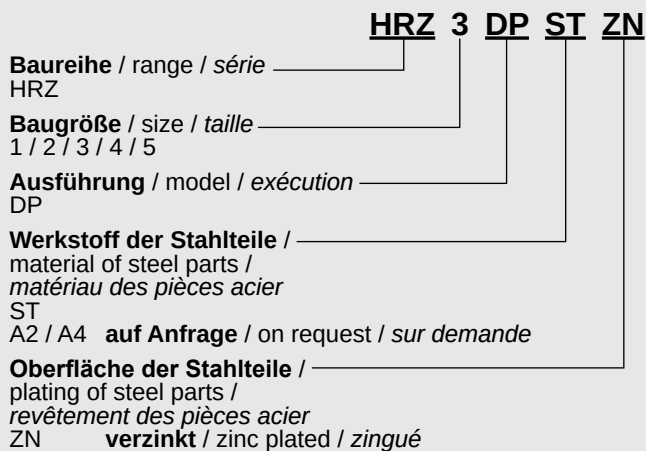
1.5 Collier double selon DIN 3015 chap. 3, pièces individuelles

BT 1



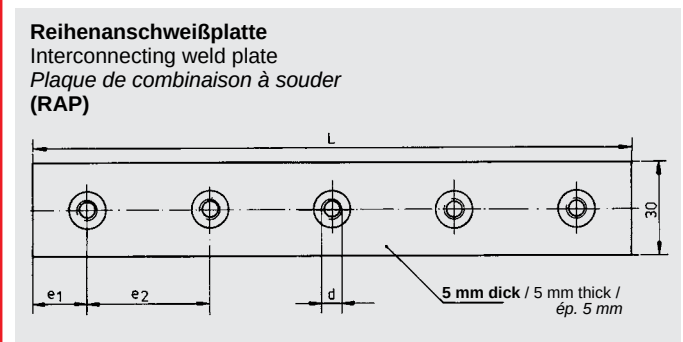
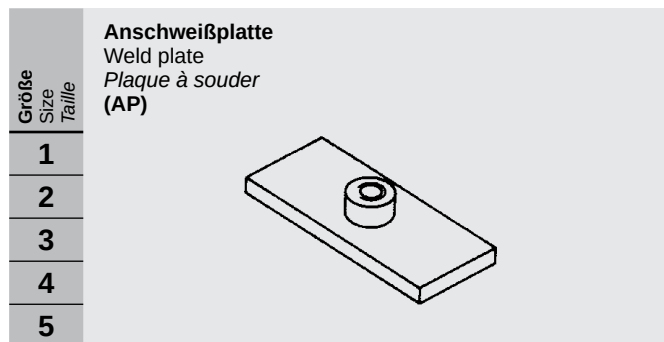
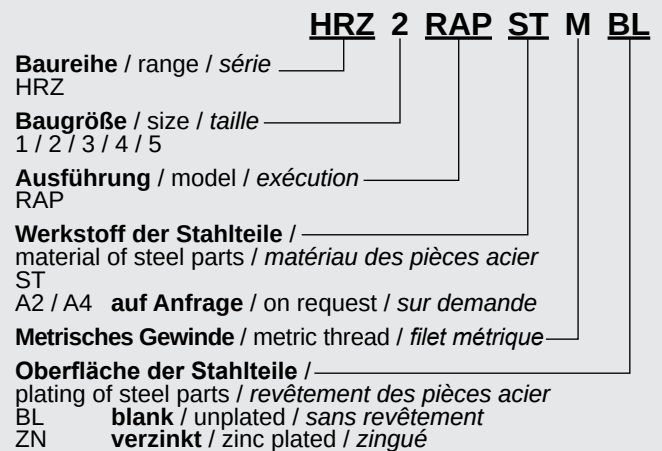
Bestellschlüssel

Order code / Code de commande



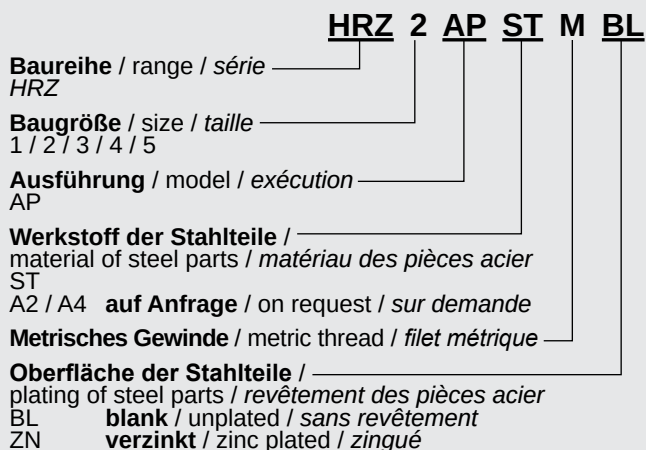
Bestellschlüssel

Order code / Code de commande



Bestellschlüssel

Order code / Code de commande

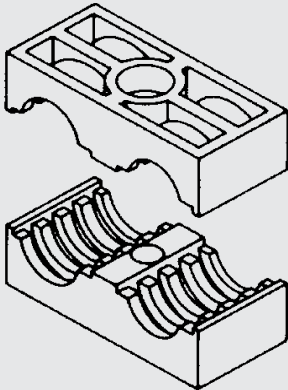


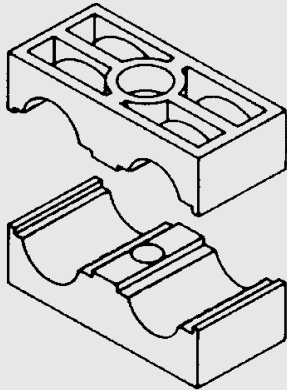
Größe Size Taille	Schellenanzahl Number of clamps Nombre de colliers	Abmessungen Dimensions Dimensions	e1	e2	L	d
1	5	18	40	196	M6	
2	5	28	58	288	M8	
3	5	35	72	358	M8	
4	5	43	90	446	M8	
5	5	55	112	558	M8	

1.5 Zweirohrschelle DIN 3015 Teil 3, Einzelteile

1.5 Twin clamp DIN 3015 part 3, individual parts

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

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

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


Bestellschlüssel

Order code / Code de commande

Baureihe / range / série

HRZ
HRGZ

Baugröße / size / taille

1 / 2 / 3 / 4 / 5

Ausführung / model / exécution

KP

Durchmesser / O/D / diamètre

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

PP / PA / PAFF / TPE

andere Werkstoffe auf Anfrage / other materials on request / autres matériaux sur demande

HRZ 3 KP 23-23 PP

1.5 Zweirohrschele DIN 3015 Teil 3, Einzelteile

1.5 Twin clamp DIN 3015 part 3, individual parts

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

BT 1

Abmessungen Dimensions Dimensions	Größe Size Taille	6-kt-Schraube ISO 4014 Hex. bolt ISO 4014 Vis H ISO 4014 (6kt-schr.ISO4014)
M6 x 35	1	
M8 x 35	2	
M8 x 45	3	
M8 x 50	4	
M8 x 60	5	

Abmessungen Dimensions Dimensions	Größe Size Taille	Aufbauschraube Build-up bolt Goujon-écrou (AF...)
AF6	1	
AF8	2	
AF8	3	
AF8	4	
AF8	5	

Bestellschlüssel

Order code / Code de commande

6kt-schr. ISO4014 - M6 x 35 - 8.8 - A4B

Bauart / _____
design / forme
6kt-schr. ISO4014

Baugröße / size / taille _____
ISO4014

M6 x 35
M8 x 35
M8 x 45
M8 x 50
M8 x 60

Schraubenqualität / bolt quality / qualité de vis _____
8.8

Oberfläche der Schraube / bolt plating / revêtement de vis _____
A4B **verzinkt / zinc plated / zingué**

Bestellschlüssel

Order code / Code de commande

HRZ 4 AF ST M ZN

Baureihe / range / série _____
HRZ

Baugröße / size / taille _____
1 = HRL 0+1 AF ST M ZN
2 / 3 / 4 / 5

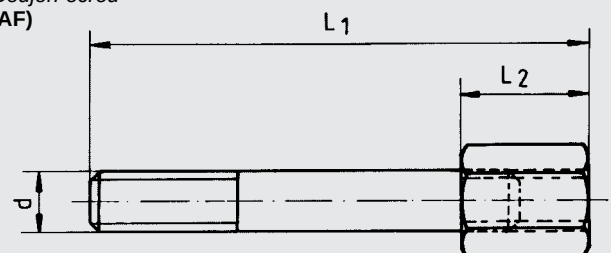
Ausführung / model / exécution _____
AF

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

Metrisches Gewinde / metric thread / filet métrique _____

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

Aufbauschraube
Build-up bolt
Goujon-écrou
(AF)

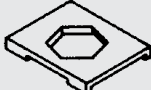


Größe Size Taille	Abmessungen Dimensions Dimensions		
	L1	L2	d
1	34	14	M6
2	33	13	M8
3	44	15	M8
4	49	15	M8
5	62	15	M8

1.5 Zweirohrschele DIN 3015 Teil 3, Einzelteile

1.5 Twin clamp DIN 3015 part 3, individual parts

1.5 Collier double DIN 3015 chap. 3, pièces individuelles

Größe Size Taille	Sicherungsblech Locking plate Plaque intermédiaire (SIP)
1	
2-5	

Abmessungen Dimensions Dimensions	Größe Size Taille	Tragschienenmutter Bayonet nut Ecrou rail porteur (TM ...)
TMV6	1	
TM8	2-5	

Bestellschlüssel

Order code / Code de commande

	HRZ	2-5	SIP	ST	ZN
Baureihe / range / série	HRZ				
Baugröße / size / taille	1 / 2-5				
Ausführung / model / exécution	SIP				
Werkstoff / material / matériau	ST A4				
	auf Anfrage / on request / sur demande				
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier	ZN				
	verzinkt / zinc plated / zingué				

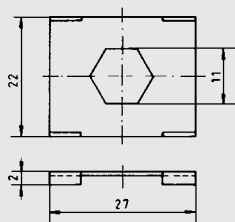
Bestellschlüssel

Order code / Code de commande

	HRL	TMV6	ST	ZN
Baureihe / range / série	HRL			
Größe/Size/Taille 1: HRL TMV6				
Größe/Size/Taille 2-5: HRZ TM8				
Ausführung / model / exécution	TMV6 / TM8			
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier	ST A4			
	auf Anfrage / on request / sur demande			
Oberflächenbeschichtung / plating / revêtement	ZN			
	verzinkt / zinc plated / zingué			

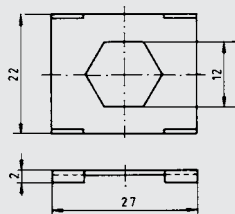
Sicherungsblech Gr. 1

Locking plate size 1
Plaque intermédiaire taille 1
(SIP)



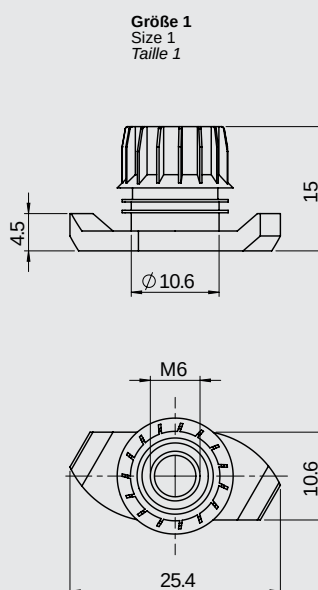
Sicherungsblech Gr. 2-5

Locking plate size 2-5
Plaque intermédiaire taille 2-5
(SIP)



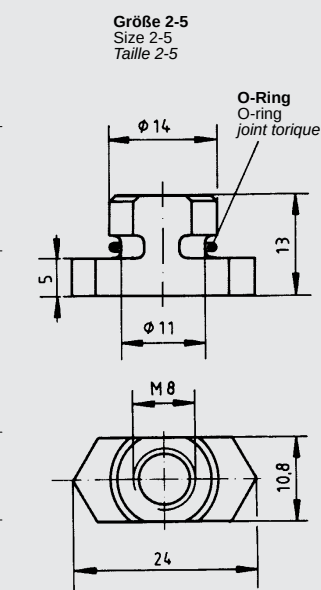
Tragschienenmutter M6

Bayonet nut M6
Ecrou pour rail porteur M6
(TMV6)



Tragschienenmutter M8

Bayonet nut M8
Ecrou pour rail porteur M8
(TM8)

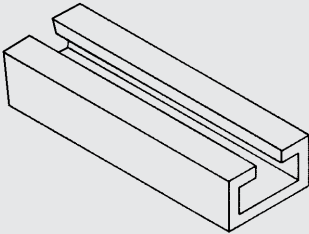


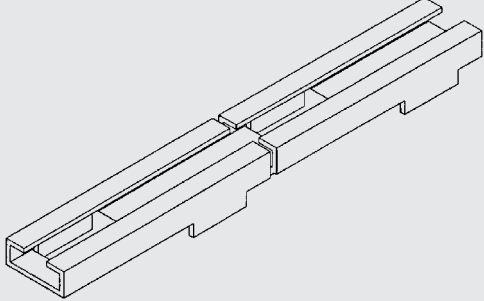
1.5 Zweiroherschelle DIN 3015 Teil 3, Einzelteile

1.5 Twin clamp DIN 3015 part 3, individual parts

1.5 Collier double DIN 3015 chap. 3, pièces individuelles

BT 1

Größe Size Taille	C-Tragschiene C-rail C-Rail porteur (TS)
	
	28 x 11
	28 x 14
	28 x 30

Abmessungen Dimensions Dimensions	C-Tragschiene m. Anschweißstegen C-rail with weld struts C-Rail porteur avec barres à souder (TS28x11AS)
	
	28 x 11

Bestellschlüssel

Order code / Code de commande

	HRL	TS28x11	ST	BL	1m
Baureihe / range / série					
Ausführung / model / exécution					
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier					
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier					
Baulänge / length / longueur					

* auf Anfrage / on request / sur demande

Bestellschlüssel

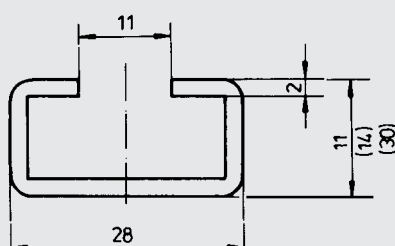
Order code / Code de commande

	HRL	TS28x11AS	ST	BL	1m
Baureihe / range / série					
Ausführung / model / exécution					
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier					
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier					
Baulänge / length / longueur					

* auf Anfrage / on request / sur demande

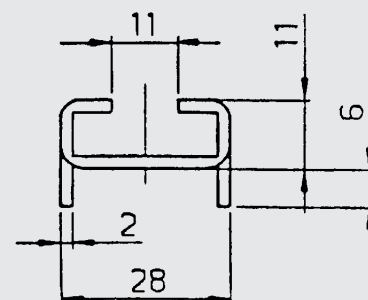
C-Tragschiene

C-rail
C-Rail porteur
(TS)



C-Tragschiene m. Anschweißstegen

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



Technische Daten / Allgemeine Hinweise

Dem Anwender stehen zur Befestigung von Rohrleitungen umfassende Angebote an Systemen zur Verfügung. Die Befestigungsbauteile bestehen in der Regel aus Stahl-, Aluminium-, Kunststoff- und Gummiteilen. Aus diesen Bauteilen werden Kombinationen gewählt, die zur Montage der Rohrleitungen notwendig sind.

So ergeben sich z.B. für die Schellen in Blockform nach DIN 3015 die vielfältigsten Anwendungsmöglichkeiten.

Bei der Verwendung dieser Schellen stellt sich die Frage:

Wann setze ich die Leichte Baureihe, wann die Schwere Baureihe und wann die Zweirohrschelle ein?

Die nachstehenden Informationen sollen helfen, diese Entscheidung zu vereinfachen.

Allgemeine Hinweise

Für die sichere Montage ist eine stabile, den Belastungen entsprechende Unterbefestigung der Trägereinheiten, wie Grundplatten und Tragschienen notwendig.

Die erste Schelle soll unmittelbar nach der Anschlussverschraubung platziert sein. Sie hält somit die Schwingungen von der Verschraubung ab.

Rohrbögen sind unmittelbar hinter den Bögen abzufangen (Pulsationsrichtung beachten).

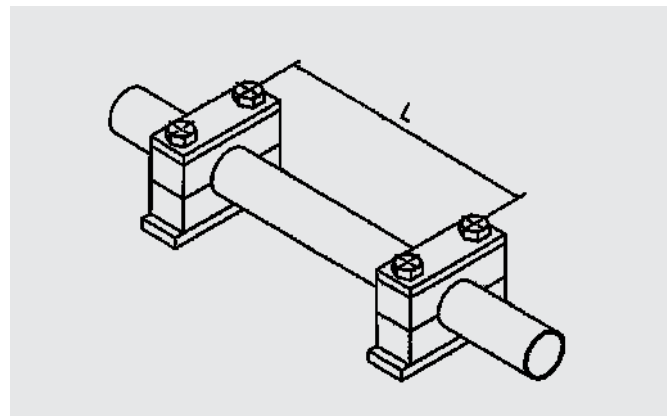
Die vorgegebenen Schraubenanzugsmomente nach DIN 3015, Teil 10 sind einzuhalten (siehe Folgeseiten).

Die vorgegebenen Grenzen der Materialeigenschaften sind zu beachten (siehe Folgeseiten).

Wo keine Aussage aufgrund der praktischen Erfahrung vorliegt, sind die empfohlenen Rohrstützweiten einzuhalten (siehe unten).

Werden in den Rohrleitungen Armaturen integriert, so ist eine Abstützung vor und hinter diesen Armaturen empfohlen.

Empfohlene Rohrstützweiten



Rohrstützweite L (m)	Rohrdurchmesser D	
	min (mm)	max (mm)
1,0	6,0	12,7
1,2	12,7	22,0
1,5	22,0	32,0
2,0	32,0	38,0
2,7	38,0	57,0
3,0	57,0	75,0
3,5	75,0	76,1
3,7	76,1	88,9
4,0	88,9	102,0
4,5	102,0	114,0
5,0	114,0	168,0
6,0	168,0	219,0
6,7	219,0	324,0
7,0	324,0	356,0

1.6 Schellen nach DIN 3015

1.6 Clamps to DIN 3015

1.6 Colliers selon DIN 3015

Recommended guidelines for mounting pipelines

There is an extensive range of systems available for mounting pipelines. The mounting components are generally made of steel, aluminium, plastic and rubber. From these components combinations are selected as required. This means that block type clamps to DIN 3015, for example, have a multitude of application possibilities. The question arises concerning the use of these clamps:

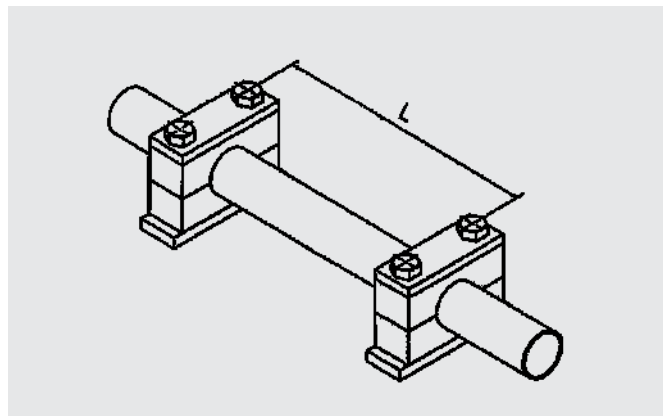
When to use the Light range, heavy range or twin clamp?

The following information is intended to simplify this decision.

Basic prerequisite

- For secure mounting, stable carrier units, such as base plates and rails are required according to specific load requirements.
- The first clamp should be situated directly after the threaded connection or coupling. This protects the threaded connection or coupling from vibrations.
- Bends in the pipe should be clamped on each side (pulsation direction must be taken into account).
- The given screw torque ratings to DIN 3015, Part 10 must be adhered to (see following pages).
- Material property limitations must be observed (see following pages).
- In the absence of any past experience, the recommended distance between pipe supports must be adhered to (see below).
- If valves are incorporated in the pipelines, it is recommended that support is provided in front of and behind these valves.

Recommended distance between pipe supports



Distance between pipe supports L (m)	Pipe outside diameters D	
	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

Consignes pour la fixation de tuyauteries

Il existe aujourd'hui pour l'utilisateur un choix très large et varié de types de fixation de tuyauteries. Les pièces de fixation sont en règle générale composées de pièces en acier, aluminium, matière plastique et matière caoutchouc. La combinaison entre ces différentes pièces permet le montage de tuyauteries. On peut ainsi obtenir pour les colliers en forme bloc suivant DIN 3015 un nombre très important de possibilités. Les questions suivantes se posent lors de l'utilisation de ces colliers:

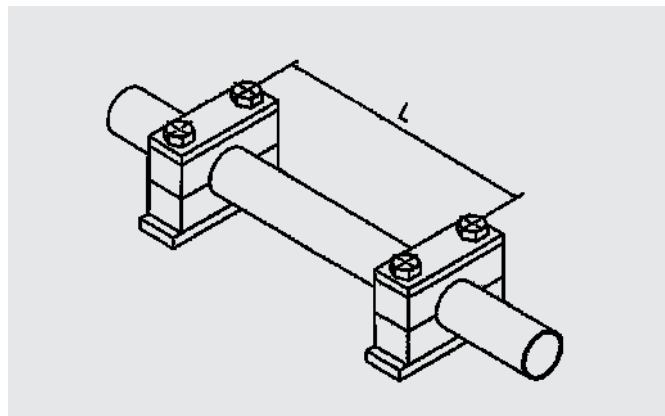
A quel moment dois-je choisir la série légère ou la série lourde ou les colliers doubles?

Les informations suivantes sont destinées à vous aider lors de votre choix.

Conditions de base

- Pour assurer un montage sûr, il est nécessaire d'utiliser une embase supportant les charges, comme la plaque de base ou le rail porteur.
- Le premier collier doit impérativement être monté directement après le raccord. Il empêche ainsi des oscillations de ce raccord.
- Sur un tube coudé, la fixation est à prévoir en sortie de courbe (sens de pulsation à vérifier).
- Le couple de serrage des vis prescrit dans la norme DIN 3015, partie 10, est à respecter (voir pages suivantes).
- Les caractéristiques limites des matériaux prescrites dans le tableau E sont à vérifier (voir pages suivantes).
- En l'absence de caractéristiques techniques, lorsque l'expérience pratique prévaut, respecter les espacements de colliers conseillés (voir ci-dessous).
- Lorsque des vannes sont intégrées dans la tuyauterie, il est conseillé de prévoir des points de fixation directement avant et après ces vannes.

Espacement recommandé



Espacement L (m)	Diamètre extérieur du tube D	
	min (mm)	max (mm)
1,0	6,0	12,7
1,2	12,7	22,0
1,5	22,0	32,0
2,0	32,0	38,0
2,7	38,0	57,0
3,0	57,0	75,0
3,5	75,0	76,1
3,7	76,1	88,9
4,0	88,9	102,0
4,5	102,0	114,0
5,0	114,0	168,0
6,0	168,0	219,0
6,7	219,0	324,0
7,0	324,0	356,0

1.6 Schellen nach DIN 3015

1.6 Clamps to DIN 3015

1.6 Colliers selon DIN 3015

Materialeigenschaften der Schellen nach DIN 3015

Mechanische Eigenschaften		Polypropylen	Polyamid	Thermo- plastisches Elastomer (TPE)	Acrylnitril- Butadien Elastomer (NBR)
Streckspannung	DIN 53455	30 N/mm ²	55 bis 82 N/mm ²	8,3 N/mm ²	25 N/mm ²
Grenzbiegespannung	DIN 53452	54 N/mm ²	145 N/mm ²	24 N/mm ²	–
Schlagzähigkeit	DIN 53453	ohne Bruch	ohne Bruch	–	–
Kugeldruckhärte	ISO 2039	60 N/mm ²	70 N/mm ²	–	–
Shore-Härte		–	–	73 ± 5° Shore A andere Härten a.A.	73 ± 5° Shore A andere Härten a.A.

Thermische Eigenschaften

Temperaturbeständigkeit		-30 bis +90 °C	-40 bis +120 °C	-40 bis +125 °C	-30 bis +120 °C
Wärmeausdehnungskoeffizient		1,5 x 10 ⁻⁴ /°C	7 bis 10 x 10 ⁻³ /°C	–	–

Elektrische Eigenschaften

Spezif. Durchgangswiderstand	DIN 53482 VDE 0303	10 ¹⁵ Ohm x cm	10 ¹⁵ Ohm x cm	–	–
Kriechstromfestigkeit	DIN 53480 VDE 0303	KA 3 c	KA 3 b	–	–

Festigkeitswerte

AL-Schelle

Zugfestigkeit	160 – 200 N/mm ²
Druckfestigkeit	HB 600 – 750 N/mm ²
E-Modul	68000 – 78000 N/mm ²

Thermische Eigenschaften

Temperaturbeständigkeit (max)	bis 300 °C
-------------------------------	------------

		Polyamid PA-VO	Polyamid PAFF S4
Vorbeugender Brandschutz		nach UL 94	nach DIN 5510 Teil 2
Mechanische Eigenschaften			
Streckspannung	ISO 527	45 N/mm ²	45 N/mm ²
Kerbschlagzähigkeit	nach Charpy / ISO 179 / 1eA	35 kJ/m ² bei +23 °C	35 kJ/m ² bei +23 °C
Kugeldruckhärte		100 N/mm ²	100 N/mm ²
Thermische Eigenschaften			
Temperaturbeständigkeit		-40 °C bis +120 °C	-40 °C bis +120 °C

Schraubenanzugs-Drehmoment (Nm) nach DIN 3015 Teil 10

Norm	Gewinde	Nenngröße	Anzugsmoment in Nm bei Klemmwerkstoff		
			PP	PA	AL
Leichte Reihe	M 6	0 bis 6	8	10	12
Schwere Reihe	M 10	1 bis 2	12	20	30
		3	15	25	35
		4	30	40	55
	M 12	4	30	40	55
	M 16	5	45	55	120
	M 20	6	80	150	220
	M 24	7	110	200	250
	M 30	8	180	350	500
		9	200	370	500
		10	270	470	600
Zweiroherschellen Reihe	M 6	1	5	6	–
	M 8	2 bis 4	12	12	–
		5	8	8	–

Die angegebenen Schraubenanzugsmomente beziehen sich auf Montage mit Deckplatten und Außensechskantschrauben nach ISO 4014 / 4017.

1.6 Schellen nach DIN 3015

1.6 Clamps to DIN 3015

1.6 Colliers selon DIN 3015

Properties of plastic pieces to DIN 3015

Mechanical properties		Polypropylene	Polyamide	Thermo-plastic elastomer (TPE)	Acrylonitrile butadiene elastomer (NBR)
Yield stress	DIN 53455	30 N/mm ²	55 to 82 N/mm ²	8.3 N/mm ²	25 N/mm ²
Critical bending stress	DIN 53452	54 N/mm ²	145 N/mm ²	24 N/mm ²	–
Impact resistance	DIN 53453	no breakage	no breakage	–	–
Ball indentation hardness	ISO 2039	60 N/mm ²	70 N/mm ²	–	–
Shore hardness	–	–	–	73 ± 5° Shore A other hardness on request	73 ± 5° Shore A other hardness on request
Thermal properties					
Temperature resistant		-30 to +90 °C	-40 to +120 °C	-40 to +125 °C	-30 to +120 °C
Coefficient of thermal expansion		1.5 x 10 ⁻⁴ /°C	7 to 10 x 10 ⁻³ /°C	–	–
Electrical properties					
Specific current-flow resistance	DIN 53482 VDE 0303	10 ¹⁵ Ohm x cm	10 ¹⁵ Ohm x cm	–	–
Creep resistance	DIN 53480 VDE 0303	KA 3 c	KA 3 b	–	–

Strength values

Alu clamp

Tensile strength	160 – 200 N/mm ²
Pressure resistance	HB 600 – 750 N/mm ²
Modulus of elasticity	68000 – 78000 N/mm ²

Thermal properties

Temperature resistant	to 300 °C
-----------------------	-----------

		Polyamide PA-VO	Polyamide PAFF S4
Preventive fire protection		to UL 94	to DIN 5510 part 2
Mechanical properties			
Yield stress	ISO 527	45 N/mm ²	45 N/mm ²
Noched impact strength	to Charpy / ISO 179 / 1eA	35 kJ/m ² at +23 °C	35 kJ/m ² at +23 °C
Ball indentation hardness		100 N/mm ²	100 N/mm ²
Thermal properties			
Temperature resistant		-40 °C to +120 °C	-40 °C to +120 °C

Bolt Torque Rating (Nm) to DIN 3015 Part 10

Standard	Thread	Nominal size	Torque rating in Nm with clamping material		
			PP	PA	AL
Light range	M 6	0 to 6	8	10	12
Heavy range	M 10	1 to 2	12	20	30
		3	15	25	35
		4	30	40	55
	M 12	4	30	40	55
	M 16	5	45	55	120
	M 20	6	80	150	220
	M 24	7	110	200	250
	M 30	8	180	350	500
		9	200	370	500
		10	270	470	600
Twin clamp range	M 6	1	5	6	–
	M 8	2 to 4	12	12	–
		5	8	8	–

The indicated screw tightening torques refer to the assembly with cover plates and hexagon bolts according to ISO 4014 / 4017.

1.6 Schellen nach DIN 3015

1.6 Clamps to DIN 3015

1.6 Colliers selon DIN 3015

Caractéristiques des pièces en plastique selon DIN 3015

Caractéristiques mécaniques		Polypropylène	Polyamide	Thermo-plastique élastomère (TPE)	Acrylonitril-Butadien élastomère (NBR)
Résistance à la traction	DIN 53455	30 N/mm ²	55 à 82 N/mm ²	8,3 N/mm ²	25 N/mm ²
Résistance à la flexion	DIN 53452	54 N/mm ²	145 N/mm ²	24 N/mm ²	–
Résistance aux chocs	DIN 53453	sans rupture	sans rupture	–	–
Dureté à la bille	ISO 2039	60 N/mm ²	70 N/mm ²	–	–
Dureté - Shore		–	–	73 ± 5° Shore A autres duretés sur demande	73 ± 5° Shore A autres duretés sur demande

Caractéristiques thermiques

Résistance à la température	-30 à +90 °C	-40 à +120 °C	-40 à +125 °C	-30 à +120 °C
Coefficient de dilatation thermique	1,5 x 10 ⁻⁴ /°C	7 à 10 x 10 ⁻³ /°C	–	–

Caractéristiques électriques

Résistivité spécifique	DIN 53482 VDE 0303	10 ¹⁵ Ohm x cm	10 ¹⁵ Ohm x cm	–	–
Résistivité au courant de fuite	DIN 53480 VDE 0303	KA 3 c	KA 3 b	–	–

Résistances mécaniques

Collier aluminium

Résistance à la traction	160 – 200 N/mm ²
Résistance à la compression	HB 600 – 750 N/mm ²
Module d'élasticité	68000 – 78000 N/mm ²

Caractéristiques thermiques

Résistance à la température (max)	à 300 °C
-----------------------------------	----------

		Polyamid PA-VO	Polyamid PAFF S4
Prévention protection contre le feu		UL 94	DIN 5510 chap. 2
Caractéristiques mécaniques			
Résistance à la traction	ISO 527	45 N/mm ²	45 N/mm ²
Essai de résilience	Charpy / ISO 179 / 1eA	35 kJ/m ² à +23 °C	35 kJ/m ² à +23 °C
Dureté à la bille		100 N/mm ²	100 N/mm ²
Caractéristiques thermiques			
Résistance à la température		-40 °C à +120 °C	-40 °C à +120 °C

Couple de serrage des vis (Nm) suivant DIN 3015 partie 10

			Couple de serrage en Nm suivant matériau de collier		
Norme	Filetage	Taille nom.	PP	PA	AL
Série légère	M 6	0 à 6	8	10	12
Série lourde	M 10	1 à 2	12	20	30
		3	15	25	35
		M 12	4	30	40
	M 16	5	45	55	120
	M 20	6	80	150	220
	M 24	7	110	200	250
	M 30	8	180	350	500
		9	200	370	500
		10	270	470	600
	Collier série double	M 6	1	5	6
M 8		2 à 4	12	12	—
		5	8	8	—

Les couples de serrage des vis sont donnés pour le montage avec plaque de protection et vis hexagonale d'après ISO 4014 / 4017.

1.7 Leichte Reihe DIN 3015 Teil 1

1.7 Light range DIN 3015 part 1

1.7 SERIE LEGERE selon DIN 3015 chap. 1

Verpackungseinheiten

Packing details

Conditionnement

L	Klemmbackenpaare Pair of clamp jaws <i>Pièces de serrage</i>		Anschweiß- und Deckplatten Weld and cover plates <i>Plaques de base et de protection</i>		Schrauben Bolts <i>Vis</i>	
	Karton (Paar) Box (pairs) <i>Carton (paires)</i>	Tüte (Paar) Bag (pairs) <i>Sachet (paires)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>
	PP, PA	AL	AP	DP		
0	1000		250	500	50	1000
1	1000	500	250	500	50	1000
2	1000	250		250	50	1000
3	500	250		250	50	1000
4	500	200		200	25	1000
5	250	100	100	200	25	500
6	250	100	100	200	25	500
TMV 6				1000	50	
U-Scheibe Washer <i>Rondelle</i>					50	
Aufbaumutter Build-up nut <i>Ecrou pour collier superposable</i>				1000	50	

L = Leichte Baureihe DIN 3015 / Light range DIN 3015 / Série légère selon DIN 3015

Abgabe nur in Verpackungseinheiten.

Only available in given pack sizes.

Livraison uniquement sous conditionnement.

1.7 SCHWERE REIHE DIN 3015 Teil 2

1.7 HEAVY RANGE DIN 3015 part 2

1.7 SERIE LOURDE selon DIN 3015 chap. 2

Verpackungseinheiten

Packing details

Conditionnement

S	Klemmbackenpaare Pair of clamp jaws <i>Pièces de serrage</i>			Anschweiß- und Deckplatten Weld and cover plates <i>Plaques de base et de protection</i>		Schrauben Bolts <i>Vis</i>	
	Karton (Paar) Box (pairs) <i>Carton (paires)</i>		Tüte (Paar) Bag (pairs) <i>Sachet (paires)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>
	PP, PA	AL					
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 (Stück,pieces,pièces)			50		100	
5	120 (Stück,pieces,pièces)			25		25	
TM 10				250	50		
TM 12				250	50		
U-Scheibe Washer <i>Rondelle</i>					50		
Aufbaumutter Build-up nut <i>Ecrou pour collier superposable</i> Gr. 1–4				250	50		
Aufbaumutter Build-up nut <i>Ecrou pour collier superposable</i> Gr. 5				100			
Stiftschraube Stud <i>Gougeon</i> Gr. 1–3				250	50		
Stiftschraube Stud <i>Gougeon</i> Gr. 4				250			
Stiftschraube Stud <i>Gougeon</i> Gr. 5				100			

S = Schwere Baureihe DIN 3015 / Heavy range DIN 3015 / Série lourde selon DIN 3015

Gr. = Größe / Size / Taille

Abgabe nur in Verpackungseinheiten.

Only available in given pack sizes.

Livraison uniquement sous conditionnement.

1.7 Zweiroherschelle DIN 3015 Teil 3

1.7 Twin clamp DIN 3015 part 3

1.7 Collier double selon DIN 3015 chap. 3

Verpackungseinheiten

Packing details

Conditionnement

Z	Klemmbackenpaare Pair of clamp jaws <i>Pièces de serrage</i>		Anschweiß- und Deckplatten Weld and cover plates <i>Plaques de base et de protection</i>		Schrauben Bolts <i>Vis</i>	
	Karton (Paar) Box (pairs) <i>Carton (paires)</i>	Tüte (Paar) Bag (pairs) <i>Sachet (paires)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>	Karton (Stück) Box (pieces) <i>Carton (pièces)</i>	Tüte (Stück) Bag (pieces) <i>Sachet (pièces)</i>
			AP	DP		
1	1000	50	200	250	50	500
2	750	50	100	200	50	500
3	500	50	100	200	50	500
4	250	25	100	25	200	25
5	250	25	100	25	200	25
TMV 6					50	
TM 8					25	
Aufbauschraube wie normale Schrauben Build-up bolt the same as normal bolts <i>Vis pour collier superposable identiques aux vis standard</i>						

Z = Zweiroherschelle DIN 3015 / Twin clamp DIN 3015 / Collier double selon DIN 3015

Abgabe nur in Verpackungseinheiten.

Only available in given pack sizes.

Livraison uniquement sous conditionnement.

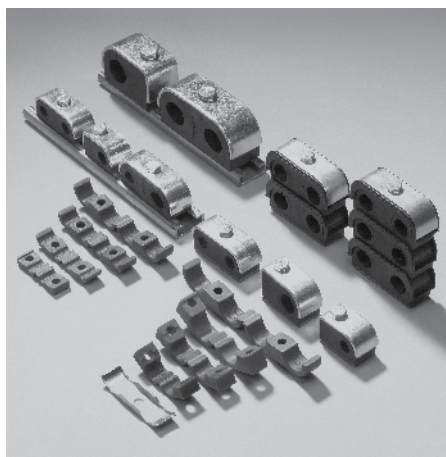
1.8 Gegenüberstellung "Metrisch" zu "Zoll"

1.8. Comparison metric / imperial measurements

1.8 Correspondance métrique / pouce

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Zoll Inch pouce	Gewinderohre Nominal bore (inch) Tube fileté pouce
6	–	–
6,4	1/4	–
8	5/16	–
9,5	3/8	–
10	–	G 1/8
12	–	–
12,7	1/2	–
13,7	–	G 1/4
14	–	–
15	–	–
16	5/8	–
17,1	–	G 3/8
18	–	–
19	3/4	–
20	–	–
21,3	–	G 1/2
22	–	–
23	–	–
25	–	–
25,4	1	–
26,9	–	G 3/4
28	–	–
30	–	–
32	1 1/4	–
33,7	–	G 1
35	–	–
38	1 1/2	G 1 1/8
40	–	–
42	–	G 1 1/4
44,5	1 3/4	–
48,3	–	G 1 1/2
50,8	2	–
54	–	–
57	2 1/4	–
60,3	–	G 2
63,5	2 1/2	–
65	–	–
70	–	–
73	–	–
76,1	3	G 2 1/2

Rohr-Außen-Ø in mm Pipe O/D mm Ø extérieur du tuyau mm	Zoll Inch pouce	Gewinderohre Nominal bore (inch) Tube fileté pouce
80	–	–
88,9	3 1/2	G 3
90	–	–
96	–	–
101,6	4	G 3 1/2
108	4 1/4	–
114,3	4 1/2	G 4
136	–	–
139,7	5 1/2	G 5
168	6 1/2	G 6
177,8	7	–
193,7	7 5/8	G 7
219,1	8 5/8	G 8
244,5	–	–
273	–	G 10
323,9	12 3/4	G 12
355,6	–	G 14
406,4	–	G 16



HYDAC Schellen

HYDAC Clamps

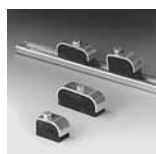
Colliers HYDAC



BT 2.1. Diagonalschelle

BT 2.1. Diagonal clamp

BT 2.1. Collier forme diagonale



BT 2.2. Buegu-Schelle

BT 2.2. Buegu Clamp

BT 2.2. Collier Buegu



BT 2.3. Oval-Schelle

BT 2.3. Oval clamp

BT 2.3. Collier ovale

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ANMERKUNG

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

NOTE

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

REMARQUE

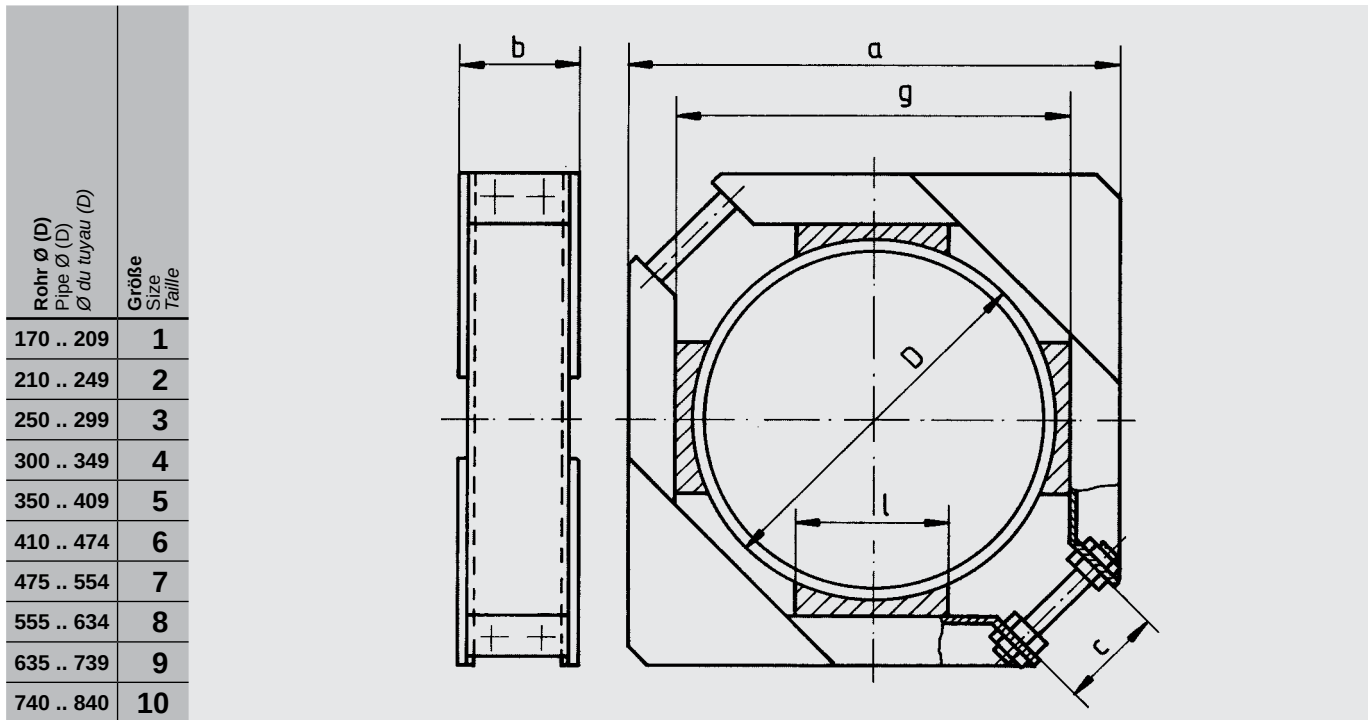
Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.

2.1 Diagonalschelle

2.1 Diagonal clamp

2.1 Collier forme diagonale

BT 2



Bestellschlüssel

Order code / Code de commande

HRD 5 A 370 PP ST

Baureihe / range / série
HRD

Baugröße / size / taille
1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10

Ausführung / model / exécution
A

Durchmesser / O/D / diamètre

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

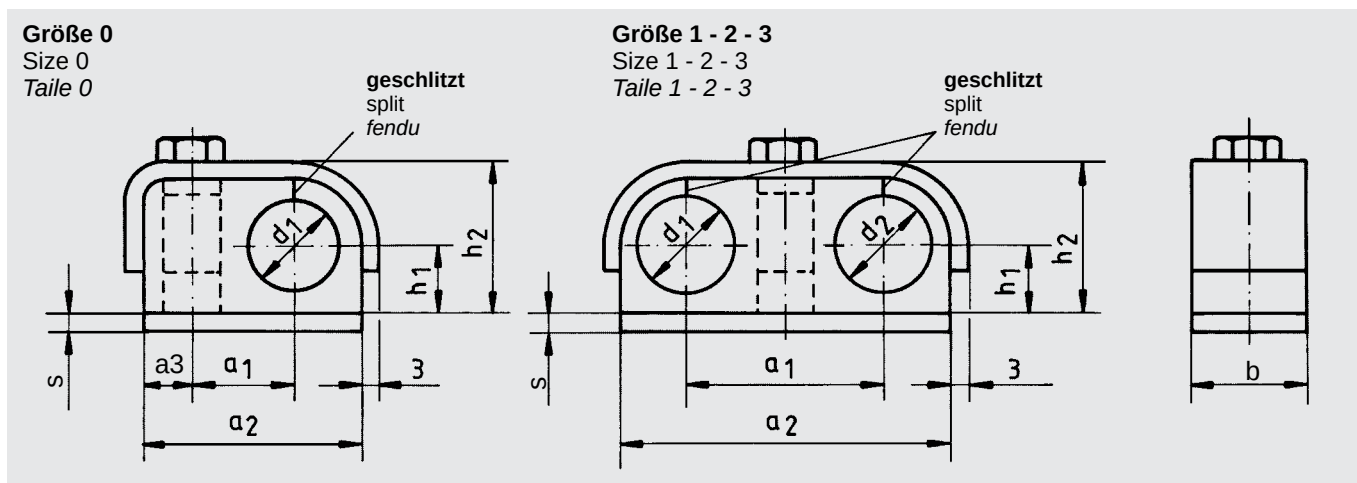
Werkstoff der Stahlteile /
material of steel parts /
matériau des pièces acier
ST

Größe / Size / Taille	Abmessungen Dimensions Dimensions					Stiftschraube Stud Goujon
	a	b	c	l	g	
1	315		50		225	M16 x 100
2	355	117	78		265	
3	420		82	110	320	M16 x 130
4	470	121	75		370	
5	540		106		430	M20 x 180
6	605	161	153	175	495	M20 x 220
7	685		165		575	
8	780	186	170		655	M20 x 240
9	880	190	255	250	760	M24 x 320
10	980		297		860	M24 x 360

2.2 Buegu-Schelle

2.2 Buegu clamp

2.2 Collier Buegu avec garniture élastomère



Ø d1 - d2* lagenvorrätig available ex stock disponible	Größe Size Taille	Abmessungen Dimensions Dimensions							ASKT für Ausführung Ext. hex. bolt for model Vis H pour exécution			Höhe der Hülse für Ausführung Length of sleeve for model Hauteur de l'entretoise pour exécution		
		a ₁	a ₂	a ₃	b	h ₁	h ₂	s	A	A1	A1TM	A	A1	A1TM
6 8 10 12	0A	15	34	9	20	10	23	3	M6 x 25	M6 x 30	M6 x 25	11,5	18	11,5
10 12 14 15 16 18 19 20	0B	18	39	9	20	12	27	3	M6 x 25	M6 x 35	M6 x 30	15,5	22	15,5
21,3 22 23 25 25,4 28 30 32	0C	23,5	57,5	15	30	20	43	5	M8 x 45	M8 x 50	M8 x 45	32	38	32
6 - 6 8 - 8 10 - 10 12 - 12	1	30	50	—	20	10	23	3	M6 x 25	M6 x 30	M6 x 25	11,5	18	11,5
10 - 10 12 - 12 15 - 15 16 - 16 17,1 - 17,1 18 - 18 19 - 19 20 - 20	2	35	59	—	20	12	27	3	M6 x 25	M6 x 35	M6 x 30	15,5	22	15,5
21,3-21,3 22 - 22 23 - 23 25 - 25 25,4-25,4 28 - 28 30 - 30 32 - 32	3	47	86	—	30	20	43	5	M8 x 45	M8 x 50	M8 x 45	32	38	32

* Andere Ø-Kombinationen auf Anfrage

* Other Ø-combinations on request

* Autres combinaisons de diamètre sur demande

2.2 Buegu-Schelle

2.2 Buegu clamp

2.2 Collier Buegu avec garniture élastomère

Durchmesser Diameter Diamètre	Größe Size Taille	Ausführung A Model A Exécution A
6 ... 12	0A	
10 ... 20	0B	
21,3 ... 32	0C	

Größe 0A, 0B, 0C
Size 0A, 0B, 0C
Taille 0A, 0B, 0C

Ausführung A1 Model A1 Exécution A1	

Größe 0A, 0B, 0C
Size 0A, 0B, 0C
Taille 0A, 0B, 0C

Ausführung A1TM Model A1TM Exécution A1TM	

Größe 0A, 0B, 0C
Size 0A, 0B, 0C
Taille 0A, 0B, 0C

Durchmesser Diameter Diamètre	Größe Size Taille	Ausführung A Model A Exécution A
6 - 6 ... 12 - 12	1	
10 - 10 ... 20 - 20	2	
21,3 - 21,3 ... 32 - 32	3	

Größe 1, 2, 3
Size 1, 2, 3
Taille 1, 2, 3

Ausführung A1 Model A1 Exécution A1	

Größe 1, 2, 3
Size 1, 2, 3
Taille 1, 2, 3

Ausführung A1TM Model A1TM Exécution A1TM	

Größe 1, 2, 3
Size 1, 2, 3
Taille 1, 2, 3

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série
HRBGS

Baugröße / size / taille
0A / 0B / 0C / 1 / 2 / 3

Ausführung / model / exécution
A / A1 / A1TM

Durchmesser / O/D / diamètre

Werkstoff des Gummiteils / material of rubber body / matériau de la garniture élastomère
TPE

Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier
ST
A4

auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

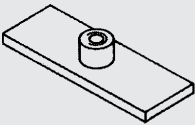
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier
BL blank / unplated / sans revêtement
ZN verzinkt / zinc plated / zingué

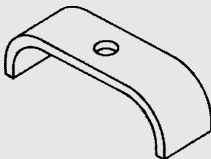
HRBGS 1 A1 12 - 12 TPE ST M BL

2.2 Buegu-Schelle, Einzelteile

2.2 Buegu clamp, individual parts

2.2 Collier Buegu avec garniture élastomère, pièces individuelles

Größe Size Taille	Anschweißplatte Weld plate Plaque à souder (AP)
0A	
0B	
0C	
1	
2	
3	

Größe Size Taille	Bügel Stirrup Arceau (BUE)
0A	
0B	
0C	
1	
2	
3	

Bestellschlüssel

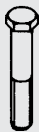
Order code / Code de commande

	HRBGS	0A	AP	ST	M	BL
Baureihe / range / série _____ HRBGS						
Baugröße / size / taille _____ 0A / 0B / 0C / 1 / 2 / 3						
Ausführung / model / exécution _____ AP						
Werkstoff der Stahlteile / _____ material of steel parts / matériau des pièces acier						
ST						
A4						
auf Anfrage / on request / sur demande						
Metrisches Gewinde / _____ metric thread / filet métrique						
Oberfläche der Stahlteile / _____ plating of steel parts / revêtement des pièces acier						
BL						
ZN						
blank / unplated / sans revêtement						
verzinkt / zinc plated / zingué						

Bestellschlüssel

Order code / Code de commande

	HRBGS	2	BUE	ST	ZN
Baureihe / range / série _____ HRBGS					
Baugröße / size / taille _____ 0A / 0B / 0C / 1 / 2 / 3					
Ausführung / model / exécution _____ BUE					
Werkstoff der Stahlteile / _____ material of steel parts / matériau des pièces acier					
ST					
A4					
auf Anfrage / on request / sur demande					
Oberfläche der Stahlteile / _____ plating of steel parts / revêtement des pièces acier					
ZN					
verzinkt / zinc plated / zingué					

Größe Size Taille	Außen-6-kt-Schraube DIN Ext. hex. screw DIN Vis H DIN (6kt-shr. ISO 4014 / 4017)
0A	
0B	
0C	
1	
2	
3	

Bestellschlüssel

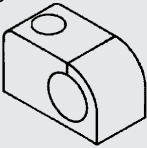
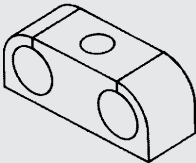
Order code / Code de commande

	6kt-shr. ISO4014 - M6 x 30 - 8.8 - A3B
Bauart / design / série _____ 6kt-shr. ISO4014 6kt-shr. ISO4017	
Baugröße / size / taille _____ ISO4014ISO4017 M6 x 30 M6 x 25 M6 x 35 M8 x 45 M8 x 50	
Schraubenqualität / bolt quality / qualité de vis _____ 8.8 A2 / A4	
auf Anfrage / on request / sur demande	
Oberfläche der Schraube / bolt plating / revêtement de vis _____ A3B	
verzinkt / zinc plated / zingué	

2.2 Buegu-Schelle, Einzelteile

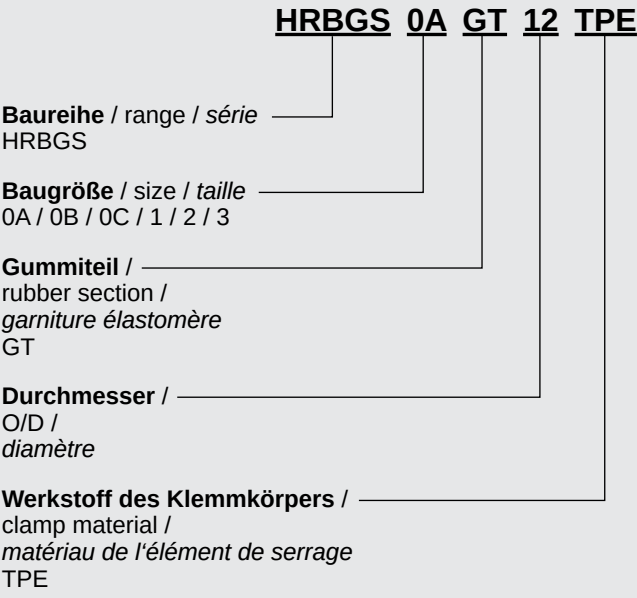
2.2 Buegu clamp, individual parts

2.2 Collier Buegu avec garniture élastomère, pièces individuelles

Durchmesser Diameter Diamètre	Größe Size Taille	Gummiteil Rubber section Garniture élastomère (GT)
6 .. 12	0A	
10 .. 20	0B	
21,3 .. 32	0C	
6 - 6 .. 12 - 12	1	
8 - 14 .. 20 - 20	2	
21,3 .. 32	3	

Bestellschlüssel

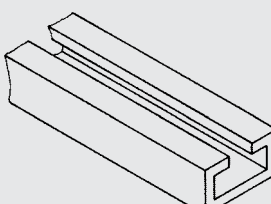
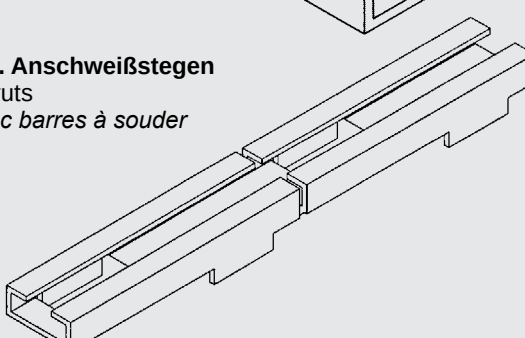
Order code / Code de commande

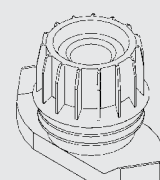


2.2 Buegu-Schelle, Einzelteile

2.2 Buegu clamp, individual parts

2.2 Collier Buegu avec garniture élastomère, pièces individuelles

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

Abmessungen Dimensions Dimensions	Tragschienenmutter Bayonet nut Ecrou rail porteur (TMV6)	
TMV6		

Bestellschlüssel

Order code / Code de commande

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

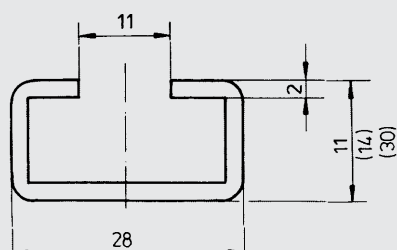
Bestellschlüssel

Order code / Code de commande

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

C-Tragschiene

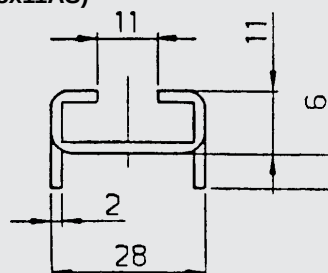
C-rail
C-Rail porteur
(TS)



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

C-Tragschiene m. Anschweißstegen

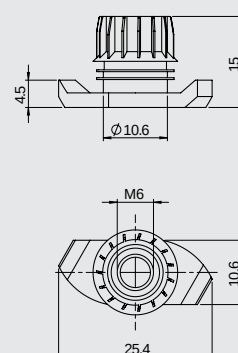
C-rail with weld struts
C-Rail porteur avec barres à souder
(TS28x11AS)



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

Tragschienenmutter M6

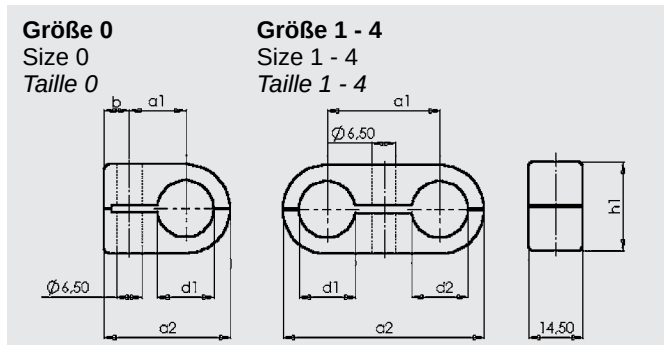
Bayonet nut M6
Ecrou rail porteur M6
(TMV6)



2.3 Oval-Schelle

2.3 Oval clamp

2.3 Collier ovale

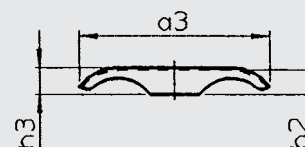


Größe Size Taille	Abmessungen Dimensions				
Ø d1 - d2 Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	a ₁	a ₂	b	h ₁
6 6,4 8	0a	9	23	7	13,5
8 9,5 10 12 12,7	0b	11	27	7	18,5
10 14 12 15 12,7 16 13,5	0c	15	34	7	23,5
14 20 15 21,3 16 22 17,2 25 18 25,4 19	0d	19	40	6	30,5
6 6,4 8	1	18	32	–	13,5
8 9,5 10 12 12,7	2	22	41	–	18,5
10 14 12 15 12,7 16 13,5	3	30	54	–	23,5
14 20 15 21,3 16 22 17,2 25 18 25,4 19	4	38	69	–	30,5

Zubehör zu Größe 1 - 4

Accessories to size 1 - 4

Accessoires pour la taille 1 - 4



Größe Size Taille	Werkstoff Material Matériau	Abmessungen Dimensions		
		a ₃	h ₂	h ₃
1	STZN	29	4,0	4,5
2	STZN	40	4,0	4,5
3	STZN	50,5	7,6	8,2
4	STZN	63	7,6	8,2

Bestellschlüssel

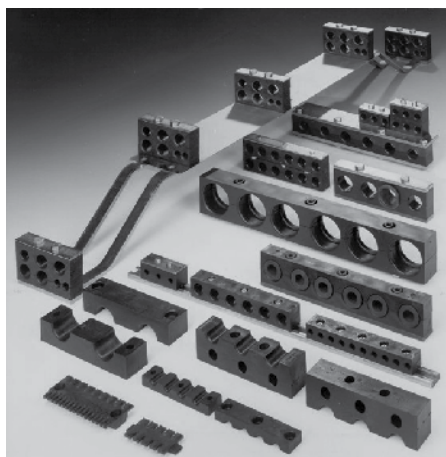
Order code / Code de commande

Baureihe / range / série	HROS	3	DP	ST	ZN
Baugröße / size / taille	1 / 2 / 3 / 4				
Ausführung / model / exécution	DP				
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier	ST				
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier	ZN				
	verzinkt / zinc plated / zingué				

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série	HROS	3	KP	15-15	PP
Baugröße / size / taille	0a / 0b / 0c / 0d / 1 / 2 / 3 / 4				
Ausführung / model / exécution	KP				
Durchmesser / O/D / diamètre					
Werkstoff der Klemmbacken / clamp material / matériau des pièces de serrage	PP / PA				



Reihenleisten

Series strips

Colliers en ligne



BT 3.1. Reihenleiste Leichte Reihe

BT 3.1. Series strip light range

BT 3.1. Colliers en ligne série légère



BT 3.2. Reihenleiste Schwere Reihe mit Elastomereinsatz

BT 3.2. Series strip heavy range with elastomer insert

BT 3.2. Colliers en ligne série lourde avec garniture élastomère

ANMERKUNG

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

NOTE

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

REMARQUE

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

3.1 Reihenleiste Leichte Reihe

3.1 Series strip light range

3.1 Colliers en ligne série légère

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	2 Rohre mit 2 Befestigungsschrauben 2 pipes with 2 fixing screws 2 tuyaux avec 2 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	3 Rohre mit 2 Befestigungsschrauben 3 pipes with 2 fixing screws 3 tuyaux avec 2 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	4 Rohre mit 2 Befestigungsschrauben 4 pipes with 2 fixing screws 4 tuyaux avec 2 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	4 Rohre mit 3 Befestigungsschrauben 4 pipes with 3 fixing screws 4 tuyaux avec 3 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	6 Rohre mit 3 Befestigungsschrauben 6 pipes with 3 fixing screws 6 tuyaux avec 3 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille	10 Rohre mit 5 Befestigungsschrauben 10 pipes with 5 fixing screws 10 tuyaux avec 5 vis de fixation
6 .. 12	1L	
10 .. 18	2L	
15 .. 25,4	3L	

Größe Size Taille	Abmessungen Dimensions Dimensions	A	C	H	L
1L		20	40	13,5	60,5
2L		29	58	16,5	78,5
3L		36	72	18,5	92,5

Größe Size Taille	Abmessungen Dimensions Dimensions	A	C	H	L
1L		20	20	13,5	56
2L		29	29	16,5	85
3L		36	36	18,5	106

Größe Size Taille	Abmessungen Dimensions Dimensions	A	C	H	L
1L		20	40	13,5	76
2L		29	58	16,5	114
3L		36	72	18,5	142

Größe Size Taille	Abmessungen Dimensions Dimensions	A	C	H	L
1L		20	40	13,5	100,5
2L		29	58	16,5	136,5
3L		36	72	18,5	164,5

Größe Size Taille	Abmessungen Dimensions Dimensions	A	C	H	L
1L		20	40	13,5	116
2L		29	58	16,5	172
3L		36	72	18,5	214

Größe Size Taille	Abmessungen Dimensions Dimensions	A	C	H	L
1L		20	40	13,5	196
2L		29	58	16,5	288
3L		36	72	18,5	358

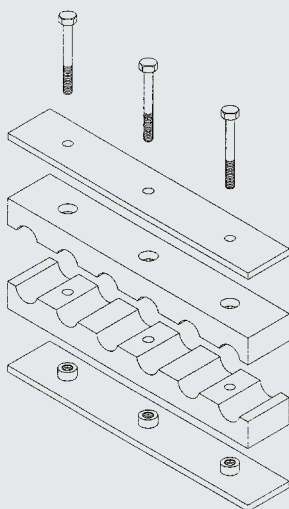
3.1 Reihenleiste Leichte Reihe

3.1 Series strip light range

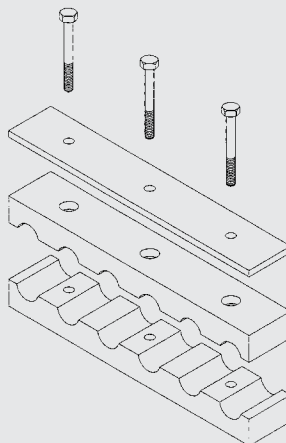
3.1 Colliers en ligne série légère

Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille
2 x D	60,5 / 2	1L
3 x D	56 / 2	
4 x D	76 / 2	
4 x D	100,5 / 3	
6 x D	116 / 3	
10 x D	196 / 5	2L
2 x D	78,5 / 2	
3 x D	85 / 2	
4 x D	114 / 2	
4 x D	136,5 / 3	
6 x D	172 / 3	3L
10 x D	288 / 5	
2 x D	92,5 / 2	
3 x D	106 / 2	
4 x D	142 / 2	
4 x D	164,5 / 3	
6 x D	214 / 3	
10 x D	358 / 5	

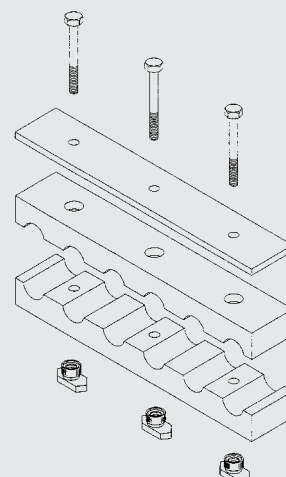
Ausführung A
Model A
Exécution A



Ausführung A1
Model A1
Exécution A1

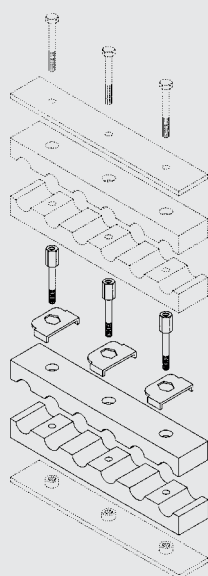


Ausführung A1TM
Model A1TM
Exécution A1TM



Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille
2 x D	60,5 / 2	1L
3 x D	56 / 2	
4 x D	76 / 2	
4 x D	100,5 / 3	
6 x D	116 / 3	
10 x D	196 / 5	2L
2 x D	78,5 / 2	
3 x D	85 / 2	
4 x D	114 / 2	
4 x D	136,5 / 3	
6 x D	172 / 3	3L
10 x D	288 / 5	
2 x D	92,5 / 2	
3 x D	106 / 2	
4 x D	142 / 2	
4 x D	164,5 / 3	
6 x D	214 / 3	
10 x D	358 / 5	

Ausführung D
Model D
Exécution D



Bestellschlüssel

Order code / Code de commande

HRRL 2L A 4x12 PP 114/2 ST M6 BL

Baureihe /
range /
série
HRRL

Baugröße / size / taille
1L / 2L / 3L

Ausführung / model /
exécution
A / A1 / A1TM / D

Durchmesser / O/D / diamètre

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

Baulänge / Anzahl der Schrauben /
Length / number of screws /
Longueur / nombre de vis de fixation

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

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

Metrisches Gewinde / metric thread / filet métrique

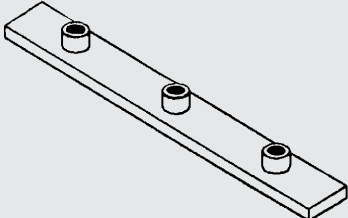
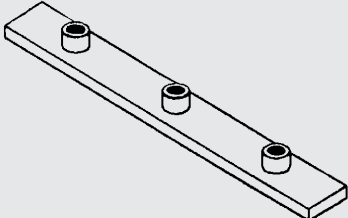
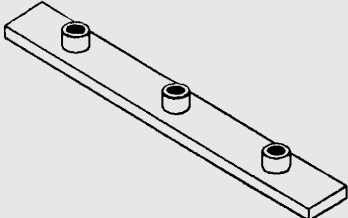
Oberfläche der Stahlteile /
plating of steel parts /
revêtement des pièces acier

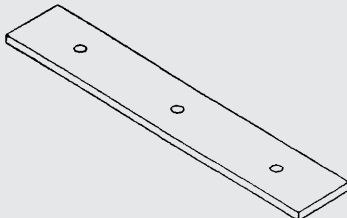
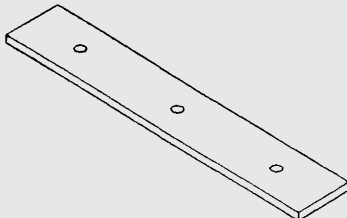
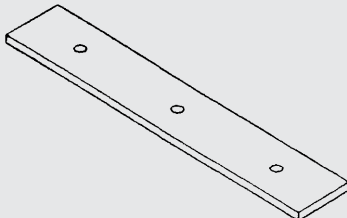
BL **blank / unplated / sans revêtement**
ZN **verzinkt / zinc plated / zingué**

3.1 Reihenleiste Leichte Reihe, Einzelteile

3.1 Series strip light range, individual parts

3.1 Colliers en ligne série légère, pièces individuelles

Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Anschweißplatte Weld plate Plaque à souder (AP)
60,5 / 2	1L	
56 / 2		
76 / 2		
100,5 / 3		
116 / 3		
196 / 5	2L	
78,5 / 2		
85 / 2		
114 / 2		
136,5 / 3		
172 / 3	3L	
288 / 5		
92,5 / 2		
106 / 2		
142 / 2		
164,5 / 3		
214 / 3		
358 / 5		

Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Deckplatte Cover plate Plaque de protection (DP)
60,5 / 2	1L	
56 / 2		
76 / 2		
100,5 / 3		
116 / 3		
196 / 5	2L	
78,5 / 2		
85 / 2		
114 / 2		
136,5 / 3		
172 / 3	3L	
288 / 5		
92,5 / 2		
106 / 2		
142 / 2		
164,5 / 3		
214 / 3		
358 / 5		

Bestellschlüssel

Order code / Code de commande

HRRL 3L AP 30x3x214/3 ST M6 BL

Baureihe / range / série
HRRL

Baugröße / size / taille
1L / 2L / 3L

Ausführung / model / exécution
AP

Baulänge / Anzahl der Schrauben / Length / number of screws / Longueur / nombre de vis de fixation

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

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique

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

Bestellschlüssel

Order code / Code de commande

HRRL 3L DP 30x3x106/2 ST D7 ZN

Baureihe / range / série
HRRL

Baugröße / size / taille
1L / 2L / 3L

Ausführung / model / exécution
DP

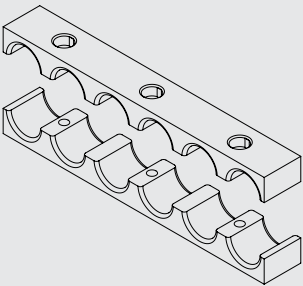
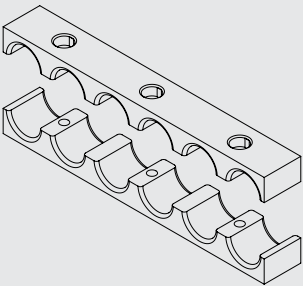
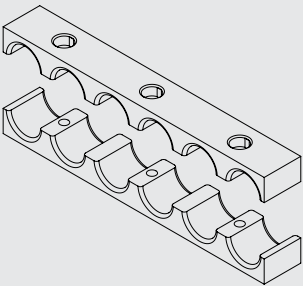
Baulänge / Anzahl der Schrauben / Length / number of screws / Longueur / nombre de vis de fixation

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

A2 / A4 auf Anfrage / on request / sur demande

Schraubenbohrung / hole / Perçage pour vissage

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

Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Klemmbackenpaar Pair of clamp jaws Paire de pièces de serrage (KP)
2 x D	60,5 / 2	1L	
3 x D	56 / 2		
4 x D	76 / 2		
4 x D	100,5 / 3		
6 x D	116 / 3		
10 x D	196 / 5	2L	
2 x D	78,5 / 2		
3 x D	85 / 2		
4 x D	114 / 2		
4 x D	136,5 / 3		
6 x D	172 / 3	3L	
10 x D	288 / 5		
2 x D	92,5 / 2		
3 x D	106 / 2		
4 x D	142 / 2		
4 x D	164,5 / 3		
6 x D	214 / 3		
10 x D	358 / 5		

Bestellschlüssel

Order code / Code de commande

HRRL 1L KP 3x12 PP 56/2 M6

Baureihe / range / série
HRRL

Baugröße / size / taille
1L / 2L / 3L

Ausführung / model / exécution
KP

Durchmesser / O/D / diamètre

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

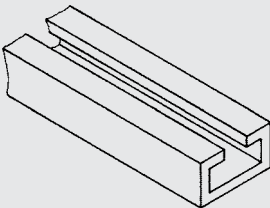
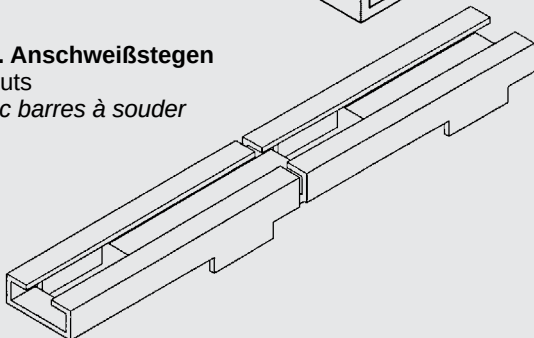
Baulänge / Anzahl der Schrauben / Length / number of screws / Longueur / nombre de vis de fixation

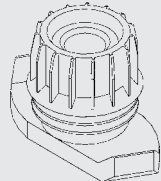
Schraubenbohrung / hole / Perçage pour vissage

3.1 Reihenleiste Leichte Reihe, Einzelteile

3.1 Series strip light range, individual parts

3.1 Colliers en ligne série légère, pièces individuelles

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

Abmessungen Dimensions Dimensions	Tragschienenmutter Bayonet nut Ecrou rail porteur (TMV6)	
TMV6		

Bestellschlüssel

Order code / Code de commande

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

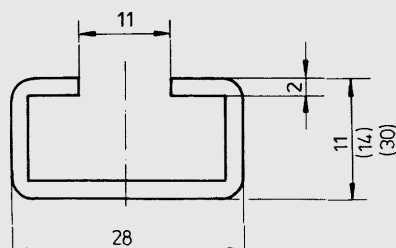
Bestellschlüssel

Order code /
Code de commande

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

C-Tragschiene

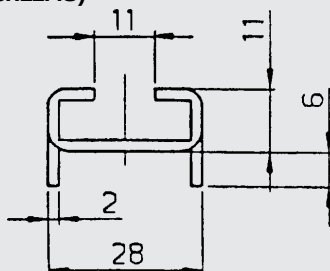
C-rail
C-Rail porteur
(TS)



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

C-Tragschiene m. Anschweißstegen

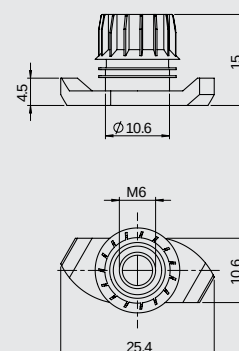
C-rail with weld struts
C-Rail porteur avec barres à souder
(TS28x11AS)



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

Tragschienenmutter M6

Bayonet nut M6
Ecrou rail porteur M6
(TMV6)



3.1 Reihenleiste Leichte Reihe, Einzelteile

3.1 Series strip light range, individual parts

3.1 Colliers en ligne série légère, pièces individuelles

Abmessungen Dimensions Dimensions	Größe Size Taille	Außen-6-kt-Schraube ISO 4014 Ext. hex. screw ISO 4014 Vis H ISO 4014 (6kt-shr. ISO 4014)
M6 x 30	1L	
M6 x 35	2L	
M6 x 40	3L	

Bestellschlüssel

Order code / Code de commande

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

Bauart / design / série

6kt-shr. ISO4014

Baugröße / size / taille

M6 x 30

M6 x 35

M6 x 40

Schraubenqualität / bolt quality / qualité de vis

8.8

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

Oberfläche der Schraube / bolt plating / revêtement de vis

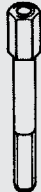
A3B

verzinkt / zinc plated / zingué

3.1 Reihenleiste Leichte Reihe, Einzelteile

3.1 Series strip light range, individual parts

3.1 Colliers en ligne série légère, pièces individuelles

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

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

Bestellschlüssel
Order code / Code de commande

HRL 3 AF ST M ZN

Baureihe / range / série — HRL

Baugröße / size / taille — 3

Ausführung / model / exécution — AF

Werkstoff / material / matériau — ST

A2 / A4 auf Anfrage / on request / sur demande

Metrisches Gewinde / metric thread / filet métrique — M

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

ZN verzinkt / zinc plated / zingué

Bestellschlüssel
Order code / Code de commande

HRL 0 SIP ST ZN

Baureihe / range / série — HRL

Baugröße / size / taille — 0

Ausführung / model / exécution — SIP

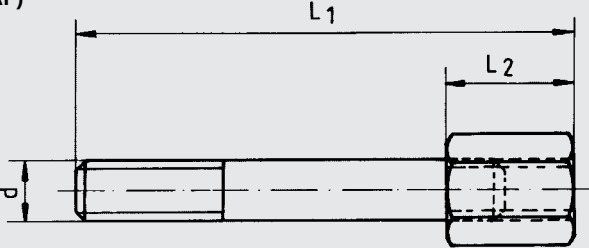
Werkstoff / material / matériau — ST

A4 auf Anfrage / on request / sur demande

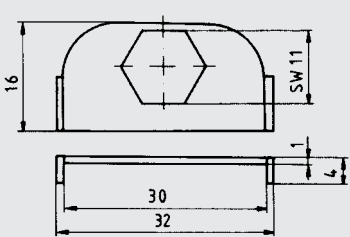
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier — ZN

ZN verzinkt / zinc plated / zingué

Aufbauschraube Gr. 0-3
Build-up bolt size 0-3
Goujon-écrou taille 0-3
(AF)



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



Größe Size Taille	Abmessungen Dimensions Dimensions	L1	L2	d
0+1		34	14	M6
2		39	14	M6
3		44	14	M6

für alle Größen
for all sizes
pour toutes les tailles

3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz

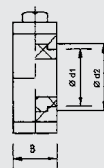
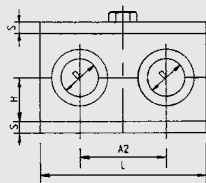
3.2 Series strip heavy range with elastomer inserts

3.2 Colliers en ligne série lourde avec garniture élastomère

BT 3

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 19	2
6 .. 19	3*
20 .. 32	3
33,7 .. 56,4	4

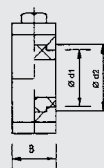
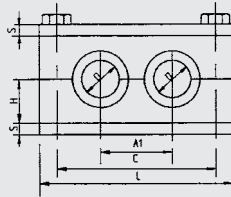
2 Rohre mit 1 Befestigungsschrauben
2 pipes with 1 fixing bolts
2 tuyaux avec 1 vis de fixation



Größe / Size / Taille	Abmessungen Dimensions Dimensions	d1	d2	A1	A2	B	L	H	C	S
2		25,5	31		46	30	83	23		8
3		39	46		60	30	115	30		8
4		65	74		93	45	173	40		10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 19	2
6 .. 19	3*
20 .. 32	3
33,7 .. 56,4	4

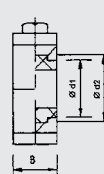
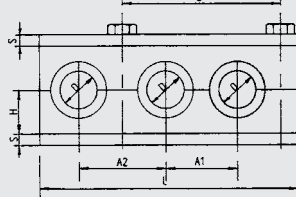
2 Rohre mit 2 Befestigungsschrauben
2 pipes with 2 fixing bolts
2 tuyaux avec 2 vis de fixation



Größe / Size / Taille	Abmessungen Dimensions Dimensions	d1	d2	A1	A2	B	L	H	C	S
2		25,5	31	34		30	107	23	80	8
3		39	46	50		30	134	30	110	8
4		65	74	80		45	199	40	173	10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 19	2
6 .. 19	3*
20 .. 32	3
33,7 .. 56,4	4

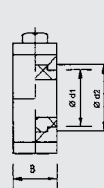
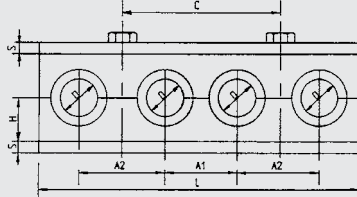
3 Rohre mit 2 Befestigungsschrauben
3 pipes with 2 fixing bolts
3 tuyaux avec 2 vis de fixation



Größe / Size / Taille	Abmessungen Dimensions Dimensions	d1	d2	A1	A2	B	L	H	C	S
2		25,5	31	34	46	30	135	23	80	8
3		39	46	50	60	30	179,5	30	110	8
4		65	74	80	93	45	273	40	173	10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 19	2
6 .. 19	3*
20 .. 32	3
33,7 .. 56,4	4

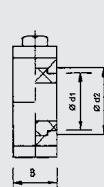
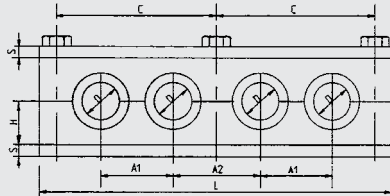
4 Rohre mit 2 Befestigungsschrauben
4 pipes with 2 fixing bolts
4 tuyaux avec 2 vis de fixation



Größe / Size / Taille	Abmessungen Dimensions Dimensions	d1	d2	A1	A2	B	L	H	C	S
2		25,5	31	34	46	30	163	23	80	8
3		39	46	50	60	30	225	30	110	8
4		65	74	80	93	45	346	40	173	10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 19	2
6 .. 19	3*
20 .. 32	3
33,7 .. 56,4	4

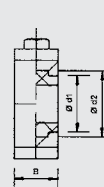
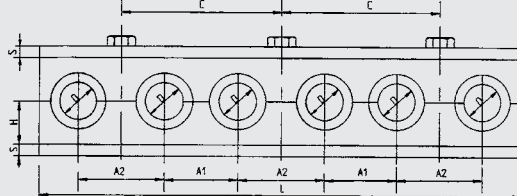
4 Rohre mit 3 Befestigungsschrauben
4 pipes with 3 fixing bolts
4 tuyaux avec 3 vis de fixation



Größe / Size / Taille	Abmessungen Dimensions Dimensions	d1	d2	A1	A2	B	L	H	C	S
2		25,5	31	34	46	30	187	23	80	8
3		39	46	50	60	30	244	30	110	8
4		65	74	80	93	45	373	40	173	10

Rohr-Außen Ø mm Pipe O/D mm Ø extérieur du tuyau mm	Größe Size Taille
6 .. 19	2
6 .. 19	3*
20 .. 32	3
33,7 .. 56,4	4

6 Rohre mit 3 Befestigungsschrauben
6 pipes with 3 fixing bolts
6 tuyaux avec 3 vis de fixation



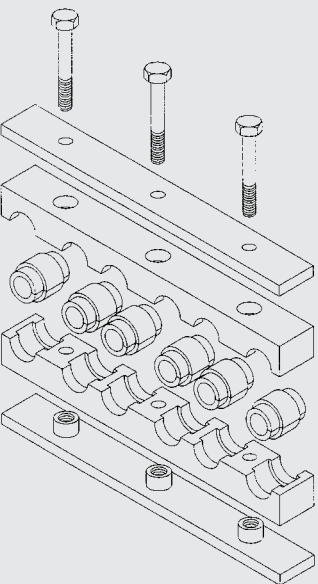
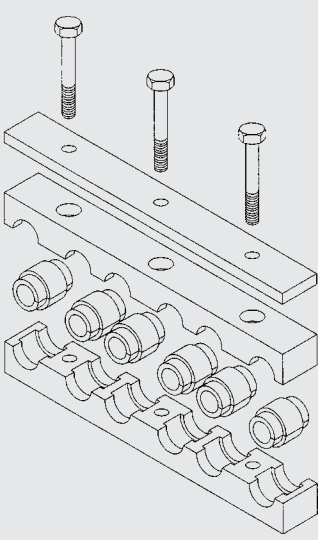
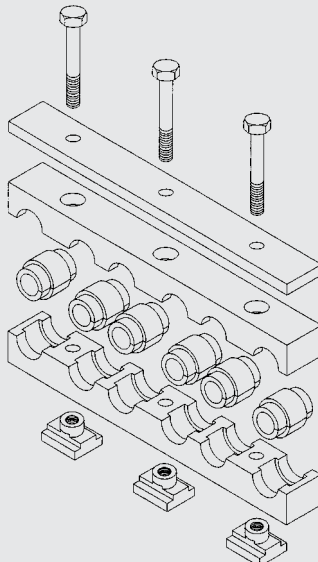
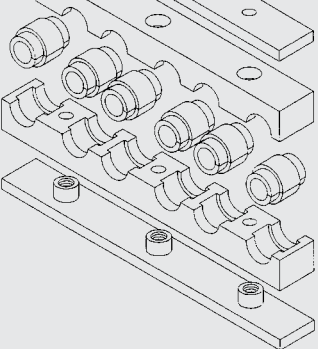
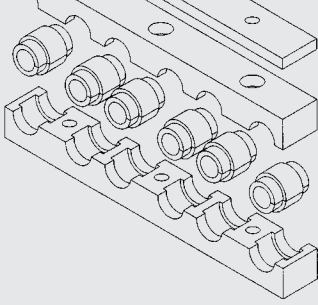
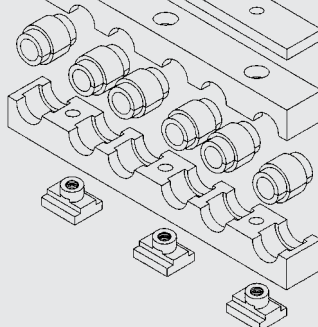
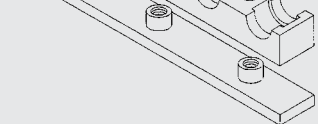
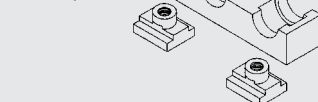
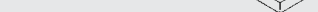
Größe / Size / Taille	Abmessungen Dimensions Dimensions	d1	d2	A1	A2	B	L	H	C	S
2		25,5	31	34	46	30	243	23	80	8
3		39	46	50	60	30	335	30	110	8
4		65	74	80	93	45	519	40	173	10

* Nur mit Reduzierstück / Only with reducing piece / Seulement avec pièce de réduction

3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz

3.2 Series strip heavy range with elastomer inserts

3.2 Colliers en ligne série lourde avec garniture élastomère

Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Ausführung S Model S Exécution S	Ausführung S1 Model S1 Exécution S1	Ausführung S1TM Model S1TM Exécution S1TM
2 x D	83 / 1	2			
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	4			
6 x D	335 / 3				
2 x D	199 / 2				
3 x D	346 / 2				
4 x D	373 / 3	4			
6 x D	519 / 3				

Bestellschlüssel

Order code / Code de commande

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

Baureihe / _____
range /
série
HRRLE

Baugröße / size / taille _____
2 / 3 / 4

Ausführung / model / exécution _____
S / S1 / S1TM

Durchmesser / O/D / diamètre _____

Werkstoff der Klemmbacken / _____
clamp material /
matériau des pièces de serrage
PP / PA

Baulänge / Anzahl der Schrauben / _____
Length / number of bolts /
Longueur / nombre de vis de fixation

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

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

Metrisches Gewinde / metric thread / filet métrique _____

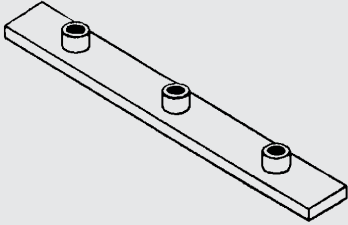
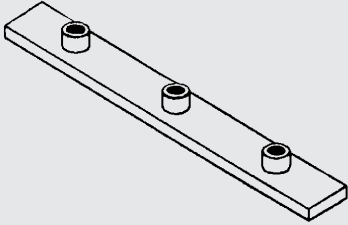
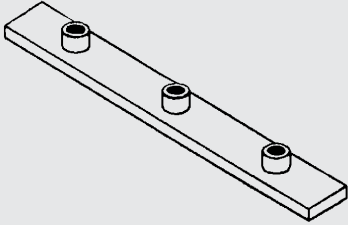
Oberfläche der Stahlteile / plating of steel parts / _____
revêtement des pièces acier
BL **blank / unplated / sans revêtement**
ZN **verzinkt / zinc plated / zingué**

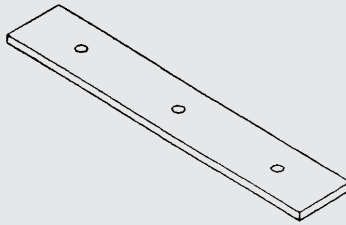
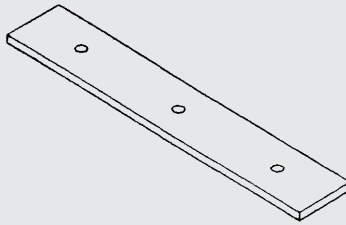
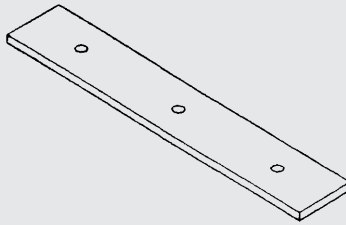
3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz, Einzelteile

3.2 Series strip heavy range with elastomer inserts, individual parts

3.2 Colliers en ligne série lourde avec garniture élastomère, pièces individuelles

BT 3

Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Anschweißplatte Weld plate Plaque à souder (AP)
83 / 1	2	
107 / 2		
135 / 2		
163 / 2		
187 / 3		
243 / 3	3	
115 / 1		
134 / 2		
179,5 / 2		
225 / 2		
244 / 3	4	
335 / 3		
199 / 2		
346 / 2		
373 / 3		
519 / 3		

Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Deckplatte Cover plate Plaque de protection (DP)
83 / 1	2	
107 / 2		
135 / 2		
163 / 2		
187 / 3		
243 / 3	3	
115 / 1		
134 / 2		
179,5 / 2		
225 / 2		
244 / 3	4	
335 / 3		
199 / 2		
346 / 2		
373 / 3		
519 / 3		

Bestellschlüssel

Order code / Code de commande

HRRLE 3 AP 30x8x225/2 ST M10 BL

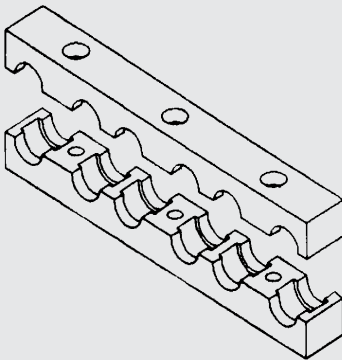
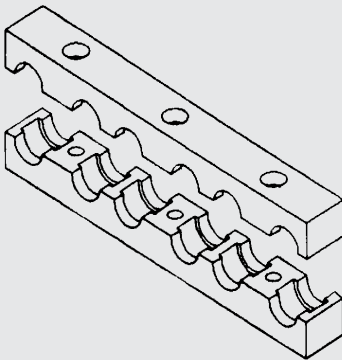
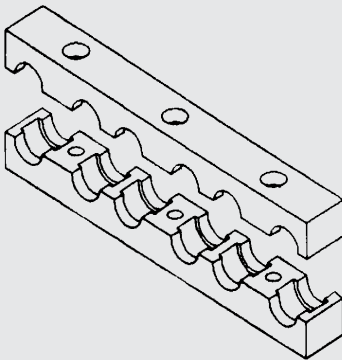
Baureihe / range / série
HRRLE
Baugröße / size / taille
2 / 3 / 4
Ausführung / model /
exécution: AP
Baulänge / Anzahl der Schrauben /
Length / number of bolts /
Longueur / nombre de vis de fixation
Werkstoff der Stahlteile /
material of steel parts / matériau des pièces acier
ST
A2 / A4 **auf Anfrage /** on request / sur demande
Metrisches Gewinde / metric thread / filet métrique
Oberfläche der Stahlteile /
plating of steel parts / revêtement des pièces acier
BL **blank /** unplated / sans revêtement
ZN **verzinkt /** zinc plated / zingué

Bestellschlüssel

Order code / Code de commande

HRRLE 4 DP 45x10x519/3 ST ZN

Baureihe / range / série
HRRLE
Baugröße / size / taille
2 / 3 / 4
Ausführung / model /
exécution: DP
Baulänge / Anzahl der Schrauben /
Length / number of bolts /
Longueur / nombre de vis de fixation
Werkstoff der Stahlteile /
material of steel parts / matériau des pièces acier
ST
A2 / A4 **auf Anfrage /** on request / sur demande
Oberfläche der Stahlteile /
plating of steel parts / revêtement des pièces acier
ZN **verzinkt /** zinc plated / zingué

Anzahl und Ø der Rohre Number and diameter of pipes quantité et Ø des tuyaux	Länge / Anzahl der Befestigungsschrauben Length / number of fixing bolts Longueur et nombre de vis de fixation	Größe Size Taille	Klemmbackenpaar Pair of clamp jaws Paire de pièces de serrage (KP)
2 x 25,5	83 / 1	2	
2 x 25,5	107 / 2		
3 x 25,5	135 / 2		
4 x 25,5	163 / 2		
4 x 25,5	187 / 3		
6 x 25,5	243 / 3	3	
2 x 39	115 / 1		
2 x 39	134 / 2		
3 x 39	179,5 / 2		
4 x 39	225 / 2		
4 x 39	244 / 3	4	
6 x 39	335 / 3		
2 x 65	199 / 2		
4 x 65	346 / 2		
4 x 65	373 / 3		
6 x 65	519 / 3		

Bestellschlüssel

Order code / Code de commande

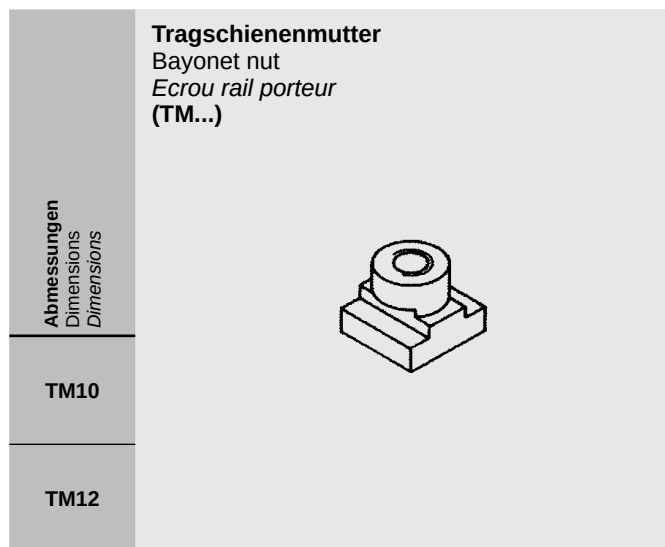
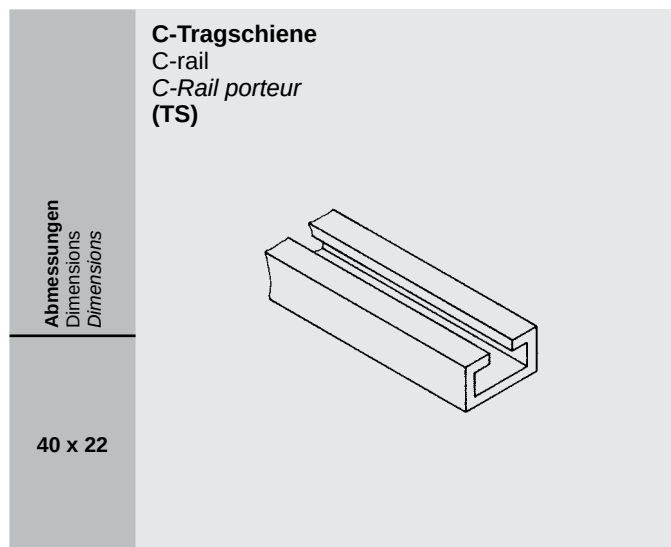
HRRLE 4 KP 4x65 PP 346/2

Baureihe / range / série
HRRLE
Baugröße / size / taille
2 / 3 / 4
Ausführung / model /
exécution: KP
Durchmesser / O/D / diamètre
Werkstoff der Klemmbacken /
clamp material /
matériau des pièces de serrage
PP / PA
Baulänge / Anzahl der Schrauben /
Length / number of bolts /
Longueur / nombre de vis de fixation

3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz, Einzelteile

3.2 Series strip heavy range with elastomer inserts, individual parts

3.2 Colliers en ligne série lourde avec garniture élastomère, pièces individuelles



Bestellschlüssel

Order code / Code de commande

HRS TS40x22 ST BL 2m

Baureihe / range / série — HRS

Ausführung / model / exécution — TS 40 x 22

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

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

Baulänge / length / longueur —
1 m / 2 m

Bestellschlüssel

Order code / Code de commande

HRS TM10 ST M ZN

Baureihe / range / série — HRS

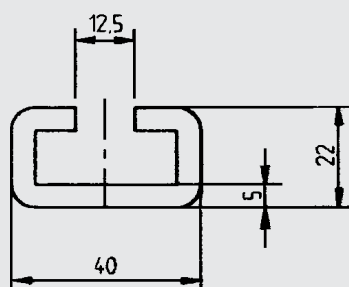
Ausführung / model / exécution — TM10 / TM12

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

Metrisches Gewinde / —
metric thread / filet métrique
ZN **verzinkt / zinc plated / zingué**

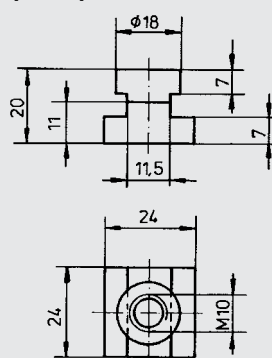
C-Tragschiene

C-rail
C-Rail porteur
(TS)



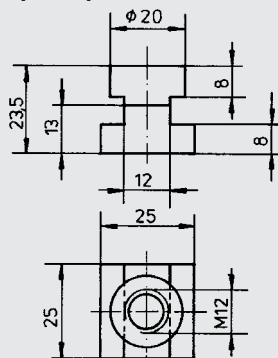
Tragschienenmutter M10

Bayonet nut M10
Ecrou pour rail porteur M10
(TM10)



Tragschienenmutter M12

Bayonet nut M12
Ecrou pour rail porteur M12
(TM12)

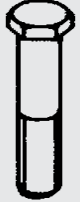


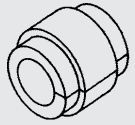
3.2 Reihenleiste Schwere Reihe mit Elastomereinsatz, Einzelteile

BT 3

3.2 Series strip heavy range with elastomer inserts, individual parts

3.2 Colliers en ligne série lourde avec garniture élastomère, pièces individuelles

Abmessungen Dimensions Dimensions	Größe Size Taille	6-kt-Schraube ISO 4014 Ext. hex. bolt ISO 4014 Vis H ISO 4014 (6kt-schr. ISO 4014)
M10 x 60	2	
M10 x 70	3	
M12 x 100	4	

Abmessungen Dimensions Dimensions	Größe Size Taille	Elastomereinsatz glatt Elastomer insert, smooth Garniture élastomère à portée lisse (EE)
6 - 19	2/4L	
20 - 32	3/6L	
33,7 - 56,4	4	

Bestellschlüssel

Order code / Code de commande

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

Bauart / _____
design / forme
6kt-schr. ISO4014

Baugröße / size / taille _____
ISO4014
M10 x 60
M10 x 70
M12 x 100

Schraubenqualität / bolt quality / qualité de vis _____
8.8

Oberfläche der Schraube / bolt plating / revêtement de vis _____
keine Angabe (blank) /
no details (unplated) /
pas d'indication (sans revêtement)
A4B **verzinkt / zinc plated / zingué**

Bestellschlüssel

Order code / Code de commande

HRES 2/4L EE 16 TPE

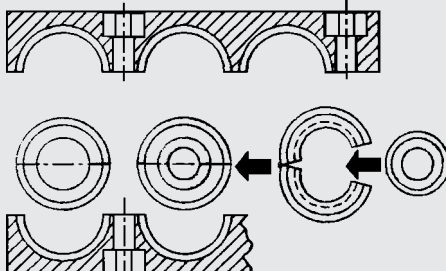
Baureihe / range / série _____
HRES

Baugröße / size / taille _____
2/4L 3/6L 4

Ausführung / model / exécution _____
EE

Durchmesser / O/D / diamètre _____

Werkstoff des Einsatzes / _____
insert material /
matériau de la garniture élastomère
TPE

Größe Size Taille	Reduzierstück Reducing piece Pièce de réduction (RE)
3/2	 Elastomereinsatz Gr. 3S Rubber insert size 3S Garniture élastomère taille 3S Reduzierstück mit Elastomereinsatz Gr. 3S Reducing piece with rubber insert size 3S Pièce insert avec garniture élastomère taille 3S

Bestellschlüssel

Order code / Code de commande

HRES 3/2 RE PP

Baureihe / range / série _____
HRES

Baugröße / size / taille _____
3/2

Ausführung / model / exécution _____
RE

Werkstoff des Einsatzes / _____
material of reducing piece /
matériau de la garniture élastomère
PP / PA



Bügelschellen

U-bolt clamps

Collier arceau



BT 4.1. Rundstahlbügelschellen ähnlich DIN 3570

BT 4.1. U-bolt clamps similar to DIN 3570

BT 4.1. Collier arceau semblable à DIN 3570



BT 4.2. Flachstahlbügelschellen DIN 3567

BT 4.2. Flat steel bolt clamp to DIN 3567

BT 4.2. Collier circulaire plat en acier selon DIN 3567

ANMERKUNG

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

NOTE

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

REMARQUE

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

4.1 Rundstahlbügelschellen ähnlich DIN 3570

4.1 U-bolt clamps similar to DIN 3570

4.1 Colliers arceau semblable à DIN 3570

Kurze Ausführung

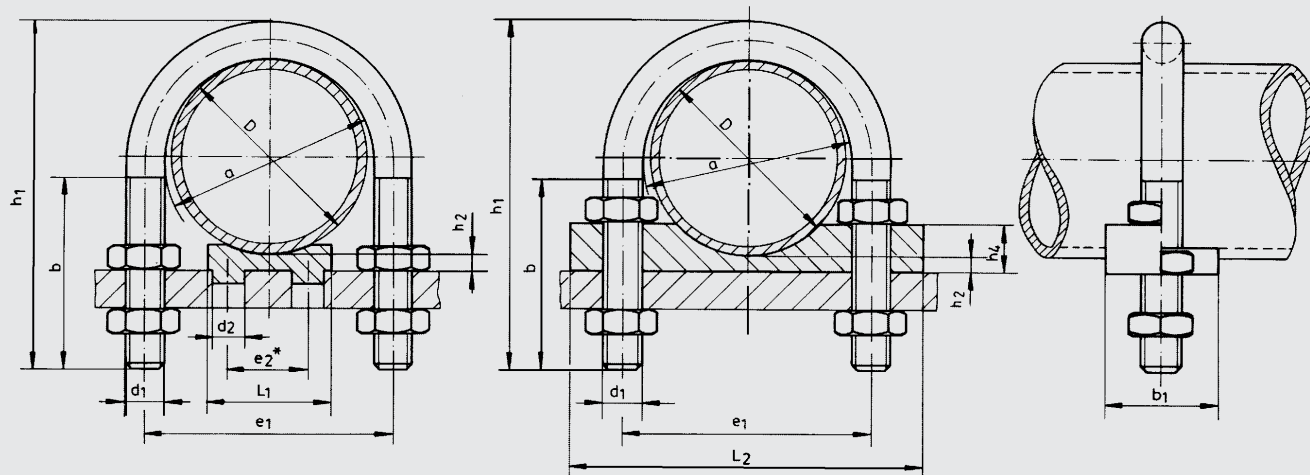
Short version

Exécution courte

Lange Ausführung

Long version

Exécution longue



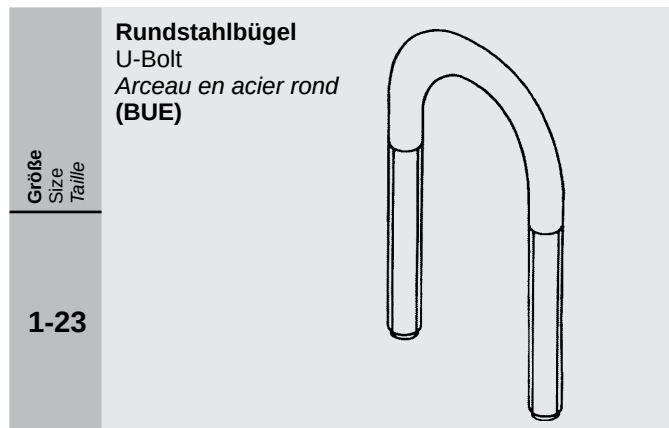
Bei Rohrunterlage D=Ø bis 42,4 ist e_2 um 90° versetzt gezeichnet.
For pipe support D= dia. up to 42,4, e_2 is shown displaced by 90°.
Pour support de tuyau D=Ø jusqu'à 42,4, e_2 est représenté décalé de 90°

Rohr Ø Pipe Ø Ø tuyau		Größe Size Taille	Rundstahlbügel U-Bolt Colliers arceau en acier rond				Rohrunterlage kurze Ausführung Pipe support short version Support de tuyau exécution courte					Rohrunterlage lange Ausführung Pipe support long version Support de tuyau exécution longue					Rohr Ø Pipe Ø Ø tuyau
			a	b	d ₁	e ₁	h ₁	d ₂	e ₂	h ₂	L ₁	b ₁	h ₂	h ₄	L ₂	b ₁	
17,1 21,3	1	23	40	M10	33	65	8	25	5	24	35	5	10	60	25	17,1 21,3	
25 26,9	2	30			40	70										25	26,9
30 33,7	3	38			48	75										30	33,7
38 42,4	4	46	50		56	86	38	42,4									
44,5 48,3	5	52		62	92	40	44,5										
57 60,3	6	64	60	M12	76	109	10	25	5	38	50	5	15	95	35	57 60,3	
76,1	7	82			94	125										42,4	48,3
88,9	8	94			106	138										44,5	48,3
108 114,3	9	120	80		M16	136	171	20	80	110	80	10	20	145	40	88,9 108 114,3	
133 139,7	10	148		164		191	133 139,7										
159 168,3	11	176		192		217	159 168,3										
(191) 193,7	12	202		218		249	191 193,7										
216 219,1	13	228	100	M20	248	283	25	130	9	175	110	12	25	270	50	216 219,1	
267 273	14	282			302	334										267 273	
318 323,9	15	332			352	385										318 323,9	
355,6 368	16	378			402	435										355,6 368	
406,4 419	17	428	150	M24	452	487	30	210	250	130	15	30	480	60	406,4 419		
508 521	18	530			554	589									508 521		
558	19	570			600	650									558		
609	20	622	652		700	609											
660	21	680	150	M30	710	760	20	40	250	130	20	40	810	70	660		
711	22	730			760	810									711		
762	23	785			815	870									762		

4.1 Rundstahlbügelschellen ähnlich DIN 3570

4.1 U-bolt clamps similar to DIN 3570

4.1 Colliers arceau semblable à DIN 3570



Bestellschlüssel

Order code / Code de commande

HRRBS 10 BUE ST ZN

Baureihe / range / série

HRRBS

Baugröße / size / taille

1 - 23

Ausführung / model / exécution

BUE

Werkstoff der Stahlteile /

material of steel parts /

matériau des pièces acier

ST

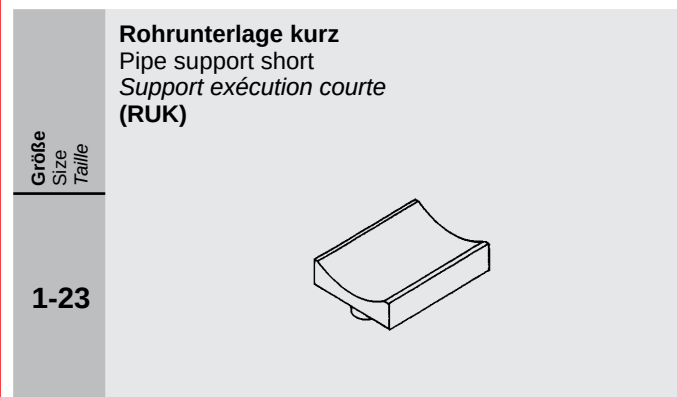
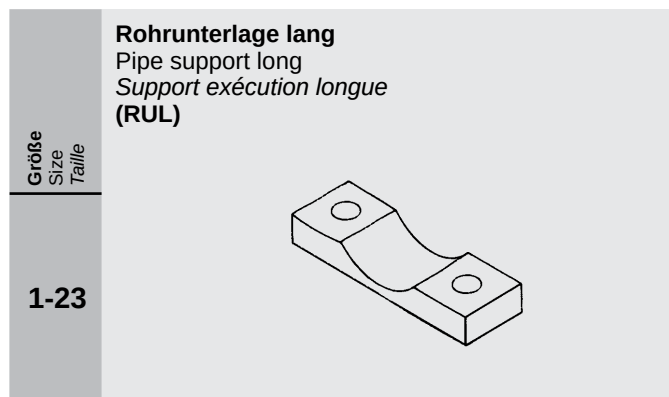
A2 / A4 auf Anfrage / on request / sur demande

Oberfläche der Stahlteile / plating of steel parts /

revêtement des pièces acier

ZN

verzinkt / zinc plated / zingué



Bestellschlüssel

Order code / Code de commande

HRRBS 10 RUL 139.7 PP

Baureihe / range / série

HRRBS

Baugröße / size / taille

1 - 23

Ausführung / model / exécution

RUL / RUK

Durchmesser / O/D / diamètre

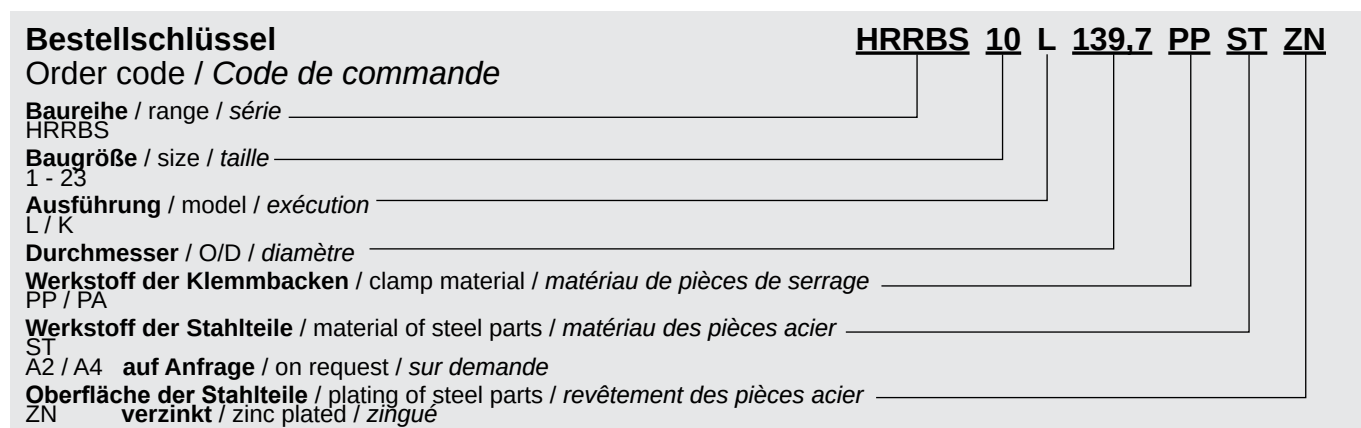
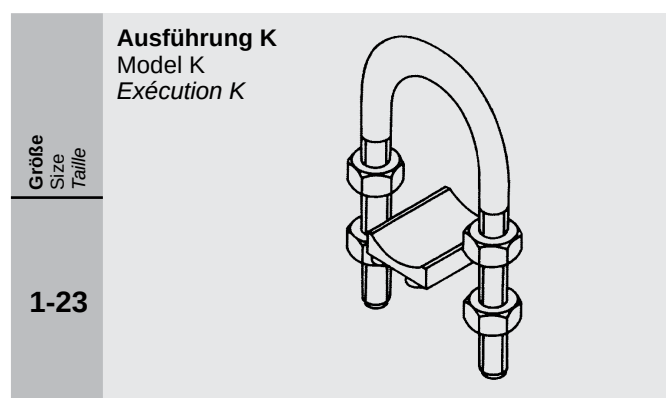
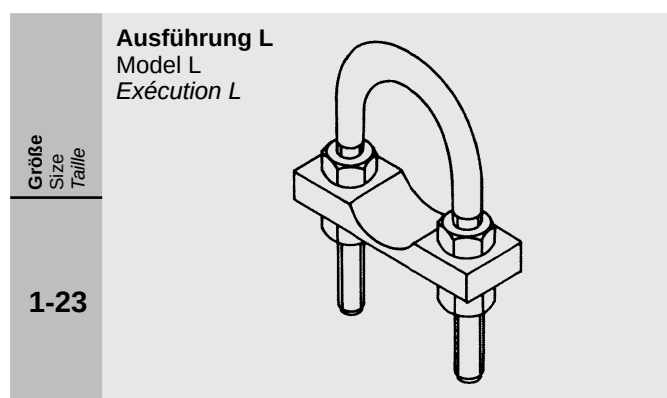
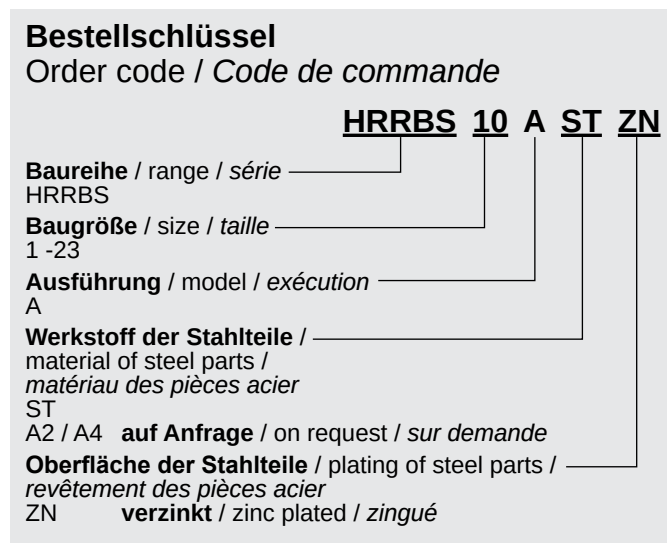
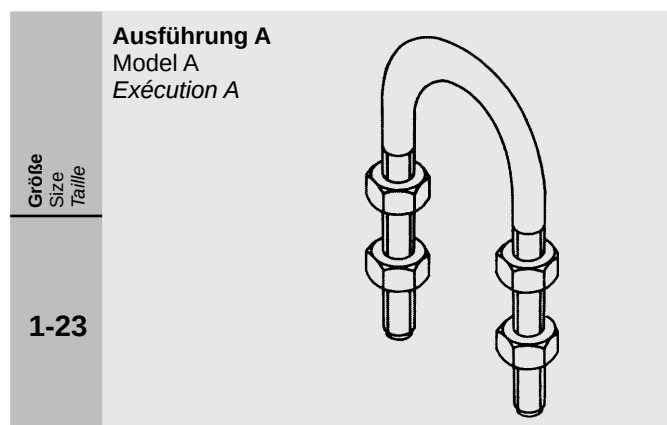
Werkstoff der Klemmbacken / clamp material / matériau des pièces de serrage

PP / PA (nur für RUK / for RUK only / seulement RUK)

4.1 Rundstahlbügelschellen ähnlich DIN 3570

4.1 U-bolt clamps similar to DIN 3570

4.1 Colliers arceau semblable à DIN 3570



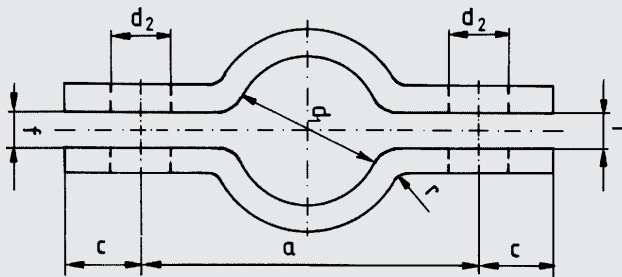
4.2 Flachstahlbügelschellen DIN 3567

4.2 Flat steel bolt clamp to DIN 3567

4.2 Colliers circulaire plat en acier selon DIN 3567

Form A
Form A
Forme A

Lagerware bis Größe 12
Available ex stock up to size 12
Disponible jusqu'à taille 12



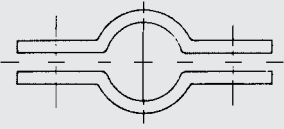
d ₁	Größe Size Taille	Anzuwenden bei Nennweite To be used for nominal width A utiliser pour les tailles don- nées	Abmessungen Dimensions Dimensions	a	c	d ₂	f	r	Flachstahl- nach DIN 1017 Flat steel to DIN 1017 Acier selon DIN 1017	ASKT nach ISO 4017 Ext. hex. to ISO 4017 Vis H selon ISO 4017	Gewicht kg/100 St. Weight kg/100 off Poids kg/100 pièces	Form A
25	1	20		62							21,73	
27	2		3/4"	66							22,75	
30	3	25		68							23,37	
34	4		1"	72							24,79	
38	5	32		76							26,12	
43	6		1 1/4"	82							27,87	
45	7	40		84							28,81	
49	8		1 1/2"	88							30,37	
57	9	50		104							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							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							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							852,20	
419	30			510							875,00	
508	31	500		600							1020,00	
521	32			614							1050,00	

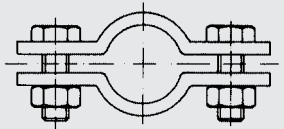
Eingeklammerte Größe möglichst vermeiden / Size in brackets should be avoided if possible / Eviter si possible les tailles entre parenthèses

4.2 Flachstahlbügelschellen DIN 3567

4.2 Flat steel bolt clamp to DIN 3567

4.2 Colliers circulaire plat en acier selon DIN 3567

Größe Size Taille	Form A Ausführung A1 = ohne Schrauben und Muttern Model A1 = without bolts or nuts Exécution A1 = sans vis ni écrou
1-32	

Größe Size Taille	Form A Ausführung A = mit Schrauben und Muttern Model A = with bolts and nuts Exécution A = avec vis et écrou
1-32	

Bestellschlüssel

Order code / Code de commande

HRFBS 12 A1 89 ST ZN Form A

Baureihe / range / série _____

HRFBS

Baugröße / size / taille _____

1 - 32

Ausführung / model / exécution _____

A / A1

Durchmesser / O/D / diamètre _____

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

ST

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

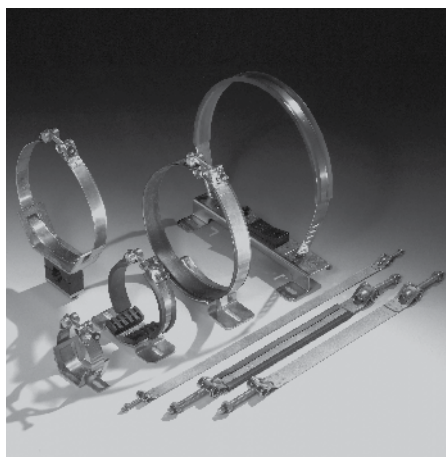
Oberfläche der Stahlteile / plating of steel parts / revêtement des pièces acier _____

BL **blank / unplated / sans revêtement**

ZN **verzinkt / zinc plated / zingué**

Form / form / forme _____

Form A



Gelenkbandschellen

Swivel bolt clamps

Colliers à bande articulée



BT 5.1 Gelenkbolzenspannband

BT 5.1 Swivel bolt clamping band

BT 5.1 Bande de serrage à vis articulée



BT 5.2 Unterlage kurz, für Luftbehälter

BT 5.2 Support short, for mounting air reservoirs

BT 5.2 Support exécution courte, pour fixation réservoir à air



BT 5.3 Gelenkbolzenschelle mit Schnellverschluss

BT 5.3 Quick release swivel bolt clamp

BT 5.3 Collier à arceau à verrouillage rapide



BT 5.4 Gelenkbandkonsolenschelle

BT 5.4 Quick release swivel bolt band clamp

BT 5.4 Collier console à bande articulée



BT 5.5 Gelenkbandkonsolenschelle "MULTI"

BT 5.5 Quick release swivel bolt band clamp "MULTI"

BT 5.5 Collier à bande articulée sur support "MULTI"



BT 5.6 Gelenkband-Prismaschelle

BT 5.6 Swivel bolt prism clamp

BT 5.6 Collier prismatique à arceau



BT 5.7 Halter für Zylinder

BT 5.7 Mounting for cylinder

BT 5.7 Fixation pour vérin

HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

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

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

Internet: www.hydac.com

E-Mail: info@hydac.com

Befestigungstechnik, wie insbesondere Gelenkbänder, ist Sicherheitstechnik. Deshalb sind An- und Einbau unserer Befestigungsmittel nur durch geschultes Personal vorzunehmen. Gewährleistung und Haftung übernehmen wir nur für die Mangelfreiheit unseres Liefergegenstandes als solchen. Für die Eignung der Umfeldbedingungen und für die fachgerechte Montage tragen wir keine Verantwortung.

Mounting technology, in particular swivel bolt clamps, has health & safety implications. Therefore our mounting equipment must only be fitted and installed by trained personnel. We will only guarantee and accept liability for our products as such, but not their installation or their suitability for individual ambient conditions.

La technique de fixation, tout comme les bandes articulées, relèvent de la sécurité. Pour cette raison, le montage et l'installation de notre matériel de fixation ne peuvent être effectués que par un personnel qualifié. Notre garantie et notre responsabilité couvrent uniquement l'absence de vice sur le matériel livré. Nous n'engageons pas notre responsabilité quant aux conditions et à la qualité du montage.

ANMERKUNG

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

NOTE

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

REMARQUE

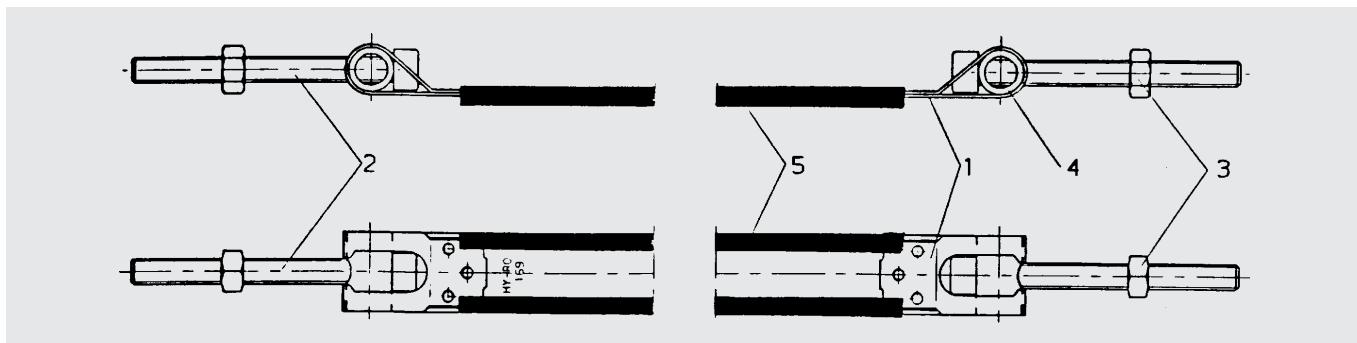
Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.

5.1 Gelenkbolzenspannband

5.1 Swivel bolt clamping band

5.1 Bande de serrage à vis articulées

BT 5



Einzelteile

Individual parts

Pièces individuelles

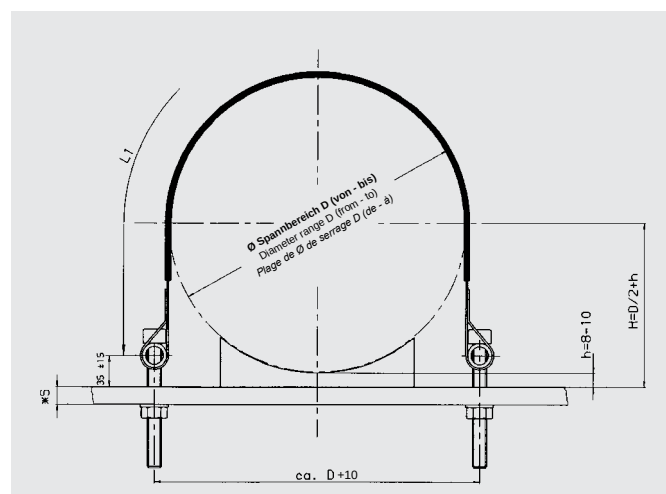
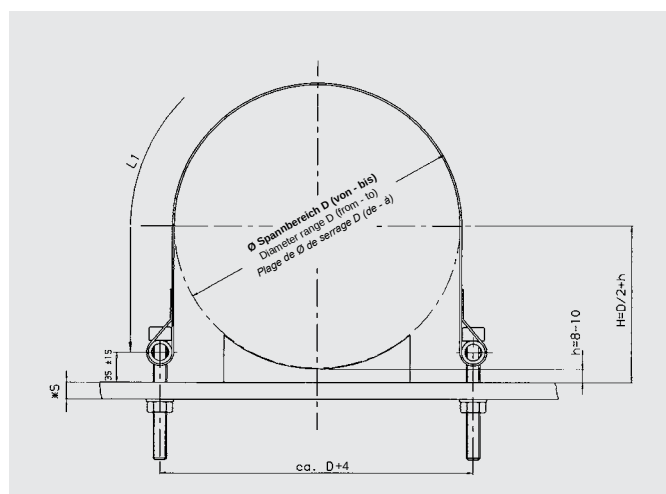
Nr. No. No.	Bezeichnung Description Désignation	Werkstoff/Oberfläche Material/Coating Matériau/Surface
1	Spannband Clamping band Bande de serrage Leichte Baureihe (GBSP) Light range (GBSP) Série légère (GBSP) Schwere Baureihe (GBSSP) Heavy range (GBSSP) Série lourde (GBSSP)	Stahl nicht rostend Stainless steel Acier inoxydable
2	Schraube Bolt Vis	Stahl verzinkt Zinc-plated steel Acier galvanisé
3	Mutter Nut Ecrou	Stahl verzinkt Zinc-plated steel Acier galvanisé
4	Gelenkhülse, Gelenkbolzen Swivel sleeve, swivel bolt Douille articulée, vis articulée	Stahl verzinkt Zinc-plated steel Acier galvanisé
5	Gummiprofil Rubber profile Garniture caoutchouc Bandbreite 25, 30, 40 mm Band width 25, 30, 40 mm Largeur de la bande 25, 30, 40 mm Temperatur-Beständigkeit: -20 °C bis +90 °C Temperature resistance: -20 °C to +90 °C Résistance à la température de -20 °C à +90 °C	Ethylen-Propylen-Terpolymer Ethylene propylene terpolymer Ethyène-propylène-terpolymère

Belastungswerte

Stress factors

Facteurs de résistance

Bandgröße Band dimension Dimension de la bande	max. Zugbelastung (N) max. tensile strength (N) résistance à la traction max. (N)	Anzugsmoment Nm torque rating Nm couple de serrage Nm
25 x 1,0	4600	auf Anfrage, on request, sur demande
30 x 1,0	5500	auf Anfrage, on request, sur demande
30 x 1,5	8300	auf Anfrage, on request, sur demande
40 x 1,5	11000	auf Anfrage, on request, sur demande

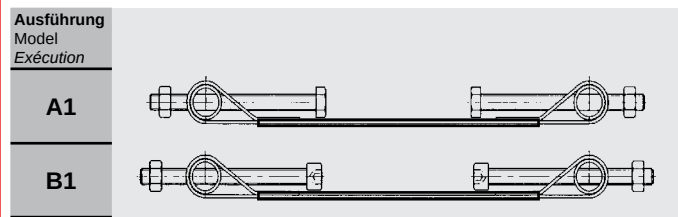
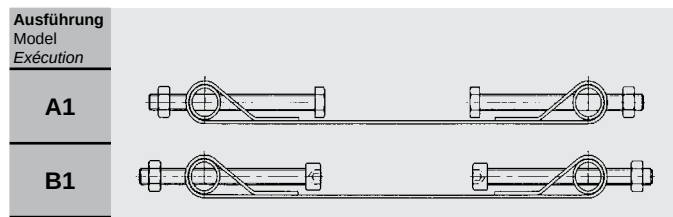


DEF 8.187.3/11.13

5.1 Gelenkbolzenspannband

5.1 Swivel bolt clamping band

5.1 Bande de serrage à vis articulées



Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
64	80 - 86	187
70	87 - 93	206
76	94 - 101	224
82	101 - 109	242
88	108 - 121	260
94	115 - 128	279
100	122 - 139	297
106	130 - 148	316
115	140 - 159	343
120	146 - 164	358
124	151 - 169	371
133	162 - 180	399
142	173 - 191	427
151	184 - 202	455
160	195 - 213	483
169	206 - 224	511
178	217 - 235	539
187	228 - 246	567
196	239 - 257	595
205	250 - 268	623
214	261 - 279	651
223	272 - 290	679
231	281 - 299	704
234	284 - 302	713
241	293 - 311	735
250	304 - 322	764
259	315 - 333	792
268	326 - 344	820
277	337 - 355	849
286	348 - 366	877
295	359 - 377	905
300	366 - 384	921

Leichte Baureihe
Band- und Schraubenabmessung
Light range
Band and thread dimension
Série légère
Dimension de la bande et des vis
25 x 1 mm, M8 x 80

Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
80	99 - 109	232
89	110 - 119	260
98	120 - 130	287
107	131 - 141	315
116	142 - 153	342
125	153 - 171	370
134	164 - 186	398
143	175 - 197	426
152	186 - 208	454
165	201 - 224	494
178	216 - 239	534
191	232 - 255	575
204	248 - 271	615
217	264 - 287	656
230	279 - 302	696
243	295 - 318	737
256	311 - 334	777
269	327 - 350	818
282	342 - 365	859
295	358 - 381	900
300	366 - 389	916
308	374 - 397	941
321	390 - 413	981
334	406 - 429	1022
347	422 - 445	1063
360	437 - 460	1103
373	453 - 476	1144
386	469 - 492	1185
399	485 - 508	1225
412	501 - 524	1266
425	516 - 540	1307
438	532 - 556	1348
451	548 - 571	1388
464	564 - 587	1429
477	580 - 603	1470
490	596 - 619	1511

Leichte Baureihe / Schwere Baureihe
Band- und Schraubenabmessung
Light range / Heavy range
Band and thread dimension
Série légère / Série lourde
Dimension de la bande et des vis
30 x 1 mm, M10x90 / 30 x 1,5 mm, M10x90/
40 x 1,5 mm, M10x90

Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
64	77 - 83	187
70	84 - 90	206
76	91 - 98	224
82	98 - 106	242
88	105 - 118	260
94	112 - 125	279
100	119 - 136	297
106	127 - 145	316
115	137 - 156	343
120	143 - 161	358
124	148 - 166	371
133	159 - 177	399
142	170 - 188	427
151	181 - 199	455
160	192 - 210	483
169	203 - 221	511
178	214 - 232	539
187	225 - 243	567
196	236 - 254	591
205	247 - 265	623
214	258 - 276	651
223	269 - 287	679
231	278 - 296	704
234	281 - 299	713
241	290 - 308	735
250	301 - 319	764
259	312 - 330	792
268	323 - 341	820
277	334 - 352	849
286	345 - 363	877
295	356 - 374	905
300	363 - 382	921

Leichte Baureihe
Band- und Schraubenabmessung
Light range
Band and thread dimension
Série légère
Dimension de la bande et des vis
25 x 1 mm, M8 x 80

Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
80	96 - 106	232
89	107 - 116	260
98	117 - 127	287
107	128 - 138	315
116	139 - 150	342
125	150 - 168	370
134	161 - 183	398
143	172 - 194	426
152	183 - 205	454
165	198 - 221	494
178	213 - 236	534
191	229 - 252	575
204	245 - 268	615
217	261 - 284	656
230	276 - 299	696
243	292 - 315	737
256	308 - 331	777
269	324 - 347	818
282	339 - 362	859
295	355 - 378	900
300	363 - 386	916
308	371 - 394	941
321	387 - 410	981
334	403 - 426	1022
347	419 - 442	1063
360	434 - 457	1103
373	450 - 473	1144
386	466 - 489	1185
399	482 - 505	1225
412	496 - 521	1266
425	513 - 537	1307
438	529 - 553	1348
451	545 - 568	1388
464	561 - 584	1429
477	577 - 600	1470
490	593 - 616	1511

Leichte Baureihe / Schwere Baureihe
Band- und Schraubenabmessung
Light range / Heavy range
Band and thread dimension
Série légère / Série lourde
Dimension de la bande et des vis
30 x 1 mm, M10x90 / 30 x 1,5 mm, M10x90
40 x 1,5 mm, M10x90

Bestellschlüssel

Order code / Code de commande

HRGBLP 25 A1 169 ST

Baureihe /
range / série

25 x 1 / 30 x 1

30 x 1,5 / 40 x 1,5

HRGBLP

HRSGBLP

Bandbreite /

band width / largeur de la bande

25 / 30 / 40

Ausführung / model / exécution

A1 / B1

Typ / type / type

Werkstoff der Stahlteile /

material of steel parts /

matériau des pièces acier

ST / A2

Bestellschlüssel

Order code / Code de commande

HRSGBLP 30 A1 373 ST

Baureihe /
range / série

25 x 1 / 30 x 1

30 x 1,5 / 40 x 1,5

HRSGBLP

HRSGBLP

Bandbreite /

band width / largeur de la bande

25 / 30 / 40

Ausführung / model / exécution

A1 / B1

Typ / type / type

Werkstoff der Stahlteile /

material of steel parts /

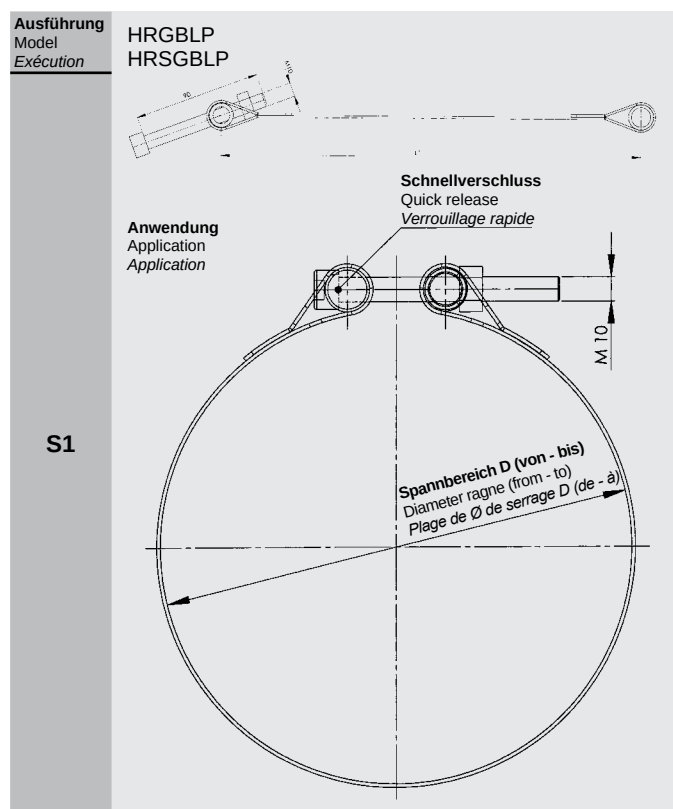
matériau des pièces acier

ST / A2

5.1 Gelenkbolzenspannband

5.1 Swivel bolt clamping band

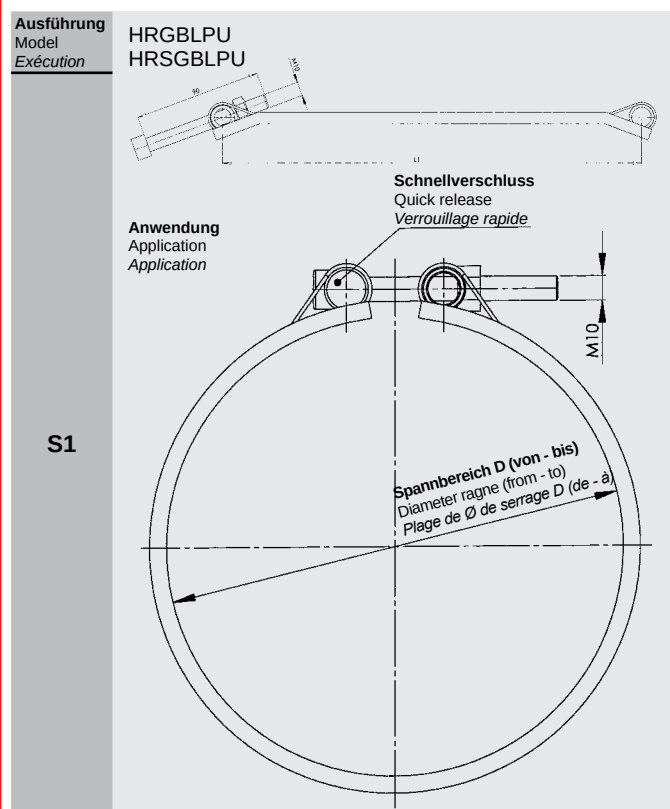
5.1 Bande de serrage à vis articulées



Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
80	77 - 82	232
89	86 - 91	260
98	95 - 100	287
107	104 - 112	315
116	113 - 121	342
125	122 - 130	370
134	131 - 139	398
143	140 - 148	426
152	149 - 157	454
165	162 - 170	494
178	175 - 183	534
191	188 - 196	575
204	201 - 209	615
217	214 - 222	656
230	227 - 235	696
243	240 - 251	737
256	253 - 264	777
269	266 - 277	818
282	279 - 290	859
295	292 - 303	900
300	297 - 308	916
308	305 - 316	941
321	318 - 329	981
334	331 - 342	1022
347	344 - 355	1063
360	357 - 368	1103
373	370 - 381	1144
386	383 - 394	1185
399	396 - 407	1225
412	409 - 420	1266
425	422 - 433	1307
438	435 - 446	1348
451	448 - 459	1388
464	461 - 472	1429
477	474 - 485	1470
490	487 - 498	1511
503	500 - 511	1552

Leichte Baureihe / Schwere Baureihe
Band- und Schraubenabmessung
Light range / Heavy range
Band and thread dimension
Série légère / Série lourde
Dimension de la bande et des vis

30 x 1 mm, M10x90 / 30 x 1,5 mm, M10x90
40 x 1,5 mm, M10x90



Typ Type Type	D (von - bis) D (from - to) D (de - à)	L1
80	71 - 76	232
89	80 - 85	260
98	89 - 94	287
107	98 - 103	315
116	107 - 115	342
125	116 - 124	370
134	125 - 133	398
143	134 - 142	426
152	143 - 151	454
165	156 - 164	494
178	169 - 177	534
191	182 - 190	575
204	195 - 203	615
217	208 - 216	656
230	221 - 229	696
243	234 - 245	737
256	247 - 258	777
269	260 - 271	818
282	273 - 284	859
295	286 - 297	900
300	291 - 302	916
308	299 - 310	941
321	312 - 323	981
334	325 - 336	1022
347	338 - 349	1063
360	351 - 362	1103
373	364 - 375	1144
386	377 - 388	1185
399	390 - 401	1225
412	403 - 414	1266
425	416 - 427	1307
438	429 - 440	1348
451	442 - 453	1388
464	455 - 466	1429
477	468 - 479	1470
490	481 - 492	1511
503	494 - 505	1552

Leichte Baureihe / Schwere Baureihe
Band- und Schraubenabmessung
Light range / Heavy range
Band and thread dimension
Série légère / Série lourde
Dimension de la bande et des vis

30 x 1 mm, M10x90 / 30 x 1,5 mm, M10x90
40 x 1,5 mm, M10x90

Bestellschlüssel

Order code / Code de commande

	HRSGBLP	30	S1	373	ST
Baureihe / range / série					
HRGBLP	(30 x 1,0)				
HRGBLPU	(30 x 1,0)				
HRSGBLP	(30 x 1,5; 40 x 1,5)				
HRSGBLPU	(30 x 1,5; 40 x 1,5)				
Bandbreite / band width / longueur de la bande					
30					
40					
Ausführung / model / exécution					
S1					
Typ / type / type					
Werkstoff der Stahlteile / material of steel parts/ matériau des pièces en acier					
ST / A2					

ANMERKUNG

Eigengefertigte Spannbänder der
Bandgrößen 30x1,0; 30x1,5 und 40x1,5
nach Schweißzulassung DIN EN 15085

Zertifizierungsstufe: CL2
Schweißnahtgüteklasse: CP-C3
Prüfklasse: CT4
Oberflächengüte: Stufe 3

NOTE

Internally manufactured of clamping
bands, band dimension 30x1.0; 30x1.5
and 40x1.5 according to weld certification
DIN EN 15085

Certification level: CL2
Weld seam quality: CP-C3
Quality class: CT4
Surface quality: step 3

REMARQUE

Production de bandes de serrage
de 30x1,0; 30x1,5 et 40x1,5 d'après
agrément de soudure DIN EN 15085

Niveau de certification: CL2
Classe de qualité cordonde soudure:
CP-C3
Classe de contrôle: CT4
Qualité de surface: Niveau 3

5.2 Unterlage kurz, für Luftbehälter

5.2 Support short, for mounting air reservoirs

5.2 Support exécution courte, pour fixation réservoir à air

Unterlage kurz (BUK) für Luftbehälter in Verbindung mit:

– HY-ROS Gelenkbolzen - Spannband (siehe Seite BT 5.1.)

Support short (BUK) for mounting of air reservoir in conjunction with:

– HY-ROS Swivel bolt clamping band (see pages BT 5.1.)

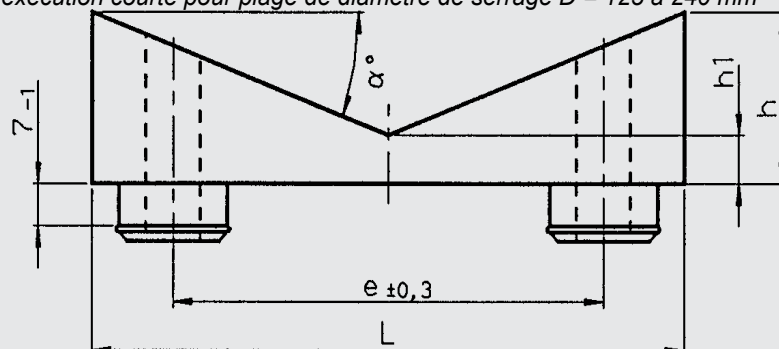
Support exécution courte (BUK) pour fixation de réservoir à air en combinaison avec:

– HY-ROS Bande de serrage à vis articulée (voir pages BT 5.1.)

Unterlage kurz für Spannbereich D = 125 bis 240 mm

Support short for diameter range D = 125 to 240 mm

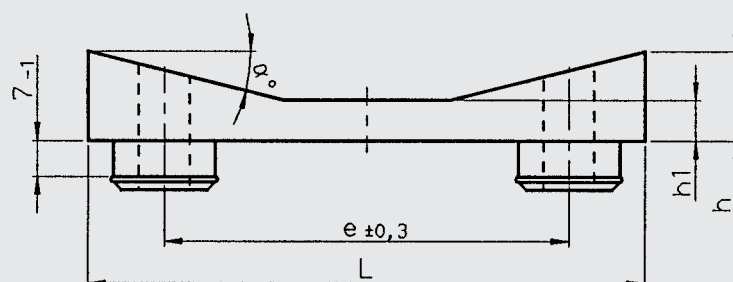
Support exécution courte pour plage de diamètre de serrage D = 125 à 240 mm



Unterlage kurz für Spannbereich D = 240 bis 500 mm

Support short for diameter range D = 240 to 500 mm

Support exécution courte pour plage de diamètre de serrage D = 240 à 500 mm



Spannbereich (von - bis) Diameter range (from - to) Plage de serrage (de - à)	Abmessungen Dimensions Dimensions						Gewicht (g/Stück) Weight (g/ea) Poids (g/pièce)	
	b	L	h	e	h1	α	PP	PA
125 - 240	30	110	28	80	8	20°	49	63
240 - 350			17,6			14°	32	43
350 - 420	40	200	38		10	22°	82	106
420 - 500			32			17,5°	65	83

Bestellschlüssel

Order code / Code de commande

HRLBB BUK 240-350 PA

Baureihe / range / série
HRLBB

Ausführung / model / exécution
BUK

Durchmesser/ O/D / diamètre
125 - 240, 240 - 350, 350 - 420, 420 - 500

Werkstoff / material / matériau
PP / PA

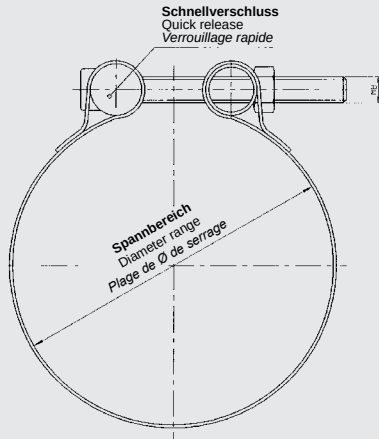
5.3 Gelenkbolzenschelle mit Schnellverschluss

5.3 Quick release swivel bolt clamp

5.3 Colliers à arceau à verrouillage rapide

BT 5

Einfach Basic Simple HRGBP



Bandbreite 25 mm
Band width 25 mm
Largeur de bande 25 mm

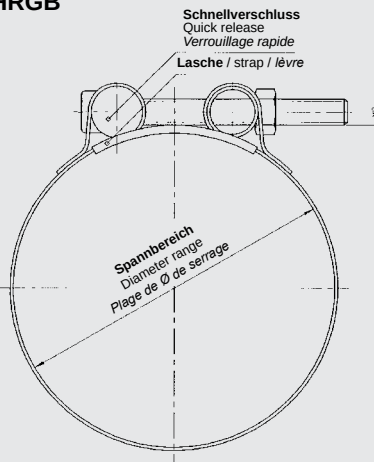
Typ Type Type	D (von – bis) D (from – to) D (de – à)	
62	60	65
64	62	67
70	68	73
76	74	79
82	80	85
88	86	91
94	92	97
100	98	103
106	104	112
115	113	121
124	122	130
133	131	139
142	140	148
151	149	157
160	158	166
169	167	175
178	176	184
187	185	193
196	194	202
205	203	211
214	212	220
223	221	229
231	230	238
241	239	247
250	248	256
259	257	265
268	266	274
277	275	283
286	284	292
295	293	301

Bestellschlüssel / Order code / Code de commande

HRGBP 25 S1 203-211/205 ST

Baureihe/
range / série
HRGBP
Größe /
size / taille
Ausführung /
model / exécution
Durchmesser /
O/D / diamètre
Werkstoff der Stahlteile /
material of steel parts /
matériau des pièces acier
ST / A2

mit Lasche with strap avec lèvre HRGB



Bandbreite 25 mm
Band width 25 mm
Largeur de bande 25 mm

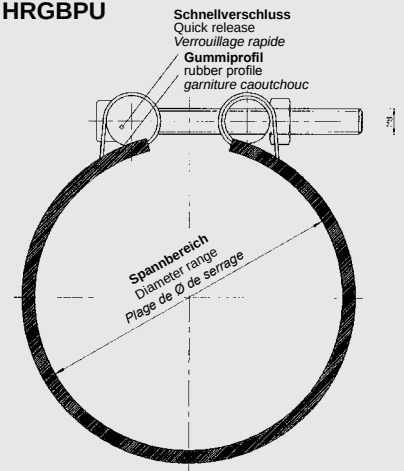
Typ Type Type	D (von – bis) D (from – to) D (de – à)	
62	60	65
64	62	67
70	68	73
76	74	79
82	80	85
88	86	91
94	92	97
100	98	103
108	104	112
117	113	121
126	122	130
135	131	139
144	140	148
153	149	157
162	158	166
171	167	175
180	176	184
189	185	193
198	194	202
207	203	211
216	212	220
225	221	229
234	230	238
243	239	247
252	248	256
261	257	265
270	266	274
279	275	283
288	284	292
297	293	301

Bestellschlüssel / Order code / Code de commande

HRGB 25 S1 203-211/207 ST

Baureihe/
range / série
HRGB
Größe /
size / taille
Ausführung /
model / exécution
Durchmesser /
O/D / diamètre
Werkstoff der Stahlteile /
material of steel parts /
matériau des pièces acier
ST / A2

mit Gummiprofil with rubber profile avec garniture caoutchouc HRGBPU



Bandbreite 25 mm
Band width 25 mm
Largeur de bande 25 mm

Typ Type Type	D (von – bis) D (from – to) D (de – à)	
62	54	59
64	56	61
70	62	67
76	68	73
82	74	79
88	80	85
94	86	91
100	92	97
106	98	106
115	107	115
124	116	124
133	125	133
142	134	142
151	143	151
160	152	160
169	161	169
178	170	178
187	179	187
196	188	196
205	197	205
214	206	214
223	215	223
231	224	232
241	233	241
250	242	250
259	251	259
268	260	268
277	269	277
286	278	286
295	287	295

Bestellschlüssel / Order code / Code de commande

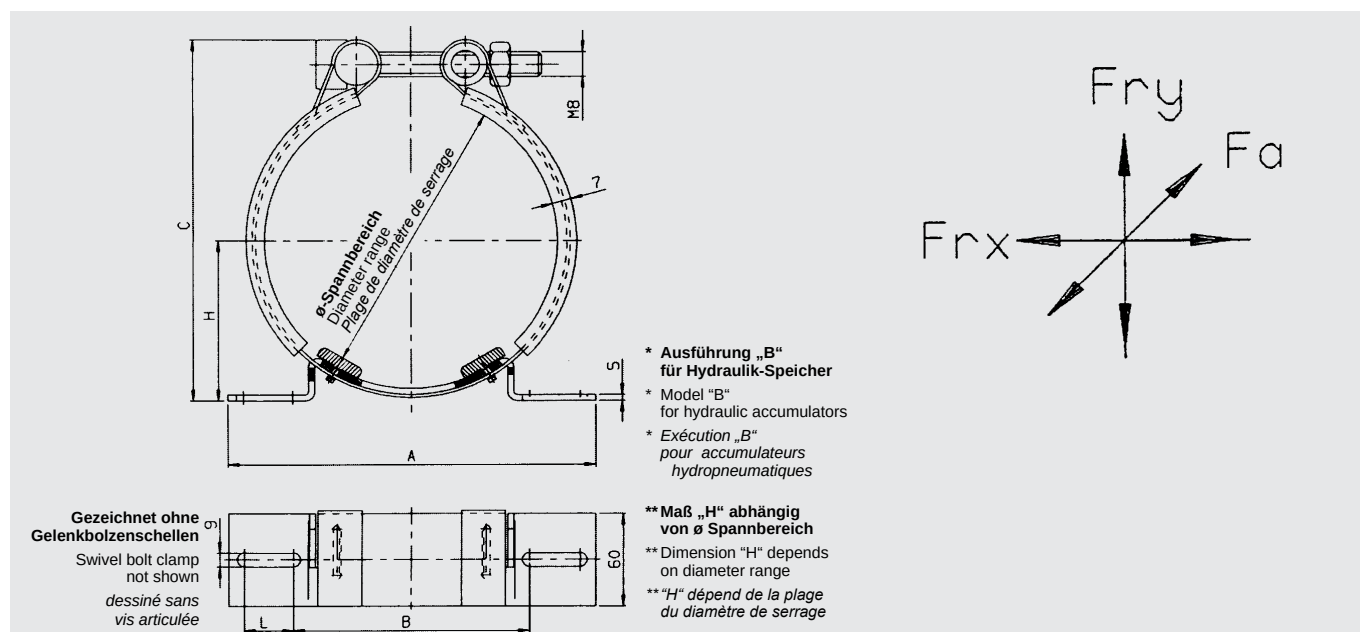
HRGBPU 25 S1 74-79/82 ST

Baureihe/
range / série
HRGBPU
Größe /
size / taille
Ausführung /
model / exécution
Durchmesser /
O/D / diamètre
Werkstoff der Stahlteile /
material of steel parts /
matériau des pièces acier
ST / A2

5.4 Gelenkbandkonsolenschele

5.4 Quick release swivel bolt band clamp

5.4 Colliers console à bande articulée



Werkstoff der Einzelteile

Material of individual parts

Matériaux des différents éléments

Bezeichnung Description Désignation	Werkstoff / Oberfläche Material / Coating Matériau / Surface	Abkürzung Abbreviation Abréviation
Konsole (KONS) Support (KONS) Console (KONS)	Stahl / verzinkt Zinc-plated steel Acier galvanisé	ST ZN ST ZN ST ZN
Rohrunterlage Pipe support Support exécution courte	Polyethylen Polyethylene Polyéthylène	PE PE PE
Gelenkbolzenschele mit Schnellschraubverschluss (HRGB) Quick release swivel bolt clamp (HRGB) Colliers a arceau à verrouillage rapide (HRGB)	Stahl / nicht rostend Stahl / verzinkt Stainless steel Zinc-plated steel Acier inoxydable Acier galvanisé	ST ZN / F1 ST ZN / F1 ST ZN / F1
Gummiprofil Rubber profile Garniture caoutchouc	Chloropren Chloroprene Caoutchouc chloroprène	EPDM EPDM EPDM

Schellengröße mit Belastungswerten (N)

Clamp size with stress factors (N)

Taille de colliers avec facteurs de résistance (N)

Größe Size Taille	Durchmesser Diameter Diamètre	Fry (N)	Fr _x (N)	Fa (N)	Anzugsmoment in Nm Torque rating in Nm Couple de serrage en Nm
1	100 - 120	500	400	360	max. 17
	121 - 159	550	350	350	max. 17
2	160 - 180	1100	700	650	max. 17
	181 - 200	1200	640	640	max. 17
	201 - 230	1500	630	630	max. 17

A			B		Abmessungen und Gewicht gültig für Ausführung A und B* Dimensions and weight apply to model A and B* Dimensions et poids pour exécutions A et B*					Gewicht (KG) Weight (KG) Poids (KG)
Größe Size Taille	Spannbereich (von - bis) Diameter range (from - to) Plage de diamètre de serrage (de - à)	H** (von - bis) H** (from - to) H** (de - à)	Hydr. Speicher Hydr. accumulators Accumulateur hydropneumatique	Hydr. Speicher Hydr. accumulators Accumulateur hydropneumatique H	B	L	A	C max	S	
1	100-105	59 - 62			100	18	156	135	3	0,4
	106-114	62,5 - 66	108	64				138		0,41
	115-123	66,5 - 71	114	67				150		0,42
	124-132	71,5 - 76	126	77				160		0,43
	133-142	76,5 - 82,5						174		0,44
	143-151	83 - 86,5	146	83				182		0,45
	152-159	87 - 91						191		0,46
2	160-167	89 - 92	167	92,5	152	32	236	196	4	0,7
	167-175	92,5 - 96,5	175	99,5				207		0,72
	176-185	97 - 102,5	206	118				241		0,75
	186-194	103 - 108	210	123				248		0,76
	195-203	108,5 - 113,5	216	123				251		0,76
	204-213	111,5 - 115,5	219	123				252		0,77
	214-222	116 - 120	222	120/123				254		0,77
	223-230	120,5 - 123,5	229	123				259		0,78

Bestellschlüssel

Order code / Code de commande

HRGKS 1 A 124-132 ST

Baureihe / range / série

HRGKS

Baugröße / size / taille

1 / 2

Ausführung / model / exécution

A / B

Durchmesser/ O/D / diamètre

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

ST ZN verzinkt / zinc plated / zinqué

5.5 Gelenkbandkonsolenschele "MULTI"

5.5 Quick release swivel bolt band clamp "MULTI"

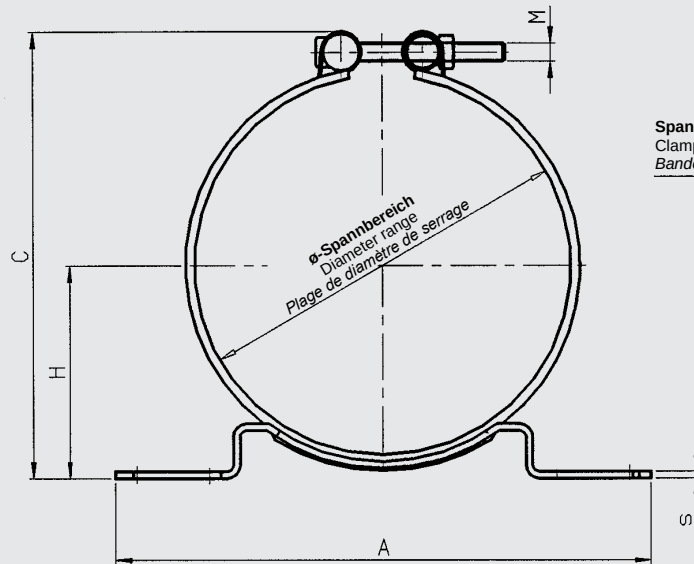
5.5 Colliers à bande articulée sur support "MULTI"

BT 5

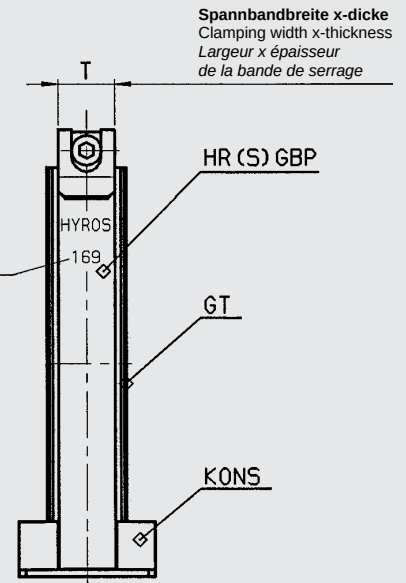
Ausführung: Standard (HRGKSM)

Model: standard (HRGKSM)

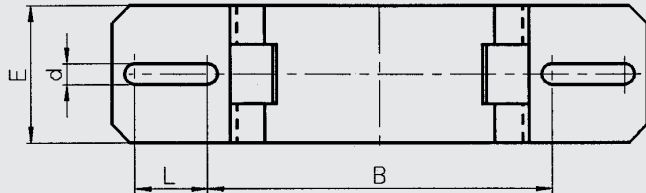
Exécution: standard (HRGKSM)



Spannband-Typ
Clamp type
Bande de serrage type



Gezeichnet ohne Gelenkbolzenschele
Swivel bolt clamp not shown
dessiné sans colliers à arceau



Werkstoff der Einzelteile

Material of individual parts

Matériaux des différents éléments

Bezeichnung Description Désignation	Werkstoff/Oberfläche Material/Coating Matériau/Revêtement	Abkürzung Abbreviation Abréviation
Konsole (KONS) Support (KONS) Console (KONS)	Stahl/verzinkt Zinc-plated steel Acier galvanisé	ST ZN ST ZN ST ZN
Kunststoffprofil (GT) Synthetic material profile (GT) Profil en matériau synthétique (GT)	Polyethylen Polyethylene Polyéthylène	PE PE PE
Gelenkbolzenschele mit Schnellverschraubverschluss (HR(S)GBP) Quick release swivel bolt clamp (HR(S)GBP) Colliers à arceau à verrouillage rapide (HR(S)GBP)	Stahl/nicht rostend Stahl/verzinkt Stainless steel Zinc-plated steel Acier inoxydable Acier galvanisé	ST ZN/F1 ST ZN/F1 ST ZN/F1

5.5 Gelenkbandkonsolenschelle "MULTI"

5.5 Quick release swivel bolt band clamp "MULTI"

5.5 Colliers à bande articulée sur support "MULTI"

Größe Size Taille	Ausführung Model Exécution	D (von - bis) D (from - to) D (de - à)	Typ Type Type	H	C max	M	T	A	s	L	B	E	d	Werkstoff Material Matériau	Gewicht in kg/Stück Weight in kg/ea Poids en kg/pièce
0	R	44 - 46	47	29,8 - 32,3	67	M6x50	20x0,8	120	3	8	85	40	9	ST	0,15
		46 - 49	50	30,8 - 32,3	69										0,15
		51 - 54	55	33,3 - 34,8	75										0,15
		55 - 58	59	35,3 - 36,8	77										0,16
		58 - 61	62	37,3 - 38,8	83										0,16
		62 - 65	65	38,0 - 39,5	85										0,20
		66 - 69	69	40,0 - 41,5	89										0,21
		70 - 73	73	42,0 - 43,5	93										0,21
		73 - 76	76	43,5 - 45,0	96										0,22
		77 - 80	80	45,5 - 47,0	100										0,22
		81 - 84	85	47,0 - 48,5	104										0,23
		85 - 88	89	49,0 - 50,5	108										0,23
		89 - 92	93	51,0 - 52,5	112										0,24
		92 - 95	96	52,5 - 54,0	115										0,24
		96 - 100	100	54,5 - 56,5	120										0,24
1	R	101 - 109	106	58,5 - 62,5	137	M8 x 80	25x1,0	156	3	18	100	50	9	ST	0,34
		110 - 118	115	63,0 - 67,0	146										0,35
		119 - 127	124	66,8 - 70,8	154										0,36
		128 - 136	133	71,3 - 75,3	163										0,37
		137 - 145	142	76,0 - 80,0	172										0,38
		146 - 154	151	80,5 - 84,5	181										0,39
		155 - 163	160	85,0 - 89,0	190										0,40
2	R	163 - 171	169	90,1 - 94,1	200	M8 x 80	25x1,0	236	3	32	152	60	9	ST	0,57
		167 - 175	173	92,1 - 96,1	204										0,58
		172 - 180	178	94,6 - 98,6	209										0,58
		181 - 189	187	98,4 - 102,4	217										0,59
		186 - 194	192	100,9 - 104,9	222										0,60
		190 - 198	196	102,9 - 106,9	226										0,60
		199 - 207	205	107,4 - 111,4	235										0,61
		208 - 216	214	111,2 - 115,2	243										0,62
		217 - 225	223	115,7 - 119,7	252										0,63
		226 - 234	231	120,2 - 124,2	261										0,64
3	R	235 - 246	243	129,0 - 134,5	279	M10 x 90	30x1,0	300	4	28	222	60	11	ST	0,97
		248 - 259	256	135,5 - 141,0	292										0,99
		261 - 272	269	140,9 - 146,4	304										1,00
		274 - 285	282	147,4 - 152,9	317										1,02
		287 - 298	295	153,9 - 159,4	330										1,03
		300 - 311	308	159,4 - 164,9	342										1,05
		313 - 324	321	165,9 - 171,4	355										1,06
		326 - 337	334	172,4 - 177,9	368										1,08
4	R	339 - 350	347	181,2 - 186,7	385	M10 x 90	30x1,5	400	4	28	322	60	11	ST	1,47
		352 - 363	360	187,7 - 193,2	398										1,49
		365 - 376	373	194,2 - 199,7	411										1,51
		378 - 389	386	200,7 - 206,2	424										1,52
		391 - 402	399	205,2 - 210,7	435										1,54
		404 - 415	412	211,7 - 217,2	448										1,56
		417 - 428	425	218,2 - 223,7	461										1,58
		430 - 441	438	224,7 - 230,2	474										1,60
		443 - 454	451	229,4 - 234,9	485										1,62
		456 - 467	464	235,9 - 241,4	498										1,63
		469 - 480	477	242,4 - 247,9	511										1,65
		482 - 493	490	248,9 - 254,4	524										1,67
		495 - 506	503	255,4 - 260,9	537										1,70

5.5 Gelenkbandkonsolenschelle "MULTI"

5.5 Quick release swivel bolt band clamp "MULTI"

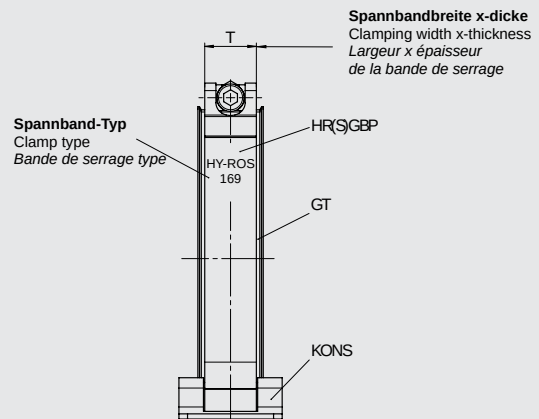
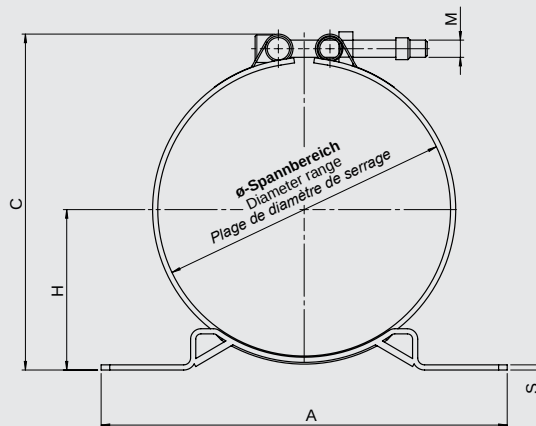
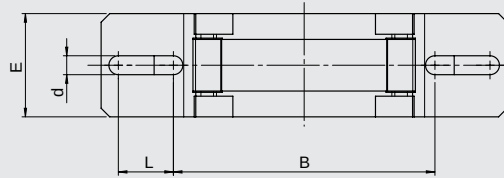
5.5 Colliers à bande articulée sur support "MULTI"

BT 5

Ausführung: mit Steg (HRVMS)

Model: with web plate (HRVMS)

Exécution: avec nervure de reifort (HRVMS)



Größe Size Taille	Ausführung Model Exécution	Spannbereich (von - bis) Diameter range (from - to) Plage de diamètre de serrage (de - à)	Typ Type Type	H	C max	M	T	A	s	L	B	E	d	Werkstoff Material Matériau	Gewicht in kg/Stück Weight in kg/ea Poids en kg/pièce	HRVMS
2	R	159-167	165	88,1- 92,1	197	M10x90	30x1,5	236	3	28	158	60	11	ST	0,73	
		165-173	171	91,1- 95,1	203										0,73	
		172-180	178	94,2- 98,2	210										0,74	
		178-186	184	97,6-101,6	216										0,74	
		185-193	191	101,1-105,1	223										0,75	
		192-200	198	103,9-107,9	229										0,75	
		198-206	204	106,9-110,9	235										0,75	
		204-212	210	109,9-113,9	241										0,76	
		211-219	217	112,7-116,7	248										0,77	
		217-225	223	115,7-119,7	254										0,78	
3	R	224-232	230	119,2-125,2	263	M10x90	30x1,5	300	4	28	222	60	11	ST	0,79	
		235-246	243	129,0-134,5	279										1,03	
		248-259	256	135,5-141,0	292										1,05	
		261-272	269	140,9-146,4	304										1,06	
		274-285	282	147,4-152,9	317										1,08	
		287-298	295	153,9-159,4	330										1,09	
		300-311	308	159,4-164,9	342										1,11	
		313-324	321	165,9-171,4	355										1,12	
		326-337	334	172,4-177,9	368										1,14	
		339-350	347	181,2-186,7	385										1,53	
4	R	352-363	360	187,7-193,2	398	M10x90	30x1,5	400	4	28	322	60	11	ST	1,55	
		365-376	373	194,2-199,7	411										1,57	
		378-389	386	200,7-206,2	424										1,58	
		391-402	399	205,2-210,7	435										1,60	
		404-415	412	211,7-217,2	448										1,62	
		417-428	425	218,2-223,7	461										1,64	
		430-441	438	224,7-230,2	474										1,66	
		443-454	451	229,4-234,9	485										1,68	
		456-467	464	235,9-241,4	498										1,69	
		469-480	477	242,4-247,9	511										1,71	
		482-493	490	248,9-254,4	524										1,73	
		495-506	503	255,4-260,9	537										1,76	

5.5 Gelenkbandkonsolenschelle "MULTI"

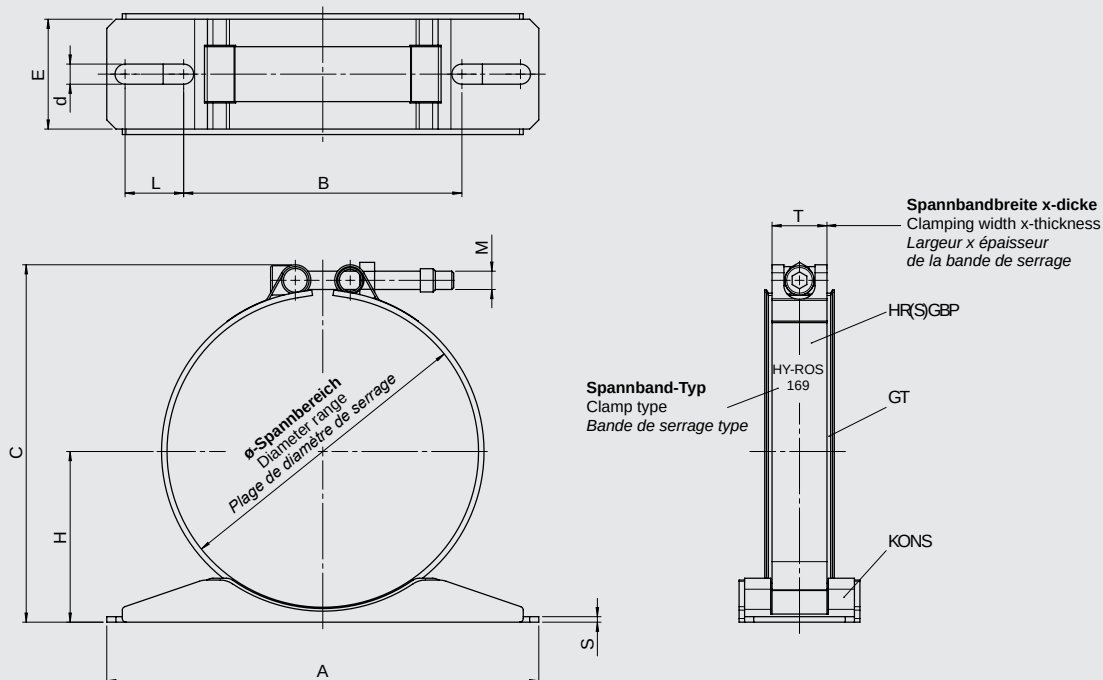
5.5 Quick release swivel bolt band clamp "MULTI"

5.5 Colliers à bande articulée sur support "MULTI"

Ausführung: mit Wange (HRVMW)

Model: with reinforced side wall (HRVMW)

Exécution: avec renfort latéral (HRVMW)



Größe Size Taille	Ausführung Model Exécution	Spannbereich (von - bis) Diameter range (from - to) Plage de diamètre de serrage (de - à)	Typ Type Type	H	C max	M	T	A	s	L	B	E	d	Werkstoff Material Matériau	Gewicht in kg/Stück Weight in kg/ea Poids en kg/piece	HRVMW
2	R	159-167	165	88,1-92,1	197	M10x90	30x1,5	236	3	28	158	60	11	ST	0,73	
		165-173	171	91,1-95,1	203										0,73	
		172-180	178	94,2-98,2	210										0,74	
		178-186	184	97,6-101,6	216										0,74	
		185-193	191	101,1-105,1	223										0,75	
		192-200	198	103,9-107,9	229										0,75	
		198-206	204	106,9-110,9	235										0,75	
		204-212	210	109,9-113,9	241										0,76	
		211-219	217	112,7-116,7	248										0,77	
3	R	217-225	223	115,7-119,7	254	M10x90	30x1,5	300	4	28	222	60	11	ST	0,78	
		224-232	230	119,2-125,2	263										0,79	
		235-246	243	129,0-134,5	279										1,41	
		248-259	256	135,5-141,0	292										1,43	
		261-272	269	140,9-146,4	304										1,44	
		274-285	282	147,4-152,9	317										1,46	
		287-298	295	153,9-159,4	330										1,47	
		300-311	308	159,4-164,9	342										1,49	
		313-324	321	165,9-171,4	355										1,50	
4	R	326-337	334	172,4-177,9	368	M10x90	30x1,5	400	4	28	322	60	11	ST	1,52	
		339-350	347	181,2-186,7	385										2,08	
		352-363	360	187,7-193,2	398										2,10	
		365-376	373	194,2-199,7	411										2,12	
		378-389	386	200,7-206,2	424										2,13	
		391-402	399	205,2-210,7	435										2,15	
		404-415	412	211,7-217,2	448										2,17	
		417-428	425	218,2-223,7	461										2,19	
		430-441	438	224,7-230,2	474										2,21	
		443-454	451	229,4-234,9	485										2,23	
		456-467	464	235,9-241,4	498										2,24	
		469-480	477	242,4-247,9	511										2,26	
		482-493	490	248,9-254,4	524										2,28	
		495-506	503	255,4-260,9	537										2,30	

5.5 Gelenkbandkonsolenschelle "MULTI"

5.5 Quick release swivel bolt band clamp "MULTI"

5.5 Colliers à bande articulée sur support "MULTI"

Bestellschlüssel

Order code / Code de commande

	HRGKSM	2	R	186-194/	192	ST	GS	O.PE
Baureihe / range / série	HRGKSM / HRVMS / HRVMW							
Baugröße / size / taille	HRGKSM (0 / 1 / 2 / 3 / 4)							
	HRVMS (2 / 3 / 4)							
	HRVMW (2 / 3 / 4)							
Ausführung / model / exécution	R							
Durchmesser / O/D / diamètre								
Typ / type / type								
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier	ST ZN							
	verzinkt / zinc plated / zinqué							
	A2*							
	A4*							
Sonderausführung / special model / exécution spéciale	GS							
	mit Gleitschiene / with guide rail / avec rail de guidage							
	(nur HRVMW / only HRVMW / seulement HRVMW)							
	ab Größe 3 / for size 3 and above / à partir de la taille de 3							
O.PE	ohne Kunststoffprofil / without synthetic material profile / sans profile en matériau synthétique							

* auf Anfrage / on request / sur demande

5.6 Gelenkbandprismaschelle

5.6 Swivel bolt prism clamp

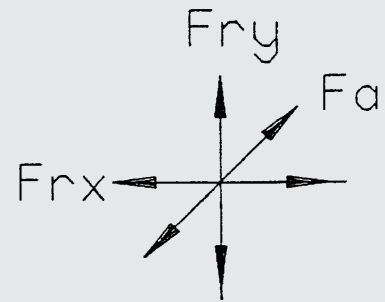
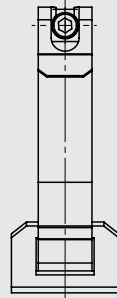
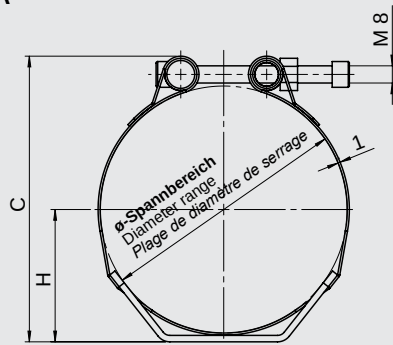
5.6 Colliers prismatique à arceau

BT 5

Ausführung A

Model A

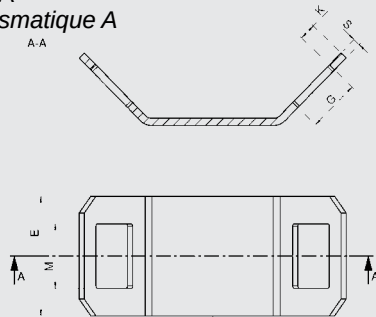
Exécution A



Prisma-Ausführung A

Prism model A

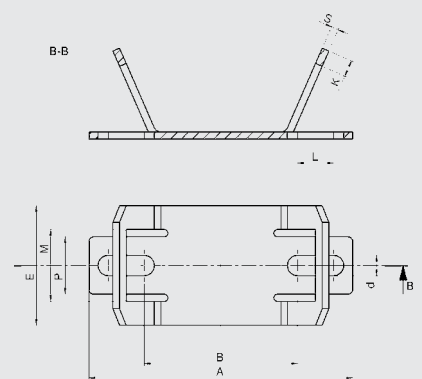
Exécution prismatique A



Prisma-Ausführung AV

Prism model AV

Exécution prismatique AV



Schellengröße mit Belastungswerten (N)

Clamp size with stress factors (N)

Taille de colliers avec facteurs de résistance (N)

(2-fache Sicherheit gegen Verformung)

(double protection against distortion)

(double sécurité contre déformation)

Größe Size Taille	Spannbereich Diameter range Plage de diamètre	Fry (N)	Fr _x (N)	Fa (N)	Anzugsmoment in Nm Torque rating in Nm Couple de serrage en Nm
0	67 - 138	450	450	350	max. 17
1	139-300	1000	630	630	max. 17

5.6 Gelenkbandprismaschelle
5.6 Swivel bolt prism clamp
5.6 Colliers prismatique à arceau

Größe Size Taille	Ausführung Model Exécution	Spannbereich (von – bis) Diameters range (from – to) Plage de diamètre de serrage (de – à)	Typ Type Type	H	C _{max}	E	M	S	K	G	A	B	d	L	P	Werkstoff Material Matériau	Gewicht A/AV in (kg) Weight A/AV in (kg) Poids A/AV en (kg)		
																	A	/	AV
0	A / AV	67 – 72	70	37,5 – 40,0	93	50	27/30	3	7	22	110	64	8,5	15	24	ST	0,25	/	0,26
		73 – 78	76	40,5 – 43,0	99												0,26	/	0,26
		79 – 84	82	43,5 – 46,0	105												0,26	/	0,27
		85 – 90	88	46,5 – 49,0	111												0,26	/	0,27
		91 – 96	94	49,5 – 52,0	117												0,27	/	0,27
		97 – 102	100	52,5 – 55,0	123												0,27	/	0,28
		103 – 111	106	55,5 – 59,5	132												0,27	/	0,28
		112 – 120	115	60,0 – 64,0	141												0,28	/	0,29
		121 – 129	124	64,5 – 68,5	150												0,29	/	0,29
		130 – 138	133	69,0 – 73,0	159												0,29	/	0,30
		139 – 147	142	73,5 – 77,5	168												0,41		
1	A	148 – 156	151	78,0 – 82,0	177	50	27	3	13	22						ST	0,42		
		157 – 165	160	82,5 – 86,5	186												0,42		
		166 – 174	169	87,0 – 91,0	195												0,43		
		175 – 183	178	91,5 – 95,5	204												0,44		
		184 – 192	187	96,0 – 100,0	213												0,44		
		193 – 201	196	100,5 – 104,5	222												0,44		
		202 – 210	205	105,0 – 109,0	231												0,45		
		211 – 219	214	109,5 – 113,5	240												0,46		
		216 – 224	219	112,0 – 116,0	245												0,47		
		220 – 228	223	114,0 – 118,0	249												0,48		
		228 – 236	231	118,0 – 122,0	257												0,48		
		238 – 246	241	123,0 – 127,0	267												0,48		
		247 – 255	250	127,5 – 131,5	276												0,49		
		256 – 264	259	132,0 – 136,0	285												0,49		
		265 – 273	268	136,5 – 140,5	294												0,50		
		274 – 282	277	141,0 – 145,0	303												0,50		
		283 – 291	286	145,5 – 149,5	312												0,51		
		292 – 300	295	150,0 – 154,0	321												0,52		

Bestellschlüssel
Order code / Code de commande
HRGPS 0 AV 91-96/94 ST
Baureihe / range / série
Baugröße / size / taille
Ausführung / model / exécution
Durchmesser/ O/D / diamètre
Werkstoff der Stahlteile / material of steel parts / matériau des pièces acier
ST blank / unplated / sans revêtement
ST ZN verzinkt / zinc plated / zinqué
A2*
* auf Anfrage / on request / sur demande

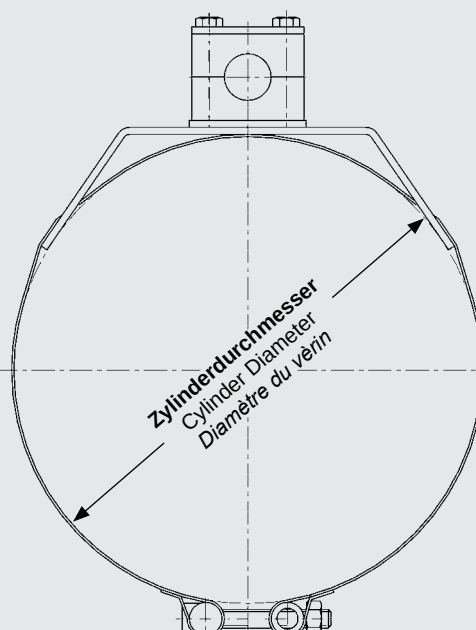
5.7 Halter für Zylinder

5.7 Clamp for cylinders

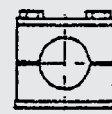
5.7 Fixation pour vérin

Größe Size Taille	Zylinderdurchmesser Cylinder diameter Diamètre du vérin
7	67 - 88
8	89 - 99
9	100 - 114
10	115 - 140
11	141 - 169
12	170 - 194
13	195 - 220
14	221 - 274
15	275 - 299

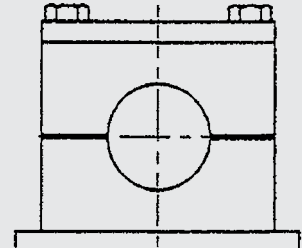
Standardausführung A
Standard model A
Exécution standard A



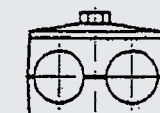
Schelle DIN3015 Teil 1
Clamp DIN3015 part 1
Colliers DIN3015 chap. 1



Schelle DIN3015 Teil 2
Clamp DIN3015 part 2
Colliers DIN3015 chap. 2



Schelle DIN3015 Teil 3
Clamp DIN3015 part 3
Colliers DIN3015 chap. 3



Andere Kombinationen auf Anfrage
Other combinations on request
Autres combinaisons sur demande

Bestellschlüssel

Order code / Code de commande

Baureihe / range / série HRHZ

Baugröße Zylinder / size of cylinder / taille du vérin 12

Baugröße Schelle / clamp size / taille des pièces de serrage 3S

Ausführung / model / exécution A

Durchmesser Zylinder / O/D cylinder / diamètre extérieur du vérin 172

Durchmesser Rohr / pipe O/D / diamètre extérieur du tuyau 33.7

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

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

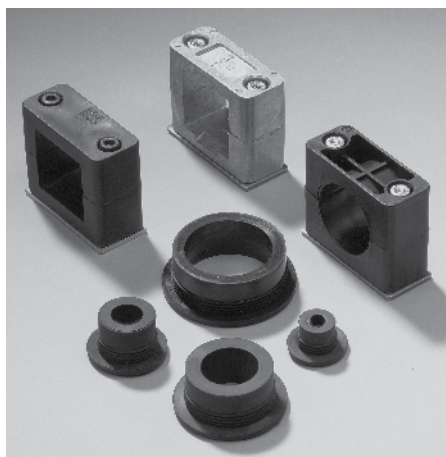
Metrisches Gewinde / metric thread / filet métrique M

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

1L 1S 1Z
2L 2S 2Z
3L 3S 3Z
4L 4S 4Z
5L 5Z
6L

A2 / A4 auf Anfrage / on request / sur demande

verzinkt / zinc plated / zingué



Sonstige Lösungen

Other solutions

Autres solutions



BT 6.1 Sensorschelle

BT 6.1 Sensor clamp

BT 6.1 Collier pour capteur



BT 6.2 Rohrdurchführung

BT 6.2 Rubber tank bush

BT 6.2 Traversée de cloison

HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

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E-Mail: info@hydac.com

ANMERKUNG

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

NOTE

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

REMARQUE

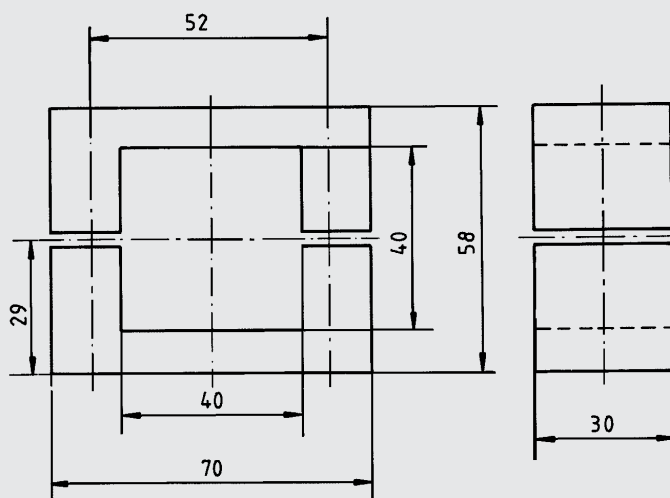
Les données de ce prospectus se réfèrent aux conditions de fonctionnement et d'utilisation décrites. Pour des conditions d'utilisation et de fonctionnement différentes, veuillez vous adresser au service technique compétent. Sous réserve de modifications techniques.

6.1 Sensorschelle

6.1 Sensor clamp

6.1 Collier pour capteur

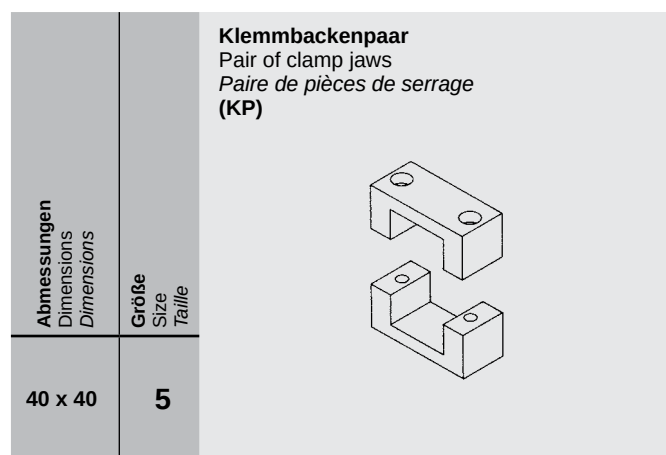
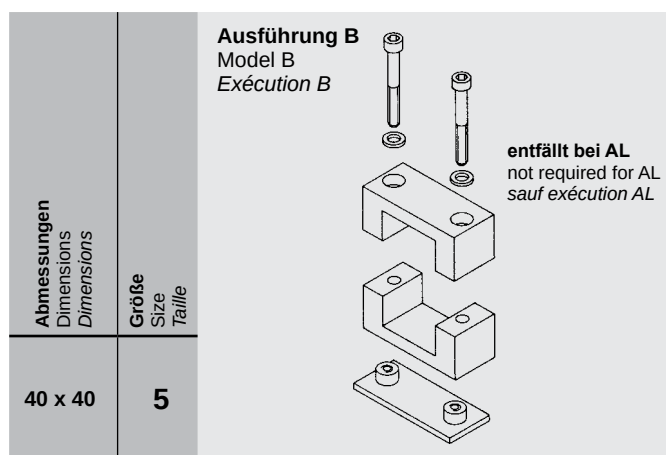
BT 6



Weitere Einzelteile sind bau- und preisgleich mit der Leichten Reihe (Standard) siehe Kapitel Schellen nach DIN 3015.

Other components are identical in size and price to the light range (standard) see chapter on clamps to DIN 3015.

Les autres pièces détachées sont identiques en prix et en encombrement à celles de la série légère (standard). Voir § colliers selon DIN 3015.



Bestellschlüssel

Order code / Code de commande

HRSEN 5 B 40x40 PP ST M BL

Baureihe / range / série
HRSEN

Baugröße / size / taille
5

Ausführung / model / exécution
B

Durchmesser/ O/D / diamètre
Werkstoff der Klemmbacken / clamp material /
matériau des pièces de serrage
PP / PA / AL

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

Metrisches Gewinde / metric thread / *filet métrique*

Oberfläche der Stahlteile / plating of steel parts /
revêtement des pièces acier
BL **Blank /** unplated / *sans revêtement*

Bestellschlüssel

Order code / Code de commande

HRSEN 5 KP 40x40 PP

Baureihe / range / série
HRSEN

Baugröße / size / taille
5

Ausführung / model / exécution
KP

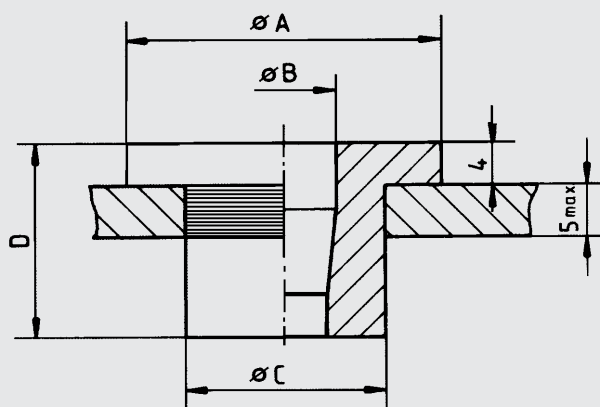
Durchmesser/ O/D / diamètre

Werkstoff der Klemmbacken / clamp material /
matériau des pièces de serrage
PP / PA / AL

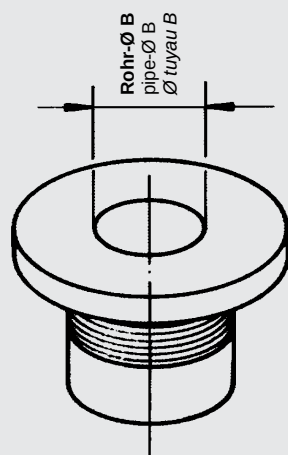
6.2 Rohrdurchführung

6.2 Rubber tank bush

6.2 Traversée de cloison



Ø B lagervorrätig Ø B available ex stock Ø B disponible	Ø B auf Anfrage Ø B on request Ø B sur demande	Ø A	Ø C	D	Größe Size Taille
6					
8					
	9	30	18	18	1
	9,5				
10					
12					
14					
15					
16					
17					
18		40	28	24	2
	19				
20					
21,3					
22					
25					
27					
28					
30		55	42	24	3
	31,5				
34					
35					
38					
42					
42,5		70	58	24	4
48,5					
50,5					
60,5		80	67	24	5



Bestellschlüssel

Order code / Code de commande

HRRDF 3 GT 30 TPE

Baureihe / range / série

HRRDF

Baugröße / size / taille

1 / 2 / 3 / 4 / 5

Ausführung / model / exécution

GT

Durchmesser/ O/D / diamètre

Werkstoff / material / matériau

Größe/Size/Taille 1-3: TPE 64

Größe/Size/Taille 4: NBR

Größe/Size/Taille 5: TPE 64

Supports for Hydraulic Accumulators



1. DESCRIPTION

1.1. GENERAL

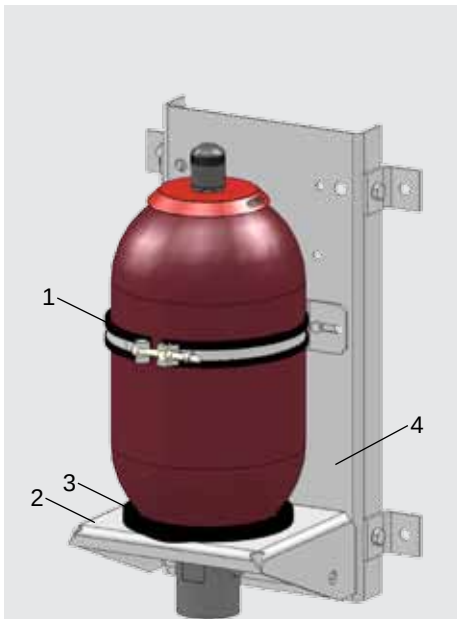
HYDAC supports are used to mount all types of hydraulic accumulator safely and simply. Clamps, consoles and complete accumulator sets are available.

1.2. USE

The supports are designed for static use. For dynamic stresses, specially designed clamps are available on request.

2. SELECTION TABLES FOR SUPPORTS

2.1. BLADDER ACCUMULATOR

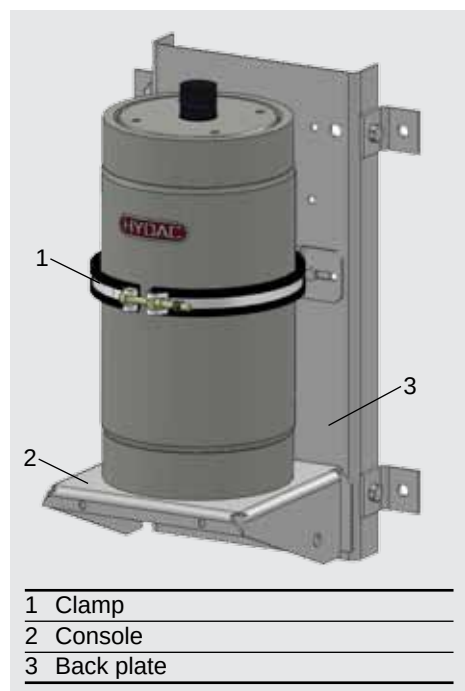


- 1 Clamp
- 2 Console
- 3 Rubber support ring
- 4 Back plate

Description	Capacity [l]																		
	SB330				SB400				SB 550		SB500 / SB600		SB35		SB40		SB35H		SB35HB
	1	2.5+5	4+6	10-24	32-50	0.5	4	10-20	32-50	1	2.5-5	10-20	32-50	2.5-5	10-20	32-50	20	32-50	20
Clamps *																			
HyRac 89-92 193 ST					1														
HyRac 106-114/115 H3 ST												2		2					
HyRac 110-118/124 H10 ST	1	2																	
HyRac 121-129/133 H8 ST									1	2									
HyRac 167-175/178 H5 ST			1			1													
HyRac 202-210/214 H8 ST												1	2				1	2	
HyRac 216-224/226 H5 ST														1	2			1	2
HyRac 223-230/231 H3 ST				1	2														2
HyRac 225-234/234 H3 ST								1	2										
HSS 242											1	2							
Consoles																			
KBK 167 / G			1			1													
KBK 222 / G				1	1			1	1		1	1		1	1		1	1	1
KHF 210 / G																	1	1	1
Accumulator set																			
SEB		1	1	1	1		1	1	1										
SEH										1	1	1							
SEN													1	1	1				
SEM															1	1	1		
SEHF																	1	1	
SEHB																		1	1

* The number of clamps can vary depending on the requirements and on the length of the accumulator. These are recommendations.

2.2. PISTON ACCUMULATOR



Type	Piston diameter [mm]											
	50	60	80	100	150	180	250	> 250				
	Accumulator external diameter [mm]											
	60	70	95	100	120	125	180	210	220	286	300	> 300
Clamps SK280 *												
HRGKSM 0 R 58-61/62 ST	●											On request
HRGKSM 0 R 70-73/73 ST		●										
HRGKSM 0 R 92-95/96 ST			●									
HRGKSM 1 R 119-127/124 ST					●							
Clamps SK Standard *												
HyRac 96-100/100 ST				●								on request
HyRac 121-129/133 H8 ST					●							
HyRac 176-185/187 H5 ST						●						
HyRac 209-217/223 H10 ST							●					
HyRac 216-224/226 H5 ST								●				
HSS 286										●		
HSS 310											●	
consoles												
KBK 126						1						On request
KBK 219								1	1			
KBK 310										1	1	

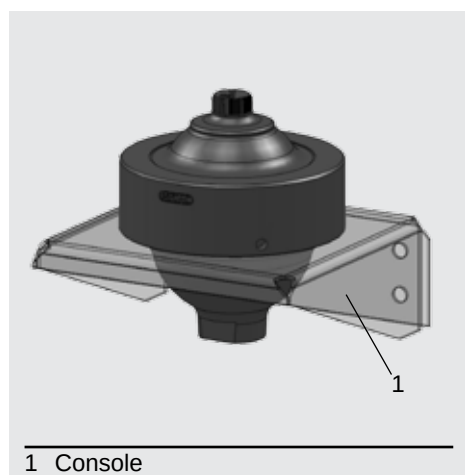
* Selecting the correct clamp depends on the external diameter of the accumulator. Depending on the application and length of the accumulator, we recommend that several clamps are used. Clamps must be mounted near the end caps in order to prevent deformation of the cylinder.

2.3. DIAPHRAGM ACCUMULATOR (WELD TYPE)



Accumulator type	Clamp type
SBO250-0.075E	HyRac 62-65/65 ST
SBO210-0.16E	HyRac 73-76/76 ST
SBO210-0.32E	HyRac 92-95/96 ST
SBO210-0.5E	HyRac 100-105/106 H3 ST
SBO100-0.7E	HyRac 106-114/115 H3 ST
SBO330-0.6E	HyRac 110-118/124 H10 ST
SBO330-0.7E	
SBO210-0.75E	HyRac 121-129/133 H8 ST
SBO330-0.75E	
SBO200-1E	HyRac 133-142/142 H3 ST
SBO140-1.4E	HyRac 143-151/151 H3 ST
SBO210-1.4E	
SBO330-1.4E	HyRac 152-159/160 H3 ST
SBO100-2E	HyRac 160-167/169 H5 ST
SBO210-2E	HyRac 167-175/178 H5 ST
SBO210-2.8E	
SBO250-3.5E	
SBO330-2E	
SBO330-2.8E	
SBO330-3.5E	

2.4. DIAPHRAGM ACCUMULATOR (SCREW TYPE)



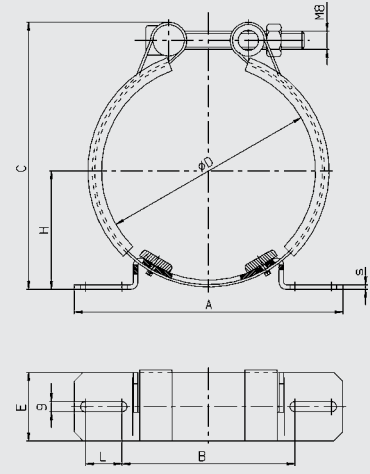
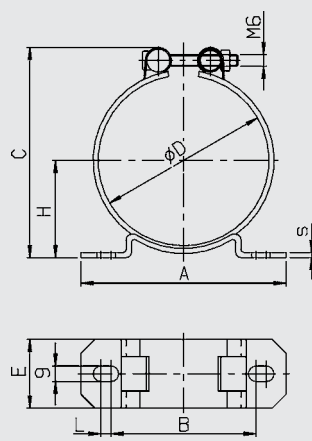
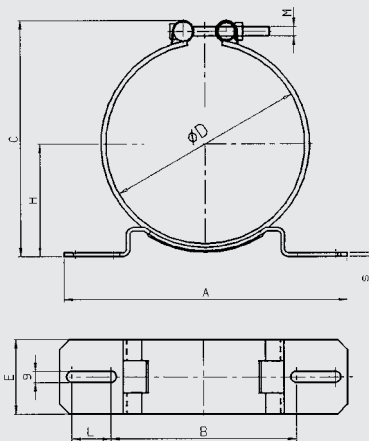
Type of accumulator	Console
SBO210-1.3A6	KMS 200
SBO400-1.3A6	KMS 210
SBO100-2.0A6	KMS 220
SBO250-2.0A6	
SBO210-2.8A6	KMS 250
SBO400-2.8A6	KMS 280
SBO210-4.0A6	KMS 300
SBO400-4.0A6	KMS 310

3. CLAMPS

HRGKSM

HyRac (ØD ≤ 100 mm)

HyRac (ØD ≥ 100 mm)



Closing device, support
Clamping band
Insert

zinc-plated
stainless steel
LDPE

Closing device, support
Clamping band
Insert

zinc-plated
stainless steel
PE

Closing device, support
Clamping band
Insert

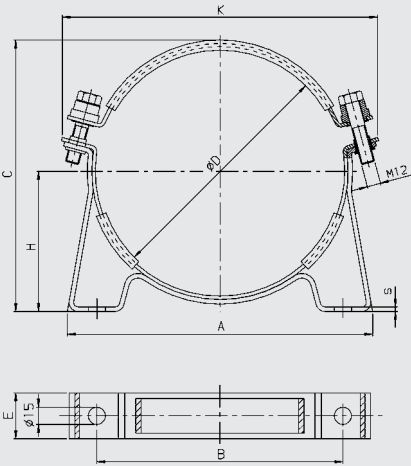
zinc-plated
stainless steel
PE, NBR

Description	Part no.	A [mm]	B [mm]	C max [mm]	ØD (from - to) [mm]	H (from - to) [mm]	E [mm]	L [mm]	S [mm]	K max. [mm]	Weight: [kg]
HRGKSM 0 R 58-61/62 ST	3018442	120	85	83	58 - 61	37.3 - 38.8	40	6	3	—	0.16
HRGKSM 0 R 70-73/73 ST	3018444			93	70 - 73	42.0 - 43.5					0.21
HRGKSM 0 R 92-95/96 ST	444995			115	92 - 95	52.5 - 54.0					0.24
HRGKSM 1 R 119-127/124 ST	444505	158	100	154	119 - 127	66.8 - 70.8	50	18			0.36
HyRac 62-65/65 ST	445037	120	85	85	62 - 65	38 - 39.5	40	6	3	—	0.16
HyRac 73-76/76 ST	445038			96	73 - 76	43.5 - 45					0.16
HyRac 89-92/92 ST	445039			112	89 - 92	51 - 52.5					0.17
HyRac 92-95/96 ST	445040			115	92 - 95	52.5 - 54					0.17
HyRac 96-100/100 ST	445041			120	96 - 100	54.5 - 56.5					0.17
HyRac 100-105/106 H3 ST	444904	156	100	135	100 - 105	59 - 62	60	18	3	—	0.40
HyRac 106-114/115 H3 ST	444905			143	106 - 114	62.5 - 66					0.41
HyRac 110-118/124 H10 ST	445042			156	110 - 118	72.5 - 77					0.42
HyRac 121-129/133 H8 ST	444906			165	121 - 129	75.5 - 80					0.43
HyRac 133-142/142 H3 ST	444907			174	133 - 142	76.5 - 82.5					0.44
HyRac 143-151/151 H3 ST	444908			182	143 - 151	83 - 86.5					0.45
HyRac 152-159/160 H3 ST	444909			191	152 - 159	87 - 91					0.46
HyRac 160-167/169 H5 ST	444910	236	152	197	160 - 167	89 - 92	60	32	4	—	0.70
HyRac 167-175/178 H5 ST	445043			207	167 - 175	92.5 - 96.5					0.72
HyRac 176-185/187 H5 ST	445044			241	176 - 185	97 - 102.5					0.75
HyRac 202-210/214 H8 ST	445045			245	202 - 210	116 - 120					0.76
HyRac 209-217/223 H10 ST	445046			255	209 - 217	122.5 - 126.5					0.77
HyRac 216-224/226 H5 ST	445047			256	216 - 224	120 - 124					0.77
HyRac 223-230/231 H3 ST	445048			259	223 - 230	120.5 - 123.5					0.78
HyRac 225-234/234 H3 ST	445049			265	225 - 234	123 - 127.5					0.79

Model/order code (example):

HyRac 167-175/178 H5 ST 445043

HSS



Clamp zinc-plated
Insert NBR

Description	Part no.	A	B	C max	ØD (from - to)	H (from - to)	E	L	S	K max.	Weight:
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
HSS 222/229	235224	268	216	244	222 - 229	123	40	Ø15	4	292	1.60
HSS 242	362712	267	216	267	242	136				306	1.66
HSS 286	237395	330	280	314	286	163				355	1.95
HSS 310	237389	330	280	333	310	170				390	2.45
HSS 360	355592	426	365	383	360	195				434	2.56

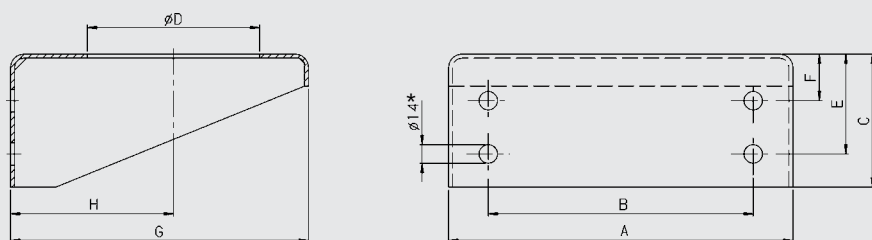
Model/order code (example):

HSS 222/229	235224
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4. CONSOLES

4.1. CONSOLE KBK FOR BLADDER AND PISTON ACCUMULATOR

Console KBK



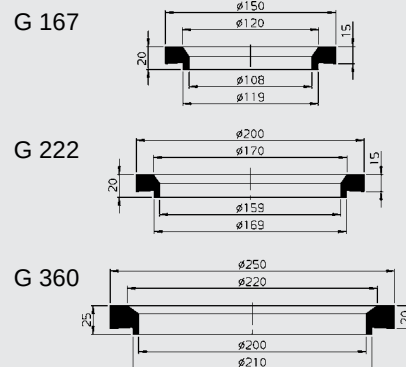
* Ø22 on KBK 310 and KBK 360

Type	Mat.	Part no.	A [mm]	B [mm]	C [mm]	ØD [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight: [kg]
126	STZN	290530	175	100	60	65	36	—	150	77	1.1
167		238526	260	200	100	120	75	35	225	92	2.5
219		238042	270	180		135	80	40	250	123	6.5
222		3002160	260	200		170	75	35	225		2.4
310		238043	330	220	200	190	140	60	340	170	18.3
360		357959	390	270	240	211	180		390	195	20.1

Model/order code (example):

KBK	167	STZN	238526
-----	-----	------	--------

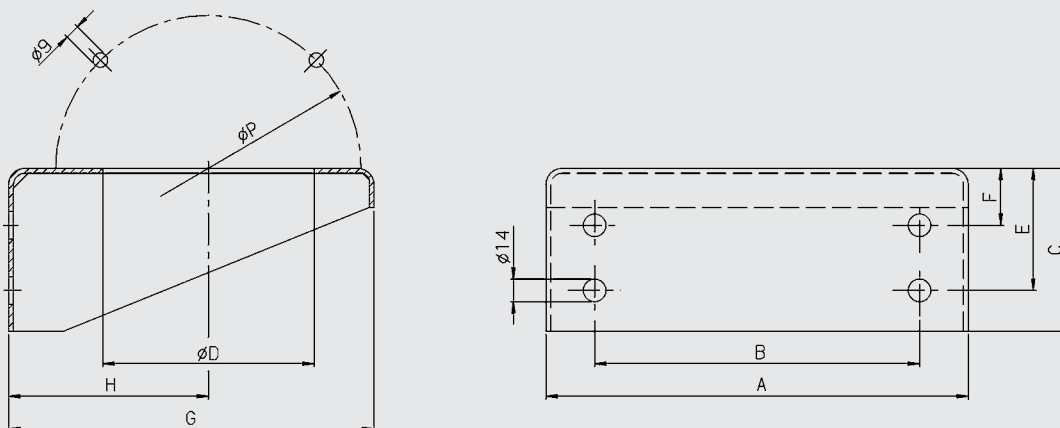
Rubber support ring G



Type	Material	Part no.
—	NBR	—
167		236997
—		—
222		236996
—		—
360		355966

G	167	NBR	236997
---	-----	-----	--------

4.2. KMS CONSOLES FOR DIAPHRAGM ACCUMULATOR SCREW TYPE



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

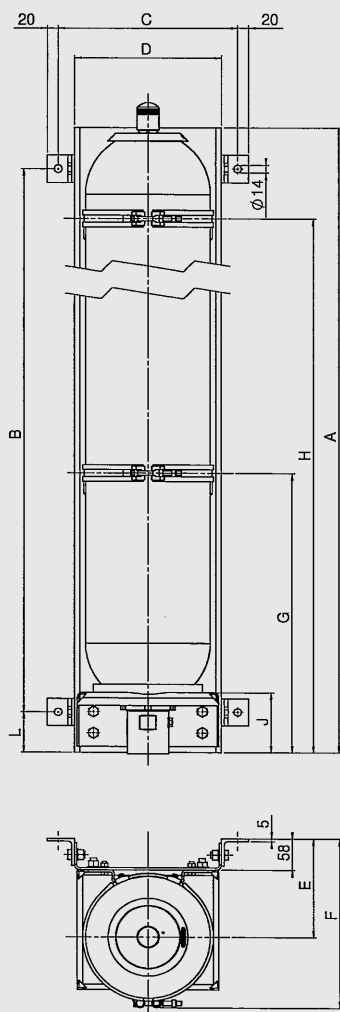
Type	Mat.	Part no.	A [mm]	B [mm]	C [mm]	ØD [mm]	ØP [mm]	E [mm]	F [mm]	G [mm]	H [mm]	ØI [mm]	Weight: [kg]
200	STZN	359931	270	180	100	148	160	80	40	250	123	14	6.5
210		358989	260	200		170	180	75	35	225		14	2.4
220		359922				170	188						
250		359924				192	204						
280		359925	330	220	200	215	230	140	60	340	170	22	18.3
300		359926				220	235						
310		359927				245	265						
320		359928				290	305						

Model/order code (example):

KMS	200	STZN	359931
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5. ACCUMULATOR SET FOR BLADDER ACCUMULATORS

SEB, SEH, SEM



5.1. SEB FOR SB330/440

Accumulator set	Part no.	Vol. [l]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	J [mm]
SEB 2.5	290787	2.5	460	310	198	138	132	214	200	400	75	—
SEB 4	238403	4	410	320	330	270	152	253	—	270	45	95
SEB 6	2115851	6	570	420	330	270	180	317	—	330	75	111
SEB 10	238407	10								330		
SEB 20	240598	20	1340	1190	330	270	180	317	500	500		
SEB 32	238409	32								1160		
SEB 50	240599	50								—		

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

See catalogue section:

- ACCUSET SB
No. 3.503

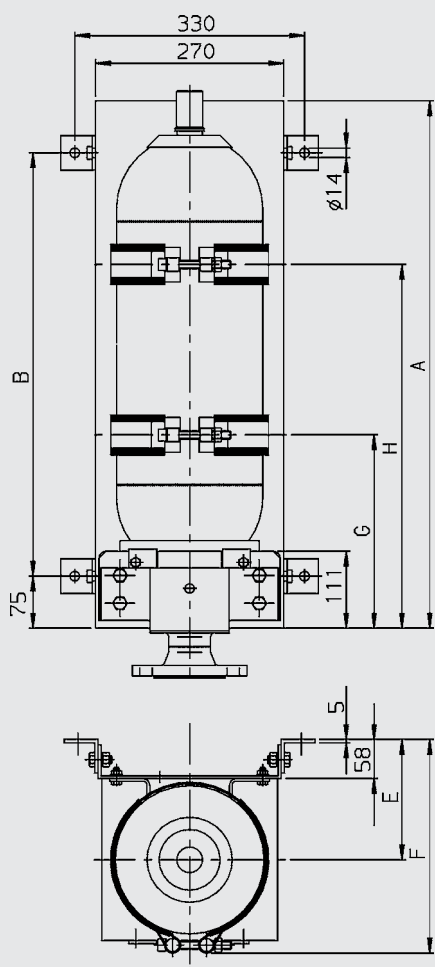
5.2. SEH FOR SB500/550/600

Accumulator set	Part no.	Vol. [l]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	J [mm]
SEH 2.5	2105194	2.5	460	310	198	138	133.5	223	200	400	75	—
SEH 5	2105195	5	750	600						650		
SEH 10	378952	10	570	420	330	270	194	323	—	330		
SEH 20	298181	20								500	1160	111
SEH 32	298182	32	1340	1190	330	270	194	323	500	1160		
SEH 50	298183	50								—		

5.3. SEM FOR SB40

Accumulator set	Part no.	Vol. [l]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	J [mm]
SEM 2.5	3007402	2.5	460	310	198	138	121.5	201	200	410	75	—
SEM 5	3007423	5	750	600					220	650		
SEM 10	3007424	10	570	420	330	270	172	310	—	330		
SEM 20	3007425	20								500	1160	111
SEM 32	3007426	32	1340	1190	330	270	172	310	500	1160		
SEM 50	3007427	50								—		

SEHB



5.4. SEHB FOR SB35HB

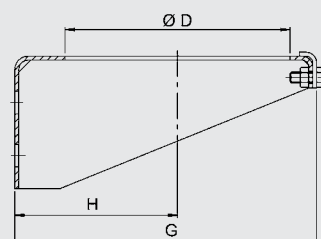
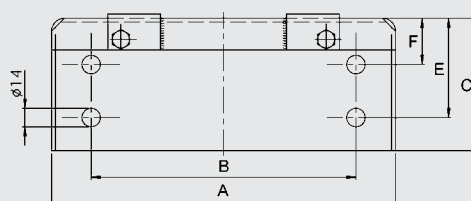
Accumulator set	Part no.	Vol. [l]	A [mm]	B [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	J [mm]
SEHB 20	3007431	20	570	420	172	310	–	500	75	111
SEHB 32	3007432	32	1340	1190			500	1160		
SEHB 50	3007433	50	1340	1190			500	1160		

Console	Mat.	Part no.	A [mm]	B [mm]	C [mm]	ØD [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [kg]
KHF 210	STZN	239965	260	200	100	170	75	35	230	123	2.5

Model/order code (example):

SEB 10 238407

KHF 210



The accumulator sets SEHF/SEHB are supplied with console KHF 210 / G which can be opened at the front for easier mounting of the bladder accumulator.

6. NOTE

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

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Bell Housings with Rigid / Flexible Pump Mounting

PTS / PT

1. DESCRIPTION

1.1. GENERAL

Bell housings are connection elements between drive motors and hydraulic pumps. Both connecting flanges are supplied ready for installation. The bell housings are made from an aluminium cast alloy.

1.2. MODELS

Bell housings in both flexible and rigid design are available in dimensions to the VDMA 24561 standard.

2. TECHNICAL SPECIFICATIONS

2.1. GENERAL

2.1.1 Mounting position

Optional.

2.1.2 Operating temperature

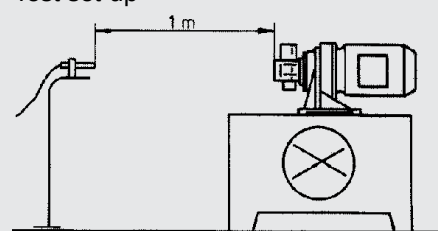
-20 °C to +100 °C

2.1.3 Noise level reduction

The noise level reduction achieved depends on many factors such as pump type, operating pressure, type of fitting, design etc. It is therefore not possible to quote exact figures. In general, noise level reductions of up to 6 db(A) can be achieved.

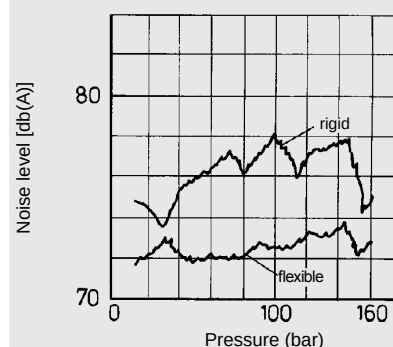
The illustration in the next column shows how the test is set up, together with a graph showing typical noise level improvements when using a flexible bell housing compared to a rigid bell housing.

Test set-up



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

Noise level diagram



2.1.4 Notes on mounting

The fixing bolts used for mounting the motor to the pump must be long enough in order to fully utilize the available thread depth on the bell housing. If the bolts used are too short, there is the risk of damaging the thread.

2.1.5 Weight loading

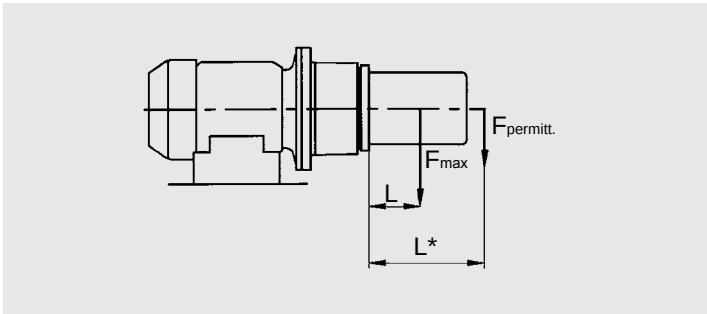
The permitted radial or axial load of the bell housing with flexible and rigid pump mounting, allowing for an operating temperature of +60 °C:

Bell housings Nominal size	Type of Damping ring	Permitted force due to gravity F_{max} [N]	Centre of gravity distance for radial load L [mm]
160	Only rigid bell housing possible		
200	E	400	200
	K	500	
250	E	600	200
	K	800	
300	E	1000	200
	K	1300	
350	E	1500	200
	K	2000	
400	E	2200	200
	K	3000	
450	E	4000	200
	K	5500	
550	E	4000	200
	K	5500	
660	E	4500	200
	K	6000	
800	Only rigid bell housing possible		

For a larger centre of gravity distance L^* the permitted force due to gravity is reduced according to the following formula:

$$F_{permitt.*} = \frac{F_{max.} \cdot L}{L^*} \text{ [N]}$$

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 $F_{permitt.}$ 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 to DIN 51524, other fluids on request.

NOTE

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

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

Subject to technical modifications.

3. MODEL CODE

PT - 250 / 5.0 / M / FL001 - E / F3

Type

PTS = Rigid bell housing
PT = Flexible bell housing

Nominal size for IEC standard motor (type of mounting B5, B35, V1, V15)

Nominal size PTS / PT	Type Rigid Flexible	Electric motor size	Output n = 1430 rpm
160	x	71	0.25 - 0.37 kW
200	x x	80/90	0.55 - 1.5 kW
250	x x	100/112	2.2 - 4.0 kW
300	x x	132	5.5 - 7.5 kW
350	x x	160/180	11 - 22 kW
400	x x	200	30 kW
450	x x	225	37 - 45 kW
550	x x	250/280	55 - 90 kW
660	x x	315	110 - 200 kW
800	x	335/400	250 - 400 kW

Model with additional bores

Rigid PTS	Flexible PT	Additional bores
2.0	5.0	Without additional bore (standard)
5.1	5.1	1x Leakage bore
5.3	5.3	Additional bores to Cnomo standard*

Mineral oil resistance (Special models on request)

Bore template code for pump connection (see our sizing program PT-WIN)

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

E = standard
K = damping ring for higher loads (greater rigidity)

Accessories

... = without accessories (no details)
F3 = bell housing foot bracket

* Cnomo: 1x mounting hole with grille, 1x leakage bore



Bell Housings with Flexible Pump Mounting with Oil/Air Cooler

PTK Series

1. DESCRIPTION

1.1. GENERAL

Bell housings are connection elements between drive motors and hydraulic pumps.

Both connecting flanges are supplied ready for installation.

The bell housings are made from an aluminium cast alloy.

On the PTK (bell housing with built-in oil/air cooler) the oil is cooled efficiently by an air stream produced by a fan mounted on the motor shaft.

This combination of noise-damping bell housing and oil/air cooler considerably simplifies the construction and reduces the cost of hydraulic systems.

The high cooling capacity of the built-in cooler enables the user to reduce his tank capacity.

This reduction in oil quantity results in a reduction in operating costs and oil disposal costs.

1.2. MODELS

Bell housings with flexible pump mounting and oil/air cooler are supplied with dimensions to the VDMA 24561 standard.

2. TECHNICAL SPECIFICATIONS

2.1. GENERAL

2.1.1 Mounting position

Optional.

Once both mounting bolts have been removed, the cooler element can be turned through 180° (ports point towards the motor or to the pump).

2.1.2 Temperature ranges

During operation of the PTK, ensure that the maximum oil temperature of +100 °C is not exceeded.

Warning! If there is a temperature difference of over 50 °C between the oil inlet on the cooler element and the ambient temperature, large fluctuations in temperature (e.g. by turning on and off frequently) must be avoided. Otherwise this could result in significant reduction in lifetime or direct damage to the element through stress cracking.

Permitted ambient temperature:
-20 °C to +60 °C

2.1.3 Noise level reduction

PTKs have a flexible damping ring as standard between the bell housing and pump flange.

This ensures a complete decoupling of the pump from the motor and bell housing.

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

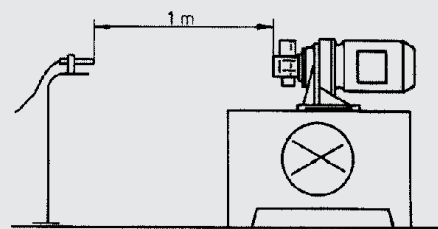
Basically, the noise level reduction achieved depends on many factors such as pump type, operating pressure, type of fitting, design etc.

It is therefore not possible to quote exact figures.

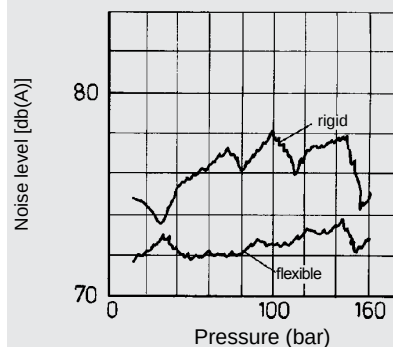
In general, noise level reductions of up to 6 dB(A) can be achieved by using the flexible pump mounting.

The illustration below shows how the test is set up, together with a graph showing typical noise level improvements when using a flexible bell housing compared with a rigid bell housing.

Test set-up



Noise level diagram



2.1.4 Notes on mounting

The fixing bolts used for mounting the motor to the pump must be long enough in order to fully utilize the available thread depth on the PTK.

If the bolts used are too short, there is the risk of damaging the thread and consequently the whole unit.

2.1.5 Weight loading

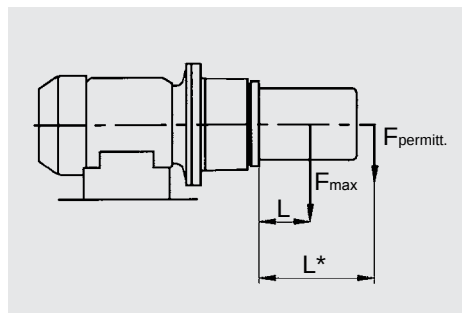
The permitted radial or axial load of the PTK with flexible pump mounting, allowing for an operating temperature of +60 °C:

PTK Nominal size	Type of damping ring	Permitted force due to gravity F_{max} [N]	Centre of gravity distance for radial load L [mm]
200/2001	E	400	200
250	E	700	200
300	E	1150	200
350/3501	E	1500	200

For a larger centre of gravity distance L^* the permitted force due to gravity is reduced according to the following formula:

$$F_{\text{permitt.}} = \frac{F_{\text{max.}} \cdot L}{L^*} \text{ [N]}$$

If the centre of gravity distance L^* of the pump is smaller than the centre of gravity distance L in the table, then the permitted force due to gravity $F_{\text{permitt.}}$ for the pump is equal to the maximum force due to gravity F_{max} in the table.



2.2. SPECIFICATIONS

2.2.1 Coolant

Mineral oil to DIN 51524, other fluids on request

2.2.2 Nominal rpm for drive

$n=1430$ 1/min

(Base rpm for the stated technical data)

(up to 3000 1/min possible)

2.2.3 Direction of rotation

When looking at the pump shaft

clockwise

2.2.4 Air flow rate

Nominal size	Volume
PTK-200	approx. 72 m³/h
PTK-2001	approx. 72 m³/h
PTK-250	approx. 260 m³/h
PTK-300	approx. 435 m³/h
PTK-350	approx. 780 m³/h
PTK-3501	approx. 780 m³/h

2.2.5 Power requirement for fan

Nominal size	Rotation speed	
	1430 1/min	1800 1/min
PTK-200	20 Watt	30 Watt
PTK-2001	20 Watt	30 Watt
PTK-250	30 Watt	50 Watt
PTK-300	90 Watt	130 Watt
PTK-350	140 Watt	220 Watt
PTK-3501	140 Watt	220 Watt

2.2.6 Noise levels for PTK

with electric motor without pump

(measured to DIN 45635, Part 1)

Nominal size	Output of electric motor at 1430 1/min	PTK with electric motor
PTK-200	1.5 kW	52 db(A)
PTK-250	4 kW	58 db(A)
PTK-300	5.5 kW	69 db(A)
PTK-350	11 kW	70 db(A)

The noise levels with electric motor depend on the make of motor.

The noise levels are only a guide as the acoustic properties of a room and reflections have an effect on the noise level.

2.3. HYDRAULIC DATA

2.3.1 Cooler element

Material

Aluminium

Pressure resistance

– At an operating pressure of ≤ 16 bar and a temperature ≤ 50 °C, 2 million cycles (2 Hz) are achieved. For higher operating pressures and/or temperatures, the life expectancy will be shorter.

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

Mounting

When mounting or dismantling the threaded connection of the cooler inlet or outlet, the torque must be countered (protects the cooler element from distortions). Please also see the assembly instructions supplied with the product.

NOTE

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

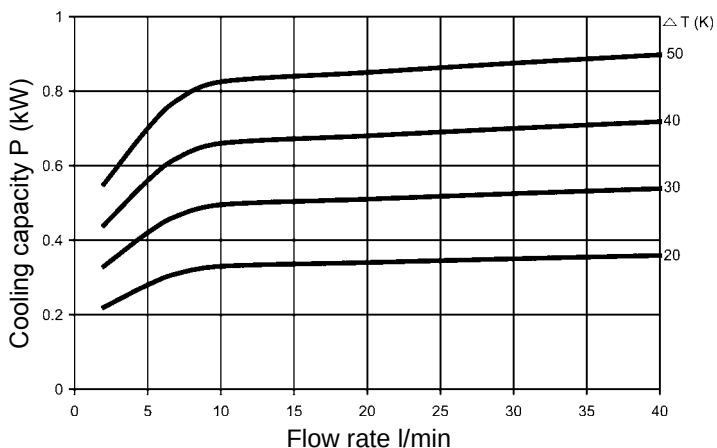
For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

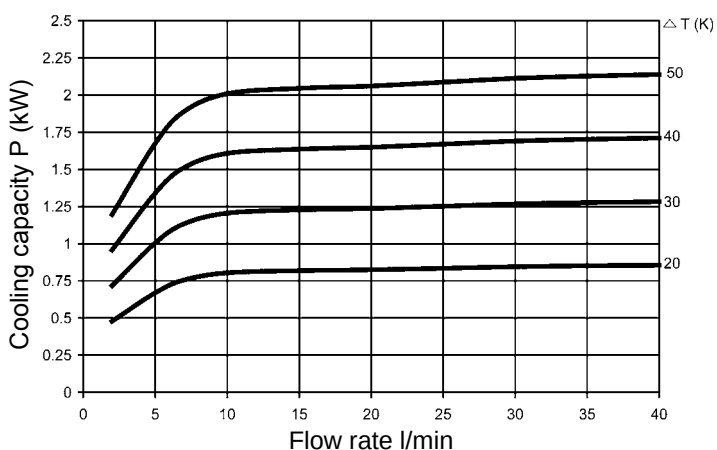
2.3.2 Cooling capacity

Cooling capacity against oil flow rate for different temperature differentials ΔT between oil inlet and air inlet.
(Motor rpm 1430 1/min)

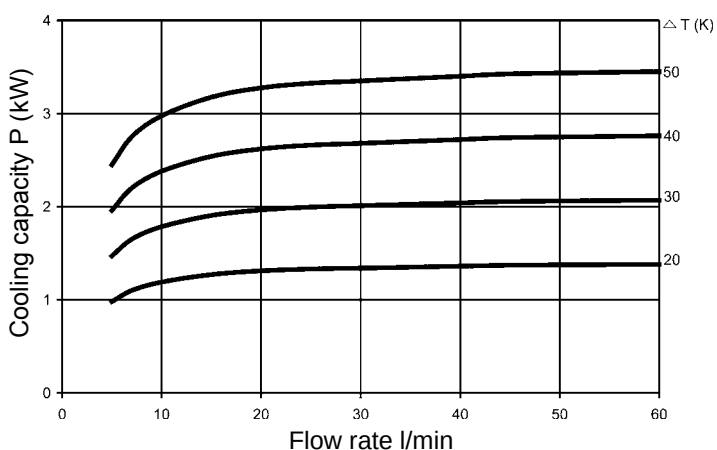
PTK-200/PTK-2001



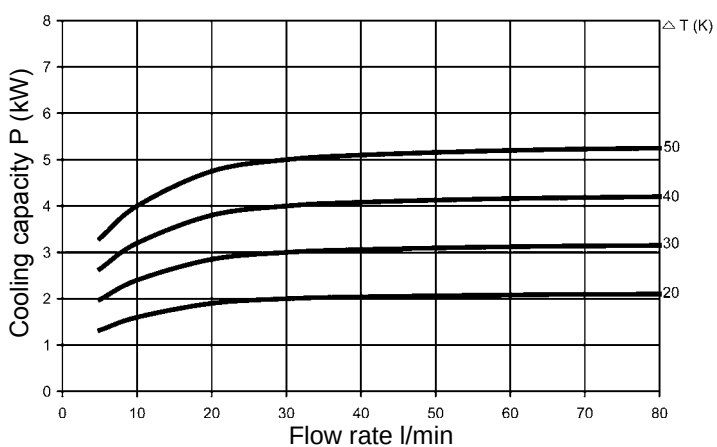
PTK-250



PTK-300



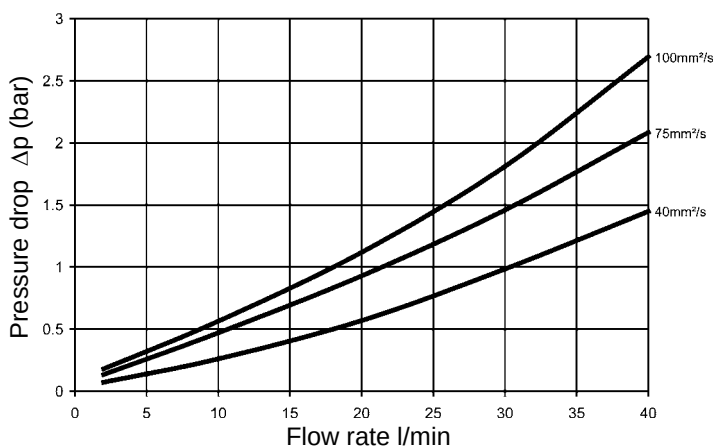
PTK-350/PTK-3501



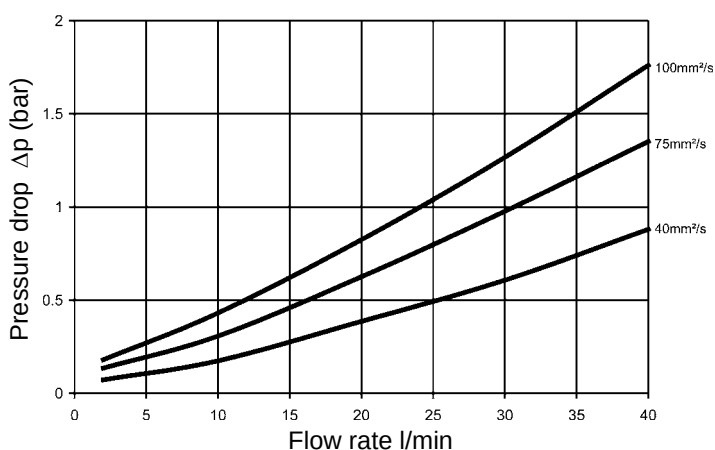
2.3.3 Pressure drop Δp in the cooler element

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

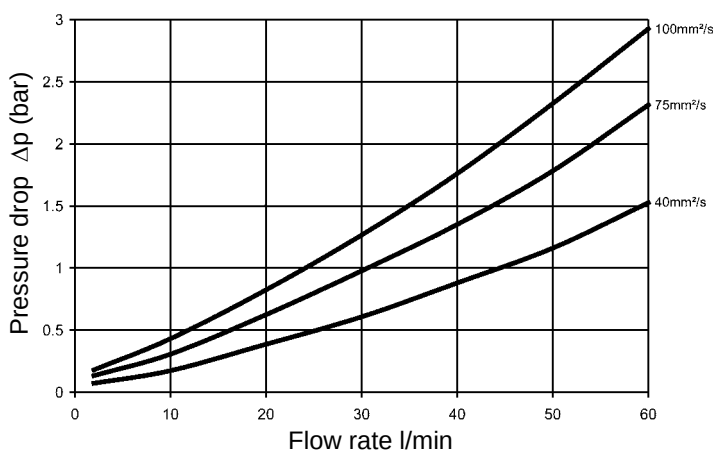
PTK-200/PTK-2001



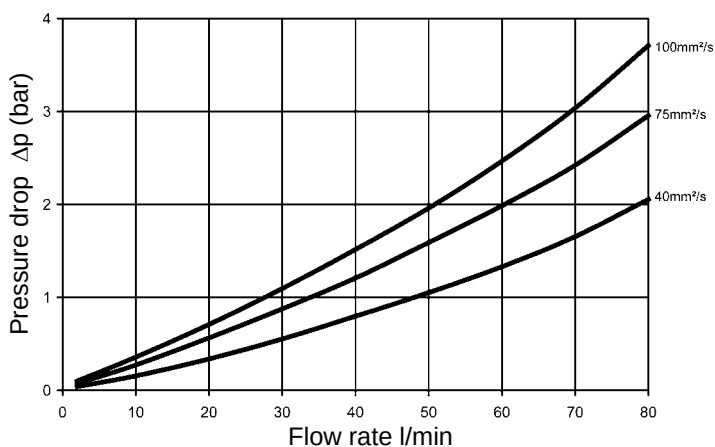
PTK-250



PTK-300



PTK-350/PTK-3501



3. MODEL CODE

PTK - 250 / 2.X / M / FL001 - E / F3

Bell housing with flexible pump mounting and built-in oil/air cooler

Nominal size for IEC standard motor (type of mounting B5, B35, V1, V15)

Nominal size PTK	Size Electric motor	Output n = 1430 rpm
2001	80	0.55 - 0.75 kW
200	90	1.1 - 1.5 kW
250	100/112	2.2 - 4.0 kW
300	132	5.5 - 7.5 kW
350	160	11.0 - 15.0 kW
3501	180	18.5 - 22.0 kW

Modification number

Mineral oil resistance (Special models on request)

Bore template code for pump connection (please use our sizing program PT-WIN)

Type of damping ring

E = standard

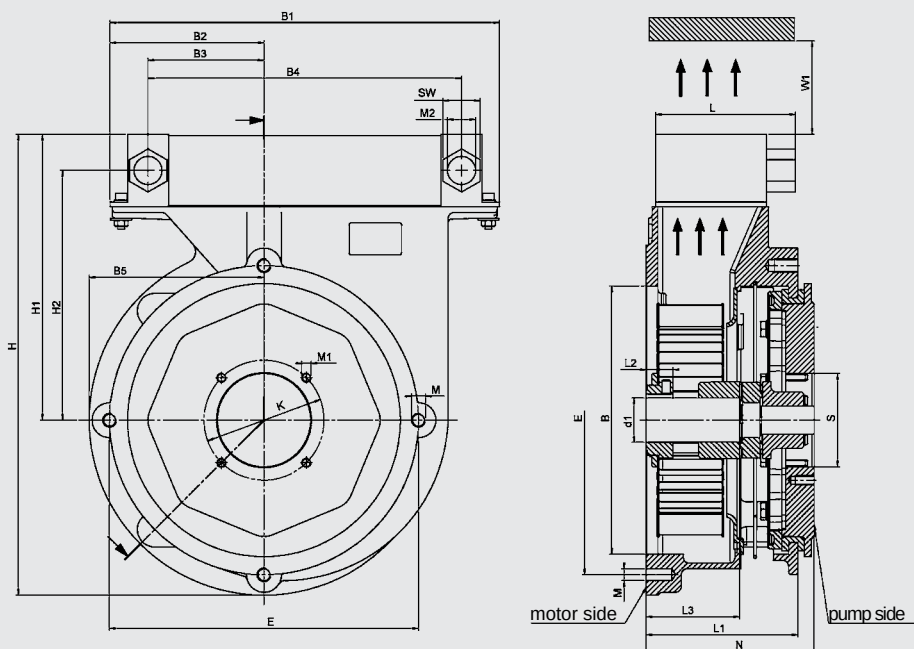
K = damping ring for higher loads (greater rigidity)

Accessories

... = without accessories (no details)

F3 = bell housing foot bracket

3.1. DIMENSIONS



Electric motor	Output at 1500 rpm	Electric motor Drive shaft	PTK Nominal size	PTK Foot bracket	PTK Mounting plate	H	H1	H2	B	E	M	B1	B2	B3	B4	B5	SW	M2	L	L1	L2	min. W1
80	0.55	19 x 40	PTK-2001	PTFL-200	PP200	275	174	143	130	164	M10	260	110	77.5	195	100	32	G1/2	84	80	21	120
90 S	1.1	24 x 50	PTK-200																			
90 L	1.5																					
100 L	2.2	28 x 60	PTK-250	PTFL-250	PP250	327	197	166	180	215	M12	334	156	123.5	269	130	32	G3/4	120	105	23	160
112 M	4																					
132 S	5.5	38 x 80	PTK-300	PTFL-300	PP-300	395	245	214	230	265	M12	334	132	99.5	269	150	32	G3/4	120	130	23	200
132 M	7.5																					
160 M	11	42 x 110	PTK-350																			
160 L	15			PTFL-350	-	437	262	231	250	300	M16	334	102	69.5	269	175	32	G3/4	148	170	31	240
180 M	18.5	48 x 110	PTK-3501																			
180 L	22																					

To identify the bore template code (dimensions N, S, K, M1), please use our sizing program PT-WIN as far as possible, or ask at our Head Office. You can download and use the PT-WIN program free of charge from our website www.hydac.com by clicking through Support » Download » Software » Product Division - Accessories.

Accessories:

For the range of accessories (bell housing foot brackets, bell housing mounting plate, damping rails, damping rings and couplings) please use our supplementary brochure "Bell Housing Accessories". This brochure can be downloaded from our website www.hydac.com.

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Bell Housing Set

1. DESCRIPTION

To connect HYDAC pumps easily and effectively to the drive motors, HYDAC Accessories provides bell housing sets.

Depending on the requirements, the sets consist of corresponding bell housings and couplings. Foot brackets are also available for the bell housing and damping rails, as an option.

2. VARIANTS OF THE BELL HOUSINGS

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

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

Using a HYDAC bell housing eliminates costly alignment work.

Possible versions:

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

Selecting the matching nominal size

Motor size	Bell housing size	Motor power at 1500 rpm kW *	Bell housing version		
			PTS rigid	PT flexible	PTK flexible with oil-air cooler
71	160	0.25-0,37	x	not available	
80	2001	0.55-0,75	x	x	x
90S	200	1.1	x	x	x
90L	200	1.5	x	x	x
100L	250	2.2-3	x	x	x
112M	250	4	x	x	x
132S	300	5.5	x	x	x
132M	300	7.5	x	x	x
160M	350	11	x	x	x
160L	350	15	x	x	x
180M	3501	18.5	x	x	x
180L	3501	22	x	x	x
200L	400	30	x	x	not available
225S	450	37	x	x	
225M	450	45	x	x	
250M	550	55	x	x	
280S	5501	75	x	x	
280M	5501	90	x	x	
315S	660	110	x	x	
315M	660	132	x	x	
315L	6601	160-200	x	x	

Order details

- Electric motor size
- Motor power [kW]
- Motor speed [rpm]
- Complete pump designation

* For other motor speeds or sizes please get in touch.

3. Model code (also example order)

PTK – 2001 / 2.0 / PPV100 / 016 / S F00 - 00

Version of the bell housing base

PTS = rigid bell housing

PT = flexible bell housing

PTK = flexible bell housing with oil-air cooler

Set size

Set size	Motor size	Power at 1500 rpm *		
160	71	0.25	- 0.37	kW
2001	80	0.55	- 0.75	kW
200	90S-90L	1.1	- 1.5	kW
250	100L-112M	2.2	- 4	kW
300	132S-132M	5.5	- 7.5	kW
350	160M-160L	11	- 15	kW
3501	180M-180L	18.5	- 22	kW
400	200L		30	kW
450	225S-225M	37	- 45	kW
550	250M		55	kW
5501	280S-280M	75	- 90	kW
660	315S-315M	110	- 132	kW
6601	315L	160	- 200	kW

* For other motor speeds or sizes please get in touch.

Version

2.0 = standard

5.3 = to CNOMO standard (leakage hole and assembly hole with grille)

Pump series

PPV100 axial piston pump medium pressure series
PPV101 axial piston pump light heavy duty series
PPV102 axial piston pump heavy duty series
PPV103 axial piston pump light medium pressure series
PVF100 vane pump, fixed displacement
PVF101 vane pump as double pump
PVV100 vane pump, variable displacement, pilot-operated
PVV101 vane pump variable displacement, direct-acting
PGE101-PGE104 gear pump

Set designation

HYDAC issues the designation of the set.

4. ACCESSORIES

To complement the pump mounting set, HYDAC Accessories also offers foot brackets and damping rails.

You will find extensive information in our brochure "Bell housing accessories" (E 5.616), which you can download from our web site www.hydac.com.

BELL HOUSING FOOT BRACKETS

HYDAC bell housing foot brackets to simply fasten the motor pump unit to the unit

- Bell housing foot brackets to VDMA 24561
- Lightweight and heavy series available off the shelf
- Reduction of the motor bearing bracket to IMB5/V1
- Simple replacement of the electric motor
- It is also possible to set up the hydraulic pump and pipework without an electric motor
- Available sizes:
 - lightweight series: PF-160/3 to PF-300/3
 - heavy series: PF-250/4 to PF-660/4



DAMPING RAILS

HYDAC damping rails decouple vibrations and lower the noise level

- For bell housing foot brackets to VDMA 24561 in the light and heavy duty design
- Resistant to mineral oil due to NBR rubber compound
- Designed for weight-bearing when installed horizontally
- Reduces noise & vibration
- Available from stock
- Special lengths and/or special designs available on request
- Available sizes:
 - FDS.../3 for bell housing foot brackets for light range
 - FDS.../4 for bell housing foot brackets for the heavy duty range



NOTE

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

Subject to technical modifications.

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Bell Housing Accessories



FLEXIBLE DRIVE (SPIDER) COUPLINGS

Features

Code

Dimensions



GEAR COUPLINGS

Features

Code

Dimensions



BELL HOUSING FOOT BRACKETS

Light-duty range

Heavy-duty range



BELL HOUSING MOUNTING PLATE

Bell housing mounting plate

Seal for bell housing mounting plate



DAMPING RAILS

Damping rails for motors

Damping rails for bell housing foot brackets



DAMPING RINGS

Application

Dimensions



TANK SET



Flexible Drive (Spider) Couplings

FEATURES

- Torsionally flexible and vibration damping due to elastomer toothed insert (spider) with 98° Shore A (polyurethane)
- Elastomer is only subjected to compression loading
- Axial plug-in
- Failsafe as a result of positive-fit power transmission
- Maintenance-free
- Axial, radial and angular misalignment compensation
- Available in aluminium (Al), cast iron (GG/GGG) or steel (St)
- Temperature range:
-30 °C to +90 °C for continuous operation, -40 °C to +120 °C for short-term operation

MODEL CODE

(also order example)

Coupling 24/28 – 28 / 22.2 F ALU

Coupling size

Version of motor hub

28 = 28H7 cylindrical bore with key to DIN 6885

Version of pump hub

22.2F = 22.2 code F (7/8") imperial hole

B17...TN2A = tapered bores

SAE ... = profiled bores / spline shafts

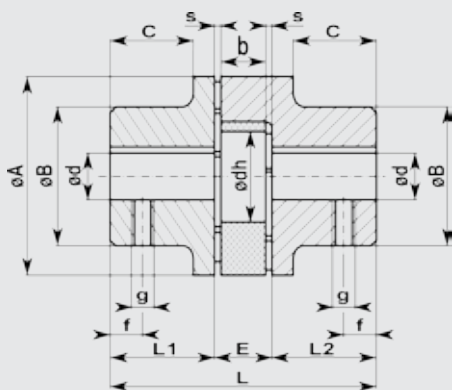
Special model

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

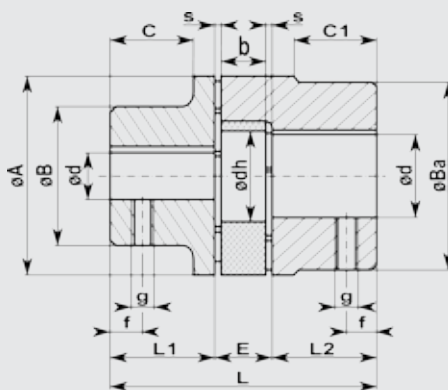
ALU = coupling in aluminium

ATEX = with ATEX approval

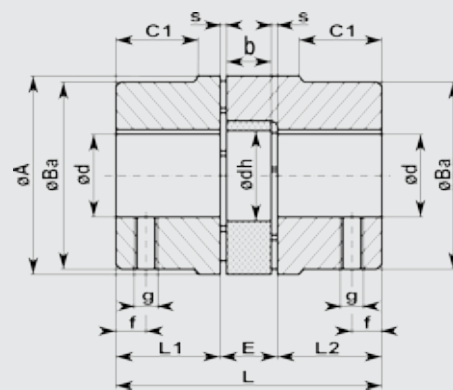
DIMENSIONS



Hub combination A/A
e.g. Coupling 28 – 28/20



Hub combination A/B
e.g. Coupling 28/38 – 28/35



Hub combination B/B
e.g. Coupling 28/38 – 38/38

Coupling hubs in aluminium

Order example: Coupling 19/24-24/14 ALU

Type	max. kW at 1000 rpm	max. kW at 1500 rpm	Bores						Dimensions [mm]															Weight [kg]
			A-hub			B-hub																		
			Pilot hole	Finished bore Ø d		Pilot hole	Finished bore Ø d																	
				min	max		min	max																
19/24	1.1	1.5	5	6	19	18	19	24	40	32	39	66	25	16	2	12	20	21	18	M5	10	0.13		
24/28	2.2	4	7	8	24	15	16	32	55	40	53	78	30	18	2	14	24	26	27	M5	10	0.26		
28/38	5.5	7.5	8	10	28	25	28	38	65	48	63	90	35	20	3	15	28	29	30	M6	15	0.46		
38/45	11	15	13	14	38	35	38	45	80	66	79	114	45	24	3	18	37	39	38	M8	15	0.9		
42/55	22	30	13	19	42	40	42	55	95	75	94	126	50	26	3	20	40	41	46	M8	20	1.39		
48/60	30	45	18	19	48	46	48	60	105	85	104	140	56	28	4	21	45	46	51	M8	20	1.86		

Coupling hubs in steel / cast iron

Order example: Coupling 24/28-20/24

Type	max. kw at 1000 rpm	max. kW at 1500 rpm	Bores						Dimensions [mm]															Weight [kg]
			A-hub			B-hub																		
			Pilot hole	Finished bore Ø d		Pilot hole	Finished bore Ø d																	
				min	max		min	max	A	B	OM	L	L1+ L2	E	s	b	C	C1	dh	g	f			
19/24	1.1	1.5	—	6	19	—	12	24	40	32	39	66	25	16	2	12	20	21	18	M5	10	0.35		
24/28	2.2	4	—	10	24	—	14	32	55	40	52	78	30	18	2	14	24	26	27	M5	10	1		
28/38	5.5	7.5	—	12	28	22	24	38	65	45	62	90	35	20	2.5	15	28	29	30	M6	15	1.6		
38/45	11	15	—	14	38	30	38	45	80	66	77	114	45	24	3	18	37	37	38	M8	15	2.3		
42/55	22	30	—	19	42	15	42	55	95	75	94	126	50	26	3	20	40	40	46	M8	20	3.6		
48/60	30	45	—	19	48	15	48	60	105	85	102	140	56	28	3.5	21	45	45	51	M8	20	4.8		
55/70	37	55	—	19	55	47	55	70	120	98	118	160	65	30	4	22	52	52	60	M10	20	7.4		
65/75	55	90	—	22	65	57	65	75	135	115	132	185	75	35	4.5	26	61	59	68	M10	20	10.9		
75/90	90	132	—	30	75	50	75	90	160	135	158	210	85	40	5	30	69	65	80	M10	25	17.7		
90/100	250	315	29	40	90	79	90	100	200	160	180	245	100	45	5.5	34	81	81	100	M10	25	29.5		
100/110	315	315	—	—	—	40	55	110	225	—	200	270	110	50	6	38	—	89	113	M12	30	43.5		

IMPERIAL BORES

Order Code	Ød mm	Ød Inch	Groove	
			b+0.05	t2+0.2
9.5 TB	9.5	3/8	3.17	11.1
11.11 DNB	11.11	7/16	2.4	12.5
12.69 T	12.69	1/2	4.75	14.6
12.7 TA	12.7	1/2	3.17	14.3
13.45 DNC	13.45	17/32	3.17	14.9
14.29 DO	14.29	9/16	3.17	15.6
15.87 E	15.87	5/8	3.17	17.5
15.87 S	15.87	5/8	3.97	17.9
15.88 ES	15.88	5/8	4.0	17.7
15.85 DND	15.852	5/8	4.75	18.1
15.87 ED	15.87	5/8	4.75	18.1
17.47 DNH	17.465	11/16	4.75	19.6
19.02 AD	19.02	3/4	3.17	20.7
19.02 AS	19.02	3/4	4.78	21.3
19.05 A	19.05	3/4	4.78	21.3
22.2 FA	22.2	7/8	6.35	25.2
22.23 DNI	22.228	7/8	6.35	25.0
22.22 GS	22.22	7/8	4.78	24.4
22.22 g	22.22	7/8	4.75	24.7
22.22 GB	22.22	7/8	4.78	25.5
22.22 F	22.22	7/8	6.38	25.2
22.225 GD	22.225	7/8	4.76	24.7
23.8 GF	23.8	15/16	6.35	26.8
25.0 HB	25.0	63/64	6.35	28.7
25.38 BA	25.38	1	6.35	27.6
25.38 BS	25.38	1	6.37	28.3
25.4 H	25.4	1	4.78	27.8
25.4 HS	25.4	1	6.35	28.7
26.95 R	26.95	1 1/16	4.78	29.3
28.58 SA	28.575	1 1/8	6.35	31.7
28.58 SB	28.58	1 1/8	6.35	31.5
28.58 SD	28.58	1 1/8	7.93	32.1
31.7 JA	31.7	1 1/4	7.93	34.4
31.71 JC	31.71	1 1/4	7.93	35.3
31.75 JS	31.75	1 1/4	6.35	34.6
31.75 K	31.75	1 1/4	7.93	35.5
31.75 KS	31.75	1 1/4	7.93	36.6
31.76 DNK	31.755	1 1/4	7.93	35.3
34.93 MA	34.925	1 3/8	7.93	38.7
34.92 M	34.92	1 3/8	7.93	38.6
34.93 RH1	34.93	1 3/8	9.55	37.8
36.5 CB	36.5	1 7/16	9.55	40.9
38.07 CA	38.07	1 1/2	7.93	42.0
38.07 C	38.07	1 1/2	9.55	42.5
41.25 N	41.25	1 5/8	9.55	45.6
41.28 NB	41.275	1 5/8	9.55	45.8
44.42 LS	44.42	1 3/4	9.55	48.8
44.45 LA	44.45	1 3/4	11.0	48.1
44.45 L	44.45	1 3/4	11.11	49.4
47.63 LU	47.625	1 7/8	12.7	53.5
49.2 DA	49.2	1 15/16	12.7	55.0
50.77 DS	50.77	2	12.7	56.4
50.8 D	50.8	2	12.7	55.1
53.95 P	53.95	2 1/8	12.7	59.6
53.98 PA	53.975	2 1/8	12.7	60.0
57.1 U	57.1	2 1/4	12.73	62.9
60.33 UB	60.325	2 3/8	15.875	67.6
73.03 WA	73.025	2 7/8	19.05	81.7
85.73 WD	85.725	3 3/8	22.225	95.8
92.08 WF	92.075	3 5/8	22.225	101.9

PROFILE BORES

Profile spline DIN 5480	Profile DIN 5482	Profile SAE
N 20 x 1.25 x 14 x 9 G	A 17 x 14	SAE 5/8" – 16/32 – Z9
N 25 x 1.25 x 18 x 9 G	A 28 x 25	SAE 3/4" – 16/32 – Z11
N 30 x 2 x 14 x 9 G	A 30 x 27	SAE 7/8" – 16/32 – Z13
N 35 x 2 x 16 x 9 G	A 35 x 31	SAE 1" – 16/32 – Z15
N 40 x 2 x 18 x 9 G	A 40 x 36	SAE 1-1/8" – 16/32 – Z17
N 45 x 2 x 21 x 9 G	A 45 x 41	SAE 1-1/4" – 12/24 – Z14
N 50 x 2 x 24 x 9 G	A 48 x 44	SAE 1-3/8" – 16/32 – Z21
N 55 x 2 x 24 x 9 G	A 50 x 45	SAE 1-1/2" – 12/24 – Z17
N 60 x 2 x 28 x 9 G	A 58 x 53	SAE 1-1/2" – 16/32 – Z23
N 70 x 3 x 22 x 9 G	A 70 x 64	SAE 1-3/4" – 16/32 – Z27
N 80 x 3 x 25 x 9 G		SAE 1-3/4" – 8/16 – Z13
N 90 x 3 x 28 x 9 G		SAE 2" – 8/16 – Z15
		SAE 2-1/4" – 8/16 – Z17

TAPER BORES

Order code	Cone 1:8			
	Ød	b	t2	l
TN1	9.75	2.40	10.7	17.0
TN1C	11.60	3.00	12.9	16.5
TN1E	13.00	2.40	13.8	21.0
TN1D	14.00	3.00	15.5	17.5
TN1B	14.30	3.20	15.7	19.5
TN2	17.20	3.20	18.3	24.0
TN2A	17.20	4.00	18.9	24.0
TN2B	17.20	3.00	18.3	24.0
TN3	22.00	4.00	23.4	28.0
TN4	25.46	4.78	27.8	36.0
TN4B	25.46	5.00	28.2	36.0
TN4A	27.00	4.78	28.8	32.5
TN4G	28.45	6.00	29.3	38.5
TN5	33.17	6.38	35.4	44.0
TN5A	33.17	7.00	35.4	44.0

Order code	Cone 1:5			
	Ød	b	t2	l
A10	9.85	2	10.9	11.5
B17	16.85	3	18.9	18.5
C20	19.85	4	22.0	21.5
Cs22	21.95	3	23.8	21.5
D25	24.85	5	27.9	26.5
E30	29.85	6	32.5	31.5
F35	34.85	6	37.5	36.5
G40	39.85	6	45.5	41.5

 = Standard

Gear Couplings



FEATURES

- Flexible shaft connection
- Axial, radial and angular misalignment compensation
- Coupling hub in steel, coupling sleeve in polyamide
- Torque transmission without radial stress due to double Cardan construction
- Temperature range: -25 °C to +80 °C for continuous operation

MODEL CODE

(also order example)

Coupling B 24 24H7 / 20H7

Gear coupling

Coupling size

Version of motor hub

24H7 = cylindrical bore with key to DIN 6885

Version of pump hub

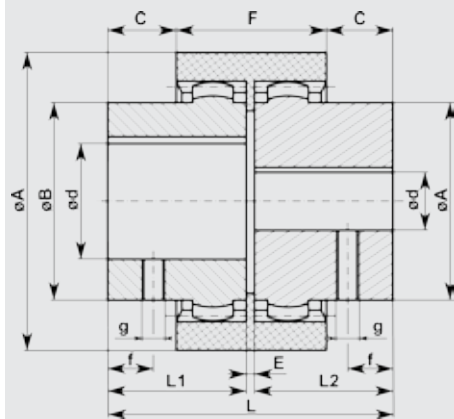
20H7 = cylindrical bore with key to DIN 6885

22.2F = 22.2 Code F (7/8") imperial bore*

B17/TN2A = tapered bore*

* see tables under flexible drive couplings

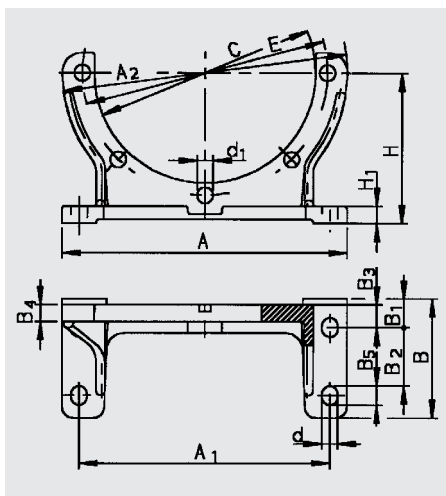
DIMENSIONS



Type	max. kw for 1000 rpm	max. kw for 1500 rpm	Pilot hole	Finished- holes d [mm]		Dimensions [mm]										Weight
				Min.	Max.	A	B	L	L1 + L2	E	C	F	g	f	[kg]	
B 24	1.10	1.50	—	10	24	52	36	56	26	4	7.5	41	M 5	6	0.316	
B 28	2.20	4.00	7	10	28	66	44	84	40	4	19	46	M 8	10	0.739	
B 38	5.50	7.50	12	14	38	83	58	84	40	4	18	48	M 8	10	1.22	
B 42	11.00	15.00	12	20	42	92	65	88	42	4	19	50	M 8	10	1.49	



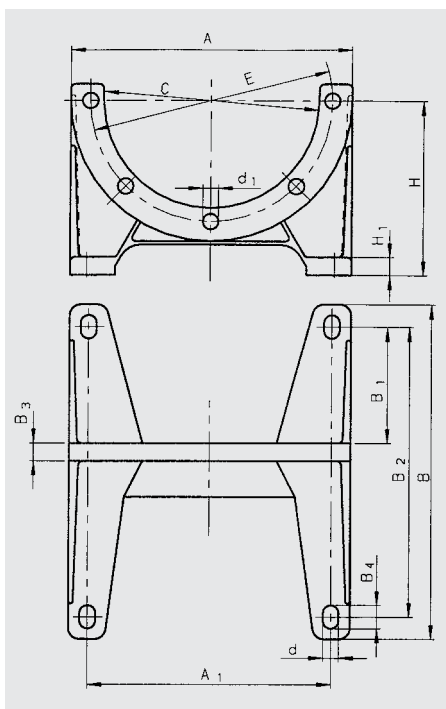
Bell Housing Foot Brackets for PT, PTK, PTS



LIGHT-DUTY RANGE TO VDMA 24561

Size	Part no.	A	A1	A2	B	B1	B2	B3	B4	B5	H	H1	d	C	E	d1
PF-160/3	3130712	160	140	—	80	15	50	7	12	—	100	10	9	110	130	9
PF-200/3	953938	210	180	200	93	14	60	3	8	23	112	12	11	146	165	11
PF-250/3 for PT, PTS	3326868	250	220	—	110	20	60	21	19	—	132	15	14	190	215	14
PF-250/3 for PTK*	3290117	250	220	—	110	20	60	21	19	—	132	15	14	190	215	14
PF-300/3	953710	290	260	300	120	19	80	19	15	32	160	15	14	240	265	14

* additional counterbore for use with countersunk screws



HEAVY-DUTY RANGE TO VDMA 24561

Size	Part no.	A	A1	B	B1	B2	B3	B4	H	H1	d	C	E	d1
PF-350/3*	953942	350	300	305	70	265	18	22	180	18	18	265	300	18
PF-250/4	3045399	250	215	260	60	185	15	24	155	15	14	190.3	215	14
PF-300/4	3043132	300	265	270	75	225	18	24	185	18	14	234.5	265	14
PF-350/4	3045259	350	300	305	90	265	18	30	235	18	18	260	300	18
PF-400/4	3044298	400	350	350	100	300	20	30	260	20	18	302	350	18
PF-450/4	3044299	450	400	385	110	335	22	30	295	20	18	352	400	18
PF-550/4	3030682	550	500	465	140	415	25	30	350	25	18	452	500	18
PF-660/4	3044300	660	600	555	165	495	30	40	380	30	22	552	600	22

* PF-350/3 is part of the light-duty range but has dimensions according to drawing on left

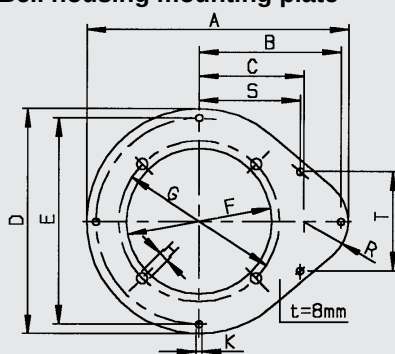


Bell Housing Mounting Plate for Bell Housings Type PT, PTK, PTS

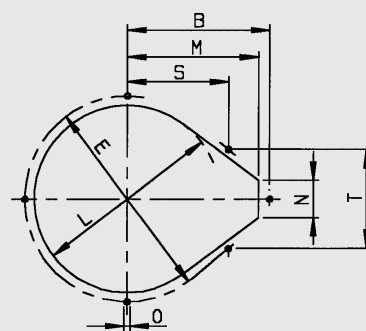
FEATURES

- Enables the complete motor-pump unit to be fitted and removed from outside the tank
- Simplifies cleaning and maintenance
- Bell housing mounting plate in aluminium, seal in NBR rubber (mineral oil resistant)

Bell housing mounting plate

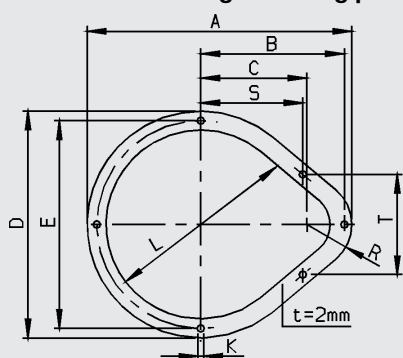


Oil tank cut-out



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

Seal for bell housing mounting plate



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

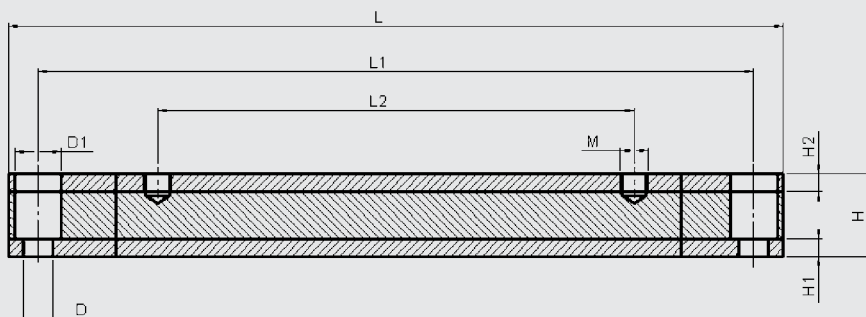


FEATURES

- Horizontal base mounting (not overhead mounted)
- Machined ready for IMB 35 motors
- Noise reduction due to decoupling
- Resistant to mineral oil due to NBR rubber compound, shore A60°±5
- Special lengths and models are possible on request

Damping Rails

for Electric Motors Mounting-Type IMB35



Damping rails	For type	Part no.	L	L1	L2	H	H1	H2	B	B1	B2	D	D1	M
MDS 080	80	3134999	176	146	100	40	8	12	50	22	25	14	20	M8
MDS 090S	90S	721987	196	156	100	40	8	12	50	22	25	14	20	M8
MDS 090L	90L	721988	240	205	125	40	8	12	50	24	25	14	20	M8
MDS 100L	100L	721989	240	205	140	40	8	12	50	24	25	14	20	M10
MDS 112M	112M	3065818	240	205	140	40	8	12	50	20	25	14	20	M10
MDS 132S	132S	721990	285	245	140	45	8	12	50	20	25	14	20	M10
MDS 132M	132M	721991	285	245	178	45	8	12	50	20	25	14	20	M10
MDS 160M	160M	721992	340	300	210	60	15	15	70	28	35	18	26	M12
MDS 160L	160L	3128252	416	370	254	60	15	15	70	28	35	18	26	M12
MDS 180M	180M	3234395	416	370	241	60	15	15	70	35	35	18	26	M12
MDS 180L	180L	721995	446	400	279	60	15	15	70	35	35	18	26	M12
MDS 200L	200L	724279	496	430	305	60	15	15	70	35	35	22	32	M16
MDS 225S	225S	3042916	496	430	286	60	15	15	70	35	35	22	32	M16
MDS 225M	225M	723832	496	445	311	60	15	15	70	35	35	22	32	M16
MDS 250M	250M	722801	496	445	349	60	15	15	100	50	50	25	40	M20
MDS 280S	280S	3042928	580	530	368	60	15	15	100	50	50	25	40	M20
MDS 280M	280M	3042929	580	530	419	60	15	15	100	50	50	25	40	M20
MDS 315S	315S	3026755	660	610	406	70	15	15	150	60	75	25	40	M24
MDS 315M	315M	3026452	660	610	457	70	15	15	150	60	75	25	40	M24
MDS 315L	315L	3065559	720	670	508	70	15	15	150	60	75	25	40	M24

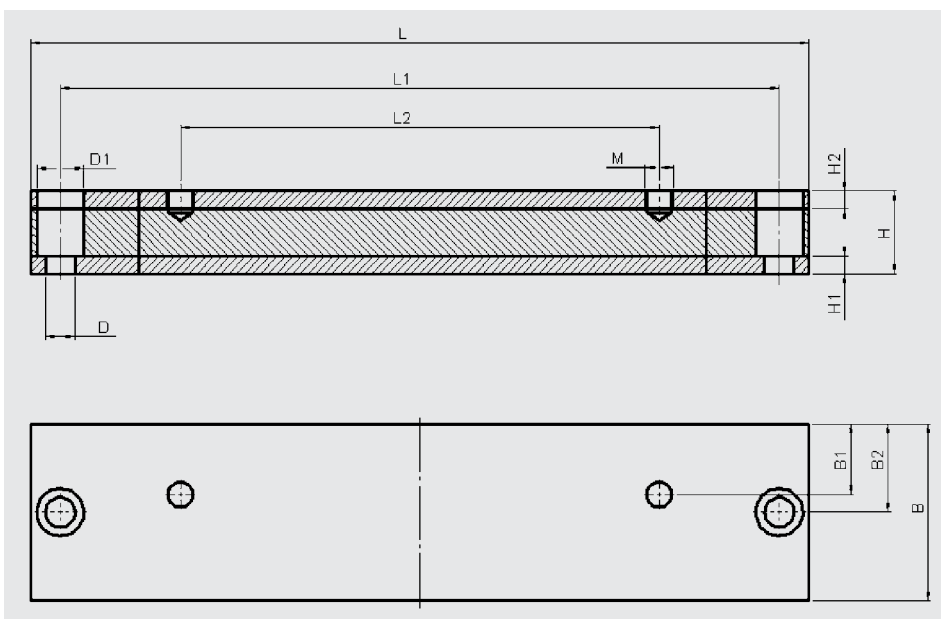


Damping Rails for Bell Housing Foot Bracket



FEATURES

- Horizontal base mounting (not overhead mounted)
- Ready machined for bell housing base
- Noise reduction due to decoupling
- Resistant to mineral oil due to NBR rubber compound, shore A60°±5
- Special lengths and models are possible on request



Damping rails *	For type	Part no.	L	L1	L2	H	H1	H2	B	B1	B2	D	D1	M
FDS 160/3	PF160/3	3156788	166	120	50	40	8	12	50	19	25	14	20	M8
FDS 200/3	PF200/3	721983	190	150	60	40	8	12	50	21	25	14	20	M10
FDS 250/3	PF250/3	721984	225	185	60	40	8	12	50	21	25	14	20	M12
FDS 300/3	PF300/3	721985	285	245	80	45	8	12	50	21	25	14	20	M12
FDS 350/3	PF350/3	721986	380	340	265	60	8	12	70	29	35	18	26	M16
FDS 300/4	PF300/4	3169191	350	300	225	40	8	12	50	25	20	14	20	M12
FDS 350/4	PF350/4	3169192	375	340	265	60	15	15	70	29	35	18	26	M16
FDS 400/4	PF400/4	3044302	420	385	300	60	15	15	70	30	35	18	26	M16
FDS 450/4	PF450/4	3044304	455	420	335	60	15	15	70	30	35	18	26	M16
FDS 550/4	PF550/4	3044305	535	500	415	60	15	15	70	30	35	18	26	M16
FDS 660/4	PF660/4	3044306	660	610	495	60	15	15	70	30	35	22	32	M20

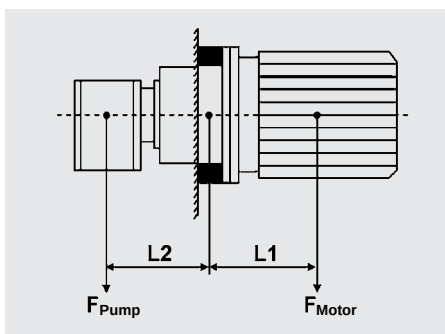
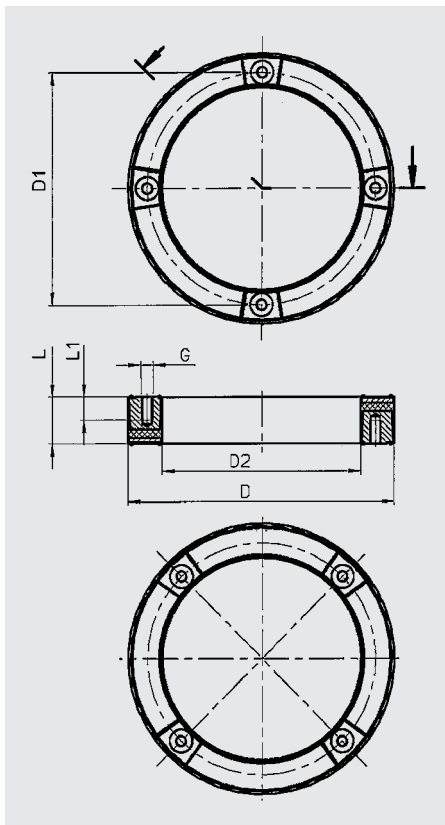
* FDS .../3 for bell housing foot bracket for the light-duty range
FDS .../4 for bell housing foot bracket for heavy-duty range

Damping Rings



APPLICATION

- For vertical and horizontal mounting
- Cost-effective noise reduction due to decoupling
- Resistant to mineral oil through the use of NBR rubber compound
- Vulcanized seal lip, no additional seal required



DIMENSIONS

Damping ring type	IEC motor size	Part no.	Dimensions [mm]					
			D	D1	D2	G	L1	L
DFR-V1/B5 200	80, 90S / 90L	3026885	200	165	146	4xM10	18	40
DFR-V1/B5 250	100L / 112 M	3026886	250	215	191	4xM12	22	45
DFR-V1/B5 300	132S / 132 M	3026887	300	265	235	4xM12	22	50
DFR-V1/B5 350	160M / 160L / 180M / 180 L	3210971	350	300	261	4xM16	28	60
DFR-V1/B5 400	200L	3210987	400	350	301	4xM16	29	50
DFR-V1/B5 450	225S / 225M	1151180	450	400	352	8xM16	32	60
DFR-V1/B5 550	250M / 280S / 280M	1151181	550	500	452	8xM16	32	60
DFR-V1/B5 660	315S / 315M	3041666	660	600	552	8xM20	33	65
DFR-V1/B5-350-VS	160M / 160L / 180M / 180L	3870296	350	300	261	4xM16	22	60
DFR-V1/B5-400-VS	200L	3870297	400	350	301	4xM16	29	50
DFR-V1/B5-450-VS	225S / 225M	3870298	450	400	352	8xM16	32	60

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

Maximum permitted force:

$$F_{\text{pump}} + F_{\text{motor}} \leq F_{\text{perm.}}$$

Maximum permitted bending moment:

$$F_{\text{motor}} \times L1 - F_{\text{pump}} \times L2 \leq Mb_{\text{perm.}}$$

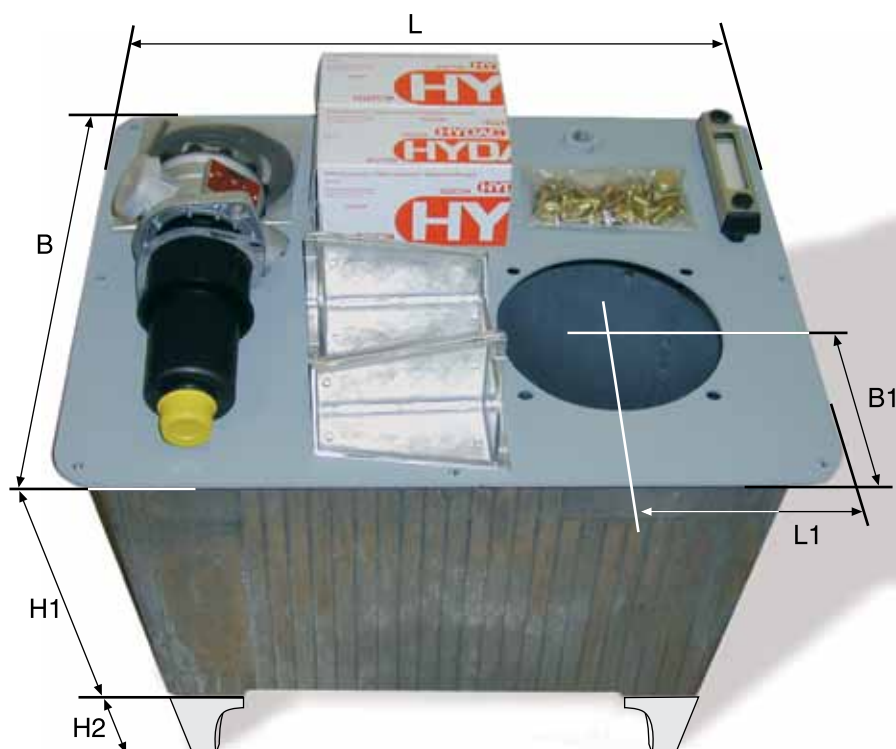
Damp. ring type	200	250	300	350	400	450	550	660
$F_{\text{perm.}} [\text{N}]$	385	755	1520	3780	5040	6800	13390	24720
$Mb_{\text{perm.}} [\text{Nm}]$	32	68	184	770	1135	1650	4530	9270

TankSet



COMPONENT PARTS:

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



Type	Tank size	Coordinates	Part. no.	Displ. vol.	Fluid level gauge	Return line filter with filter cartridge	Breather filters
	LxBxH1/H2	L1/B1		(l)		10 µm	
HYNG 6.5-140	260x220x170/10	85/85	3102944	6	FSA 076	RF 30	BFP3G10W3.0
HYNG 12-140	310x240x215/75	81/86	3104404	10	FSA 076	RF 30	BFP3G10W3.0
HYNG 12-160	310x240x215/75	96/96	3102945	10	FSA 076	RF 30	BFP3G10W3.0
HYNG 20-160	366x288x245/75	99/100	3102946	17	FSA 076	RFM 75	BFP3G10W3.0
HYNG 20-200	366x288x245/75	119/120	3104405	17	FSA 076	RFM 75	BFP3G10W3.0
HYNG 30-200	490x340x275/150	125/120	3104406	27	FSA 076	RFM 165	BFP3G10W3.0
HYNG 30-250	490x340x275/150	150/145	3102947	27	FSA 076	RFM 165	BFP3G10W3.0
HYNG 44-200	515x415x305x150	170/170	3104407	40	FSA 127	RFM 165	BFP3G10W3.0
HYNG 44-250	515x415x305x150	170/170	3103018	40	FSA 127	RFM 165	BFP3G10W3.0
HYNG 70-250	605x465x355/150	170/170	3103019	63	FSA 127	RFM 165	BFP3G10W3.0
HYNG 70-300	605x465x355/150	170/170	3104428	63	FSA 127	RFM 165	BFP3G10W3.0
HYNG 130-xxx	760x600x386/150	x/x	-	123	FSA 127	RFM 185	BFP3G10W3.0

NOTE

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

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

Subject to technical modifications.

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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
- TankSet

NOTE

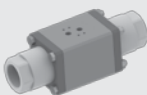
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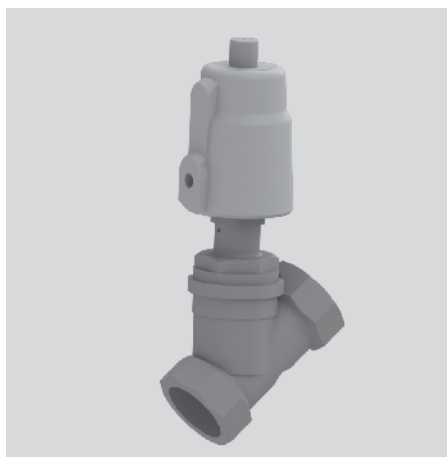
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Section selector

	2/2-way Piston Valves	Pilot-operated	CXK01, CXK02	287
	2/2-way Coaxial Valves	Direct acting	CX02 – CX05	293
			CX03M – CX05M	297
		Pilot-operated	CX06 – CX08	303
			CX06M – CX08M	309
	3/2-way Coaxial Valves	Direct acting	CX03, CX04	315
		Pilot-operated	CX06, CX07	319
	2/2-way Pressure Relief Valve	Pilot operated	CX CBV	323
			CX DBV	329

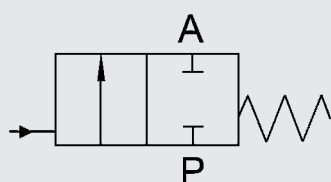




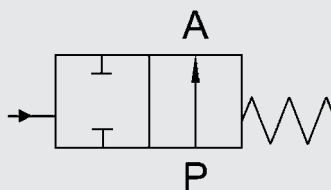
2/2-way Piston Valves

CXK01 and CXK02

Switching function



NC (normally closed)



NO (normally open)

Model code

(also example order)

CXK01 2/2 F C 3 15 025 012 PP

Type

CXK01 = Closes with the flow

CXK02 = Closes against the flow

Ways

2/2 = The number of ways

Control

F = External pilot

Switching function

C = NC - closed when de-energised

O = NO - open when de-energised

Body material

3 = Red bronze

6 = Stainless steel

Nominal size

15 = DN 15

20 = DN 20

25 = DN 25

32 = DN 32

40 = DN 40

50 = DN 50

Pressure range (see table)

003 = 0 to 3 bar

⋮

025 = 0 to 25 bar

Connection

012 = G $\frac{1}{2}$ - DN 15

034 = G $\frac{3}{4}$ - DN 20

100 = G1 - DN 25

114 = G1 $\frac{1}{4}$ - DN 32

112 = G1 $\frac{1}{2}$ - DN 40

200 = G2 - DN 50

Sealing Spindle / Seat

Red bronze

PP = PTFE / PTFE

Stainless steel

PF = PTFE / FKM

Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature

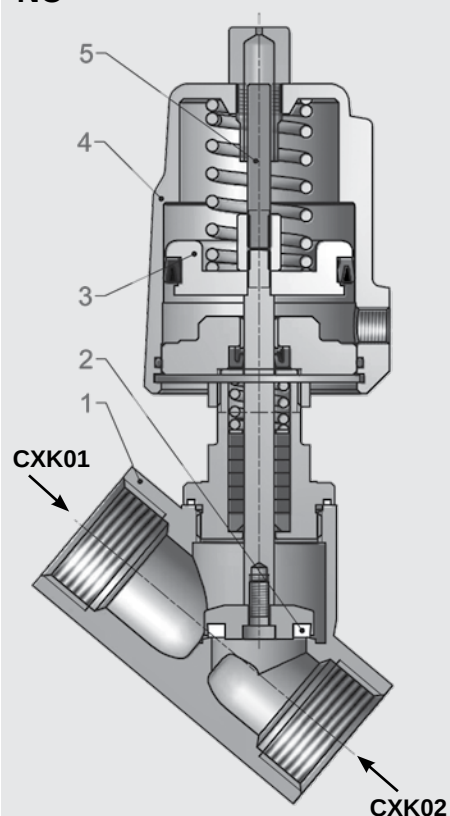
Technical specifications

Nominal size:	DN15 to DN50	
Pressure range:	PN0 to PN25 (see table)	
Body material:	Red bronze, stainless steel	
Seal material:	Red bronze	Seat seals: PTFE Spindle seal: PTFE, optional NBR
	Stainless steel	Seat seals: FKM optional PTFE Spindle seal: PTFE, optional NBR
Flow rate	0 – approx. 792 l/min	
Medium temperature	-10 °C to +80 °C for NBR -40 °C to +200 °C for PTFE	
Ambient temperature	Max. +60 °C	
Connection	G½ - G2	
Operating fluid	Media	Aggressive, neutral, gaseous and liquid media, which do not have a negative effect on the physical and chemical properties of the material of the housing or sealing material concerned
	Max. permitted pressure	See table
	Max. permissible viscosity	600 m²/s
Control medium	Medium	Neutral gases
	Volume	Drive size 50 mm 0.035 dm³
		Drive size 80 mm 0.131 dm³
Control pressure	4 to 10 bar	
Pilot valve	Optional 3/2-way pilot valve, possible with M12x1 plug	
Mounting position	In any position	

Designation	Nom. dia. mm	Pressure		Connection	Kv value m³/h DIN 60354	Material
		bar – Ø 50	bar – Ø 80*			
CXK01	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	
CXK01	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	
CXK02	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	
CXK02	15	0 – 16	–	G½	4.6	Stainless steel
	20	0 – 20	0 – 25	G¾	9.4	
	25	0 – 10	0 – 16	G1	17.4	
	32	0 – 7	0 – 10	G1¼	21.5	
	40	0 – 6	0 – 8	G1½	26.4	
	50	0 – 3	0 – 5	G2	47.5	

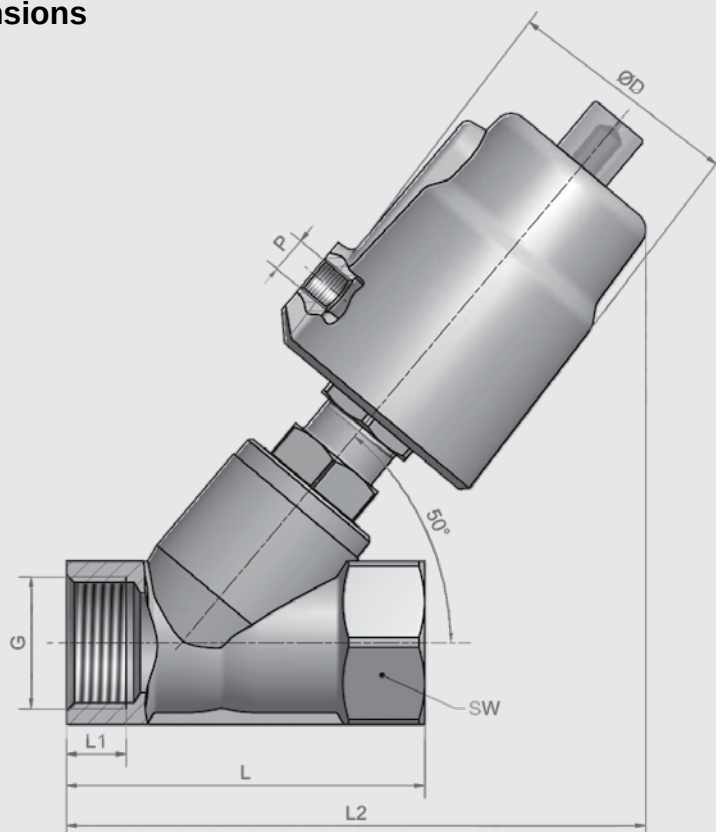
*Actuator Ø 80 as option

Sectional drawing NC



Item	Designation	Quantity
1	Valve body	1
2	Seals	1
3	Piston	1
4	End cap	1
5	Spindle	1

Dimensions

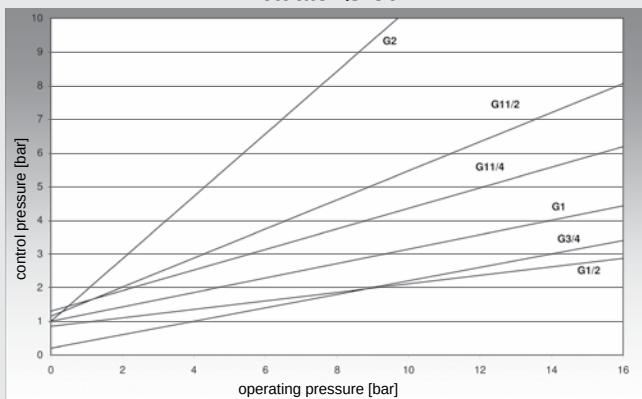


Red bronze	Actuator Ø 50							Actuator Ø 80		
	G	½	¾	1	1¼	1½	2	1¼	1½	2
	ØD	62	62	62	62	62	62	94	94	94
	P	G½	G½	G½	G½	G½	G½	G½	G½	G½
	L	57	68	80	97	107	124	97	107	124
	L1	8	9	10.5	12.5	14.5	16.5	12.5	14.5	16.5
	L2	135	140	145	150	155	160	195	205	215
	SW	27	33	41	50	56	68	50	56	68
	kg	1.2	1.3	1.5	1.8	2.4	3.5	3.0	3.4	4.5

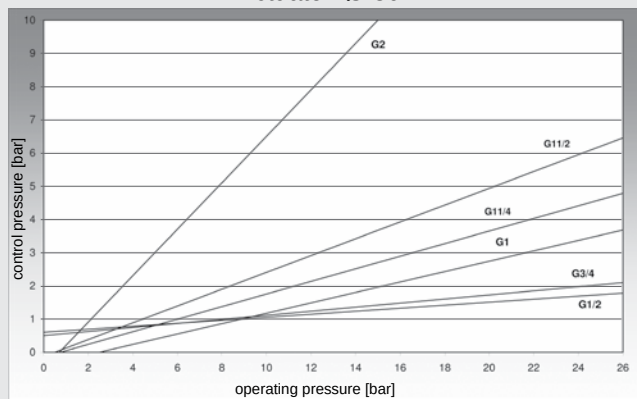
Stainless steel	G	½	¾	1	1¼	1½	2	1¼	1½	2
	ØD	62	62	62	62	62	62	94	94	94
	P	G½	G½	G½	G½	G½	G½	G½	G½	G½
	L	65	75	90	110	120	150	110	120	150
	L1	12	13	15	17	19	21	17	19	21
	L2	140	145	150	155	160	175	200	210	230
	SW	27	32	42	50	55	70	50	55	70
	kg	1.3	1.4	1.6	2.2	2.5	3.5	3.2	3.4	4.6

Operating pressure / control pressure graph

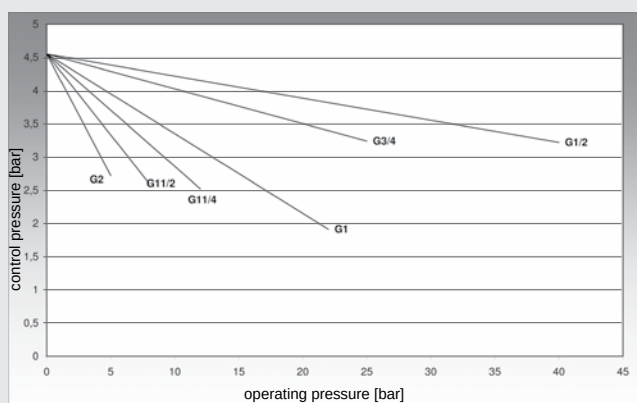
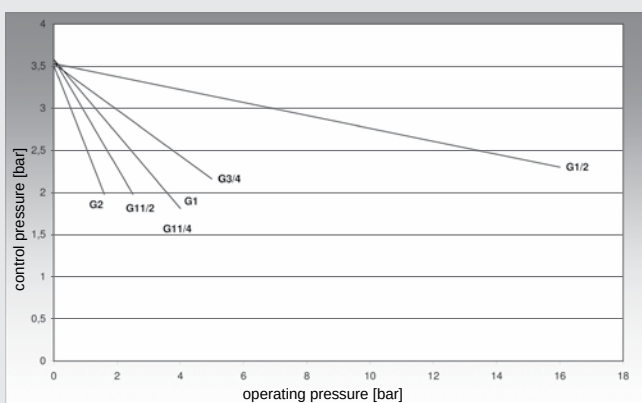
Actuator Ø 50 mm



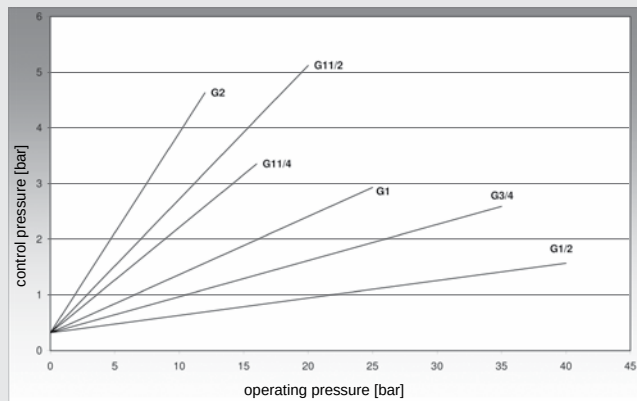
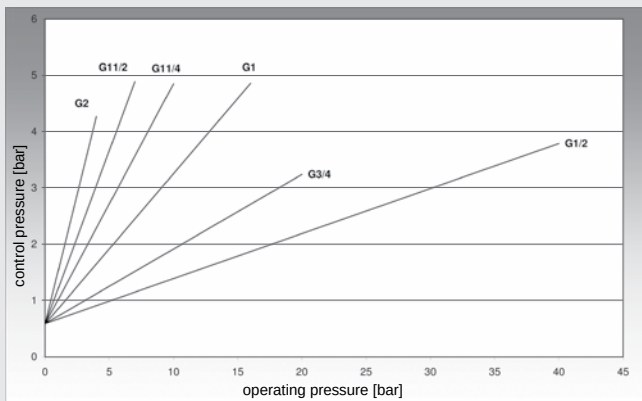
Actuator Ø 80 mm



CXK01 NC closes with the flow, normally closed

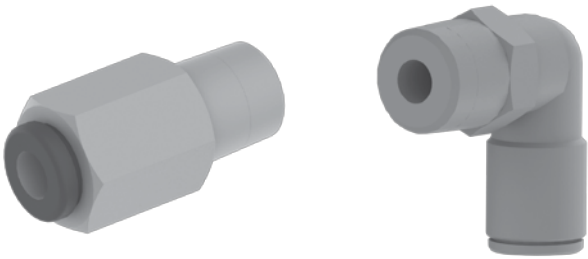


CXK02 NC closes with the flow, normally closed



CXK02 NO closes against the flow, normally open

Accessories

Threaded connections	
3/2-way pilot valve	

On request we would be happy to discuss your requirements for further options and accessories.

NOTE

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

Subject to technical modifications.

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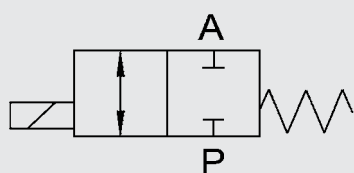




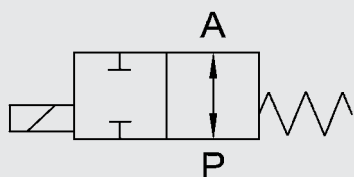
2/2 way Coaxial Valve

CX02 to CX05 direct acting

Switching function



NC (normally closed)



NO (normally open)

Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Nominal voltage

Model code

(also example order)

CX02 2/2 D C 2 10 020 014 24V

Type

CX02 = CX02 series
CX03 = CX03 series
CX04 = CX04 series
CX05 = CX05 series

Ways

2/2 = The number of ways

Control

D = Direct acting

Switching function

C = NC - normally closed
O = NO - normally open

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

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

Nominal voltage

24V = 24 V DC
230V = 230 V AC 40-60 Hz
Special voltages on request

*optional

Technical specifications

Control	2/2 way valve, direct-acting	
Nominal size	DN 10 to DN 50	
Pressure range (see table)	CX02 – 2/2	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	PN 0 to PN 64
	CX05 – 2/2	PN 0 to PN 100
Connections (see table)	Threaded sleeve flange on request	
Body material	Sleeve version Flange version	Brass, nickel-coated brass, 1.4305, 1.4571 on request
Valve seat (plastic on metal)	FKM PTFE	CX02 / CX03 / CX04 CX05
Material of seals	Static: Dynamic:	FKM PTFE
Back pressure resistant	Up to 16 bar	
Media	Gaseous, liquid, contaminated	
Direction of flow	P → A A → P	As marked max. 16 bar
Temperature of medium	-20 °C to +130 °C	
Ambient temperature	-30 °C to +60 °C	
Mounting position	In any position	
Limit switch	Inductive*	
Fixing	Angle bracket*	

Electrical part

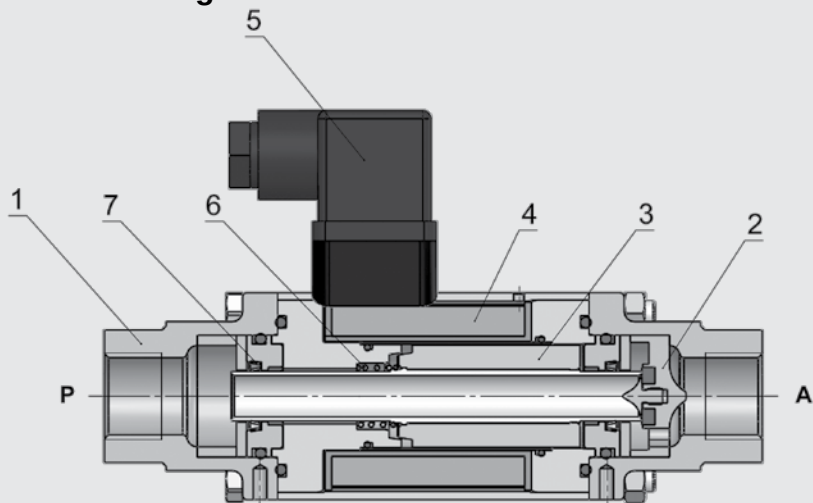
Nominal voltage	DC: 24 V AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet AC: DC magnet with integrated rectifier
Connection	Connector plug to DIN EN 175301-803 type A Connector plug to DESINA M12x1 * Illuminated plug with varistor *
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when fitted with connector plug

On request we would be happy to discuss your requirements for further options and accessories.

*optional

Designation	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h]	Wattage [W]		Weight [kg]
				DIN 60354	24V DC	230 V 50 Hz	
CX02	10	0 – 20	G¼, G¾, G½	2.1	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	2.1	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	2.1	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	2.1	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

Sectional drawing

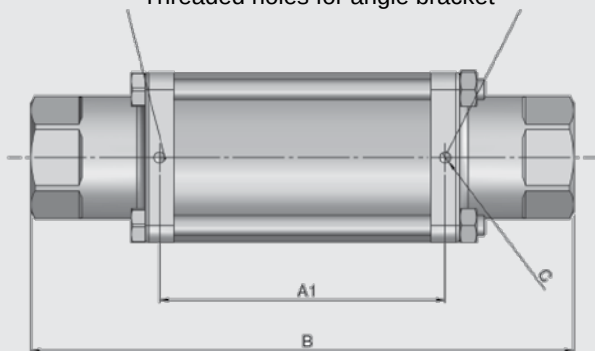


Item	Designation	Qty.
1	Connecting block	2
2	Valve seat	1
3	Armature	1
4	Magnet	1
5	Connector plug	1
6	Spring	1
7	PTFE rod seal	2

Dimensions

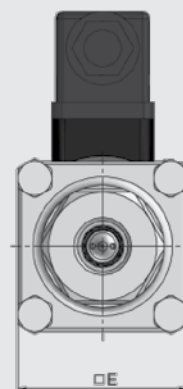
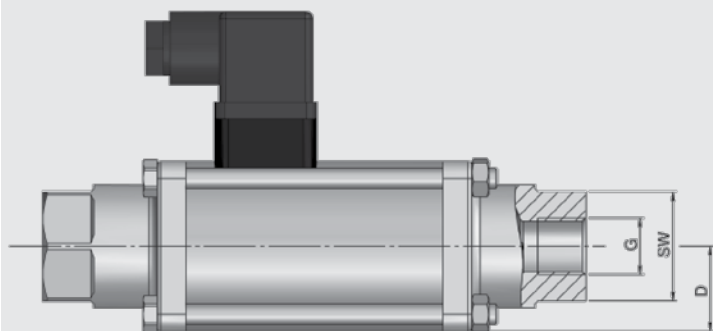
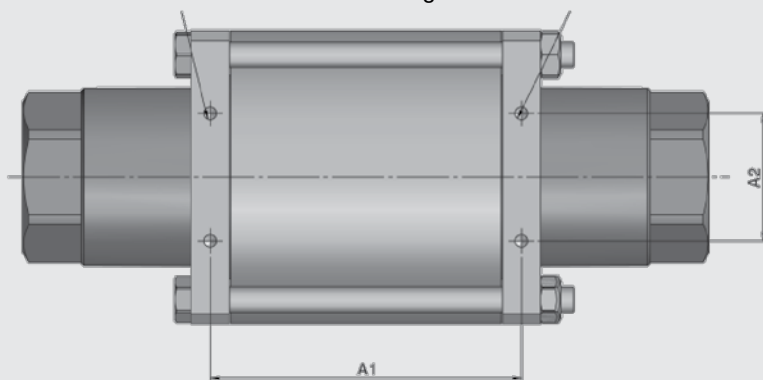
DN10 - DN25

Threaded holes for angle bracket



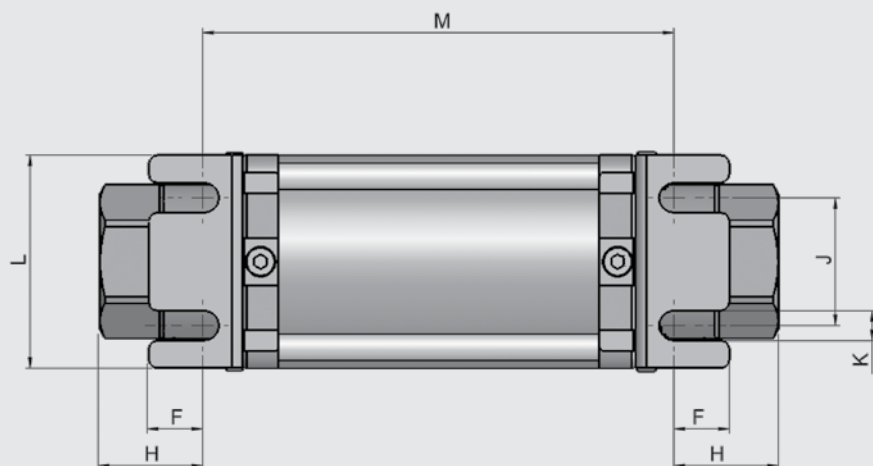
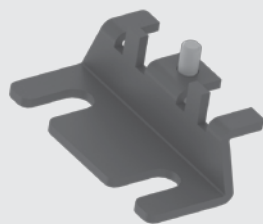
DN32 - DN50

Threaded holes for angle bracket



DN	G	SW	A1 [mm]	A2 [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	25	50
15	G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	41	100	—	184	M5	35	70
20	G $\frac{1}{2}$, G $\frac{3}{4}$, G1	46	108	—	215	M5	40	80
25	G $\frac{3}{4}$, G1, G1 $\frac{1}{4}$	55	121	—	246	M5	45	90
32	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$	60	122	50	269	M6	57.5	115
40	G1 $\frac{1}{2}$	75	131	60	304	M6	65	130
50	G2	75	131	60	304	M6	65	130

Angle bracket



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

NOTE

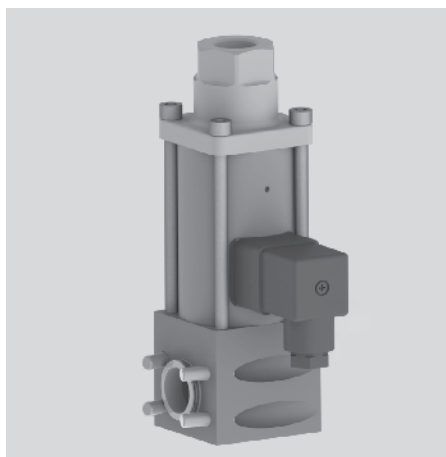
The information in this brochure relates to the operating conditions and applications described.

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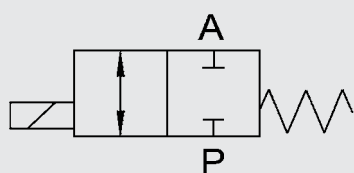
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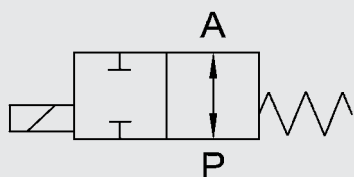
2/2 Way Coaxial Valve CX03M to CX05M direct acting



Switching function



NC (normally closed)



NO (normally open)

Model code

(also example order)

CX03M 2/2 D C 2 10 040 014 24V

Type

CX03M = CX03M series
CX04M = CX04M series
CX05M = CX05M series

Ways

2/2 = The number of ways

Control

D = Direct acting

Switching function

C = NC - normally closed
O = NO - normally open*

Body material

2 = Brass (valve), aluminium (block)

Nominal size

10 = DN 10
15 = DN 15
20 = DN 20
25 = DN 25
32 = DN 32

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

Nominal voltage

24V = 24V DC
230V = 230 V AC 40-60 Hz
Special voltage on request

Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Nominal voltage
- Number of module blocks

*optional

Technical specifications

Control	2/2 way valve, direct-acting	
Nominal size	DN 10 to DN 32	
Pressure range (see table)	CX03M – 2/2	PN 0 to PN 40
	CX04M – 2/2	PN 0 to PN 64
	CX05M – 2/2	PN 0 to PN 100
Connection	Valve: G ¼ - G1½ Block: G ½ - G2	
Body material	Single valve: brass Block: aluminium	
Material of seals	Static:	FKM
	Dynamic:	PTFE
	Seat seal:	FKM, PTFE
Back pressure resistant	Up to 16 bar	
Media	Gaseous, liquid, contaminated	
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	In any position	
Limit switch	Inductive*	
Fixing	Angle bracket*	

Electrical part

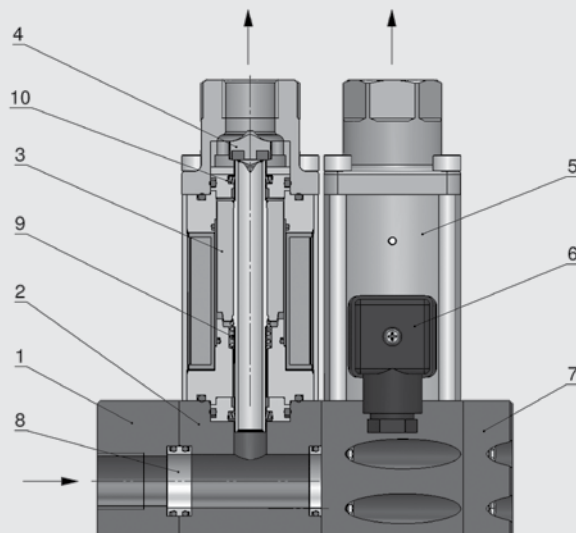
Supply voltage	DC: 24 V AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet AC: DC magnet with integrated rectifier
Connection	Connector plug to DIN EN 175301-803 type A Connector plug to DESINA M12x1 * Illuminated plug with varistor *
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when fitted with connector plug

On request we would be happy to discuss your requirements for further options and accessories.

*optional

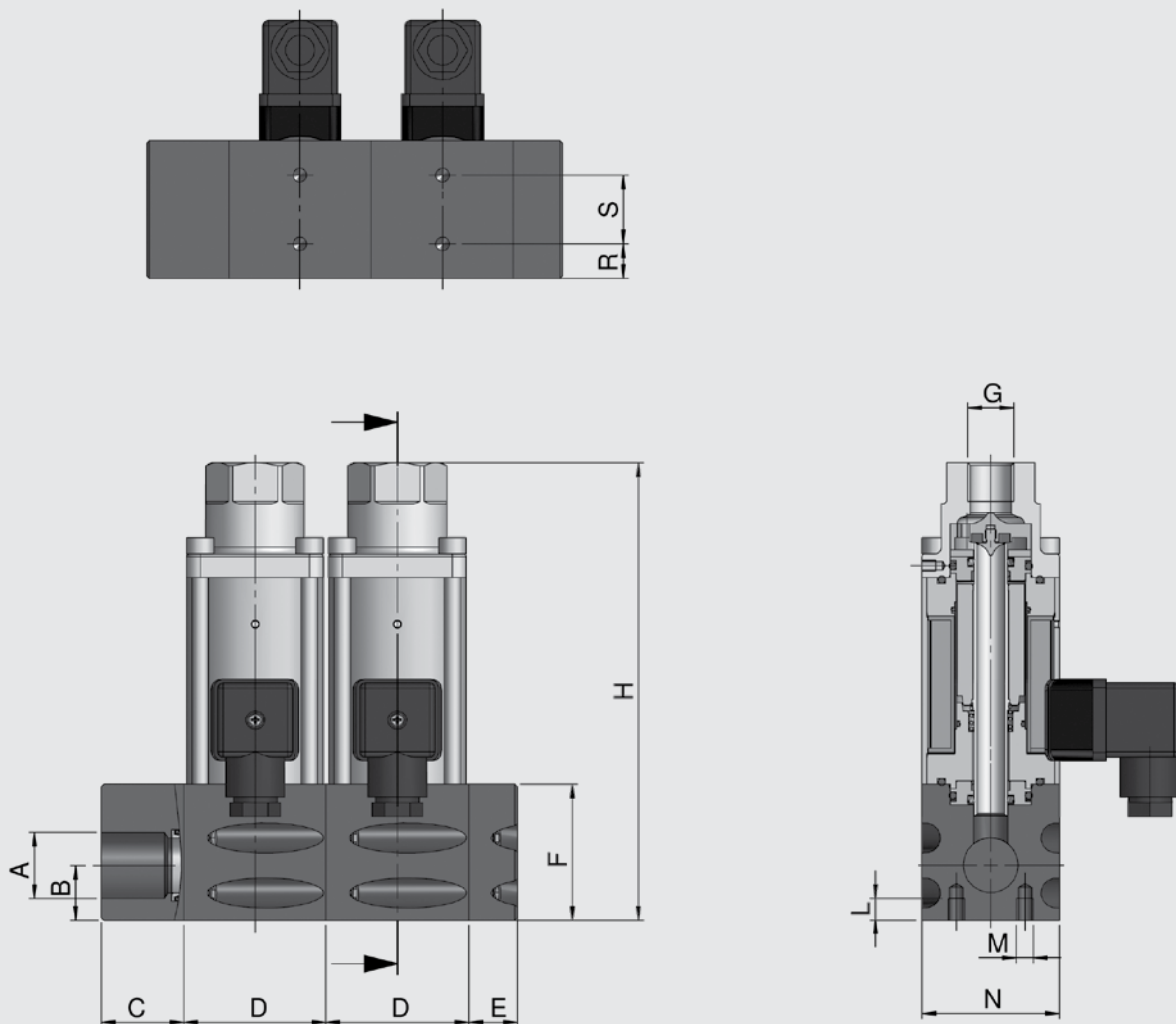
Designation	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h]	Wattage [W]		Weight [kg]
					24V	230 V 50 Hz	
CX03M	10	0 - 40	G¼, G¾, G½	2.1	35	41	1.7
	15	0 - 40	G¾, G½, G¾	5.2	40	45	3.6
	20	0 - 40	G½, G¾, G1	7.0	45	53	5.4
	25	0 - 40	G¾, G1, G1¼	12.3	60	68	7.1
	32	0 - 40	G1, G1¼, G1½	20.0	73	76	12.6
CX04M	10	0 - 64	G¼, G¾, G½	2.1	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	2.1	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

Sectional drawing



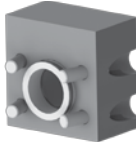
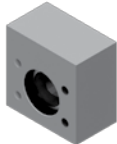
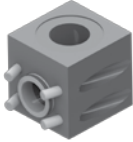
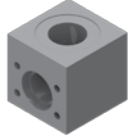
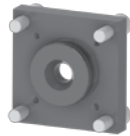
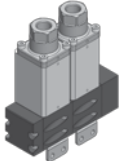
Item	Designation	Quantity
1	Connecting block, left	1
2	Block module	2
3	Armature	2
4	Valve seat	2
5	Magnet	2
6	Connector plug	2
7	Cover	1
8	Spacer	3
9	Spring	1
10	PTFE rod seal	2

Dimensions

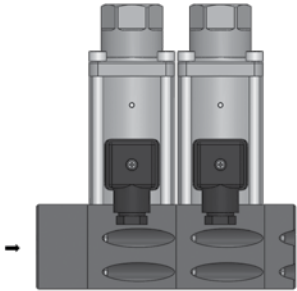
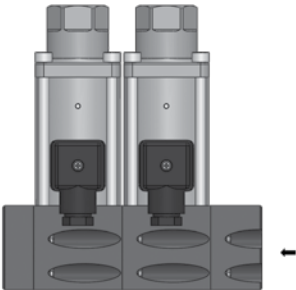
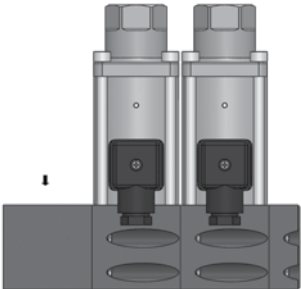
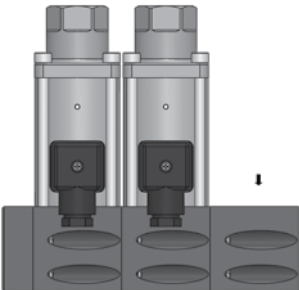


DN	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	G	L [mm]	M [mm]	N [mm]	R [mm]	S [mm]
10	G $\frac{1}{2}$, G $\frac{3}{4}$, G1	20	42	52	18	49.5	167	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	8	M6	50	13	25
15	G $\frac{1}{2}$, G $\frac{3}{4}$, G1, G1 $\frac{1}{4}$	28	42	72	27	69.5	207	G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	8	M6	70	21	28
20	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$	34	32	82	32	79.5	235	G $\frac{1}{2}$, G $\frac{3}{4}$, G1	10	M8	80	25	34
25	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$	36	32	92	32	89.5	265	G $\frac{3}{4}$, G1, G1 $\frac{1}{4}$	10	M8	90	20	50
32	G1 $\frac{1}{4}$, G1 $\frac{1}{2}$, G2	50	34	118	34	114.5	302	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$	10	M8	115	34	50

Accessories

Joining rings	Blanking ring	
	Spacer ring	
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	
Angle bracket		

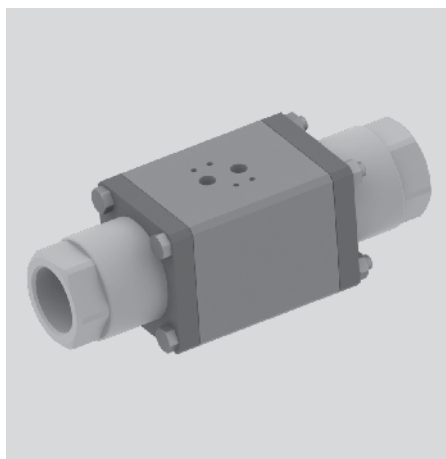
Examples of ordering codes

	Basic valve	CX03M-2/2-D/C-2/10/040/012/24V
	Connecting block, left	CX03M-2/2-D/C-2/10/040/012/24V -WS-2XL
	Connecting block, right	CX03M-2/2-D/C-2/10/040/012/24V -WS-2XR
	Connecting block, left 90° Angled version, outlet on top	CX03M-2/2-D/C-2/10/040/012/24V -WS-2XLO
	Connecting block, right 90° Angled version, outlet on top	CX03M-2/2-D/C-2/10/040/012/24V -WS-2XRO

NOTE

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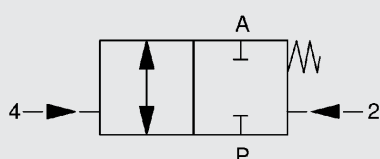
2/2 Way Coaxial Valve

CX06 to CX09 pilot operated

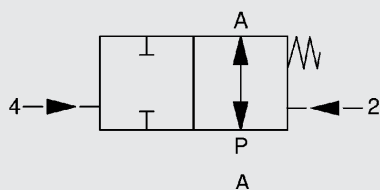
Model code
(also example order)

CX06 2/2 F C 2 10 064 100 PV

Switching function



NC (normally closed)



NO (normally open)

Type

CX06 = CX06 series
CX07 = CX07 series
CX08 = CX08 series
CX09 = CX09 series

Ways

2/2 = The number of ways

Control

F = External pilot

Switching function

C = NC - normally closed
O = NO - normally open

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)

Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Nominal voltage

*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: Brass, nickel-coated brass, 1.4305, 1.4571 Flange version: on request		
Material of seals	Static:	FKM	
	Dynamic:	FKM / CX06	
		PTFE / CX07, CX08 & CX09	
	Seat seal:	PTFE	
Back pressure resistant	Up to 16 bar		
Media	Gaseous, liquid, contaminated		
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	In any position		
Limit switch	Inductive*		
Fixing	Angle bracket*		

Electrical part

Nominal 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

Pneumatic part

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 $\frac{1}{4}$
Switching speed	CX valve can be smoothly adjusted by adjusting the supply to the pilot valve

On request we would be happy to discuss your requirements for further options and accessories.

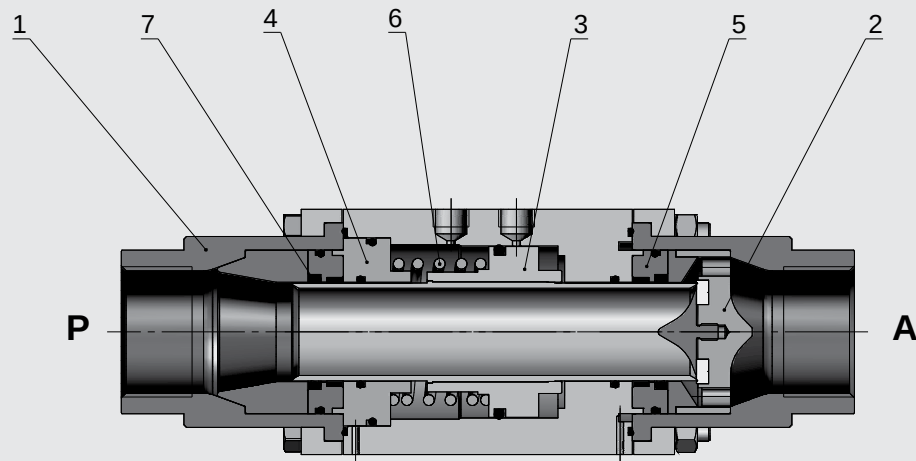
*optional

Designation	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h] DIN 60354	Weight [kg]
CX06	10	0 – 64	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	2.7	1.6
	15	0 – 64	G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	6.6	2.8
	20	0 – 64	G $\frac{1}{2}$, G $\frac{3}{4}$, G1	9.4	4.0
	25	0 – 64	G $\frac{3}{4}$, G1, G1 $\frac{1}{4}$	14.5	5.3
	32	0 – 64	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$	20.0	6.9
	40	0 – 64	G1 $\frac{1}{2}$	45.7	11.7
	50	0 – 64	G2	47.2	11.7
CX07	10	0 – 120	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	2.7	1.6
	15	0 – 120	G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	6.6	2.8
	20	0 – 120	G $\frac{1}{2}$, G $\frac{3}{4}$, G1	9.4	4.0
	25	0 – 120	G $\frac{3}{4}$, G1, G1 $\frac{1}{4}$	14.5	5.3
	32	0 – 100	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$	20.0	6.9
	40	0 – 100	G1 $\frac{1}{2}$	45.7	11.7
	50	0 – 100	G2	47.2	11.7
CX08	10	0 – 160	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	2.7	1.6
	15	0 – 160	G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	6.6	2.8
	20	0 – 160	G $\frac{1}{2}$, G $\frac{3}{4}$, G1	9.4	4.0
	25	0 – 160	G $\frac{3}{4}$, G1, G1 $\frac{1}{4}$	14.5	5.3
CX09	15	0 – 200	G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	7.2	3.2

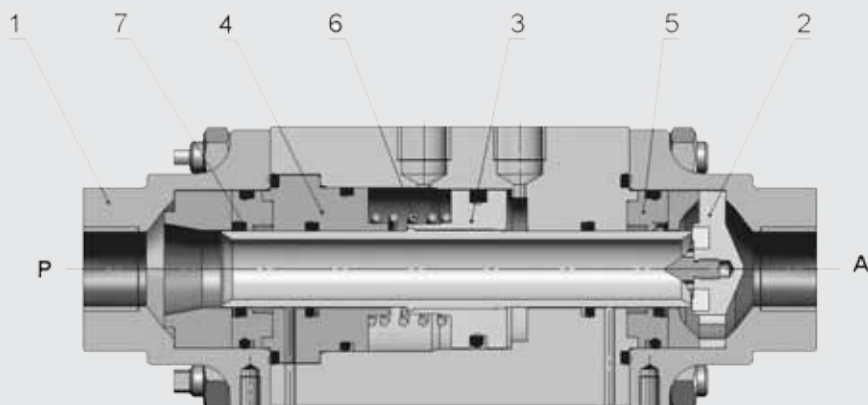
NOTE: Inserting a maintenance unit upstream will increase the service life of the unit.

Sectional drawing

CX06 - CX08



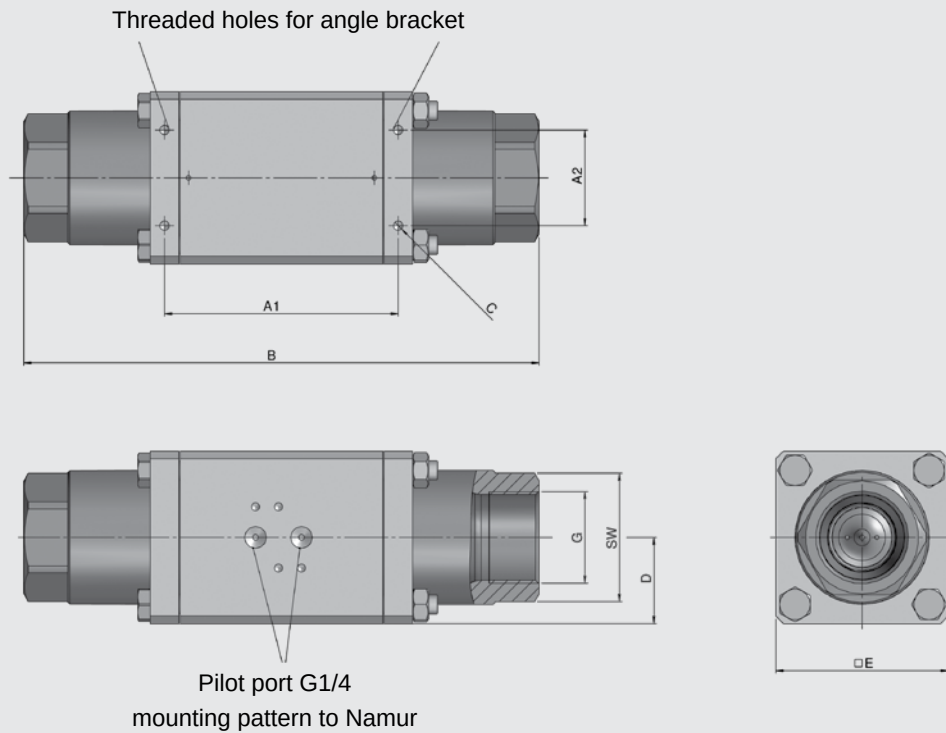
CX09



Item	Designation	Quantity
1	Connecting block	2
2	Valve seat	1
3	Piston / control tube	1
4	Actuating plate	1
5	Guide disc	2
6	Spring	1
7	PTFE rod seal	2

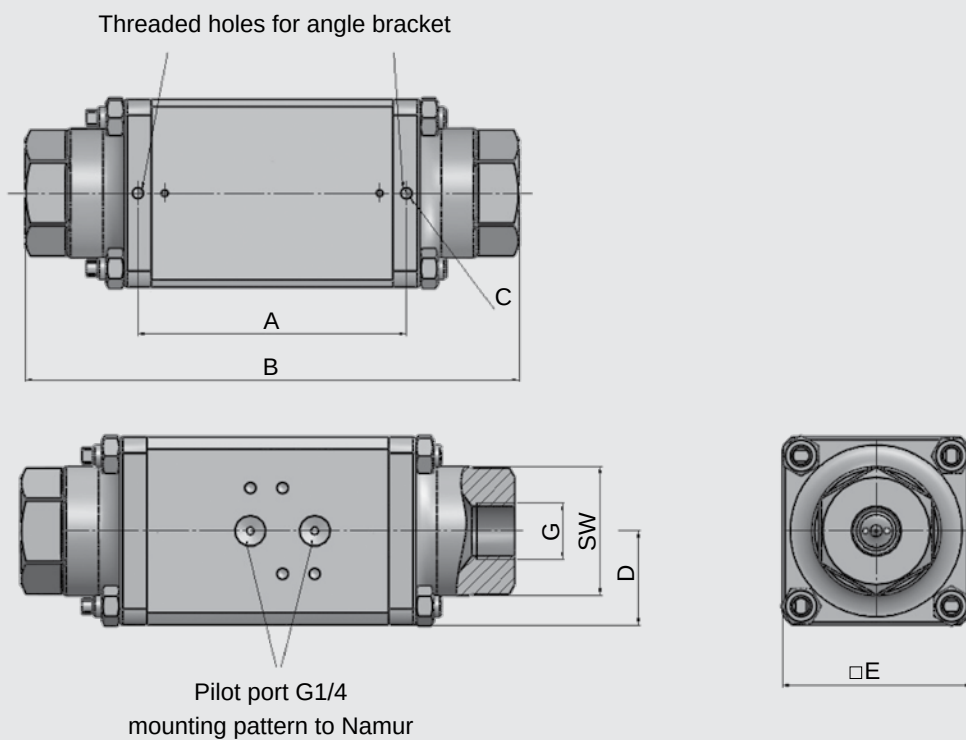
Dimensions

CX06 - CX08



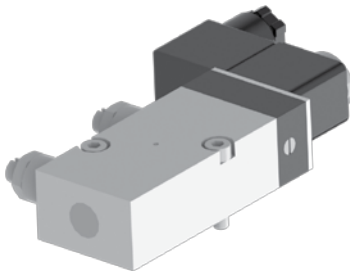
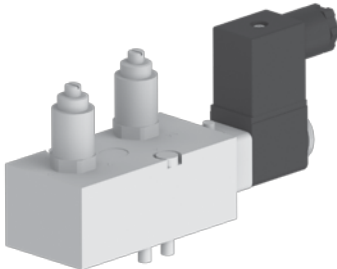
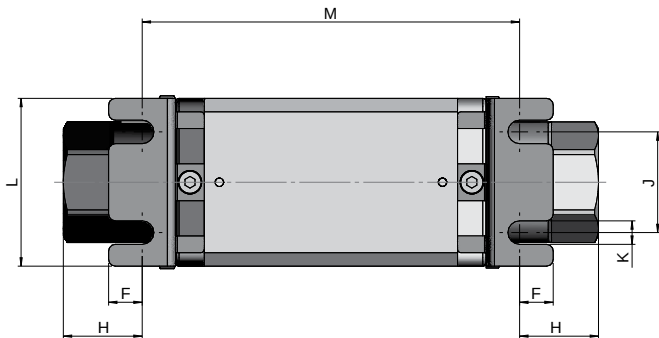
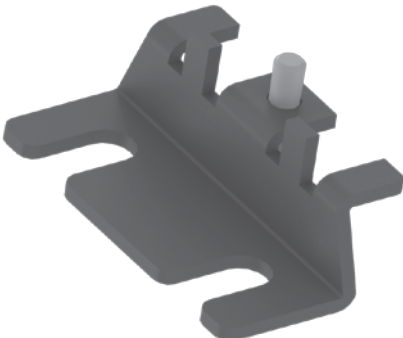
DN	G	SW	A ₁ [mm]	A ₂ [mm]	B [mm]	C	D [mm]	E [mm]
10	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	32	84	—	159.5	M4	25	50
15	G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	41	100	—	184	M5	35	70
20	G ¹ / ₂ , G ³ / ₄ , G1	46	108	—	215	M5	40	80
25	G ³ / ₄ , G1, G1 ¹ / ₄	55	121	—	246	M5	45	90
32	G1, G1 ¹ / ₄ , G1 ¹ / ₂	60	122	50	269	M6	45	90
40	G1 ¹ / ₂	75	131	60	304	M6	55	110
50	G2	75	131	60	304	M6	55	110

CX09



DN	G	SW	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

5/2-way pilot valve (NAMUR)	For flange-mounting, connections on side 24 V DC 230 V 50Hz																																																									
5/2-way pilot valve (NAMUR)	For flange-mounting, connections on top 24 V DC 230 V 50Hz																																																									
Mounting bracket	<table><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><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>90</td><td>195</td></tr><tr><td>40</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>110</td><td>224</td></tr><tr><td>50</td><td>6</td><td>40</td><td>98</td><td>6.5</td><td>110</td><td>224</td></tr></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	90	195	40	6	40	98	6.5	110	224	50	6	40	98	6.5	110	224	
DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]																																																				
10	10	23.5	30	7	50	113																																																				
15	10.5	22.5	45	7	70	139																																																				
20	15.3	33.5	50	7	80	149																																																				
25	16	34	60	8.5	90	178																																																				
32	6	37	78	6.5	90	195																																																				
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On request we would be happy to discuss your requirements for further options and accessories.

NOTE

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

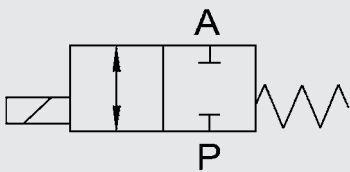
HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
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Fax: +49 (0)6897 - 509-1009
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E-Mail: info@hydac.com



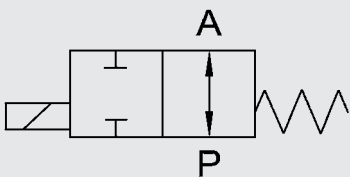
2/2 Way Coaxial Valve

CX06M to CX08M pilot operated

Switching function



NC (normally closed)



NO (normally open)

Model code

(also example order)

CX06M 2/2 F C 2 10 064 014 PV

Type

CX06M = CX06M series
CX07M = CX07M series
CX08M = CX08M series

Ways

2/2 = The number of ways

Control

F = External pilot

Switching function

C = NC - normally closed
O = NO - normally open*

Housing material

2 = brass (valve), aluminium (block)

Nominal size

10 = DN 10
15 = DN 15
20 = DN 20
25 = DN 25
32 = DN 32

Pressure range

040 = > 0 - 40 bar
064 = > 0 - 120 bar
100 = > 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

Option

PV ... = Pilot valve (... acc. to accessories)

Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Nominal voltage
- Number of module blocks

Technical specifications

Control	2/2 way valve, pilot operated	
Nominal size	DN 10 to DN 32	
Pressure range (see table)	CX06M	PN 0 to PN 64
	CX07M	PN 0 to PN 120
	CX08M	PN 0 to PN 160
Ports	Valve: G ¼ - G1½ Block: G ½ - G2	
Body material	Single valve: brass Block: aluminium	
Material of seals	Static:	FKM
	Dynamic:	FKM, PTFE
	Seat seal	PTFE
Back pressure resistant	Up to 16 bar	
Media	Gaseous, liquid, contaminated	
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	In any position	
Limit switch	Inductive*	
Fixing	Angle bracket*	

Electrical part

Nominal voltage	DC: 24 V
	AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet
	AC: DC magnet with integrated rectifier
Connection	Connector socket to DIN EN 175301-803 type A
	Connector socket 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

Pneumatic part

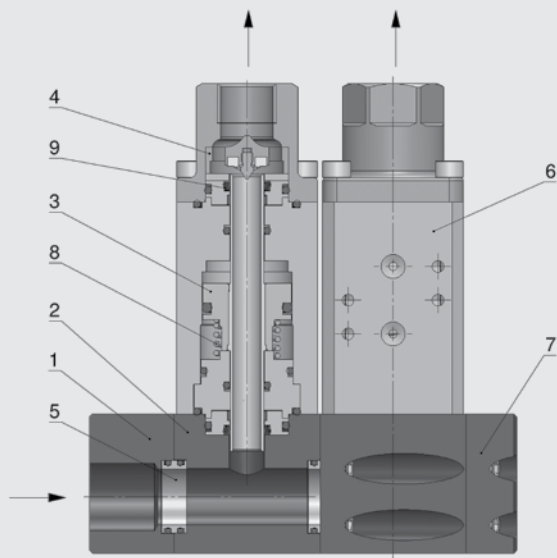
Control	5/2-way pilot valve
Mounting pattern	Namur
Control pressure	3 to 8 bar
Air requirement	approx. 7 cm³ / stroke
Pilot ports	2/4 G¼ interface to NAMUR
Switching times	Open/close 50-1000 ms
	depending on control pressure, pilot valve (option) and meter-out control (option)

On request we would be happy to discuss your requirements for further options and accessories.

*optional

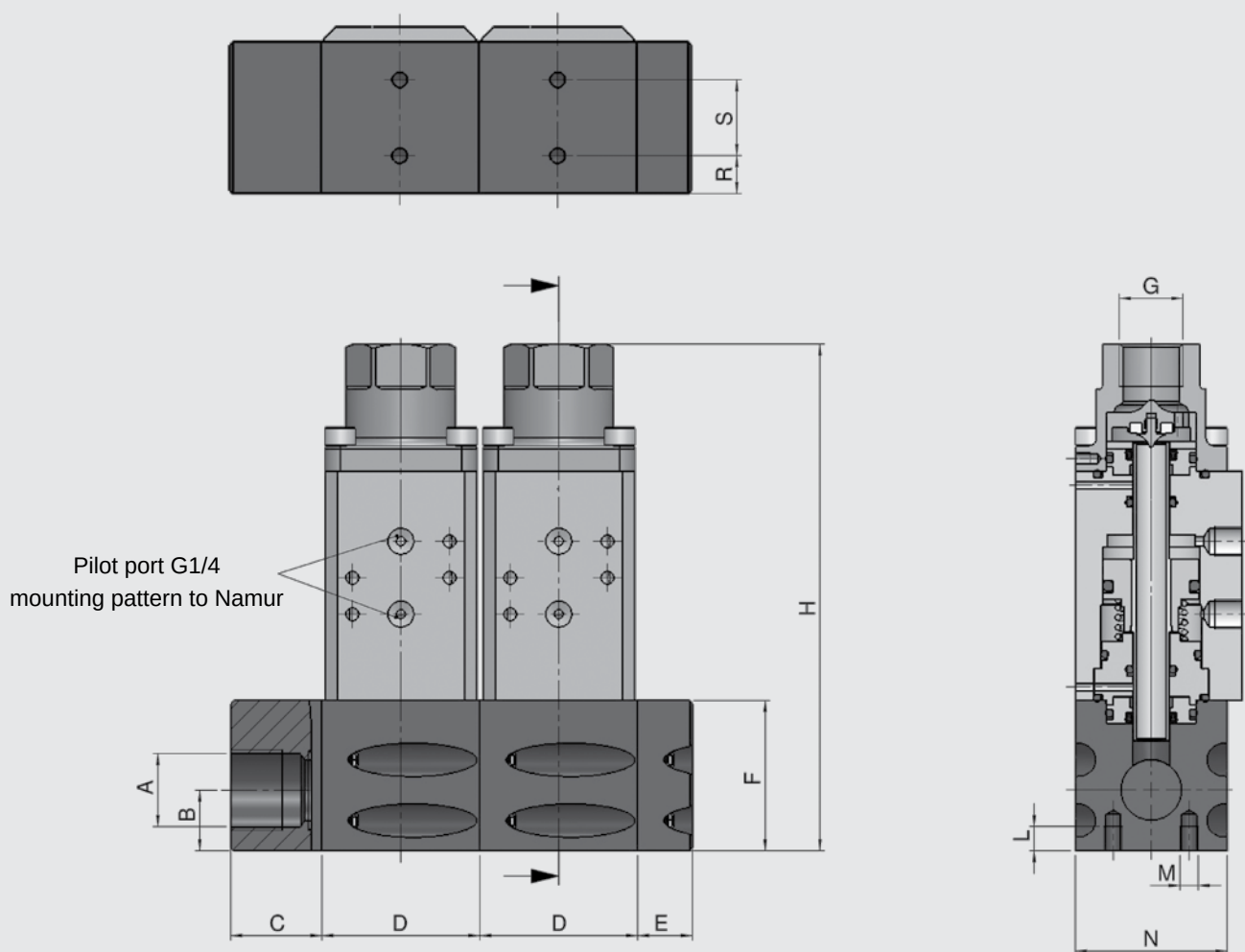
Designation	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h]	Weight [kg]
CX06M	10	0 - 64	G¼, G¾, G½	2.7	1.5
	15	0 - 64	G¾, G½, G¾	6.6	3.2
	20	0 - 64	G½, G¾, G1	9.4	4.0
	25	0 - 64	G¾, G1, G1¼	14.5	5.3
	32	0 - 64	G1, G1¼, G1½	20.0	6.9
CX07M	10	0 - 120	G¼, G¾, G½	2.7	1.5
	15	0 - 120	G¾, G½, G¾	6.6	3.2
	20	0 - 120	G½, G¾, G1	9.4	4.0
	25	0 - 120	G¾, G1, G1¼	14.5	5.3
	32	0 - 100	G1, G1¼, G1½	20.0	6.9
CX08M	10	0 - 160	G¼, G¾, G½	2.7	1.5
	15	0 - 160	G¾, G½, G¾	6.6	3.2
	20	0 - 160	G½, G¾, G1	9.4	4.0
	25	0 - 160	G¾, G1, G1¼	14.5	5.3

Sectional drawing



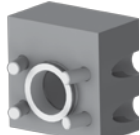
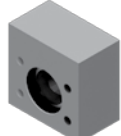
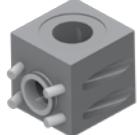
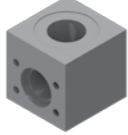
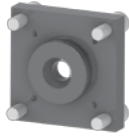
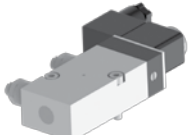
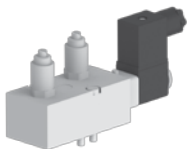
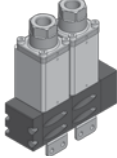
Item	Designation	Quantity
1	Connection block, left	1
2	Block module	2
3	Piston	2
4	Valve seat	2
5	Spacer	3
6	Cylinder	2
7	Cover	1
8	Spring	1
9	PTFE rod seal	2

Dimensions



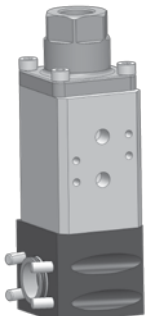
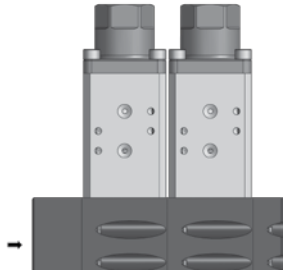
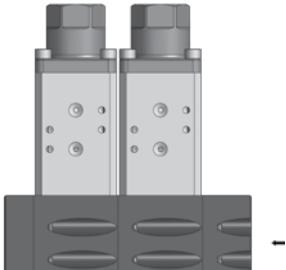
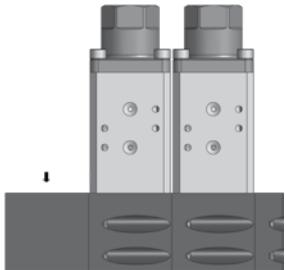
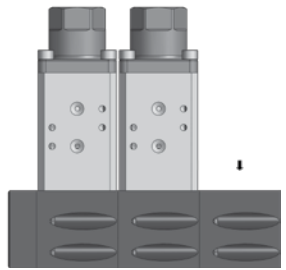
DN	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	G	L [mm]	M [mm]	N [mm]	R [mm]	S [mm]
10	G½, G¾, G1	20	42	52	18	49.5	167	G¼, G⅜, G½	8	M6	50	13	25
15	G½, G¾, G1, G1¼	28	42	72	27	69.5	207	G¾, G½, G¾	8	M6	70	21	28
20	G1, G1¼, G1½	34	32	82	32	79.5	235	G½, G¾, G1	10	M8	80	25	34
25	G1, G1¼, G1½	36	32	92	32	89.5	265	G¾, G1, G1¼	10	M8	90	20	50
32	G1¼, G1½, G2	44	34	93	34	99.5	287	G1, G1¼, G1½	10	M8	90	21	50

Accessories

Joining rings	Blanking ring		
	Spacer ring		
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	DN15 to DN10 DN25 to DN10 DN25 to DN15 DN32 to DN20	
5/2-way pilot valve (NAMUR)	For flange-mounting, connections on side 24 V DC 230 V 50Hz		
5/2-way pilot valve (NAMUR)	For flange-mounting, connections on top 24 V DC 230 V 50Hz		
Mounting bracket			

On request we would be happy to discuss your requirements for further options and accessories.

Examples of ordering codes

	Basic valve	CX06M-2/2-F/C-2/10/064/014/24V
	Connecting block, left	CX06M-2/2-F/C-2/10/064/014/24V - 2XL
	Connecting block, right	CX06M-2/2-F/C-2/10/064/014/24V - 2XR
	Connecting block, left 90° Angled version, outlet on top	CX06M-2/2-F/C-2/10/064/014/24V - 2XLO
	Connecting block, right 90° Angled version, outlet on top	CX06M-2/2-F/C-2/10/064/014/24V - 2XRO

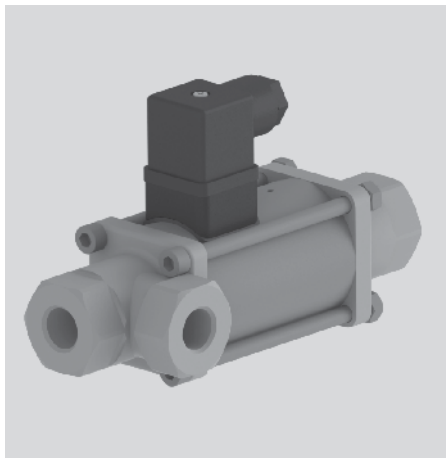
NOTE

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

Subject to technical modifications.

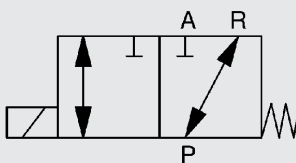
HYDAC Accessories GmbH
Hirschbachstr. 2
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Tel.: +49 (0)6897 - 509-01
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E-Mail: info@hydac.com



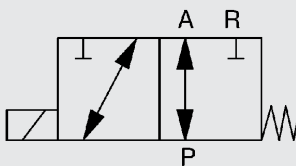
3/2 Way Coaxial Valve

CX03 and CX04 direct acting

Switching function



NC (normally closed)



NO (normally open)

Model code

(also example order)

CX04 3/2 D C 2 10 064 014 24V

Type

CX03 = series CX03
CX04 = series CX04

Ways

3/2 = The number of ways

Control

D = Direct acting

Switching function

C = NC - normally closed
O = NO - normally open

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

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

Nominal voltage

24V = 24V DC
230V = 230V AC 40-60Hz
Special voltages on request

Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Nominal voltage

*optional

Technical specifications

Control	3/2 way valve, direct-acting		
Nominal size	DN 10 to DN 50		
Pressure range (see table)	CX03 – 3/2 CX03 – 3/2 CX04 – 3/2	DN 10 - 32 DN 40 - 50	PN 0 to PN 40 PN 0 to PN 16 PN 0 to PN 64
Connections (see table)	Threaded sleeve flange on request		
Body material	Sleeve version: brass, nickel-coated brass, 1.4305, 1.4571 Flanged version: on request		
Valve seat (plastic on metal)	FKM		
Material of seals	Static: Dynamic:	FKM PTFE	
Back pressure resistant	Up to 16 bar		
Media	Gaseous, liquid, contaminated		
Direction of flow	CX03 CX04	P → A max. 40 bar P → R max. 40 bar P → A max. 64 bar P → R max. 64 bar	A → P max. 16 bar R → P max. 16 bar P → A max. 16 bar R → P max. 16 bar
Temperature of medium	-20 °C to +130 °C		
Ambient temperature	-30 °C to +60 °C		
Mounting position	In any position		
Limit switch	Inductive*		
Fixing	Mounting bracket*		

Electrical part

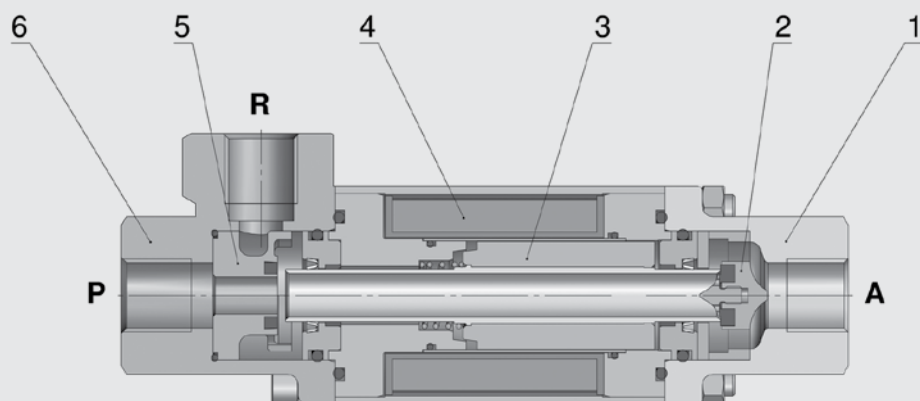
Nominal voltage	DC: 24 V AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet AC: DC magnet with integrated rectifier
Connection	Connector plug to DIN EN 175301-803 type A Connector plug to DESINA M12x1 * Illuminated plug with varistor *
Voltage tolerance	+ / - 10% to VDE 0580
Duty cycle	100% duty cycle
Protection class	IP 65 when fitted with connector plug

On request we would be happy to discuss your requirements for further options and accessories.

*optional

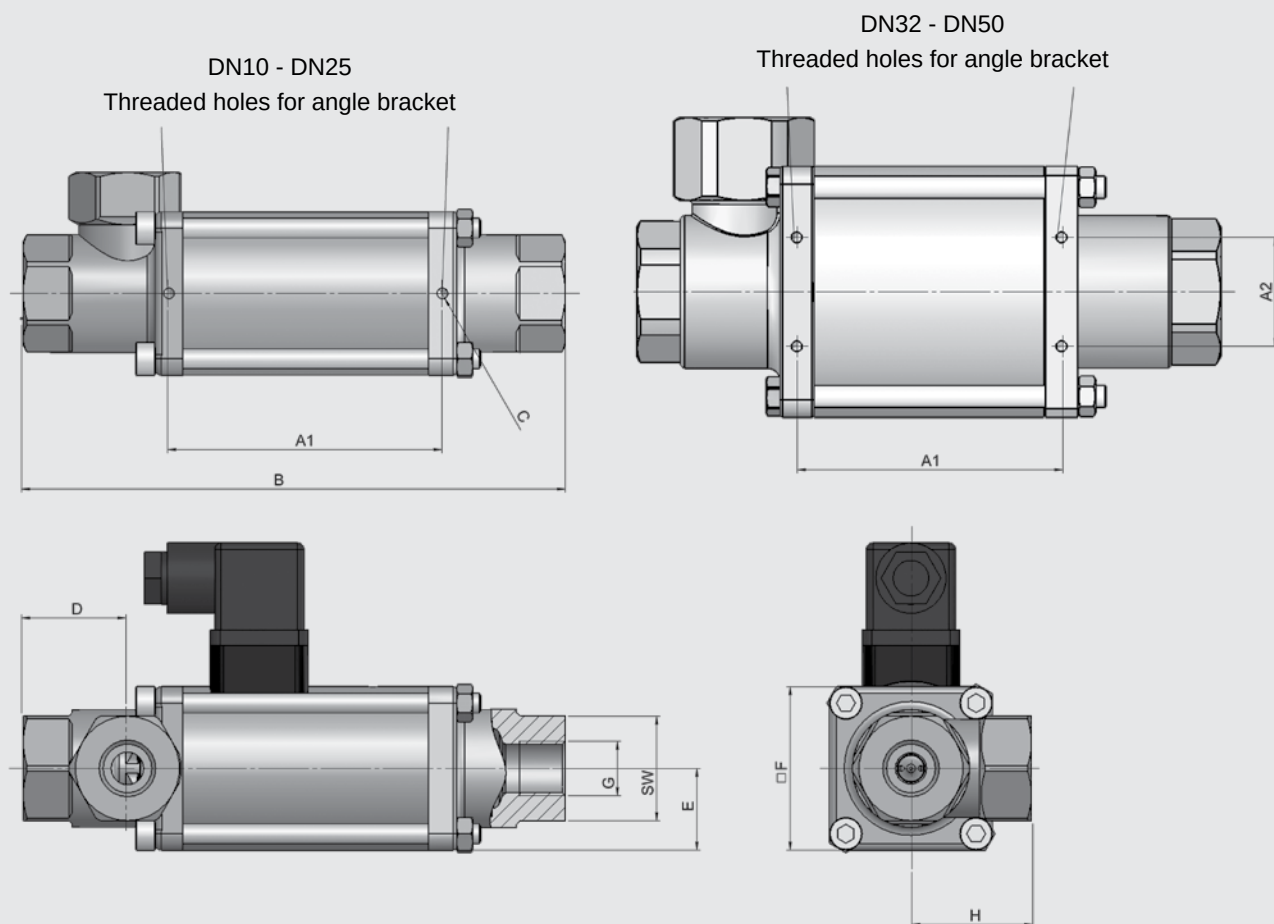
Designation	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h] DIN 60354	Wattage [W]		Weight [kg]
					24V DC	230 V 50 Hz	
CX03	10	0 - 40	G¼, G¾, G½	2.0	35	41	1.9
	15	0 - 40	G¾, G½, G¾	5.6	40	45	4.0
	20	0 - 40	G½, G¾, G1	8.0	45	53	6.0
	25	0 - 40	G¾, G1, G1¼	11.5	60	68	7.5
	32	0 - 40	G1, G1¼, G1½	17.9	73	76	13.4
	40	0 - 16	G1½	41.5	73	90	18.7
	50	0 - 16	G2	43.0	73	90	18.5
CX04	10	0 - 64	G¼, G¾, G½	2.0	44	53	1.9
	15	0 - 64	G¾, G½, G¾	5.6	50	55	4.0
	20	0 - 64	G½, G¾, G1	8.0	53	59	6.0
	25	0 - 64	G¾, G1, G1¼	11.5	77	85	7.5
	32	0 - 64	G1, G1¼, G1½	17.9	73	76	13.4

Sectional drawing



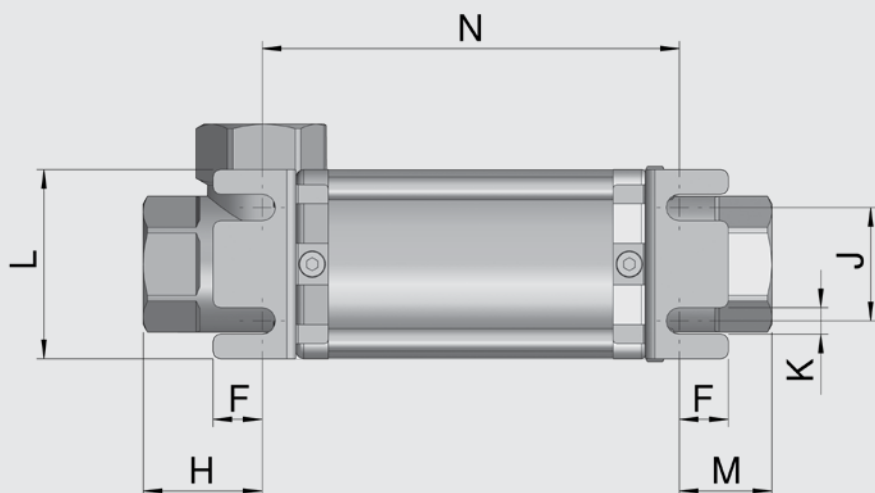
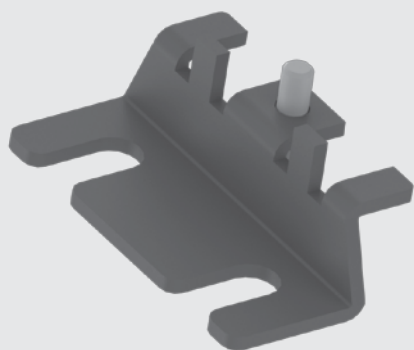
Item	Designation	Qty.
1	2/2-way connecting block	1
2	Valve seat	1
3	Armature	1
4	Magnet	1
5	3/2-way valve seat	1
6	3/2-way connecting block	1

Dimensions



DN	G	SW [mm]	A1 [mm]	A2 [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	H [mm]
10	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	32	84	—	166.5	M4	32	25	50	37
15	G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	41	100	—	200	M5	38.5	35	70	60
20	G $\frac{1}{2}$, G $\frac{3}{4}$, G1	46	108	—	228	M5	45.5	40	80	72
25	G $\frac{3}{4}$, G1, G1 $\frac{1}{4}$	55	121	—	252	M5	48	45	90	80
32	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$	60	122	50	269	M6	49.5	57.5	115	80
40	G1 $\frac{1}{2}$	75	131	60	304	M6	56.5	65	130	84
50	G2	75	131	60	304	M6	56.5	65	130	84

Angle bracket



DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	N [mm]
10	10	30.5	30	7	50	23.5	113
15	10.5	38.5	45	7	70	23.5	139
20	15.3	46.5	50	7	80	33.5	149
25	16	40	60	8.5	90	34	178
32	6	37	78	6.5	115	37	195
40	6	40	98	6.5	130	40	224
50	6	40	98	6.5	130	40	224

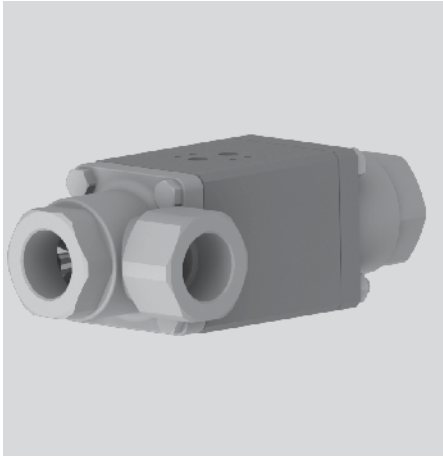
NOTE

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

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

Subject to technical modifications.

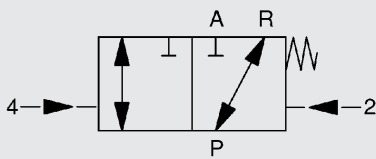
HYDAC Accessories GmbH
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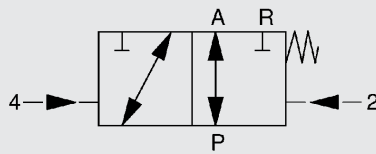
3/2 Way Coaxial Valve

CX06 and CX07 pilot operated

Switching function



NC (normally closed)



NO (normally open)

Order data

- Nominal size
- Connection
- Function NC/NO
- Operating pressure
- Flow rate
- Medium
- Medium temperature
- Ambient temperature
- Nominal voltage

Model code

(also example order)

CX06 3/2 F C 2 15 064 034 PV

Type

CX06 = Series CX06
CX07 = Series CX07

Ways

3/2 = The number of ways

Control

F = External pilot

Switching function

C = NC - normally closed
O = NO - normally open*

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

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	
Connections	Threaded sleeve flange on request		
Body material	Sleeve version: Brass, nickel-coated brass, 1.4305, 1.4571 Flange version: on request		
Material of seals	Static: Dynamic: Seat seal	FKM FKM, PTFE PTFE	
Back pressure resistant	up to 16 bar		
Media	Gaseous, liquid, contaminated		
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	Double acting piston with return spring		
Mounting position	In any position		
Limit switch	Inductive*		
Fixing	Angle bracket*		

Electrical part

Nominal voltage	DC: 24 V
	AC: 230 V 40-60 Hz
Electrical part	DC: DC magnet
	AC: DC magnet with integrated rectifier
Connection	Connector socket to DIN EN 175301-803 type A
	Connector socket 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 socket

Pneumatic part

Control	5/2-way pilot valve
Mounting pattern	Namur
Control pressure	3 to 8 bar
Air requirement	approx. 7 cm³ / stroke
Pilot ports	2/4 G ³ / ₄
Switching speed	CX valve can be smoothly adjusted by adjusting the supply to the pilot valve

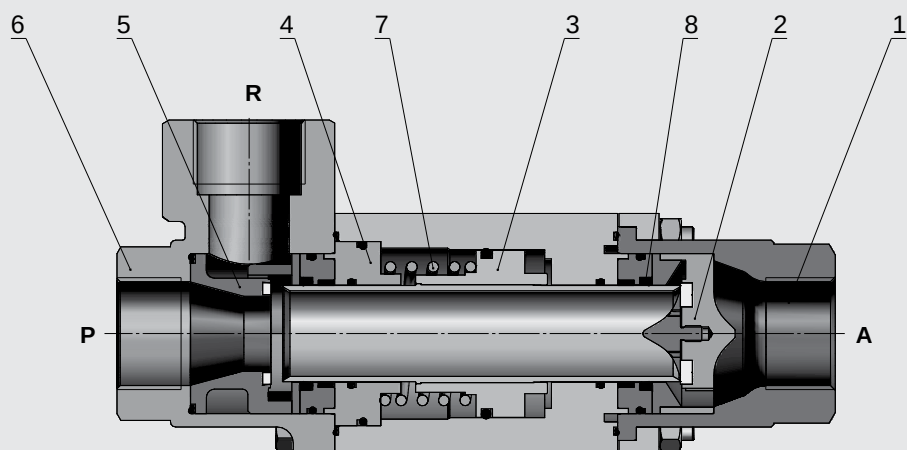
On request we would be happy to discuss your requirements for further options and accessories.

*optional

Designation	DN [mm]	Pressure [bar]	Connection	Kv value [m³/h] DIN 60354	Weight [kg]
CX06	10	0 – 64	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.2	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
	50	0 – 64	G 2	43.0	12.1
CX07	10	0 – 100	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂	2.2	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

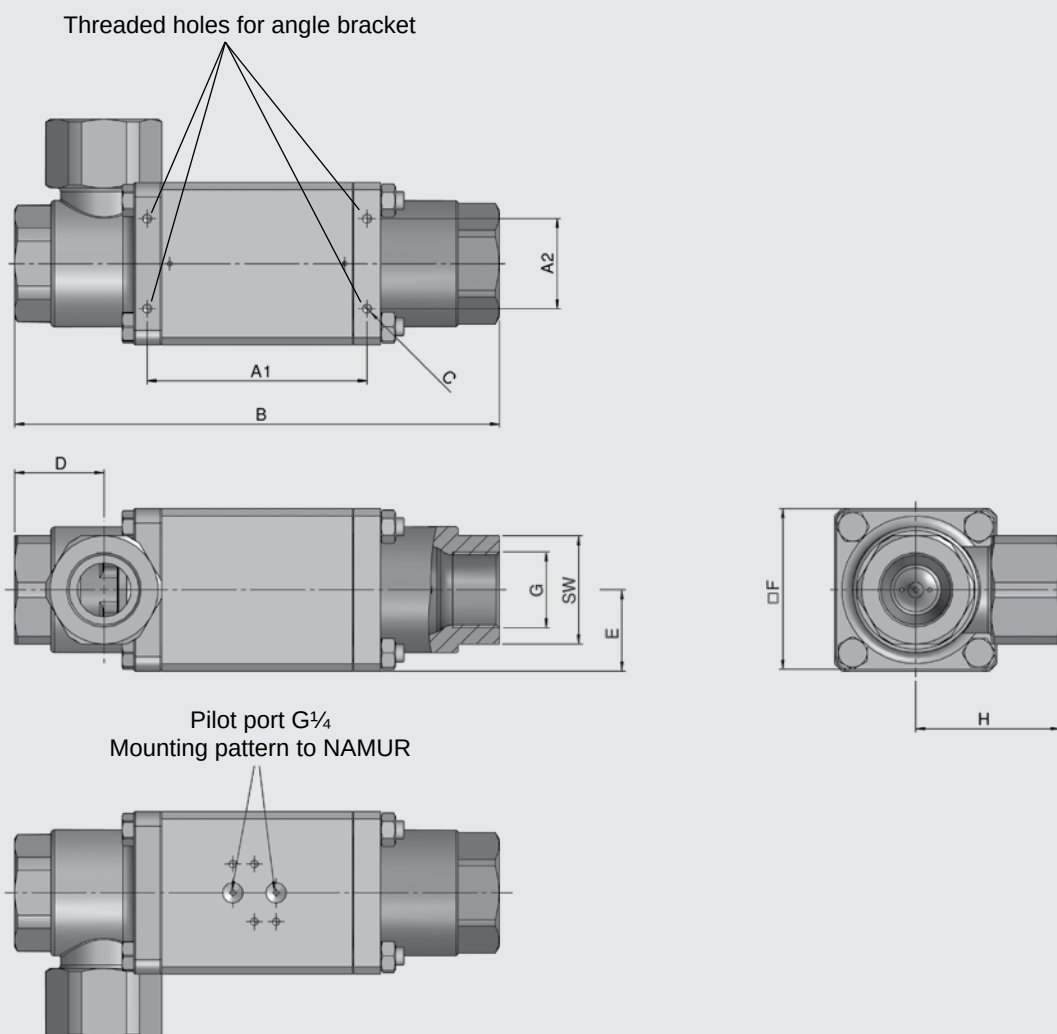
NOTE: Inserting a maintenance unit upstream will increase the service life of the unit.

Sectional drawing



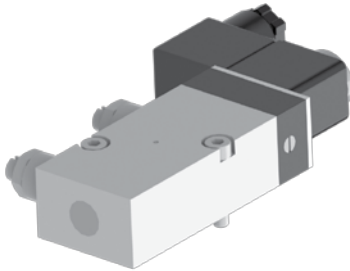
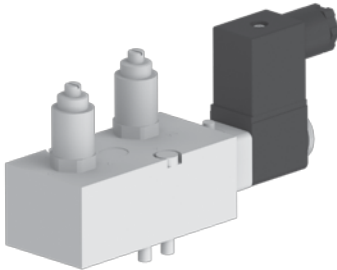
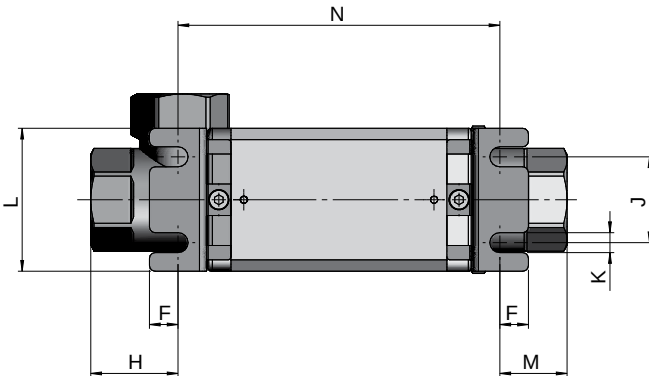
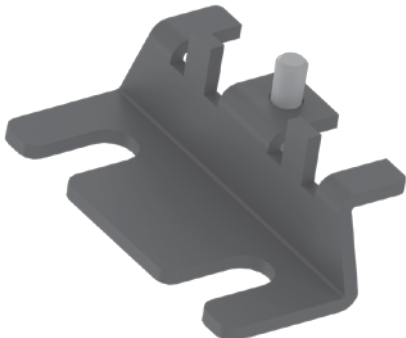
Item	Designation	Qty.
1	2/2-way connecting block	1
2	2/2 valve seat	1
3	Piston / control tube	1
4	Actuation disc	1
5	3/2-way valve seat	1
6	3/2-way connecting block	1
7	Spring	1
8	PTFE rod seal	2

Dimensions



DN	G	SW	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

5/2-way pilot valve (NAMUR)	For flange-mounting, connections on side 24 V DC 230 V 50Hz																																																																	
5/2-way pilot valve (NAMUR)	For flange-mounting, connections on top 24 V DC 230 V 50Hz																																																																	
Angle bracket	<table><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><th>N [mm]</th></tr><tr><td>10</td><td>10</td><td>30.5</td><td>30</td><td>7</td><td>50</td><td>23.5</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>23.5</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>33.5</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>34</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>37</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>40</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>40</td><td>224</td></tr></table>	DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	N [mm]	10	10	30.5	30	7	50	23.5	113	15	10.5	38.5	45	7	70	23.5	139	20	15.3	46.5	50	7	80	33.5	149	25	16	40	60	8.5	90	34	178	32	6	37	78	6.5	115	37	195	40	6	40	98	6.5	130	40	224	50	6	40	98	6.5	130	40	224	
DN	F [mm]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	N [mm]																																																											
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On request we would be happy to discuss your requirements for further options and accessories.

NOTE

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

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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

5 - 120 bar

Connection

G1 = female threaded connection G1"

Seal

F = FKM (Viton)

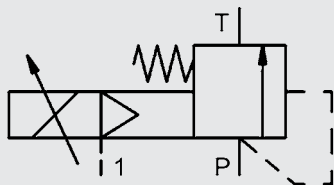
Control

- E = Electrical proportional control of pilot pressure reducing valve
- P = Manually adjustable control via solenoid valve to limit system pressure
- H = Manually adjustable control of pilot pressure reducing valve

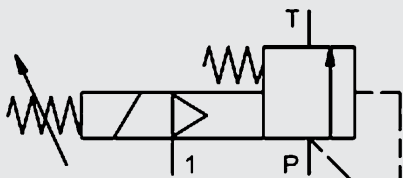
Supply voltage

24 V = 24V DC (not for CX CBV - H)

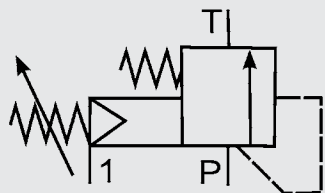
CX CBV-E

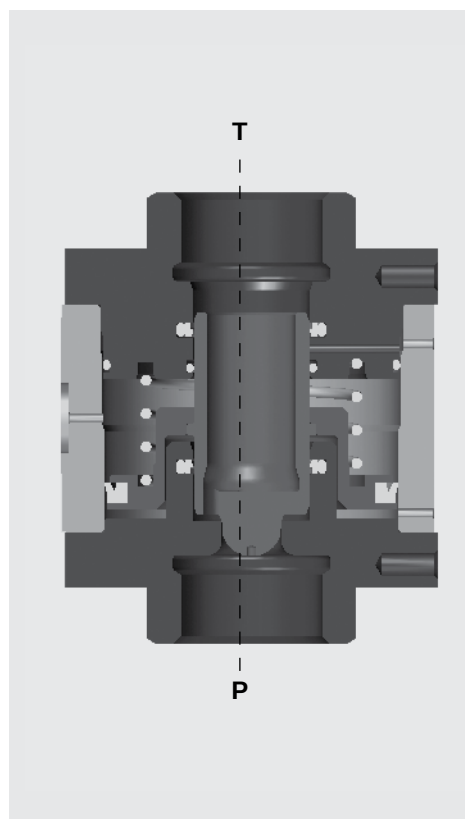


CX CBV-P



CX CBV-H





Construction

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.

Function

The compressed air with the spring produces a force on the closing cone, pressing it into the valve seat, which opposes the hydraulic pressure on the 'P' port. If this is less than the pre-set force, the valve remains closed. If the hydraulic pressure exceeds the pre-set force, the cone will lift away from the seat and the fluid flows from the 'P' port to the tank port 'T'. This limits pressure at the 'P' port. Hydraulic energy dissipated in this way is converted into heat energy.

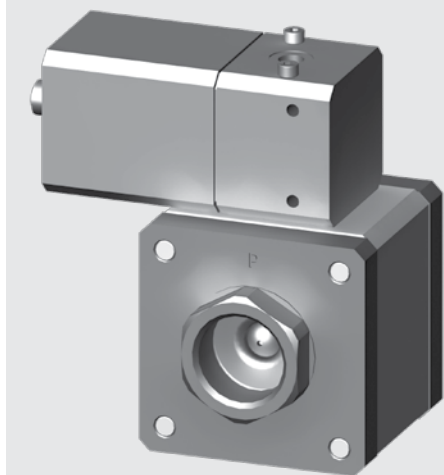
Technical specifications

Control	E: Electrical proportional control of pilot pressure reducing valve
	P: Manually adjustable control via solenoid valve which limits system pressure
	H: Manually adjustable control of pilot pressure reducing valve
Media	contaminated fluids
Nominal bore	DN 15
Pressure range	5 – 120 bar
Flow rate	6 m³/h
Housing material	Steel, zinc-plated
Material of seals	FKM
Temperature of medium	0 °C to +60 °C
Ambient temperature	+10 °C to +50 °C
Connections	Female threaded connection G1"
Electrical connection	E: male connection M12 x 1
	P: female connection DIN EN 175301-803 optional: solenoid coil M12x1 with LED
Supply voltage	E: 24 V DC (max. residual ripple 10 %)
	P: 24 V DC, 230 V AC, special voltages
Voltage tolerance	E / P: ± 10 % to VDE 0580
Power consumption	E: 2.5 Watt
	P: 7 Watt
Duty	E / P: 100 %
IP class	E / P: IP 65 when fitted with connector
Mounting position	E: M12 connection preferably uppermost
	H / P: control plate preferably uppermost
Control air	40 µ filtered, max. 8 bar

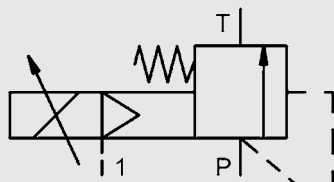
T-line should be connected without pressure to tank

Further options and accessories available on request.

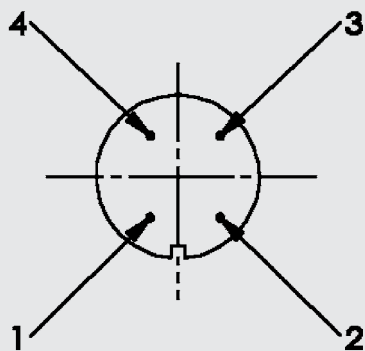
CX CBV-E



Switching function

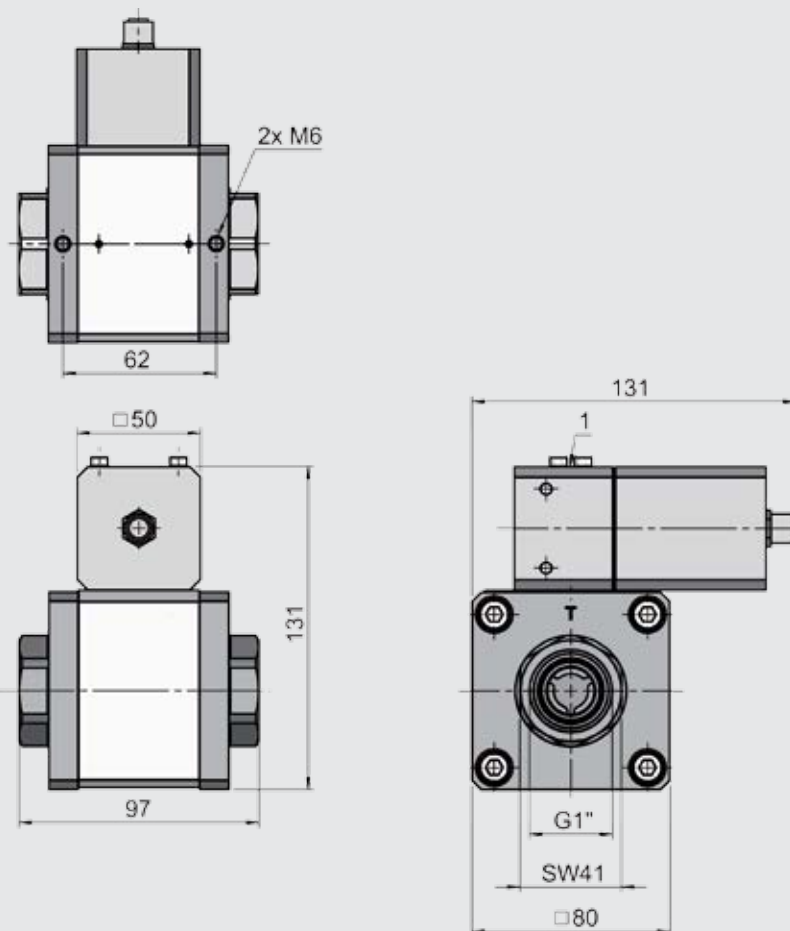


Electrical connection (M21x1)



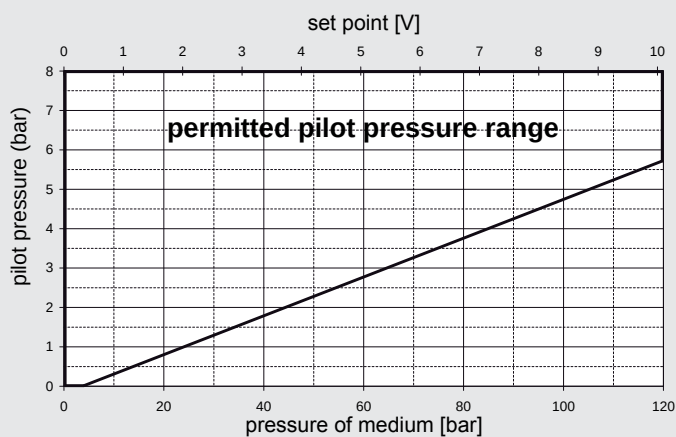
1	Supply
2	Set value (-)
3	GND (-)
4	Set value (+) 0-10V

Dimensions

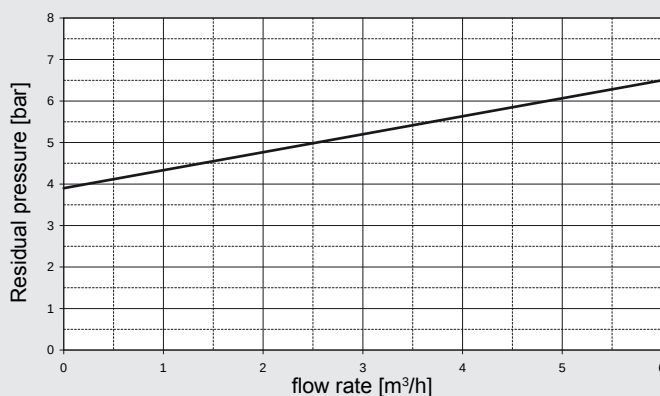


1: 1/4" pneumatic connection

Control pressure graphs

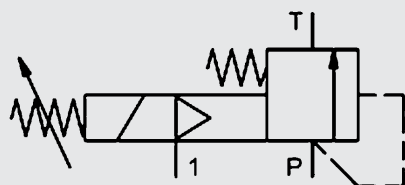
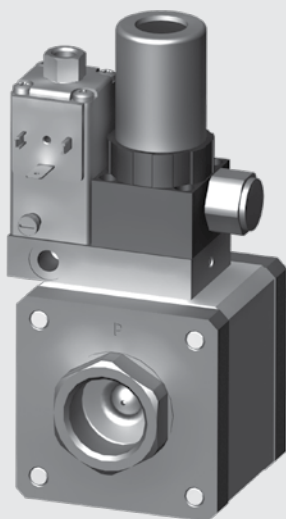


Pressure drop against flow



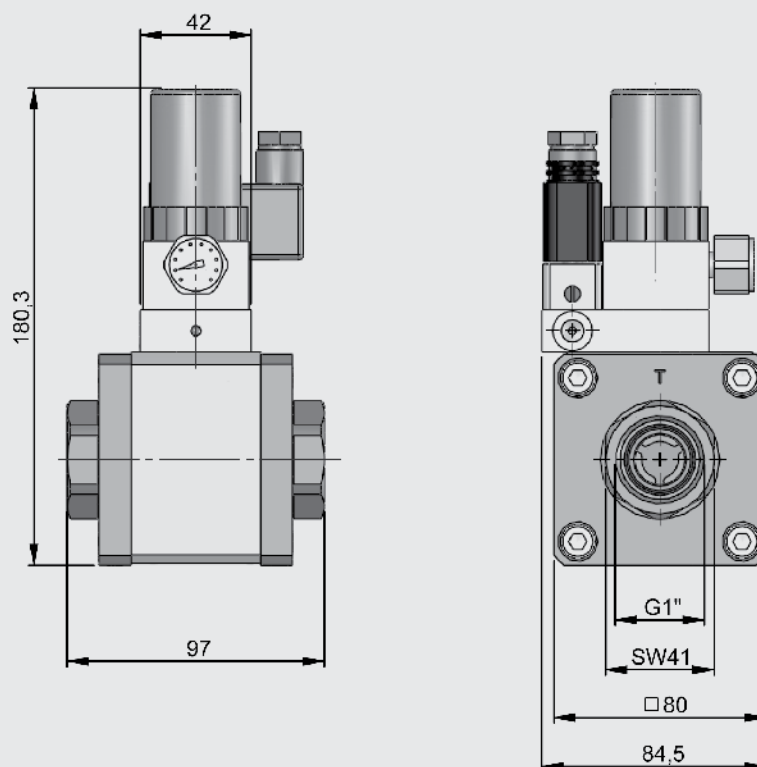
Noise level approx. 70dBA
(measured at a residual pressure of 6.5 bar and a flow rate of 6m³/h)

CX CBV-P

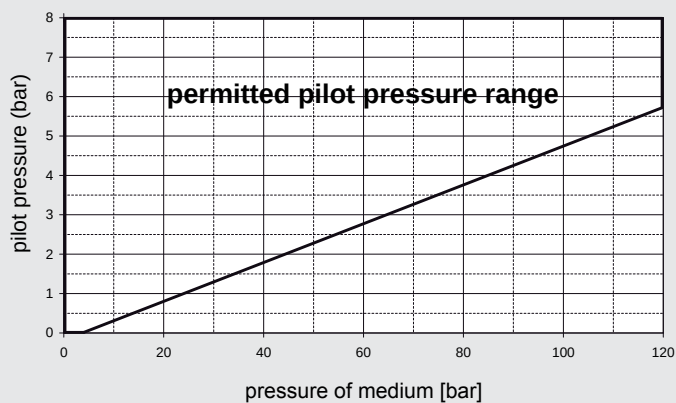


Switching function

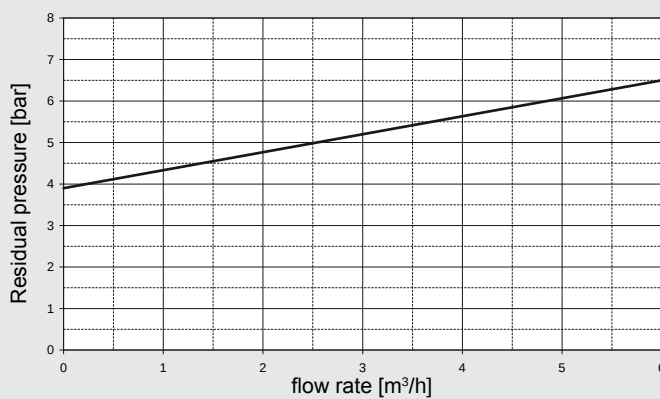
Dimensions



Control pressure graphs

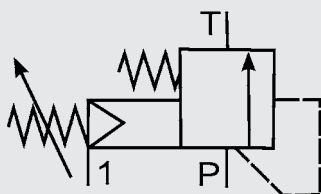
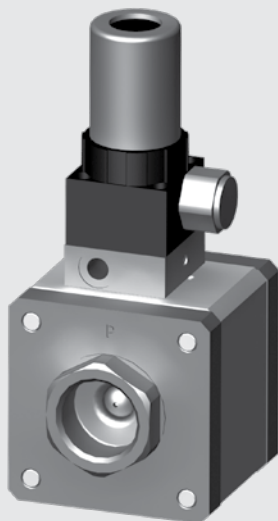


Pressure drop against flow



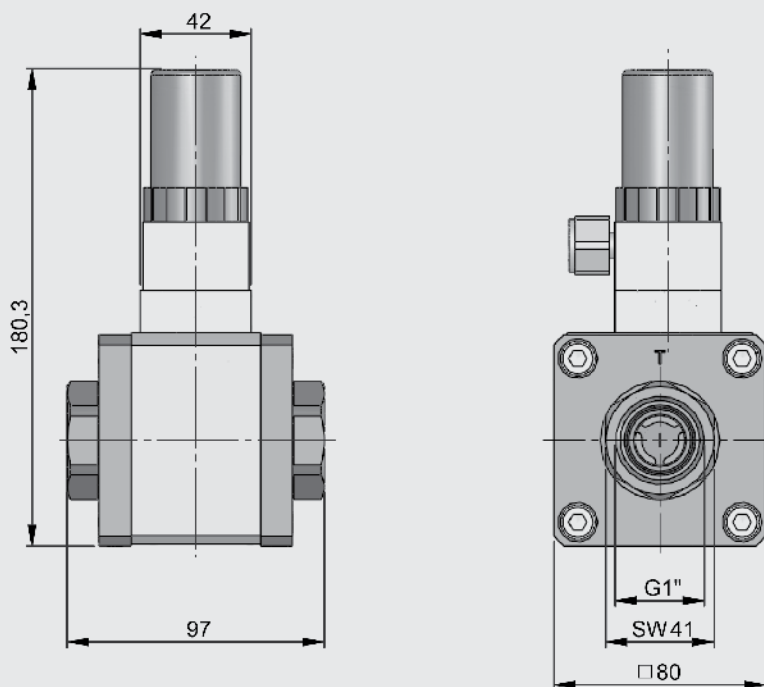
Noise level approx. 70dBA
(measured at a residual pressure of 6.5 bar and a flow rate of 6m³/h)

CX CBV-H

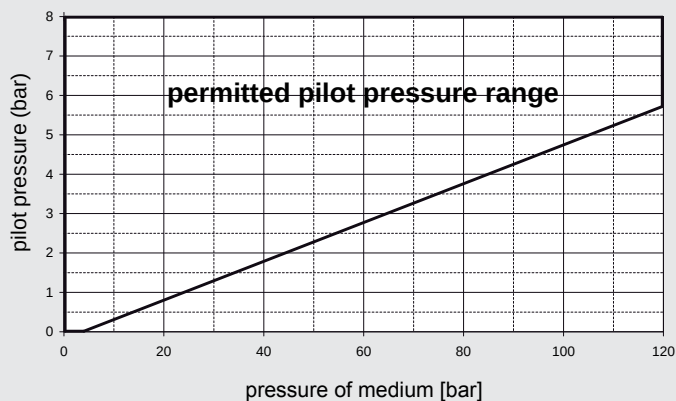


Switching function

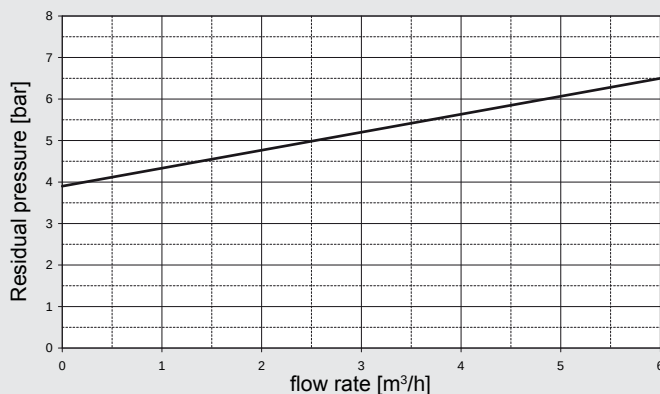
Dimensions



Control pressure graphs



Pressure drop against flow



Noise level approx. 70dBA
(measured at a residual pressure of 6.5 bar and a flow rate of 6m³/h)

NOTE

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

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

Subject to technical modifications.

HYDAC Accessories GmbH

Hirschbachstr. 2

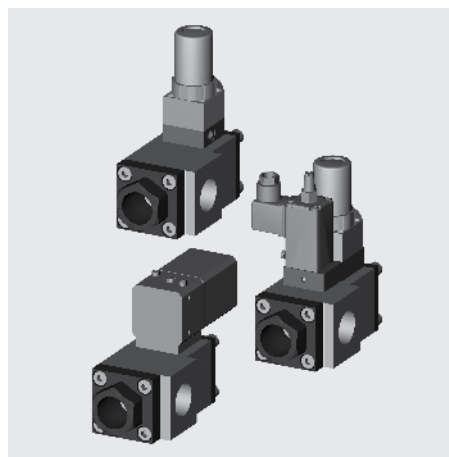
66280 Sulzbach/Saar

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

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

Internet: www.hydac.com

E-Mail: info@hydac.com



2/2-Way Pressure Relief Valve CX DBV (Right-Angle Design)

Model code
(also order example)

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

160 = 12 - 160 bar / DN 10
120 = 10 - 120 bar / DN 12
064 = 5 - 64 bar / DN 15
040 = 3 - 40 bar / DN 20

Connection

G1 = female threaded connection G1"

Seal

F = FKM (Viton)

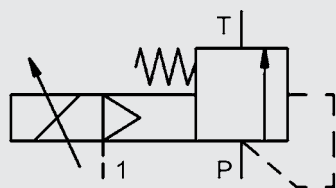
Control

E = Electrical control with proportional control valve
P = Smooth manual control with pilot valve to reduce pressure
H = Smooth manual control of pressure

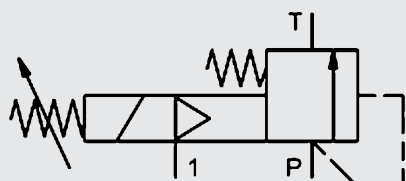
Supply voltage

24 V = 24V DC (not for CX DBV – H)

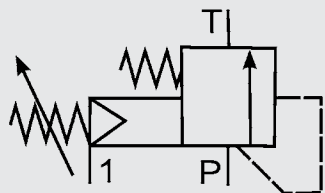
CX DBV-E

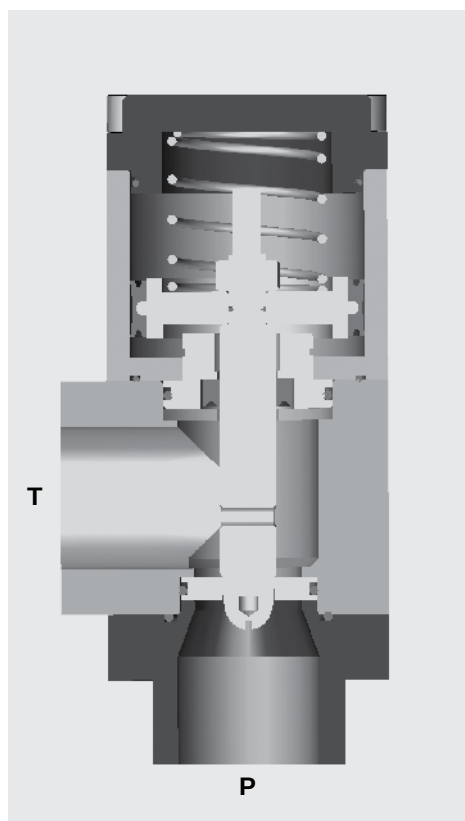


CX DBV-P



CX DBV-H





Design

Essentially this valve consists of a valve body with integrated valve seat, and a hardened and ground closing cone. A pre-set force is produced by a spring and a pressurized piston.

Functional description

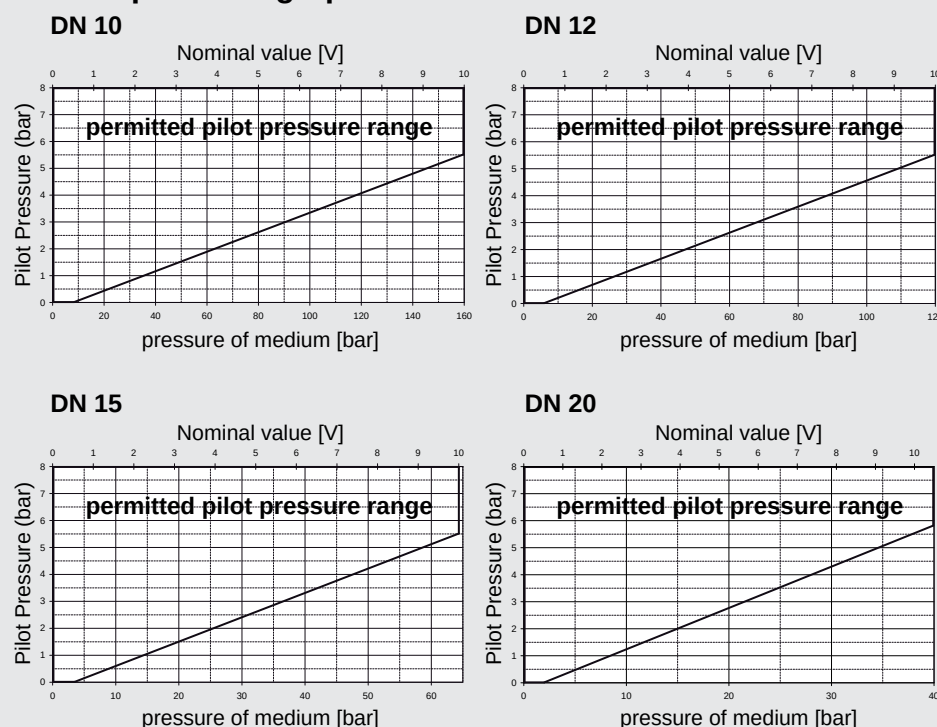
The compressed air with the spring exerts a force on the closing cone and this is pressed onto the valve seat. The hydraulic force is applied to the opposing side of the closing cone. If this is below the pre-set force, the valve will be closed. If the hydraulic force exceeds the pre-set force, then the closing cone 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.

Technical Data

Control	E: Smooth electrical control of pressure P: Smooth manual control of pressure with a pilot valve for unpressurised flow H: Smooth manual control of pressure
Media	contaminated fluids
Nominal size	DN 10 / DN 12 / DN 15 / DN 20
Spring range	3 – 160 bar (see Table)
Flow rate	See table
Housing material	V2A
Material of seals	FKM
Temperature of medium	0 °C to +60 °C
Ambient temperature	+10 °C to +50 °C
Ports	Female threaded connection G1"
Electrical connection	E: M12x1 connector with LED indicator P: DIN EN 175301-803 socket optional: M12x1 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: $\pm 10\%$ to VDE 0580
Power consumption	E: 2.5 Watt P: 7 Watt
Duty cycle	E / P: 100 %
Protection class	E / P: IP 65 when fitted with connector
Mounting position	E: M12 connection preferably uppermost H / P: pressure gauge preferably uppermost
Control air	40 μ filtered, max. 8 bar

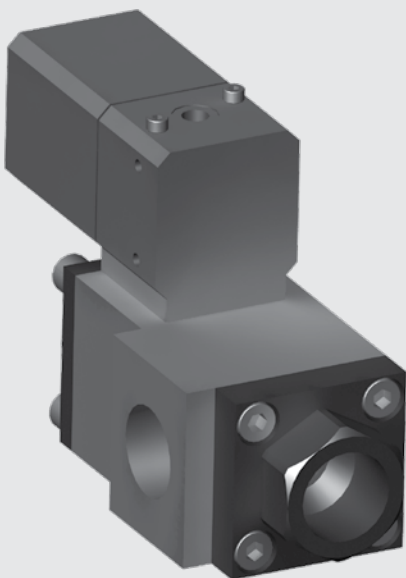
Put the T-line into the tank while unpressurised. Further options and accessories available on request.

Control pressure graphs

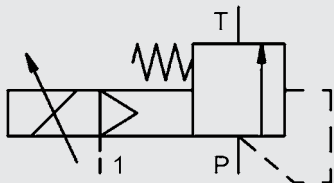


Noise level approx. 70dB
(measured at a residual pressure of 6.5 bar and a flow rate of 6m³/h)

CX DBV-E

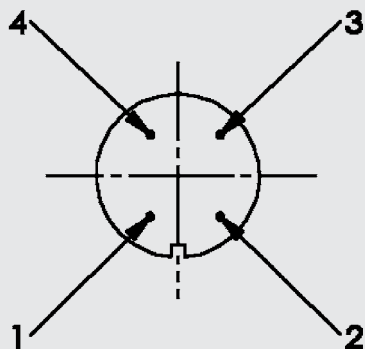


Switching function



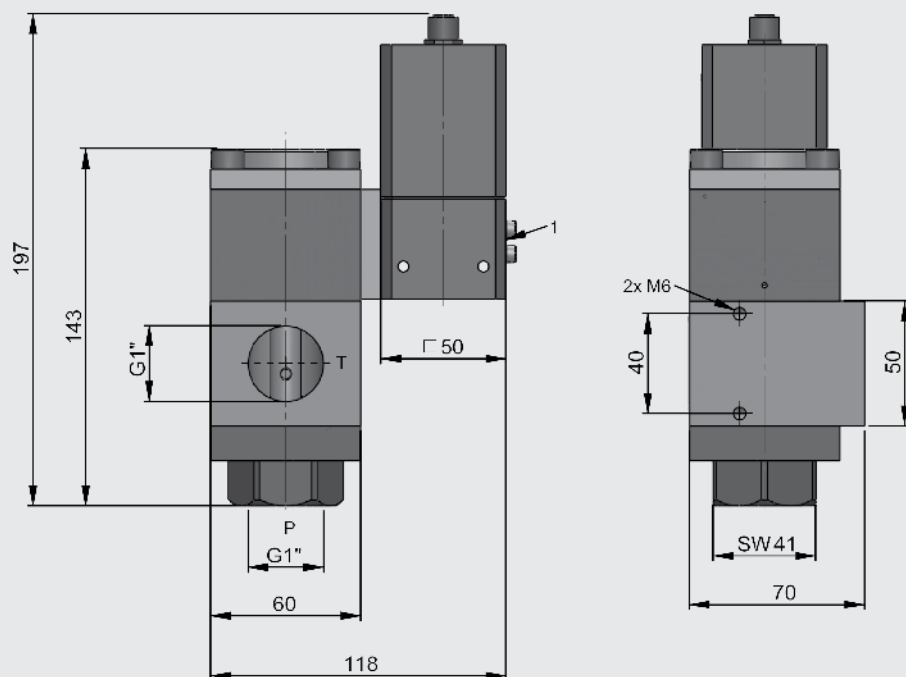
Electrical connection

(M12x1)



1	Supply
2	Set value (-)
3	GND (-)
4	Set value (+) 0-10V

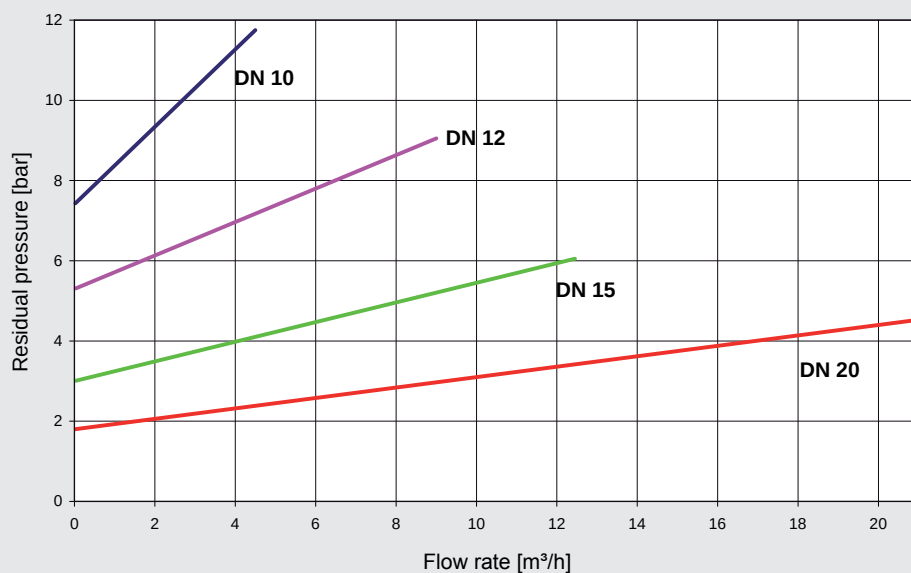
Dimensions



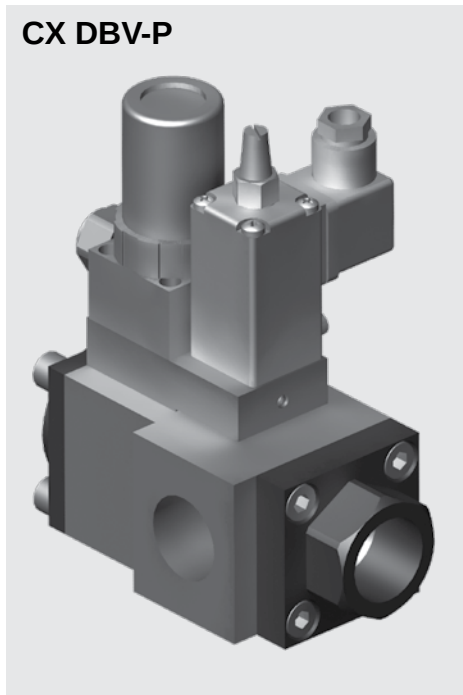
1: 1/4" Pneumatic connection

DN [mm]	Pressure control range [bar]	Connection	max. flow rate [m³/h]
10	12 – 160	G 1"	3.0
12	10 – 120	G 1"	6.0
15	5 – 64	G 1"	8.3
20	3 – 40	G 1"	14.1

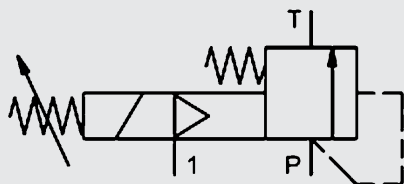
Pressure drop against flow



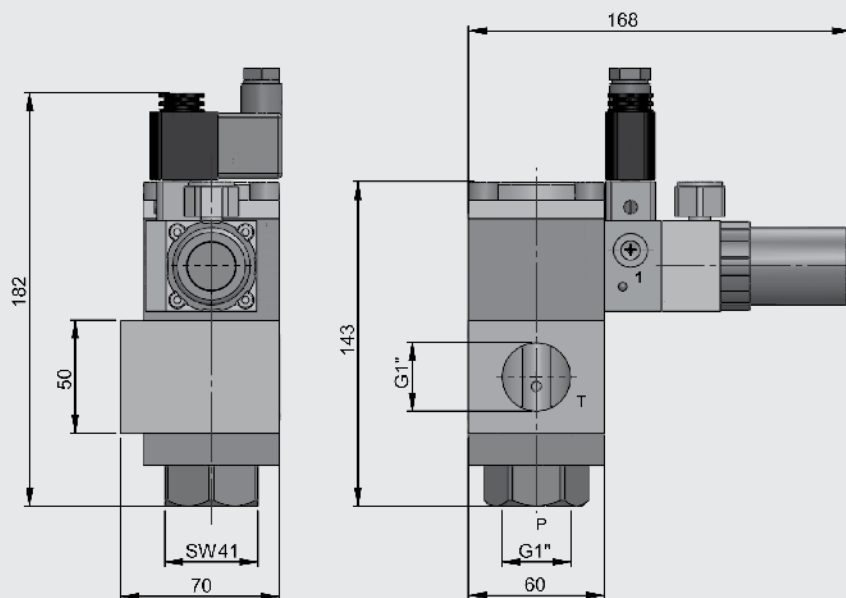
CX DBV-P



Switching function



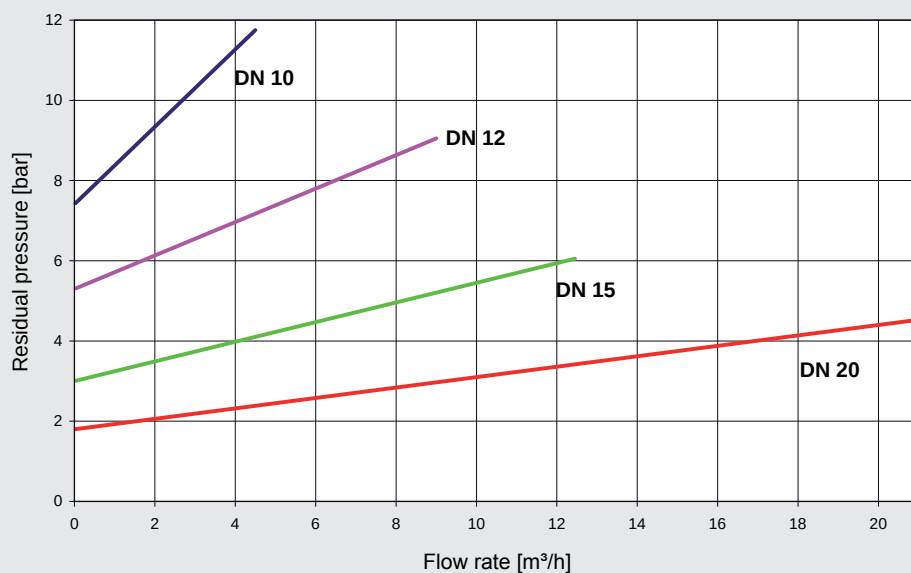
Dimensions



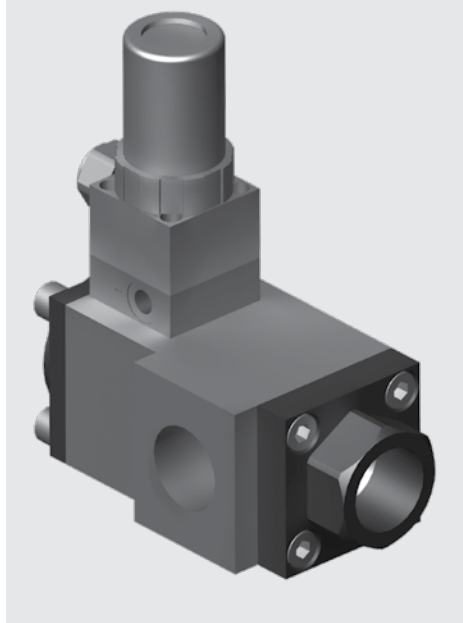
1: 1/4" Pneumatic connection

DN [mm]	Pressure control range [bar]	Connection	max. flow rate [m³/h]
10	12 – 160	G 1"	3.0
12	10 – 120	G 1"	6.0
15	5 – 64	G 1"	8.3
20	3 – 40	G 1"	14.1

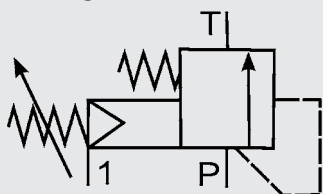
Pressure drop against flow



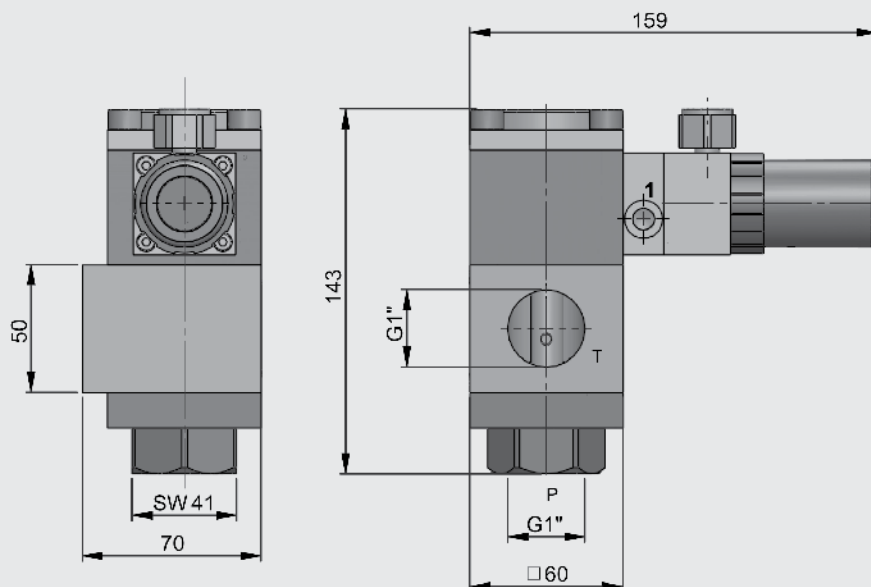
CX DBV-H



Switching function



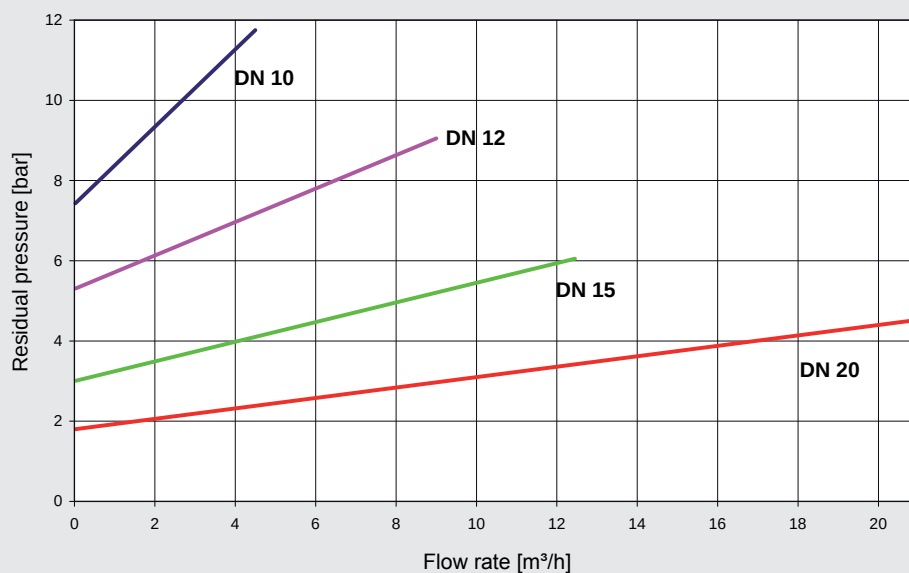
Dimensions



1: 1/4" Pneumatic connection

DN [mm]	Pressure control range [bar]	Connection	max. flow rate [m³/h]
10	12 – 160	G 1"	3.0
12	10 – 120	G 1"	6.0
15	5 – 64	G 1"	8.3
20	3 – 40	G 1"	14.1

Pressure drop against flow



NOTE

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

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

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E-Mail: info@hydac.com

The HYDAC logo is located in the top left corner. It consists of the word "HYDAC" in white, bold, sans-serif capital letters, enclosed within a red rounded rectangular border. The background of the entire advertisement is a close-up photograph of a hydraulic test setup. It features a central black cylindrical component with several brass-colored fittings and connectors. These are connected to black hydraulic hoses. In the bottom right corner, a portion of a digital pressure gauge is visible, showing a green LCD screen with text and some physical buttons below it.

HYDAC

INTERNATIONAL

TestPoint.

Die kleine, schnelle
Messkupplung

TestPoint.

The compact, quick fastening
measurement coupling

TestPoint verbindet...

Unter TestPoint als Messpunkt versteht man eine Messkupplung kleinster Nennweite mit Rückschlagventil. Die Öffnungsarmatur für die Messkupplung befindet sich z.B. als Kopfstück an Schläuchen oder als Adapter an Drucksensoren. Beim Anschrauben an die Messkupplung öffnet sich das Rückschlagventil und es entsteht eine direkte Verbindung zum Medium.

Die wesentlichen Vorteile sind:

- Kuppeln und Entkuppeln ohne Anlagenstillstand.
- Druck- und Druckspitzenmessungen mit Drucksensoren.
- Systementlüftungen und Probenentnahmen.

Die Verantwortung gegenüber unseren Kunden beschleunigte die Entscheidung, eine leckagefreie Messkupplung zu entwickeln und den bisherigen Stand der Technik, d.h. Abdichtung durch Kugelrückschlagventil, zu verlassen. Eine saubere Handhabung für den Anwender unter Einbeziehung der Umweltschonung führte zur neuen, patentierten, leckagefreien Messkupplung mit Tellersitzabdichtung.

Unter dem Begriff „Neue Dichttechnik“ wurde diese erfolgreich in den Markt eingeführt.

Gestützt auf diese konsequente Weiterentwicklung konnten folgende Zulassungen erreicht werden:

- Kupplungszulassung der Bundesanstalt für Materialprüfung (BAM) in Feuerlöschern für das Medium Halon.
- Wehrtechnische Zulassung der Kupplung in Stickstoffspeichern.
- DVGW-Registrierungen für differenzierte Messkupplungen durch den Deutschen Verein des Gas- und Wasserfaches e.V. für wiederkehrende Messungen in Gasdruckregelanlagen.

TestPoint connects...

TestPoints are test couplings with a very small nominal bore and a check valve. The opening valve for the test coupling is located on hose ends or as adaptors on pressure sensors. When connecting the test coupling, the check valve opens and gives direct contact to the fluid.

The most important features of the TestPoint are:

- Coupling and uncoupling without system shut down
- Pressure and pressure peaks can be measured using pressure sensors.
- Systems can be vented and samples taken.

Dedication to our customers has been the catalyst to developing a leak-free test point and to moving away from conventional technology, i.e. sealing by means of ball check valves.

The need for clean handling for the user whilst also protecting the environment resulted in a new, patented, leak-free test point using plate seat technology.

Since the successful launch of the "new sealing technology", the advanced design has achieved the following approvals as a result of further product development:

- Approval by the German Federal Institute for Material Testing (Bundesanstalt für Materialprüfung) for use with halon in fire extinguishers.
- Military standard approval for use with nitrogen accumulators.
- Approval of the gas coupling by the German Gas & Water Association (DVGW). The gas coupling is used for repeat testing in gas pressure regulation plants.



Handmessgerät HMG ...
Portable measuring unit HMG ...



Druckmessumformer
Electronic pressure transducer



Adapter
adaptor



Wegweiser durch das TestPoint Programm / Guide to the TestPoint Product Range



**TestPoint
Schraubkupplung**
● mit Metallkappe
● oder
Kunststoff-
kappe

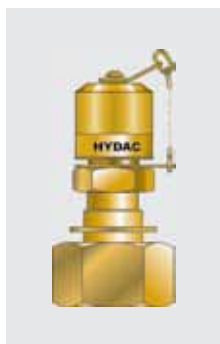
TestPoint
screw coupling
● with metal cap
● or plastic cap



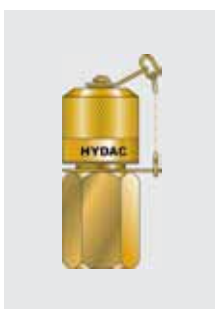
Messstutzen
Standpipe Adaptor



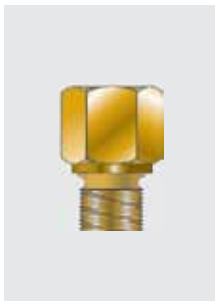
T-Verschraubung
T-piece,
screw-type



**DKO-
Messstutzen**
DKO adaptor



Messstutzen
37°-Bördel-
verschraubung
SAE J 514
Standpipe adaptor
37° edged cone

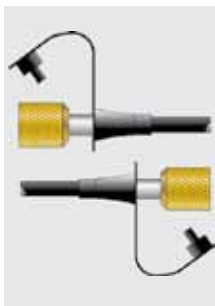


Gewindestutzen
Reducer



Anschweißstutzen
Weld adaptor

Schläuche / Hoses



Messschläuche
DN 2
Microbore hose
DN 2



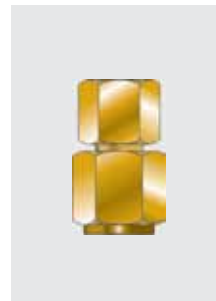
**Adapter zur
Verbindung von
Messschläuchen**
Connecting
adaptor for hoses



**Adapter zum
Anschluss auf
verschiedene
Schraubreihen**
1620-1615-1215
TestPoint adaptor
for connecting
different thread
series
1620-1615-1215



**Messschott-
Kupplung**
Bulkhead
coupling with
TestPoint screw
coupling

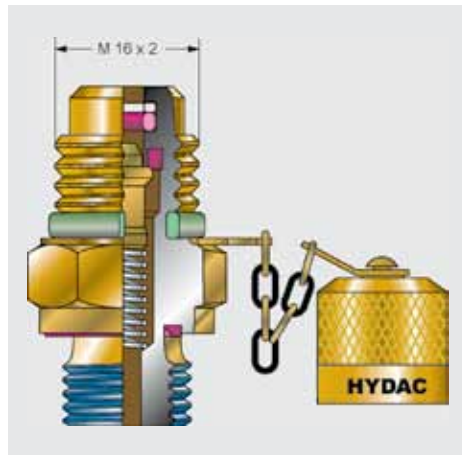


**Manometer-
direktanschluss**
Direct gauge
connection



**Manometer-
anschluss für
Schottwand**
Pressure gauge
connection for
bulkhead pipe
fitting

Technische Daten TestPoint 1620



Max. Betriebsdruck 63 MPa

**Medieneinsatz
für Hydraulik- und sonstige Öle auf
Mineralölbasis**

Werkstoff

**Kupplungskörper und Metallkappe
Stahl 1.0718**

Hinweis:

**Alle in diesem Katalog aufgeführten
Produkte sind aus Automatenstahl 1.0718,
wenn nicht anders angegeben**

Dichtungen

**Interne Primär- und Sekundärdichtung
sowie Einschraubdichtung aus Perbunan.
Option in Viton**

Einschraubgewinde

**Verschiedene Gewindeanschlüsse stehen
zur Auswahl.**

Option: Vibrationssicherung

**Zusätzlicher O-Ring aus Perbunan gegen
Lösen der Metallkappe.**

Temperatureinsatzbereiche

Einsatz mit Metallkappe (Standard)

Dichtungen in Perbunan:

-25 °C bis + 100 °C, kurzzeitig bis +120 °C

Dichtungen in Viton (Option):

-20 °C bis +200 °C

Einsatz mit Kunststoffkappe (Option)

für beide Dichtungsmaterialien:

-20 °C bis +100 °C

Technical data TestPoint 1620

Max. operating pressure 63 MPa (9000 psi)

Fluids

**Suitable for hydraulic and other mineral
based oils**

Material

Coupling body and metal cap in steel 1.0718

Note:

**Unless stated otherwise, all products shown
in this catalogue are made from free-cutting
steel 1.0718**

Seals

**Internal primary and secondary seals and
seals for screw thread in NBR. Option: Viton.**

Screw-thread

Different kinds of thread are available

Option: Safety devices against vibration

**Additional NBR O-ring to prevent the metal
cap from loosening.**

Temperature ranges

When used with metal cap (standard)

Seals in NBR.

-25 °C to +100 °C (-13 °F to +212 °F)

short-term to +120 °C (+248 °F)

Seals in Viton (option):

-20 °C to +200 °C (-4 °F to +392 °F)

When used with plastic cap (option)

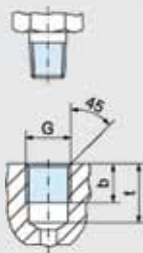
for both sealing materials:

-20 °C to +100 °C (-4 °F to +212 °F)

Einschraublöcher und Abdichtungsarten

Hole dimensions and sealing details

Form C

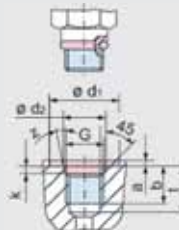


G	b	t
ISO 7 / I-R1/8	5,5	9,5
ISO 7 / I-R1/4	8,5	13,5

**Einschraubloch nach
DIN 3852 Teil 1
und Teil 2. Form Z
(Abdichtung durch
geeignete Dichtmittel)**

Hole dimensions
according to DIN 3852
part 1 and part 2, form
Z (sealing by means of
suitable sealant)

Form E



SAE J 514 (UNF)

G	d 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

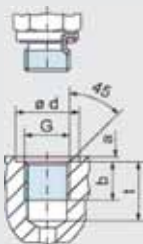
ISO 6149-1

G	d ₁	d ₂	b	k	t	a	z°
M 10 x 1	19	11,1	10	1,6	11,5	1	12
M 12 x 1,5	19	13,8	11,5	2,4	14	1,5	15
M 14 x 1,5	21	15,8	11,5	2,4	14	1,5	15
M 16 x 1,5	24	17,8	13	2,4	15,5	1,5	15

**Einschraubloch nach
SAE J 514 (UNF) oder
nach ISO 6149-1
Abdichtung durch
O-Ring**

Hole dimensions accor-
ding to
SAE J 514 (UNF) or
according to ISO 6149-1
(sealing by O-ring)

Form F

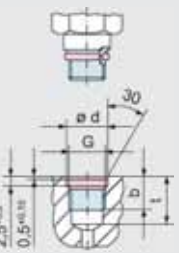


G	d	a	b	t
ISO 228-G 1/8	15	1	8	13
ISO 228-G 1/4	20	1,5	12	18,5
M 12 x 1,5	18	1,5	12	18,5
M 14 x 1,5	20	1,5	12	18,5

**Einschraubloch bis
auf ød nach
DIN 3852 Teil 1 und
Teil 2. Form X
(Abdichtung durch
Gi-Ring)**

Hole dimensions
(apart from Ø d)
according to
DIN 3852 part 1 and
part 2, form X
(square section seal)

Form G



G	d	b	t
M 10 x 1	11,5	9	13
M 8 x 1	9,5	9	13

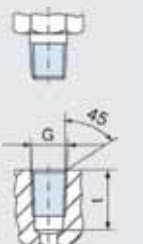
Stufenbohrwerkzeug auf Anfrage

Drill bit on request

**Einschraubloch nach
HYDROTECHNIK
Werknorm N 901-01- 14
(Abdichtung durch
O-Ring)**

Hole dimensions
according to
HYDROTECHNIK
factory standard
N 901-01-14
(sealing by O-ring)

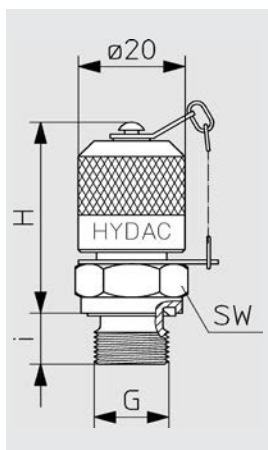
Form H



G	t
1/8 NPTF	12
1/4 NPTF	17,5

**Einschraubloch nach
ANSI/ASME
B 1.20.1-1983
(Selbstdichtendes
Gewinde)**

Hole dimensions
according to
ANSI/ASME
B 1.20.1-1983
(self sealing thread)



TestPoint 1620 Schraubkupplung

TestPoint 1620 Series

Standardausführung: Schraubkappe in Metall

Standard design: Screw-on metal cap

Gewinde G Thread	Abdichtungsart Sealing details	p _{max}	Anzugsdreh- moment Torque [Nm]	H [mm]	i [mm]	SW [mm]	Bestell-Nummer mit Metall-Kappe Part number with metal cap
M 8 x 1 *	O-Ring/Form G	25 MPa (3600 psi)	6	41	8,5	17	06003731
M 10 x 1		63 MPa (9000 psi)	15	37,5	8,5	17	00629237
M 12 x 1,5	30		36	10	17	00632615	
M 14 x 1,5	Gi-Ring/Form F square section seal		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		63 MPa (9000 psi)	40	36	10	19	00680107
ISO 228-G 3/8			60	36	10	22	06003733
1/8 NPTF	Selbstdichtendes Gewinde/Form H self sealing thread/form H	40 MPa (5800 psi)	–	33	9,5	17	06003734
1/4 NPTF		63 MPa (9000 psi)	–	33	16,5	17	00639645
7/16-20 UNF	O-Ring/Form E		20	37	9	17	06003735
9/16-18 UNF			35	36	10	19	06003737
ISO 7/I-R 1/8	Geeignete Dicht- mittel/Form C Sealing by suitable sealant	40 MPa (5800 psi)	–	33	13	17	06003738
ISO 7/I-R 1/4		63 MPa (9000 psi)	–	33	13	17	06003739
M 10 x 1	O-Ring/Form E nach / to ISO 6149-2	63 MPa (9000 psi)	12	38	9,5	17	06003740
M 12 x 1,5			30	35,5	11	17	06003741
M 14 x 1,5			45	35,5	11	19	06003742
M 16 x 1,5			55	35,5	12,5	22	06003743

* M 8 x 1 - bitte nicht für Neukonstruktionen verwenden

**Schraubkupplungen mit EPDM-Dichtung für Bremsflüssigkeit
bzw. für andere Medien auf Anfrage.**

Technische Änderungen vorbehalten

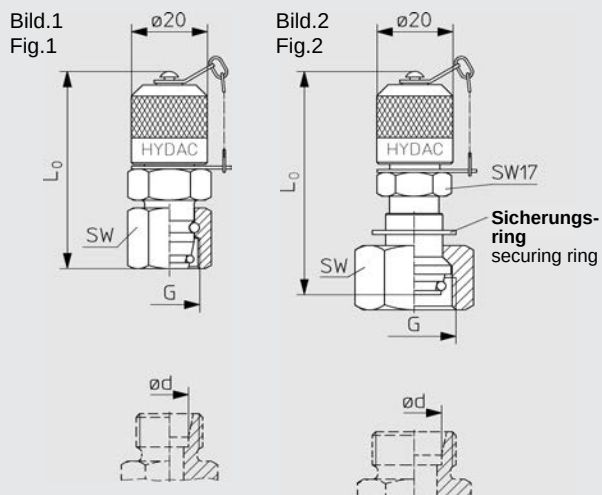
* M 8 x 1 - for spares only, please do not use for new designs

Screw couplings with EPDM seal for brake fluid and
other fluids on request.

We reserve the right to make technical modifications.

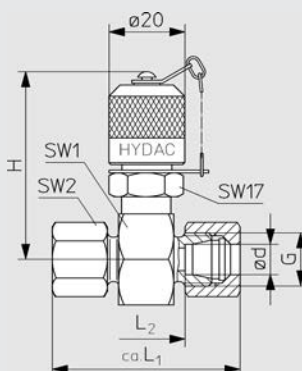
DKO adaptor, T-piece (screw-type), Standpipe adaptor
for solder-free screw-in pipe connections to DIN 2353

DKO adaptor



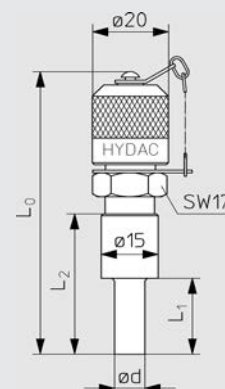
DKO adaptor with 24 ° sealing cone and coupling fitted.
Elastic NBR O-ring on sealing cone.

T-piece, screw-type



T-piece with coupling fitted and cutting rings with union nuts.

Standpipe adaptor



DKO-adaptor

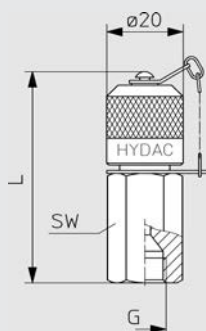
Reihe model e d	p max	Gewinde thread G	Bild fig.	L ₀	SW	Bestell Nr. Part Number
L 6	31,5 MPa 4500 psi	M 12 x 1,5	1	52	14	06003774
L 8		M 14 x 1,5		52	17	06003775
L 10		M 16 x 1,5		52	19	06003776
L 12		M 18 x 1,5		52	22	00637510
L 15		M 22 x 1,5		52	27	06003777
L 18		M 26 x 1,5		52	32	06003778
L 22	16 MPa 2300 psi	M 30 x 2	2	60	36	06003779
L 28		M 36 x 2		61	41	06003780
L 35		M 45 x 2		63	50	06003781
L 42		M 52 x 2		63	60	06003782
S 6	63 MPa 9000 psi	M 14 x 1,5	1	52	17	06003045
S 8		M 16 x 1,5		52	19	06003044
S 10		M 18 x 1,5		52	22	06003783
S 12		M 20 x 1,5		52	24	06003784
S 14		M 22 x 1,5	2	63	27	06003785
S 16	40 MPa 5800 psi	M 24 x 1,5	1	52	30	00625518
S 20		M 30 x 2	2	63	36	06003787
S 25		M 36 x 2		64,5	46	06003788
S 30		M 42 x 2		66	50	06003789
S 38	31,5 MPa 4500 psi	M 52 x 2		69	60	06003790

T-piece, screw-type

L ₁	L ₂	H	SW ₁	SW ₂	Bestell Nr. Part Number
50,5	20,5	49,5	24	14	06003747
50,5	20,5	49,5	24	17	06003748
52,5	22,5	49,5	24	19	00632341
52,5	22,5	49,5	24	22	00638340
54,5	24,5	52,5	30	27	06003749
56,5	23,5	53,5	32	32	00689068
60,5	27,5	55,5	36	36	06003750
60,5	27,5	58	41	41	06003751
68,5	25,5	60,5	46	50	06003752
70,5	24,5	65	55	60	06003753
54,5	24,5	49,5	24	17	06003755
54,5	24,5	49,5	24	19	06003756
56,5	23,5	49,5	24	22	06003757
56,5	23,5	49,5	24	24	00689069
62,5	26,5	51	27	27	06003758
62,5	25,5	52,5	30	30	06003759
68,5	25,5	55,5	36	36	00689245
74,5	26,5	58	41	46	06003770
80,5	27,5	60,5	46	50	06003771
91	29	65	55	60	06003772

Standpipe adaptor

[illegible]



Messstutzen 37°-Bördelverschraubung SAE J514

Standpipe adaptor 37° edged cone

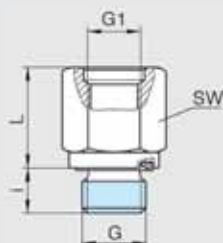
Gewinde Thread	G	p max	Rohr ø Pipe ø in mm	Rohr ø Pipe ø in Zoll	L in mm	SW in mm	Bestell-Nummer Part Number
7/16-20 UNF		60 MPa (8700 psi)	6	1/4"	55	17	06003792
1/2 -20 UNF		42 MPa (6000 psi)	8	5/16"	56,5	17	06003793
9/16-18 UNF		31,5 MPa (4500 psi)	10	3/8"	57,5	19	06003794
3/4- 16 UNF			12	1/2"	60,5	22	06003795

Weitere Anschlussgewinde auf Anfrage

Further threads on request

Gewindestutzen

Reducer



Außengewinde Ext. thread	G	Abdichtungsart Type of seal	p max	L in mm	i in mm	SW in mm	Bestell-Nummer Part Number
M 12 x 1,5	Form F		63 MPa (9000 psi)	19	10	17	06003797
M 16 x 1,5				19	10	22	06003798
ISO 228-G 1/8			40 MPa (9000 psi)	19	8	17	06003799
ISO 228-G 1/2			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	

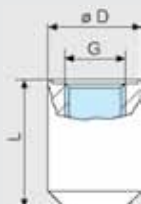
Anschlussgewinde G1:

M10 x 1; Form G, nach HYDROTECHNIK-Werknorm N901-01-14

Thread in reducer G1: M 10 x 1, form G, acc. to
HYDROTECHNIK company standard N 901-01-14

Anschweißstutzen

Weld adaptor



Gewinde Thread	G	Einschraubloch Hole	p max	L in mm	Ø D in mm	Bestell-Nummer Part Number
M 14 x 1,5		Form F	63 MPa (9000 psi)	30	22	06003796
ISO 228-G 1/4						0683922

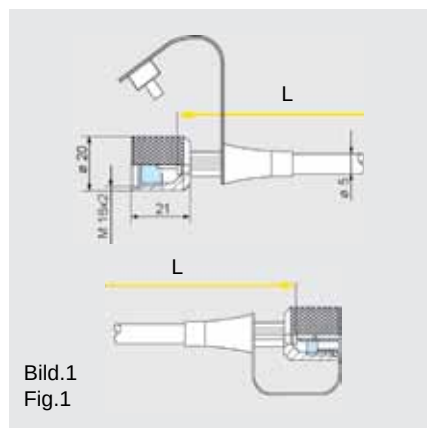


Bild.1
Fig.1

Techn. Daten: Technical Data:

Biegeradius:

Bending radius:

min. 20 mm

(unter -20 °C: 30 mm

under -4 °F: 30 mm)

Druckausnutzungsgrad:

Pressure utilization factor:

0 °C	122 %
30 °C	110 %
50 °C	100 %
80 °C	86 %
100 °C	77 %
120 °C	68 %

Schlauchaufbau:

Hose construction:

Schlauchseele und Oberdecke

Hose core and hose cover

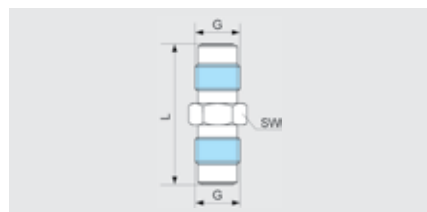
Polyamid

Druckträger:

Inner reinforcement:

Polyesterfaser

Polyester fibre



Messschläuche DN 2 Micro bore flexible hoses

L in mm	p max	Bestell-Nummer Part Number	Bild/ fig. 1	p max	Bestell-Nummer Part Number	Bild/ fig. 1
200	40 MPa 5800 psi	00680606		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				

Schraubanschluss, Hydrotechnik "AC".

Andere Schraubanschlusskombinationen auf Anfrage.

TestPoint Connection, Hydrotechnik "AC".

Other combinations on request.

Adapter zur Verbindung von Messschläuchen

Adaptor for connection of hoses

Gewinde Thread	G	L in mm	SW in mm	p max	Bestell-Nummer Part Number
M 16 x 2		42	17	63 MPa (9000 psi)	00687889

Anm.: Ohne Rückschlagventil

Note: without check valve

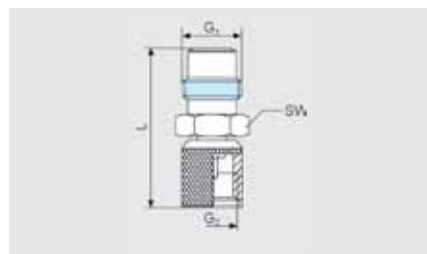
Adapter zum Anschluss auf unterschiedliche

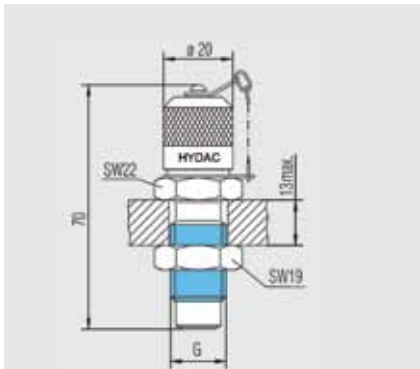
Schraubreihen: 1620-1615-1215

Adaptor for connecting different thread series:

1620-1615-1215

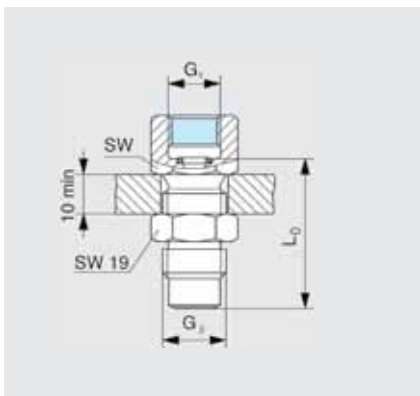
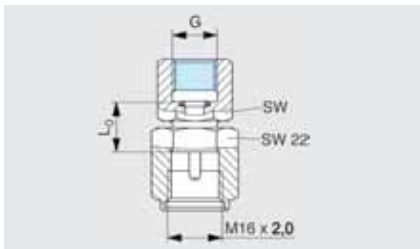
Gewinde Thread	G ₁	Gewinde Thread	G ₂	L in mm	SW in mm	Bestell-Nummer Part Number
Hemmgew. 12 retaining thread		M 16 x 2		25,2	17	—
M 16 x 2		Hemmgew. 12 retaining thread		32		00629635
M 16 x 1,5		M 16 x 2		31,4		—
M 16 x 2		M 16 x 1,5		31,4		00629636





Für lötlöse Rohrverschraubung nach DIN 2353, Gegenseite TestPoint-1620-Anschluss (M 16 x 2)

For solderfree screw-in pipe connection acc. to DIN 2353, opposite end: TestPoint 1620 connection (M16 x 2)



Messschott-Kupplung

Bulkhead coupling

Gewinde Thread G	p max	Anschluss Connection	Bestell-Nummer Part Number
M 16 x 2	63 MPa (9000 psi)	beidseitig Serie 1620 / both ends for series 1620	06003767

Manometerdirektanschluss

Direct gauge connection

Innengewinde Internal thread G	p max	L ₀ in mm	SW in mm	Bestell-Nummer Part Number
ISO 228-G 1/4	63 MPa (9000 psi)	14,5	19	06003824
ISO 228-G 1/2		17	27	06003825
1/4 NPT		—	19	06003769

Manometeranschluss für Schottwand

Pressure gauge connection for bulkhead pipe fitting

Innengewinde Internal thread G₁	Außengewinde External thread G₂	L ₀ in mm (ca.)	SW in mm	Bestell-Nummer Part Number
ISO 228-G 1/4	1620 / M 16 x 2	38	19	06003822
ISO 228-G 1/2		42,5	27	06003823
1/4 NPT			19	06003768

Anmerkung: Ohne Rückschlagventil
Note: Without check valve

ANMERKUNG

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

NOTE

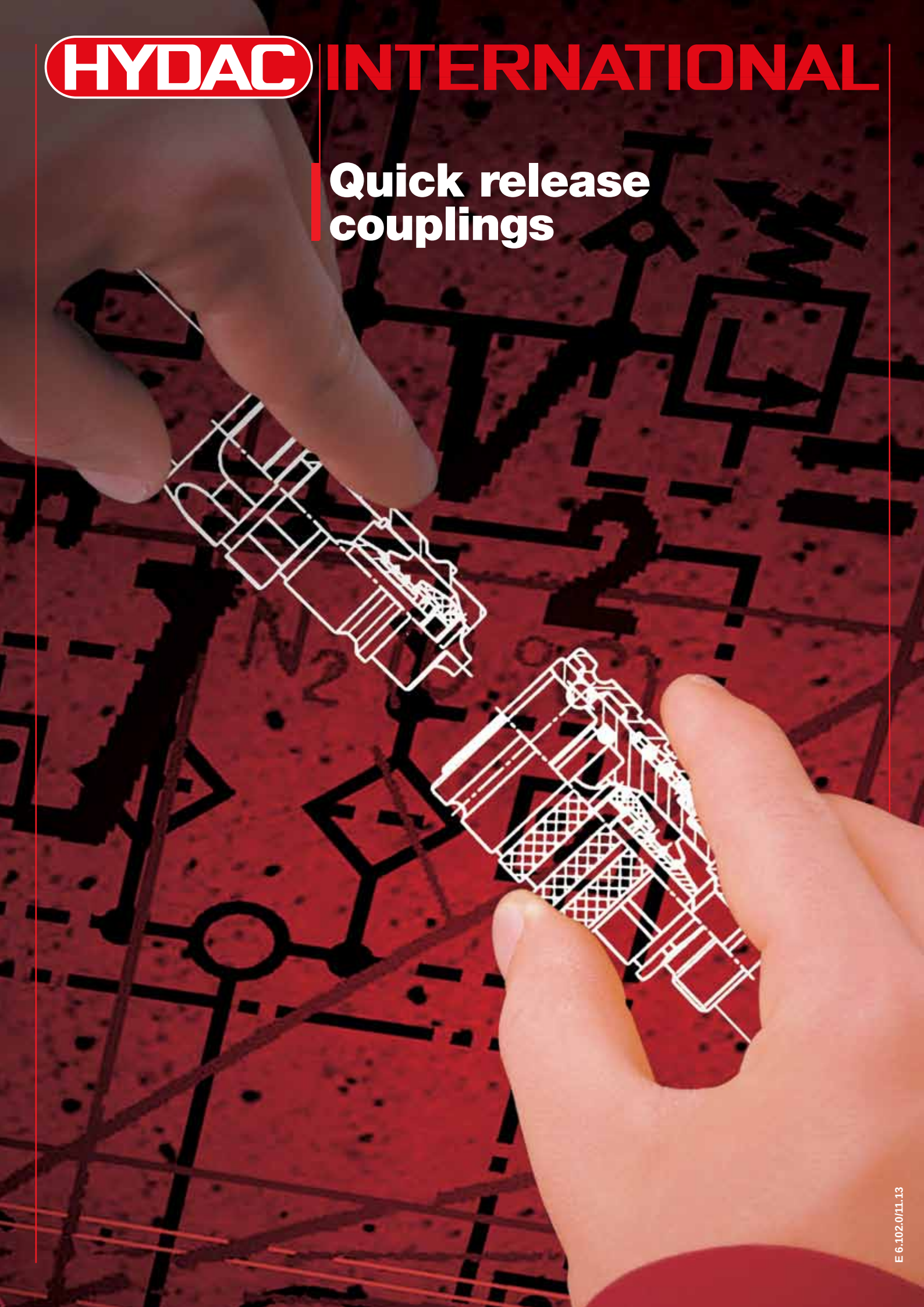
The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

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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 to the couplings in our catalogue.

Housing material:

Steel corresponding to EN 10277, zinc-plated

Seals:

NBR/PTFE

Operating temperature:

-30 °C to +100 °C

Other applicable standards:

EN ISO 8330:2000, ISO 5675, ISO 5676, ISO 7241, ISO/DIS 16028

Please enquire about other material combinations.

Our range includes:

- Push fit couplings to ISO 7241-1, series A
- Push fit couplings, flat face, to ISO/DIS 16028
- Push fit couplings in plastic
- Locking couplings for hydraulic braking systems to ISO 5676
- Screw couplings
- Screw couplings for high pressures
- Pipe couplings

We are showing you a selection of these in this catalogue.

The operating pressures given in our catalogue relate to the strength of the housing components. Standardised connector shapes can have other nominal pressures, which do not have to apply to the type of coupling concerned.

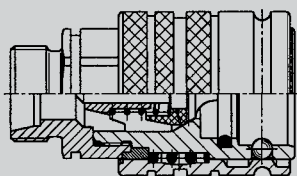
Special agreements are possible.

It is not possible to make a general statement about the compatibility of our couplings to bio-oils. It can however be presumed that the compatibility will be the same as for rubber hoses.

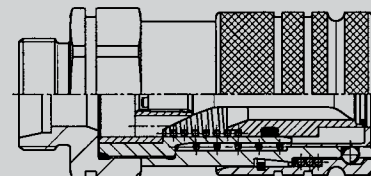
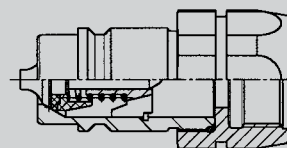
A test will be required to make a definite statement in each case. Apart from the standard couplings, custom versions can also be supplied.

If you have a particular problem to solve, please get in touch with us.

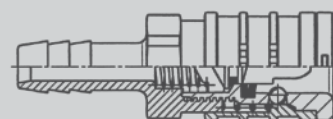
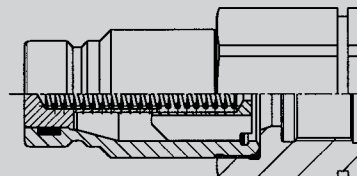
As part of our process of continuous improvement, we reserve the right to make technical changes.



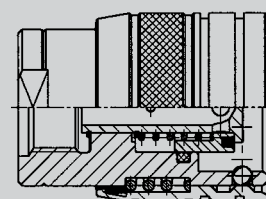
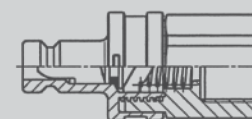
Push fit coupling ISO7241



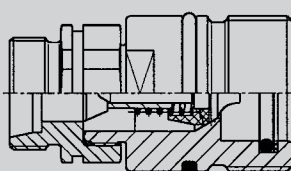
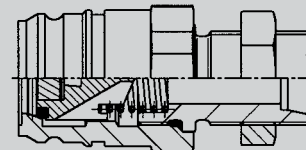
Push fit coupling ISO16028, with gasket



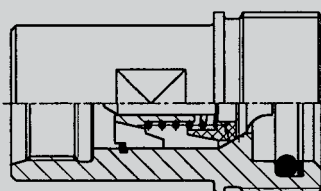
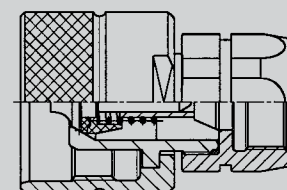
Push fit coupling, plastic



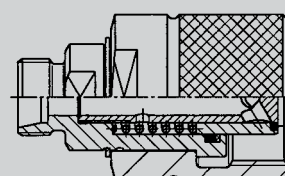
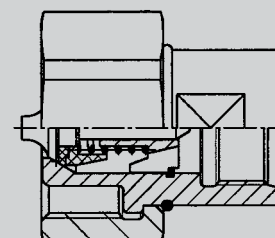
Locking couplings for hydraulic braking systems



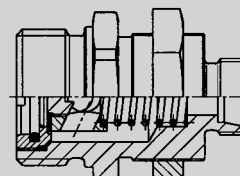
Screw coupling



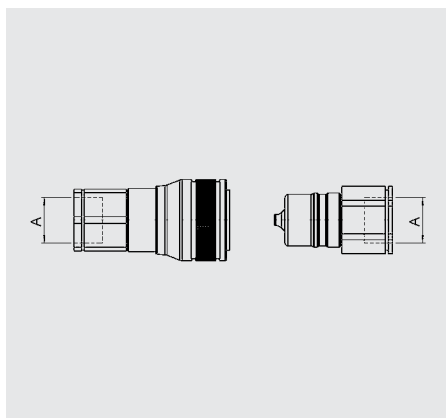
Screw coupling for high pressure



Pipe coupling



Push fit couplings



Selection of available push fit couplings

	Connection A	Pipe Ø	P _{max} [bar]	Size according to ISO 7241-1, series A				
				6.3	10	12.5	20	25
Female thread DIN 3852	G $\frac{1}{4}$	-	250	x	x			
	G $\frac{3}{8}$	-	250		x	x		
	G $\frac{1}{2}$	-	250			x		
	G $\frac{3}{4}$	-	250				x	x
	G1	-	250					x
	M16x1.5	-	250		x	x		
	M18x1.5	-	250			x		
	M22x1.5	-	250			x	x	
	NPTF $\frac{1}{4}$ -18	-	250	x				
	NPTF $\frac{3}{8}$ -18	-	250		x	x		
	NPTF $\frac{1}{2}$ -14	-	250					
	NPTF $\frac{3}{4}$ -14	-	250				x	
Male stud with type W bore (24") DIN 3861	UNF $\frac{3}{4}$ -16	-	250			x		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
	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 $\frac{3}{8}$	-	250		x	x		
	G $\frac{1}{2}$	-	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 construction machines. Thanks to their modular design, a large variety of connections is available, which conform to international standards.

Technical Data

Dimensions		According to ISO 7241-1, series A, as well as ISO 5675		
Housing material		Steel corresponding to EN 10277		
Material of seals		NBR / PTFE ISO 3601		
Operating pressure	P _{max}	250 bar	With standard threaded connections, the operating pressure is governed by the highest rated pressure of the connection.	
Burst pressure	P _{coupled}	1000 bar		
	P _{female}	1000 bar		
	P _{male}	1000 bar (except size 25 → here max. 700 bar)		
Ports		Male thread DIN 3852 Female thread DIN 3852 Male stud with type W bore (24°) to DIN 3861 Male stud with type W bore (24°) to DIN 3861, bulkhead		
Operating temperature		-30 °C to +100 °C		

NOTE

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

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

Subject to technical modifications.

Accessories

Dust protection parts

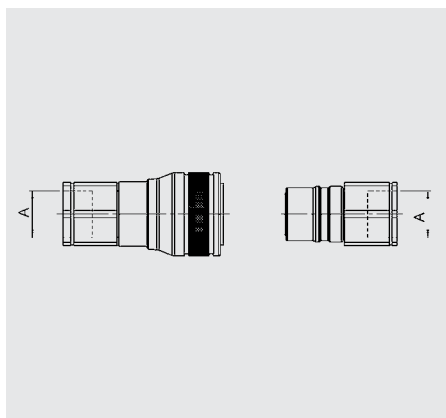
These dust caps and dust plugs can be retrofitted to the connectors.

Colour: red

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E-Mail: info@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			
Male stud with type W bore (24") DIN 3861	UNF 11/16-12	-	350			x	x	x	
	UNF 15/16-12	-	350					x	
	UNF 15/8-12	-	300						x
	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					
Male stud with type W bore (24") DIN 3861 Bulkhead	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	
	M14x1.5	8L	400	x					
	M16x1.5	10L	400* / 350	x	x				
	M18x1.5	12L	350		x	x			
	M22x1.5	15L	350		x	x	x		
	M26x1.5	18L	350			x	x	x	
	M30x2	22L	350				x	x	
	M36x2	28L	350					x	
	M16x1.5	8S	400	x					
	M18x1.5	10S	400	x					
	M20x1.5	12S	350		x				
	M24x1.5	16S	350		x	x	x		
	M30x2	20S	350			x	x	x	
	M36x2	25S	350				x	x	
	M42x2	30S	350					x	
	M36x2	25S	250						x
	M42x2	30S	250						x

Order data

- Nominal size
- Pipe Ø
- Threaded connection
- Size
- Operating pressure
- Material

Apart from the standard couplings,
custom versions can also be supplied.
Contact us for more information.

* for size 6.3
** for size 25

Description

During coupling and releasing, the design of the flat face push fit couplings ensures minimal oil loss and minimal air incursion. Due to the fixed valve tappet in the coupling, backflow is effectively prevented.

The couplings are also designed for easy cleaning and to keep dirt out.

Their main applications are for machines which work in environmentally sensitive areas and hydraulic tools. Thanks to their modular design, HYDAC can make a large variety of connections available which conform to international standards.

Technical Data

Dimensions		to ISO/DIS 16028					
Housing material		Steel corresponding to EN 10277					
Material of seals		NBR / PTFE ISO 3601					
Operating pressure	P _{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
Ports		Female thread DIN 3852 Male stud with type W bore (24°) to DIN 3861 Male stud with type W bore (24°) to DIN 3861, bulkhead					
Operating temperature		-30 °C to +100 °C					

NOTE

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

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

Subject to technical modifications.

Accessories

Dust protection parts

- Dust cap for connector (male)
- Dust cap for connector (female)

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

Spare Parts

- O-ring material: NBR
- Back-up ring material: PTFE
- Brake ring material: NBR
- Valve seal material: NBR
- Lock nut material: steel, zinc-plated

Dimensions according to the size concerned

Overview of couplings

Designation Function	Size	DN	A _{min}	Q _{max}	Operating pressure	Burst pressure			Leakage oil [ml]
		[Inch]	[mm²]	[mm²]		coupled [bar]	Sleeve [bar]	Connector [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 gasket 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	⅜	130	160	400	1500	1200	1200	
	20	⅜	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

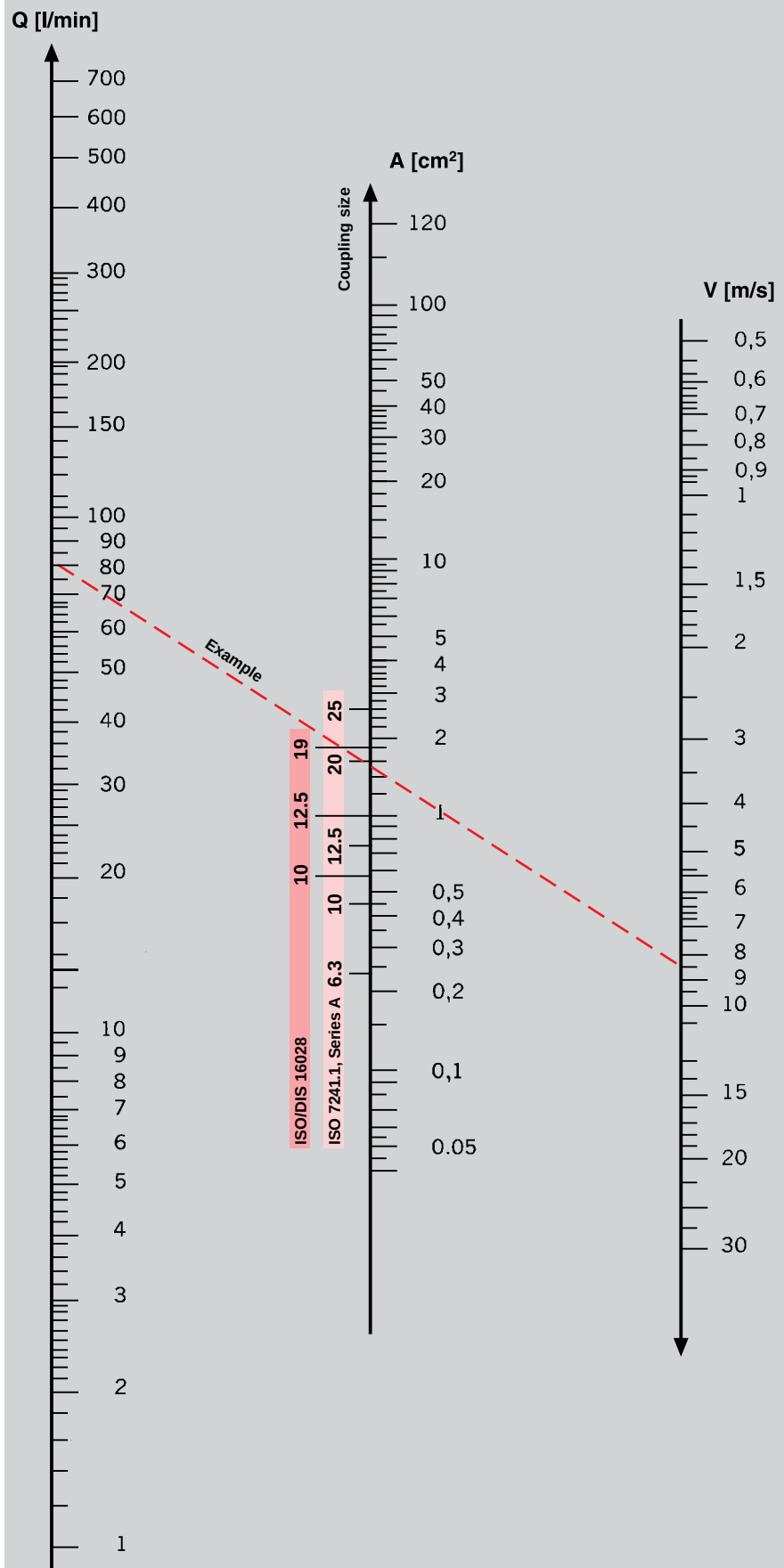
Determining the coupling size

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 !

Incorrect selection or incorrect and inexperienced handling of couplings and accessories can lead to material damage and personal injury.

- Escape of hydraulic fluids under high pressure
- Explosion or ignition of the fluid used
- Collision with parts starting to move or fall, caused by the failure of the hydraulic circuit
- Dangerous lashing of the hydraulic hoses (so-called whipping effect)
- Risk of injury due to contact with hot or cold fluids or fluids which are dangerous for other reasons

Before you select and use a quick release coupling or the corresponding accessories, it is vital that you comply with the following instructions.

1. General information

1.1 General

This section contains instructions on the choice and handling (installation, coupling and disconnecting procedure and maintenance). This is to be understood as additional safety information and must be considered when using the products.

1.2 Safety precautions

Under certain circumstances, couplings can unexpectedly fail. Take account of this when planning your system or plant, using safety devices.

1.3 Information for the user

Pass these safety instructions on to the persons who are responsible for the selection or handling. Only use the couplings after you have received and understood the product-specific information.

1.4 The user's responsibility

Owing to the large variety of applications for quick release couplings, it is not possible to consider every application and each technical detail.

The user is responsible for

- The final selection of the product
- The operator's compliance with the requirements
- The safety of persons and plant
- The safety precautions which are necessary when using couplings

Should you have any other questions, please contact our sales team.

2. Notes for the correct choice of coupling

2.1 Pressure range

The couplings must be chosen so that their maximum permissible operating pressure is greater than or equal to the system pressure. Pressure peaks in the system, which exceed the operating pressure will reduce the coupling's service life and must thus be considered when making the selection.

2.2 Media resistance

The sealing materials in the locking couplings are suitable for numerous pressurised media.

Your product manager will supply you with information about compatibility with a fluid on request.

2.3 Working temperature

The working temperatures in the specifications are maximum values. These values must not be exceeded with a stationary or a circulating circuit. During actuation, the natural heating of the coupling must be considered.

2.4 Size

The choice of size and type of connection depends upon the required level of power transmission. The corresponding diagrams are to be used for this.

Flow rates, pressure drops and flow speeds must be considered when choosing the correct size.

If these values are exceeded during operation, faults may occur in the function of the coupling.

2.5 Mechanical connection

The connection of two halves of a coupling depends on the model. Here care should be taken that push-fit couplings completely engage and that screw-fit couplings are fully screwed on, until the stop is reached.

Forcefully and improperly undoing locking couplings will lead to faults.

2.6 Thermal loading

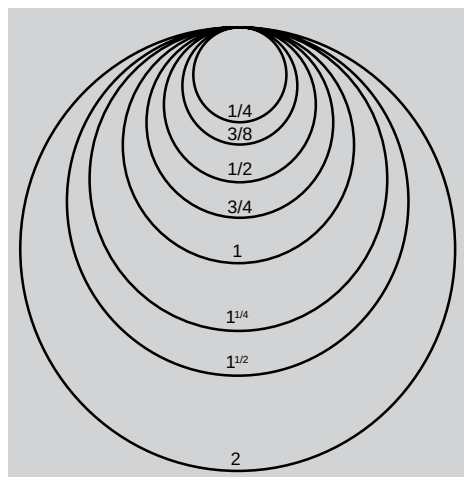
Strongly heating above the recommended operating temperature, by welding or soldering on the couplings, can produce hazardous gases. Apart from that, the surface protection (zinc plating) can be damaged. This can interfere with proper functioning.

2.7 Guidelines

All of the specifications and standards applicable for the area of application must be complied with when making a choice.

Technical information

		Flange		Metric						
Size	DN	3000 psi	6000 psi	Light range	Heavy range	Inch	BSP	JIC	ORS	NPTF
03	05			M12x1.5-6	M16x1.5-8	1/16	G1/8"	3/8-24		1/8-27
04	06			M14x1.5-8	M18x1.5-10	1/4	G1/4"	7/16-20	9/16-18	1/4-18
05	08			M16x1.5-10	M20x1.5-12	5/16		1/2-20		
06	10			M18x1.5-12	M22x1.5-14	3/8	G3/8"	9/16-18	11/16-16	3/8-18
08	12	1/2"	1/2"	M22x1.5-15	M24x1.5-16	1/2	G1/2"	3/4-16	13/16-16	1/2-14
10	16			M26x1.5-18	M30x2-20	5/8	G5/8"	7/8-14	1-14	
12	20	3/4"	3/4"	M30x2-20	M36x2-25	3/4	G3/4"	1 3/16-12	1 3/16-12	3/4-14
16	25	1"	1"	M36x2-25	M42x2-30	1	G1"	1 5/16-12	1 7/16-12	1-11.5
20	32	1 1/4"	1 1/4"	M45x2-35	M52x2-38	1 1/4	G1 1/4"	1 5/8-12		1 1/4-11.5
24	40	1 1/2"	1 1/2"	M52x2-42		1 1/2	G1 1/2"	1 7/8-12		1 1/2-11.5
32	50	2"	2"			2	G2	2 1/2-12		2-11.5
40	65	2 1/2"				2 1/2		3-12		
48	80	3"				3		3 1/2-12		
56	90	3 1/2"				3 1/2				
64	100	4"				4				



American threaded connections (NPTF and NPSM)

To determine the nominal size of the NPTF thread, hold the end of the thread against the matching circle.

NOTE

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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

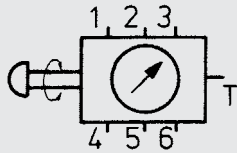
to VDI 3267

2.1. GENERAL

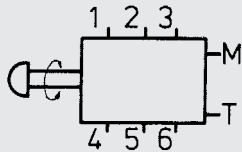
2.1.1 Designation and Symbol

Multi-station gauge isolator

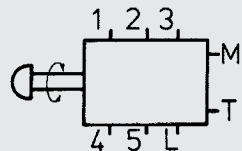
Type MS 2/MSL 2



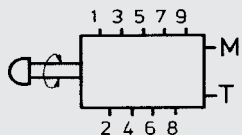
Type MS 4



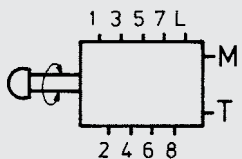
Type MS 5



Type MS 6



Type MS 7



2.1.2 Model code (also order example)

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)

MSL 2 A 2 . 0 / 315 .

Multi-station gauge isolator

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

MS 4 A 2 . 0 / .

2.1.3 Mounting method

Flange mounting

4 screws M 6 ISO 4762

2.1.4 Connections

MS 2/MSL 2/MS 4/MS 5

G 1/4 (ISO 228)

MS 6/MS 7

G 1/8 (ISO 228)

MS 2/MSL 2

6 measuring points

1 tank connection

MS 4/MS 6

6/9 measuring points

1 gauge connection = M

1 tank connection = T

MS 5/MS 7

5/8 measuring points

1 gauge connection = M

1 tank connection = T

1 leakage connection = L

2.1.5 Weight

MS 2/MSL 2: 1.7 kg

MS 4/MS 5: 1.4 kg

MS 6/MS 7: 1.9 kg

2.1.6 Mounting position

Optional

2.1.7 Operating fluid

Mineral oil to DIN 51524

and DIN 51525

Special fluids on request.

2.2. HYDRAULIC TECHNICAL DATA

2.2.1 Operating pressure range

MS 2/MSL 2

Max. permitted operating pressure at measuring points 1 to 6:
depending on permitted indicator range of gauge

= p_{max} up to 315 bar

Tank connection = p_{max} 10 bar.

MS 4/MS 5/MS 6/MS 7

Max. permitted operating pressure at the measuring points

= p_{max} 315 bar

Tank connection and leakage connection = p_{max} 10 bar.

2.2.2 Temperature range of operating medium

-20 °C... +70 °C

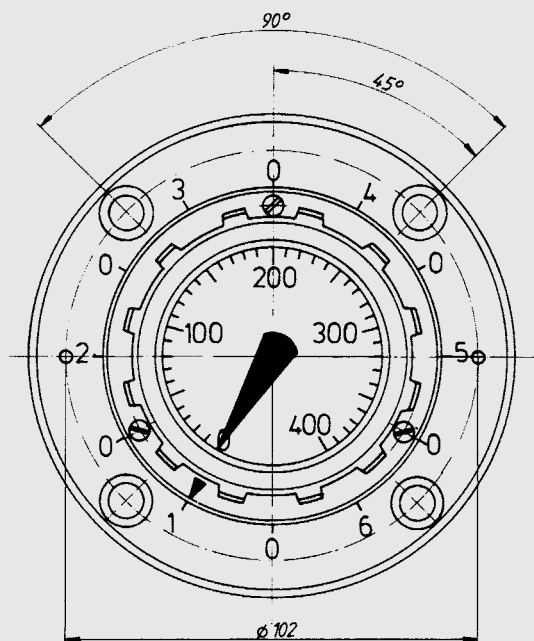
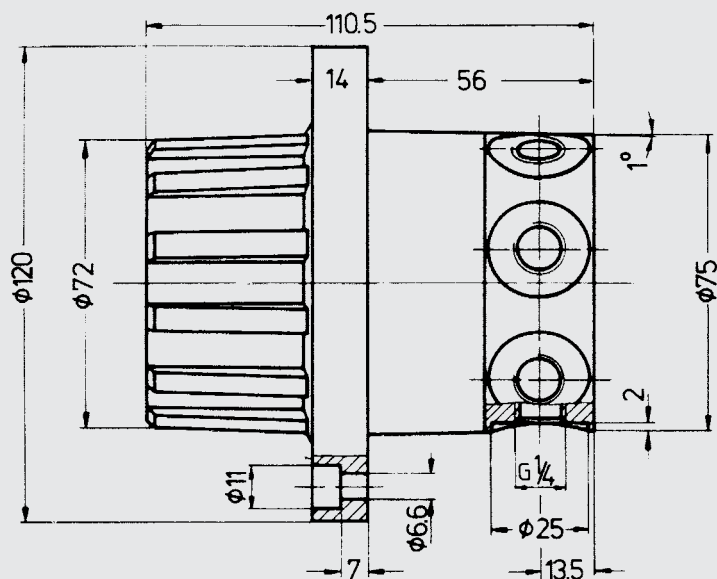
2.2.3 Gauge accuracy

MS 2/MSL 2

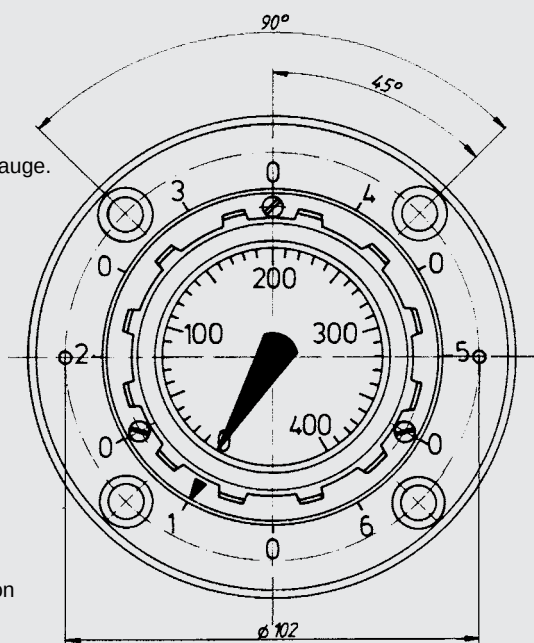
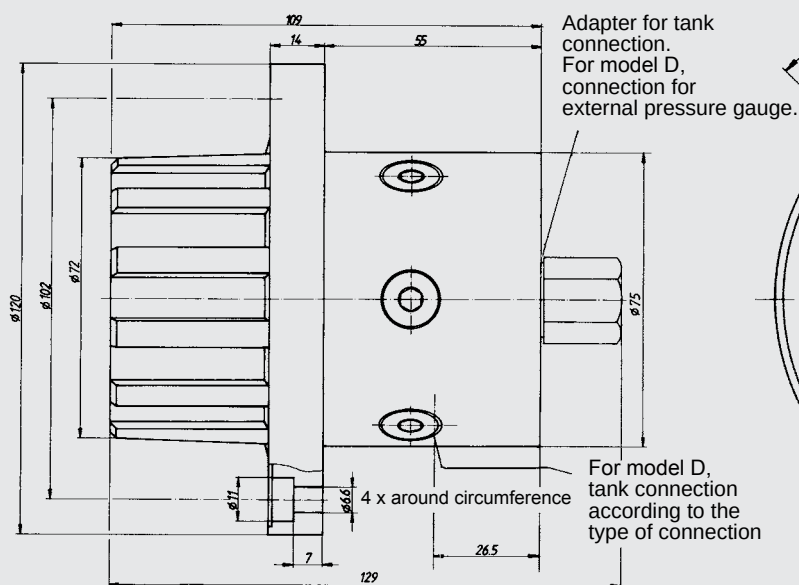
The accuracy of the built-in gauge is 1.6% of the red scale value at 20 °C. Inaccuracy per 10 °C temperature increase approx. +0.3% and per 10 °C temperature decrease approx. -0.3% of the red scale value.

3. DIMENSIONS

TYPE MS 2



TYP MSL 2



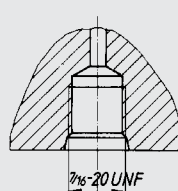
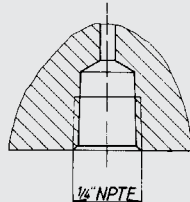
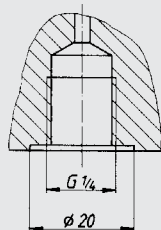
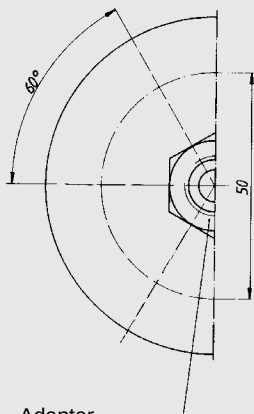
Type of connection:
A/G/H

Connections:

A

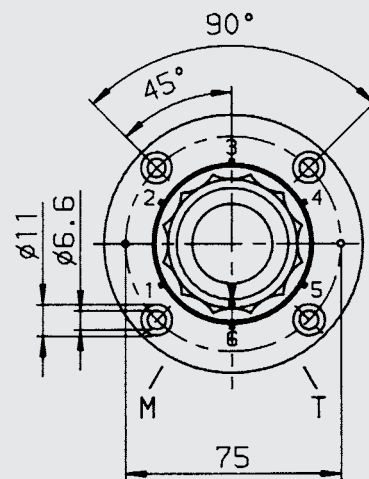
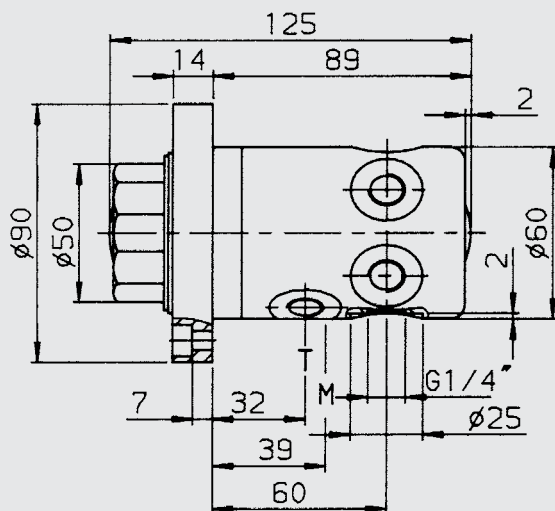
G

H

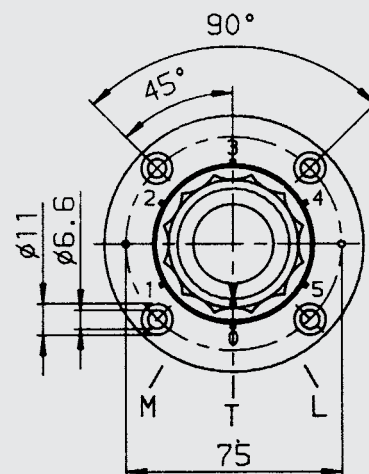
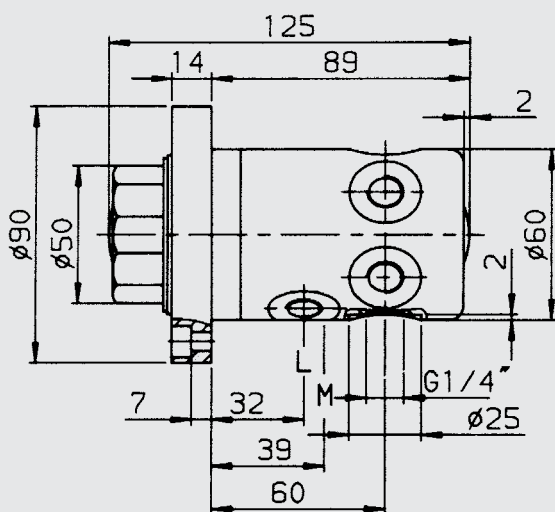


Adapter
for tank connection.
For model D,
connection for external
pressure gauge

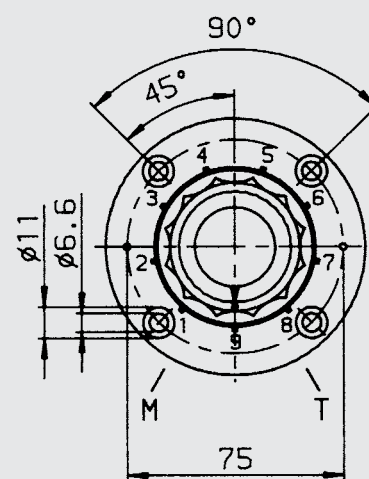
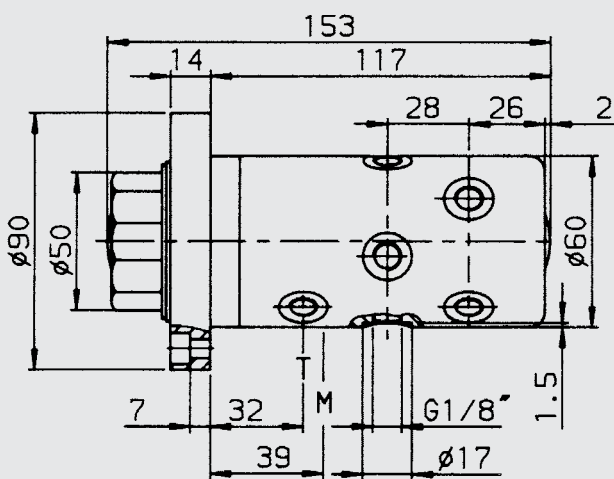
TYPE MS 4



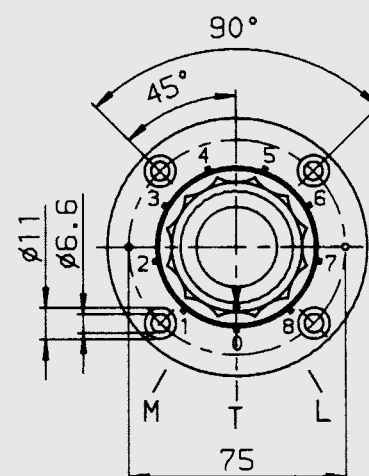
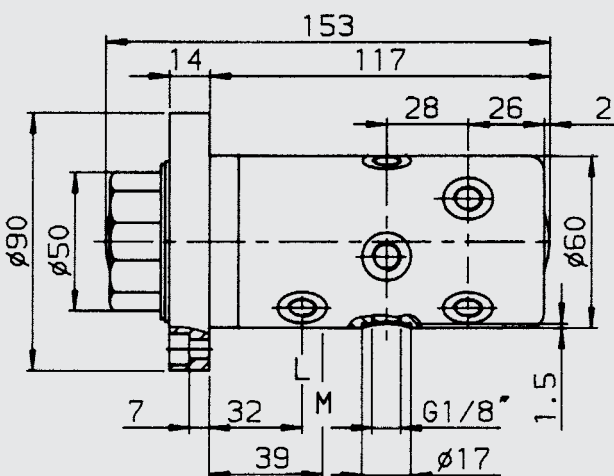
TYPE MS 5



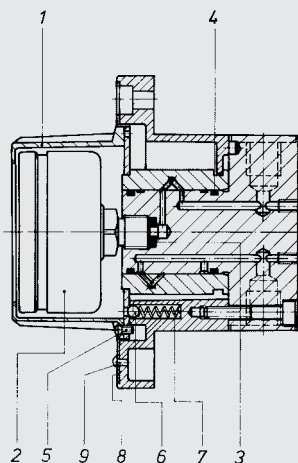
TYPE MS 6



TYPE MS 7



4. SPARE PARTS MS 2



Item	Qty.	Description
1	1	Rotary knob
2	1	Gauge
3	1	Seal ring
4	2	Quad rings
5	3	Slotted head screws M3 x 6 DIN 964 - 5.8
6	1	Ball 5 mm DIN 5401 Class III
7	1	Spring
8	1	Scale plate
9	2	Rivets 2 x 6 DIN 1476

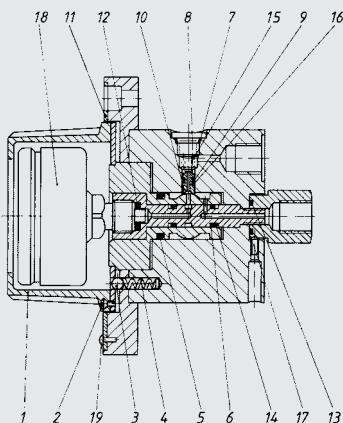
ORDER EXAMPLE

Type MS 2 A 2 . 0 / 315 .

1 off seal ring, item 3

(When ordering, always quote the whole model code of the unit)

SPARE PARTS MSL 2



Item	Qty.	Description
1	1	Rotary knob
2	3	Slotted head screws M 3 x 5 DIN 964
3	1	Ball 5 mm DIN 5401 Class III
4	1	Spring
5	1	O-ring 15 x 2.5
6	2	O-ring 6 x 2
7	6	O-ring 8.5 x 1.5
8	6	Locking screws G 1/8 DIN 908
9	6	O-ring 2 x 1.6
10	6	Seals
11	1	Scale plate
12	1	Seal ring
13	1	O-ring 9.25 x 1.78
14	2	Support rings
15	6	Springs
16	6	Support rings
17	1	Grub screw M 4 x 10 DIN 914
18	1	Pressure gauge
19	2	Rivets 2 x 6 DIN 1476

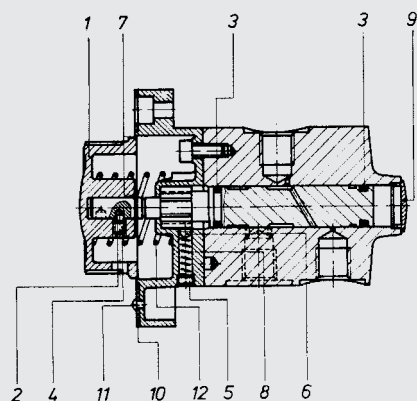
ORDER EXAMPLE

Type MSL 2 A 2 . 0 / 315 .

1 off seal ring, item 12

(When ordering, always quote the whole model code of the unit)

SPARE PARTS MS 4



Item	Qty.	Description
1	1	Rotary knob
2	1	Disc
3	2	Quad rings
4	1	Grub screw M 5 x 8 DIN 417
5	1	Grub screw M 6 x 4 DIN 557
6	1	Ball 5 mm DIN 5401 Class III
7	1	Retainer 8 x 0.8 DIN 471
8	1	Spring
9	1	End cap
10	1	Scale plate
11	2	Rivets 2 x 6 DIN 1476
12	1	Spring

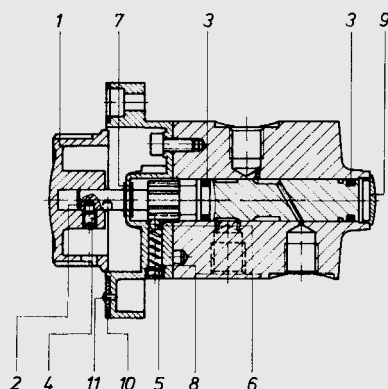
ORDER EXAMPLE

Type MS 4 A 2 . 0 / .

1 off quad ring item 3

(When ordering, always quote the whole model code of the unit)

SPARE PARTS MS 5



Item	Qty.	Description
1	1	Rotary knob
2	1	Disc
3	2	Quad rings
4	1	Grub screw M 5 x 8 DIN 417
5	1	Grub screw M 6 x 4 DIN 557
6	1	Ball 5 mm DIN 5401 Class III
7	2	Retainers 8 x 0.8 DIN 471
8	1	Spring
9	1	End cap
10	1	Scale plate
11	2	Rivets 2 x 6 DIN 1476

ORDER EXAMPLE

Type MS 5 A 2 . 0 / .

1 off quad ring, item 3

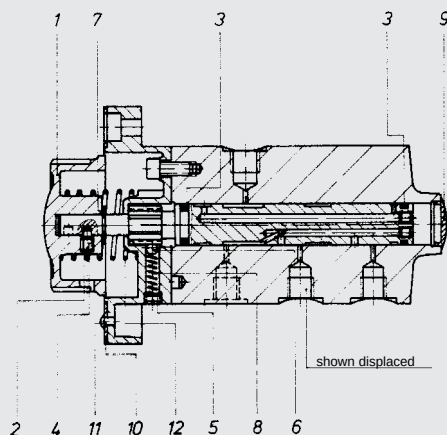
(When ordering, always quote the whole model code of the unit)

MOUNTING INSTRUCTIONS

Taking into account the operating forces, it is recommended that measuring points with pressures of more than 100 bar are arranged symmetrically. Ports not required should be plugged.

Required oil cleanliness class for MSL:
NAS 1638-9 ISO DIS 4406-18/14

SPARE PARTS MS 6



Item	Qty.	Description
1	1	Rotary knob
2	1	Disc
3	2	Quad rings
4	1	Grub screw M 5 x 8 DIN 417
5	1	Grub screw M 6 x 4 DIN 557
6	1	Ball 5 mm DIN 5401 Class III
7	1	Retainer 8 x 0.8 DIN 471
8	1	Spring
9	1	End cap
10	1	Scale plate
11	2	Rivets 2 x 6 DIN 1476
12	1	Spring

ORDER EXAMPLE

Type MS 6 A 2 . 0 / .

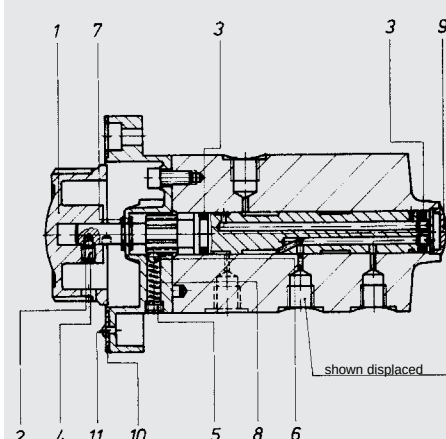
1 off quad ring, item 3

(when ordering, always quote the whole model code of the unit)

NOTE

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

SPARE PARTS MS 7



Item	Qty.	Description
1	1	Rotary knob
2	1	Disc
3	2	Quad rings
4	1	Grub screw M 5 x 8 DIN 417
5	1	Grub screw M 6 x 4 DIN 557
6	1	Ball 5 mm DIN 5401 Class III
7	2	Retainers 8 x 0.8 DIN 471
8	1	Spring
9	1	End cap
10	1	Scale plate
11	2	Rivets 2 x 6 DIN 1476

ORDER EXAMPLE

Type MS 7 A 2 . 0 / .

1 off quad ring item 3

(When ordering, always quote the whole model code of the unit)

HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

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

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

Internet: www.hydac.com

E-Mail: info@hydac.com



Single Station Gauge Isolator MA

1. DESCRIPTION

Long life and continuous accuracy can be achieved if pressure gauges are only pressurised for the time it takes to read the pressure. For the rest of the time the gauge isolator isolates the pressure gauge and the gauge is automatically vented to the tank. This then protects the gauge from possible pressure surges from the system.

This is possible with the HYDAC Single Station Gauge Isolator.

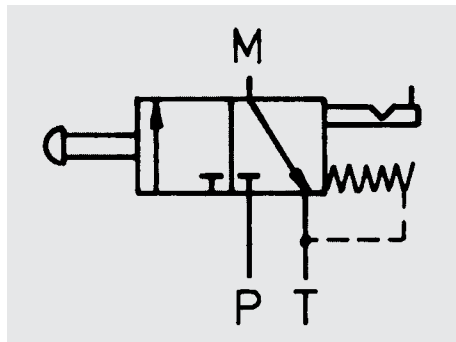
It can be operated in two ways:

- A) Push button:
the pressure is indicated as long as the button is depressed.
- B) Push button and turn clockwise through 90°:
this locks the pressure indication until the button is released.

2. TECHNICAL SPECIFICATIONS

2.1. GENERAL

2.1.1 **Designation/Symbol**
Single Station Gauge Isolator



2.1.2 **Mounting method**

Panel mounting
(max. 10 mm panel thickness)

2.1.3 **Connections**

G 1/4" (for M, P, T)

2.1.4 **Weight**

Approx. 0.4 kg

2.1.5 **Mounting position**

Optional

2.1.6 **Operating fluid**

Mineral oil

Other fluids on request

Special models and surface treatments on request

Oil cleanliness class

NAS 1638-9

ISO DIS 4406-18/14

2.1.7 Model code (order example)

MA 1 A 1 0 / V

Single Station Gauge Isolator

Design

1 = push & turn button

Type of connection

A = threaded connection

Type code

Modification number

Supplementary details

5 = NPT thread 1/4"

V = Viton seals

(no code for standard = Perbunan)

2.2. HYDRAULIC DATA

2.2.1 Operating pressure

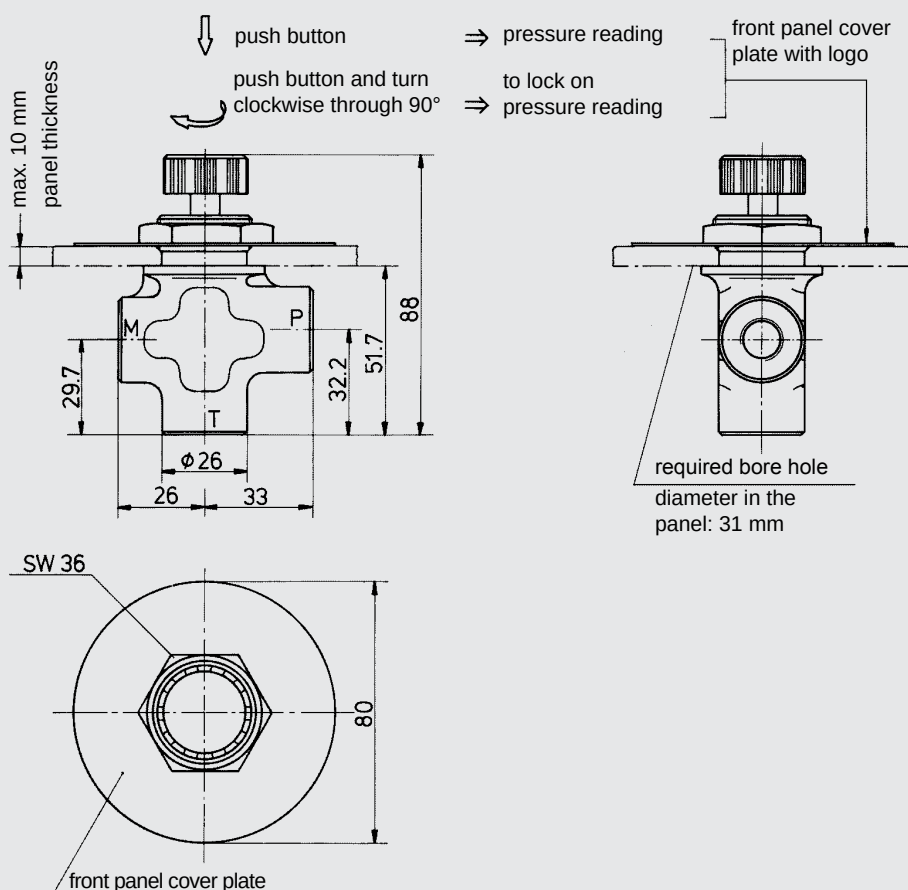
max. 350 bar

(port T: max. 10 bar)

2.2.2 Temperature range of operating fluid

– 20 °C ... + 80 °C

3. DIMENSIONS



4. NOTE

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

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Fluid Level Gauge Fluid Level Sensor Temperature Switch

FSA / FSK / TS

up to size 381; to PN 0.5; to T = 80 °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 five 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 mounting (FSA/K).
- **FSA-IB:** leak-free shut off of the fluid to the fluid level gauge via non-return valve
Display of the current level by simultaneously pressing the upper and lower buttons on the non-return valves
With the optional use of a thermometer, the current temperature of the fluid will also be shown.
Certified by Bureau Veritas (BV approval) and by American Bureau of Shipping (ABS approval)
- **FSK:** Four evenly spaced sizes.
Switching contact can be either type O (opens when fluid is at low level), type C (closes when fluid is at low level) or type W (dual switching unit).
Temperature gauge which measures the temperature of the operating fluid in the tank in °C and °F.
- **FSK-2SP:** Monitoring of the minimum or maximum fluid level.
Two additional alternative switching points for size 254 and above.
Option: line marking on sight tube and float.
Better visual fluid level monitoring possible with red float.
Simple, standardised mounting (FSA/K).
- **FSK-V:** Monitor the fluid level via an electrical signal
Switching point can be variably positioned
Additional alternative switching points possible
Change over switch contacts
Opens or closes at switching level
Tube made of glass
Optional, 3-pole AMP plug (super seal)
Optional line marking on inspection tube and float.
- **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.

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.

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.

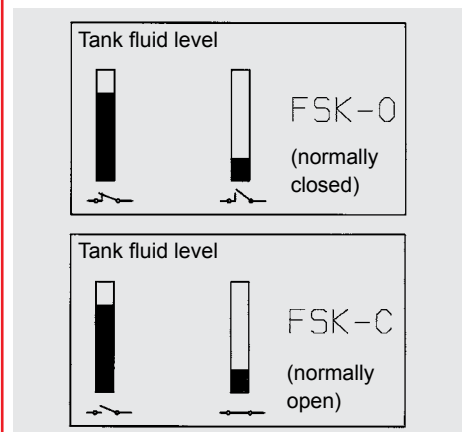
To ensure correct functioning, pressure, viscosity and temperature specifications must be observed.

FSA/FSK

Not suitable for use with glycol or fluids containing glycol.

FSK

Depending on the fluid level of the tank, the following switching logic applies for the fluid level monitor with NC and NO contacts.



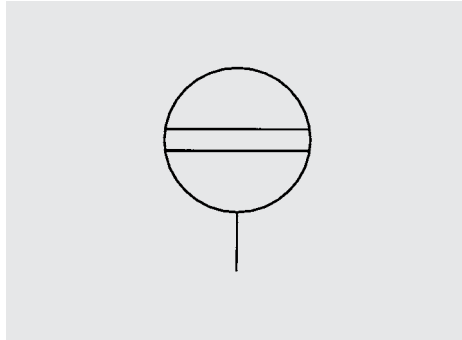
In each case the switching logic of the fluid level sensor starts with a full tank. For the NC version the switching contact opens when the fluid level drops below the switching level. Correspondingly, in the NO version, the switching contact closes when the fluid level drops below the switching level.

2. TECHNICAL CHARACTERISTICS

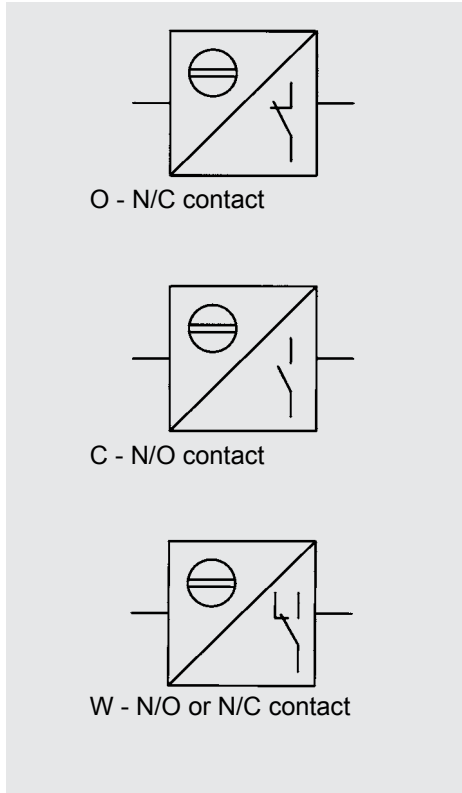
2.1. GENERAL

2.1.1 Designation and Symbol

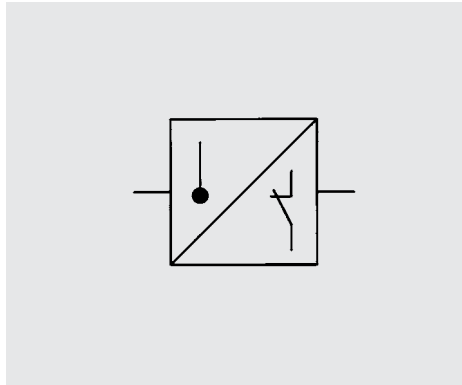
Fluid level gauge FSA



Fluid level sensor FSK



Temperature switch TS



2.1.2 Model code for FSA

(also order example)

FSA - 076 - 2 . X / FT200 / 12 ...

Fluid level gauge

Nominal size

≡ Bolt centre spacing

076

127

176

254

381

Seal material

1 = NBR (Perbunan)

2 = FKM (Viton)

Series

(specified by manufacturer)

Additional thermometer function

– = no additional function

T = thermometer in display tube

FF = prepared for temperature probe

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 ... +150 °C

Installation conditions

Banjo bolt thread

M 12 (standard)

M 10 (not on TS)

Special models

SO2 = with glass tube, connections in aluminium and round shape

SO7 = frame, mounting bolts and nuts in stainless steel (1.4571)

SO8 = mounting bolts and nuts in stainless steel (1.4571)

SO14 = with glass tube, connections in plastic (PA)

SO19 = with green hollow ball, without contrast sheet

SO65 = FSA standard, but without mounting bolts and washers

SO67 = FSA standard, but without mounting bolts

SO79 = with side inspection window

IB BV = with non-return valve, BV approval

IB ABS = with non-return valve, ABS approval

* only for size M12

Model code FSA-IB

(also order example)

FSA - 254 - 2 . 0 / T / 12 S07 / S078 2 x IB

Fluid level gauge

Size

076

127

176

254

381

Seal material

1 = NBR (Perbunan)

2 = FKM (Viton)

Glass tube (round)

Thermometer (in the glass tube)

Thread of the M12 banjo bolt

Frame, screws and nuts made of stainless steel

2x screw ISOLATOR BOLT

Model code FSK

(also order example)

FSK - 127 - 2 . X / O / FT200 / 12 / ...**Fluid level sensor****Nominal size**

≅ Bolt centre spacing

127

176

254

381

Seal material

2 = FKM (Viton)

Series

(specified by manufacturer)

Switching function

O = opens at the switching level

C = closes at the switching level

W = opens or closes at the switching level
(connector Z4 = standard)**Additional thermometer function**

– = no additional function

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 ... +150 °C

Installation conditions

Banjo bolt thread

M 12 (standard)

M 10 (not on TS)

Connector

No details = 3 pole MPM (standard)

Z4 = 4 pole Hirschmann

SEW = 4 pole M12x1 (sensor connector horizontal)

SES = 4 pole M12x1 (sensor connector vertical)

Type B = special connection to the connector plug

Model code FSK-2SP / FSK-V

(also order example)

FSK - 127 - 1 . O / W / - / 12 / 2SP**Designation**

FSK = fluid level monitor

FSKV = fluid level monitor with variable switching points

Nominal size

≅ Bolt centre spacing

127

176

254

381

Seal material

1 = NBR (Perbunan)

Series

(specified by manufacturer)

Switching function

W = change over, opens and closes at the switching level

Additional thermometer function

– = no additional function (standard)

Installation conditions

12 = M12 (banjo bolt thread)

Switching points

2SP = 2 switching points (1 x minimum, 1 x maximum)

additional switching points on request

Connector

FSK-2SP: 5-pole M12x1 male

FSK-V: 3-pole M8x1 male

Model code TS

(also order example)

TS - 70 / X / 12**Designation**

TS - temperature switch (for FSA)

TS-L - temperature switch long (for FSK)

Nominal temperature

60 °C

70 °C

80 °C

Series

(specified by manufacturer)

Banjo bolt thread

M 12

2.1.4 Type of construction

The units are designed to be mounted directly on to the operating fluid tank.

2.1.5 Type of connection**FSA / FSK**

The unit is mounted using two banjo bolts. The connection bores can either be threaded holes or through holes (Ø 13, Ø 11).

TS

The temperature switch can be fitted to the FSA/FSK in place of the lower banjo bolt.

2.1.6 Mounting position

FSA – vertically on the tank wall

FSK – vertically on the tank wall
(connection plug at bottom of the tank)

TS – instead of lower banjo bolt
M12 (FSA)

TS-L – instead of lower banjo bolt
M12 (FSK)

2.1.7 Weight

FSK 127 – 0.21 kg

FSK 176 – 0.23 kg

FSK 254 – 0.26 kg

FSK 381 – 0.30 kg

FSA 076 – 0.17 kg

FSA 127 – 0.19 kg

FSA 176 – 0.21 kg

FSA 254 – 0.24 kg

FSA 381 – 0.29 kg

TS-... – 0.11 kg

TS-L-... – 0.13 kg

FT 200 – 0.03 kg

FT 300 – 0.04 kg

2.1.8 Flow direction

any

2.1.9 Ambient temperature

- 20 °C to + 80 °C

2.1.10 Materials**FSA / FSK**

- End caps and tube in high quality synthetic material
- Housing in aluminium
- 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 made of stainless steel

- Tube made of glass

FSK-2SP

- Connectors made of aluminium / polyamide

- Frame made of aluminium

- Tube made of glass

FSK-V

- Housing frame made of stainless steel

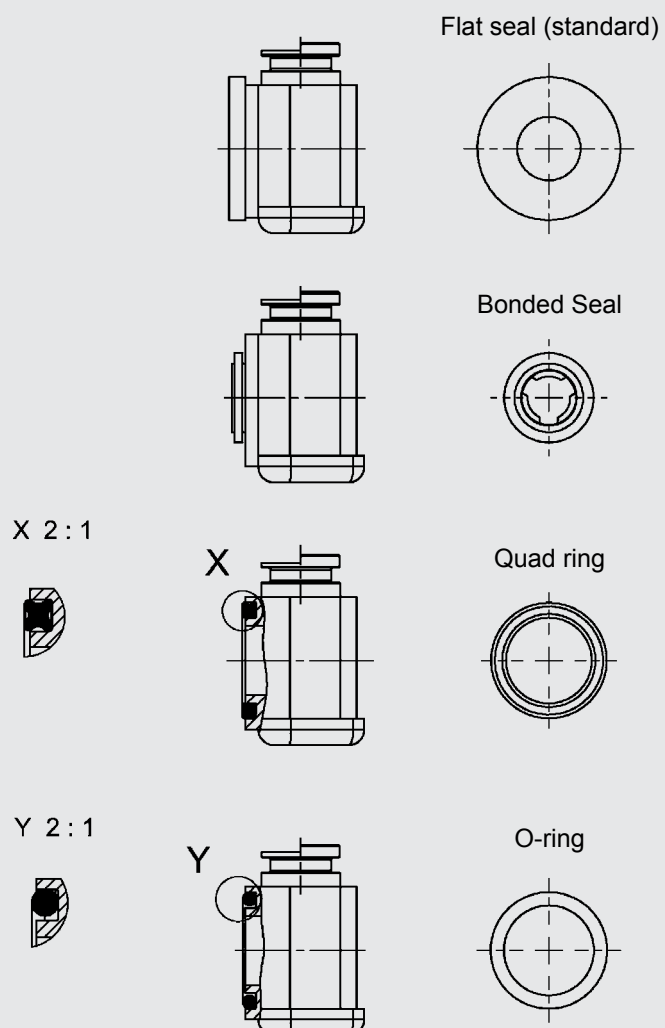
- Connectors made of aluminium / polyamide

- Tube in glass

TS / TS-L

- Housing with temperature sensor, washer and nut in steel (zinc-plated)

- Plug connections in high quality synthetic material

2.1.11 FSA seal types

2.2. HYDRAULIC DATA

2.2.1 Nominal pressure

max. 0.5 bar

2.2.2 Operating fluids

Mineral oil to DIN 51524 Part 1 and 2, water-oil emulsions and synthetic fluids, such as hydraulic fluids based on phosphate ester.

(other fluids on request)

2.2.3 Temperature of operating fluid

- 20 °C to + 80 °C

2.2.4 Range of thermometer scale

FSA / FSK

Thermometer T for FSA :

+ 20 °C to + 80 °C

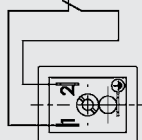
Thermometer FT for FSA / FSK :

0 °C to + 100 °C

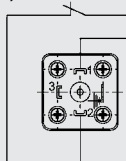
2.3. ELECTRICAL CHARACTERISTICS FSK

2.3.1 Electrical functions

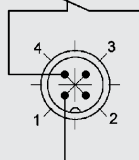
Type O / normally closed



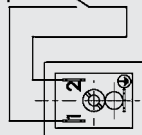
Type O / normally closed
(plug Z4 and type B)



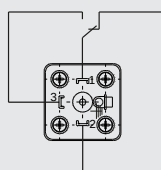
Type O / normally closed
(plug - SEW)



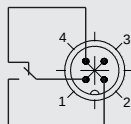
Type C / normally open



Type W / change over
(connector Z4 and type B)



Type W / change over
(plug - SEW)

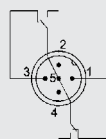


FSK-2SP

Type W / change over

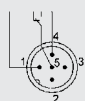
As delivered, switching point at bottom activated by magnetic field.

Size 127, 254, 381

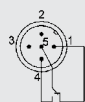


Contact assignment	bottom	top
Float setting		
Minimum	5 - 4	5 - 3
Maximum	5 - 1	5 - 2

Size 176



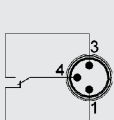
Contact assignment	top
Float setting	
Maximum	5 - 4



Contact assignment	bottom
Float setting	
Minimum	5 - 4

FSK-V

Type W / change over



Contact assignment	bottom	top
Float setting		
Minimum	3 - 4	1 - 4
Maximum	1 - 4	3 - 4

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

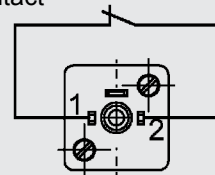
2.3.6 Viscosity range

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

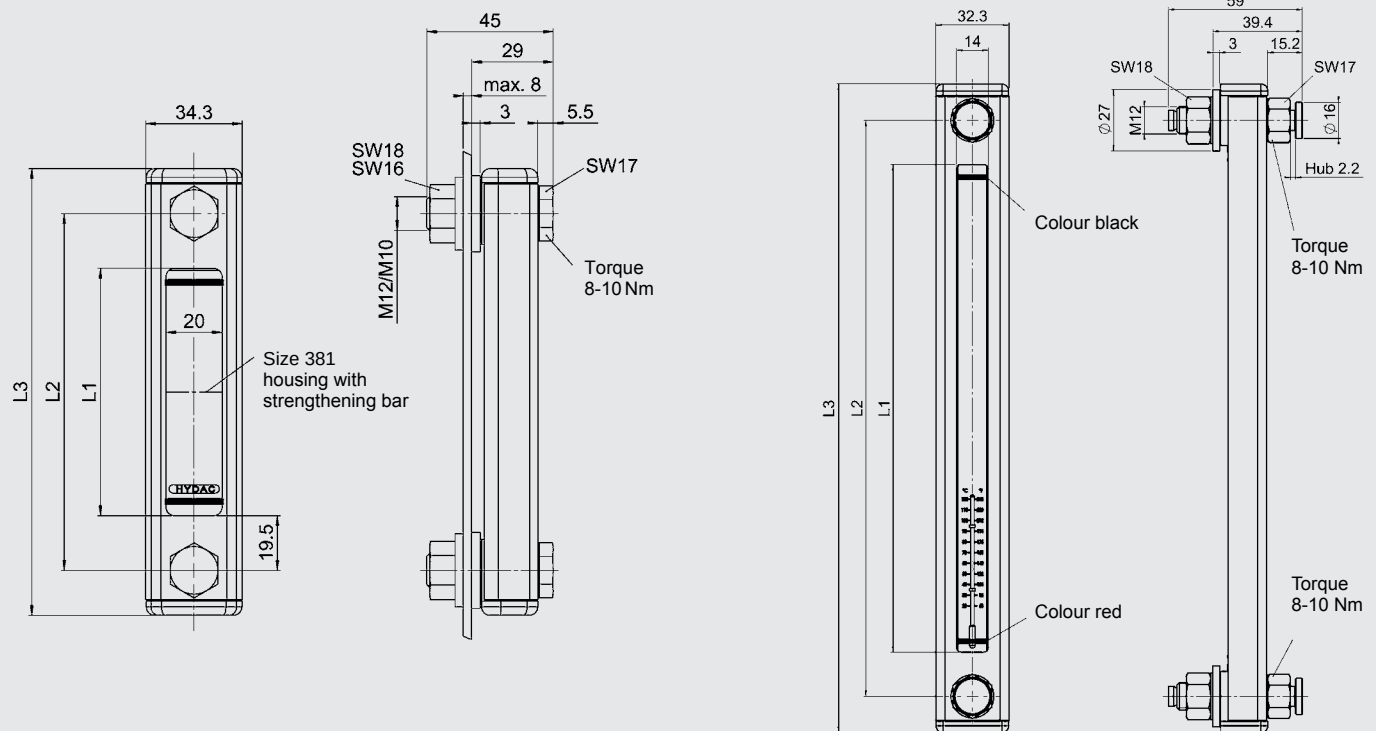
70 °C - 10-15 K

80 °C - 10-20 K

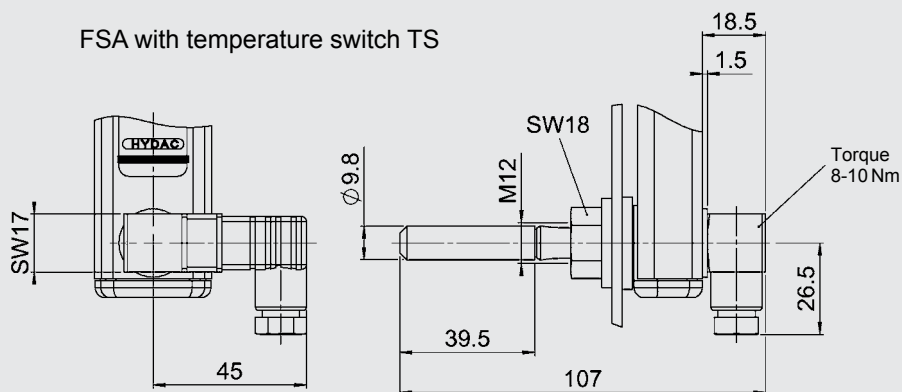
3. DIMENSIONS

3.1. FLUID LEVEL GAUGE FSA FSA standard

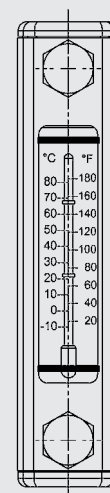
FSA-IB (with non-return valve)



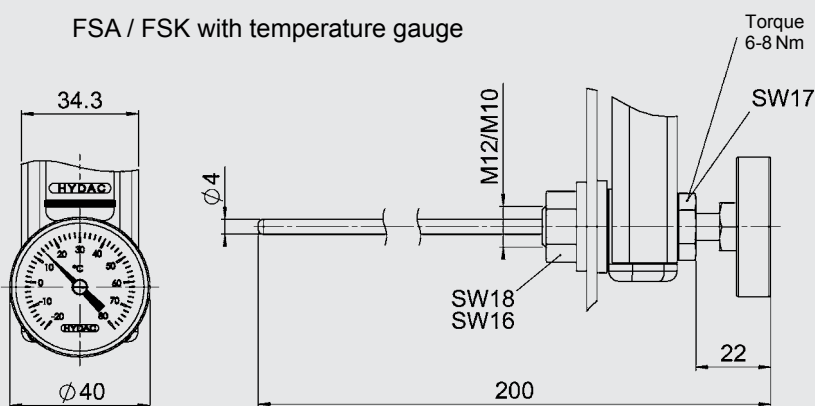
FSA with temperature switch TS



FSA
with temperature gauge



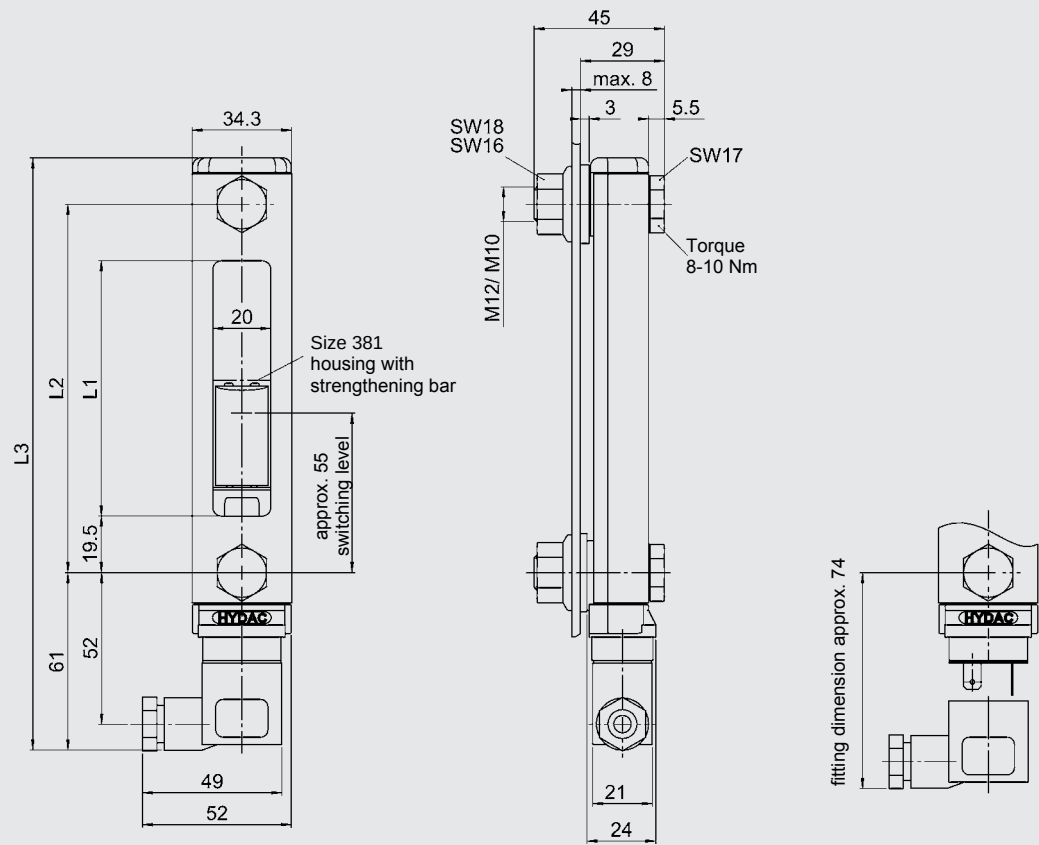
FSA / FSK with temperature gauge



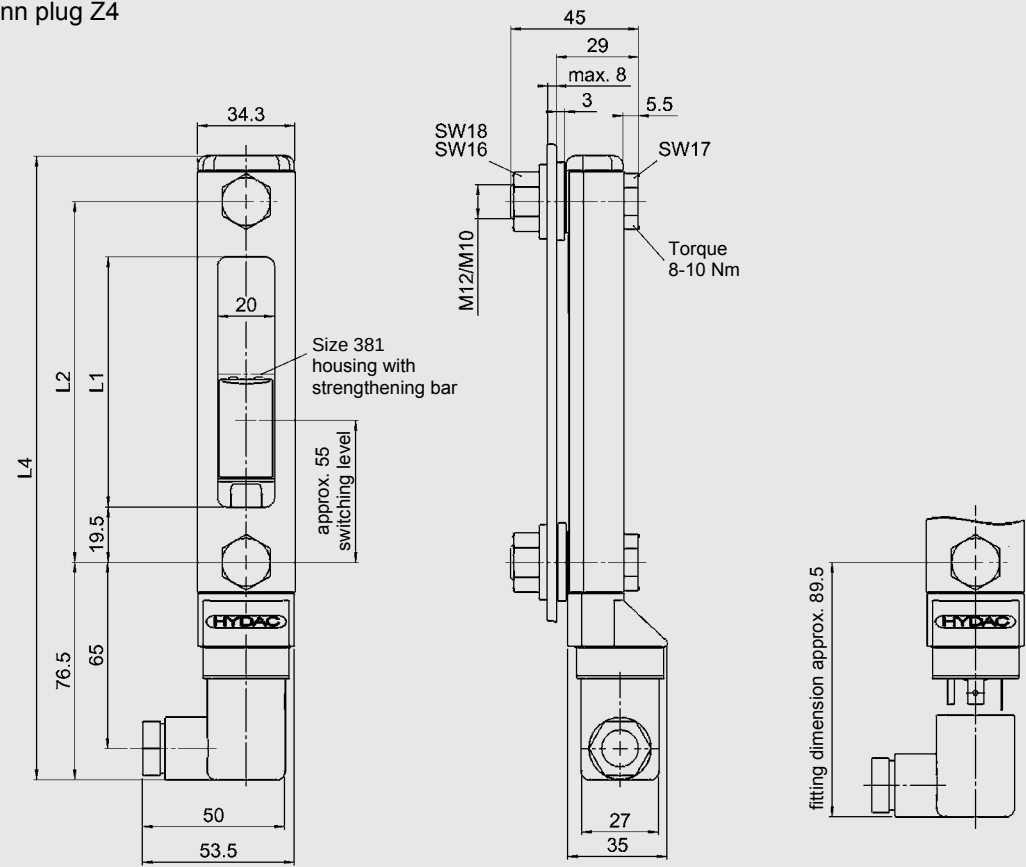
Size = centre distance of bolts	L3	L1	L2
76	108	37	76
127	159	88	127
176	208	137	176
254	286	215	254
381	413	342	381

3.2. FLUID LEVEL SENSOR FSK

FSK standard

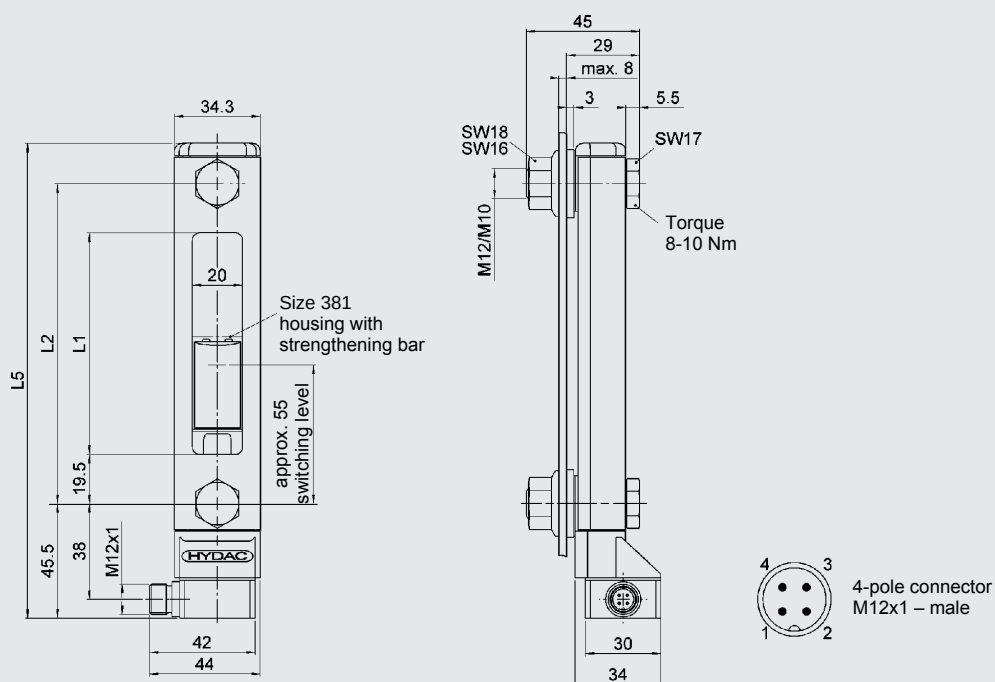


FSK Hirschmann plug Z4

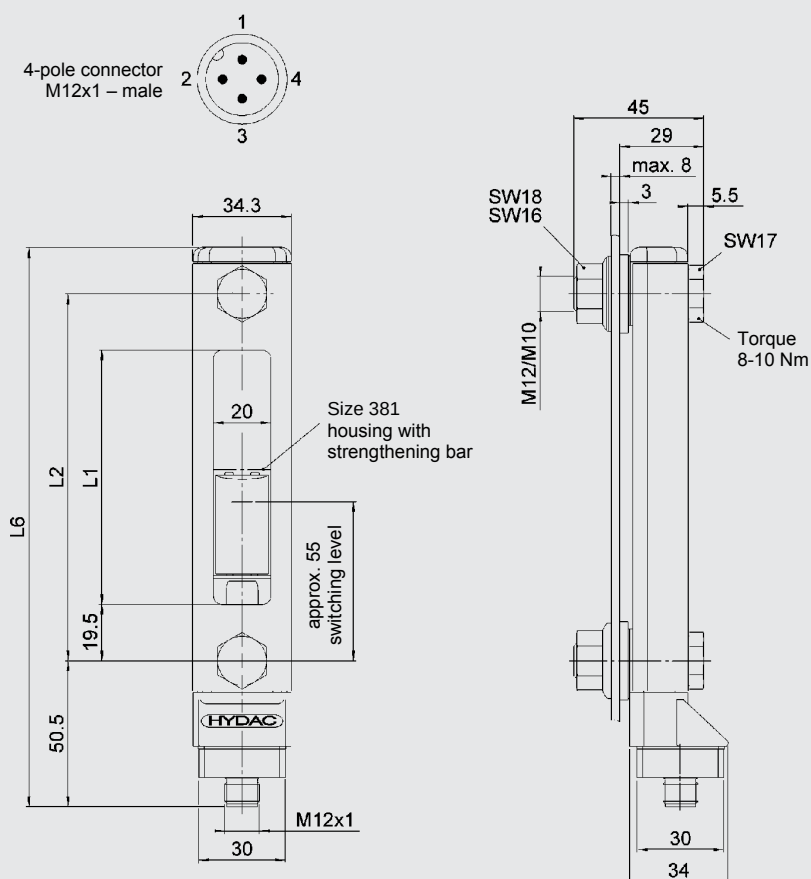


Size = centre distance of bolts	L1	L2	L3	L4
127	88	127	204	219.5
176	137	176	253	268.5
254	215	254	331	346.5
381	342	381	458	473.5

FSK sensor connection SEW-M12x1 horizontal

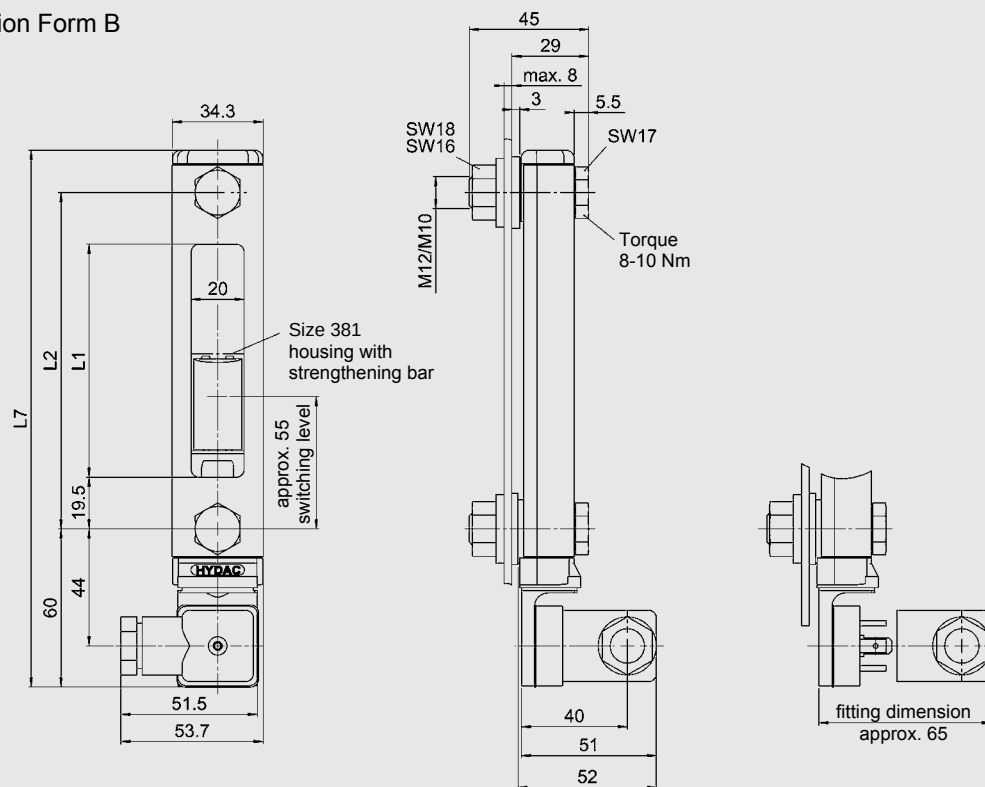


FSK sensor connection SES-M12x1 vertical



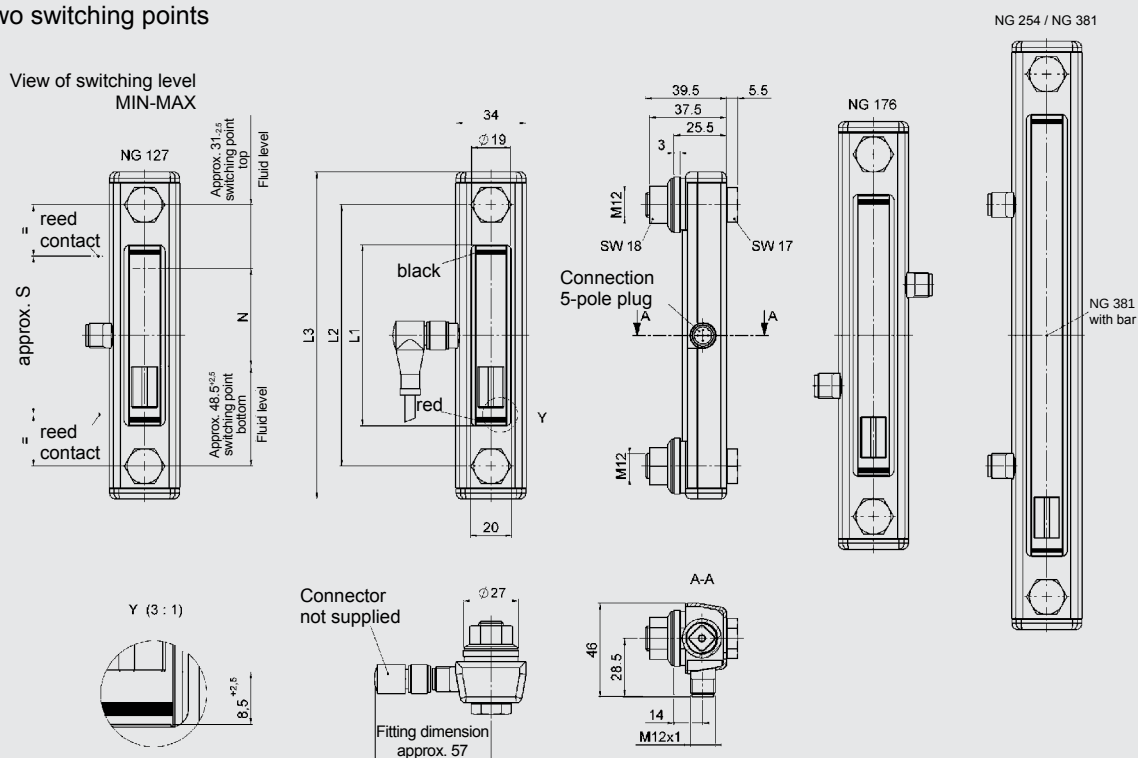
Size = centre distance of bolts	L1	L2	L5	L6
127	88	127	188.5	193.5
176	137	176	237.5	242.5
254	215	254	315.5	320.5
381	342	381	442.5	447.5

FSK male connection Form B



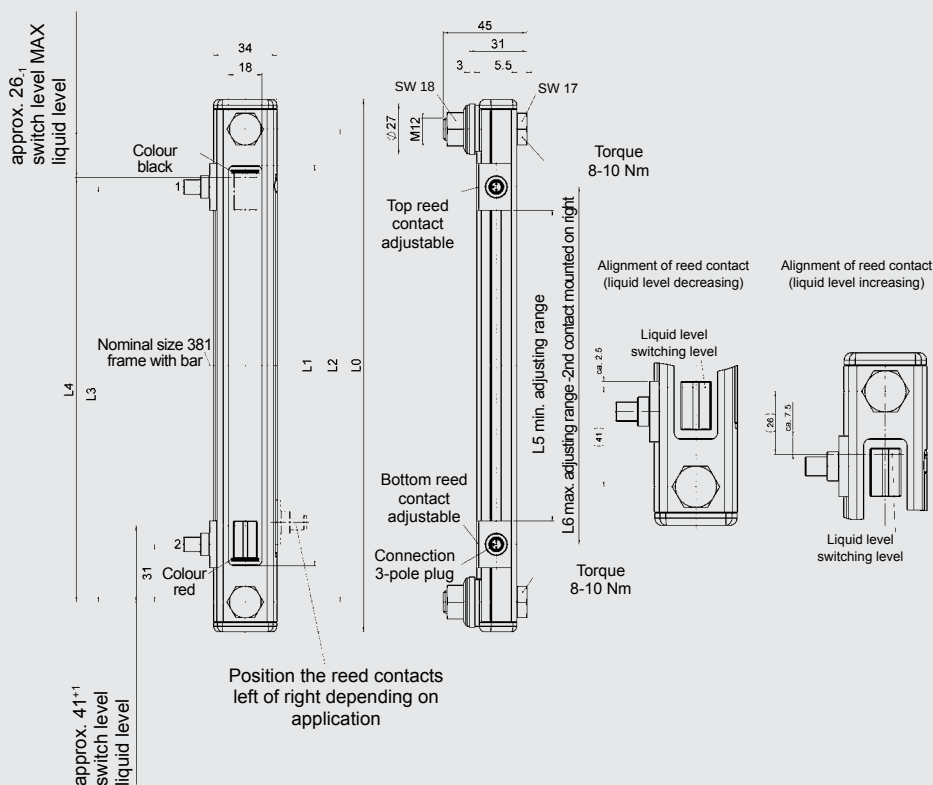
Size = centre distance of bolts	L1	L2	L7
127	88	127	203
176	137	176	252
254	215	254	330
381	342	381	457

FSK with two switching points



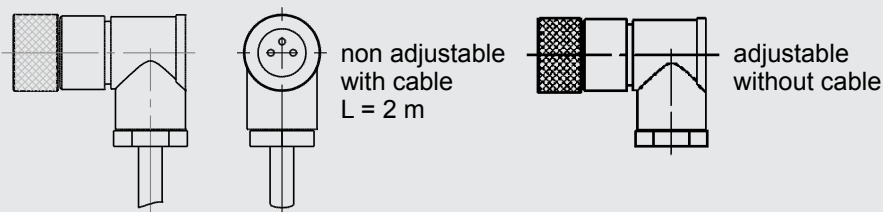
Type	Nom. size	L1	L2	L3	N	approx. S
FSK-127-1.0/W/-/12/2SP	127	88	127	159	47.5	77
FSK-176-1.0/W/-/12/2SP	176	137	176	208	96.5	126
FSK-254-1.0/W/-/12/2SP	254	215	254	286	174.5	204
FSK-381-1.0/W/-/12/2SP	381	342	381	413	301.5	331

FSK with variable switching points



Type	Nom. size	L0	L1	L2	L3	L4	L5	L6
FSKV-127	127	159	88	127	96	101	40	65
FSKV-176	176	208	137	176	145	150	89	114
FSKV-254	254	286	215	254	223	228	167	192
FSKV-381	381	413	342	381	350	355	294	319

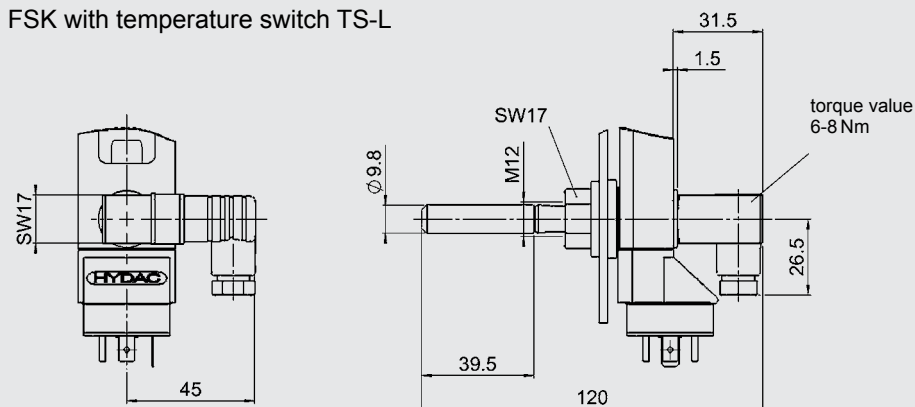
Angled connector M8x1 for FSKV



Order no.: 6105865

6105866

FSK with temperature switch TS-L

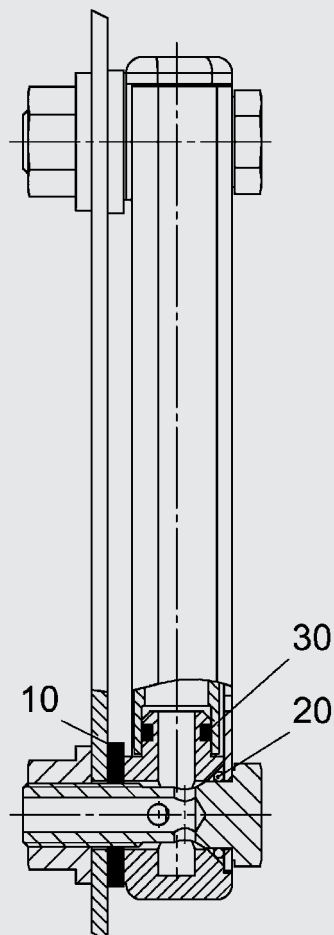


3.3. TEMPERATURE SWITCH TS / TS-L

See FSA with TS fitted
See FSK with TS-L fitted

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

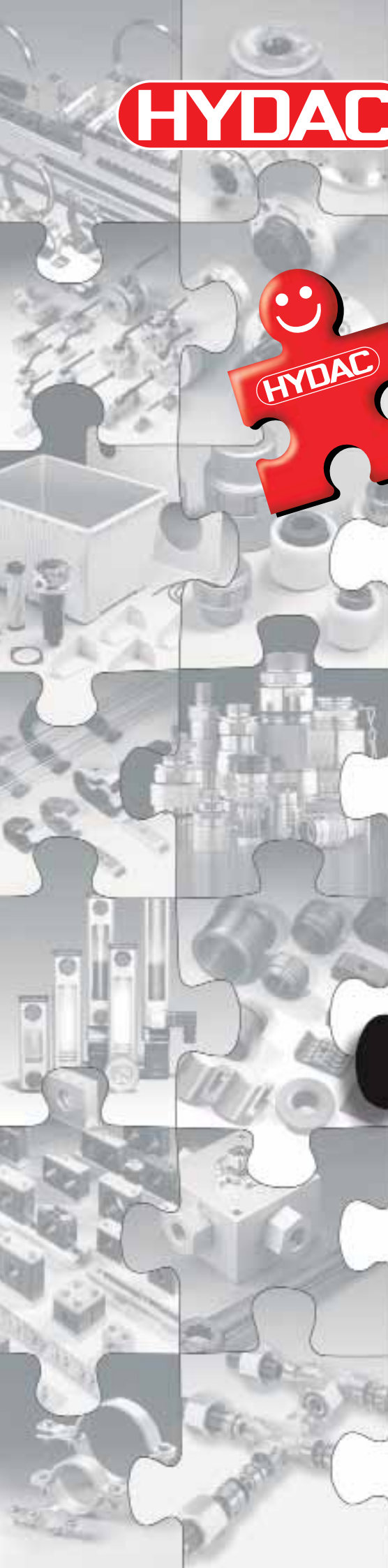
5. NOTE

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

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

Subject to technical modifications.

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



HYDAC INTERNATIONAL



HYDAC Accessories: Buyer's Guide

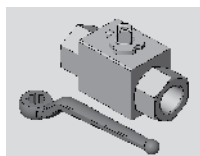


**Order direct
by phone, fax or email.**

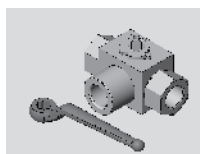
The Benefits to You:

- **Products immediately available,**
- **Easy to order using Part Number,**
- **Renowned "Made in Germany" quality,**
- **Over 40 years' experience in hydraulics.**

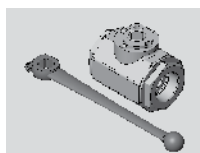
HYDAC Accessories: Product Range Overview



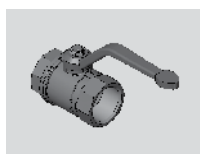
High pressure ball valves,
Steel



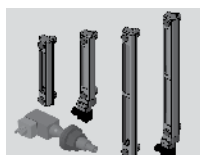
Change-Over Ball Valves,
Steel



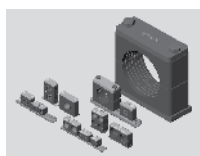
High pressure ball valves,
Stainless steel



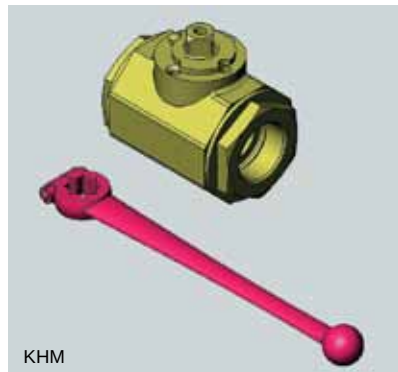
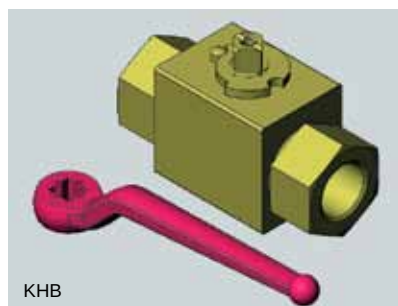
Low Pressure Ball Valves



Gauges, Switches



Mounting Clamps,
Overview



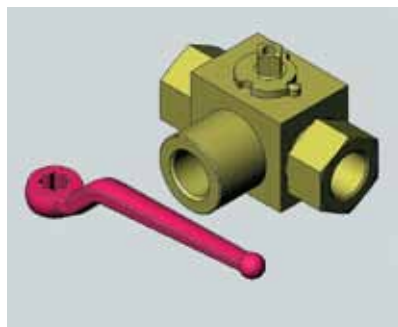
HYDAC Accessories: High Pressure Ball Valves, Steel

2/2-Way Ball Valve KHB / KHM Steel

Features:

- Seals: Ball (POM), O-ring (NBR)
- High pressure version up to 500 bar
- Full port
- Zinc-plated DN 04-25, Phosphate-plated DN 32-50
- Connections in G, LR, SR
- Temperature resistant from -10 °C – +80 °C
- Hand lever in aluminium (straight 01), Zinc die-cast (cranked 04)

Type of connection	DN	Type	Handle	Part No.	Length in mm	PN in bar
G	06	KHB-G1/4	04	3288786	69	500
	10	KHB-G3/8	04	700950	72	500
	13	KHB-G1/2	04	851728	83	500
	16	KHB-G1/2	01	855871	83	400
	20	KHB-G3/4	01	552762	95	315
	25	KHB-G1	01	850711	113	315
	25	KHB-G1 1/4	01	562730	120	315
	32	KHM-G1 1/4	01	700721	110	315
	40	KHM-G1 1/2	01	700724	130	315
	50	KHM-G2	01	700727	140	315
LR	04	KHB-06LR	04	3288754	67	500
	06	KHB-08LR	04	3288813	67	500
	08	KHB-10LR	04	855967	74	500
	10	KHB-12LR	04	704200	74	500
	13	KHB-15LR	04	704800	82	500
	16	KHB-18LR	01	851913	82	400
	20	KHB-22LR	01	707868	101	315
	25	KHB-28LR	01	707869	108	315
	32	KHM-35LR	01	700573	141	315
	40	KHM-42LR	01	700576	162	315
SR	04	KHB-08SR	04	3288829	73	500
	06	KHB-10SR	04	3288837	73	500
	08	KHB-12SR	04	855414	76	500
	13	KHB-16SR	04	854996	86	500
	16	KHB-20SR	01	700602	90	400
	20	KHB-25SR	01	700819	109	315
	25	KHB-30SR	01	707722	120	315
	32	KHM-38SR	01	700658	153	315



HYDAC Accessories: Change-Over Ball Valves, Steel

3/2-Way Ball Valve KHB3K-L Steel

Features:

- Seals: Ball (POM), O-ring (NBR)
- High pressure version up to 500 bar
- Full port
- Zinc-plated DN 04-25, Phosphate-plated DN 32-50
- Connections in G, LR, SR
- Temperature resistant from -10 °C – +80 °C
- Hand lever in aluminium (straight 01), Zinc die-cast (cranked 04)

Type of connection	DN	Type	Handle	Part No.	Length in mm	PN in bar
G	06	KHB3K-G1/4-L	04	3248008	69	500
	10	KHB3K-G3/8-L	04	703308	72	500
	13	KHB3K-G1/2-L	04	703309	83	500
	16	KHB3K-G1/2-L	01	557811	83	400
	20	KHB3K-G3/4-L	01	702891	95	315
	25	KHB3K-G1-L	01	398948	113	315
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



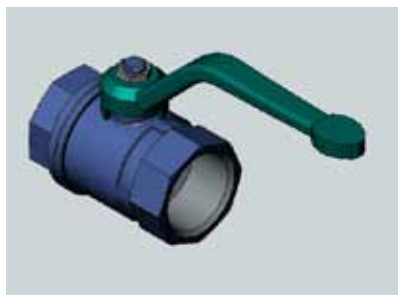
HYDAC Accessories: High Pressure Ball Valves, Stainless Steel

2/2-Way Ball Valves KHM Stainless steel

Features:

- High pressure version up to 500 bar
- Full port
- Connections in G, LR, SR
- Temperature resistant from -20 °C – +80 °C
- Handle in aluminium (straight 01)
- Seals: Ball (POM), O-ring (VITON)

Type of connection	DN	Type	Handle	Part No.	Length in mm	PN in bar
G	06	KHM-G1/4	01	3146514	69	500
	10	KHM-G3/8	01	854863	72	500
	16	KHM-G1/2	01	398245	83	400
	20	KHM-G3/4	01	851545	95	315
	25	KHM-G1	01	851546	113	315
	32	KHM-G11/4	01	851547	110	315
	40	KHM-G11/2	01	851548	130	315
	50	KHM-G2	01	398246	140	315
LR	04	KHM-06LR	01	3289261	67	500
	06	KHM-08LR	01	3289263	67	500
	08	KHM-10LR	01	3178451	74	500
	10	KHM-12LR	01	3178452	74	500
	12	KHM-15LR	01	398238	82	400
	16	KHM-18LR	01	398239	82	400
	20	KHM-22LR	01	398240	101	315
	25	KHM-28LR	01	398242	108	315
	32	KHM-35LR	01	398243	141	315
	40	KHM-42LR	01	855253	162	315
SR	04	KHM-08SR	01	3289264	73	500
	06	KHM-10SR	01	3289275	73	500
	08	KHM-12SR	01	3178457	76	500
	12	KHM-16SR	01	851742	86	400
	16	KHM-20SR	01	700648	90	400
	20	KHM-25SR	01	851549	109	400
	25	KHM-30SR	01	397753	120	315
	32	KHM-38SR	01	851550	153	315



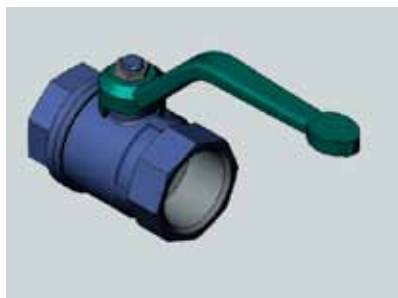
HYDAC Accessories: Low Pressure Ball Valves

2/2-Way Low Pressure Ball Valve KHNVN / KHNVS Brass

Features:

- Cost-competitive version
- Cranked handle in aluminium
- With PTFE sealing cups
- Suitable for water, air and nitrogen

DN	Type	Part No.	Length in mm	PN in bar
16	KHNVN-G1/2-2233-12X	702152	50.5	50
20	KHNVN-G3/4-2233-12X	702153	57.5	40
25	KHNVN-G1-2233-12X	702154	70	40
32	KHNVN-G11/4-2233-12X	702155	80.5	30
40	KHNVN-G11/2-2233-12X	702156	94	30
50	KHNVN-G2-2233-12X	702157	112.5	25
06	KHNVS-Rp1/4-2233-12X	702164	49.5	50
10	KHNVS-Rp3/8-2233-12X	702165	52.5	50
16	KHNVS-Rp1/2-2233-12X	551093	61	50
20	KHNVS-Rp3/4-2233-12X	551094	68	40
25	KHNVS-Rp1-2233-12X	551095	85	40
32	KHNVS-Rp11/4-2233-12X	551096	99.5	30
40	KHNVS-Rp11/2-2233-12X	551097	109	30
50	KHNVS-Rp2-2233-12X	551098	130	25
65	KHNVS-Rp21/2-2233-12X	702172	152	16
80	KHNVS-Rp3-2233-12X	702173	177	16
100	KHNVS-Rp4-2233-12X	702174	214	16



HYDAC Accessories: Low Pressure Ball Valves

2/2-Way Low Pressure Ball Valve KHNVN / KHNVS Stainless steel

Features:

- Cost-competitive version
- Cranked handle in stainless steel
- With PTFE sealing cups
- Suitable for water, air and nitrogen

DN	Type	Part No.	Length in mm	PN in bar
06	KHNVN-G1/4-3333-18X	398344	53.5	64
10	KHNVN-G3/8-3333-18X	398345	53.5	64
16	KHNVN-G1/2-3333-18X	398346	60	64
20	KHNVN-G3/4-3333-18X	398347	70	40
25	KHNVN-G1-3333-18X	398348	79	40
32	KHNVN-G11/4-3333-18X	398349	91	25
40	KHNVN-G11/2-3333-18X	397686	103	25
50	KHNVN-G2-3333-18X	398350	124	25
04	KHNVS-Rp1/8-3333-18X	702434	55.5	140
06	KHNVS-Rp1/4-3333-18X	702402	55.5	140
10	KHNVS-Rp3/8-3333-18X	702403	55.5	140
16	KHNVS-Rp1/2-3333-18X	702404	66	140
20	KHNVS-Rp3/4-3333-18X	702405	79	105
25	KHNVS-Rp1-3333-18X	702406	93	105
32	KHNVS-Rp11/4-3333-18X	702407	100	64
40	KHNVS-Rp11/2-3333-18X	702408	110	64
50	KHNVS-Rp2-3333-18X	702409	131	64



HYDAC Accessories: Gauges, Switches

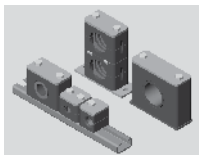
Fluid level gauge **FSA**
Fluid level sensor **FSK**
Temperature Switch **TS/TS-L**

Features:

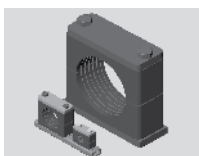
- Impact and scratch resistant
- Highly resistant to leakage
- Precise fluid level gauge
- Very easy to see fluid level
- Operating temperature up to 80 °C
- Highly reliable due to potted connector in protection class IP64

Type	Size = centre distance of bolts	Order code	Part No.
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
	M 12	TS-60/X/12	3233817
	M 12	TS-70/X/12	3233820
FSK	M 12	TS-80/X/12	3243251
	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
	M 12	TS-L-60/X/12	3252752
	M 12	TS-L-70/X/12	3252766
	M 12	TS-L-80/X/12	3252767
TS-L			

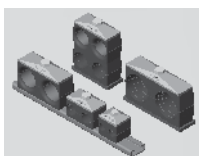
HYDAC Accessories: Mounting Clamps, Overview



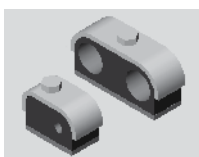
Light Range DIN 3015
Part 1



Heavy range DIN 3015
Part 2



Twin Clamps DIN 3015
Part 3



Buegu clamp



HYDAC Accessories: Mounting Clamps

Light range
DIN 3015 Part 1
Type: Internal surface ribbed

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
1	6	HRL 1 A 6 PP ST M BL	423127
	6.4	HRL 1 A 6.4 PP ST M BL	423128
	8	HRL 1 A 8 PP ST M BL	423129
	9.5	HRL 1 A 9.5 PP ST M BL	423130
	10	HRL 1 A 10 PP ST M BL	423131
	12	HRL 1 A 12 PP ST M BL	423132
2	12.7	HRL 2 A 12.7 PP ST M BL	423133
	13.7	HRL 2 A 13.7 PP ST M BL	423134
	14	HRL 2 A 14 PP ST M BL	423135
	15	HRL 2 A 15 PP ST M BL	423136
	16	HRL 2 A 16 PP ST M BL	423137
	17.1	HRL 2 A 17.1 PP ST M BL	423138
	18	HRL 2 A 18 PP ST M BL	423139
3	19	HRL 3 A 19 PP ST M BL	423140
	20	HRL 3 A 20 PP ST M BL	423141
	21.3	HRL 3 A 21.3 PP ST M BL	423142
	22	HRL 3 A 22 PP ST M BL	423143
	23	HRL 3 A 23 PP ST M BL	423144
	25	HRL 3 A 25 PP ST M BL	423145
	25.4	HRL 3 A 25.4 PP ST M BL	423146
4	26.9	HRL 4 A 26.9 PP ST M BL	423147
	28	HRL 4 A 28 PP ST M BL	423148
	30	HRL 4 A 30 PP ST M BL	423149
5	32	HRL 5 A 32 PP ST M BL	423150
	33.7	HRL 5 A 33.7 PP ST M BL	423151
	35	HRL 5 A 35 PP ST M BL	423152
	38	HRL 5 A 38 PP ST M BL	423153
	40	HRL 5 A 40 PP ST M BL	423154
	42	HRL 5 A 42 PP ST M BL	423155
6	44.5	HRL 6 A 44.5 PP ST M BL	423156
	48.3	HRL 6 A 48.3 PP ST M BL	423157
	50.8	HRL 6 A 50.8 PP ST M BL	423158



HYDAC Accessories: Mounting Clamps

Light range
DIN 3015 Part 1
Type: Internal surface smooth

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
1	6	HRGL 1 A 6 PP ST M BL	439815
	8	HRGL 1 A 8 PP ST M BL	439817
	9.5	HRGL 1 A 9.5 PP ST M BL	439818
	10	HRGL 1 A 10 PP ST M BL	439819
	12	HRGL 1 A 12 PP ST M BL	439820
2	12.7	HRGL 2 A 12.7 PP ST M BL	439875
	13.7	HRGL 2 A 13.7 PP ST M BL	439876
	14	HRGL 2 A 14 PP ST M BL	439877
	15	HRGL 2 A 15 PP ST M BL	439878
	16	HRGL 2 A 16 PP ST M BL	439879
	17.1	HRGL 2 A 17.1 PP ST M BL	439880
	18	HRGL 2 A 18 PP ST M BL	439881
3	19	HRGL 3 A 19 PP ST M BL	439945
	20	HRGL 3 A 20 PP ST M BL	439946
	21.3	HRGL 3 A 21.3 PP ST M BL	439947
	22	HRGL 3 A 22 PP ST M BL	439948
	23	HRGL 3 A 23 PP ST M BL	439949
	25	HRGL 3 A 25 PP ST M BL	439950
	25.4	HRGL 3 A 25.4 PP ST M BL	439951
4	26.9	HRGL 4 A 26.9 PP ST M BL	440015
	28	HRGL 4 A 28 PP ST M BL	440016
	30	HRGL 4 A 30 PP ST M BL	440017
5	32	HRGL 5 A 32 PP ST M BL	440045
	33.7	HRGL 5 A 33.7 PP ST M BL	440046
	35	HRGL 5 A 35 PP ST M BL	440047
	38	HRGL 5 A 38 PP ST M BL	440048
	40	HRGL 5 A 40 PP ST M BL	440049
	42	HRGL 5 A 42 PP ST M BL	440050
6	44.5	HRGL 6 A 44.5 PP ST M BL	440105
	48.3	HRGL 6 A 48.3 PP ST M BL	440106
	50.8	HRGL 6 A 50.8 PP ST M BL	440107



HYDAC Accessories: Mounting Clamps

Light range
DIN 3015 Part 1
Type: With elastomer insert

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
4	6	HREL 4 A 6 PP ST M BL	435001
	8	HREL 4 A 8 PP ST M BL	435002
	10	HREL 4 A 10 PP ST M BL	435003
	12	HREL 4 A 12 PP ST M BL	435004
	12.7	HREL 4 A 12.7 PP ST M BL	435005
	14	HREL 4 A 14 PP ST M BL	435006
	15	HREL 4 A 15 PP ST M BL	435007
	16	HREL 4 A 16 PP ST M BL	435008
	17.2	HREL 4 A 17.2 PP ST M BL	435009
	18	HREL 4 A 18 PP ST M BL	444515
	19	HREL 4 A 19 PP ST M BL	435010
6	20	HREL 6 A 20 PP ST M BL	435641
	21.3	HREL 6 A 21.3 PP ST M BL	3001709
	22	HREL 6 A 22 PP ST M BL	435642
	23	HREL 6 A 23 PP ST M BL	445027
	25	HREL 6 A 25 PP ST M BL	435643
	26.9	HREL 6 A 26.9 PP ST M BL	435644
	28	HREL 6 A 28 PP ST M BL	435645
	30	HREL 6 A 30 PP ST M BL	435646
	32	HREL 6 A 32 PP ST M BL	435647



HYDAC Accessories: Mounting Clamps

Heavy range
DIN 3015 Part 2
Type: Internal surface ribbed

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
1	6	HRS 1 S 6 PP ST M BL	420000
	6.4	HRS 1 S 6.4 PP ST M BL	420001
	8	HRS 1 S 8 PP ST M BL	420002
	9.5	HRS 1 S 9.5 PP ST M BL	420003
	10	HRS 1 S 10 PP ST M BL	420004
	12	HRS 1 S 12 PP ST M BL	420006
	12.7	HRS 1 S 12.7 PP ST M BL	420007
	13.7	HRS 1 S 13.7 PP ST M BL	420008
	14	HRS 1 S 14 PP ST M BL	420009
	15	HRS 1 S 15 PP ST M BL	420010
	16	HRS 1 S 16 PP ST M BL	420011
	17.1	HRS 1 S 17.1 PP ST M BL	420012
	18	HRS 1 S 18 PP ST M BL	420013
2	19	HRS 2 S 19 PP ST M BL	420014
	20	HRS 2 S 20 PP ST M BL	420015
	21.3	HRS 2 S 21.3 PP ST M BL	420016
	22	HRS 2 S 22 PP ST M BL	420017
	25	HRS 2 S 25 PP ST M BL	420018
	25.4	HRS 2 S 25.4 PP ST M BL	420019
	26.7	HRS 2 S 26.7 PP ST M BL	420020
	28	HRS 2 S 28 PP ST M BL	420021
	30	HRS 2 S 30 PP ST M BL	441349
3	30	HRS 3 S 30 PP ST M BL	420022
	32	HRS 3 S 32 PP ST M BL	420023
	33.7	HRS 3 S 33.7 PP ST M BL	420024
	35	HRS 3 S 35 PP ST M BL	420025
	38	HRS 3 S 38 PP ST M BL	420026
	40	HRS 3 S 40 PP ST M BL	420027
	42	HRS 3 S 42 PP ST M BL	420028
4	38	HRS 4 S 38 PP ST M BL	420030
	42	HRS 4 S 42 PP ST M BL	420031
	44.5	HRS 4 S 44.5 PP ST M BL	420032
	48.3	HRS 4 S 48.3 PP ST M BL	420033
	50.8	HRS 4 S 50.8 PP ST M BL	420034
	55	HRS 4 S 55 PP ST M BL	441571
	57	HRS 4 S 57 PP ST M BL	420036
	60.3	HRS 4 S 60.3 PP ST M BL	420037
	63.5	HRS 4 S 63.5 PP ST M BL	441578
	65	HRS 4 S 65 PP ST M BL	420038
	70	HRS 4 S 70 PP ST M BL	420039



HYDAC Accessories: Mounting Clamps

Heavy range
DIN 3015 Part 2
Type: With elastomer insert

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
2	6	HRES 2 S 6 PP ST M BL	433457
	8	HRES 2 S 8 PP ST M BL	433458
	10	HRES 2 S 10 PP ST M BL	433459
	12	HRES 2 S 12 PP ST M BL	433460
	12.7	HRES 2 S 12.7 PP ST M BL	433461
	14	HRES 2 S 14 PP ST M BL	433462
	15	HRES 2 S 15 PP ST M BL	433463
	16	HRES 2 S 16 PP ST M BL	433464
	17.2	HRES 2 S 17.2 PP ST M BL	433465
	18	HRES 2 S 18 PP ST M BL	443460
	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 clamps
DIN 3015 Part 3
Type: Internal surface ribbed

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
1	6	HRZ 1 A 6-6 PP ST M BL	43060
	6.4	HRZ 1 A 6.4-6.4 PP ST M BL	430609
	8	HRZ 1 A 8-8 PP ST M BL	430610
	9.5	HRZ 1 A 9.5-9.5 PP ST M BL	430611
	10	HRZ 1 A 10-10 PP ST M BL	430612
	12	HRZ 1 A 12-12 PP ST M BL	430613
2	12.7	HRZ 2 A 12.7-12.7 PP ST M BL	430614
	13.7	HRZ 2 A 13.7-13.7 PP ST M BL	430615
	14	HRZ 2 A 14-14 PP ST M BL	430616
	15	HRZ 2 A 15-15 PP ST M BL	430617
	16	HRZ 2 A 16-16 PP ST M BL	430618
	17.1	HRZ 2 A 17.1-17.1 PP ST M BL	430619
	18	HRZ 2 A 18-18 PP ST M BL	430620
3	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
	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
4	26.6	HRZ 4 A 26.6-26.6 PP ST M BL	430628
	28	HRZ 4 A 28-28 PP ST M BL	430629
	30	HRZ 4 A 30-30 PP ST M BL	430630
5	32	HRZ 5 A 32-32 PP ST M BL	430631
	33.7	HRZ 5 A 33.7-33.7 PP ST M BL	430632
	35	HRZ 5 A 35-35 PP ST M BL	430633
	38	HRZ 5 A 38-38 PP ST M BL	430634
	40	HRZ 5 A 40-40 PP ST M BL	430635
	42	HRZ 5 A 42-42 PP ST M BL	430636



HYDAC Accessories: Mounting Clamps

Twin clamps
DIN 3015 Part 3
Type: Internal surface smooth

Features:

- I International standard
- I Worldwide availability

Size
1
2
3
4
5

Pipe diameter Ø in mm	Order code	Part No.
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
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
19	HRGZ 3 A 19-19 PP ST M BL	444032
20	HRGZ 3 A 20-20 PP ST M BL	443266
22	HRGZ 3 A 22-22 PP ST M BL	443659
23	HRGZ 3 A 23-23 PP ST M BL	443552
25	HRGZ 3 A 25-25 PP ST M BL	3255780
26.6	HRGZ 4 A 26.6-26.6 PP ST M BL	3142660
30	HRGZ 4 A 30-30 PP ST M BL	3056357
32	HRGZ 5 A 32-32 PP ST M BL	3204419



HYDAC Accessories: Mounting Clamps

Buegu clamp

Features:

- International standard
- Worldwide availability

Size	Pipe diameter Ø in mm	Order code	Part No.
0a	6	HRBGS 0a A 6 TPE ST M BL	441418
	8	HRBGS 0a A 8 TPE ST M BL	441419
	9.5	HRBGS 0a A 9.5 TPE ST M BL	444868
	10	HRBGS 0a A 10 TPE ST M BL	441420
	12	HRBGS 0a A 12 TPE ST M BL	441421
0b	12.7	HRBGS 0b A 12.7 TPE ST M BL	444876
	14	HRBGS 0b A 14 TPE ST M BL	441422
	15	HRBGS 0b A 15 TPE ST M BL	441480
	16	HRBGS 0b A 16 TPE ST M BL	441423
	18	HRBGS 0b A 18 TPE ST M BL	441732
	19	HRBGS 0b A 19 TPE ST M BL	442666
	20	HRBGS 0b A 20 TPE ST M BL	444344
1	6 - 6	HRBGS 1 A 6-6 TPE ST M BL	441492
	8 - 8	HRBGS 1 A 8-8 TPE ST M BL	441985
	10 - 10	HRBGS 1 A 10-10 TPE ST M BL	441425
	12 - 12	HRBGS 1 A 12-12 TPE ST M BL	441427
2	14 - 14	HRBGS 2 A 14-14 TPE ST M BL	3087396
	15 - 15	HRBGS 2 A 15-15 TPE ST M BL	441486
	16 - 16	HRBGS 2 A 16-16 TPE ST M BL	441430
	18 - 18	HRBGS 2 A 18-18 TPE ST M BL	441431
	19 - 19	HRBGS 2 A 19-19 TPE ST M BL	444869
	20 - 20	HRBGS 2 A 20-20 TPE ST M BL	441432



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You will find a local contact on the "Company / Locations" page on our web site.



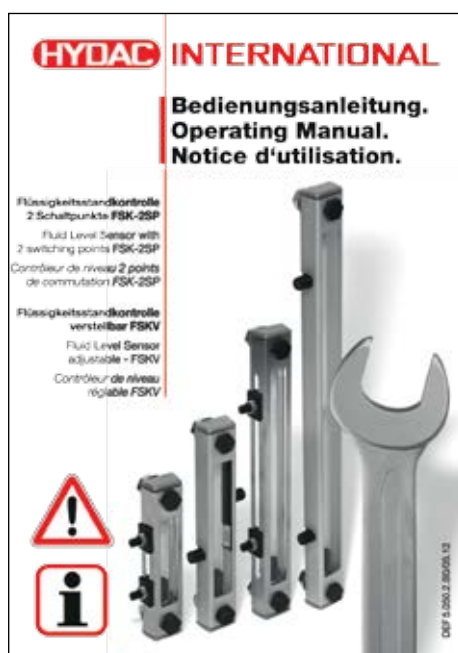
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OPERATING MANUAL

Fluid Level Sensor FSK
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OPERATING MANUAL
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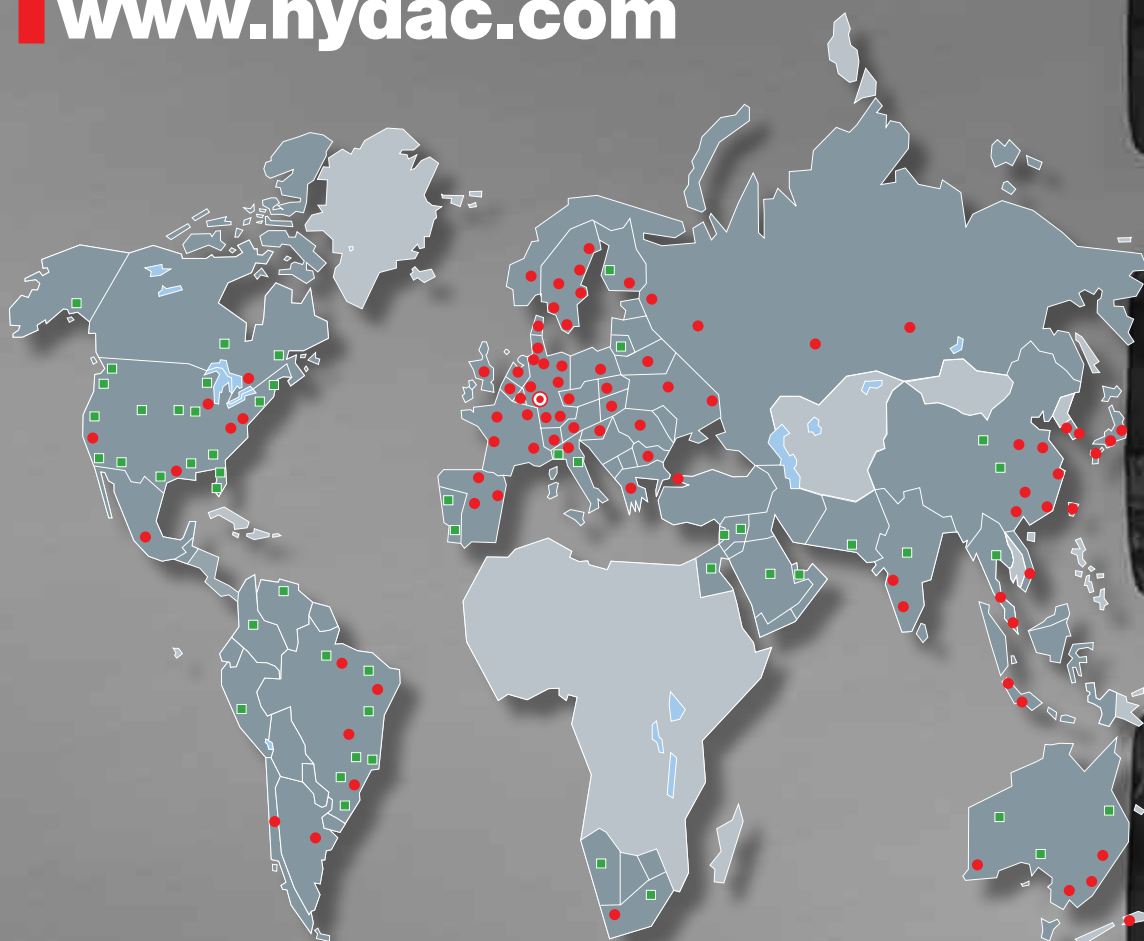


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