

## 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)

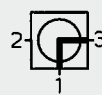
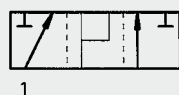
### Surface protection

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

### Function diagram

3/2 way ball valve L-bore 90° switch

2 3



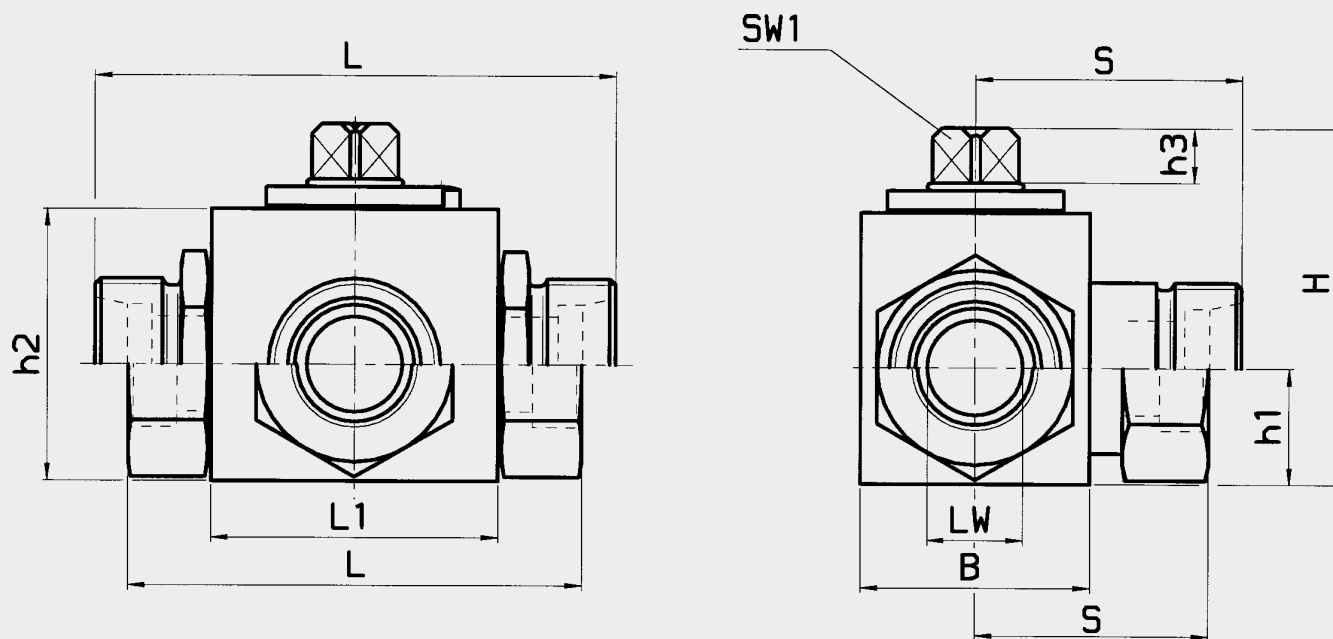
\* undefined switching position

## 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

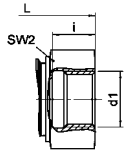
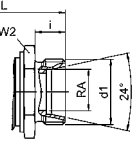
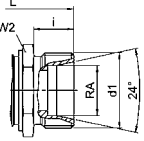
3/2 way ball valve



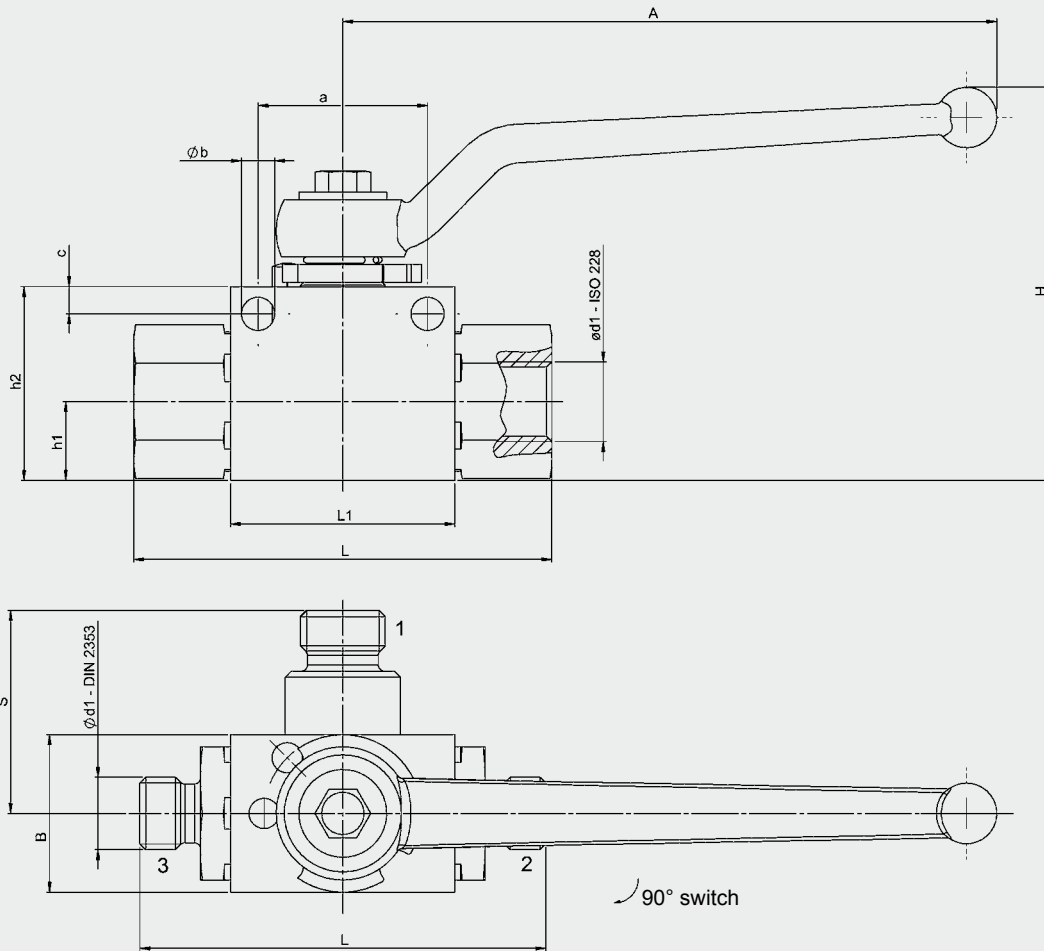
# Steel

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]
<b>DIN ISO 228</b> 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
<b>DIN 2353</b> 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	
<b>DIN 2353</b> 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
<b>ANSI B1.20.1</b> 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
<b>SAE J 5/4 UN/UNF</b> 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

## 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]
<b>DIN ISO 228</b> 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
<b>DIN 2353</b> 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
<b>DIN 2353</b> 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

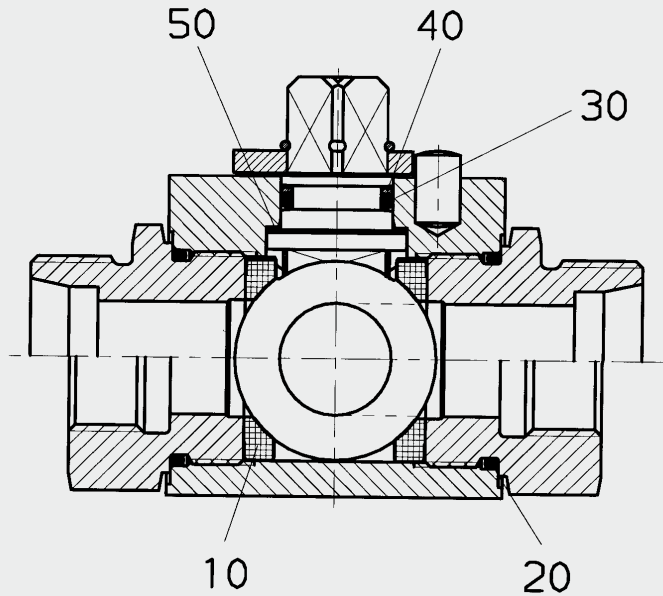
## Dimensions, Mounting bore (S0 1073)



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.

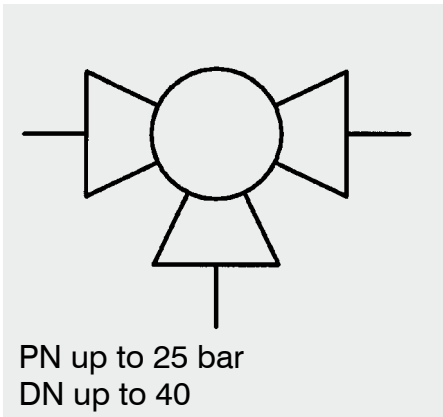
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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## Change-Over Low Pressure Ball Valves

### KHN3K



#### Model code

(also order example)

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

#### Designation

KHN3K = Change-over low pressure ball valve

#### Connection type

Thread size

#### Ball bore

L

T

#### Materials

*Housing, connection adapters 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

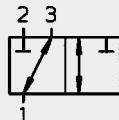
X = determined by manufacturer

#### Switching functions (as supplied)

3/2 way change-over ball valve

L-bore

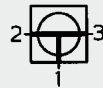
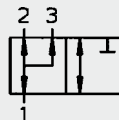
90° switch



3/2 way change-over ball valve

T-bore

90° switch

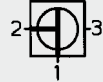
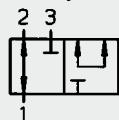


#### By moving the control spindle through 90°, the following switching positions can also be achieved.

3/2 way change-over ball valve

T-bore

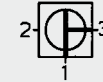
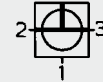
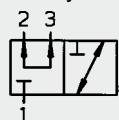
90° switch



3/2 way change-over ball valve

T-bore

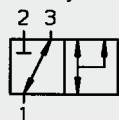
90° switch



3/2 way change-over ball valve

T-bore

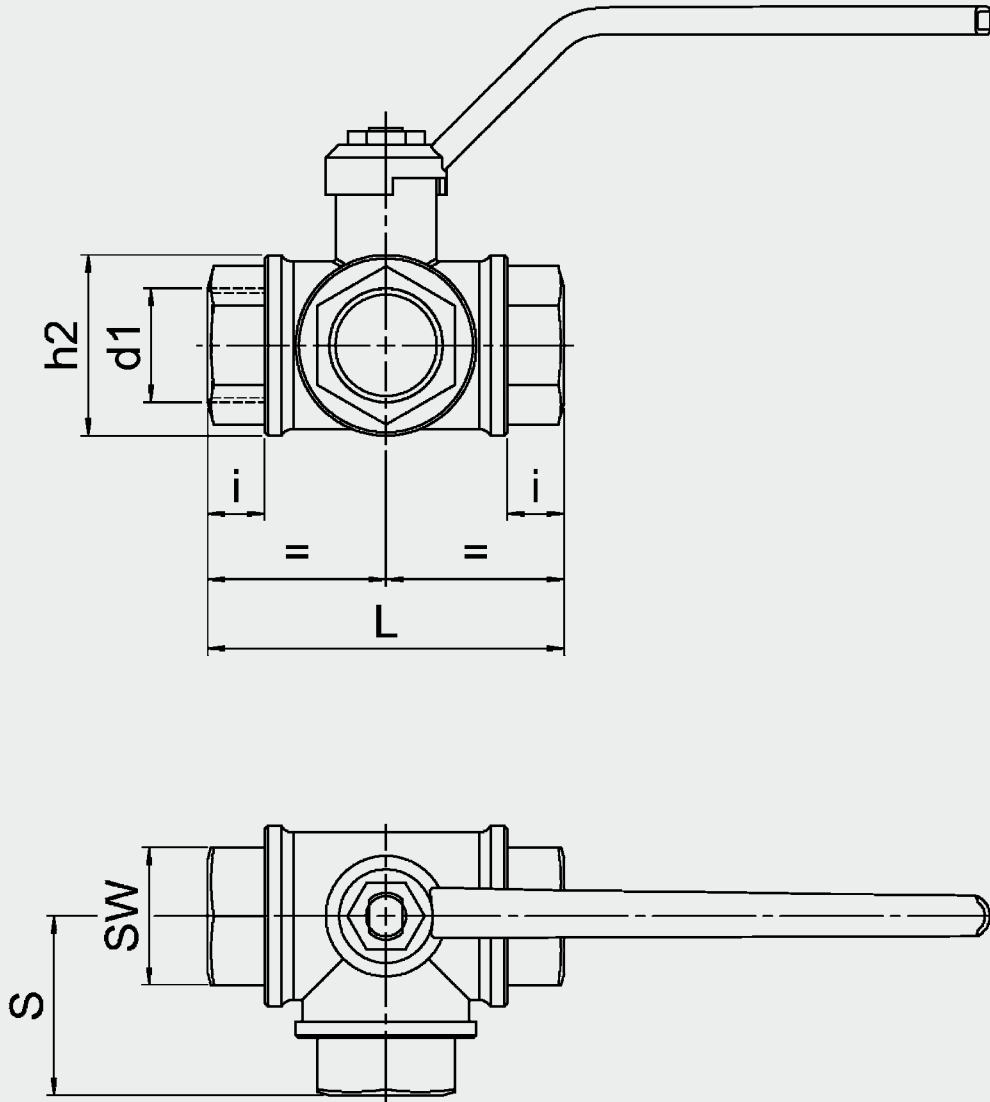
90° switch



## 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-G11/4	L, T	1 1/4"	118	65	50	170	24	29	59	102	25	2.64
KHN3K-G11/2	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.

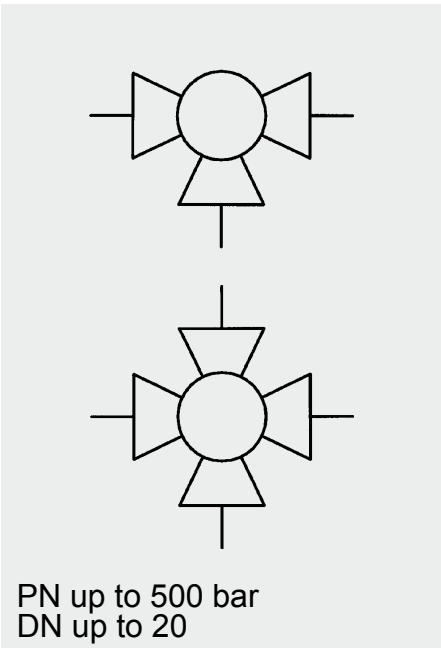
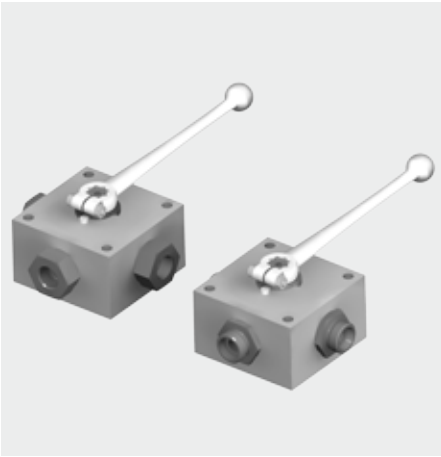
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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## 3-Way and 4-Way Ball Valves

KH3 / KH4



### Model code

(also order example)

**KH3** **G1/2** **L** **1114** **06** **X**

### Designation

KH3 = 3-way ball valve

KH4 = 4-way ball valve

### Nominal bore

### Ball bore

KH3 - L

KH3 - T

KH4 - T

KH4 - X

### Materials

Housing, connection adapters 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)

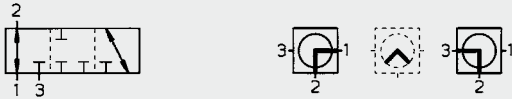
## Standard model functions

(Standard)

(Positive switching overlap)

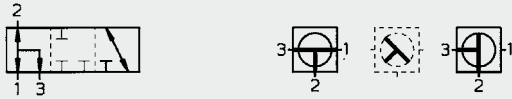
3-way ball valve L-bore

90° switch



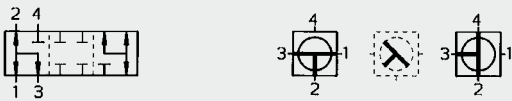
3-way ball valve T-bore

90° switch



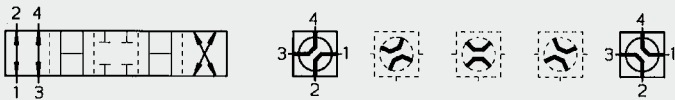
4-way ball valve T-bore

90° switch



4-way ball valve X-bore

90° switch



## Non-standard model functions

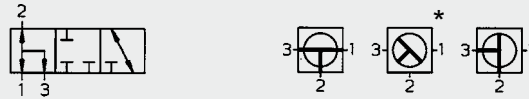
(positive switching overlap)

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

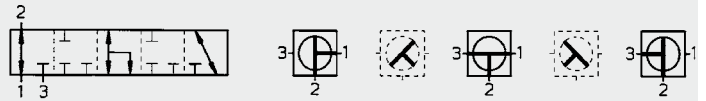
3-way ball valve L-bore, 90° switch, detent at 45°, SO 378



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



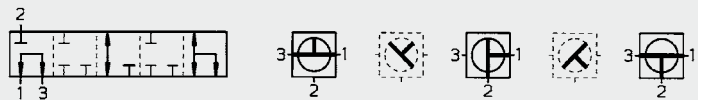
3-way ball valve T-bore, 180° switch, no detent on centre setting



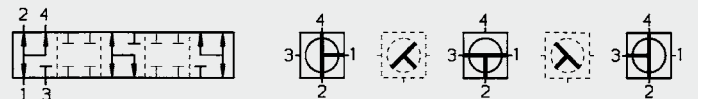
3-way ball valve T-bore, 180° switch, SO 926.1, no detent on centre setting



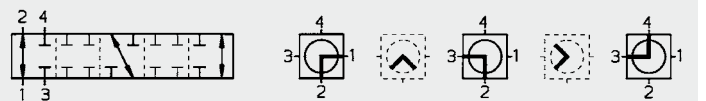
3-way ball valve T-bore, 180° switch, SO 926.2, no detent on centre setting



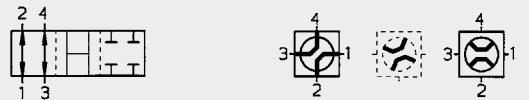
4-way ball valve T-bore, 180° switch, no detent on centre setting



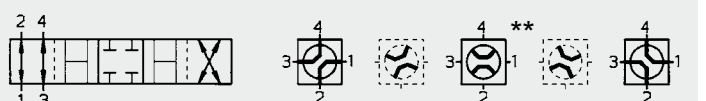
4-way ball valve L-bore, 180° switch, no detent on centre setting



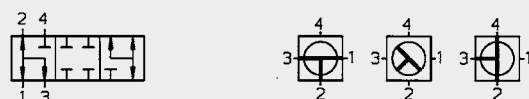
4-way ball valve X-bore, 45° switch, SO 384




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

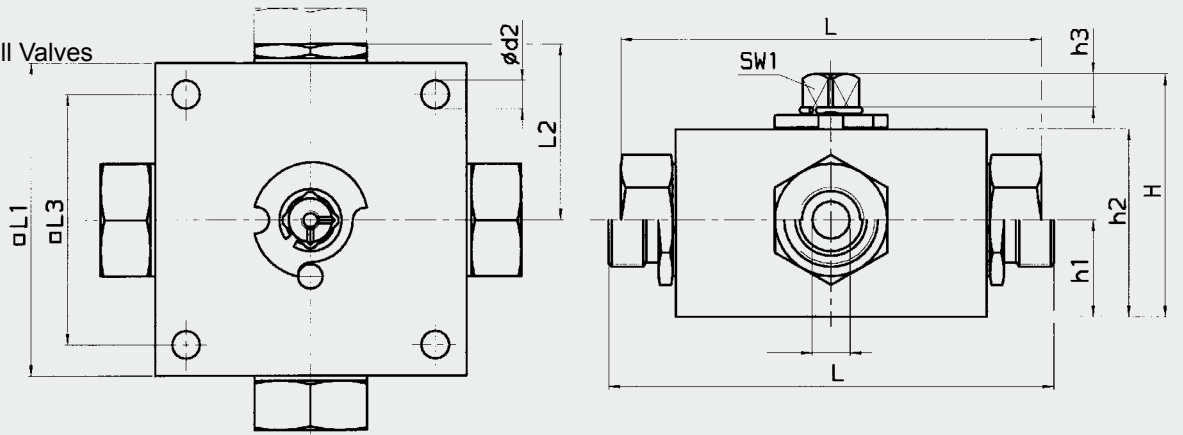
\* The centre setting is held by a detent pin.

## 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]
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

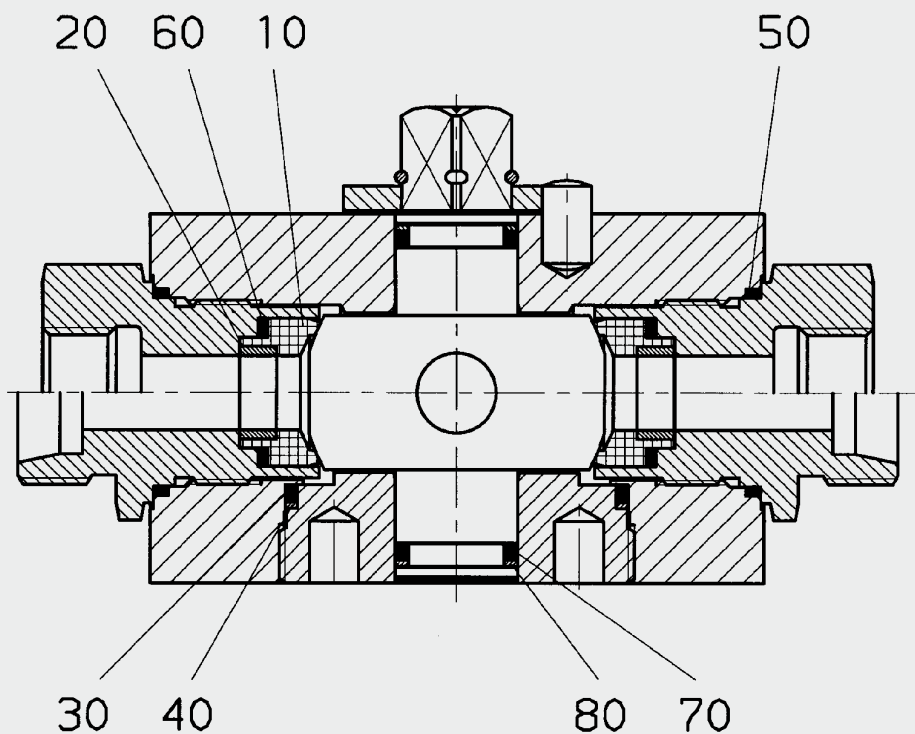
Type	DN	Bore int. Ø			RA	d1	i	L	L1	L2	L3	H	h1	h2	h3	d2	SW1	SW2	Weight [kg]	Nom. press. PN [bar]
KH3/4-06LR	4	6	6	4.5	6	M12x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-08LR	6	6	6	4.5	8	M14x1.5	10	105	70	42.5	55	57	22	40	11	6.5	12	24	1.6	500
KH3/4-10LR	8	9	9	6	10	M16x1.5	11	114	80	46	65	67.5	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]
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]
KH3/4-06NPT	6	6	6	4.5		1/4 - 18 NPT	10.21	100	70	42.5	55	83	22	40	11	6.5	12	24	1.75	500
KH3/4-10NPT	10	9	9	6		3/8 - 18 NPT	10.36	115	80	46	65	63.5	27	50	11.5	6.5	14	30	2.7	500
KH3/4-12NPT	12	13	13	10		1/2 - 14 NPT	13.56	135	100	56	85	75.5	31	60	11.5	9	14	36	4.8	400
KH3/4-20NPT	20	18	18	14		3/4 - 14 NPT	13.86	144	100	58	85	92	36	73	11.5	9	17	46	6.3	315

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

## Spare parts (seal kit)



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.

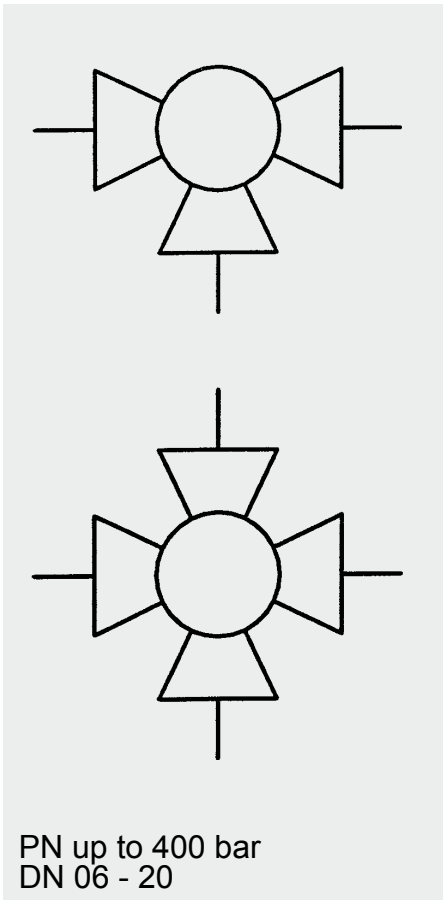
For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.



## 3-Way and 4-Way Manifold Mounted Ball Valves

KH3P / KH4P



### 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

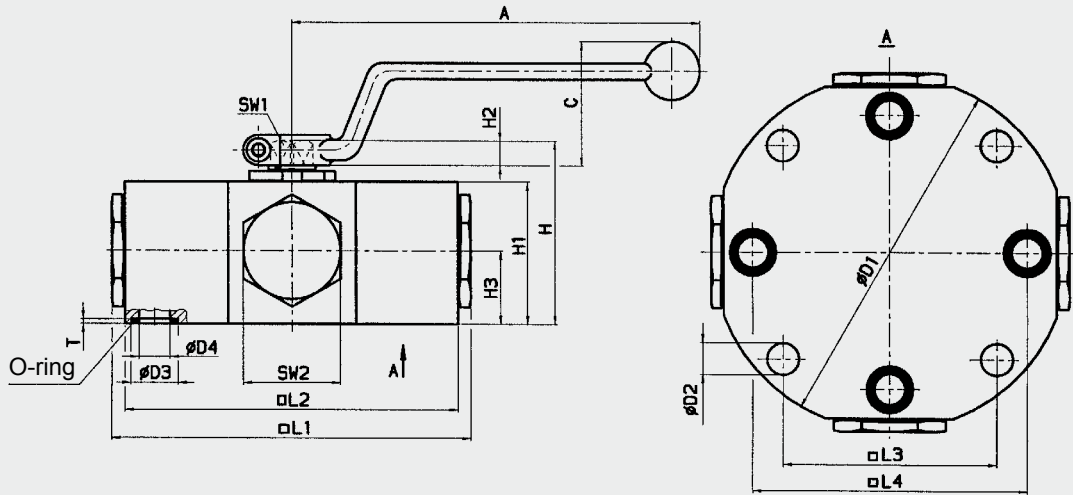
	Ball bore	Switching movement	Function diagram	SO ... model	
<b>KH3P</b>	L	0° - 90°			-
	T	0° - 45°			45°
	T	0° - 90°			-
	T	0° - 90° - 180°			180°
	L	0° - 45° - 90°			SO 378
	T	0° - 45° - 90°			SO 379
<b>KH4P</b>	T	0° - 90°			-
	X	0° - 45°			45°
	X	0° - 90°			-
	L	0° - 90° - 180°			180°
	T	0° - 90° - 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

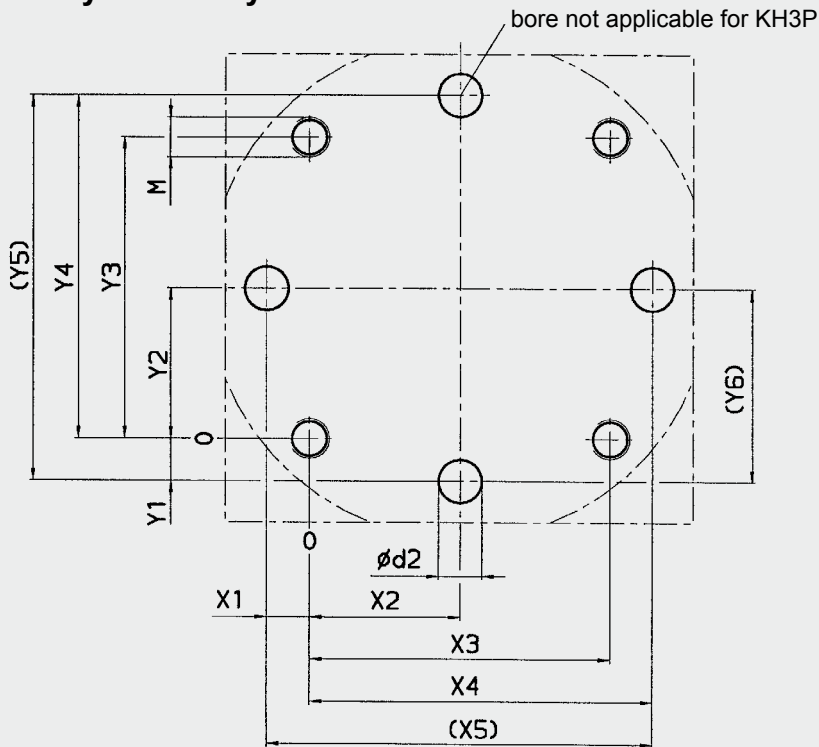
### 3-way and 4-way manifold mounted ball valve with cranked aluminium handle



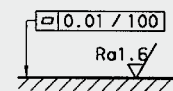
DN	Int. diam.			L1	L2	L3	L4	H	H1	H2	H3	D1	D2	D3	D4	SW 1	SW 2	T
	L	T	X															
06	5	5	4.5	103	90	70	68.6	57	40	11	22	--	6.5	11.7	6	12	27	1.9
10	9	9	6	113	100	80	81	67.5	50	11.5	27	--	9	14.7	8	14	30	1.9
16	12	12	10	152.5	140	90	115.4	77.5	60	11.5	31.5	150	13.5	19.7	13	14	41	2
20	18	18	14	184	170	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  $\mu$  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
<b>Spare parts:</b>	Seal kits available on request
<b>Accessories:</b>	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

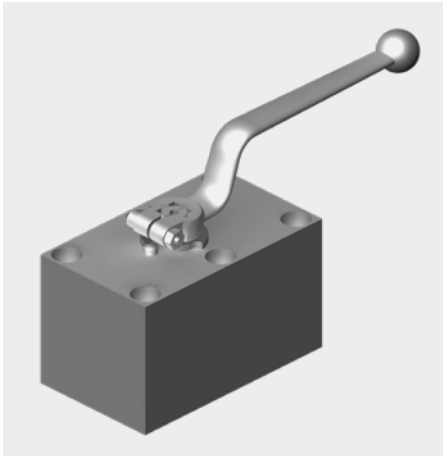
**66280 Sulzbach/Saar**

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

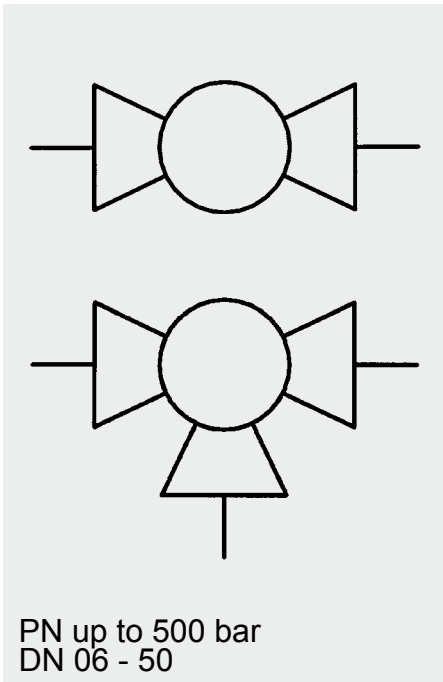
Internet: [www.hydac.com](http://www.hydac.com)

E-Mail: [info@hydac.com](mailto:info@hydac.com)



## Manifold Mounted Ball Valves

KHP / KHP3K



PN up to 500 bar  
DN 06 - 50

**Model code**  
(also order example)

**KHP3K 16 L 1114 06 X ...**

### Designation

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

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

### Nominal bore

### Ball bore (not applicable for KHP)

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

### Materials

*Housing, locking screw, 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

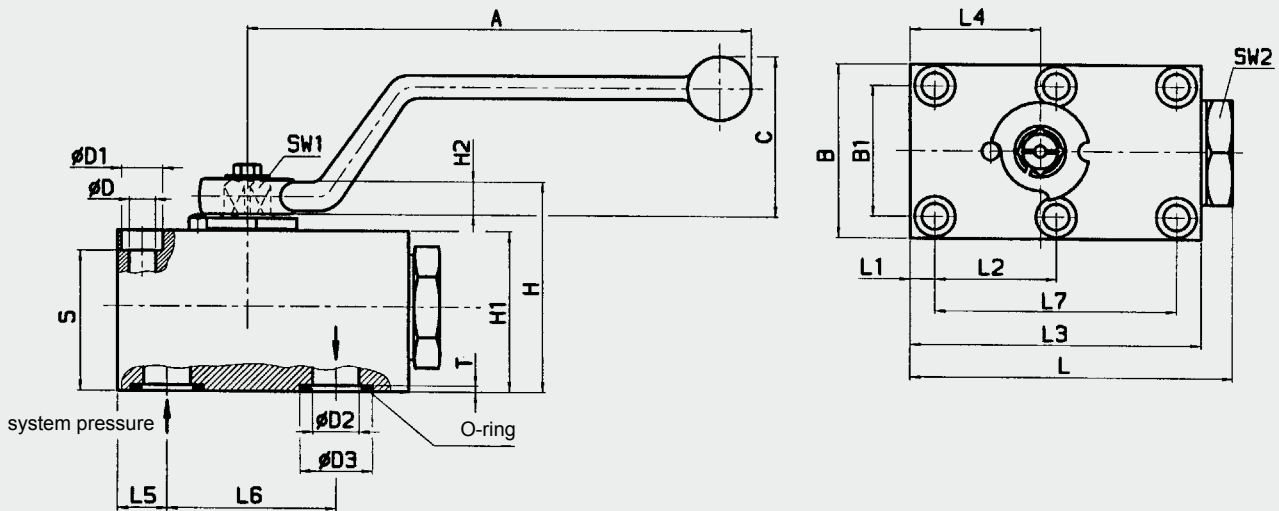
SO 560.1 - positive switching overlap

T-bore on request

## Dimensions

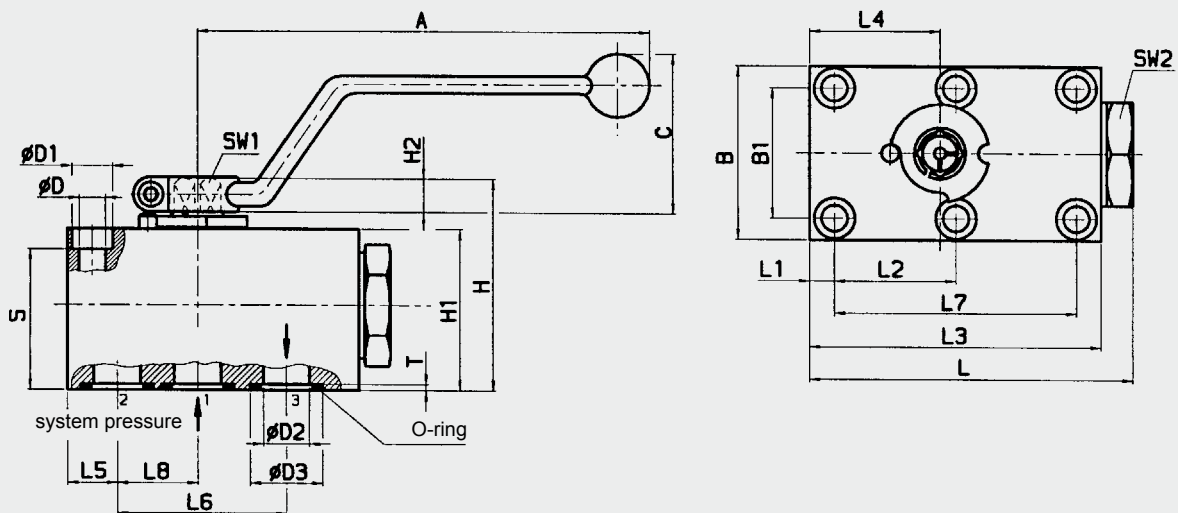
### KHP

Manifold mounted ball valve with cranked bolt-on steel handle



### KHP3K

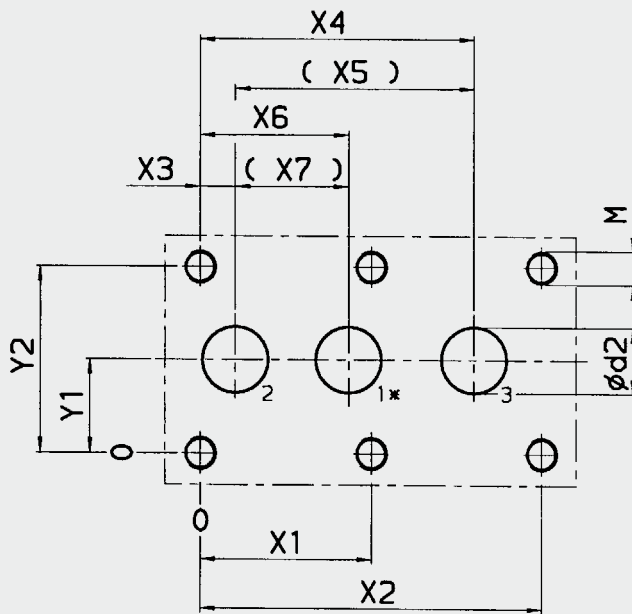
3-way manifold mounted ball valve with cranked clamped aluminium handle



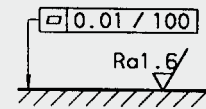
DN	Int. Ø.	L	L1	L2	L3	L4	L5	L6	L7	L8	B	B1	SW1	A	C
06	6	64	8.5	17.5	59	25	8.5	35	35	17.5	40	27	6	60	23
10	9.5	80	7.5	27.5	70	29	10	44	55	19	55	40	9	108	28
16	16	109.4	8.5	41.5	100	44	17	58	83	26.5	60	45	12	163	50
20	20	127	10	48.5	117	51	20	69	97	31	70	51	14	169	59
25	23.5	145	10	57.5	135	62	24	81	115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

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