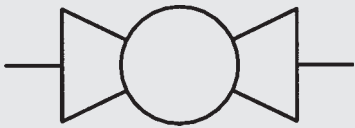
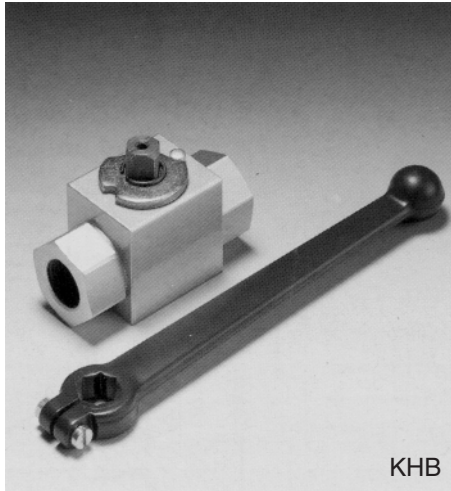


## Ball Valves KHB/KHM



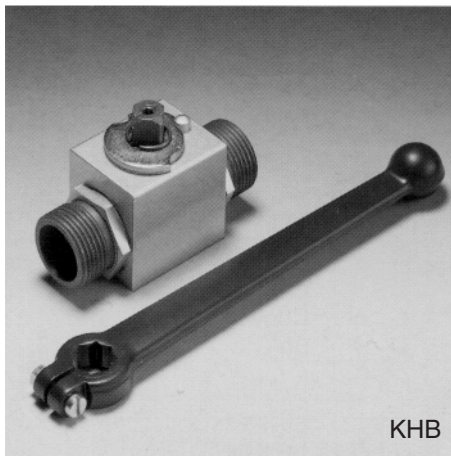
up to 500 bar  
up to DN 50



KHB



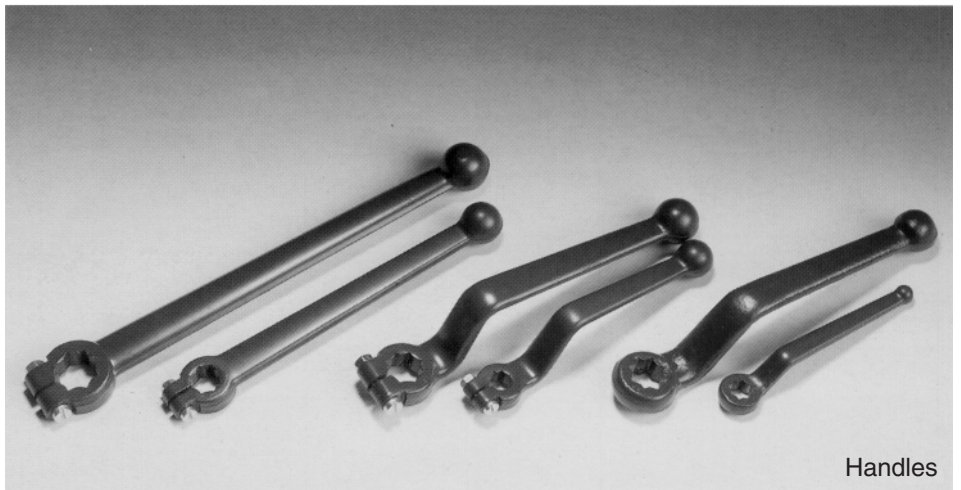
KHM



KHB



KHM



Handles

# 1. DESCRIPTION

## 1.1. GENERAL

According to DIN-ISO 1219, HYDAC 2-way ball valves are units which serve to shut off the flow of an operating medium in both directions.

They are available in two models:

- Block type (KHB) - DN 04-25
- Sleeve type (KHM) - DN 32-50

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 for DN 04-50 and on the connection adaptors for DN 32-50
- No glands, therefore no manual re-adjustment of seals required
- Sealing principle with floating ball, sealing on both sides
- Full flow passage for unrestricted flow of medium
- Easy operation
- Surface phosphate-plated or yellow zinc-plated for DN 04-25 and phosphate-plated for DN 32-50

HYDAC ball valves are available in stainless steel version.

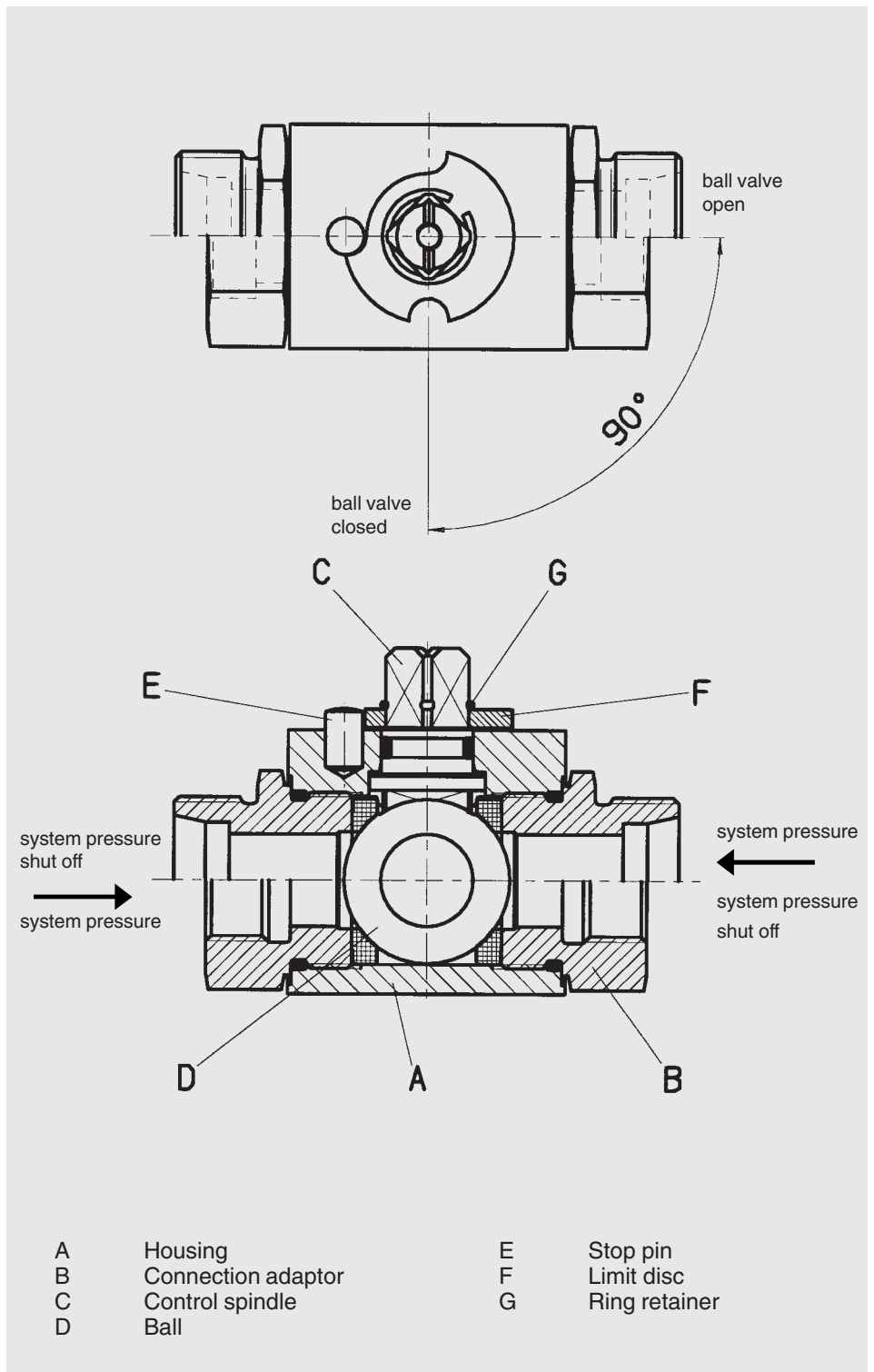
HYDAC handle, for full details see brochure no. E 5.515../..

On request we can supply other models to cover nearly all applications, e.g. for aggressive or gaseous media.

Test certificates for material tests to EN 10204 and quality test certificates to DIN 55350 Part 18 can be supplied if required.

## 1.2. FUNCTION

Turning the control spindle moves the ball from the open to the closed switching position. The system pressure pushes the ball against the non-pressurised side of the sealing cup and shuts off the flow leakage-free.



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

## 1.3. APPLICATION

HYDAC 2-way ball valves KHB/KHM are used to shut off 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 to avoid damaging the sealing cups.

To ensure correct functioning, the 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.

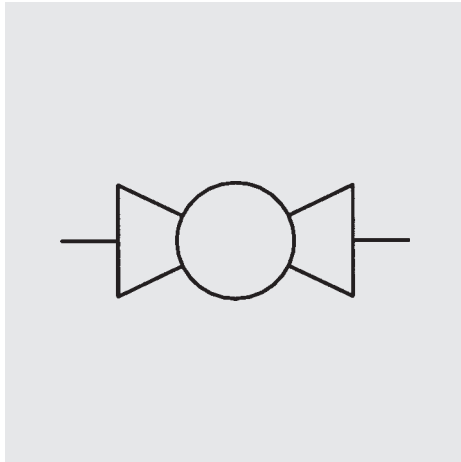
The handles are supplied loose with the ball valves.

## 2. TECHNICAL SPECIFICATIONS

### 2.1. GENERAL

#### 2.1.1 Designation and symbol

Block type ball valve    KHB  
Sleeve type ball valve    KHM



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

**KHB - G 1/2 - 1212 - 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 (see table 2.1.3)

##### Materials

	Material code
Housing, connection adaptor and control spindle (steel)	1
ball (brass)    DN 04-25	2
1 = (steel)    DN 32-50	
Sealing cups (POM)	1
Control spindle seal and connection seal	2
2 = Perbunan (NBR)	
4 = Viton (FKM)	

##### Type

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

no details = phosphate-plated  
G = yellow zinc-plated

Please quote stock no. when ordering (see table 2.1.3).  
Delivery for non-standard valves is longer and the price is higher.

### 2.1.3 Standard models

Type of connection	Thread designation of outside diameter of pipe RA	Nominal bore DN	Nominal pressure PN [bar]	Order no. = Stock number	Weight [kg]		
<b>G</b>	Whitworth internal thread to ISO 228	KHB-G 1/8 -1212-03X	04	500	855304	0.38	
		KHB-G 1/8 -1212-04X	04	500	397593	0.34	
		KHB-G 1/8 -1212-09X	04	500	397605	0.29	
		KHB-G 1/4 -1212-03X	06	500	855305	0.41	
		KHB-G 1/4 -1212-04X	06	500	397595	0.37	
		KHB-G 1/4 -1212-09X	06	500	397607	0.32	
		KHB-G 3/8 -1212-03X	10	500	854360	0.55	
		KHB-G 3/8 -1212-04X	10	500	397598	0.51	
		KHB-G 3/8 -1212-09X	10	500	397609	0.46	
		KHB-G 1/2 -1212-03X-SW09	13	500	854326	0.67	
		KHB-G 1/2 -1212-04X-SW09	13	500	397716	0.64	
		KHB-G 1/2 -1212-09X-SW09	13	500	397730	0.59	
		KHB-G 1/2 -1212-01X	16	400	855308	0.77	
		KHB-G 1/2 -1212-02X	16	400	397600	0.76	
		KHB-G 1/2 -1212-06X	16	400	854361	0.96	
		KHB-G 1/2 -1212-09X	16	400	397611	0.70	
		KHB-G 3/4 -1212-01X	20	315	855309	1.40	
		KHB-G 3/4 -1212-02X	20	315	397601	1.40	
		KHB-G 3/4 -1212-06X	20	315	700898	1.56	
		KHB-G 3/4 -1212-09X	20	315	397613	1.30	
		KHB-G 1 -1212-01X	25	315	855310	2.13	
		KHB-G 1 -1212-02X	25	315	397602	2.13	
		KHB-G 1 -1212-06X	25	315	700899	2.29	
		KHB-G 1 -1212-09X	25	315	397615	2.03	
		KHM-G 11/4 -1112-01X	32	315	700721	3.13	
		KHM-G 11/4 -1112-02X	32	315	700723	3.14	
		KHM-G 11/4 -1112-06X	32	315	851517	3.36	
		KHM-G 11/4 -1112-09X	32	315	851931	3.01	
		KHM-G 11/2 -1112-01X	40	315	700724	4.50	
		KHM-G 11/2 -1112-02X	40	315	700726	4.51	
		KHM-G 11/2 -1112-06X	40	315	707731	4.73	
		KHM-G 11/2 -1112-09X	40	315	850713	4.38	
		KHM-G 2 -1112-01X	50	315	700727	6.72	
		KHM-G 2 -1112-02X	50	315	704852	6.73	
		KHM-G 2 -1112-06X	50	315	700884	6.95	
		KHM-G 2 -1112-09X	50	315	851662	6.60	
	<b>LR</b>	Threaded pipe connection light range to DIN 2353	KHB-06LR -1212-03X	04	315	397524	0.35
			KHB-06LR -1212-04X	04	315	397618	0.31
			KHB-06LR -1212-09X	04	315	854722	0.26
			KHB-08LR -1212-03X	06	315	854829	0.35
KHB-08LR -1212-04X			06	315	397621	0.31	
KHB-08LR -1212-09X			06	315	854723	0.26	
		KHB-10LR -1212-03X	08	315	397525	0.52	
		KHB-10LR -1212-04X	08	315	397624	0.48	
		KHB-10LR -1212-09X	08	315	854724	0.43	
		KHB-12LR -1212-03X	10	315	854734	0.52	
		KHB-12LR -1212-04X	10	315	854378	0.48	
		KHB-12LR -1212-09X	10	315	854725	0.43	
		KHB-15LR -1212-03X-SW09	13	315	854834	0.62	
		KHB-15LR -1212-04X-SW09	13	315	700954	0.59	
		KHB-15LR -1212-09X-SW09	13	315	854726	0.54	
		KHB-15LR -1212-01X	12	315	397526	0.71	
		KHB-15LR -1212-02X	12	315	397627	0.70	
		KHB-15LR -1212-06X	12	315	854837	0.90	
		KHB-15LR -1212-09X	12	315	854727	0.64	
		KHB-18LR -1212-01X	16	315	397527	0.70	
		KHB-18LR -1212-02X	16	315	397629	0.70	
		KHB-18LR -1212-06X	16	315	854838	0.90	
		KHB-18LR -1212-09X	16	315	397640	0.63	
		KHB-22LR -1212-01X	20	160	397528	1.35	
		KHB-22LR -1212-02X	20	160	397632	1.35	
		KHB-22LR -1212-06X	20	160	854841	1.51	
		KHB-22LR -1212-09X	20	160	854729	1.25	
		KHB-28LR -1212-01X	25	160	397529	1.64	
		KHB-28LR -1212-02X	25	160	397634	1.64	
		KHB-28LR -1212-06X	25	160	854843	1.80	
		KHB-28LR -1212-09X	25	160	854730	1.54	
		KHM-35LR -1112-01X	32	160	700573	3.48	
		KHM-35LR -1112-02X	32	160	850864	3.49	
		KHM-35LR -1112-06X	32	160	851640	3.71	
		KHM-35LR -1112-09X	32	160	851935	3.36	
		KHM-42LR -1112-01X	40	160	700576	5.00	
		KHM-42LR -1112-02X	40	160	707721	5.01	
		KHM-42LR -1112-06X	40	160	850739	5.23	
		KHM-42LR -1112-09X	40	160	850746	4.88	

Type of connection	Thread designation of outside diameter of pipe RA	Nominal bore DN	Nominal pressure PN [bar]	Order no. = Stock number	Weight [kg]
Threaded pipe connection heavy range to DIN 2353	KHB-08SR -1212-03X	04	500	397530	0.37
	KHB-08SR -1212-04X	04	500	397645	0.33
	KHB-08SR -1212-09X	04	500	854732	0.28
	KHB-10SR -1212-03X	06	500	854830	0.41
	KHB-10SR -1212-04X	06	500	397648	0.37
	KHB-10SR -1212-09X	06	500	854733	0.32
	KHB-12SR -1212-03X	08	500	854833	0.54
	KHB-12SR -1212-04X	08	500	397651	0.50
	KHB-12SR -1212-09X	08	500	854761	0.45
	KHB-16SR -1212-03X-SW09	13	500	854835	0.64
	KHB-16SR -1212-04X-SW09	13	500	397725	0.60
	KHB-16SR -1212-09X-SW09	13	500	854763	0.55
	KHB-16SR -1212-01X	12	400	397532	0.72
	KHB-16SR -1212-02X	12	400	397655	0.72
	KHB-16SR -1212-06X	12	400	854839	0.92
	KHB-16SR -1212-09X	12	400	854764	0.65
	KHB-20SR -1212-03X-SW09	13	500	854836	0.69
	KHB-20SR -1212-04X-SW09	13	500	397728	0.66
	KHB-20SR -1212-09X-SW09	13	500	854765	0.61
	KHB-20SR -1212-01X	16	400	397533	0.74
	KHB-20SR -1212-02X	16	400	397658	0.74
	KHB-20SR -1212-06X	16	400	854840	0.94
	KHB-20SR -1212-09X	16	400	854766	0.67
	KHB-25SR -1212-01X	20	315	397534	1.42
	KHB-25SR -1212-02X	20	315	397661	1.42
	KHB-25SR -1212-06X	20	315	854842	1.58
	KHB-25SR -1212-09X	20	315	854767	1.32
	KHB-30SR -1212-01X	25	315	397535	1.97
	KHB-30SR -1212-02X	25	315	397663	1.97
	KHB-30SR -1212-06X	25	315	854844	2.13
	KHB-30SR -1212-09X	25	315	854768	1.87
	KHM-38SR -1112-01X	32	315	700658	3.55
	KHM-38SR -1112-02X	32	315	700944	3.56
	KHM-38SR -1112-06X	32	315	855460	3.78
	KHM-38SR -1112-09X	32	315	851944	3.43

**SR**

**2.1.4 Type of construction**

Shut off device is a ball.

**2.1.5 Type of connection**

Whitworth female thread to ISO 228

Light and heavy threaded pipe connection to DIN 2353

**2.1.6 Mounting position**

Optional

**2.1.7 Weight**

See table 2.1.3

**2.1.8 Flow direction**

Optional

**2.1.9 Ambient temperature**

- 10 °C to + 80 °C

**2.1.10 Materials**

Housing, connection adaptors and control spindle in steel

Surface phosphate-plated or yellow zinc-plated for DN 04 - 25

Housing, connection adaptors and control spindle in steel

Surface phosphate-plated for DN 32 - 50

Ball for DN 04 - 25 in brass, hard-chromed

Ball for DN 32 - 50 in steel, hard-chromed

Ball seal in high quality synthetic material (POM)

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

Handle SW 09 - zinc die-casting, zinc-plated for DN 04 - 10, 13 and handles SW 12 - 17 - aluminium, red-anodised or zinc-plated steel for DN 12 - 50

**2.2. HYDRAULIC DETAILS**

**2.2.1 Nominal pressure**

PN 315 bar to PN 500 bar (See table 2.1.3)

**2.2.2 Operating fluids**

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

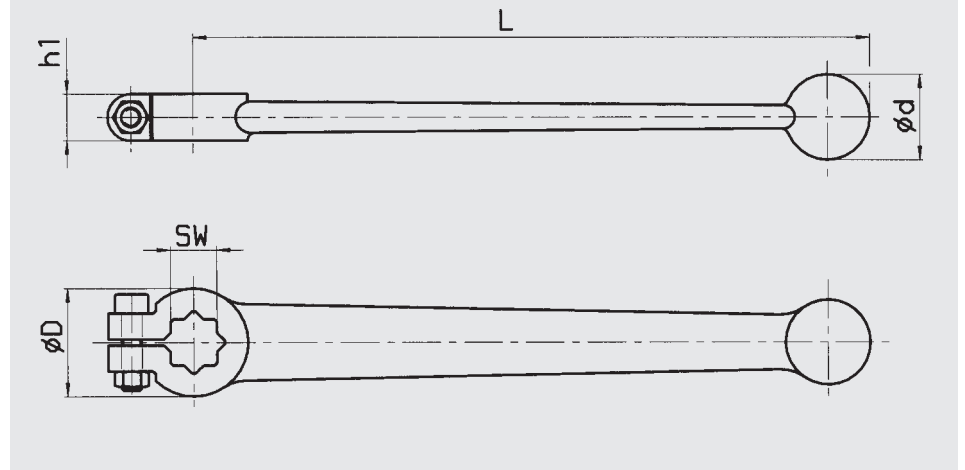
**2.2.3 Temperature of operating fluid**

- 10 °C to + 80 °C

**3. DIMENSIONS**

**3.1. HANDLE**

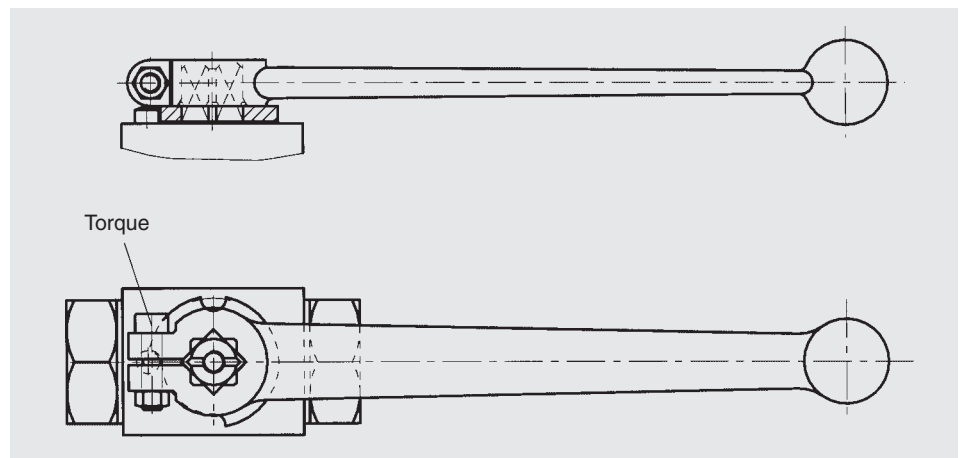
**Straight clamped handle**



L	ØD	Ød	h1	SW	Ball valve nominal bore	Model	Order no. = stock no.
150	22	15	10	09	04-10, 13	03 (ZG)	559419
175	28	22	12	12	12-16	01 (AG)	270100
200	32	24	12	14	20-25	01 (AG)	270101
240	36	26	14	17	32-50	01 (AG)	270311

**3.1.1 Notes on assembly**

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.

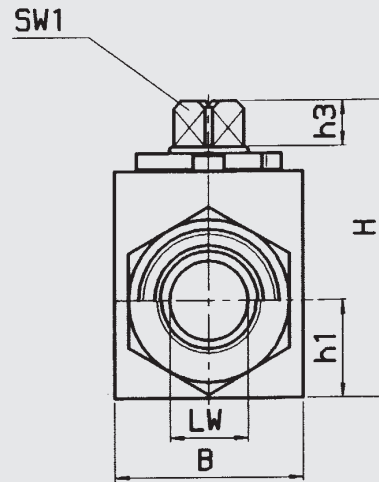
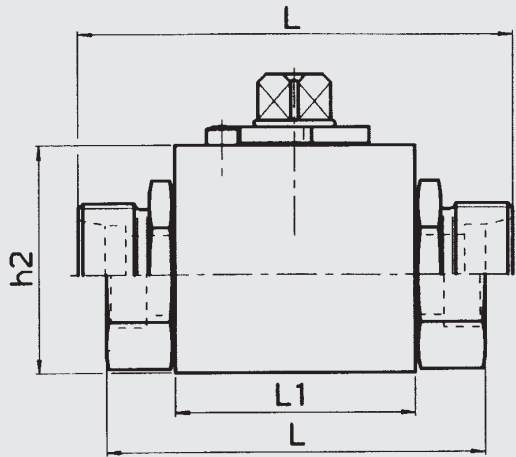


	SW 09 M5 x 20	SW 12 M5 x 20	SW 14 M6 x 30	SW 17 M6 x 30
Torque	3 Nm	3 Nm	5 Nm	7 Nm

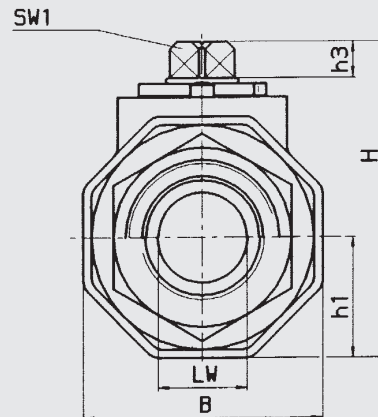
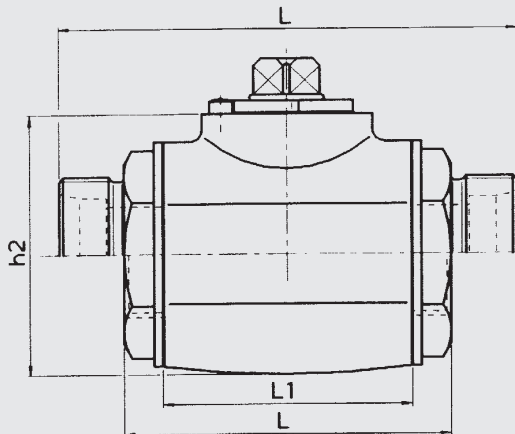
The handles can be displaced by 45°.

3.2. BALL VALVES

KHB



KHM

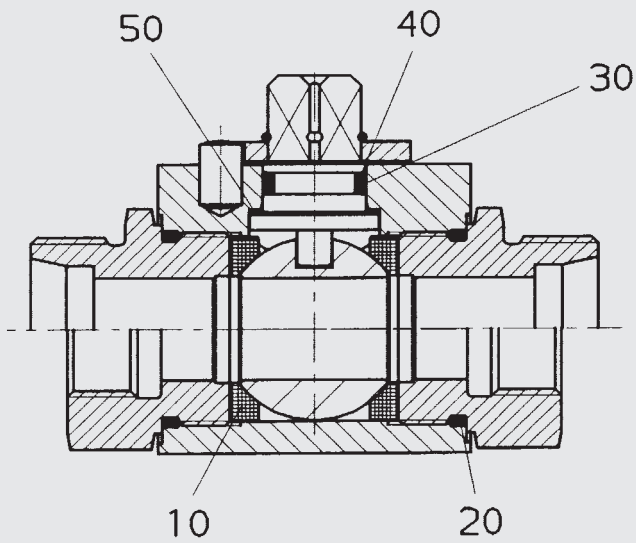


Type of connection	Type	DN	LW	RA	d1	i	L	L1	B	H	h1	h2	h3	SW1	SW2
	KHB-G 1/8	04	06	-	G 1/8	10	69	35	25	48	13	35	8	09	19
	KHB-G 1/4	06	06	-	G 1/4	14	69	35	25	48	13	35	8	09	22
	KHB-G 3/8	10	10	-	G 3/8	14	72	42	32	53	17	40	8	09	27
	KHB-G 1/2	13	12	-	G 1/2	15	83	47	35	53	17	40	8	09	30
	KHB-G 1/2	16	15	-	G 1/2	16	83	47	38	62	19	45	11	12	32
	KHB-G 3/4	20	20	-	G 3/4	18	95	60	48	75	24.5	57	11	14	41
	KHB-G 1	25	25	-	G 1	20.5	113	65	57	82	28.5	64	11	14	50
	KHM-G 1 1/4	32	30	-	G 1 1/4	22	110	84	75	102.7	37.5	84.2	12	17	60
	KHM-G 1 1/2	40	38	-	G 1 1/2	24	130	91	85	113.7	42.5	95.2	12	17	70
	KHM-G 2	50	48	-	G 2	26	140	100	105	131.2	52.5	112.7	12	17	80
	KHB-06LR	04	04	06	M12x1.5	10	67	35	25	48	13	35	8	09	19
	KHB-08LR	06	06	08	M14x1.5	10	67	35	25	48	13	35	8	09	19
	KHB-10LR	08	08	10	M16x1.5	11	74	42	32	53	17	40	8	09	27
	KHB-12LR	10	10	12	M18x1.5	11	74	42	32	53	17	40	8	09	27
	KHB-15LR	13	12	15	M22x1.5	12	82	47	35	53	17	40	8	09	30
	KHB-15LR	12	12	15	M22x1.5	12	82	47	38	62	19	45	11	12	32
	KHB-18LR	13	12	18	M26x1.5	12	82	47	35	53	17	40	8	09	30
	KHB-18LR	16	15	18	M26x1.5	12	82	47	38	62	19	45	11	12	32
	KHB-22LR	20	19	22	M30x2	14	101	60	48	75	24.5	57	11	14	41
	KHB-28LR	25	24	28	M36x2	14	108	65	57	82	28.5	64	11	14	50
	KHM-35LR	32	30	35	M45x2	16	141	84	75	102.7	37.5	84.2	12	17	60
	KHM-42LR	40	36	42	M52x2	16	162	91	85	113.7	42.5	95.2	12	17	70
	KHB-08SR	04	05	08	M16x1.5	12	73	35	25	48	13	35	8	09	19
	KHB-10SR	06	06	10	M18x1.5	12	73	35	25	48	13	35	8	09	19
	KHB-12SR	08	08	12	M20x1.5	12	76	42	32	53	17	40	8	09	27
	KHB-14SR	10	10	14	M22x1.5	14	80	42	32	53	17	40	8	09	27
	KHB-16SR	13	12	16	M24x1.5	14	86	47	35	53	17	40	8	09	30
	KHB-16SR	12	12	16	M24x1.5	14	86	47	38	62	19	45	11	12	32
	KHB-20SR	13	12	20	M30x2	16	90	47	35	53	17	40	8	09	30
	KHB-20SR	16	15	20	M30x2	16	90	47	38	62	19	45	11	12	32
	KHB-25SR	20	20	25	M36x2	18	109	60	48	75	24.5	57	11	14	41
	KHB-30SR	25	25	30	M42x2	20	120	65	57	82	28.5	64	11	14	50
	KHM-38SR	32	30	38	M52x2	22	153	84	75	102.7	37.5	84.2	12	17	60

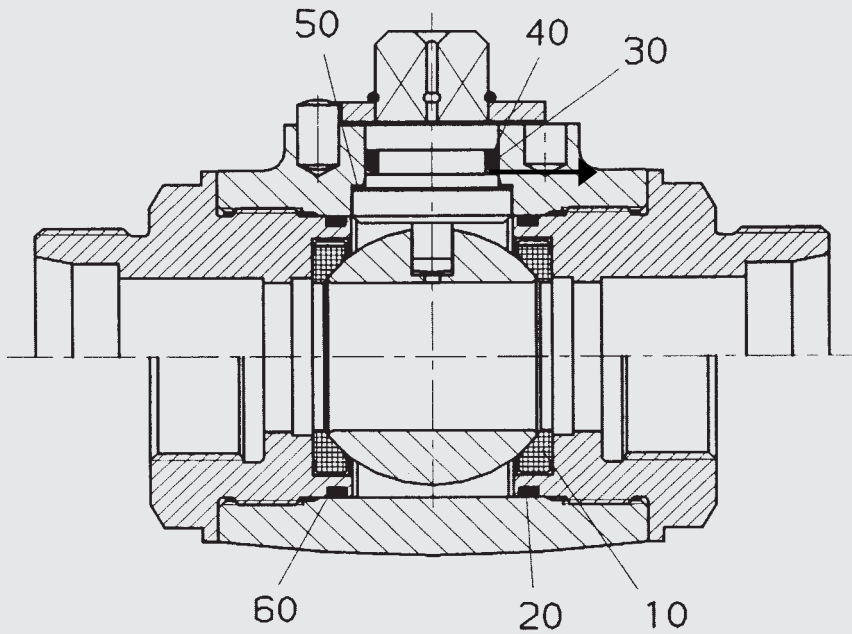
#### 4. SPARE PARTS

(Seal kit)

KHB, DN 04 - 25



KHM, DN 32 - 50



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
DN 32	703 045
DN 40	701 292
DN 50	703 007

The parts indicated by numbers on the above drawing are contained 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.