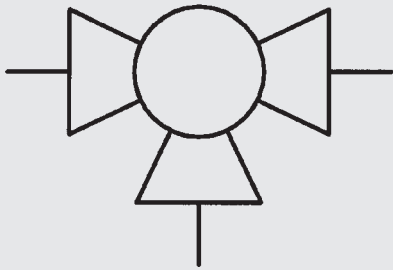
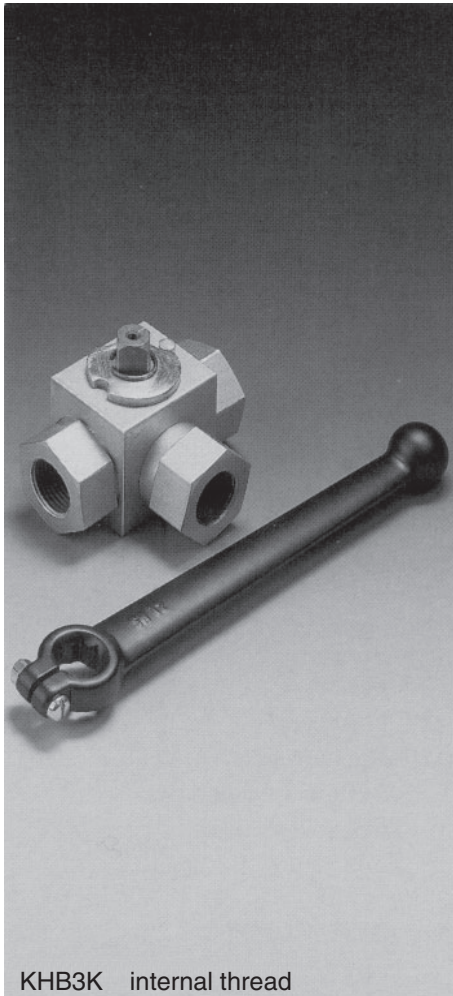


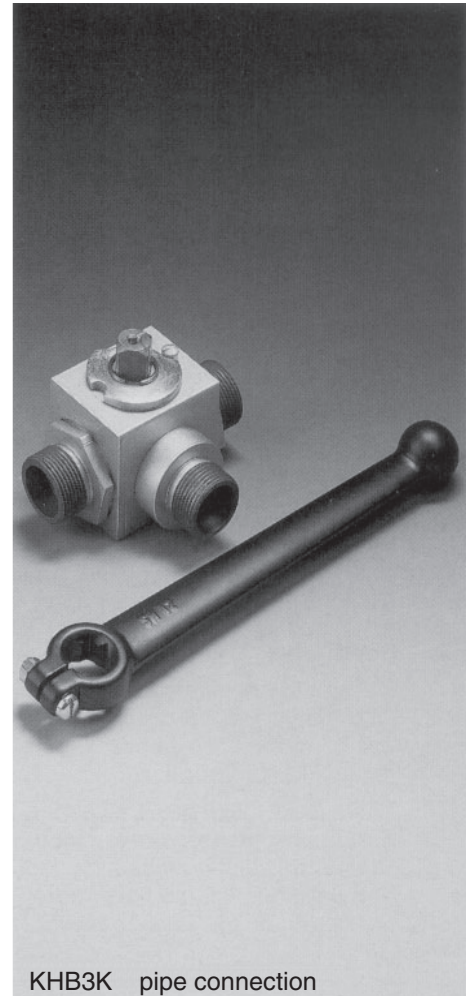
3/2 Way Ball Valves KHB3K



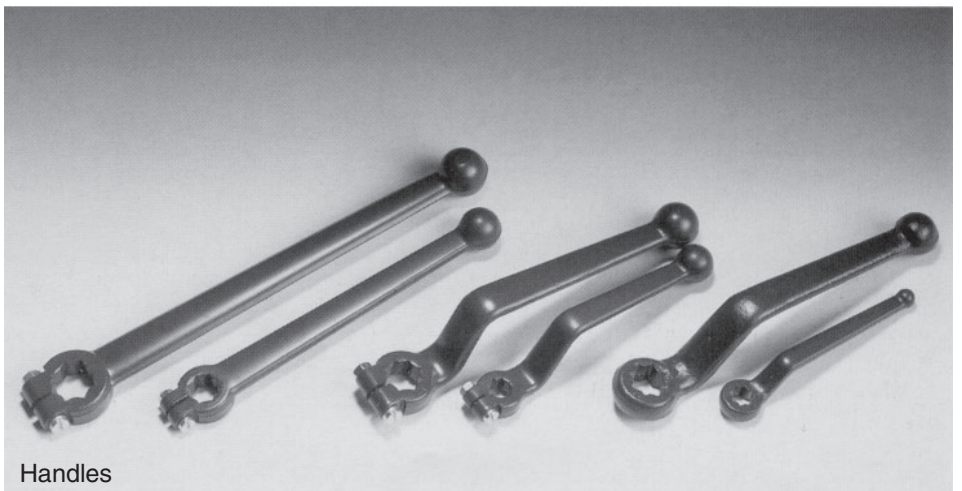
up to 500 bar
up to DN 25



KHB3K internal thread



KHB3K pipe connection



Handles

1. DESCRIPTION

1.1. GENERAL

According to DIN 2429, HYDAC 3/2 way ball valves are units which shut off and divert the flow of an operating medium.

The 3/2 way ball valves are available in nominal bores DN 04 - 25.

These ball valves have the following advantages:

- Visual indication of the switching position by means of a slot on the control spindle
- Switching limited by means of stop pin and stop disc
- Support ring on the control spindle seal
- No glands, therefore no manual re-adjustment of seals required
- Sealing principle with floating ball, sealing on the outlet side
- Full flow passage for unrestricted flow of medium
- Easy operation
- Compact design
- Surface phosphate-plated or yellow zinc-plated

HYDAC ball valves are available in stainless steel version.

HYDAC handle, for full details see brochure no. E 5.515../..

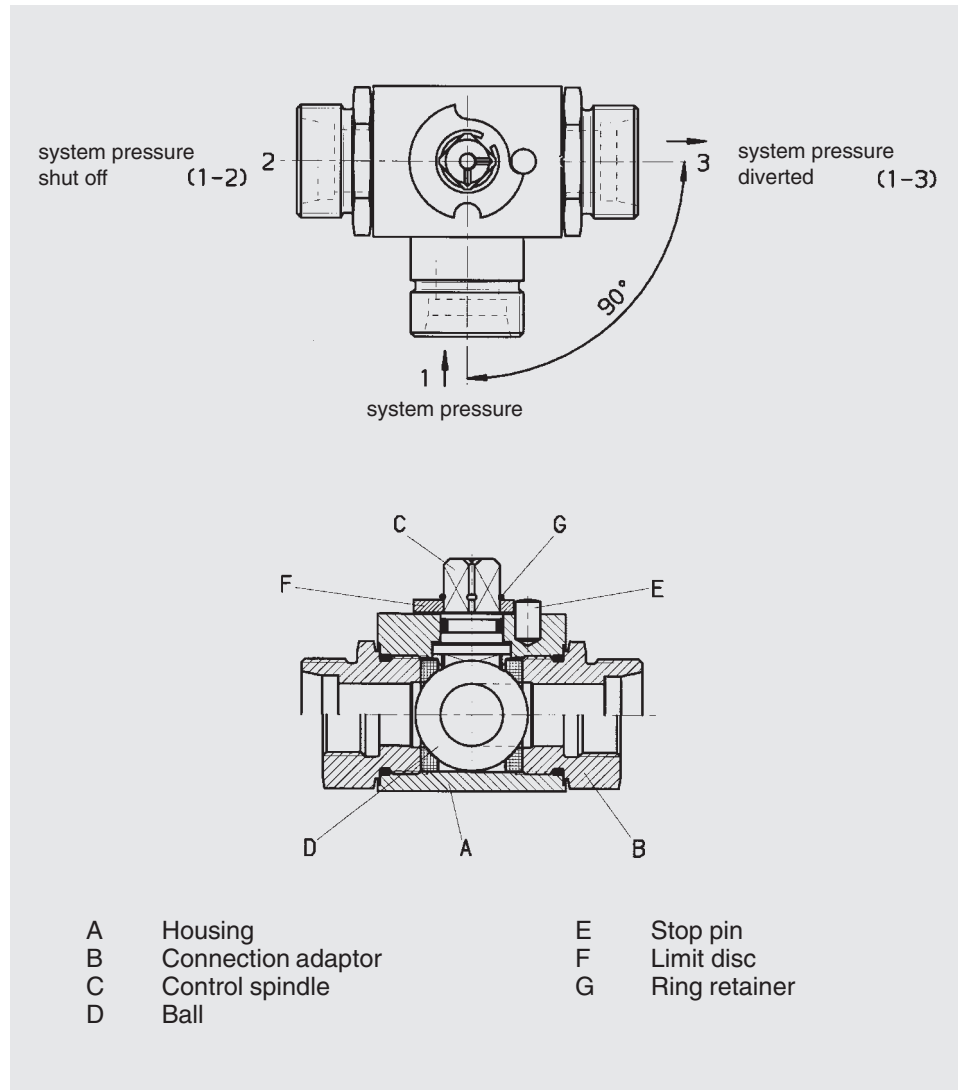
On request we can supply other models to cover nearly all applications, e.g. for aggressive or gaseous media, as well as quality test certificates to DIN 55350, Part 18.

1.2. FUNCTION

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

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

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



- | | | | |
|---|--------------------|---|---------------|
| A | Housing | E | Stop pin |
| B | Connection adaptor | F | Limit disc |
| C | Control spindle | G | Ring retainer |
| D | Ball | | |

1.3. APPLICATION

HYDAC 3/2 way ball valves are used to divert flow in hydraulic circuits.

Areas of application are for example:

- Machine tools
- System engineering
- Mobile hydraulics
- Agricultural machinery

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 in order to avoid damaging the sealing cups.

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

The permissible operating pressure of the threaded pipe connection must be taken into account.

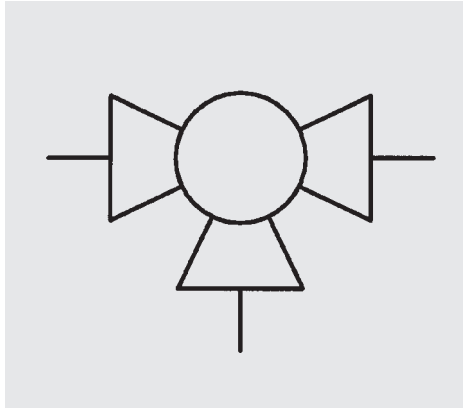
The cap nuts and cutting rings on threaded pipe connections are not supplied with the ball valve.

The handles are supplied loose with the ball valves.

2. TECHNICAL SPECIFICATIONS

2.1. GENERAL

2.1.1 Designation and symbol 3/2 way ball valve KHB3K



2.1.2 Model code (also order example)

KHB3K - G1/2 - L - 1112 - 01 X -

Designation _____
KHB3K = 3/2 way ball valve

Type of connection _____
Thread size or outside diameter
of pipe and type of connection
(see table 2.1.4)

Ball bore _____

Materials

Housing, connection adaptor
and control spindle (steel)

Ball (steel)

Sealing cups (POM)

Control spindle seal and connection seal
Perbunan (NBR)
4 = Viton (FKM)

Material code

1 _____

1 _____

1 _____

2 _____

Handle _____

01 = aluminium clamped handle, straight (AG)
DN 12 - 25

02 = aluminium clamped handle, cranked (AK)
DN 12 - 25

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 - 25

09 = without handle

Series _____

(determined by manufacturer)

Surface treatment _____

no details = phosphate-plated

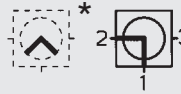
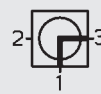
G = yellow zinc-plated

Please quote stock number when ordering (see table 2.1.4).

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

2.1.3 Function diagram

3/2 way ball valve L-bore 90° switch
2 3



* undefined
switching
position

2.1.4 Standard valves

Type of connection	Thread designation or outside diameter of pipe RA	Nominal bore DN	Nominal pressure PN [bar]	Order no. = stock no.	Weight [kg]	
G Whitworth internal thread to ISO 228	KHB3K- G 1/4 -L-1112-03X	06	500	701582	0.49	
	KHB3K- G 1/4 -L-1112-04X	06	500	702899	0.45	
	KHB3K- G 1/4 -L-1112-09X	06	500	852633	0.40	
	KHB3K- G 3/8 -L-1112-03X	10	500	701585	0.61	
	KHB3K- G 3/8 -L-1112-04X	10	500	703362	0.57	
	KHB3K- G 3/8 -L-1112-09X	10	500	703328	0.52	
	KHB3K- G 1/2 -L-1112-03X-SW09	13	500	852709	0.76	
	KHB3K- G 1/2 -L-1112-04X-SW09	13	500	703309	0.72	
	KHB3K- G 1/2 -L-1112-09X-SW09	13	500	702860	0.67	
	KHB3K- G 1/2 -L-1112-01X	16	400	701590	0.87	
	KHB3K- G 1/2 -L-1112-02X	16	400	701588	0.87	
	KHB3K- G 1/2 -L-1112-06X	16	400	701641	1.07	
	KHB3K- G 1/2 -L-1112-09X	16	400	852634	0.80	
	KHB3K- G 3/4 -L-1112-01X	20	315	701591	1.57	
	KHB3K- G 3/4 -L-1112-02X	20	315	703317	1.57	
	KHB3K- G 3/4 -L-1112-06X	20	315	701642	1.73	
	KHB3K- G 3/4 -L-1112-09X	20	315	703329	1.47	
	KHB3K- G 1 -L-1112-01X	25	315	701594	2.36	
	KHB3K- G 1 -L-1112-02X	25	315	851234	2.36	
	KHB3K- G 1 -L-1112-06X	25	315	701643	2.52	
	KHB3K- G 1 -L-1112-09X	25	315	852635	2.26	
	LR Threaded pipe connection light range to DIN 2353	KHB3K- 08LR -L-1112-03X	06	315	701528	0.38
		KHB3K- 08LR -L-1112-04X	06	315	852708	0.34
		KHB3K- 08LR -L-1112-09X	06	315	852637	0.29
KHB3K- 10LR -L-1112-03X		08	315	701531	0.55	
KHB3K- 10LR -L-1112-04X		08	315	398901	0.52	
KHB3K- 10LR -L-1112-09X		08	315	703369	0.47	
KHB3K- 12LR -L-1112-03X		10	315	701534	0.55	
KHB3K- 12LR -L-1112-04X		10	315	703393	0.52	
KHB3K- 12LR -L-1112-09X		10	315	703357	0.46	
KHB3K- 15LR -L-1112-03X-SW09		13	315	701539	0.69	
KHB3K- 15LR -L-1112-04X-SW09		13	315	852740	0.66	
KHB3K- 15LR -L-1112-09X-SW09		13	315	851259	0.61	
KHB3K- 15LR -L-1112-01X		12	315	701537	0.78	
KHB3K- 15LR -L-1112-02X		12	315	856737	0.77	
KHB3K- 15LR -L-1112-06X		12	315	702873	0.97	
KHB3K- 15LR -L-1112-09X		12	315	703377	0.71	
KHB3K- 18LR -L-1112-01X		16	315	701540	0.77	
KHB3K- 18LR -L-1112-02X		16	315	-	0.77	
KHB3K- 18LR -L-1112-06X		16	315	562139	0.97	
KHB3K- 18LR -L-1112-09X		16	315	703372	0.70	
KHB3K- 22LR -L-1112-01X		20	160	701543	1.49	
KHB3K- 22LR -L-1112-02X		20	160	852698	1.49	
KHB3K- 22LR -L-1112-06X		20	160	562140	1.65	
KHB3K- 22LR -L-1112-09X		20	160	852638	1.39	
KHB3K- 28LR -L-1112-01X	25	160	701546	1.98		
KHB3K- 28LR -L-1112-02X	25	160	-	1.98		
KHB3K- 28LR -L-1112-06X	25	160	701548	2.14		
KHB3K- 28LR -L-1112-09X	25	160	852639	1.88		
SR Threaded pipe connection heavy range to DIN 2353	KHB3K- 08SR -L-1112-03X	04	500	701552	0.41	
	KHB3K- 08SR -L-1112-04X	04	500	852734	0.37	
	KHB3K- 08SR -L-1112-09X	04	500	852640	0.32	
	KHB3K- 10SR -L-1112-03X	06	500	701555	0.41	
	KHB3K- 10SR -L-1112-04X	06	500	701557	0.37	
	KHB3K- 10SR -L-1112-09X	06	500	852641	0.32	
	KHB3K- 12SR -L-1112-03X	08	500	701558	0.58	
	KHB3K- 12SR -L-1112-04X	08	500	852733	0.54	
	KHB3K- 12SR -L-1112-09X	08	500	852611	0.49	
	KHB3K- 16SR -L-1112-03X-SW09	13	500	856703	0.71	
	KHB3K- 16SR -L-1112-04X-SW09	13	500	-	0.67	
	KHB3K- 16SR -L-1112-09X-SW09	13	500	703358	0.62	
	KHB3K- 16SR -L-1112-01X	12	400	701564	0.79	
	KHB3K- 16SR -L-1112-02X	12	400	852625	0.79	
	KHB3K- 16SR -L-1112-06X	12	400	856721	0.99	
	KHB3K- 16SR -L-1112-09X	12	400	851262	0.72	
	KHB3K- 20SR -L-1112-03X-SW09	13	500	-	0.76	
	KHB3K- 20SR -L-1112-04X-SW09	13	500	-	0.72	
	KHB3K- 20SR -L-1112-09X-SW09	13	500	562148	0.67	
	KHB3K- 20SR -L-1112-01X	16	400	701567	0.84	
	KHB3K- 20SR -L-1112-02X	16	400	852673	0.83	
	KHB3K- 20SR -L-1112-06X	16	400	856724	1.03	
	KHB3K- 20SR -L-1112-09X	16	400	703359	0.77	
	KHB3K- 25SR -L-1112-01X	20	315	701570	1.54	
	KHB3K- 25SR -L-1112-02X	20	315	852675	1.54	
	KHB3K- 25SR -L-1112-06X	20	315	551499	1.70	
	KHB3K- 25SR -L-1112-09X	20	315	852643	1.44	
	KHB3K- 30SR -L-1112-01X	25	315	701573	2.11	
	KHB3K- 30SR -L-1112-02X	25	315	856745	2.11	
	KHB3K- 30SR -L-1112-06X	25	315	702886	2.27	
KHB3K- 30SR -L-1112-09X	25	315	852644	2.01		

2.1.5 Type of construction

The shut-off and/or diverting device is a ball.

2.1.6 Type of connection

Whitworth internal thread to ISO 228 light and heavy threaded pipe connection to DIN 2353

2.1.7 Mounting position

Optional

2.1.8 Weight

(see table 2.1.4)

2.1.9 Flow direction

From port 1 to 3
(port 2 is shut off leakage-free)
From port 1 to 2
(port 3 is shut off leakage-free)
From port 2 or 3 to 1
(leakage dependent on pressure)

2.1.10 Ambient temperature

- 10 °C to + 80 °C

2.1.11 Materials

Housing, connection adaptors and control spindle in steel
Surface phosphate-plated or yellow zinc-plated

Ball in steel, hard chromed

Ball seal in high quality synthetic material (POM)

Soft seal in Perbunan (NBR) or Viton (FKM)

Handle SW 09 in zinc die-casting, zinc-plated DN 04 - 10, 13 and SW 12 - 14 in aluminium, red anodised, or zinc-plated steel DN 12 - 25.

2.2. HYDRAULIC DETAILS

2.2.1 Nominal pressure

PN 250 bar to PN 500 bar
(see table 2.1.4)

2.2.2 Operating fluids

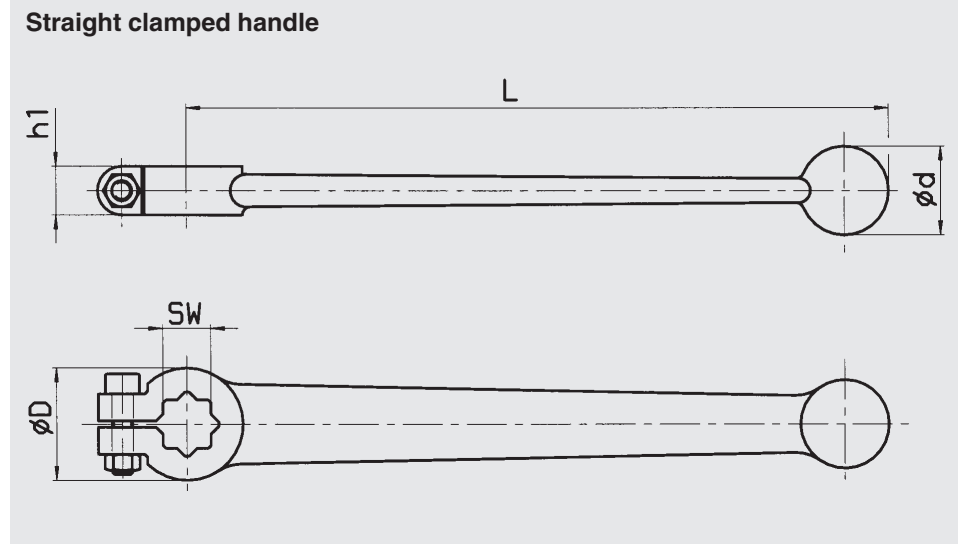
Mineral oil to DIN 51524, Part 1 and Part 2
(other fluids on request)

2.2.3 Temperature of operating fluid

- 10 °C to + 80 °C

3. DIMENSIONS

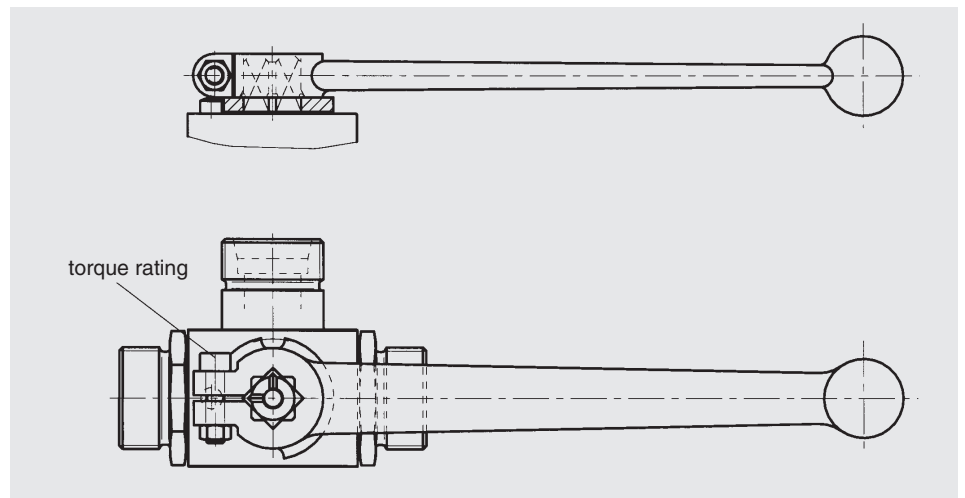
3.1. HANDLE



L	ØD	Ød	SW	h1	Ball valve nominal bore	Type	Order no. = stock no.
150	22	15	09	10	04-10, 13	03 (ZG)	559419
175	28	22	12	12	12-16	01 (AG)	270100
200	32	24	14	12	20-25	01 (AG)	270101

3.1.1 Notes on assembly

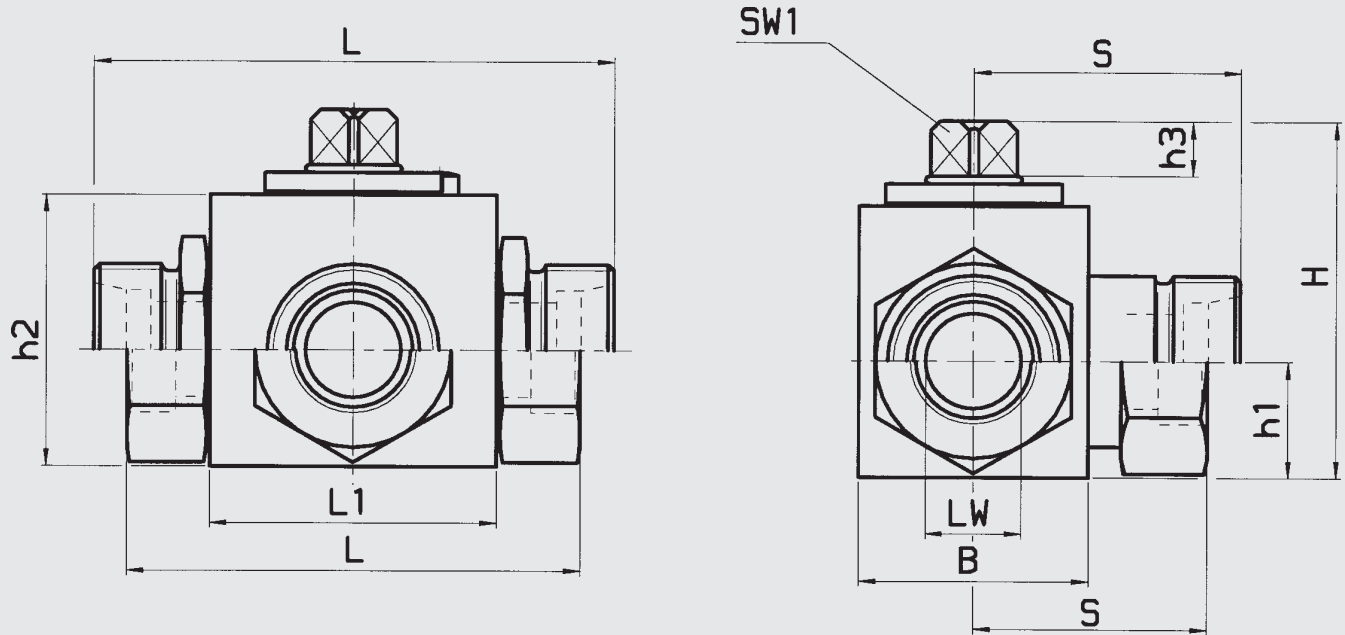
The clamped handle is pushed onto the square end of the ball valve spindle and clamped to the square by means of a screw through the end of the handle.



	SW 09 M5 x 20	SW 12 M5 x 20	SW 14 M6 x 30
Torque rating	3 Nm	3 Nm	5 Nm

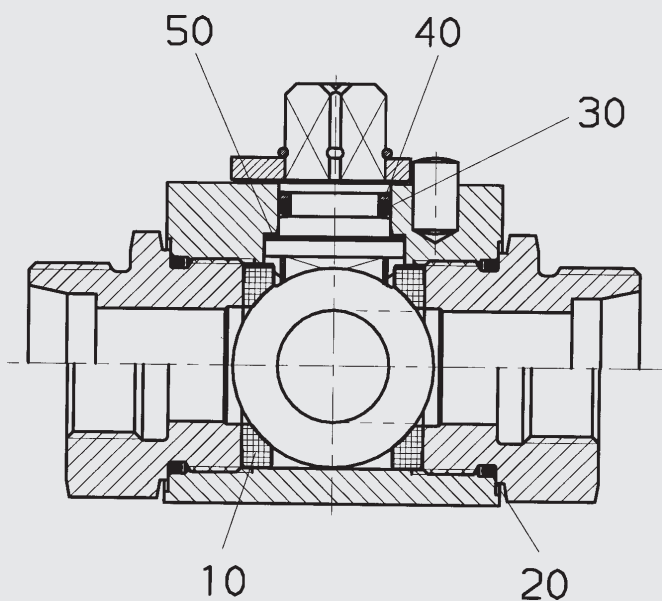
The handles can be displaced by 45°.

3.2. 3/2 WAY BALL VALVE



Type of connection	Type	DN	Int. diam. LW	RA	d1	i	L	L1	B	H	h1	h2	h3	S	SW1	SW2
	KHB3K-G 1/8	04	06	—	G 1/8	10	69	35	25	48	13	35	8	35	09	19
	KHB3K-G 1/4	06	06	—	G 1/4	14	69	35	25	48	13	35	8	35	09	22
	KHB3K-G 3/8	10	10	—	G 3/8	14	72	42	32	53	17	40	8	36	09	27
	KHB3K-G 1/2	13	12	—	G 1/2	15	83	47	35	53	17	40	8	40	09	30
	KHB3K-G 1/2	16	15	—	G 1/2	16	83	47	38	62	19	45	11	42	12	32
	KHB3K-G 3/4	20	20	—	G 3/4	18	95	60	48	75	24.5	57	11	49	14	41
	KHB3K-G 1	25	25	—	G 1	20.5	113	65	57	82	28.5	64	11	56.5	14	50
		KHB3K-06LR	04	04	06	M 12x1.5	10	67	35	25	48	13	35	8	34.5	09
KHB3K-08LR		06	06	08	M 14x1.5	10	67	35	25	48	13	35	8	34.5	09	19
KHB3K-10LR		08	08	10	M 16x1.5	11	74	42	32	53	17	40	8	37	09	27
KHB3K-12LR		10	10	12	M 18x1.5	11	74	42	32	53	17	40	8	37	09	27
KHB3K-15LR		13	12	15	M 22x1.5	12	82	47	35	53	17	40	8	40	09	30
KHB3K-15LR		12	12	15	M 22x1.5	12	82	47	38	62	19	45	11	40	12	32
KHB3K-18LR		13	12	18	M 26x1.5	12	82	47	35	53	17	40	8	42	09	30
KHB3K-18LR		16	15	18	M 26x1.5	12	82	47	38	62	19	45	11	42	12	32
KHB3K-22LR		20	19	22	M 30x2	14	101	60	48	75	24.5	57	11	52	14	41
KHB3K-28LR		25	24	28	M 36x2	14	108	65	57	82	28.5	64	11	54	14	50
	KHB3K-08SR	04	05	08	M 16x1.5	12	73	35	25	48	13	35	8	37	09	19
	KHB3K-10SR	06	06	10	M 18x1.5	12	73	35	25	48	13	35	8	37	09	19
	KHB3K-12SR	08	08	12	M 20x1.5	12	76	42	32	53	17	40	8	38	09	27
	KHB3K-14SR	10	10	14	M 22x1.5	14	80	42	32	53	17	40	8	40	09	27
	KHB3K-16SR	13	12	16	M 24x1.5	14	86	47	35	53	17	40	8	44	09	30
	KHB3K-16SR	12	12	16	M 24x1.5	14	86	47	38	62	19	45	11	43.5	12	32
	KHB3K-20SR	13	12	20	M 30x2	16	90	47	35	53	17	40	8	44	09	30
	KHB3K-20SR	16	15	20	M 30x2	16	90	47	38	62	19	45	11	45.5	12	32
	KHB3K-25SR	20	20	25	M 36x2	18	109	60	48	75	24.5	57	11	56	14	41
	KHB3K-30SR	25	25	30	M 42x2	20	120	65	57	82	28.5	64	11	60	14	50

4. SPARE PARTS (Seal kit)



Seal kit	Order no. = stock 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 on the above drawing are all included in the seal kit.

5. 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.