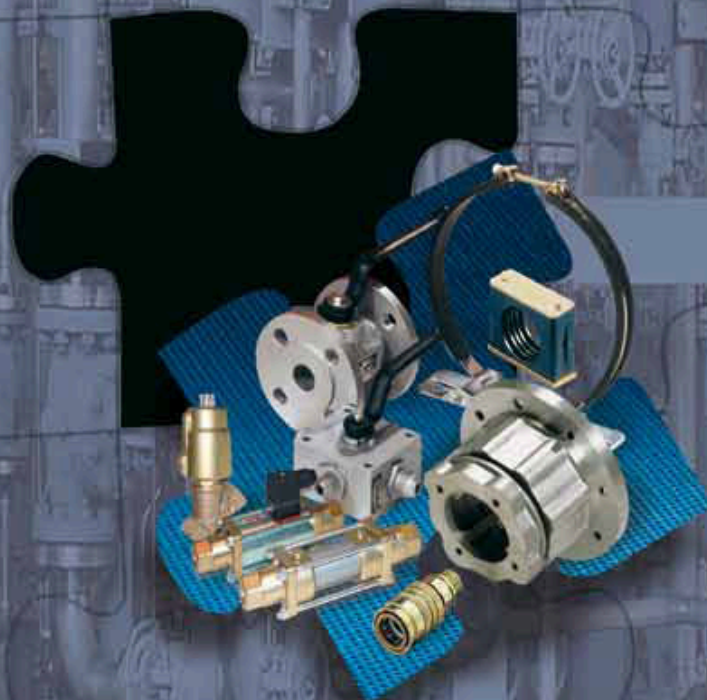


HYDAC

INTERNATIONAL



**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:

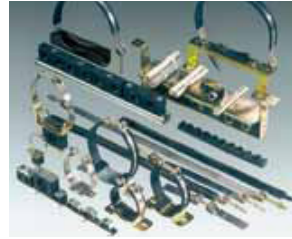
- **Automotive industry**
- **Vehicle technology**
- **Construction machinery**
- **Agricultural machinery**
- **Lifting and material handling technology**
- **Rail technology**
- **Machine tools**
- **Plastic injection moulding machines**
- **Paint spray plants**
- **Hydraulic presses**
- **Mechanical 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



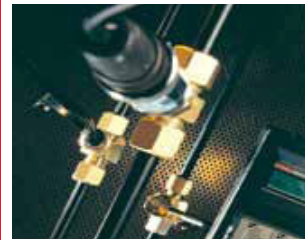
Mounting technology



Quick release couplings



Ball valves



Test points



Bell housings and dampers



Fluid level gauge/control



Tank sets



Multi-station gauge isolators

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.

CATALOGUE INDEX

PAGE

INDUSTRY INDEX	4
BALL VALVES	7
Standard ball valves; Low pressure ball valves; Flange type ball valves; ANSI Flange ball valves; SAE Flange ball valves; Direct flange ball valves 3/2-way ball valves; Change-over low pressure ball valves; 3-way and 4-way ball valves; 3-way and 4-way manifold ball valves; Manifold mounted ball valves Spring-return isolator, Isolator sandwich plate CETOP Ball valves with pneumatic / electrical actuator; Lockable ball valves; Ball valves with electrical limit controls; Handles Three-way safety block DSV; Compatibility list	
HY-ROS MOUNTING TECHNOLOGY	119
Mounting clamp DIN 3015; Diagonal clamp; Buegu clamp; Oval clamp; Series strips; U-bolt clamps; Flat steel bolt clamps Swivel bolt clamps; Clamps for mounting pipes/hoses to cylinders; Sensor clamp; Rubber tank bush Mounting elements for hydraulic accumulators	
BELL HOUSINGS	233
Bell housings with flexible pump mounting; Bell housings with rigid pump mounting; Bell housings with oil/air coolers; Flexible drive couplings; Curved-tooth couplings; Bell housing foot brackets; Bell housing mounting plate; Damping rails; Damping rings; Tank set	
COAXIAL VALVES / PISTON VALVES	253
2/2-Way Pressure Relief Valves	
TEST POINTS	289
QUICK RELEASE COUPLINGS	299
MULTI-STATION GAUGE ISOLATORS	349
FLUID LEVEL GAUGES / FLUID LEVEL SENSORS	357
BUYER'S GUIDE / STOCK ITEMS	367
OPERATING MANUALS	387

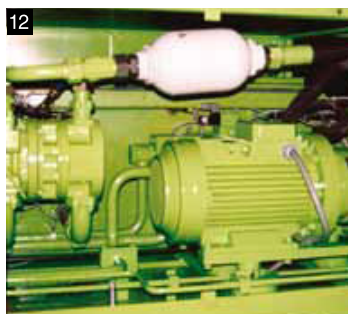
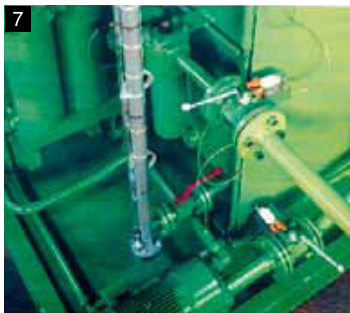
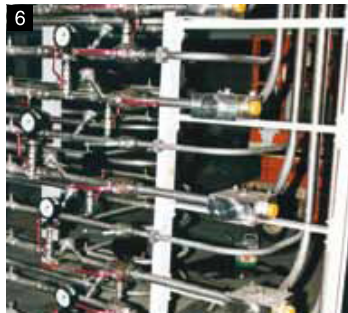
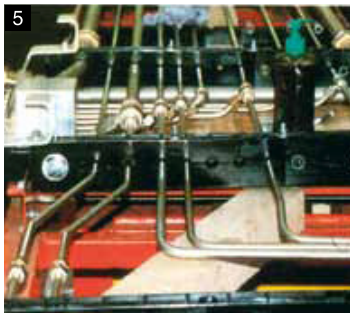
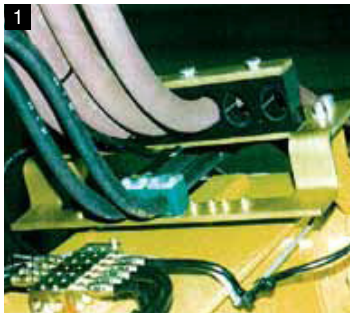
HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com



ACCESSORIES FOR EVERY SECTOR.

Your professional partner for...

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

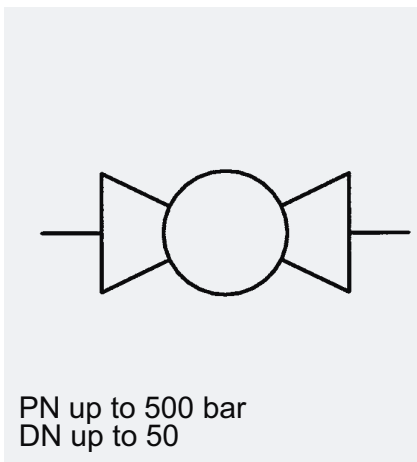


HYDAC ACCESSORIES FOR ALMOST EVERY APPLICATION

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

Extensive information is available on applications and products.





Ball valves KHB / KHM

Model code
(also order example)

KHB G 1/2 1112 01 X .

Designation

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

Type of connection

Thread size or
Outside diameter of pipe
and type of connection

Materials

Housing, connection adapters and control spindle

1 = Steel
3 = Stainless steel

Ball

1 = Steel
3 = Stainless steel

Ball seals

1 = POM
3 = PTFE
8 = Peek

Control spindle seal and connection seal

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

Handle

01 = Aluminium clamped handle, straight (AG) DN 12 - 50
02 = Aluminium clamped handle, cranked (AK) DN 12 - 50
03 = Zinc die-cast clamped handle, straight (ZG) DN 04 - 10, 13
04 = Zinc die-cast bolt-on handle, cranked (ZK) DN 04 - 10, 13
06 = Steel bolt-on handle, cranked (SK) DN 12 - 50
09 = Without handle

Series

(determined by manufacturer)

Surface protection

... = phosphate-plated (no details required)
A = zinc-plated, chrome (VI)-free

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

Technical specifications

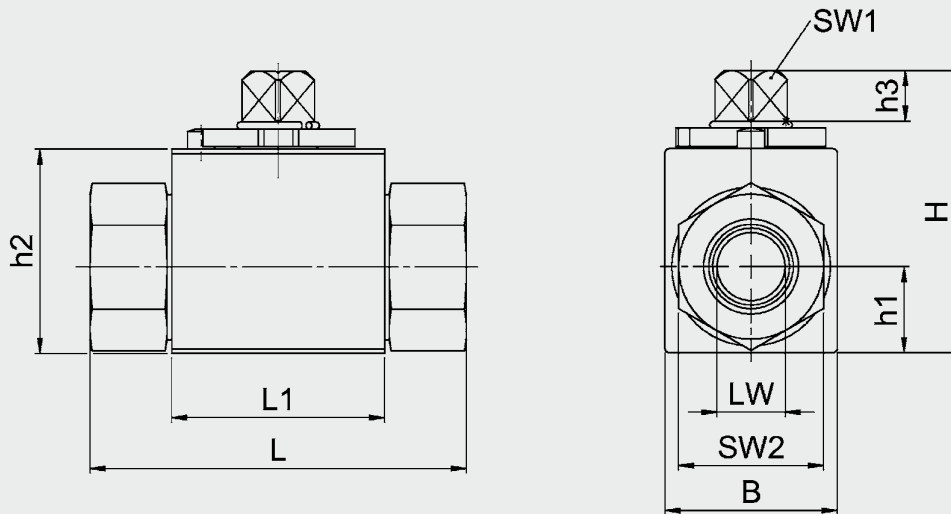
Construction:	Block-type KHB DN 04 - 25 Sleeve-type KHM DN 32 - 50
Types of connection:	Light and heavy threaded pipe connection to DIN 2353 Whitworth female thread to ISO 228 NPT SAE
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 500 bar
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
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

Hydraulic data

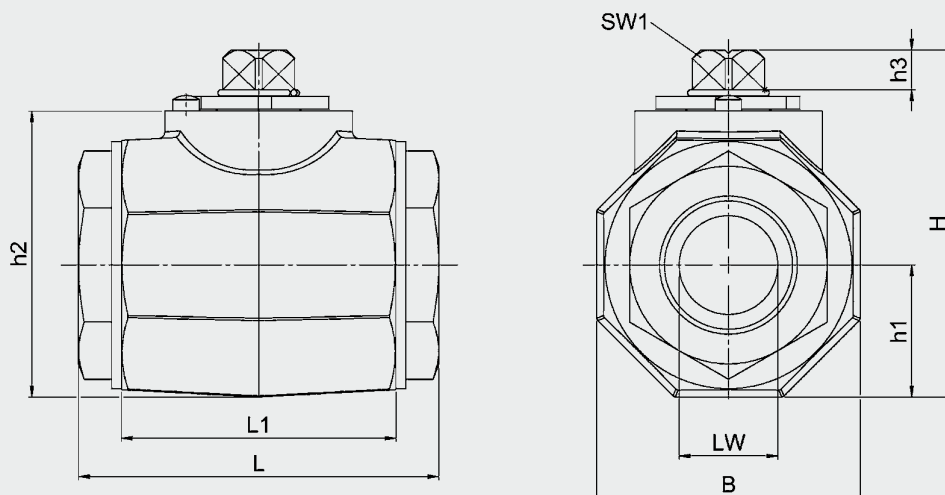
Nominal pressure	PN 315 bar up to PN 500 bar (see Table)
Operating fluids	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid	-10 °C to +80 °C

Dimensions

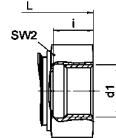
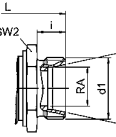
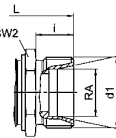
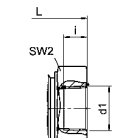
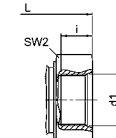
KHB



KHM



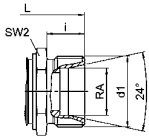
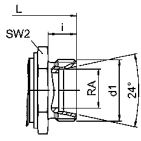
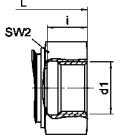
Steel

Connection type	Type	DN	LW	RA	d1	i	L	L1	B	H	h1	h2	h3	SW1	SW2	Wt. [kg]	Nom. press. PN [bar]
DIN ISO 228 Female thread 	KHB-G1/8	4	8	-	G1/8	10	69	37	26	44	13	32	7	9	22	0.29	500
	KHB-G1/4	6	8	-	G1/4	14	69	37	26	44	13	32	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	38	62	19	45	11	12	32	0.7	400
	KHB-G3/4	20	20	-	G3/4	18	95	60	48	75	24.5	57	11.6	14	41	1.3	315
	KHB-G1	25	25	-	G1	20.5	113	65	57	82	28.5	64	11.6	14	50	2.03	315
	KHB-G11/4	25/32	25	-	G11/4	22	120	65	57	82	28.5	64	11.6	14	50		315
	KHM-G11/4	32	30	-	G11/4	22	109.4	83.4	80	105.2	40	86.7	12	17	60	3.1	315
	KHM-G11/2	40	38	-	G11/2	24	130	91	90	116.2	45	97.7	12	17	70	4.4	315
	KHM-G2	50	48	-	G2	28	140	100	111	134.2	55.5	115.7	12	17	80	6.6	315
DIN 2353 Light range 	KHB-06LR	4	4	6	M12x1.5	7	67	37	26	44	13	32	7	9	22	0.26	500
	KHB-08LR	6	6	8	M14x1.5	7	67	37	26	44	13	32	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	38	62	19	45	11.6	12	32	0.64	400
	KHB-18LR	13	12	18	M26x1.5	12	82	47	35	53	17	40	8.5	9	30	0.63	400
	KHB-18LR	16	15	18	M26x1.5	12	82	47	38	62	19	45	11	12	32	1.25	315
	KHB-22LR	20	19	22	M30x2	14	101	60	48	75	24.5	57	11.6	14	41	1.54	315
	KHB-28LR	25	24	28	M36x2	14	108	65	57	82	28.5	64	11.6	14	50	1.54	315
	KHB-35LR	25/32	25	35.3	M45x2	16	112	65	57	82	28.5	64	11.6	14	50		315
	KHM-35LR	32	30	35.3	M45x2	16	141.4	83.4	80	105.2	40	86.7	12	17	60	3.36	315
	KHM-42LR	40	36	42.3	M52x2	16	162	91	90	116.2	45	97.7	12	17	70	4.88	315
DIN 2353 Heavy range 	KHB-08SR	4	5	8	M16x1.5	7	73	37	26	44	13	32	7	9	22	0.28	500
	KHB-10SR	6	7	10	M18x1.5	7.5	73	37	26	44	13	32	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		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	38	62	19	45	11.6	12	32	0.65	400
	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	38	62	19	45	11	12	32	0.67	400
	KHB-25SR	20	20	25	M36x2	18	109	60	48	75	24.5	57	11.6	14	41	1.32	315
	KHB-30SR	25	25	30	M42x2	20	120	65	57	82	28.5	64	11.6	14	50	1.87	315
	KHB-38SR	25/32	25	38.3	M52x2	22	124	65	57	82	28.5	64	11.6	14	55		315
KHM-38SR	32	30	38.3	M52x2	22	153.4	83.4	80	105.2	40	86.7	12	17	60	3.43	315	
ANSI B1.20.1 NPT female thread 	KHB-06NPT	6	8	-	1/4 - 18 NPT	6.7	69	37	26	44	13	32	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	38	62	19	45	11	12	32	0.75	400
	KHB-20NPT	20	20	-	3/4 - 14 NPT	13.86	95	60	48	75	24.5	57	11.6	14	41	1.3	350
	KHB-25NPT	25	25	-	1 - 11 1/2 NPT	17.34	113	65	57	82	28.5	64	11.6	14	50	2	350
	KHM-32NPT	32	30	-	1 1/4 - 11 1/2 NPT	17.95	109.4	83.4	80	105.2	40	86.7	12	17	60	3.1	350
	KHM-40NPT	40	38	-	1 1/2 - 11 1/2 NPT	18.38	130	91	90	116.2	45	97.7	12	17	70	4.4	350
	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	350
SAE J 5/4 UN/UNF Female thread 	KHB-06SAE	6	8	-	7/16 - 20 UNF	12	69	37	26	44	13	32	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	38	62	19	45	11	12	32	0.75	400
	KHB-20SAE	20	20	-	1 1/16 - 12 UN	20	95	60	48	75	24.5	57	11.6	14	41	1.3	350
	KHB-25SAE	25	25	-	1 5/16 - 12 UN	20	113	65	57	82	28.5	64	11.6	14	50	2	350
	KHM-32SAE	32	30	-	1 5/8 - 12 UN	20	109.4	83.4	80	105.2	40	86.7	12	17	60	3.1	350
	KHM-40SAE	40	38	-	1 7/8 - 12 UN	20	130	91	90	116.2	45	97.7	12	17	70	4.4	350
	KHM-50SAE	50	48	-	2 1/2 - 12 UN	20	140	100	111	134.2	55.5	115.7	12	17	80	6.6	350

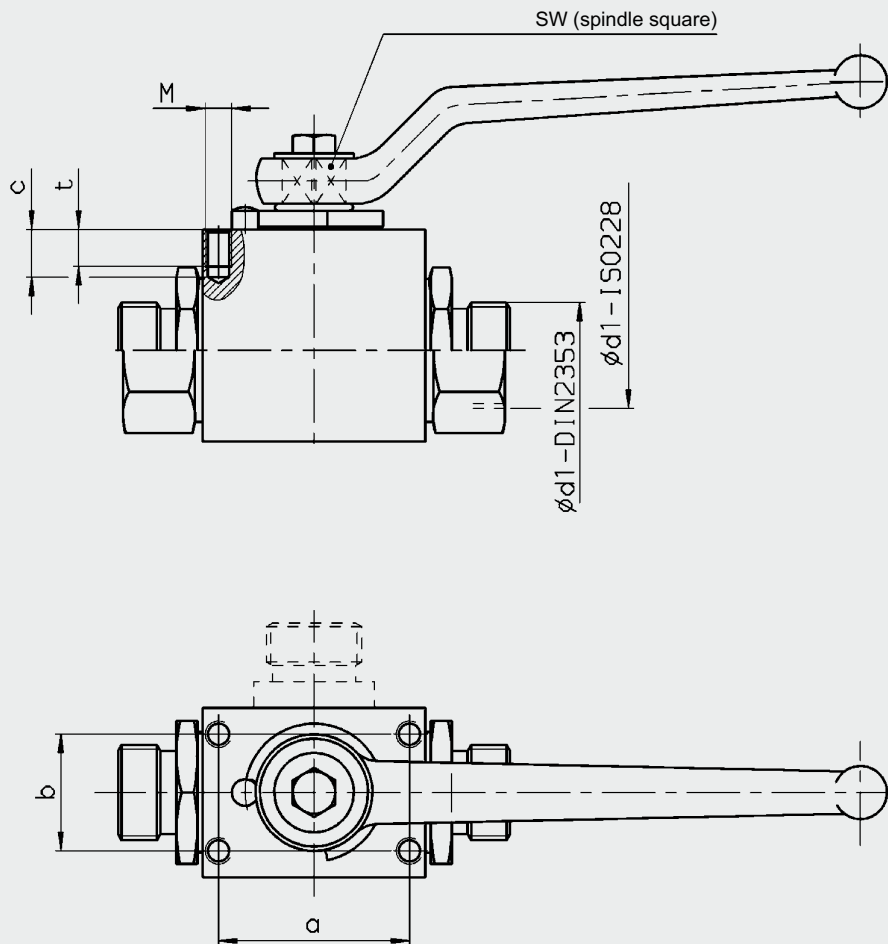
E 5.501.20/03.10

Stainless steel

Connection type	Type	DN	LW	RA	d1	i	L	L1	B	H	h1	h2	h3	SW1	SW2	Wt. [kg]	Nom. press. PN [bar]
DIN ISO 228 Female thread	KHM-G1/8	4	8	-	G1/8	10	69	36	31	46.2	15.5	34.5	7	9	22	0.39	500
	KHM-G1/4	6	8	-	G1/4	14	69	36	31	46.2	15.5	34.5	7	9	22	0.39	500
	KHM-G3/8	10	10	-	G3/8	14	72	41	36	54	18	40.8	8.5	9	27	0.45	500
	KHM-G1/2	13	12	-	G1/2	16	84	41	36	54	18	40.8	8.5	9	30	0.53	500
	KHM-G1/2	16	15	-	G1/2	16	82.8	45.8	45	65.7	22.5	48.5	11	12	32	0.7	400
	KHM-G3/4	20	20	-	G3/4	18	95	58.3	55	77.8	27.5	60	11.6	14	41	1.64	315
	KHM-G1	25	25	-	G1	20.5	113	63.5	65	85.6	32.5	68	11.6	14	50	2.05	315
	KHM-G11/4	32	30	-	G11/4	22	109.4	83.4	80	105.2	40	86.7	12	17	60	3.29	315
	KHM-G11/2	40	38	-	G11/2	24	130	91	90	116.2	45	97.7	12	17	70	4	315
	KHM-G2	50	48	-	G2	28	140	100	111	134.2	55.5	115.7	12	17	80	6.82	315
DIN 2353 Light range	KHM-06LR	4	4	6	M12x1.5	10	67	36	31	46.2	15.5	34.5	7	9	22	0.38	500
	KHM-08LR	6	6	8	M14x1.5	10	67	36	31	46.2	15.5	34.5	7	9	22	0.38	500
	KHM-10LR	8	8	10	M16x1.5	11	74	41	36	54	18	40.8	8.5	9	27	0.62	500
	KHM-12LR	10	10	12	M18x1.5	11	74	41	36	54	18	40.8	8.5	9	27	0.62	500
	KHM-15LR	13	12	15	M22x1.5	12	82	41	36	54	18	40.8	8.5	9	30	0.74	500
	KHM-15LR	12	12	15	M22x1.5	12	81.8	45.8	45	65.7	22.5	48.5	11	12	32	0.64	400
	KHM-18LR	13	12	18	M26x1.5	12	82	41	36	54	18	40.8	8.5	9	30	0.95	400
	KHM-18LR	16	15	18	M26x1.5	12	81.8	45.8	45	65.7	22.5	48.5	11	12	32	0.65	315
	KHM-22LR	20	19	22	M30x2	14	101	58.3	55	77.8	27.5	60	11.6	14	41	1.74	315
	KHM-28LR	25	24	28	M36x2	14	108	63.5	65	85.6	32.5	68	11.6	14	50	2.75	315
	KHM-35LR	32	30	35.3	M45x2	16	141.4	83.4	80	105.2	40	86.7	12	17	60	3.7	315
	KHM-42LR	40	36	42.3	M52x2	16	162	91	90	116.2	45	97.7	12	17	70	4.9	315
DIN 2353 Heavy range	KHM-08SR	4	5	8	M16x1.5	12	73	36	31	46.2	15.5	34.5	7	9	22	0.39	500
	KHM-10SR	6	7	10	M18x1.5	12	73	36	31	46.2	15.5	34.5	7	9	22	0.39	500
	KHM-12SR	8	8	12	M20x1.5	12	76	41	36	54	18	40.8	8.5	9	27	0.62	500
	KHM-14SR	10	10	14	M22x1.5	14	80	41	36	54	18	40.8	8.5	9	27	0.64	500
	KHM-16SR	13	12	16	M24x1.5	14	86	41	36	54	18	40.8	8.5	9	30	0.77	500
	KHM-16SR	12	12	16	M24x1.5	14	85.8	45.8	45	65.7	22.5	48.5	11	12	32	0.66	400
	KHM-20SR	13	12	20	M30x2	16	90	41	36	54	18	40.8	8.5	9	32	0.87	500
	KHM-20SR	16	15	20	M30x2	16	89.8	45.8	45	65.7	22.5	48.5	11	12	32	0.69	400
	KHM-25SR	20	20	25	M36x2	18	109	58.3	55	77.8	27.5	60	11.6	14	41	1.85	315
	KHM-30SR	25	25	30	M42x2	20	120	63.5	65	85.6	32.5	68	11.6	14	50	2.96	315
KHM-38SR	32	30	38.3	M52x2	22	153.4	83.4	80	105.2	40	86.7	12	17	60	3.89	315	



Dimensions of mounting bore



DIN ISO 228

$\phi d1$	DN	SW	a	b	M	t	c
G 1/8	04	09	28	18	M4	6	8
G 1/4	06	09	28	18	M4	6	8
G 3/8	10	09	36	22	M5	7	9
G 1/2*	13	09	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
G 1	25	14	45	28	M6	9	11

DIN 2353 Light Range

$\phi d1$	DN	SW	a	b	M	t	c
06LR	04	09	28	18	M4	6	8
08LR	06	09	28	18	M4	6	8
10LR	08	09	36	22	M5	7	9
12LR	10	09	36	22	M5	7	9
15LR	12	12	36	22	M5	7	9
15LR*	13	09	36	22	M5	7	9
18LR	16	12	36	22	M5	7	9
18LR*	13	09	36	22	M5	7	9
22LR	20	14	45	28	M6	9	11
28LR	25	14	45	28	M6	9	11

DIN 2354 Heavy Range

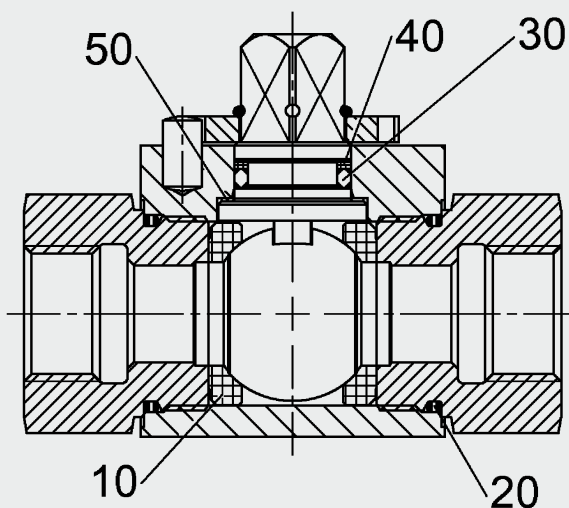
$\phi d1$	DN	SW	a	b	M	t	c
08SR	04	09	28	18	M4	6	8
10SR	06	09	28	18	M4	6	8
12SR	08	09	36	22	M5	7	9
14SR	10	09	36	22	M5	7	9
16SR	12	12	36	22	M5	7	9
16SR*	13	09	36	22	M5	7	9
20SR	16	12	36	22	M5	7	9
20SR*	13	09	36	22	M5	7	9
25SR	20	14	45	28	M6	9	11
30SR	25	14	45	28	M6	9	11

* reduced bore

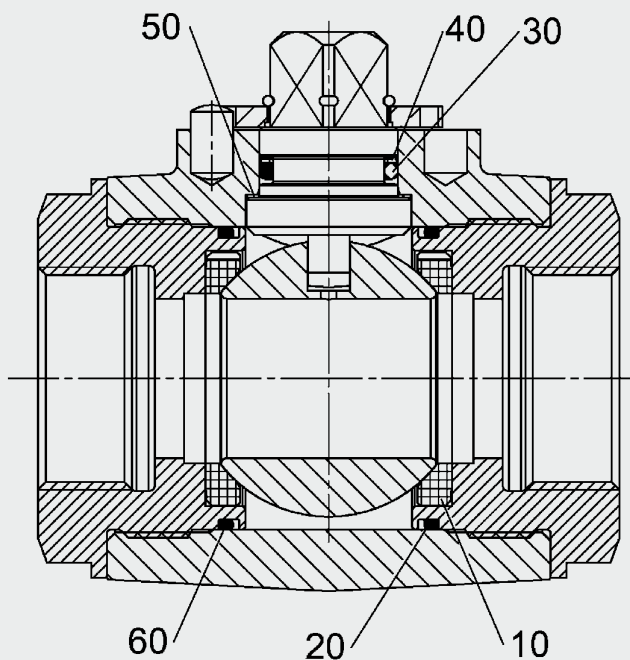
Spare parts

(Seal kit)

KHB, DN 04 - 25



KHM, DN 32 - 50



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

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

NOTE

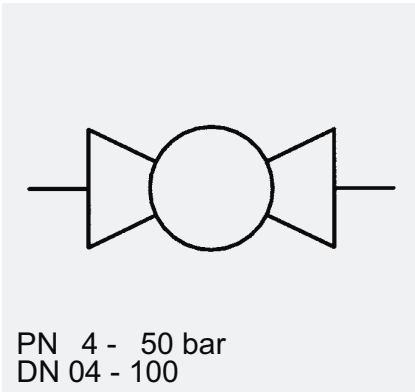
The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.

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
 (German Technical Association for Gas & Water)

Connection type

Thread Size

Materials

Housing, control spindle
 2 = brass, nickel-plated

Ball
 2 = brass, chrome-plated

Ball seals
 3 = PTFE

Soft seals
 2 = NBR (Perbunan)
 3 = PTFE

Handle

12 = aluminium handle, cranked, supplied fitted

Series

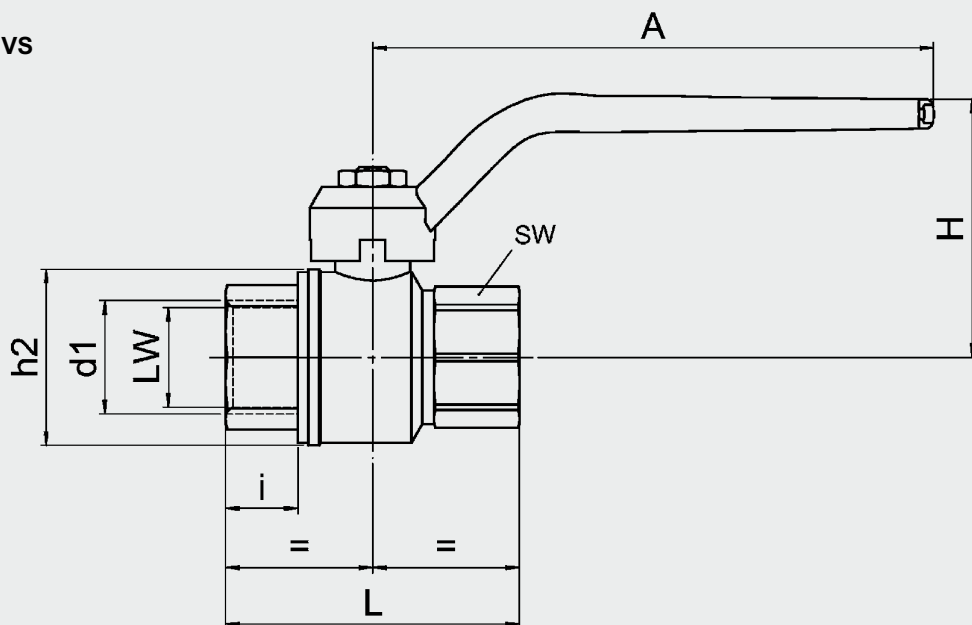
(determined by manufacturer)

Approval

DIN-DVGW (KHN only)

Dimensions

KHNVN / KHNVS

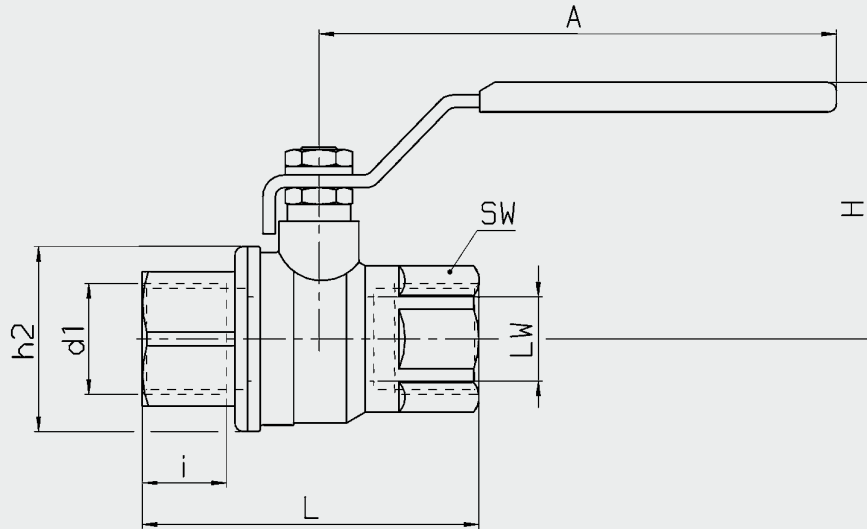


Type	d1	L [mm]	h2 [mm]	H [mm]	A [mm]	i [mm]	LW [mm]	SW [mm]	Nom. pressure PN [bar]
KHNVN	G 1/4	44.4	23.5	37	80	10	10	18	50
KHNVN	G 3/8	44.4	24	37	80	10	10	21	50
KHNVN	G 1/2	50.5	30.5	41	80	12	15	25	50
KHNVN	G 3/4	57.5	37.0	55	113	12.5	20	31	40
KHNVN	G 1	70	45.5	59	113	15	25	38	40
KHNVN	G 1 1/4	80.5	57	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 + 160 °C	
Nominal pressure:	up to PN 50 bar	
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 controls Lock



Type DVGW	d1	Nom. bore DN	ØLW	Nom. press. 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	Rp1 1/4	32	32	4	21.4	96	59	78	160	48	0.97
KHN	Rp1 1/2	40	40	4	21.4	108	73	86	160	54	1.45
KHN	Rp2	50	50	4	25.7	126	86	104	170	67	1.98

Technical specifications

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

NOTE

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

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

Subject to technical modifications.

HYDAC Accessories GmbH
 Hirschbachstr. 2
66280 Sulzbach/Saar
 Tel.: +49 (0)6897 - 509-1001
 Fax: +49 (0)6897 - 509-1009
 Internet: www.hydac.com
 E-Mail: info@hydac.com



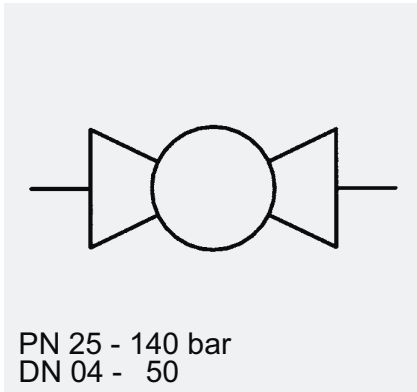


Stainless Steel Low Pressure Ball Valves

KHNVN / KHNVS

Model code
(also order example)

KHNVS Rp 1/2 3333 18 X



Designation

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

Type of connection

Rp
G

Thread size

Materials

Housing, control spindle
3 = stainless steel (1.4401)

Ball
3 = stainless steel (1.4401)

Ball seals
3 = PTFE

Seals
3 = PTFE

Handle

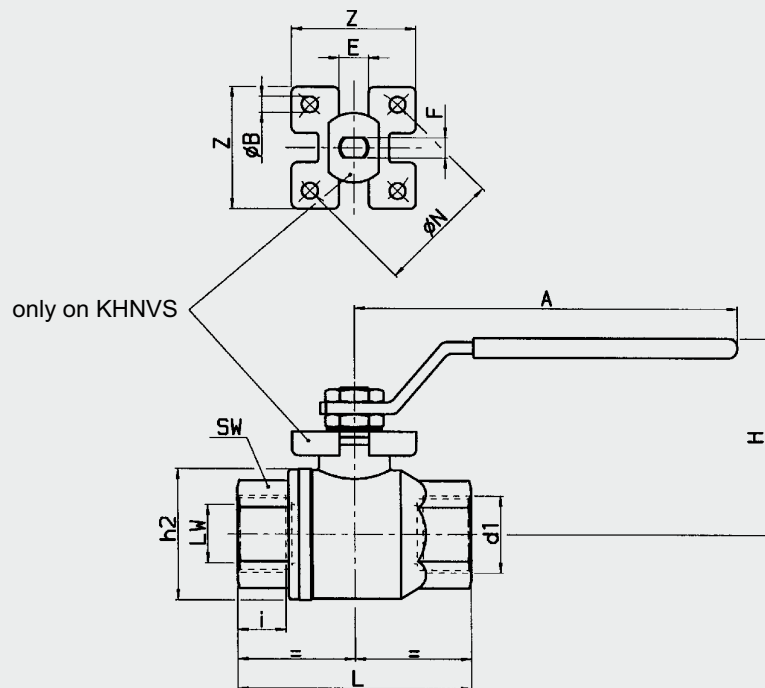
18 = stainless steel handle, cranked, supplied fitted

Series

(determined by manufacturer)

Dimensions

KHNVN / KHNVS



Type	d1	Nominal bore DN	ØLW Int. diam.	PN [bar]	i	L	Øh2	H	A	SW	Weight [kg]
KHNVN	G1/4	6	8	64	11	50	30	50	100	22	0.22
KHNVN	G3/8	10	10	64	11	50	30	50	100	22	0.2
KHNVN	G1/2	16	15	64	14	58	35	52	100	27	0.25
KHNVN	G3/4	20	20	64	14	65	42	57	115	32	0.45
KHNVN	G1	25	25	50	17	80	50	75	150	41	0.85
KHNVN	G1 1/4	32	32	50	18	92	63	80	150	50	1.2
KHNVN	G1 1/2	40	40	40	19	105	73	95	180	55	1.8
KHNVN	G2	50	50	40	24	125	90	100	180	70	2.7

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

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

Technical specifications

Type of connection:	Whitworth female thread to ISO 228 (G) Whitworth female thread to DIN 2999 (Rp)
Mounting position:	Optional
Ambient temperature:	-20 °C to + 160 °C
Nominal pressure:	up to PN 140 bar
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
---------------------	---

NOTE

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

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

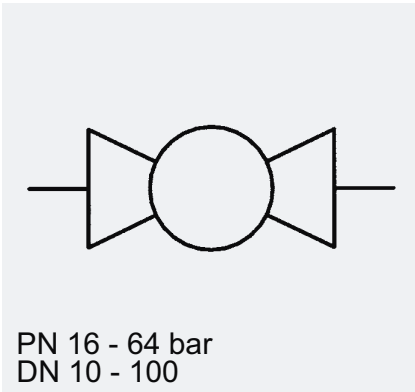
Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com





Weld-Type Low Pressure Ball Valves KHM3S



Model code
(also order example)

KHM3S 20 1333 16 X

Description

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

Nominal bore

Materials

Housing, butt weld, spindle

- 1 = steel
- 3 = stainless steel

Ball

- 3 = stainless steel

Ball seals

- 3 = PTFE

Seals

- 3 = PTFE

Handle

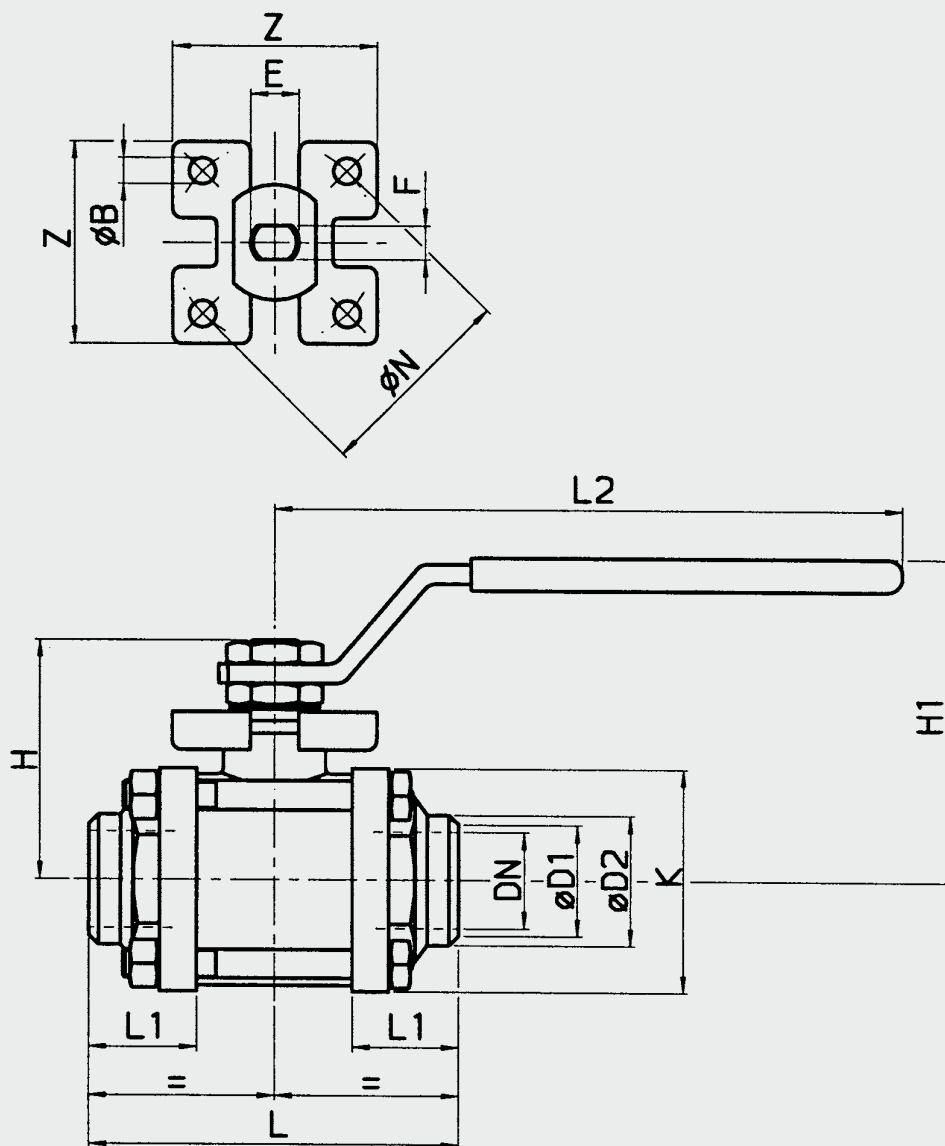
- 16 = steel bolt-on handle, cranked, supplied fitted
- 18 = stainless steel bolt-on handle, cranked, supplied fitted DN 10 - 50

Series

(determined by manufacturer)

Dimensions

KHM3S



Type / Steel 1333	DN	D1	D2	H	H1	L	L1	L2
KHM3S - 10	10	12.48	17.1	35	64	65	20.5	110
KHM3S - 15	15	15.76	21.3	47	64	65	20.5	131
KHM3S - 20	20	20.96	26.7	51	68	76	22.5	131
KHM3S - 25	25	26.64	33.4	60	78	92	27	174
KHM3S - 32	32	35.08	42.2	64	83	106.5	30	174
KHM3S - 40	40	40.94	48.3	79	99.5	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 / Steel 1333	K	Z	B	N	F	E	Weight (kg)	PN (bar)
KHM3S - 10	38	–	–	–	7	10	0.45	64
KHM3S - 15	38	–	–	–	7	10	0.40	64
KHM3S - 20	46.5	–	–	–	7	10	0.60	40
KHM3S - 25	58	–	–	–	8	12	1.10	40
KHM3S - 32	66.5	–	–	–	8	12	1.53	25
KHM3S - 40	76	–	–	–	10	16	2.10	25
KHM3S - 50	90	50	–	–	10	16	3.20	25
KHM3S - 65	134	65	M 8	70 F07	14	20	8.30	16
KHM3S - 80	161	65	M 8	70 F07	14	20	13.40	16
KHM3S -100	190	92	M10	102 F10	18	24	22.20	16

Type / Stainless steel 3333	DN	D1	D2	H	H1	L	L1	L2
KHM3S - 10	10	13.6	17.2	35	50	55	17	110.5
KHM3S - 15	15	18	21.4	47	64	65	20.5	131.5
KHM3S - 20	20	23	27	51.5	68	76	22.5	131.5
KHM3S - 25	25	28	34	60	78	92	27	174.5
KHM3S - 32	32	35	42	64.5	83	106.5	30	174.5
KHM3S - 40	40	43	49	78	100	116	31	250.5
KHM3S - 50	50	54	60	85	107	136	36	250.5
KHM3S - 65	65	69	77	103	126.5	153.5	38.5	321.5
KHM3S - 80	80	84	90	114	137.5	180	43	321.5
KHM3S -100	100	104	116	137	156.5	217	50	381.5

Type / Stainless steel 3333	K	Z	B	N	F	E	Weight (kg)	PN (bar)
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	65	M 8	70 F07	14	20	8.10	16
KHM3S - 80	161	65	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 bar
Operating fluids:	Mineral oil to DIN 51524 Part 1 + 2, gaseous media, compressed air, water other media on request
Temperature of operating fluid:	-20 °C to + 160 °C

Spare parts:	Seal kits available on request
Accessories:	All ball valves can be supplied with the following options: Actuator Limit controls Lock

NOTE

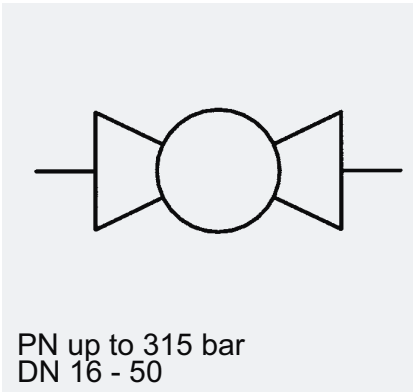
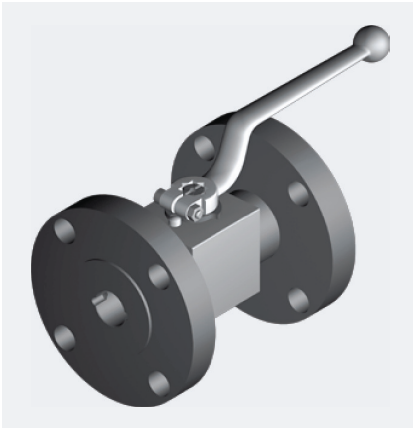
The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com





Flanged Ball Valves

KHBF / KHMF / KHMFF

Model code

(also order example)

KHBF 16 PN040 11141 02 X ...

Designation

KHBF =	Block-type ball valve	DN 16 - 25 (steel)
KHMF =	Sleeve-type ball valve	DN 32 - 50 (steel)
	Long version –	DN 16 - 50 (stainless steel)
	DIN-EN 558-1, FTF, basic range 1	DIN 3202 - F1
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 and control spindle

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

Ball

- 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

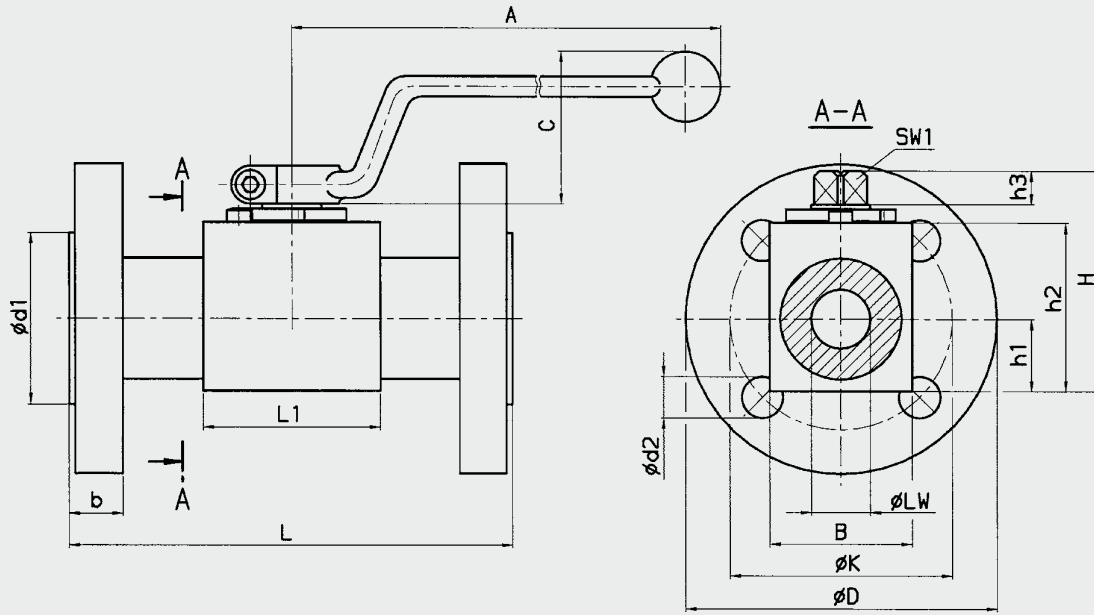
(determined by manufacturer)

Surface protection

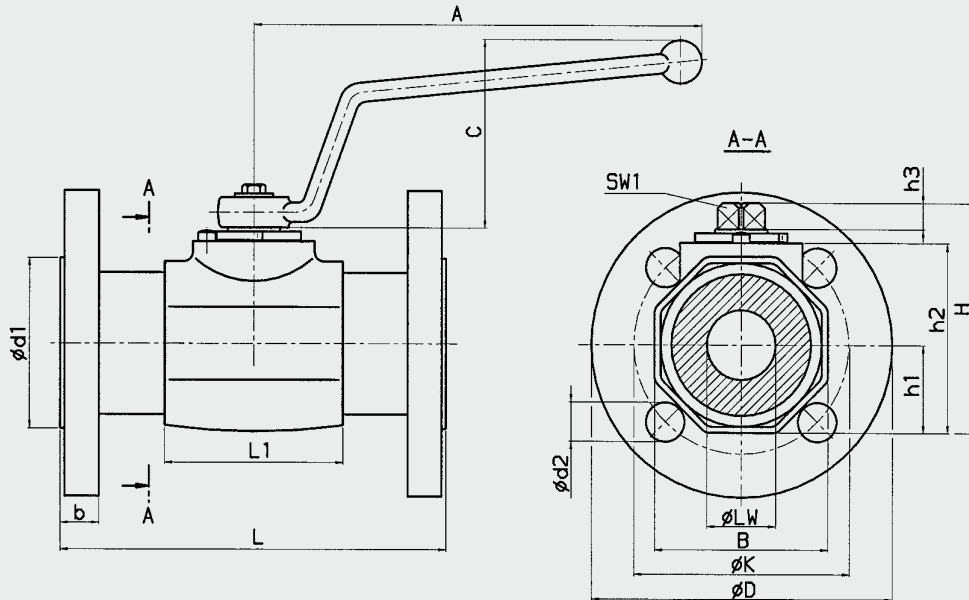
- ... = phosphate-plated (no details required)
- A = zinc-plated, chrome (VI)-free

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 connection / Seal face	Type	Pressure range PN [bar]	L	D	d1	d2	K	b	Z*	Weight [kg]
F1 (FTF, basic range 1)	KHBF - 16 KHMFF - 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
	KHBF - 25 KHMFF - 25	40	160	115	68	14	85	18	4	5.0
		160	160	140	68	18	100	24	4	7.1
		250	160	150	68	22	105	28	4	8.6
		315	160	160	68	22	115	34	4	9.2
	KHMFF - 32	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	160	42	8	31.0	
F4 (FTF, basic range 14)	KHMFF - 032 KHMFF - 040 KHMFF - 050	40	130	140	78	18	100	18	4	6.1
		40	140	150	88	18	110	18	4	7.7
		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 2501, Form E
Flange connections:	rotating flanges
Mounting position:	optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 315 bar (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

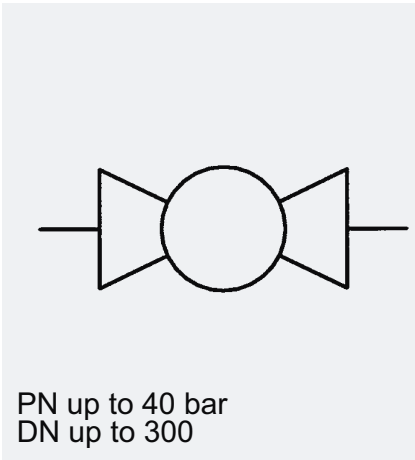
The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com





Flange Type Ball Valve DN 65 - 300

KHMFF

Model code

(also order example)

KHMFF 080 PN016 8834 02 X

Designation

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

KHMFF = Sleeve-type flange ball valve
(short version F5) DN 125 -300

Nominal bore

DN 65 - 100	PN 16	Material code	8834
DN 65 - 100	PN 40	Material code	10834
DN 65 - 125	PN 16 reduced	Material code	8232
DN 125 - 150	PN 16	Material code	8834
DN 125 - 150	PN 40	Material code	10333
DN 200 - 300	on request	Material code	10333

Pressure range

to DIN 2501

Materials

Housing, flange

- 8 = Cast iron (GG25), spindle in steel
- 10 = Cast steel (GS-C25), spindle in stainless steel

Ball

- 2 = Brass
- 3 = Stainless steel
- 8 = Cast iron, hard-chromed

Ball seal

- 3 = PTFE

Housing seal and control spindle seal

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

Handle

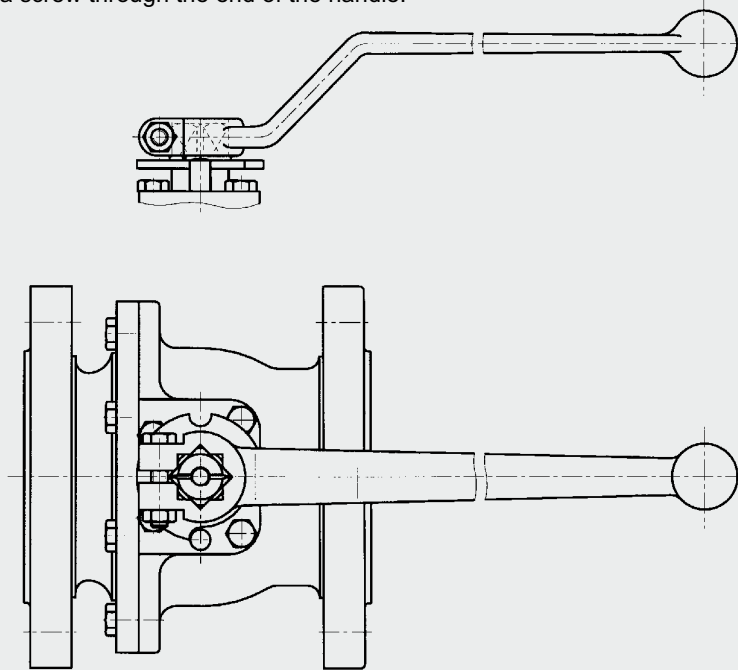
- 02 = Aluminium clamped handle, cranked (AK) DN 65 - 100
- 05 = Steel bolt-on handle, straight (SG) DN 150 - 200
- 06 = Steel bolt-on handle, cranked (SK) DN 125 PN 40
- 16 = Steel bolt-on handle, cranked, supplied fitted
reduced nominal bores DN 65 - 125
- AM = Mechanical drive DN 250 - 300
(worm gear with handwheel)

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 and DN 125 - 200 with fixed handle position)

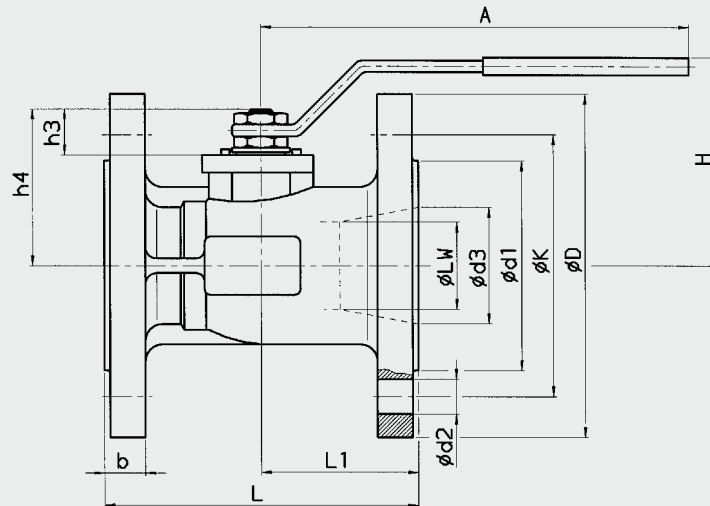
SW 22

Torque value

10 Nm

Dimensions

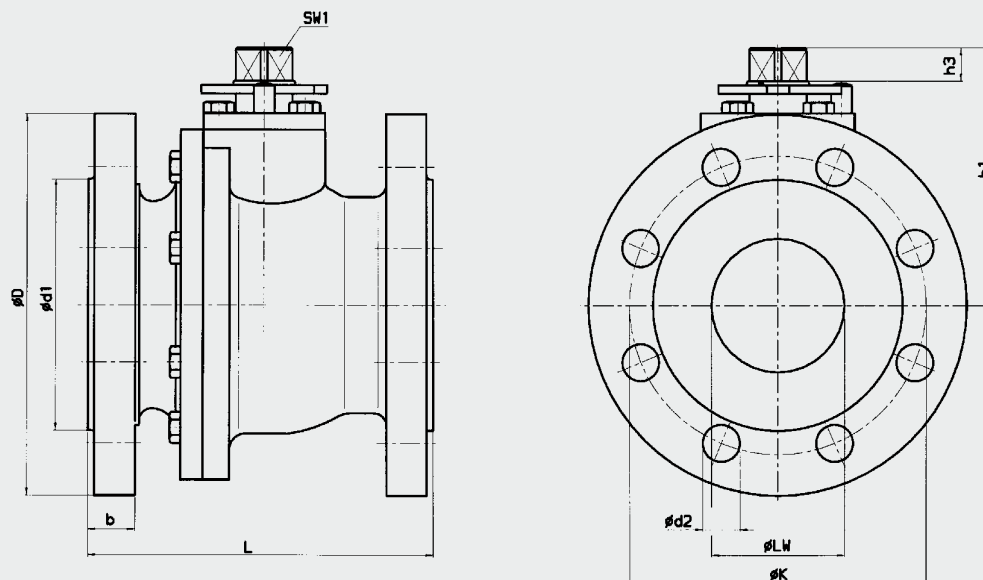
KHMFF (reduced)



Type of conn. / Seal face	Type	Pressure range	LW	A	L	L1	D	d1	d2	d3	K	b	H	h3	h4	Z*	Weight [kg]	Length DIN 3202
Flange connection DIN 2501, Form E F4	KHMFF - 065	16	50.2*	250	170	85	185	122	18	65	145	18	112	23	86.5	4	10.5	F4
	KHMFF - 080	16	64*	321	180	90	200	138	18	80	160	20	128	29	105	8	15	F4
	KHMFF - 100	16	76*	321	190	95	220	158	18	100	180	20	138	29	114.5	8	18	F4
	KHMFF - 125	16	95*	381	200	100	250	188	18	125	210	22	157	33	137.5	8	26.5	F4

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

KHMFF (DN 65-300)



Type of conn. / Seal face	Type	Pressure range	LW	L	D	d1	d2	K	b	h1	h3	SW1	Z*	Weight [kg]
Flange connection DIN 2501, Form E F4	KHMFF - 065	10 - 16	65	170	185	122	18	145	21.5	118	16	22	4	17
	KHMFF - 065	25 - 40	65	170	185	122	18	145	22	150	18	14	8	17.5
	KHMFF - 080	10 - 16	80	180	200	138	18	160	24	128	16	22	8	20
	KHMFF - 080	25 - 40	80	180	200	138	18	160	24	161	20	19.3	8	21
	KHMFF - 100	10 - 16	100	190	220	158	18	180	22	142.5	16	22	8	24
	KHMFF - 100	25 - 40	100	190	235	162	22	190	24	178	20	19.3	8	25
Flange connection DIN 2501, Form C F5	KHMFF - 125	10 - 16	125	325	250	188	18	210	22	265	30	25.5	8	48
	KHMFF - 125	25 - 40	125	325	270	188	26	220	26	265	30	25.5	8	67
	KHMFF - 150	10 - 16	150	350	285	212	22	240	22	297.5	41.5	32	8	72
	KHMFF - 150	25 - 40	150	350	300	218	26	250	28	297.5	41.5	32	8	95
	KHMFF - 200	16	200	400	340	268	22	295	26	335	41.5	32	12	146
	KHMFF - 200	40	200	400	375	285	30	320	34	335	41.5	32	12	172
	KHMFF - 250	16	250	450	405	320	26	355	26	390	51	36	12	242
	KHMFF - 250	40	250	450	450	345	33	385	38	390	51	36	12	287
	KHMFF - 300	16	300	500	460	378	26	410	28	425	51	36	12	330
	KHMFF - 300	40	300	500	515	410	33	450	42	425	51	36	16	375

Z* = number of fixing holes

NOTE

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

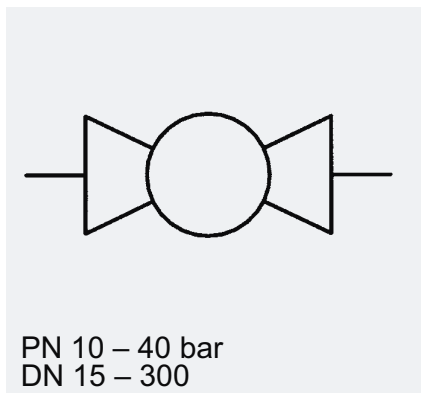
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com



Flanged Ball Valves KHFF



Model code
(also order example)

KHFF 100 PN040 10333 06 X

Designation

KHFF = Flange ball valve DN 15 - 200 (short version - DIN EN 558-1 - Series 27)
KHF = Flange ball valve DN 15 - 200 (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

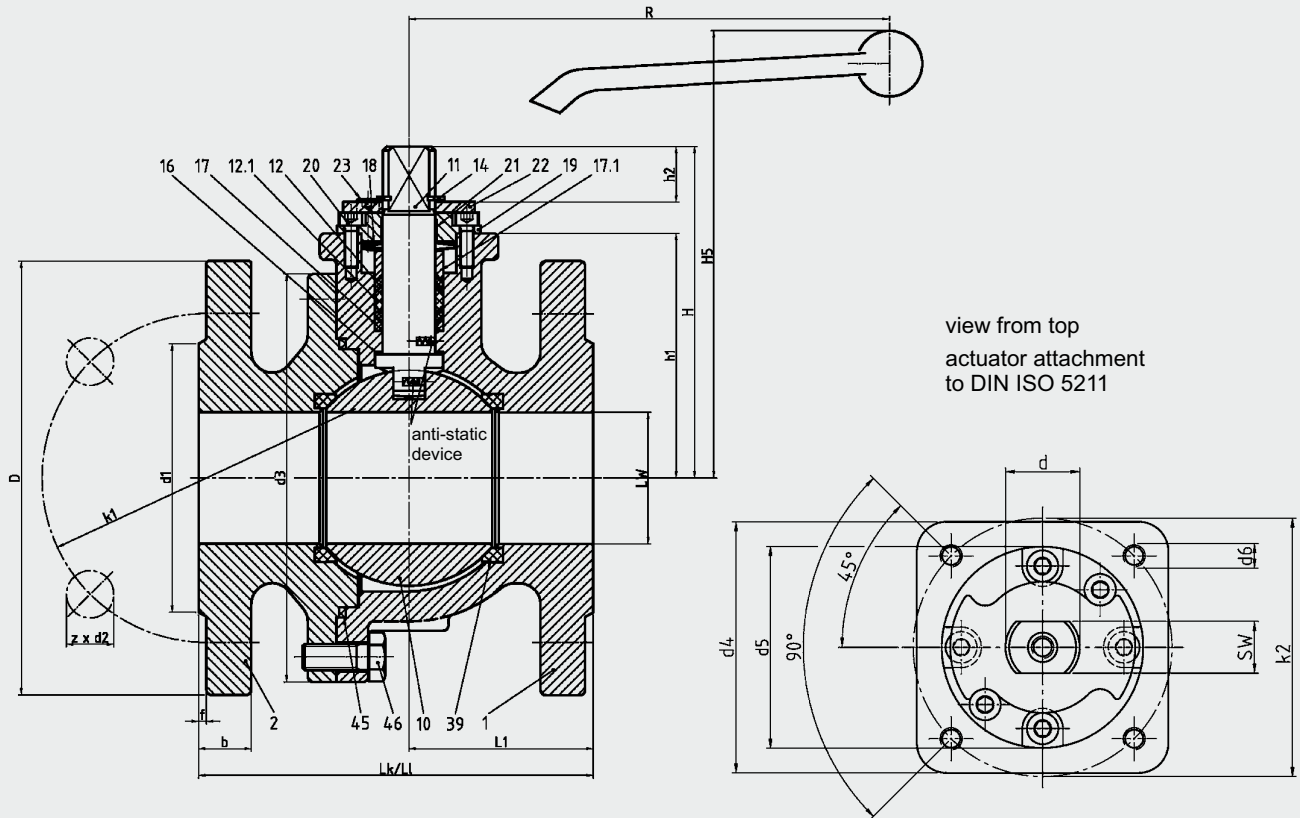
(other materials on request)

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					
15	40	16	115	130	47	90	80	133	63	10	16	12.4	65	45	14	48	35	M6	50	160	95	16	18	4	8	3.9	4	F 05				
20	40	20	120	150	49								75	58							105	4.4				4.5						
25	40	25	125	160	52								85	68							115	4.6				4.7						
32	40	32	130	180	55	98	85	138	68	14	20	14	100	78	18	68	55	M8	70	140	20	215	2	8	12	6.4	6.8	F 07				
40	40	40	140	200	69.5	129	109	158	80				110	88						150	18					8.5	8.9					
50	40	50	150	230	70	155	126	171	93				125	102						165	20					12.8	13.5					
65	16	65	170	290	80	190	150	195	115	18	20	14	145	122	18	96	70	M10	102	300	185	22	2	8	12	16	19	20.5	F 10			
65	40												200	24							25	27.5										
80	40	80	180	310	86	208	161	211	124	20	25	19.3	160	138	22	150	85	M12	125	800	200	24	2	8	12	16	30	34	F 12			
100	16	100	190	350	94.5	242	178	228	141				180	158							220	20					33.5	37.5				
100	40	125	325	400	162.5	290	265	270	222				210	188							220	25.5					250	22		635	270	26
125	16	150	350	480	175	327	297.5	301	242.5	41.5	44	32	240	212	22	150	85	M12	125	800	285	22	2	8	12	16	100	106	F 12			
125	40												250	218	26						300	28					340	24		26	161	173
150	16	200	400	600	200	400	335	338	280	51	48	36	295	268	22	175	100	M16	140	-	800	340	26	2	8	12	16	164	176	F 14		
200	10												310	278	26							360	30					375	34		172	184
200	16												350	320	22							395	26					405	32		255	
200	25	250	450	-	225	492	390	-	330	51	48	36	355	26	175	100	M16	140	-	800	405	32	2	8	12	16	257		F 14			
250	16												370	335							30	425					32	450		38	272	
250	40	300	500	-	250	575	425	-	365	51	48	36	385	345	33	175	100	M16	140	-	800	450	38	2	8	12	16	292		F 14		
300	16												400	370	22							445	26					460	28		339	
300	25	300	500	-	250	575	425	-	365	51	48	36	410	378	26	175	100	M16	140	-	800	445	26	2	8	12	16	340		F 14		
300	40												430	395	30							485	34					515	42		355	
300	40	450	410	33	515	42	380		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 15 - 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 25 - 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 seats.
Application:	Neutral gases and fluids, mineral oil products, alkalis, corrosive fluids and gases.

NOTE

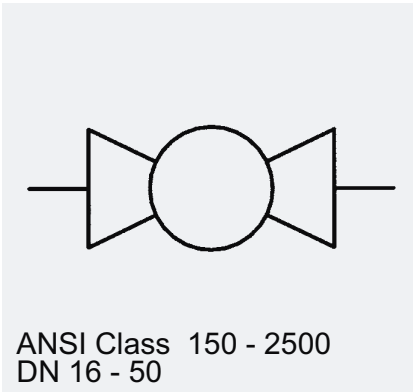
The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com





ANSI Flange Ball Valves 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 bore

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 and control spindle

1 = steel
3 = stainless steel (1.4571)

Ball

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 (supplied loose)

Series

(determined by manufacturer)

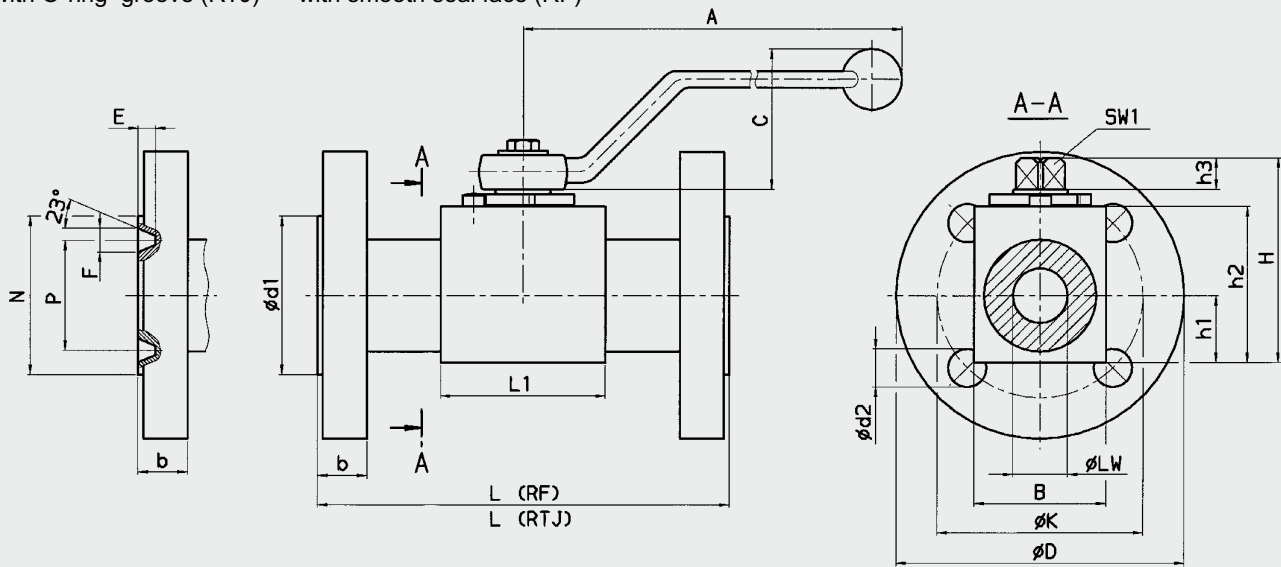
Surface protection

... = phosphate-plated (no details required)
A = zinc-plated, chrome (VI)-free

Dimensions

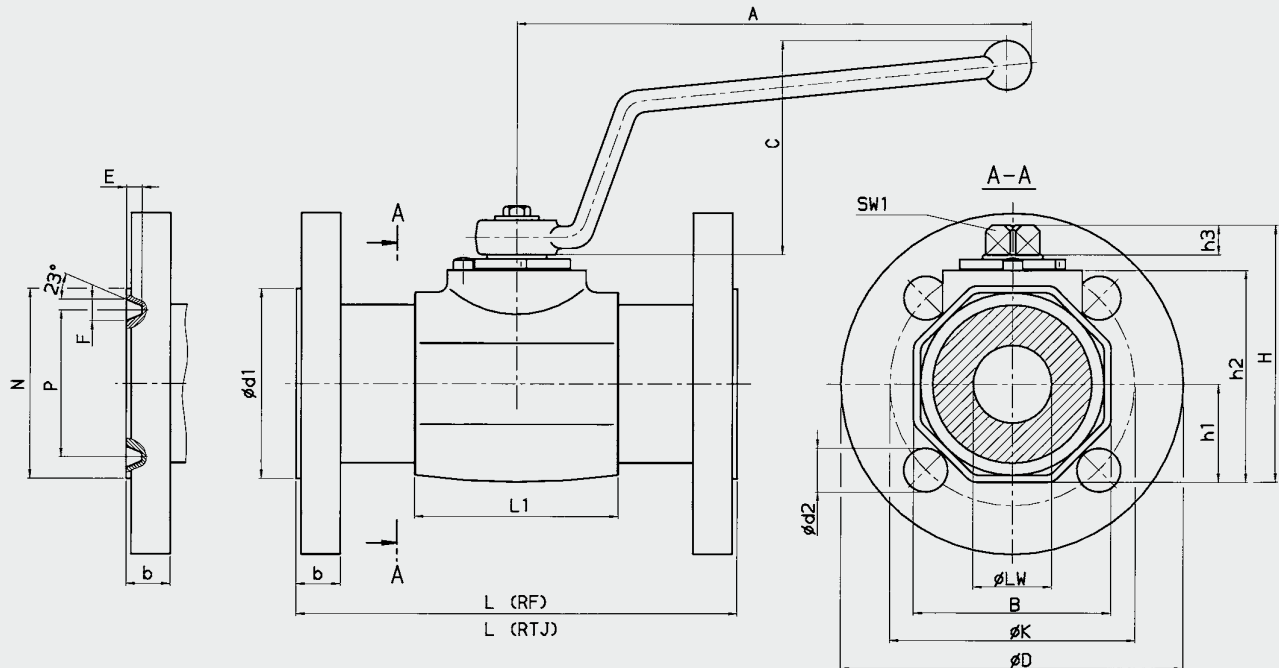
KHBF

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



KHMF

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



		Housing dimensions										PN (Ball valve)	
Type of constr.	Type	DN	LW	L1	B	H	h1	h2	h3	SW1	A	C	[bar]
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 bar (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 or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

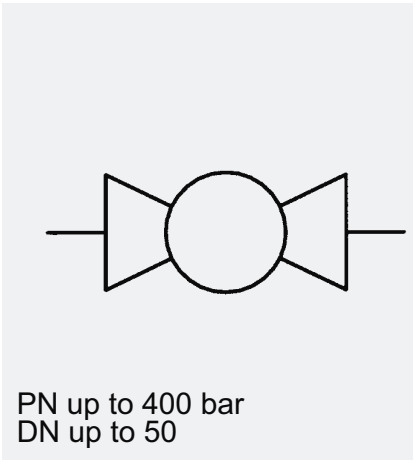
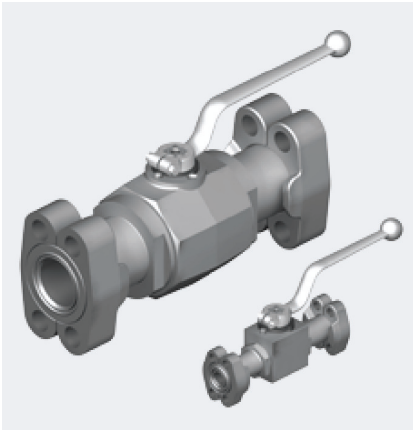
HYDAC Accessories GmbH

Hirschbachstr. 2
66280 Sulzbach/Saar
 Tel.: +49 (0)6897 - 509-1001
 Fax: +49 (0)6897 - 509-1009
 Internet: www.hydac.com
 E-Mail: info@hydac.com



SAE Flanged Ball Valves

KHB-F3/6 / KHM-F3/6



Model code
(also order example)

KHB 20 F3 11141 02 X

Designation

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

Nominal bore

Type of SAE flange

Materials

Housing, connection adapters and control spindle

1 = steel
3 = stainless steel

Ball

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

Series

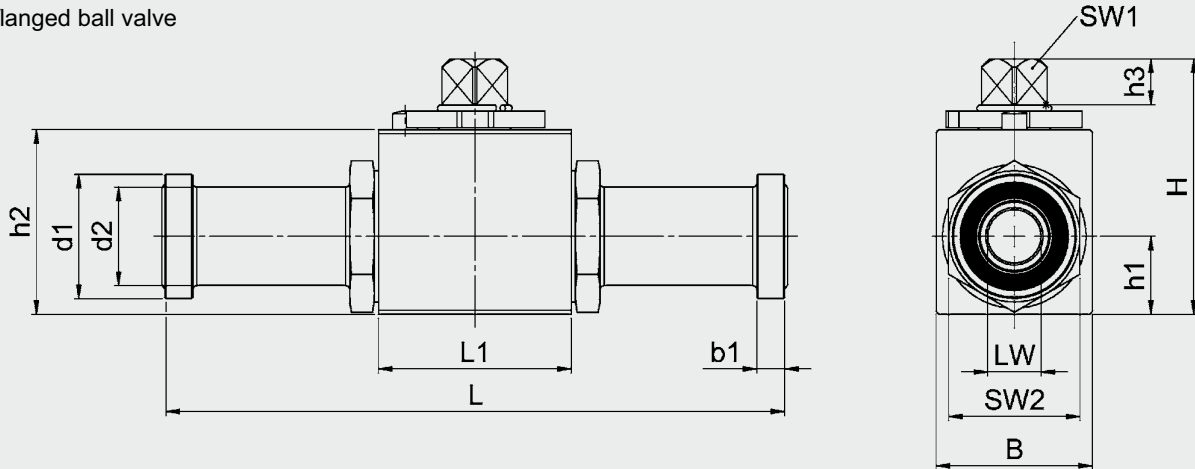
(determined by manufacturer)

Technical specifications

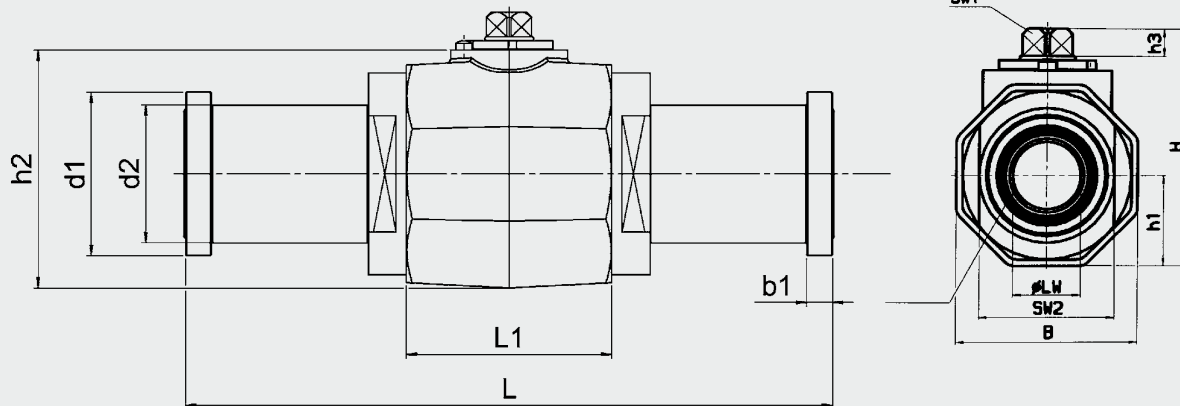
Type of construction:	Block-type KHB DN 16 - 25 Sleeve-type KHM DN 32 - 50
Flange dimensions:	ISO 6162, Table 1 and 2 (SAE J 518 c)
Flange connections:	SAE split flanges
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 400 bar
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Spare parts:	Seal kits available on request

Dimensions

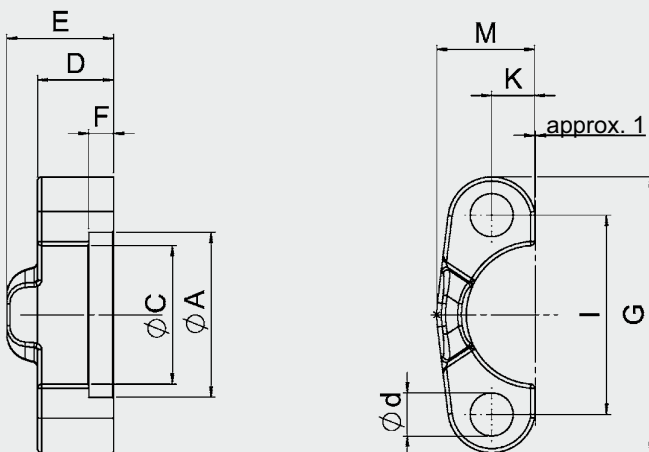
SAE flanged ball valve
KHB



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	3/4"	16	16*	170	47	62	19	45	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 size	Weight (kg)
KHB-16-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	3/4"	16	16*	170	47	62	19	45	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

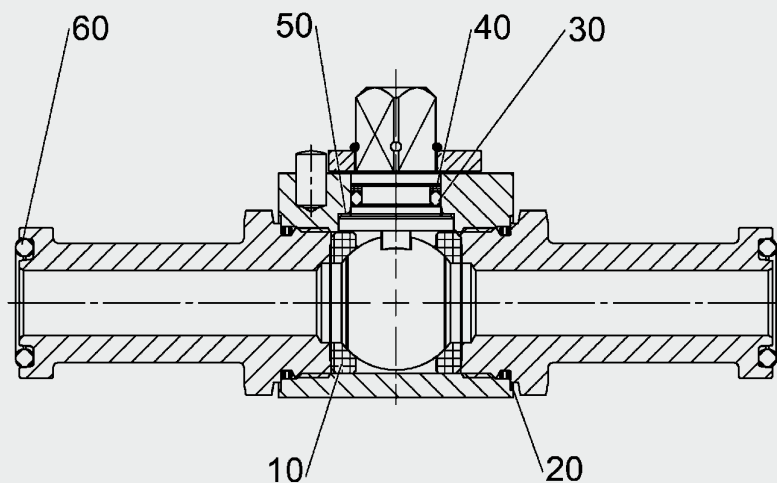
SAE Split flanges - F6

Type	A	C	D	E	F	M	K	I	G	d	Nominal size	Weight (kg)
KHB-16-F6	42	32.5	19	28	8.3	30	11.9	50.8	72	10.5	400	1.9
KHB-20-F6	42	32.5	19	28	8.3	30	11.9	50.8	72	10.5	350	2.5
KHB-25-F6	48.4	38.9	24	32	9	35	13.9	57.2	81	13	350	3.5
KHM-32-F6	54.8	44.5	27	38	9.8	39	15.9	66.7	96	15	350	6.4
KHM-40-F6	64.3	51.6	30	42	12.1	48	18.3	79.4	113	17	350	9.7
KHM-50-F6	80.2	67.6	37	52	12.1	57	22.2	96.8	134	21	350	14.7

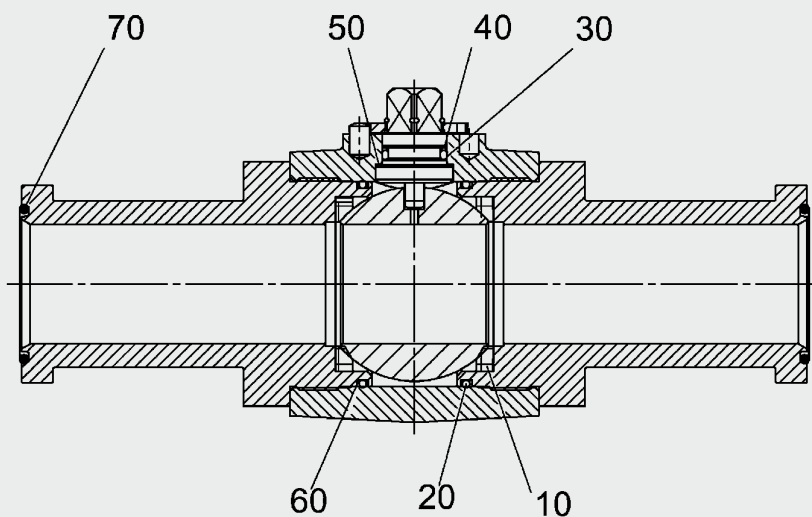
Spare parts

(Seal kit)

KHB, DN 16 - 25



KHM, DN 32 - 50



Seal kit	Order No. = Part No.
DN 16	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

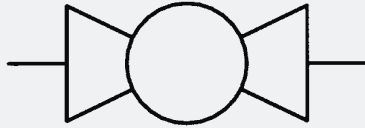
The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.

SAE Threaded Flange Ball Valves

KHBG-F3/6 / KHMG-F3/6



PN up to 400 bar
DN up to 50

Model code

(also order example)

KHBG 20 F3 11141 02 X ...

Designation

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

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

Nominal bore

SAE flange type

F3
F6

Materials

Housing, connection adapters and control spindle

1 = steel
3 = stainless steel

Ball

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

Series

(determined by manufacturer)

Surface protection

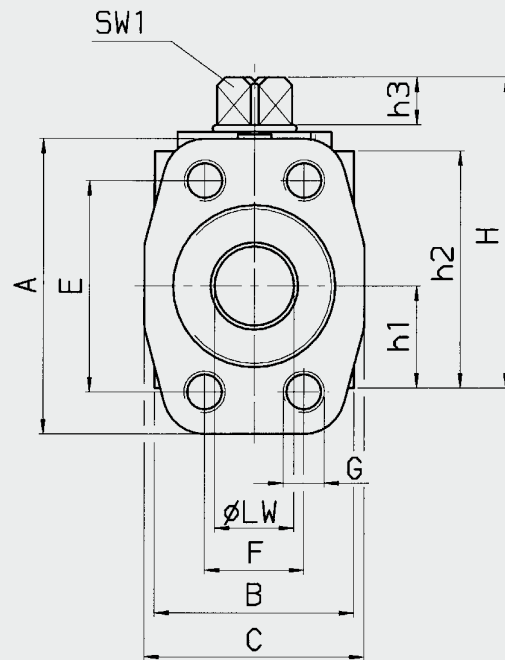
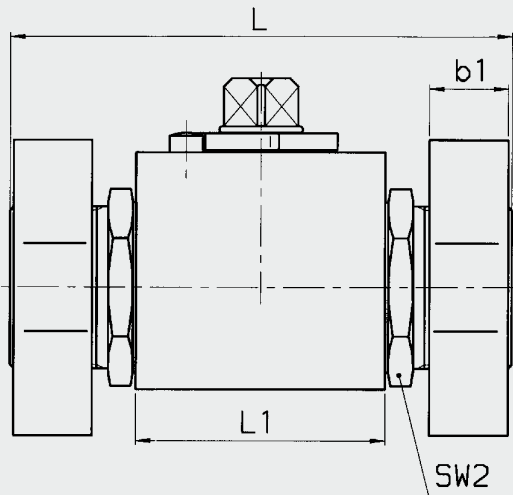
... = phosphate-plated (no details required)
A = zinc-plated, chrome (VI)-free

Technical specifications

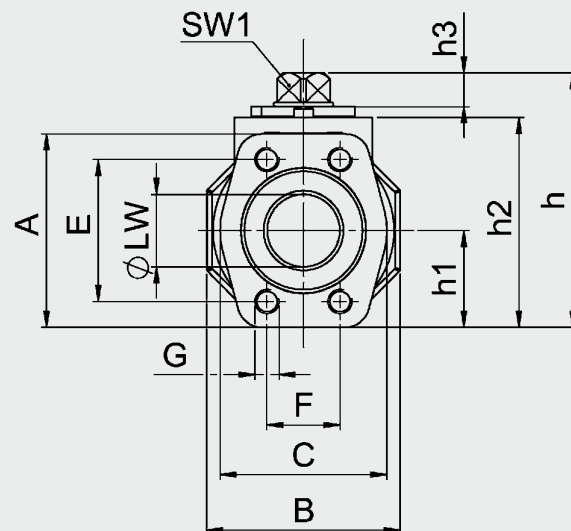
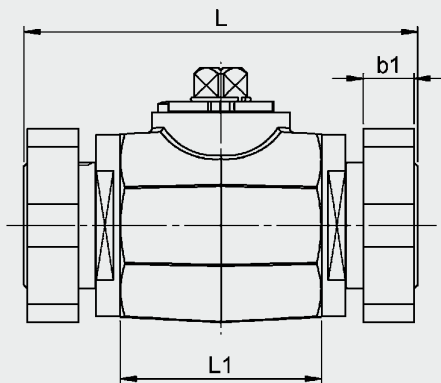
Type of construction:	Block type KHBG DN 16 - 25 Sleeve type KHBG DN 32 - 50
Type of connection:	ISO 6162, Table 1 and 2 (SAE J 518 c)
Flange connections:	SAE threaded flange
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 400 bar
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid:	-10 °C to +80 °C
Spare parts:	Seal kits available on request, 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	19	45	11	38	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	1 1/2"	40	38	168	91	116.2	45	97.7	12	90	17	70
KHMG-50-F3	2"	50	48	186	100	134.2	55.5	115.7	12	111	17	80

Flange F3

Type	b1	A	C	E	F	G	Nom. pressure PN [bar]	Weight (kg)
KHBG-16-F3	16	57	47	38.1	17.5	M8	350	1.1
KHBG-20-F3	18	66	49	47.6	22.3	M10	350	1.9
KHBG-25-F3	19	71	53	52.4	26.2	M10	350	2.4
KHMG-32-F3	21	80	69	58.7	30.2	M10	275	3.8
KHMG-40-F3	24	95	77	69.9	35.7	M12	210	4.5
KHMG-50-F3	24	103	89	77.8	42.9	M12	210	6.5

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	19	45	11	38	12	32
KHBG-20-F6	3/4"	20	19	121	60	75	24.5	57	11.6	48	14	46
KHBG-25-F6	1"	25	25	133	65	82	28.5	64	11.6	57	14	50
KHMG-32-F6	1 1/4"	32	30	163	83.4	105.2	40	86.7	12	80	17	60
KHMG-40-F6	1 1/2"	40	38	168	91	116.2	45	97.7	12	90	17	70
KHMG-50-F6	2"	50	48	186	100	134.2	55.5	115.7	12	111	17	80

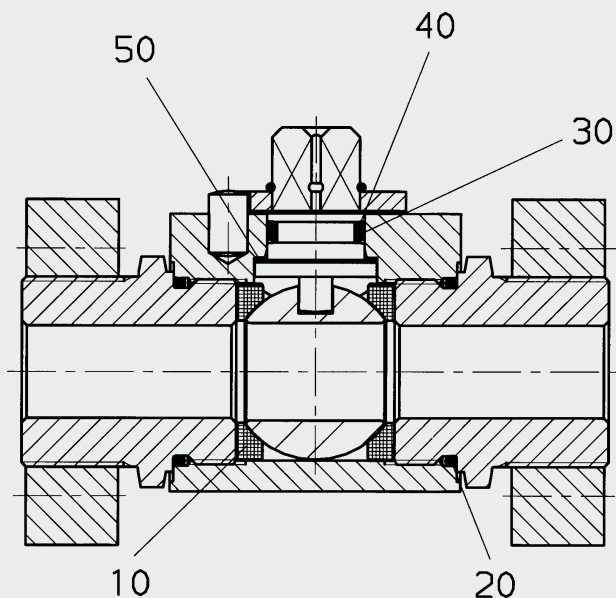
Flange F6

Type	b1	A	C	E	F	G	Nom. pressure PN [bar]	Weight (kg)
KHBG-16-F6	16	57	47	40.5	18.2	M8	400	1.2
KHBG-20-F6	19	71	53	50.8	23.8	M10	350	2
KHBG-25-F6	21	80	66	57.2	27.8	M12	350	2.6
KHMG-32-F6	24	94	77	66.6	31.8	M14	350	4
KHMG-40-F6	24	103	89	79.3	36.5	M16	350	4.7
KHMG-50-F6	30	135	123	96.9	44.5	M20	350	7.2

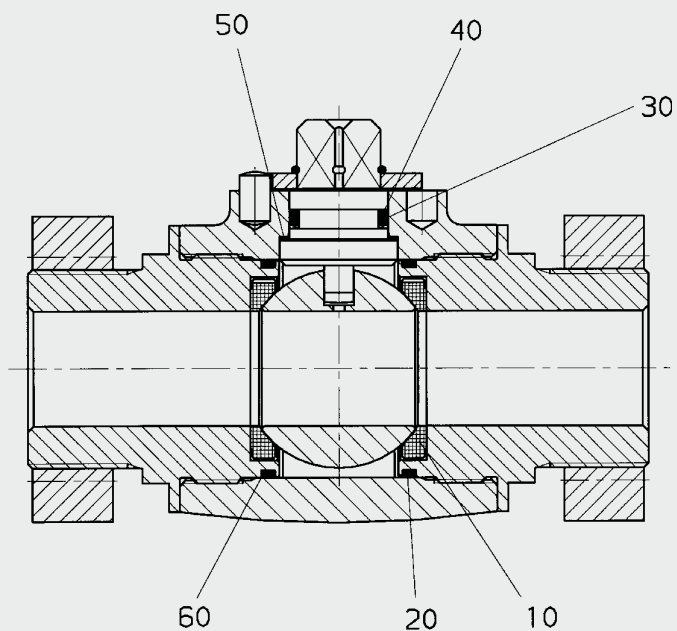
Spare parts

(Seal kit)

KHBG, DN 16 - 25



KHMG, DN 32 - 50



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

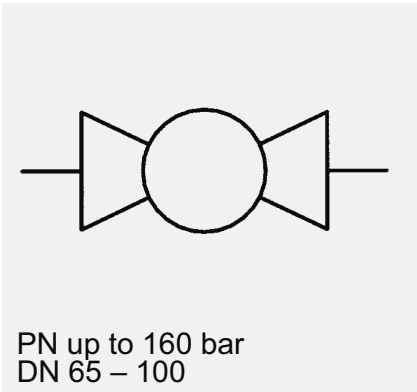
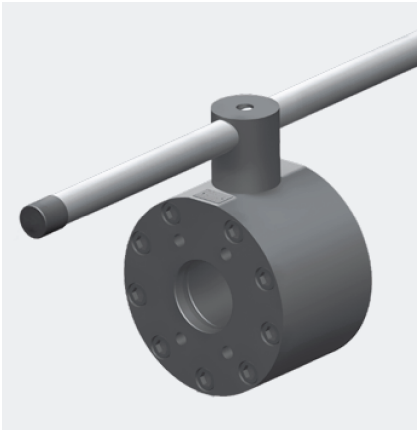
NOTE

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

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

Subject to technical modifications.

SAE Fixed Flange Ball Valves KHF3



Model code
(also order example)

KHF3 65 1114 05 X A ...

Designation

KHF3 = Fixed flange ball valve DN 65 - 100

Nominal bore

Materials

Housing, housing flange, control spindle

- 1 = steel
- 3 = stainless steel

Ball

- 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)

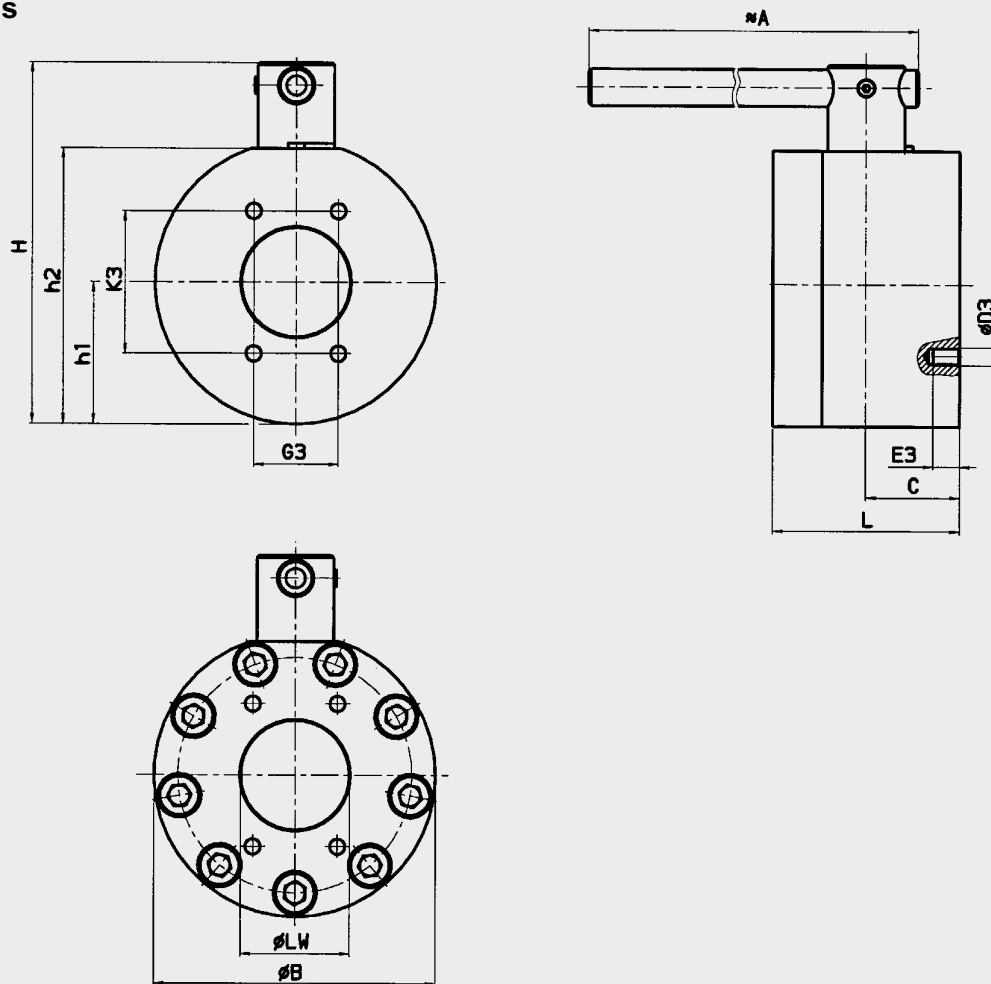
Surface protection

- ... = 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	SAE size		Housing dimensions								PN [bar]	Weight [kg]
	DN	SAE size	LW	L	C	H	h1	h2	B	A		
Fixed flange to 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	25	59.5

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

Technical specifications

Mounting position:	optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 160 bar (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

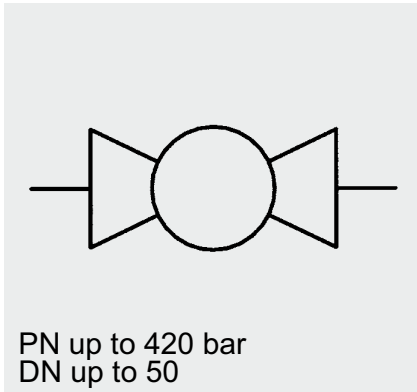
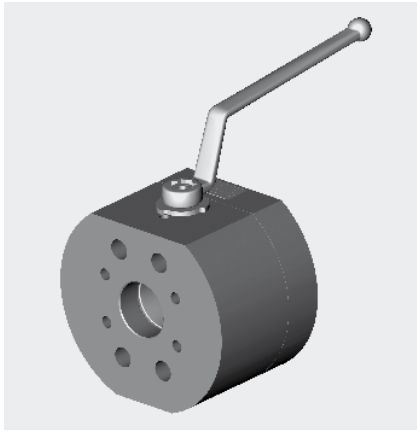
NOTE

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

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

Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com



SAE Fixed Flange Ball Valves

KHF3/6

Model code

(also order example)

KHF3/6 20 1114 16 X A

Designation

KHF3/6 = Fixed flange ball valve

Nominal bore

Materials

Housing, connection adapters and control spindle

- 1 = steel
- 3 = stainless steel

Ball

- 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

- 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

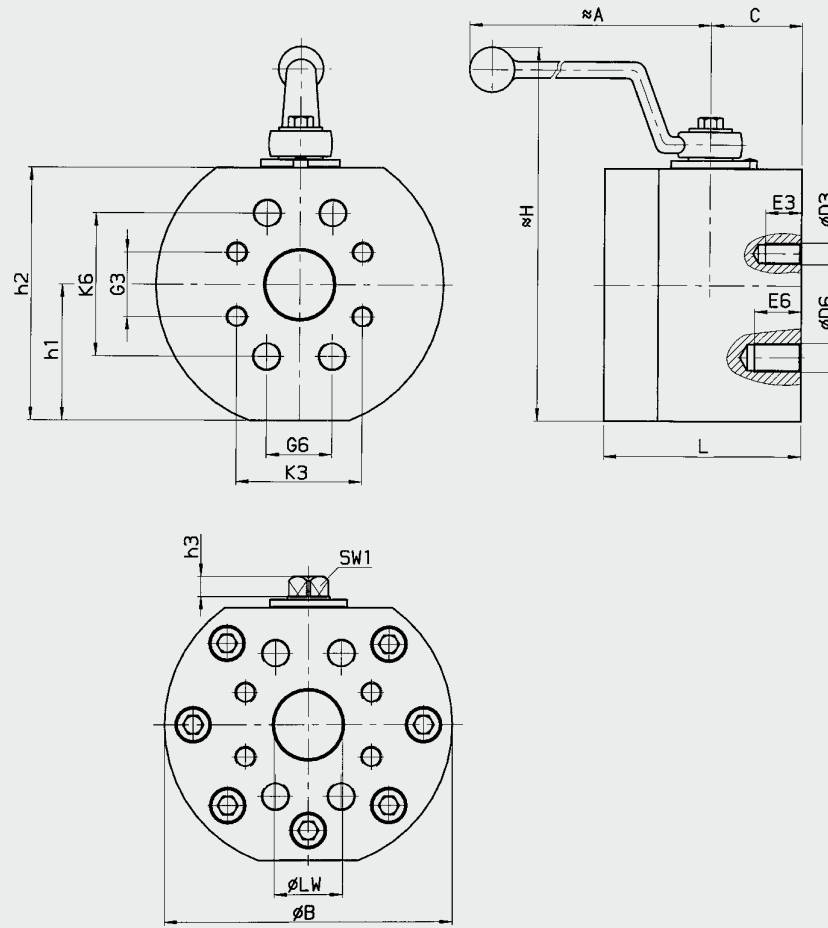
Connection type	SAE Size	Nominal bore / Type	Nominal bore DN	Nominal pressure PN [bar] *	Weight [kg]
Fixed flange connection to ISO 6162 Table 1+2 (SAE J 518 c) F3/F6	1/2 "	KHF3/6 - 16 - 1114-16X-G	16	420	2.5
	3/4 "	KHF3/6 - 20 - 1114-16X-G	20	420	3.9
	1 "	KHF3/6 - 25 - 1114-16X-G	25	420	6.0
	1 1/4 "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

UNC thread version

Connection type	SAE Size	Nominal bore / Type	Nominal bore DN	Nominal pressure PN [bar] *	Weight [kg]
Fixed flange connection to 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



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

Connection dimensions - metric

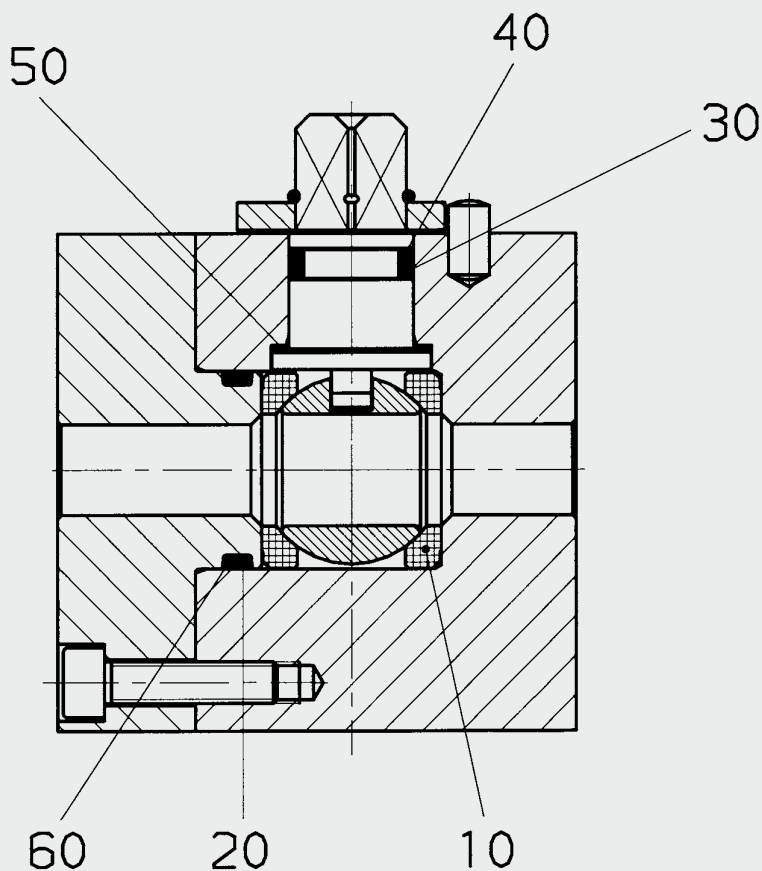
Type	K3	G3	D3	E3	K6	G6	D6	E6
KHF3/6-16	38.1	17.5	M8	16	40.5	18.2	M8	16
KHF3/6-20	47.6	22.3	M10	18	50.8	23.8	M10	18
KHF3/6-25	52.4	26.2	M10	18	57.2	27.8	M12	21
KHF3/6-32 / M12	58.7	30.2	M10	18	66.6	31.8	M12	21
KHF3/6-32 / M14	58.7	30.2	M10	18	66.6	31.8	M14	21
KHF3/6-40	69.9	35.7	M12	20	79.3	36.5	M16	26
KHF3/6-50	77.8	42.9	M12	22	96.8	44.5	M20	34

Connection dimensions - UNC

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

Spare parts

(Seal kit)



Seal kit	Order No. = Part number
DN 16	3015691
DN 20	3015694
DN 25	3015695
DN 32	3015696
DN 40	3015697
DN 50	3015698

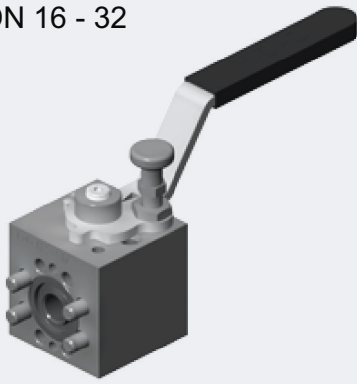
NOTE

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

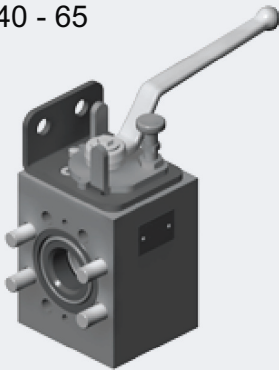
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

DN 16 - 32



DN 40 - 65



PN up to 420 bar
DN up to 80

Direct Flange Ball Valves KHDF3 / KHDF6

Model code
(also order example)

KHDF3 16 1114 18X A X

Designation

KHDF3 = Direct flange ball valve 3000PSI
KHDF6 = Direct flange ball valve 6000PSI

Nominal bore

Materials

Housing, connection adapters and control spindle

- 1 = steel (standard)
- 3 = stainless steel

Ball

- 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

Options

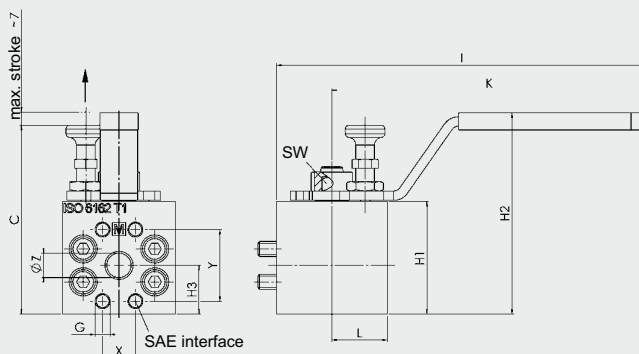
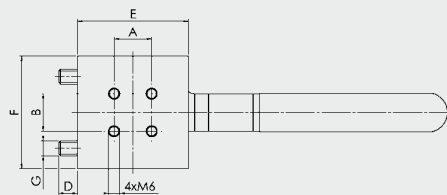
- SO 760 = can be locked in open and closed position using padlock.
Padlock not supplied
- I-1.300 = adapted for proximity switch M12,
monitoring of ball valve in either open, closed or both positions
- I-1.200 = with standard proximity switch M12,
monitoring of ball valve in open position
- I-3.200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

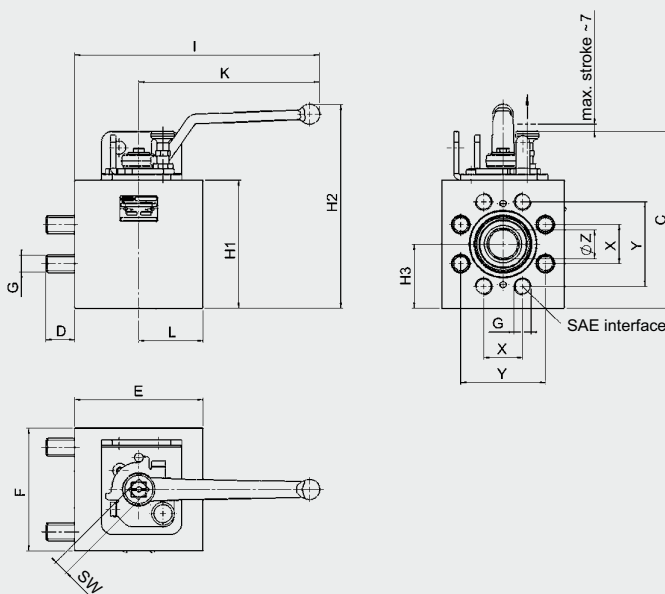
Dimensions

KHDF3



Type	A	B	C	D	E	F	G	H1	H2	H3	I	K	L	X	Y	SW	Z	PN		Proximity switch
																		bar	PSI	
KHDF3-16	20	20	100.6	10	59	60	M8	60	107.1	26	197	167	29.5	17.5	38.1	12	13	350	5000	
KHDF3-20	20	20	111	12.6	68	70	M10	70	118	32.5	206	170	32	22.3	47.6	14	19	350	5000	
KHDF3-25	25	25	116	11.6	69	75	M10	75	123	37.5	206	170	33	26.2	52.4	14	20	350	5000	
KHDF3-32	25	25	126	12	81	85	M10	85	133	42.5	209	170	42	30.2	58.7	14	25	250	3600	
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	25.5	162	158	M16	171	258	85.5	381	300	81	61.9	106.4	22	55	100	1400	M18

KHDF6



Type	A	B	C	D	E	F	G	H1	H2	H3	I	K	L	X	Y	SW	Z	PN		Proximity switch
																		bar	PSI	
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	49.5	209	147	42	31.8	66.6	14	25	400	5800	
KHDF6-32	25	25	141	19	81	100	M14	100	147	49.5	209	170	42	31.8	66.6	14	25	400	5800	
KHDF6-40			165.4	27	120	115	M16	120	190.7	60	229	169	60	36.5	79.3	14	32	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 6161, Table 1 and 2 (SAE J 518c)
Mounting position	Optional
Ambient temperature	-10°C to +80°C
Nominal pressure	210 bar or 420 bar
Operating fluids	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid	-10°C to +80°C
Spare parts	Seal kits available on request

NOTE

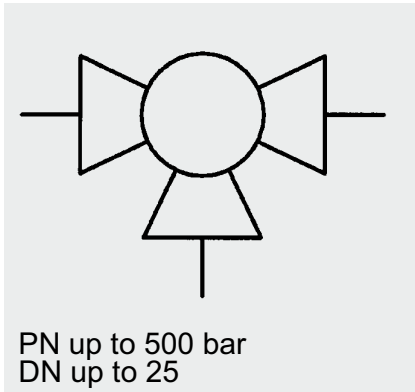
The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com





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 and control spindle

1 = Steel
3 = Stainless steel

Ball

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

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)

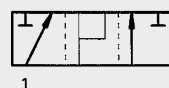
Surface protection

... = phosphate-plated (no details required)
A = zinc-plated, chrome (VI)-free

Function diagram

3/2 way ball valve L-bore 90° switch

2 3



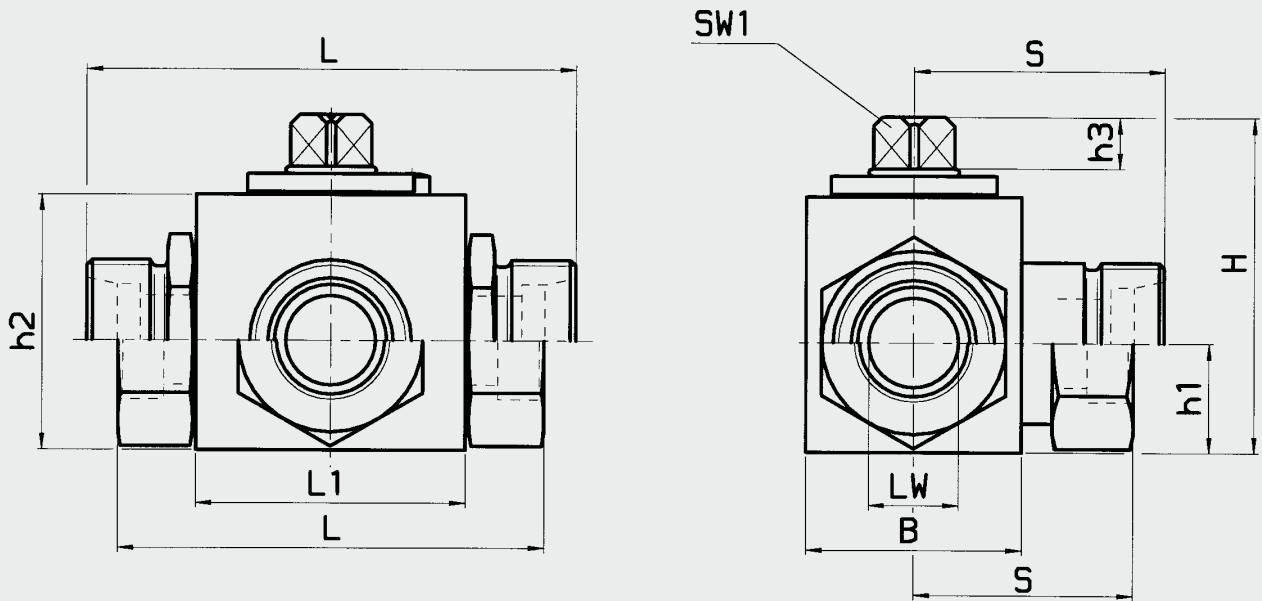
* undefined switching position

Technical specifications

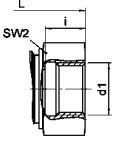
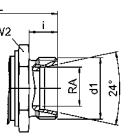
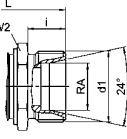
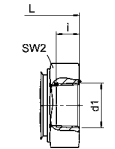
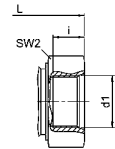
Types of connection:	Light and heavy threaded pipe connection to DIN 2353 Whitworth female thread to ISO 228 NPT SAE
Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	up to PN 500 bar
Operating fluids:	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)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

Dimensions

3/2 way ball valve

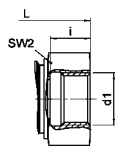
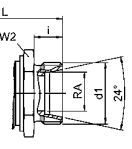
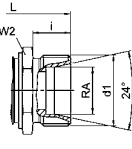


Steel

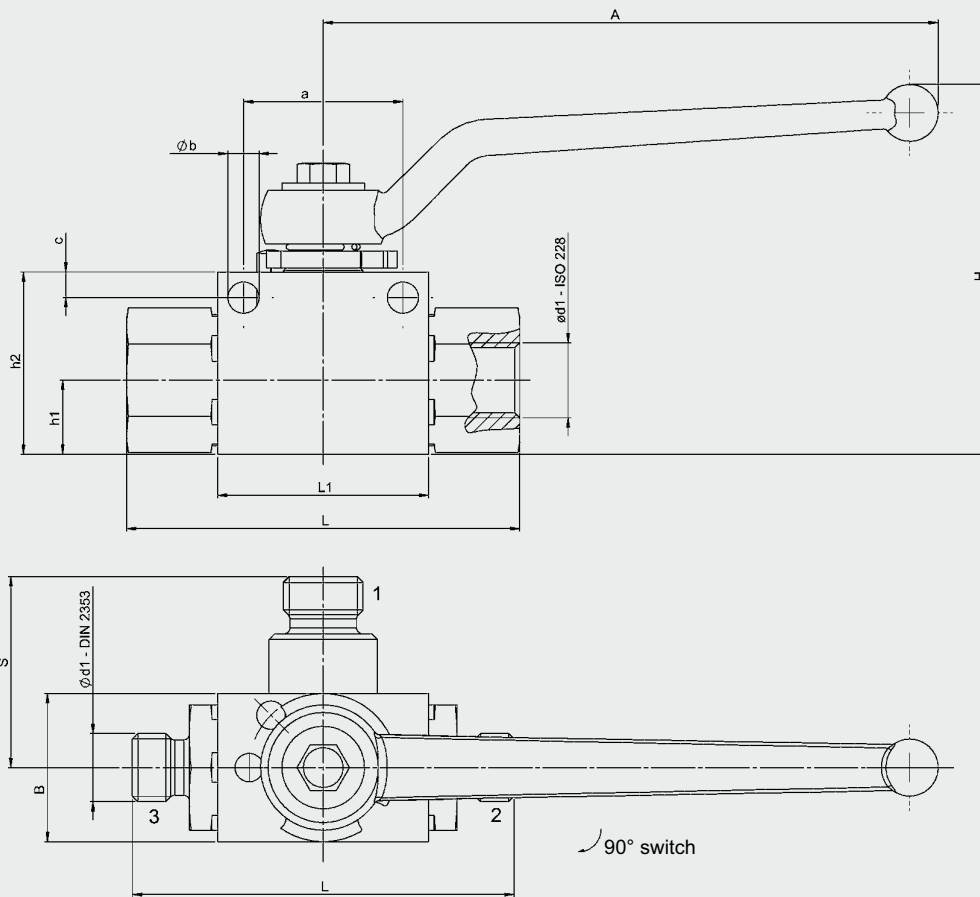
Connection type	Type	DN	Int. dia.	RA	d1	i	L	L1	B	H	h1	h2	h3	S	SW1	SW2	Wt. [kg]	Nom. press. PN [bar]
DIN ISO 228 Female thread 	KHB3K-G1/8	4	8	–	G1/8	10	69	37	26	43.7	13	32	7	34.5	9	22	0.40	500
	KHB3K-G1/4	6	8	–	G1/4	14	69	37	26	43.7	13	32	7	34.5	9	22	0.49	500
	KHB3K-G3/8	10	10	–	G3/8	14	72	42	32	53.2	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	80	108.5	43.3	90	12	70.5	17	65	5.50	350
	KHB3K-G11/2	40	35	–	G11/2	24	120	85	87	114.7	43.5	96.2	12	72	17	75	6.40	350
KHB3K-G2	50	44	–	G2	28	150	120	120	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
KHB3K-42LR	40	35	42.3	M52x2	16	149	85	87	114.7	43.5	96.2	12	74.5	17	75	5.20	350	
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	17	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 5/4 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	65	58	77.8	27.5	60	11.6	56.5	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	40.5	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	

E 5.504.15/03.10

Stainless steel

Connection type	Type	DN	Int. Ø.	RA	d1	i	L	L1	B	H	h1	h2	h3	S	SW1	SW2	Wt. [kg]	Nom. press. 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

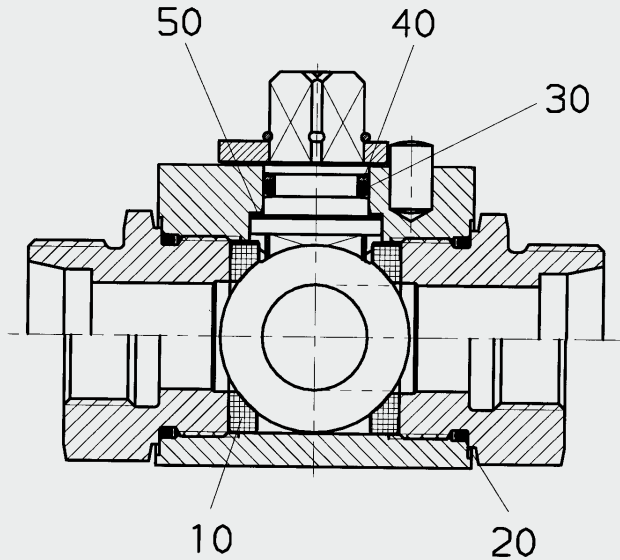
Dimensions, Mounting bore (S0 1073)



Ød1	DN	PN	L	L1	B	H	h1	h2	a	Øb	c	A	S
G 1/8	04	500	69	37	26	64	13.0	32	28	5.5	4.5	108	34.5
G 1/4	06	500	69	37	26	64	13.0	32	28	5.5	4.5	108	34.5
G 3/8	10	500	72	42	32	68	17.0	40	32	5.5	5.0	108	36.0
G 1/2*	13	500	84	47	35	68	17.0	40	32	5.5	5.0	108	41.5
G 1/2	16	400	83	47	38	102	19.0	45	38	5.5	5.0	174	41.5
G 3/4	20	315	95	60	48	115	24.5	57	46	6.6	6.0	174	47.5
G 1	25	315	113	65	57	122	28.5	64	46	6.6	6.0	174	56.5
08LR	06	500	67	37	26	64	13.0	32	28	5.5	4.5	108	33.5
10LR	08	500	71	37	26	64	13.0	32	28	5.5	4.5	108	35.5
12LR	10	500	74	42	32	68	17.0	40	32	5.5	5.0	108	37.0
15LR*	13	500	82	47	35	68	17.0	40	32	5.5	5.0	108	41.0
15LR	12	400	82	47	38	102	19.0	45	38	5.5	5.0	174	41.0
18LR	16	400	82	47	38	102	19.0	45	38	5.5	5.0	174	41.0
22LR	20	315	101	60	48	115	24.5	57	46	6.6	6.0	174	50.5
28LR	25	315	108	65	57	122	28.5	64	46	6.6	6.0	174	54.0

* 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.

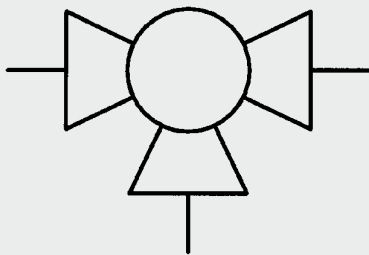
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com

Change-Over Low Pressure Ball Valves

KHN3K



PN up to 25 bar
DN up to 40

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 and control spindle

2 = brass, nickel-plated

Ball

2 = brass, hard-chromed

Ball seal

3 = PTFE (Teflon)

Control spindle seal

3 = PTFE (Teflon)

Handle

12 = aluminium clamped handle, cranked, fitted

Series

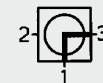
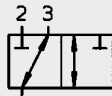
X = determined by manufacturer

Switching functions (as supplied)

3/2 way change-over ball valve

L-bore

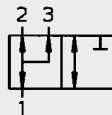
90° switch



3/2 way change-over ball valve

T-bore

90° switch

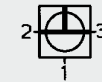
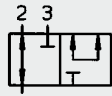


By moving the control spindle through 90°, the following switching positions can also be achieved.

3/2 way change-over ball valve

T-bore

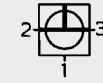
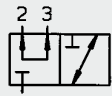
90° switch



3/2 way change-over ball valve

T-bore

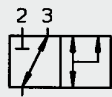
90° switch



3/2 way change-over ball valve

T-bore

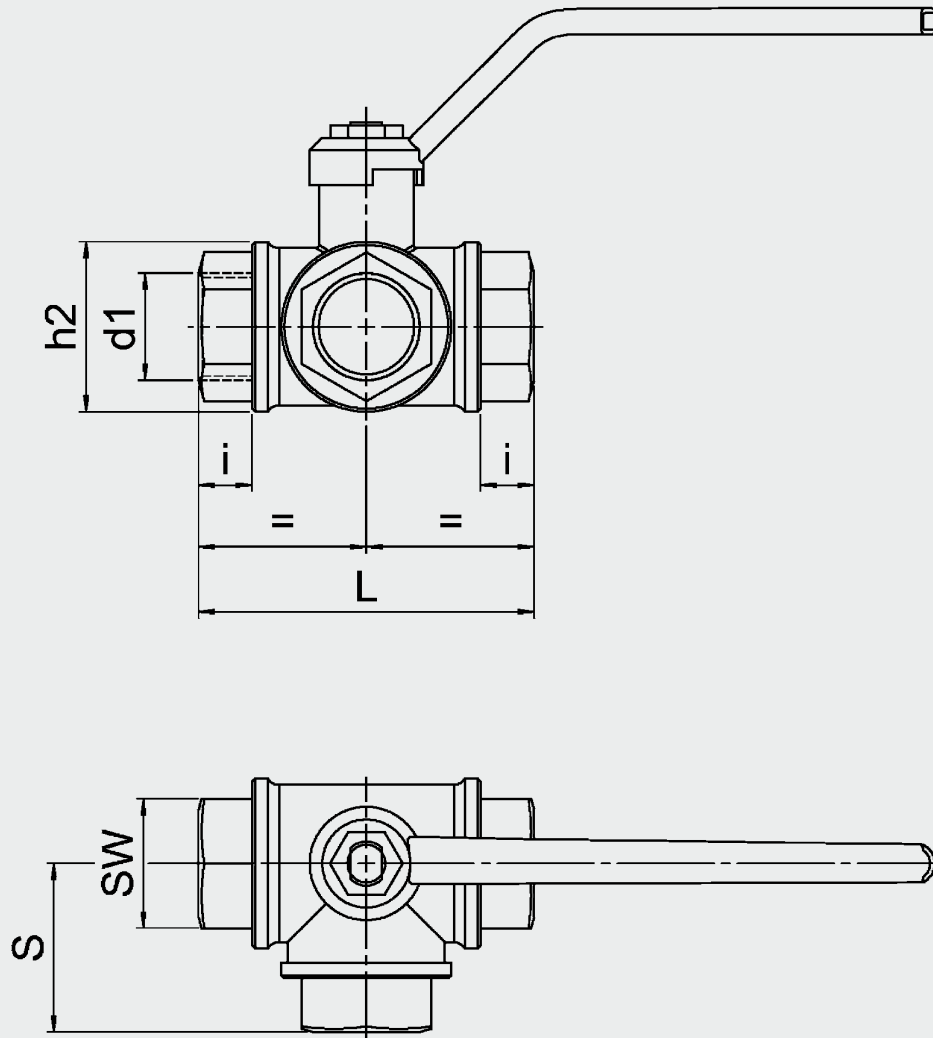
90° switch



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

Subject to technical modifications.

HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

Tel.: +49 (0)6897 - 509-1001

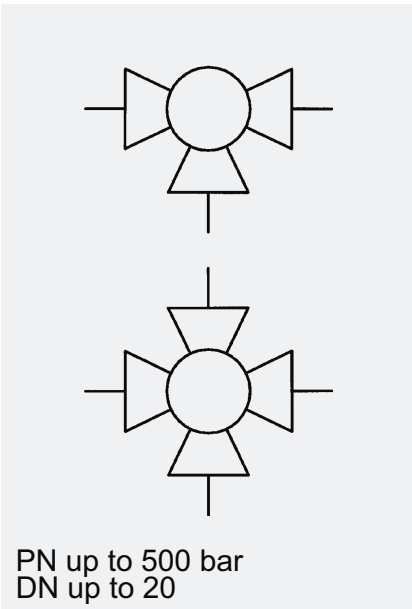
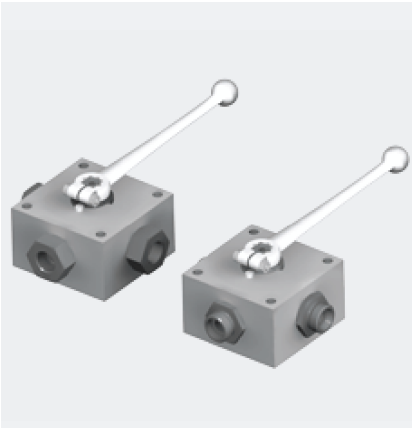
Fax: +49 (0)6897 - 509-1009

Internet: www.hydac.com

E-Mail: info@hydac.com

3-Way and 4-Way Ball Valves

KH3 / KH4



PN up to 500 bar
DN up to 20

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 and control spindle

1 = Steel
3 = Stainless steel

Ball

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

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

Series

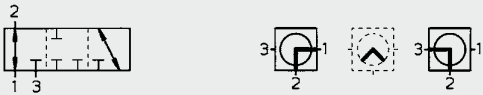
(determined by manufacturer)

Standard model functions

(Standard)
(Positive switching overlap)

3-way ball valve L-bore

90° switch



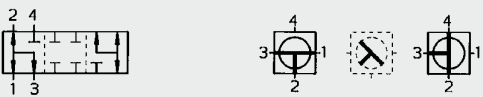
3-way ball valve T-bore

90° switch



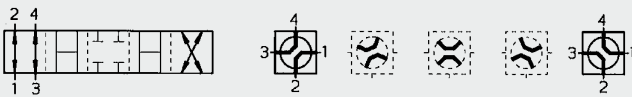
4-way ball valve T-bore

90° switch



4-way ball valve X-bore

90° switch



Non-standard model functions

(positive switching overlap)

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

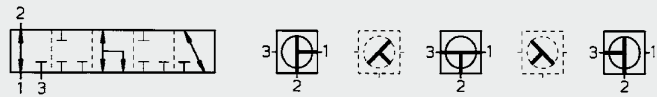
3-way ball valve L-bore, 90° switch, detent at 45°, SO 378



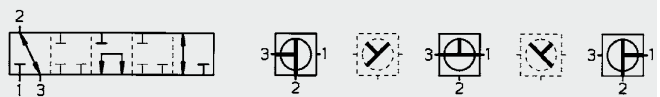
3-way ball valve T-bore, 90° switch, detent at 45°, SO 379



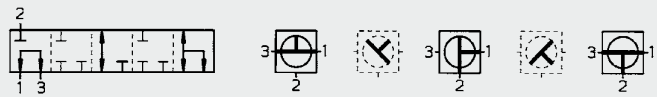
3-way ball valve T-bore, 180° switch, no detent on centre setting



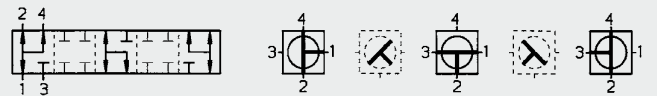
3-way ball valve T-bore, 180° switch, SO 926.1, no detent on centre setting



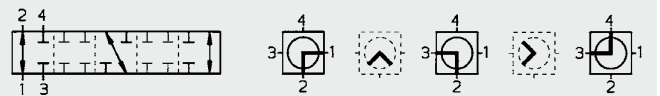
3-way ball valve T-bore, 180° switch, SO 926.2, no detent on centre setting



4-way ball valve T-bore, 180° switch, no detent on centre setting



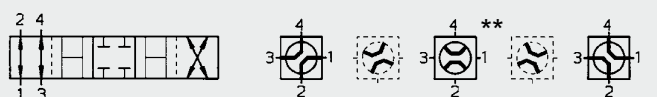
4-way ball valve L-bore, 180° switch, no detent on centre setting



4-way ball valve X-bore, 45° switch, SO 384



4-way ball valve X-bore, 90° switch with detent position at 45°, SO 385



4-way ball valve T-bore, 90° switch with detent position at 45°, SO 389



undefined switching position

*

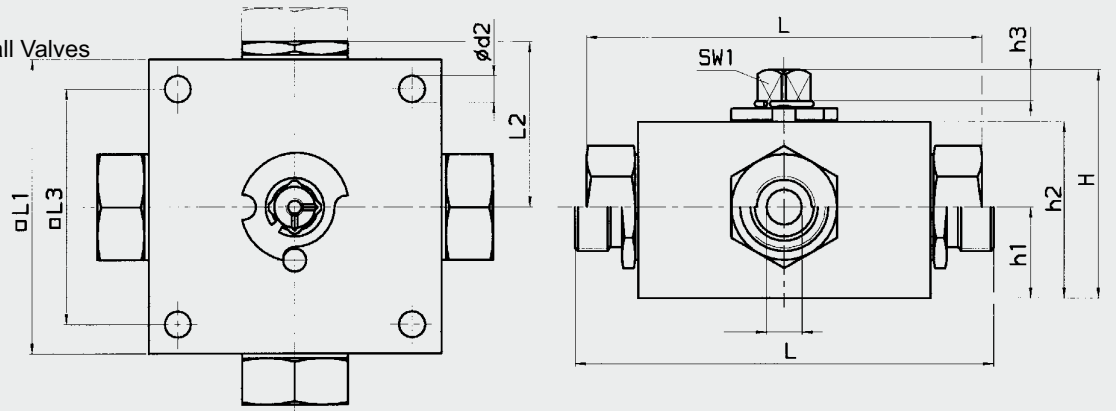
The centre setting is held by a detent pin.

Technical specifications

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 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

Dimensions

3-Way and 4-Way Ball Valves



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

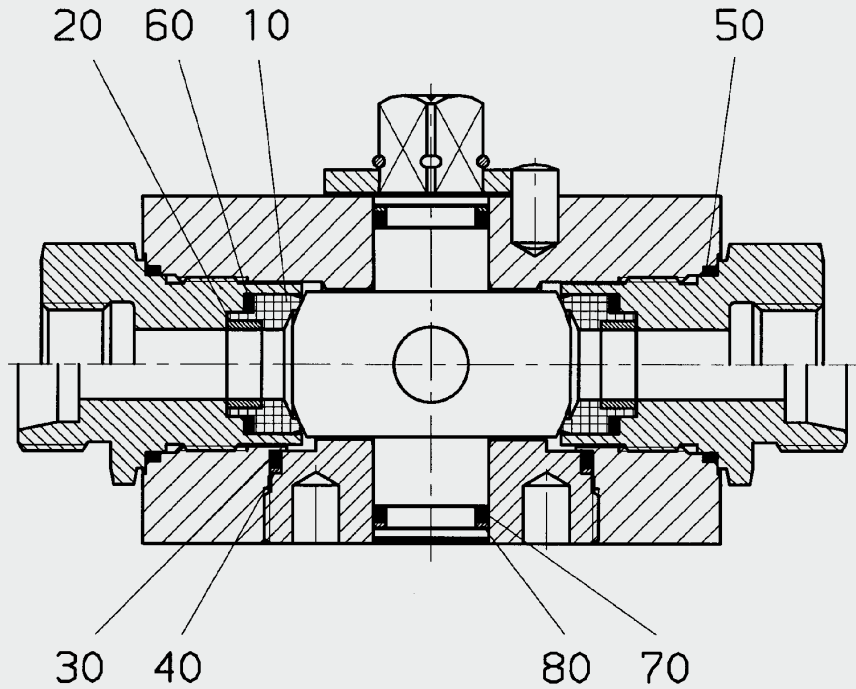
Type	DN	Bore int. Ø			RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nom. press. PN [bar]
		L	T	X																
KH3/4-06LR	4	6	6	4.5	6	M12x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-08LR	6	6	6	4.5	8	M14x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-10LR	8	9	9	6	10	M16x1.5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

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

Type	DN	Bore int. Ø			RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nom. press. PN [bar]
		L	T	X																
KH3/4-06NPT	6	6	6	4.5		1/4 - 18 NPT	10.21	100	70	42.5	55	83	22	40	11	6.5	12	24	1.75	500
KH3/4-10NPT	10	9	9	6		3/8 - 18 NPT	10.36	115	80	46	65	63.5	27	50	11.5	6.5	14	30	2.7	500
KH3/4-12NPT	12	13	13	10		1/2 - 14 NPT	13.56	135	100	56	85	75.5	31	60	11.5	9	14	36	4.8	400
KH3/4-20NPT	20	18	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			RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nom. press. PN [bar]
		L	T	X																
KH3/4-10SAE	10	9	9	6		9/16-18 UNF	13	115	80	46	65	63.5	27	50	11.5	6.5	14	30	2.68	500
KH3/4-12SAE	12	9	9	10		3/4-16 UNF	15	135	100	56	80	75.5	31	60	11.5	9	14	36	4.75	400
KH3/4-20SAE	20	13	13	14		1 1/16 - 12 UN	20	144	100	58	85	91	36	73	10.5	9	17	46	6.1	315

Spare parts (seal kit)



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

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

NOTE

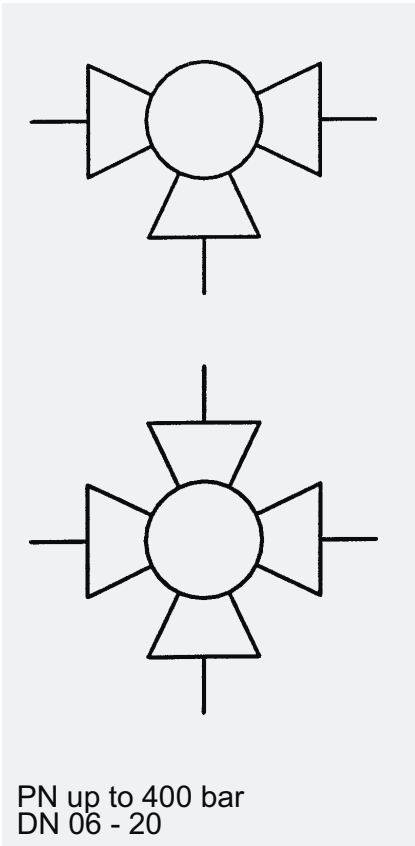
The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.

3-Way and 4-Way Manifold Mounted Ball Valves

KH3P / KH4P



PN up to 400 bar
DN 06 - 20

Model code

(also order example)

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

Description

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 page 2)

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 specification
- 180° = 180° switch

(Please see examples on the next page)

Standard models

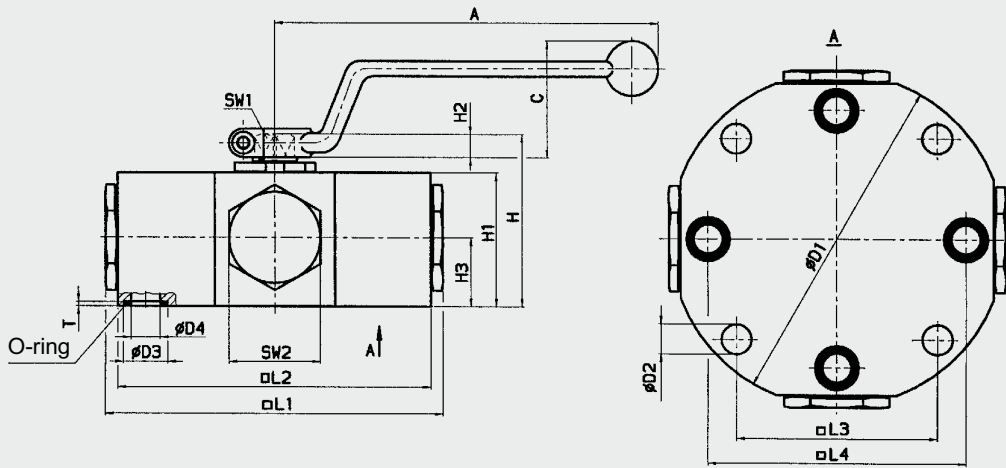
	Ball bore	Switching movement	Function diagram	SO ... model	
KH3P	L	0° - 90°			-
	T	0° - 45°			45°
	T	0° - 90°			-
	T	0° - 90° - 180°			180°
	L	0° - 45° - 90°			SO 378
	T	0° - 45° - 90°			SO 379
KH4P	T	0° - 90°			-
	X	0° - 45°			45°
	X	0° - 90°			-
	L	0° - 90° - 180°			180°
	T	0° - 90° - 180°			180°
	X	0° - 45° - 90°			SO 385
	T	0° - 45° - 90°			SO 389

* - detent position at 45°

--- undefined switching position

Other models or special ball bores on request

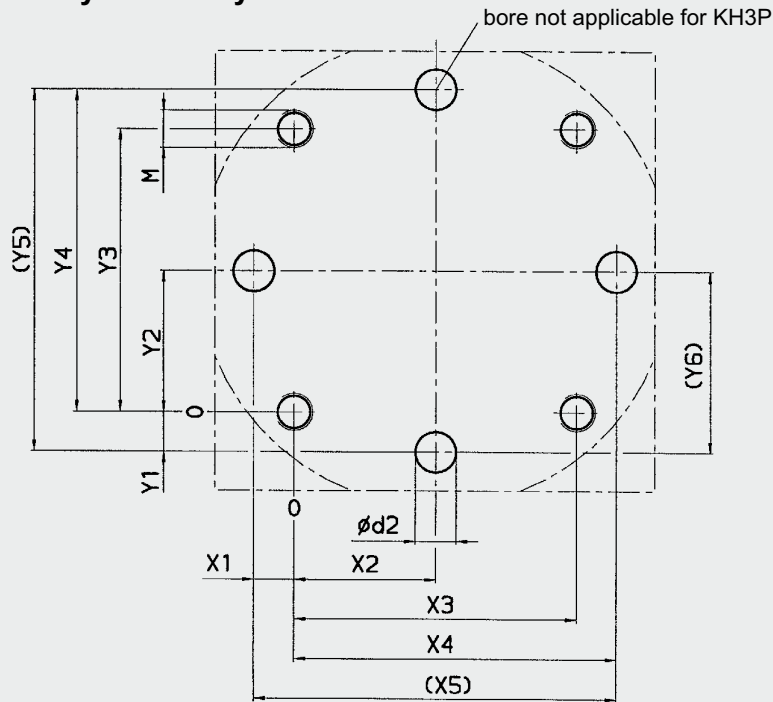
3-way and 4-way manifold mounted ball valve with cranked aluminium handle



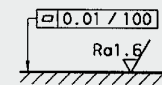
DN	Int. diam.			L1	L2	L3	L4	H	H1	H2	H3	D1	D2	D3	D4	SW 1	SW 2	T
	L	T	X															
06	5	5	4.5	103	90	70	68.6	57	40	11	22	--	6.5	11.7	6	12	27	1.9
10	9	9	6	113	100	80	81	67.5	50	11.5	27	--	9	14.7	8	14	30	1.9
16	12	12	10	152.5	140	90	115.4	77.5	60	11.5	31.5	150	13.5	19.7	13	14	41	2
20	18	18	14	184	170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

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

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



Required surface finish on interface area



Dimensional tolerances ISO 2768 m

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

* Standard values for friction coefficient μ 0.14

Technical specifications

Mounting position:	Optional
Ambient temperature:	-10 °C to +80 °C
Nominal pressure:	Up to PN 400 bar (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

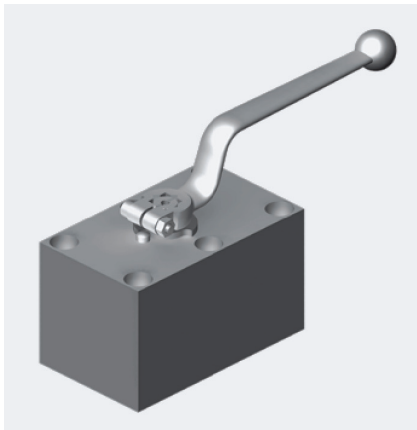
NOTE

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

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

Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com

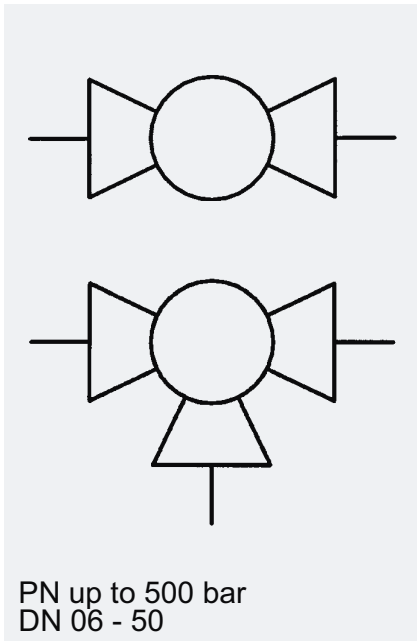


Manifold Mounted Ball Valves

KHP / KHP3K

Model code
(also order example)

KHP3K 16 L 1114 06 X ...



PN up to 500 bar
DN 06 - 50

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, control spindle

1 = Steel

3 = Stainless steel

Ball

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 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

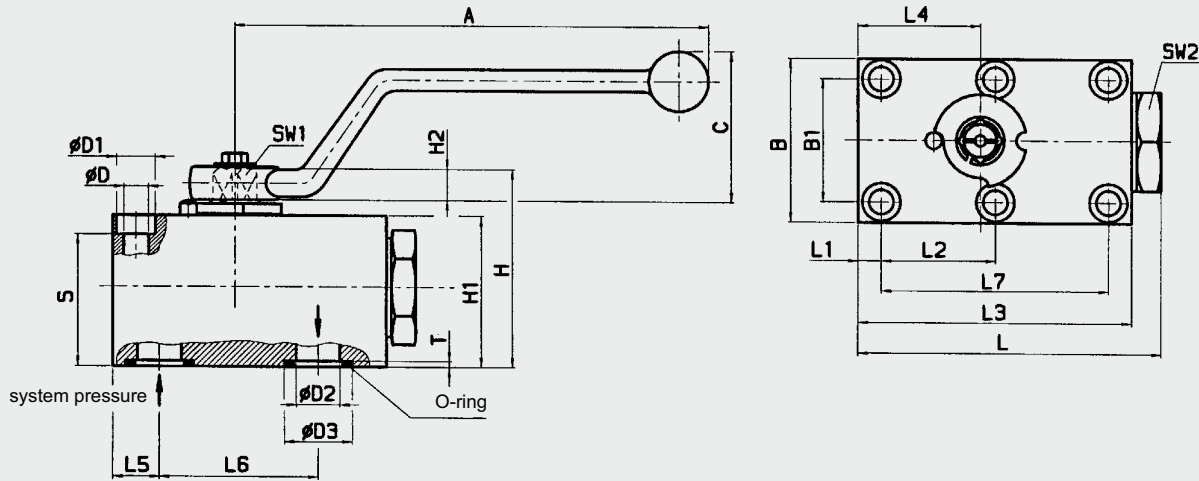
SO 560.1 - positive switching overlap

T-bore on request

Dimensions

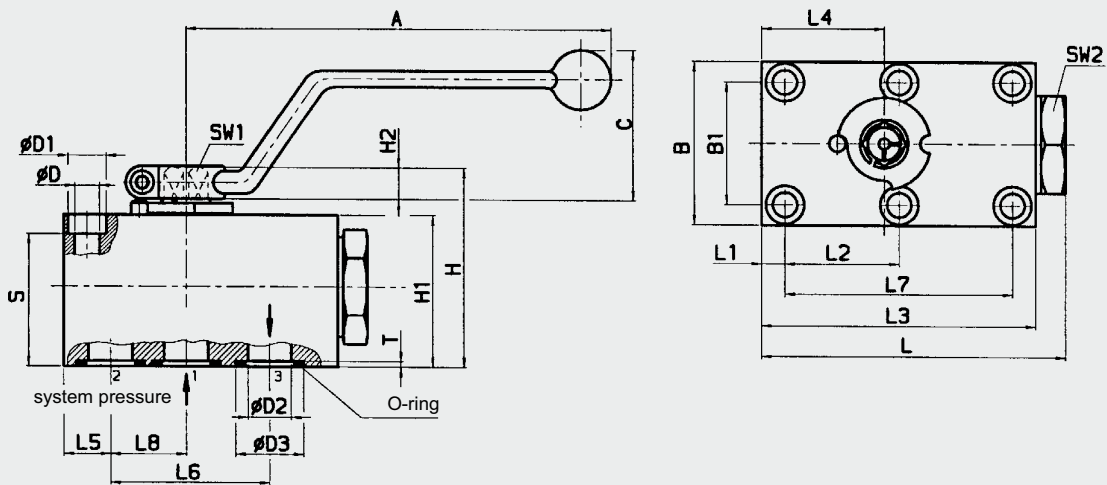
KHP

Manifold mounted ball valve with cranked bolt-on steel handle



KHP3K

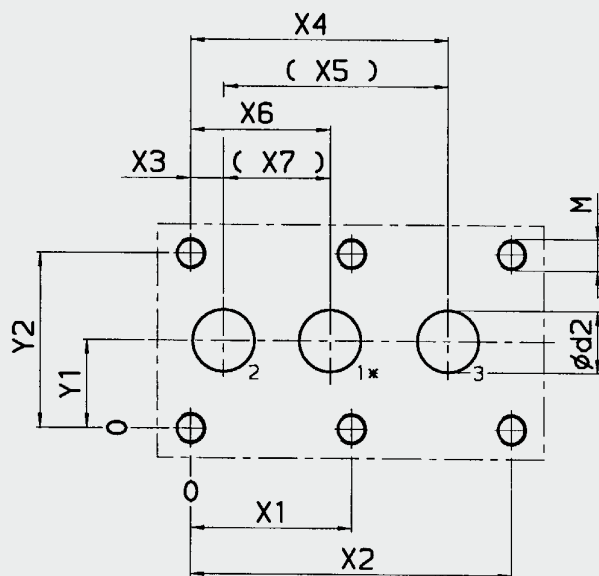
3-way manifold mounted ball valve with cranked clamped aluminium handle



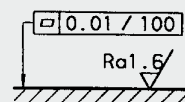
DN	Int. Ø.	L	L1	L2	L3	L4	L5	L6	L7	L8	B	B1	SW1	A	C
06	6	64	8.5	17.5	59	25	8.5	35	35	17.5	40	27	6	60	23
10	9.5	80	7.5	27.5	70	29	10	44	55	19	55	40	9	108	28
16	16	109.4	8.5	41.5	100	44	17	58	83	26.5	60	45	12	163	50
20	20	127	10	48.5	117	51	20	69	97	31	70	51	14	169	59
25	23.5	145	10	57.5	135	62	24	81	115	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]	Press. 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

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 bar (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.

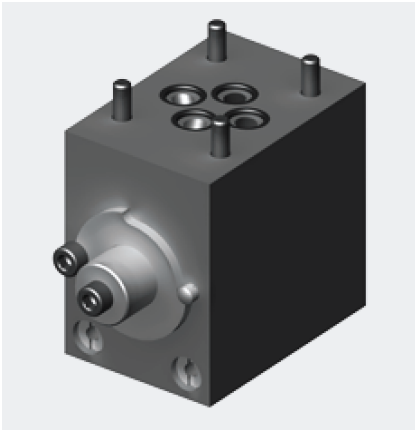
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

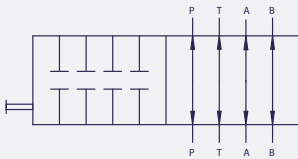
HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com



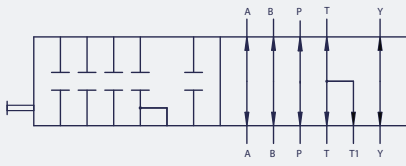
Isolator Sandwich Plate CETOP



Symbol DN 06



Symbol DN 10



Model code

(also order example)

KHB4K **DN10** **CETOP** **5302** **09** **X**

Designation

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

Nominal bore

DN06
DN10

Connection type

CETOP

Materials

Housing

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

Spindle

3 = stainless steel 1.4462

Gasket

0 = metal

O-ring

2 = NBR

Handle

09 = without handle

Series

(determined by manufacturer)

Function

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

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

Advantages

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

Technical specifications

Design	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/EC; DIN EN 19; ISO 4401, DIN 24340-T2

KHB4K-DN06-1302-09X

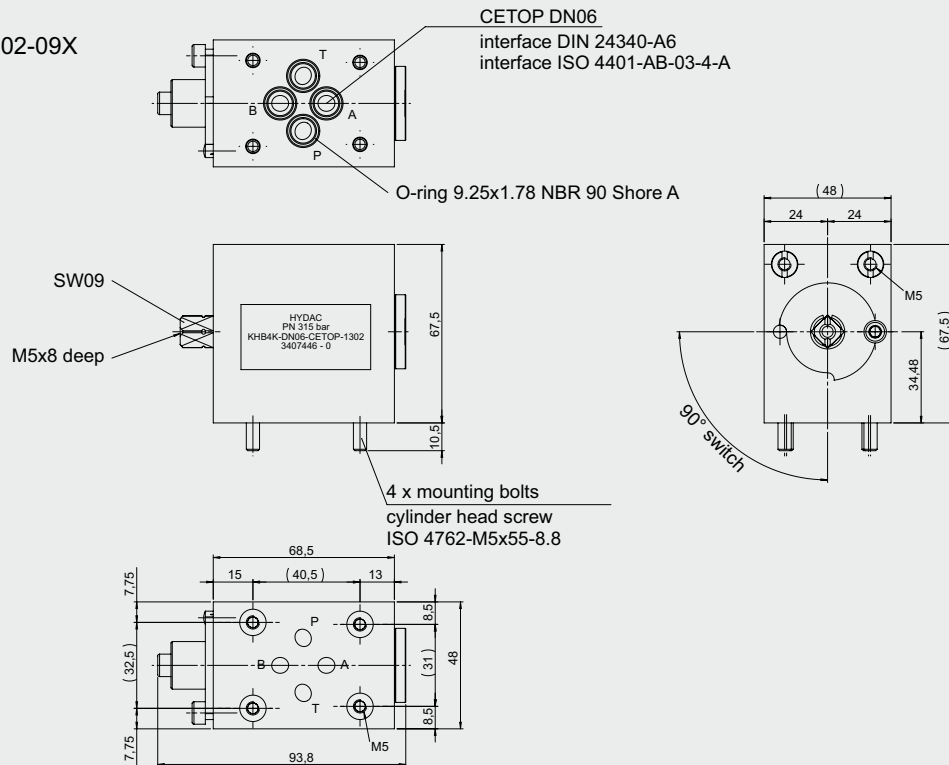
Connection type	CETOP DN06
Interface	DIN 24340-A6 ISO 4401
Temperature of the medium	-10°C to + 70°C
Ambient temperature	-10°C to + 70°C
Nominal pressure	PN 315 bar
Max. operating pressure	PB 315 bar

KHB6K-DN10-5302-09X

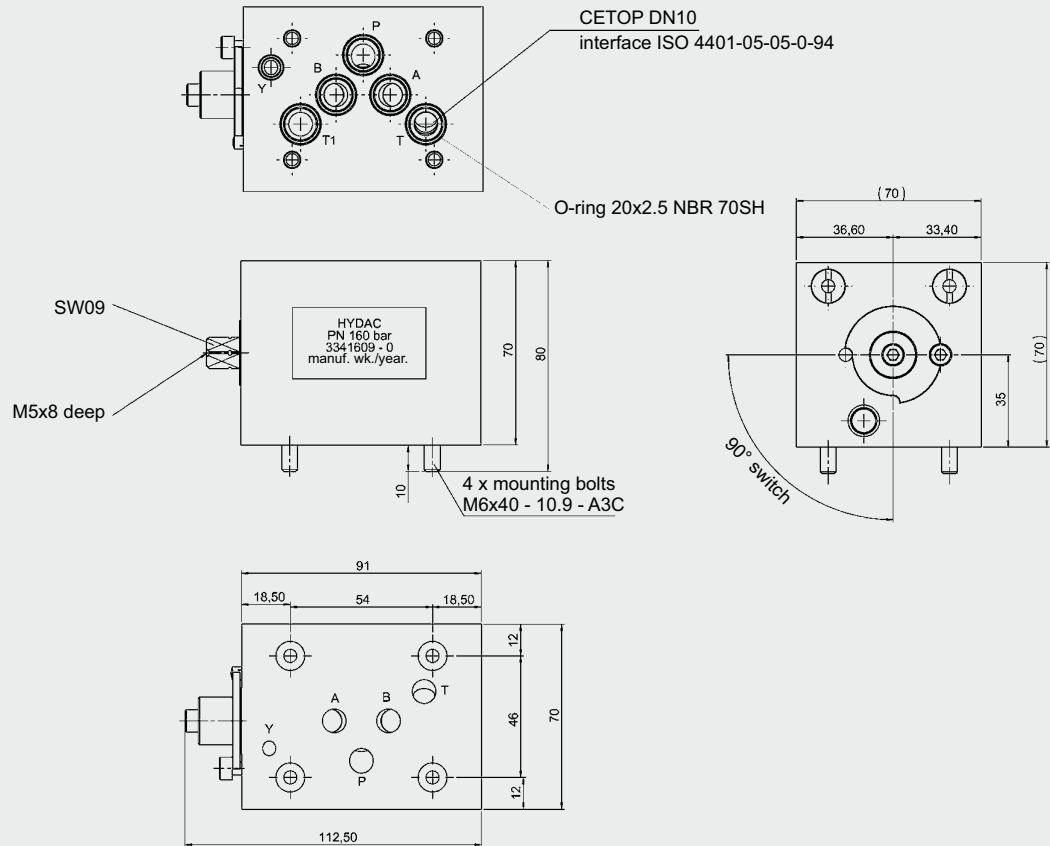
Connection type	CETOP DN10
Interface	DIN 24340-A10 ISO 4401
Temperature of the medium	+30°C to + 60°C
Ambient temperature	-20°C to + 70°C
Nominal pressure	PN 160 bar
Max. operating pressure	PB 160 bar

Dimensions

KHB4K-DN06-CETOP-1302-09X



KHB4K-DN10-CETOP-5302-09X



NOTE

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

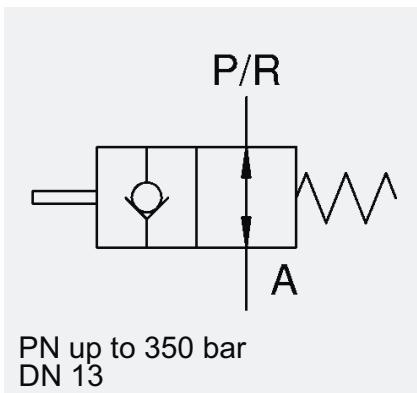
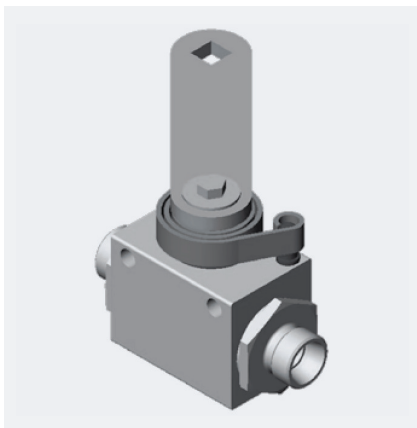
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

HYDAC Accessories GmbH
 Hirschbachstr. 2
 66280 Sulzbach/Saar
 Tel.: +49 (0)6897 - 509-1001
 Fax: +49 (0)6897 - 509-1009
 Internet: www.hydac.com
 E-Mail: info@hydac.com



Spring Return Isolator HKHB



Model code

(also order example)

HKHB 12LR 1112 09X A CCW OK 0°

Designation

HKHB = Block ball valve with 2 mounting holes $\varnothing 6.5$, 37.5mm apart, 5mm 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 and control spindle

1 = steel

Ball

1 = steel

Ball seal

1 = POM

Control spindle seal

2 = NBR (Perbunan)

Handle

15 = steel bolt-on handle, straight

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

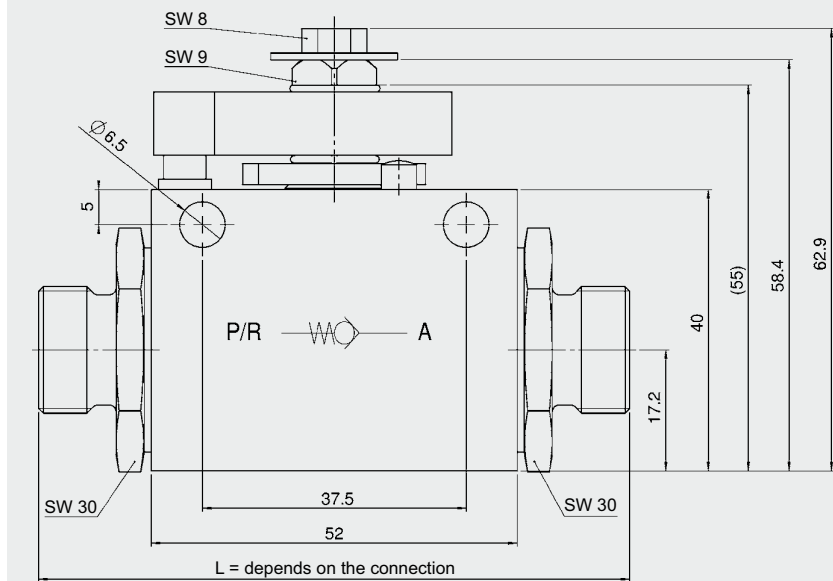
0° 315°

(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

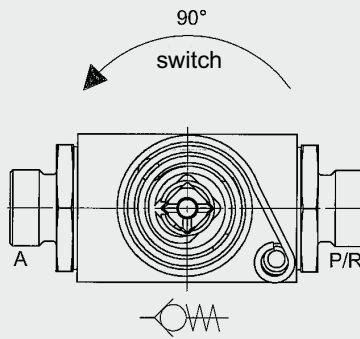
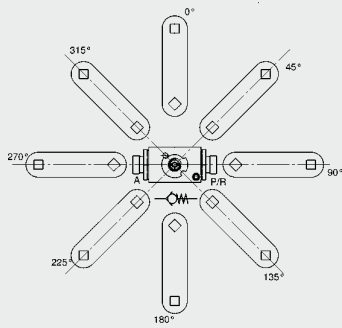


Technical specifications

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 75mm (100x25x4) long 125mm (150x25x4)
Reset torque	2 Nm
End position	8 Nm

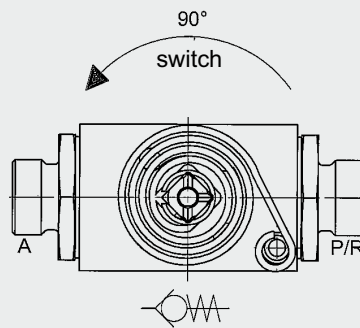
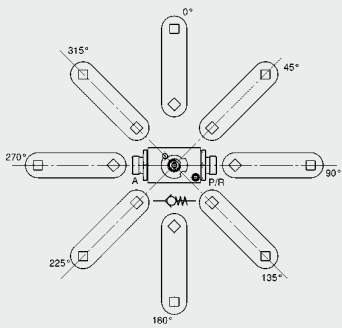
ORDER FORM

Handle position



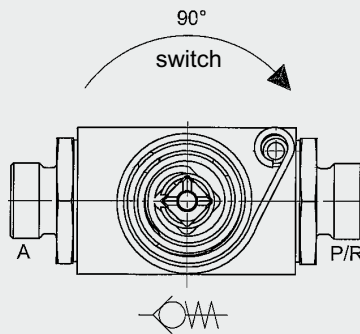
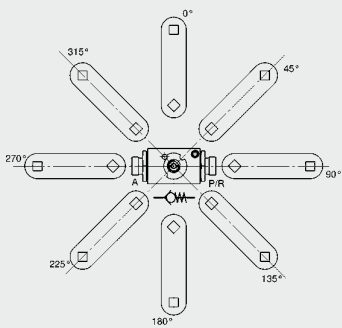
-
- Open
- Anti-clockwise CCW
- Connection: 10L
- 12L
- 15L
- 10SR
- Handle: short
- long
- Handle position:°

Handle position



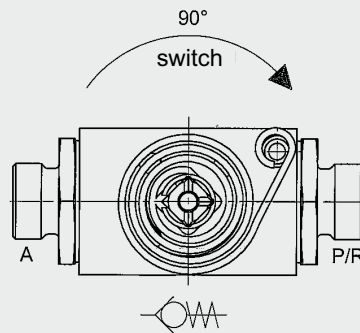
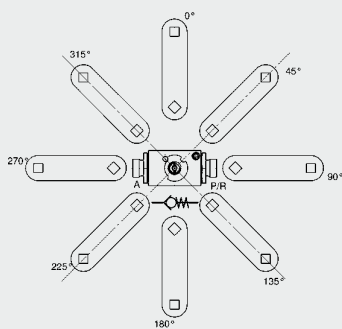
-
- Closed
- Anti-clockwise CCW
- Connection: 10L
- 12L
- 15L
- 10SR
- Handle: short
- long
- Handle position:°

Handle position



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

Handle position



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

NOTE

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

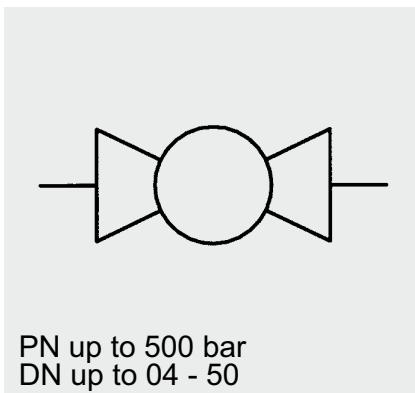
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

HYDAC Accessories GmbH
 Hirschbachstr. 2
 66280 Sulzbach/Saar
 Tel.: +49 (0)6897 - 509-1001
 Fax: +49 (0)6897 - 509-1009
 Internet: www.hydac.com
 E-Mail: info@hydac.com



Ball Valves with Pneumatic Actuator



Model code
(also order example)

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 = 24V
AC = 230V 50Hz

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

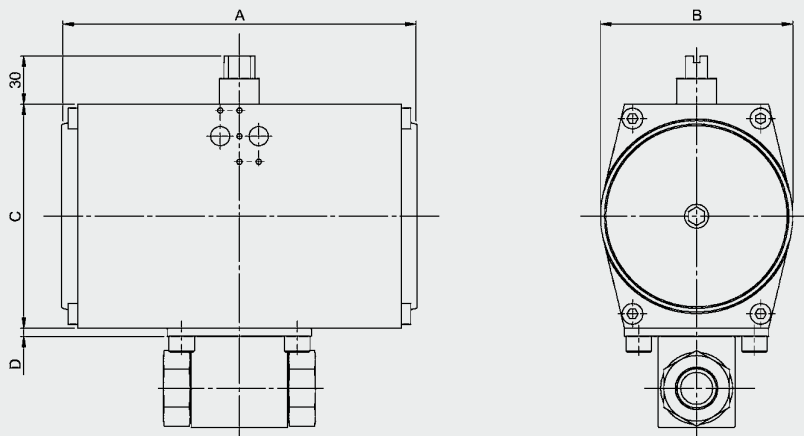
Note

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

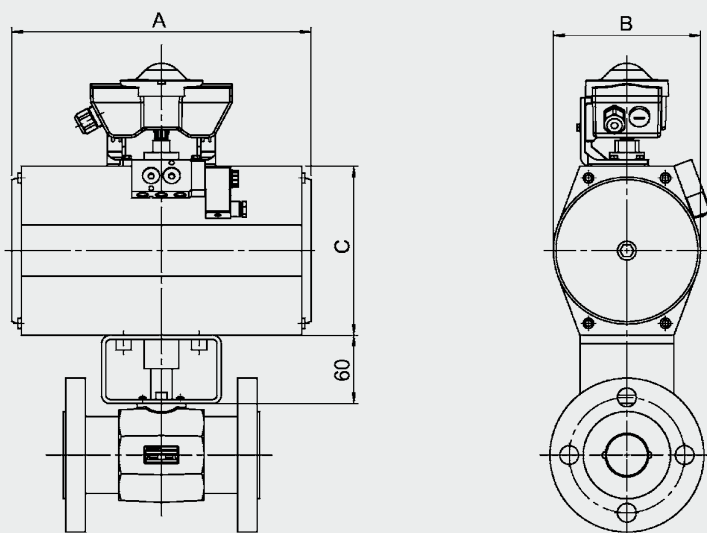
For flanged, manifold and 3-way and 4-way ball valves, a separate coupling is required for assembly.

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

Assembly using adapter plate



Assembly using separate coupling



Technical specifications

Mounting position	Optional
Ambient temperature	-10°C to +80°C
Nominal pressure	Up to PN 500 bar (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

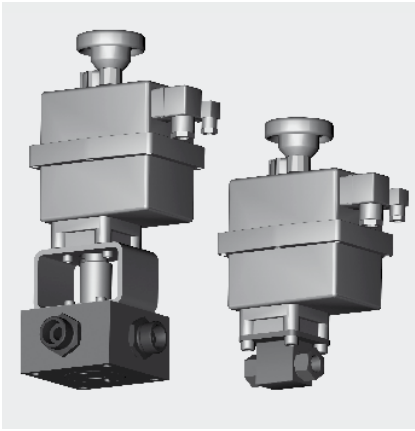
NOTE

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.

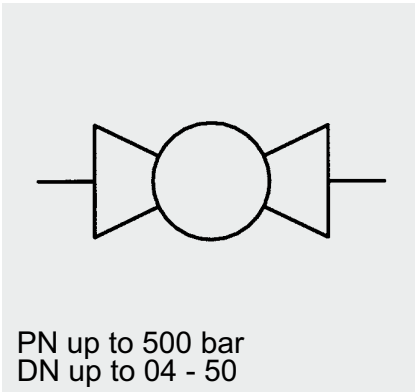
Subject to technical modifications.

Electrically Actuated Ball Valves



Model code
(also order example)

KHB-G1/4-1114 AE.24V



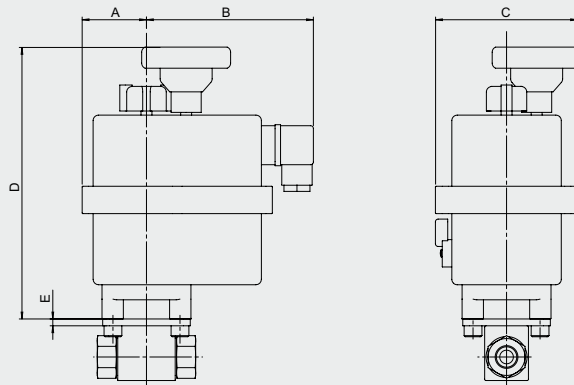
Designation

Type of ball valve

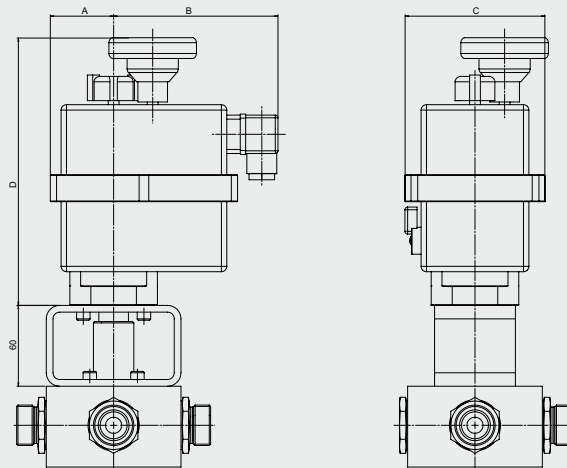
Actuator code

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

Assembly using adapter plate



Assembly using separate coupling



Dimensions

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

Note

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

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

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

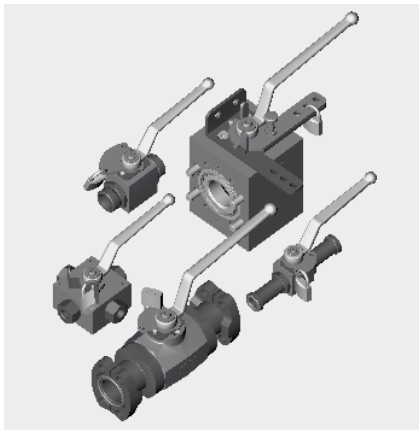
Mounting position	Optional
Ambient temperature	-10°C to +80°C
Nominal pressure	Up to PN 500 bar (see pressure range)
Operating fluids	Mineral oil to DIN 51524 Part 1 and Part 2 (other fluids on request)
Temperature of operating fluid	-10°C to +80°C
Spare parts	Seal kits available on request

NOTE

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.



Lockable Ball Valves

Model code
(also order example)

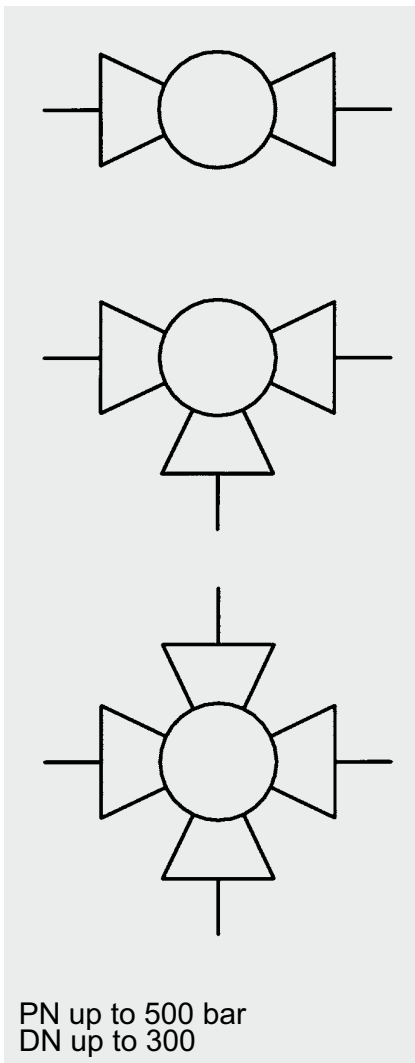
KHB-16SR-1114-16X SO 760

Designation

Type of ball valve

Lockable

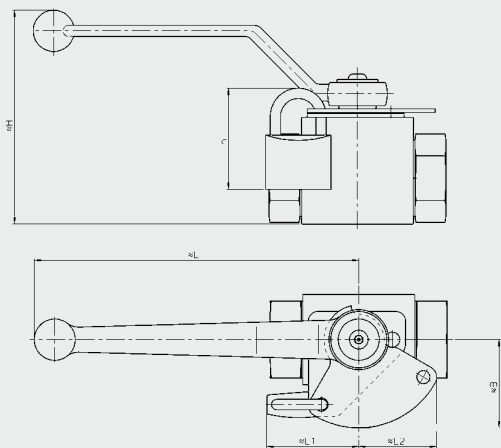
- SO 760 = Ball valve can be locked in open and closed position using padlock. Padlock not supplied.
- SO 770 = Ball valve can be locked in open and closed position using padlock.
- SO 160 = Ball valve can be locked in open and closed position using cylinder lock. Key can be removed once locked.



PN up to 500 bar
DN up to 300

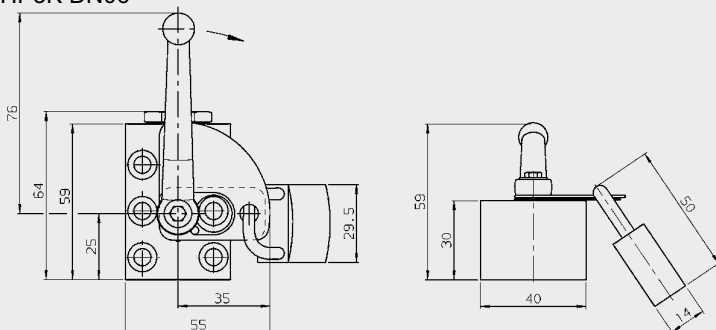
Lockable ball valves SO 760/770

KHB/KHM

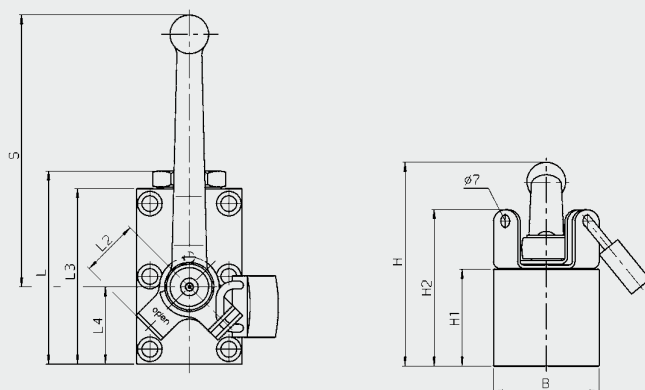


DN		L1	L2	h	B	H	L
04/06	M5	42	28.5	54	32	63.5	108
08/10/13	M5	42	28.5		32	68.5	108
12/16	M5	43	30.5		34	102	174
20	M6	50	41.7		47	114	174
25	M6	50	41.7		47	121	174
32	M8	47	37.9		42	158.5	213
40	M8	47	37.9		42	169.5	213
50	M8	47	37.9		42	186	213

KHP/KHP3K DN06



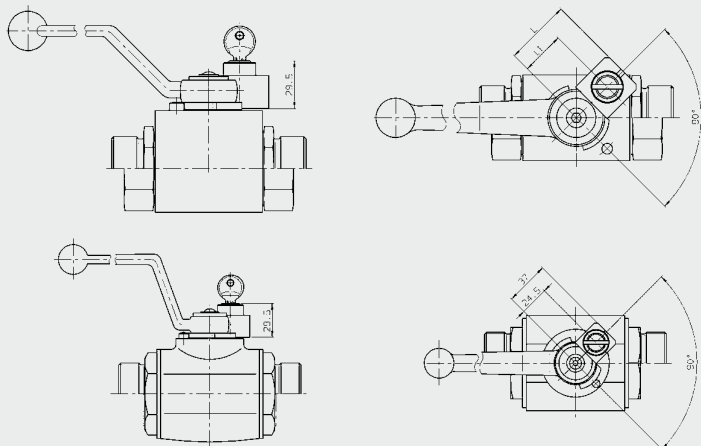
KHP/KHP3K DN10 - 50



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

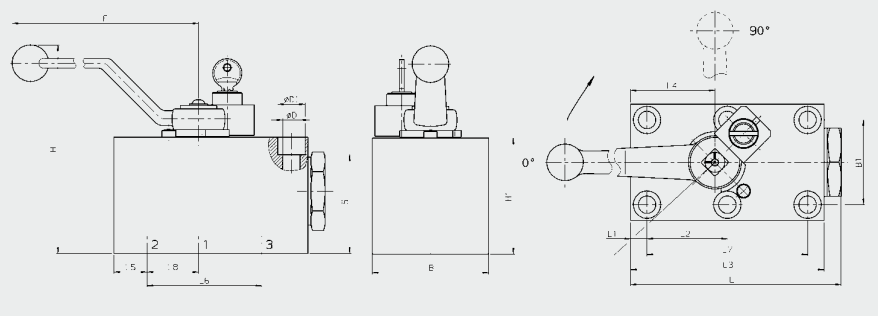
KHM-32-50 SO160



SO 160 - Ball valve can be locked in open or closed position.
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

KHP3K 16-25



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

NOTE

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

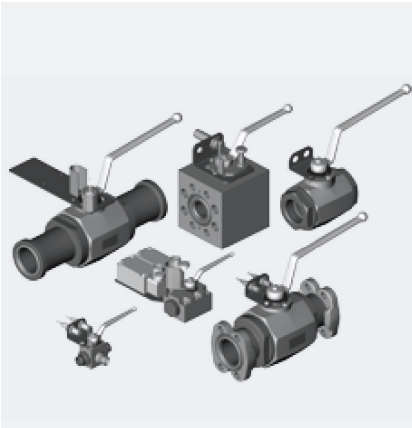
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com

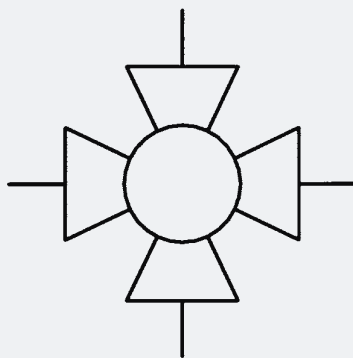
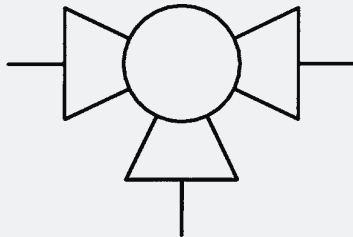
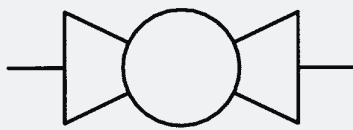


Ball Valves with Electrical Limit Controls



Model code (Limit switch)
(also order example)

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



Designation

Type of ball valve

Limit control

E = limit switch (position switch)

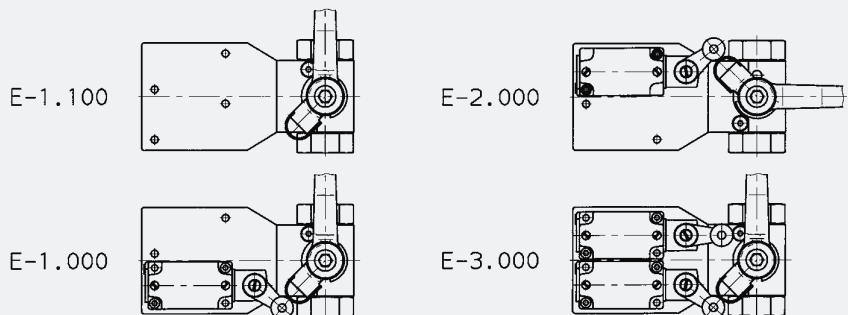
Monitored switching position

- 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 position

Limit switch code

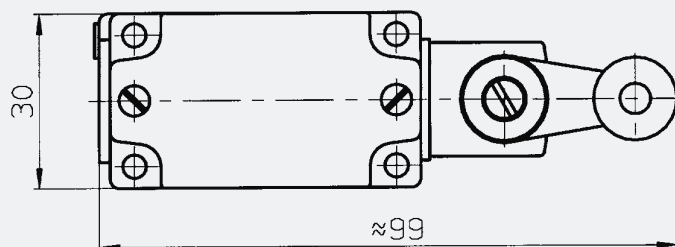
000 = limit switch to DIN EN 50041 - Form A
 100 = adapted for limit switch to DIN EN 50041 - Form A
 ... = on request, almost all commercially available makes and protection classes can be supplied..

Examples of different models



PN up to 500 bar
DN up to 300

Limit switch



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

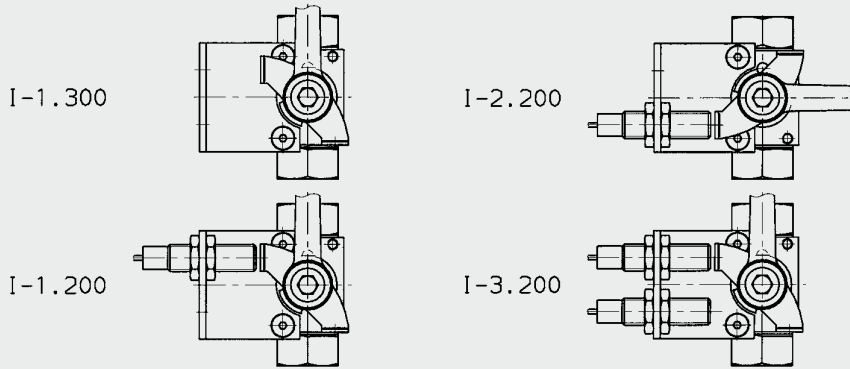
Monitored switching position

- 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 position

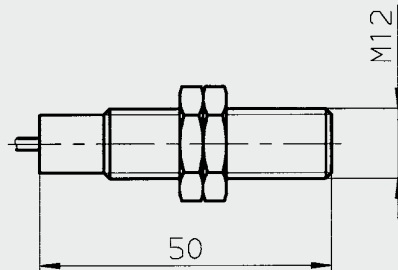
Proximity switch code

- 200 = with built-in cylindrical proximity switch M12 to DIN EN 60947 Type: IA
- 300 = adapted for cylindrical proximity switch M12 to DIN EN 60947 Type: IA
- ... = on request, almost all commercially available makes and protection classes can be supplied.

Examples of different models



Inductive proximity switch



Technical specifications

Limit switch:

Position switch:	to DIN EN 50041 Form A, metal enclosure with roller lever
Switch equipment:	1 N/C contact and 1 N/O contact
Protection class:	IP 67
Insulation group:	500 V AC
Continuous current:	10 A
Nominal voltage:	300 V AC
Mechanical service life:	30 x 10 ⁶ switching cycles
Switching frequency:	6 x 10 ³ switching cycles per hour
Permitted ambient temperature:	-40 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 to +70 °C
Function display:	LED
Type of connection:	Cable 3 conductor, 5 m long

Spare parts

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

NOTE

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

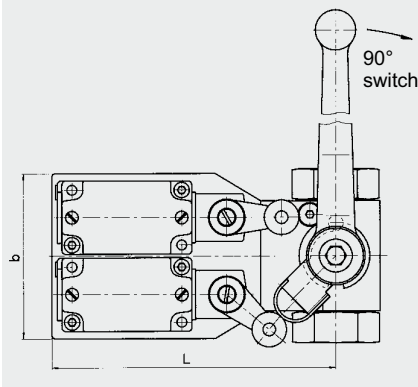
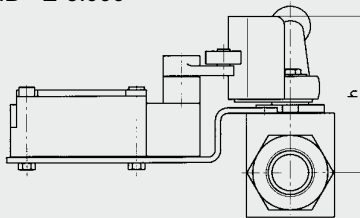
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

DIMENSIONS

BALL VALVE WITH LIMIT SWITCH

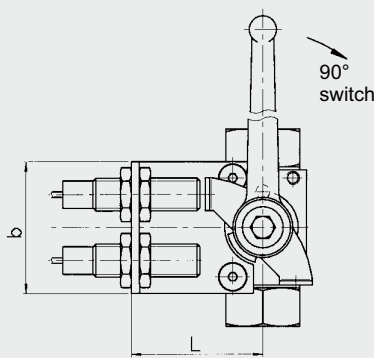
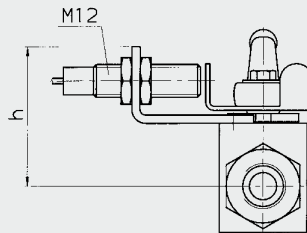
KHB - E-3.000



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

HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

Tel.: +49 (0)6897 - 509-1001

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
--------	----	------

Description

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 (SW 17 only)

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.

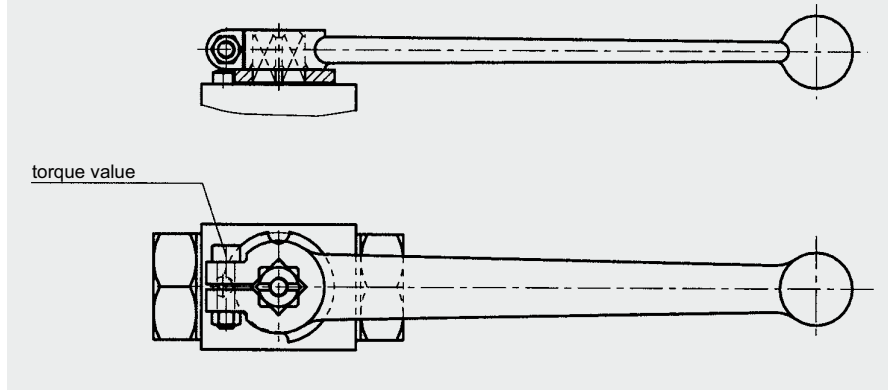
Bolt-on handle

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

Both types of handle can be displaced by 45°.

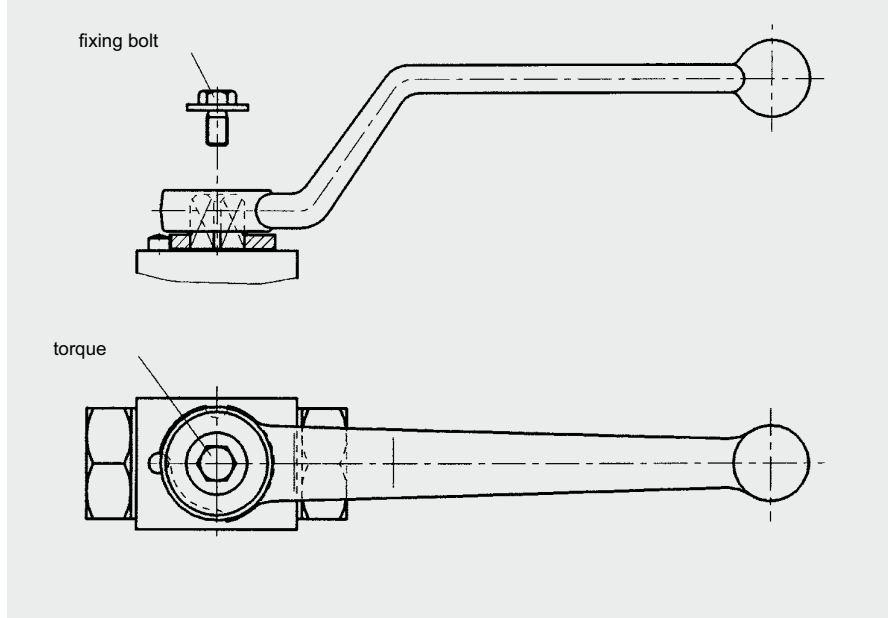
The fixing bolts for the bolt-on handles must be ordered separately.

CLAMPED HANDLE



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

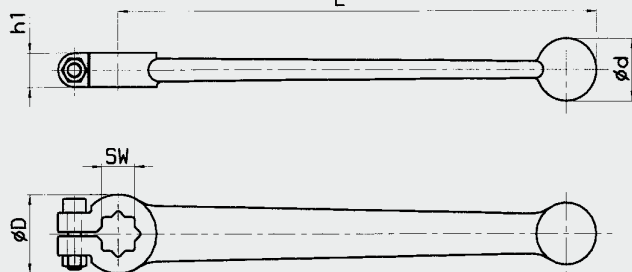
BOLT-ON HANDLE



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

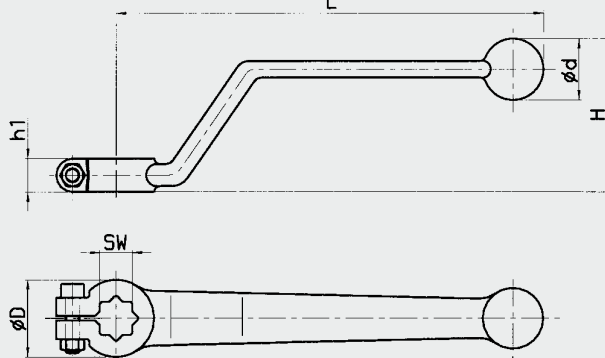
Dimensions

STRAIGHT HANDLE - CLAMPED HANDLE



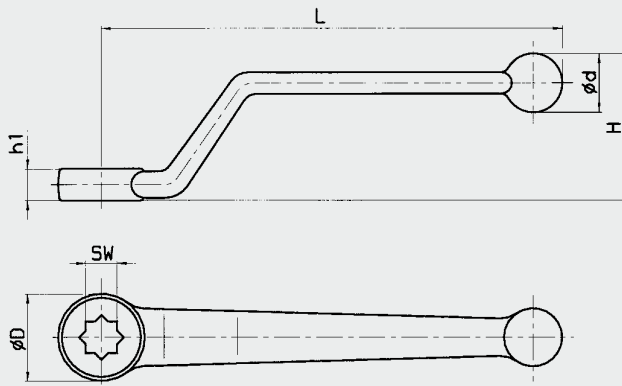
L	ϕD	ϕd	h_1	SW	Type	Part number	Weight (kg)
150	22	15	10	09	ZG (03)	559419	0.090
150	25	20	11	09	AG (01)	270099	0.054
175	28	22	12	12	AG (01)	270100	0.073
200	32	24	12	14	AG (01)	270101	0.096
240	36	26	14	17	AG (01)	270311	0.12

CRANKED HANDLE - CLAMPED HANDLE



L	H	ϕD	ϕd	h_1	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	0.12
360	85	44	32	18	22	AK (02)	281604	0.29

CRANKED HANDLE - BOLT-ON HANDLE



L	H	ϕD	ϕd	h_1	SW	Type	Part number	Weight [kg]	Fixing bolt/washer Part no.
76	27	16	12	6	06	ZK (04)	554893	0.030	637051
108	28	22	10	9.5	09	ZK (04)	556352	0.053	637052
169	59	31	18	12.5	12	SK (06)	275036	0.28	639387
169	59	31	18	12.5	14	SK (06)	282976	0.275	638601
228	80	34	20	14	17	SK (06)	273662	0.342	638600
306	81	35	22	16	17	SK (26)	561681	0.591	638600

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

Subject to technical modifications.

HYDAC Accessories GmbH

Hirschbachstr. 2

66280 Sulzbach/Saar

Tel.: +49 (0)6897 - 509-1001

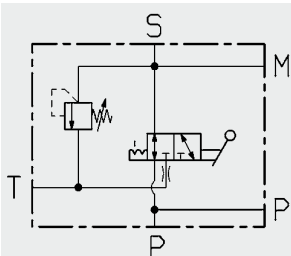
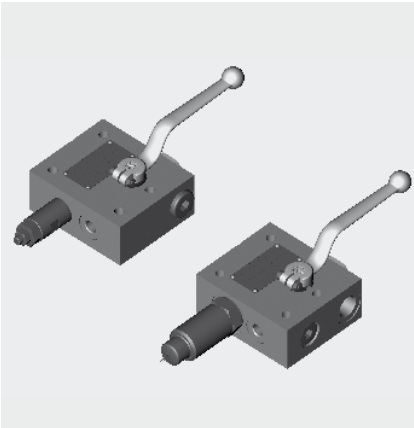
Fax: +49 (0)6897 - 509-1009

Internet: www.hydac.com

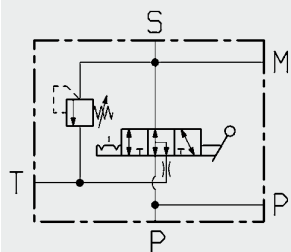
E-Mail: info@hydac.com



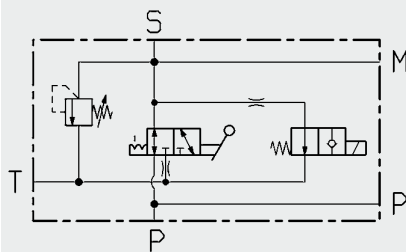
3-Way Safety Block DSV



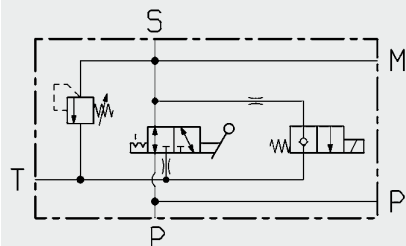
DSV 10 - M



DSV 10 - M - T-ball



DSV 10 - EY



DSV 10 - EZ

PN up to 350 bar
DN 10

1. DESCRIPTION

1.1. GENERAL

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
- Accumulators stations
- System engineering

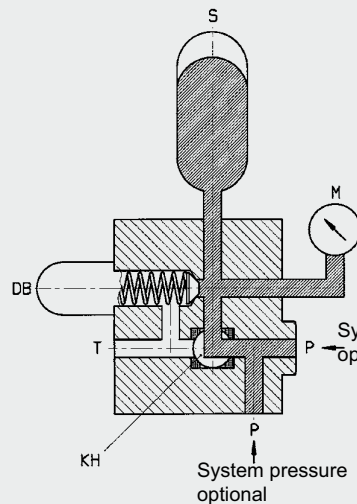
1.4. NOTES

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

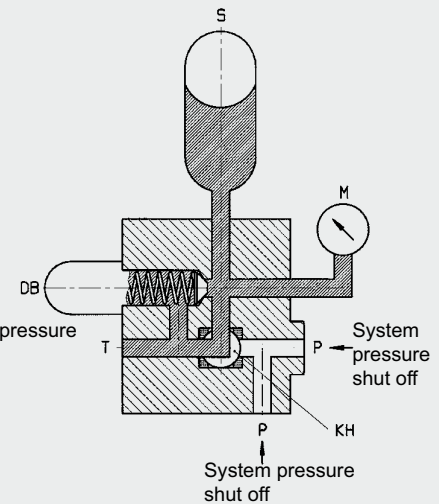
To ensure correct functioning, pressure and temperature specifications must be observed.

The handles are supplied loose.

Accumulator operation



Shutting off the system pressure and simultaneously discharging the accumulator



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

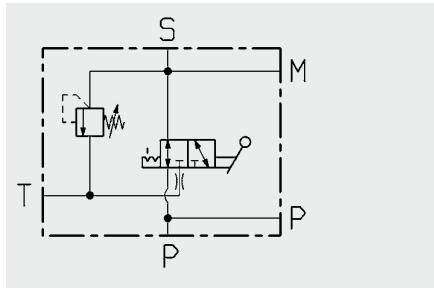
2. SPECIFICATIONS

2.1. GENERAL

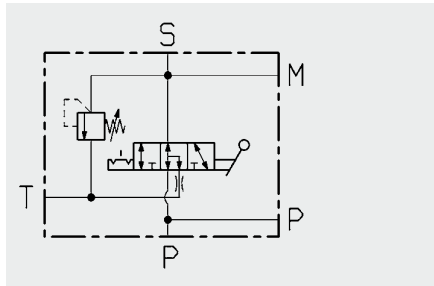
2.1.1 Designation and symbol

3-way safety block DSV

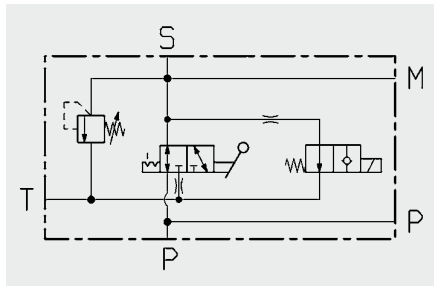
DSV 10 - M



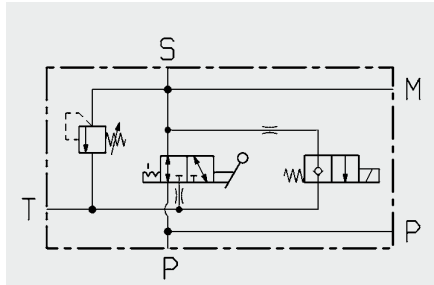
DSV 10 - M - T-ball



DSV 10 - EY



DSV 10 - EZ



2.1.2 Model code (also order example)

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

3-way safety block

Nominal bore
10

Discharge

M = manual

E = manual / solenoid-operated

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

Y = open when de-energised

Z = closed when de-energized

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)

Viton (FKM) = 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 bar

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

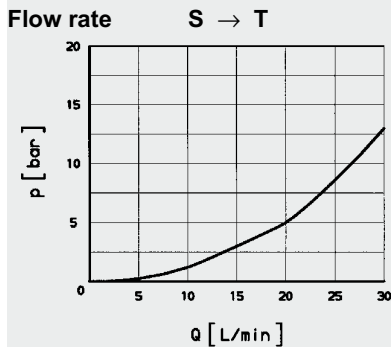
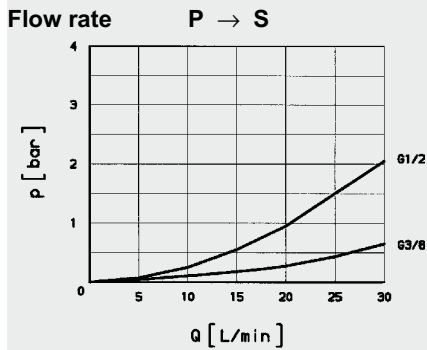
2.2.3 **Temperature of operating fluid**
- 10 °C to + 80 °C

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.

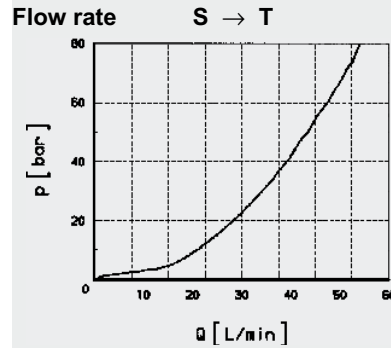
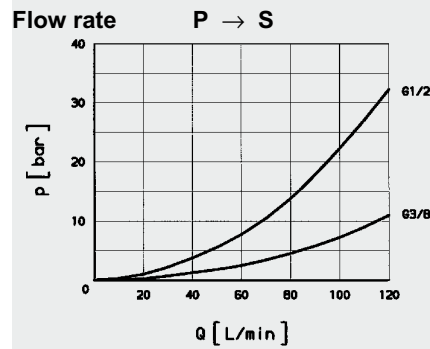
2.2.6 **Δp - Q graph DSV - 10 with pressure relief valve DB 4**

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



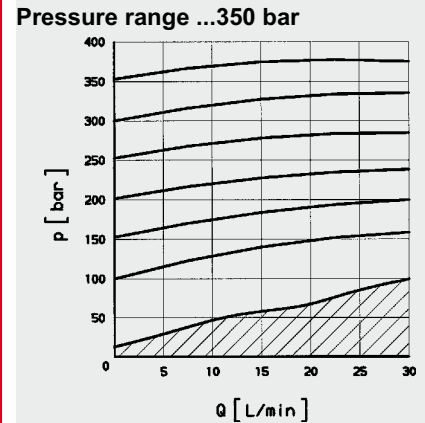
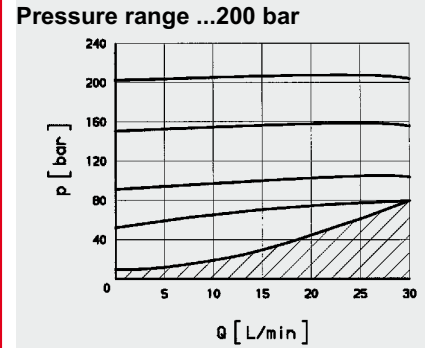
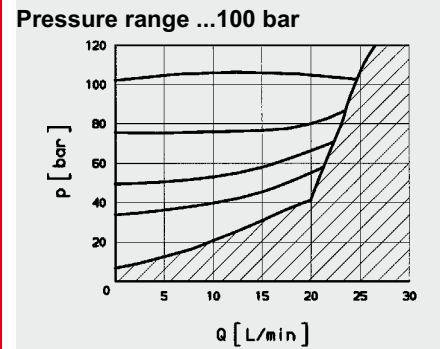
2.2.7 Δp - Q Graph DSV - 10 with pressure relief valve DB 12

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



2.2.8 Pressure, dependent on flow rate DB 4

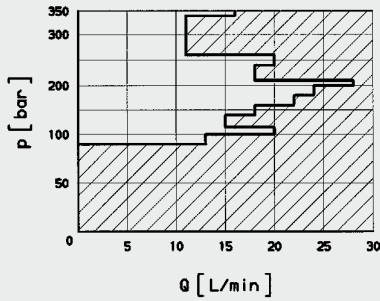
measured at $v = 36 \text{ mm}^2/\text{s}$ and $t_{\text{oil}} = 50 \text{ }^\circ\text{C}$



2.2.9 Pressure, flow rate dependent DB 4 - TÜV

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

Application range of DB 4 - TÜV



Q_{max} table for DB 4 - TÜV

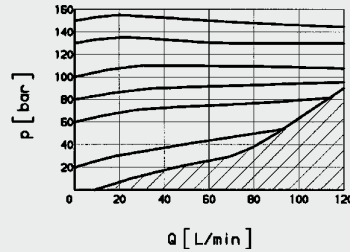
Max. permitted flow rate of the pump

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

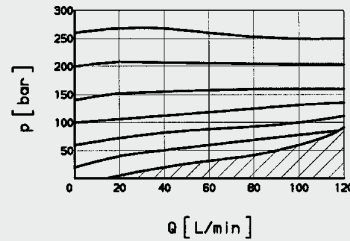
2.2.10 Pressure, dependent on flow rate DB 12

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

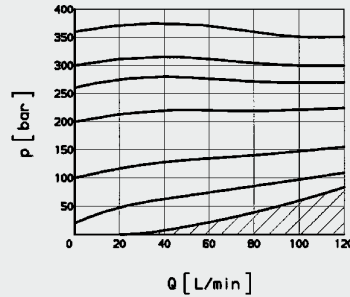
Pressure range ...150 bar



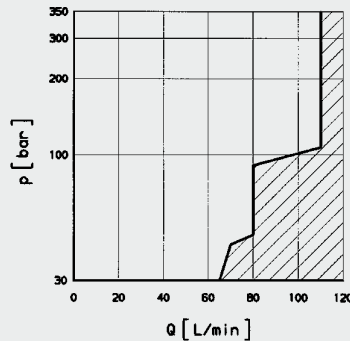
Pressure range ...250 bar



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 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

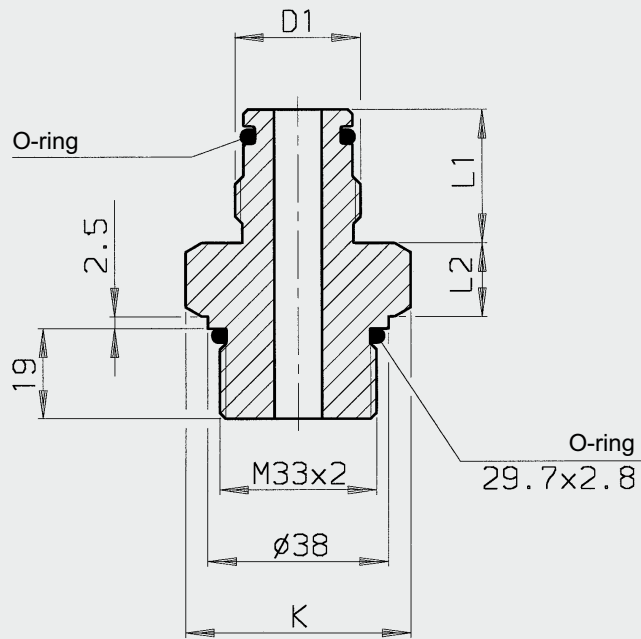
When ordering, please quote part number (see Table 3.3.)
Delivery is longer for non-standard models.

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

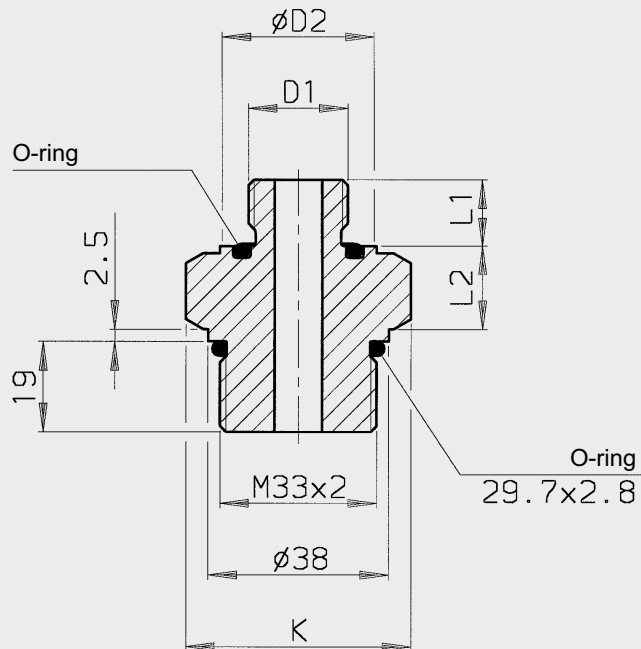
3.4. DIMENSIONS OF ADAPTERS

Adapter - M 33 x 2, Figure 1



Type	Thread D1	D2	L1	L2	K	O-ring
S10	ISO 228 - G ¾ A	-	28	15.5	SW 41	17 x 3
S11	ISO 228 - G 1 A	-	34	16.5	SW 46	22 x 3
S12	ISO 228 - G 1¼ A	-	37	16.5	SW 46	30 x 3
S13	ISO 228 - G 2 A	-	44	20.5	SW 65	48 x 31

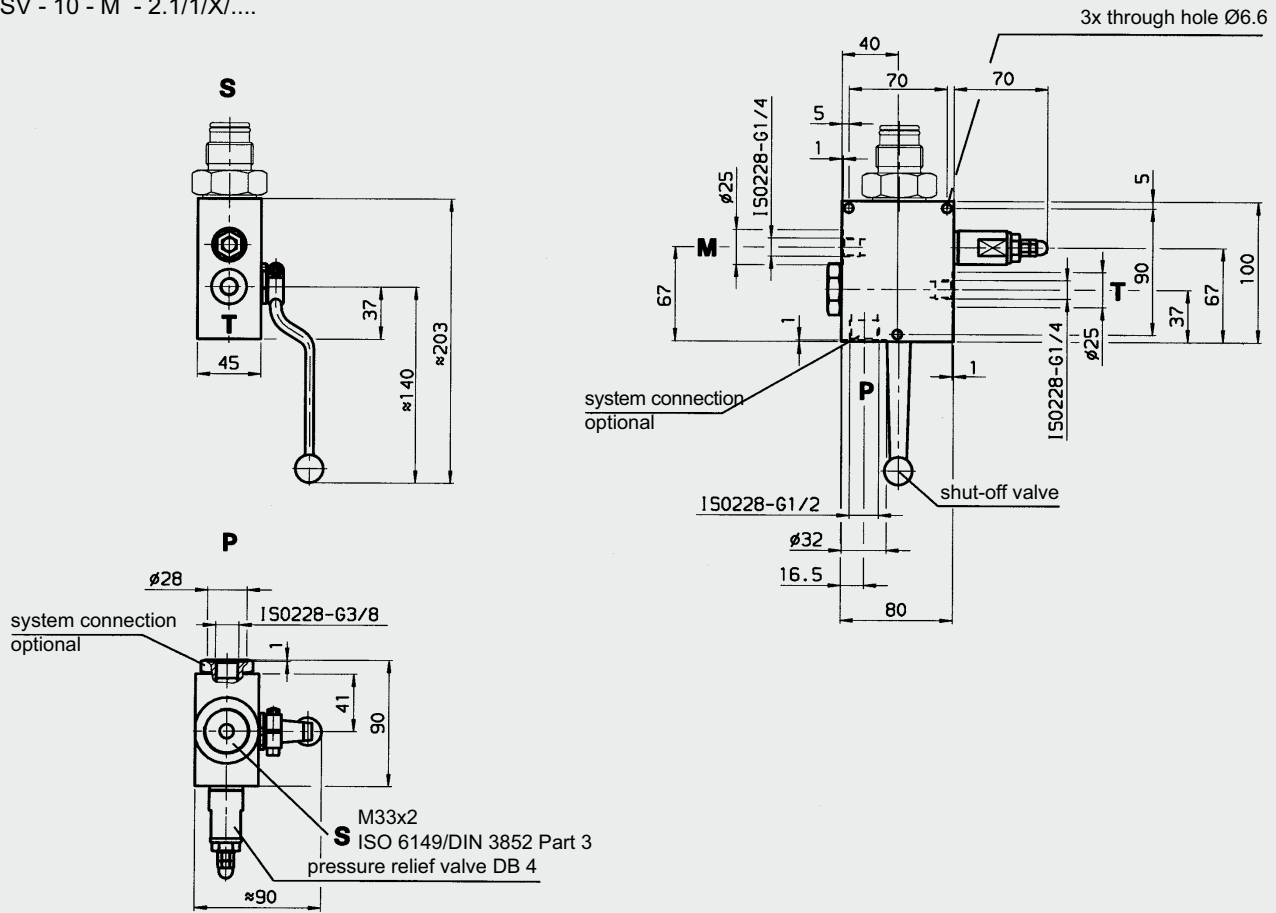
Adapter - M 33 x 2, Figure 2



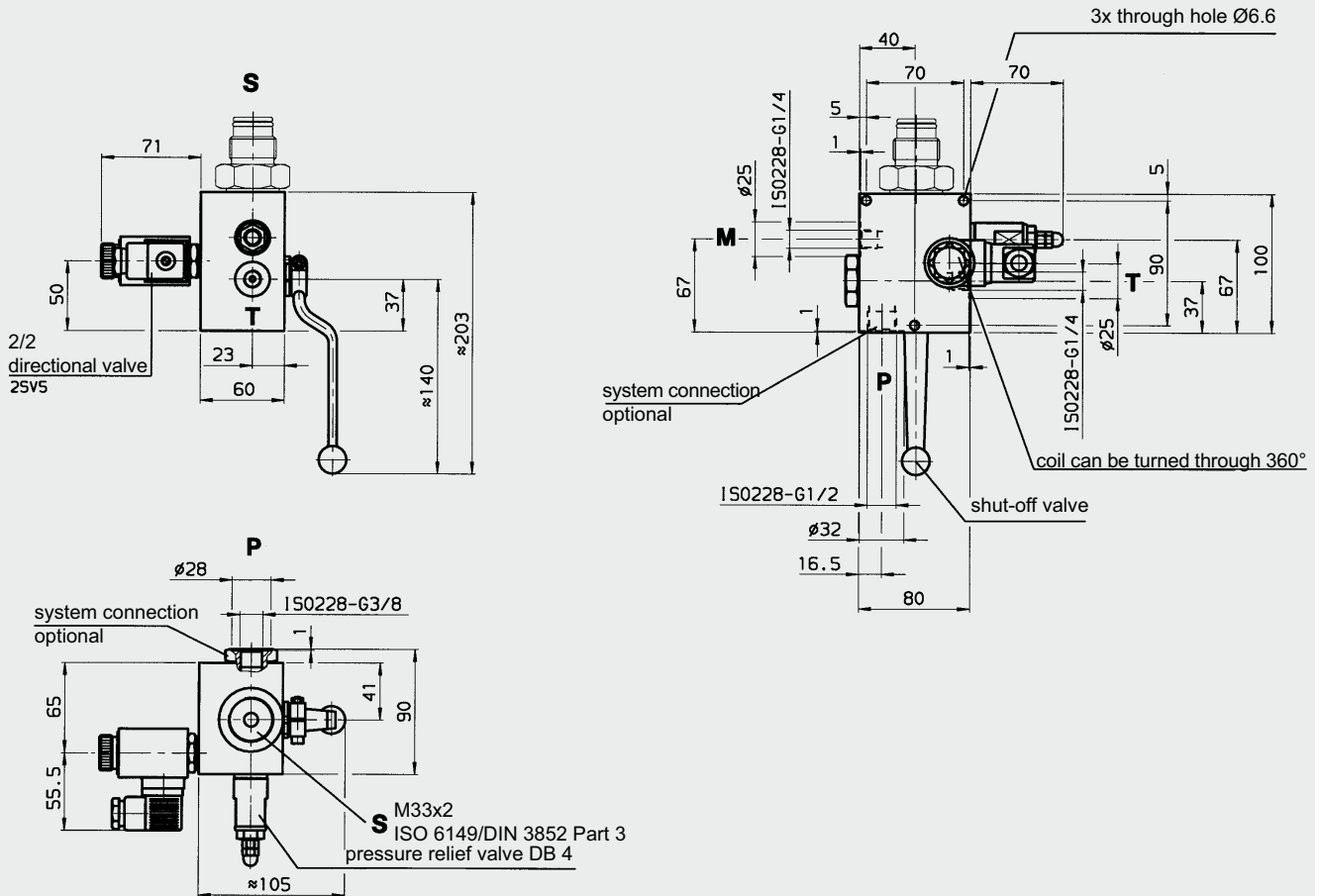
Type	Thread D1	D2	L1	L2	K	O-ring
S20	M 30 x 1.5	40	15	17.5	SW 41	32 x 2
S21	M 40 x 1.5	54	20	20.5	SW 55	43 x 3
S22	M 50 x 1.5	64	20	20.5	SW 65	53 x 3
S30	ISO 228 - G ½ A	33	14	17.5	SW 41	22 x 3
S31	ISO 228 - G ¾ A	40	16	17.5	SW 41	28 x 3
S32	ISO 228 - G 1 A	45	18	18.5	SW 46	35 x 3
S33	ISO 228 - G 1¼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

4. DIMENSIONS

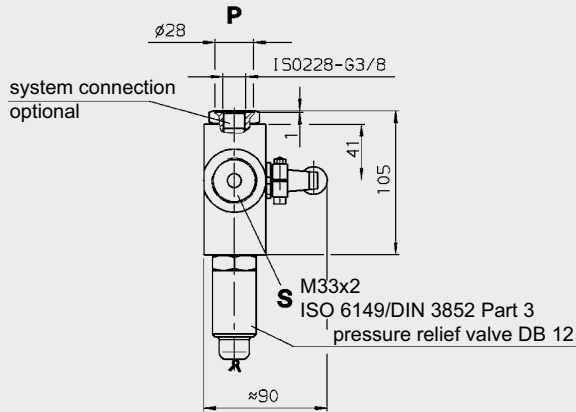
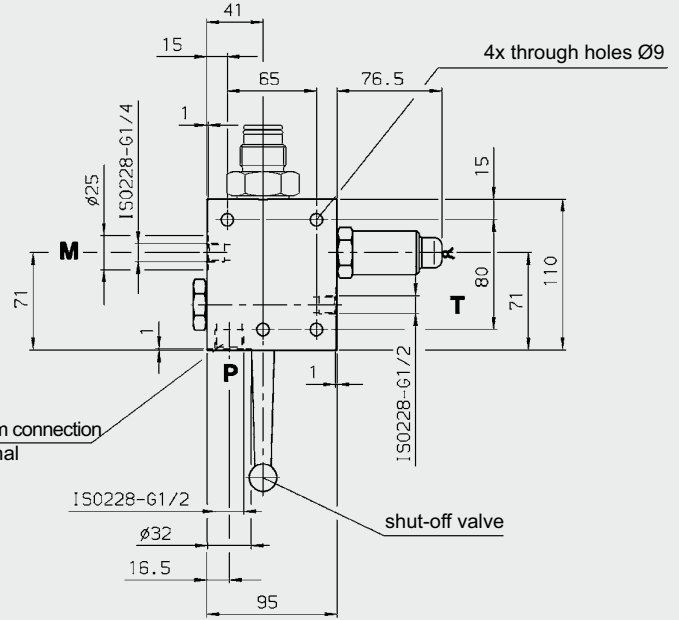
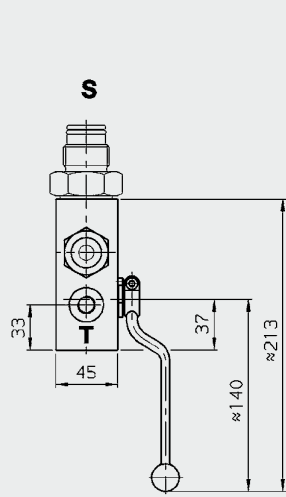
DSV - 10 - M - 2.1/1/X/....



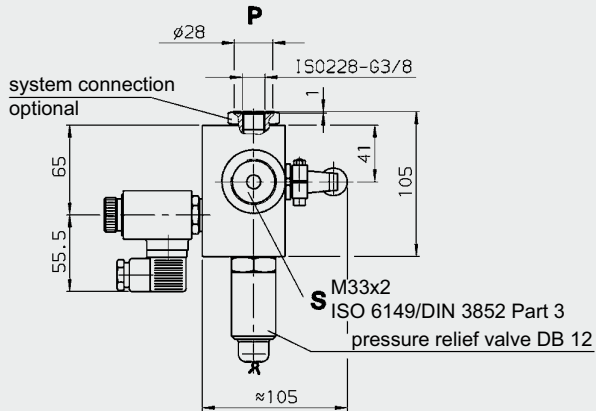
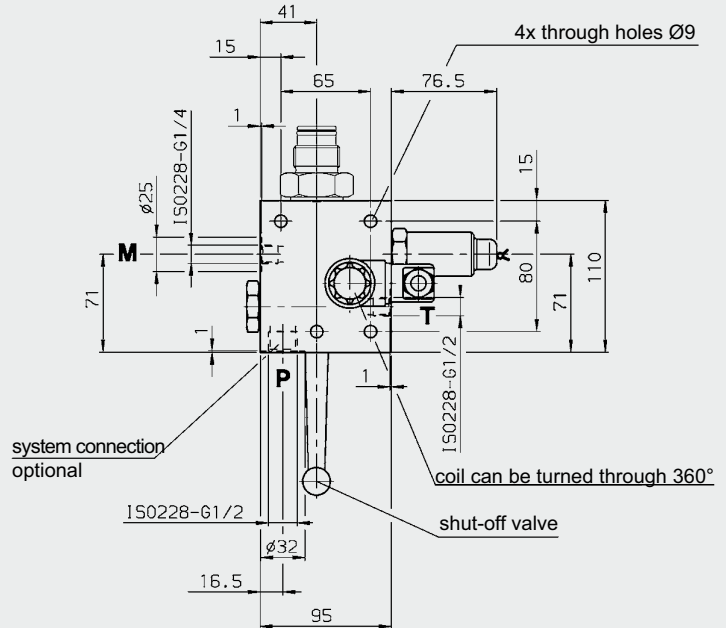
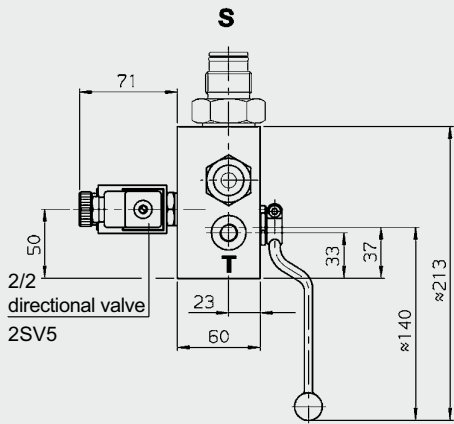
DSV - 10 - E - 2.1/1/X/....



DSV - 10 - M - 4.1/1/X/....

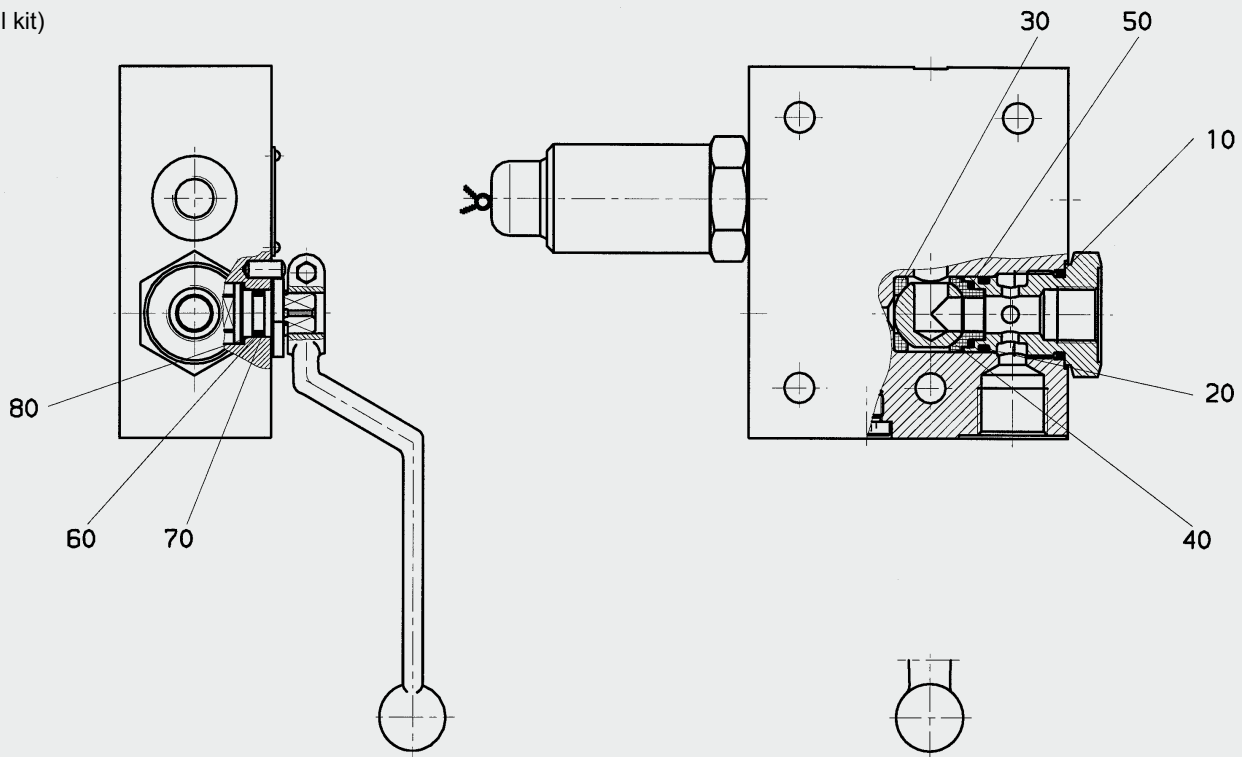


DSV - 10 - E - 4.1/1/X/....



5. SPARE PARTS

(Seal kit)



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

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

NOTE

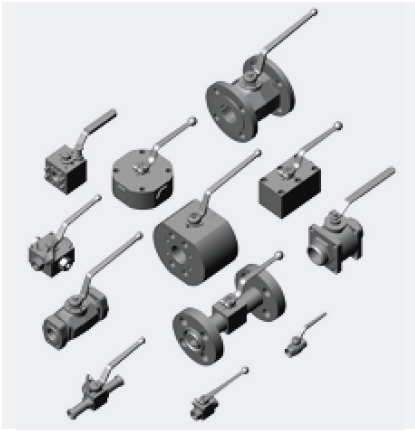
The information in this brochure relates to the operating conditions and applications described.

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

Subject to technical modifications.

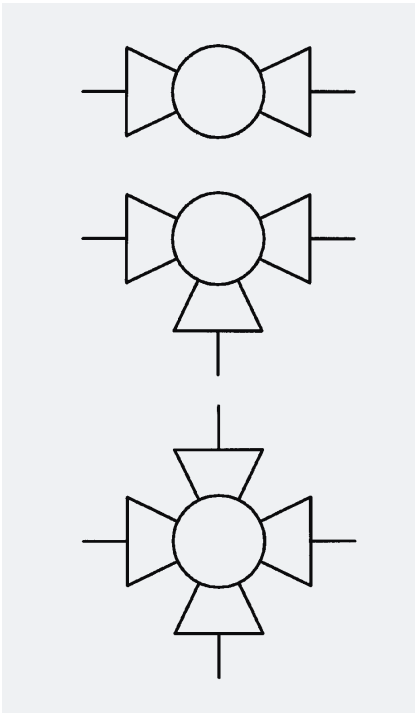
HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com





Compatibility List

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



1. DESCRIPTION

1.1 GENERAL

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

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

1.2 NOTES

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

Medium	Ball valve materials				Soft seals		Sealing cups	
	Housing	Ball	Control spindle					
	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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					
	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
D								
Diesel fuel	1	1	1	1	3	1	2	1

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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

Medium	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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	
	Housing	Ball	Control spindle					
	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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	
	Housing	Ball	Control spindle					
	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
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 thiosulphate, 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					
	Steel	Brass	GG, GS-C	1.4571	NBR	FKM	POM	PTFE
Medium								
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.

HYDAC Accessories GmbH
Hirschbachstr. 2
66280 Sulzbach/Saar
Tel.: +49 (0)6897 - 509-1001
Fax: +49 (0)6897 - 509-1009
Internet: www.hydac.com
E-Mail: info@hydac.com