







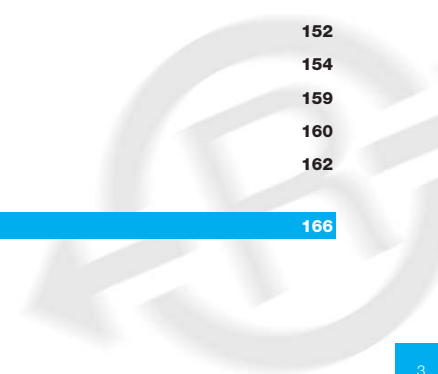
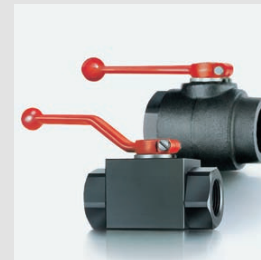


ZAWORY KULOWE WYSOKOCIŚNIENIOWE - RÖTELMANN

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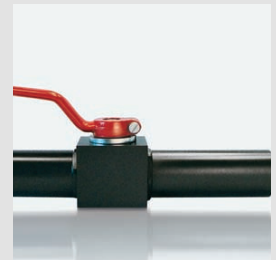




with threaded connector



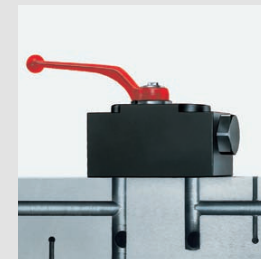
with flange connection



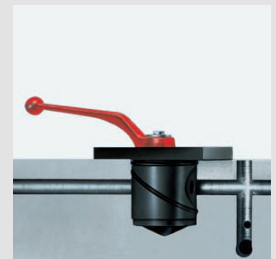
with welding-end



with staple-lock connector



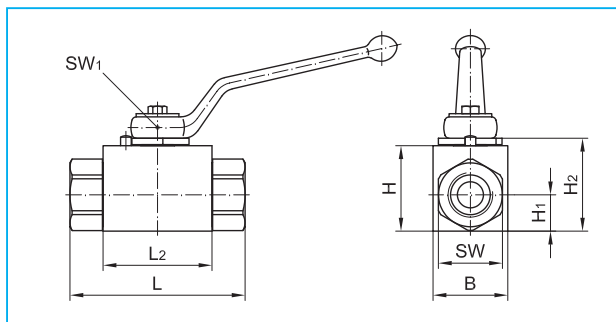
for manifold mounting



for manifold insertion
as cartridge type

2-way ball valves with threaded connector

Steel · DN 4 - DN 40/25



Handle included in delivery
 Please check pressure rating of the pipe fittings!
 For actuators and handles refer to "Attachments, accessories".
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

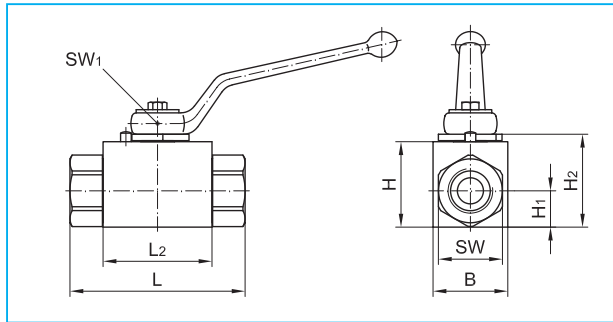
Body:	Steel	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel	Steel
Ball seats:	POM	POM	PTFE
Stem seats:	NBR	FKM	FKM

Type of connection	DN	Thread D	RA	L	L1	L2	B	H	H1	H2	SW	SW1	Handle Code	Weight
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	4	M12 x 1,5	6	67	10	36	20	25	10,0	27,5	19	7	1	0,20
	6	M14 x 1,5	8	67	10	36	20	25	10,0	27,5	19	7	1	0,20
	8	M16 x 1,5	10	75	11	45	30	35	14,5	38,5	24	8	2	0,42
	10	M18 x 1,5	12	75	11	45	30	35	14,5	38,5	24	8	2	0,42
	12	M22 x 1,5	15	83	12	51	35	40	17,0	43,5	30	10	3	0,63
	16	M26 x 1,5	18	82	12	50	45	45	20,0	49,0	36	11	6	0,85
	20	M30 x 2	22	99	14	60	45	55	24,0	59,0	41	14	8	1,21
	25	M36 x 2	28	108	14	70	55	60	26,0	64,0	50	14	8	1,75
	32/25	M45 x 2	35	116	16	70	55	60	26,0	64,0	50	14	8	1,88
	40/25	M52 x 2	42	121	16	70	55	60	26,0	64,0	55	14	8	2,05
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	4	M16 x 1,5	8	73	12	36	20	25	10,0	27,5	19	7	1	0,22
	6	M18 x 1,5	10	73	12	36	20	25	10,0	27,5	19	7	1	0,22
	8	M20 x 1,5	12	77	12	45	30	35	14,5	38,5	24	8	2	0,43
	10	M22 x 1,5	14	81	14	45	30	35	14,5	38,5	24	8	2	0,44
	12	M24 x 1,5	16	87	14	51	35	40	17,0	43,5	30	10	3	0,65
	16	M30 x 2	20	90	16	50	45	45	20,0	49,0	36	11	6	0,89
	20	M36 x 2	25	107	18	60	45	55	24,0	59,0	41	14	8	1,29
	25	M42 x 2	30	120	20	70	55	60	26,0	64,0	50	14	8	1,88
	32/25	M52 x 2	38	134	22	70	55	60	26,0	64,0	55	14	8	2,20
	BSP-female thread-DIN EN ISO 228-1	4	G 1/8	-	69	12	36	20	25	10,0	27,5	19	7	1
6		G 1/4	-	69	12	36	20	25	10,0	27,5	19	7	1	0,21
10		G 3/8	-	73	14	45	30	35	14,5	38,5	24	8	2	0,43
12		G 1/2	-	82	15	51	35	40	17,0	43,5	30	10	3	0,67
16		G 5/8	-	88	18	50	45	45	20,0	49,0	36	11	6	0,97
20		G 3/4	-	93	18	60	45	55	24,0	59,0	41	14	8	1,28
25		G 1	-	115	18	70	55	60	26,0	64,0	50	14	8	2,00
32/25		G 1 1/4	-	134	20	70	55	60	26,0	64,0	50	14	8	2,05
40/25		G 1 1/2	-	139	22	70	55	60	26,0	64,0	55	14	8	2,20
NPT-female thread ANSI/ASME B1.20.1-1983		4	1/8 - 27 NPT	-	69	6,9	36	20	25	10,0	27,5	19	7	1
	6	1/4 - 18 NPT	-	69	10,0	36	20	25	10,0	27,5	19	7	1	0,21
	10	3/8 - 18 NPT	-	73	10,3	45	30	35	14,5	38,5	24	8	2	0,43
	12	1/2 - 14 NPT	-	82	13,6	51	35	40	17,0	43,5	30	10	3	0,67
	20	3/4 - 14 NPT	-	93	14,1	60	45	55	24,0	59,0	41	14	8	1,30
	25	1 - 11 1/2 NPT	-	115	16,8	70	55	60	26,0	64,0	50	14	8	2,00
	32/25	1 1/4 - 11 1/2 NPT	-	134	17,3	70	55	60	26,0	64,0	50	14	8	2,05
	40/25	1 1/2 - 11 1/2 NPT	-	139	17,3	70	55	60	26,0	64,0	55	14	8	2,44

DN	PN	Article-No.	PN	Article-No.	PN	Article-No.
4	500	100 001	500	100 051	315	100 671
	500	100 002	500	100 052	315	100 672
	500	100 003	500	100 053	315	100 673
	500	100 004	500	100 054	315	100 674
	500	100 005	500	100 055	315	100 675
	400	100 006	400	100 056	315	100 676
	400	100 007	400	100 057	250	100 677
	400	100 008	400	100 058	250	100 678
	400	100 037	400	100 087	250	100 842
	400	100 038	400	100 088	250	100 843
6	500	100 009	500	100 059	315	100 679
	500	100 010	500	100 060	315	100 680
	500	100 011	500	100 061	315	100 681
	500	100 012	500	100 062	315	100 682
	500	100 013	500	100 063	315	100 683
	400	100 014	400	100 064	315	100 684
	400	100 015	400	100 065	250	100 685
	400	100 016	400	100 066	250	100 686
	400	100 039	400	100 089	250	100 844
	10	500	100 017	500	100 067	315
500		100 018	500	100 068	315	100 688
500		100 019	500	100 069	315	100 689
500		100 020	500	100 070	315	100 690
400		100 021	400	100 071	315	100 691
400		100 022	400	100 072	250	100 692
400		100 023	400	100 073	250	100 693
400		100 047	400	100 097	250	100 845
400		100 048	400	100 098	250	100 846
12		500	100 024	500	100 074	315
	500	100 025	500	100 075	315	100 695
	500	100 026	500	100 076	315	100 696
	500	100 027	500	100 077	315	100 697
	400	100 028	400	100 078	250	100 698
	400	100 029	400	100 079	250	100 699
	400	100 049	400	100 099	250	100 847
	400	100 050	400	100 100	250	100 848

2-way ball valves with threaded connector

Steel · DN 4 - DN 25



Handle included in delivery

Please check pressure rating of the pipe fittings!

For actuators and handles refer to "Attachments, accessories".

Custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

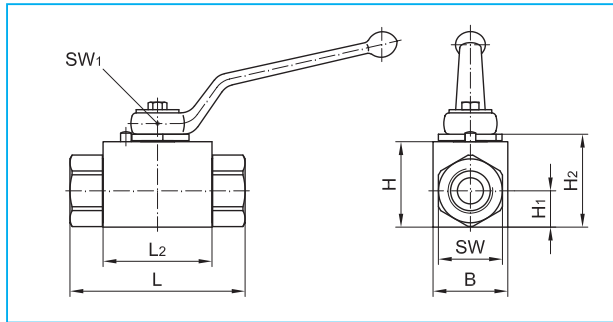
Pressure in bar

Body:	Steel	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel	Steel
Ball seats:	POM	POM	PTFE
Stem seals:	NBR	FKM	FKM

Type of connection	DN	Thread D	RA	L	L1	L2	B	H	H1	H2	SW	SW1	Handle Code	Weight	DN	PN	Article-No.	PN	Article-No.	PN	Article-No.
For cut (clamp) ring tube fittings with ball lining DIN 7601	4	M12 x 1,5	6	67	10	36	20	25	10,0	27,5	19	7	1	0,20	4	500	100 475	500	100 483	315	100 491
	6	M14 x 1,5	8	67	10	36	20	25	10,0	27,5	19	7	1	0,20	6	500	100 476	500	100 484	315	100 492
	8	M16 x 1,5	10	75	11	45	30	35	14,5	38,5	24	8	2	0,42	8	500	100 477	500	100 485	315	100 493
	10	M18 x 1,5	12	75	11	45	30	35	14,5	38,5	24	8	2	0,42	10	500	100 478	500	100 486	315	100 494
	12	M22 x 1,5	15	83	12	51	35	40	17,0	43,5	30	10	3	0,63	12	500	100 479	500	100 487	315	100 495
	16	M26 x 1,5	18	82	12	50	45	45	20,0	49,0	36	11	6	0,85	16	400	100 480	400	100 488	315	100 496
NPT-male thread ANSI/ASME B1.20.1-1983	20	M30 x 1,5	22	99	14	60	45	55	24,0	59,0	41	14	8	1,21	20	400	100 481	400	100 489	250	100 497
	25	M38 x 1,5	28	108	14	70	55	60	26,0	64,0	50	14	8	1,75	25	400	100 482	400	100 490	250	100 498
	4	1/8 - 27 NPT	-	67	10,0	36	20	25	10,0	27,5	19	7	1	0,20	4	500	100 613	500	100 619	315	100 625
	6	1/4 - 18 NPT	-	77	15,1	36	20	25	10,0	27,5	19	7	1	0,22	6	500	100 614	500	100 620	315	100 626
	10	3/8 - 18 NPT	-	84	15,3	45	30	35	14,5	38,5	24	8	2	0,45	10	500	100 615	500	100 621	315	100 627
	12	1/2 - 14 NPT	-	99	19,9	51	35	40	17,0	43,5	30	10	3	0,65	12	500	100 616	500	100 622	315	100 628
BSP-male thread (flat seal) DIN EN ISO 228-1	20	3/4 - 14 NPT	-	111	20,2	60	45	55	24,0	59,0	41	14	8	1,22	20	400	100 617	400	100 623	250	100 629
	25	1 - 11 1/2 NPT	-	130	25,0	70	55	60	26,0	64,0	50	14	8	1,80	25	400	100 618	400	100 624	250	100 630
	4	G 1/8 A	-	67	10	36	20	25	10,0	27,5	19	7	1	0,20	4	500	100 631	500	100 639	315	100 663
	6	G 1/4 A	-	69	11	36	20	25	10,0	27,5	19	7	1	0,20	6	500	100 632	500	100 640	315	100 664
	8	G 3/8 A	-	77	12	45	30	35	14,5	38,5	24	8	2	0,42	8	500	100 633	500	100 641	315	100 665
	10	G 1/2 A	-	77	12	45	30	35	14,5	38,5	24	8	2	0,42	10	500	100 634	500	100 642	315	100 666
Female thread ISO 11926-1	12	G 5/8 A	-	83	12	51	35	40	17,0	43,5	30	10	3	0,63	12	500	100 635	500	100 643	315	100 667
	16	G 3/4 A	-	86	14	50	45	45	20,0	49,0	36	11	6	0,85	16	400	100 636	400	100 644	315	100 668
	20	G 1 A	-	103	16	60	45	55	24,0	59,0	41	14	8	1,22	20	400	100 637	400	100 645	250	100 669
	25	G 1 1/4 A	-	116	18	70	55	60	26,0	64,0	50	14	8	1,86	25	400	100 638	400	100 646	250	100 670
	4	7/16-20 UNF - 2B	-	69	11,5	36	20	25	10,0	27,5	19	7	1	0,22	4	500	101 171	500	101 179	315	101 187
	6	1/2-20 UNF - 2B	-	69	11,5	36	20	25	10,0	27,5	19	7	1	0,21	6	500	101 172	500	101 180	315	101 188
8	9/16-18 UNF - 2B	-	90	12,7	45	30	35	14,5	38,5	27	8	2	0,50	8	500	101 173	500	101 181	315	101 189	
10	3/4-16 UNF - 2B	-	90	14,3	45	30	35	14,5	38,5	27	8	2	0,50	10	500	101 174	500	101 182	315	101 190	
12	7/8-14 UNF - 2B	-	101	16,7	51	35	40	17,0	43,5	30	10	3	0,77	12	500	101 175	500	101 183	315	101 191	
16	1 1/16-12 UN - 2B	-	107	19,0	50	45	45	20,0	49,0	41	11	6	1,19	16	400	101 176	400	101 184	315	101 192	
20	1 5/16-12 UN - 2B	-	116	19,0	60	45	55	24,0	59,0	46	14	8	1,51	20	400	101 177	400	101 185	250	101 193	
25	1 5/8-12 UN - 2B	-	131	19,0	70	55	60	26,0	64,0	55	14	8	2,20	25	400	101 178	400	101 186	250	101 194	

2-way ball valves with threaded connector

Steel · DN 4 - DN 25



*) included in delivery

Handle included in delivery

Please check pressure rating of the pipe fittings!

For actuators and handles refer to "Attachments, accessories".

Custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

Body:	Steel	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel	Steel
Ball seats:	POM	POM	PTFE
Stem seals:	NBR	FKM	FKM

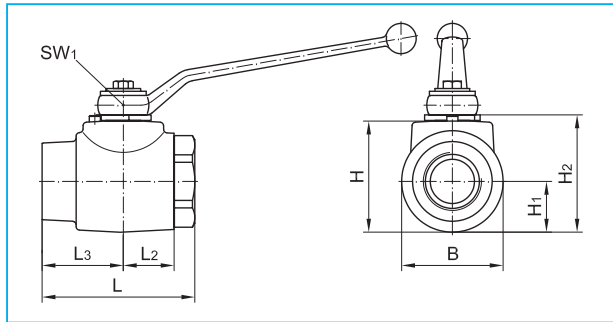
Type of connection	DN	Thread D	L	L1	L2	B	H	H1	H2	SW	SW1	Handle Code	O-Ring	Weight
Male thread ISO 8434-3	6	9/16-18 UNF	67	10,0	36	20	25	10,0	27,5	19	7	1	7,65 x 1,78*	0,20
	8	1 1/16-16 UN	75	11,0	45	30	35	14,5	38,5	24	8	2	9,25 x 1,78*	0,42
	10	1 3/16-16 UN	79	13,0	45	30	35	14,5	38,5	24	8	2	12,42 x 1,78*	0,44
	12	1-14 UNS	90	15,5	51	35	40	17,0	43,5	30	10	3	15,60 x 1,78*	0,65
	16	1 3/16-12 UN	92	17,0	50	45	45	20,0	49,0	36	11	6	18,77 x 1,78*	0,90
	20	1 7/16-12 UN	106	17,5	60	45	55	24,0	59,0	41	14	8	23,52 x 1,78*	1,22
	25	1 1/16-12 UN	115	17,5	70	55	60	26,0	64,0	50	14	8	29,87 x 1,78*	1,80
Female thread ISO 6149-1	4	M10 x 1,0	69	10,0	36	20	25	10,0	27,5	19	7	1	-	0,22
	6	M12 x 1,5	69	11,5	36	20	25	10,0	27,5	19	7	1	-	0,21
	8	M14 x 1,5	73	11,5	45	30	35	14,5	38,5	24	8	2	-	0,44
	10	M16 x 1,5	73	13,0	45	30	35	14,5	38,5	24	8	2	-	0,43
	12	M18 x 1,5	82	14,5	51	35	40	17,0	43,5	30	10	3	-	0,67
	16	M22 x 1,5	88	15,5	50	45	45	20,0	49,0	36	11	6	-	0,97
	20	M27 x 2	93	19,0	60	45	55	24,0	59,0	41	14	8	-	1,28
	25	M33 x 2	115	19,0	70	55	60	26,0	64,0	50	14	8	-	2,00

DN	PN	Article-No.	PN	Article-No.	PN	Article-No.
6	500	101 111	500	101 121	315	101 131
8	500	101 112	500	101 122	315	101 132
10	500	101 113	500	101 123	315	101 133
12	500	101 114	500	101 124	315	101 134
16	400	101 115	400	101 125	315	101 135
20	400	101 116	400	101 126	250	101 136
25	400	101 117	400	101 127	250	101 137
4	500	101 141	500	101 151	315	101 161
6	500	101 142	500	101 152	315	101 162
8	500	101 143	500	101 153	315	101 163
10	500	101 144	500	101 154	315	101 164
12	500	101 145	500	101 155	315	101 165
16	400	101 146	400	101 156	315	101 166
20	400	101 147	400	101 157	250	101 167
25	400	101 148	400	101 158	250	101 168



2-way ball valves with threaded connector

Steel · DN 32 - DN 50



Handle included in delivery

Please check pressure rating of the pipe fittings!

For actuators and handles refer to "Attachments, accessories".

Custom orders on request

Also available with most other connection types

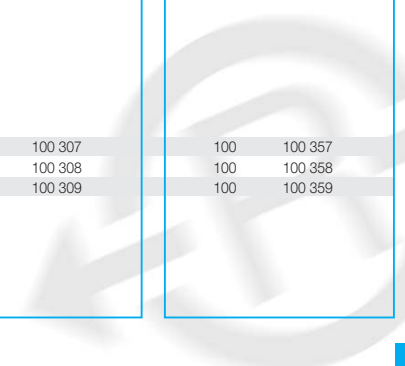
All dimensions subject to change without notice

Dimensions in mm

Weight in kg

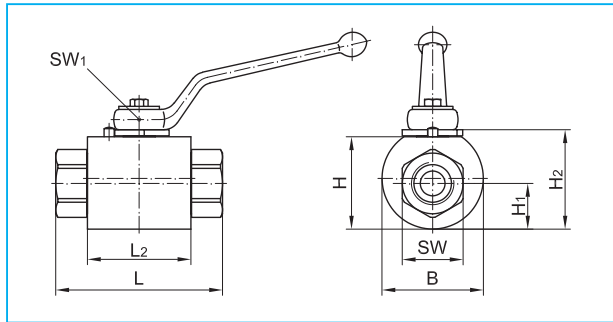
Pressure in bar

Type of connection	DN	Thread D	RA	L	L ₁	L ₂	L ₃	B	H	H ₁	H ₂	SW	SW ₁	Handle Code	Weight	DN	PN	Article-No.	PN	Article-No.	PN	Article-No.
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	32	M45 x 2	35	121	16	36,5	58,5	73	80	36,5	84,5	60	17	22	2,59	32	400	100 251	400	100 301	100	100 351
	40	M52 x 2	42	118	16	40,0	52,5	85	90	42,5	94,5	75	17	22	3,24	40	400	100 252	400	100 302	100	100 352
For cut (clamp) ring tube fitting DIN 2353 heavy series ISO 8434-1	32	M52 x 2	38	127	22	36,5	58,2	73	80	36,5	84,5	60	17	22	2,73	32	400	100 253	400	100 303	100	100 353
	40	G 1 1/4	-	110	24,0	36,5	58,5	73	80	36,5	84,5	60	17	22	3,07	32	400	100 254	400	100 304	100	100 354
BSP-female thread DIN EN ISO 228-1	40	G 1 1/2	-	114	26,0	40,0	57,0	85	90	42,5	94,5	75	17	22	3,96	40	400	100 255	400	100 305	100	100 355
	50	G 2	-	129	27,5	48,0	65,0	99	104	49,5	108,5	85	17	22	5,02	50	400	100 256	400	100 306	100	100 356
NPT-female thread ANSI/ASME B1.20.1-1983	32	1 1/4 - 11 1/2 NPT	-	110	17,3	36,5	58,5	73	80	36,5	84,5	60	17	22	3,46	32	400	100 257	400	100 307	100	100 357
	40	1 1/2 - 11 1/2 NPT	-	114	17,3	40,0	57,0	85	90	42,5	94,5	75	17	22	3,96	40	400	100 258	400	100 308	100	100 358
	50	2 - 11 1/2 NPT	-	129	17,7	48,0	65,0	99	104	49,5	108,5	85	17	22	5,28	50	400	100 259	400	100 309	100	100 359



2-way ball valves with threaded connector

Steel · DN 4 - DN 25



Handle included in delivery

Please check pressure rating of the pipe fittings!

For actuators and handles refer to "Attachments, accessories".

Custom orders on request

Also available with most other connection types

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

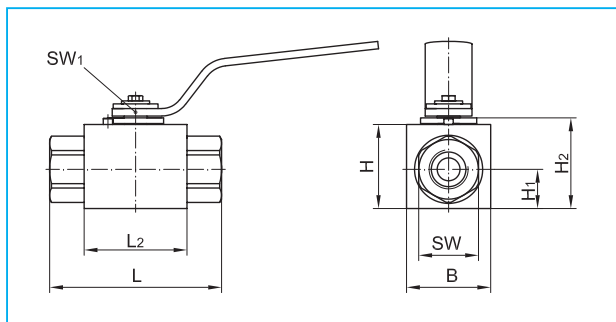
Body:	Steel
Ball:	Steel, hard chrome plated
Stem:	Steel
Ball seats:	PEEK
Stem seals:	NBR

Type of connection	DN	Thread D	RA	L	L ₁	L ₂	B	H	H ₁	H ₂	SW	SW ₁	Handle Code	Weight	DN	PN	Article-No.
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	4	M16 x 1,5	8	114	12	67	65	62,5	30	66	41	9	18	1,84	4	800	101 338
	6	M18 x 1,5	10	114	12	67	65	62,5	30	66	41	9	18	1,86	6	800	101 339
	8	M20 x 1,5	12	114	12	67	65	62,5	30	66	41	9	18	1,89	8	800	101 340
	10	M22 x 1,5	14	118	14	67	65	62,5	30	66	41	9	18	1,96	10	800	101 341
	12	M24 x 1,5	16	118	14	67	65	62,5	30	66	41	9	18	1,98	12	800	101 342
	20	M36 x 2	25	156	18	90	108	102,0	51	106	70	14	20	6,60	20	800	101 343
25	M42 x 2	30	160	20	90	108	102,0	51	106	70	14	20	6,60	25	800	101 344	
BSP-female thread DIN EN ISO 228-1	4	G 1/8	-	90	11	67	65	62,5	30	66	41	9	18	1,82	4	800	101 345
	6	G 1/4	-	90	15	67	65	62,5	30	66	41	9	18	1,82	6	800	101 346
	10	G 3/8	-	90	15	67	65	62,5	30	66	41	9	18	1,84	10	800	101 347
	12	G 1/2	-	90	17	67	65	62,5	30	66	41	9	18	1,90	12	800	101 348
	20	G 3/4	-	120	19	90	108	102,0	51	106	70	14	20	6,50	20	800	101 349
	25	G 1	-	120	21	90	108	102,0	51	106	70	14	20	6,50	25	800	101 350
NPT-female thread ANSI/ASME B1.20.1-1983	4	1/8 - 27 NPT	-	90	6,9	67	65	62,5	30	66	41	9	18	1,82	4	800	101 351
	6	1/4 - 18 NPT	-	90	10,0	67	65	62,5	30	66	41	9	18	1,82	6	800	101 352
	10	3/8 - 18 NPT	-	90	10,3	67	65	62,5	30	66	41	9	18	1,84	10	800	101 353
	12	1/2 - 14 NPT	-	90	13,6	67	65	62,5	30	66	41	9	18	1,90	12	800	101 354
	20	3/4 - 14 NPT	-	120	14,1	90	108	102,0	51	106	70	14	20	6,50	20	800	101 355
	25	1 - 11 1/2 NPT	-	120	16,8	90	108	102,0	51	106	70	14	20	6,50	25	800	101 356



2-way ball valves with threaded connector

Stainless Steel · DN 4 - DN 25



Handle included in delivery. Please check pressure rating of the pipe fittings!

For actuators and handles refer to "Attachments, accessories".

Stainless Steel (material No.1.4571 - or other stainless steels)

Custom orders on request

Also available with most other connection types

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

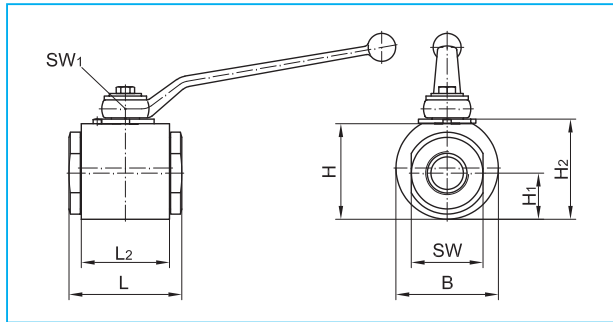
Pressure in bar

Body:	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Ball:	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Stem:	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Ball seats:	POM	POM	PTFE	PTFE
Stem seals:	NBR	FKM	FKM	FFKM

Type of connection	DN	Thread D	RA	L	L ₁	L ₂	B	H	H ₁	H ₂	SW	SW ₁	Handle Weight Code	DN	PN	Article-No.	PN	Article-No.	PN	Article-No.	PN	Code-No.	
For cut (clamp) ring tube fitting DIN 2353 light series ISO 8434-1	4	M12 x 1,5	6	73	10	41	30	30	13,7	33,5	22	7	26	0,38	4	500	100 861	500	101 309	315	100 921	315	101 250
	6	M14 x 1,5	8	73	10	41	30	30	13,7	33,5	22	7	26	0,41	6	500	100 862	500	101 310	315	100 922	315	101 251
	8	M16 x 1,5	10	87	11	53	40	40	18,0	44,5	30	8	27	0,82	8	500	100 863	500	101 311	315	100 923	315	101 252
	10	M18 x 1,5	12	87	11	53	40	40	18,0	44,5	30	8	27	0,82	10	500	100 864	500	101 312	315	100 924	315	101 253
	12	M22 x 1,5	15	91	12	55	45	45	21,0	49,5	32	10	28	1,03	12	500	100 865	500	101 313	315	100 925	315	101 254
	16/12	M26 x 1,5	18	91	12	55	45	45	21,0	49,5	32	10	28	1,04	16/12	500	100 866	500	101 314	315	100 926	315	101 255
	20	M30 x 2	22	105	14	65	65	65	31,0	70,0	46	14	29	2,50	20	400	109 078	400	109 102	250	109 090	250	101 256
25	M36 x 2	28	112	14	71	75	75	38,0	80,0	50	14	29	3,07	25	400	109 079	400	109 103	250	109 091	250	101 257	
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	4	M16 x 1,5	8	76	12	41	30	30	13,7	33,5	22	7	26	0,40	4	500	100 869	500	101 317	315	100 929	315	101 258
	6	M18 x 1,5	10	76	12	41	30	30	13,7	33,5	22	7	26	0,40	6	500	100 870	500	101 318	315	100 930	315	101 259
	8	M20 x 1,5	12	89	12	53	40	40	18,0	44,5	30	8	27	0,85	8	500	100 871	500	101 319	315	100 931	315	101 260
	10	M22 x 1,5	14	93	14	53	40	40	18,0	44,5	30	8	27	0,85	10	500	100 872	500	101 320	315	100 932	315	101 261
	12	M24 x 1,5	16	96	14	55	45	45	21,0	49,5	32	10	28	1,05	12	500	100 873	500	101 321	315	100 933	315	101 262
	16/12	M30 x 2	20	99	16	55	45	45	21,0	49,5	32	10	28	1,09	16/12	500	100 874	500	101 322	315	100 934	315	101 263
	20	M36 x 2	25	113	18	65	65	65	31,0	70,0	46	14	29	2,59	20	400	109 081	400	109 105	250	109 093	250	101 264
25	M42 x 2	30	124	20	71	75	75	38,0	80,0	50	14	29	3,19	25	400	109 082	400	109 106	250	109 094	250	101 265	
BSP-female thread DIN EN ISO 228-1	4	G 1/8	-	69	11	41	30	30	13,7	33,5	22	7	26	0,42	4	500	100 877	500	101 325	315	100 937	315	101 266
	6	G 1/4	-	75	14	41	30	30	13,7	33,5	22	7	26	0,42	6	500	100 878	500	101 326	315	100 938	315	101 267
	10	G 3/8	-	86	14	53	40	40	18,0	44,5	30	8	27	0,89	10	500	100 879	500	101 327	315	100 939	315	101 268
	12	G 1/2	-	92	16	55	45	45	21,0	49,5	32	10	28	1,10	12	500	100 880	500	101 328	315	100 940	315	101 269
	16/12	G 5/8	-	102	18	55	45	45	21,0	49,5	32	10	28	1,14	16/12	500	100 881	500	101 329	315	100 941	315	101 270
	20	G 3/4	-	111	18	65	65	65	31,0	70,0	46	14	29	2,69	20	400	109 084	400	109 108	250	109 096	250	101 271
25	G 1	-	122	20	71	75	75	38,0	80,0	50	14	29	3,31	25	400	109 085	400	109 109	250	109 097	250	101 272	
NPT-female thread ANSI/ASME B1.20.1-1983	4	1/8 - 27 NPT	-	82	6,9	41	30	30	13,7	33,5	22	7	26	0,44	4	500	100 884	500	101 332	315	100 944	315	101 273
	6	1/4 - 18 NPT	-	82	10,0	41	30	30	13,7	33,5	22	7	26	0,44	6	500	100 885	500	101 333	315	100 945	315	101 274
	10	3/8 - 18 NPT	-	95	10,3	53	40	40	18,0	44,5	30	8	27	0,95	10	500	100 886	500	101 334	315	100 946	315	101 275
	12	1/2 - 14 NPT	-	108	13,6	55	45	45	21,0	49,5	32	10	28	1,19	12	500	100 887	500	101 335	315	100 947	315	101 276
	20	3/4 - 14 NPT	-	111	14,1	65	65	65	31,0	70,0	46	14	29	2,69	20	400	109 087	400	109 111	250	109 099	250	101 277
	25	1 - 11 1/2 NPT	-	122	16,8	71	75	75	38,0	80,0	50	14	29	3,31	25	400	109 088	400	109 112	250	109 100	250	101 278

2-way ball valves with threaded connector

Stainless Steel · DN 32 - DN 50



Handle included in delivery

Please check pressure rating of the pipe fittings!

For actuators and handles refer to "Attachments, accessories".

Stainless Steel (material no.1.4571 - or other stainless steels)

Custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

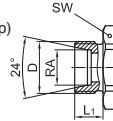
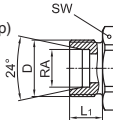
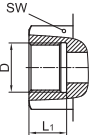
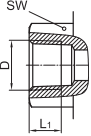
Pressure in bar

Overall length: Pipe fitting connector

Overall length: Female thread connector

DIN 3202-5-V1/V2

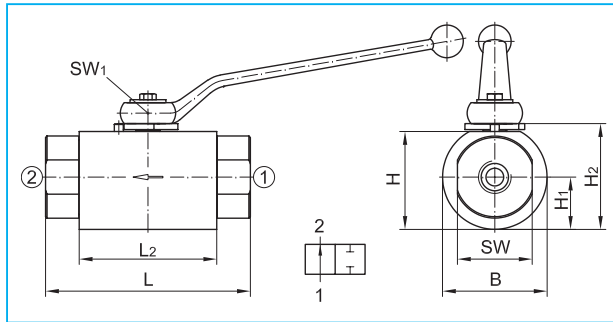
DIN 3202-4-M3

Type of connection	DN	Thread D	RA	L	L1	L2	B	H	H1	H2	SW	SW1	Handle-Code	Weight	DN	PN	Article-No.	PN	Article-No.	PN	Article-No.	PN	Article-No.
For cut (clamp) ring tube fitting DIN 2353 light series ISO 8434-1 	32	M45 x 2	35	145	16	86	100	93,2	45,0	99,0	70	19	23	6,3	32	400	109 051	400	109 069	100	109 060	100	109 114
	40	M52 x 2	42	150	16	92	110	104,4	52,2	110,0	80	19	23	7,8	40	400	109 052	400	109 070	100	109 061	100	109 115
For cut (clamp) ring tube fitting DIN 2353 heavy series ISO 8434-1 	32	M52 x 2	38	145	22	86	100	93,2	45,0	99,0	70	19	23	6,1	32	400	109 053	400	109 071	100	109 062	100	109 116
BSP-female thread DIN EN ISO 228-1 	32	G 1 1/4	-	110	24,0	86	100	93,2	45,0	99,0	70	19	23	6,1	32	400	109 054	400	109 072	100	109 063	100	109 117
	40	G 1 1/2	-	120	26,0	92	110	104,4	52,2	110,0	80	19	23	6,9	40	400	109 055	400	109 073	100	109 064	100	109 118
	50	G 2	-	140	27,5	97	125	119,4	59,7	125,0	95	19	23	10,3	50	400	109 056	400	109 074	100	109 065	100	109 119
NPT-female thread ANSI/ASME B1.20.1-1983 	32	1 1/4 - 1 1/2 NPT	-	110	17,3	86	100	93,2	45,0	99,0	70	19	23	6,1	32	400	109 057	400	109 075	100	109 066	100	109 120
	40	1 1/2 - 1 1/2 NPT	-	120	17,3	92	110	104,4	52,2	110,0	80	19	23	6,9	40	400	109 058	400	109 076	100	109 067	100	109 121
	50	2 - 1 1/2 NPT	-	140	17,7	97	125	119,4	59,7	125,0	95	19	23	10,3	50	400	109 059	400	109 077	100	109 068	100	109 122



2-way ball valves with threaded connector

Stainless Steel · DN 6 - DN 25



DN 6 - DN 12: can be actuated at differential pressure of up to 500 bar
 DN 20 + DN 25: can be actuated at differential pressure of up to 400 bar

Unidirectional installation!

Note: Use only with fluid media!

*) Deviating from the standard:
 longer connection thread

Handle included in delivery

Please check pressure rating of the pipe fittings!

For actuators and handles refer to "Attachments, accessories".

Custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

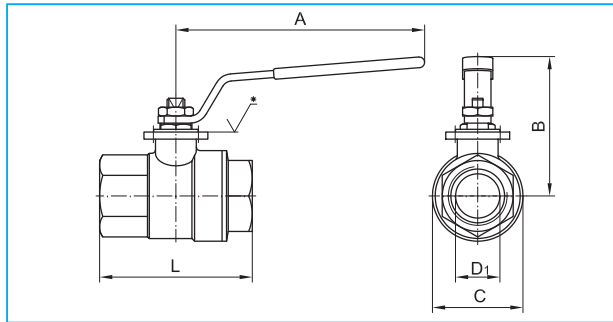
Body:	Stainless steel
Ball:	Stainless steel
Stem:	Stainless steel
Ball seats:	PEEK
Stem seals:	NBR

Type of connection	DN	Thread D	RA	L	L1	L2	B	H	H1	H2	SW	SW1	Handle-Code	Weight	DN	PN	Article-No.
For cut (clamp) ring tube fitting DIN 2353 heavy series ISO 8434-1	6	M18 x 1,5	10	144	18*	92	70	65,5	35	70,0	50	17	21	2,7	6	1500	100 900
	8	M20 x 1,5	12	144	18*	92	70	65,5	35	70,0	50	17	21	2,9	8	1500	100 901
	10	M22 x 1,5	14	150	21*	92	70	65,5	35	70,0	50	17	21	3,0	10	1500	100 902
	12	M24 x 1,5	16	150	21*	92	70	65,5	35	70,0	50	17	21	3,4	12	1500	100 903
	20	M36 x 2	25	172	23*	110	80	77,0	40	81,5	55	17	21	4,8	20	1400	100 904
25	M42 x 2	30	202	25*	128	100	98,0	50	102,5	70	17	21	9,2	25	1000	100 905	
BSP-female thread DIN EN ISO 228-1	6	G 1/4	-	108,0	12	92	70	65,5	35	70,0	50	17	21	3,4	6	1500	100 906
	10	G 3/8	-	120,0	14	92	70	65,5	35	70,0	50	17	21	3,8	10	1500	100 907
	12	G 1/2	-	137,0	16	92	70	65,5	35	70,0	50	17	21	4,1	12	1500	100 908
	20	G 3/4	-	146,5	19	110	80	77,0	40	81,5	55	17	21	4,9	20	1400	100 909
	25	G 1	-	172,0	21	128	100	98,0	50	102,5	70	17	21	9,6	25	1000	100 910



2-way ball valves with threaded connector

Stainless Steel · DN 10 - DN 50



Handle included in delivery
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

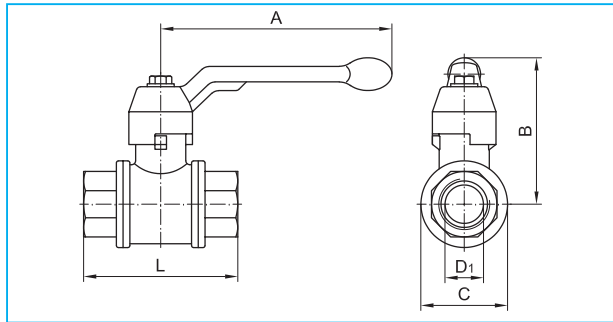
Body:	Stainless steel
Ball:	Stainless steel
Stem:	Stainless steel
Ball seats:	PTFE
Stem seals:	NBR

Type of connection	DN	Thread	D1	L	L1	A	B	C	* Porting pattern DIN EN ISO 5211	Weight	DN	PN	Article-No.
BSP-female thread DIN EN 10226-1 	10	Rp 3/8	10	50	11,4	110	52	29,0	F 03	0,23	10	160	101 523
	12	Rp 1/2	15	60	15,0	110	55	34,5	F 03	0,31	12	160	101 524
	20	Rp 3/4	20	70	16,3	140	66	42,5	F 03	0,51	20	100	101 525
	25	Rp 1	25	85	19,1	140	70	50,5	F 03	0,76	25	100	101 526
	32	Rp 1 1/4	32	95	21,4	180	85	63,0	F 04	1,27	32	64	101 527
	40	Rp 1 1/2	40	105	21,4	180	91	75,5	F 04	1,81	40	64	101 528
	50	Rp 2	50	125	25,7	230	105	91,0	F 05	3,16	50	40	101 529



2-way ball valves with threaded connector

Brass · DN 4 - DN 50



Handle included in delivery
 Overall length DIN 3202-4-M3
 Approved by DVGW for use up to PN 4
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

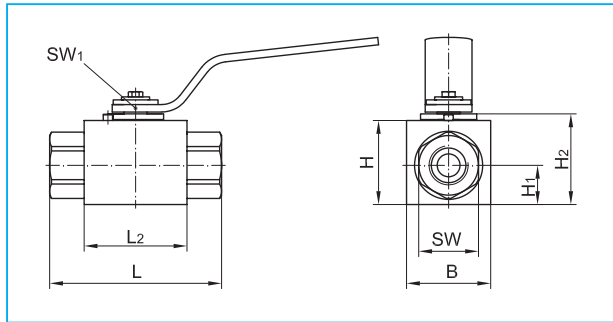
Body:	Brass
Ball:	Brass
Stem:	Brass
Ball seats:	PTFE
Stem seals:	PTFE

Type of connection	DN	Thread D	D ₁	L	L ₁	A	B	C	Weight	DN	PN	Article-No.
<p>BSP-female thread DIN EN 10226-1</p>	4	Rp 1/8	8	50	10	75	52	23	0,16	4	64	101 531
	6	Rp 1/4	8	50	13	75	52	23	0,15	6	64	101 532
	10	Rp 3/8	10	60	13	100	61	29	0,25	10	64	101 533
	12	Rp 1/2	15	75	16	100	64	36	0,38	12	50	101 534
	20	Rp 3/4	20	80	17	120	76	45	0,63	20	50	101 535
	25	Rp 1	25	90	19	120	80	54	0,90	25	50	101 536
	32	Rp 1 1/4	32	110	22	150	97	65	1,58	32	40	101 537
	40	Rp 1 1/2	40	120	22	150	104	79	2,38	40	40	101 538
	50	Rp 2	50	140	27	175	118	96	3,74	50	32	101 539



2-way ball valves with threaded connector

Aluminium · DN 4 - DN 25



Handle included in delivery

For actuators and handles refer to "Attachments, accessories".

Stainless Steel (material No.1.4571 - or other stainless steels)

Custom orders on request

Also available with most other connection types

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

Overall length: Female thread connector

DIN 3202-4-M6/M9

Please check pressure rating of the pipe fittings!

Body: Aluminium

Ball: Stainless steel

Stem: Stainless steel

Ball seats: POM

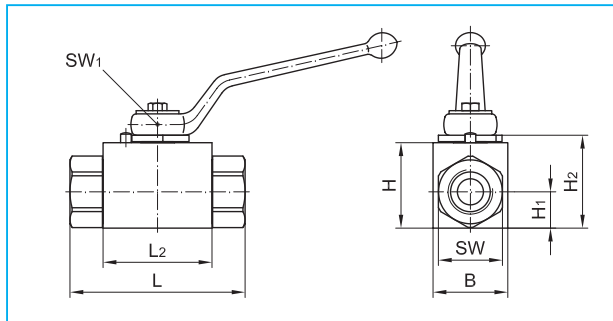
Stem seals: NBR

Type of connection	DN	Thread D	RA	L	L ₁	L ₂	B	H	H ₁	H ₂	SW	SW ₁	Handle Code	Weight	DN	PN	Article-No.
For cut (clamp) ring tube fitting DIN 2353 light series ISO 8434-1	4	M12 x 1,5	6	78	10	46,4	30	30	13,7	33,5	22	7	26	0,20	4	400	105 152
	6	M14 x 1,5	8	78	10	46,4	30	30	13,7	33,5	22	7	26	0,20	6	400	105 153
	8	M16 x 1,5	10	87	11	53,0	45	45	23,0	49,5	30	8	27	0,49	8	400	105 170
	10	M18 x 1,5	12	87	11	53,0	45	45	23,0	49,5	30	8	27	0,49	10	400	105 154
	12	M22 x 1,5	15	93	12	57,0	50	50	26,0	54,5	32	10	28	0,56	12	400	105 155
	20	M30 x 2	22	108	14	68,0	70	70	36,0	75,0	46	14	29	1,34	20	400	105 156
25	M36 x 2	28	114	14	73,0	80	80	43,0	85,0	50	14	29	1,59	25	400	105 157	
For cut (clamp) ring tube fitting DIN 2353 heavy series ISO 8434-1	4	M16 x 1,5	8	81	12	46,4	30	30	13,7	33,5	22	7	26	0,22	4	400	105 158
	6	M18 x 1,5	10	81	12	46,4	30	30	13,7	33,5	22	7	26	0,22	6	400	105 159
	8	M20 x 1,5	12	89	12	53,0	45	45	23,0	49,5	30	8	27	0,50	8	400	105 171
	10	M22 x 1,5	14	93	14	53,0	45	45	23,0	49,5	30	8	27	0,50	10	400	105 160
	12	M24 x 1,5	16	98	14	57,0	50	50	26,0	54,5	32	10	28	0,58	12	400	105 161
	20	M36 x 2	25	116	18	68,0	70	70	36,0	75,0	46	14	29	1,42	20	400	105 162
25	M42 x 2	30	126	20	73,0	80	80	43,0	85,0	50	14	29	1,66	25	400	105 163	
BSP-female thread DIN EN ISO 228-1	4	G 1/8	-	80	11	46,4	30	30	13,7	33,5	22	7	26	0,22	4	400	105 151
	6	G 1/4	-	80	14	46,4	30	30	13,7	33,5	22	7	26	0,22	6	400	105 141
	10	G 3/8	-	85	14	53,0	45	45	23,0	49,5	30	8	27	0,50	10	400	105 142
	12	G 1/2	-	100	16	57,0	50	50	26,0	54,5	32	10	28	0,60	12	400	105 143
	20	G 3/4	-	120	18	68,0	70	70	36,0	75,0	46	14	29	1,41	20	400	105 144
25	G 1	-	135	20	73,0	80	80	43,0	85,0	50	14	29	1,78	25	400	105 145	
NPT-female thread ANSI/ASME B1.20.1-1983	4	1/8 - 27 NPT	-	80	6,9	46,4	30	30	13,7	33,5	22	7	26	0,22	4	400	105 164
	6	1/4 - 18 NPT	-	80	10,0	46,4	30	30	13,7	33,5	22	7	26	0,22	6	400	105 165
	10	3/8 - 18 NPT	-	85	10,3	53,0	45	45	23,0	49,5	30	8	27	0,50	10	400	105 166
	12	1/2 - 14 NPT	-	100	13,6	57,0	50	50	26,0	54,5	32	10	28	0,60	12	400	105 167
	20	3/4 - 14 NPT	-	120	14,1	68,0	70	70	36,0	75,0	46	14	29	1,41	20	400	105 168
	25	1 - 11 1/2 NPT	-	135	16,8	73,0	80	80	43,0	85,0	50	14	29	1,78	25	400	105 169



2-way ball valves with threaded connector

Steel · DVGW-Approval · DN 4 - DN 25



Handle included in delivery

For actuators and handles refer to "Attachments, accessories".

Custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

Approval mark PN 16: DIN - DVGW NG - 43 13 AP 10 27

Approval mark PN 100: DIN - DVGW NG - 43 14 AP 11 50

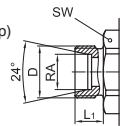
Overall length: DIN 3202-5-V1

*) Design PN 100 according to approval

Body:	Steel, zinc plated
Ball:	Steel, hard chrome plated
Stem*:	Steel
Ball seats:	PTFE
Stem seals:	FKM

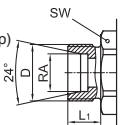
Type of connection	DN	Thread D	RA	L	L ₁	L ₂	B	H	H ₁	H ₂	SW	SW ₁	Handle Code	Weight
	4	M12 x 1,5	6	76	10	36	20	25	10,0	27,5	19	7	1	0,23
	6	M14 x 1,5	8	76	10	36	20	25	10,0	27,5	19	7	1	0,23
	8	M16 x 1,5	10	76	11	45	30	35	14,5	38,5	24	8	2	0,43
	10	M18 x 1,5	12	80	11	45	30	35	14,5	38,5	24	8	2	0,44
	12	M22 x 1,5	15	96	12	51	35	40	17,0	43,5	30	10	3	0,71
	16	M26 x 1,5	18	105	12	50	45	45	20,0	49,0	36	11	6	1,05
	20	M30 x 2,0	22	110	14	60	45	55	24,0	59,0	41	14	8	1,34
	25	M36 x 2,0	28	120	14	70	55	60	26,0	64,0	50	14	8	1,96

For cut (clamp) ring tube fitting DIN 2353 light series ISO 8434-1



	4	M16 x 1,5	8	76	12	36	20	25	10,0	27,5	19	7	1	0,25
	6	M18 x 1,5	10	76	12	36	20	25	10,0	27,5	19	7	1	0,25
	8	M20 x 1,5	12	76	12	45	30	35	14,5	38,5	24	8	2	0,44
	10	M22 x 1,5	14	80	14	45	30	35	14,5	38,5	24	8	2	0,46
	12	M24 x 1,5	16	96	14	51	35	40	17,0	43,5	30	10	3	0,73
	16	M30 x 2	20	105	16	50	45	45	20,0	49,0	36	11	6	1,09
	20	M36 x 2	25	110	18	60	45	55	24,0	59,0	41	14	8	1,42
	25	M42 x 2	30	120	20	70	55	60	26,0	64,0	50	14	8	2,09

For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1



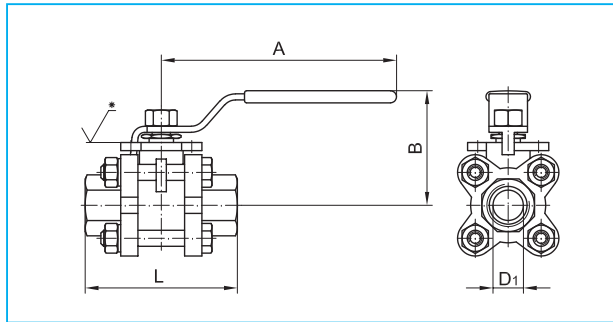
DN	PN	Article-No.
4	16	109 001
6	16	109 002
8	16	109 003
10	16	109 004
12	16	109 005
16	16	109 006
20	16	109 007
25	16	109 008
4	100	108 001
6	100	108 002
8	100	108 003
10	100	108 004
12	100	108 005
16	100	108 006
20	100	108 007
25	100	108 008

4	16	109 009
6	16	109 010
8	16	109 011
10	16	109 012
12	16	109 013
16	16	109 014
20	16	109 015
25	16	109 016
4	100	108 009
6	100	108 010
8	100	108 011
10	100	108 012
12	100	108 013
16	100	108 014
20	100	108 015
25	100	108 016



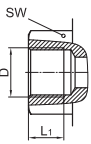
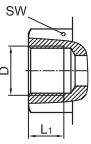
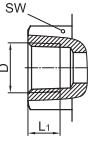
2-way ball valves with threaded connector

Stainless steel · with removable centre · DN 6 - DN 50



Handle included in delivery
 Overall length DIN 3202-4-M3
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

Body:	Stainless steel
Ball:	Stainless steel
Stem:	Stainless steel
Ball seats:	PTFE
Stem seals:	PTFE

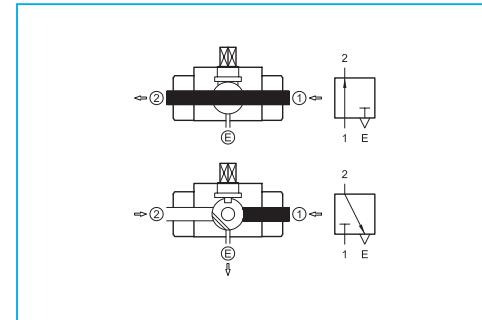
Type of connection	DN	Thread D	D ₁	L	L ₁	A	B	* Porting pattern DIN EN ISO 5211	Weight	DN	PN	Article-No.
BSP-female thread DIN EN ISO 228-1 	6	G 1/4	11,6	50	12,0	105	51	F04	0,45	6	63	100 853
	10	G 3/8	12,7	60	12,0	105	51	F04	0,45	10	63	100 854
	12	G 1/2	15,0	75	15,0	105	61	F04	0,65	12	63	100 855
	20	G 3/4	20,0	80	19,0	125	66	F04	0,75	20	63	100 856
	25	G 1	25,0	90	22,0	152	78	F04	1,15	25	63	100 857
	32	G 1 1/4	32,0	110	21,4	152	82	F04	1,75	32	63	100 858
BSP-female thread DIN EN 10266-1 	6	Rp 1/4	11,6	50	12,0	105	51	F04	0,45	6	63	100 890
	10	Rp 3/8	12,7	60	12,0	105	51	F04	0,45	10	63	100 891
	12	Rp 1/2	15,0	75	15,0	105	61	F04	0,65	12	63	100 892
	20	Rp 3/4	20,0	80	19,0	125	66	F04	0,75	20	63	100 893
	25	Rp 1	25,0	90	22,0	152	78	F04	1,15	25	63	100 894
	32	Rp 1 1/4	32,0	110	21,4	152	82	F04	1,75	32	63	100 895
NPT-female thread ANSI/ASME B1.20.1-1983 	6	1/4 - 18 NPT	11,6	50	10,0	105	51	F04	0,45	6	63	100 913
	10	3/8 - 18 NPT	12,7	60	10,3	105	51	F04	0,45	10	63	100 914
	12	1/2 - 14 NPT	15,0	75	13,6	105	61	F04	0,65	12	63	100 915
	20	3/4 - 14 NPT	20,0	80	14,1	125	66	F04	0,75	20	63	100 916
	25	1 - 11 1/2 NPT	25,0	90	16,8	152	78	F04	1,15	25	63	100 917
	32	1 1/4 - 11 1/2 NPT	32,0	110	17,3	152	82	F04	1,75	32	63	100 918
40	1 1/2 - 11 1/2 NPT	38,0	120	17,3	191	95	F05	2,40	40	63	100 919	
50	2 - 11 1/2 NPT	49,0	140	17,7	191	104	F05	3,60	50	40	100 920	



2-way ball valves with threaded connector



Steel or Stainless Steel · with automatic pressure relief · DN 4 - DN 50



Materials/seals/connections:

2-way ball valves with automatic pressure relief can be delivered in nearly all dimensions as described in the chapter "2-way ball valves". Article-nos. on request

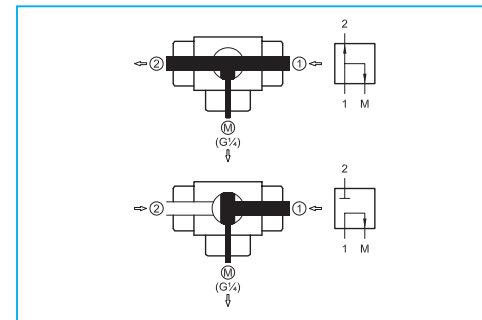
Function:

To separate quick connection couplings or to test pressure gauges etc. the consumer side of a system has to be shut off and relieved. Up to now these have been two independent processes with different valves.

This type of ball valve implies both functions, i.e. shut off and relief are done simultaneously. This simplifies operation because relief cannot be forgotten. Ball valves with automatic relief have to be installed unidirectional in according to the direction of the arrow.

2-way ball valves with threaded connector

Steel or Stainless Steel · with additional miniature test point outlet
DN 4 - DN 50



Materials/seals/connections:

2-way ball valves with additional test point connection can be delivered in nearly all versions. Article-nos. and dimensions on request

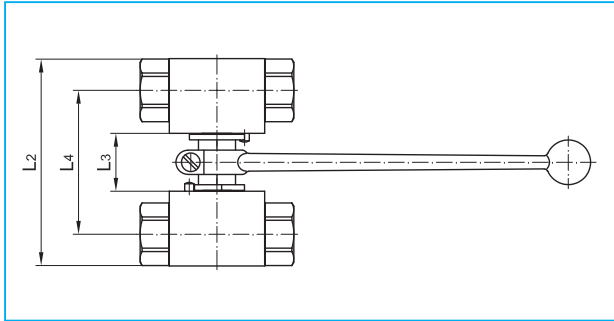
Function:

With this ball valve the system pressure can be measured in open and/or closed position. It replaces the combination of a standard ball valve and additional, cost intensive piping. Different possibilities can be realised by different porting patterns.



2-way ball valves with threaded connector

Steel or Stainless Steel · as combination · DN 4 - DN 50



Mounting sets are identical in design for multi-way ball valves with floating ball.

*) Stainless Steel: DN 16/12: L3 = 31; (Article-No. DN 12)

For dimensions and article-numbers for ball valve bodies refer to the respective chapter.

Stainless Steel DN 32 - DN 50 on request

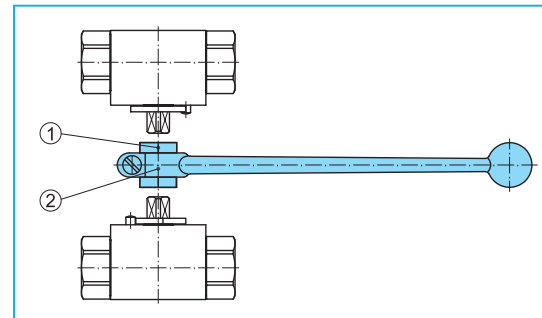
Custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Also available completely assembled

Type of connection	DN	Steel			Stainless Steel		Mounting sets DN	Article-No. (Steel)	Article-No. (Stainless steel)
		L ₂	L ₃	L ₄	L ₂	L ₄			
ALL	4	67	17	47	77	49,6	4	100 780	100 849
	6	67	17	47	77	49,6	6	100 780	100 849
	8	94	24	65	104	68,0	8	100 781	100 850
	10	94	24	65	104	68,0	10	100 781	100 850
	12	111	31	77	121	79,0	12	100 782	100 851
	16*	126	36	86	121	79,0	16	100 783	100 851
	20	150	40	102	170	108,0	20	100 784	100 852
	25	160	40	108	190	114,0	25	100 784	100 852
	32	203	43	130	-	-	32	100 785	-
	40	223	43	138	-	-	40	100 785	-
	50	251	43	152	-	-	50	100 785	-



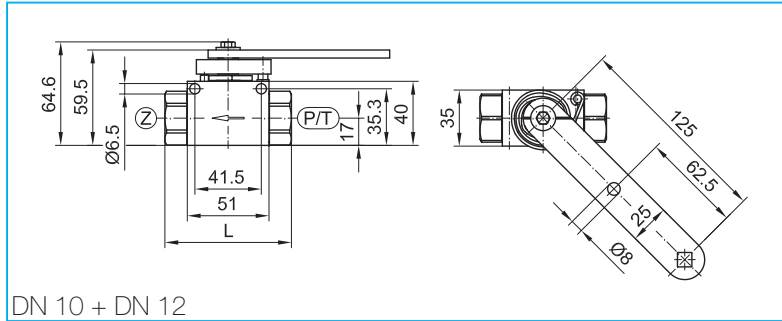
Combination consisting of:
two ball valves
(without handle)
and one mounting set

Mounting set consisting of
① Square coupling (1 pc.)
② Handle (1 pc.)



2-way ball valves with threaded connector

Steel · with spring return and integrated check valve



Unidirectional installation!

Please check pressure rating of the pipe fittings!
 Custom orders on request
 All dimensions subject to change without notice
 Handle included in delivery

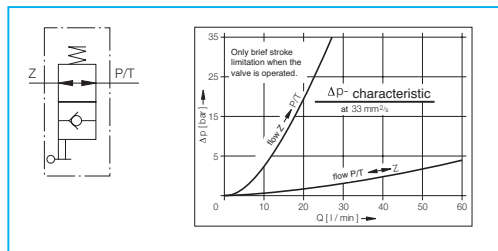
Also available without check valve

Dimensions in mm
 Weight in kg
 Pressure in bar

Body:	Steel
Ball:	Steel, hard chrome plated
Stem:	Steel
Ball seats:	POM
Stem seals:	NBR

Type of connection	DN	Thread D	RA	L	L ₁	SW	Weight
For cut (clamp) ring tube fitting DIN 2353 light series ISO 8434-1	10	M 18 x 1,5	12	81	11	30	0,82
	12	M 22 x 1,5	15	83	12	30	0,82
For cut (clamp) ring tube fitting DIN 2353 heavy series ISO 8434-1	10	M 22 x 1,5	14	87	14	30	0,85
	12	M 24 x 1,5	16	87	14	30	0,85
BSP-female thread DIN EN ISO 228-1	10	G 3/8	-	79	14	30	0,82
	12	G 1/2	-	82	15	30	0,82

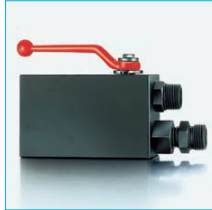
DN	PN	Article-No.
10	500	300 004
12	500	300 005
10	500	300 008
12	500	300 009
10	500	300 006
12	500	300 007



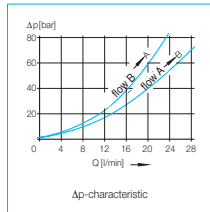
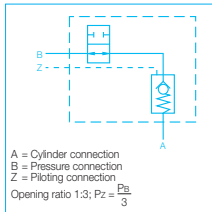
2-way ball valves with threaded connector

for support cylinder control

Technical information



2-way ball valve pilot-operated check valve for support cylinder control



Previous solutions:

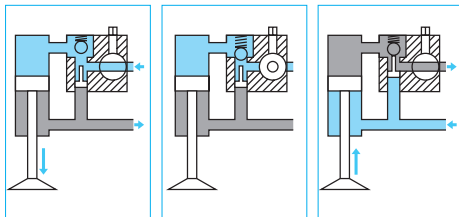
Central control from the cabin with complex rotary distributors and piping, or central control from the chassis with an unsatisfactory view of outrigger components; in some cases pilot-operated check valves are located in the lines serving the cylinders, without protection against burst lines as prescribed by the guidelines of the Central Association of the Workmen's Compensation Insurance Societies and Safety Authorities.

Our solution for this problem:

The support cylinder ball valve is flanged directly to the support cylinder, the combination forming a compact operating unit. The outrigger piston extends into position when the valve is opened. The check valve integrated into the valve body prevents unintentional retraction of the support piston under load due to operating errors or pipe rupture. During hydraulic retraction the check valve is automatically cracked to permit return flow.

Advantages:

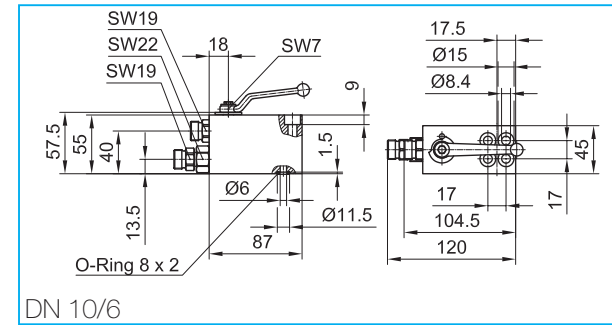
- decentralised control of each outrigger unit directly at the support cylinder for improved safety
- simplified design for the main rotary distributor
- savings on piping and fitting
- strict compliance with the guidelines published by the Central Association of the Workmen's Compensation Insurance Societies 11.1977



2-way ball valves with threaded connector

for support cylinder control

Steel · DN 10 · with integrated, pilot-operated check valve

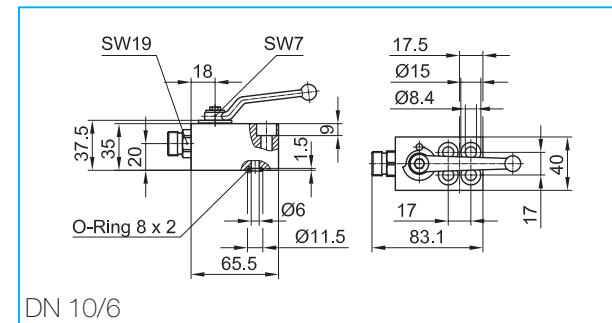


Handle included in delivery
For handle refer to "attachments, accessories".
Please check pressure rating of the pipe fittings!
Custom orders on request
All dimensions subject to change without notice
Dimensions in mm
Weight in kg
Pressure in bar

Body:	Steel
Ball:	Steel, hard chrome plated
Stem:	Steel
Body seals:	NBR
Ball seats:	POM
Stem seals:	NBR

Type of connection	DN	Thread D	RA	L1	Handle Code	Weight	PN	Article-No.
For cut (clamp) ring tube fitting DIN 2353 light series ISO 8434-1	10/6	M 18 x 1,5	12	11	1	1,57	315	300 101

Steel · DN 10 · without check valve



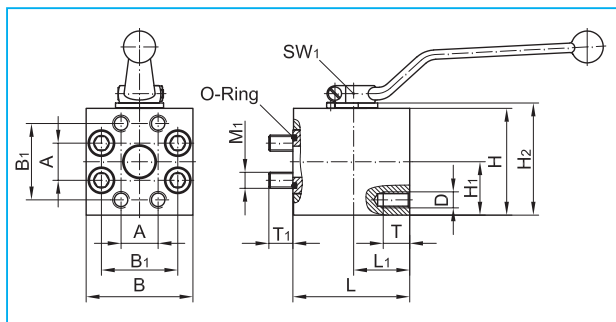
Handle included in delivery
For handle refer to "attachments, accessories".
Please check pressure rating of the pipe fittings!
Custom orders on request
All dimensions subject to change without notice
Dimensions in mm
Weight in kg
Pressure in bar

Body:	Steel
Ball:	Steel, hard chrome plated
Stem:	Steel
Body seals:	NBR
Ball seats:	POM
Stem seals:	NBR

Type of connection	DN	Thread D	RA	L1	Hand- lever Code	Weight	PN	Article-No.
For cut (clamp) ring tube fitting DIN 2353 light series ISO 8434-1	10/6	M 18 x 1,5	12	11	1	0,7	315	300 102

2-way ball valves with flange connection

Steel · SAE · DN 12 - DN 50 · direct mounted



Handle included in delivery
 For handle refer to "Attachments, accessories".
 Actuators and custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

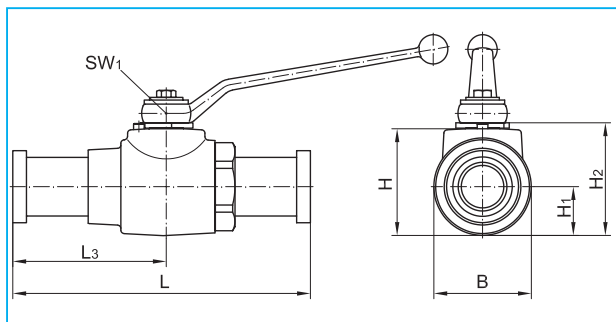
*) Fixing bolts are not included as standard equipment.
 Please check property class of the fixing bolts.

Type of connection	DN	Flange-size (inch)	D	T	A	B ₁	L	L ₁	B	H	H ₁	H ₂	SW ₁	M ₁ *	T ₁	Handle Code	Weight	DN	O-Ring	PN	Article-No.	PN	Article-No.
ISO 6162-2	12	1/2	M8	15,0	18,2	40,5	55,5	27,0	60	55	28,5	58,5	10	M8x60	13,5	3	1,29	12	18,64 x 3,53	400	104 093	400	104 120
	20	3/4	M10	16,5	23,8	50,8	62,5	31,0	70	70	35,0	74,0	14	M10x65	14,0	8	1,99	20	24,99 x 3,53	400	104 094	400	104 121
	25	1	M12	21,5	27,8	57,2	75,5	38,5	80	80	40,0	84,0	14	M12x80	18,0	8	2,98	25	32,92 x 3,53	400	104 095	400	104 122
	32	1 1/4	M12	23,5	31,8	66,6	82,0	43,5	100	100	50,0	104,5	17	M12x85	18,0	22	5,80	32	37,69 x 3,53	400	104 096	400	104 123
	40	1 1/2	M16	26,0	36,5	79,3	99,0	53,5	120	120	60,0	124,5	17	M16x100	18,0	22	9,50	40	47,22 x 3,53	400	104 097	400	104 124
	50	2	M20	34,0	44,5	96,8	109,5	61,0	134	124	62,5	128,5	17	M20x110	22,0	22	11,10	50	56,74 x 3,53	400	104 098	400	104 125
ISO 6162-2	12	1/2	5/16-18 UNC	19	18,2	40,5	55,5	27,0	60	55	28,5	58,5	10	5/16 UNC x 2 1/2	17,5	3	1,29	12	18,64 x 3,53	400	104 099	400	104 126
	20	3/4	3/8 -16 UNC	21	23,8	50,8	62,5	31,0	70	70	35,0	74,0	14	3/8 UNC x 2 3/4	19,0	8	1,99	20	24,99 x 3,53	400	104 100	400	104 127
	25	1	7/16-14 UNC	21	27,8	57,2	75,5	38,5	80	80	40,0	84,0	14	7/16 UNC x 3 1/4	20,0	8	2,98	25	32,92 x 3,53	400	104 101	400	104 128
	32	1 1/4	1/2 -13 UNC	25	31,8	66,6	82,0	43,5	100	100	50,0	104,5	17	1/2 UNC x 3 1/2	21,0	22	5,80	32	37,69 x 3,53	400	104 102	400	104 129
	40	1 1/2	5/8 -11 UNC	28	36,5	79,3	99,0	53,5	120	120	60,0	124,5	17	5/8 UNC x 4 1/4	26,0	22	9,50	40	47,22 x 3,53	400	104 103	400	104 130
	50	2	3/4 -10 UNC	34	44,5	96,8	109,5	61,0	134	124	62,5	128,5	17	3/4 UNC x 4 1/2	26,0	22	11,10	50	56,74 x 3,53	400	104 104	400	104 131



2-way ball valves with flange connection

Steel · SAE · DN 12 - DN 50 · for split flanges



*) block body

Handle included in delivery

For actuators and handles refer to "Attachments, accessories".

Custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

Type of connection DN Flange-size (inch) D1 D2 L L1 L2 L3 B H H1 H2 SW SW1 Handle Code Weight

ISO 6162-1

DN	Flange-size (inch)	D1	D2	L	L1	L2	L3	B	H	H1	H2	SW	SW1	Handle Code	Weight
12*	1/2	30,20	24,0	151,0	42,0	6,8	75,5	35	40	17,0	43,5	32	10	3	0,9
20*	3/4	38,10	31,5	162,0	43,0	6,8	81,0	45	55	24,0	59,0	41	14	8	1,7
25*	1	44,45	38,0	178,0	38,9	8,0	89,0	55	60	26,0	64,0	50	14	8	2,5
32	1 1/4	50,80	43,0	190,5	40,3	8,0	99,0	73	80	36,5	84,5	60	17	22	3,8
40	1 1/2	60,35	50,0	231,0	58,3	8,0	115,5	85	90	42,5	94,5	70	17	22	4,5
50	2	71,40	62,0	232,0	50,9	9,6	116,0	99	104	49,5	108,5	85	17	22	6,1

ISO 6162-2

DN	Flange-size (inch)	D1	D2	L	L1	L2	L3	B	H	H1	H2	SW	SW1	Handle Code	Weight
12*	1/2	31,8	24	151	42,0	7,8	75,5	35	40	17,0	43,5	32	10	3	1,0
20*	3/4	41,3	32	174	49,0	8,8	87,0	45	55	24,0	59,0	46	14	8	1,8
25*	1	47,6	38	198	49,0	9,5	99,0	55	60	26,0	64,0	50	14	8	2,6
32	1 1/4	54,0	44	223	56,5	10,3	115,0	73	80	36,5	84,5	60	17	22	4,0
40	1 1/2	63,5	51	281	83,5	12,6	140,5	85	90	42,5	94,5	70	17	22	5,6
50	2	79,4	67	316	93,5	12,6	158,5	99	104	49,5	108,5	85	17	22	7,7

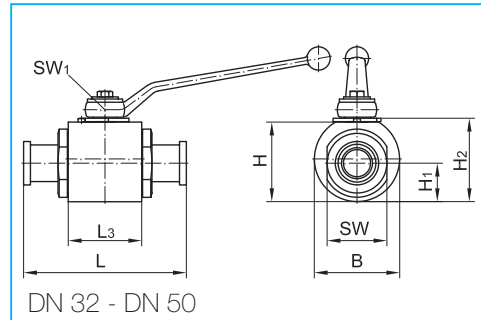
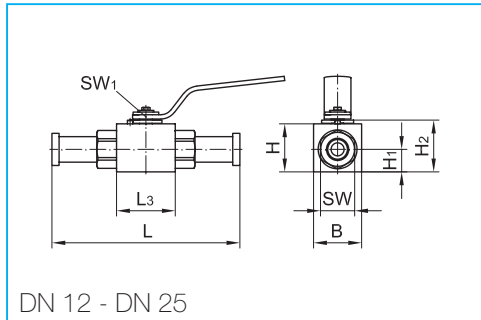
Body:	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel
Ball seats:	POM	POM
Stem seals:	NBR	FKM

DN	O-Ring	PN	Article-No.	PN	Article-No.
12*	18,64 x 3,53	350	104 523	350	104 533
20*	24,99 x 3,53	350	104 524	350	104 534
25*	32,92 x 3,53	315	104 501	315	104 511
32	37,69 x 3,53	250	104 502	250	104 512
40	47,22 x 3,53	200	104 503	200	104 513
50	56,74 x 3,53	160	104 504	160	104 514
12*	18,64 x 3,53	400	104 528	400	104 538
20*	24,99 x 3,53	400	104 529	400	104 539
25*	32,92 x 3,53	400	104 505	400	104 515
32	37,69 x 3,53	400	104 506	400	104 516
40	47,22 x 3,53	400	104 507	400	104 517
50	56,74 x 3,53	400	104 508	400	104 518



2-way ball valves with flange connection

Stainless steel · SAE · DN 12-50 · for split flanges



Handle included in delivery

For actuators and handles refer to "Attachments, accessories".

Stainless Steel (material no.1.4571 - or other stainless steels)

Custom orders on request

All dimensions subject to change without notice

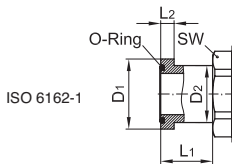
Dimensions in mm

Weight in kg

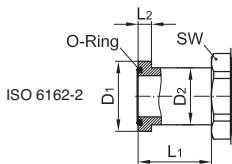
Pressure in bar

Body:	Stainless steel	Stainless steel
Ball:	Stainless steel	Stainless steel
Stem:	Stainless steel	Stainless steel
Ball seats:	POM	POM
Stem seals:	NBR	FKM

Type of connection DN Flange-size (inch) D1 D2 L L1 L2 L3 B H H1 H2 SW SW1 Handle Code Weight



12	1/2	30,20	24,0	176,0	42,0	6,8	55	45	45,0	21,0	49,5	32	10	28	1,35
20	3/4	38,10	31,5	197,0	43,0	6,8	65	65	65,0	31,0	70,0	46	14	29	3,10
25	1	44,45	38,0	200,0	38,9	8,0	71	75	75,0	38,0	80,0	50	14	29	3,75
32	1 1/4	50,80	43,0	190,5	40,3	8,0	86	100	93,2	45,0	99,0	70	19	23	6,60
40	1 1/2	60,35	50,0	236,5	58,3	8,0	92	110	104,4	52,2	110,0	80	19	23	7,80
50	2	71,40	62,0	242,0	50,9	9,6	97	125	119,4	59,7	125,0	95	19	23	11,45



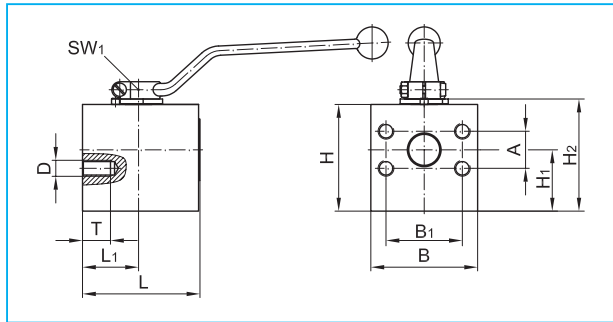
12	1/2	31,8	24	176,0	42,0	7,8	55	45	45,0	21,0	49,5	32	10	28	1,40
20	3/4	41,3	32	209,0	49,0	8,8	65	65	65,0	31,0	70,0	46	14	29	3,15
25	1	47,6	38	220,0	49,0	9,5	71	75	75,0	38,0	80,0	50	14	29	3,90
32	1 1/4	54,0	44	223,0	56,5	10,3	86	100	93,2	45,0	99,0	70	19	23	6,90
40	1 1/2	63,5	51	287,0	83,5	12,6	92	110	104,4	52,2	110,0	80	19	23	8,35
50	2	79,4	67	327,0	93,5	12,6	97	125	119,4	59,7	125,0	95	19	23	13,10

DN	O-Ring	PN	Article-No.	PN	Article-No.
12	18,64 x 3,53	350	104 152	350	104 154
20	24,99 x 3,53	350	104 110	350	104 155
25	32,92 x 3,53	315	104 111	315	104 156
32	37,69 x 3,53	250	104 112	250	104 157
40	47,22 x 3,53	200	104 113	200	104 158
50	56,74 x 3,53	160	104 114	160	104 159
12	18,64 x 3,53	400	104 153	400	104 160
20	24,99 x 3,53	400	104 115	400	104 161
25	32,92 x 3,53	400	104 116	400	104 162
32	37,69 x 3,53	400	104 117	400	104 163
40	47,22 x 3,53	400	104 118	400	104 164
50	56,74 x 3,53	400	104 119	400	104 165



2-way ball valves with flange connection

Steel · SAE · DN 12 - DN 25



Handle included in delivery
 For handles refer to "Attachments, accessories".
 Actuators and custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

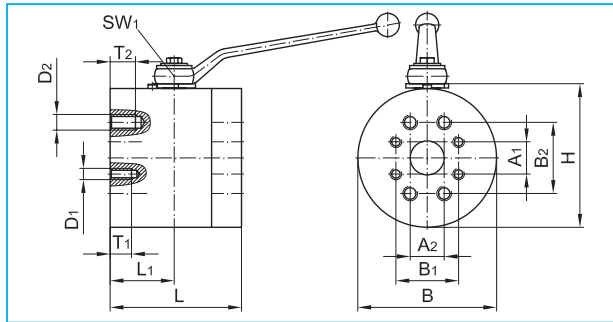
Body:	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel
Ball seats:	POM	POM
Stem seals:	NBR	FKM

Type of connection	DN	Flange-size (inch)	D	T	A	B ₁	L	L ₁	B	H	H ₁	H ₂	SW ₁	Handle Code	Weight	DN	PN		Article-No.	
																	PN	Article-No.	PN	Article-No.
ISO 6162-1	12	1/2	M8	17	17,5	38,1	60	23,5	55	45	22	48,5	10	3	1,1	12	350	104 021	350	104 041
	20	3/4	M10	21	22,3	47,6	80	39,5	70	70	39	74,0	14	8	2,8	20	350	104 022	350	104 042
	25	1	M10	19	26,2	52,4	88	42,0	80	80	46	84,0	14	8	4,0	25	315	104 023	315	104 043
	12	1/2	5/16 - 18 UNC	24	17,5	38,1	60	23,5	55	45	22	48,5	10	3	1,1	12	350	104 061	350	104 081
	20	3/4	3/8 - 16 UNC	22	22,3	47,6	80	39,5	70	70	39	74,0	14	8	2,8	20	350	104 062	350	104 082
	25	1	3/8 - 16 UNC	22	26,2	52,4	88	42,0	80	80	46	84,0	14	8	4,0	25	315	104 063	315	104 083
ISO 6162-2	12	1/2	M8	19	18,2	40,5	60	23,5	55	45	22	48,5	10	3	1,1	12	400	104 027	400	104 047
	20	3/4	M10	21	23,8	50,8	80	39,5	70	70	39	74,0	14	8	2,8	20	400	104 028	400	104 048
	25	1	M12	23	27,8	57,2	88	42,0	80	80	46	84,0	14	8	4,0	25	400	104 029	400	104 049
	12	1/2	5/16 - 18 UNC	21	18,2	40,5	60	23,5	55	45	22	48,5	10	3	1,1	12	400	104 067	400	104 087
	20	3/4	3/8 - 16 UNC	24	23,8	50,8	80	39,5	70	70	39	74,0	14	8	2,8	20	400	104 068	400	104 088
	25	1	7/16 - 14 UNC	27	27,8	57,2	88	42,0	80	80	46	84,0	14	8	4,0	25	400	104 069	400	104 089



2-way ball valves with flange connection

Steel · SAE · DN 32 - DN 50



D1; A1; B1; T1; Δ ISO 6162-1

D2; A2; B2; T2; Δ ISO 6162-2

*) Please check pressure rating of the SAE flanges

Handle included in delivery

For handles refer to "Attachments, accessories".

Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

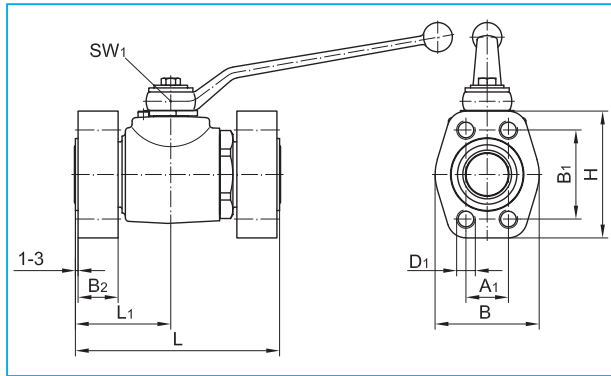
Body:	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel
Ball seats:	POM	POM
Stem seals:	NBR	FKM

Type of connection	DN	Flange- D1 size (inch)	T1	A1	B1	D2	T2	A2	B2	L	L1	B	H	SW1	Handle Code	Weight	DN	PN	Article-No.	PN	Article-No.	
ISO 6162-1	32	1 1/4	M10	20	30,2	58,7	M12	24	31,8	66,6	123	60	130	134,5	17	22	11,8	32	400*	104 024	400*	104 044
	40	1 1/2	M12	25	35,7	69,9	M16	27	36,5	79,3	126	61	140	144,5	17	22	13,6	40	400*	104 025	400*	104 045
	50	2	M12	25	42,8	77,8	M20	35	44,5	96,8	158	79	160	162,5	17	22	20,9	50	400*	104 026	400*	104 046
ISO 6162-2	32	1 1/4	7/16 - 14 UNC	28	30,2	58,7	1/2 - 13 UNC	28	31,8	66,6	123	60	130	134,5	17	22	11,8	32	400*	104 064	400*	104 084
	40	1 1/2	1/2 - 13 UNC	27	35,7	69,9	5/8 - 11 UNC	28	36,5	79,3	126	61	140	144,5	17	22	13,6	40	400*	104 065	400*	104 085
	50	2	1/2 - 13 UNC	27	42,8	77,8	3/4 - 10 UNC	36	44,5	96,8	158	79	160	162,5	17	22	20,9	50	400*	104 066	400*	104 086



2-way ball valves with flange connection

Steel · SAE · DN 12 - DN 40/32



*) Body in block form

For dimensions of ball valves refer to the respective chapter "2-way ball valves".

Actuators: refer to "Attachments, accessories".

Custom orders on request

All dimensions subject to change without notice

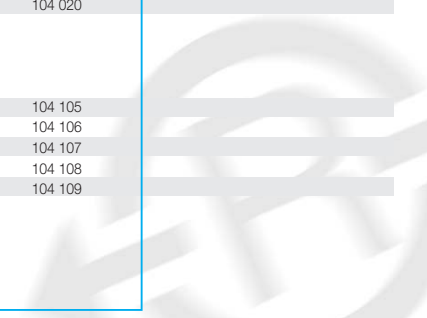
Dimensions in mm

Weight in kg

Pressure in bar

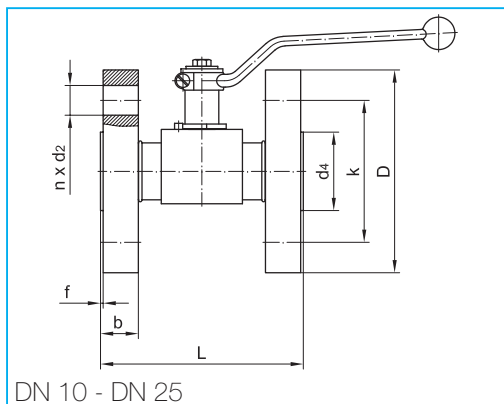
Body:	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel
Ball seats:	POM	POM
Stem seals:	NBR	FKM

Type of connection	DN	Thread D	RA	D ₁	A ₁	B ₁	B ₂	L	L ₁	B	H	Weight	DN	O-Ring	PN	Article-No.	PN	Article-No.
<p>SAE-Flange ISO 6162-1</p>	12"	M24 x 1,5	16	M8	17,5	38,1	20	103	51,5	46	54	1,2	12*	18,64 x 3,53	350	104 001	350	104 011
	20"	M36 x 2	25	M10	22,3	47,6	20	125	62,5	52	65	2,0	20*	24,99 x 3,53	350	104 002	350	104 012
	25"	M42 x 2	30	M10	26,2	52,4	21	138	69,0	59	70	2,7	25*	32,92 x 3,53	315	104 003	315	104 013
	32	M52 x 2	38	M10	30,2	58,7	24	153	71,5	73	79	3,8	32	37,69 x 3,53	250	104 004	250	104 014
	40/32	M52 x 2	38	M12	35,7	69,9	30	153	71,5	83	94	4,9	40/32	47,22 x 3,53	200	104 005	200	104 015
<p>for threaded ends of cut (clamp) ring tube fitting DIN 2353 heavy series ISO 8434-1</p>	12"	M24 x 1,5	16	5/16 - 18 UNC	17,5	38,1	20	103	51,5	46	54	1,2	12*	18,64 x 3,53	350	104 033	350	104 073
	20"	M36 x 2	25	3/8 - 16 UNC	22,3	47,6	20	125	62,5	52	65	2,0	20*	24,99 x 3,53	350	104 034	350	104 074
	25"	M42 x 2	30	3/8 - 16 UNC	26,2	52,4	21	138	69,0	59	70	2,7	25*	32,92 x 3,53	315	104 035	315	104 075
	32	M52 x 2	38	7/16 - 14 UNC	30,2	58,7	24	153	71,5	73	79	3,8	32	37,69 x 3,53	250	104 036	250	104 076
	40/32	M52 x 2	38	1/2 - 13 UNC	35,7	69,9	30	153	71,5	83	94	4,9	40/32	47,22 x 3,53	200	104 037	200	104 077
<p>SAE-Flange ISO 6162-2</p>	12"	M24 x 1,5	16	M8	18,2	40,5	20	103	51,5	48	56	1,4	12*	18,64 x 3,53	400	104 006	400	104 016
	20"	M36 x 2	25	M10	23,8	50,8	22	125	62,5	60	71	2,8	20*	24,99 x 3,53	400	104 007	400	104 017
	25"	M42 x 2	30	M12	27,8	57,2	24	138	69,0	70	81	3,1	25*	32,92 x 3,53	400	104 008	400	104 018
	32	M52 x 2	38	M12	31,8	66,6	30	153	71,5	78	95	4,3	32	37,69 x 3,53	400	104 009	400	104 019
	40/32	M52 x 2	38	M16	36,5	79,3	33	153	71,5	95	113	5,5	40/32	47,22 x 3,53	400	104 010	400	104 020
<p>for threaded ends of cut (clamp) ring tube fitting DIN 2353 heavy series ISO 8434-1</p>	12"	M24 x 1,5	16	5/16 - 18 UNC	18,2	40,5	20	103	51,5	48	56	1,4	12*	18,64 x 3,53	400	104 053	400	104 105
	20"	M36 x 2	25	3/8 - 16 UNC	23,8	50,8	22	125	62,5	60	71	2,8	20*	24,99 x 3,53	400	104 054	400	104 106
	25"	M42 x 2	30	7/16 - 14 UNC	27,8	57,2	24	138	69,0	70	81	3,1	25*	32,92 x 3,53	400	104 055	400	104 107
	32	M52 x 2	38	1/2 - 13 UNC	31,8	66,6	30	153	71,5	78	95	4,3	32	37,69 x 3,53	400	104 056	400	104 108
	40/32	M52 x 2	38	5/8 - 11 UNC	36,5	79,3	33	153	71,5	95	113	5,5	40/32	47,22 x 3,53	400	104 057	400	104 109

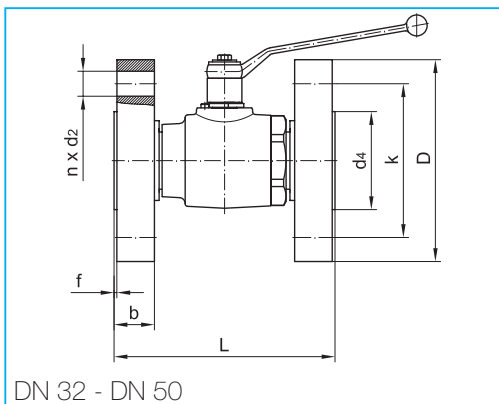


2-way ball valves with flange connection

Steel · DIN · DN 10 - DN 50 · adjustable



DN 10 - DN 25



DN 32 - DN 50

Flange-connecting dimension: DIN EN 1092-1 (DIN 2501-1)
 Overall length PN 25 - PN 320: DIN EN 558-1 TB 1 (DIN 3202-1-F1)
 Overall length PN 400: DIN EN 558-1 TB 2 (DIN 3202-1-F2)
 For dimensions of ball valves refer to the respective chapter "2-way ball valves".

Custom orders on request
 All dimensions subject to change without notice

Dimensions in mm

Weight in kg

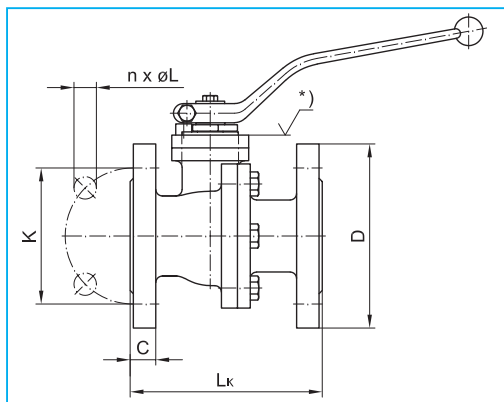
Pressure in bar

Body:	Steel	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel	Steel
Ball seats:	POM	POM	PTFE
Stem seals:	NBR	FKM	FKM

Type of connection	DN	D	b	k	d4	f	Quantity n	d2	L	Weight	DN	Article-No.	Article-No.	Article-No.
PN 25	10	90	16	60	40	2	4	14	130	2,1	10	109 212	109 219	109 200
	15	95	16	65	45	2	4	14	130	2,7	15	109 213	109 220	109 201
	20	105	18	75	58	2	4	14	150	3,8	20	109 214	109 221	109 202
	25	115	18	85	68	2	4	14	160	4,9	25	109 215	109 222	109 203
	32	140	18	100	78	2	4	18	180	7,0	32	109 216	109 223	109 204
	40	150	18	110	88	3	4	18	200	8,9	40	109 217	109 224	109 205
PN 63	50	165	20	125	102	3	4	18	230	12,2	50	109 218	109 225	109 206
	10	100	20	70	40	2	4	14	130	2,9	10	109 226	109 231	109 236
	15	105	20	75	45	2	4	14	130	3,5	15	109 227	109 232	109 237
	25	140	24	100	68	2	4	18	160	7,6	25	109 228	109 233	109 238
	40	170	26	125	88	3	4	22	200	12,6	40	109 229	109 234	109 239
PN 100	50	180	26	135	102	3	4	22	230	15,3	50	109 230	109 235	109 240
	10	100	20	70	40	2	4	14	130	2,9	10	109 226	109 231	109 236
	15	105	20	75	45	2	4	14	130	3,5	15	109 227	109 232	109 237
	25	140	24	100	68	2	4	18	160	7,6	25	109 228	109 233	109 238
PN 160	40	170	26	125	88	3	4	22	200	12,6	40	109 229	109 234	109 239
	50	195	28	145	102	3	4	26	230	17,9	50	109 241	109 242	109 243
	10	100	20	70	40	2	4	14	130	2,9	10	109 226	109 231	109 236
	15	105	20	75	45	2	4	14	130	3,5	15	109 227	109 232	109 237
PN 250	25	140	24	100	68	2	4	18	160	7,6	25	109 228	109 233	109 238
	40	170	28	125	88	3	4	22	200	13,2	40	109 244	109 246	-
	50	195	30	145	102	3	4	26	230	18,7	50	109 245	109 247	-
	10	125	24	85	40	2	4	18	130	5,0	10	109 207	109 251	109 256
PN 320	15	130	26	90	45	2	4	18	130	6,2	15	109 208	109 252	109 257
	25	150	28	105	68	2	4	22	160	9,5	25	109 248	109 253	109 258
	40	185	34	135	88	3	4	26	200	17,2	40	109 249	109 254	-
	50	200	38	150	102	3	8	26	230	22,6	50	109 250	109 255	-
PN 400	10	125	24	85	40	2	4	18	130	5,0	10	109 207	109 251	109 256
	15	130	26	90	45	2	4	18	130	6,2	15	109 208	109 252	109 257
	25	160	34	115	68	2	4	22	160	12,5	25	109 209	109 259	-
	40	195	38	145	88	3	4	26	200	20,5	40	109 210	109 260	-
	50	210	42	160	102	3	8	26	230	26,4	50	109 211	109 261	-
PN 400	10	125	28	85	40	2	4	18	210	6,0	10	109 262	109 267	-
	15	145	30	100	45	2	4	22	210	9,0	15	109 263	109 268	-
	25	180	38	130	68	2	4	26	230	17,4	25	109 264	109 269	-
	40	220	48	165	88	3	4	30	260	31,9	40	109 265	109 270	-
	50	235	52	180	102	3	8	30	300	38,9	50	109 266	109 271	-

2-way ball valves with flange connection

Steel and Stainless steel · DIN · DN 15 - DN 200



Flange-connecting dimension: DIN EN 1092-2 (DIN 2501-1)
 Overall length: DIN EN 558-1 Grundreihe 27 (DIN 3202-1-F4/F5)

- ¹⁾ without porting pattern DIN EN ISO 5211
- ²⁾ design with inspection certificate according to DIN EN 10204
- ³⁾ deviating from the standard PN 40

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

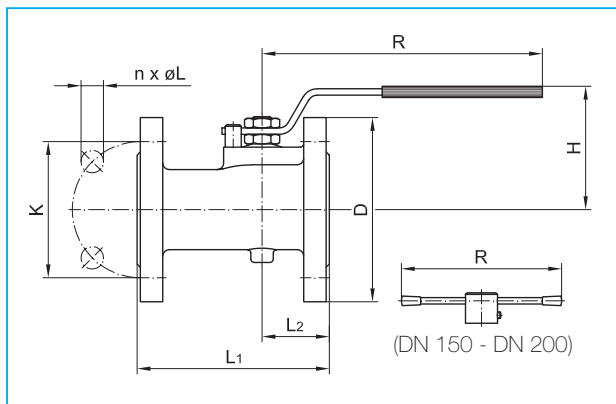
Pressure in bar

Body:	GGG	GS	Stainless steel	Stainless steel
Ball:	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Stem:	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Ball seats:	PTFE	PTFE	PTFE	PTFE
Stem seals:	FKM	PTFE	PTFE	PTFE

Type of connection	DN	D	C	K	Quantity n	ØL	Lk	*Porting pattern DIN EN ISO 5211	DN	Article-No. ¹	Weight	Article-No.	Weight	Article-No.	Weight	Article-No. ²	Weight
PN 10	15	95	16 ³	65	4	14	115	F 05	15	-	-	105 271	3,9	105 071	3,0	105 215	3,9
	20	105	18 ³	75	4	14	120	F 05	20	-	-	105 272	4,4	105 072	3,6	105 216	4,4
	25	115	18 ³	85	4	14	125	F 05	25	105 260	3,8	105 273	4,6	105 073	4,5	105 217	4,6
	32	140	18 ³	100	4	18	130	F 05	32	105 261	5,7	105 274	6,4	105 074	6,1	105 218	6,4
	40	150	18 ³	110	4	18	140	F 07	40	105 262	6,7	105 275	8,5	105 075	8,2	105 219	8,5
	50	165	20 ³	125	4	18	150	F 07	50	105 263	9,1	105 276	12,8	105 076	10,7	105 220	12,8
	65	185	18	145	4	18	170	F 10	65	105 264	15,5	105 277	19,0	105 077	13,5	105 221	19,0
	80	200	20	160	8	18	180	F 10	80	105 265	19,8	105 278	25,0	105 078	21,0	105 222	25,0
	100	220	20	180	8	18	190	F 10	100	105 266	27,5	105 279	30,0	105 079	28,6	105 223	30,0
	125	250	22	210	8	18	325	F 12	125	105 267	53,0	105 280	67,0	-	-	105 224	67,0
	150	285	22	240	8	22	350	F 12	150	105 268	68,0	105 281	100,0	-	-	105 225	100,0
	200	340	24	295	8	22	400	F 12	200	105 269	140,0	105 282	161,0	-	-	105 226	161,0
	PN 16	15	95	16 ³	65	4	14	115	F 05	15	-	-	105 271	3,9	105 071	3,0	105 215
20		105	18 ³	75	4	14	120	F 05	20	-	-	105 272	4,4	105 072	3,6	105 216	4,4
25		115	18 ³	85	4	14	125	F 05	25	105 260	3,8	105 273	4,6	105 073	4,5	105 217	4,6
32		140	18 ³	100	4	18	130	F 05	32	105 261	5,7	105 274	6,4	105 074	6,1	105 218	6,4
40		150	18 ³	110	4	18	140	F 07	40	105 262	6,7	105 275	8,5	105 075	8,2	105 219	8,5
50		165	20 ³	125	4	18	150	F 07	50	105 263	9,1	105 276	12,8	105 076	10,7	105 220	12,8
65		185	18	145	4	18	170	F 10	65	105 264	15,5	105 277	19,0	105 077	13,5	105 221	19,0
80		200	20	160	8	18	180	F 10	80	105 265	19,8	105 278	25,0	105 078	21,0	105 222	25,0
100		220	20	180	8	18	190	F 10	100	105 266	27,5	105 279	30,0	105 079	28,6	105 223	30,0
125		250	22	210	8	18	325	F 12	125	105 267	53,0	105 280	67,0	-	-	105 224	67,0
150		285	22	240	8	22	350	F 12	150	105 268	68,0	105 281	100,0	-	-	105 225	100,0
200		340	24	295	12	22	400	F 12	200	105 270	140,0	105 283	161,0	-	-	105 226	161,0
PN 25 PN 40		15	95	16	65	4	14	115	F 05	15	-	-	105 284	3,9	105 084	3,0	105 230
	20	105	18	75	4	14	120	F 05	20	-	-	105 285	4,4	105 085	3,6	105 231	4,4
	25	115	18	85	4	14	125	F 05	25	-	-	105 286	4,6	105 086	4,5	105 232	4,6
	32	140	18	100	4	18	130	F 05	32	-	-	105 287	6,4	105 087	6,1	105 233	6,4
	40	150	18	110	4	18	140	F 07	40	-	-	105 288	8,5	105 088	8,2	105 234	8,5
	50	165	20	125	4	18	150	F 07	50	-	-	105 289	12,8	105 089	10,7	105 235	12,8
	65	185	22	145	8	18	170	F 10	65	-	-	105 290	20,0	105 090	14,5	105 236	20,0
	80	200	24	160	8	18	180	F 10	80	-	-	105 291	25,0	105 091	22,6	105 237	25,0
	100	235	24	190	8	22	190	F 10	100	-	-	105 292	33,5	105 092	30,8	105 238	33,5
	125	270	26	220	8	26	325	F 12	125	-	-	105 293	72,0	-	-	105 239	72,0
	150	300	28	250	8	26	350	F 12	150	-	-	105 294	106,0	-	-	105 240	106,0

2-way ball valves with flange connection

Gray cast iron · flange · DN 25 - DN 200



Flange-connecting dimension: DIN EN 1092-1 (DIN 2501-1)
 Overall length PN 25 - PN 320: DIN EN 558-1 TB 1 (DIN 3202-1-F1)
 Overall length PN 400: DIN EN 558-1 TB 2 (DIN 3202-1-F2)
 For dimensions of ball valves refer to the respective chapter "2-way ball valves".

Custom orders on request
 All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

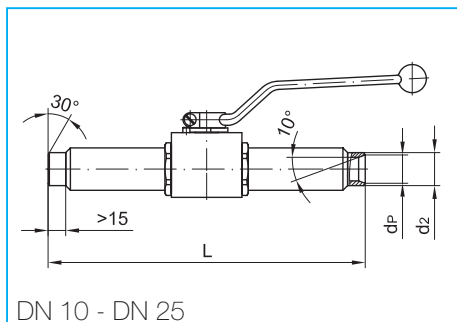
Body:	GG
Ball:	Brass
Stem:	Steel
Ball seats:	PTFE
Stem seals:	NBR

Type of connection	DN	D	K	Quantity	ØL	L1	L2	H	R	Weight	DN	Article-No.
PN 10	25	115	85	4	M12	125	42	77	175	3,1	25	105 050
	32	140	100	4	M16	130	47	82	175	4,8	32	105 051
	40	150	110	4	M16	140	49	99	250	6,1	40	105 052
	50	165	125	4	M16	150	52	106	250	8,6	50	105 053
	65	185	145	4	M16	170	65	125	320	11,0	65	105 054
	80	200	160	8	M16	180	66	136	320	13,3	80	105 055
	100	220	180	8	M16	190	89	156	380	19,7	100	105 056
	125	250	210	8	M16	200	100	174	380	32,0	125	105 057
	150	285	240	8	M20	210	105	234	700	44,0	150	105 058
	200	340	295	8	Ø22	400	200	272	700	97,0	200	105 059
PN 16	25	115	85	4	M12	125	42	77	175	3,1	25	105 050
	32	140	100	4	M16	130	47	82	175	4,8	32	105 051
	40	150	110	4	M16	140	49	99	250	6,1	40	105 052
	50	165	125	4	M16	150	52	106	250	8,6	50	105 053
	65	185	145	4	M16	170	65	125	320	11,0	65	105 054
	80	200	160	8	M16	180	66	136	320	13,3	80	105 055
	100	220	180	8	M16	190	89	156	380	19,7	100	105 056
	125	250	210	8	M16	200	100	174	380	32,0	125	105 057
	150	285	240	8	M20	210	105	234	700	44,0	150	105 058
	200	340	295	12	Ø22	400	200	272	700	97,0	200	105 069

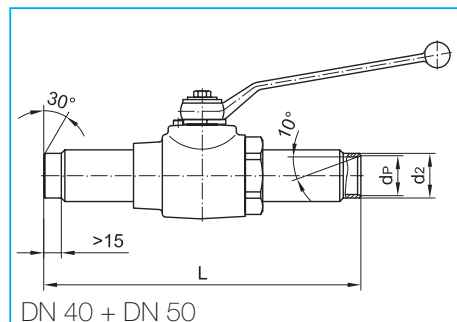


2-way ball valves with welding end

Steel · DN 10 - DN 50



DN 10 - DN 25



DN 40 + DN 50

Welding ends : DIN EN 12627 (DIN 3239-1)

Overall length : DIN EN 12982 basic range 68 (DIN 3202-2-S10)

For dimensions of the ball valves refer to respective chapter "2-way ball valves".

Custom orders on request

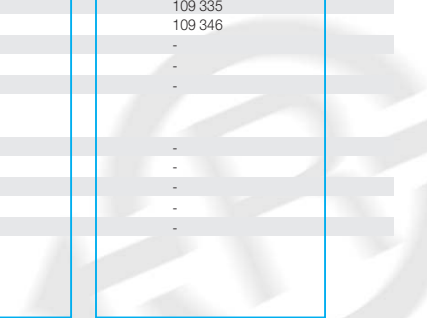
All dimensions subject to change without notice

Dimensions in mm

Weight in kg

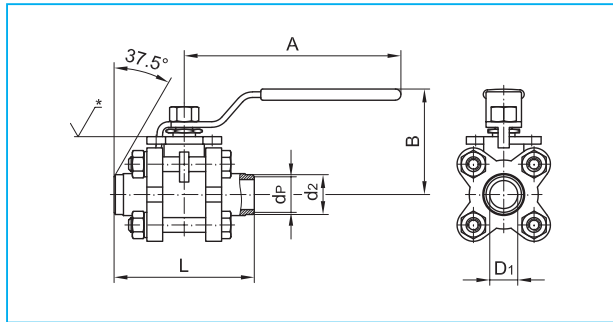
Pressure in bar

Type of connection	DN	d2	dP	L	Weight	DN	Article-No.	Article-No.	Article-No.
PN 40	10	18	13,0	270	1,00	10	109 300	109 306	109 312
	15	22	17,0	270	2,05	15	109 301	109 307	109 313
	20	28	22,0	270	2,75	20	109 302	109 308	109 314
	25	34	28,5	270	3,85	25	109 303	109 309	109 315
	40	49	43,0	270	6,50	40	109 304	109 310	109 316
	50	61	54,0	300	9,55	50	109 305	109 311	109 317
PN 63 PN 100	10	18	13,0	270	1,00	10	109 300	109 306	109 312
	15	22	17,0	270	2,05	15	109 301	109 307	109 313
	25	34	28,5	270	3,85	25	109 303	109 309	109 315
	40	49	43,0	270	6,50	40	109 304	109 310	109 316
	50	61	54,0	300	9,55	50	109 305	109 311	109 317
PN 160	10	18	13,0	270	1,00	10	109 300	109 306	109 312
	15	22	17,0	270	2,05	15	109 301	109 307	109 313
	25	34	27,0	270	3,85	25	109 318	109 321	109 324
	40	49	41,0	270	6,50	40	109 319	109 322	-
	50	61	52,5	300	9,55	50	109 320	109 323	-
PN 250	10	18	12,0	270	1,00	10	109 325	109 330	109 335
	15	22	16,0	270	2,05	15	109 326	109 331	109 336
	25	35	26,5	270	3,85	25	109 327	109 332	109 337
	40	49	38,5	270	6,50	40	109 328	109 333	-
	50	61	45,0	300	9,55	50	109 329	109 334	-
PN 320	10	18	12,0	270	1,00	10	109 325	109 330	109 335
	15	22	15,0	270	2,05	15	109 338	109 342	109 346
	25	35	24,0	270	3,85	25	109 339	109 343	-
	40	49	36,0	270	6,50	40	109 340	109 344	-
	50	77	59,5	300	9,55	50	109 341	109 345	-
PN 400	10	18	10,0	270	1,00	10	109 347	109 352	-
	15	28	17,0	270	2,05	15	109 348	109 353	-
	25	44	29,0	270	3,85	25	109 349	109 354	-
	40	61	40,0	270	6,50	40	109 350	109 355	-
	50	77	49,5	300	9,55	50	109 351	109 356	-



2-way ball valves with welding end

Stainless Steel · with removable centre · DN 10 - DN 50



Handle included in delivery
 Welding ends: DIN EN 12627 (DIN 3239-1)
 Overall length: DIN EN 12982 basic range 67 (DIN 3202-2-S13)
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

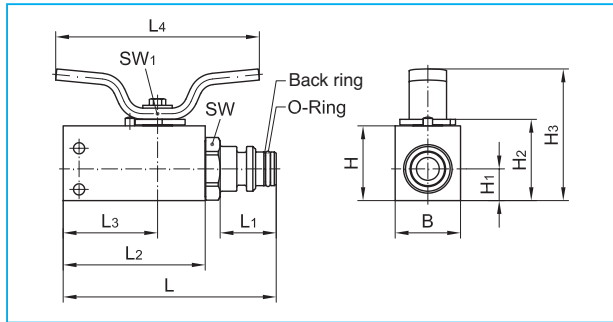
Body:	Stainless steel
Ball:	Stainless steel
Stem:	Stainless steel
Ball seats:	PTFE
Stem seals:	PTFE

Type of connection	DN	D1	d2	dp	L	A	B	* Porting pattern DIN EN ISO 5211	Weight	DN	Article-No.
PN 40	50	49,0	60,3	56,5	150	191	104	F05	3,60	50	109 363
PN 63	10	12,7	17,2	15,0	70	105	51	F04	0,45	10	109 357
	15	15,0	21,3	19,0	75	105	61	F04	0,60	15	109 358
	20	20,0	26,9	23,0	90	125	66	F04	0,65	20	109 359
	25	25,0	33,7	30,0	100	152	78	F04	1,20	25	109 360
	32	32,0	42,4	39,0	110	152	82	F04	1,75	32	109 361
	40	38,0	48,3	45,0	125	191	95	F05	2,45	40	109 362



2-way ball valves with staple lock connector

Steel · DN 10 - DN 25



Handle, o-ring and back ring included in delivery
 For handle refer to "Attachments, accessories".
 Actuators and custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

Body:	Steel
Ball:	Steel, Steel, hard chrome plated
Stem:	Steel
Ball seats:	POM
Stem seals:	NBR

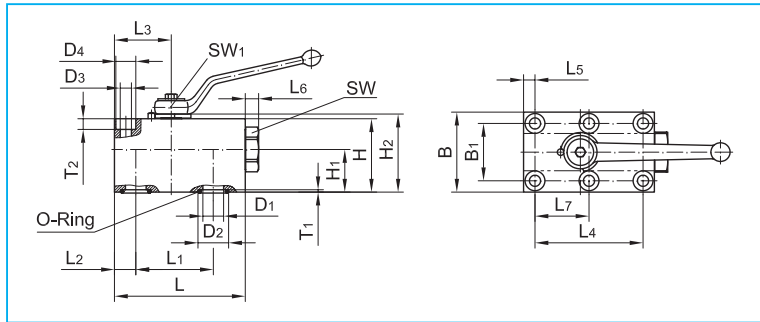
Type of connection	DN	L	L1	L2	L3	L4	B	H	H1	H2	H3	SW	SW1	Weight
Staple lock female/ male connector DIN 20043	10	106	29	70	47,0	109	30	35	14,5	38,5	65,5	24	8	0,60
	12	114	29	76	50,5	109	35	40	17,0	43,5	70,5	30	10	0,84
	20	120	29	82	52,0	160	45	55	24,0	59,0	99,0	41	14	1,65
	25	143	35	100	65,0	160	55	60	26,0	64,0	104,0	50	14	2,50

DN	O-Ring	PN	Article-No.
10	10 x 2,0	500	103 001
12	13 x 2,5	500	103 002
20	19 x 2,5	400	103 003
25	25 x 2,5	400	103 004



2-way ball valves for manifold mounting

Steel · DN 6 - DN 50



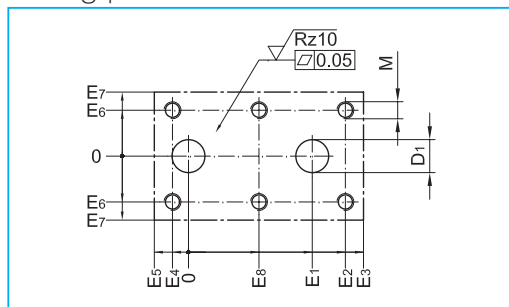
Handle included in delivery
 For handle refer to "Attachments, accessories".
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

Body:	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel
Body seals:	NBR	FKM
Ball seats:	POM	POM
Stem seals:	NBR	FKM

Type of connection	DN	L	L1	L2	L3	L4	L5	L6	L7	B	B1	H	H1	H2	T1	T2	DN	D1	D2	D3	D4	SW	SW1	Handle Code	Weight	for Cylinder-head screw DIN EN ISO 4762 (DIN 912)	PN	Article-No.	PN	Article-No.
Body-Flange with O-ring-seal	6	59	35	8,5	23,5	35	8,5	4,5	17,5	40	27	35	20,0	37,5	1,8	6,8	6	6,0	12,0	6,4	11	24	7	1	0,58	M6 - 10,9	500	106 021	500	106 031
	10	73	44	10,0	29,0	55	7,5	7,0	27,5	55	40	45	24,5	48,5	1,8	8,0	10	9,5	15,0	8,4	-	32	8	2	1,17	M8 - 10,9	500	106 022	500	106 032
	12	98	58	16,0	42,5	83	7,5	10,0	41,5	60	45	55	32,0	58,5	1,8	8,0	12	15,5	25,0	8,4	-	36	10	3	2,25	M8 - 12,9	500	106 023	500	106 033
	20	117	69	20,0	52,0	97	10,0	12,0	48,5	70	51	70	39,0	74,0	2,7	11,0	20	20,0	30,0	10,5	17	-	14	8	4,00	M10 - 12,9	315	106 024	315	106 034
	25	138	81	24,0	62,0	115	10,0	7,0	57,5	80	60	80	46,0	84,0	2,7	11,0	25	24,0	35,0	10,5	17	50	14	8	5,82	M10 - 12,9	315	106 025	315	106 035
	32	165	96	29,0	75,0	136	12,0	11,0	68,0	100	78	100	56,6	104,5	2,7	12,0	32	32,0	40,0	13,0	19	70	17	22	10,97	M12 - 12,9	315	106 026	315	106 036
	40	175	112	28,5	84,5	112	28,5	25,0	56,0	130	95	100	52,6	104,5	2,7	17,5	40	38,0	48,5	17,0	26	-	17	22	15,25	M16 - 12,9	315	106 027	315	106 037
	50	215	136	38,0	106,0	136	38,0	25,0	68,0	150	112	110	55,1	114,5	2,7	20,0	50	48,0	55,5	21,0	33	-	17	22	23,20	M20 - 12,9	315	106 028	315	106 038

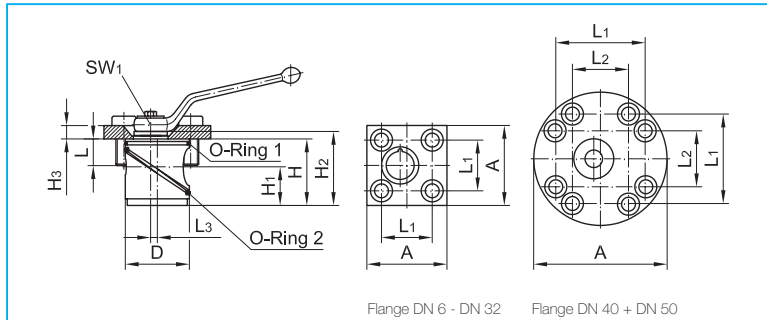
DN	D1	E1	E2	E3	E4	E5	E6	E7	E8	M	O-Ring
6	6,0	35	35,0	50,5	0,0	8,5	13,5	20,0	17,5	M 6	7,5 x 2,5
10	9,5	44	52,5	63,0	2,5	10,0	20,0	27,5	25,0	M 8	10,5 x 2,5
12	15,5	58	74,5	82,0	8,5	16,0	22,5	30,0	33,0	M 8	20,5 x 2,5
20	20,0	69	87,0	97,0	10,0	20,0	25,5	35,0	38,5	M10	23,5 x 3,5
25	24,0	81	101,0	114,0	14,0	24,0	30,0	40,0	43,5	M10	28,5 x 3,5
32	32,0	96	119,0	136,0	17,0	29,0	39,0	50,0	51,0	M12	33,5 x 3,5
40	38,0	112	112,0	146,5	0,0	28,5	47,5	65,0	56,0	M16	42,0 x 3,5
50	48,0	136	136,0	177,0	0,0	38,0	56,0	75,0	68,0	M20	49,0 x 3,5

Drilling pattern



2-way ball valves for manifold insertion as cartridge type

Steel · DN 6 - DN 50



Handle and attachment screws included in delivery.

For handle refer to "Attachments, accessories".

Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

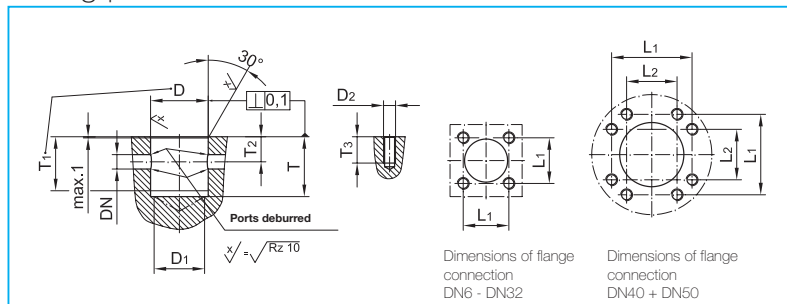
Pressure in bar

Body:	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel
Body seals:	NBR	FKM
Ball seats:	POM	POM
Stem seals:	NBR	FKM

Type of connection	DN	D	H	H1	H2	H3	L	L1	L2	L3	SW1	A	Handle Code	DN	O-Ring 1	O-Ring 2	Weight	Cylinder-head screws DIN EN ISO 4762 (DIN 912)	PN		Article-No.	
																			PN	Article-No.	PN	Article-No.
Cavity	6	36	34,6	21,0	40,5	8	20	38	-	5,0	7	60	1	6	31,00 x 1,50	32,00 x 3,00	0,55	M10 x 25-12.9	500	107 001	500	107 021
	10	45	45,4	27,0	50,0	10	20	50	-	5,0	8	80	2	10	40,00 x 2,00	42,00 x 3,00	1,10	M12 x 25-12.9	500	107 002	500	107 022
	12	48	49,9	29,0	56,5	10	20	50	-	5,0	10	80	3	12	43,00 x 2,00	46,00 x 3,00	1,25	M12 x 25-12.9	400	107 003	400	107 023
	16	54	53,9	31,0	60,0	10	20	60	-	5,5	11	90	24	16	49,00 x 2,00	53,57 x 3,53	1,55	M12 x 25-12.9	315	107 009	315	107 029
	20	63	64,9	36,0	74,5	18	25	70	-	7,0	14	100	20	20	55,20 x 3,00	61,00 x 3,50	2,95	M16 x 35-12.9	315	107 004	315	107 024
	25	70	70,9	39,0	81,0	18	25	70	-	7,0	14	100	20	25	63,00 x 3,00	67,00 x 4,00	3,35	M16 x 35-12.9	315	107 005	315	107 025
	32	92	90,0	47,5	122,5	35	30	100	-	10,0	17	140	22	32	82,14 x 3,53	92,00 x 5,00	9,10	M20 x 50-12.9	315	107 006	315	107 026
	40	107	106,0	56,0	140,5	35	30	134	84	10,0	17	200	22	40	98,02 x 3,53	108,00 x 6,00	14,65	M20 x 50-12.9	315	107 007	315	107 027
	50	126	120,0	63,0	155,0	35	30	152	96	11,5	17	230	22	50	117,07 x 3,53	124,00 x 6,00	20,60	M20 x 50-12.9	315	107 008	315	107 028

General tolerances DIN ISO 2768 Surfaces DIN EN ISO 4287	DN	D H9	D1 max.	D2	L1 ±0,2	L2 ±0,2	T +0,1	T1 +0,2	T2 +0,1	T3 min.	DN	Article-No. Mounting-tool
10	45	39	M12	50	-	45,5	41	18,4	22	10	107 012	
12	48	42	M12	50	-	50,0	45	20,9	22	12	107 013	
16	54	47	M12	60	-	54,0	49	22,9	22	16	107 019	
20	63	55	M16	70	-	65,0	61	28,9	28	20	107 014	
25	70	62	M16	70	-	71,0	66	31,9	28	25	107 015	
32	92	80	M20	100	-	90,0	86	42,5	33	32	107 016	
40	107	95	M20	134	84	106,0	101	50,0	33	40	107 017	
50	126	115	M20	152	96	120,0	115	57,0	33	50	107 018	

Drilling pattern





with floating ball



with trunnion ball

Multi-way ball valves

Standard- and special porting patterns



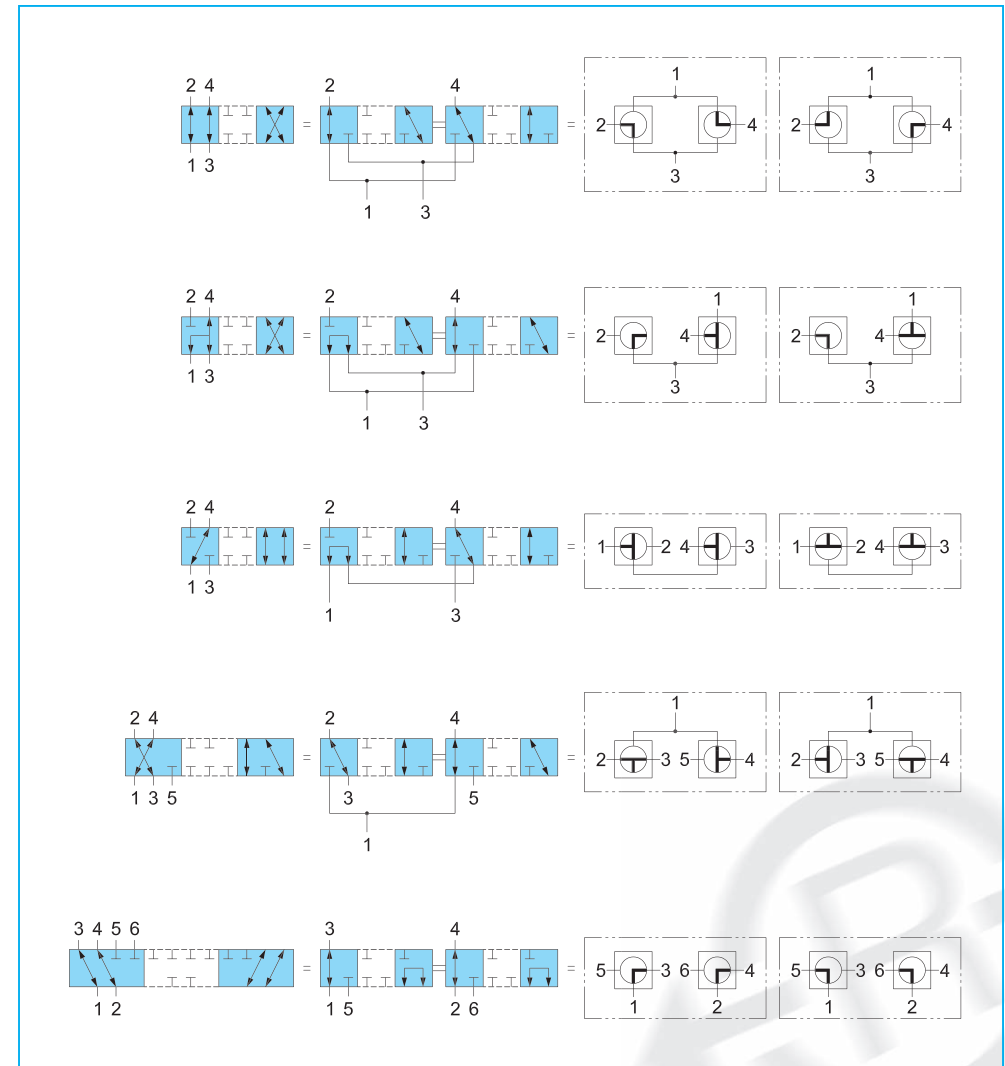
Ref-No.	Ball valve style	Cycling	Porting symbols	Descriptions
01	3-way compact ball valve with L-bore	90°		Floating ball, all ports connected in the cross-over position, pressure should not be applied from the closed port
03	3-way compact ball valve with T-bore	90°		Floating ball, all ports connected in the cross-over position, pressure should not be applied from the closed port
08	3-way ball valve with L-bore	90°		Trunnion ball, all ports closed in the cross-over position, full bore
09	3-way ball valve with T-bore	90°		Trunnion ball, all ports closed in the cross-over position, full bore
10	3-way ball valve with T-bore	2 x 90°		Trunnion ball, all ports closed in the cross-over position, full bore, detent at center position is recommended
11	4-way ball valve with L-bore	90°		Trunnion ball, all ports closed in the cross-over position, full bore
12	4-way ball valve with L-bore	2 x 90°		Trunnion ball, all ports closed in the cross-over position, full-bore, detent at center position is recommended
13	4-way ball valve with double L-bore	90°		Trunnion ball, temporary connection of all ports in the cross-over position but with full shut-off at center point, reduced bore
14	4-way ball valve with double L-bore and additional bore	2 x 45°		Trunnion ball, all ports connected in the cross-over position with center shut-off position, reduced bore, detent for center position is recommended
15	4-way ball valve with double L-bore and additional bore	2 x 45°		Trunnion ball, all ports connected in the cross-over position, reduced bore, detent for center position is recommended
16	4-way ball valve with Y-bore	2 x 45°		Trunnion ball, all ports connected in the cross-over position, reduced bore, detent for center position is recommended
17	5-way ball valve with double L-bore perpendicular	3 x 90°		Trunnion ball, all ports closed, full-bore passage, detents for switching positions are recommended
18	4-way ball valve with T- and L-bore	45°		Trunnion ball, all ports connected in the cross-over position, reduced bore
19	4-way ball valve with double L-bore and additional bore	45°		Trunnion ball, all ports connected in the cross-over position, reduced bore
20	3-way ball valve with L-bore and additional bore	90°		Trunnion ball, all ports connected in the cross-over position, full bore
21	3-way ball valve with T-bore and additional bore	2 x 45°		Trunnion ball, all ports connected in the cross-over position, reduced bore
22	3-way ball valve with L-bore and additional bore	45°		Trunnion ball, all ports connected in the cross-over position, reduced bore

Other special porting patterns on request

Multi-way ball valves

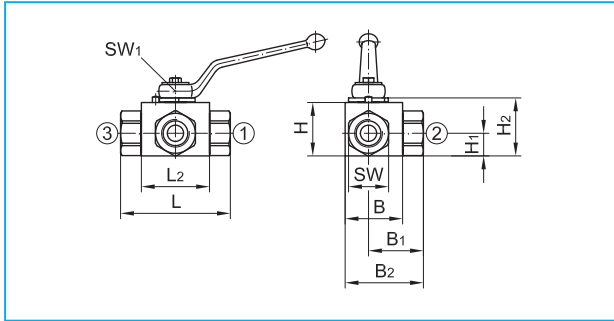
Special porting patterns · Examples for Combinations

By combining simple patterns more complex functions can be achieved.



Multi-way ball valves with floating ball

3-way · Steel · Threaded connector · DN 4 - DN 40/25



Handle included in delivery

For handle refer to "Attachments, accessories".

✦ Application of pressure only as indicated in chapter "technical information"

Please check pressure rating of the pipe fittings!

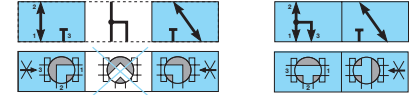
Actuators and custom orders on request

Also available with most other connection types

Custom orders on request

All ball valves available with mounting plate

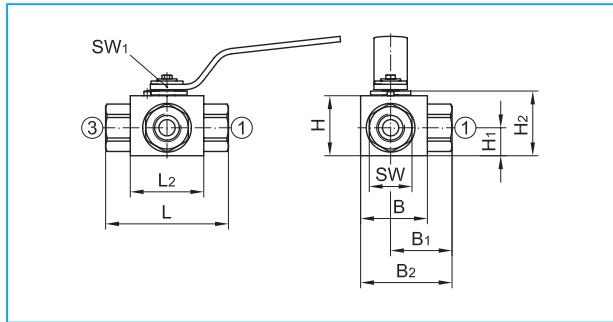
Dimensions	in mm	L	T
Bore:		90°	90°
Cycling:		Steel	Steel
Body:		Steel, hard chrome plated	Steel, hard chrome plated
Ball:		Steel	Steel
Stem:		POM	POM
Ball seats:		NBR	NBR
Stem seals:			



Type of connection	DN	Thread D	RA	L	L1	L2	B	B1	B2	H	H1	H2	SW	SW1	Handle Weight Code	DN	PN	Article-No.	PN	Article-No.	
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	4	M12 x 1,5	6	67	10	36	30	33,5	45,5	30	15,0	32,5	19	7	1	0,32	4	500	200 151	500	200 191
	6	M14 x 1,5	8	67	10	36	30	33,5	45,5	30	15,0	32,5	19	7	1	0,32	6	500	200 152	500	200 192
	8	M16 x 1,5	10	75	11	45	40	37,5	55,0	35	14,5	38,5	24	8	2	0,55	8	500	200 153	500	200 193
	10	M18 x 1,5	12	75	11	45	40	37,5	55,0	35	14,5	38,5	24	8	2	0,55	10	500	200 154	500	200 194
	12	M22 x 1,5	15	83	12	51	45	41,5	61,0	45	22,0	48,5	30	10	3	0,89	12	500	200 155	500	200 195
	16	M26 x 1,5	18	82	12	50	50	41,0	66,0	50	25,0	54,0	36	11	6	1,05	16	400	200 156	400	200 196
	20	M30 x 2	22	99	14	60	55	51,0	74,5	60	29,0	64,0	41	14	8	1,61	20	400	200 157	400	200 197
	25	M36 x 2	28	108	14	70	65	54,0	84,0	65	31,0	69,0	50	14	8	2,27	25	400	200 158	400	200 198
	32/25	M45 x 2	35	116	16	70	65	58,0	88,0	65	31,0	69,0	50	14	8	2,48	32/25	400	200 159	400	200 199
	40/25	M52 x 2	42	121	16	70	65	60,5	90,5	65	31,0	69,0	55	14	8	2,60	40/25	400	200 160	400	200 200
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	4	M16 x 1,5	8	73	12	36	30	36,5	48,5	30	15,0	32,5	19	7	1	0,35	4	500	200 161	500	200 201
	6	M18 x 1,5	10	73	12	36	30	36,5	48,5	30	15,0	32,5	19	7	1	0,35	6	500	200 162	500	200 202
	8	M20 x 1,5	12	77	12	45	40	38,5	56,0	35	14,5	38,5	24	8	2	0,57	8	500	200 163	500	200 203
	10	M22 x 1,5	14	81	14	45	40	40,5	58,0	35	14,5	38,5	24	8	2	0,57	10	500	200 164	500	200 204
	12	M24 x 1,5	16	87	14	51	45	43,5	63,0	45	22,0	48,5	30	10	3	0,91	12	500	200 165	500	200 205
	16	M30 x 2	20	90	16	50	50	45,0	70,0	50	25,0	54,0	36	11	6	1,12	16	400	200 166	400	200 206
	20	M36 x 2	25	107	18	60	55	55,0	78,5	60	29,0	64,0	41	14	8	1,72	20	400	200 167	400	200 207
	25	M42 x 2	30	120	20	70	65	60,0	90,0	65	31,0	69,0	50	14	8	2,44	25	400	200 168	400	200 208
	32/25	M52 x 2	38	134	22	70	65	67,0	97,0	65	31,0	69,0	55	14	8	2,95	32/25	400	200 169	400	200 209
	BSP-female thread DIN EN ISO 228-1	4	G 1/8	-	69	12	36	30	34,5	46,5	30	15,0	32,5	19	7	1	0,37	4	500	200 171	500
6		G 1/4	-	69	12	36	30	34,5	46,5	30	15,0	32,5	19	7	1	0,34	6	500	200 172	500	200 212
10		G 3/8	-	73	14	45	40	36,5	54,0	35	14,5	38,5	24	8	2	0,57	10	500	200 173	500	200 213
12		G 1/2	-	82	15	51	45	41,0	60,5	45	22,0	48,5	30	10	3	0,94	12	500	200 174	500	200 214
16		G 5/8	-	88	18	50	50	44,0	69,0	50	25,0	54,0	36	11	6	1,24	16	400	200 175	400	200 215
20		G 3/4	-	93	18	60	55	48,0	71,5	60	29,0	64,0	41	14	8	1,72	20	400	200 176	400	200 216
25		G1	-	115	18	70	65	57,5	87,5	65	31,0	69,0	50	14	8	2,65	25	400	200 177	400	200 217
32/25		G1 1/4	-	134	20	70	65	67,0	97,0	65	31,0	69,0	50	14	8	2,71	32/25	400	200 178	400	200 218
40/25	G1 1/2	-	139	22	70	65	69,5	99,5	65	31,0	69,0	55	14	8	2,91	40/25	400	200 179	400	200 219	
NPT-female thread ANSI/ASME B1.20.1-1983	4	1/8 - 27 NPT	-	69	6,9	36	30	34,5	46,5	30	15,0	32,5	19	7	1	0,37	4	500	200 181	500	200 221
	6	1/4 - 18 NPT	-	69	10,0	36	30	34,5	46,5	30	15,0	32,5	19	7	1	0,34	6	500	200 182	500	200 222
	10	3/8 - 18 NPT	-	73	10,3	45	40	36,5	54,0	35	14,5	38,5	24	8	2	0,57	10	500	200 183	500	200 223
	12	1/2 - 14 NPT	-	82	13,6	51	45	41,0	60,5	45	22,0	48,5	30	10	3	0,94	12	500	200 184	500	200 224
	20	3/4 - 14 NPT	-	93	14,1	60	55	48,0	71,5	60	29,0	64,0	41	14	8	1,75	20	400	200 185	400	200 225
	25	1 - 11 1/2 NPT	-	115	16,8	70	65	57,5	87,5	65	31,0	69,0	50	14	8	2,71	25	400	200 186	400	200 226
	32/25	1 1/4 - 11 1/2 NPT	-	134	17,3	70	65	67,0	97,0	65	31,0	69,0	50	14	8	2,79	32/25	400	200 187	400	200 227
	40/25	1 1/2 - 11 1/2 NPT	-	139	17,3	70	65	69,5	99,5	65	31,0	69,0	55	14	8	2,94	40/25	400	200 188	400	200 228

Multi-way ball valves with floating ball

3-way · Stainless steel · Threaded connector · DN 4 - DN 25



Handle included in delivery. For handle refer to "Attachments, accessories".

✳ Application of pressure only as indicated in chapter "technical information"

Please check pressure rating of the pipe fittings!

Full-PTFE-version, actuators and custom orders on request

Stainless Steel (material no.1.4571 - or other stainless steels)

All ball valves available with mounting plate

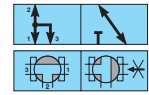
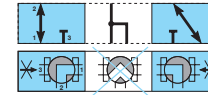
Also available with most other connection types

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

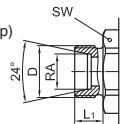
Pressure in bar



Type of connection DN Thread RA L L1 L2 B B1 B2 H H1 H2 SW SW1 Handle Weight

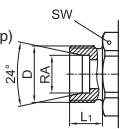
D **Code**

For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1



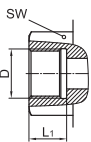
4	M12 x 1,5	6	73	10	41	35	36,5	51,1	35	18,7	38,5	22	7	26	0,47
6	M14 x 1,5	8	73	10	41	35	36,5	51,1	35	18,7	38,5	22	7	26	0,50
8	M16 x 1,5	10	87	11	53	45	43,5	62,3	45	23,0	49,5	30	8	27	0,98
10	M18 x 1,5	12	87	11	53	45	43,5	62,3	45	23,0	49,5	30	8	27	0,98
12	M22 x 1,5	15	91	12	55	50	45,8	68,3	50	26,0	54,5	32	10	28	1,23
16/12	M26 x 1,5	18	91	12	55	50	45,8	68,3	50	26,0	54,5	32	10	28	1,27
20	M30 x 2	22	105	14	65	60	54,5	80,0	60	26,0	65,0	46	14	29	2,57
25	M36 x 2	28	112	14	71	70	58,5	90,5	70	33,0	75,0	50	14	29	3,19

For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1



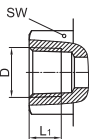
4	M16 x 1,5	8	76	12	41	35	38,0	52,6	35	18,7	38,5	22	7	26	0,49
6	M18 x 1,5	10	76	12	41	35	38,0	52,6	35	18,7	38,5	22	7	26	0,49
8	M20 x 1,5	12	89	12	53	45	44,5	63,3	45	23,0	49,5	30	8	27	1,01
10	M22 x 1,5	14	93	14	53	45	46,5	65,3	45	23,0	49,5	30	8	27	1,02
12	M24 x 1,5	16	96	14	55	50	48,3	70,8	50	26,0	54,5	32	10	28	1,25
16/12	M30 x 2	20	99	16	55	50	49,8	72,3	50	26,0	54,5	32	10	28	1,32
20	M36 x 2	25	113	18	65	60	58,5	84,0	60	26,0	65,0	46	14	29	2,66
25	M42 x 2	30	124	20	71	70	64,5	96,5	70	33,0	75,0	50	14	29	3,31

BSP-female thread DIN EN ISO 228-1



4	G 1/8	-	69	11	41	35	34,5	49,1	35	18,7	38,5	22	7	26	0,52
6	G 1/4	-	75	14	41	35	37,5	52,1	35	18,7	38,5	22	7	26	0,53
10	G 3/8	-	86	14	53	45	43,0	61,8	45	23,0	49,5	30	8	27	1,09
12	G 1/2	-	92	16	55	50	46,3	68,8	50	26,0	54,5	32	10	28	1,33
16/12	G 5/8	-	102	18	55	50	51,3	73,8	50	26,0	54,5	32	10	28	1,42
20	G 3/4	-	111	18	65	60	57,5	83,0	60	26,0	65,0	46	14	29	2,87
25	G1	-	122	20	71	70	63,5	95,5	70	33,0	75,0	50	14	29	3,54

NPT-female thread ANSI/ASME B1.20.1-1983



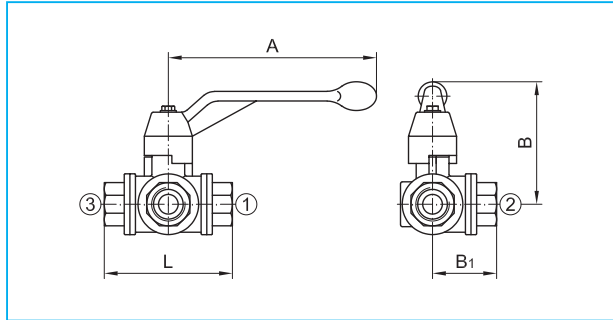
4	1/8 - 27 NPT	-	82	6,9	41	35	41,0	55,6	35	18,7	38,5	22	7	26	0,54
6	1/4 - 18 NPT	-	82	10,0	41	35	41,0	55,6	35	18,7	38,5	22	7	26	0,54
10	3/8 - 18 NPT	-	95	10,3	53	45	47,5	66,3	45	23,0	49,5	30	8	27	1,11
12	1/2 - 14 NPT	-	108	13,6	55	50	54,3	76,8	50	26,0	54,5	32	10	28	1,39
20	3/4 - 14 NPT	-	111	14,1	65	60	57,5	83,0	60	26,0	65,0	46	14	29	2,87
25	1 - 11/2 NPT	-	122	16,8	71	70	63,5	95,5	70	33,0	75,0	50	14	29	3,54

Bore:	L	T
Cycling:	90°	90°
Body:	Stainless steel	Stainless steel
Ball:	Stainless steel	Stainless steel
Stem:	Stainless steel	Stainless steel
Ball seats:	POM	POM
Stem seals:	NBR	NBR

DN	PN	Article-No.	PN	Article-No.
4	500	201 140	500	201 169
6	500	201 141	500	201 170
8	500	201 142	500	201 171
10	500	201 143	500	201 172
12	500	201 144	500	201 173
16/12	500	201 145	500	201 174
20	315	201 146	315	201 175
25	315	201 147	315	201 176
4	500	201 148	500	201 177
6	500	201 149	500	201 178
8	500	201 150	500	201 179
10	500	201 151	500	201 180
12	500	201 152	500	201 181
16/12	500	201 153	500	201 182
20	315	201 154	315	201 183
25	315	201 155	315	201 184
4	500	201 156	500	201 185
6	500	201 157	500	201 186
10	500	201 158	500	201 187
12	500	201 159	500	201 188
16/12	500	201 160	500	201 189
20	315	201 161	315	201 190
25	315	201 162	315	201 191
4	500	201 163	500	201 192
6	500	201 164	500	201 193
10	500	201 165	500	201 194
12	500	201 166	500	201 195
20	315	201 167	315	201 196
25	315	201 168	315	201 197

Multi-way ball valves with floating ball

3-way · Brass · Threaded connector · DN 6 - DN 50



Handle included in delivery

✳ Application of pressure only as indicated in chapter "technical information"

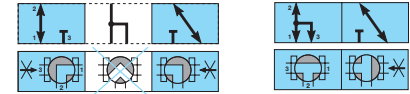
Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar



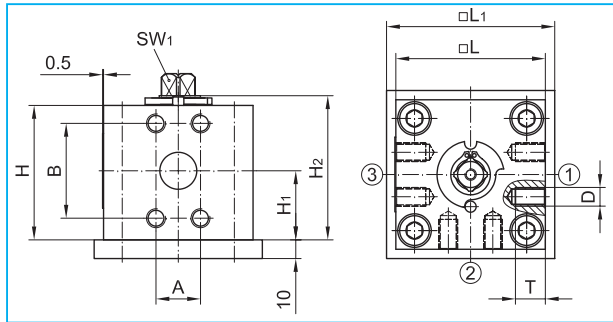
Bore:	L	T
Cycling:	90°	90°
Body:	Brass	Brass
Ball:	Brass, hard chrome plated	Brass, hard chrome plated
Stem:	Brass	Brass
Ball seats:	PTFE	PTFE
Stem seals:	PTFE	PTFE

Type of connection	DN/LW	Thread D	L	L1	A	B	B1	Weight	DN/LW	PN	Article-No.	PN	Article-No.
BSP-female thread DIN EN 10226-1	6/10	Rp 1/4	71	13	130	77	35,5	0,7	6/11	35	201 501	35	201 551
	10/13	Rp 3/8	71	13	130	77	35,5	0,7	10/11	35	201 502	35	201 552
	15/13	Rp 1/2	80	13	130	77	40,0	0,7	15/13	40	201 503	40	201 553
	20/18	Rp 3/4	96	15	160	89	48,0	1,1	20/18	40	201 504	40	201 554
	25/23	Rp 1	113	17	160	93	56,5	1,7	25/23	25	201 505	25	201 555
	32/29	Rp 1 1/4	130	19	195	110	65,0	2,6	32/29	16	201 506	16	201 556
	40/35	Rp 1 1/2	147	22	195	115	73,5	3,7	40/35	16	201 507	16	201 557
	50/44	Rp 2	169	27	235	129	84,5	5,8	50/44	16	201 508	16	201 558



Multi-way ball valves with floating ball

3-way · Steel · SAE-flange connection · DN 20 - DN 32



Handle on request, refer to "Attachments, accessories".

✳ Application of pressure only as indicated in chapter "technical information"

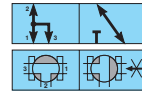
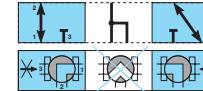
Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar



Bore:	L	L	T	T
Cycling:	90°	90°	90°	90°
Body:	Steel	Steel	Steel	Stahl
Ball:	Steel, hard chrome plated	Steel, hard chrome plated	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel	Steel	Steel
Ball seats:	POM	POM	POM	POM
Stem seals:	NBR	FKM	NBR	FKM

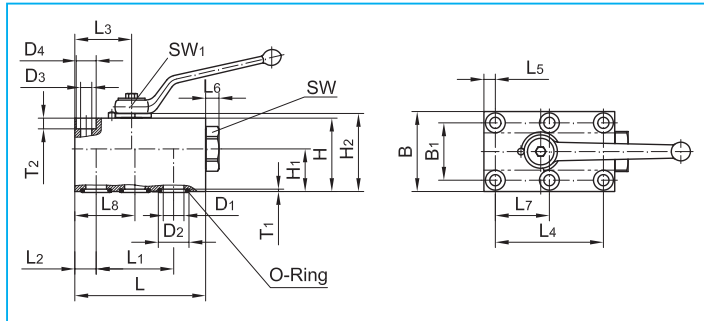
Type of connection	DN	Flange-size (inch)	D	T	A	B	L	L ₁	H	H ₁	H ₂	SW ₁	Weight
ISO 6162-2	20	3/4	M10	21	23,8	50,8	80	90	72	37	77,5	14	4,0
	25	1	M12	23	27,8	57,2	90	100	80	40	85,5	14	5,5
	32	1 1/4	M12	24	31,8	66,6	100	110	100	50	106,0	17	8,0
	20	3/4	3/8 - 16 UNC	24	23,8	50,8	80	90	72	37	77,5	14	4,0
	25	1	7/16 - 14 UNC	27	27,8	57,2	90	100	80	40	85,5	14	5,5
	32	1 1/4	1/2 - 13 UNC	28	31,8	66,7	100	110	100	50	106,0	17	8,0

DN	PN	Article-No.	PN	Article-No.	PN	Article-No.	PN	Article-No.
20	400	204 301	400	204 306	400	204 311	400	204 316
25	400	204 302	400	204 307	400	204 312	400	204 317
32	400	204 303	400	204 308	400	204 313	400	204 318
20	400	204 321	400	204 326	400	204 331	400	204 336
25	400	204 322	400	204 327	400	204 332	400	204 337
32	400	204 323	400	204 328	400	204 333	400	204 338



Multi-way ball valves with floating ball

3-way · Steel · manifold mounting · DN 6 - DN 50



Handle included in delivery

For handles refer to "Attachments, accessories".

✦ Application of pressure only as indicated in chapter "technical information"

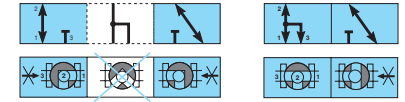
Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar



Bore:	L	T
Cycling:	90°	90°
Body:	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel
Body seals:	NBR	NBR
Ball seats:	POM	POM
Stem seals:	NBR	NBR

Anschluß-Art	DN	L	L1	L2	L3	L4	L5	L6	L7	L8	B	B1	H	H1	H2	T1	T2
Body-Flange with O-ring-seal	6	59	35	8,5	23,5	35	8,5	4,5	17,5	26,0	40	27	35	20,0	37,5	1,8	6,8
	10	73	44	10,0	29,0	55	7,5	7,0	27,5	29,0	55	40	45	24,5	48,5	1,8	8,0
	12	98	58	16,0	42,5	83	7,5	10,0	41,5	42,5	60	45	55	32,0	58,5	1,8	8,0
	20	117	69	20,0	52,0	97	10,0	12,0	48,5	52,0	70	51	70	39,0	74,0	2,7	11,0
	25	138	81	24,0	62,0	115	10,0	7,0	57,5	62,0	80	60	80	46,0	84,0	2,7	11,0
	32	165	96	29,0	75,0	136	12,0	11,0	68,0	75,0	100	78	100	56,6	104,5	2,7	12,0
	40	175	112	28,5	84,5	112	28,5	25,0	56,0	84,5	130	95	100	52,6	104,5	2,7	17,5
50	215	136	38,0	106,0	136	38,0	25,0	68,0	106,0	150	112	110	55,1	114,5	2,7	20,0	

DN	D1	D2	D3	D4	SW	SW1	Handle Code	Weight
6	6,0	12,0	6,4	11	24	7	1	0,58
10	9,5	15,0	8,4	-	32	8	2	1,15
12	15,5	25,0	8,4	-	36	10	3	2,11
20	20,0	30,0	10,5	17	-	14	8	4,00
25	24,0	35,0	10,5	17	50	14	8	5,58
32	32,0	40,0	13,0	19	70	17	22	11,14
40	38,0	48,5	17,0	26	-	17	22	15,19
50	48,0	55,5	21,0	33	-	17	22	22,67

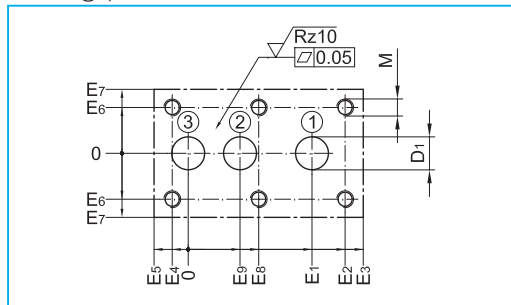
for Cylinder-head screws
DIN EN ISO 4762
(DIN 912)

PN	Article-No.	PN	Article-No.
500	206 101	500	206 121
500	206 102	500	206 122
315	206 103	315	206 123
250	206 104	250	206 124
250	206 105	250	206 125
250	206 106	250	206 126
250	206 107	250	206 127
315	206 108	315	206 128

General tolerances
DIN ISO 2768
Surfaces
DIN EN ISO 4287

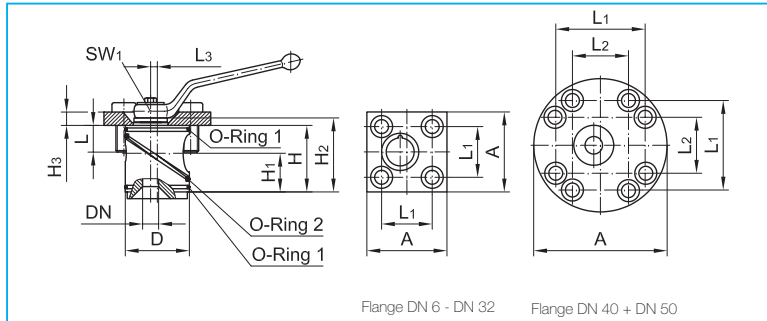
DN	D1	E1	E2	E3	E4	E5	E6	E7	E8	E9	M	O-Ring
6	6,0	35	35,0	50,5	0,0	8,5	13,5	20,0	17,5	17,5	M 6	7,50 x 2,5
10	9,5	44	52,5	63,0	2,5	10,0	20,0	27,5	25,0	19,0	M 8	10,5 x 2,5
12	15,5	58	74,5	82,0	8,5	16,0	22,5	30,0	33,0	26,5	M 8	20,5 x 2,5
20	20,0	69	87,0	97,0	10,0	20,0	25,5	35,0	38,5	32,0	M10	23,5 x 3,5
25	24,0	81	101,0	114,0	14,0	24,0	30,0	40,0	43,5	38,0	M10	28,5 x 3,5
32	32,0	96	119,0	136,0	17,0	29,0	39,0	50,0	51,0	46,0	M12	33,5 x 3,5
40	38,0	112	112,0	146,5	0,0	28,5	47,5	65,0	56,0	56,0	M16	42,0 x 3,5
50	48,0	136	136,0	177,0	0,0	38,0	56,0	75,0	68,0	68,0	M20	49,0 x 3,5

Drilling pattern



Multi-way ball valves with floating ball

3-way · Steel · manifold insertion as cartridge type · DN 6 - DN 50



Handle and attachment screws included in delivery
For handles refer to "Attachments, accessories".

✦ Application of pressure only as indicated in chapter "technical information"

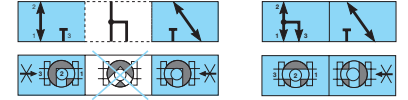
Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

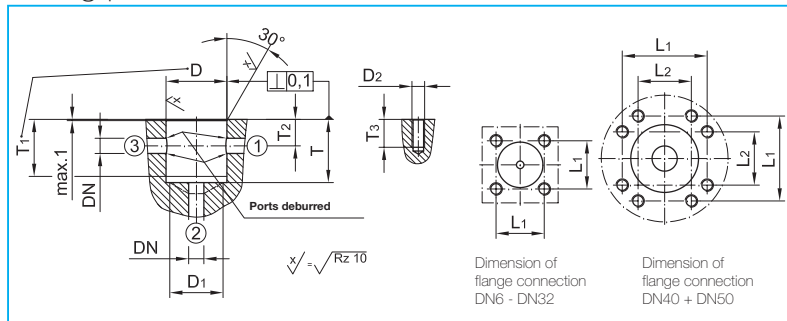


Bore:	L	T
Cycling:	90°	90°
Body:	Steel	Steel
Ball:	Steel, hard chrome plated	Steel, hard chrome plated
Stem:	Steel	Steel
Body seals:	NBR	NBR
Ball seats:	POM	POM
Stem seals:	NBR	NBR

Type of connection	DN	D	H	H ₁	H ₂	H ₃	L	L ₁	L ₂	L ₃	SW ₁	A	Handle Code	DN	O-Ring 1	O-Ring 2	Weight	Cylinder-head screws DIN EN ISO 4762 (DIN 912)	PN		PN	
																			Article-No.	Article-No.	Article-No.	Article-No.
Cavity	6	36	39,9	26,3	45,8	8	20	38	-	5,0	7	60	1	6	31,00 x 1,50	32,00 x 3,00	0,59	M10 x 25-12,9	500	107 031	500	107 041
	10	45	50,9	32,5	55,8	10	20	50	-	5,0	8	80	2	10	40,00 x 2,00	42,00 x 3,00	1,15	M12 x 25-12,9	500	107 032	500	107 042
	12	48	54,9	34,0	61,5	10	20	50	-	5,0	10	80	3	12	43,00 x 2,00	46,00 x 3,00	1,29	M12 x 25-12,9	400	107 033	400	107 043
	16	54	58,9	36,0	65,0	10	20	60	-	5,5	11	90	24	16	49,00 x 2,00	53,57 x 3,53	1,59	M12 x 25-12,9	315	107 034	315	107 044
	20	63	72,9	44,0	82,5	18	25	70	-	7,0	14	100	20	20	55,20 x 3,00	61,00 x 3,50	3,04	M16 x 35-12,9	315	107 035	315	107 045
	25	70	78,9	47,0	89,0	18	25	70	-	7,0	14	100	20	25	63,00 x 3,00	67,00 x 4,00	3,31	M16 x 35-12,9	315	107 036	315	107 046
	32	92	100,0	57,5	132,5	35	30	100	-	10,0	17	140	22	32	82,14 x 3,53	92,00 x 5,00	9,26	M20 x 50-12,9	315	107 037	315	107 047
	40	107	116,0	66,0	150,5	35	30	134	84	10,0	17	200	22	40	98,02 x 3,53	108,00 x 6,00	14,77	M20 x 50-12,9	315	107 038	315	107 048
	50	126	130,0	73,0	165,0	35	30	152	96	11,6	17	230	22	50	117,07 x 3,53	124,00 x 6,00	20,60	M20 x 50-12,9	315	107 039	315	107 049

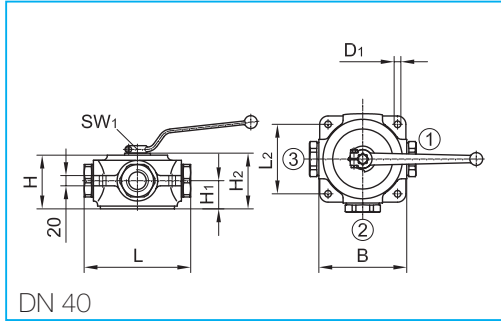
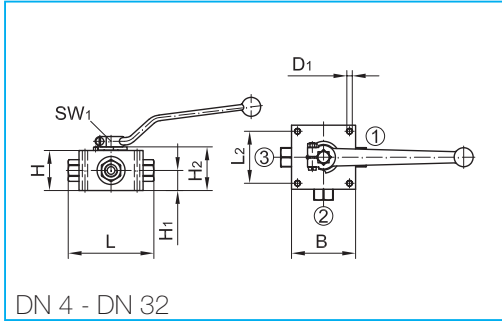
General tolerances DIN ISO 2768 Surfaces DIN EN ISO 4287	DN	D H9	D ₁ max.	D ₂	L ₁ ±0,2	L ₂ ±0,2	T +0,1	T ₁ +0,2	T ₂ +0,1	T ₃ min.	DN	Article-No. Mounting-tool
10	45	39	M12	50	-	51	47	18,4	22	10	107 052	
12	48	42	M12	50	-	55	50	20,9	22	12	107 053	
16	54	47	M12	60	-	59	54	22,9	22	16	107 054	
20	63	55	M16	70	-	73	69	28,9	28	20	107 055	
25	70	62	M16	70	-	79	74	31,9	28	25	107 056	
32	92	80	M20	100	-	100	96	42,5	33	32	107 057	
40	107	95	M20	134	84	116	111	50,0	33	40	107 058	
50	126	115	M20	152	96	130	125	57,0	33	50	107 059	

Drilling pattern



Multi-way ball valves with trunnion ball

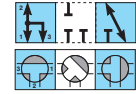
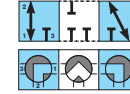
3-way · Steel · Threaded connector



Type of connection	DN	Thread D	RA	L	L1	L2	B	H	H1	H2	D1	SW	SW1	Handle Code	Weight
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	4	M12 x 1,5	6	100	10	55	70	40	20,0	44,5	6,7	19	12	7	1,58
	6	M14 x 1,5	8	100	10	55	70	40	20,0	44,5	6,7	19	12	7	1,57
	8	M16 x 1,5	10	109	11	65	80	50	25,0	54,5	6,7	24	14	8	2,50
	10	M18 x 1,5	12	109	11	65	80	50	25,0	54,5	6,7	24	14	8	2,50
	12	M22 x 1,5	15	130	12	80	100	55	27,5	59,5	8,4	30	14	8	4,16
	16/12	M26 x 1,5	18	136	12	80	100	55	27,5	59,5	8,4	30	14	8	4,26
	20	M30 x 2	22	138	14	85	100	75	40,0	79,5	8,4	41	19	10	5,71
	25	M36 x 2	28	157	14	105	120	81	43,5	85,5	10,5	50	19	10	8,60
	32	M45 x 2	35	210	16	106	Ø180	100	50,0	104,5	10,5	60	19	10	17,10
	40	M52 x 2	42	256	16	150	190	116	61,0	120,5	14,5	75	19	10	20,84
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	4	M16 x 1,5	8	106	12	55	70	40	20,0	44,5	6,7	19	12	7	1,61
	6	M18 x 1,5	10	106	12	55	70	40	20,0	44,5	6,7	19	12	7	1,61
	8	M20 x 1,5	12	111	12	65	80	50	25,0	54,5	6,7	24	14	8	2,52
	10	M22 x 1,5	14	115	14	65	80	50	25,0	54,5	6,7	24	14	8	2,53
	12	M24 x 1,5	16	134	14	80	100	55	27,5	59,5	8,4	30	14	8	4,15
	16/12	M30 x 2	20	144	16	80	100	55	27,5	59,5	8,4	36	14	8	4,32
	20	M36 x 2	25	146	18	85	100	75	40,0	79,5	8,4	41	19	10	5,82
	25	M42 x 2	30	169	20	105	120	81	43,5	85,5	10,5	50	19	10	8,73
	32	M52 x 2	38	222	22	106	Ø180	100	50,0	104,5	10,5	60	19	10	17,40
	BSP-female thread DIN EN ISO 228-1	4	G 1/8	-	102	12	55	70	40	20,0	44,5	6,7	19	12	7
6		G 1/4	-	102	12	55	70	40	20,0	44,5	6,7	19	12	7	1,60
10		G 3/8	-	107	14	65	80	50	25,0	54,5	6,7	24	14	8	2,51
12		G 1/2	-	129	15	80	100	55	27,5	59,5	8,4	30	14	8	4,20
16/12		G 5/8	-	146	18	80	100	55	27,5	59,5	8,4	36	14	8	4,31
20		G 3/4	-	132	18	85	100	75	40,0	79,5	8,4	41	19	10	5,82
25		G1	-	162	20	105	120	81	43,5	85,5	10,5	50	19	10	8,95
32		G1 1/4	-	188	20	106	Ø180	100	50,0	104,5	10,5	60	19	10	16,61
40		G1 1/2	-	224	25	150	190	116	61,0	120,5	14,5	75	19	10	20,30
NPT-female thread ANSI/ASME B1.20.1-1983		4	1/8 - 27 NPT	-	102	6,9	55	70	40	20,0	44,5	6,7	19	12	7
	6	1/4 - 18 NPT	-	102	10,0	55	70	40	20,0	44,5	6,7	19	12	7	1,60
	10	3/8 - 18 NPT	-	107	10,3	65	80	50	25,0	54,5	6,7	24	14	8	2,51
	12	1/2 - 14 NPT	-	129	13,6	80	100	55	27,5	59,5	8,4	30	14	8	4,20
	20	3/4 - 14 NPT	-	132	14,1	85	100	75	40,0	79,5	8,4	41	19	10	5,82
	25	1 - 11 1/2 NPT	-	162	16,8	105	120	81	43,5	85,5	10,5	50	19	10	8,95
	32	1 1/4 - 11 1/2 NPT	-	188	17,3	106	Ø180	100	50,0	104,5	10,5	60	19	10	16,61
	40	1 1/2 - 11 1/2 NPT	-	224	17,3	150	190	116	61,0	120,5	14,5	75	19	10	20,30

Handle included in delivery
 For more porting patterns refer to "standard- and special porting patterns"
 Also available with most other connection types
 Please check pressure rating of the pipe fittings!
 *) up to 100 bar to be operated manually
 **) DN 32 and DN 40: steel, hard chrome plated

For handles refer to "Attachments, accessories".
 Actuators and custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

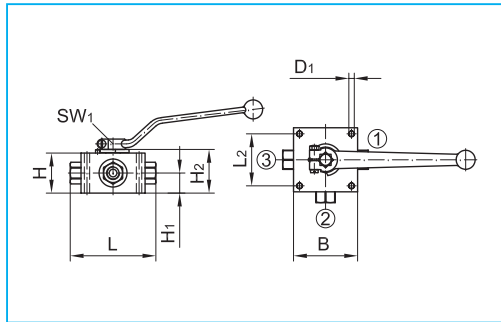


Bore:	L	L	T	T
Cycling:	90°	90°	90°	90°
Body:	Steel	Steel	Steel	Steel
Trunnion ball**:	Brass, hard chrome plated	Brass, hard chrome plated	Brass, hard chrome plated	Brass, hard chrome plated
Ball seats:	POM	PTFE	POM	PTFE
Shaft seals:	NBR	FKM	NBR	FKM

DN	PN	Article-No.	PN	Article-No.	PN	Article-No.	PN	Article-No.
4	500	202 001	100	202 026	500	202 051	100	202 076
6	500	202 002	100	202 027	500	202 052	100	202 077
8	500	202 003	100	202 028	500	202 053	100	202 078
10	500	202 004	100	202 029	500	202 054	100	202 079
12	500	202 005	100	202 030	500	202 055	100	202 080
16/12	500	202 006	100	202 031	500	202 056	100	202 081
20	315	202 901	100	202 902	315	202 903	100	202 904
25	315	202 921	100	202 922	315	202 923	100	202 924
32	315*	202 253	100	202 278	315*	202 303	100	202 328
40	100	202 940	100	202 955	100	202 970	100	202 985
4	500	202 007	100	202 032	500	202 057	100	202 082
6	500	202 008	100	202 033	500	202 058	100	202 083
8	500	202 009	100	202 034	500	202 059	100	202 084
10	500	202 010	100	202 035	500	202 060	100	202 085
12	500	202 011	100	202 036	500	202 061	100	202 086
16/12	500	202 012	100	202 037	500	202 062	100	202 087
20	315	202 905	100	202 906	315	202 907	100	202 908
25	315	202 925	100	202 926	315	202 927	100	202 928
32	315*	202 257	100	202 282	315*	202 307	100	202 332
4	500	202 013	100	202 038	500	202 063	100	202 088
6	500	202 014	100	202 039	500	202 064	100	202 089
10	500	202 015	100	202 040	500	202 065	100	202 090
12	500	202 016	100	202 041	500	202 066	100	202 091
16/12	500	202 017	100	202 042	500	202 067	100	202 092
20	315	202 909	100	202 910	315	202 911	100	202 912
25	315	202 929	100	202 930	315	202 931	100	202 932
32	315*	202 260	100	202 285	315*	202 310	100	202 335
40	100	202 947	100	202 962	100	202 977	100	202 992
4	500	202 018	100	202 043	500	202 068	100	202 093
6	500	202 019	100	202 044	500	202 069	100	202 094
10	500	202 020	100	202 045	500	202 070	100	202 095
12	500	202 021	100	202 046	500	202 071	100	202 096
20	315	202 913	100	202 914	315	202 915	100	202 916
25	315	202 933	100	202 934	315	202 935	100	202 936
32	315*	202 264	100	202 289	315*	202 314	100	202 339
40	100	202 951	100	202 966	100	202 981	100	202 996

Multi-way ball valves with trunnion ball

3-way · Stainless steel · Threaded connector · DN 4 - DN 32



Handle included in delivery

For handles refer to "Attachments, accessories".

For more porting patterns refer to "standard- and special porting patterns".

Stainless Steel (material no.1.4571 - or other stainless steels)

Also available with most other connection types

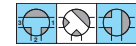
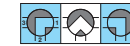
Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

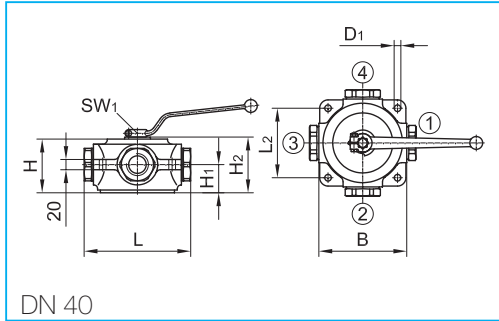
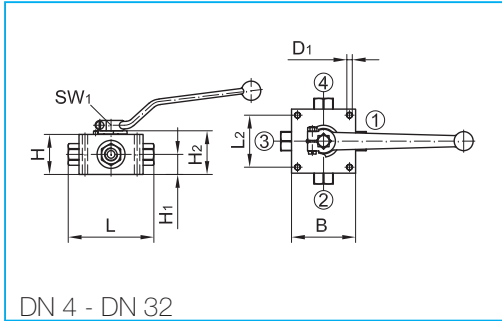


Type of connection	DN	Thread D	RA	L	L1	L2	B	H	H1	H2	D1	SW	SW1	Handle Code	Weight
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	4	M12 x 1,5	6	100	10	55	70	40	20,0	44,5	6,7	19	12	7	1,58
	6	M14 x 1,5	8	100	10	55	70	40	20,0	44,5	6,7	19	12	7	1,57
	8	M16 x 1,5	10	109	11	65	80	50	25,0	54,5	6,7	24	14	8	2,50
	10	M18 x 1,5	12	109	11	65	80	50	25,0	54,5	6,7	24	14	8	2,50
	12	M22 x 1,5	15	130	12	80	100	55	27,5	59,5	8,4	30	14	8	4,16
	16/12	M26 x 1,5	18	136	12	80	100	55	27,5	59,5	8,4	30	14	8	4,26
	20	M30 x 2	22	138	14	85	100	75	40,0	79,5	8,4	41	19	10	5,71
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	25	M36 x 2	28	157	14	105	120	81	43,5	85,5	10,5	50	19	10	8,60
	32	M45 x 2	35	210	16	106	Ø180	100	50,0	104,5	10,5	60	19	10	17,10
	4	M16 x 1,5	8	106	12	55	70	40	20,0	44,5	6,7	19	12	7	1,61
	6	M18 x 1,5	10	106	12	55	70	40	20,0	44,5	6,7	19	12	7	1,61
	8	M20 x 1,5	12	111	12	65	80	50	25,0	54,5	6,7	24	14	8	2,52
	10	M22 x 1,5	14	115	14	65	80	50	25,0	54,5	6,7	24	14	8	2,53
	12	M24 x 1,5	16	134	14	80	100	55	27,5	59,5	8,4	30	14	8	4,15
BSP-female thread DIN EN ISO 228-1	16/12	M30 x 2	20	144	16	80	100	55	27,5	59,5	8,4	36	14	8	4,32
	20	M36 x 2	25	146	18	85	100	75	40,0	79,5	8,4	41	19	10	5,82
	25	M42 x 2	30	169	20	105	120	81	43,5	85,5	10,5	50	19	10	8,73
	32	M52 x 2	38	222	22	106	Ø180	100	50,0	104,5	10,5	60	19	10	17,40
	4	G 1/8	-	102	12	55	70	40	20,0	44,5	6,7	19	12	7	1,63
	6	G 1/4	-	102	12	55	70	40	20,0	44,5	6,7	19	12	7	1,60
	10	G 3/8	-	107	14	65	80	50	25,0	54,5	6,7	24	14	8	2,51
NPT-female thread ANSI/ASME B1.20.1-1983	12	G 1/2	-	129	15	80	100	55	27,5	59,5	8,4	30	14	8	4,20
	16/12	G 5/8	-	146	18	80	100	55	27,5	59,5	8,4	36	14	8	4,31
	20	G 3/4	-	132	18	85	100	75	40,0	79,5	8,4	41	19	10	5,82
	25	G1	-	162	20	105	120	81	43,5	85,5	10,5	50	19	10	8,95
	32	G1 1/4	-	188	20	106	Ø180	100	50,0	104,5	10,5	60	19	10	16,61
	4	1/8 - 27 NPT	-	102	6,9	55	70	40	20,0	44,5	6,7	19	12	7	1,63
	6	1/4 - 18 NPT	-	102	10,0	55	70	40	20,0	44,5	6,7	19	12	7	1,60
10	3/8 - 18 NPT	-	107	10,3	65	80	50	25,0	54,5	6,7	24	14	8	2,51	
12	1/2 - 14 NPT	-	129	13,6	80	100	55	27,5	59,5	8,4	30	14	8	4,20	
20	3/4 - 14 NPT	-	132	14,1	85	100	75	40,0	79,5	8,4	41	19	10	5,82	
25	1 - 11 1/2 NPT	-	162	16,8	105	120	81	43,5	85,5	10,5	50	19	10	8,95	
32	1 1/4 - 11 1/2 NPT	-	188	17,3	106	Ø180	100	50,0	104,5	10,5	60	19	10	16,61	

DN	PN	Article-No.	PN	Article-No.	PN	Article-No.	PN	Article-No.
4	100	202 501	100	202 526	100	202 551	100	202 576
6	100	202 502	100	202 527	100	202 552	100	202 577
8	100	202 503	100	202 528	100	202 553	100	202 578
10	100	202 504	100	202 529	100	202 554	100	202 579
12	100	202 505	100	202 530	100	202 555	100	202 580
16/12	100	202 506	100	202 531	100	202 556	100	202 581
20	100	202 751	100	202 776	100	202 801	100	202 826
25	100	202 752	100	202 777	100	202 802	100	202 827
32	100	202 753	100	202 778	100	202 803	100	202 828
4	100	202 507	100	202 532	100	202 557	100	202 582
6	100	202 508	100	202 533	100	202 558	100	202 583
8	100	202 509	100	202 534	100	202 559	100	202 584
10	100	202 510	100	202 535	100	202 560	100	202 585
12	100	202 511	100	202 536	100	202 561	100	202 586
16/12	100	202 512	100	202 537	100	202 562	100	202 587
20	100	202 755	100	202 780	100	202 805	100	202 830
25	100	202 756	100	202 781	100	202 806	100	202 831
32	100	202 757	100	202 782	100	202 807	100	202 832
4	100	202 513	100	202 538	100	202 563	100	202 588
6	100	202 514	100	202 539	100	202 564	100	202 589
10	100	202 515	100	202 540	100	202 565	100	202 590
12	100	202 516	100	202 541	100	202 566	100	202 591
16/12	100	202 517	100	202 542	100	202 567	100	202 592
20	100	202 758	100	202 783	100	202 808	100	202 833
25	100	202 759	100	202 784	100	202 809	100	202 834
32	100	202 760	100	202 785	100	202 810	100	202 835
4	100	202 518	100	202 543	100	202 568	100	202 593
6	100	202 519	100	202 544	100	202 569	100	202 594
10	100	202 520	100	202 545	100	202 570	100	202 595
12	100	202 521	100	202 546	100	202 571	100	202 596
20	100	202 762	100	202 787	100	202 812	100	202 837
25	100	202 763	100	202 788	100	202 813	100	202 838
32	100	202 764	100	202 789	100	202 814	100	202 839

Multi-way ball valves with trunnion ball

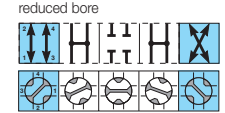
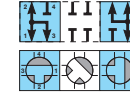
4-way · Steel · Threaded connector



Type of connection	DN	Thread D	RA	L	L1	L2	B	H	H1	H2	D1	SW	SW1	Handle Code	Weight
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	4	M12 x 1,5	6	100	10	55	70	40	20,0	44,5	6,7	19	12	7	1,60
	6	M14 x 1,5	8	100	10	55	70	40	20,0	44,5	6,7	19	12	7	1,60
	8	M16 x 1,5	10	109	11	65	80	50	25,0	54,5	6,7	24	14	8	2,50
	10	M18 x 1,5	12	109	11	65	80	50	25,0	54,5	6,7	24	14	8	2,50
	12	M22 x 1,5	15	130	12	80	100	55	27,5	59,5	8,4	30	14	8	4,16
	16/12	M26 x 1,5	18	136	12	80	100	55	27,5	59,5	8,4	30	14	8	4,26
	20	M30 x 2	22	138	14	85	100	75	40,0	79,5	8,4	41	19	10	5,72
	25	M36 x 2	28	157	14	105	120	81	43,5	85,5	10,5	50	19	10	8,60
	32	M45 x 2	35	210	16	106	Ø180	100	50,0	104,5	10,5	60	19	10	17,10
	40	M52 x 2	42	256	16	150	190	116	61,0	120,5	14,5	75	19	10	20,84
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	4	M16 x 1,5	8	106	12	55	70	40	20,0	44,5	6,7	19	12	7	1,61
	6	M18 x 1,5	10	106	12	55	70	40	20,0	44,5	6,7	19	12	7	1,61
	8	M20 x 1,5	12	111	12	65	80	50	25,0	54,5	6,7	24	14	8	2,52
	10	M22 x 1,5	14	115	14	65	80	50	25,0	54,5	6,7	24	14	8	2,53
	12	M24 x 1,5	16	134	14	80	100	55	27,5	59,5	8,4	30	14	8	4,15
	16/12	M30 x 2	20	144	16	80	100	55	27,5	59,5	8,4	36	14	8	4,32
	20	M36 x 2	25	146	18	85	100	75	40,0	79,5	8,4	41	19	10	5,82
	25	M42 x 2	30	169	20	105	120	81	43,5	85,5	10,5	50	19	10	8,73
	32	M52 x 2	38	222	22	106	Ø180	100	50,0	104,5	10,5	60	19	10	17,40
	BSP-female thread DIN EN ISO 228-1	4	G 1/8	-	102	12	55	70	40	20,0	44,5	6,7	19	12	7
6		G 1/4	-	102	12	55	70	40	20,0	44,5	6,7	19	12	7	1,60
10		G 3/8	-	107	14	65	80	50	25,0	54,5	6,7	24	14	8	2,51
12		G 1/2	-	129	15	80	100	55	27,5	59,5	8,4	30	14	8	4,20
16/12		G 5/8	-	146	18	80	100	55	27,5	59,5	8,4	36	14	8	4,31
20		G 3/4	-	132	18	85	100	75	40,0	79,5	8,4	41	19	10	5,82
25		G1	-	162	20	105	120	81	43,5	85,5	10,5	50	19	10	8,95
32		G1 1/4	-	188	20	106	Ø180	100	50,0	104,5	10,5	60	19	10	16,61
40		G1 1/2	-	224	25	150	190	116	61,0	120,5	14,5	75	19	10	20,30
NPT-female thread ANSI/ASME B1.20.1-1983		4	1/8 - 27 NPT	-	102	6,9	55	70	40	20,0	44,5	6,7	19	12	7
	6	1/4 - 18 NPT	-	102	10,0	55	70	40	20,0	44,5	6,7	19	12	7	1,60
	10	3/8 - 18 NPT	-	107	10,3	65	80	50	25,0	54,5	6,7	24	14	8	2,51
	12	1/2 - 14 NPT	-	129	13,6	80	100	55	27,5	59,5	8,4	30	14	8	4,20
	20	3/4 - 14 NPT	-	132	14,1	85	100	75	40,0	79,5	8,4	41	19	10	5,85
	25	1 - 11 1/2 NPT	-	162	16,8	105	120	81	43,5	85,5	10,5	50	19	10	8,95
	32	1 1/4 - 11 1/2 NPT	-	188	17,3	106	Ø180	100	50,0	104,5	10,5	60	19	10	16,61
	40	1 1/2 - 11 1/2 NPT	-	224	17,3	150	190	116	61,0	120,5	14,5	75	19	10	20,30

Handle included in delivery
 For more porting patterns refer to "standard- and special porting patterns".
 Also available with most other connection types
 Please check pressure ratings of the pipe fittings!
 *) up to 100 bar to be operated manually
 **) DN 32 and DN 40: steel, hard chrome plated

For handles refer to "Attachments, accessories".
 Actuators and custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

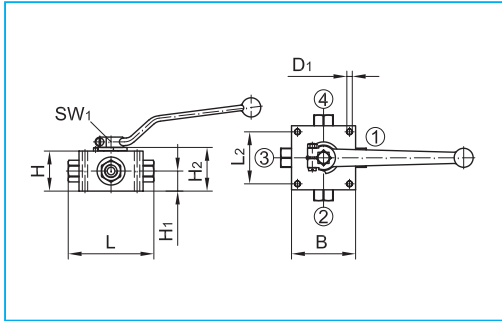


Bore:	T	T	Double-L	Double-L
Cycling:	90°	90°	90°	90°
Body:	Steel	Steel	Steel	Steel
Trunnion ball**:	Brass, hard chrome plated	Brass, hard chrome plated	Brass, hard chrome plated	Brass, hard chrome plated
Ball seats:	POM	PTFE	POM	PTFE
Shaft seals:	NBR	FKM	NBR	FKM

DN	PN	Article-No.	PN	Article-No.	PN	Article-No.	PN	Article-No.
4	500	203 001	100	203 026	500	203 051	100	203 076
6	500	203 002	100	203 027	500	203 052	100	203 077
8	500	203 003	100	203 028	500	203 053	100	203 078
10	500	203 004	100	203 029	500	203 054	100	203 079
12	500	203 005	100	203 030	500	203 055	100	203 080
16/12	500	203 006	100	203 031	500	203 056	100	203 081
20	315	203 911	100	203 912	315	203 913	100	203 914
25	315	203 931	100	203 932	315	203 933	100	203 934
32	315*	203 253	100	203 278	315*	203 303	100	203 328
40	100	204 204	100	204 219	100	204 234	100	204 249
4	500	203 007	100	203 032	500	203 057	100	203 082
6	500	203 008	100	203 033	500	203 058	100	203 083
8	500	203 009	100	203 034	500	203 059	100	203 084
10	500	203 010	100	203 035	500	203 060	100	203 085
12	500	203 011	100	203 036	500	203 061	100	203 086
16/12	500	203 012	100	203 037	500	203 062	100	203 087
20	315	203 915	100	203 916	315	203 917	100	203 918
25	315	203 935	100	203 936	315	203 937	100	203 938
32	315*	203 257	100	203 282	315*	203 307	100	203 332
4	500	203 013	100	203 038	500	203 063	100	203 088
6	500	203 014	100	203 039	500	203 064	100	203 089
10	500	203 015	100	203 040	500	203 065	100	203 090
12	500	203 016	100	203 041	500	203 066	100	203 091
16/12	500	203 017	100	203 042	500	203 067	100	203 092
20	315	203 919	100	203 920	315	203 921	100	203 922
25	315	203 939	100	203 940	315	203 941	100	203 942
32	315*	203 260	100	203 285	315*	203 310	100	203 335
40	100	204 211	100	204 226	100	204 241	100	204 256
4	500	203 018	100	203 043	500	203 068	100	203 093
6	500	203 019	100	203 044	500	203 069	100	203 094
10	500	203 020	100	203 045	500	203 070	100	203 095
12	500	203 021	100	203 046	500	203 071	100	203 096
20	315	203 923	100	203 924	315	203 925	100	203 926
25	315	203 943	100	203 944	315	203 945	100	203 946
32	315*	203 264	100	203 289	315*	203 314	100	203 339
40	100	204 215	100	204 230	100	204 245	100	204 260

Multi-way ball valves with trunnion ball

4-way · Stainless Steel · Threaded connector · DN 4 - DN 32



Handle included in delivery

For handles refer to "Attachments, accessories".

For more porting patterns refer to "standard- and special porting patterns".

Stainless Steel (material no.1.4571 - or other stainless steels)

Also available with most other connection types

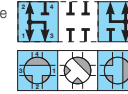
Actuators and custom orders on request

All dimensions subject to change without notice

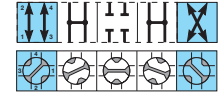
Dimensions in mm

Weight in kg

Pressure in bar



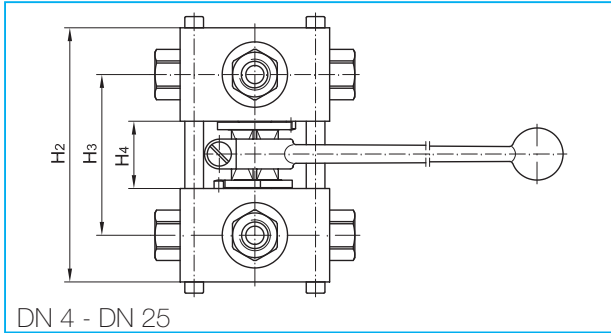
reduced bore



Type of connection	DN	Thread D	RA	L	L1	L2	B	H	H1	H2	D1	SW	SW1	Handle Code	Weight	DN	PN	Article-No.	PN	Article-No.	PN	Article-No.	PN	Article-No.
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	4	M12 x 1,5	6	100	10	55	70	40	20,0	44,5	6,7	19	12	7	1,60	4	100	203 501	100	203 526	100	203 551	100	203 576
	6	M14 x 1,5	8	100	10	55	70	40	20,0	44,5	6,7	19	12	7	1,60	6	100	203 502	100	203 527	100	203 552	100	203 577
	8	M16 x 1,5	10	109	11	65	80	50	25,0	54,5	6,7	24	14	8	2,50	8	100	203 503	100	203 528	100	203 553	100	203 578
	10	M18 x 1,5	12	109	11	65	80	50	25,0	54,5	6,7	24	14	8	2,50	10	100	203 504	100	203 529	100	203 554	100	203 579
	12	M22 x 1,5	15	130	12	80	100	55	27,5	59,5	8,4	30	14	8	4,16	12	100	203 505	100	203 530	100	203 555	100	203 580
	16/12	M26 x 1,5	18	136	12	80	100	55	27,5	59,5	8,4	30	14	8	4,26	16/12	100	203 506	100	203 531	100	203 556	100	203 581
	20	M30 x 2	22	138	14	85	100	75	40,0	79,5	8,4	41	19	10	5,72	20	100	203 751	100	203 776	100	203 801	100	203 826
	25	M36 x 2	28	157	14	105	120	81	43,5	85,5	10,5	50	19	10	8,60	25	100	203 752	100	203 777	100	203 802	100	203 827
	32	M45 x 2	35	210	16	106	Ø180	100	50,0	104,5	10,5	60	19	10	17,10	32	100	203 753	100	203 778	100	203 803	100	203 828
	For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	4	M16 x 1,5	8	106	12	55	70	40	20,0	44,5	6,7	19	12	7	1,61	4	100	203 507	100	203 532	100	203 557	100
6		M18 x 1,5	10	106	12	55	70	40	20,0	44,5	6,7	19	12	7	1,61	6	100	203 508	100	203 533	100	203 558	100	203 583
8		M20 x 1,5	12	111	12	65	80	50	25,0	54,5	6,7	24	14	8	2,52	8	100	203 509	100	203 534	100	203 559	100	203 584
10		M22 x 1,5	14	115	14	65	80	50	25,0	54,5	6,7	24	14	8	2,53	10	100	203 510	100	203 535	100	203 560	100	203 585
12		M24 x 1,5	16	134	14	80	100	55	27,5	59,5	8,4	30	14	8	4,15	12	100	203 511	100	203 536	100	203 561	100	203 586
16/12		M30 x 2	20	144	16	80	100	55	27,5	59,5	8,4	36	14	8	4,32	16/12	100	203 512	100	203 537	100	203 562	100	203 587
20		M36 x 2	25	146	18	85	100	75	40,0	79,5	8,4	41	19	10	5,82	20	100	203 755	100	203 780	100	203 805	100	203 830
25		M42 x 2	30	169	20	105	120	81	43,5	85,5	10,5	50	19	10	8,73	25	100	203 756	100	203 781	100	203 806	100	203 831
32		M52 x 2	38	222	22	106	Ø180	100	50,0	104,5	10,5	60	19	10	17,40	32	100	203 757	100	203 782	100	203 807	100	203 832
BSP-female thread DIN EN ISO 228-1		4	G 1/8	-	102	12	55	70	40	20,0	44,5	6,7	19	12	7	1,63	4	100	203 513	100	203 538	100	203 563	100
	6	G 1/4	-	102	12	55	70	40	20,0	44,5	6,7	19	12	7	1,60	6	100	203 514	100	203 539	100	203 564	100	203 589
	10	G 3/8	-	107	14	65	80	50	25,0	54,5	6,7	24	14	8	2,51	10	100	203 515	100	203 540	100	203 565	100	203 590
	12	G 1/2	-	129	15	80	100	55	27,5	59,5	8,4	30	14	8	4,20	12	100	203 516	100	203 541	100	203 566	100	203 591
	16/12	G 5/8	-	146	18	80	100	55	27,5	59,5	8,4	36	14	8	4,31	16/12	100	203 517	100	203 542	100	203 567	100	203 592
	20	G 3/4	-	132	18	85	100	75	40,0	79,5	8,4	41	19	10	5,82	20	100	203 758	100	203 783	100	203 808	100	203 833
	25	G1	-	162	20	105	120	81	43,5	85,5	10,5	50	19	10	8,95	25	100	203 759	100	203 784	100	203 809	100	203 834
	32	G1 1/4	-	188	20	106	Ø180	100	50,0	104,5	10,5	60	19	10	16,61	32	100	203 760	100	203 785	100	203 810	100	203 835
NPT-female thread ANSI/ASME B1.20.1-1983	4	1/8 - 27 NPT	-	102	6,9	55	70	40	20,0	44,5	6,7	19	12	7	1,63	4	100	203 518	100	203 543	100	203 568	100	203 593
	6	1/4 - 18 NPT	-	102	10,0	55	70	40	20,0	44,5	6,7	19	12	7	1,60	6	100	203 519	100	203 544	100	203 569	100	203 594
	10	3/8 - 18 NPT	-	107	10,3	65	80	50	25,0	54,5	6,7	24	14	8	2,51	10	100	203 520	100	203 545	100	203 570	100	203 595
	12	1/2 - 14 NPT	-	129	13,6	80	100	55	27,5	59,5	8,4	30	14	8	4,20	12	100	203 521	100	203 546	100	203 571	100	203 596
	20	3/4 - 14 NPT	-	132	14,1	85	100	75	40,0	79,5	8,4	41	19	10	5,85	20	100	203 762	100	203 787	100	203 812	100	203 837
	25	1 - 11 1/2 NPT	-	162	16,8	105	120	81	43,5	85,5	10,5	50	19	10	8,95	25	100	203 763	100	203 788	100	203 813	100	203 838
	32	1 1/4 - 11 1/2 NPT	-	188	17,3	106	Ø180	100	50,0	104,5	10,5	60	19	10	16,61	32	100	203 764	100	203 789	100	203 814	100	203 839

Multi-way ball valves with trunnion ball

Steel or Stainless steel · as combination

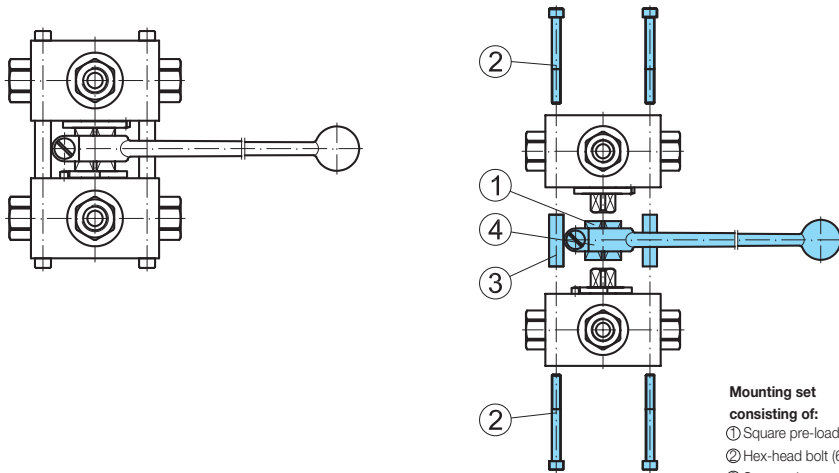


Handle included in delivery
For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
Custom orders on request
All dimensions subject to change without notice
Dimensions in mm

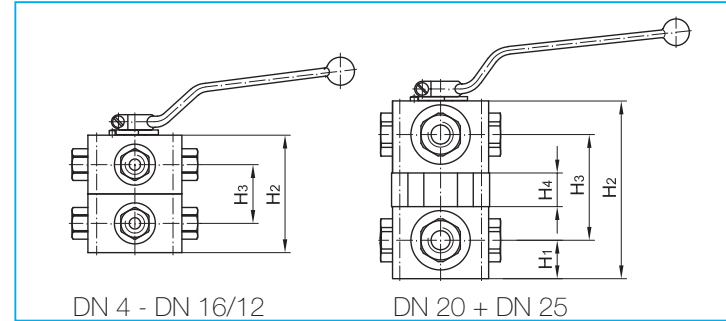
Also available completely assembled

Type of connection	DN	H2	H3	H4	Handle Code	Mounting-sets	
						Article-No. (Steel)	Article-No. (Stainless steel)
ALL	4	114	74	34	44	203 890	203 950
	6	114	74	34	44	203 890	203 950
	8	136	86	36	45	203 891	203 951
	10	136	86	36	45	203 891	203 951
	12	146	91	36	45	203 892	203 952
	16/12	146	91	36	45	203 892	203 952
	20	195	115	45	47	203 893	203 953
	25	207	120	45	47	203 894	203 954

Combination consisting of:
two multi-way ball valves (without handle) and one mounting set



Mounting set consisting of:
① Square pre-load coupling
② Hex-head bolt (6 pc.)
③ Spacer sleeves (3 pc.)
④ Handle

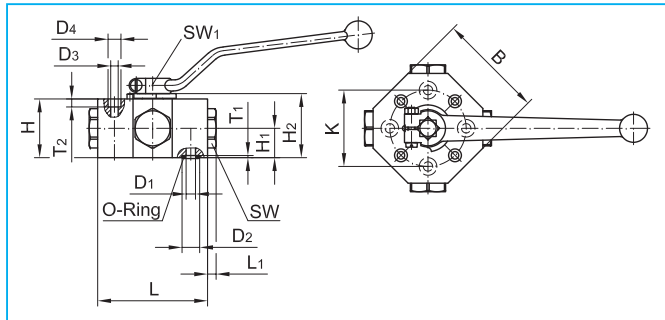


Handle included in delivery
For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
Also available with most other connection types
Custom orders on request
All dimensions subject to change without notice
Dimensions in mm

Type of connection	DN	Thread D	H1	H2	H3	H4	Handle Code	
								For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1
		6	M14 x 1,5	-	80	40	-	7
		8	M16 x 1,5	-	100	50	-	8
		10	M18 x 1,5	-	100	50	-	8
		12	M22 x 1,5	-	110	55	-	8
		16/12	M26 x 1,5	-	110	55	-	8
		20	M30 x 2	40,0	185	110	35	10
		25	M36 x 2	43,5	197	116	35	10
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1		4	M16 x 1,5	-	80	40	-	7
		6	M18 x 1,5	-	80	40	-	7
		8	M20 x 1,5	-	100	50	-	8
		10	M22 x 1,5	-	100	50	-	8
		12	M24 x 1,5	-	110	55	-	8
		16/12	M30 x 2	-	110	55	-	8
		20	M36 x 2	40,0	185	110	35	10
		25	M42 x 2	43,5	197	116	35	10
BSP-female thread DIN EN ISO 228-1		4	G 1/8	-	80	40	-	7
		6	G 1/4	-	80	40	-	7
		10	G 3/8	-	100	50	-	8
		12	G 1/2	-	110	55	-	8
		16/12	G 5/8	-	110	55	-	8
		20	G 3/4	40,0	185	110	35	10
		25	G1	43,5	197	116	35	10
NPT-female thread ANSI/ASME B1.20.1-1983		4	1/8 - 27 NPT	-	80	40	-	7
		6	1/4 - 18 NPT	-	80	40	-	7
		10	3/8 - 18 NPT	-	100	50	-	8
		12	1/2 - 14 NPT	-	110	55	-	8
		20	3/4 - 14 NPT	40,0	185	110	35	10
		25	1 - 11 1/2 NPT	43,5	197	116	35	10

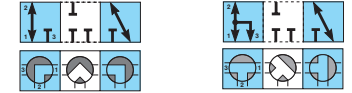
Multi-way ball valves with trunnion ball

3-way · Steel · manifold mounting · DN 6 - DN 25



The body of the 3-way-version is identical with that of the 4-way-version.
The unused port is then to be sealed against the hydraulic manifold with an o-ring.

Handle included in delivery
For handles refer to "Attachments, accessories".
For more porting patterns refer to "standard- and special porting patterns".
Actuators and custom orders on request
All dimensions subject to change without notice
Dimensions in mm
Weight in kg
Pressure in bar



Bore:	L	T
Cycling:	90°	90°
Body:	Steel	Steel
Trunnion ball:	Brass, hard chrome plated	Brass, hard chrome plated
Body seals:	NBR	NBR
Ball seats:	POM	POM
Shaft seals:	NBR	NBR

Type of connection	DN	L	L ₁	B	H	H ₁	H ₂	K	D ₁	D ₂	D ₃	D ₄	T ₁	T ₂
Body-Flange with o-ring-seal	6	82,0	6,5	80	40,5	20,5	45,0	55	6,0	12,5	6,4	11	1,8	6,8
	10	93,5	7,3	90	50,0	25,0	54,5	65	8,0	15,0	6,4	11	1,8	6,8
	12	113,4	10,0	Ø120	55,0	27,5	59,5	80	12,5	18,8	8,4	15	1,8	9,0
	20	170,0	10,0	Ø180	75,0	40,0	79,5	115	19,0	30,0	17,0	26	3,0	22,0
	25	188,0	11,0	Ø200	81,0	43,5	85,5	135	23,5	35,0	21,0	33	3,0	21,5

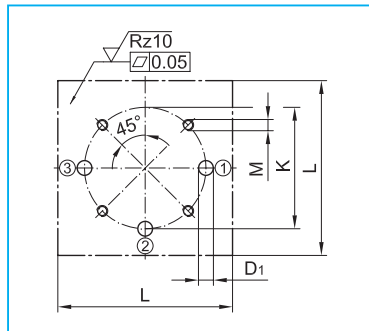
DN	SW	SW ₁	Handle Code	Weight	For Cylinder-head screws DIN EN ISO 4762 (DIN 912)
6	24	12	7	1,73	M 6 - 10,9
10	30	14	8	2,70	M 6 - 12,9
12	36	14	8	4,58	M 8 - 12,9
20	50	19	10	12,96	M16 - 8,8
25	60	19	10	16,60	M20 - 8,8

PN	Article-No.	PN	Article-No.
400	206 501	400	206 521
400	206 502	400	206 522
400	206 503	400	206 523
315	206 504	315	206 524
315	206 505	315	206 525

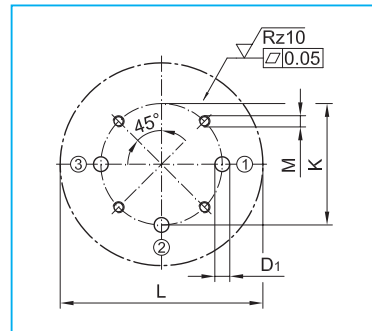
DN	D ₁	K	L	M	O-Ring
6	6,0	55	82	M 6	8,0 x 2,5
10	8,0	65	94	M 6	10,5 x 2,5
12	12,5	80	114	M 8	14,0 x 2,5
20	19,0	115	170	M16	23,5 x 3,5
25	23,5	135	188	M20	28,1 x 3,5

General tolerances
DIN ISO 2768
Surfaces
DIN EN ISO 4287

Drilling pattern DN 6 + DN 10

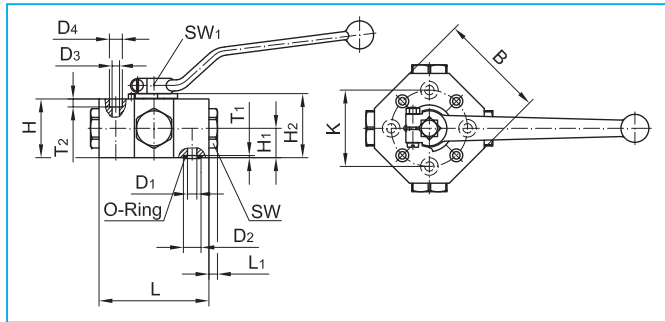


DN 12 - DN 25



Multi-way ball valves with trunnion ball

4-way · Steel · manifold mounting · DN 6 - DN 25



Handle included in delivery

For handles refer to "Attachments, accessories".

For more porting patterns refer to "standard- and special porting patterns".

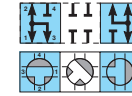
Actuators and custom orders on request

All dimensions subject to change without notice

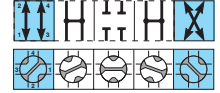
Dimensions in mm

Weight in kg

Pressure in bar



reduced bore



Bore:	T	Double-L
Cycling:	90°	90°
Body:	Steel	Steel
Trunnion ball:	Brass, hard chrome plated	Brass, hard chrome plated
Body seals:	NBR	NBR
Ball seats:	POM	POM
Shaft seals:	NBR	NBR

Type of connection	DN	L	L ₁	B	H	H ₁	H ₂	K	D ₁	D ₂	D ₃	D ₄	T ₁	T ₂
Body-Flange with o-ring-seal	6	82,0	6,5	80	40,5	20,5	45,0	55	6,0	12,5	6,4	11	1,8	6,8
	10	93,5	7,3	90	50,0	25,0	54,5	65	8,0	15,0	6,4	11	1,8	6,8
	12	113,4	10,0	Ø120	55,0	27,5	59,5	80	12,5	18,8	8,4	15	1,8	9,0
	20	170,0	10,0	Ø180	75,0	40,0	79,5	115	19,0	30,0	17,0	26	3,0	22,0
	25	188,0	11,0	Ø200	81,0	43,5	85,5	135	23,5	35,0	21,0	33	3,0	21,5

DN	SW	SW ₁	Handle Code	Weight	For Cylinder-head screws DIN EN ISO 4762 (DIN 912)
6	24	12	7	1,73	M 6 - 10.9
10	30	14	8	2,70	M 6 - 12.9
12	36	14	8	4,58	M 8 - 12.9
20	50	19	10	12,96	M16 - 8.8
25	60	19	10	16,60	M20 - 8.8

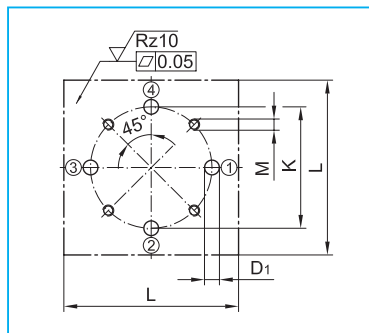
PN	Article-No.	PN	Article-No.
400	206 521	400	206 541
400	206 522	400	206 542
400	206 523	400	206 543
315	206 524	315	206 544
315	206 525	315	206 545

DN	D ₁	K	L	M	O-Ring
6	6,0	55	82	M 6	8,0 x 2,5
10	8,0	65	94	M 6	10,5 x 2,5
12	12,5	80	114	M 8	14,0 x 2,5
20	19,0	115	170	M16	23,5 x 3,5
25	23,5	135	188	M20	28,1 x 3,5

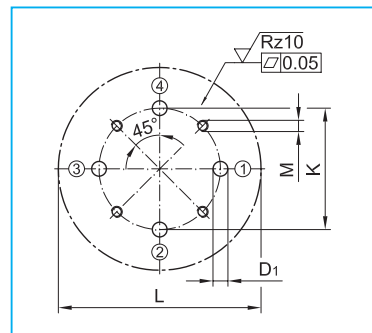
General tolerances
DIN ISO 2768
Surfaces
DIN EN ISO 4287

Drilling pattern

DN 6 + DN 10



DN 12 - DN 25





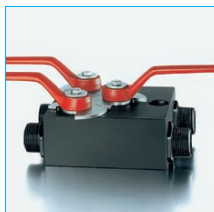
Shut-off blocks with integrated bypass and safety-lock



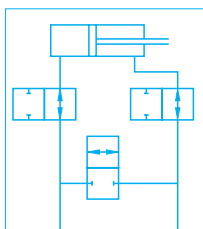
Sandwich plates



Pressure accumulator safety blocks

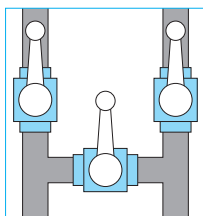


Shut-off blocks with integrated bypass and safety-lock



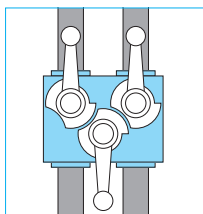
Application/function:

For liquid and oily media as per the compatibility table in the technical data appendix; for insertion upline of actuator cylinders with the capability to both block the cylinder feed lines and to short-circuit them.



The previous situation:

Installation of separate ball valves in the piping system. Here a total of twelve pipe joints must be provided, using two tees. This is labor-intensive and thus expensive. In addition, the hazard of leaks rises with the number of joints.



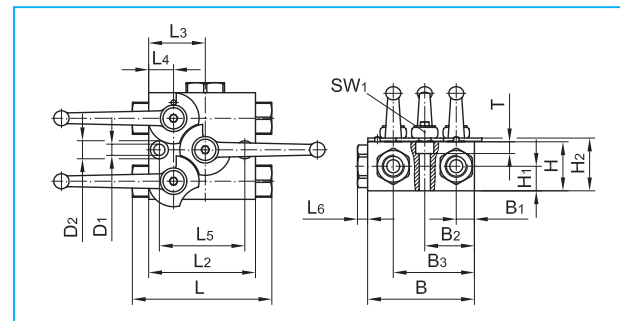
Our solution for the problem:

Combining the three shut-off functions within a single block by incorporating three ball valve assemblies. Only four pipe connections need to be made. A certain sequence in operation is achieved by cam interlocks on the ball valves:

1. block the rod end
2. open the bypass
3. block the piston end

Advantages:

- clear design and user-friendly arrangement
- quick assembly with a reduced number of pipe connections
- reduced hazard of leaks
- mutual interlocks for the valves give a specific operating sequence and prevent any pressure intensification in the rod end of the cylinder
- switches can be attached

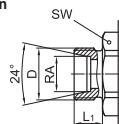


Handle included in delivery
 For handles refer to "Attachments, accessories".
 Please check pressure ratings of pipe fittings!
 Also available with most other connection types
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

Body:	Steel
Ball:	Steel, hard chrome plated
Stem:	Steel
Ball seats:	POM
Stem seals:	NBR

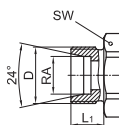
Type of connection

For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1



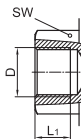
Type of connection	DN	Thread	RA	L	L1	L2	L3	L4	L5	L6	B	B1	B2	B3	H	H1	H2	D1	D2	T	SW	SW1	Handle Code	Weight	PN	Article-No.
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	10	M18 x 1,5	12	120	11	90	51,0	22,8	60	6,5	90	20,7	45,7	70,7	40	19,5	43,5	8,4	15	9	24	8	2	1,9	500	250 001
	12	M22 x 1,5	15	132	12	100	53,0	23,5	80	9,5	100	17,0	46,5	76,0	46	23,0	49,5	10,5	17	11	30	10	3	3,2	500	250 002
	20	M30 x 2	22	149	14	110	66,5	29,0	90	12,0	125	23,0	60,0	97,0	62	31,0	68,5	10,5	17	11	41	14	8	5,5	315	250 004
	25	M36 x 2	28	173	14	135	76,6	32,6	115	6,5	147	27,8	71,8	115,8	68	34,0	74,5	10,5	17	11	50	14	8	8,3	315	250 005

For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1



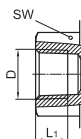
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	10	M22 x 1,5	14	126	14	90	51,0	22,8	60	6,5	90	20,7	45,7	70,7	40	19,5	43,5	8,4	15	9	24	-	2	1,9	500	250 006
	12	M24 x 1,5	16	136	14	100	53,0	23,5	80	9,5	100	17,0	46,5	76,0	46	23,0	49,5	10,5	17	11	30	-	3	3,2	500	250 007
	20	M36 x 2	25	157	18	110	66,5	29,0	90	12,0	125	23,0	60,0	97,0	62	31,0	68,5	10,5	17	11	41	-	8	5,5	315	250 009
	25	M42 x 2	30	185	20	135	76,6	32,6	115	6,5	147	27,8	71,8	115,8	68	34,0	74,5	10,5	17	11	50	-	8	8,3	315	250 010

BSP-female thread DIN EN ISO 228-1

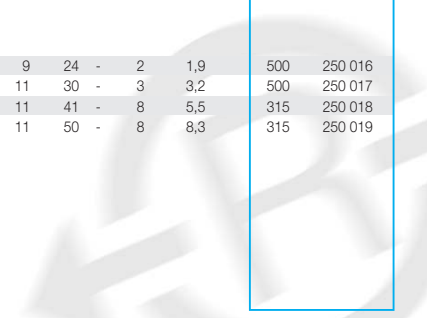


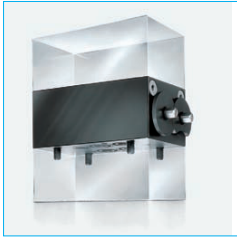
BSP-female thread DIN EN ISO 228-1	10	G 3/8	-	118	14	90	51,0	22,8	60	6,5	90	20,7	45,7	70,7	40	19,5	43,5	8,4	15	9	24	-	2	1,9	500	250 011
	12	G 1/2	-	131	15	100	53,0	23,5	80	9,5	100	17,0	46,5	76,0	46	23,0	49,5	10,5	17	11	30	-	3	3,2	500	250 012
	20	G 3/4	-	143	18	110	66,5	29,0	90	12,0	125	23,0	60,0	97,0	62	31,0	68,5	10,5	17	11	41	-	8	5,5	315	250 014
	25	G 1	-	178	18	135	76,6	32,6	115	6,5	147	27,8	71,8	115,8	68	34,0	74,5	10,5	17	11	50	-	8	8,3	315	250 015

NPT-female thread ANSI/ASME B1.20.1-1983

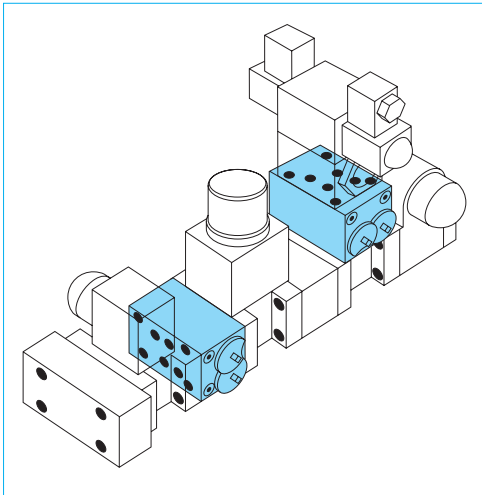


NPT-female thread ANSI/ASME B1.20.1-1983	10	3/8-18 NPT	-	118	10,3	90	51,0	22,8	60	6,5	90	20,7	45,7	70,7	40	19,5	43,5	8,4	15	9	24	-	2	1,9	500	250 016
	12	1/2-14 NPT	-	131	13,6	100	53,0	23,5	80	9,5	100	17,0	46,5	76,0	46	23,0	49,5	10,5	17	11	30	-	3	3,2	500	250 017
	20	3/4-14 NPT	-	143	14,1	110	66,5	29,0	90	12,0	125	23,0	60,0	97,0	62	31,0	68,5	10,5	17	11	41	-	8	5,5	315	250 018
	25	1-11 1/2 NPT	-	178	16,8	135	76,6	32,6	115	6,5	147	27,8	71,8	115,8	68	34,0	74,5	10,5	17	11	50	-	8	8,3	315	250 019





Shut-off plates and sandwich elements for interconnected systems



The previous situation:

The large number of control elements means large systems susceptible to malfunctions. If, for example, a solenoid valve at the central hydraulic system for an aluminium rolling mill failed, the controlled component would have to be operated manually or production would have to be suspended to change the valve.

This replacement makes it necessary to depressurize the system, to prop up external loads which cylinders are supporting and to drain the fluid from the riser lines to the cylinder. Once the solenoid valve has been changed, the lines will have to be refilled and bled.

Our solution for the problem:

With the use of our sandwich-plate, which is bolted separately to the control block, all the channels through the plate can be blocked and the directional-control valve can be replaced without having to depressurize or drain lines and without affecting the other control units on the same block. All channels are open during normal operation. The operating handle can be removed to prevent unauthorized actuation.

Advantages:

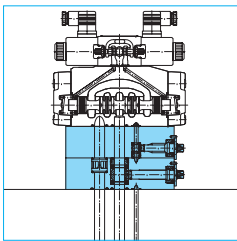
- full bore design causes no pressure drop
- significant reduction in hydraulic system downtime
- no need to drain fluid, bleed air or refill the system
- simplified start-up and maintenance due to the ease of changing flushing plates and directional valves
- pressure can be maintained in cylinders so that the supported loads do not need to be shored up
- standard mounting and porting patterns allow retrofit without rework
- proprietary design increases safety by utilizing separate mechanically isolated bolts for mounting the sandwich-plate and directional valve; removing the directional valve cannot accidentally loosen the sandwich-plate

Applications:

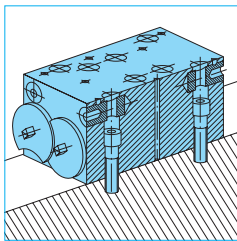
For liquid media as per the compatibility table in the technical data appendix

On request:

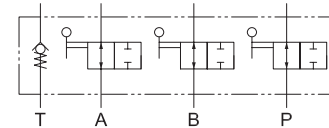
Limit switch, proximity switch, locking devices; also available in other materials and combinations



Operation setting:
Sandwich plate with the solenoid valve mounted on top

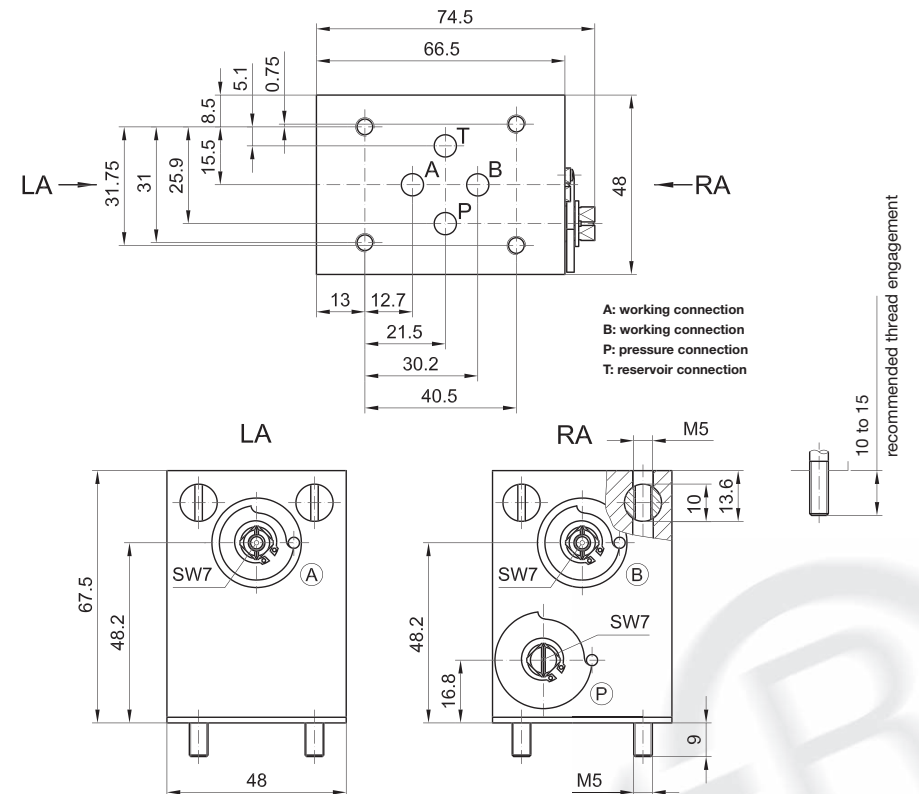
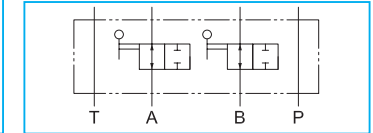


Repair setting:
Passages inside the sandwich plate shut-off; plate remains bolted to the hydraulic control block. Solenoid valve removed.



Article-No. 208 030

Weight: 1,55 kg
Opening pressure of check valve: approx. 0,3 bar
Drilling pattern to DIN 24340-A6 and ISO 4401-03-02-0-94
Custom orders on request
All dimensions subject to change without notice
Also available with blocking in A and B only
Dimension sheet on request



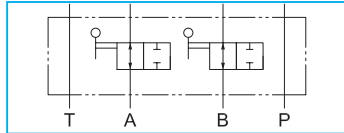
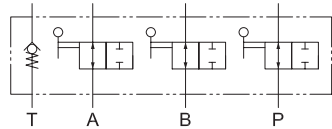
Ball valve-combinations

Sandwich plate · NG 10 · PN 315

Article-No. 208 032

Weight: 4,45 kg
 Opening pressure of check valve: approx. 0,3 bar
 Drilling pattern to DIN 24340-A10 and
 ISO 4401-05-04-0-94

Custom orders on request
 All dimensions subject to change without notice
 Also available with blocking in A and B only
 Dimension sheet on request

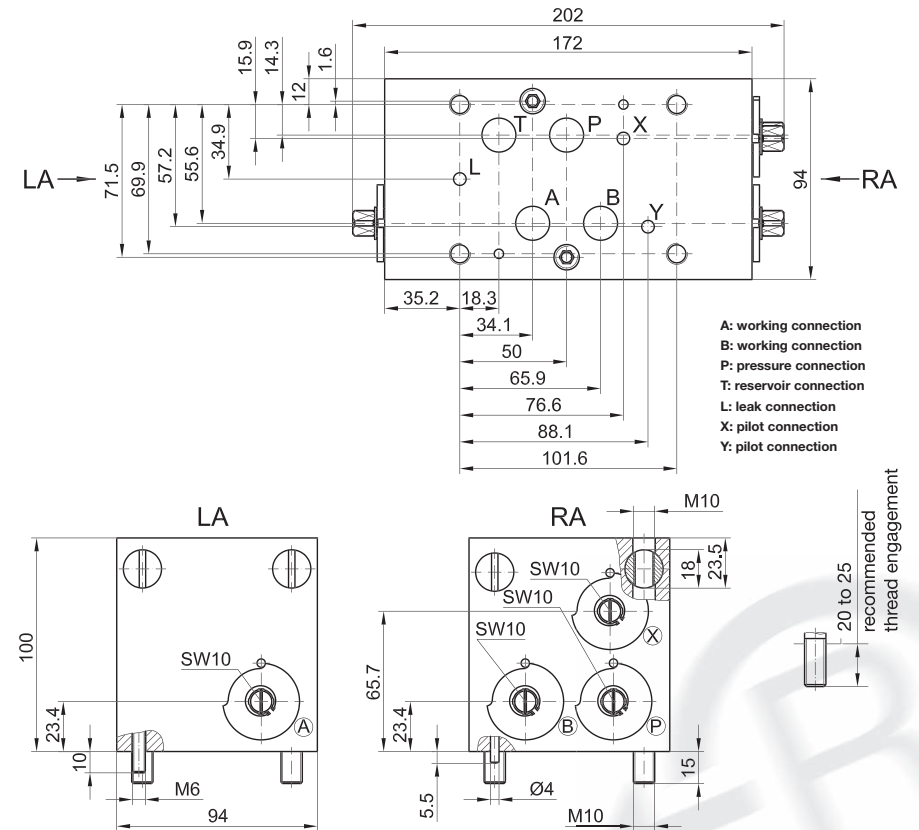
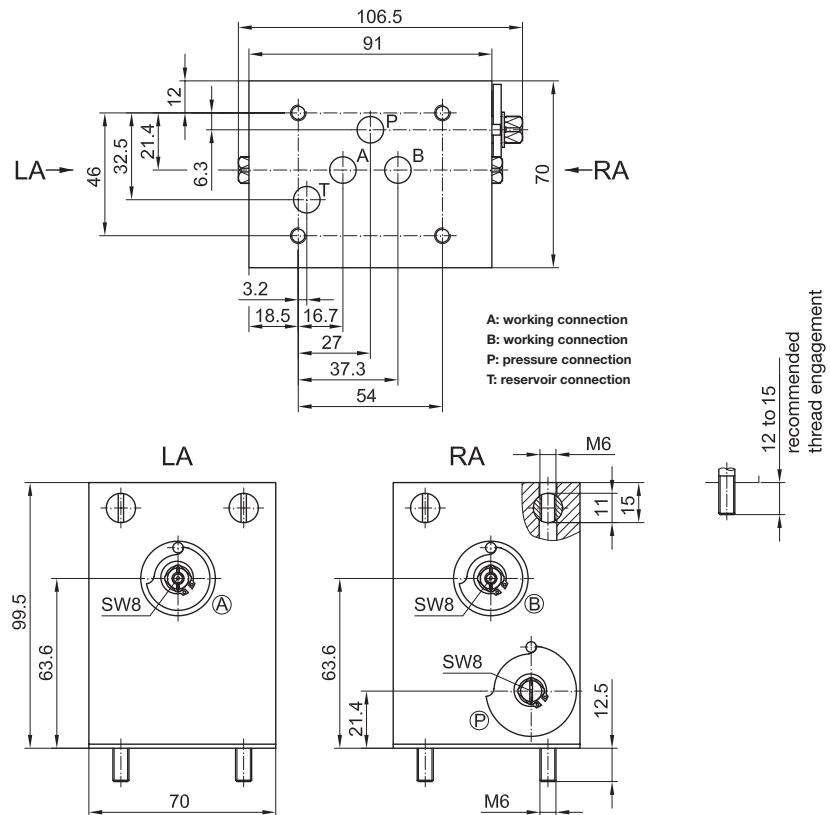
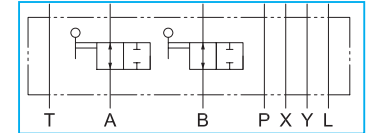
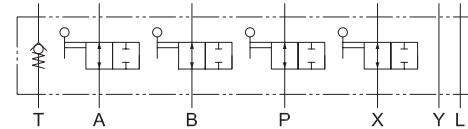


Sandwich plate · NG 16 · PN 315

Article-No. 208 034

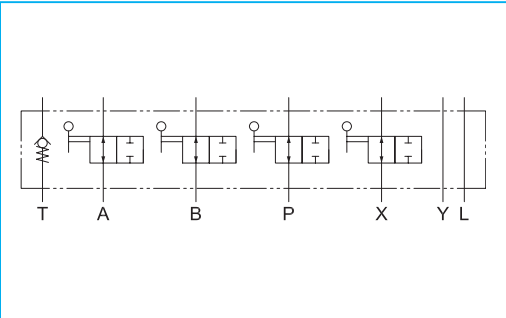
Weight: 11,7 kg
 Opening pressure of check valve: approx. 0,3 bar
 Drilling pattern to DIN 24340-A16 and
 ISO 4401-07-06-0-94

Custom orders on request
 All dimensions subject to change without notice
 Also available with blocking in A and B only
 Dimension sheet on request



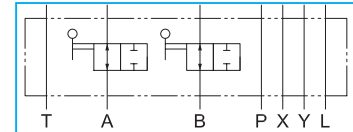
Ball valve-combinations

Sandwich plate · NG 25 · PN 315

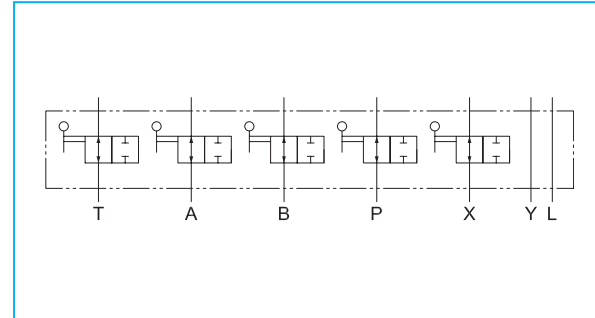


Article-No. 208 036

Weight: 25,4 kg
 Opening pressure of check valve: approx. 0,3 bar
 Drilling pattern to DIN 24340-A25 and ISO 4401-08-07-0-94
 Custom orders on request
 All dimensions subject to change without notice
 Also available with blocking in A and B only
 Dimension sheet on request

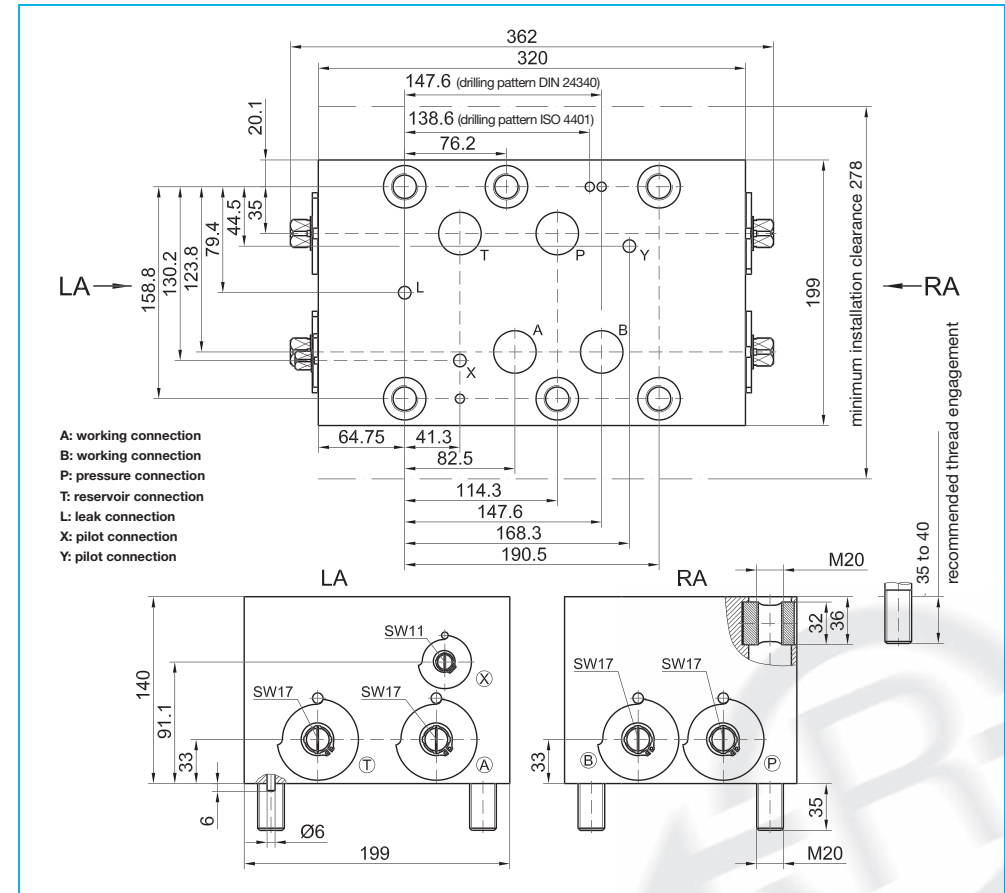
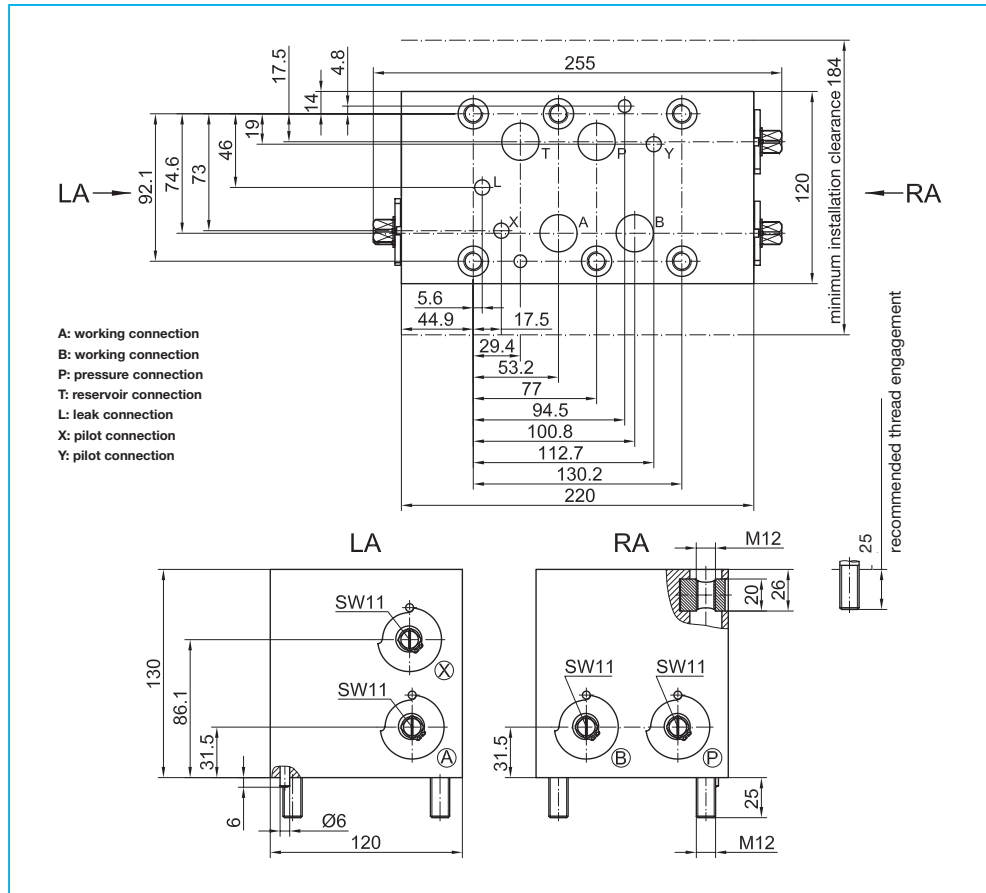
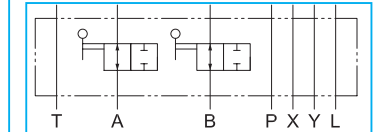


Sandwich plate · NG 32 · PN 315



Article-No. 208 038

Weight: approx. 60 kg
 Drilling pattern to DIN 24340-A32 and ISO 4401-10-08-0-94
 Custom orders on request
 All dimensions subject to change without notice
 also available with blocking in A and B only
 Dimension sheet on request



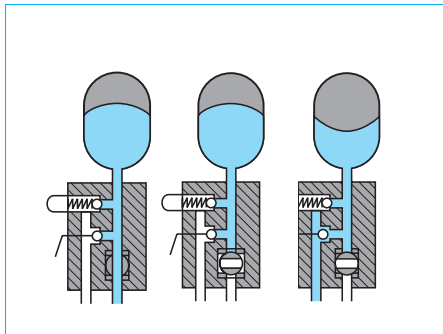
Ball valve-combinations

Accumulator safety blocks · with integrated 2-way ball valve type RSA Technical information



Locking device available

- Easy order guide:** RSA 10 F F S010 1 1 N 300 E Y 1
- Nominal size (NG) ball valve**
- 10 = NG 10
 - 20 = NG 20
 - 32 = NG 32
- Connection thread pump (P)**
- A = M22x1.5 light series (ISO 8434-1)
 - B = M36x2 light series (ISO 8434-1)
 - C = M52x2 light series (ISO 8434-1)
 - D = M24x1.5 heavy series (ISO 8434-1)
 - E = M42x2 heavy series (ISO 8434-1)
 - F = G 1/2 (DIN EN ISO 228-1)
 - G = G1 (DIN EN ISO 228-1)
 - H = G1 1/2 (DIN EN ISO 228-1)
 - J = 1/2-14NPT (ANSI/ASME B1.20.1-1983)
 - K = 1-11 1/2NPT (ANSI/ASME B1.20.1-1983)
 - L = 1 1/2-11 1/2NPT (ANSI/ASME B1.20.1-1983)
 - M = other threads
- Connection thread tank (T)**
- A = M22x1.5 light series (ISO 8434-1)
 - B = M36x2 light series (ISO 8434-1)
 - C = M52x2 light series (ISO 8434-1)
 - D = M24x1.5 heavy series (ISO 8434-1)
 - E = M42x2 heavy series (ISO 8434-1)
 - F = G 1/2 (DIN EN ISO 228-1)
 - G = G1 (DIN EN ISO 228-1)
 - H = G1 1/2 (DIN EN ISO 228-1)
 - J = 1/2-14NPT (ANSI/ASME B1.20.1-1983)
 - K = 1-11 1/2NPT (ANSI/ASME B1.20.1-1983)
 - L = 1 1/2-11 1/2NPT (ANSI/ASME B1.20.1-1983)
 - M = other threads
- Adapter fitting for accumulator (S)**
- e.g. S010 = G 3/4A (DIN EN ISO 228-1) refer to table
- Body material**
- 1 = Steel
 - 4 = other material
- Sealing material (elastomer)**
- 1 = NBR
 - 2 = FKM
 - 3 = EPDM
 - 5 = other material
- Pressure relief valve (DBV)**
- N = without approval
 - T = with TÜV-approval
 - X = Delivered without pressure limiter valve
- opening pressure**
- 300 = e.g. 300 bar
 - 000 = Delivered without pressure limiter valve
- Relief**
- M = manual
 - E = manual and electromagnetic
 - V = prepared for electromagnetical relief
- Solenoid valve design**
- X = Delivered without solenoid valve
 - Y = open when de-energized
 - Z = closed when de-energized
- Solenoid valve voltage**
- 0 = Delivered without solenoid valve
 - 1 = 24 V DC
 - 2 = 230 V DC
 - 3 = other



Securing, isolating and depressurising hydraulic pressure accumulators:

Simple operation stands for absolute operational safety. Depending on the position of the handle, the passage from the system to the accumulator will be opened or closed. The accumulator block can be kept pressurised with the valve in the closed status (battery configuration). The accumulator can be relieved manually with the integrated valve. - Refer to "3-way accumulator safety blocks" if automatic relief is desired.

Flexibility thanks to a modular design:

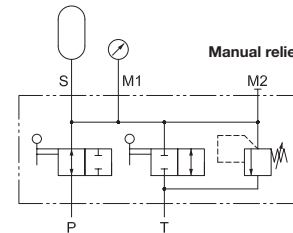
The modular design concept makes the safety block particularly economical and flexible to meet customer requirements. The body is assembled at the factory with adapter fittings in accordance with your order.

Applications/functions:

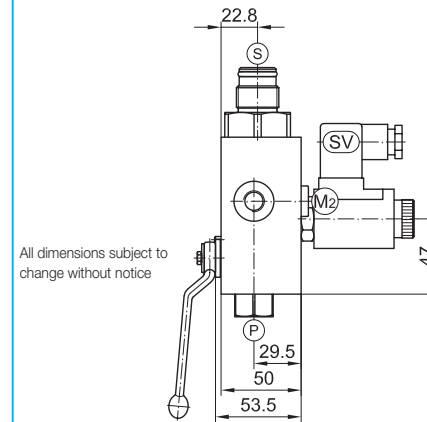
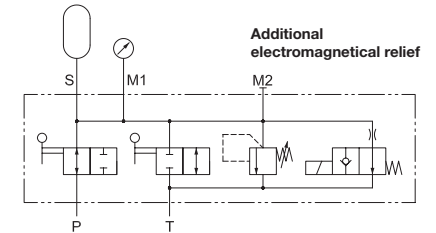
For liquid media as per the compatibility table in the technical data appendix

The accumulator safety blocks can be supplied with solenoid-operated relief valves as desired. Every block is equipped with the connections required for retrofitting.

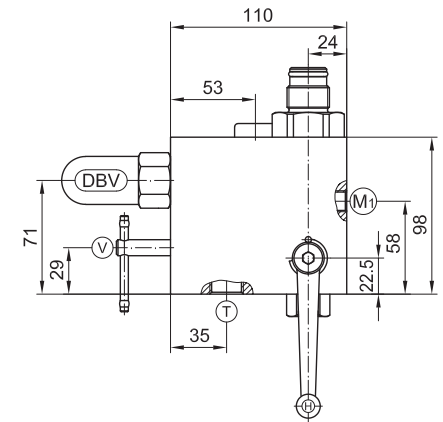
Accumulator safety blocks · with integrated 2-way ball valve type RSA



NG 10



All dimensions subject to change without notice



- P = Pump connector**
G 1/2 (DIN EN ISO 228-1)
M-version 400 bar
E-version 350 bar
- T = Tank connector**
G 1/2 (DIN EN ISO 228-1)
- S = Accumulator connector**
- M1 = Test gauge connection**
G 1/4 (DIN EN ISO 228-1)
- M2 = Pressure gauge connector (closed)**
G 1/4 (DIN EN ISO 228-1)
- DBV = Pressure relief valve**
cavity-thread M28x1.5
assembly torque 50⁺⁵ Nm
- SV = 2-way-solenoid valve**
cavity-thread M20x1.5
assembly torque 25⁺⁵ Nm
(manual relief closed)
- V = Pressure relief**
- H = Handle Code 2 (8kt8)**
refer to chapter "attachments, accessories"

Adapter fittings for accumulator connector S

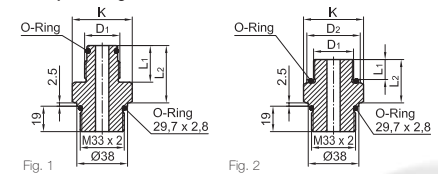


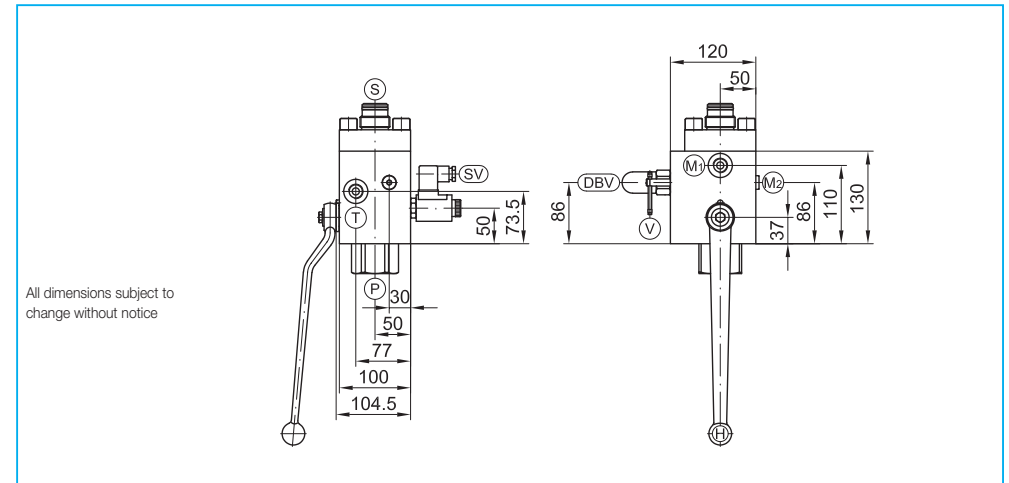
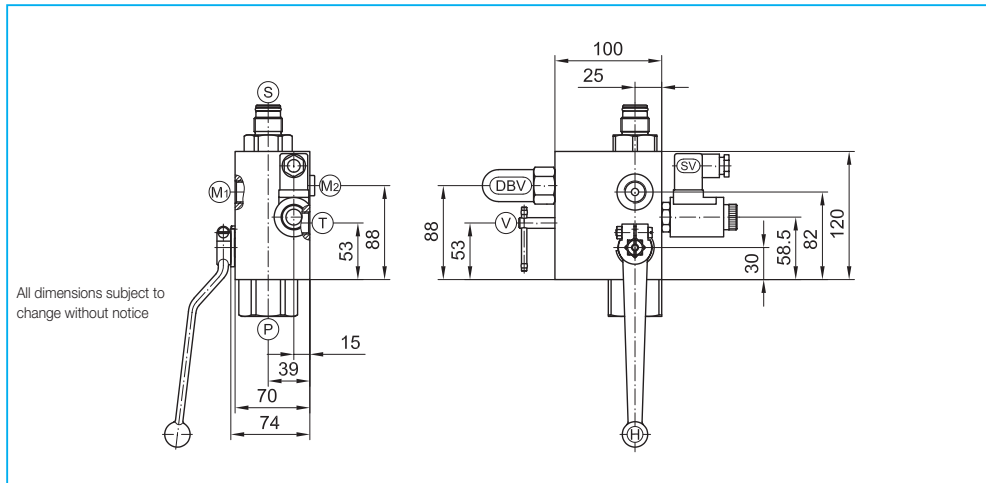
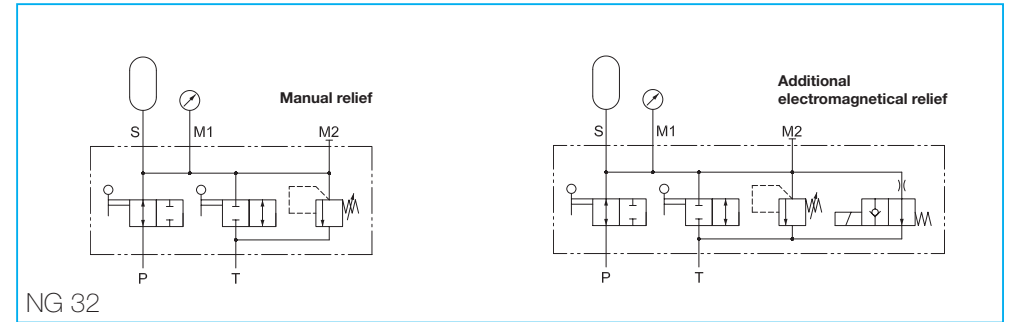
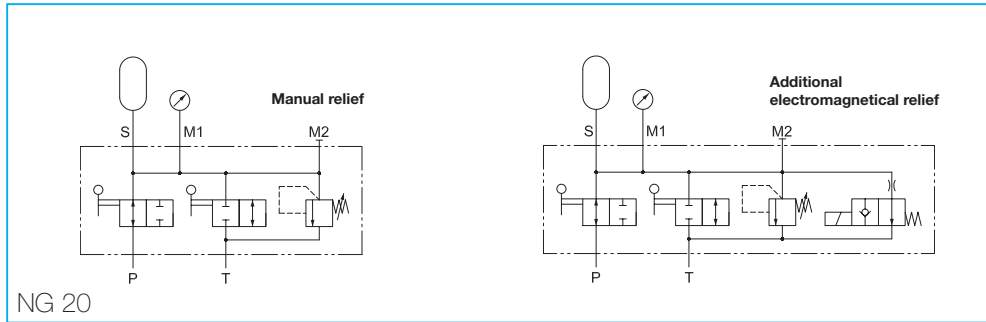
Fig.	D1 Connection-thread	Adapter-fitting	K (SW)	L1	L2	D2	O-ring
1	G 3/4 A	S010	41	28	43,5	-	17 x 3
	G 1 A	S011	46	34	50,5	-	22 x 3
	G 1 1/4 A	S012	46	37	53,5	-	30 x 3
2	G 2 A	S013	65	44	64,5	-	48 x 3
	M 30 x 1,5	S020	41	15	32,5	40	32 x 2
	M 40 x 1,5	S021	55	20	40,5	54	43 x 3
	M 50 x 1,5	S022	65	20	40,5	64	53 x 3

Also available with most other connection types

Ball valve-combinations

Accumulator safety blocks · with integrated 2-way ball valve type RSA

Accumulator safety blocks · with integrated 2-way ball valve type RSA



All dimensions subject to change without notice

All dimensions subject to change without notice

- P = Pump connector**
G¹/₂ (DIN EN ISO 228-1)
M-version 400 bar
E-version 350 bar
- T = Tank connector**
G¹/₂ (DIN EN ISO 228-1)
- S = Accumulator connector**
G¹/₂ (DIN EN ISO 228-1)
- M1 = Test gauge connection**
G¹/₂ (DIN EN ISO 228-1)
- M2 = Pressure gauge connector (closed)**
G¹/₄ (DIN EN ISO 228-1)
- BV = Pressure relief valve**
cavity-thread M35x1.5
assembly torque 80⁺⁵ Nm
- SV = 2-way Solenoid**
cavity-thread M20x1.5
assembly torque 25⁺⁵ Nm
(manual relief closed)
- VV = Pressure relief**
- H = Handle Code 2 (8kt14)**
refer to chapter "attachments, accessories"

Adapter fittings for accumulator connector S

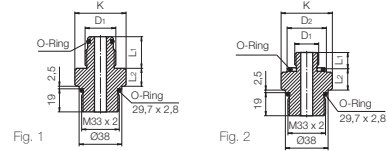


Fig.	D1 Connection-thread	Adapter-fitting	K (SW)	L ₁	L ₂	D ₂	O-ring
1	G 3/4 A	S010	41	28	43,5	-	17 x 3
	G 1 A	S011	46	34	50,5	-	22 x 3
	G 1 1/4 A	S012	46	37	53,5	-	30 x 3
	G 2 A	S013	65	44	64,5	-	48 x 3
2	M 30 x 1,5	S020	41	15	32,5	40	32 x 2
	M 40 x 1,5	S021	55	20	40,5	54	43 x 3
	M 50 x 1,5	S022	65	20	40,5	64	53 x 3

Also available with most other connection types

- P = Pump connector**
G¹/₂ (DIN EN ISO 228-1)
M-version 400 bar
E-version 350 bar
- T = Tank connector**
G¹/₂ (DIN EN ISO 228-1)
- S = Accumulator connector**
G¹/₂ (DIN EN ISO 228-1)
- M1 = Test gauge connection**
G¹/₂ (DIN EN ISO 228-1)
- M2 = Pressure gauge connector (closed)**
G¹/₄ (DIN EN ISO 228-1)
- BV = Pressure relief valve**
cavity-thread M35x1.5
assembly torque 80⁺⁵ Nm
- SV = 2-way Solenoid**
cavity-thread M20x1.5
assembly torque 25⁺⁵ Nm
(manual relief closed)
- VV = Pressure relief**
- H = Handle Code 2 (8kt17)**
refer to chapter "attachments, accessories"

Adapter fittings for accumulator connector S

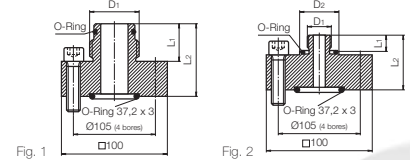


Fig.	D1 Connection-thread	Adapter-fitting	L ₁	L ₂	D ₂	O-ring
1	G 3/4 A	S305	28	58	-	17 x 3
	G 1 A	S306	34	64	-	22 x 3
	G 1 1/4 A	S307	37	67	-	30 x 3
	G 2 A	S309	44	74	-	48 x 3
2	M 30 x 1,5	S330	15	47	45	32 x 2
	M 40 x 1,5	S340	20	51	60	43 x 3
	M 50 x 1,5	S350	20	51	75	53 x 3

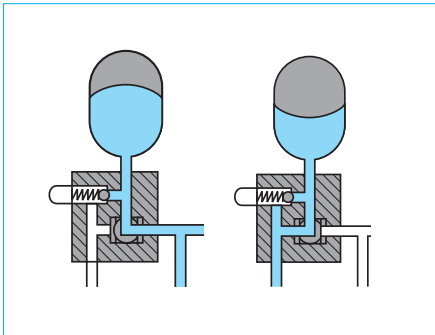
Also available with most other connection types

Ball valve-combinations

Accumulator safety blocks · with integrated 3-way ball valve type RSK Technical information



Locking device available



Securing, isolating and depressurizing hydraulic pressure accumulators:

Simple operation stands for absolute operational safety. Depending on the position of the handle, the passage from the system to the accumulator will be opened or – with simultaneous relief of the accumulator - closed. The integrated 3-way ball valve ensures that the system will be blocked off and the accumulator pressure relieved with just a single motion; this eliminates the need for an additional relief valve. If separate isolation of the accumulator is desired, refer to the "accumulator 2-way safety block" information.

Flexibility thanks to a modular design:

The modular design concept makes the connection block particularly economical and flexible to meet customer requirements. The body is assembled at the factory with adapter fittings in accordance with your order.

Applications/functions:

For liquid media as per the compatibility table in the technical data appendix

The accumulator safety blocks can be supplied with solenoid-operated relief valves as desired. Every body is equipped with the fittings required for retrofitting. When connected to large-volume accumulators the safety block can be ordered with a choke integrated into the bypass line.

Easy order guide : **RSK 10 E E S500 1 1 L N 300 E Y 1**

Nominal size (NG) ball valve

- 6 = NG 6
- 10 = NG 10
- 20 = NG 20

Connection thread pump (P)

- A = M18x1.5 light series (ISO 8434-1)
- B = M30x2 light series (ISO 8434-1)
- C = M22x1.5 heavy series (ISO 8434-1)
- D = M36x2 heavy series (ISO 8434-1)
- E = G 3/8 (DIN EN ISO 228-1)
- F = G 3/4 (DIN EN ISO 228-1)
- G = 3/8 - 18 NPT (ANSI/ASME B1.20.1-1983)
- H = 3/4 - 14 NPT (ANSI/ASME B1.20.1-1983)
- J = other thread

Connection thread tank (T)

- A = M18x1.5 light series (ISO 8434-1)
- B = M30x2 light series (ISO 8434-1)
- C = M22x1.5 heavy series (ISO 8434-1)
- D = M36x2 heavy series (ISO 8434-1)
- E = G 3/8 (DIN EN ISO 228-1)
- F = G 3/4 (DIN EN ISO 228-1)
- G = 3/8 - 18 NPT (ANSI/ASME B1.20.1-1983)
- H = 3/4 - 14 NPT (ANSI/ASME B1.20.1-1983)
- J = other thread

Adapter fitting for accumulator (S)

e.g. S500 = G 3/4A (DIN EN ISO 228 - 1) refer to table

Body material

- 1 = Steel
- 4 = other material

Sealing material (elastomer)

- 1 = NBR
- 2 = FKM
- 3 = EPDM
- 5 = other material

Ball-bore

- L = L-shaped bore
- T = T-shaped bore

Pressure relief valve (DBV)

- N = without approval
- T = with TÜV-approval
- X = Delivered without pressure limiter valve

opening pressure

- 300 = e.g. 300 bar
- 000 = Delivered without pressure limiter valve

Relief

- M = manual
- E = manual and electromagnetic
- V = prepared for electromagnetical relief

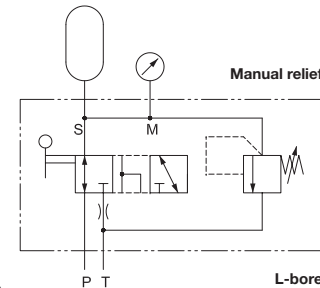
Solenoid valve design

- X = Delivered without solenoid valve
- Y = open when de-energized
- Z = closed when de-energized

Solenoid valve voltage

- 0 = Delivered without solenoid valve
- 1 = 24 V DC
- 2 = 230 V DC
- 3 = other

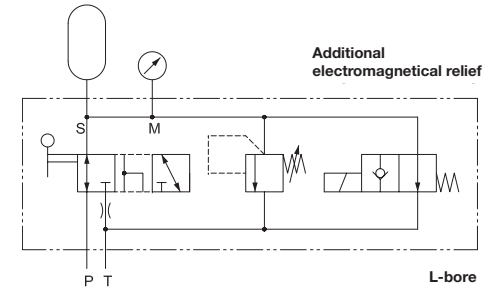
Accumulator safety blocks · with integrated 3-way ball valve type RSK



NG 6

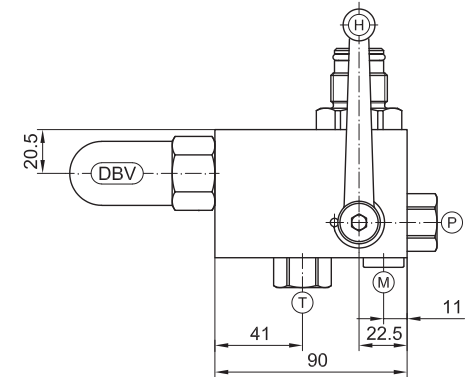
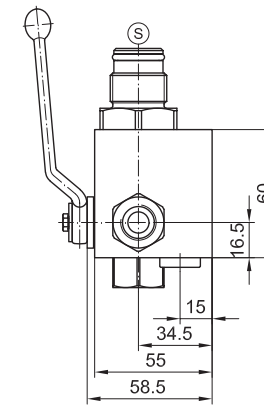
Manual relief

L-bore



Additional electromagnetical relief

L-bore



All dimensions subject to change without notice

P = Pump connector
M-version 500 bar
E-version 350 bar

T = Tank connector

S = Accumulator connector

M = Pressure gauge connector (closed)
G 1/4 (DIN EN ISO 228-1)

DBV = Pressure relief valve

cavity-thread M28x1.5
assembly torque 50⁺⁵ Nm

SV = 2-way Solenoid

Manifold mounting
Drilling pattern ISO 4401-03-02-0-94
(DIN 24340-A6)

Handle Code 2 (8kt17)

refer to chapter "attachments, accessories"

Adapter fittings for accumulator connector S

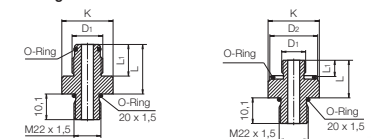


Fig. 1

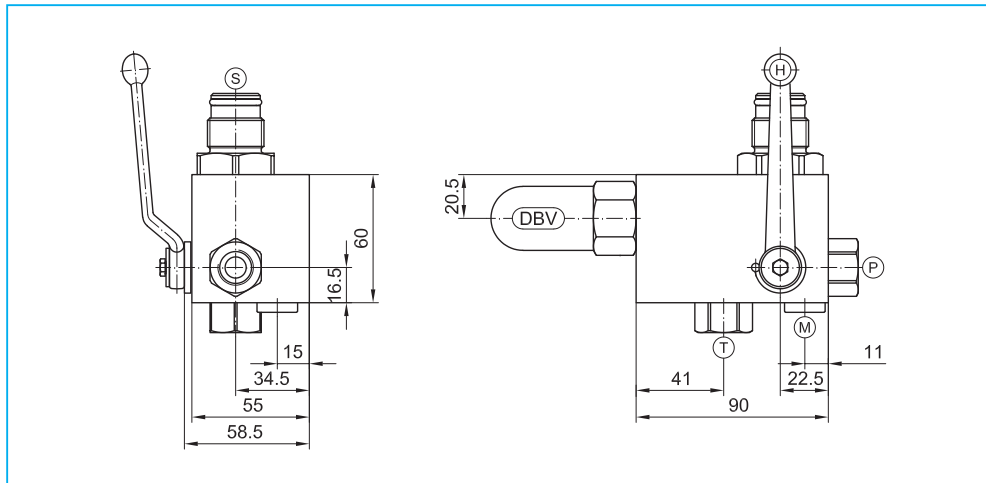
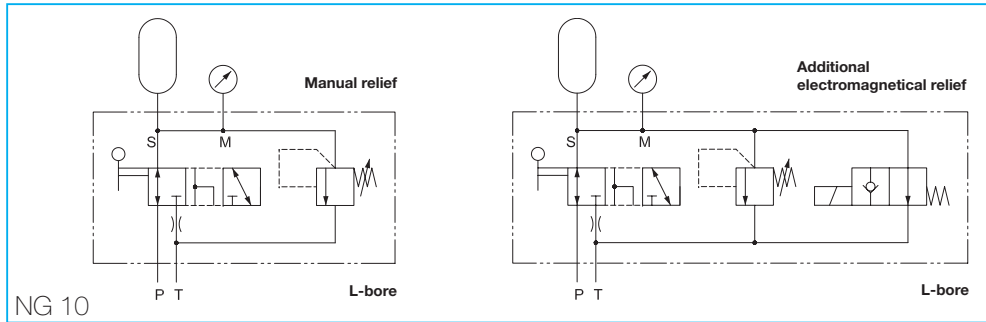
Fig. 2

Fig.	D1 Connection-thread	Adapter-fitting	K (SW)	L	L1	D2	O-ring
1	G 3/4 A	S 500	36	38	28	-	17 x 3
	G 1 A	S 501	41	44	34	-	22 x 3
	G 1 1/4 A	S 502	46	47	37	-	30 x 3
	G 2 A	S 503	65	54	44	-	48 x 3
2	M 30 x 1,5	S 550	41	25	15	40	32 x 2
	M 40 x 1,5	S 551	55	30	20	54	43 x 3
	M 50 x 1,5	S 552	65	30	20	64	53 x 3

Also available with most other connection types

Ball valve-combinations

Accumulator safety blocks · with integrated 3-way ball valve type RSK



All dimensions subject to change without notice

P = Pump connector
M-version 500 bar
E-version 350 bar

T = Tank connector
S = Accumulator connector
M = Pressure gauge connector (closed)
G 1/4 (DIN EN ISO 228-1)

DBV = Pressure relief valve
cavity-thread M35x1.5
assembly torque 80⁺⁵ Nm
SV = 2-way Solenoid
Manifold mounting
Drilling pattern ISO 4401-03-02-0-94
(DIN 24340-A6)

Handle Code 2 (8kt8)
refer to chapter *attachments, accessories*

Adapter fittings for accumulator connector S

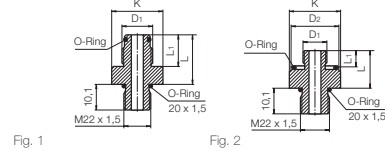
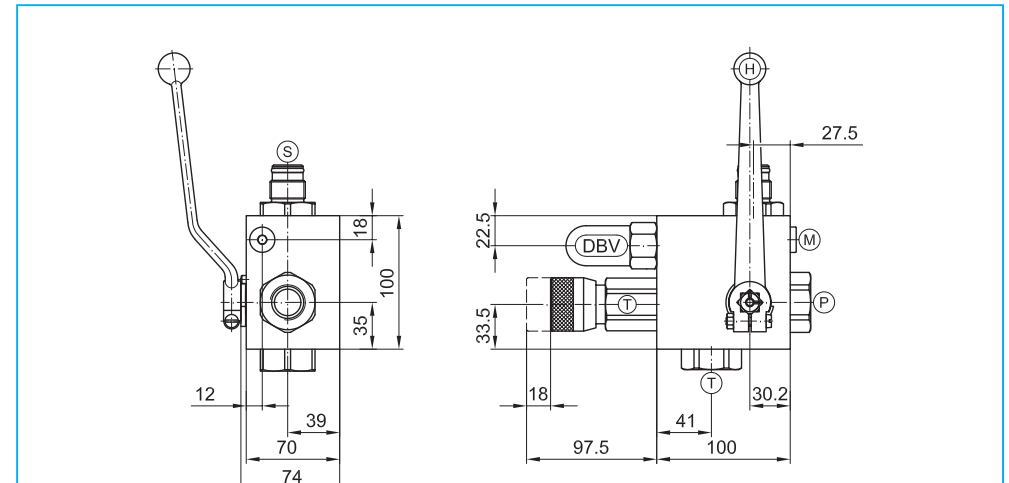
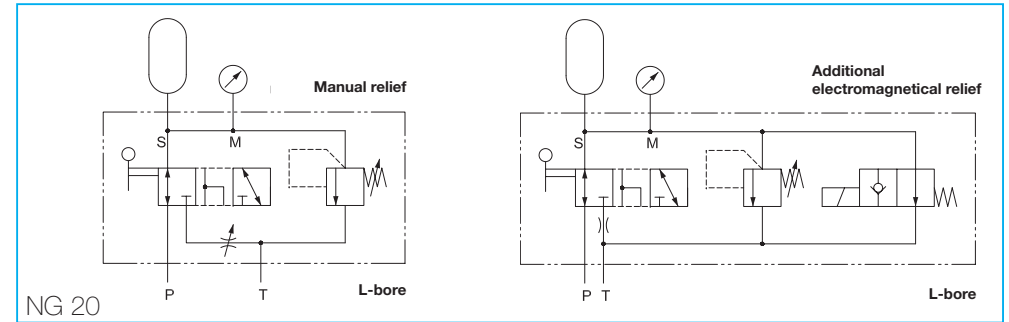


Fig.	D1 Connection-thread	Adapter-fitting	K (SW)	L	L ₁	D ₂	O-ring
1	G 3/4 A	S 500	36	38	28	-	17 x 3
	G 1 A	S 501	41	44	34	-	22 x 3
	G 1 1/4 A	S 502	46	47	37	-	30 x 3
	G 2 A	S 503	65	54	44	-	48 x 3
2	M 30 x 1,5	S 550	41	25	15	40	32 x 2
	M 40 x 1,5	S 551	55	30	20	54	43 x 3
	M 50 x 1,5	S 552	65	30	20	64	53 x 3

Also available with most other connection types

Accumulator safety blocks · with integrated 3-way ball valve type RSK



All dimensions subject to change without notice

P = Pump connector
M-Version 315 bar
E-Version 315 bar

T = Tank connector
S = Accumulator connector
M = Pressure gauge connector (closed)
G 1/4 (DIN EN ISO 228-1)

DBV = Pressure relief valve
cavity-thread M35x1.5
assembly torque 80⁺⁵ Nm

SV = 2-way Solenoid
Manifold mounting
Drilling pattern ISO 4401-03-02-0-94
(DIN 24340-A6)

Handle Code 2 (8kt14)
refer to chapter *attachments, accessories*

Adapter fittings for accumulator connector S

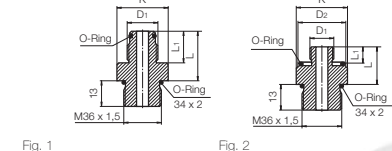
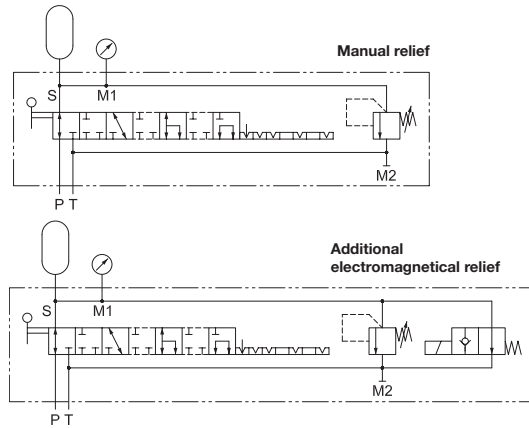


Fig.	D1 Connection-thread	Adapter-fitting	K (SW)	L	L ₁	D ₂	O-ring
1	G 3/4 A	S 600	41	38	28	-	17 x 3
	G 1 A	S 601	41	44	34	-	22 x 3
	G 1 1/4 A	S 602	46	47	37	-	30 x 3
	G 2 A	S 603	65	54	44	-	48 x 3
2	M 30 x 1,5	S 650	41	25	15	40	32 x 2
	M 40 x 1,5	S 651	55	30	20	54	43 x 3
	M 50 x 1,5	S 652	65	30	20	64	53 x 3

Also available with most other connection types

Ball valve-combinations

Accumulator safety blocks · with integrated 3-way ball valve type RSM Technical information



The multifunctional accumulator safety block RSM from Roetelmann unites all advantages of the already known 2- and 3-way pressure accumulator blocks and does provide additional functions, as well. The operation of the RSM accumulator safety block now is extraordinary simple, but still safe, as it is effected by just one handle and a respective detent. The T-bore avoids any pressure drop during the working position.

The following functions are provided:

- working position with a direct passage to the accumulator
- total closing of all ports, the pressure is kept in the accumulator
- relief of the accumulator to the tank
- total connection of all ports for filling the system
- depressurised circulation from the pump to the tank

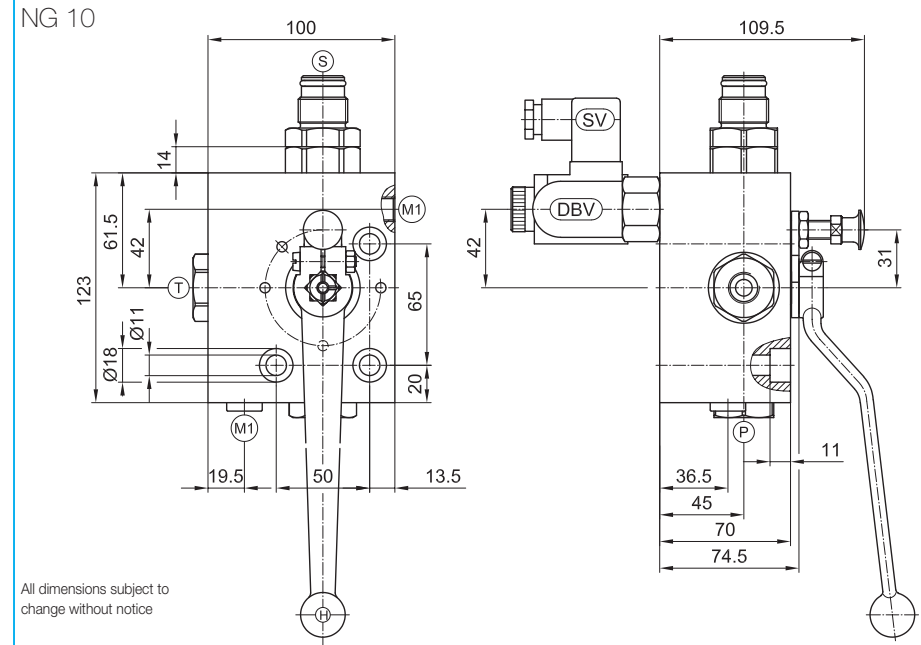
Resulting from this great variety of functions, additional valves and ball valves are not necessary and therefore can be saved. As this principle was not known until now, the multifunctional accumulator safety block has been patented respectively.

Custom orders on request

Locking device available

- Easy order guide: RSM 10 C C S500 1 1 N 250 E Y 1**
- Nominal size (NG) ball valve**
 10 = NG 10
 20 = NG 20 (on request)
 32 = NG 32 (on request)
- Connection thread pump (P)**
 A = M18x1.5 light series (ISO 8434-1)
 B = M22x1.5 heavy series (ISO 8434-1)
 C = G 3/8 (DIN EN ISO 228-1)
 D = 3/8 - 18 NPT (ANSI/ASME B1.20.1-1983)
 E = other thread
- Connection thread tank (T)**
 A = M18x1.5 light series (ISO 8434-1)
 B = M22x1.5 heavy series (ISO 8434-1)
 C = G 3/8 (DIN EN ISO 228-1)
 D = 3/8 - 18 NPT (ANSI/ASME B1.20.1-1983)
 H = other thread
- Adapter fitting for accumulator (S)**
 e.g. S500 = G 3/4A (DIN EN ISO 228 - 1) refer to table
- Body material**
 1 = Steel
 4 = other material
- Sealing material (elastomer)**
 1 = NBR
 2 = FKM
 3 = EPDM
 5 = other material
- Pressure relief valve (DBV)**
 N = without approval
 T = with TÜV-approval
 X = Delivered without pressure limiter valve
- opening pressure**
 250 = e.g. 250 bar
 000 = Delivered without pressure limiter valve
- Relief**
 M = manual
 E = manual and electromagnetical
 V = prepared for electromagnetical relief
- Solenoid valve design**
 X = Delivered without solenoid valve
 Y = open when de-energized
 Z = closed when de-energized
- Solenoid valve voltage**
 0 = Delivered without solenoid valve
 1 = 24 V DC
 2 = 230 V DC
 3 = other

Accumulator safety blocks · with integrated 3-way ball valve type RSM



All dimensions subject to change without notice

Adapter fittings for accumulator connector S

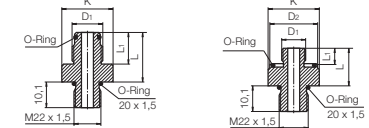


Fig. 1

Fig. 2

- P = Pump connector**
 M-Version 400 bar
 E-Version 350 bar
- T = Tank connector**
- S = Accumulator connector**
- M1 = Test gauge connection**
 G 1/4 (DIN EN ISO 228-1)
- M2 = Pressure gauge connector (closed)**
 G 1/4 (DIN EN ISO 228-1)
- DBV = Pressure relief valve**
 cavity-thread M28x1.5
 assembly torque 80⁺⁵ Nm/50⁺⁵ Nm
- SV = 2-way Solenoid**
 cavity-thread M20x1.5
 assembly torque 25⁺⁵ Nm
- Handle Code 2 (8kt14)**
 refer to chapter "attachments, accessories"

Fig.	D1 Connection-thread	Adapter-fitting	K (SW)	L	L ₁	D ₂	O-ring
1	G 3/4 A	S 500	36	38	28	-	17 x 3
	G 1 A	S 501	41	44	34	-	22 x 3
	G 1 1/4 A	S 502	46	47	37	-	30 x 3
	G 2 A	S 503	65	54	44	-	48 x 3
2	M 30 x 1,5	S 550	41	25	15	40	32 x 2
	M 40 x 1,5	S 551	55	30	20	54	43 x 3
	M 50 x 1,5	S 552	65	30	20	64	53 x 3

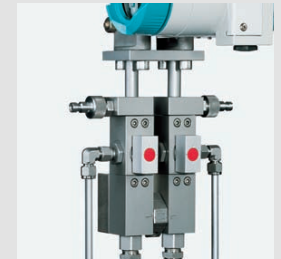
Also available with most other connection types



2-way ball valves with test line connections (TK2)



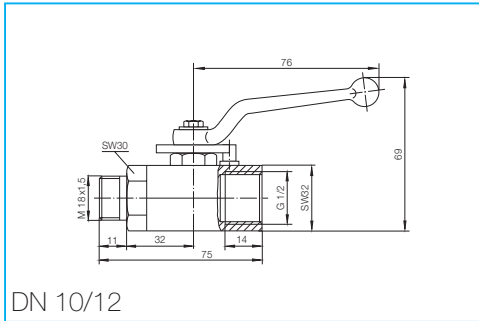
Multi-way ball valves with floating ball for pressure gauges (TK4)



Directional ball valves for differential pressure transducers (TK5-TK7)

Ball valves for instrumentation technology

2-way ball valves with test line connections (TK2)
Stainless steel · different connections



Stainless steel (1.4571 - or similar)
Custom orders on request
All dimensions subject to change without notice
Dimensions in mm
Pressure in bar

Body:	Stainless steel
Ball:	Stainless steel
Stem:	Stainless steel
Ball seats:	PTFE
Stem seals:	PTFE

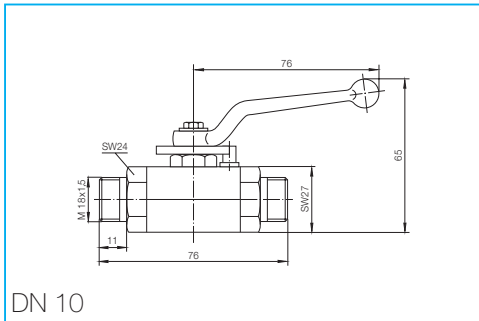
Type of connection

M 18 x 1,5	DIN 2353 light series ISO 8434-1 (with cut (clamp) ring and nut)
G 1/2	BSP female thread DIN EN ISO 228-1

Connections

M 18 x 1,5 / G 1/2	PN 100	Article-No. 101 028
--------------------	--------	---------------------

2-way ball valves with test line connections (TK2)
Stainless steel · identical connections



Type of connection

M 18 x 1,5	DIN 2353 light series ISO 8434-1 (with cut (clamp) ring and nut)
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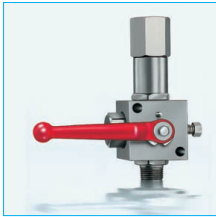
Connections

M 18 x 1,5	PN 100	Article-No. 101 030
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Ball valves for instrumentation technology

Multi-way ball-valves with floating ball for pressure gauges (TK4)
 Technical information



3-way ball valve for connecting both a manometer and verification gauge

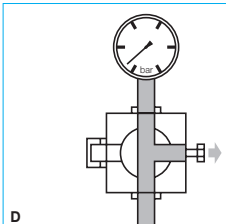
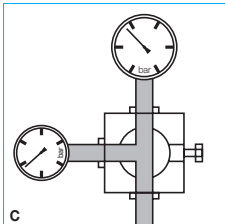
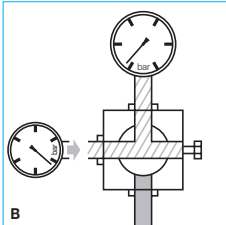
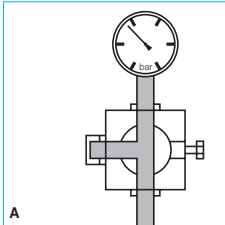


Advantages of the ball valve for the pressure gauge:

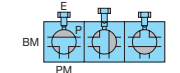
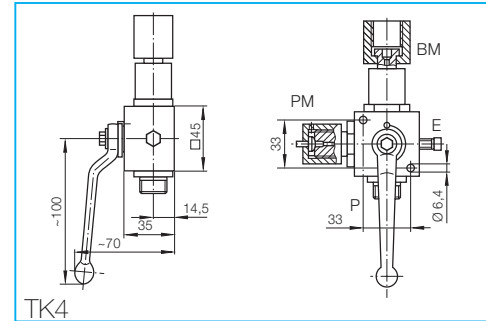
- highly visible operational position
- short cycle paths
- seats resistant to leakage over extended periods of time
- vibration-proof with DIN 16284 union nut (instead of coupling sleeve) used to mount the manometer
- no leakage in the normal operating position if the bleed screw is opened erroneously

Operating functions:

- A Normal setting; system gauge is connected to the system
- B Bleeder position; system manometer can be checked for proper zeroing. A test gauge may be connected in addition.
- C Normal setting with test gauge connected.
- D Setting to vent the system and the pressure gauge to the atmosphere.



Multi-way ball-valves with floating ball for pressure gauges (TK4)
 Stainless steel · DN 10



Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

P = Pressure inlet port
 E = Bleeder screw
 PM = Test gauge port
 BM = System gauge port

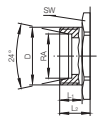
Body:	Stainless steel
Ball:	Stainless steel
Stem:	Stainless steel
Ball seats:	PTFE
Stem seals:	FKM

Connections

	BM	PM	P	PN	Article-No.
G 1/2	G 1/2	M 18 x 1,5	M 18 x 1,5	100	101 072
G 1/2	M 20 x 1,5	M 18 x 1,5	M 18 x 1,5	100	101 074
G 1/2	G 1/2	G 1/2	G 1/2	100	101 076
G 1/2	M 20 x 1,5	G 1/2	G 1/2	100	101 078

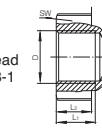
Type of connection

P
 For cut (clamp) ring tube fittings
 DIN 2353 light series
 ISO 8434-1



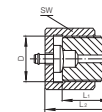
Thread D	RA	L1	L2	SW
M 18 x 1,5	12	11	15	24

P or PM
 BSP-female thread
 DIN EN ISO 228-1



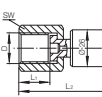
G 1/2	-	15	21	27
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PM
 Thread connection nipple with coupling sleeve meeting,
 DIN 16287-C



M 20 x 1,5	-	22	35	24
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BM
 Adapter with DIN 16284 swivel nut connector nipple and spindle, for pressure gauge mounting bracket as per 16271-B

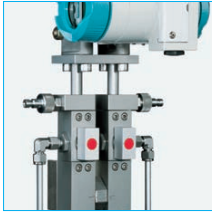


G 1/2	-	19	66	27
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Ball valves for instrumentation technology

Directional ball valves for differential pressure transducers (TK5 - TK7)
 Technical information



Directional ball-valve for pressure differential measurement transducer with staple-lock connectors

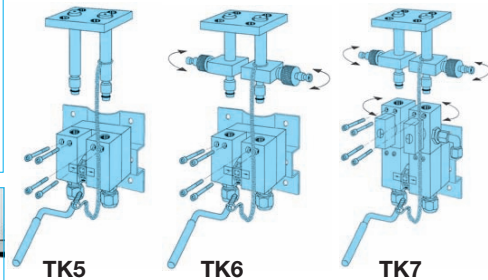


Modular design:

Directional ball valves with their modular system and staple-lock fittings offer great flexibility and trouble-free assembly. The advantages of these devices are tight seating, short actuation arcs, long service life and simple operation. All the ball valve switching functions - operational position, blocked position and zero-point test - are set with just a single operating lever.

Logical and clear schematic diagram symbols make it easy to identify the switching positions.

The TK5 basic unit comprises the divert unit and the connection flange to accept the measurement transducer. The TK6 features additional test connections and the TK7 has not only the test connections but additional blow-out ball valves.



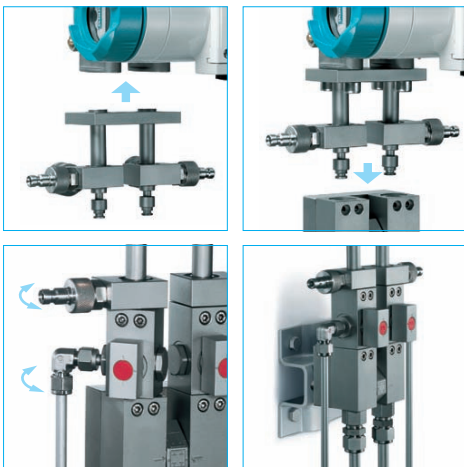
Installation is completed

The pressure gauge is first attached to the connector flange with just four screws. Then this preassembled unit slips into the ball valve body. This staple-lock joint not only saves time but is a real boon in tight spaces.

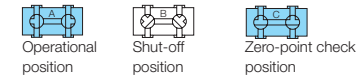
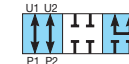
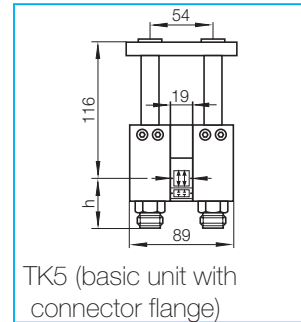
The connection flange and test connection form a unit in the TK6 and TK7 versions. The test connections are swivel-mounted, simple to use and designed for easy access. The TK7 ball valve features in addition a swivel-mounted blowout line for each of the process pressure lines.

The sturdy bracket is used to mount the directional ball valve - either on a wall or on a pipe. This makes it possible to detach the gauge itself with the fitting remaining in the pipe circuit.

The valve unit is put in the "operational" position to prepare for cleaning; here the bores are aligned, giving clear passage all the way through the unit.



Directional ball valves for differential pressure transducers (TK5 - TK7)



Stainless Steel (material no.1.4571 - or other stainless steels)

Custom orders on request

All dimensions subject to change without notice

Dimensions in mm

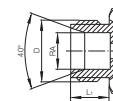
Weight in kg

Pressure in bar

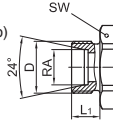
Body:	Stainless steel	Stainless steel
Ball:	Stainless steel	Stainless steel
Stem:	Stainless steel	Stainless steel
Ball seats:	PTFE	PTFE
Stem seals:	FKM	FKM

Type of connection P1/P2

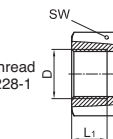
Swagelok pipe fitting



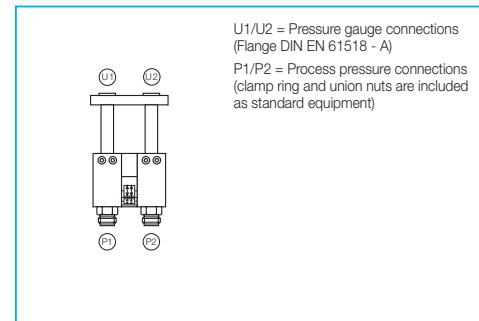
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1



BSP-female thread DIN EN ISO 228-1



Type of connection P1/P2	Thread D	RA	L1	h	PN	Article-No.	For oxygen	
							PN	Article-No.
Swagelok pipe fitting	3/4 - 20 UNEF	12	12	58	100	101 234	40	101 235
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	M 18 x 1,5	12	11	37	100	101 236	40	101 237
BSP-female thread DIN EN ISO 228-1	G 1/4	-	12	37	100	101 242	40	101 243



U1/U2 = Pressure gauge connections (Flange DIN EN 61518 - A)

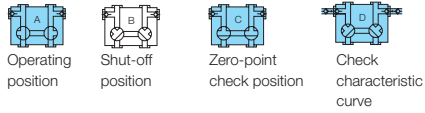
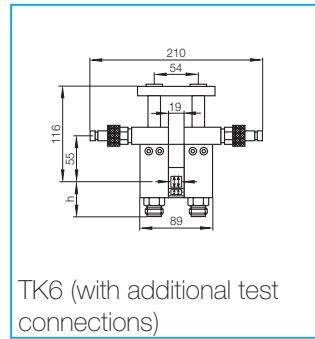
P1/P2 = Process pressure connections (clamp ring and union nuts are included as standard equipment)



Ball valves for measurement technology

Directional ball valves for differential pressure transducers (TK5 - TK7)

Stainless steel · DN 10



Stainless Steel (material no.1.4571 - or other stainless steels)

Custom orders on request

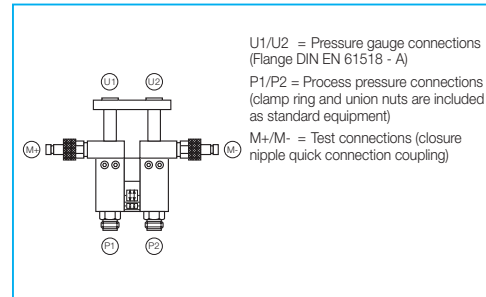
All dimensions subject to change without notice

Dimensions in mm

Pressure	in bar	Body:	Stainless steel	Stainless steel
		Ball:	Stainless steel	Stainless steel
		Stem:	Stainless steel	Stainless steel
		Ball seats:	PTFE	PTFE
		Stem seals:	FKM	FKM

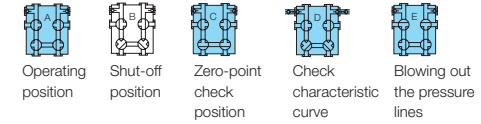
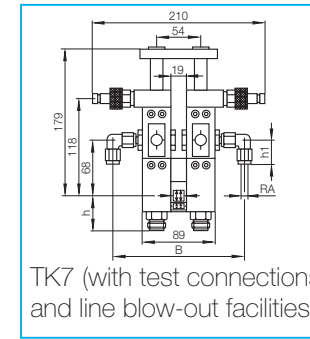
TK6 (with additional test connections)

Type of connection P1/P2	Thread D	RA	L1	h	PN	Article-No.	For oxygen	
							PN	Article-No.
Swagelok pipe fitting 	3/4 - 20 UNEF	12	12	58	100	101 228	40	101 229
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1 	M 18 x 1,5	12	11	37	100	101 238	40	101 239
BSP-female thread DIN EN ISO 228-1 	G 1/4	-	12	37	100	101 244	40	101 245



Directional ball valves for differential pressure transducers (TK5 - TK7)

Stainless steel · DN 10



Stainless Steel (material no.1.4571 - or other stainless steels)

Custom orders on request

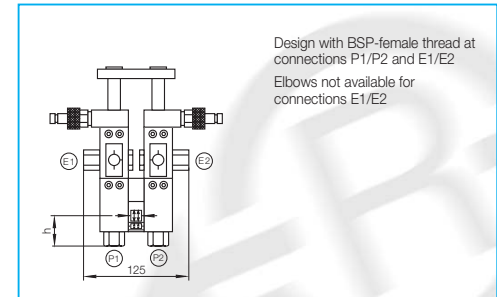
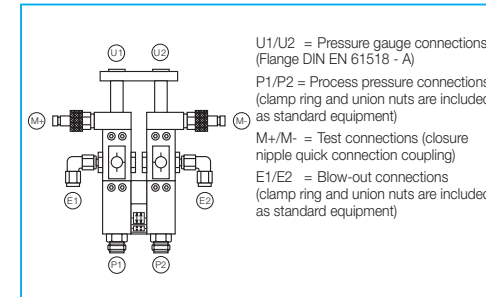
All dimensions subject to change without notice

Dimensions in mm

Pressure	in bar	Body:	Stainless steel	Stainless steel
		Ball:	Stainless steel	Stainless steel
		Stem:	Stainless steel	Stainless steel
		Ball seats:	PTFE	PTFE
		Stem seals:	FKM	FKM

TK7 (with test connections and line blow-out facilities)

Type of connection P1/P2	Thread D	RA	RA E1/E2	L1	h	h1	B	PN	Article-No.	For oxygen	
										PN	Article-No.
Swagelok pipe fitting 	3/4 - 20 UNEF	12	8	12	58	29	161	100	101 232	40	101 233
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1 	M 18 x 1,5	12	8	11	37	29	164	100	101 240	40	101 241
BSP-female thread DIN EN ISO 228-1 	G 1/4	-	-	12	37	-	-	100	101 246	40	101 247





Check valves

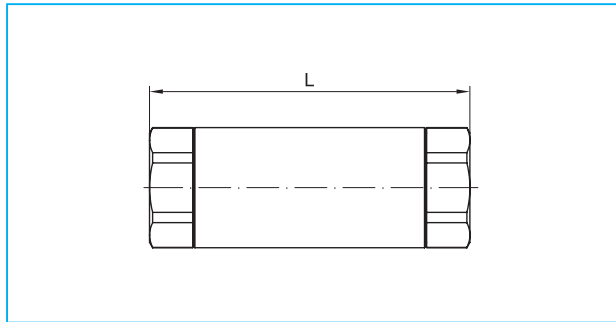


Needle valves



Flow control valves

Check valves with threaded connector · Steel · DN 4 - DN 50



Full flow, no reduction!

Please check pressure rating of the pipe fittings!

Custom orders on request

All dimensions subject to change without notice

Also available with most other connection types

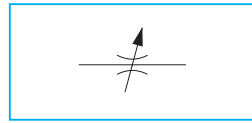
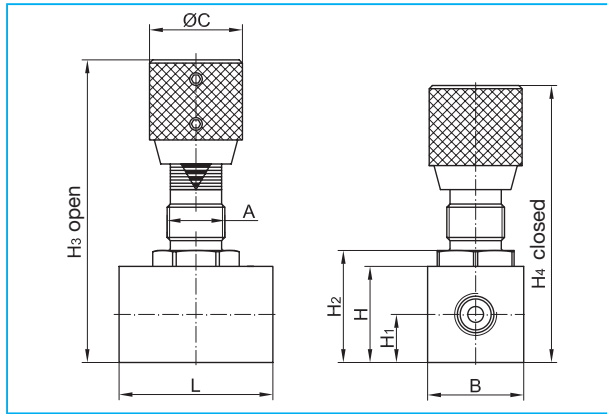
Dimensions in mm

Weight in kg

Pressure in bar

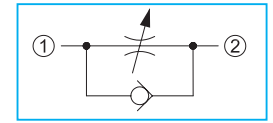
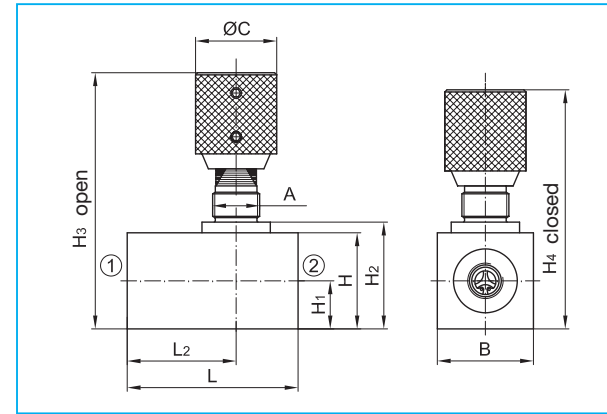
Type of connection	DN	Thread D	RA	L	L ₁	SW	opening- pressure	Weight	DN	Steel/POM-FKM	
										PN	Article-No.
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1	4	M12 x 1,5	6	88,0	10	19	1,0	0,18	4	400	233 033
	6	M14 x 1,5	8	88,0	10	19	1,0	0,18	6	400	233 034
	8	M16 x 1,5	10	85,0	11	24	0,5	0,27	8	400	233 036
	10	M18 x 1,5	12	87,0	11	24	0,5	0,27	10	400	233 037
	12	M22 x 1,5	15	105,0	12	30	0,5	0,46	12	400	233 038
	16	M26 x 1,5	18	100,0	12	36	0,5	0,78	16	400	233 040
	20	M30 x 2	22	126,0	14	41	0,5	1,00	20	400	233 041
	25	M36 x 2	28	137,0	14	50	0,5	1,75	25	400	233 042
	32	M45 x 2	35	174,5	16	60	0,5	3,00	32	400	233 044
	40	M52 x 2	42	on request					40	400	233 045
For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1	4	M16 x 1,5	8	94,0	12	19	1,0	0,18	4	400	233 031
	6	M18 x 1,5	10	94,0	12	19	1,0	0,18	6	400	233 054
	8	M20 x 1,5	12	87,0	12	24	0,5	0,27	8	400	233 032
	10	M22 x 1,5	14	93,0	14	24	0,5	0,27	10	400	233 055
	12	M24 x 1,5	16	109,0	14	30	0,5	0,46	12	400	233 056
	16	M30 x 2	20	108,0	16	36	0,5	0,83	16	400	233 035
	20	M36 x 2	25	134,0	18	41	0,5	1,00	20	400	233 057
	25	M42 x 2	30	149,0	20	50	0,5	1,75	25	400	233 058
	32	M52 x 2	38	185,5	22	60	0,5	3,20	32	400	233 053
	BSP-female thread DIN EN ISO 228-1	4	G 1/8	-	90,0	12	19	1,0	0,18	4	400
6		G 1/4	-	90,0	12	19	1,0	0,18	6	400	233 059
10		G 3/8	-	85,0	14	24	0,5	0,27	10	400	233 060
12		G 1/2	-	104,0	15	30	0,5	0,46	12	400	233 061
16		G 5/8	-	106,0	18	36	0,5	0,90	16	400	233 043
20		G 3/4	-	120,0	18	41	0,5	1,00	20	400	233 062
25		G 1	-	142,0	18	50	0,5	1,75	25	400	233 063
32		G 1 1/4	-	151,5	20	60	0,5	2,90	32	400	233 046
40		G 1 1/2	-	on request					40	400	233 047
50		G 2	-	on request					50	400	233 048
NPT-female thread ANSI/ASME B1.20.1-1983	4	1/8 - 27 NPT	-	90,0	6,9	19	1,0	0,18	4	400	233 049
	6	1/4 - 18 NPT	-	90,0	10,0	19	1,0	0,18	6	400	233 064
	10	3/8 - 18 NPT	-	85,0	10,3	24	0,5	0,27	10	400	233 065
	12	1/2 - 14 NPT	-	104,0	13,6	30	0,5	0,46	12	400	233 066
	20	3/4 - 14 NPT	-	120,0	14,1	41	0,5	1,00	20	400	233 067
	25	1 - 11 1/2 NPT	-	142,0	16,8	50	0,5	1,75	25	400	233 068
	32	1 1/4 - 11 1/2 NPT	-	151,5	17,3	60	0,5	2,85	32	400	233 050
	40	1 1/2 - 11 1/2 NPT	-	on request					40	400	233 051
	50	2 - 11 1/2 NPT	-	on request					50	400	233 052

Needle valves · DN 4 - DN 50



Body: Steel
 Spindle: Steel
 Rotary knob: Aluminium
 PN: 350 bar
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg

Flow control valves · DN 4 - DN 50



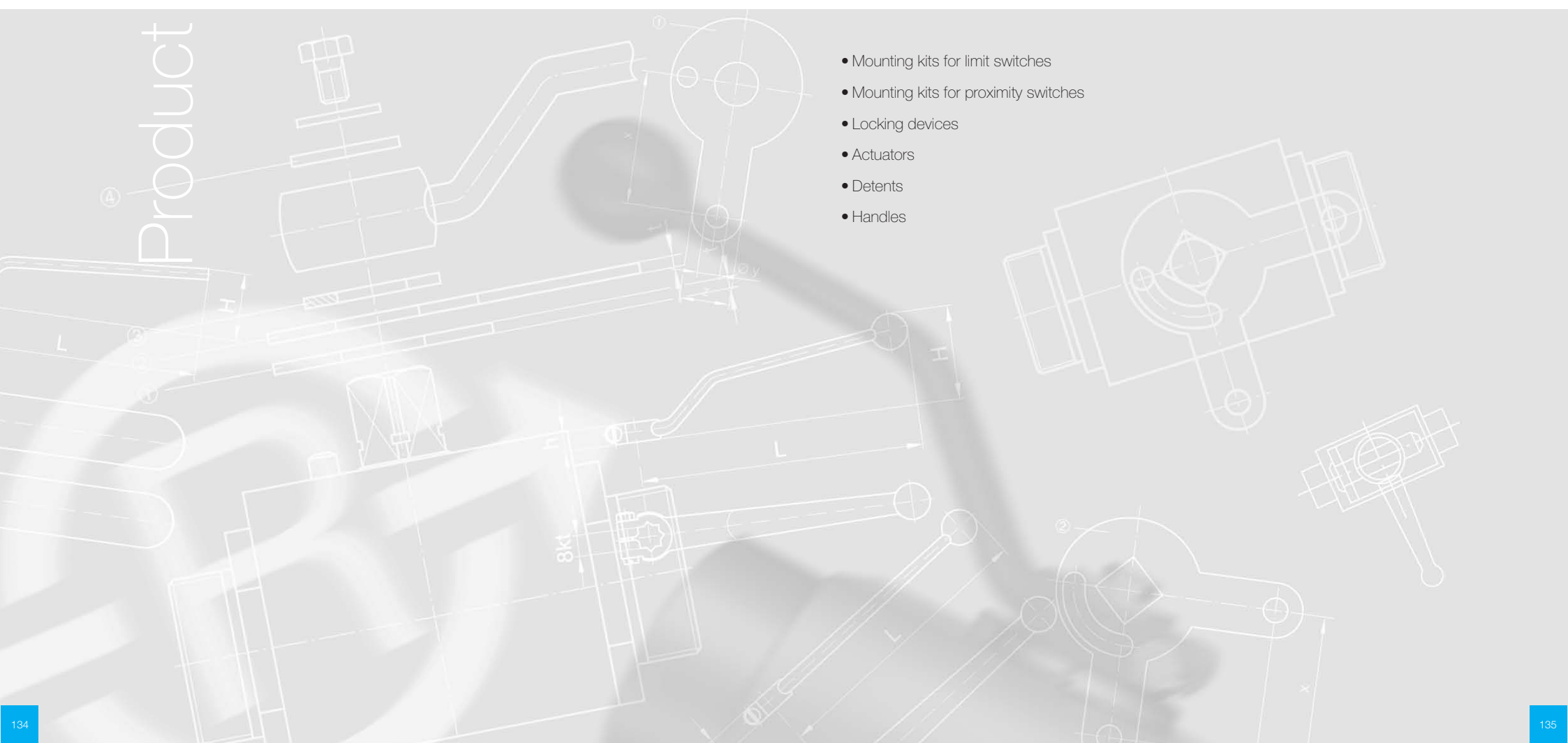
Body: Steel
 Spindle: Steel
 Rotary knob: Aluminium
 PN: 350 bar
 Opening pressure: 0,5 bar
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg

Type of connection	DN	Thread D	L	L ₁	A	B	ØC	H	H ₁	H ₂	H ₃	H ₄	Weig.	Art.-No. (NBR)	Art.-No. (FKM)
BSP-female thread DIN EN ISO 228-1	4	G 1/8	38	10,0	M18x1,5	20	29	20	10,0	23	87	78,0	0,23	219 001	219 028
	6	G 1/4	48	12,0	M18x1,5	25	29	25	12,5	28	92	83,0	0,33	219 002	219 029
	10	G 3/8	58	14,0	M18x1,5	30	29	30	15,0	35	95	86,0	0,56	219 003	219 030
	12	G 1/2	68	15,0	M18x1,5	35	29	35	17,5	40	100	91,5	0,68	219 004	219 031
	16	G 5/8	78	16,0	M22x1,5	45	38	45	22,5	52	122	114,0	1,30	219 055	219 058
	20	G 3/4	78	16,0	M22x1,5	45	38	45	22,5	52	122	114,0	1,30	219 005	219 032
	25	G1	108	20,0	M36x1,5	50	50	50	25,0	60	173	158,5	2,55	219 006	219 033
	32	G1 1/4	108	20,0	M36x1,5	60	50	60	30,0	70	183	168,5	3,26	219 007	219 034
	40	G1 1/2	108	23,0	M36x1,5	70	50	70	35,0	80	193	178,5	4,21	219 008	219 035
	50	G2	130	24,5	M36x1,5	90	50	90	45,0	100	213	198,5	7,60	219 009	219 036
NPT-female thread ANSI/ASME B1.20.1-1983	4	1/8 - 27 NPT	38	6,9	M18x1,5	20	29	20	10,0	23	87	78,0	0,23	219 010	219 037
	6	1/4 - 18 NPT	48	10,0	M18x1,5	25	29	25	12,5	28	92	83,0	0,33	219 011	219 038
	10	3/8 - 18 NPT	58	10,3	M18x1,5	30	29	30	15,0	35	95	86,0	0,56	219 012	219 039
	12	1/2 - 14 NPT	68	13,6	M18x1,5	35	29	35	17,5	40	100	91,5	0,68	219 013	219 040
	20	3/4 - 14 NPT	78	14,1	M22x1,5	45	38	45	22,5	52	122	114,0	1,30	219 014	219 041
	25	1 - 11 1/2 NPT	108	16,8	M36x1,5	50	50	50	25,0	60	173	158,5	2,55	219 015	219 042
	32	1 1/4 - 11 1/2 NPT	108	17,3	M36x1,5	60	50	60	30,0	70	183	168,5	3,26	219 016	219 043
	40	1 1/2 - 11 1/2 NPT	108	17,3	M36x1,5	70	50	70	35,0	80	193	178,5	4,21	219 017	219 044
	50	2 - 11 1/2 NPT	130	17,7	M36x1,5	90	50	90	45,0	100	213	198,5	7,60	219 018	219 045
	Female thread ISO 11926-1	4	7/16 - 20 UNF - 2B	42	6,9	M18x1,5	20	29	20	10,0	23	87	78,0	0,23	219 020
6		1/2 - 20 UNF - 2B	48	10,0	M18x1,5	25	29	25	12,5	28	92	83,0	0,33	219 056	219 059
8		9/16 - 18 UNF - 2B	58	12,7	M18x1,5	30	29	30	15,0	35	95	86,0	0,56	219 021	219 048
10		3/4 - 16 UNF - 2B	60	14,3	M18x1,5	30	29	30	15,0	35	95	86,0	0,56	219 022	219 049
12		7/8 - 14 UNF - 2B	72	16,7	M18x1,5	35	29	35	17,5	40	100	91,5	0,68	219 057	219 060
16		1 1/16 - 12 UN - 2B	84	19,0	M22x1,5	45	38	45	22,5	52	122	114,0	1,30	219 023	219 050
20		1 5/16 - 12 UN - 2B	108	19,0	M36x1,5	50	50	50	25,0	60	173	158,5	2,55	219 024	219 051
25		1 5/8 - 12 UN - 2B	108	16,8	M36x1,5	60	50	60	30,0	70	183	168,5	3,26	219 025	219 052
32		1 7/8 - 12 UN - 2B	108	19,0	M36x1,5	70	50	70	35,0	80	193	178,5	4,21	219 026	219 053
40		2 1/2 - 12 UN - 2B	130	19,0	M36x1,5	90	50	90	45,0	100	213	198,5	7,60	219 027	219 054

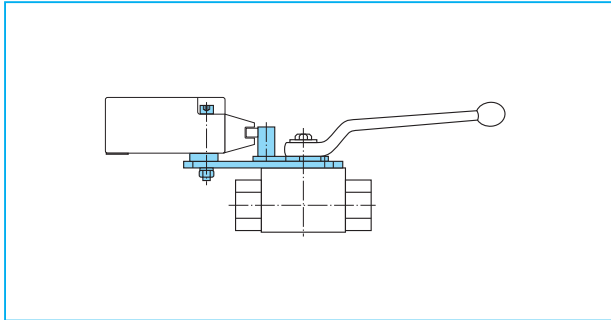
Type of connection	DN	Thread D	L	L ₁	L ₂	A	B	ØC	H	H ₁	H ₂	H ₃	H ₄	Weig.	Art.-No. (NBR)	Art.-No. (FKM)
BSP-female thread DIN EN ISO 228-1	4	G 1/8	45	10,0	26,0	M18x1,5	20	29	20	10,0	23	87,0	78,0	0,25	218 001	218 028
	6	G 1/4	55	12,0	33,5	M18x1,5	25	29	25	12,5	28	92,0	83,0	0,38	218 002	218 029
	10	G 3/8	65	14,0	41,0	M18x1,5	30	29	30	15,0	33	97,0	88,0	0,52	218 003	218 030
	12	G 1/2	73	15,0	48,0	M18x1,5	35	29	35	17,5	38	102,0	93,0	0,70	218 004	218 031
	16	G 5/8	88	16,0	57,0	M22x1,5	45	38	45	22,5	49	123,0	111,0	1,35	218 005	218 032
	25	G1	127	20,0	77,0	M36x1,5	50	50	50	25,0	56	172,5	154,5	2,68	218 006	218 033
	32	G1 1/4	143	20,0	93,0	M36x1,5	60	50	60	30,0	66	182,5	164,5	3,92	218 007	218 034
	40	G1 1/2	143	23,0	98,0	M36x1,5	70	50	70	35,0	76	192,5	174,5	4,84	218 008	218 035
	50	G2	165	24,5	111,0	M36x1,5	90	50	90	45,0	96	212,5	194,5	8,95	218 009	218 036
	NPT-female thread ANSI/ ASME B1.20.1-1983	4	1/8 - 27 NPT	45	6,9	26,0	M18x1,5	20	29	20	10,0	23	87,0	78,0	0,25	218 010
6		1/4 - 18 NPT	55	10,0	33,5	M18x1,5	25	29	25	12,5	28	92,0	83,0	0,38	218 011	218 038
10		3/8 - 18 NPT	65	10,3	41,0	M18x1,5	30	29	30	15,0	33	97,0	88,0	0,52	218 012	218 039
12		1/2 - 14 NPT	73	13,6	48,0	M18x1,5	35	29	35	17,5	38	102,0	93,0	0,70	218 013	218 040
20		3/4 - 14 NPT	88	14,1	57,0	M22x1,5	45	38	45	22,5	49	123,0	111,0	1,35	218 014	218 041
25		1 - 11 1/2 NPT	127	16,8	77,0	M36x1,5	50	50	50	25,0	56	172,5	154,5	2,68	218 015	218 042
32		1 1/4 - 11 1/2 NPT	143	17,3	93,0	M36x1,5	60	50	60	30,0	66	182,5	164,5	3,92	218 016	218 043
40		1 1/2 - 11 1/2 NPT	143	17,3	98,0	M36x1,5	70	50	70	35,0	76	192,5	174,5	4,84	218 017	218 044
50		2 - 11 1/2 NPT	165	17,7	111,0	M36x1,5	90	50	90	45,0	96	212,5	194,5	8,95	218 018	218 045
Female thread ISO 11926-1		4	7/16 - 20 UNF - 2B	49	11,5	28,0	M18x1,5	20	29	20	10,0	23	87,0	78,0	0,25	218 020
	6	1/2 - 20 UNF - 2B	55	11,5	33,5	M18x1,5	25	29	25	12,5	28	92,0	83,0	0,38	218 055	218 057
	8	9/16 - 18 UNF - 2B	67	12,7	42,0	M18x1,5	30	29	30	15,0	33	97,0	88,0	0,52	218 021	218 048
	10	3/4 - 16 UNF - 2B	67	14,3	42,0	M18x1,5	30	29	30	15,0	33	97,0	88,0	0,52	218 022	218 049
	12	7/8 - 14 UNF - 2B	77	16,7	50,0	M18x1,5	35	29	35	17,5	38	102,0	93,0	0,70	218 056	218 058
	16	1 1/16 - 12 UN - 2B	94	19,0	60,0	M22x1,5	45	38	45	22,5	49	123,0	111,0	1,35	218 023	218 050
	20	1 5/16 - 12 UN - 2B	127	19,0	77,0	M36x1,5	50	50	50	25,0	56	172,5	154,5	2,68	218 024	218 051
	25	1 5/8 - 12 UN - 2B	143	19,0	93,0	M36x1,5	60	50	60	30,0	66	182,5	164,5	3,92	218 025	218 052
	32	1 7/8 - 12 UN - 2B	143	19,0	98,0	M36x1,5	70	50	70	35,0	76	192,5	174,5	4,84	218 026	218 053
	40	2 1/2 - 12 UN - 2B	165	19,0	111,0	M36x1,5	90	50	90	45,0	96	212,5	194,5	8,95	218 027	218 054

Product overview

- Mounting kits for limit switches
- Mounting kits for proximity switches
- Locking devices
- Actuators
- Detents
- Handles

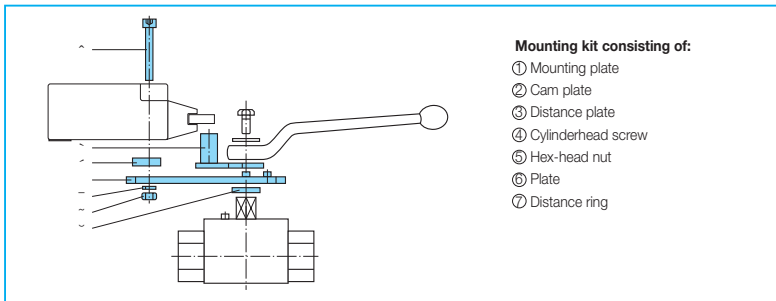


Mounting kits for limit switches

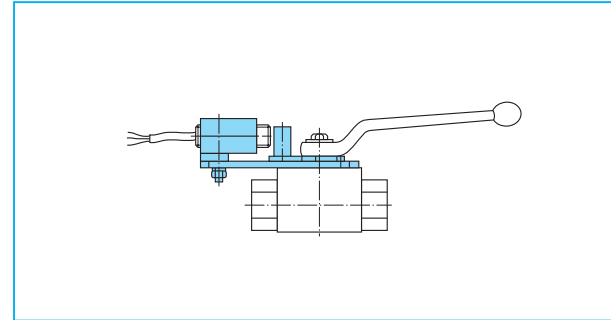


For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
 Mounting kits for other types of ball valves on request
 All dimensions subject to change without notice
Also available completely assembled

Switching positions	DN	2-way- and multi-way ball valves with floating ball (Steel) Article-No.	Multi-way ball valves with trunnion ball (Steel) Article-No.
open 	4/6	204 001	204 031
	8/10	204 002	204 032
	12	204 003	204 032
	16	204 004	204 032
	20/25	204 005	204 033
	32	204 006	204 033
closed 	4/6	204 011	204 041
	8/10	204 012	204 042
	12	204 013	204 042
	16	204 014	204 042
	20/25	204 015	204 043
	32	204 016	204 043
open and closed 	4/6	204 021	204 051
	8/10	204 022	204 052
	12	204 023	204 052
	16	204 024	204 052
	20/25	204 025	204 053
	32	204 026	204 053
40	204 026	204 054	
50	204 026	-	

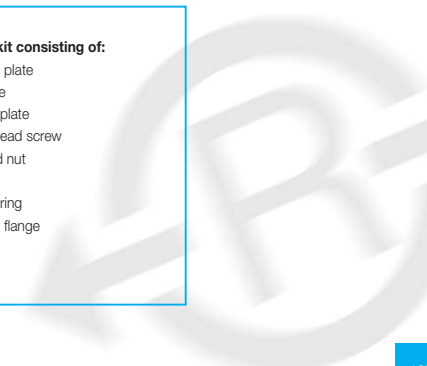
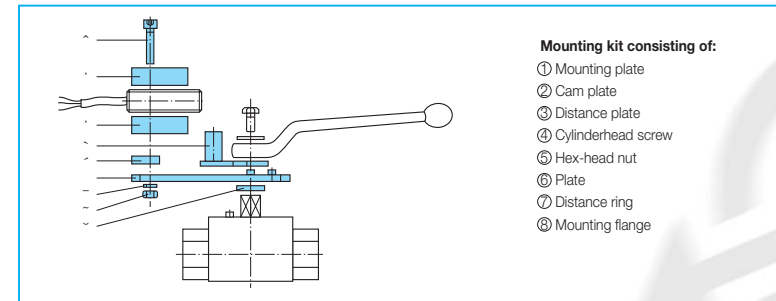


Mounting kits for proximity switches



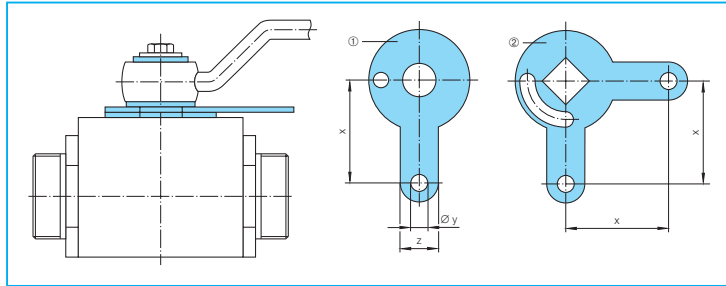
For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
 Mounting kits for other types of ball valves on request
 All dimensions subject to change without notice
Also available completely assembled

Switching positions	DN	2-way- and multi-way ball valves with floating ball (Steel) Article-No.	Multi-way ball valves with trunnion ball (Steel) Article-No.
open 	4/6	204 061	204 091
	8/10	204 062	204 092
	12	204 063	204 092
	16	204 064	204 092
	20/25	204 065	204 093
	32	204 066	204 093
closed 	4/6	204 071	204 101
	8/10	204 072	204 102
	12	204 073	204 102
	16	204 074	204 102
	20/25	204 075	204 103
	32	204 076	204 103
open and closed 	4/6	204 081	204 111
	8/10	204 082	204 112
	12	204 083	204 112
	16	204 084	204 112
	20/25	204 085	204 113
	32	204 086	204 113
40	204 086	204 114	
50	204 086	-	



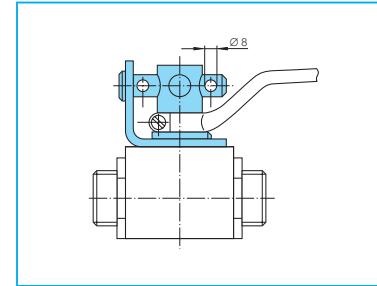
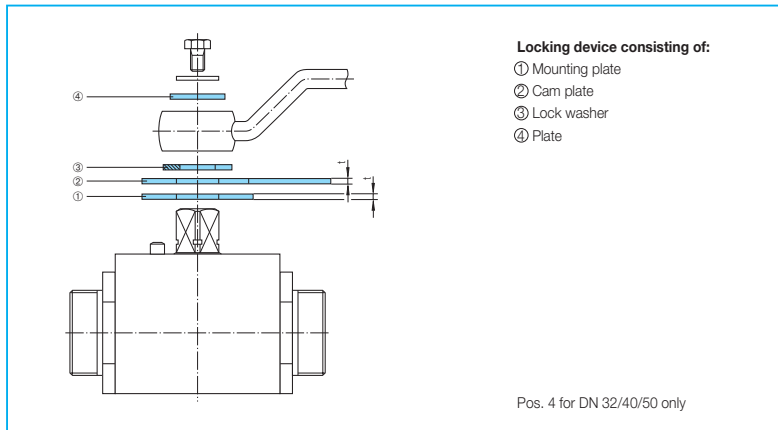
Attachments, accessories

Locking devices for 2- and 3-way compact ball valves Steel and stainless steel



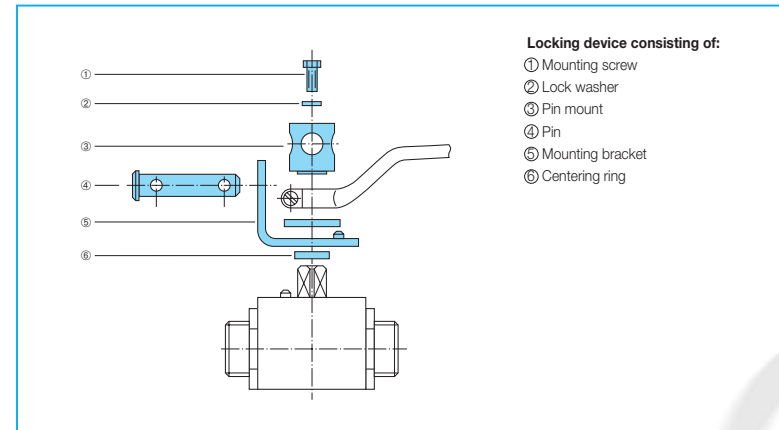
For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
Locking devices for other types of ball valves on request
All dimensions subject to change without notice
Also available completely assembled

Switching position	DN	t	x	y	z	Art.-No. (Steel)	x	Art.-No. (Stainless steel)
	4/ 6	0,8	18	9	20	100 836	21,5	100 974
	8/10	1,2	21	9	20	100 837	26,5	100 975
	12	1,2	24	9	20	100 838	29,0	100 976
	16	1,5	29	9	20	100 839	-	-
	20/25	1,5	34	9	20	100 840	44,0	100 978
	32/40/50	1,75	54	9	20	100 841	54,0	100 979



For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
Locking devices for other types of ball valves on request
All dimensions subject to change without notice
Also available completely assembled

	DN	Article-No (Steel)	Article-No (Stainless steel)
open 	4/ 6	100 821	100 831
	8/10	100 822	100 832
	12	100 823	100 833
	16	100 824	100 833
	20	100 825	100 834
	25	100 825	100 834
closed 	32	100 826	100 835
	40	100 826	100 835
	50	100 826	100 835



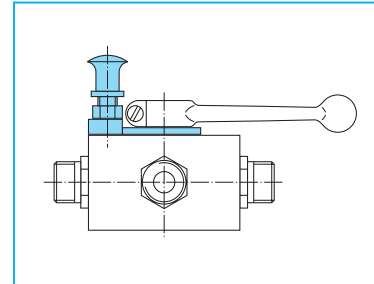
Actuators



Actuators

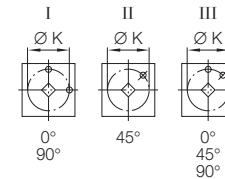
Most available pneumatic, hydraulic and electrical actuators can be attached, here only an example is given. Solenoid valves can be mounted as well or the system can be integrated into bus technology.

Detents for multi-way ball valves
Steel and stainless steel



For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
Detents for other types of ball valves on request
All dimensions subject to change without notice
Also available completely assembled

Common detent position at



DN ØK

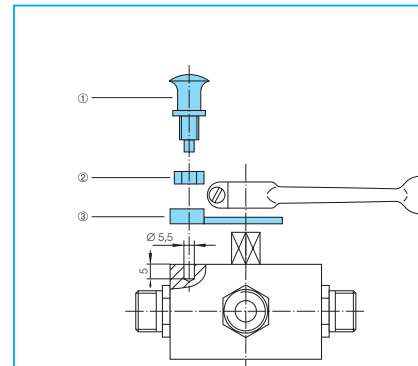
4/6	52
8/10	62
12	62
16/12	62
20	68
25	68
32	68
40	68

**Article-No.
(Steel)**

**Article-No.
(Stainless steel)**

203 897
203 898
203 898
203 898
203 899
203 899
203 899
203 900

203 901
203 902
203 902
203 902
203 903
203 903
203 903
203 904

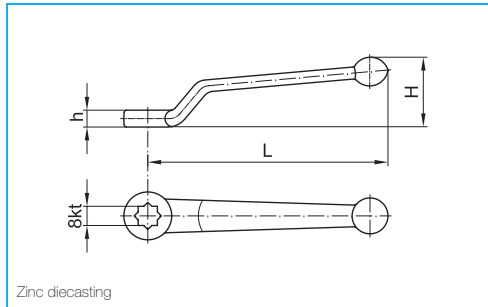


Detent consisting of:

- ① Bolt
- ② Lock nut
- ③ Special cam plate

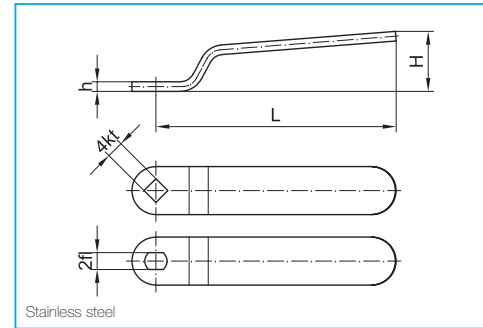


Handles



All dimensions subject to change without notice
Dimensions in mm

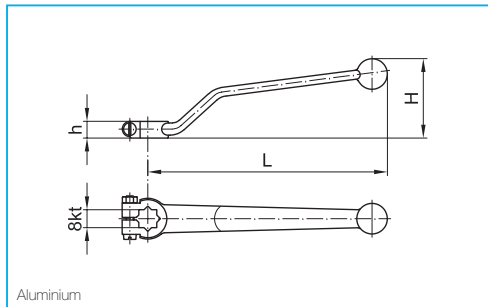
Code	8kt	L	H	h	Art.-No.
1	7	76,0	27	6	903000
2	8	100,0	29	7	903001
3	10	112,5	48	10	903002



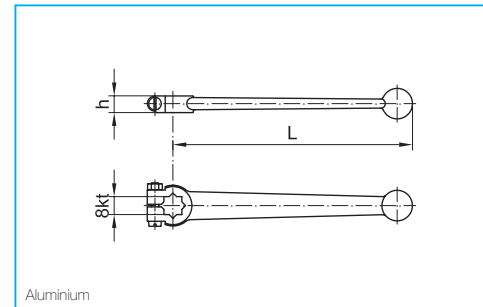
All dimensions subject to change without notice
Dimensions in mm

Code	4kt	L	H	h	Art.-No.
26	7	100	25	4	903600
27	8	130	40	4	903569
28	10	130	40	4	903557
29	14	185	45	5	903501

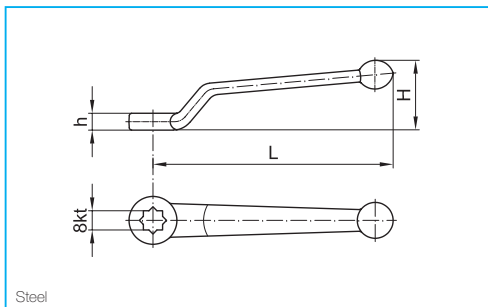
Code	2fl	L	H	h	Art.-No.
36	6	74,5	24	4	903568



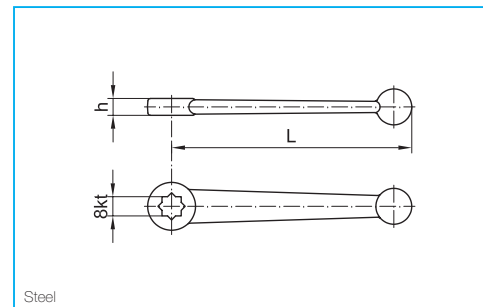
Code	8kt	L	H	h	Art.-No.
4	8	92	28	9,0	903020
5	10	120	48	11,0	903026
6	11	166	56	12,0	903003
7	12	187	54	13,0	903009
8	14	187	62	13,0	903004
9	17	227	70	13,5	903027
10	19	259	81	16,5	903028



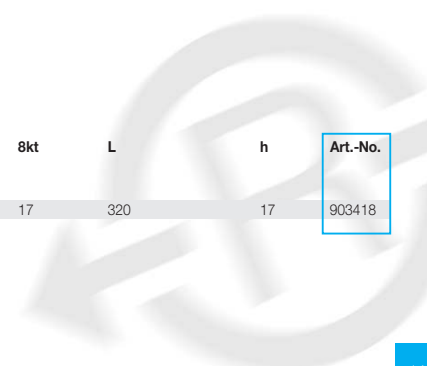
Code	8kt	L	h	Art.-No.
41	11	176	12	903029
42	12	200	12	903030
43	14	200	12	903031
44	17	240	14	903005
45	19	280	16	903032
46	22	320	18	903033



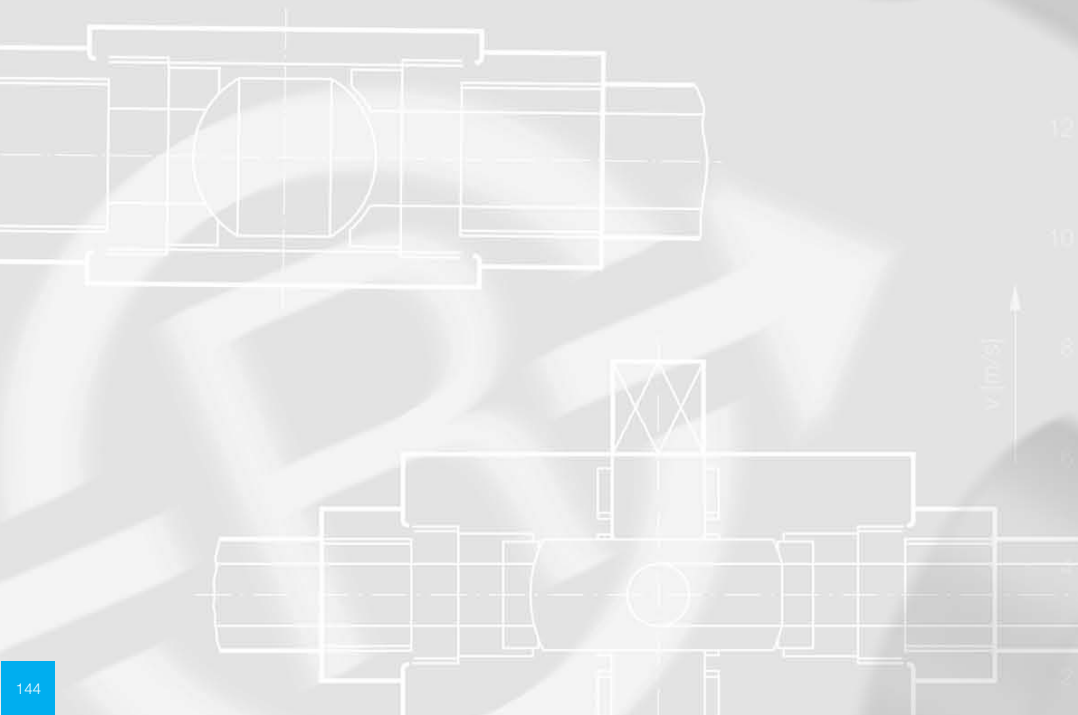
Code	8kt	L	H	h	Art.-No.
16	7	76	30	6,0	903415
17	8	116	46	8,5	903416
18	9	145	55	10,0	903468
19	10	116	48	12,5	903414
24	11	128	41	12,0	903018
20	14	192	60	17,0	903417
21	17	211	66	14,0	903440
22	17	320	76	17,0	903539
23	19	320	76	17,0	903545



Code	8kt	L	h	Art.-No.
51	17	320	17	903418

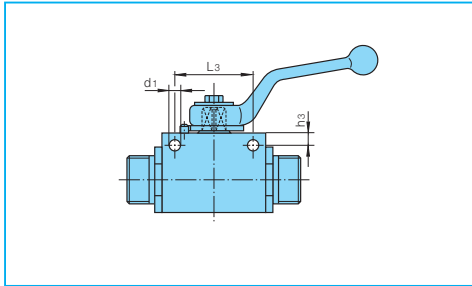


- Mounting holes
- Design principle for ball valves
- Seals for ball valves
- Seal materials
- Compatibility table
- Ball valve size selection
- Pressure/temperature-diagram
- Δp -characteristics



Technical information

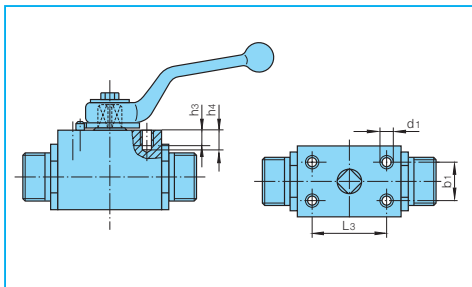
Mounting holes for 2-way and multi-way ball valves with floating ball Steel and stainless steel · DN 4 - DN 25



For wall mounting, stack design, etc.

For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
All dimensions subject to change without notice

DN	L3	h3	d1
4	27,5	3,5	4,5
6	27,5	3,5	4,5
8	35,0	4,5	5,3
10	35,0	4,5	5,3
12	41,5	4,5	5,3
16	41,5	4,5	5,3
20	46,5	6,0	5,3
25	46,5	6,0	5,3

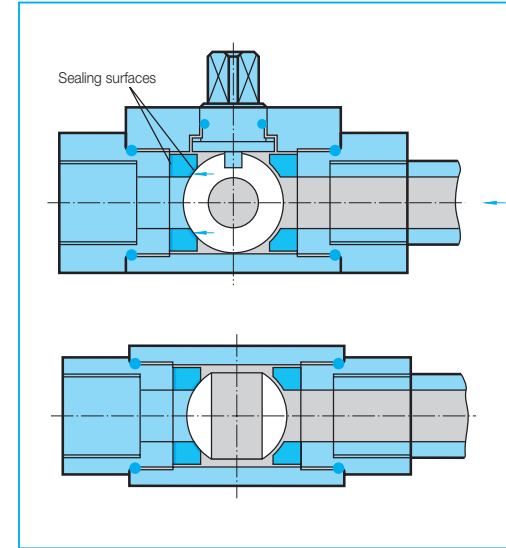


For panel mounting,
installation of actuators, etc.

For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
All dimensions subject to change without notice

DN	L3	b1	d1	h3	h4
4	27,5	12,0	M4	5	6
6	27,5	12,0	M4	5	6
8	35,0	22,0	M5	6	8
10	35,0	22,0	M5	6	8
12	41,5	24,0	M5	8	10
16*	39,0	28,0	M5	8	10
20	48,0	33,0	M6	9	12
25	54,0	40,0	M6	9	12

Design principle of 2-way ball valves with floating ball



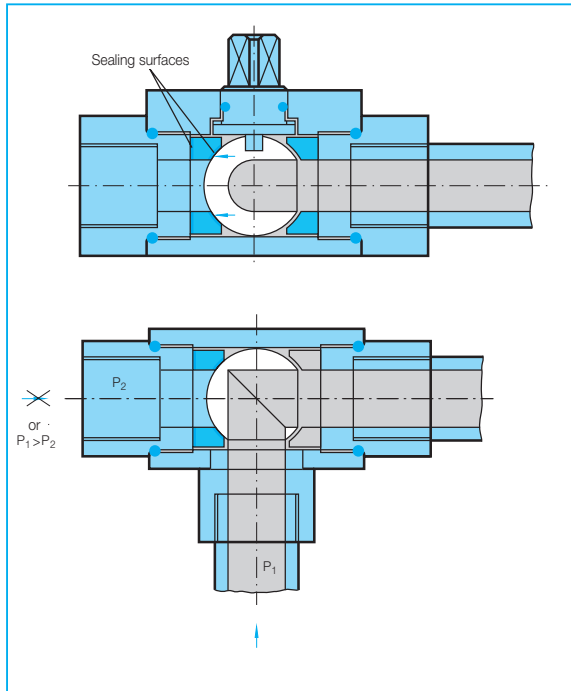
Bearing:
The seats also serve as the bearings for the floating ball.

Sealing:
Medium pressure will force the ball into the seat on the downstream side, forming a tight seal.

Leakage rate:
A - DIN EN 12266-1
(No visibly detectable leakage during the time of inspection)



Design principle of multi-way ball valves with floating ball

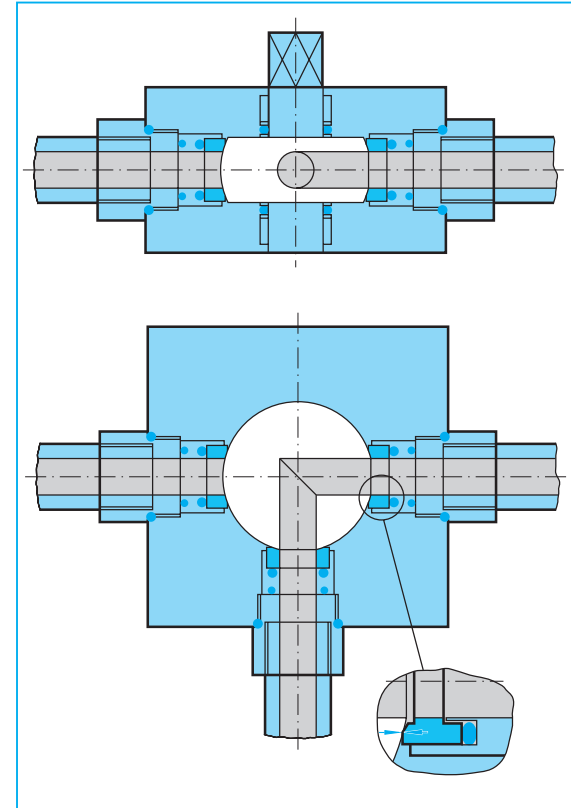


Bearing:
The seats also serve as the bearings for the floating ball.

Sealing:
Medium pressure will force the ball into the seat on the downstream side, forming a tight seal, provided the pressure in the lines which are joined is greater than the pressure in the line which is closed off. Leakage will be encountered if the pressure in the closed line is equal to or greater than that in the other lines.

Leakage:
A - DIN EN 12266-1
(No visibly detectable leakage during the time of inspection)

Design principle of multi-way ball valves with trunnion ball



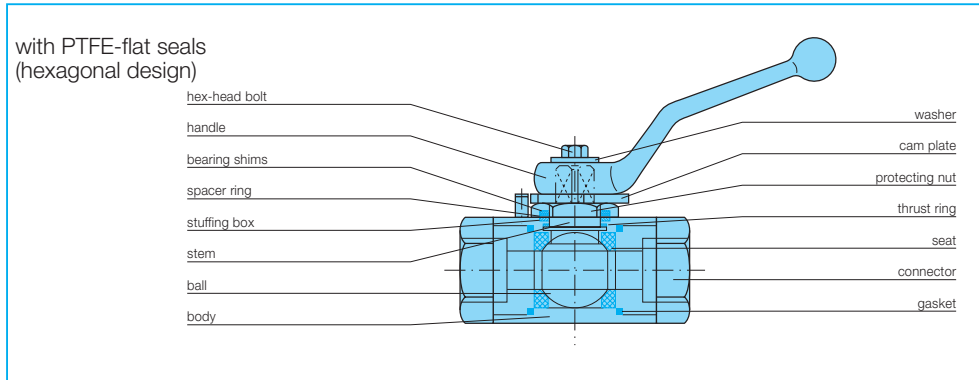
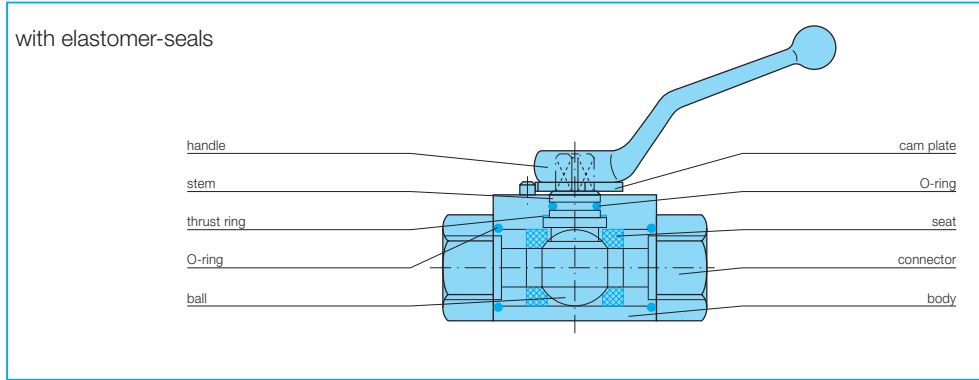
Bearing:
The seats also serve as the bearings for the floating ball.

Sealing:
Tight seal at the trunnion ball due to pressure equalized Rötelmann telescopic seal.

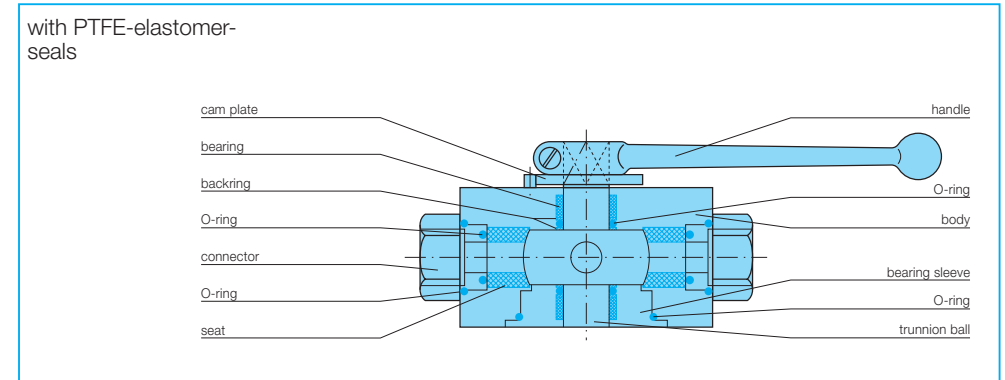
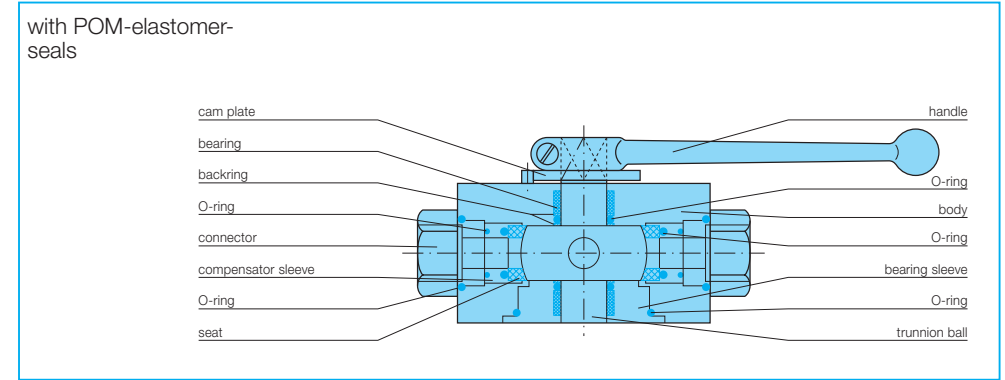
Leakage:
A - DIN EN 12266-1
(No visibly detectable leakage during the time of inspection)



Seals in ball valves with floating ball

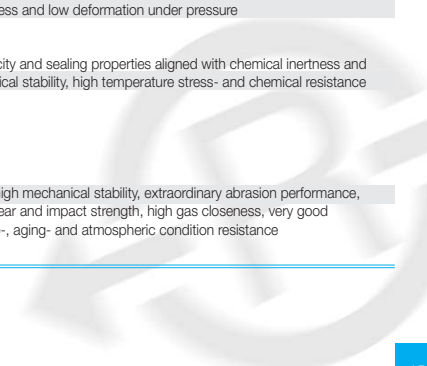


Seals in multi-way ball valves with trunnion ball



Seal materials

Abbreviation (DIN ISO 1629)	Generic designation	Trade name (registered Trademarks)	Plastic properties	Abbreviation (DIN ISO 1629)	Applications	Temperature range (check pressure/ temperature diagram)	Special properties
PTFE	Polytetrafluorethylene	Teflon Hostafion Fluon	Thermoplastic	PTFE	Ball seal	-200°C to +260°C	High chemical and temperature resistance; good slip properties. Modifying the crossage can extend the application range to 250°C or 315 bar.
PVDF	Polyvinyl-diene-fluoride	Solef Dyflor	Thermoplastic	PVDF	Ball seal	-40°C to +150°C	Mechanical properties similar to PTFE; greater stiffness than PTFE. Thermal loading capabilities lower than PTFE
PCTFE	Polychlorotrifluor-ethylene	Kel-F Neoflon Aclar	Thermoplastic	PCTFE	Ball seal	-240°C to +150°C	Mechanical properties similar to PTFE; greater stiffness than PTFE. Thermal loading capabilities lower than PTFE
POM	Polyoxymethylene/Polyacetal	Delrin Hostaform C Ultraform	Thermoplastic	POM	Ball seal	-40°C bis +100°C	High strength and stiffness, good creep strength, low humidity absorption, hydrolytic resistance (up to 60°C)
PEEK	Polyether-ether-ketone	Victrex Hostatec	Thermoplastic	PEEK	Ball seal	-40°C to +260°C	Excellent chemical and hydrolytic resistance, good creep strength even at higher temperature, very good resistance to wear under varying operating conditions
PAI	Polyamide	Torlon	Thermoplastic	PAI	Ball seal	-190°C to +260°C	Excellent retention of mechanical stability, stiffness and creep strength at broad temperature range, excellent friction and abrasion performance, excellent UV-resistance
PI	Polyimide	Vespel	Thermoplastic	PI	Ball seal	-273°C to +255°C	High mechanical strength, stiffness and creep strength even at higher temperature, good abrasion performance
NBR	Nitrile-butadien-rubber	Perbunan Chemigum Hycar Elaprim Krynac JSR-N	Elastomer	NBR	Body- and stem-seal	-30°C to +100°C	High density, low deformation under pressure
HNBR	Hydro nitrile- butadien-rubber	Terban Zetpol	Elastomer	HNBR	Body- and stem-seal	-35°C to +150°C	Excellent physical properties and good abrasion resistance even at higher temperature, low deformation under pressure, good resistance against steam, oxygen and ozone
EPDM	Ethylene-propylene-rubber	Buna AP Vistalon Dutral Keltan	Elastomer	EPDM	Body- and stem-seal	-50°C to +150°C	Excellent swelling resistance with heating-circuit water and steam, very good ozone-, aging- and atmospheric condition resistance
FKM	Fluor-rubber	Viton Technoflon Fluorel	Elastomer	FKM	Body- and stem-seal	-25°C to +200°C	Good chemical stability and high temperature resistance, excellent tightness and low deformation under pressure
FFKM	Perfluor-rubber	Kalrez Chemraz Parofluor Isolast Simriz	Elastomer	FFKM	Body- and stem-seal	-15°C to +300°C	Elasticity and sealing properties aligned with chemical inertness and thermal stability, high temperature stress- and chemical resistance
PUR	Polyurethane-rubber	Vulkollan Desmopan Moltopren Elastollan	Elastomer	PUR	Body- and stem-seal	-30°C to +80°C	Very high mechanical stability, extraordinary abrasion performance, high tear and impact strength, high gas closeness, very good ozone-, aging- and atmospheric condition resistance



Compatibility table

This compatibility table is for information only and without responsibility. The data presented are guidelines and recommendations based on common practice. The resistance of the materials might be affected through specific, on the location prevailing operating conditions as pressure, temperature, static or dynamic strain, but also through modified concentrations of the media exposed to the material.

+ = resistant o = conditionally resistant - = not resistant

Medium	Chem. formula	Comment	Steel	1.4571	Hastelloy	Ms	Alu	POM	PEEK	PTFE	PVDF	NBR	EPDM	FKM	FFKM
A															
acetone	CH ₃ COCH ₃	Propanone	o	+	+	+	+	+	+	+	o	-	+	-	+
acetylene	C ₂ H ₂		o	+	+	-	+	+	+	+	+	+	+	+	+
acetic acid	CH ₃ COOH		-	+	+	-	o	-	+	+	o	-	-	-	+
air	-		+	+	+	+	+	+	+	+	+	+	+	+	+
aluminium chloride	AlCl ₃		-	-	+	-	-	o	+	+	+	+	+	+	+
ammonia	NH ₃		+	+	+	-	-	+	o	+	+	o	+	-	+
argon	Ar	noble gas	+	+	+	+	+	+	+	+	+	+	+	+	+
asphalt, bitumen	-		+	+	+	o	-	-	+	+	+	-	-	-	+
B															
benzene	C ₆ H ₆		o	+	+	o	+	o	+	+	o	-	-	+	+
boric acid	H ₃ BO ₃		-	+	+	-	o	o	+	+	+	+	+	+	+
brake fluid	-		+	+	+	+	-	+	+	+	+	-	+	-	+
bromine	Br ₂		-	-	-	-	-	-	-	-	-	-	-	o	+
butane	C ₄ H ₁₀		+	+	+	+	+	+	+	+	+	+	-	+	+
C															
calcium chloride	CaCl ₂		-	o	+	-	-	+	+	+	+	+	+	+	+
calcium hydroxide	Ca(OH) ₂		+	+	+	-	-	+	+	+	+	+	+	+	+
carbon disulfide	CS ₂		+	+	+	o	+	+	+	+	+	-	-	+	+
carbon dioxide	CO ₂		+	+	+	+	+	+	+	+	+	+	+	+	+
chlorine	Cl ₂		-	o	o	-	-	-	-	-	-	-	-	o	+
chloroforme	CHCl ₃	trichlormethane	o	+	+	o	-	-	+	+	+	-	+	+	+
copper(II)chloride	CuCl ₂		-	-	o	-	-	o	+	+	+	+	+	+	+
copper sulfate	CuSO ₄		-	+	+	-	-	o	+	+	+	+	+	+	+
chromic acid	H ₂ CrO ₄		-	o	o	-	-	-	o	+	o	-	-	o	+
D															
diesel fuel	-		+	+	+	+	+	+	+	+	+	+	-	+	+
E															
ethane	C ₂ H ₆		o	+	+	+	+	+	+	+	o	+	-	+	+
ethanol	C ₂ H ₅ OH	ethylalcohol	o	+	+	o	o	+	+	+	+	+	+	-	+
ethylene	C ₂ H ₄		o	+	+	o	o	+	+	+	+	+	-	+	+
ethyleneglycol	C ₂ H ₆ O ₂	ethanediol	o	+	+	o	+	o	+	+	+	+	+	+	+
ethylenetrichloride	C ₂ HCl ₃	trichloroethene	o	+	+	o	o	o	+	+	+	-	-	+	+
F															
fatty acid	C ₁₇ H ₃₃ COOH		-	+	+	-	-	+	+	+	+	o	-	+	+
fluorine	F ₂	dry	-	-	-	-	-	-	-	-	-	-	-	-	-
formic acid	HCO ₂ H		-	o	+	-	-	-	+	+	+	-	+	-	+
fuel oil	-	light	o	+	+	o	+	-	+	+	+	+	-	+	+
fuel oil	-	heavy	o	+	+	o	+	-	+	+	+	-	-	+	+
G															
glucose	C ₆ H ₁₂ O ₆		o	+	+	+	+	+	+	+	+	+	+	+	+
glycerine	C ₃ H ₈ O ₃		o	+	+	-	+	+	+	+	+	+	+	+	+
H															
heavy oil	-	IF600	+	+	+	o	o	+	+	+	+	-	-	-	+
HEES hydraulic fluid	-	synthetic ester	o	+	+	o	-	+	+	+	+	+	-	+	-
HEPG hydraulic fluid	-	polyglycols	o	+	+	o	-	+	+	+	+	+	-	+	-
HETG hydraulic fluid	-	rape oil	o	+	+	o	-	+	+	+	+	+	-	+	-

Medium	Chem. formula	Comment	Steel	1.4571	Hastelloy	Ms	Alu	POM	PEEK	PTFE	PVDF	NBR	EPDM	FKM	FFKM
H															
helium	He	noble gas	+	+	+	+	+	+	+	+	+	+	+	+	+
heptane	C ₇ H ₁₆		o	+	+	+	+	+	+	+	+	+	+	-	+
hexane	C ₆ H ₁₄		o	o	+	+	+	+	+	+	+	+	+	-	+
HFA hydraulic fluid	-	oil-in-water emulsion	+	+	+	+	+	+	+	+	+	+	-	+	+
HFB hydraulic fluid	-	water-in-oil emulsion	+	+	+	+	+	+	+	+	+	+	-	+	+
HFC hydraulic fluid	-	waterglycole	o	+	+	o	+	+	+	+	+	+	+	o	+
HFD-R hydraulic fluid	-	phosphonates	o	+	+	o	-	+	+	+	+	+	-	+	+
HFD-S hydraulic fluid	-	chlorineterol hydrocarbons	o	+	+	o	-	+	+	+	+	+	-	+	+
HFD-U hydraulic fluid	-	organic ester	o	+	+	o	-	+	+	+	+	+	-	+	+
hydraulic oils	-	mineral-oil basis	+	+	+	+	+	+	+	+	+	+	+	+	+
hydrochloric acid	HCl		-	-	o	-	-	+	+	+	+	-	+	+	+
hydrogensulfide	H ₂ S	hydrogen sulfide	-	+	+	-	-	-	+	+	+	-	+	-	+
hydrogen	H ₂		o	+	+	+	+	+	+	+	+	+	+	+	+
hydrogen peroxid	H ₂ O ₂		o	+	+	o	o	+	+	+	+	+	-	-	+
I															
ink	-		-	+	+	-	-	+	+	+	+	+	+	+	+
insulating oil	-		+	+	+	+	+	+	+	+	+	+	o	-	+
iron(II)-chloride	FeCl ₂		-	-	o	o	-	-	+	+	+	+	+	+	+
iron(II)-sulfate	FeSO ₄		+	o	o	o	-	+	+	+	+	-	+	+	+
isobutyl alcohole	C ₄ H ₁₀ O	isobutanol	o	o	+	-	-	+	+	+	o	-	+	+	+
isocyanate	-		+	+	+	o	+	+	+	+	+	-	+	+	o
isooctane	C ₈ H ₁₈		+	+	+	+	+	+	+	+	+	+	-	+	+
isopropylalcohol	C ₃ H ₈ O	isopropanol	o	o	o	o	o	o	o	+	+	o	+	+	+
J															
jet petrol	-		o	+	+	-	+	+	+	+	+	o	-	+	+
K															
kerosene	-		+	+	+	+	+	+	+	+	+	+	-	+	+
L															
lacquers	-		o	+	+	-	+	+	+	+	+	o	-	o	+
lighting gas	-	coke oven gas	o	+	+	+	+	+	+	+	+	-	-	+	+
M															
magnesium chloride	MgCl ₂		-	o	+	-	-	+	+	+	+	+	+	+	+
magnesium hydroxide	Mg(OH) ₂		+	+	+	-	-	+	+	+	+	+	o	+	+
magnesium sulfate	MgSO ₄		-	+	o	o	o	+	+	+	+	+	o	+	+
mercury	Hg		+	+	+	-	-	+	+	+	+	+	+	+	+
mercury(II)chloride	Hg ₂ Cl ₂	calomel	-	-	-	-	-	+	+	+	+	+	+	+	+
metalworking hebricants	-		o	+	+	+	+	+	+	+	+	+	+	-	+
methanale	CH ₂ O	formaldehyde	-	+	o	o	-	+	+	+	+	+	-	o	-
methane	CH ₄	mine gas	o	o	+	+	+	+	+	+	+	+	-	+	+
methanol	CH ₃ OH	methyl alcohol	o	o	+	o	o	o	+	+	+	+	+	-	+
methyl acetate	CH ₃ CO ₂ CH ₃		o	+	+	-	+	+	+	+	+	-	o	-	o
methyl amine	CH ₃ NH ₂		o	+	+	-	+	+	+	+	+	+	-	o	-
methyl chloride	CH ₃ Cl	chloromethane	o	+	+	-	-	-	+	+	+	-	-	+	+
methylene chloride	CH ₂ Cl ₂	dichloromethane	-	+	o	o	-	+	+	+	+	+	-	-	o
mine water	-		o	+	+	+	-	+	+	+	+	+	+	+	+

Compatibility table

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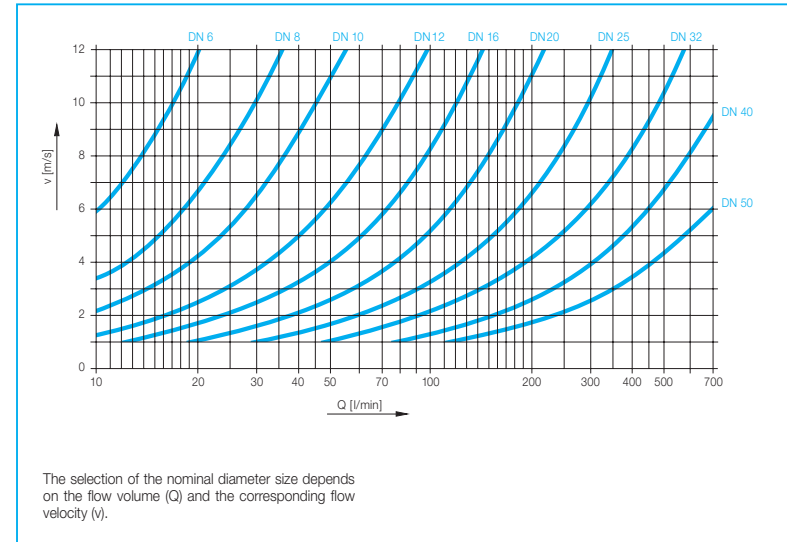
+ = resistant o = conditionally resistant - = not resistant

Medium	Chem. formula	Comment	Steel	1.4571	Hastelloy	Ms	Alu	POM	PEEK	PTFE	PVDF	NBR	EPDM	FKM	FFKM
N															
naphthalene	C ₁₀ H ₈		o	o	o	-	o	+	+	+	+	-	-	+	+
natural gas	-		o	+	+	+	+	+	+	+	+	+	+	+	+
neon	Ne	noble gas	+	+	+	+	+	+	+	+	+	+	+	+	+
nickel chloride	NiCl ₂		-	o	+	-	o	+	+	+	+	+	+	+	+
nickel sulfate	NiSO ₄		-	+	+	-	-	o	+	+	+	+	+	+	+
nitrobenzene	C ₆ H ₅ NO ₂		-	+	+	-	-	-	-	+	-	-	-	-	+
nitric acid	HNO ₃		-	+	-	-	-	-	-	+	+	-	-	o	+
nitrogen	N ₂		+	+	+	+	+	+	+	+	+	+	+	+	+
O															
octane	C ₈ H ₁₈		-	+	+	o	o	+	+	+	+	o	-	+	+
oxalic acid	HO ₂ CCO ₂ H		-	-	+	-	o	-	+	+	+	o	+	+	+
oxygen	O ₂		o	+	+	+	o	+	+	+	+	o	+	o	+
ozone	O ₃		-	+	+	o	o	-	+	+	+	-	+	+	+
P															
palmitic acid	CH ₃ (CH ₂) ₁₄ CO ₂ H	hexadecanoic acid	o	+	+	-	o	+	+	+	+	o	-	+	+
paraffin	-		+	+	+	+	+	+	+	+	+	+	-	+	+
pentane	C ₅ H ₁₂		o	+	+	+	+	o	+	+	+	+	-	+	+
pentanol	CH ₃ (CH ₂) ₄ OH		+	+	+	o	o	-	o	+	+	o	+	o	+
petrol	-		+	+	+	+	+	+	+	+	+	+	-	+	+
petroleum	-		o	+	+	+	+	+	+	+	+	+	-	+	+
phenol	C ₆ H ₅ OH	carbolic acid	o	+	+	o	o	-	o	+	+	-	-	+	+
phosphoric acid	H ₃ PO ₄		-	o	o	-	-	-	+	+	+	-	o	+	+
picric acid	(O ₂ N) ₃ C ₆ H ₂ OH		-	+	+	-	-	-	+	+	+	-	o	-	-
potassium carbonate	K ₂ CO ₃	potash	-	o	o	-	-	+	+	+	+	+	+	+	+
potassium chloride	KCl		-	-	-	-	-	+	+	+	+	+	+	+	+
potassium hydroxide	KOH	caustic potash	o	+	o	-	-	+	+	+	+	-	-	-	+
potassium nitrate	KNO ₃	salpeter	o	+	o	o	o	+	+	+	+	+	+	+	+
potassium sulfate	K ₂ SO ₄		o	+	+	o	+	+	+	+	+	+	+	+	+
propane	C ₃ H ₈		+	+	+	o	+	+	+	+	+	+	-	+	+
propandiol	CH ₂ CH(OH)CH ₂ OH	propylene glycole	o	o	+	o	+	-	+	+	+	o	+	+	+
propylene	C ₃ H ₆	propene	+	+	+	o	o	+	+	+	+	-	-	+	+
S															
salicylic acid	HOC ₆ H ₄ CO ₂ H		-	+	o	-	-	-	-	+	+	o	+	+	+
seawater	-	seawater	-	o	+	o	-	+	+	+	+	+	+	+	+
Skydro®	-	hydraulic fluid	+	+	+	-	-	+	+	+	o	-	+	-	+
silicon oil	-		-	+	-	-	o	+	+	+	+	+	+	+	+
silver nitrate	AgNO ₃	lunar caustic	-	+	o	-	-	+	+	+	+	o	+	+	+
sodium carbonate	Na ₂ CO ₃	soda	o	o	+	-	-	+	+	+	+	+	+	+	+
sodium chloride	NaCl	cooking salt	o	o	+	-	-	+	+	+	+	+	+	+	+
sodium hydrogencarbonate	NaHCO ₃		o	o	o	-	-	+	+	+	+	+	+	+	+
sodium hydrogensulfate	NaHSO ₄		-	+	o	-	-	+	+	+	+	+	+	+	+
sodium hydroxide	NaOH	caustic soda solution	-	+	o	-	-	+	+	+	+	o	-	+	-
sodium nitrate	NaNO ₃	soda niter	-	+	-	o	+	+	+	+	+	o	+	+	+
sodium sulfate	Na ₂ SO ₄		-	+	+	o	+	+	+	+	+	+	o	+	+
sodium tetraborate	Na ₂ B ₄ O ₇	borax	o	+	+	+	-	+	+	+	+	o	+	+	+
solvents	-		o	+	+	-	+	o	+	+	+	+	-	+	+
steam	H ₂ O	100° C	+	+	+	+	+	-	+	+	+	o	-	+	-
sulfur	S		-	o	+	-	+	+	+	+	+	-	+	+	+
sulfurdioxide	SO ₂		-	o	o	-	o	-	+	+	+	-	+	-	+
sulfuric acid	H ₂ SO ₄		-	+	+	-	-	-	o	+	+	-	-	+	+
sulfur trioxide	SO ₃		o	+	+	o	+	-	+	+	-	-	o	+	+

Medium	Chem. formula	Comment	Steel	1.4571	Hastelloy	Ms	Alu	POM	PEEK	PTFE	PVDF	NBR	EPDM	FKM	FFKM
T															
tannic acid	-		-	+	+	o	o	o	+	+	+	+	+	+	+
tetrachloromethane	CCl ₄		-	+	+	-	-	-	+	+	+	-	-	+	+
thermo-oil	-	250° C	+	+	+	-	-	-	+	+	+	-	-	o	+
tin(II)chloride	SnCl ₂		-	-	o	-	-	+	+	+	+	+	+	+	+
top gas	-	blast furnace gas	o	+	+	-	-	-	+	+	+	+	-	-	+
transmission lubricant	-		+	+	+	+	+	+	+	+	+	+	-	+	+
turpentine	-		o	+	+	o	+	+	+	+	+	o	-	+	+
U															
urea	H ₂ NCONH ₂	carbanide	-	o	+	o	o	+	+	+	+	+	+	+	+
V															
vaseline	-		o	+	+	o	+	+	+	+	+	+	-	+	+
vinyl chloride	C ₂ H ₃ Cl		o	+	+	-	-	+	+	+	+	-	o	o	+
W															
water	H ₂ O		o	+	+	+	+	+	+	+	+	+	+	+	+
X															
xylene	C ₈ H ₁₀		o	+	+	+	+	+	+	+	+	-	-	o	+
Z															
zinc chloride	ZnCl ₂		-	-	o	-	-	+	+	+	+	+	+	+	+
zinc sulfate	ZnSO ₄		-	+	o	-	-	+	+	+	+	+	+	+	+



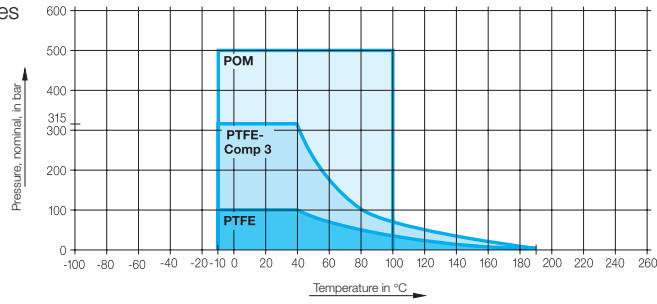
Ball valves size selection



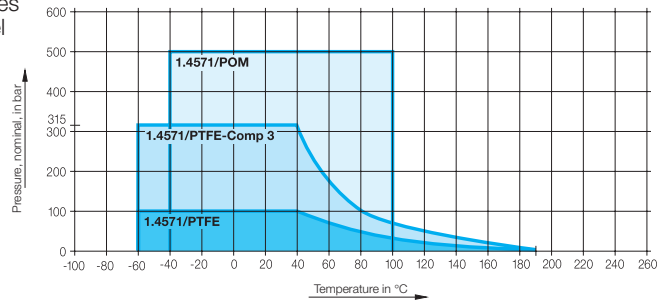
Pressure/temperature diagrams

Please observe max. pressure for ball valves!

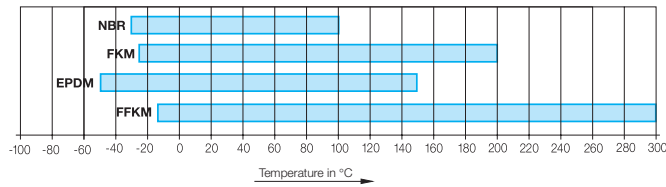
Pressure/temperature diagram 1 for ball valves made of steel



Pressure/temperature diagram 2 for ball valves made of stainless steel

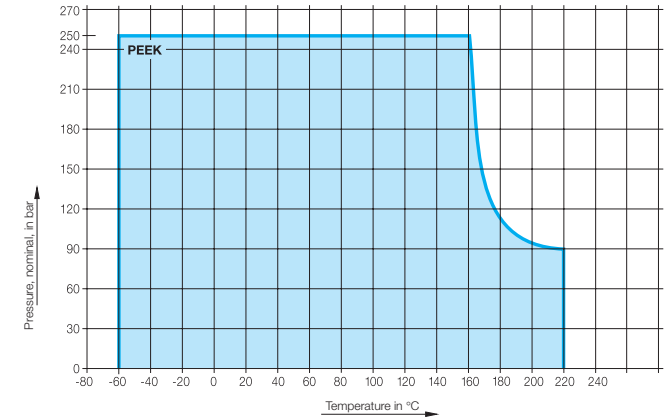


Temperature-range for elastomers



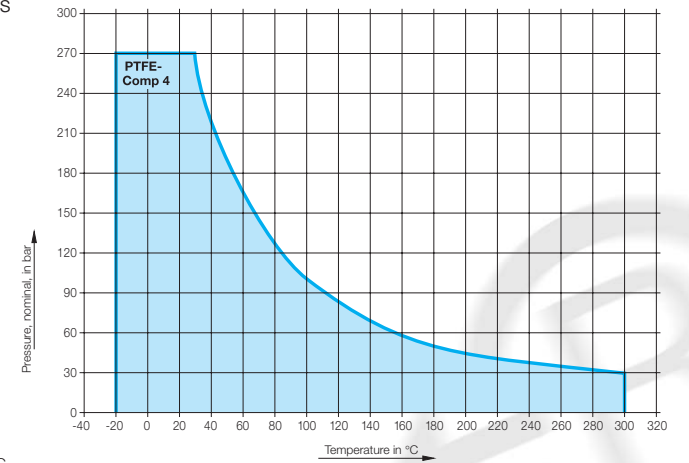
Please observe max. pressure for ball valves!

Pressure/temperature diagram 3 for ball valves made of steel* and stainless steel



*) Free-cutting steel down to -10° C

Pressure/temperature diagram 4 for ball valves made of steel* and stainless steel

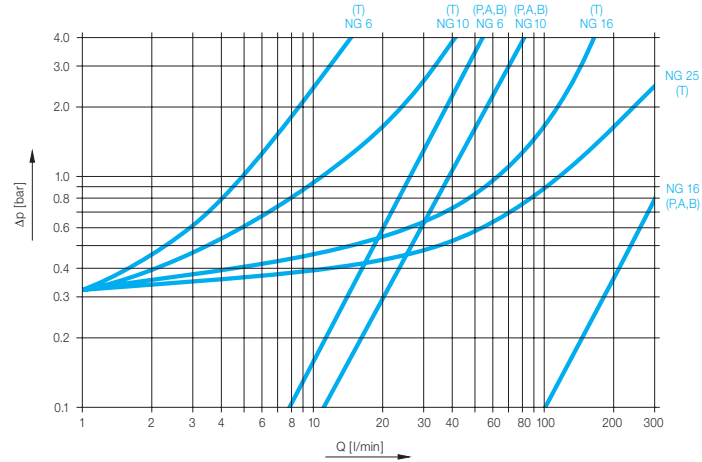


*) Free-cutting steel down to -10° C

Δp -characteristics

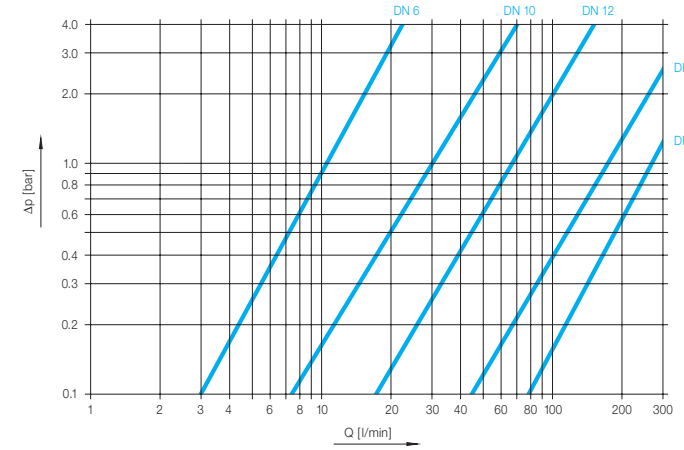
Test medium : hydraulic oil
 Viscosity : 33 mm²/s (cSt)

Sandwich plates

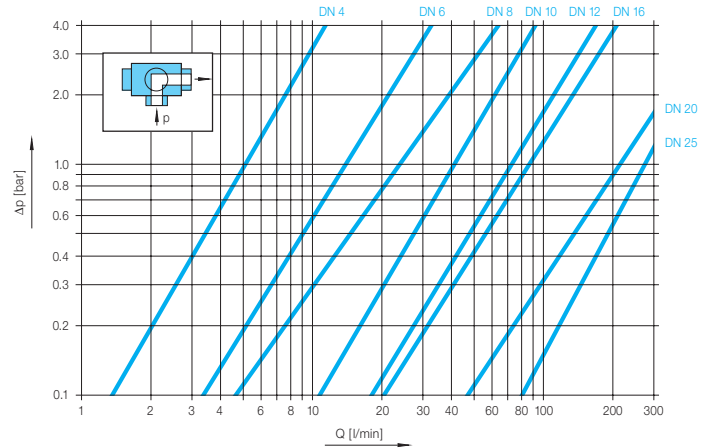


Test medium : hydraulic oil
 Viscosity : 33 mm²/s (cSt)

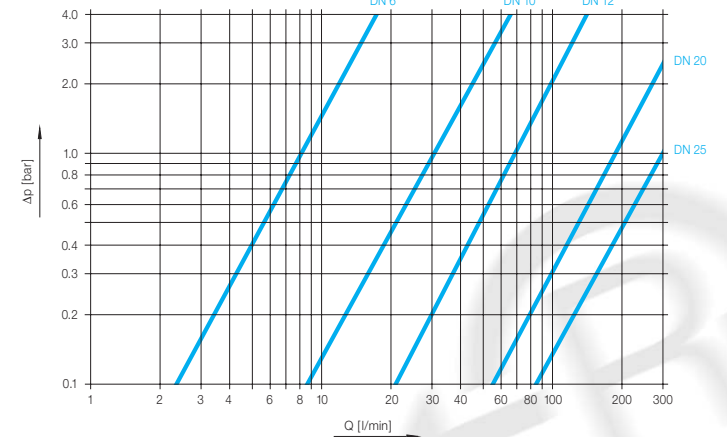
Multi-way ball valves with trunnion ball with L-bore



Multi-way ball valves with floating ball with L-bore



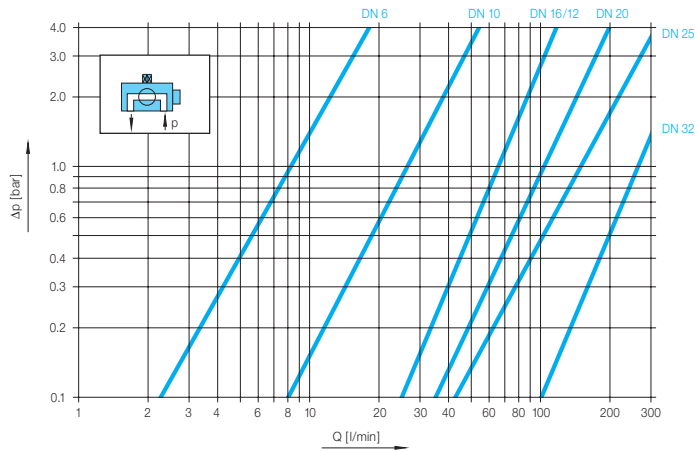
Multi-way ball valves with trunnion ball with double L-bore



Δp -characteristics

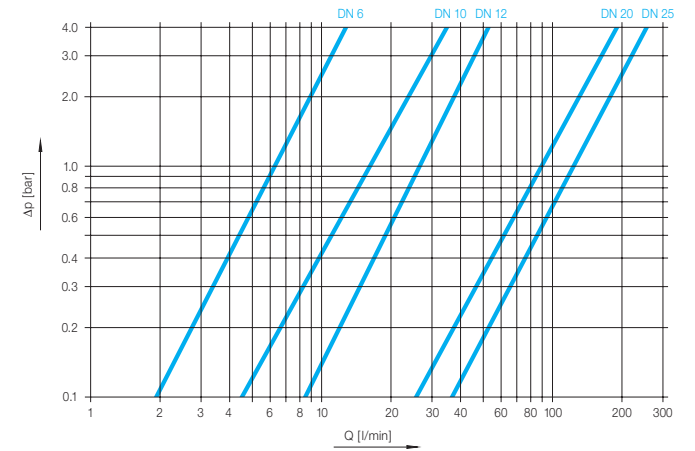
Test medium : hydraulic oil
 Viscosity : 33 mm²/s (cSt)

2-way ball valves for manifold mounting

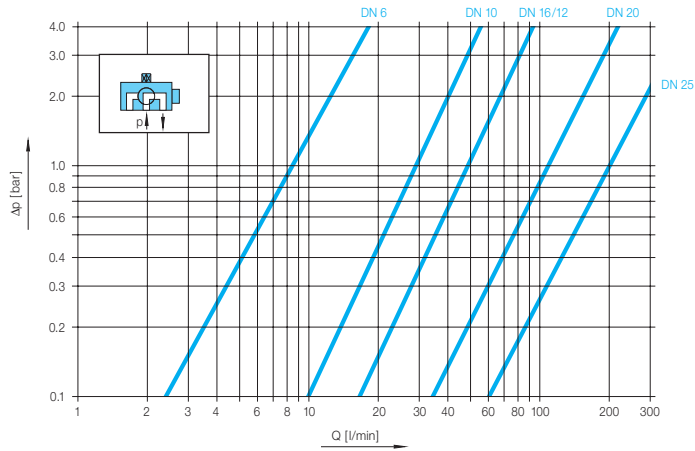


Test medium : hydraulic oil
 Viscosity : 33 mm²/s (cSt)

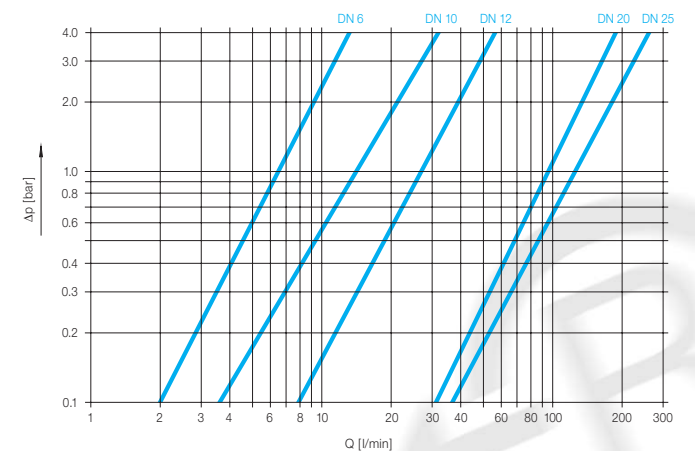
Multi-way ball valves with trunnion ball for manifold mounting with L-bore



Multi-way ball valves with floating ball for manifold mounting with L-bore



Multi-way ball valves with trunnion ball for manifold mounting with double L-bore



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