









Shut-off and control technology



A line of ball valves and ideas



| | |
|--|------------|
|  2-way ball valves | 5 |
| • with threaded connector | 6 |
| • with removable centre | 32 |
| • with automatic pressure relief | 35 |
| • with additional miniature test point outlet | 35 |
| • as combination | 36 |
| • with spring-return and integrated check valve | 38 |
| • for support cylinder control | 40 |
| • with integrated, pilot-operated check valve | |
| • without check valve | |
| • with flange connection | 42 |
| • with ISO-flange connection (SAE) | 42 |
| • with DIN-flange connection | 54 |
| • with welding-end | 60 |
| • with removable centre | 62 |
| • with staple-lock connector | 64 |
| • for manifold mounting | 66 |
| • for manifold insertion as cartridge type | 68 |
| | |
|  Multi-way ball valves | 71 |
| • with floating ball | 74 |
| • with threaded connector | 74 |
| • as combination (see 2-way ball valves) | 36 |
| • with ISO-flange connection (SAE) | 84 |
| • for manifold mounting | 86 |
| • for manifold insertion as cartridge type | 88 |
| • with trunnion ball | 90 |
| • with threaded connector | 90 |
| • as combination | 98 |
| • for manifold mounting | 100 |
| | |
|  Ball valve-combinations | 105 |
| • Shut-off blocks with integrated bypass and safety-lock | 106 |
| • Sandwich plates | 108 |
| • Accumulator safety blocks | 114 |
| • with integrated 2-way ball valve type RSA | 114 |
| • with integrated 3-way ball valve type RSK | 120 |
| • with integrated 3-way ball valve type RSM | 124 |

| | |
|---|------------|
|  Ball valves for instrumentation technology | 129 |
| • 2-way ball valves with test line connections (TK2) | 130 |
| • Multi-way ball valves with floating ball for pressure gauges (TK4) | 132 |
| • Directional ball valves for differential pressure transducers (TK5-TK7) | 134 |
| • Test valves MBV 5000 | 138 |
| | |
|  Valves | 141 |
| • Check valves | 142 |
| • with threaded connector | 142 |
| • with ISO-flange connection (SAE) | 144 |
| • for manifold mounting | 148 |
| • Needle valves | 150 |
| • with threaded connector | 150 |
| • for manifold mounting | 152 |
| • for manifold insertion as cartridge type | 154 |
| • Flow control valves | 156 |
| • with threaded connector | 156 |
| • for manifold mounting | 158 |
| | |
|  Attachments, accessories | 161 |
| | |
|  Technical information | 173 |
| • Mounting holes | 174 |
| • for wall mounting, stack design etc. | 174 |
| • for panel mounting | 175 |
| • for installation of actuators | 176 |
| • Design principle of | 177 |
| • 2-way ball valves with floating ball | 177 |
| • multi-way ball valves with floating ball | 178 |
| • multi-way ball valves with trunnion ball | 179 |
| • Sealing systems in ball valves | 180 |
| • with floating ball | 180 |
| • with trunnion ball | 181 |
| • Sealing materials | 182 |
| • Compatibility table | 184 |
| • Ball valve size selection | 189 |
| • Pressure/temperature diagrams | 190 |
| • Δp-characteristics | 192 |
| | |
|  How to find us | 197 |

2-way ball valves



with threaded connector



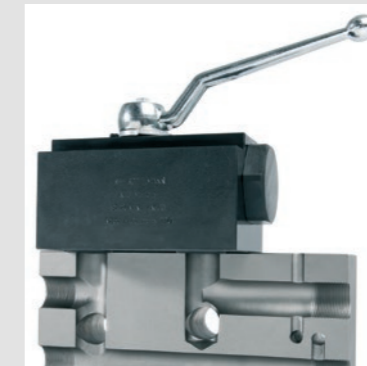
with flange connection



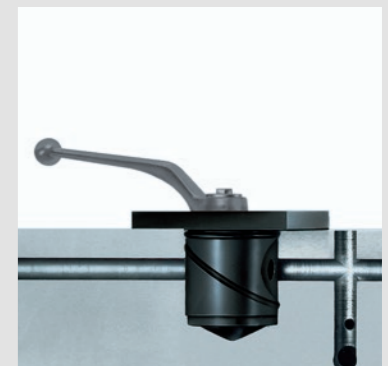
with welding-end



with staple-lock connector



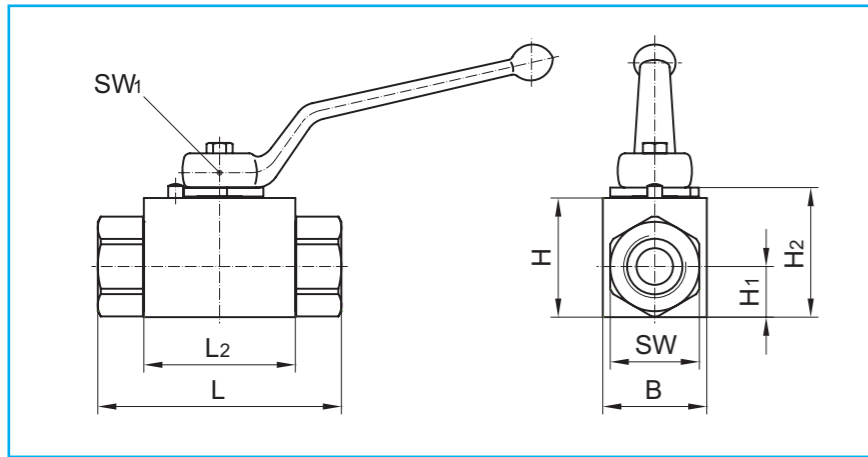
for manifold mounting



for manifold insertion
as cartridge type

2-way ball valves with threaded connector

Steel · DN 4 - DN 40/25



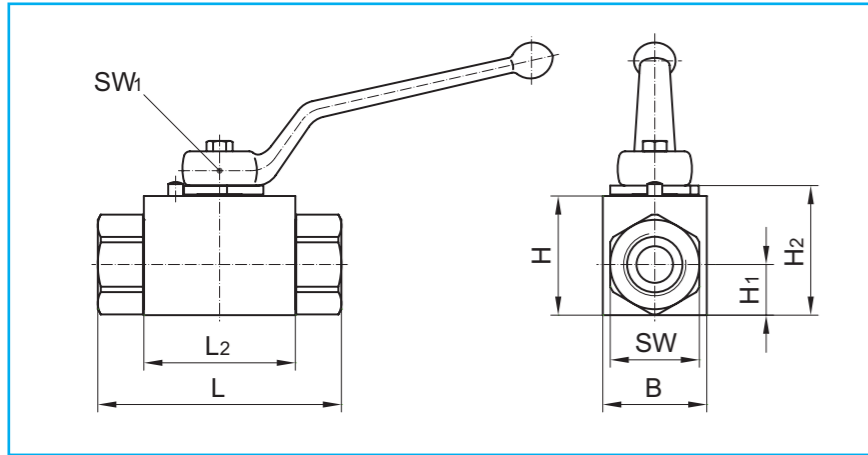
Handle included in delivery
 Please check pressure rating of the pipe fittings!
 For actuators and handles refer to "Attachments, accessories"
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

| | | | | |
|-------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Body: | steel, black oxide | steel, black oxide | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM | PTFE-Comp.3 | metal |
| Stem seals: | NBR | FKM | FKM | FKM |

| Connection | DN | Thread D | OD | L | L ₁ | L ₂ | B | H | H ₁ | H ₂ | SW | SW ₁ | 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 | 67 | 10 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 0,20 | 4 | 500 | 100 001 | 500 | 100 051 | 315 | 100 671 | 500 | 101 401 |
| | 6 | M14 x 1,5 | 8 | 67 | 10 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 0,20 | 6 | 500 | 100 002 | 500 | 100 052 | 315 | 100 672 | 500 | 101 402 |
| | 8 | M16 x 1,5 | 10 | 75 | 11 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,42 | 8 | 500 | 100 003 | 500 | 100 053 | 315 | 100 673 | 500 | 101 403 |
| | 10 | M18 x 1,5 | 12 | 75 | 11 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,42 | 10 | 500 | 100 004 | 500 | 100 054 | 315 | 100 674 | 500 | 101 404 |
| | 12 | M22 x 1,5 | 15 | 83 | 12 | 51 | 35 | 40 | 17,0 | 43,5 | 30 | 10 | 14 | 0,63 | 12 | 500 | 100 005 | 500 | 100 055 | 315 | 100 675 | 500 | 101 405 |
| | 16 | M26 x 1,5 | 18 | 82 | 12 | 50 | 45 | 45 | 20,0 | 48,5 | 36 | 10 | 14 | 0,85 | 16 | 420 | 100 006 | 420 | 100 056 | 315 | 100 676 | 420 | 101 406 |
| | 20 | M30 x 2 | 22 | 99 | 14 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | 1,21 | 20 | 420 | 100 007 | 420 | 100 057 | 250 | 100 677 | 420 | 101 407 |
| | 25 | M36 x 2 | 28 | 108 | 14 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 1,75 | 25 | 420 | 100 008 | 420 | 100 058 | 250 | 100 678 | 420 | 101 408 |
| | 32/25 | M45 x 2 | 35 | 116 | 16 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 1,88 | 32/25 | 420 | 100 037 | 420 | 100 087 | 250 | 100 842 | 420 | 101 409 |
| | 40/25 | M52 x 2 | 42 | 121 | 16 | 70 | 55 | 60 | 26,0 | 64,0 | 55 | 14 | 15 | 2,05 | 40/25 | 420 | 100 038 | 420 | 100 088 | 250 | 100 843 | 420 | 101 410 |
| 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 | 12 | 0,22 | 4 | 500 | 100 009 | 500 | 100 059 | 315 | 100 679 | 500 | 101 411 |
| | 6 | M18 x 1,5 | 10 | 73 | 12 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 0,22 | 6 | 500 | 100 010 | 500 | 100 060 | 315 | 100 680 | 500 | 101 412 |
| | 8 | M20 x 1,5 | 12 | 77 | 12 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,43 | 8 | 500 | 100 011 | 500 | 100 061 | 315 | 100 681 | 500 | 101 413 |
| | 10 | M22 x 1,5 | 14 | 81 | 14 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,44 | 10 | 500 | 100 012 | 500 | 100 062 | 315 | 100 682 | 500 | 101 414 |
| | 12 | M24 x 1,5 | 16 | 87 | 14 | 51 | 35 | 40 | 17,0 | 43,5 | 30 | 10 | 14 | 0,65 | 12 | 500 | 100 013 | 500 | 100 063 | 315 | 100 683 | 500 | 101 415 |
| | 16 | M30 x 2 | 20 | 90 | 16 | 50 | 45 | 45 | 20,0 | 48,5 | 36 | 10 | 14 | 0,89 | 16 | 420 | 100 014 | 420 | 100 064 | 315 | 100 684 | 420 | 101 416 |
| | 20 | M36 x 2 | 25 | 107 | 18 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | 1,29 | 20 | 420 | 100 015 | 420 | 100 065 | 250 | 100 685 | 420 | 101 417 |
| | 25 | M42 x 2 | 30 | 120 | 20 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 1,88 | 25 | 420 | 100 016 | 420 | 100 066 | 250 | 100 686 | 420 | 101 418 |
| | 32/25 | M52 x 2 | 38 | 134 | 22 | 70 | 55 | 60 | 26,0 | 64,0 | 55 | 14 | 15 | 2,20 | 32/25 | 420 | 100 039 | 420 | 100 089 | 250 | 100 844 | 420 | 101 419 |
| | BSP-female thread DIN EN ISO 228-1 | 4 | G 1/8 | - | 69 | 12 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 0,22 | 4 | 500 | 100 017 | 500 | 100 067 | 315 | 100 687 | 500 |
| 6 | | G 1/4 | - | 69 | 12 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 0,21 | 6 | 500 | 100 018 | 500 | 100 068 | 315 | 100 688 | 500 | 101 421 |
| 10 | | G 3/8 | - | 73 | 14 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,43 | 10 | 500 | 100 019 | 500 | 100 069 | 315 | 100 689 | 500 | 101 422 |
| 12 | | G 1/2 | - | 82 | 15 | 51 | 35 | 40 | 17,0 | 43,5 | 30 | 10 | 14 | 0,67 | 12 | 500 | 100 020 | 500 | 100 070 | 315 | 100 690 | 500 | 101 423 |
| 16 | | G 5/8 | - | 88 | 18 | 50 | 45 | 45 | 20,0 | 48,5 | 36 | 10 | 14 | 0,97 | 16 | 420 | 100 021 | 420 | 100 071 | 315 | 100 691 | 420 | 101 424 |
| 20 | | G 3/4 | - | 93 | 18 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | 1,28 | 20 | 420 | 100 022 | 420 | 100 072 | 250 | 100 692 | 420 | 101 425 |
| 25 | | G 1 | - | 115 | 18 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 2,00 | 25 | 420 | 100 023 | 420 | 100 073 | 250 | 100 693 | 420 | 101 426 |
| 32/25 | | G 1 1/4 | - | 134 | 20 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 2,05 | 32/25 | 420 | 100 047 | 420 | 100 097 | 250 | 100 845 | 420 | 101 427 |
| 40/25 | | G 1 1/2 | - | 139 | 22 | 70 | 55 | 60 | 26,0 | 64,0 | 55 | 14 | 15 | 2,20 | 40/25 | 420 | 100 048 | 420 | 100 098 | 250 | 100 846 | 420 | 101 428 |
| 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 | 12 | 0,22 | 4 | 500 | 100 024 | 500 | 100 074 | 315 | 100 694 | 500 |
| | 6 | 1/4 - 18 NPT | - | 69 | 10,0 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 0,21 | 6 | 500 | 100 025 | 500 | 100 075 | 315 | 100 695 | 500 | 101 430 |
| | 10 | 3/8 - 18 NPT | - | 73 | 10,3 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,43 | 10 | 500 | 100 026 | 500 | 100 076 | 315 | 100 696 | 500 | 101 431 |
| | 12 | 1/2 - 14 NPT | - | 82 | 13,6 | 51 | 35 | 40 | 17,0 | 43,5 | 30 | 10 | 14 | 0,67 | 12 | 500 | 100 027 | 500 | 100 077 | 315 | 100 697 | 500 | 101 432 |
| | 20 | 3/4 - 14 NPT | - | 93 | 14,1 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | 1,30 | 20 | 420 | 100 028 | 420 | 100 078 | 250 | 100 698 | 420 | 101 433 |
| | 25 | 1 - 11 1/2 NPT | - | 115 | 16,8 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 2,00 | 25 | 420 | 100 029 | 420 | 100 079 | 250 | 100 699 | 420 | 101 434 |
| | 32/25 | 1 1/4 - 11 1/2 NPT | - | 134 | 17,3 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 2,05 | 32/25 | 420 | 100 049 | 420 | 100 099 | 250 | 100 847 | 420 | 101 435 |
| | 40/25 | 1 1/2 - 11 1/2 NPT | - | 139 | 17,3 | 70 | 55 | 60 | 26,0 | 64,0 | 55 | 14 | 15 | 2,44 | 40/25 | 420 | 100 050 | 420 | 100 100 | 250 | 100 848 | 420 | 101 436 |

2-way ball valves with threaded connector

Steel · DN 4 - DN 25



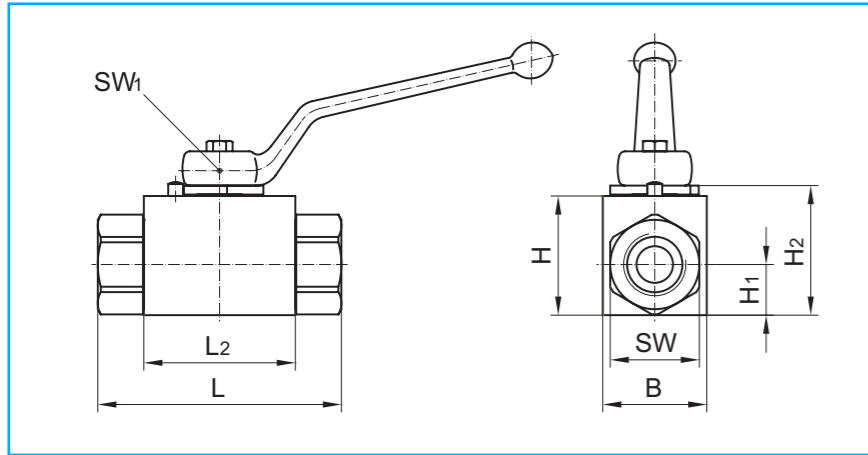
Handle included in delivery
 Please check pressure rating of the pipe fittings!
 For actuators and handles refer to "Attachments, accessories"
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

| | | | |
|-------------|---------------------------|---------------------------|---------------------------|
| Body: | steel, black oxide | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM | PTFE-Comp.3 |
| Stem seals: | NBR | FKM | FKM |

| Connection | DN | Thread D | OD | L | L ₁ | L ₂ | 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 with ball lining DIN 7601 DIN 3863 | 4 | M12 x 1,5 | 6 | 67 | 10 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 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 | 12 | 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 | 13 | 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 | 13 | 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 | 14 | 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 | 48,5 | 36 | 10 | 14 | 0,85 | 16 | 420 | 100 480 | 420 | 100 488 | 315 | 100 496 |
| | 20 | M30 x 1,5 | 22 | 99 | 14 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | 1,21 | 20 | 420 | 100 481 | 420 | 100 489 | 250 | 100 497 |
| | 25 | M38 x 1,5 | 28 | 108 | 14 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 1,75 | 25 | 420 | 100 482 | 420 | 100 490 | 250 | 100 498 |
| NPT-male thread ANSI/ASME B1.20.1-1983 | 4 | 1/8 - 27 NPT | - | 67 | 10,0 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 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 | 12 | 0,22 | 6 | 500 | 100 614 | 500 | 100 620 | 315 | 100 626 |
| | 8 | 3/8 - 18 NPT | - | 85 | 15,3 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,45 | 8 | 500 | 100 615 | 500 | 100 621 | 315 | 100 627 |
| | 10 | 1/2 - 14 NPT | - | 93 | 19,9 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,50 | 10 | 500 | 100 616 | 500 | 100 622 | 315 | 100 628 |
| | 16 | 3/4 - 14 NPT | - | 99 | 20,2 | 50 | 45 | 45 | 20,0 | 48,5 | 36 | 10 | 14 | 0,90 | 16 | 420 | 100 617 | 420 | 100 623 | 250 | 100 629 |
| | 20 | 1 - 11 1/2 NPT | - | 121 | 25,0 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | 1,30 | 20 | 420 | 100 618 | 420 | 100 624 | 250 | 100 630 |
| | 25 | 1 1/4 - 11 1/2 NPT | - | 131 | 25,6 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 1,80 | 25 | 420 | 100 647 | 420 | 100 648 | 250 | 100 649 |
| BSP-male thread (flat seal) DIN EN ISO 228-1 | 4 | G 1/8 A | - | 67 | 10 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 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 | 12 | 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 | 13 | 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 | 13 | 0,42 | 10 | 500 | 100 634 | 500 | 100 642 | 315 | 100 666 |
| | 12 | G 5/8 A | - | 83 | 12 | 51 | 35 | 40 | 17,0 | 43,5 | 30 | 10 | 14 | 0,63 | 12 | 500 | 100 635 | 500 | 100 643 | 315 | 100 667 |
| | 16 | G 3/4 A | - | 86 | 14 | 50 | 45 | 45 | 20,0 | 48,5 | 36 | 10 | 14 | 0,85 | 16 | 420 | 100 636 | 420 | 100 644 | 315 | 100 668 |
| | 20 | G 1 A | - | 103 | 16 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | 1,22 | 20 | 420 | 100 637 | 420 | 100 645 | 250 | 100 669 |
| 25 | G 1 1/4 A | - | 116 | 18 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 1,86 | 25 | 420 | 100 638 | 420 | 100 646 | 250 | 100 670 | |
| Female thread ISO 11926-1 | 6 | 7/16-20 UNF - 2B | - | 69 | 11,7 | 36 | 20 | 25 | 10,0 | 27,5 | 22 | 7 | 12 | 0,22 | 6 | 500 | 100 031 | 500 | 100 081 | 315 | 100 041 |
| | 10 | 9/16-18 UNF - 2B | - | 73 | 12,7 | 45 | 30 | 35 | 14,5 | 38,5 | 27 | 8 | 13 | 0,43 | 10 | 500 | 100 032 | 500 | 100 082 | 315 | 100 042 |
| | 12 | 3/4-16 UNF - 2B | - | 82 | 14,5 | 51 | 35 | 40 | 17,0 | 43,5 | 30 | 10 | 14 | 0,67 | 12 | 500 | 100 033 | 500 | 100 083 | 315 | 100 043 |
| | 20 | 1 1/16-12 UN - 2B | - | 93 | 19,0 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | 1,28 | 20 | 420 | 100 035 | 420 | 100 085 | 315 | 100 045 |
| | 25 | 1 5/16-12 UN - 2B | - | 115 | 19,0 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 2,00 | 25 | 420 | 100 036 | 420 | 100 086 | 315 | 100 046 |

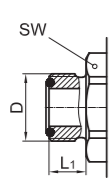
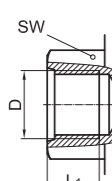
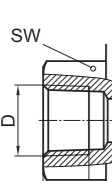
2-way ball valves with threaded connector

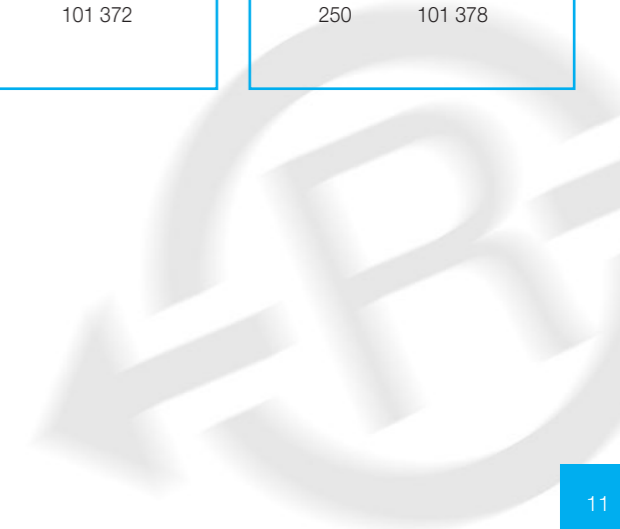
Steel · DN 4 - DN 25



*) 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, black oxide | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM | PTFE-Comp.3 |
| Stem seals: | NBR | FKM | FKM |

| Connection | DN | Thread D | L | L1 | L2 | B | H | H1 | H2 | SW | SW1 | Handle Code | O-Ring | Weight | DN | PN | Article-No. | PN | Article-No. | PN | Article-No. |
|--|----|---------------|-----|------|----|----|----|------|------|----|-----|-------------|---------------|--------|----|-----|-------------|-----|-------------|-----|-------------|
| Male thread ISO 8434-3  | 6 | 9/16-18 UNF | 67 | 10,0 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | 7,65 x 1,78' | 0,20 | 6 | 500 | 101 111 | 500 | 101 121 | 315 | 101 131 |
| | 8 | 1 1/16-16 UN | 75 | 11,0 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 9,25 x 1,78' | 0,42 | 8 | 500 | 101 112 | 500 | 101 122 | 315 | 101 132 |
| | 10 | 1 3/16-16 UN | 79 | 13,0 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 12,42 x 1,78' | 0,44 | 10 | 500 | 101 113 | 500 | 101 123 | 315 | 101 133 |
| | 12 | 1-14 UNS | 90 | 15,5 | 51 | 35 | 40 | 17,0 | 43,5 | 30 | 10 | 14 | 15,60 x 1,78' | 0,65 | 12 | 500 | 101 114 | 500 | 101 124 | 315 | 101 134 |
| | 16 | 1 3/16-12 UN | 92 | 17,0 | 50 | 45 | 45 | 20,0 | 48,5 | 36 | 10 | 14 | 18,77 x 1,78' | 0,90 | 16 | 420 | 101 115 | 420 | 101 125 | 315 | 101 135 |
| | 20 | 1 7/16-12 UN | 106 | 17,5 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | 23,52 x 1,78' | 1,22 | 20 | 420 | 101 116 | 420 | 101 126 | 250 | 101 136 |
| | 25 | 1 11/16-12 UN | 115 | 17,5 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | 29,87 x 1,78' | 1,80 | 25 | 420 | 101 117 | 420 | 101 127 | 250 | 101 137 |
| Female thread ISO 6149-1  | 4 | M10 x 1,0 | 69 | 10,0 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | - | 0,22 | 4 | 500 | 101 141 | 500 | 101 151 | 315 | 101 161 |
| | 6 | M12 x 1,5 | 69 | 11,5 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | - | 0,21 | 6 | 500 | 101 142 | 500 | 101 152 | 315 | 101 162 |
| | 8 | M14 x 1,5 | 73 | 11,5 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | - | 0,44 | 8 | 500 | 101 143 | 500 | 101 153 | 315 | 101 163 |
| | 10 | M16 x 1,5 | 73 | 13,0 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | - | 0,43 | 10 | 500 | 101 144 | 500 | 101 154 | 315 | 101 164 |
| | 12 | M18 x 1,5 | 82 | 14,5 | 51 | 35 | 40 | 17,0 | 43,5 | 30 | 10 | 14 | - | 0,67 | 12 | 500 | 101 145 | 500 | 101 155 | 315 | 101 165 |
| | 16 | M22 x 1,5 | 88 | 15,5 | 50 | 45 | 45 | 20,0 | 48,5 | 36 | 10 | 14 | - | 0,97 | 16 | 420 | 101 146 | 420 | 101 156 | 315 | 101 166 |
| | 20 | M27 x 2 | 93 | 19,0 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | - | 1,28 | 20 | 420 | 101 147 | 420 | 101 157 | 250 | 101 167 |
| | 25 | M33 x 2 | 115 | 19,0 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | - | 2,00 | 25 | 420 | 101 148 | 420 | 101 158 | 250 | 101 168 |
| BSPT-female thread ISO 7-1  | 4 | Rc 1/8 | 69 | 6,5 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | - | 0,22 | 4 | 500 | 101 361 | 500 | 101 367 | 315 | 101 373 |
| | 6 | Rc 1/4 | 69 | 9,7 | 36 | 20 | 25 | 10,0 | 27,5 | 19 | 7 | 12 | - | 0,21 | 6 | 500 | 101 362 | 500 | 101 368 | 315 | 101 374 |
| | 10 | Rc 3/8 | 72 | 10,1 | 45 | 30 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | - | 0,39 | 10 | 500 | 101 363 | 500 | 101 369 | 315 | 101 375 |
| | 12 | Rc 1/2 | 83 | 13,2 | 51 | 35 | 40 | 17,0 | 43,5 | 30 | 10 | 14 | - | 0,71 | 12 | 500 | 101 364 | 500 | 101 370 | 315 | 101 376 |
| | 20 | Rc 3/4 | 95 | 14,5 | 60 | 45 | 55 | 24,0 | 59,0 | 41 | 14 | 15 | - | 1,30 | 20 | 420 | 101 365 | 420 | 101 371 | 250 | 101 377 |
| | 25 | Rc 1 | 113 | 16,8 | 70 | 55 | 60 | 26,0 | 64,0 | 50 | 14 | 15 | - | 2,00 | 25 | 420 | 101 366 | 420 | 101 372 | 250 | 101 378 |



2-way ball valves with threaded connector

Stainless steel · DN 4 - DN 25

NEW!

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 connections

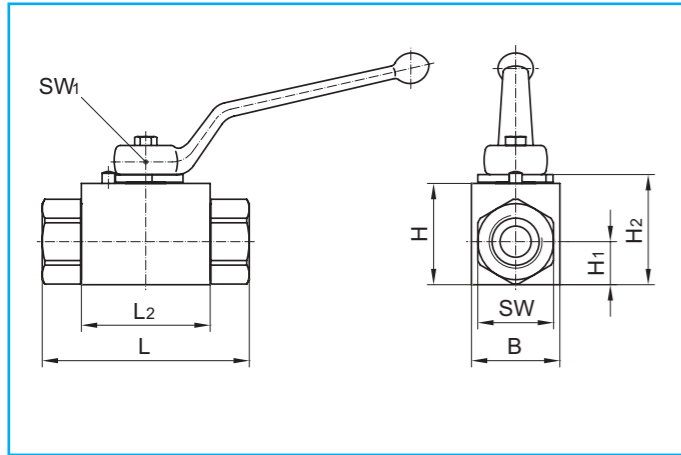
All dimensions subject to change without notice

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 seals: | POM | PTFE-Comp.3 |
| Stem seals: | FKM | FKM |
| Handle: | zinc, die cast | zinc, die cast |
| Stop plate: | steel, zinc plated | steel, zinc plated |



| Connection | DN | Thread D | OD | L | L ₁ | L ₂ | B | H | H ₁ | SW | SW ₁ | Handle Code | H ₂ | Weight | DN | PN | Article-No. | PN | Article-No. |
|---|------------|-----------|-----|-----|----------------|----------------|----|----|----------------|------|-----------------|-------------|----------------|--------|------|-----|-------------|--------|-------------|
| For cut (clamp) ring tube fitting DIN 2353 light series ISO 8434-1 | 4 | M12 x 1,5 | 6 | 67 | 10 | 36 | 20 | 25 | 10,0 | 19 | 7 | 12 | 27,5 | 0,20 | 4 | 500 | 109400 | 315 | 109460 |
| | 6 | M14 x 1,5 | 8 | 67 | 10 | 36 | 20 | 25 | 10,0 | 19 | 7 | 12 | 27,5 | 0,20 | 6 | 500 | 109401 | 315 | 109461 |
| | 8 | M16 x 1,5 | 10 | 75 | 11 | 45 | 30 | 35 | 14,5 | 24 | 8 | 13 | 38,5 | 0,42 | 8 | 500 | 109402 | 315 | 109462 |
| | 10 | M18 x 1,5 | 12 | 75 | 11 | 45 | 30 | 35 | 14,5 | 24 | 8 | 13 | 38,5 | 0,42 | 10 | 500 | 109403 | 315 | 109463 |
| | 12 | M22 x 1,5 | 15 | 83 | 12 | 51 | 35 | 40 | 17,0 | 30 | 10 | 14 | 43,5 | 0,63 | 12 | 500 | 109404 | 315 | 109464 |
| | 16 | M26 x 1,5 | 18 | 99 | 12 | 60 | 45 | 55 | 24,0 | 41 | 14 | 15 | 59,0 | 1,19 | 16 | 420 | 109405 | 250 | 109465 |
| For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1 | 20 | M30 x 2 | 22 | 99 | 14 | 60 | 45 | 55 | 24,0 | 41 | 14 | 15 | 59,0 | 1,21 | 20 | 420 | 109406 | 250 | 109466 |
| | 25 | M36 x 2 | 28 | 108 | 14 | 70 | 55 | 60 | 26,0 | 50 | 14 | 15 | 64,0 | 1,75 | 25 | 420 | 109407 | 250 | 109467 |
| | 4 | M16 x 1,5 | 8 | 73 | 12 | 36 | 20 | 25 | 10,0 | 19 | 7 | 12 | 27,5 | 0,22 | 4 | 500 | 109408 | 315 | 109468 |
| | 6 | M18 x 1,5 | 10 | 73 | 12 | 36 | 20 | 25 | 10,0 | 19 | 7 | 12 | 27,5 | 0,22 | 6 | 500 | 109409 | 315 | 109469 |
| | 8 | M20 x 1,5 | 12 | 77 | 12 | 45 | 30 | 35 | 14,5 | 24 | 8 | 13 | 38,5 | 0,43 | 8 | 500 | 109410 | 315 | 109470 |
| | 10 | M22 x 1,5 | 14 | 81 | 14 | 45 | 30 | 35 | 14,5 | 24 | 8 | 13 | 38,5 | 0,44 | 10 | 500 | 109411 | 315 | 109471 |
| BSP-female thread DIN EN ISO 228-1 | 12 | M24 x 1,5 | 16 | 87 | 14 | 51 | 35 | 40 | 17,0 | 30 | 10 | 14 | 43,5 | 0,65 | 12 | 500 | 109412 | 315 | 109472 |
| | 16 | M30 x 2 | 20 | 107 | 16 | 60 | 45 | 55 | 24,0 | 41 | 14 | 15 | 59,0 | 1,27 | 16 | 420 | 109413 | 250 | 109473 |
| | 20 | M36 x 2 | 25 | 107 | 18 | 60 | 45 | 55 | 24,0 | 41 | 14 | 15 | 59,0 | 1,29 | 20 | 420 | 109414 | 250 | 109474 |
| | 25 | M42 x 2 | 30 | 120 | 20 | 70 | 55 | 60 | 26,0 | 50 | 14 | 15 | 64,0 | 1,88 | 25 | 420 | 109415 | 250 | 109475 |
| | 4 | G 1/8 | - | 69 | 12 | 36 | 20 | 25 | 10,0 | 19 | 7 | 12 | 27,5 | 0,22 | 4 | 500 | 109416 | 315 | 109476 |
| | 6 | G 1/4 | - | 69 | 12 | 36 | 20 | 25 | 10,0 | 19 | 7 | 12 | 27,5 | 0,21 | 6 | 500 | 109417 | 315 | 109477 |
| NPT-female thread ANSI/ASME B1.20.1-1983 | 10 | G 3/8 | - | 73 | 14 | 45 | 30 | 35 | 14,5 | 24 | 8 | 13 | 38,5 | 0,43 | 10 | 500 | 109418 | 315 | 109478 |
| | 12 | G 1/2 | - | 82 | 15 | 51 | 35 | 40 | 17,0 | 30 | 10 | 14 | 43,5 | 0,67 | 12 | 500 | 109419 | 315 | 109479 |
| | 16 | G 5/8 | - | 93 | 18 | 60 | 45 | 55 | 24,0 | 41 | 14 | 15 | 59,0 | 1,30 | 16 | 420 | 109420 | 250 | 109480 |
| | 20 | G 3/4 | - | 93 | 18 | 60 | 45 | 55 | 24,0 | 41 | 14 | 15 | 59,0 | 1,28 | 20 | 420 | 109421 | 250 | 109481 |
| | 25 | G 1 | - | 115 | 18 | 70 | 55 | 60 | 26,0 | 50 | 14 | 15 | 64,0 | 1,97 | 25 | 420 | 109422 | 250 | 109482 |
| | 4 | 1/8 - 27 | NPT | - | 69 | 6,9 | 36 | 20 | 25 | 10,0 | 19 | 7 | 12 | 27,5 | 0,22 | 4 | 500 | 109423 | 315 |
| 6 | 1/4 - 18 | NPT | - | 69 | 10,0 | 36 | 20 | 25 | 10,0 | 19 | 7 | 12 | 27,5 | 0,21 | 6 | 500 | 109424 | 315 | 109484 |
| 10 | 3/8 - 18 | NPT | - | 73 | 10,3 | 45 | 30 | 35 | 14,5 | 24 | 8 | 13 | 38,5 | 0,43 | 10 | 500 | 109425 | 315 | 109485 |
| 12 | 1/2 - 14 | NPT | - | 82 | 13,6 | 51 | 35 | 40 | 17,0 | 30 | 10 | 14 | 43,5 | 0,67 | 12 | 500 | 109426 | 315 | 109486 |
| 20 | 3/4 - 14 | NPT | - | 93 | 14,1 | 60 | 45 | 55 | 24,0 | 41 | 14 | 15 | 59,0 | 1,28 | 20 | 420 | 109427 | 250 | 109487 |
| 25 | 1 - 11 1/2 | NPT | - | 115 | 16,8 | 70 | 55 | 60 | 26,0 | 50 | 14 | 15 | 64,0 | 1,97 | 25 | 420 | 109428 | 250 | 109488 |



2-way ball valves with threaded connector

Stainless steel · DN 4 - DN 25

NEW!

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 connections

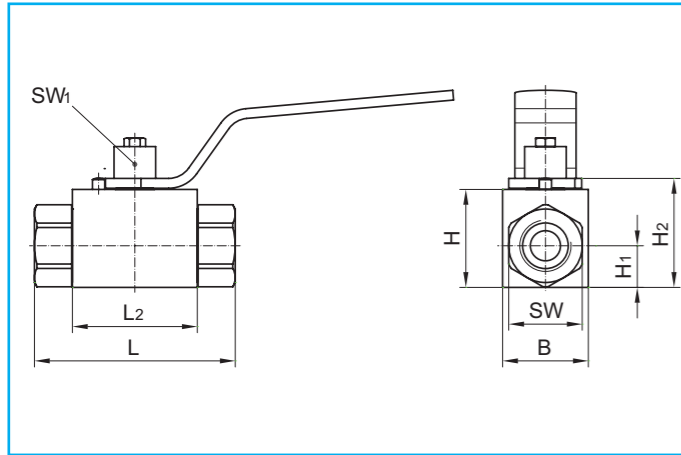
All dimensions subject to change without notice

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 seals: | POM | PTFE-Comp.3 |
| Stem seals: | FKM | FKM |
| Handle: | stainless steel | stainless steel |
| Stop plate: | stainless steel | stainless steel |

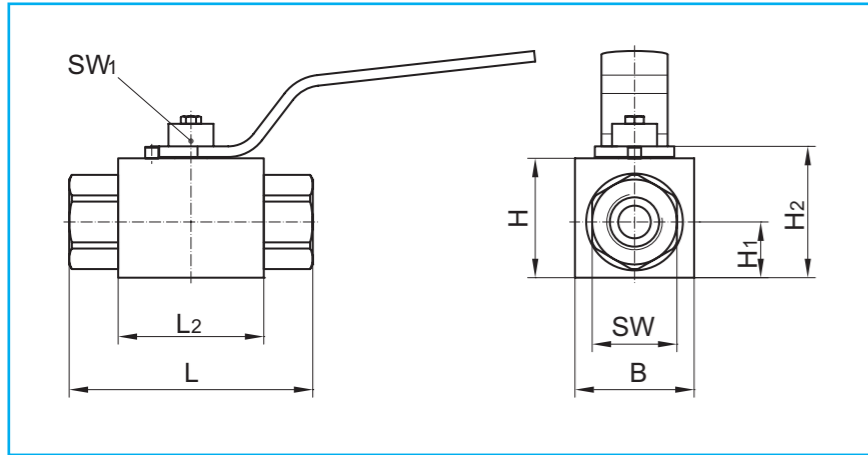


| Connection | DN | Thread D | OD | L | L1 | L2 | B | H | H1 | SW | SW1 | Handle Code | H2 | Weight | DN | PN | Article-No. | PN | Article-No. | |
|---|---------|------------|-----|-----|-----|------|----|------|------|------|-----|-------------|------|--------|------|--------|-------------|--------|-------------|--------|
| For cut (clamp) ring tube fitting DIN 2353 light series ISO 8434-1 | 4 | M12 x 1,5 | 6 | 67 | 10 | 36 | 20 | 25 | 10,0 | 19 | 7 | 32 | 29,5 | 0,20 | 4 | 500 | 109490 | 315 | 109430 | |
| | 6 | M14 x 1,5 | 8 | 67 | 10 | 36 | 20 | 25 | 10,0 | 19 | 7 | 32 | 29,5 | 0,20 | 6 | 500 | 109491 | 315 | 109431 | |
| | 8 | M16 x 1,5 | 10 | 75 | 11 | 45 | 30 | 35 | 14,5 | 24 | 8 | 33 | 39,5 | 0,42 | 8 | 500 | 109492 | 315 | 109432 | |
| | 10 | M18 x 1,5 | 12 | 75 | 11 | 45 | 30 | 35 | 14,5 | 24 | 8 | 33 | 39,5 | 0,42 | 10 | 500 | 109493 | 315 | 109433 | |
| | 12 | M22 x 1,5 | 15 | 83 | 12 | 51 | 35 | 40 | 17,0 | 30 | 10 | 34 | 44,5 | 0,63 | 12 | 500 | 109494 | 315 | 109434 | |
| | 16 | M26 x 1,5 | 18 | 99 | 12 | 60 | 45 | 55 | 24,0 | 41 | 14 | 35 | 60,5 | 1,19 | 16 | 420 | 109495 | 250 | 109435 | |
| | 20 | M30 x 2 | 22 | 99 | 14 | 60 | 45 | 55 | 24,0 | 41 | 14 | 35 | 60,5 | 1,21 | 20 | 420 | 109496 | 250 | 109436 | |
| 25 | M36 x 2 | 28 | 108 | 14 | 70 | 55 | 60 | 26,0 | 50 | 14 | 35 | 65,5 | 1,75 | 25 | 420 | 109497 | 250 | 109437 | | |
| 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 | 19 | 7 | 32 | 29,5 | 0,22 | 4 | 500 | 109498 | 315 | 109438 | |
| | 6 | M18 x 1,5 | 10 | 73 | 12 | 36 | 20 | 25 | 10,0 | 19 | 7 | 32 | 29,5 | 0,22 | 6 | 500 | 109499 | 315 | 109439 | |
| | 8 | M20 x 1,5 | 12 | 77 | 12 | 45 | 30 | 35 | 14,5 | 24 | 8 | 33 | 39,5 | 0,43 | 8 | 500 | 109500 | 315 | 109440 | |
| | 10 | M22 x 1,5 | 14 | 81 | 14 | 45 | 30 | 35 | 14,5 | 24 | 8 | 33 | 39,5 | 0,44 | 10 | 500 | 109501 | 315 | 109441 | |
| | 12 | M24 x 1,5 | 16 | 87 | 14 | 51 | 35 | 40 | 17,0 | 30 | 10 | 34 | 44,5 | 0,65 | 12 | 500 | 109502 | 315 | 109442 | |
| | 16 | M30 x 2 | 20 | 107 | 16 | 60 | 45 | 55 | 24,0 | 41 | 14 | 35 | 60,5 | 1,27 | 16 | 420 | 109503 | 250 | 109443 | |
| | 20 | M36 x 2 | 25 | 107 | 18 | 60 | 45 | 55 | 24,0 | 41 | 14 | 35 | 60,5 | 1,29 | 20 | 420 | 109504 | 250 | 109444 | |
| 25 | M42 x 2 | 30 | 120 | 20 | 70 | 55 | 60 | 26,0 | 50 | 14 | 35 | 65,5 | 1,88 | 25 | 420 | 109505 | 250 | 109445 | | |
| BSP-female thread DIN EN ISO 228-1 | 4 | G 1/8 | - | 69 | 12 | 36 | 20 | 25 | 10,0 | 19 | 7 | 32 | 29,5 | 0,22 | 4 | 500 | 700091 | 315 | 109446 | |
| | 6 | G 1/4 | - | 69 | 12 | 36 | 20 | 25 | 10,0 | 19 | 7 | 32 | 29,5 | 0,21 | 6 | 500 | 700092 | 315 | 109447 | |
| | 10 | G 3/8 | - | 73 | 14 | 45 | 30 | 35 | 14,5 | 24 | 8 | 33 | 39,5 | 0,43 | 10 | 500 | 700093 | 315 | 109448 | |
| | 12 | G 1/2 | - | 82 | 15 | 51 | 35 | 40 | 17,0 | 30 | 10 | 34 | 44,5 | 0,67 | 12 | 500 | 700094 | 315 | 109449 | |
| | 16 | G 5/8 | - | 93 | 18 | 60 | 45 | 55 | 24,0 | 41 | 14 | 35 | 60,5 | 1,30 | 16 | 420 | 700095 | 250 | 109450 | |
| | 20 | G 3/4 | - | 93 | 18 | 60 | 45 | 55 | 24,0 | 41 | 14 | 35 | 60,5 | 1,28 | 20 | 420 | 700096 | 250 | 109451 | |
| 25 | G 1 | - | 115 | 18 | 70 | 55 | 60 | 26,0 | 50 | 14 | 35 | 65,5 | 1,97 | 25 | 420 | 700097 | 250 | 109452 | | |
| NPT-female thread ANSI/ASME B1.20.1-1983 | 4 | 1/8 - 27 | NPT | - | 69 | 6,9 | 36 | 20 | 25 | 10,0 | 19 | 7 | 32 | 29,5 | 0,22 | 4 | 500 | 700100 | 315 | 109453 |
| | 6 | 1/4 - 18 | NPT | - | 69 | 10,0 | 36 | 20 | 25 | 10,0 | 19 | 7 | 32 | 29,5 | 0,21 | 6 | 500 | 700101 | 315 | 109454 |
| | 10 | 3/8 - 18 | NPT | - | 73 | 10,3 | 45 | 30 | 35 | 14,5 | 24 | 8 | 33 | 39,5 | 0,43 | 10 | 500 | 700102 | 315 | 109455 |
| | 12 | 1/2 - 14 | NPT | - | 82 | 13,6 | 51 | 35 | 40 | 17,0 | 30 | 10 | 34 | 44,5 | 0,67 | 12 | 500 | 700103 | 315 | 109456 |
| | 20 | 3/4 - 14 | NPT | - | 93 | 14,1 | 60 | 45 | 55 | 24,0 | 41 | 14 | 35 | 60,5 | 1,28 | 20 | 420 | 700104 | 250 | 109457 |
| | 25 | 1 - 11 1/2 | NPT | - | 115 | 16,8 | 70 | 55 | 60 | 26,0 | 50 | 14 | 35 | 65,5 | 1,97 | 25 | 420 | 700105 | 250 | 109458 |



2-way ball valves with threaded connector

Stainless steel · DN 4 - DN 25 · 630 bar



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

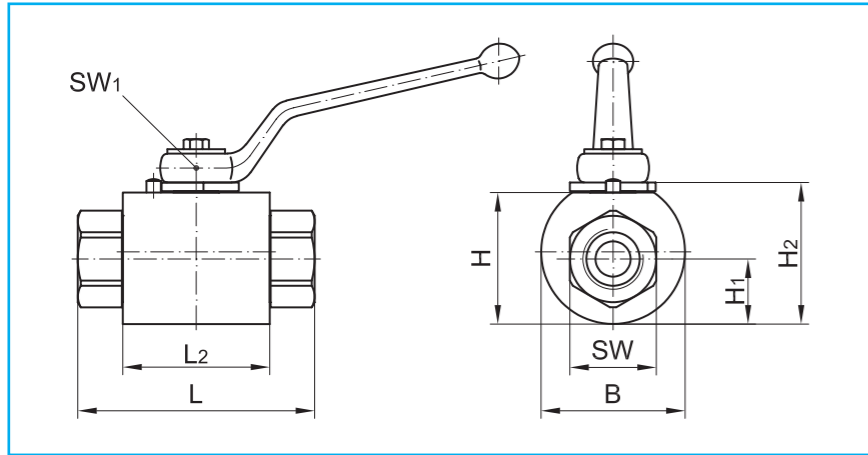
| | |
|-------------|-----------------|
| Body: | stainless steel |
| Ball: | stainless steel |
| Stem: | stainless steel |
| Ball seals: | PEEK |
| Stem seals: | FKM |

| Connection | DN | Thread D | OD | 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 | 73 | 10 | 41 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,38 | 4 | 630 | 101 309 |
| | 6 | M14 x 1,5 | 8 | 73 | 10 | 41 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,41 | 6 | 630 | 101 310 |
| | 8 | M16 x 1,5 | 10 | 87 | 11 | 53 | 40 | 40 | 18,0 | 44,5 | 30 | 8 | 33 | 0,82 | 8 | 630 | 101 311 |
| | 10 | M18 x 1,5 | 12 | 87 | 11 | 53 | 40 | 40 | 18,0 | 44,5 | 30 | 8 | 33 | 0,82 | 10 | 630 | 101 312 |
| | 12 | M22 x 1,5 | 15 | 91 | 12 | 55 | 45 | 45 | 21,0 | 49,5 | 32 | 10 | 34 | 1,03 | 12 | 630 | 101 313 |
| | 16 | M26 x 1,5 | 18 | 101 | 12 | 65 | 65 | 65 | 31,0 | 70,5 | 46 | 14 | 35 | 2,45 | 16 | 630 | 109 124 |
| For cut (clamp) ring tube fitting DIN 2353 heavy series ISO 8434-1 | 20 | M30 x 2 | 22 | 105 | 14 | 65 | 65 | 65 | 31,0 | 70,5 | 46 | 14 | 35 | 2,50 | 20 | 630 | 109 102 |
| | 25 | M36 x 2 | 28 | 112 | 14 | 71 | 75 | 75 | 38,0 | 80,5 | 50 | 14 | 35 | 3,07 | 25 | 630 | 109 103 |
| | 4 | M16 x 1,5 | 8 | 76 | 12 | 41 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,40 | 4 | 630 | 101 317 |
| | 6 | M18 x 1,5 | 10 | 76 | 12 | 41 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,40 | 6 | 630 | 101 318 |
| | 8 | M20 x 1,5 | 12 | 89 | 12 | 53 | 40 | 40 | 18,0 | 44,5 | 30 | 8 | 33 | 0,85 | 8 | 630 | 101 319 |
| | 10 | M22 x 1,5 | 14 | 93 | 14 | 53 | 40 | 40 | 18,0 | 44,5 | 30 | 8 | 33 | 0,85 | 10 | 630 | 101 320 |
| BSP-female thread DIN EN ISO 228-1 | 12 | M24 x 1,5 | 16 | 96 | 14 | 55 | 45 | 45 | 21,0 | 49,5 | 32 | 10 | 34 | 1,05 | 12 | 630 | 101 321 |
| | 16 | M30 x 2 | 20 | 109 | 16 | 65 | 65 | 65 | 31,0 | 70,5 | 46 | 14 | 35 | 2,55 | 16 | 630 | 109 168 |
| | 20 | M36 x 2 | 25 | 113 | 18 | 65 | 65 | 65 | 31,0 | 70,5 | 46 | 14 | 35 | 2,59 | 20 | 630 | 109 105 |
| | 25 | M42 x 2 | 30 | 124 | 20 | 71 | 75 | 75 | 38,0 | 80,5 | 50 | 14 | 35 | 3,19 | 25 | 630 | 109 106 |
| | 4 | G 1/8 | - | 69 | 11 | 41 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,42 | 4 | 630 | 101 325 |
| | 6 | G 1/4 | - | 75 | 14 | 41 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,42 | 6 | 630 | 101 326 |
| NPT-female thread ANSI/ASME B1.20.1-1983 | 10 | G 3/8 | - | 86 | 14 | 53 | 40 | 40 | 18,0 | 44,5 | 30 | 8 | 33 | 0,89 | 10 | 630 | 101 327 |
| | 12 | G 1/2 | - | 92 | 16 | 55 | 45 | 45 | 21,0 | 49,5 | 32 | 10 | 34 | 1,10 | 12 | 630 | 101 328 |
| | 16 | G 5/8 | - | 111 | 19 | 65 | 65 | 65 | 31,0 | 70,5 | 46 | 14 | 35 | 2,64 | 16 | 630 | 109 172 |
| | 20 | G 3/4 | - | 111 | 20 | 65 | 65 | 65 | 31,0 | 70,5 | 46 | 14 | 35 | 2,69 | 20 | 630 | 109 108 |
| | 25 | G 1 | - | 122 | 22 | 71 | 75 | 75 | 38,0 | 80,5 | 50 | 14 | 35 | 3,31 | 25 | 630 | 109 109 |
| | 4 | 1/8 - 27 NPT | - | 82 | 6,9 | 41 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,44 | 4 | 630 | 101 332 |
| 6 | 1/4 - 18 NPT | - | 82 | 10,0 | 41 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,44 | 6 | 630 | 101 333 | |
| 10 | 3/8 - 18 NPT | - | 95 | 10,3 | 53 | 40 | 40 | 18,0 | 44,5 | 30 | 8 | 33 | 0,95 | 10 | 630 | 101 334 | |
| 12 | 1/2 - 14 NPT | - | 108 | 13,6 | 55 | 45 | 45 | 21,0 | 49,5 | 32 | 10 | 34 | 1,19 | 12 | 630 | 101 335 | |
| 20 | 3/4 - 14 NPT | - | 111 | 14,1 | 65 | 65 | 65 | 31,0 | 70,5 | 46 | 14 | 35 | 2,69 | 20 | 630 | 109 111 | |
| 25 | 1 - 11 1/2 NPT | - | 122 | 16,8 | 71 | 75 | 75 | 38,0 | 80,5 | 50 | 14 | 35 | 3,31 | 25 | 630 | 109 112 | |



2-way ball valves with threaded connector

Steel/Stainless steel · DN 4 - DN 25 · 840 bar



Note: Use only with fluid media!

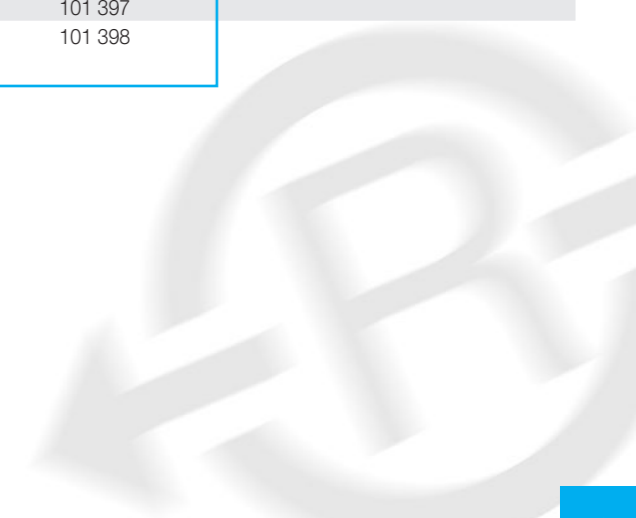
Handle included in delivery
 Please check pressure rating of the pipe fittings!
 For actuators and handles refer to "Attachments, accessories"
 Custom orders on request
 Also available with most other connections
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure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

NEW!



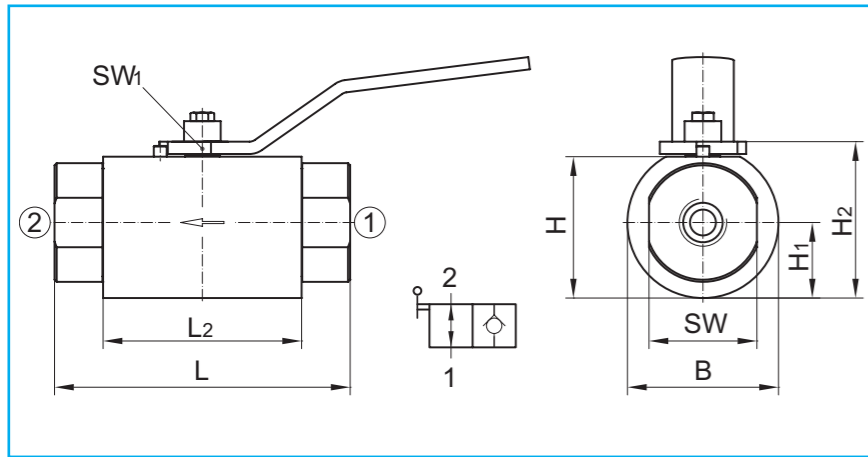
| | | |
|-------------|---------------------------|-----------------|
| Body: | steel, black oxide | stainless steel |
| Ball: | steel, hard chrome plated | stainless steel |
| Stem: | steel, zinc plated | stainless steel |
| Ball seals: | PEEK | PEEK |
| Stem seals: | NBR | NBR |

| Connection | DN | Thread D | OD | L | L ₁ | L ₂ | B | H | H ₁ | H ₂ | SW | SW ₁ | Handle Code | Weight | DN | PN | Article-No. | 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 | 10 | 19 | 1,84 | 4 | 840 | 101 338 | 840 | 101 380 |
| | 6 | M18 x 1,5 | 10 | 114 | 12 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,86 | 6 | 840 | 101 339 | 840 | 101 381 |
| | 8 | M20 x 1,5 | 12 | 114 | 12 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,89 | 8 | 840 | 101 340 | 840 | 101 382 |
| | 10 | M22 x 1,5 | 14 | 118 | 14 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,96 | 10 | 840 | 101 341 | 840 | 101 383 |
| | 12 | M24 x 1,5 | 16 | 118 | 14 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,98 | 12 | 840 | 101 342 | 840 | 101 384 |
| | 20 | M36 x 2 | 25 | 156 | 18 | 90 | 108 | 102,0 | 51 | 106 | 70 | 14 | 20 | 6,60 | 20 | 840 | 101 343 | 840 | 101 385 |
| 25 | M42 x 2 | 30 | 160 | 20 | 90 | 108 | 102,0 | 51 | 106 | 70 | 14 | 20 | 6,60 | 25 | 840 | 101 344 | 840 | 101 386 | |
| BSP-female thread DIN EN ISO 228-1 | 4 | G 1/8 | - | 90 | 11 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,82 | 4 | 840 | 101 345 | 840 | 101 387 |
| | 6 | G 1/4 | - | 90 | 15 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,82 | 6 | 840 | 101 346 | 840 | 101 388 |
| | 10 | G 3/8 | - | 90 | 15 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,84 | 10 | 840 | 101 347 | 840 | 101 389 |
| | 12 | G 1/2 | - | 90 | 17 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,90 | 12 | 840 | 101 348 | 840 | 101 390 |
| | 20 | G 3/4 | - | 120 | 19 | 90 | 108 | 102,0 | 51 | 106 | 70 | 14 | 20 | 6,50 | 20 | 840 | 101 349 | 840 | 101 391 |
| | 25 | G 1 | - | 120 | 21 | 90 | 108 | 102,0 | 51 | 106 | 70 | 14 | 20 | 6,50 | 25 | 840 | 101 350 | 840 | 101 392 |
| NPT-female thread ANSI/ASME B1.20.1-1983 | 4 | 1/8 - 27 NPT | - | 90 | 6,9 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,82 | 4 | 840 | 101 351 | 840 | 101 393 |
| | 6 | 1/4 - 18 NPT | - | 90 | 10,0 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,82 | 6 | 840 | 101 352 | 840 | 101 394 |
| | 10 | 3/8 - 18 NPT | - | 90 | 10,3 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,84 | 10 | 840 | 101 353 | 840 | 101 395 |
| | 12 | 1/2 - 14 NPT | - | 90 | 13,6 | 67 | 65 | 62,5 | 30 | 66 | 41 | 10 | 19 | 1,90 | 12 | 840 | 101 354 | 840 | 101 396 |
| | 20 | 3/4 - 14 NPT | - | 120 | 14,1 | 90 | 108 | 102,0 | 51 | 106 | 70 | 14 | 20 | 6,50 | 20 | 840 | 101 355 | 840 | 101 397 |
| | 25 | 1 - 11 1/2 NPT | - | 120 | 16,8 | 90 | 108 | 102,0 | 51 | 106 | 70 | 14 | 20 | 6,50 | 25 | 840 | 101 356 | 840 | 101 398 |



2-way ball valves with threaded connector

Stainless steel · DN 6 - DN 25 · Ultra-High Pressure



DN 6 - DN 12:
can be actuated up to 500 bar
differential pressure

DN 20 + DN 25:
can be actuated up to 400 bar
differential pressure

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

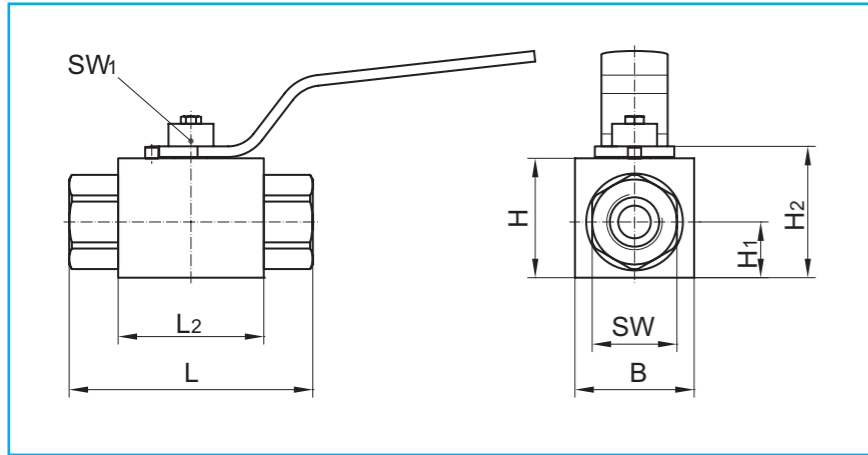
| | |
|-------------|-----------------|
| Body: | stainless steel |
| Ball: | stainless steel |
| Stem: | bronze |
| Ball seals: | PEEK |
| Stem seals: | FKM |

| Connection | DN | Thread D | OD | 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 heavy series ISO 8434-1 | 6 | M18 x 1,5 | 10 | 144,0 | 18* | 92 | 79 | 76 | 39,5 | 81 | 46 | 10 | 34 | 4,1 | 6 | 1500 | 100 900 |
| | 8 | M20 x 1,5 | 12 | 144,0 | 18* | 92 | 79 | 76 | 39,5 | 81 | 46 | 10 | 34 | 4,1 | 8 | 1500 | 100 901 |
| | 10 | M22 x 1,5 | 14 | 150,0 | 21* | 92 | 79 | 76 | 39,5 | 81 | 46 | 10 | 34 | 4,1 | 10 | 1500 | 100 902 |
| | 12 | M24 x 1,5 | 16 | 150,0 | 21* | 92 | 79 | 76 | 39,5 | 81 | 46 | 10 | 34 | 4,1 | 12 | 1500 | 100 903 |
| | 20 | M36 x 2 | 25 | 178,5 | 23* | 115 | 90 | 88 | 45,0 | 81 | 55 | 10 | 34 | 6,1 | 20 | 1400 | 100 994 |
| 25 | M42 x 2 | 30 | 202,0 | 25* | 128 | 100 | 95 | 50,0 | 101 | 70 | 14 | 35 | 9,2 | 25 | 1000 | 100 991 | |
| BSP-female thread DIN EN ISO 228-1 | 6 | G 1/4 | - | 108,0 | 12 | 92 | 79 | 76 | 39,5 | 81 | 46 | 10 | 34 | 4,1 | 6 | 1500 | 100 906 |
| | 10 | G 3/8 | - | 120,0 | 14 | 92 | 79 | 76 | 39,5 | 81 | 46 | 10 | 34 | 4,2 | 10 | 1500 | 100 907 |
| | 12 | G 1/2 | - | 137,0 | 16 | 92 | 79 | 76 | 39,5 | 81 | 46 | 10 | 34 | 4,4 | 12 | 1500 | 100 908 |
| | 20 | G 3/4 | - | 132,5 | 19 | 115 | 90 | 88 | 45,0 | 81 | 55 | 10 | 34 | 5,8 | 20 | 1400 | 100 995 |
| | 25 | G 1 | - | 152,5 | 21 | 128 | 99 | 95 | 47,5 | 101 | 70 | 14 | 35 | 8,7 | 25 | 1000 | 100 993 |



2-way ball valves with threaded connector

Aluminium · 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 connections
 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

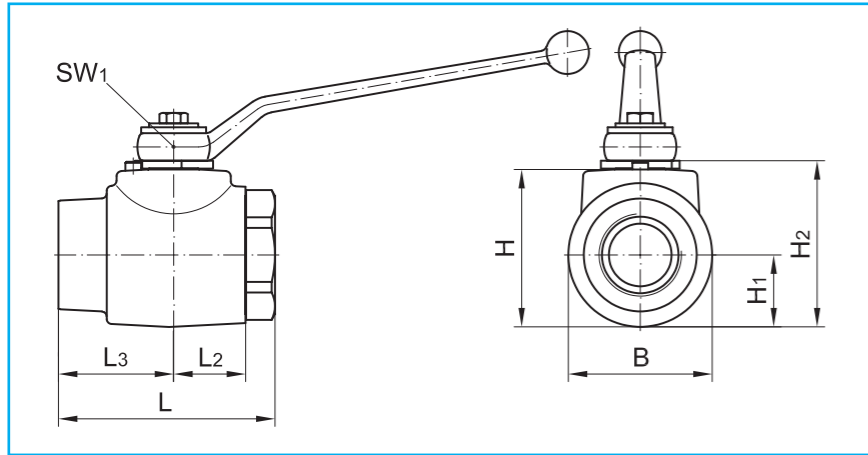
| | |
|-------------|-----------------|
| Body: | aluminium |
| Ball: | stainless steel |
| Stem: | stainless steel |
| Ball seals: | POM |
| Stem seals: | NBR |

| Connection | DN | Thread D | OD | 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 | 34,5 | 22 | 7 | 32 | 0,20 | 4 | 400 | 105 152 |
| | 6 | M14 x 1,5 | 8 | 78 | 10 | 46,4 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,20 | 6 | 400 | 105 153 |
| | 8 | M16 x 1,5 | 10 | 87 | 11 | 53,0 | 45 | 45 | 23,0 | 49,5 | 30 | 8 | 33 | 0,49 | 8 | 400 | 105 170 |
| | 10 | M18 x 1,5 | 12 | 87 | 11 | 53,0 | 45 | 45 | 23,0 | 49,5 | 30 | 8 | 33 | 0,49 | 10 | 400 | 105 154 |
| | 12 | M22 x 1,5 | 15 | 93 | 12 | 57,0 | 50 | 50 | 26,0 | 54,5 | 32 | 10 | 34 | 0,56 | 12 | 400 | 105 155 |
| | 20 | M30 x 2 | 22 | 108 | 14 | 68,0 | 70 | 70 | 36,0 | 75,5 | 46 | 14 | 35 | 1,34 | 20 | 400 | 105 156 |
| 25 | M36 x 2 | 28 | 114 | 14 | 73,0 | 80 | 80 | 43,0 | 85,5 | 50 | 14 | 35 | 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 | 34,5 | 22 | 7 | 32 | 0,22 | 4 | 400 | 105 158 |
| | 6 | M18 x 1,5 | 10 | 81 | 12 | 46,4 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,22 | 6 | 400 | 105 159 |
| | 8 | M20 x 1,5 | 12 | 89 | 12 | 53,0 | 45 | 45 | 23,0 | 49,5 | 30 | 8 | 33 | 0,50 | 8 | 400 | 105 171 |
| | 10 | M22 x 1,5 | 14 | 93 | 14 | 53,0 | 45 | 45 | 23,0 | 49,5 | 30 | 8 | 33 | 0,50 | 10 | 400 | 105 160 |
| | 12 | M24 x 1,5 | 16 | 98 | 14 | 57,0 | 50 | 50 | 26,0 | 54,5 | 32 | 10 | 34 | 0,58 | 12 | 400 | 105 161 |
| | 20 | M36 x 2 | 25 | 116 | 18 | 68,0 | 70 | 70 | 36,0 | 75,5 | 46 | 14 | 35 | 1,42 | 20 | 400 | 105 162 |
| 25 | M42 x 2 | 30 | 126 | 20 | 73,0 | 80 | 80 | 43,0 | 85,5 | 50 | 14 | 35 | 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 | 34,5 | 22 | 7 | 32 | 0,22 | 4 | 400 | 105 151 |
| | 6 | G 1/4 | - | 80 | 14 | 46,4 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,22 | 6 | 400 | 105 141 |
| | 10 | G 3/8 | - | 85 | 14 | 53,0 | 45 | 45 | 23,0 | 49,5 | 30 | 8 | 33 | 0,50 | 10 | 400 | 105 142 |
| | 12 | G 1/2 | - | 100 | 16 | 57,0 | 50 | 50 | 26,0 | 54,5 | 32 | 10 | 34 | 0,60 | 12 | 400 | 105 143 |
| | 20 | G 3/4 | - | 120 | 18 | 68,0 | 70 | 70 | 36,0 | 75,5 | 46 | 14 | 35 | 1,41 | 20 | 400 | 105 144 |
| 25 | G 1 | - | 135 | 20 | 73,0 | 80 | 80 | 43,0 | 85,5 | 50 | 14 | 35 | 1,78 | 25 | 400 | 105 145 | |
| NPT-female thread ISO 11926-1 | 4 | 7/16 - 20 | UNF - 2B | 79 | 11,5 | 46,4 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,22 | 4 | 400 | 105 172 |
| | 6 | 1/2 - 20 | UNF - 2B | 79 | 11,5 | 46,4 | 30 | 30 | 13,7 | 34,5 | 22 | 7 | 32 | 0,22 | 6 | 400 | 105 173 |
| | 8 | 9/16 - 18 | UNF - 2B | 80 | 12,7 | 53,0 | 45 | 45 | 23,0 | 49,5 | 30 | 8 | 33 | 0,40 | 8 | 400 | 105 174 |
| | 10 | 3/4 - 16 | UNF - 2B | 97 | 14,3 | 53,0 | 45 | 45 | 23,0 | 49,5 | 30 | 8 | 33 | 0,50 | 10 | 400 | 105 175 |
| | 12 | 7/8 - 14 | UNF - 2B | 106 | 16,7 | 57,0 | 50 | 50 | 26,0 | 54,5 | 32 | 10 | 34 | 0,60 | 12 | 400 | 105 176 |
| | 20 | 1 5/16 - 12 | UN - 2B | 123 | 19,0 | 68,0 | 70 | 70 | 36,0 | 75,5 | 46 | 14 | 35 | 1,41 | 20 | 400 | 105 177 |
| | 25 | 1 5/8 - 12 | UN - 2B | 133 | 19,0 | 73,0 | 80 | 80 | 43,0 | 85,5 | 50 | 14 | 35 | 1,78 | 25 | 400 | 105 178 |



2-way ball valves with threaded connector

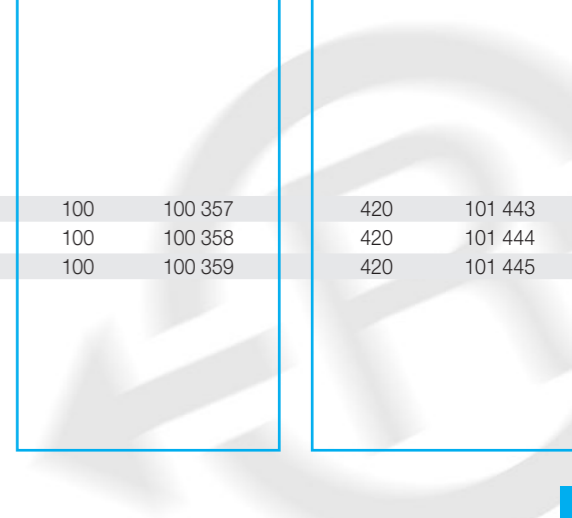
Steel · DN 32 - DN 50



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 connections
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

| | | | | |
|-------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Body: | steel, black oxide | steel, black oxide | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM | PTFE-Comp.3 | metal |
| Stem seals: | NBR | FKM | FKM | FKM |

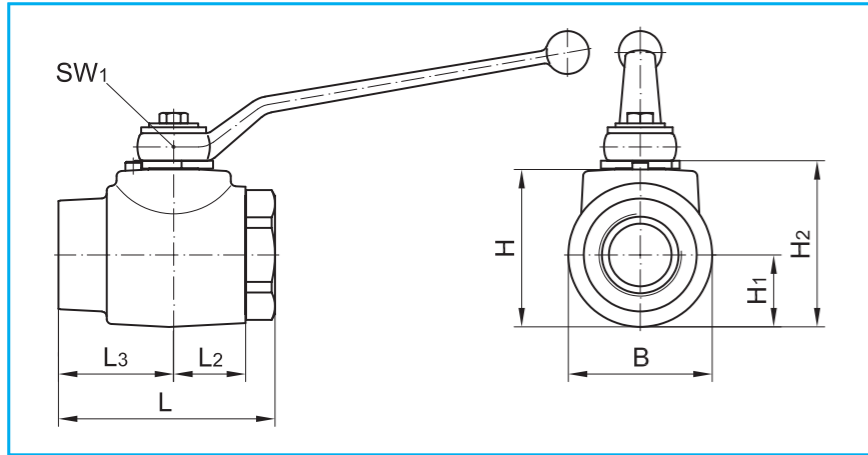
| Connection | DN | Thread D | OD | L | L ₁ | L ₂ | L ₃ | B | H | H ₁ | H ₂ | SW | SW ₁ | Handle Weight Code | DN | PN | Article-No. | PN | Article-No. | PN | Article-No. | PN | Article-No. | |
|---|----|--------------------|----|-----|----------------|----------------|----------------|----|-----|----------------|----------------|----|-----------------|--------------------------|------|----|-------------|---------|-------------|---------|-------------|---------|-------------|---------|
| For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1 | 32 | M45 x 2 | 35 | 121 | 16 | 36,5 | 58,5 | 73 | 80 | 36,5 | 84,5 | 60 | 17 | 21 | 2,59 | 32 | 420 | 100 251 | 420 | 100 301 | 100 | 100 351 | 420 | 101 437 |
| | 40 | M52 x 2 | 42 | 118 | 16 | 40,0 | 52,5 | 85 | 90 | 42,5 | 94,5 | 75 | 17 | 21 | 3,24 | 40 | 420 | 100 252 | 420 | 100 302 | 100 | 100 352 | 420 | 101 438 |
| 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 | 21 | 2,73 | 32 | 420 | 100 253 | 420 | 100 303 | 100 | 100 353 | 420 | 101 439 |
| | 32 | G 1 1/4 | - | 110 | 24,0 | 36,5 | 58,5 | 73 | 80 | 36,5 | 84,5 | 60 | 17 | 21 | 3,07 | 32 | 420 | 100 254 | 420 | 100 304 | 100 | 100 354 | 420 | 101 440 |
| 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 | 21 | 3,96 | 40 | 420 | 100 255 | 420 | 100 305 | 100 | 100 355 | 420 | 101 441 |
| | 50 | G 2 | - | 129 | 27,5 | 48,0 | 65,0 | 99 | 104 | 49,5 | 108,5 | 85 | 17 | 22 | 5,02 | 50 | 420 | 100 256 | 420 | 100 306 | 100 | 100 356 | 420 | 101 442 |
| 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 | 21 | 3,46 | 32 | 420 | 100 257 | 420 | 100 307 | 100 | 100 357 | 420 | 101 443 |
| | 40 | 1 1/2 - 11 1/2 NPT | - | 114 | 17,3 | 40,0 | 57,0 | 85 | 90 | 42,5 | 94,5 | 75 | 17 | 21 | 3,96 | 40 | 420 | 100 258 | 420 | 100 308 | 100 | 100 358 | 420 | 101 444 |
| | 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 | 420 | 100 259 | 420 | 100 309 | 100 | 100 359 | 420 | 101 445 |



2-way ball valves with threaded connector

Stainless steel · DN 32 - DN 50

NEW!

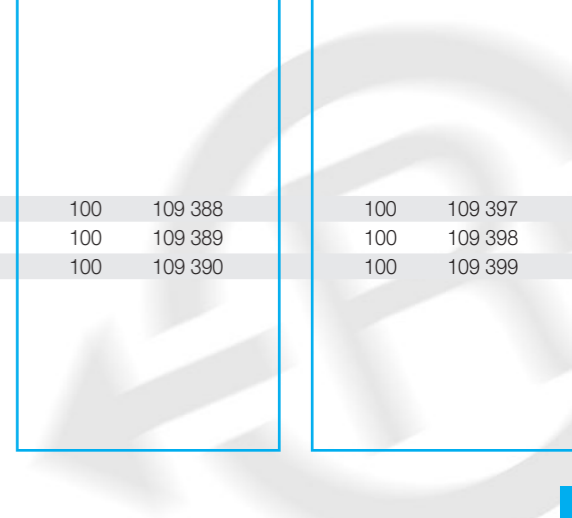


Handle included in delivery.
 Please check pressure rating of the pipe fittings!
 For actuators and handles refer to "Attachments, accessories"
 Stainless steel (material No.1.4571 - or other stainless steels)
 Custom orders on request
 All dimensions subject to change without notice

Dimensions in mm
 Weight in kg
 Pressure in bar

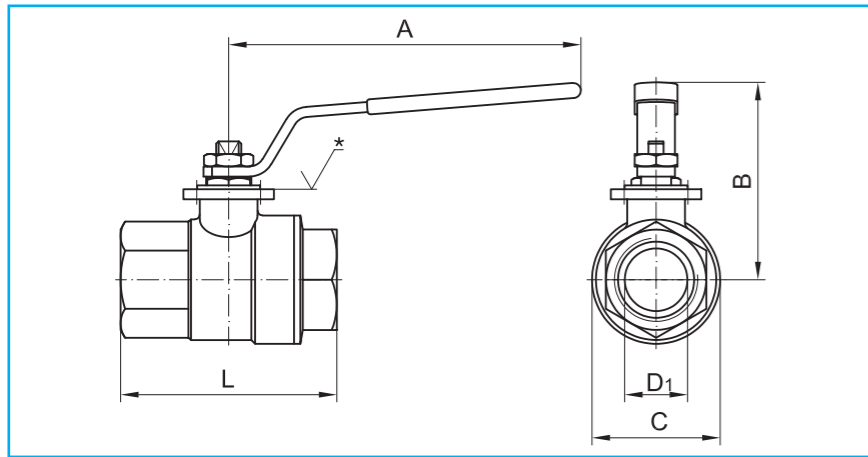
| | | | | |
|-------------|-----------------|-----------------|-----------------|-----------------|
| Body: | stainless steel | stainless steel | stainless steel | stainless steel |
| Ball: | stainless steel | stainless steel | stainless steel | stainless steel |
| Stem: | stainless steel | stainless steel | stainless steel | stainless steel |
| Ball seals: | POM | POM | PTFE-Comp.3 | PTFE-Comp.3 |
| Stem seals: | NBR | FKM | FKM | FFKM |
| Handle: | stainless steel | stainless steel | stainless steel | stainless steel |
| Stop plate: | stainless steel | stainless steel | stainless steel | stainless steel |

| Connection | DN | Thread D | OD | L | L ₁ | L ₂ | L ₃ | B | H | H ₁ | H ₂ | SW | SW ₁ | Handle Weight Code | 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 | 32 | M45 x 2 | 35 | 121 | 16 | 36,5 | 58,5 | 73 | 80 | 36,5 | 84,5 | 60 | 17 | 37 | 2,59 | 32 | 420 | 109 364 | 420 | 109 373 | 100 | 109 382 | 100 | 109 391 |
| | 40 | M52 x 2 | 42 | 118 | 16 | 40,0 | 52,5 | 85 | 90 | 42,5 | 94,5 | 75 | 17 | 37 | 3,24 | 40 | 420 | 109 365 | 420 | 109 374 | 100 | 109 383 | 100 | 109 392 |
| 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 | 37 | 2,73 | 32 | 420 | 109 366 | 420 | 109 375 | 100 | 109 384 | 100 | 109 393 |
| | 32 | G 1 1/4 | - | 110 | 24,0 | 36,5 | 58,5 | 73 | 80 | 36,5 | 84,5 | 60 | 17 | 37 | 3,07 | 32 | 420 | 109 367 | 420 | 109 376 | 100 | 109 385 | 100 | 109 394 |
| 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 | 37 | 3,96 | 40 | 420 | 109 368 | 420 | 109 377 | 100 | 109 386 | 100 | 109 395 |
| | 50 | G 2 | - | 129 | 27,5 | 48,0 | 65,0 | 99 | 104 | 49,5 | 108,5 | 85 | 17 | 38 | 5,02 | 50 | 420 | 109 369 | 420 | 109 378 | 100 | 109 387 | 100 | 109 396 |
| 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 | 37 | 3,46 | 32 | 420 | 109 370 | 420 | 109 379 | 100 | 109 388 | 100 | 109 397 |
| | 40 | 1 1/2 - 11 1/2 NPT | - | 114 | 17,3 | 40,0 | 57,0 | 85 | 90 | 42,5 | 94,5 | 75 | 17 | 37 | 3,96 | 40 | 420 | 109 371 | 420 | 109 380 | 100 | 109 389 | 100 | 109 398 |
| | 50 | 2 - 11 1/2 NPT | - | 129 | 17,7 | 48,0 | 65,0 | 99 | 104 | 49,5 | 108,5 | 85 | 17 | 38 | 5,28 | 50 | 420 | 109 372 | 420 | 109 381 | 100 | 109 390 | 100 | 109 399 |



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

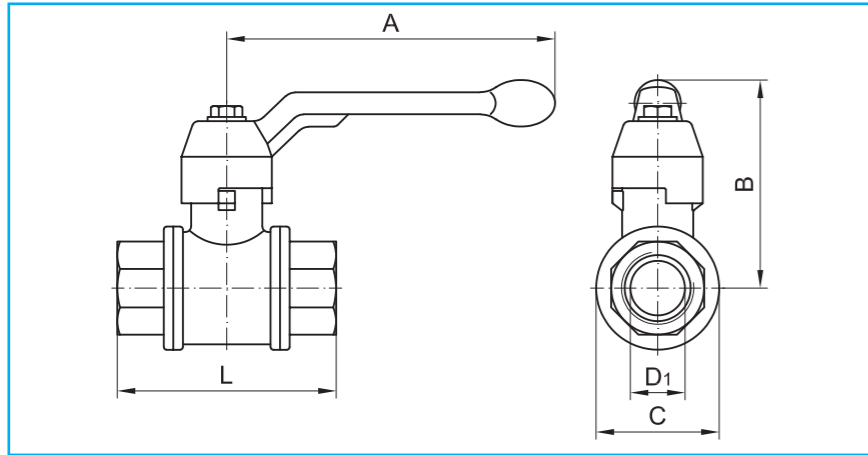
| | |
|-------------|-----------------|
| Body: | stainless steel |
| Ball: | stainless steel |
| Stem: | stainless steel |
| Ball seals: | PTFE |
| Stem seals: | FKM |

| Connection | DN | Thread | D1 | L | L1 | A | B | C | *Porting pattern DIN EN ISO 5211 | Weight | DN | PN | Article-No. |
|---|----|----------|----|-----|------|-----|-----|------|--|--------|----|-----|-------------|
| <p>BSP-female thread DIN EN 10226-1</p> | 10 | Rp 3/8 | 10 | 55 | 11,4 | 110 | 52 | 29,0 | F 03 | 0,23 | 10 | 100 | 101 523 |
| | 12 | Rp 1/2 | 15 | 65 | 15,0 | 110 | 55 | 34,5 | F 03 | 0,31 | 12 | 100 | 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 80



Handle included in delivery
 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

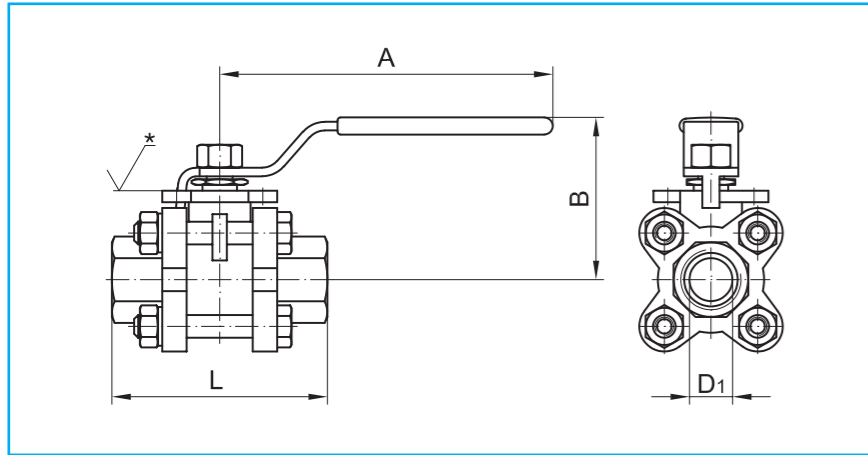
| | |
|-------------|-------|
| Body: | brass |
| Ball: | brass |
| Stem: | brass |
| Ball seals: | PTFE |
| Stem seals: | PTFE |

| 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 | 48 | 10 | 75 | 52 | 23 | 0,16 | 4 | 100 | 101 531 |
| | 6 | Rp 1/4 | 8 | 51 | 13 | 75 | 52 | 23 | 0,15 | 6 | 100 | 101 532 |
| | 10 | Rp 3/8 | 10 | 55 | 13 | 100 | 61 | 29 | 0,25 | 10 | 100 | 101 533 |
| | 12 | Rp 1/2 | 15 | 69 | 16 | 100 | 64 | 36 | 0,37 | 12 | 100 | 101 534 |
| | 20 | Rp 3/4 | 20 | 77 | 17 | 120 | 76 | 45 | 0,64 | 20 | 100 | 101 535 |
| | 25 | Rp 1 | 25 | 89 | 19 | 120 | 80 | 54 | 0,89 | 25 | 100 | 101 536 |
| | 32 | Rp 1 1/4 | 32 | 103 | 22 | 150 | 98 | 65 | 1,56 | 32 | 100 | 101 537 |
| | 40 | Rp 1 1/2 | 40 | 114 | 22 | 150 | 104 | 79 | 2,32 | 40 | 100 | 101 538 |
| | 50 | Rp 2 | 50 | 134 | 27 | 175 | 119 | 96 | 3,63 | 50 | 80 | 101 539 |
| | 65 | Rp 2 1/2 | 65 | 160 | 32 | 280 | 155 | 119 | 5,54 | 65 | 40 | 101 540 |
| | 80 | Rp 3 | 80 | 185 | 35 | 280 | 167 | 144 | 8,44 | 80 | 40 | 101 541 |



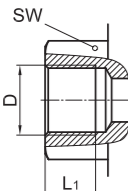
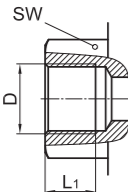
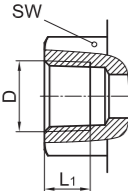
2-way ball valves with threaded connector

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

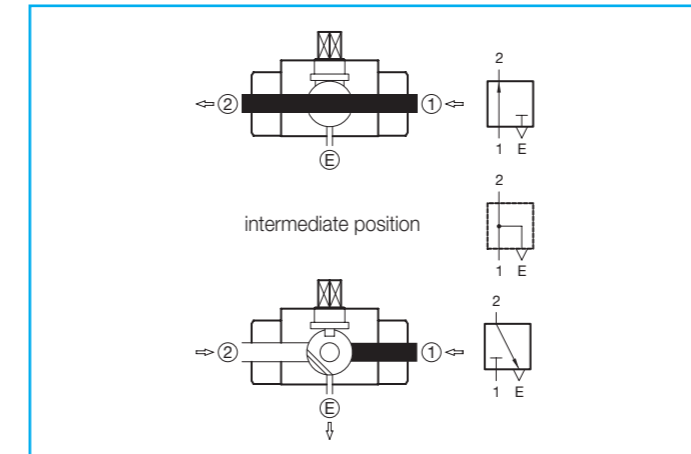
| | |
|-------------|-----------------|
| Body: | stainless steel |
| Ball: | stainless steel |
| Stem: | stainless steel |
| Ball seals: | PTFE |
| Stem seals: | PTFE |

| Connection | DN | Thread D | D1 | L | L1 | 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  | 40 | G 1 1/2 | 38,0 | 120 | 21,4 | 191 | 95 | F05 | 2,40 | 40 | 63 | 100 859 |
| | 50 | G 2 | 49,0 | 140 | 26,0 | 191 | 104 | F05 | 3,60 | 50 | 40 | 100 860 |
| | 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 |
| NPT-female thread ANSI/ASME B1.20.1-1983  | 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 |
| | 40 | Rp 1 1/2 | 38,0 | 120 | 21,4 | 191 | 95 | F05 | 2,40 | 40 | 63 | 100 896 |
| | 50 | Rp 2 | 49,0 | 140 | 26,0 | 191 | 104 | F05 | 3,60 | 50 | 40 | 100 897 |
| | 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

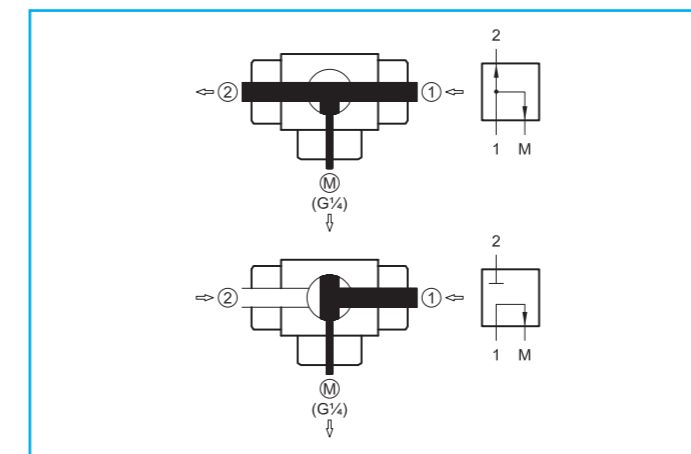
Function:

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

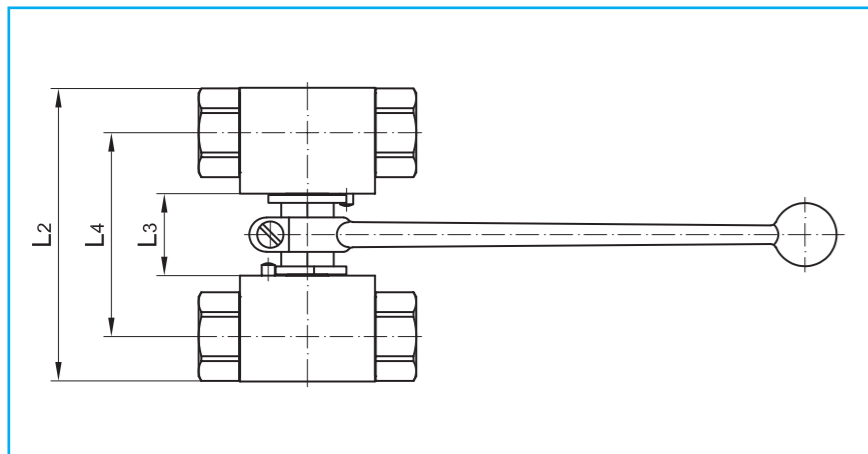
Function:

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.



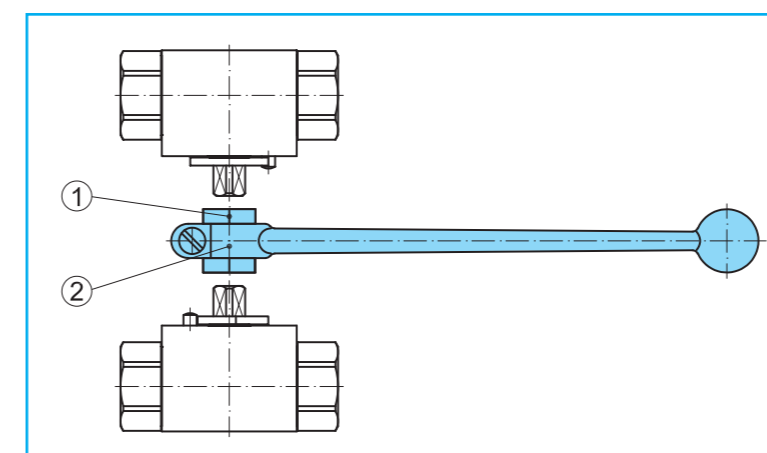
2-way ball valves with threaded connector

Steel or stainless steel · as combination · DN 4 - DN 50



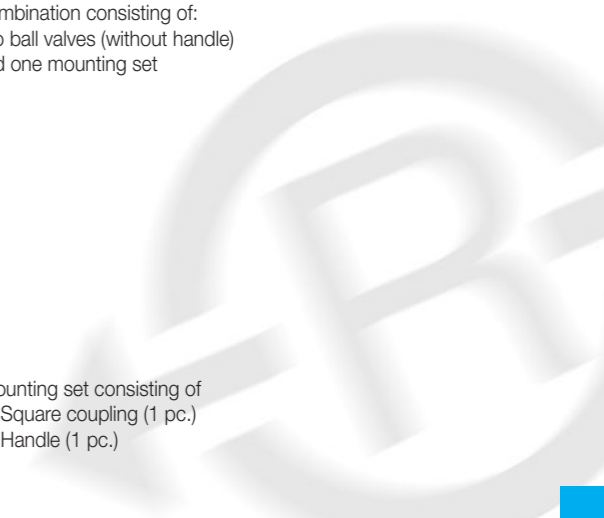
Mounting sets are identical in design for multi-way ball valves with floating ball.
 For dimensions and article numbers for ball valve bodies refer to the respective chapter.
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
Also available completely assembled

| Connection | DN | Steel | | | Stainless steel (standard) | | | Stainless steel (630 bar) | | | Mounting sets DN | Steel | Stainless steel |
|------------|----|-------|----|-----|----------------------------|----|-----|---------------------------|----|-------|---------------------|-------------|-----------------|
| | | L2 | L3 | L4 | L2 | L3 | L4 | L2 | L3 | L4 | | Article-No. | Article-No. |
| ALL | 4 | 67 | 17 | 47 | 67 | 17 | 47 | 77 | 17 | 49,6 | 4 | 100 780 | 100 849 |
| | 6 | 67 | 17 | 47 | 67 | 17 | 47 | 77 | 17 | 49,6 | 6 | 100 780 | 100 849 |
| | 8 | 94 | 24 | 65 | 94 | 24 | 65 | 104 | 24 | 68,0 | 8 | 100 781 | 100 850 |
| | 10 | 94 | 24 | 65 | 94 | 24 | 65 | 104 | 24 | 68,0 | 10 | 100 781 | 100 850 |
| | 12 | 111 | 31 | 77 | 111 | 31 | 77 | 121 | 31 | 79,0 | 12 | 100 782 | 100 851 |
| | 16 | 121 | 31 | 81 | 150 | 40 | 102 | 170 | 40 | 108,0 | 16 | 100 782 | 100 852 |
| | 20 | 150 | 40 | 102 | 150 | 40 | 102 | 170 | 40 | 108,0 | 20 | 100 784 | 100 852 |
| | 25 | 160 | 40 | 108 | 160 | 40 | 108 | 190 | 40 | 114,0 | 25 | 100 784 | 100 852 |
| | 32 | 203 | 43 | 130 | 203 | 43 | 130 | - | - | - | 32 | 100 785 | 100 803 |
| | 40 | 223 | 43 | 138 | 223 | 43 | 138 | - | - | - | 40 | 100 785 | 100 803 |
| | 50 | 251 | 43 | 152 | 251 | 43 | 152 | - | - | - | 50 | 100 785 | 100 803 |



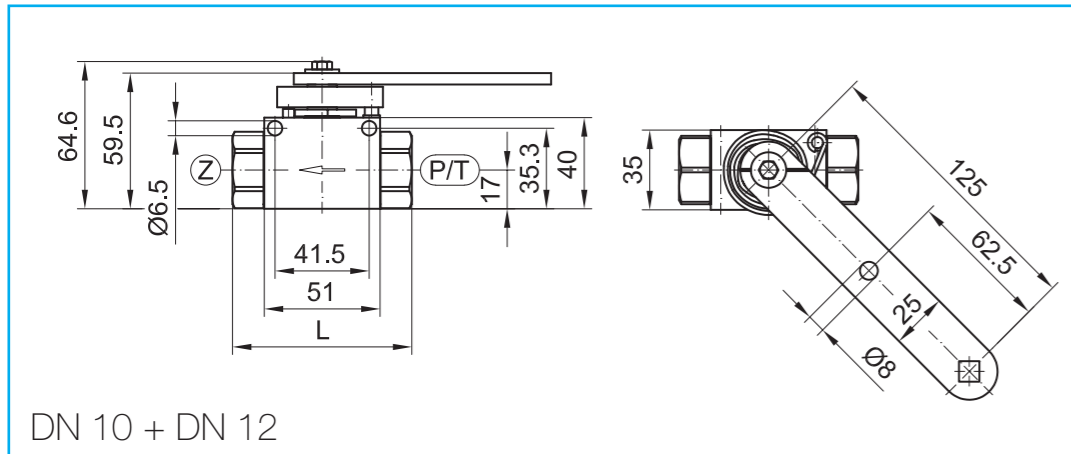
Combination consisting of:
 two ball valves (without handle)
 and one mounting set

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

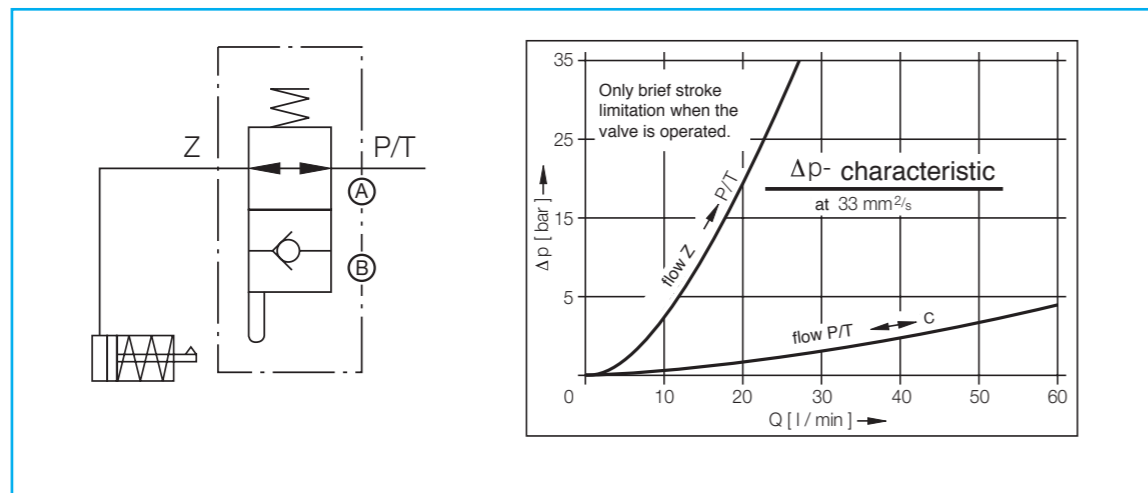
Weight in kg

Pressure in bar

| | |
|-------------|---------------------------|
| Body: | steel, black oxide |
| Ball: | steel, hard chrome plated |
| Stem: | steel, zinc plated |
| Ball seals: | POM |
| Stem seals: | NBR |

| Connection | DN | Thread D | OD | 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 |

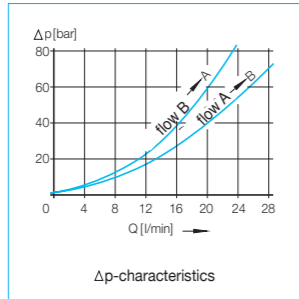
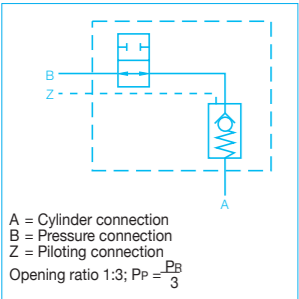


2-way ball valves with threaded connector

For support cylinder control · Technical information



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



Previous solutions:

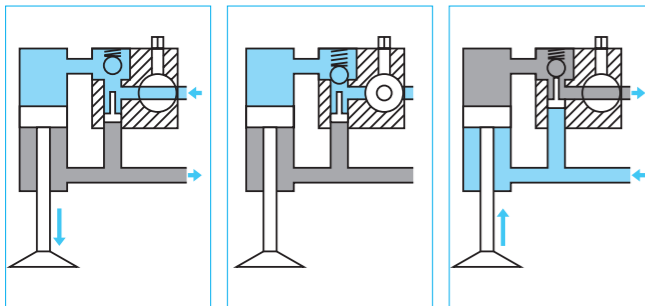
Central control from the cabin with complex rotary distributors and piping, or central control from the chassis with an unsatisfactory view of outrigger components; in some cases pilot-operated check valves are located in the lines serving the cylinders, without protection against burst lines as prescribed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

Our solution for this problem:

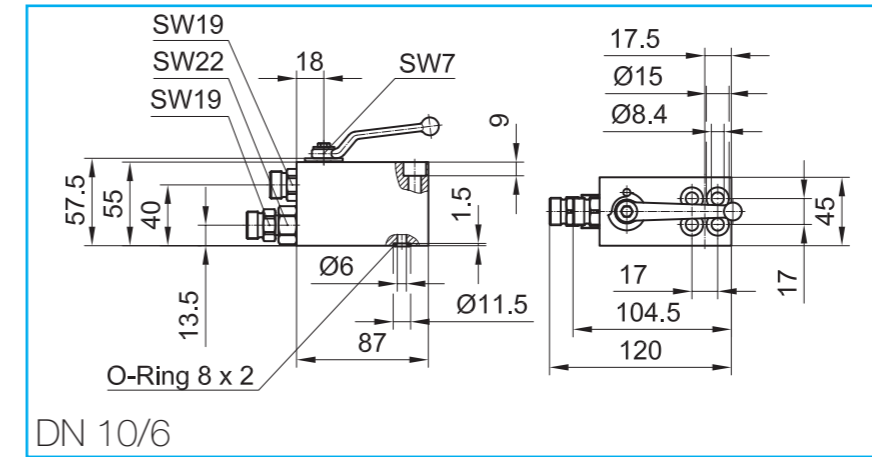
The support cylinder ball valve is flanged directly to the support cylinder, the combination forming a compact operating unit. The outrigger piston extends into position when the valve is opened. The check valve integrated into the valve body prevents unintentional retraction of the support piston under 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



with integrated, pilot-operated check valve

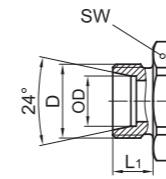


Handle included in delivery
For handle refer to "Attachments, accessories"
Please check pressure rating of the pipe fittings!
Custom orders on request
All dimensions subject to change without notice
Dimensions in mm
Weight in kg
Pressure in bar

| | |
|-------------|---------------------------|
| Body: | steel, black oxide |
| Ball: | steel, hard chrome plated |
| Stem: | steel, zinc plated |
| Body seals: | NBR |
| Ball seals: | POM |
| Stem seals: | NBR |

Connection

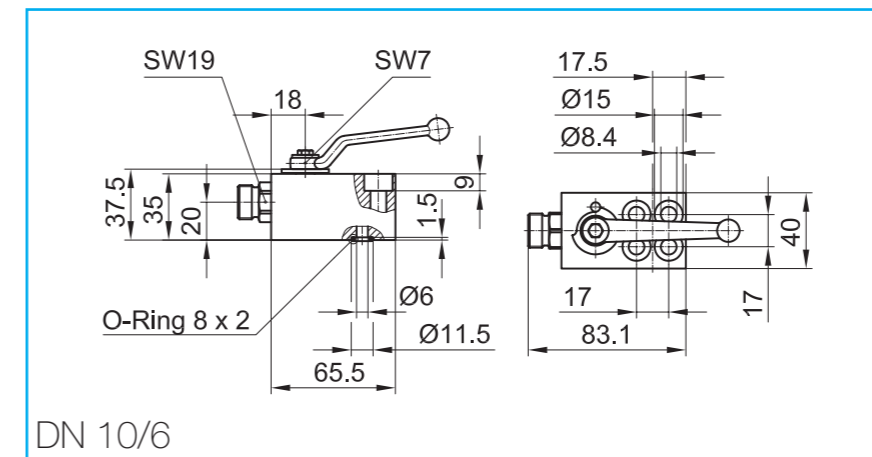
For cut (clamp) ring tube fitting
DIN 2353 light series
ISO 8434-1



| DN | Thread D | OD | L1 | Handle Code | Weight |
|------|------------|----|----|-------------|--------|
| 10/6 | M 18 x 1,5 | 12 | 11 | 12 | 1,57 |

| PN | Article-No. |
|-----|-------------|
| 315 | 300 101 |

without check valve

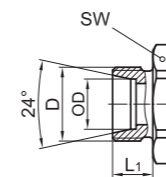


Handle included in delivery
For handle refer to "Attachments, accessories"
Please check pressure rating of the pipe fittings!
Custom orders on request
All dimensions subject to change without notice
Dimensions in mm
Weight in kg
Pressure in bar

| | |
|-------------|---------------------------|
| Body: | steel, black oxide |
| Ball: | steel, hard chrome plated |
| Stem: | steel, zinc plated |
| Body seals: | NBR |
| Ball seals: | POM |
| Stem seals: | NBR |

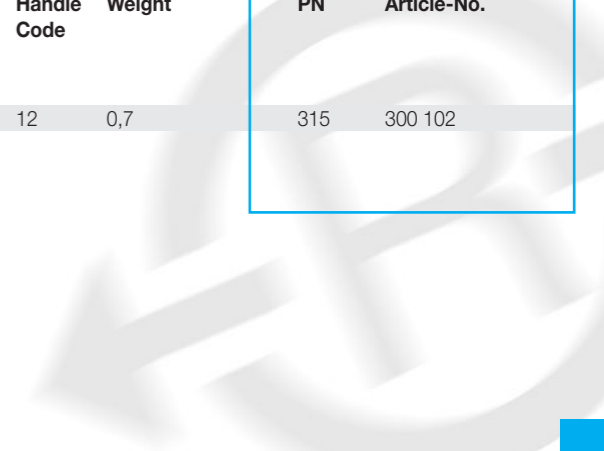
Connection

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



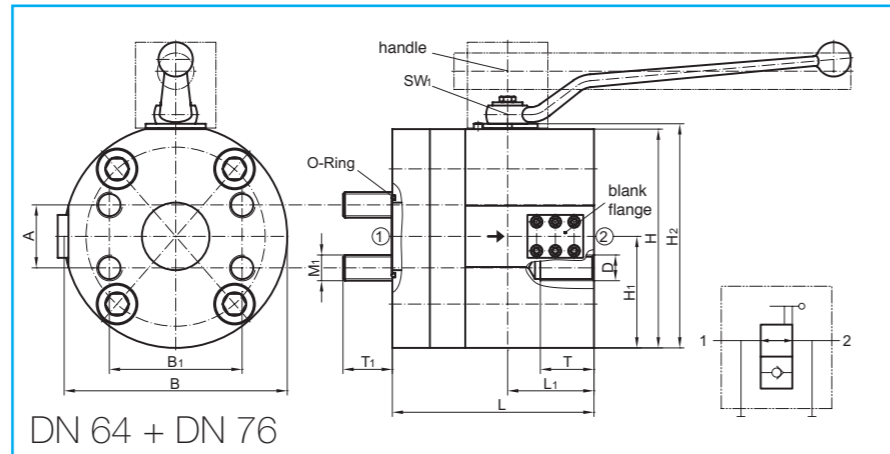
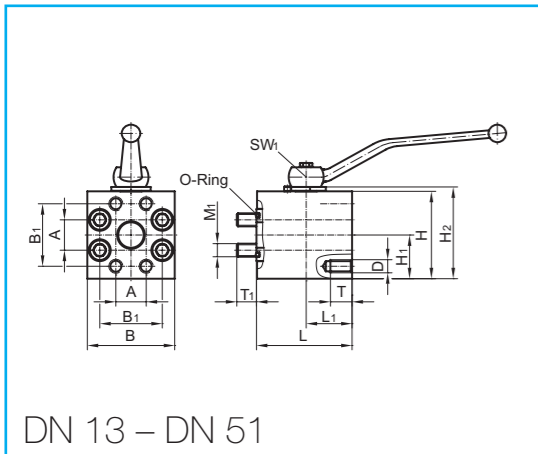
| DN | Thread D | OD | L1 | Handle Code | Weight |
|------|------------|----|----|-------------|--------|
| 10/6 | M 18 x 1,5 | 12 | 11 | 12 | 0,7 |

| PN | Article-No. |
|-----|-------------|
| 315 | 300 102 |



2-way ball valves with flange connection

Steel · ISO 6162 (SAE) · DN 13 - DN 76 · direct flangable



Handle and o-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

NEW!
 Full flow,
 no reduction!

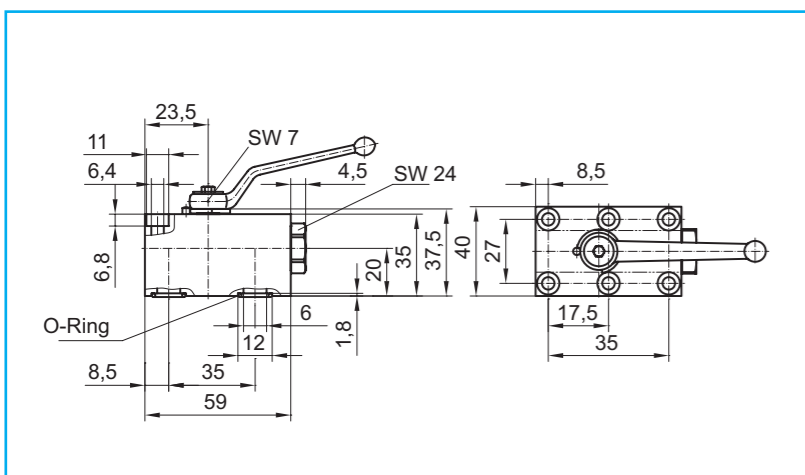
**Bypass-ball valve instead of blank flange retrofittable,
 also deliverable completely assembled with bypass-ball valve**

*) Fixing bolts are not included as standard equipment.
 Please check property class of the fixing bolts.
 **) DN 64 and DN 76: steel, zinc plated

| | | |
|-------------|---------------------------|---------------------------|
| Body: | steel, black oxide** | steel, black oxide** |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM |
| Stem seals: | NBR | FKM |

| Connection | DN Flange-size (inch) | D | T | A | B ₁ | L | L ₁ | B | H | H ₁ | H ₂ | SW ₁ | M1* | T ₁ | Handle Weight Code | DN | O-Ring | PN | Article-No. | PN | Article-No. | |
|------------|-----------------------|-------------|------|-------|----------------|-------|----------------|-----|-------|----------------|----------------|-------------------|------------------|----------------|--------------------|-------|--------------|--------------|-------------|---------|-------------|---------|
| ISO 6162-2 | 13 1/2 | M8 | 15,0 | 18,2 | 40,5 | 55,5 | 27,0 | 60 | 55 | 28,5 | 58,5 | 10 | M8x60 | 13,5 | 14 | 1,29 | 13 | 18,64 x 3,53 | 420 | 104 093 | 420 | 104 120 |
| | 19 3/4 | M10 | 16,5 | 23,8 | 50,8 | 62,5 | 31,0 | 70 | 70 | 35,0 | 74,0 | 14 | M10x65 | 14,0 | 15 | 1,99 | 19 | 24,99 x 3,53 | 420 | 104 094 | 420 | 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 | 15 | 2,98 | 25 | 32,92 x 3,53 | 420 | 104 095 | 420 | 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 | 21 | 5,80 | 32 | 37,69 x 3,53 | 420 | 104 166 | 420 | 104 167 |
| | 38 1 1/2 | M16 | 26,0 | 36,5 | 79,3 | 99,0 | 53,5 | 120 | 120 | 60,0 | 124,5 | 17 | M16x100 | 18,0 | 21 | 9,50 | 38 | 47,22 x 3,53 | 420 | 104 097 | 420 | 104 124 |
| | 51 2 | M20 | 34,0 | 44,5 | 96,8 | 109,5 | 61,0 | 134 | 123 | 61,5 | 128,5 | 17 | M20x110 | 22,0 | 22 | 11,10 | 51 | 56,74 x 3,53 | 420 | 104 098 | 420 | 104 125 |
| | 64 2 1/2 | M24 | 50,0 | 58,7 | 123,8 | 188,0 | 80,5 | 208 | 204 | 104,0 | 209,0 | 17 | M24x55 | 46,0 | 22 | 46,00 | 64 | 69,44 x 3,53 | 420 | 104 277 | 420 | 104 281 |
| 76 3 | M30 | 60,0 | 71,4 | 152,4 | 214,0 | 91,0 | 248 | 231 | 124,0 | - | 19 | M30x70 | 56,0 | 58 | 78,00 | 76 | 85,32 x 3,53 | 420 | 104 278 | 420 | 104 282 | |
| ISO 6162-2 | 13 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 | 14 | 1,29 | 13 | 18,64 x 3,53 | 420 | 104 099 | 420 | 104 126 |
| | 19 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 | 15 | 1,99 | 19 | 24,99 x 3,53 | 420 | 104 100 | 420 | 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 | 15 | 2,98 | 25 | 32,92 x 3,53 | 420 | 104 101 | 420 | 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 | 21 | 5,80 | 32 | 37,69 x 3,53 | 420 | 104 102 | 420 | 104 129 |
| | 38 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 | 21 | 9,50 | 38 | 47,22 x 3,53 | 420 | 104 103 | 420 | 104 130 |
| | 51 2 | 3/4 -10 UNC | 34 | 44,5 | 96,8 | 109,5 | 61,0 | 134 | 123 | 61,5 | 128,5 | 17 | 3/4 UNC x 4 1/2 | 26,0 | 22 | 11,10 | 51 | 56,74 x 3,53 | 420 | 104 104 | 420 | 104 131 |
| | 64 2 1/2 | 7/8 -9 UNC | 50 | 58,7 | 123,8 | 188,0 | 80,5 | 208 | 204 | 104,0 | 209,0 | 17 | 7/8 UNC x 2 1/4 | 48,0 | 22 | 46,00 | 64 | 69,44 x 3,53 | 420 | 104 279 | 420 | 104 283 |
| 76 3 | 1 1/8 -7 UNC | 60 | 71,4 | 152,4 | 214,0 | 91,0 | 248 | 231 | 124,0 | - | 19 | 1 1/8 UNC x 2 3/4 | 56,0 | 58 | 78,00 | 76 | 85,32 x 3,53 | 420 | 104 280 | 420 | 104 284 | |

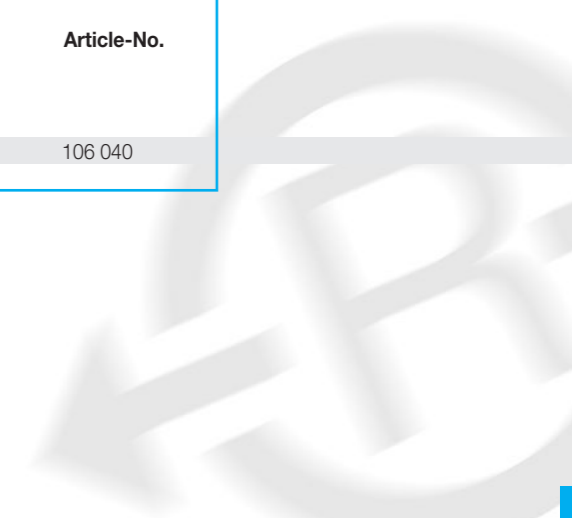
Bypass-ball valve for DN 64 and DN 76



| DN | Handle Code | Weight | O-Ring |
|----|-------------|--------|-------------|
| 6 | 12 | 0,58 | 7,50 x 2,50 |

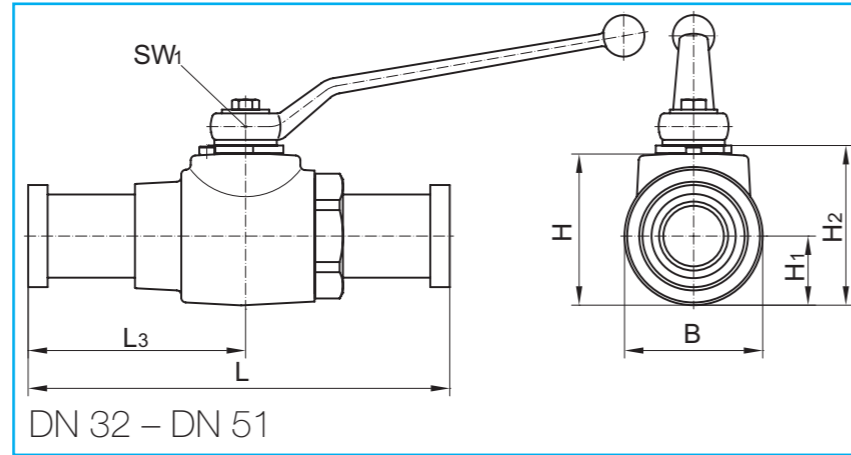
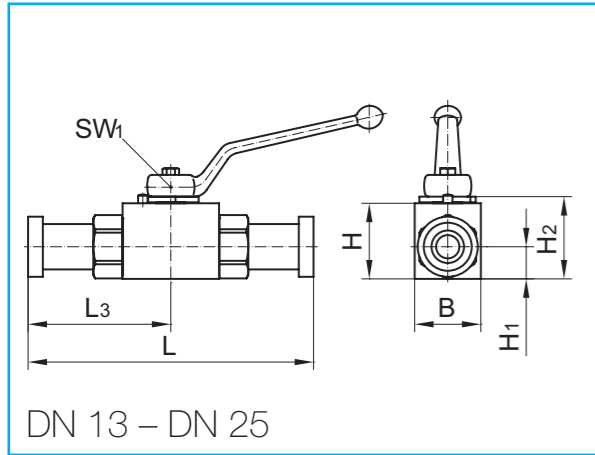
| Article-No. |
|-------------|
| 106 040 |

Bolts included in delivery



2-way ball valves with flange connection

Steel · ISO 6162 (SAE) · DN 13 - DN 51 · for split flanges



Handle and o-ring 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

DN 32 - DN 51 also available with completely assembled full flanges

| | | |
|-------------|---------------------------|---------------------------|
| Body: | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM |
| Stem seals: | NBR | FKM |

| Connection | DN | Flange-size (inch) | D1 | D2 | L | L2 | L3 | B | H | H1 | H2 | SW1 | Handle Code | Weight |
|----------------|----|--------------------|-------|------|--------|------|-------|----|-----|------|-------|-----|-------------|--------|
| ISO 6162-1 | 13 | 1/2 | 30,20 | 24,0 | 151,0 | 6,8 | 75,5 | 35 | 40 | 17,0 | 43,5 | 10 | 14 | 0,9 |
| | 19 | 3/4 | 38,10 | 31,5 | 162,0 | 6,8 | 81,0 | 45 | 55 | 24,0 | 59,0 | 14 | 15 | 1,7 |
| | 25 | 1 | 44,45 | 38,0 | 178,0 | 8,0 | 89,0 | 55 | 60 | 26,0 | 64,0 | 14 | 15 | 2,5 |
| | 32 | 1 1/4 | 50,80 | 43,0 | 195,0* | 8,0 | 99,0 | 73 | 80 | 36,5 | 84,5 | 17 | 21 | 3,8 |
| | 38 | 1 1/2 | 60,35 | 50,0 | 231,0* | 8,0 | 115,5 | 85 | 90 | 42,5 | 94,5 | 17 | 21 | 4,5 |
| | 51 | 2 | 71,40 | 62,0 | 232,0* | 9,6 | 116,5 | 99 | 104 | 49,5 | 108,5 | 17 | 22 | 6,1 |
| ISO 6162-2 | 13 | 1/2 | 31,8 | 24 | 151 | 7,8 | 75,5 | 35 | 40 | 17,0 | 43,5 | 10 | 14 | 1,0 |
| | 19 | 3/4 | 41,3 | 32 | 174 | 8,8 | 87,0 | 45 | 55 | 24,0 | 59,0 | 14 | 15 | 1,8 |
| | 25 | 1 | 47,6 | 38 | 198 | 9,5 | 99,0 | 55 | 60 | 26,0 | 64,0 | 14 | 15 | 2,6 |
| | 32 | 1 1/4 | 54,0 | 44 | 227* | 10,3 | 115,0 | 73 | 80 | 36,5 | 84,5 | 17 | 21 | 4,0 |
| | 38 | 1 1/2 | 63,5 | 51 | 281 | 12,6 | 140,5 | 85 | 90 | 42,5 | 94,5 | 17 | 21 | 5,6 |
| | 51 | 2 | 79,4 | 67 | 316 | 12,6 | 158,5 | 99 | 104 | 49,5 | 108,5 | 17 | 22 | 7,7 |

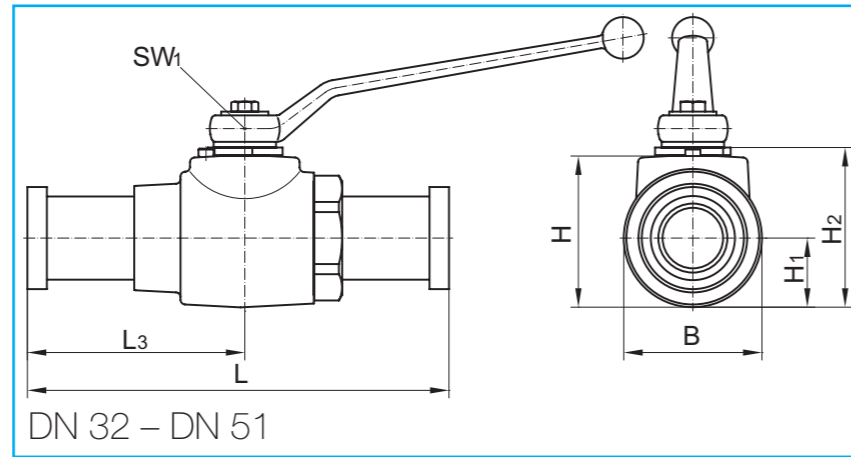
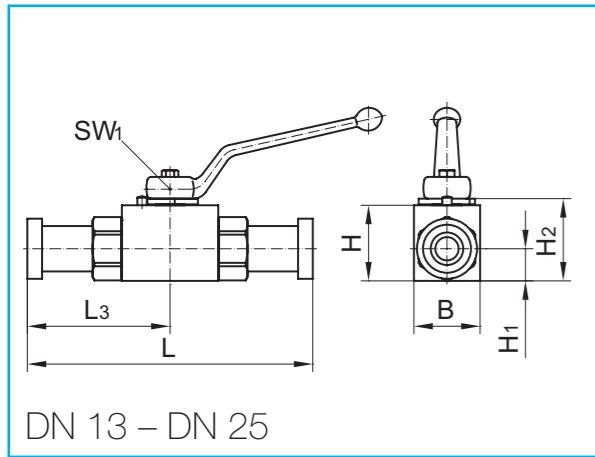
| DN | O-Ring | PN | Article-No. | PN | Article-No. |
|----|--------------|-----|-------------|-----|-------------|
| 13 | 18,64 x 3,53 | 350 | 104 523 | 350 | 104 533 |
| 19 | 24,99 x 3,53 | 350 | 104 524 | 350 | 104 534 |
| 25 | 32,92 x 3,53 | 320 | 104 501 | 320 | 104 511 |
| 32 | 37,69 x 3,53 | 280 | 104 502 | 280 | 104 512 |
| 38 | 47,22 x 3,53 | 210 | 104 503 | 210 | 104 513 |
| 51 | 56,74 x 3,53 | 210 | 104 504 | 210 | 104 514 |
| 13 | 18,64 x 3,53 | 420 | 104 528 | 420 | 104 538 |
| 19 | 24,99 x 3,53 | 420 | 104 529 | 420 | 104 539 |
| 25 | 32,92 x 3,53 | 420 | 104 505 | 420 | 104 515 |
| 32 | 37,69 x 3,53 | 420 | 104 506 | 420 | 104 516 |
| 38 | 47,22 x 3,53 | 420 | 104 507 | 420 | 104 517 |
| 51 | 56,74 x 3,53 | 420 | 104 508 | 420 | 104 518 |

*) Please regard changed dimensions!



2-way ball valves with flange connection

Stainless steel · ISO 6162 (SAE) · DN 13 - DN 51 · for split flanges



Handle and o-ring 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

Also available with completely assembled full flanges

| | | | |
|-------------|--------------------|--------------------|---------------|
| Body: | stainless steel | stainless steel | |
| Ball: | stainless steel | stainless steel | |
| Stem: | stainless steel | stainless steel | |
| Ball seals: | POM | POM | |
| Stem seals: | NBR | FKM | |
| Handle: | zinc, die cast | zinc, die cast | DN 13 - DN 25 |
| Stop plate: | steel, zinc plated | steel, zinc plated | DN 13 - DN 25 |
| Handle: | stainless steel | stainless steel | DN 32 - DN 51 |
| Stop plate: | stainless steel | stainless steel | DN 32 - DN 51 |

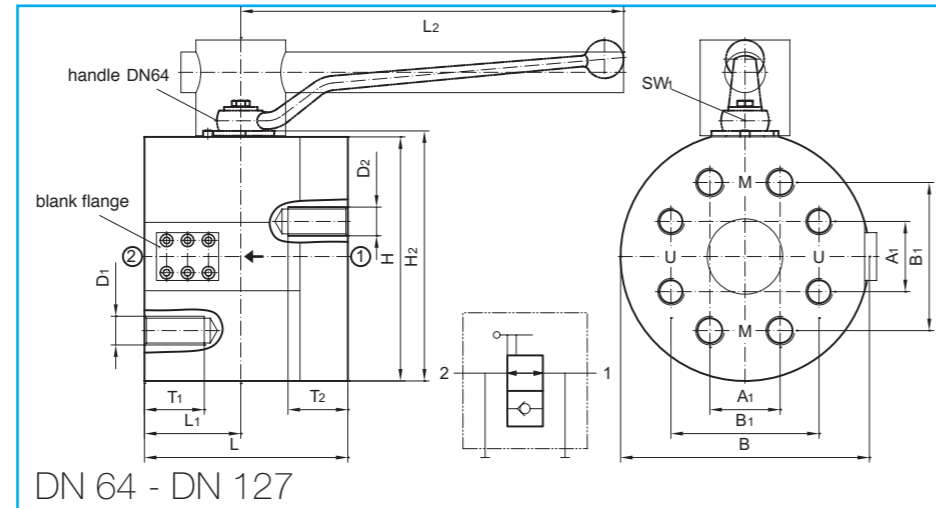
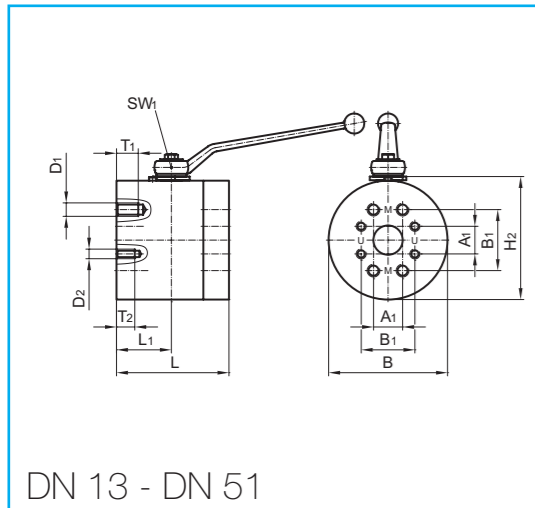
| Connection | DN | Flange-size (inch) | D1 | D2 | L | L2 | L3 | B | H | H1 | H2 | SW1 | Handle Code | Weight |
|----------------|----|--------------------|-------|-------|-------|------|-------|----|-----|------|-------|-----|-------------|--------|
| ISO 6162-1 | 13 | 1/2 | 30,20 | 24,0 | 151,0 | 6,8 | 75,5 | 35 | 40 | 17,0 | 43,5 | 10 | 14 | 0,9 |
| | 19 | 3/4 | 38,10 | 31,5 | 162,0 | 6,8 | 81,0 | 45 | 55 | 24,0 | 59,0 | 14 | 15 | 1,7 |
| | 25 | 1 | 44,45 | 38,0 | 178,0 | 8,0 | 89,0 | 55 | 60 | 26,0 | 64,0 | 14 | 15 | 2,5 |
| | 32 | 1 1/4 | 50,80 | 43,0* | 195,0 | 8,0 | 99,0 | 73 | 80 | 36,5 | 84,5 | 17 | 37 | 3,8 |
| | 38 | 1 1/2 | 60,35 | 50,0* | 231,0 | 8,0 | 115,5 | 85 | 90 | 42,5 | 94,5 | 17 | 37 | 4,5 |
| | 51 | 2 | 71,40 | 62,0* | 232,0 | 9,6 | 116,5 | 99 | 104 | 49,5 | 108,5 | 17 | 38 | 6,1 |
| ISO 6162-2 | 13 | 1/2 | 31,8 | 24 | 151 | 7,8 | 75,5 | 35 | 40 | 17,0 | 43,5 | 10 | 14 | 1,0 |
| | 19 | 3/4 | 41,3 | 32 | 174 | 8,8 | 87,0 | 45 | 55 | 24,0 | 59,0 | 14 | 15 | 1,8 |
| | 25 | 1 | 47,6 | 38 | 198 | 9,5 | 99,0 | 55 | 60 | 26,0 | 64,0 | 14 | 15 | 2,6 |
| | 32 | 1 1/4 | 54,0 | 44 | 227 | 10,3 | 115,0 | 73 | 80 | 36,5 | 84,5 | 17 | 37 | 4,0 |
| | 38 | 1 1/2 | 63,5 | 51 | 281 | 12,6 | 140,5 | 85 | 90 | 42,5 | 94,5 | 17 | 37 | 5,6 |
| | 51 | 2 | 79,4 | 67 | 316 | 12,6 | 158,5 | 99 | 104 | 49,5 | 108,5 | 17 | 38 | 7,7 |

| DN | O-Ring | PN | Article-No. | PN | Article-No. |
|----|--------------|-----|-------------|-----|-------------|
| 13 | 18,64 x 3,53 | 350 | 104 315 | 350 | 104 327 |
| 19 | 24,99 x 3,53 | 350 | 104 316 | 350 | 104 328 |
| 25 | 32,92 x 3,53 | 320 | 104 317 | 320 | 104 329 |
| 32 | 37,69 x 3,53 | 280 | 104 318 | 280 | 104 330 |
| 38 | 47,22 x 3,53 | 210 | 104 319 | 210 | 104 331 |
| 51 | 56,74 x 3,53 | 210 | 104 320 | 210 | 104 332 |
| 13 | 18,64 x 3,53 | 420 | 104 321 | 420 | 104 333 |
| 19 | 24,99 x 3,53 | 420 | 104 322 | 420 | 104 334 |
| 25 | 32,92 x 3,53 | 420 | 104 323 | 420 | 104 335 |
| 32 | 37,69 x 3,53 | 420 | 104 324 | 420 | 104 336 |
| 38 | 47,22 x 3,53 | 420 | 104 325 | 420 | 104 337 |
| 51 | 56,74 x 3,53 | 420 | 104 326 | 420 | 104 338 |



2-way ball valves with flange connection

Steel · ISO 6162 (SAE) · DN 13 - DN 127



Handle and o-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

NEW!
 Metric and UNC-
 thread in the same
 body!

**Bypass-ball valve instead of blank flange retrofittable,
 also deliverable completely assembled with bypass-ball valve**

*) DN 64 - DN 127: steel, zinc plated

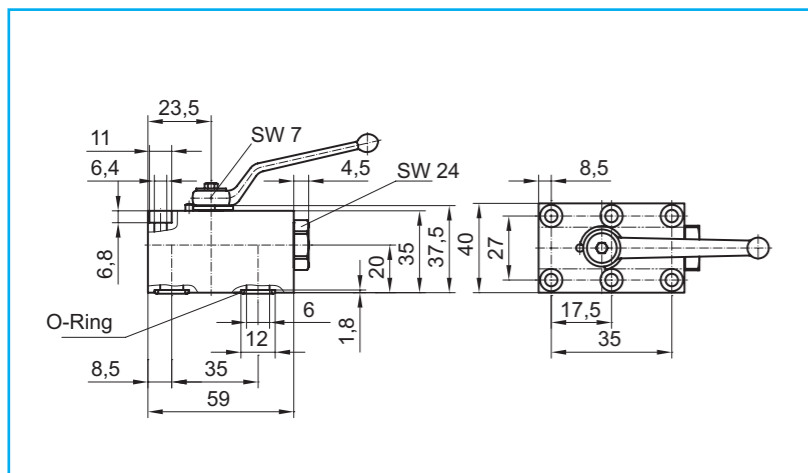
| | | |
|-------------|---------------------------|---------------------------|
| Body: | steel, black oxide* | steel, black oxide* |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM |
| Stem seals: | NBR | FKM |

| Connection | DN | Flange-size (inch) | D1 | T1 | D2 | T2 | A1 | B1 | L | L1 | B | H | H2 | SW1 | Handle Code | Weight | DN |
|------------|-----|--------------------|------|----|---------------|----|------|-------|-------|-------|-----|-------|-------|-----|-------------|--------|-----|
| ISO 6162-1 | 13 | 1/2 | M8 | 14 | 5/16 - 18 UNC | 21 | 17,5 | 38,1 | 76 | 38,0 | 55 | 54,0 | 57,5 | 10 | 14 | 1,3 | 13 |
| | 19 | 3/4 | M10 | 18 | 3/8 - 16 UNC | 22 | 22,2 | 47,6 | 78 | 36,5 | 70 | 66,0 | 70,0 | 14 | 15 | 2,1 | 19 |
| | 25 | 1 | M10 | 16 | 3/8 - 16 UNC | 22 | 26,2 | 52,4 | 80 | 34,0 | 78 | 73,0 | 77,0 | 14 | 15 | 2,6 | 25 |
| | 32 | 1 1/4 | M10 | 22 | 7/16 - 14 UNC | 28 | 30,2 | 58,7 | 123 | 60,0 | 130 | 130,0 | 134,5 | 17 | 21 | 11,8 | 32 |
| | 38 | 1 1/2 | M12 | 25 | 1/2 - 13 UNC | 27 | 35,7 | 69,9 | 133 | 61,0 | 140 | 140,0 | 144,5 | 17 | 21 | 13,6 | 38 |
| | 51 | 2 | M12 | 25 | 1/2 - 13 UNC | 27 | 42,9 | 77,8 | 162 | 79,0 | 160 | 158,0 | 162,5 | 17 | 22 | 20,9 | 51 |
| | 64 | 2 1/2 | M12 | 27 | 1/2 - 13 UNC | 27 | 50,8 | 88,9 | 150 | 75,5 | 180 | 175,0 | 180,0 | 17 | 22 | 28,0 | 64 |
| | 76 | 3 | M16 | 30 | 5/8 - 11 UNC | 30 | 61,9 | 106,4 | 155 | 80,5 | 208 | 202,0 | - | 19 | 58 | 43,0 | 76 |
| | 102 | 4 | M16 | 30 | 5/8 - 11 UNC | 30 | 77,8 | 130,2 | 170 | 85,0 | 258 | 251,0 | - | 27 | 57 | 73,0 | 102 |
| | 127 | 5 | M16 | 30 | 5/8 - 11 UNC | 30 | 92,1 | 152,4 | 210 | 105,0 | 295 | 287,5 | - | 27 | 57 | 108,0 | 127 |
| ISO 6162-2 | 13 | 1/2 | M8 | 16 | 5/16 - 18 UNC | 21 | 18,2 | 40,5 | 81,0 | 40,5 | 59 | 36,0 | 59,5 | 10 | 14 | 1,7 | 13 |
| | 19 | 3/4 | M10 | 18 | 3/8 - 16 UNC | 24 | 23,8 | 50,8 | 83,0 | 41,5 | 74 | 72,0 | 76,0 | 14 | 15 | 2,6 | 19 |
| | 25 | 1 | M12 | 23 | 7/16 - 14 UNC | 27 | 27,8 | 57,2 | 99,5 | 49,5 | 85 | 82,7 | 86,7 | 14 | 15 | 4,0 | 25 |
| | 32 | 1 1/4 | M12* | 20 | 1/2 - 13 UNC | 25 | 31,8 | 66,7 | 123,0 | 60,0 | 130 | 130,0 | 134,5 | 17 | 21 | 11,8 | 32 |
| | 38 | 1 1/2 | M16 | 27 | 5/8 - 11 UNC | 35 | 36,5 | 79,4 | 133,0 | 61,0 | 140 | 140,0 | 144,5 | 17 | 21 | 13,6 | 38 |
| | 51 | 2 | M20 | 35 | 3/4 - 10 UNC | 38 | 44,5 | 96,8 | 162,0 | 79,0 | 160 | 158,0 | 162,5 | 17 | 22 | 20,9 | 51 |
| | 64 | 2 1/2 | M24 | 50 | 7/8 - 9 UNC | 50 | 58,7 | 123,8 | 170,0 | 80,5 | 208 | 204,0 | 209,0 | 17 | 22 | 42,0 | 64 |
| | 76 | 3 | M30 | 60 | 1 1/8 - 7 UNC | 60 | 71,4 | 152,4 | 196,0 | 91,0 | 248 | 231,0 | - | 19 | 58 | 74,0 | 76 |

* ISO change from M14 to M12

| PN | Article-No. | PN | Article-No. |
|-----|-------------|-----|-------------|
| 350 | 104 200 | 350 | 104 206 |
| 350 | 104 201 | 350 | 104 207 |
| 320 | 104 202 | 320 | 104 208 |
| 280 | 104 175 | 280 | 104 185 |
| 210 | 104 176 | 210 | 104 186 |
| 210 | 104 177 | 210 | 104 187 |
| - | - | 175 | 104 213 |
| - | - | 160 | 104 214 |
| - | - | 35 | 104 215 |
| - | - | 35 | 104 216 |
| 420 | 104 203 | 420 | 104 209 |
| 420 | 104 204 | 420 | 104 210 |
| 420 | 104 205 | 420 | 104 211 |
| 420 | 104 182 | 420 | 104 192 |
| 420 | 104 183 | 420 | 104 193 |
| 420 | 104 184 | 420 | 104 194 |
| - | - | 420 | 104 217 |
| - | - | 420 | 104 218 |

Bypass-ball valve for DN 64 - DN 127



| DN | Handle Code | Weight | O-Ring |
|----|-------------|--------|-------------|
| 6 | 12 | 0,58 | 7,50 x 2,50 |

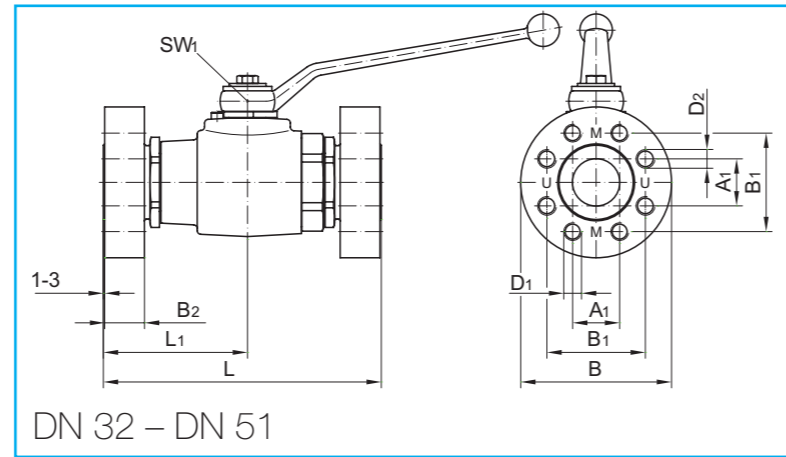
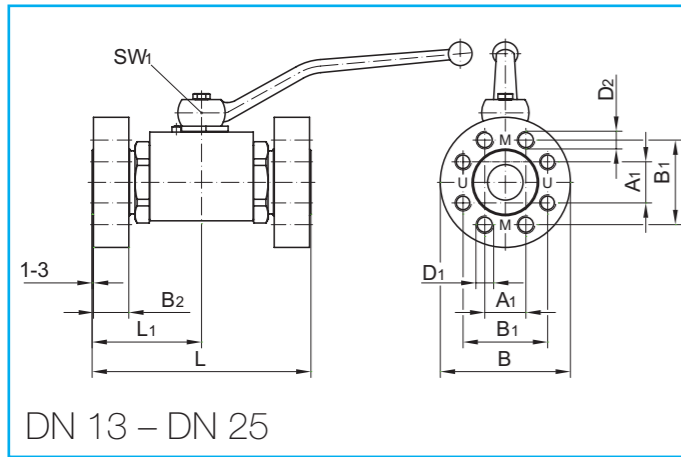
| Article-No. |
|-------------|
| 106 040 |

Bolts included in delivery



2-way ball valves with flange connection

Steel · ISO 6162 (SAE) · DN 13 - DN 51



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

For handle refer to "Attachments, accessories"

Custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

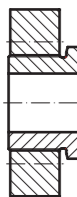
Pressure in bar

| | | |
|-------------|---------------------------|---------------------------|
| Body: | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM |
| Stem seals: | NBR | FKM |

Connection

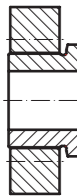
DN Flange - size (inch) D1 D2 A1 B1 B2 L L1 B SW1 Handle Code Weight

ISO 6162-1



| | | | | | | | | | | | | |
|----|-------|-----|--------------|------|------|----|-------|-------|-----|----|----|-------|
| 13 | 1/2 | M8 | 5/16-18 UNC | 17,5 | 38,1 | 20 | 108,0 | 54,0 | 60 | 10 | 14 | 1,30 |
| 19 | 3/4 | M10 | 3/8 - 16 UNC | 22,2 | 47,6 | 22 | 131,0 | 65,5 | 70 | 14 | 15 | 2,60 |
| 25 | 1 | M10 | 3/8 - 16 UNC | 26,2 | 52,4 | 22 | 144,0 | 72,0 | 75 | 14 | 15 | 3,70 |
| 32 | 1 1/4 | M10 | 7/16- 14 UNC | 30,2 | 58,7 | 25 | 200,0 | 66,0 | 85 | 17 | 21 | 8,30 |
| 38 | 1 1/2 | M12 | 1/2 - 13 UNC | 35,7 | 69,9 | 27 | 235,0 | 117,5 | 100 | 17 | 21 | 9,50 |
| 51 | 2 | M12 | 1/2 - 13 UNC | 42,9 | 77,8 | 27 | 285,0 | 129,5 | 110 | 17 | 22 | 13,10 |

ISO 6162-2



| | | | | | | | | | | | | |
|----|-------|-----|--------------|------|------|----|-------|-------|-----|----|----|-------|
| 13 | 1/2 | M8 | 5/16- 18 UNC | 18,2 | 40,5 | 21 | 108,0 | 54,0 | 60 | 10 | 14 | 1,40 |
| 19 | 3/4 | M10 | 3/8 - 16 UNC | 23,8 | 50,8 | 24 | 131,0 | 65,5 | 80 | 14 | 15 | 2,80 |
| 25 | 1 | M12 | 7/16- 14 UNC | 27,8 | 57,2 | 27 | 144,0 | 72,0 | 90 | 14 | 15 | 4,10 |
| 32 | 1 1/4 | M12 | 1/2 - 13 UNC | 31,8 | 66,7 | 25 | 200,0 | 66,0 | 100 | 17 | 21 | 4,95 |
| 38 | 1 1/2 | M16 | 5/8 - 11 UNC | 36,5 | 79,4 | 35 | 235,0 | 117,5 | 120 | 17 | 21 | 10,20 |
| 51 | 2 | M20 | 3/4 - 10 UNC | 44,5 | 96,8 | 38 | 285,0 | 129,5 | 140 | 17 | 22 | 14,10 |

DN

PN Article-No.

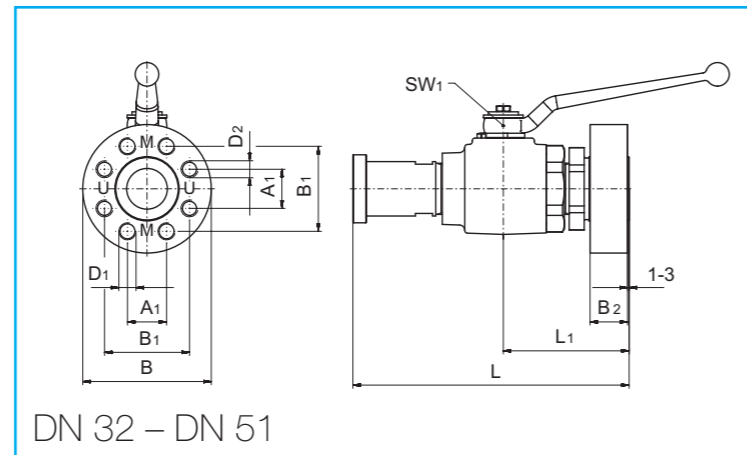
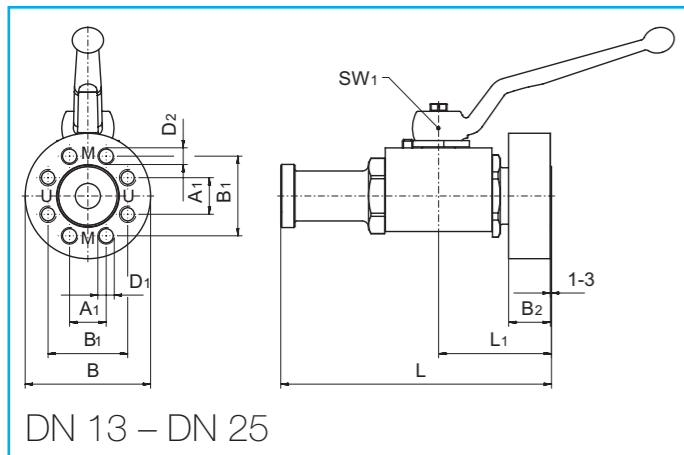
PN Article-No.

| | | | | |
|----|-----|---------|-----|---------|
| 13 | 350 | 104 286 | 350 | 104 293 |
| 19 | 350 | 104 287 | 350 | 104 294 |
| 25 | 320 | 104 288 | 320 | 104 295 |
| 32 | 280 | 104 289 | 280 | 104 296 |
| 38 | 210 | 104 290 | 210 | 104 297 |
| 51 | 210 | 104 291 | 210 | 104 298 |
| 13 | 420 | 104 300 | 420 | 104 307 |
| 19 | 420 | 104 301 | 420 | 104 308 |
| 25 | 420 | 104 302 | 420 | 104 309 |
| 32 | 420 | 104 303 | 420 | 104 310 |
| 38 | 420 | 104 304 | 420 | 104 311 |
| 51 | 420 | 104 305 | 420 | 104 312 |



2-way ball valves with flange connection

Steel · ISO 6162 (SAE) · DN 13 - DN 51 · for split flanges + flange connection



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

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

DN 32 - DN 51 also available with completely assembled full flanges

| | | |
|-------------|---------------------------|---------------------------|
| Body: | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM |
| Stem seals: | NBR | FKM |

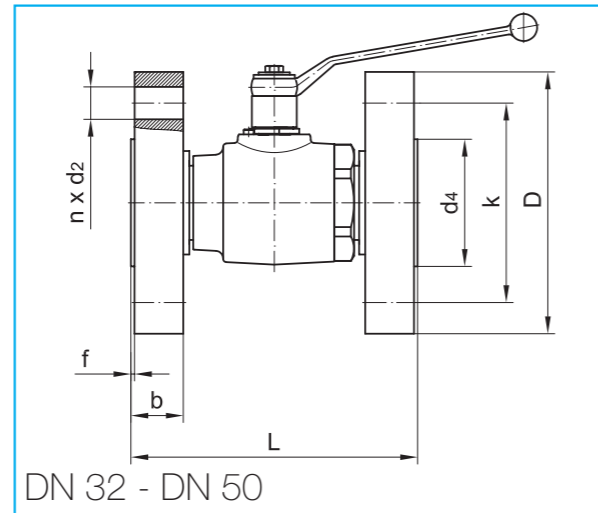
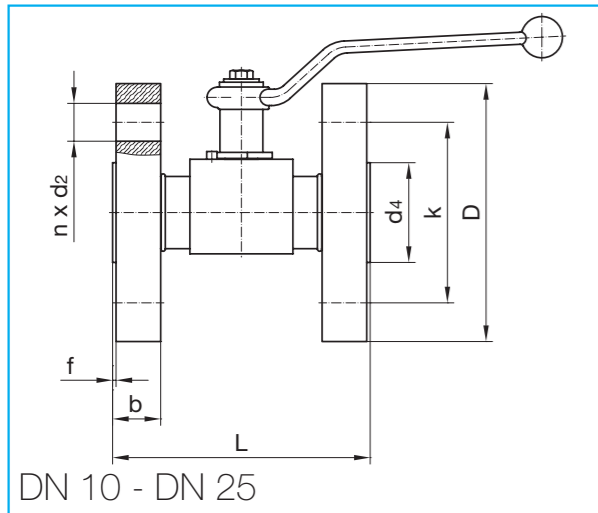
| Connection | DN | Flange-size (inch) | D1 | D2 | A1 | B1 | B2 | D3 | D4 | L | L1 | L2 | B | SW1 | Handle Code | Weight |
|----------------|----|--------------------|-----|---------------|------|------|----|-------|------|-------|-------|------|-----|-----|-------------|--------|
| ISO 6162-1 | 13 | 1/2 | M8 | 5/16 - 18 UNC | 17,5 | 38,1 | 20 | 30,20 | 24,0 | 129,5 | 54,0 | 6,8 | 60 | 10 | 14 | 1,10 |
| | 19 | 3/4 | M10 | 3/8 - 16 UNC | 22,2 | 47,6 | 22 | 38,10 | 31,5 | 146,5 | 65,5 | 6,8 | 70 | 14 | 15 | 2,15 |
| | 25 | 1 | M10 | 3/8 - 16 UNC | 26,2 | 52,4 | 22 | 44,45 | 38,0 | 161,0 | 72,0 | 8,0 | 75 | 14 | 15 | 3,10 |
| | 32 | 1 1/4 | M10 | 7/16 - 14 UNC | 30,2 | 58,7 | 25 | 50,80 | 43,0 | 196,0 | 104,0 | 8,0 | 85 | 17 | 21 | 6,05 |
| | 38 | 1 1/2 | M12 | 1/2 - 13 UNC | 35,7 | 69,9 | 27 | 60,35 | 50,0 | 233,0 | 117,5 | 8,0 | 100 | 17 | 21 | 7,00 |
| | 51 | 2 | M12 | 1/2 - 13 UNC | 42,9 | 77,8 | 27 | 71,40 | 62,0 | 245,0 | 129,5 | 9,6 | 110 | 17 | 22 | 9,60 |
| ISO 6162-2 | 13 | 1/2 | M8 | 5/16 - 18 UNC | 18,2 | 40,5 | 21 | 31,8 | 24,0 | 129,5 | 54,0 | 7,8 | 60 | 10 | 14 | 1,20 |
| | 19 | 3/4 | M10 | 3/8 - 16 UNC | 23,8 | 50,8 | 24 | 41,3 | 32,0 | 152,5 | 65,5 | 8,8 | 80 | 14 | 15 | 2,30 |
| | 25 | 1 | M12 | 7/16 - 14 UNC | 27,8 | 57,2 | 27 | 47,6 | 38,0 | 171,0 | 72,0 | 9,5 | 90 | 14 | 15 | 3,35 |
| | 32 | 1 1/4 | M12 | 1/2 - 13 UNC | 31,8 | 66,7 | 25 | 54,0 | 44,0 | 212,0 | 104,0 | 10,3 | 100 | 17 | 21 | 4,13 |
| | 38 | 1 1/2 | M16 | 5/8 - 11 UNC | 36,5 | 79,4 | 35 | 63,5 | 51,0 | 258,0 | 117,5 | 12,6 | 120 | 17 | 21 | 7,90 |
| | 51 | 2 | M20 | 3/4 - 10 UNC | 44,5 | 96,8 | 38 | 79,4 | 67,0 | 287,0 | 129,5 | 12,6 | 140 | 17 | 22 | 10,90 |

| DN | O-Ring | PN | Article-No. | PN | Article-No. |
|----|--------------|-----|-------------|-----|-------------|
| 13 | 18,64 x 3,53 | 350 | 104 340 | 350 | 104 352 |
| 19 | 24,99 x 3,53 | 350 | 104 341 | 350 | 104 353 |
| 25 | 32,92 x 3,53 | 320 | 104 342 | 320 | 104 354 |
| 32 | 37,69 x 3,53 | 280 | 104 343 | 280 | 104 355 |
| 38 | 47,22 x 3,53 | 210 | 104 344 | 210 | 104 356 |
| 51 | 56,74 x 3,53 | 210 | 104 345 | 210 | 104 357 |
| 13 | 18,64 x 3,53 | 420 | 104 346 | 420 | 104 358 |
| 19 | 24,99 x 3,53 | 420 | 104 347 | 420 | 104 359 |
| 25 | 32,92 x 3,53 | 420 | 104 348 | 420 | 104 360 |
| 32 | 37,69 x 3,53 | 420 | 104 349 | 420 | 104 361 |
| 38 | 47,22 x 3,53 | 420 | 104 350 | 420 | 104 362 |
| 51 | 56,74 x 3,53 | 420 | 104 351 | 420 | 104 363 |



2-way ball valves with flange connection

Steel · DIN · DN 10 - DN 50 · adjustable



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

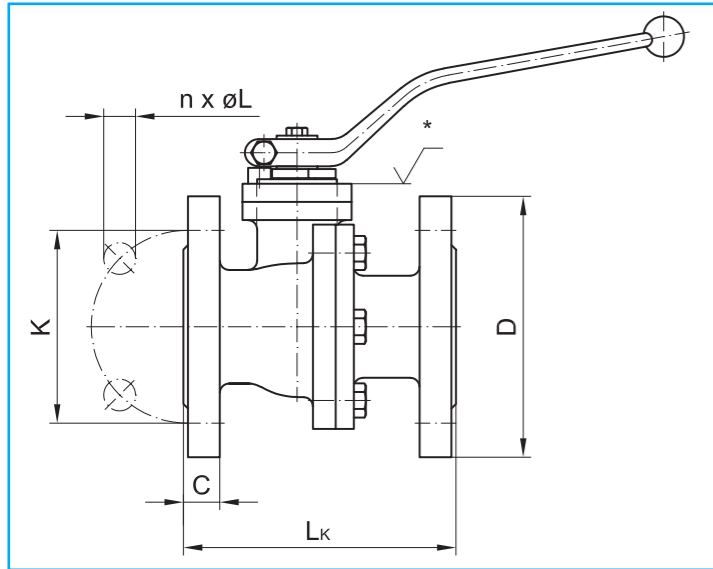
Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

| | | | |
|-------------|---------------------------|---------------------------|---------------------------|
| Body: | steel, black oxide | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM | PTFE-Comp.3 |
| Stem seals: | NBR | FKM | FKM |

| Connection | DN | D | b | k | d4 | f | Number n | d2 | L | Weight | DN | Article-No. | Article-No. | Article-No. |
|----------------|----|-----|----|-----|-----|---|-------------|----|-----|--------|----|-------------|-------------|-------------|
| PN 25 PN 40 | 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 |
| | 20 | 130 | 22 | 90 | 58 | 2 | 4 | 18 | 150 | 5,7 | 20 | 109 272 | 109 274 | 109 276 |
| | 25 | 140 | 24 | 100 | 68 | 2 | 4 | 18 | 160 | 7,6 | 25 | 109 228 | 109 233 | 109 238 |
| | 32 | 155 | 24 | 110 | 78 | 2 | 4 | 22 | 180 | 9,8 | 32 | 109 273 | 109 275 | 109 277 |
| PN 100 | 40 | 170 | 26 | 125 | 88 | 3 | 4 | 22 | 200 | 12,6 | 40 | 109 229 | 109 234 | 109 239 |
| | 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 |
| | 20 | 130 | 22 | 90 | 58 | 2 | 4 | 18 | 150 | 5,7 | 20 | 109 272 | 109 274 | 109 276 |
| | 25 | 140 | 24 | 100 | 68 | 2 | 4 | 18 | 160 | 7,6 | 25 | 109 228 | 109 233 | 109 238 |
| PN 160 | 32 | 155 | 24 | 110 | 78 | 2 | 4 | 22 | 180 | 9,8 | 32 | 109 273 | 109 275 | 109 277 |
| | 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 |
| | 25 | 140 | 24 | 100 | 68 | 2 | 4 | 18 | 160 | 7,6 | 25 | 109 228 | 109 233 | 109 238 |
| PN 250 | 40 | 170 | 28 | 125 | 88 | 3 | 4 | 22 | 200 | 13,2 | 40 | 109 244 | 109 246 | 109 238 |
| | 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 |
| | 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 | - |
| PN 320 | 50 | 200 | 38 | 150 | 102 | 3 | 8 | 26 | 230 | 22,6 | 50 | 109 250 | 109 255 | - |
| | 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



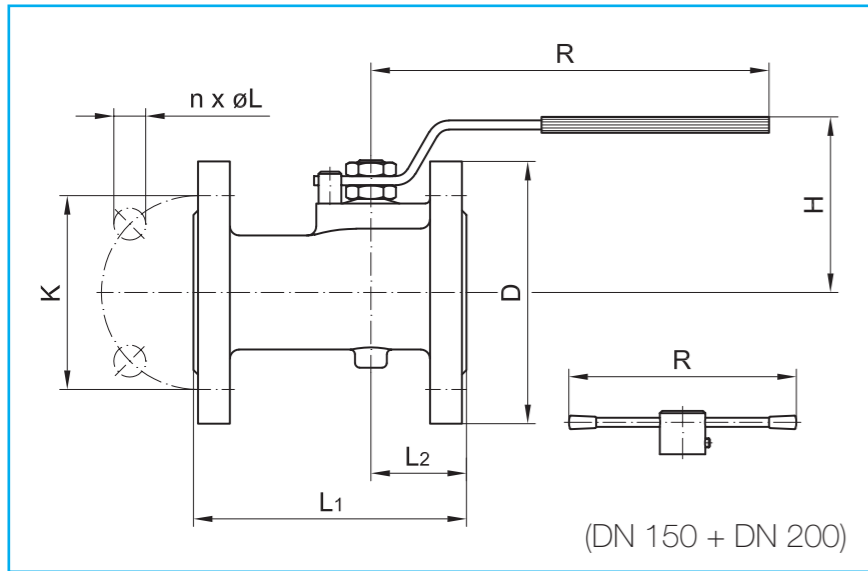
Flange-connecting dimension: DIN EN 1092-2 (DIN 2501-1)
 Overall length: DIN EN 558 basic range 27 (DIN 3202-1-F4/F5)
 1) without porting pattern DIN EN ISO 5211
 2) design with inspection certificate according to DIN EN 10204
 3) deviating from the standard PN 40
 All dimensions subject to change without 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 seals: | PTFE | PTFE | PTFE | PTFE |
| Stem seals: | FKM | PTFE | PTFE | PTFE |

| Connection | DN | D | C | K | Number n | ØL | Lk | *Porting pattern DIN EN ISO 5211 | DN | Article-No. ¹⁾ Weight | | Article-No. Weight | | Article-No. ²⁾ Weight | | | |
|----------------|-------|-----|------------------|------------------|-------------|----|-----|-------------------------------------|------|----------------------------------|--------|--------------------|---------|----------------------------------|---------|---------|---------|
| | | | | | | | | | | Article-No. | Weight | Article-No. | Weight | Article-No. | 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 | - | - | 105 242 | 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

Grey cast iron · sim. to DIN · DN 25 - DN 200



Overall length: DN 25 - DN 150: DIN EN 558 basic range 14 (DIN 3202-1-F4)

Overall length: DN 200: DIN EN 558 basic range 15 (DIN 3262-1-F5)

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

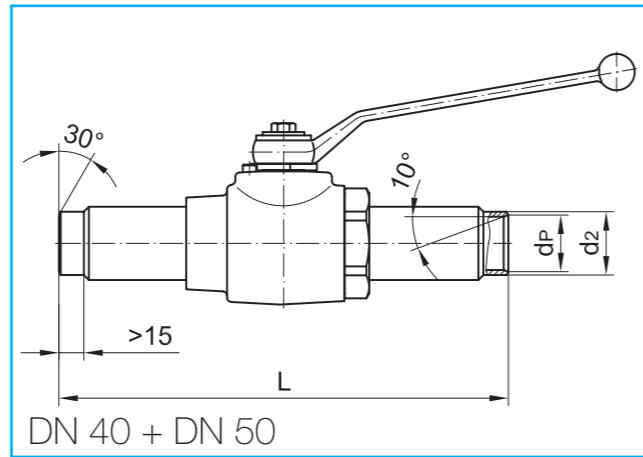
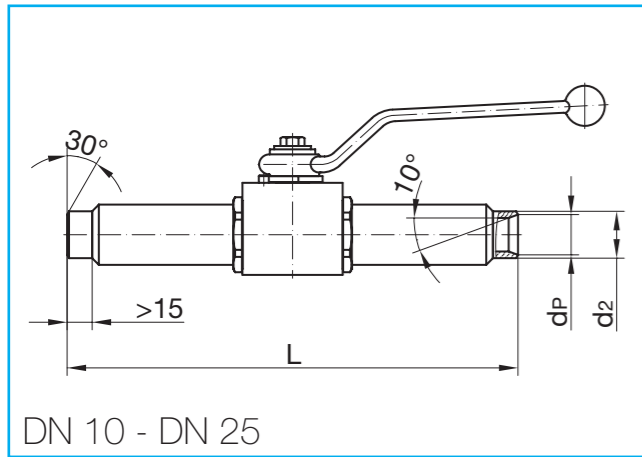
| | |
|-------------|-------|
| Body: | GG |
| Ball: | brass |
| Stem: | steel |
| Ball seals: | PTFE |
| Stem seals: | NBR |

| Connection | DN | D | K | Number n | ØL | L1 | L2 | H | R | Weight | DN | Article-No. |
|------------|-----|-----|-----|-------------|-----|-----|-------|-----|-----|--------|-----|-------------|
| PN 10 | 25 | 115 | 85 | 4 | M12 | 125 | 44,5 | 79 | 174 | 3,1 | 25 | 105 050 |
| | 32 | 140 | 100 | 4 | M16 | 130 | 51,5 | 85 | 174 | 4,8 | 32 | 105 051 |
| | 40 | 150 | 110 | 4 | M16 | 140 | 49,0 | 103 | 250 | 6,1 | 40 | 105 052 |
| | 50 | 165 | 125 | 4 | M16 | 150 | 52,0 | 110 | 250 | 7,8 | 50 | 105 053 |
| | 65 | 185 | 145 | 4 | M16 | 170 | 65,0 | 126 | 321 | 11,4 | 65 | 105 054 |
| | 80 | 200 | 160 | 8 | M16 | 180 | 66,0 | 137 | 321 | 14,1 | 80 | 105 055 |
| | 100 | 220 | 180 | 8 | M16 | 190 | 89,0 | 158 | 381 | 20,0 | 100 | 105 056 |
| | 125 | 250 | 210 | 8 | M16 | 200 | 100,0 | 180 | 381 | 30,4 | 125 | 105 057 |
| | 150 | 285 | 240 | 8 | M20 | 210 | 105,0 | 265 | 700 | 44,5 | 150 | 105 058 |
| | 200 | 340 | 295 | 8 | Ø22 | 400 | 200,0 | 308 | 700 | 103,0 | 200 | 105 059 |
| PN 16 | 25 | 115 | 85 | 4 | M12 | 125 | 44,5 | 79 | 174 | 3,1 | 25 | 105 050 |
| | 32 | 140 | 100 | 4 | M16 | 130 | 51,5 | 85 | 174 | 4,8 | 32 | 105 051 |
| | 40 | 150 | 110 | 4 | M16 | 140 | 49,0 | 103 | 250 | 6,1 | 40 | 105 052 |
| | 50 | 165 | 125 | 4 | M16 | 150 | 52,0 | 110 | 250 | 7,8 | 50 | 105 053 |
| | 65 | 185 | 145 | 4 | M16 | 170 | 65,0 | 126 | 321 | 11,4 | 65 | 105 054 |
| | 80 | 200 | 160 | 8 | M16 | 180 | 66,0 | 137 | 321 | 14,1 | 80 | 105 055 |
| | 100 | 220 | 180 | 8 | M16 | 190 | 89,0 | 158 | 381 | 20,0 | 100 | 105 056 |
| | 125 | 250 | 210 | 8 | M16 | 200 | 100,0 | 180 | 381 | 30,4 | 125 | 105 057 |
| | 150 | 285 | 240 | 8 | M20 | 210 | 105,0 | 265 | 700 | 44,5 | 150 | 105 058 |
| | 200 | 340 | 295 | 12 | Ø22 | 400 | 200,0 | 308 | 700 | 103,0 | 200 | 105 069 |



2-way ball valves with welding end

Steel · DN 10 - DN 50



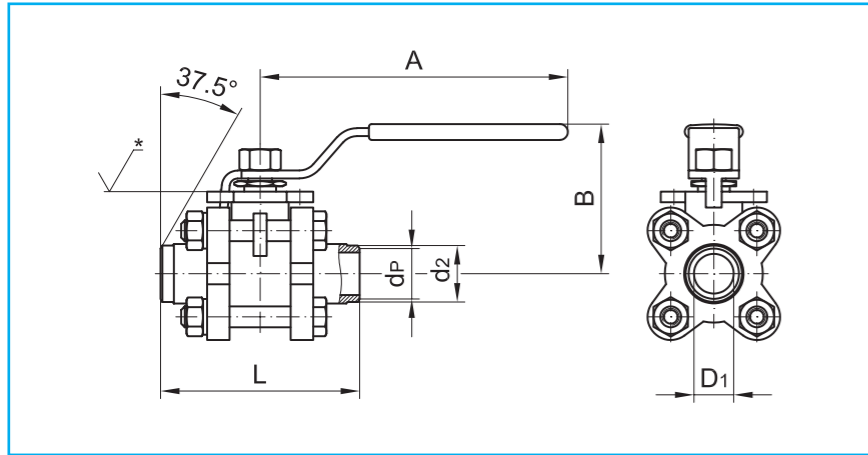
Welding ends : DIN EN 12627 (DIN 3239-1)
 Overall length : DIN EN 12982 basic range 68 (DIN 3202-2-S10)
 For dimensions of the ball valves refer to respective chapter "2-way ball valves".
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

| | | | |
|-------------|---------------------------|---------------------------|---------------------------|
| Body: | steel, black oxide | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM | PTFE-Comp.3 |
| Stem seals: | NBR | FKM | FKM |

| 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

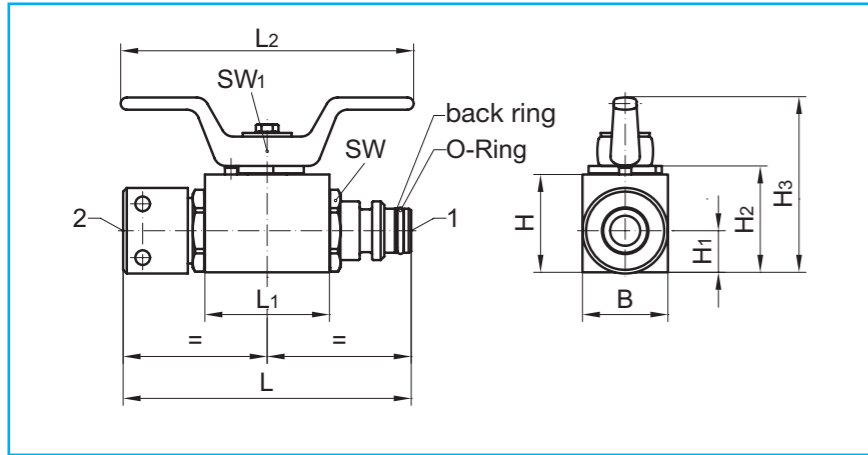
| | |
|-------------|-----------------|
| Body: | stainless steel |
| Ball: | stainless steel |
| Stem: | stainless steel |
| Ball seals: | PTFE |
| Stem seals: | PTFE |

| 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 6 - DN 25



Handle, o-ring and back-ring included in delivery

Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

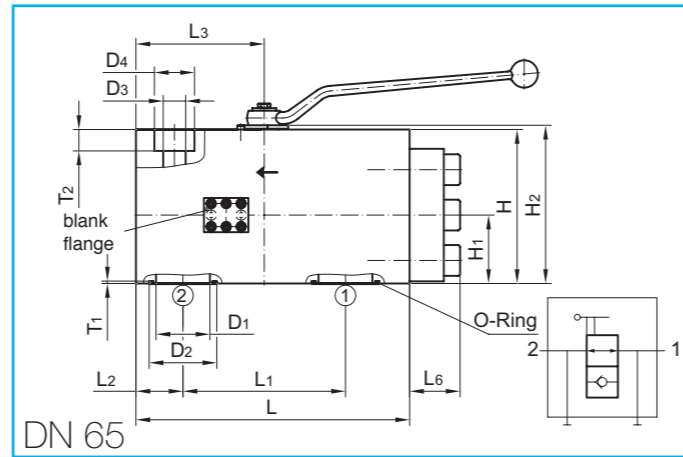
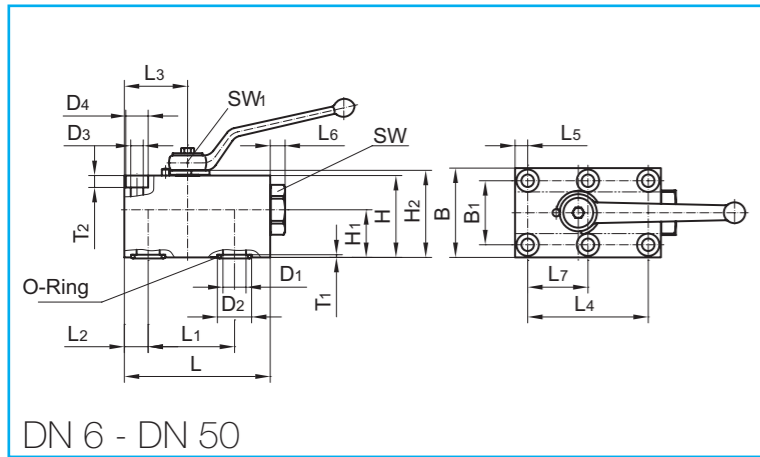
| | |
|-------------|---------------------------|
| Body: | steel, zinc plated |
| Ball: | steel, hard chrome plated |
| Stem: | steel, zinc plated |
| Ball seals: | POM |
| Stem seals: | NBR |

| Connection | DN | L | L1 | L2 | B | H | H1 | H2 | H3 | SW | SW1 | Weight | DN | O-Ring | PN | Article-No. |
|---|----|-----|----|-----|----|----|------|------|-------|----|-----|--------|----|----------|-----|-------------|
| Staple lock female/ male connector DIN 20043-2 DIN 20043-1 | 6 | 102 | 36 | 80 | 20 | 25 | 10,0 | 27,5 | 45,5 | 19 | 7 | 0,35 | 6 | 6 x 2,0 | 500 | 103 011 |
| | 10 | 114 | 45 | 105 | 30 | 35 | 14,5 | 38,5 | 62,5 | 24 | 8 | 0,55 | 10 | 10 x 2,0 | 500 | 103 012 |
| | 12 | 118 | 51 | 120 | 35 | 40 | 17,0 | 43,5 | 71,5 | 30 | 10 | 0,75 | 12 | 13 x 2,5 | 500 | 103 013 |
| | 19 | 130 | 60 | 200 | 45 | 55 | 24,0 | 59,0 | 99,0 | 41 | 14 | 1,50 | 19 | 19 x 2,5 | 400 | 103 014 |
| | 25 | 152 | 70 | 200 | 55 | 60 | 26,0 | 64,0 | 104,0 | 50 | 14 | 2,30 | 25 | 25 x 2,5 | 400 | 103 015 |
| female x female connector DIN 20043-2 | 6 | 102 | 36 | 80 | 20 | 25 | 10,0 | 27,5 | 45,5 | 19 | 7 | 0,40 | 6 | - | 500 | 103 021 |
| | 10 | 114 | 45 | 105 | 30 | 35 | 14,5 | 38,5 | 62,5 | 24 | 8 | 0,60 | 10 | - | 500 | 103 022 |
| | 12 | 118 | 51 | 120 | 35 | 40 | 17,0 | 43,5 | 71,5 | 30 | 10 | 0,80 | 12 | - | 500 | 103 023 |
| | 19 | 130 | 60 | 200 | 45 | 55 | 24,0 | 59,0 | 99,0 | 41 | 14 | 1,60 | 19 | - | 400 | 103 024 |
| | 25 | 152 | 70 | 200 | 55 | 60 | 26,0 | 64,0 | 104,0 | 50 | 14 | 2,40 | 25 | - | 400 | 103 025 |
| male x male connector DIN 20043-1 | 6 | 102 | 36 | 80 | 20 | 25 | 10,0 | 27,5 | 45,5 | 19 | 7 | 0,30 | 6 | 6 x 2,0 | 500 | 103 031 |
| | 10 | 114 | 45 | 105 | 30 | 35 | 14,5 | 38,5 | 62,5 | 24 | 8 | 0,50 | 10 | 10 x 2,0 | 500 | 103 032 |
| | 12 | 118 | 51 | 120 | 35 | 40 | 17,0 | 43,5 | 71,5 | 30 | 10 | 0,70 | 12 | 13 x 2,5 | 500 | 103 033 |
| | 19 | 130 | 60 | 200 | 45 | 55 | 24,0 | 59,0 | 99,0 | 41 | 14 | 1,40 | 19 | 19 x 2,5 | 400 | 103 034 |
| | 25 | 152 | 70 | 200 | 55 | 60 | 26,0 | 64,0 | 104,0 | 50 | 14 | 2,20 | 25 | 25 x 2,5 | 400 | 103 035 |



2-way ball valves for manifold mounting

Steel · DN 6 - DN 65



Handle and o-rings included in delivery
 For handle refer to "Attachments, accessories"
 Custom orders on request
 All dimensions subject to change without notice
 *) DN 32 to DN 50: grey cast iron
 Dimensions in mm
 Weight in kg
 Pressure in bar

**Bypass-ball valve instead of blank flange retrofittable,
 also deliverable completely assembled with bypass-ball valve**

| | | |
|-------------|---------------------------|---------------------------|
| Body*: | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Body seals: | NBR | FKM |
| Ball seals: | POM | POM |
| Stem seals: | NBR | FKM |

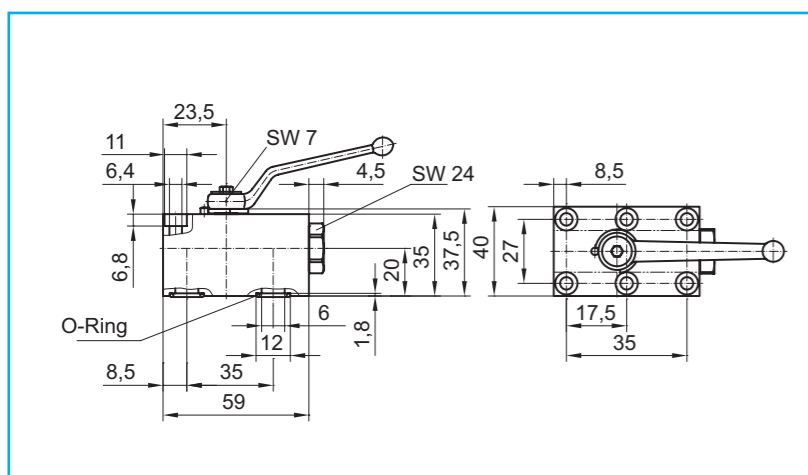
| Connection | DN | L | L1 | L2 | L3 | L4 | L5 | L6 | L7 | B | B1 | H | H1 | H2 | T1 | T2 |
|---------------------------------|----|-----|-----|------|-------|-----|------|------|-------|-----|-----|-----|------|-------|-----|------|
| Body-Flange with O-ring-seal | 6 | 59 | 35 | 8,5 | 23,5 | 35 | 8,5 | 4,5 | 17,5 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 150 | 112 | 110 | 55,1 | 114,5 | 2,7 | 20,0 |
| | 65 | 320 | 190 | 55,0 | 150,0 | 210 | 45,0 | 59,0 | 105,0 | 235 | 185 | 180 | 80,0 | 185,0 | 2,8 | 25,5 |

| DN | D1 | D2 | D3 | D4 | SW | SW1 | Handle Code | Weight | For cylinder-head screw DIN EN ISO 4762 (DIN 912) |
|----|------|------|------|----|----|-----|-------------|--------|---|
| 6 | 6,0 | 12,0 | 6,4 | 11 | 24 | 7 | 12 | 0,58 | M6 - 10,9 |
| 10 | 9,5 | 15,0 | 8,4 | - | 32 | 8 | 13 | 1,17 | M8 - 10,9 |
| 12 | 12,5 | 25,0 | 8,4 | - | 36 | 10 | 14 | 2,25 | M8 - 12,9 |
| 20 | 20,0 | 30,0 | 10,5 | 17 | - | 14 | 15 | 4,00 | M10 - 12,9 |
| 25 | 24,0 | 35,0 | 10,5 | 17 | 50 | 14 | 15 | 5,82 | M10 - 12,9 |
| 32 | 32,0 | 40,0 | 13,0 | 19 | 70 | 17 | 21 | 10,97 | M12 - 12,9 |
| 40 | 38,0 | 48,5 | 17,0 | 26 | - | 17 | 21 | 15,25 | M16 - 12,9 |
| 50 | 48,0 | 55,5 | 21,0 | 33 | - | 17 | 22 | 23,20 | M20 - 12,9 |
| 65 | 62,0 | 79,0 | 26,0 | 40 | - | 17 | 22 | 101,50 | M24 - 12,9 |

| PN | Article-No. | PN | Article-No. |
|-----|-------------|-----|-------------|
| 500 | 106 021 | 500 | 106 031 |
| 500 | 106 022 | 500 | 106 032 |
| 500 | 106 023 | 500 | 106 033 |
| 400 | 106 024 | 400 | 106 034 |
| 400 | 106 025 | 400 | 106 035 |
| 400 | 106 026 | 400 | 106 036 |
| 400 | 106 027 | 400 | 106 037 |
| 400 | 106 028 | 400 | 106 038 |
| 400 | 106 041 | 400 | 106 042 |

| 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 | M6 | 7,50 x 2,50 |
| 10 | 9,5 | 44 | 52,5 | 63,0 | 2,5 | 10,0 | 20,0 | 27,5 | 25,0 | M8 | 10,50 x 2,50 |
| 12 | 15,5 | 58 | 74,5 | 82,0 | 8,5 | 16,0 | 22,5 | 30,0 | 33,0 | M8 | 20,50 x 2,50 |
| 20 | 20,0 | 69 | 87,0 | 97,0 | 10,0 | 20,0 | 25,5 | 35,0 | 38,5 | M10 | 23,50 x 3,50 |
| 25 | 24,0 | 81 | 101,0 | 114,0 | 14,0 | 24,0 | 30,0 | 40,0 | 43,5 | M10 | 28,50 x 3,50 |
| 32 | 32,0 | 96 | 119,0 | 136,0 | 17,0 | 29,0 | 39,0 | 50,0 | 51,0 | M12 | 33,50 x 3,50 |
| 40 | 38,0 | 112 | 146,5 | 165,0 | 0,0 | 28,5 | 47,5 | 65,0 | 56,0 | M16 | 42,00 x 3,50 |
| 50 | 48,0 | 136 | 177,0 | 196,0 | 0,0 | 38,0 | 56,0 | 75,0 | 68,0 | M20 | 49,00 x 3,50 |
| 65 | 62,0 | 190 | 225,0 | 265,0 | 10,0 | 55,0 | 92,5 | 117,5 | 95,0 | M24 | 72,66 x 3,53 |

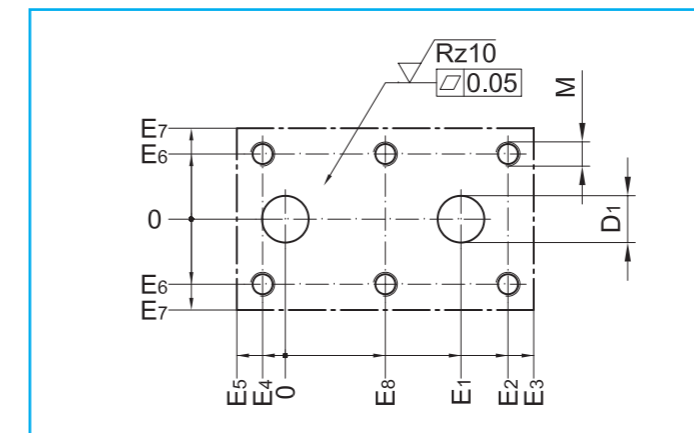
Bypass-ball valve for DN 65



| DN | Handle Code | Weight | O-Ring |
|----|-------------|--------|-------------|
| 6 | 12 | 0,58 | 7,50 x 2,50 |

Bolts included in delivery

Drilling pattern

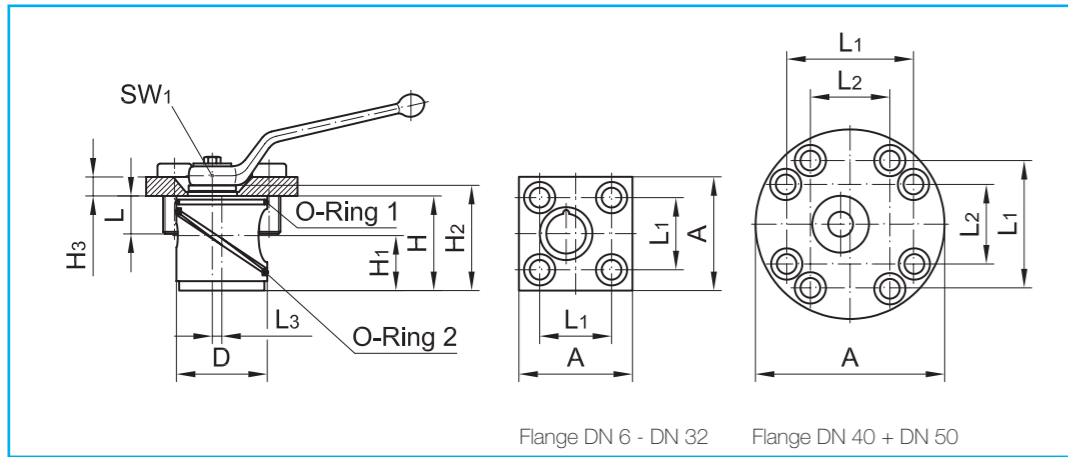


| Article-No. |
|-------------|
| 106 040 |



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

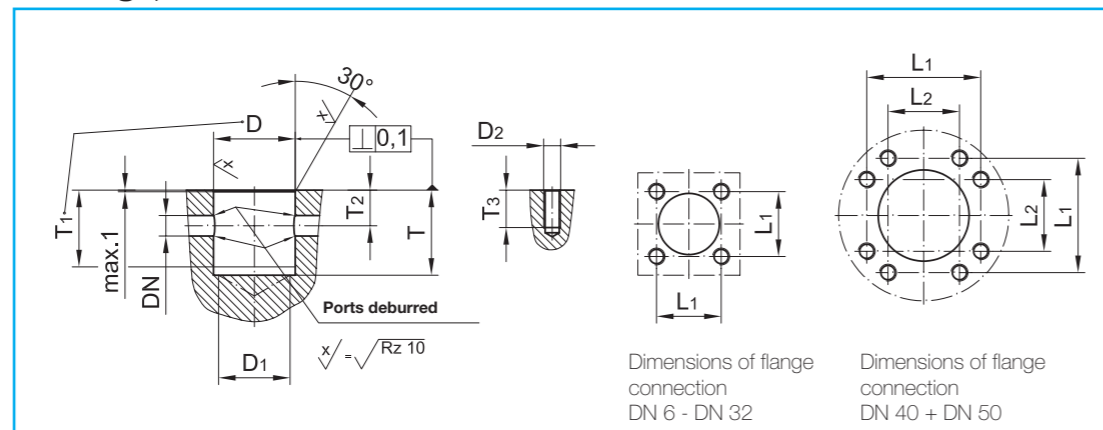
Pressure in bar

| | | |
|-------------|---------------------------|---------------------------|
| Body: | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Body seals: | NBR | FKM |
| Ball seals: | POM | POM |
| Stem seals: | NBR | FKM |

| 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 | | Article-No. | |
|------------|----|-----|-------|----------------|----------------|----------------|----|----------------|----------------|----------------|-----------------|-----|-------------|----|---------------|---------------|--------|--|-----|-------------|-------------|-------------|
| | | | | | | | | | | | | | | | | | | | PN | Article-No. | PN | Article-No. |
| Cavity | 6 | 36 | 34,6 | 21,0 | 40,5 | 8 | 20 | 38 | - | 5,0 | 7 | 60 | 12 | 6 | 31,00 x 1,50 | 32,00 x 3,00 | 0,55 | M10 x 25-8.8 | 500 | 107 001 | 500 | 107 021 |
| | 10 | 45 | 45,4 | 27,0 | 50,0 | 10 | 20 | 50 | - | 5,0 | 8 | 80 | 13 | 10 | 40,00 x 2,00 | 42,00 x 3,00 | 1,10 | M12 x 25-8.8 | 500 | 107 002 | 500 | 107 022 |
| | 12 | 48 | 49,9 | 29,0 | 56,5 | 10 | 20 | 50 | - | 5,0 | 10 | 80 | 14 | 12 | 43,00 x 2,00 | 46,00 x 3,00 | 1,25 | M12 x 25-8.8 | 400 | 107 003 | 400 | 107 023 |
| | 16 | 54 | 53,9 | 31,0 | 59,5 | 10 | 20 | 60 | - | 5,5 | 10 | 90 | 14 | 16 | 49,00 x 2,00 | 50,39 x 3,53 | 1,55 | M12 x 25-8.8 | 315 | 107 009 | 315 | 107 029 |
| | 20 | 63 | 64,9 | 36,0 | 74,5 | 18 | 25 | 70 | - | 7,0 | 14 | 100 | 15 | 20 | 55,20 x 3,00 | 61,00 x 3,50 | 2,95 | M16 x 35-8.8 | 315 | 107 004 | 315 | 107 024 |
| | 25 | 70 | 70,9 | 39,0 | 81,0 | 18 | 25 | 70 | - | 7,0 | 14 | 100 | 15 | 25 | 63,00 x 3,00 | 67,00 x 4,00 | 3,35 | M16 x 35-8.8 | 315 | 107 005 | 315 | 107 025 |
| | 32 | 92 | 90,0 | 47,5 | 122,5 | 35 | 30 | 100 | - | 10,0 | 17 | 140 | 21 | 32 | 82,14 x 3,53 | 92,00 x 5,00 | 9,10 | M20 x 50-8.8 | 315 | 107 006 | 315 | 107 026 |
| | 40 | 107 | 106,0 | 56,0 | 140,5 | 35 | 30 | 134 | 84 | 10,0 | 17 | 200 | 21 | 40 | 98,02 x 3,53 | 108,00 x 6,00 | 14,65 | M20 x 50-8.8 | 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 50-8.8 | 315 | 107 008 | 315 | 107 028 |

| 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. | Mounting-tool | |
|---|----|---------|------------------------|----------------|------------------------|------------------------|-----------|------------------------|------------------------|------------------------|---------------|-------------|
| | | | | | | | | | | | DN | Article-No. |
| | 6 | 36 | 31 | M10 | 38 | - | 34,7 | 33 | 13,6 | 22 | 6 | 107 051 |
| | 10 | 45 | 39 | M12 | 50 | - | 45,5 | 41 | 18,4 | 22 | 10 | 107 052 |
| | 12 | 48 | 42 | M12 | 50 | - | 50,0 | 45 | 20,9 | 22 | 12 | 107 053 |
| | 16 | 54 | 47 | M12 | 60 | - | 54,0 | 49 | 22,9 | 22 | 16 | 107 054 |
| | 20 | 63 | 55 | M16 | 70 | - | 65,0 | 61 | 28,9 | 28 | 20 | 107 055 |
| | 25 | 70 | 62 | M16 | 70 | - | 71,0 | 66 | 31,9 | 28 | 25 | 107 056 |
| | 32 | 92 | 80 | M20 | 100 | - | 90,0 | 86 | 42,5 | 33 | 32 | 107 057 |
| | 40 | 107 | 95 | M20 | 134 | 84 | 106,0 | 101 | 50,0 | 33 | 40 | 107 058 |
| | 50 | 126 | 115 | M20 | 152 | 96 | 120,0 | 115 | 57,0 | 33 | 50 | 107 059 |

Drilling pattern





with floating ball



with trunnion ball

Multi-way ball valves

Standard- and special porting patterns



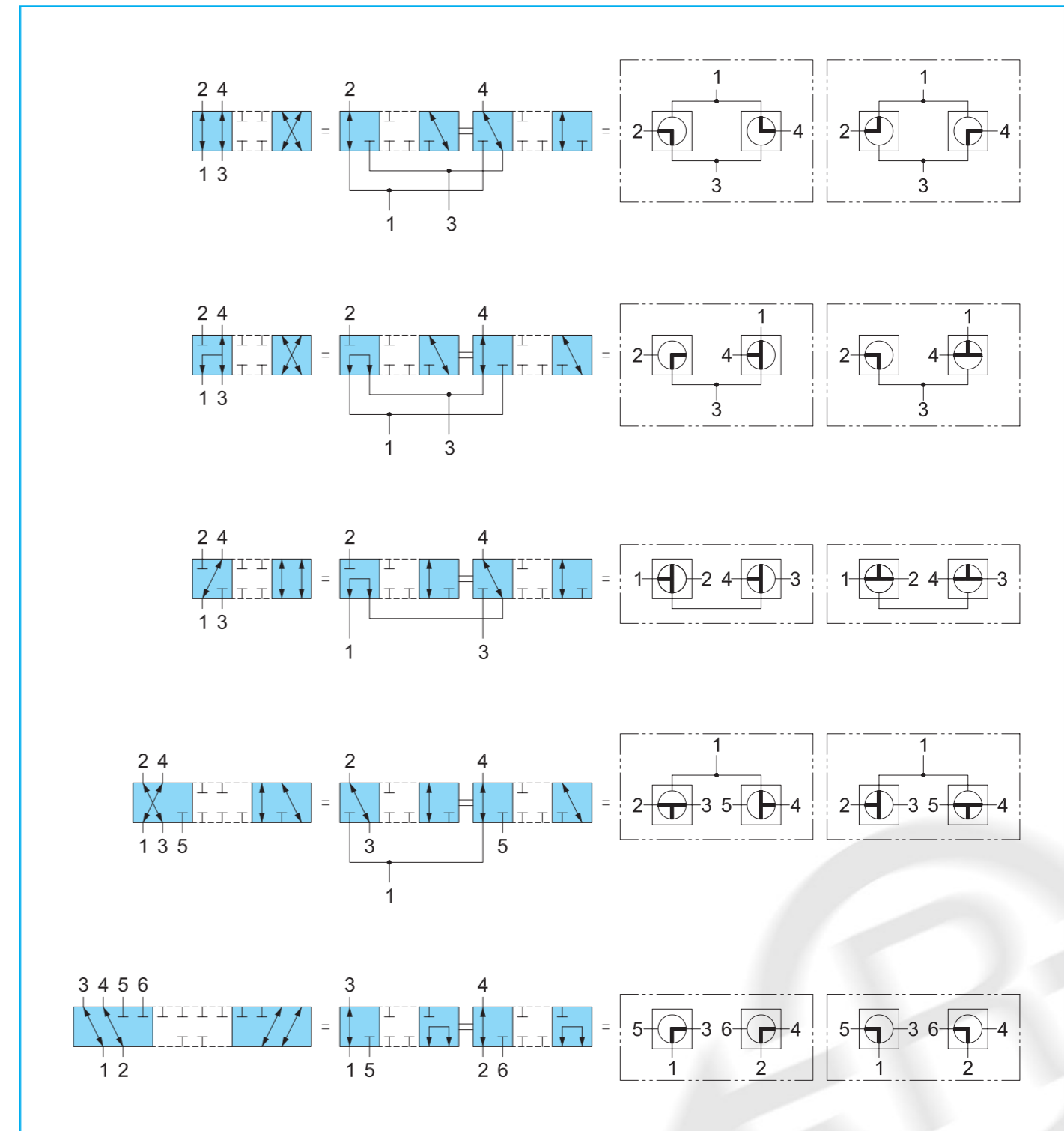
| Ref-No. | Ball valve style | Cycling | Porting symbols | Descriptions |
|---------|---|---------|-----------------|--|
| 01 | 3-way compact ball valve with L-bore | 90° | | Floating ball, all ports connected in the cross-over position, pressure should not be applied from the closed port |
| 03 | 3-way 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

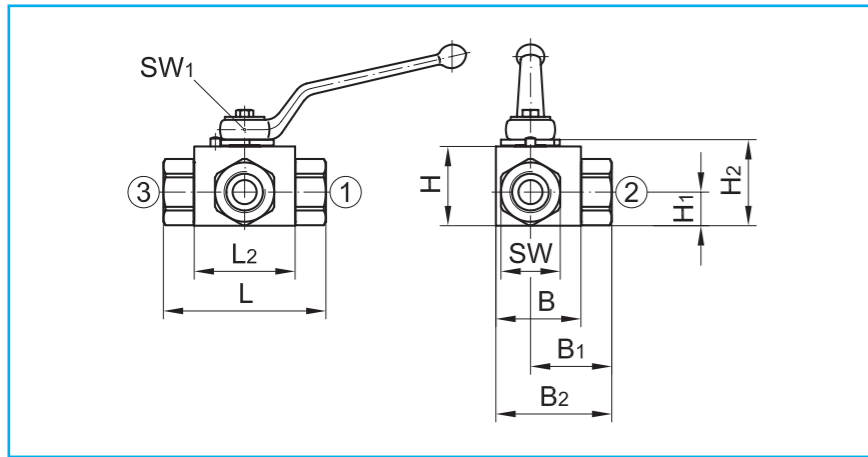
Special porting patterns · examples for combinations

By combining simple patterns more complex functions can be achieved.

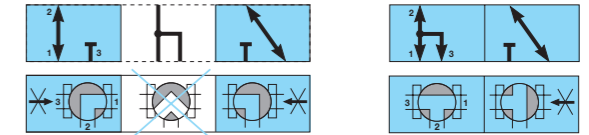


Multi-way ball valves with floating ball

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
 All dimensions subject to change without notice
 Also available with most other connections
 All ball valves available with mounting plate



Dimensions in mm
 Weight in kg
 Pressure in bar

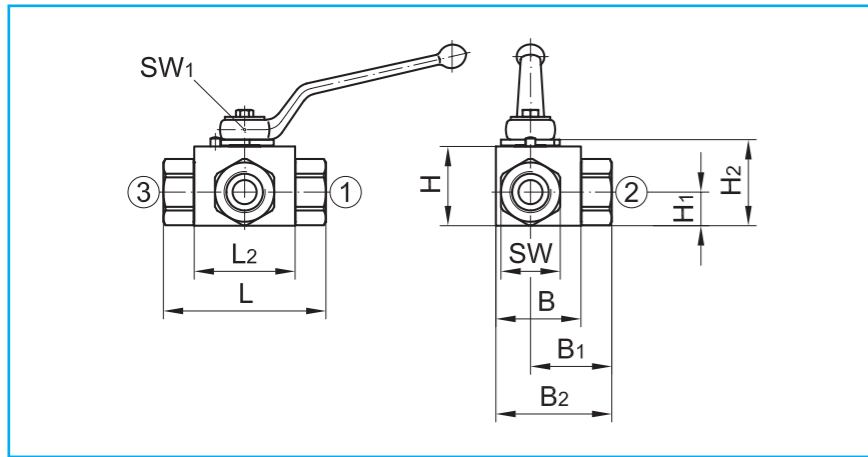
| | | |
|-------------|---------------------------|---------------------------|
| Bore: | L | T |
| Cycling: | 90° | 90° |
| Body: | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM |
| Stem seals: | NBR | NBR |

| Connection | DN | Thread D | OD | L | L ₁ | L ₂ | B | B ₁ | B ₂ | H | H ₁ | H ₂ | SW | SW ₁ | 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 | 30 | 33,5 | 45,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,32 |
| | 6 | M14 x 1,5 | 8 | 67 | 10 | 36 | 30 | 33,5 | 45,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,32 |
| | 8 | M16 x 1,5 | 10 | 75 | 11 | 45 | 40 | 37,5 | 55,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,55 |
| | 10 | M18 x 1,5 | 12 | 75 | 11 | 45 | 40 | 37,5 | 55,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,55 |
| | 12 | M22 x 1,5 | 15 | 83 | 12 | 51 | 45 | 41,5 | 61,0 | 45 | 22,0 | 48,5 | 30 | 10 | 14 | 0,89 |
| | 16 | M26 x 1,5 | 18 | 82 | 12 | 50 | 50 | 41,0 | 66,0 | 50 | 25,0 | 53,5 | 36 | 10 | 14 | 1,05 |
| | 20 | M30 x 2 | 22 | 99 | 14 | 60 | 55 | 51,0 | 74,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,61 |
| | 25 | M36 x 2 | 28 | 108 | 14 | 70 | 65 | 54,0 | 84,0 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,27 |
| | 32/25 | M45 x 2 | 35 | 116 | 16 | 70 | 65 | 58,0 | 88,0 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,48 |
| | 40/25 | M52 x 2 | 42 | 121 | 16 | 70 | 65 | 60,5 | 90,5 | 65 | 31,0 | 69,0 | 55 | 14 | 15 | 2,60 |
| 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 | 12 | 0,35 |
| | 6 | M18 x 1,5 | 10 | 73 | 12 | 36 | 30 | 36,5 | 48,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,35 |
| | 8 | M20 x 1,5 | 12 | 77 | 12 | 46 | 40 | 38,5 | 56,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,57 |
| | 10 | M22 x 1,5 | 14 | 81 | 14 | 45 | 40 | 40,5 | 58,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,57 |
| | 12 | M24 x 1,5 | 16 | 87 | 14 | 51 | 45 | 43,5 | 63,0 | 45 | 22,0 | 48,5 | 30 | 10 | 14 | 0,91 |
| | 16 | M30 x 2 | 20 | 90 | 16 | 50 | 50 | 45,0 | 70,0 | 50 | 25,0 | 53,5 | 36 | 10 | 14 | 1,12 |
| | 20 | M36 x 2 | 25 | 107 | 18 | 60 | 55 | 55,0 | 78,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,72 |
| | 25 | M42 x 2 | 30 | 120 | 20 | 70 | 65 | 60,0 | 90,0 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,44 |
| | 32/25 | M52 x 2 | 38 | 134 | 22 | 70 | 65 | 67,0 | 97,0 | 65 | 31,0 | 69,0 | 55 | 14 | 15 | 2,95 |
| | 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 | 12 |
| 6 | | G 1/4 | - | 69 | 12 | 36 | 30 | 34,5 | 46,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,34 |
| 10 | | G 3/8 | - | 73 | 14 | 45 | 40 | 36,5 | 54,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,57 |
| 12 | | G 1/2 | - | 82 | 15 | 51 | 45 | 41,0 | 60,5 | 45 | 22,0 | 48,5 | 30 | 10 | 14 | 0,94 |
| 16 | | G 5/8 | - | 88 | 18 | 50 | 50 | 44,0 | 69,0 | 50 | 25,0 | 53,5 | 36 | 10 | 14 | 1,24 |
| 20 | | G 3/4 | - | 93 | 18 | 60 | 55 | 48,0 | 71,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,72 |
| 25 | | G1 | - | 115 | 18 | 70 | 65 | 57,5 | 87,5 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,65 |
| 32/25 | | G1 1/4 | - | 134 | 20 | 70 | 65 | 67,0 | 97,0 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,71 |
| 40/25 | | G1 1/2 | - | 139 | 22 | 70 | 65 | 69,5 | 99,5 | 65 | 31,0 | 69,0 | 55 | 14 | 15 | 2,91 |
| 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 | 12 |
| | 6 | 1/4 - 18 NPT | - | 69 | 10,0 | 36 | 30 | 34,5 | 46,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,34 |
| | 10 | 3/8 - 18 NPT | - | 73 | 10,3 | 45 | 40 | 36,5 | 54,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,57 |
| | 12 | 1/2 - 14 NPT | - | 82 | 13,6 | 51 | 45 | 41,0 | 60,5 | 45 | 22,0 | 48,5 | 30 | 10 | 14 | 0,94 |
| | 20 | 3/4 - 14 NPT | - | 93 | 14,1 | 60 | 55 | 48,0 | 71,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,75 |
| | 25 | 1 - 11 1/2 NPT | - | 115 | 16,8 | 70 | 65 | 57,5 | 87,5 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,71 |
| | 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 | 15 | 2,79 |
| | 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 | 15 | 2,94 |

| DN | PN | Article-No. | PN | Article-No. |
|-------|-----|-------------|-----|-------------|
| 4 | 500 | 200 151 | 500 | 200 191 |
| 6 | 500 | 200 152 | 500 | 200 192 |
| 8 | 500 | 200 153 | 500 | 200 193 |
| 10 | 500 | 200 154 | 500 | 200 194 |
| 12 | 500 | 200 155 | 500 | 200 195 |
| 16 | 400 | 200 156 | 400 | 200 196 |
| 20 | 400 | 200 157 | 400 | 200 197 |
| 25 | 400 | 200 158 | 400 | 200 198 |
| 32/25 | 400 | 200 159 | 400 | 200 199 |
| 40/25 | 400 | 200 160 | 400 | 200 200 |
| 4 | 500 | 200 161 | 500 | 200 201 |
| 6 | 500 | 200 162 | 500 | 200 202 |
| 8 | 500 | 200 163 | 500 | 200 203 |
| 10 | 500 | 200 164 | 500 | 200 204 |
| 12 | 500 | 200 165 | 500 | 200 205 |
| 16 | 400 | 200 166 | 400 | 200 206 |
| 20 | 400 | 200 167 | 400 | 200 207 |
| 25 | 400 | 200 168 | 400 | 200 208 |
| 32/25 | 400 | 200 169 | 400 | 200 209 |
| 4 | 500 | 200 171 | 500 | 200 211 |
| 6 | 500 | 200 172 | 500 | 200 212 |
| 10 | 500 | 200 173 | 500 | 200 213 |
| 12 | 500 | 200 174 | 500 | 200 214 |
| 16 | 400 | 200 175 | 400 | 200 215 |
| 20 | 400 | 200 176 | 400 | 200 216 |
| 25 | 400 | 200 177 | 400 | 200 217 |
| 32/25 | 400 | 200 178 | 400 | 200 218 |
| 40/25 | 400 | 200 179 | 400 | 200 219 |
| 4 | 500 | 200 181 | 500 | 200 221 |
| 6 | 500 | 200 182 | 500 | 200 222 |
| 10 | 500 | 200 183 | 500 | 200 223 |
| 12 | 500 | 200 184 | 500 | 200 224 |
| 20 | 400 | 200 185 | 400 | 200 225 |
| 25 | 400 | 200 186 | 400 | 200 226 |
| 32/25 | 400 | 200 187 | 400 | 200 227 |
| 40/25 | 400 | 200 188 | 400 | 200 228 |

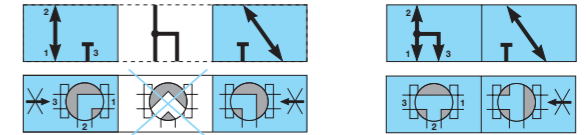
Multi-way ball valves with floating ball

3-way · steel · threaded connector · DN 32 - DN 50



NEW!
Up to DN 50!

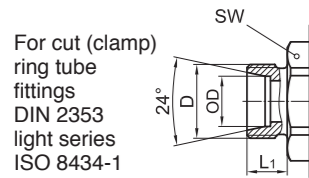
Handle included in delivery. For handle refer to "Attachments, accessories"
 ✖ Application of pressure only as indicated in chapter "Technical information"
 Please check pressure rating of the pipe fittings!
 Actuators and custom orders on request
 All dimensions subject to change without notice
 Also available with most other connections
 All ball valves available with mounting plate



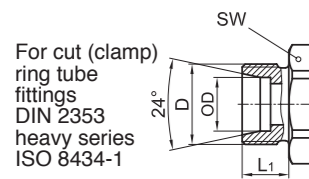
Dimensions in mm
 Weight in kg
 Pressure in bar

| | | |
|-------------|---------------------------|---------------------------|
| Bore: | L | T |
| Cycling: | 90° | 90° |
| Body: | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM |
| Stem seals: | NBR | NBR |

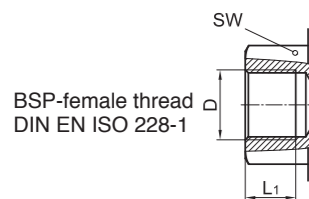
| Connection | DN | Thread D | OD | L | L ₁ | L ₂ | B | B ₁ | B ₂ | H | H ₁ | H ₂ | SW | SW ₁ | Handle Weight Code |
|------------|----|----------|----|---|----------------|----------------|---|----------------|----------------|---|----------------|----------------|----|-----------------|--------------------|
|------------|----|----------|----|---|----------------|----------------|---|----------------|----------------|---|----------------|----------------|----|-----------------|--------------------|



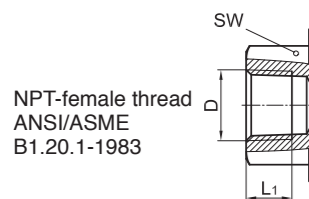
| | | | | | | | | | | | | | | | |
|----|---------|----|-----|----|----|-----|------|-------|----|------|------|----|----|----|------|
| 32 | M45 x 2 | 35 | 125 | 16 | 74 | 80 | 70,5 | 105,5 | 80 | 36,6 | 84,0 | 60 | 17 | 21 | 3,11 |
| 40 | M52 x 2 | 42 | 131 | 16 | 90 | 100 | 83,0 | 125,0 | 90 | 42,6 | 94,0 | 75 | 17 | 21 | 5,18 |



| | | | | | | | | | | | | | | | |
|----|---------|----|-----|----|----|----|------|-------|----|------|------|----|----|----|------|
| 32 | M52 x 2 | 38 | 137 | 22 | 74 | 80 | 76,5 | 111,5 | 80 | 36,6 | 84,0 | 60 | 17 | 21 | 3,32 |
|----|---------|----|-----|----|----|----|------|-------|----|------|------|----|----|----|------|



| | | | | | | | | | | | | | | | |
|----|--------------------------------|---|-----|------|-----|-----|------|-------|-----|------|-------|----|----|----|-------|
| 32 | G1 ¹ / ₄ | - | 103 | 24,0 | 74 | 80 | 59,5 | 94,5 | 80 | 36,6 | 84,0 | 60 | 17 | 21 | 3,83 |
| 40 | G1 ¹ / ₂ | - | 114 | 26,0 | 90 | 100 | 76,4 | 118,4 | 90 | 42,6 | 94,0 | 75 | 17 | 21 | 6,28 |
| 50 | G2 | - | 128 | 27,5 | 110 | 120 | 93,5 | 144,5 | 110 | 55,1 | 114,0 | 85 | 17 | 21 | 10,41 |



| | | | | | | | | | | | | | | | |
|----|---|---|-----|------|-----|-----|------|-------|-----|------|-------|----|----|----|-------|
| 32 | 1 ¹ / ₄ - 1 ¹ / ₂ NPT | - | 103 | 17,3 | 74 | 80 | 59,5 | 94,5 | 80 | 36,6 | 84,0 | 60 | 17 | 21 | 3,85 |
| 40 | 1 ¹ / ₂ - 1 ¹ / ₂ NPT | - | 114 | 17,3 | 90 | 100 | 76,4 | 118,4 | 90 | 42,6 | 94,0 | 75 | 17 | 21 | 6,28 |
| 50 | 2 - 1 ¹ / ₂ NPT | - | 128 | 17,3 | 110 | 120 | 93,5 | 144,5 | 110 | 55,1 | 114,0 | 85 | 17 | 22 | 10,43 |

| DN | PN | Article-No. | PN | Article-No. |
|----|-----|-------------|-----|-------------|
| 32 | 420 | 200230 | 420 | 200 240 |
| 40 | 420 | 200231 | 420 | 200 241 |
| 32 | 420 | 200232 | 420 | 200 242 |
| 32 | 420 | 200233 | 420 | 200 243 |
| 40 | 420 | 200234 | 420 | 200 244 |
| 50 | 420 | 200235 | 420 | 200 245 |
| 32 | 420 | 200236 | 420 | 200 246 |
| 40 | 420 | 200237 | 420 | 200 247 |
| 50 | 420 | 200238 | 420 | 200 248 |

Multi-way ball valves with floating ball

3-way · stainless steel · threaded connector · DN 4 - DN 25

NEW!

Smaller dimensions!

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 connections

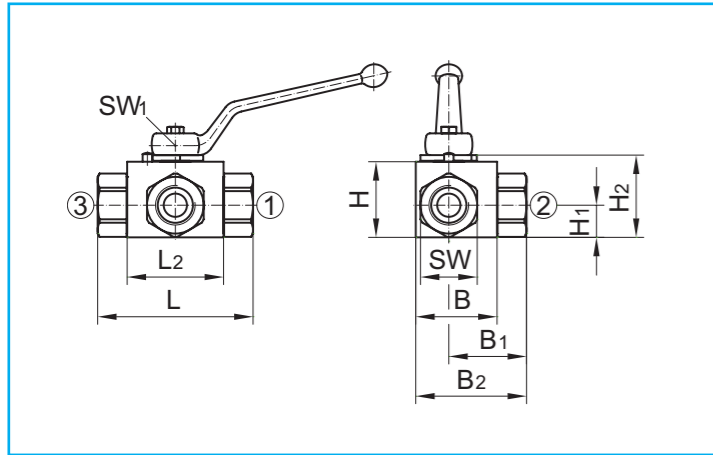
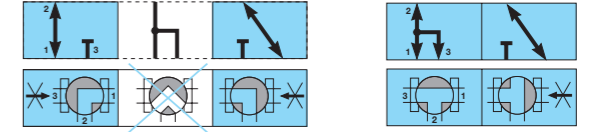
All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

| | | |
|-------------|--------------------|--------------------|
| Bore: | L | T |
| Body: | stainless steel | stainless steel |
| Ball: | stainless steel | stainless steel |
| Stem: | stainless steel | stainless steel |
| Ball seals: | POM | POM |
| Stem seals: | FKM | FKM |
| Handle: | zinc, die cast | zinc, die cast |
| Stop plate: | steel, zinc plated | steel, zinc plated |



| Connection | DN | Thread D | OD | L | L1 | L2 | B | B1 | B2 | H | H1 | H2 | SW | SW1 | Handle Code | Weight | 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 | 12 | 0,32 | 4 | 500 | 200 481 | 500 | 200 581 |
| | 6 | M14 x 1,5 | 8 | 67 | 10 | 36 | 30 | 33,5 | 45,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,32 | 6 | 500 | 200 482 | 500 | 200 582 |
| | 8 | M16 x 1,5 | 10 | 75 | 11 | 45 | 40 | 37,5 | 55,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,55 | 8 | 500 | 200 483 | 500 | 200 583 |
| | 10 | M18 x 1,5 | 12 | 75 | 11 | 45 | 40 | 37,5 | 55,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,55 | 10 | 500 | 200 484 | 500 | 200 584 |
| | 12 | M22 x 1,5 | 15 | 83 | 12 | 51 | 45 | 41,5 | 61,0 | 45 | 22,0 | 48,5 | 30 | 10 | 14 | 0,89 | 12 | 500 | 200 485 | 500 | 200 585 |
| | 16 | M26 x 1,5 | 18 | 99 | 12 | 60 | 55 | 51,0 | 74,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,67 | 16 | 400 | 200 486 | 400 | 200 586 |
| | 20 | M30 x 2 | 22 | 99 | 14 | 60 | 55 | 51,0 | 74,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,61 | 20 | 400 | 200 487 | 400 | 200 587 |
| | 25 | M36 x 2 | 28 | 108 | 14 | 70 | 65 | 54,0 | 84,0 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,27 | 25 | 400 | 200 488 | 400 | 200 588 |
| 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 | 12 | 0,35 | 4 | 500 | 200 489 | 500 | 200 589 |
| | 6 | M18 x 1,5 | 10 | 73 | 12 | 36 | 30 | 36,5 | 48,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,35 | 6 | 500 | 200 490 | 500 | 200 590 |
| | 8 | M20 x 1,5 | 12 | 77 | 12 | 45 | 40 | 38,5 | 56,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,57 | 8 | 500 | 200 491 | 500 | 200 591 |
| | 10 | M22 x 1,5 | 14 | 81 | 14 | 45 | 40 | 40,5 | 58,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,57 | 10 | 500 | 200 492 | 500 | 200 592 |
| | 12 | M24 x 1,5 | 16 | 87 | 14 | 51 | 45 | 43,5 | 63,0 | 45 | 22,0 | 48,5 | 30 | 10 | 14 | 0,91 | 12 | 500 | 200 493 | 500 | 200 593 |
| | 16 | M30 x 2 | 20 | 107 | 16 | 60 | 55 | 55,0 | 78,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,78 | 16 | 400 | 200 494 | 400 | 200 594 |
| | 20 | M36 x 2 | 25 | 107 | 18 | 60 | 55 | 55,0 | 78,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,72 | 20 | 400 | 200 495 | 400 | 200 595 |
| | 25 | M42 x 2 | 30 | 120 | 20 | 70 | 65 | 60,0 | 90,0 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,44 | 25 | 400 | 200 496 | 400 | 200 596 |
| 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 | 12 | 0,37 | 4 | 500 | 200 497 | 500 | 200 597 |
| | 6 | G 1/4 | - | 69 | 12 | 36 | 30 | 34,5 | 46,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,34 | 6 | 500 | 200 498 | 500 | 200 598 |
| | 10 | G 3/8 | - | 73 | 14 | 45 | 40 | 36,5 | 54,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,57 | 10 | 500 | 200 499 | 500 | 200 599 |
| | 12 | G 1/2 | - | 82 | 15 | 51 | 45 | 41,0 | 60,5 | 45 | 22,0 | 48,5 | 30 | 10 | 14 | 0,94 | 12 | 500 | 200 500 | 500 | 200 530 |
| | 16 | G 5/8 | - | 93 | 18 | 60 | 55 | 48,0 | 71,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,78 | 16 | 400 | 200 541 | 400 | 200 531 |
| | 20 | G 3/4 | - | 93 | 18 | 60 | 55 | 48,0 | 71,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,72 | 20 | 400 | 200 542 | 400 | 200 532 |
| | 25 | G1 | - | 115 | 18 | 70 | 65 | 57,5 | 87,5 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,65 | 25 | 400 | 200 543 | 400 | 200 533 |
| NPT-female thread ANSI/ASME B1.20.1-1983 | 4 | 1/8 - 27 NPT | - | 69 | 7,0 | 36 | 30 | 34,5 | 46,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,37 | 4 | 500 | 200 544 | 500 | 200 534 |
| | 6 | 1/4 - 18 NPT | - | 69 | 10,0 | 36 | 30 | 34,5 | 46,5 | 30 | 15,0 | 32,5 | 19 | 7 | 12 | 0,34 | 6 | 500 | 200 545 | 500 | 200 535 |
| | 10 | 3/8 - 18 NPT | - | 73 | 10,3 | 45 | 40 | 36,5 | 54,0 | 35 | 14,5 | 38,5 | 24 | 8 | 13 | 0,57 | 10 | 500 | 200 546 | 500 | 200 536 |
| | 12 | 1/2 - 14 NPT | - | 82 | 13,6 | 51 | 45 | 41,0 | 60,5 | 45 | 22,0 | 48,5 | 30 | 10 | 14 | 0,94 | 12 | 500 | 200 547 | 500 | 200 537 |
| | 20 | 3/4 - 14 NPT | - | 93 | 14,1 | 60 | 55 | 48,0 | 71,5 | 60 | 29,0 | 64,0 | 41 | 14 | 15 | 1,75 | 20 | 400 | 200 548 | 400 | 200 538 |
| | 25 | 1 - 11 1/2 NPT | - | 115 | 16,8 | 70 | 65 | 57,5 | 87,5 | 65 | 31,0 | 69,0 | 50 | 14 | 15 | 2,71 | 25 | 400 | 200 549 | 400 | 200 539 |

Multi-way ball valves with floating ball

3-way · stainless steel · threaded connector · DN 4 - DN 25

NEW!

Smaller dimensions!

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 connections

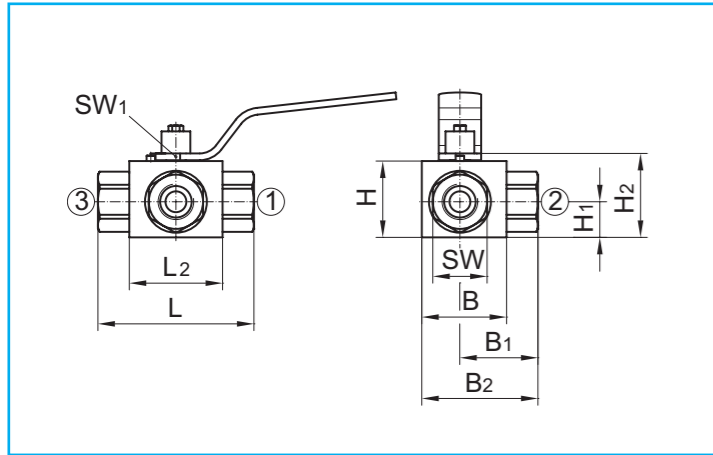
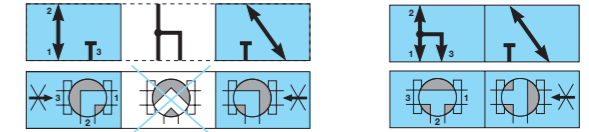
All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

| | | |
|-------------|-----------------|-----------------|
| Bore: | L | T |
| Body: | stainless steel | stainless steel |
| Ball: | stainless steel | stainless steel |
| Stem: | stainless steel | stainless steel |
| Ball seals: | PTFE Comp. 3 | PTFE Comp. 3 |
| Stem seals: | FKM | FKM |
| Handle: | stainless steel | stainless steel |
| Stop plate: | stainless steel | stainless steel |

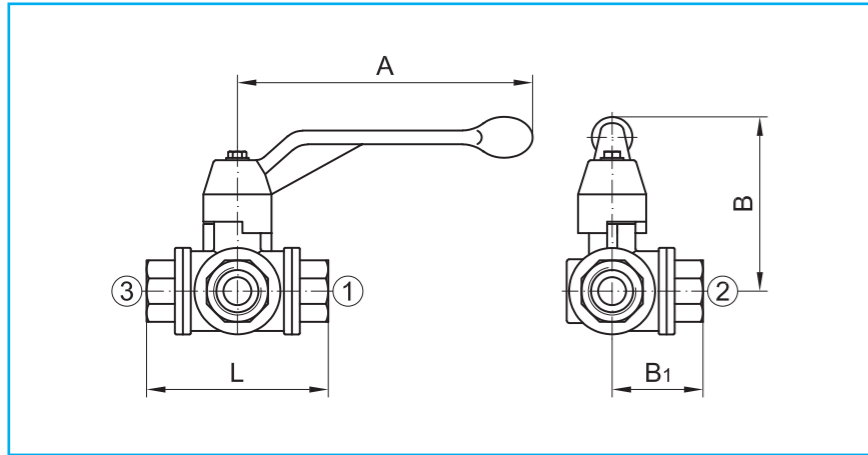


| Connection | DN | Thread D | OD | L | L ₁ | L ₂ | B | B ₁ | B ₂ | H | H ₁ | H ₂ | SW | SW ₁ | Handle Code | Weight |
|--|---------|----------------|-----|-----|----------------|----------------|------|----------------|----------------|------|----------------|----------------|----|-----------------|-------------|--------|
| For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1 | 4 | M12 x 1,5 | 6 | 67 | 10 | 36 | 30 | 33,5 | 45,5 | 30 | 15,0 | 34,5 | 19 | 7 | 32 | 0,32 |
| | 6 | M14 x 1,5 | 8 | 67 | 10 | 36 | 30 | 33,5 | 45,5 | 30 | 15,0 | 34,5 | 19 | 7 | 32 | 0,32 |
| | 8 | M16 x 1,5 | 10 | 75 | 11 | 45 | 40 | 37,5 | 55,0 | 35 | 14,5 | 39,5 | 24 | 8 | 33 | 0,55 |
| | 10 | M18 x 1,5 | 12 | 75 | 11 | 45 | 40 | 37,5 | 55,0 | 35 | 14,5 | 39,5 | 24 | 8 | 33 | 0,55 |
| | 12 | M22 x 1,5 | 15 | 83 | 12 | 51 | 45 | 41,5 | 61,0 | 45 | 22,0 | 49,5 | 30 | 10 | 34 | 0,89 |
| | 16 | M26 x 1,5 | 18 | 99 | 12 | 60 | 55 | 51,0 | 74,5 | 60 | 29,0 | 65,5 | 41 | 14 | 35 | 1,67 |
| | 20 | M30 x 2 | 22 | 99 | 14 | 60 | 55 | 51,0 | 74,5 | 60 | 29,0 | 65,5 | 41 | 14 | 35 | 1,61 |
| 25 | M36 x 2 | 28 | 108 | 14 | 70 | 65 | 54,0 | 84,0 | 65 | 31,0 | 70,5 | 50 | 14 | 35 | 2,27 | |
| 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 | 32 | 0,35 |
| | 6 | M18 x 1,5 | 10 | 73 | 12 | 36 | 30 | 36,5 | 48,5 | 30 | 15,0 | 32,5 | 19 | 7 | 32 | 0,35 |
| | 8 | M20 x 1,5 | 12 | 77 | 12 | 45 | 40 | 38,5 | 56,0 | 35 | 14,5 | 38,5 | 24 | 8 | 33 | 0,57 |
| | 10 | M22 x 1,5 | 14 | 81 | 14 | 45 | 40 | 40,5 | 58,0 | 35 | 14,5 | 38,5 | 24 | 8 | 33 | 0,57 |
| | 12 | M24 x 1,5 | 16 | 87 | 14 | 51 | 45 | 43,5 | 63,0 | 45 | 22,0 | 48,5 | 30 | 10 | 34 | 0,91 |
| | 16 | M30 x 2 | 20 | 107 | 16 | 60 | 55 | 55,0 | 78,5 | 60 | 29,0 | 64,0 | 41 | 14 | 35 | 1,78 |
| | 20 | M36 x 2 | 25 | 107 | 18 | 60 | 55 | 55,0 | 78,5 | 60 | 29,0 | 64,0 | 41 | 14 | 35 | 1,72 |
| 25 | M42 x 2 | 30 | 120 | 20 | 70 | 65 | 60,0 | 90,0 | 65 | 31,0 | 69,0 | 50 | 14 | 35 | 2,44 | |
| 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 | 32 | 0,37 |
| | 6 | G 1/4 | - | 69 | 12 | 36 | 30 | 34,5 | 46,5 | 30 | 15,0 | 32,5 | 19 | 7 | 32 | 0,34 |
| | 10 | G 3/8 | - | 73 | 14 | 45 | 40 | 36,5 | 54,0 | 35 | 14,5 | 38,5 | 24 | 8 | 33 | 0,57 |
| | 12 | G 1/2 | - | 82 | 15 | 51 | 45 | 41,0 | 60,5 | 45 | 22,0 | 48,5 | 30 | 10 | 34 | 0,94 |
| | 16 | G 5/8 | - | 93 | 18 | 60 | 55 | 48,0 | 71,5 | 60 | 29,0 | 64,0 | 41 | 14 | 35 | 1,78 |
| | 20 | G 3/4 | - | 93 | 18 | 60 | 55 | 48,0 | 71,5 | 60 | 29,0 | 64,0 | 41 | 14 | 35 | 1,72 |
| 25 | G1 | - | 115 | 18 | 70 | 65 | 57,5 | 87,5 | 65 | 31,0 | 69,0 | 50 | 14 | 35 | 2,65 | |
| NPT-female thread ANSI/ASME B1.20.1-1983 | 4 | 1/8 - 27 NPT | - | 69 | 7,0 | 36 | 30 | 34,5 | 46,5 | 30 | 15,0 | 32,5 | 19 | 7 | 32 | 0,37 |
| | 6 | 1/4 - 18 NPT | - | 69 | 10,0 | 36 | 30 | 34,5 | 46,5 | 30 | 15,0 | 32,5 | 19 | 7 | 32 | 0,34 |
| | 10 | 3/8 - 18 NPT | - | 73 | 10,3 | 45 | 40 | 36,5 | 54,0 | 35 | 14,5 | 38,5 | 24 | 8 | 33 | 0,57 |
| | 12 | 1/2 - 14 NPT | - | 82 | 13,6 | 51 | 45 | 41,0 | 60,5 | 45 | 22,0 | 48,5 | 30 | 10 | 34 | 0,94 |
| | 20 | 3/4 - 14 NPT | - | 93 | 14,1 | 60 | 55 | 48,0 | 71,5 | 60 | 29,0 | 64,0 | 41 | 14 | 35 | 1,75 |
| | 25 | 1 - 11 1/2 NPT | - | 115 | 16,8 | 70 | 65 | 57,5 | 87,5 | 65 | 31,0 | 69,0 | 50 | 14 | 35 | 2,71 |

| DN | PN | Article-No. | PN | Article-No. |
|----|-----|-------------|-----|-------------|
| 4 | 315 | 200 643 | 315 | 200 695 |
| 6 | 315 | 200 644 | 315 | 200 696 |
| 8 | 315 | 200 645 | 315 | 200 697 |
| 10 | 315 | 200 646 | 315 | 200 698 |
| 12 | 315 | 200 647 | 315 | 200 699 |
| 16 | 250 | 200 648 | 250 | 200 700 |
| 20 | 250 | 200 649 | 250 | 200 701 |
| 25 | 250 | 200 650 | 250 | 200 702 |
| 4 | 315 | 200 651 | 315 | 200 703 |
| 6 | 315 | 200 652 | 315 | 200 704 |
| 8 | 315 | 200 653 | 315 | 200 705 |
| 10 | 315 | 200 654 | 315 | 200 706 |
| 12 | 315 | 200 655 | 315 | 200 707 |
| 16 | 250 | 200 656 | 250 | 200 708 |
| 20 | 250 | 200 657 | 250 | 200 709 |
| 25 | 250 | 200 658 | 250 | 200 710 |
| 4 | 315 | 200 659 | 315 | 200 711 |
| 6 | 315 | 200 660 | 315 | 200 712 |
| 10 | 315 | 200 661 | 315 | 200 713 |
| 12 | 315 | 200 662 | 315 | 200 714 |
| 16 | 250 | 200 663 | 250 | 200 715 |
| 20 | 250 | 200 664 | 250 | 200 716 |
| 25 | 250 | 200 665 | 250 | 200 717 |
| 4 | 315 | 200 666 | 315 | 200 718 |
| 6 | 315 | 200 667 | 315 | 200 719 |
| 10 | 315 | 200 668 | 315 | 200 720 |
| 12 | 315 | 200 669 | 315 | 200 721 |
| 20 | 250 | 200 670 | 250 | 200 722 |
| 25 | 250 | 200 671 | 250 | 200 723 |

Multi-way ball valves with floating ball

3-way · brass · threaded connector · DN 6 - DN 80



Handle included in delivery

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

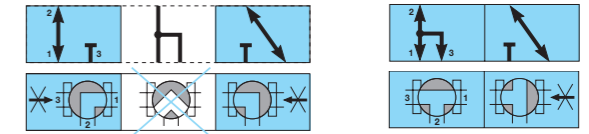
Actuators and custom orders on request

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 seals: | PTFE | PTFE |
| Stem seals: | PTFE | PTFE |

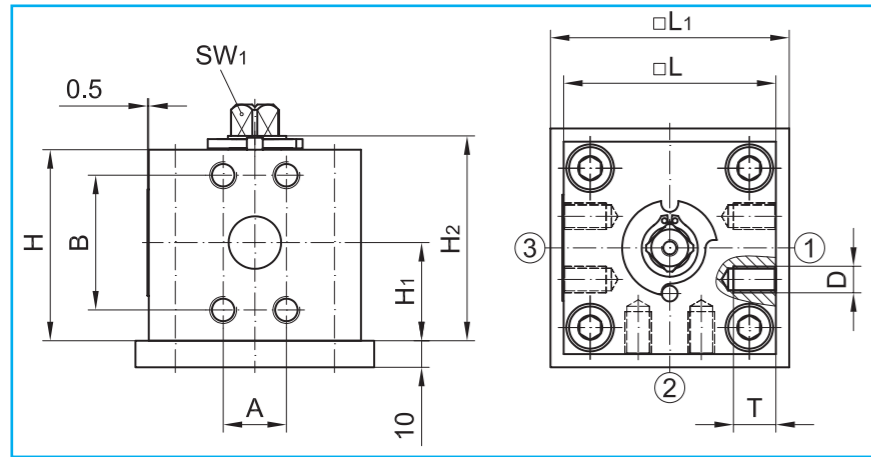
| Connection | DN/LW | Thread D | L | L ₁ | A | B | B ₁ | Weight |
|-------------------------------------|-------|----------|-----|----------------|-----|-------|----------------|--------|
| BSP-female thread DIN EN 10226-1 | 6/10 | Rp 1/4 | 71 | 13 | 130 | 85 | 35,5 | 0,7 |
| | 10/13 | Rp 3/8 | 71 | 13 | 130 | 85 | 35,5 | 0,7 |
| | 15/13 | Rp 1/2 | 80 | 13 | 130 | 85 | 40,0 | 0,7 |
| | 20/18 | Rp 3/4 | 96 | 15 | 160 | 98 | 48,0 | 1,1 |
| | 25/23 | Rp 1 | 113 | 17 | 160 | 102 | 56,5 | 1,7 |
| | 32/29 | Rp 1 1/4 | 130 | 19 | 195 | 121 | 65,0 | 2,6 |
| | 40/35 | Rp 1 1/2 | 147 | 22 | 195 | 125 | 73,5 | 3,7 |
| | 50/44 | Rp 2 | 169 | 27 | 235 | 141 | 84,5 | 5,8 |
| 80/44 | Rp 3 | 202 | 35 | 235 | 141 | 101,0 | 7,0 | |

| DN/LW | PN | Article-No. | PN | Article-No. |
|-------|----|-------------|----|-------------|
| 6/10 | 40 | 201 501 | 40 | 201 551 |
| 10/13 | 40 | 201 502 | 40 | 201 552 |
| 15/13 | 40 | 201 503 | 40 | 201 553 |
| 20/18 | 40 | 201 504 | 40 | 201 554 |
| 25/23 | 25 | 201 505 | 25 | 201 555 |
| 32/29 | 16 | 201 506 | 16 | 201 556 |
| 40/35 | 16 | 201 507 | 16 | 201 557 |
| 50/44 | 16 | 201 508 | 16 | 201 558 |
| 80/44 | 16 | 201 509 | 16 | 201 559 |



Multi-way ball valves with floating ball

3-way · steel · ISO 6162 (SAE) · DN 19 - DN 32



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

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

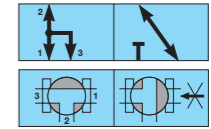
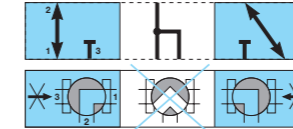
Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar



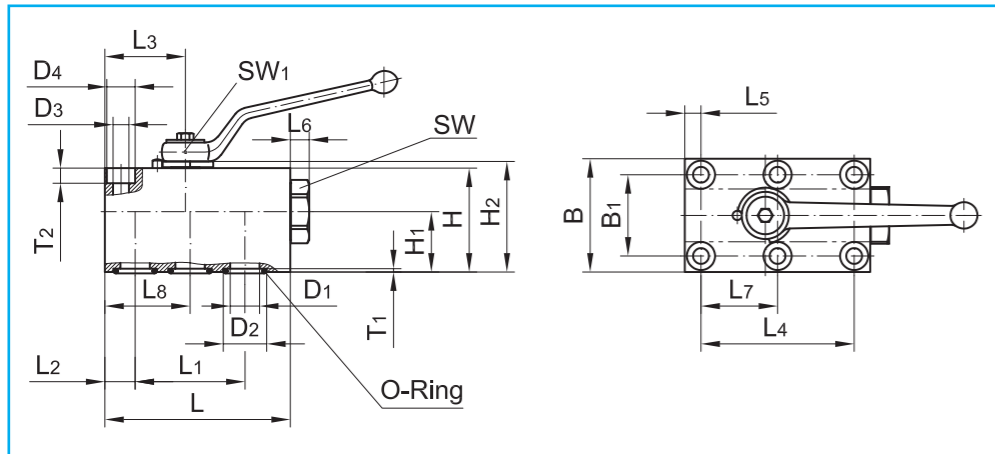
| | | | | |
|-------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Bore: | L | L | T | T |
| Cycling: | 90° | 90° | 90° | 90° |
| Body: | steel, zinc plated | steel, zinc plated | steel, zinc plated | steel, zinc plated |
| Ball: | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated | steel, zinc plated | steel, zinc plated |
| Ball seals: | POM | POM | POM | POM |
| Stem seals: | NBR | FKM | NBR | FKM |

| Connection | DN | Flange-size (inch) | D | T | A | B | L | L1 | H | H1 | H2 | SW1 | Weight | DN | PN | | PN | | PN | | PN | |
|------------|----|-----------------------|---------------|----|------|------|-----|-----|-----|----|-------|-----|--------|----|-------------|-------------|-------------|-------------|-------------|-------------|-----|---------|
| | | | | | | | | | | | | | | | Article-No. | Article-No. | Article-No. | Article-No. | Article-No. | Article-No. | | |
| ISO 6162-2 | 19 | 3/4 | M10 | 21 | 23,8 | 50,8 | 80 | 90 | 72 | 37 | 77,5 | 14 | 4,0 | 19 | 400 | 204 301 | 400 | 204 306 | 400 | 204 311 | 400 | 204 316 |
| | 25 | 1 | M12 | 23 | 27,8 | 57,2 | 90 | 100 | 80 | 40 | 85,5 | 14 | 5,5 | 25 | 400 | 204 302 | 400 | 204 307 | 400 | 204 312 | 400 | 204 317 |
| | 32 | 1 1/4 | M12 | 24 | 31,8 | 66,6 | 100 | 110 | 100 | 50 | 106,0 | 17 | 8,0 | 32 | 400 | 204 304 | 400 | 204 309 | 400 | 204 314 | 400 | 204 319 |
| | 19 | 3/4 | 3/8 - 16 UNC | 24 | 23,8 | 50,8 | 80 | 90 | 72 | 37 | 77,5 | 14 | 4,0 | 19 | 400 | 204 321 | 400 | 204 326 | 400 | 204 331 | 400 | 204 336 |
| | 25 | 1 | 7/16 - 14 UNC | 27 | 27,8 | 57,2 | 90 | 100 | 80 | 40 | 85,5 | 14 | 5,5 | 25 | 400 | 204 322 | 400 | 204 327 | 400 | 204 332 | 400 | 204 337 |
| | 32 | 1 1/4 | 1/2 - 13 UNC | 28 | 31,8 | 66,7 | 100 | 110 | 100 | 50 | 106,0 | 17 | 8,0 | 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 65



Handle and o-rings 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

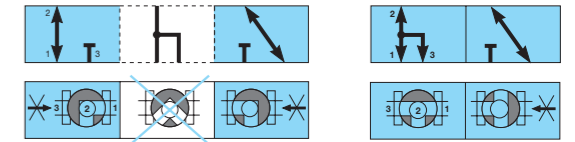
All dimensions subject to change without notice

*) DN 40 - DN 65: grey cast iron

Dimensions in mm

Weight in kg

Pressure in bar



| | | |
|-------------|---------------------------|---------------------------|
| Bore: | L | T |
| Cycling: | 90° | 90° |
| Body*: | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Body seals: | NBR | NBR |
| Ball seals: | POM | POM |
| Stem seals: | NBR | NBR |

| Connection | 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 |
| | 65 | 320 | 190 | 55,0 | 150,0 | 210 | 45,0 | 59,0 | 105,0 | 150,0 | 235 | 185 | 180 | 80,0 | 185,0 | 2,8 | 25,5 |

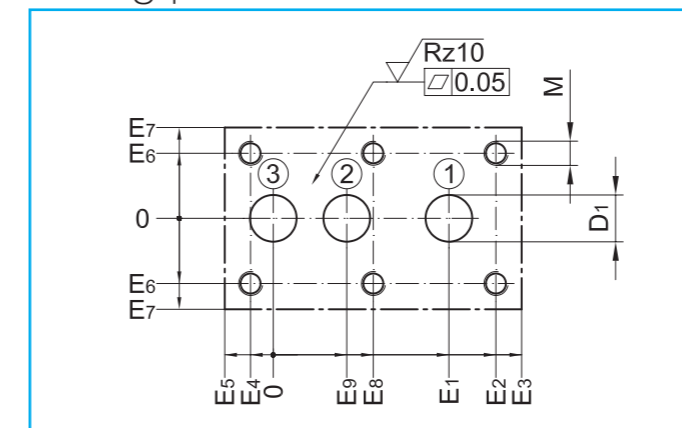
| DN | D1 | D2 | D3 | D4 | SW | SW1 | Handle Code | Weight | for Cylinder-head screws DIN EN ISO 4762 (DIN 912) |
|----|------|------|------|----|----|-----|-------------|--------|--|
| 6 | 6,0 | 12,0 | 6,4 | 11 | 24 | 7 | 12 | 0,58 | M6 - 10,9 |
| 10 | 9,5 | 15,0 | 8,4 | - | 32 | 8 | 13 | 1,15 | M8 - 10,9 |
| 12 | 12,5 | 25,0 | 8,4 | - | 36 | 10 | 14 | 2,11 | M8 - 12,9 |
| 20 | 20,0 | 30,0 | 10,5 | 17 | - | 14 | 15 | 4,00 | M10 - 12,9 |
| 25 | 24,0 | 35,0 | 10,5 | 17 | 50 | 14 | 15 | 5,58 | M10 - 12,9 |
| 32 | 32,0 | 40,0 | 13,0 | 19 | 70 | 17 | 21 | 11,14 | M12 - 12,9 |
| 40 | 38,0 | 48,5 | 17,0 | 26 | - | 17 | 21 | 15,19 | M16 - 12,9 |
| 50 | 48,0 | 55,5 | 21,0 | 33 | - | 17 | 22 | 22,67 | M20 - 12,9 |
| 65 | 62,0 | 79,0 | 26,0 | 40 | - | 17 | 22 | 101,50 | M24 - 12,9 |

| PN | Article-No. | PN | Article-No. |
|-----|-------------|-----|-------------|
| 500 | 206 101 | 500 | 206 121 |
| 500 | 206 102 | 500 | 206 122 |
| 500 | 206 103 | 500 | 206 123 |
| 400 | 206 104 | 400 | 206 124 |
| 400 | 206 105 | 400 | 206 125 |
| 400 | 206 106 | 400 | 206 126 |
| 400 | 206 107 | 400 | 206 127 |
| 400 | 206 108 | 400 | 206 128 |
| 400 | 206 131 | 400 | 206 132 |

| 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 2,50 |
| 10 | 9,5 | 44 | 52,5 | 63,0 | 2,5 | 10,0 | 20,0 | 27,5 | 25,0 | 19,0 | M 8 | 10,50 x 2,50 |
| 12 | 15,5 | 58 | 74,5 | 82,0 | 8,5 | 16,0 | 22,5 | 30,0 | 33,0 | 26,5 | M 8 | 20,50 x 2,50 |
| 20 | 20,0 | 69 | 87,0 | 97,0 | 10,0 | 20,0 | 25,5 | 35,0 | 38,5 | 32,0 | M10 | 23,50 x 3,50 |
| 25 | 24,0 | 81 | 101,0 | 114,0 | 14,0 | 24,0 | 30,0 | 40,0 | 43,5 | 38,0 | M10 | 28,50 x 3,50 |
| 32 | 32,0 | 96 | 119,0 | 136,0 | 17,0 | 29,0 | 39,0 | 50,0 | 51,0 | 46,0 | M12 | 33,50 x 3,50 |
| 40 | 38,0 | 112 | 112,0 | 146,5 | 0,0 | 28,5 | 47,5 | 65,0 | 56,0 | 56,0 | M16 | 42,00 x 3,50 |
| 50 | 48,0 | 136 | 136,0 | 177,0 | 0,0 | 38,0 | 56,0 | 75,0 | 68,0 | 68,0 | M20 | 49,00 x 3,50 |
| 65 | 62,0 | 190 | 200,0 | 265,0 | 10,0 | 55,0 | 92,5 | 117,5 | 95,0 | 95,0 | M24 | 72,66 x 3,53 |

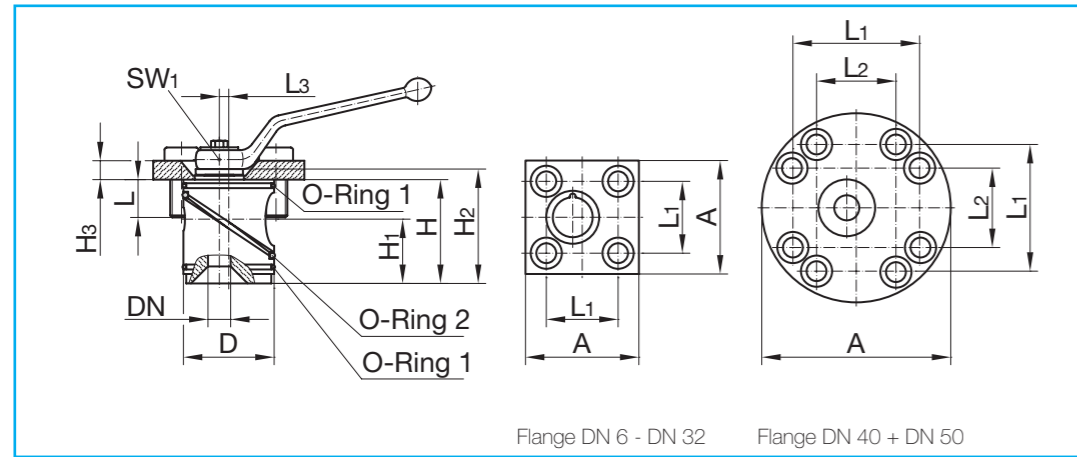
General tolerances
DIN ISO 2768
Surfaces
DIN EN ISO 4287

Drilling pattern



Multi-way ball valves with floating ball

3-way · steel · for 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"

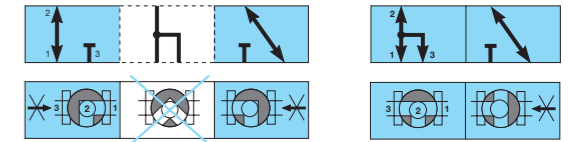
Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

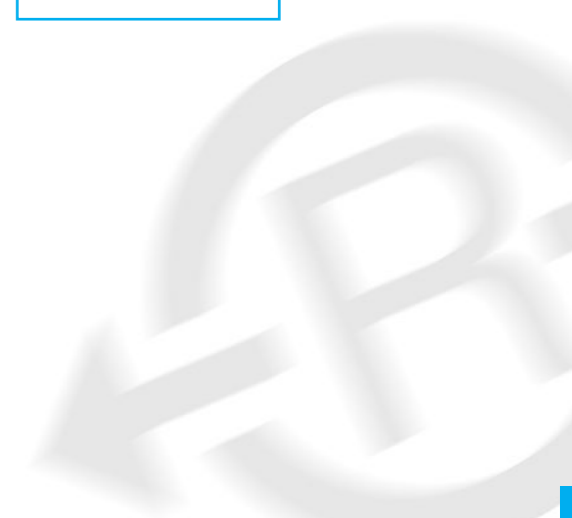
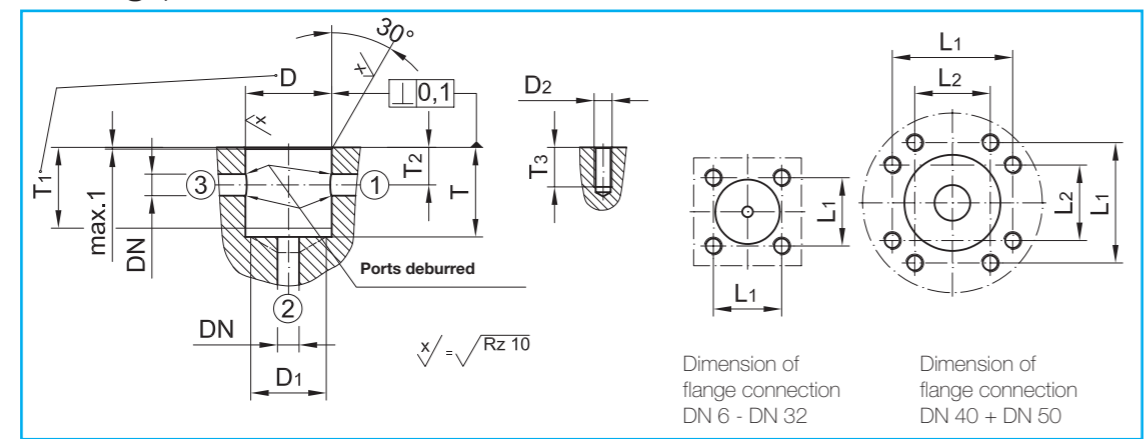


| | | |
|-------------|---------------------------|---------------------------|
| Bore: | L | T |
| Cycling: | 90° | 90° |
| Body: | steel, black oxide | steel, black oxide |
| Ball: | steel, hard chrome plated | steel, hard chrome plated |
| Stem: | steel, zinc plated | steel, zinc plated |
| Body seals: | NBR | NBR |
| Ball seals: | POM | POM |
| Stem seals: | NBR | NBR |

| 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 | Article-No. | PN | Article-No. |
|------------|----|-----|-------|----------------|----------------|----------------|----|----------------|----------------|----------------|-----------------|-----|-------------|----|---------------|---------------|--------|--|-----|-------------|-----|-------------|
| | | | | | | | | | | | | | | | | | | | | | | |
| Cavity | 6 | 36 | 39,9 | 26,3 | 45,8 | 8 | 20 | 38 | - | 5,0 | 7 | 60 | 12 | 6 | 31,00 x 1,50 | 32,00 x 3,00 | 0,59 | M10 x 25-8.8 | 500 | 107 031 | 500 | 107 041 |
| | 10 | 45 | 50,9 | 32,5 | 55,8 | 10 | 20 | 50 | - | 5,0 | 8 | 80 | 13 | 10 | 40,00 x 2,00 | 42,00 x 3,00 | 1,15 | M12 x 25-8.8 | 500 | 107 032 | 500 | 107 042 |
| | 12 | 48 | 54,9 | 34,0 | 61,5 | 10 | 20 | 50 | - | 5,0 | 10 | 80 | 14 | 12 | 43,00 x 2,00 | 46,00 x 3,00 | 1,29 | M12 x 25-8.8 | 400 | 107 033 | 400 | 107 043 |
| | 16 | 54 | 58,9 | 36,0 | 64,5 | 10 | 20 | 60 | - | 5,5 | 10 | 90 | 14 | 16 | 49,00 x 2,00 | 50,39 x 3,53 | 1,59 | M12 x 25-8.8 | 315 | 107 034 | 315 | 107 044 |
| | 20 | 63 | 72,9 | 44,0 | 82,5 | 18 | 25 | 70 | - | 7,0 | 14 | 100 | 15 | 20 | 55,20 x 3,00 | 61,00 x 3,50 | 3,04 | M16 x 35-8.8 | 315 | 107 035 | 315 | 107 045 |
| | 25 | 70 | 78,9 | 47,0 | 89,0 | 18 | 25 | 70 | - | 7,0 | 14 | 100 | 15 | 25 | 63,00 x 3,00 | 67,00 x 4,00 | 3,31 | M16 x 35-8.8 | 315 | 107 036 | 315 | 107 046 |
| | 32 | 92 | 100,0 | 57,5 | 132,5 | 35 | 30 | 100 | - | 10,0 | 17 | 140 | 21 | 32 | 82,14 x 3,53 | 92,00 x 5,00 | 9,26 | M20 x 50-8.8 | 315 | 107 037 | 315 | 107 047 |
| | 40 | 107 | 116,0 | 66,0 | 150,5 | 35 | 30 | 134 | 84 | 10,0 | 17 | 200 | 21 | 40 | 98,02 x 3,53 | 108,00 x 6,00 | 14,77 | M20 x 50-8.8 | 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 50-8.8 | 315 | 107 039 | 315 | 107 049 |

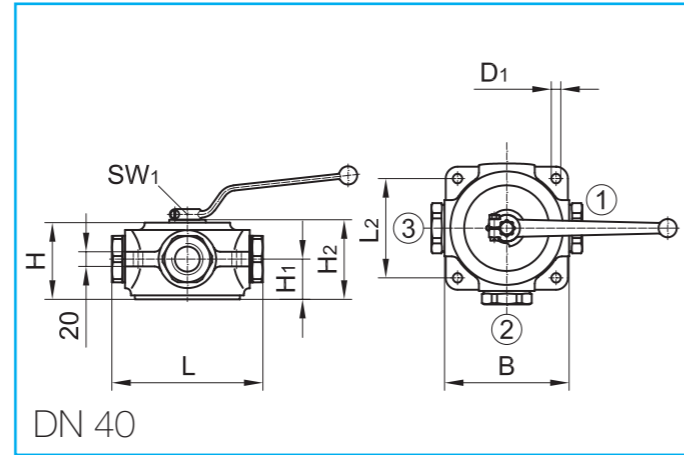
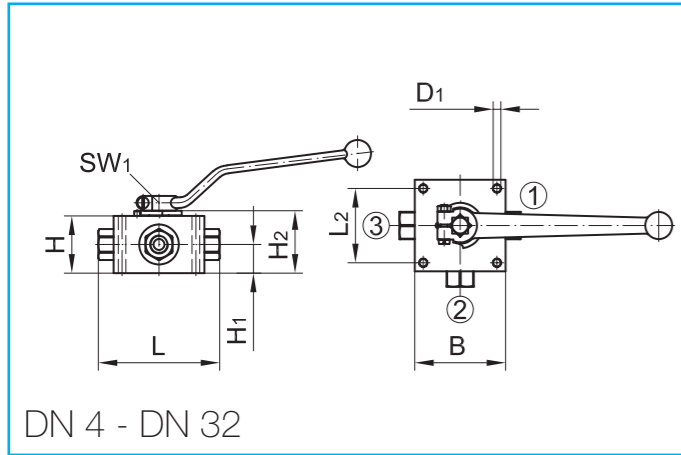
| General tolerances DIN ISO 2768 Surfaces DIN EN ISO 4287 | DN | D H9 | D ₁ max. | D ₂ | L ₁ ±0,2 | L ₂ ±0,2 | T +0,1 | T ₁ +0,2 | T ₂ +0,1 | T ₃ min. | Mounting-tool | |
|---|----|---------|------------------------|----------------|------------------------|------------------------|-----------|------------------------|------------------------|------------------------|---------------|-------------|
| | | | | | | | | | | | DN | Article-No. |
| | 6 | 36 | 31 | M10 | 38 | - | 40 | 38 | 13,6 | 22 | 6 | 107 051 |
| | 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 · DN 4 - DN 40



Handle included in delivery

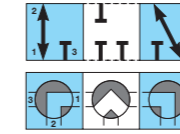
For more porting patterns refer to "Standard- and special porting patterns".

Also available with most other connections

Please check pressure rating of the pipe fittings!

*) can be actuated up to 100 bar manually

**) DN 40: grey cast iron



For handles refer to "Attachments, accessories"

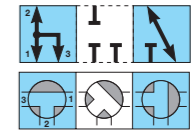
Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar



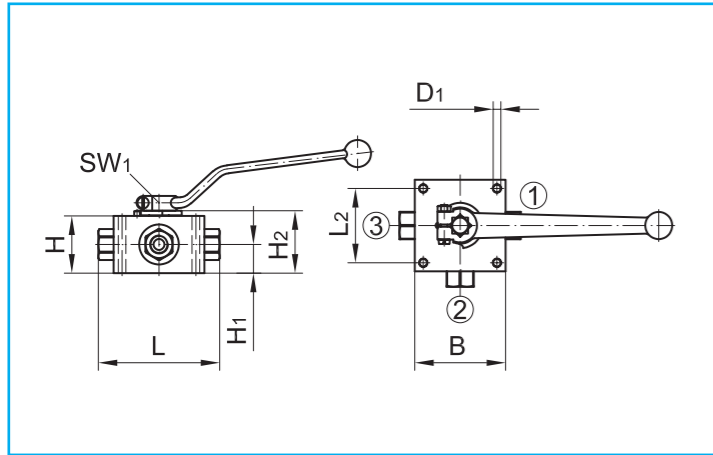
| | L | L | T | T |
|----------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Bore: | L | L | T | T |
| Cycling: | 90° | 90° | 90° | 90° |
| Body**: | steel, black oxide | steel, black oxide | steel, black oxide | steel, black oxide |
| Trunnion ball: | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated |
| Ball seals: | POM | PTFE | POM | PTFE |
| Shaft seals: | NBR | FKM | NBR | FKM |

| Connection | DN | Thread D | OD | 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 |

| 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 connections

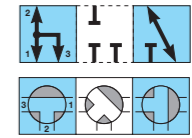
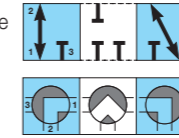
Actuators and custom orders on request

All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

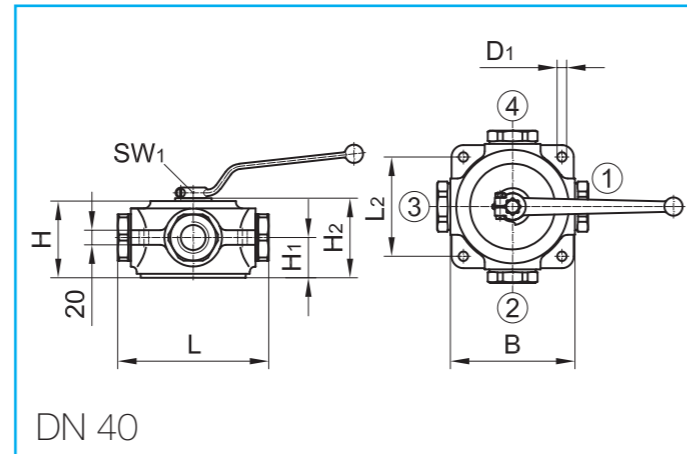
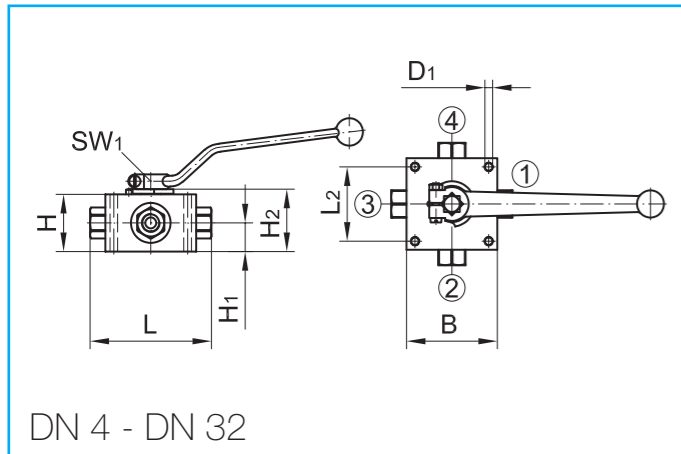


| | L | L | T | T |
|----------------|-----------------|-----------------|-----------------|-----------------|
| Bore: | L | L | T | T |
| Cycling: | 90° | 90° | 90° | 90° |
| Body: | stainless steel | stainless steel | stainless steel | stainless steel |
| Trunnion ball: | stainless steel | stainless steel | stainless steel | stainless steel |
| Ball seals: | PTFE | PTFE | PTFE | PTFE |
| Shaft seals: | FKM | FFKM | FKM | FFKM |

| Connection | DN | Thread D | OD | 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 | 1,58 | 4 | 100 | 202 501 | 100 | 202 526 | 100 | 202 551 | 100 | 202 576 |
| | 6 | M14 x 1,5 | 8 | 100 | 10 | 55 | 70 | 40 | 20,0 | 44,5 | 6,7 | 19 | 12 | 7 | 1,57 | 6 | 100 | 202 502 | 100 | 202 527 | 100 | 202 552 | 100 | 202 577 |
| | 8 | M16 x 1,5 | 10 | 109 | 11 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,50 | 8 | 100 | 202 503 | 100 | 202 528 | 100 | 202 553 | 100 | 202 578 |
| | 10 | M18 x 1,5 | 12 | 109 | 11 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,50 | 10 | 100 | 202 504 | 100 | 202 529 | 100 | 202 554 | 100 | 202 579 |
| | 12 | M22 x 1,5 | 15 | 130 | 12 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 30 | 14 | 8 | 4,16 | 12 | 100 | 202 505 | 100 | 202 530 | 100 | 202 555 | 100 | 202 580 |
| | 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 | 202 506 | 100 | 202 531 | 100 | 202 556 | 100 | 202 581 |
| | 20 | M30 x 2 | 22 | 138 | 14 | 85 | 100 | 75 | 40,0 | 79,5 | 8,4 | 41 | 19 | 10 | 5,71 | 20 | 100 | 202 751 | 100 | 202 776 | 100 | 202 801 | 100 | 202 826 |
| | 25 | M36 x 2 | 28 | 157 | 14 | 105 | 120 | 81 | 43,5 | 85,5 | 10,5 | 50 | 19 | 10 | 8,60 | 25 | 100 | 202 752 | 100 | 202 777 | 100 | 202 802 | 100 | 202 827 |
| | 32 | M45 x 2 | 35 | 210 | 16 | 106 | Ø180 | 100 | 50,0 | 104,5 | 10,5 | 60 | 19 | 10 | 17,10 | 32 | 100 | 202 753 | 100 | 202 778 | 100 | 202 803 | 100 | 202 828 |
| | 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 | 202 507 | 100 | 202 532 | 100 | 202 557 | 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 | 202 508 | 100 | 202 533 | 100 | 202 558 | 100 | 202 583 |
| 8 | | M20 x 1,5 | 12 | 111 | 12 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,52 | 8 | 100 | 202 509 | 100 | 202 534 | 100 | 202 559 | 100 | 202 584 |
| 10 | | M22 x 1,5 | 14 | 115 | 14 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,53 | 10 | 100 | 202 510 | 100 | 202 535 | 100 | 202 560 | 100 | 202 585 |
| 12 | | M24 x 1,5 | 16 | 134 | 14 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 30 | 14 | 8 | 4,15 | 12 | 100 | 202 511 | 100 | 202 536 | 100 | 202 561 | 100 | 202 586 |
| 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 | 202 512 | 100 | 202 537 | 100 | 202 562 | 100 | 202 587 |
| 20 | | M36 x 2 | 25 | 146 | 18 | 85 | 100 | 75 | 40,0 | 79,5 | 8,4 | 41 | 19 | 10 | 5,82 | 20 | 100 | 202 755 | 100 | 202 780 | 100 | 202 805 | 100 | 202 830 |
| 25 | | M42 x 2 | 30 | 169 | 20 | 105 | 120 | 81 | 43,5 | 85,5 | 10,5 | 50 | 19 | 10 | 8,73 | 25 | 100 | 202 756 | 100 | 202 781 | 100 | 202 806 | 100 | 202 831 |
| 32 | | M52 x 2 | 38 | 222 | 22 | 106 | Ø180 | 100 | 50,0 | 104,5 | 10,5 | 60 | 19 | 10 | 17,40 | 32 | 100 | 202 757 | 100 | 202 782 | 100 | 202 807 | 100 | 202 832 |
| 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 | 202 513 | 100 | 202 538 | 100 | 202 563 | 100 |
| | 6 | G 1/4 | - | 102 | 12 | 55 | 70 | 40 | 20,0 | 44,5 | 6,7 | 19 | 12 | 7 | 1,60 | 6 | 100 | 202 514 | 100 | 202 539 | 100 | 202 564 | 100 | 202 589 |
| | 10 | G 3/8 | - | 107 | 14 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,51 | 10 | 100 | 202 515 | 100 | 202 540 | 100 | 202 565 | 100 | 202 590 |
| | 12 | G 1/2 | - | 129 | 15 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 30 | 14 | 8 | 4,20 | 12 | 100 | 202 516 | 100 | 202 541 | 100 | 202 566 | 100 | 202 591 |
| | 16/12 | G 5/8 | - | 146 | 18 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 36 | 14 | 8 | 4,31 | 16/12 | 100 | 202 517 | 100 | 202 542 | 100 | 202 567 | 100 | 202 592 |
| | 20 | G 3/4 | - | 132 | 18 | 85 | 100 | 75 | 40,0 | 79,5 | 8,4 | 41 | 19 | 10 | 5,82 | 20 | 100 | 202 758 | 100 | 202 783 | 100 | 202 808 | 100 | 202 833 |
| NPT-female thread ANSI/ASME B1.20.1-1983 | 25 | G1 | - | 162 | 20 | 105 | 120 | 81 | 43,5 | 85,5 | 10,5 | 50 | 19 | 10 | 8,95 | 25 | 100 | 202 759 | 100 | 202 784 | 100 | 202 809 | 100 | 202 834 |
| | 32 | G1 1/4 | - | 188 | 20 | 106 | Ø180 | 100 | 50,0 | 104,5 | 10,5 | 60 | 19 | 10 | 16,61 | 32 | 100 | 202 760 | 100 | 202 785 | 100 | 202 810 | 100 | 202 835 |
| | 4 | 1/8 - 27 NPT | - | 102 | 6,9 | 55 | 70 | 40 | 20,0 | 44,5 | 6,7 | 19 | 12 | 7 | 1,63 | 4 | 100 | 202 518 | 100 | 202 543 | 100 | 202 568 | 100 | 202 593 |
| | 6 | 1/4 - 18 NPT | - | 102 | 10,0 | 55 | 70 | 40 | 20,0 | 44,5 | 6,7 | 19 | 12 | 7 | 1,60 | 6 | 100 | 202 519 | 100 | 202 544 | 100 | 202 569 | 100 | 202 594 |
| | 10 | 3/8 - 18 NPT | - | 107 | 10,3 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,51 | 10 | 100 | 202 520 | 100 | 202 545 | 100 | 202 570 | 100 | 202 595 |
| | 12 | 1/2 - 14 NPT | - | 129 | 13,6 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 30 | 14 | 8 | 4,20 | 12 | 100 | 202 521 | 100 | 202 546 | 100 | 202 571 | 100 | 202 596 |
| 20 | 3/4 - 14 NPT | - | 132 | 14,1 | 85 | 100 | 75 | 40,0 | 79,5 | 8,4 | 41 | 19 | 10 | 5,82 | 20 | 100 | 202 762 | 100 | 202 787 | 100 | 202 812 | 100 | 202 837 | |
| 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 | 202 763 | 100 | 202 788 | 100 | 202 813 | 100 | 202 838 | |
| 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 | 202 764 | 100 | 202 789 | 100 | 202 814 | 100 | 202 839 | |

Multi-way ball valves with trunnion ball

4-way · steel · threaded connector · DN 4 - DN 40



Handle included in delivery

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

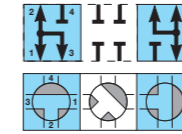
Also available with most other connections

Please check pressure ratings of the pipe fittings!

*) can be actuated up to 100 bar manually

**) DN 32 + DN 40: steel, hard chrome plated

**) DN 40: grey cast iron



For handles refer to "Attachments, accessories"

Actuators and custom orders on request

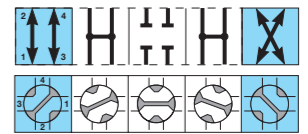
All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

(reduced bore)

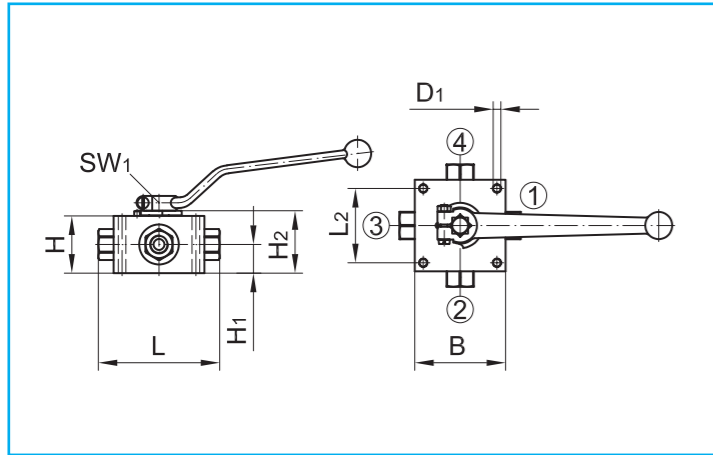


| | T | T | Double-L | Double-L |
|-------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Bore: | T | T | Double-L | Double-L |
| Cycling: | 90° | 90° | 90° | 90° |
| Body***): | steel, black oxide | steel, black oxide | steel, black oxide | steel, black oxide |
| Trunnion ball**): | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated | steel, hard chrome plated |
| Ball seals: | POM | PTFE | POM | PTFE |
| Shaft seals: | NBR | FKM | NBR | FKM |

| Connection | DN | Thread D | OD | L | L1 | L2 | B | H | H1 | H2 | D1 | SW | SW1 | Handle Code | Weight | DN | PN | | PN | | PN | | PN | |
|--|---------------------------------------|--------------------|--------------|-----|------|-----|------|-----|------|-------|------|-----|-----|-------------|--------|-------|-------------|-------------|-------------|-------------|-------------|-------------|---------|---------|
| | | | | | | | | | | | | | | | | | Article-No. | Article-No. | Article-No. | Article-No. | Article-No. | 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 | 500 | 203 001 | 100 | 203 026 | 500 | 203 051 | 100 | 203 076 |
| | 6 | M14 x 1,5 | 8 | 100 | 10 | 55 | 70 | 40 | 20,0 | 44,5 | 6,7 | 19 | 12 | 7 | 1,60 | 6 | 500 | 203 002 | 100 | 203 027 | 500 | 203 052 | 100 | 203 077 |
| | 8 | M16 x 1,5 | 10 | 109 | 11 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,50 | 8 | 500 | 203 003 | 100 | 203 028 | 500 | 203 053 | 100 | 203 078 |
| | 10 | M18 x 1,5 | 12 | 109 | 11 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,50 | 10 | 500 | 203 004 | 100 | 203 029 | 500 | 203 054 | 100 | 203 079 |
| | 12 | M22 x 1,5 | 15 | 130 | 12 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 30 | 14 | 8 | 4,16 | 12 | 500 | 203 005 | 100 | 203 030 | 500 | 203 055 | 100 | 203 080 |
| | 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 | 500 | 203 006 | 100 | 203 031 | 500 | 203 056 | 100 | 203 081 |
| | 20 | M30 x 2 | 22 | 138 | 14 | 85 | 100 | 75 | 40,0 | 79,5 | 8,4 | 41 | 19 | 10 | 5,72 | 20 | 315 | 203 911 | 100 | 203 912 | 315 | 203 913 | 100 | 203 914 |
| | 25 | M36 x 2 | 28 | 157 | 14 | 105 | 120 | 81 | 43,5 | 85,5 | 10,5 | 50 | 19 | 10 | 8,60 | 25 | 315 | 203 931 | 100 | 203 932 | 315 | 203 933 | 100 | 203 934 |
| | 32 | M45 x 2 | 35 | 210 | 16 | 106 | Ø180 | 100 | 50,0 | 104,5 | 10,5 | 60 | 19 | 10 | 17,10 | 32 | 315*) | 203 253 | 100 | 203 278 | 315*) | 203 303 | 100 | 203 328 |
| | 40 | M52 x 2 | 42 | 256 | 16 | 150 | 190 | 116 | 61,0 | 120,5 | 14,5 | 75 | 19 | 10 | 20,84 | 40 | 100 | 204 204 | 100 | 204 219 | 100 | 204 234 | 100 | 204 249 |
| 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 | 500 | 203 007 | 100 | 203 032 | 500 | 203 057 | 100 | 203 082 |
| | 6 | M18 x 1,5 | 10 | 106 | 12 | 55 | 70 | 40 | 20,0 | 44,5 | 6,7 | 19 | 12 | 7 | 1,61 | 6 | 500 | 203 008 | 100 | 203 033 | 500 | 203 058 | 100 | 203 083 |
| | 8 | M20 x 1,5 | 12 | 111 | 12 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,52 | 8 | 500 | 203 009 | 100 | 203 034 | 500 | 203 059 | 100 | 203 084 |
| | 10 | M22 x 1,5 | 14 | 115 | 14 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,53 | 10 | 500 | 203 010 | 100 | 203 035 | 500 | 203 060 | 100 | 203 085 |
| | 12 | M24 x 1,5 | 16 | 134 | 14 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 30 | 14 | 8 | 4,15 | 12 | 500 | 203 011 | 100 | 203 036 | 500 | 203 061 | 100 | 203 086 |
| | 16/12 | M30 x 2 | 20 | 144 | 16 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 36 | 14 | 8 | 4,32 | 16/12 | 500 | 203 012 | 100 | 203 037 | 500 | 203 062 | 100 | 203 087 |
| | 20 | M36 x 2 | 25 | 146 | 18 | 85 | 100 | 75 | 40,0 | 79,5 | 8,4 | 41 | 19 | 10 | 5,82 | 20 | 315 | 203 915 | 100 | 203 916 | 315 | 203 917 | 100 | 203 918 |
| | 25 | M42 x 2 | 30 | 169 | 20 | 105 | 120 | 81 | 43,5 | 85,5 | 10,5 | 50 | 19 | 10 | 8,73 | 25 | 315 | 203 935 | 100 | 203 936 | 315 | 203 937 | 100 | 203 938 |
| | 32 | M52 x 2 | 38 | 222 | 22 | 106 | Ø180 | 100 | 50,0 | 104,5 | 10,5 | 60 | 19 | 10 | 17,40 | 32 | 315*) | 203 257 | 100 | 203 282 | 315*) | 203 307 | 100 | 203 332 |
| | 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 | 500 | 203 013 | 100 | 203 038 | 500 | 203 063 | 100 |
| 6 | | G 1/4 | - | 102 | 12 | 55 | 70 | 40 | 20,0 | 44,5 | 6,7 | 19 | 12 | 7 | 1,60 | 6 | 500 | 203 014 | 100 | 203 039 | 500 | 203 064 | 100 | 203 089 |
| 10 | | G 3/8 | - | 107 | 14 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,51 | 10 | 500 | 203 015 | 100 | 203 040 | 500 | 203 065 | 100 | 203 090 |
| 12 | | G 1/2 | - | 129 | 15 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 30 | 14 | 8 | 4,20 | 12 | 500 | 203 016 | 100 | 203 041 | 500 | 203 066 | 100 | 203 091 |
| 16/12 | | G 5/8 | - | 146 | 18 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 36 | 14 | 8 | 4,31 | 16/12 | 500 | 203 017 | 100 | 203 042 | 500 | 203 067 | 100 | 203 092 |
| 20 | | G 3/4 | - | 132 | 18 | 85 | 100 | 75 | 40,0 | 79,5 | 8,4 | 41 | 19 | 10 | 5,82 | 20 | 315 | 203 919 | 100 | 203 920 | 315 | 203 921 | 100 | 203 922 |
| 25 | | G1 | - | 162 | 20 | 105 | 120 | 81 | 43,5 | 85,5 | 10,5 | 50 | 19 | 10 | 8,95 | 25 | 315 | 203 939 | 100 | 203 940 | 315 | 203 941 | 100 | 203 942 |
| 32 | | G1 1/4 | - | 188 | 20 | 106 | Ø180 | 100 | 50,0 | 104,5 | 10,5 | 60 | 19 | 10 | 16,61 | 32 | 315*) | 203 260 | 100 | 203 285 | 315*) | 203 310 | 100 | 203 335 |
| 40 | | G1 1/2 | - | 224 | 25 | 150 | 190 | 116 | 61,0 | 120,5 | 14,5 | 75 | 19 | 10 | 20,30 | 40 | 100 | 204 211 | 100 | 204 226 | 100 | 204 241 | 100 | 204 256 |
| 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 | 500 | 203 018 | 100 | 203 043 | 500 | 203 068 | 100 |
| | 6 | 1/4 - 18 NPT | - | 102 | 10,0 | 55 | 70 | 40 | 20,0 | 44,5 | 6,7 | 19 | 12 | 7 | 1,60 | 6 | 500 | 203 019 | 100 | 203 044 | 500 | 203 069 | 100 | 203 094 |
| | 10 | 3/8 - 18 NPT | - | 107 | 10,3 | 65 | 80 | 50 | 25,0 | 54,5 | 6,7 | 24 | 14 | 8 | 2,51 | 10 | 500 | 203 020 | 100 | 203 045 | 500 | 203 070 | 100 | 203 095 |
| | 12 | 1/2 - 14 NPT | - | 129 | 13,6 | 80 | 100 | 55 | 27,5 | 59,5 | 8,4 | 30 | 14 | 8 | 4,20 | 12 | 500 | 203 021 | 100 | 203 046 | 500 | 203 071 | 100 | 203 096 |
| | 20 | 3/4 - 14 NPT | - | 132 | 14,1 | 85 | 100 | 75 | 40,0 | 79,5 | 8,4 | 41 | 19 | 10 | 5,85 | 20 | 315 | 203 923 | 100 | 203 924 | 315 | 203 925 | 100 | 203 926 |
| | 25 | 1 - 11 1/2 NPT | - | 162 | 16,8 | 105 | 120 | 81 | 43,5 | 85,5 | 10,5 | 50 | 19 | 10 | 8,95 | 25 | 315 | 203 943 | 100 | 203 944 | 315 | 203 945 | 100 | 203 946 |
| | 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 | 315*) | 203 264 | 100 | 203 289 | 315*) | 203 314 | 100 | 203 339 |
| | 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 | 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 connections

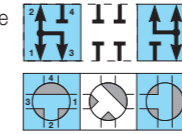
Actuators and custom orders on request

All dimensions subject to change without notice

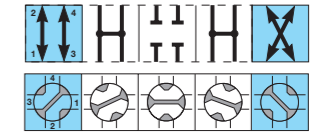
Dimensions in mm

Weight in kg

Pressure in bar



(reduced bore)

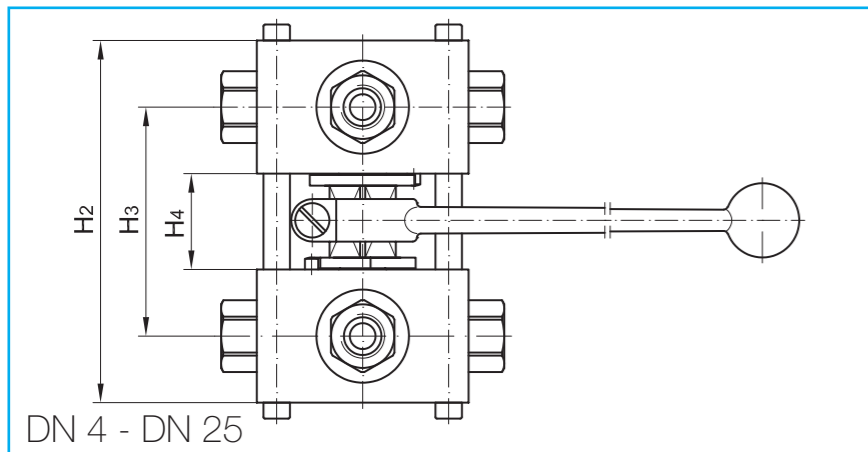


| Bore: | T | T | Double-L | Double-L |
|----------------|-----------------|-----------------|-----------------|-----------------|
| Cycling: | 90° | 90° | 90° | 90° |
| Body: | stainless steel | stainless steel | stainless steel | stainless steel |
| Trunnion ball: | stainless steel | stainless steel | stainless steel | stainless steel |
| Ball seals: | PTFE | PTFE | PTFE | PTFE |
| Shaft seals: | FKM | FFKM | FKM | FFKM |

| Connection | DN | Thread D | OD | 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 |
| 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

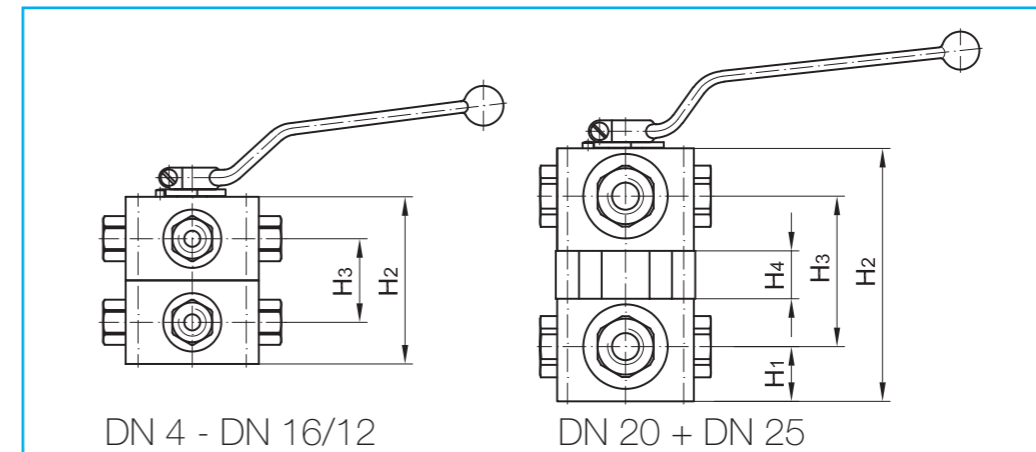


Handle included in delivery
 For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm

Also available completely assembled

| Connection | DN | H2 | H3 | H4 | Handle Code |
|------------|-------|-----|-----|----|-------------|
| ALL | 4 | 114 | 74 | 34 | 44 |
| | 6 | 114 | 74 | 34 | 44 |
| | 8 | 136 | 86 | 36 | 45 |
| | 10 | 136 | 86 | 36 | 45 |
| | 12 | 146 | 91 | 36 | 45 |
| | 16/12 | 146 | 91 | 36 | 45 |
| | 20 | 195 | 115 | 45 | 47 |
| 25 | 207 | 120 | 45 | 47 | |

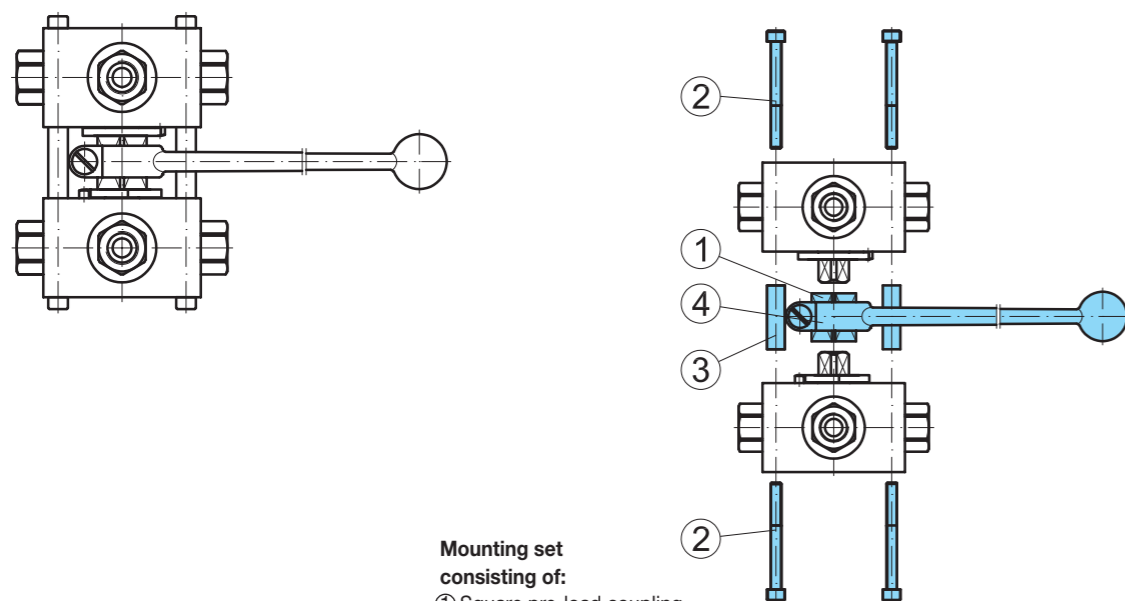
| Article-No. |
|-------------|
| 203 890 |
| 203 890 |
| 203 891 |
| 203 891 |
| 203 892 |
| 203 892 |
| 203 893 |
| 203 894 |



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

| Connection | DN | H1 | H2 | H3 | H4 | Handle Code |
|------------|-------|------|-----|-----|----|-------------|
| ALL | 4 | - | 80 | 40 | - | 7 |
| | 6 | - | 80 | 40 | - | 7 |
| | 8 | - | 100 | 50 | - | 8 |
| | 10 | - | 100 | 50 | - | 8 |
| | 12 | - | 110 | 55 | - | 8 |
| | 16/12 | - | 110 | 55 | - | 8 |
| | 20 | 40,0 | 185 | 110 | 35 | 10 |
| | 25 | 43,5 | 197 | 116 | 35 | 10 |

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

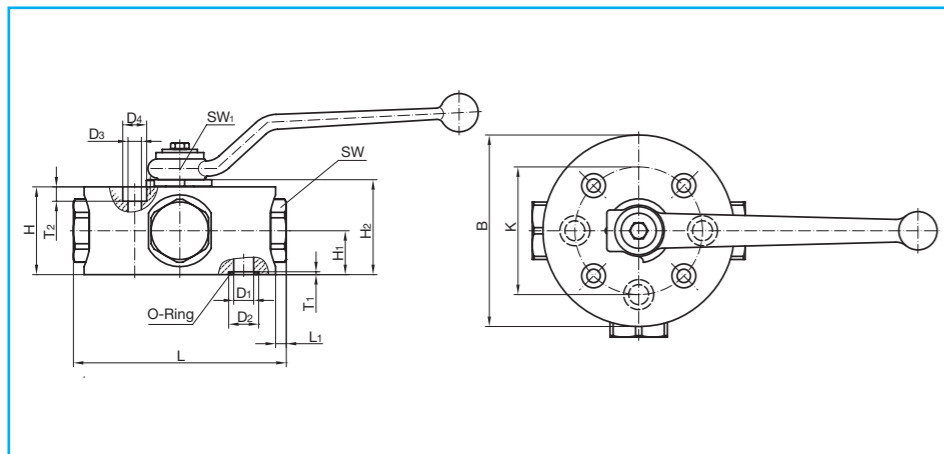


Mounting set consisting of:
 ① Square pre-load coupling
 ② Hex-head bolt (6 pc.)
 ③ Spacer sleeves (3 pc.)
 ④ Handle

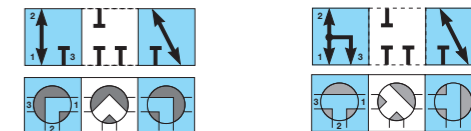


Multi-way ball valves with trunnion ball

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



Handle and o-rings included in delivery
 For handles refer to "Attachments, accessories"
 For more porting patterns refer to "Standard- and special porting patterns".
 *) can be actuated up to 100 bar manually
 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, black oxide | steel, black oxide |
| Trunnion ball: | steel, hard chrome plated | steel, hard chrome plated |
| Body seals: | NBR | NBR |
| Ball seals: | POM | POM |
| Shaft seals: | NBR | NBR |

| Connection | DN | L | L1 | B | H | H1 | H2 | K | D1 | D2 | D3 | D4 | T1 | T2 |
|------------------------------|----|-----|-----|-------|-------|------|-------|-----|------|------|------|----|-----|------|
| Body-flange with o-ring-seal | 6 | 95 | 2,5 | Ø 90 | 40,5 | 20,5 | 45,0 | 55 | 6,0 | 12,5 | 6,4 | 11 | 1,8 | 6,8 |
| | 10 | 108 | 4,0 | Ø 100 | 50,0 | 25,0 | 54,5 | 65 | 8,0 | 15,0 | 6,4 | 11 | 1,8 | 6,8 |
| | 12 | 133 | 6,5 | Ø 120 | 55,0 | 27,5 | 59,5 | 80 | 12,5 | 18,8 | 8,4 | 15 | 1,8 | 9,0 |
| | 20 | 190 | 5,0 | Ø 180 | 75,0 | 40,0 | 79,5 | 115 | 19,0 | 30,0 | 17,0 | 26 | 3,0 | 22,0 |
| | 25 | 210 | 5,0 | Ø 200 | 81,0 | 43,5 | 85,5 | 135 | 23,5 | 35,0 | 21,0 | 33 | 3,0 | 21,5 |
| | 32 | 300 | 5,0 | Ø 290 | 100,0 | 50,0 | 104,5 | 200 | 32,0 | 40,0 | 25,0 | 40 | 3,0 | 26,5 |

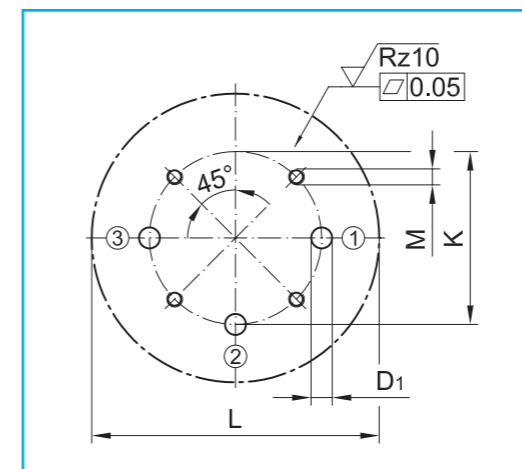
| DN | SW | SW1 | Handle Code | Weight | For Cylinder-head screws DIN EN ISO 4762 (DIN 912) |
|----|----|-----|-------------|--------|--|
| 6 | 24 | 12 | 7 | 1,73 | M 6 - 10.9 |
| 10 | 30 | 14 | 8 | 2,70 | M 6 - 12.9 |
| 12 | 36 | 14 | 8 | 4,58 | M 8 - 12.9 |
| 20 | 50 | 19 | 10 | 12,96 | M16 - 8.8 |
| 25 | 60 | 19 | 10 | 16,60 | M20 - 8.8 |
| 32 | 70 | 19 | 10 | 41,50 | M24 - 8.8 |

| PN | Article-No. | PN | Article-No. |
|------|-------------|------|-------------|
| 400 | 206 501 | 400 | 206 561 |
| 400 | 206 502 | 400 | 206 562 |
| 400 | 206 503 | 400 | 206 563 |
| 315 | 206 504 | 315 | 206 564 |
| 315 | 206 505 | 315 | 206 565 |
| 315* | 206 506 | 315* | 206 566 |

| DN | D1 | K | L | M | O-Ring |
|----|------|-----|-----|-----|------------|
| 6 | 6,0 | 55 | 95 | M 6 | 8,0 x 2,5 |
| 10 | 8,0 | 65 | 108 | M 6 | 10,0 x 2,5 |
| 12 | 12,5 | 80 | 133 | M 8 | 14,0 x 2,5 |
| 20 | 19,0 | 115 | 190 | M16 | 23,5 x 3,5 |
| 25 | 23,5 | 135 | 210 | M20 | 28,1 x 3,5 |
| 32 | 32,0 | 200 | 300 | M24 | 33,5 x 3,5 |

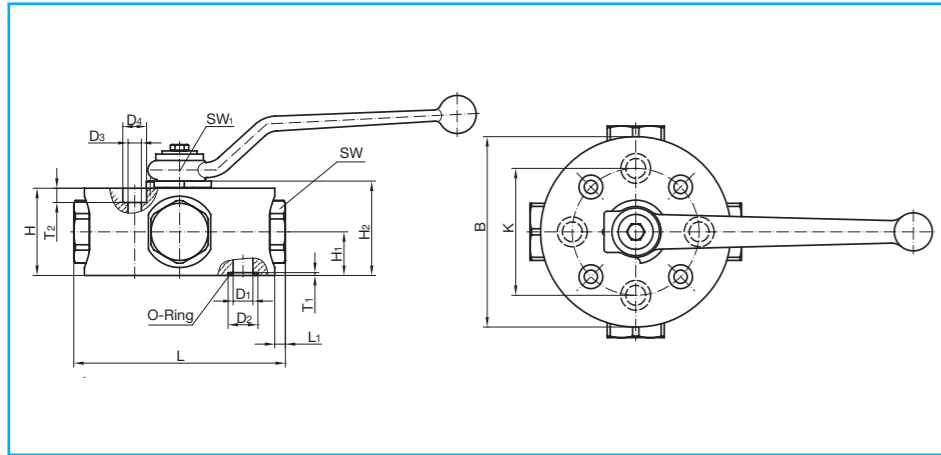
General tolerances
 DIN ISO 2768
 Surfaces
 DIN EN ISO 4287

Drilling pattern DN 6 - DN 32

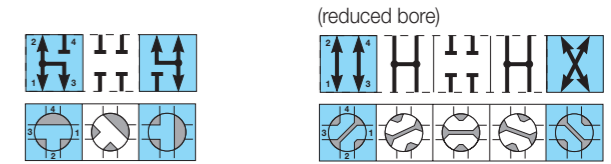


Multi-way ball valves with trunnion ball

4-way · steel · manifold mounting · DN 6 - DN 32



Handle and o-rings included in delivery
 For handles refer to "Attachments, accessories"
 For more porting patterns refer to "Standard- and special porting patterns".
 *) can be actuated up to 100 bar manually
 Actuators and custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

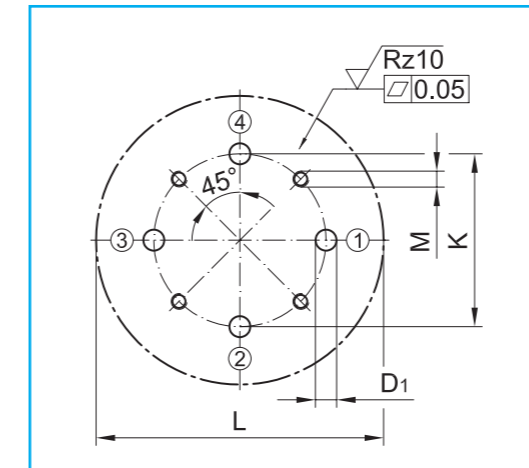


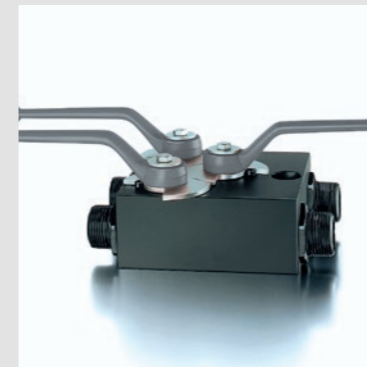
| | | |
|----------------|---------------------------|---------------------------|
| Bore: | T | Double-L |
| Cycling: | 90° | 90° |
| Body: | steel, black oxide | steel, black oxide |
| Trunnion ball: | steel, hard chrome plated | steel, hard chrome plated |
| Body seals: | NBR | NBR |
| Ball seals: | POM | POM |
| Shaft seals: | NBR | NBR |

| Connection | DN | L | L1 | B | H | H1 | H2 | K | D1 | D2 | D3 | D4 | T1 | T2 | DN | SW | SW1 | Handle Code | Weight | For Cylinder-head screws DIN EN ISO 4762 (DIN 912) | PN | Article-No. | PN | Article-No. |
|------------------------------|----|-----|-----|-------|-------|------|-------|-----|------|------|------|----|-----|------|----|----|-----|-------------|--------|--|------|-------------|------|-------------|
| Body-flange with o-ring-seal | 6 | 95 | 2,5 | Ø 90 | 40,5 | 20,5 | 45,0 | 55 | 6,0 | 12,5 | 6,4 | 11 | 1,8 | 6,8 | 6 | 24 | 12 | 7 | 1,73 | M 6 - 10.9 | 400 | 206 521 | 400 | 206 541 |
| | 10 | 108 | 4,0 | Ø 100 | 50,0 | 25,0 | 54,5 | 65 | 8,0 | 15,0 | 6,4 | 11 | 1,8 | 6,8 | 10 | 30 | 14 | 8 | 2,70 | M 6 - 12.9 | 400 | 206 522 | 400 | 206 542 |
| | 12 | 133 | 6,5 | Ø 120 | 55,0 | 27,5 | 59,5 | 80 | 12,5 | 18,8 | 8,4 | 15 | 1,8 | 9,0 | 12 | 36 | 14 | 8 | 4,58 | M 8 - 12.9 | 400 | 206 523 | 400 | 206 543 |
| | 20 | 190 | 5,0 | Ø 180 | 75,0 | 40,0 | 79,5 | 115 | 19,0 | 30,0 | 17,0 | 26 | 3,0 | 22,0 | 20 | 50 | 19 | 10 | 12,96 | M16 - 8.8 | 315 | 206 524 | 315 | 206 544 |
| | 25 | 210 | 5,0 | Ø 200 | 81,0 | 43,5 | 85,5 | 135 | 23,5 | 35,0 | 21,0 | 33 | 3,0 | 21,5 | 25 | 60 | 19 | 10 | 16,60 | M20 - 8.8 | 315 | 206 525 | 315 | 206 545 |
| | 32 | 300 | 5,0 | Ø 290 | 100,0 | 50,0 | 104,5 | 200 | 32,0 | 40,0 | 25,0 | 40 | 3,0 | 26,5 | 32 | 70 | 19 | 10 | 41,50 | M24 - 8.8 | 315* | 206 526 | 315* | 206 546 |

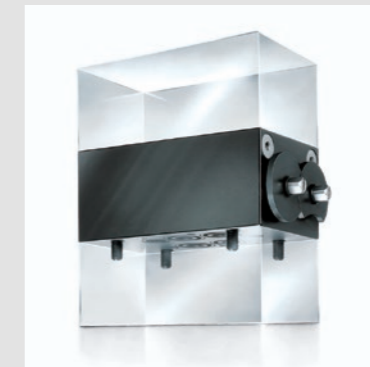
| General tolerances DIN ISO 2768 Surfaces DIN EN ISO 4287 | DN | D1 | K | L | M | O-Ring |
|---|----|------|-----|-----|-----|------------|
| | 6 | 6,0 | 55 | 95 | M 6 | 8,0 x 2,5 |
| | 10 | 8,0 | 65 | 108 | M 6 | 10,0 x 2,5 |
| | 12 | 12,5 | 80 | 133 | M 8 | 14,0 x 2,5 |
| | 20 | 19,0 | 115 | 190 | M16 | 23,5 x 3,5 |
| | 25 | 23,5 | 135 | 210 | M20 | 28,1 x 3,5 |
| | 32 | 32,0 | 200 | 300 | M24 | 33,5 x 3,5 |

Drilling pattern DN 6 - DN 32





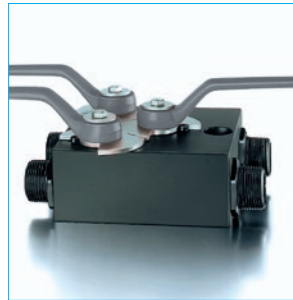
Shut-off blocks with integrated bypass and safety-lock



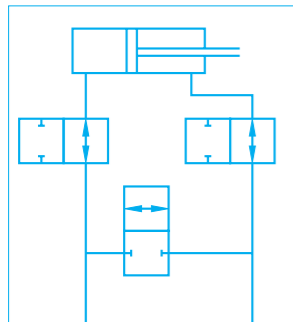
Sandwich plates



Accumulator safety blocks

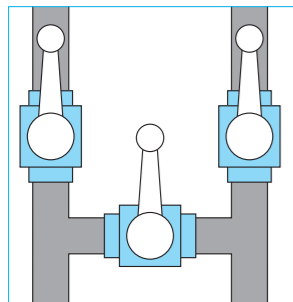


Shut-off blocks with integrated bypass and safety-lock



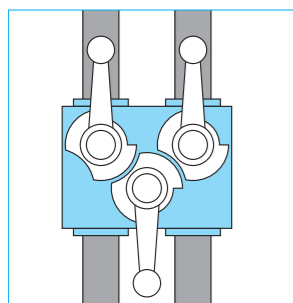
Application/function:

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.



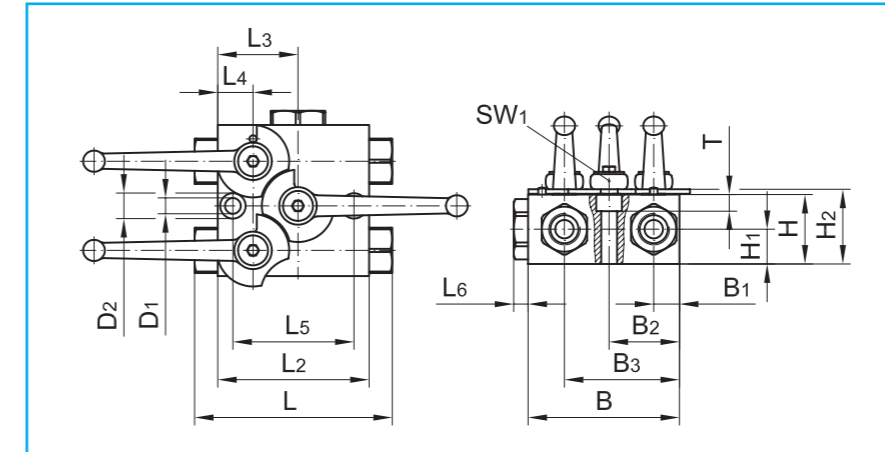
Our solution for the problem:

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

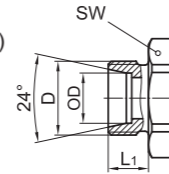


Handle included in delivery
 For handles refer to "Attachments, accessories".
 Please check pressure ratings of pipe fittings!
 Also available with most other connections
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

| | |
|-------------|---------------------------|
| Body: | steel, black oxide |
| Ball: | steel, hard chrome plated |
| Stem: | steel, zinc plated |
| Ball seals: | POM |
| Stem seals: | NBR |

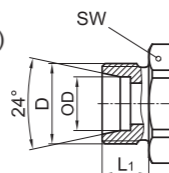
Type of connection

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



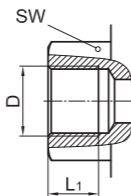
| DN | Thread D | OD | L | L1 | L2 | L3 | L4 | L5 | L6 | B | B1 | B2 | B3 | H | H1 | H2 | D1 | D2 | T | SW | SW1 | Handle Code | Weight | PN | Article-No. |
|----|-----------|----|-----|----|-----|------|------|-----|------|-----|------|------|-------|----|------|------|------|----|----|----|-----|-------------|--------|-----|-------------|
| 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 | 13 | 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 | 14 | 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 | 15 | 5,5 | 400 | 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 | 15 | 8,3 | 400 | 250 005 |

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



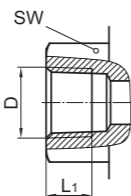
| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|-----------|----|-----|----|-----|------|------|-----|------|-----|------|------|-------|----|------|------|------|----|----|----|----|----|-----|-----|---------|
| 10 | M22 x 1,5 | 14 | 126 | 14 | 90 | 51,0 | 22,8 | 60 | 6,5 | 90 | 20,7 | 45,7 | 70,7 | 40 | 19,5 | 43,5 | 8,4 | 15 | 9 | 24 | 8 | 13 | 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 | 10 | 14 | 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 | 14 | 15 | 5,5 | 400 | 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 | 14 | 15 | 8,3 | 400 | 250 010 |

BSP-female thread
 DIN EN ISO 228-1

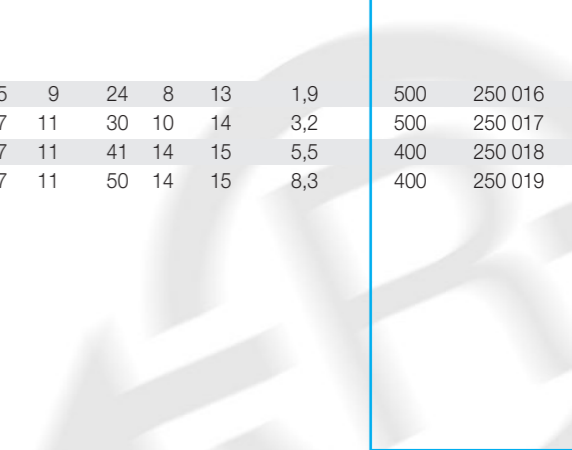


| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|-------|---|-----|----|-----|------|------|-----|------|-----|------|------|-------|----|------|------|------|----|----|----|----|----|-----|-----|---------|
| 10 | G 3/8 | - | 118 | 14 | 90 | 51,0 | 22,8 | 60 | 6,5 | 90 | 20,7 | 45,7 | 70,7 | 40 | 19,5 | 43,5 | 8,4 | 15 | 9 | 24 | 8 | 13 | 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 | 10 | 14 | 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 | 14 | 15 | 5,5 | 400 | 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 | 14 | 15 | 8,3 | 400 | 250 015 |

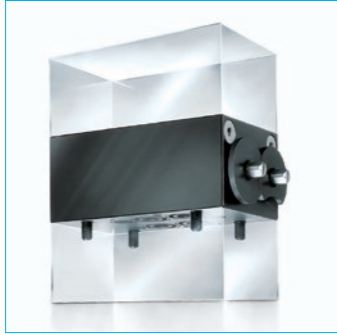
NPT-female thread
 ANSI/ASME
 B1.20.1-1983



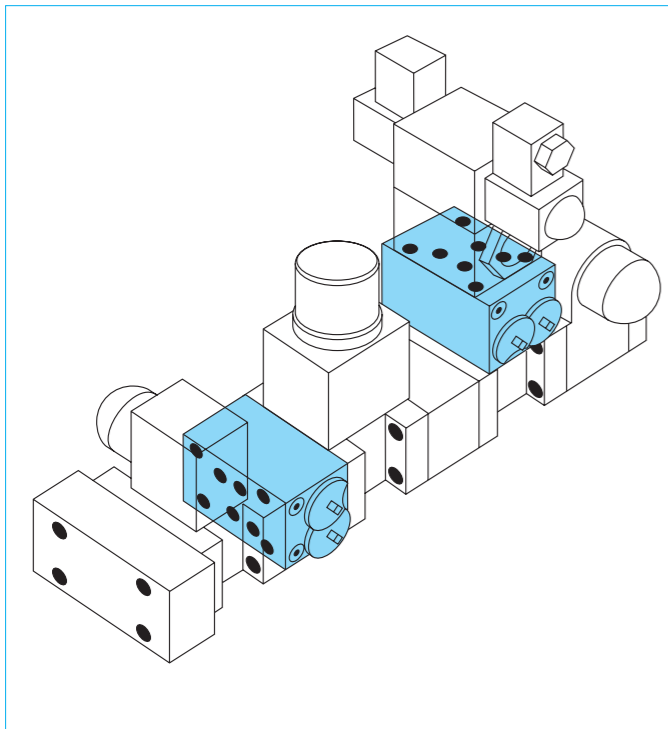
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|----------|-----|---|-----|------|-----|------|------|-----|------|-----|------|------|-------|----|------|------|------|----|----|----|----|----|-----|-----|---------|
| 10 | 3/8-18 | NPT | - | 118 | 10,3 | 90 | 51,0 | 22,8 | 60 | 6,5 | 90 | 20,7 | 45,7 | 70,7 | 40 | 19,5 | 43,5 | 8,4 | 15 | 9 | 24 | 8 | 13 | 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 | 10 | 14 | 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 | 14 | 15 | 5,5 | 400 | 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 | 14 | 15 | 8,3 | 400 | 250 019 |



Sandwich plates · technical information



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:

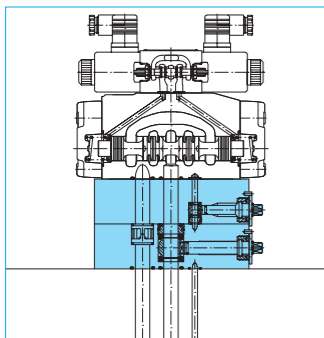
- full bore design causes no pressure drop
- significant reduction in hydraulic system downtime
- no need to drain fluid, bleed air or refill the system
- simplified start-up and maintenance due to the ease of changing flushing plates and directional valves
- pressure can be maintained in cylinders so 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:

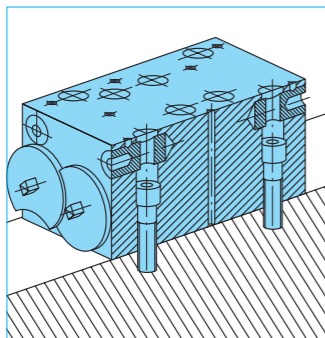
For liquid media as per the compatibility table in the technical data appendix

On request:

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

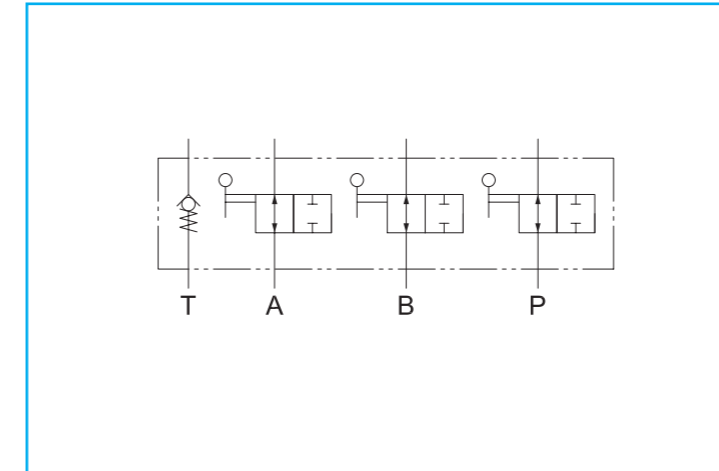


Operation setting:
Sandwich plate with the solenoid valve mounted on top



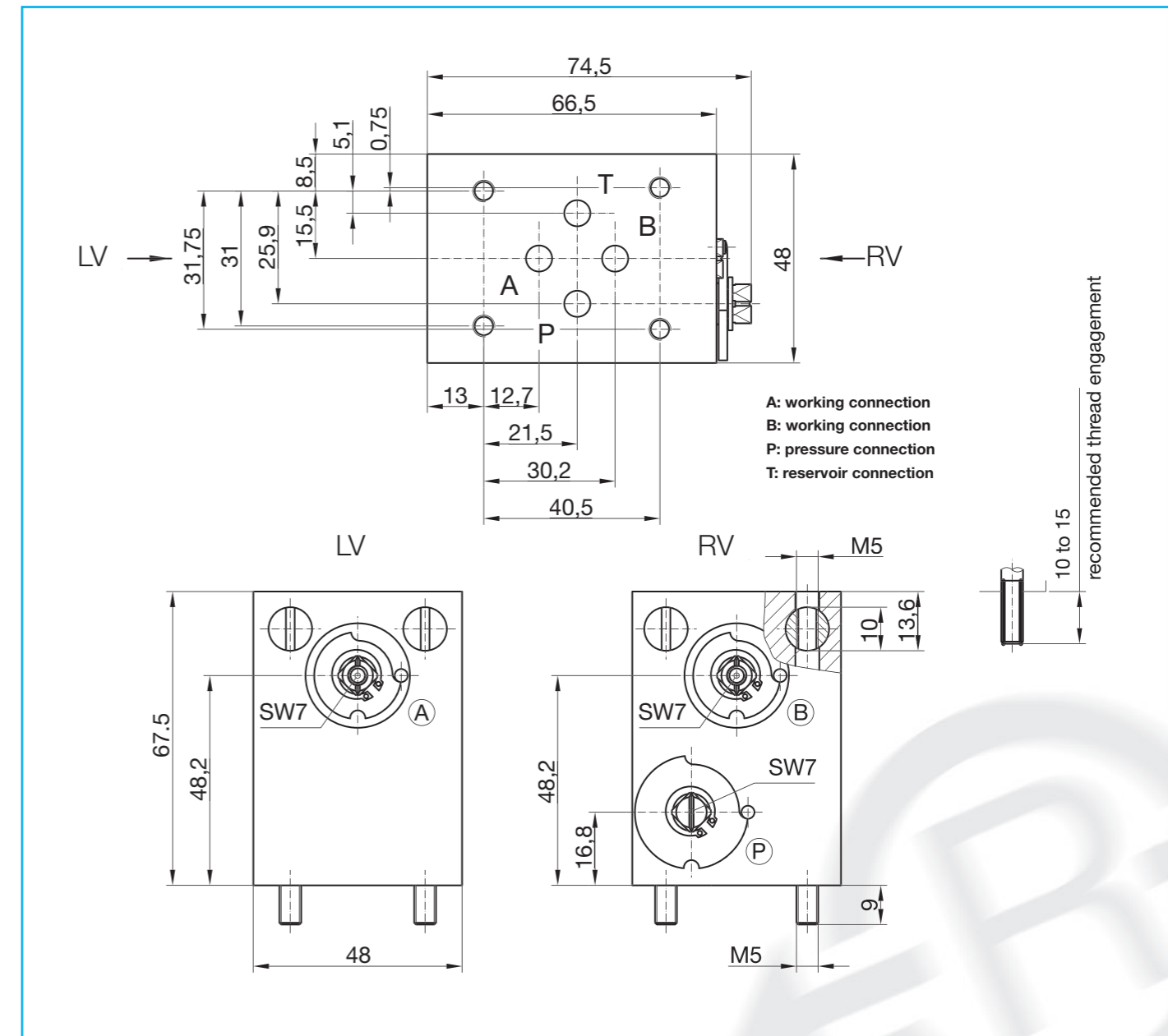
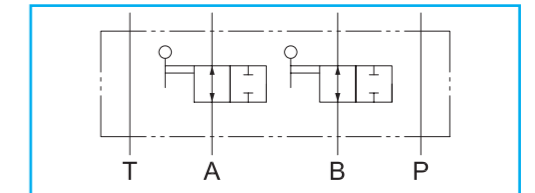
Repair setting:
Passages inside the sandwich plate shut-off; plate remains bolted to the hydraulic control block. Solenoid valve removed.

Sandwich plates · NG 6 · PN 315



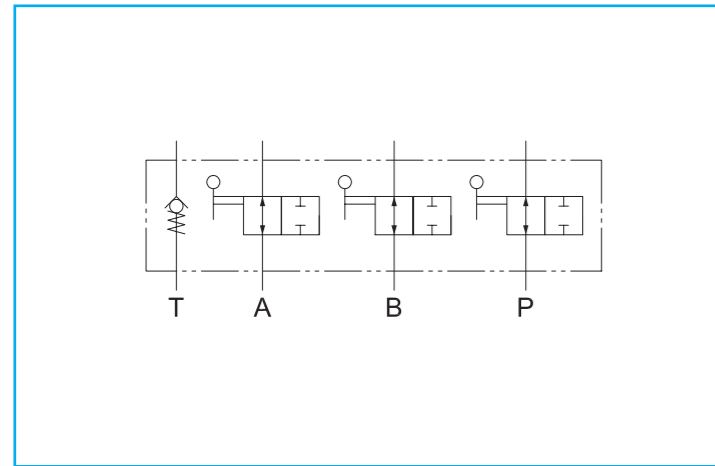
Article-No. 208 030

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, locking device retrofittable



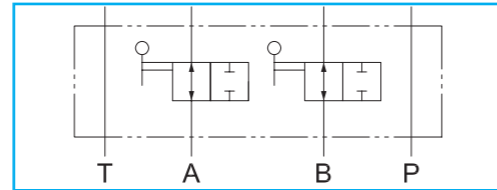
Ball valve-function systems

Sandwich plates · NG 10 · PN 315

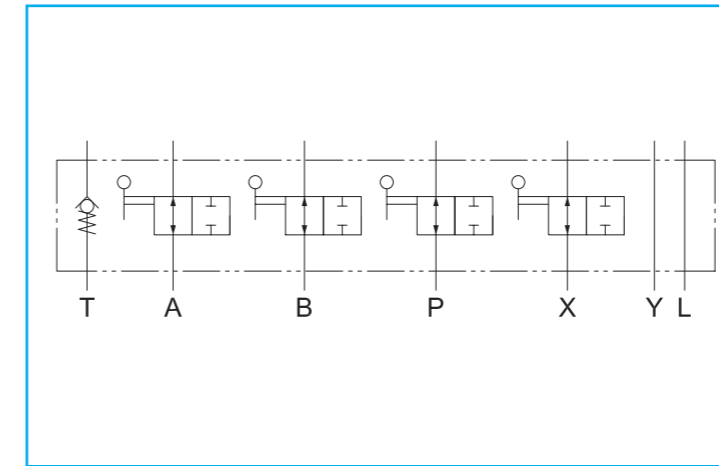


Article-No. 208 032

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, locking device retrofittable

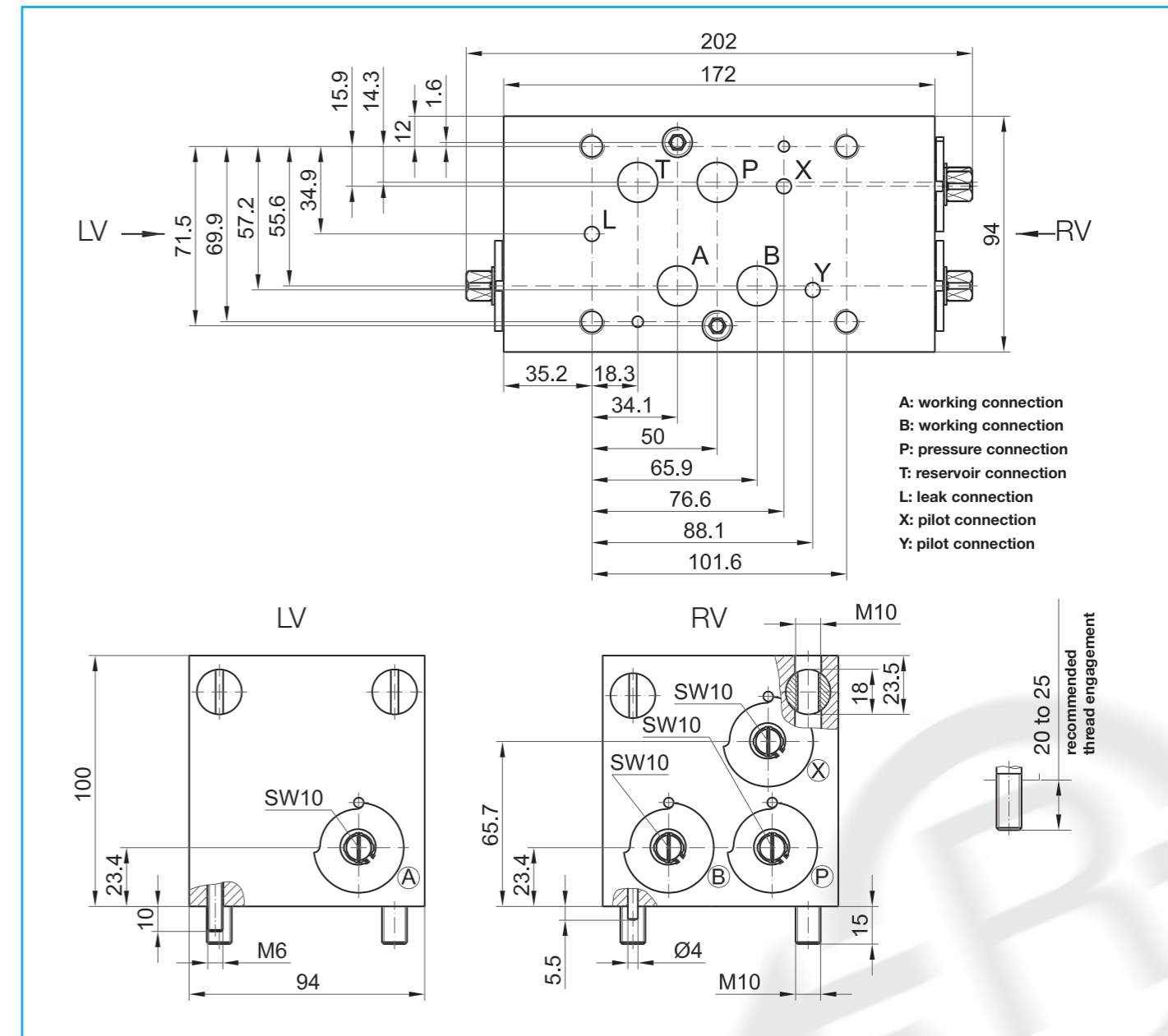
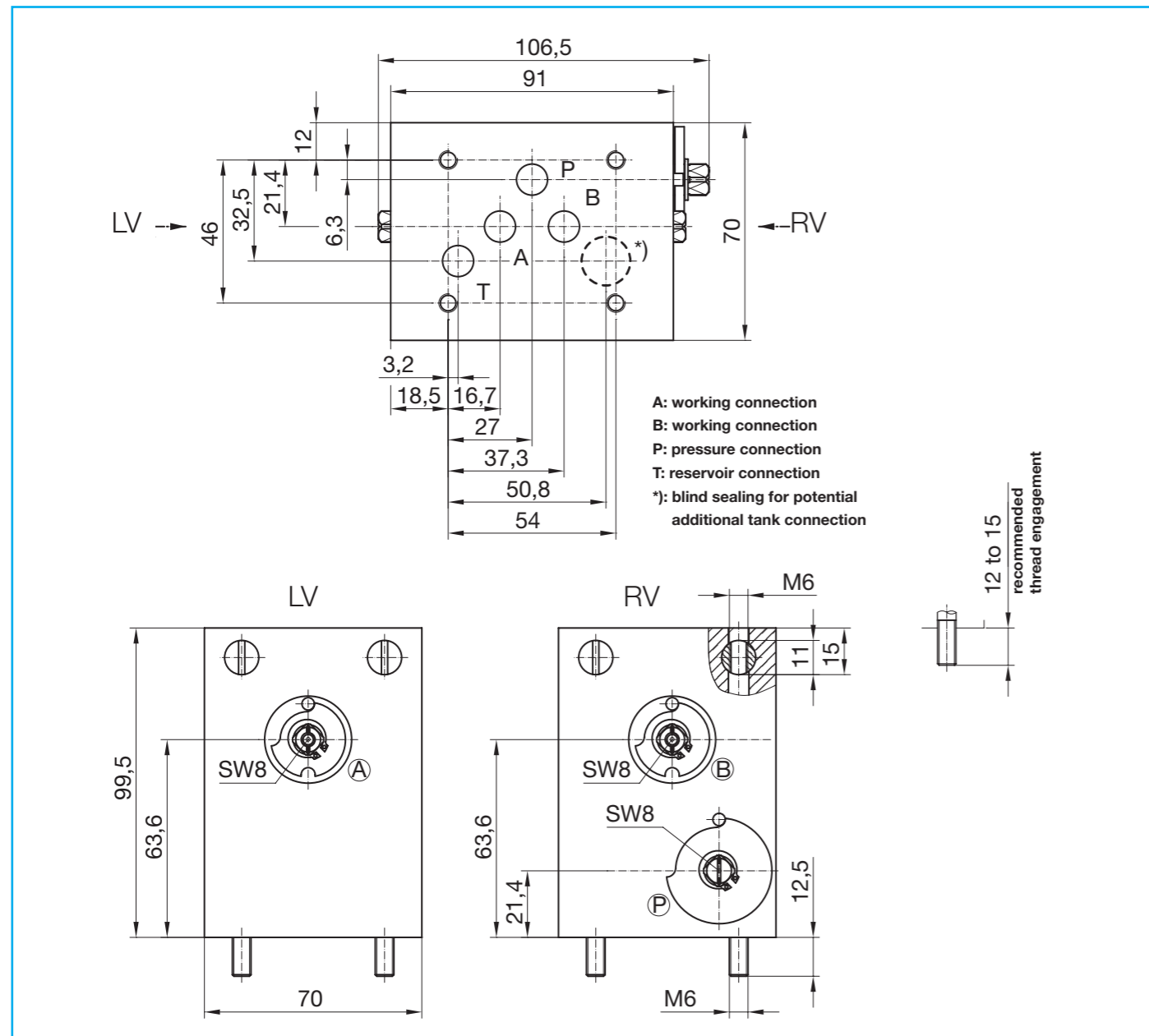
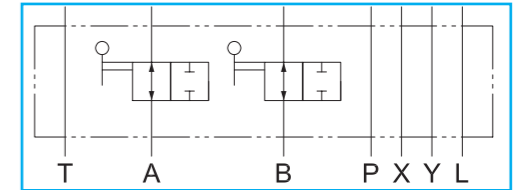


Sandwich plates · NG 16 · PN 315



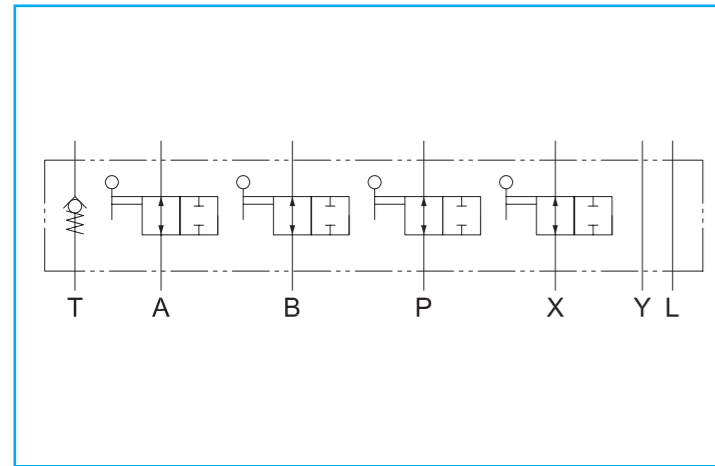
Article-No. 208 034

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, locking device retrofittable



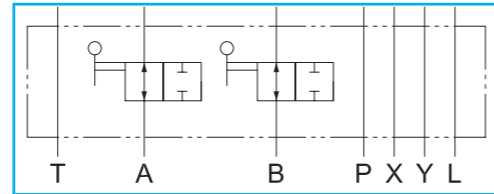
Ball valve-function systems

Sandwich plates · NG 25 · PN 315

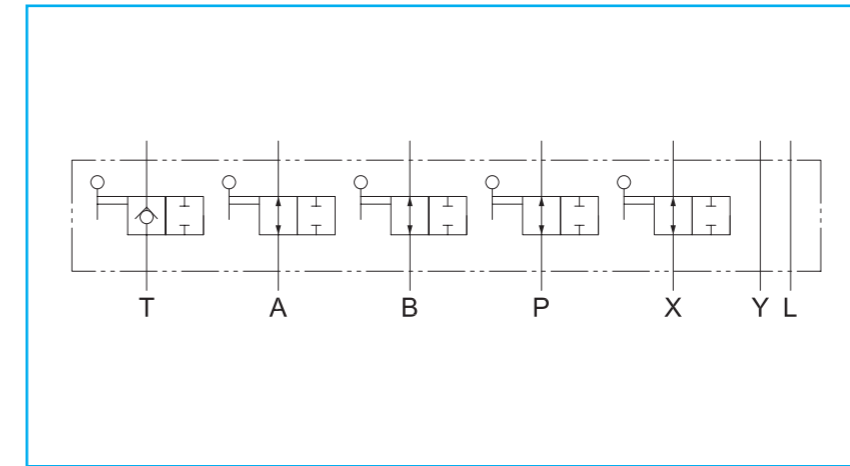


Article-No. 208 036

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, locking device retrofittable

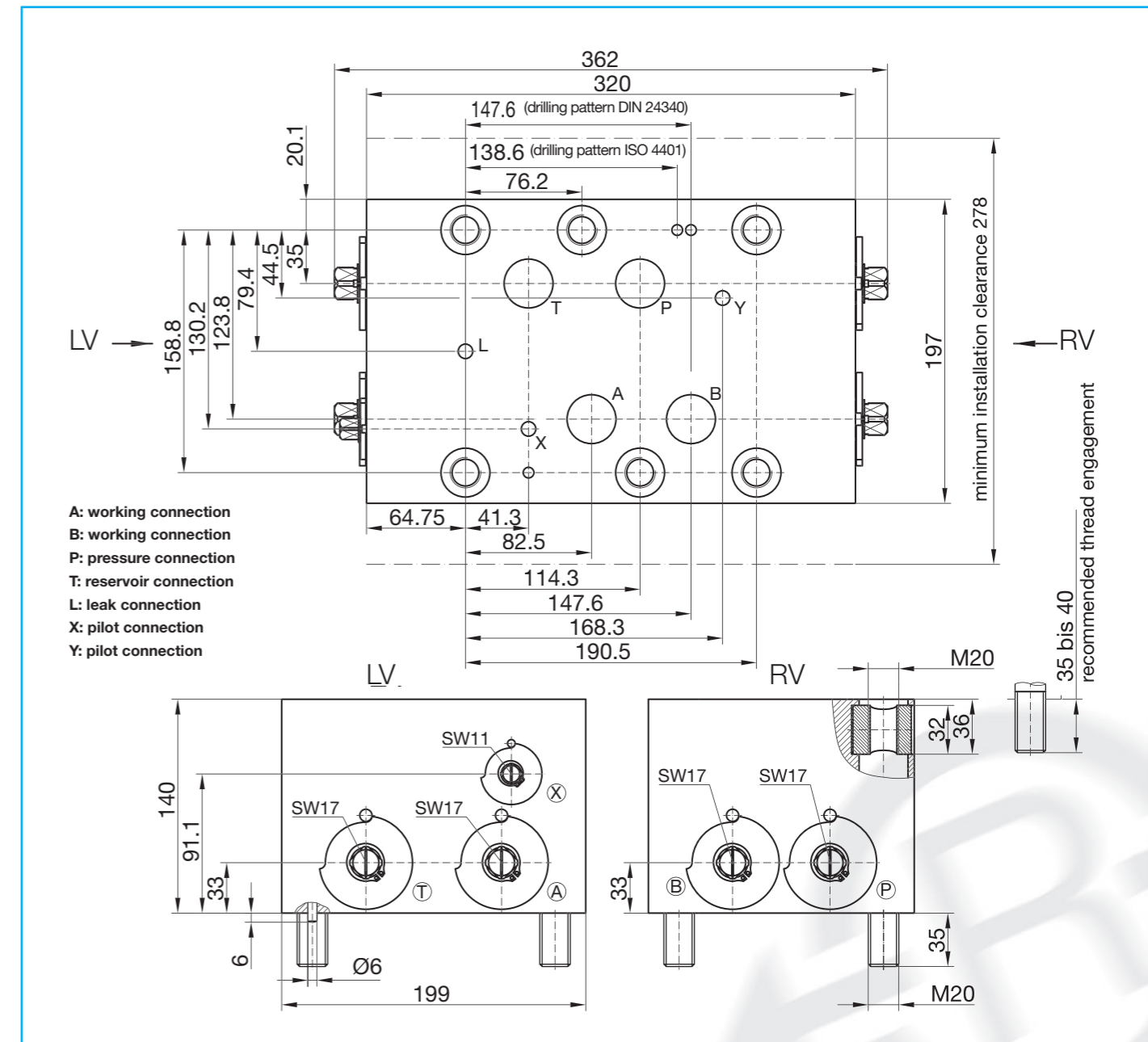
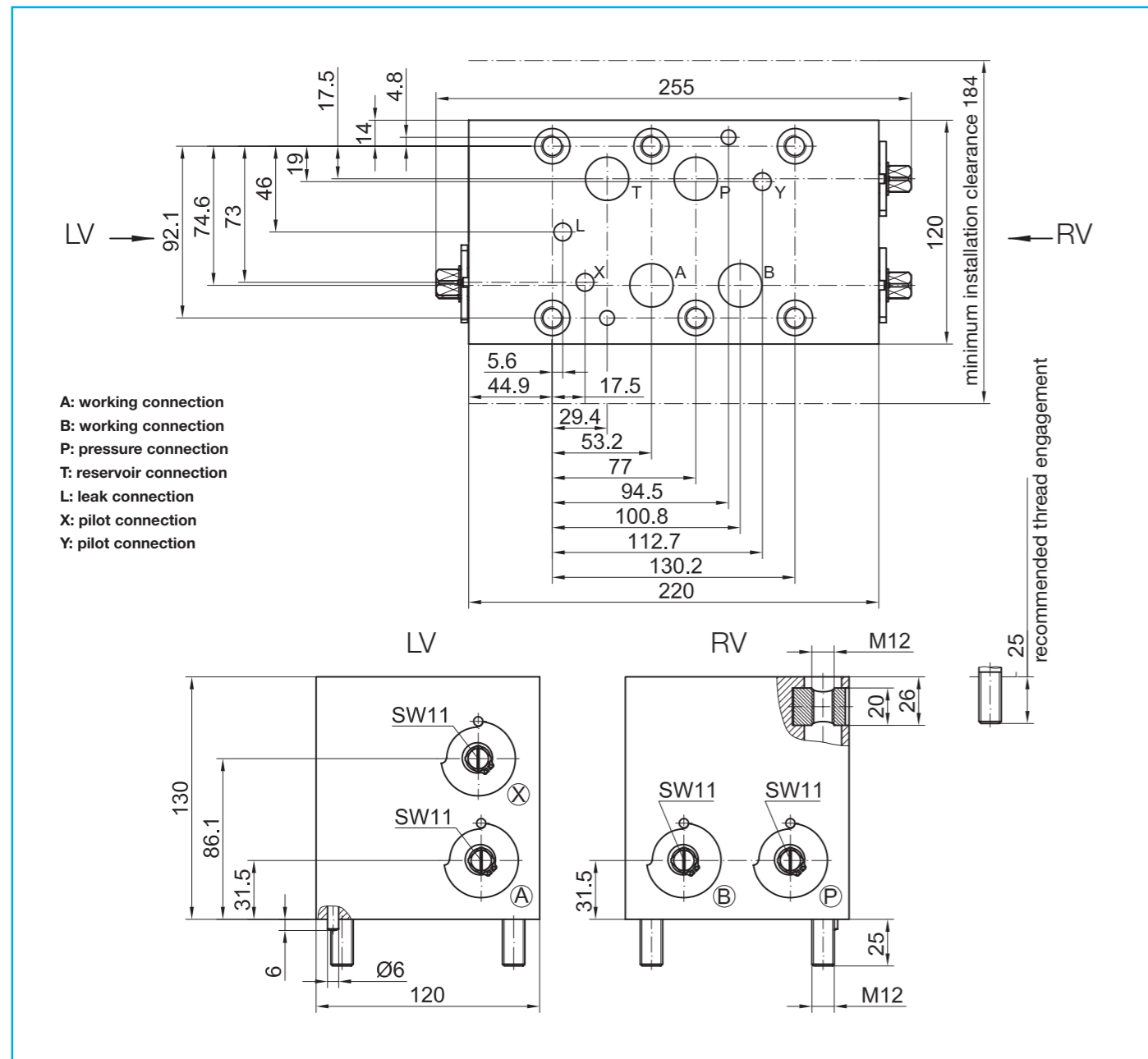
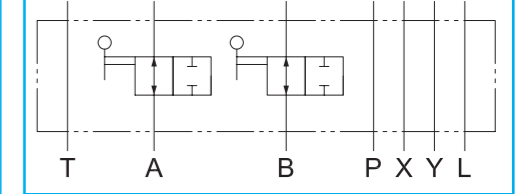


Sandwich plates · NG 32 · PN 315



Article-No. 208 038

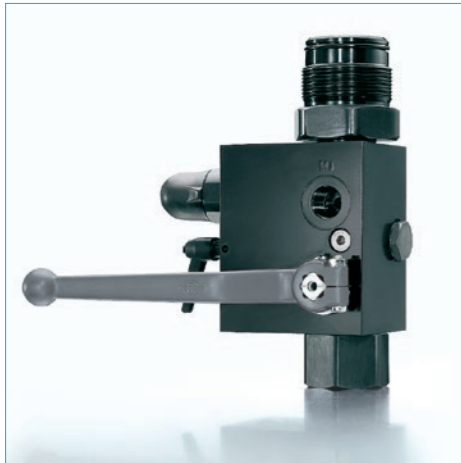
Weight: approx. 60 kg
 Drilling pattern to DIN 24340-A32 and ISO 4401-10-08-0-94
 Custom orders on request
 All dimensions subject to change without notice
 also available with blocking in A and B only
 Dimension sheet on request, locking device retrofittable



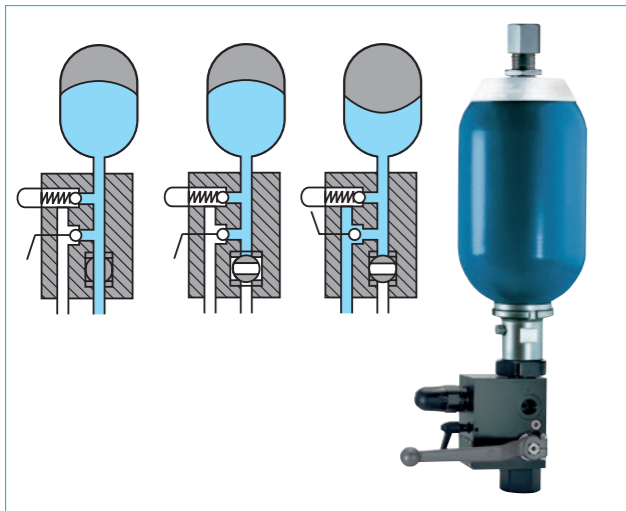
Ball valve-function systems

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

Technical information



Locking device available



- Easy order guide:** **RSA 10 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:

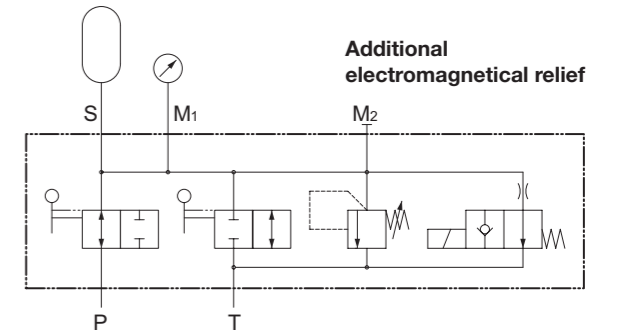
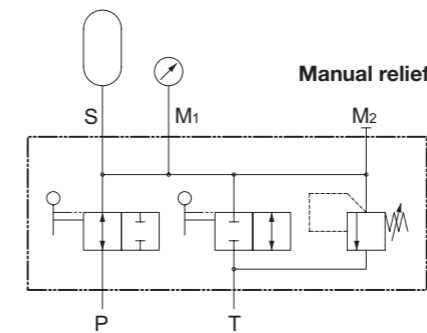
The modular design concept makes the safety block particularly economical and flexible to meet customer requirements. The body is assembled at the factory with adapter fittings in accordance with your order.

Applications/functions:

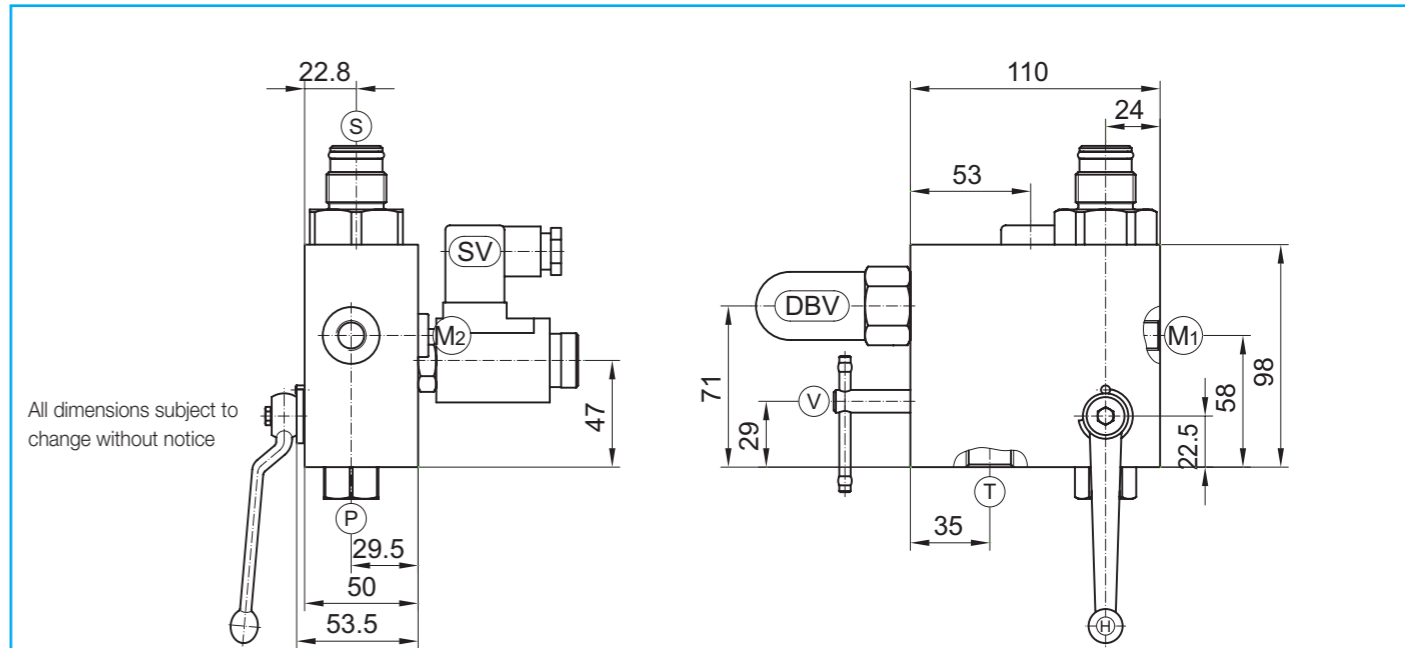
For liquid media as per the compatibility table in the technical data appendix

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

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



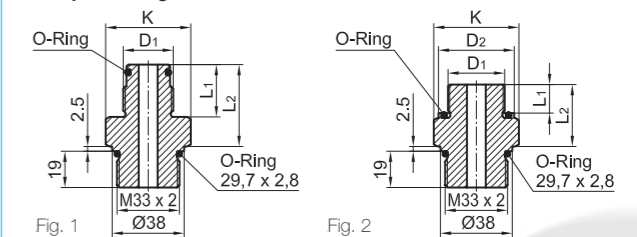
NG 10



All dimensions subject to change without notice

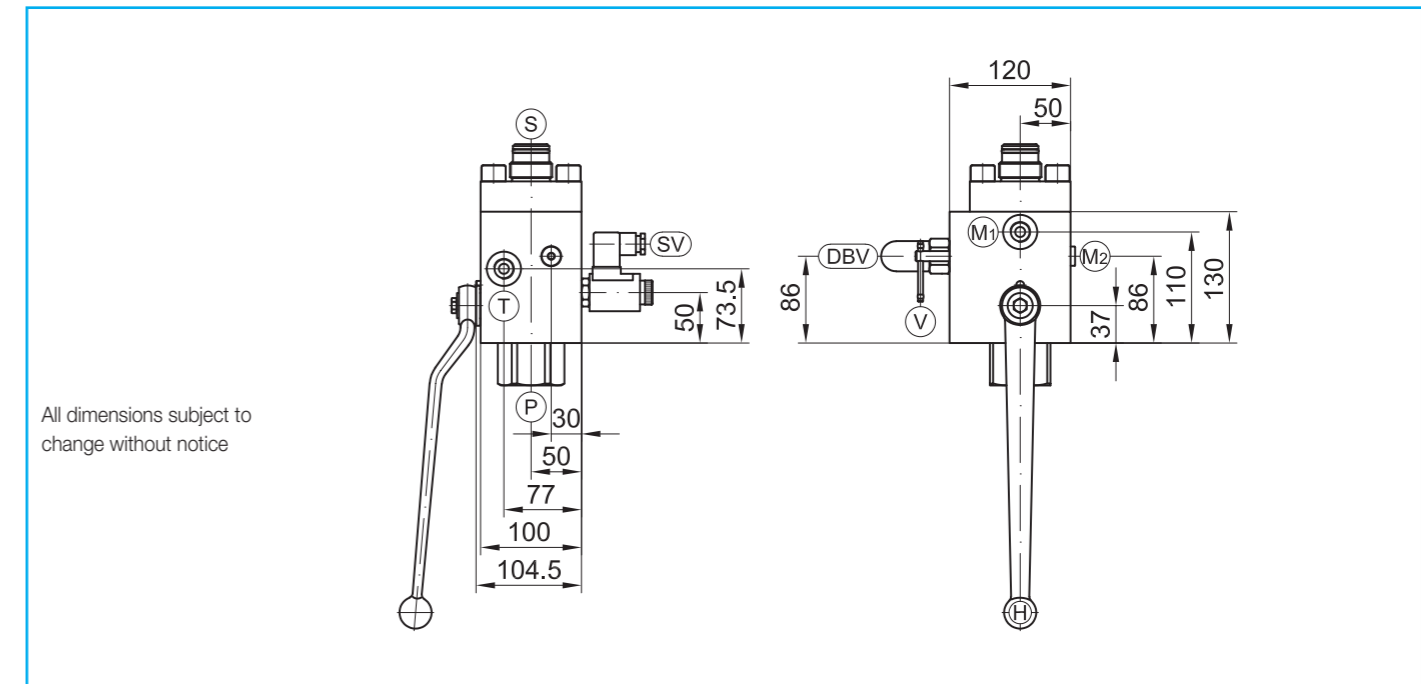
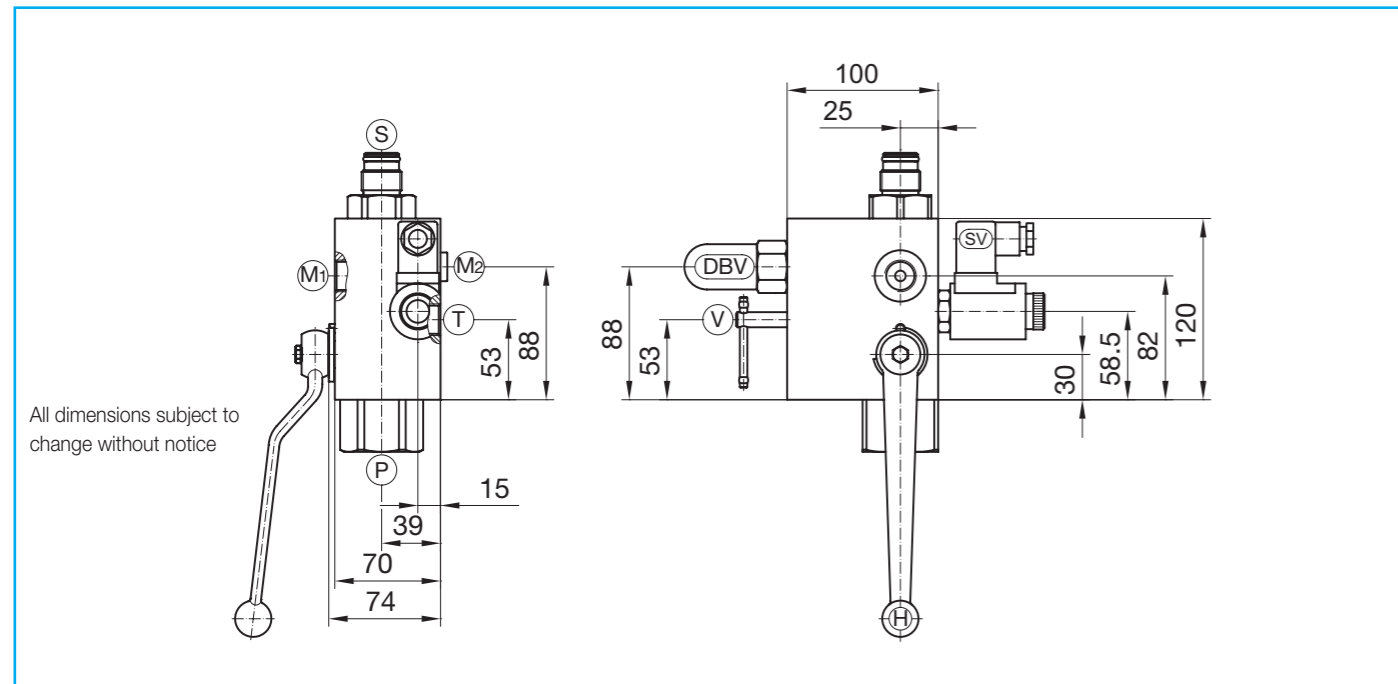
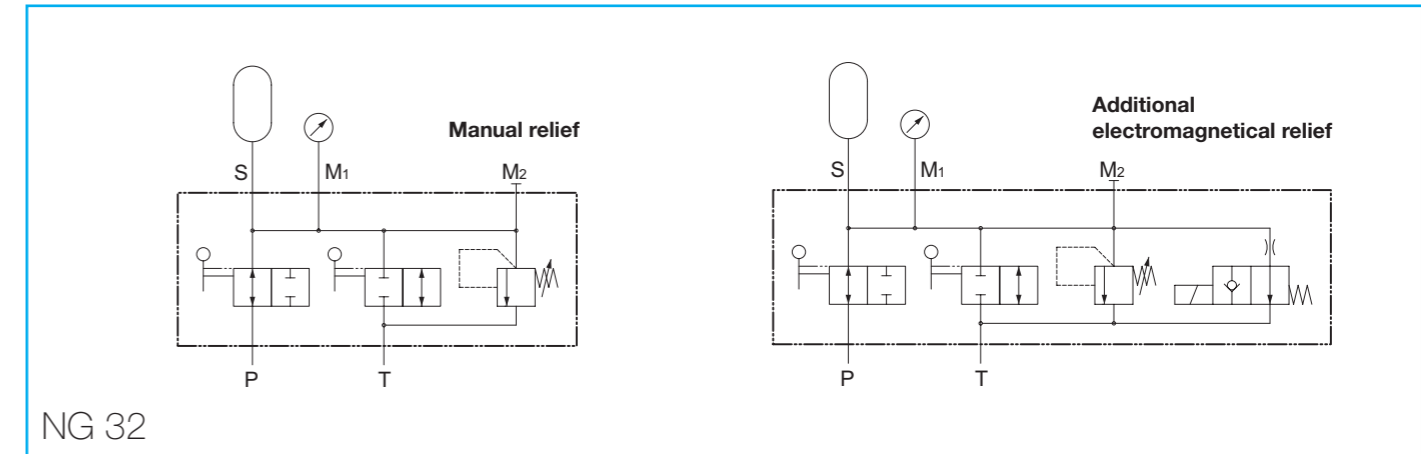
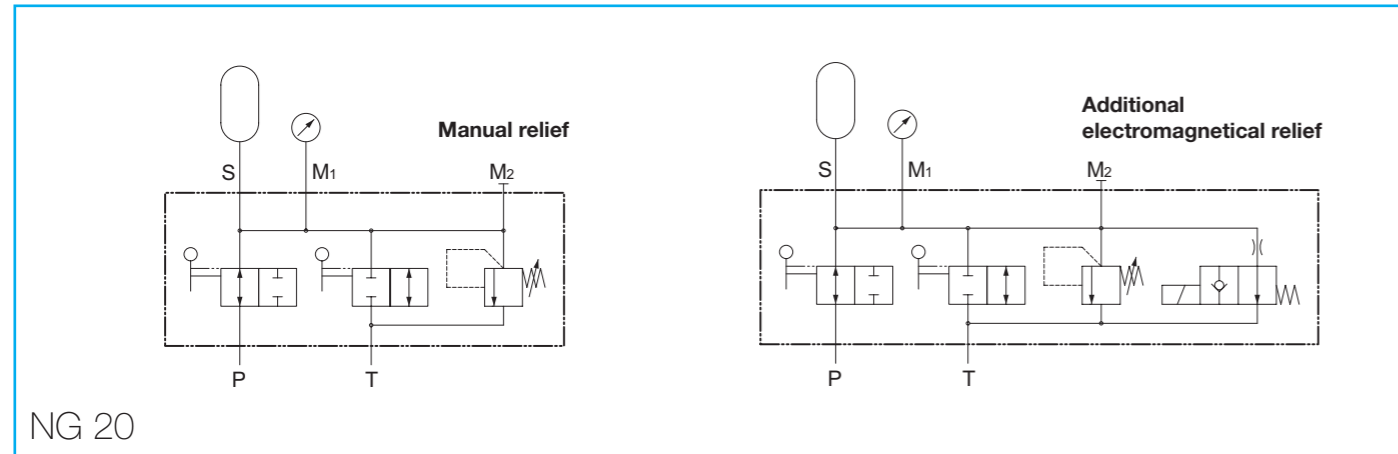
- P = Pump connection**
 M-version 400 bar
 E-version 350 bar
- T = Tank connection**
- S = Accumulator connection**
- M1 = Test gauge connection**
 G1/4 (DIN EN ISO 228-1)
- M2 = Pressure gauge connection (closed)**
 G1/4 (DIN EN ISO 228-1)
- DBV = Pressure relief valve**
 cavity-thread M28x1.5
 assembly 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 13 (8kt8)**
 refer to chapter "Attachments, accessories"

Adapter fittings for accumulator connection S



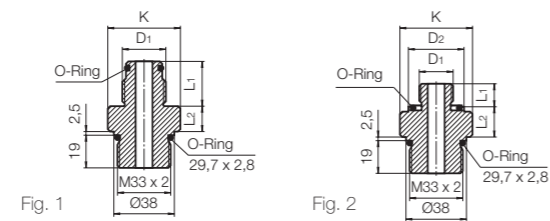
| Fig. | D1 Connection-thread | Adapter-fitting | K (SW) | L1 | L2 | D2 | O-Ring |
|------|----------------------|-----------------|--------|----|------|----|--------|
| 1 | G 3/4 A | S010 | 41 | 28 | 43,5 | - | 17 x 3 |
| | G 1 A | S011 | 46 | 34 | 50,5 | - | 22 x 3 |
| | G 1 1/4 A | S012 | 46 | 37 | 53,5 | - | 30 x 3 |
| | 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 connections



- P = Pump connection**
M-version 400 bar
E-version 350 bar
- T = Tank connection**
- S = Accumulator connection**
G¹/₂ (DIN EN ISO 228-1)
- M₂ = Pressure gauge connection (closed)**
G¹/₄ (DIN EN ISO 228-1)
- DBV = Pressure relief valve**
cavity-thread M35x1.5
assembly torque 80⁺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 15 (8kt14)**
refer to chapter "Attachments, accessories"

Adapter fittings for accumulator connection S

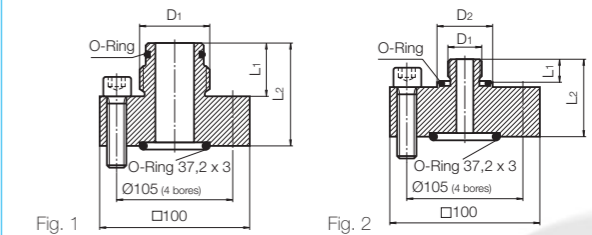


| Abb. | D ₁ Connection-thread | Adapter-fitting | K (SW) | L ₁ | L ₂ | D ₂ | O-Ring |
|------|----------------------------------|-----------------|--------|----------------|----------------|----------------|--------|
| 1 | G 3/4 A | S010 | 41 | 28 | 43,5 | - | 17 x 3 |
| | G 1 A | S011 | 46 | 34 | 50,5 | - | 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 connections

- P = Pump connection**
M-version 400 bar
E-version 350 bar
- T = Tank connection**
- S = Accumulator connection**
G¹/₂ (DIN EN ISO 228-1)
- M₁ = Test gauge connection**
G¹/₂ (DIN EN ISO 228-1)
- M₂ = Pressure gauge connection (closed)**
G¹/₄ (DIN EN ISO 228-1)
- DBV = Pressure relief valve**
cavity-thread M35x1.5
assembly torque 80⁺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 21 (8kt17)**
refer to chapter "Attachments, accessories"

Adapter fittings for accumulator connection S



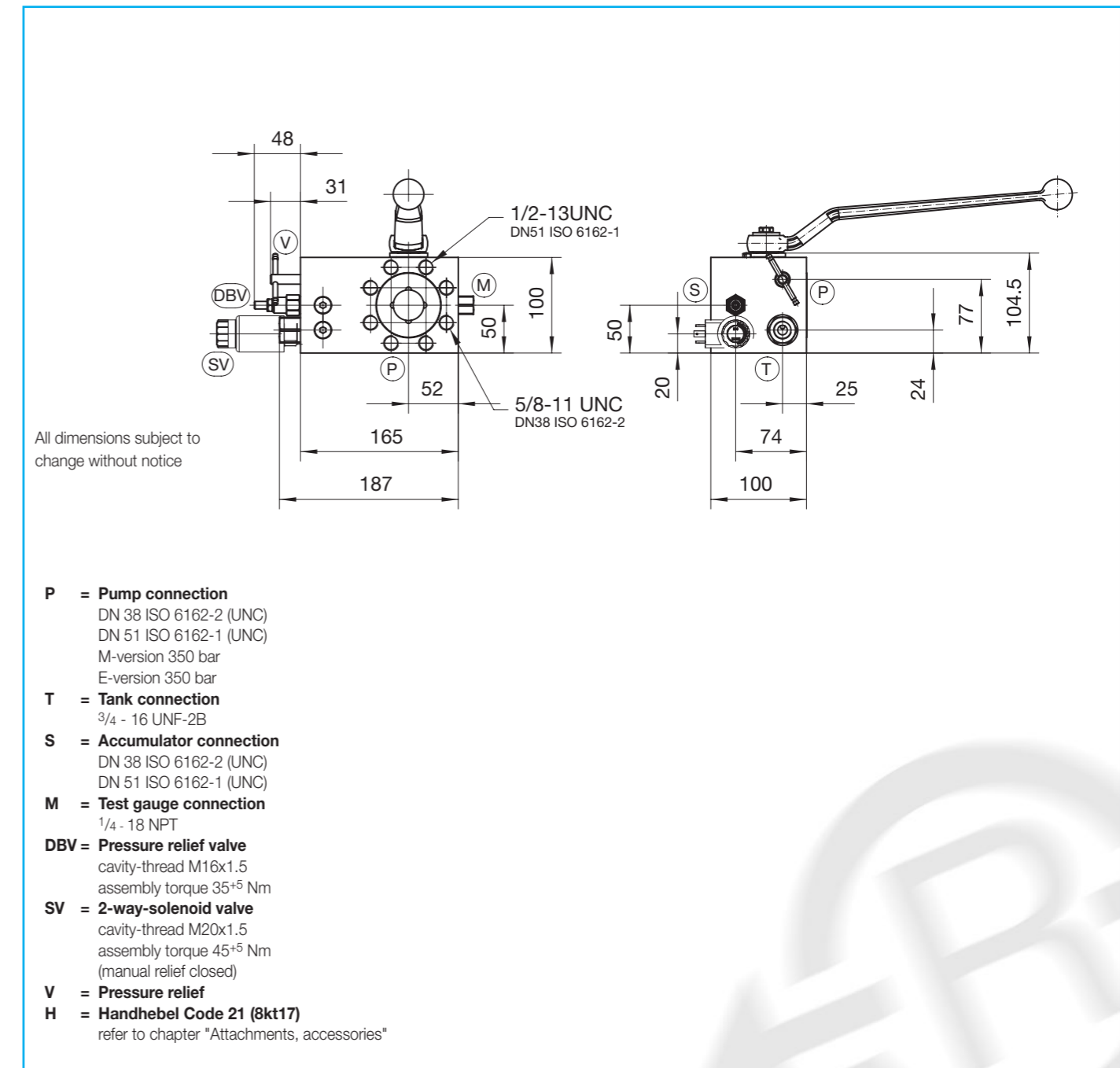
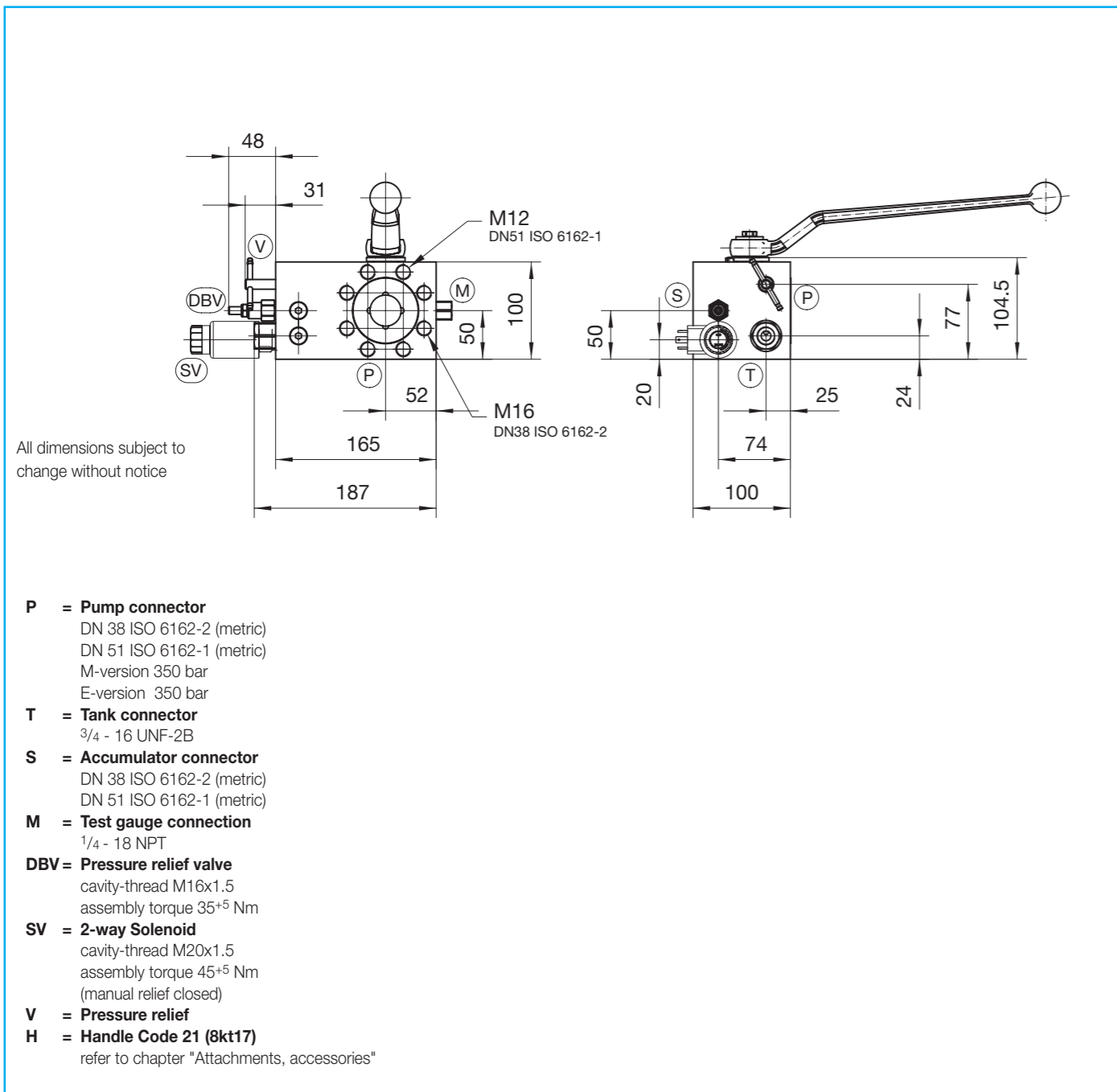
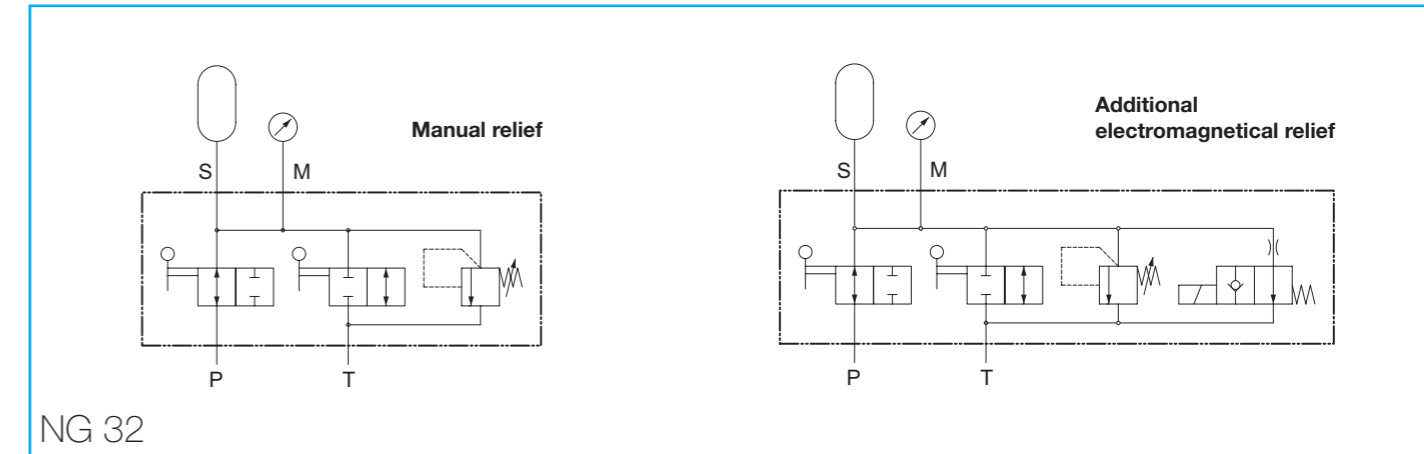
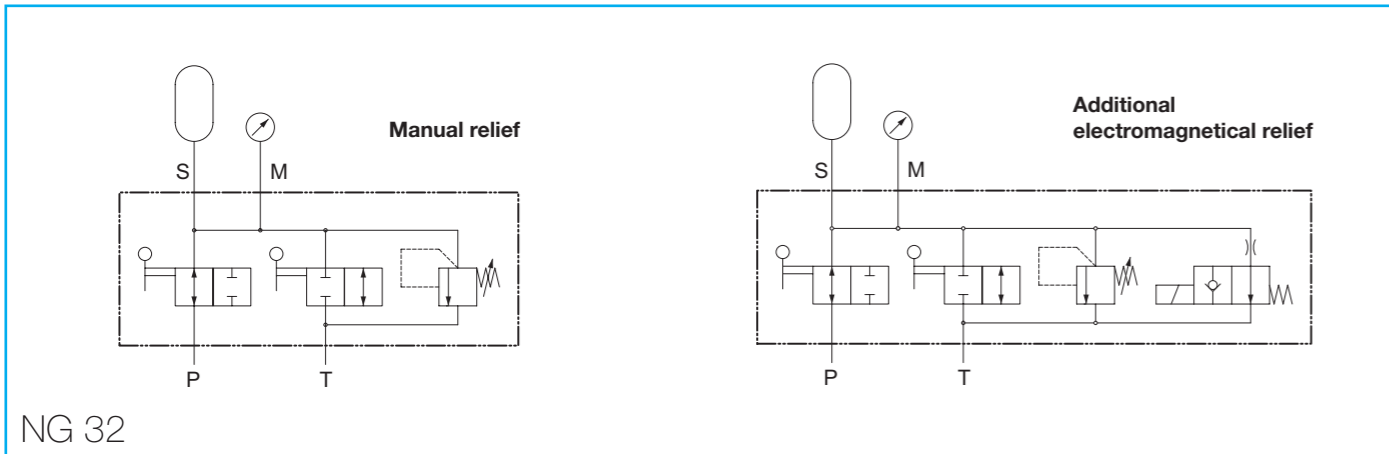
| Fig. | D ₁ Connection-thread | Adapter-fitting | L ₁ | L ₂ | D ₂ | O-Ring |
|------|----------------------------------|-----------------|----------------|----------------|----------------|--------|
| 1 | G 3/4 A | S305 | 28 | 58 | - | 17 x 3 |
| | G 1 A | S306 | 34 | 64 | - | 22 x 3 |
| | G 1 1/4 A | 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 connections

Ball valve-function systems

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

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



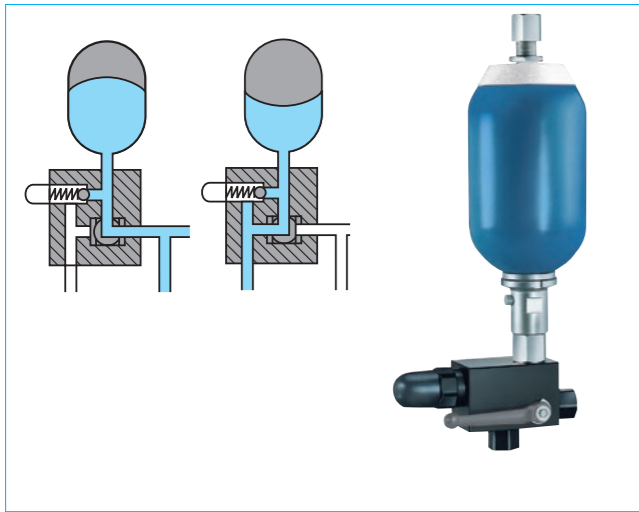
Ball valve-function systems

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

Technical information



Locking device available



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 electromagnetic 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 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:

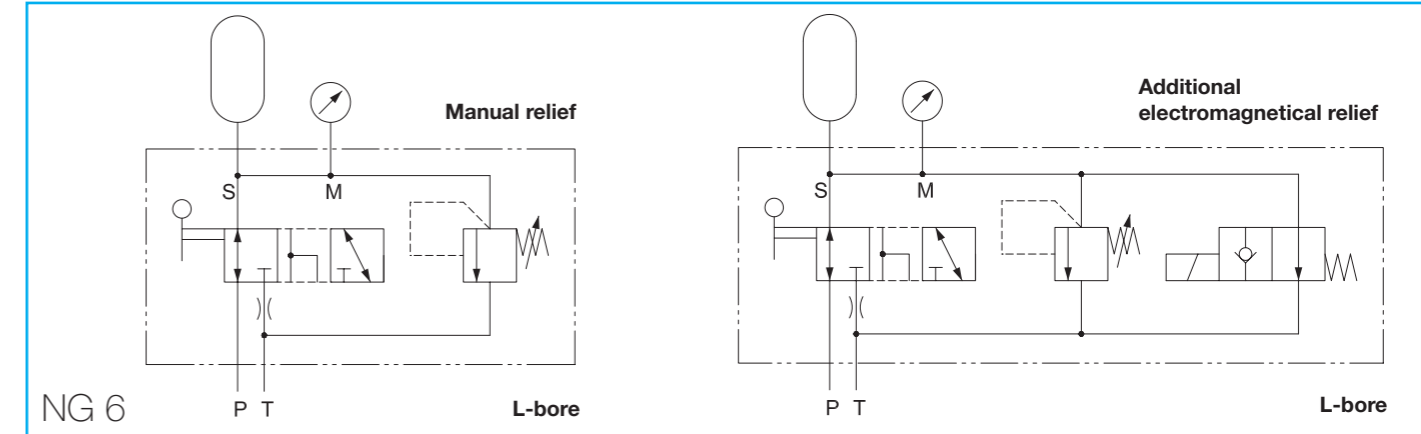
The modular design concept makes the connection block particularly economical and flexible to meet customer requirements. The body is assembled at the factory with adapter fittings in accordance with your order.

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 if 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.

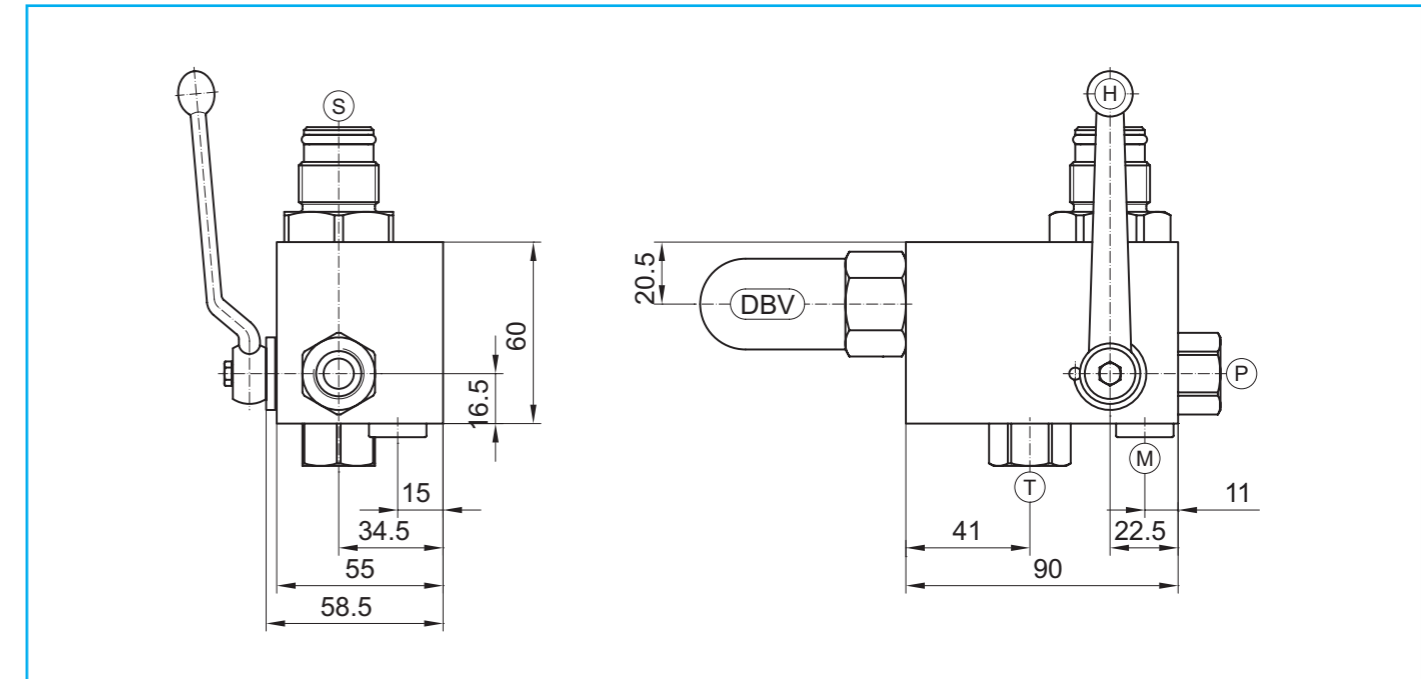
Accumulator safety blocks · with integrated 3-way ball valve type RSK



NG 6

L-bore

L-bore



All dimensions subject to change without notice

- P** = Pump connection
M-version 500 bar
E-version 350 bar
- T** = Tank connection
- S** = Accumulator connection
- M** = Pressure gauge connection (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)
- H** = Handle Code 13 (8kt8)
refer to chapter "Attachments, accessories"

Adapter fittings for accumulator connection S

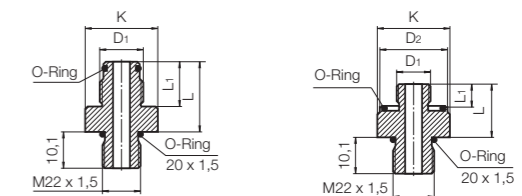


Fig. 1

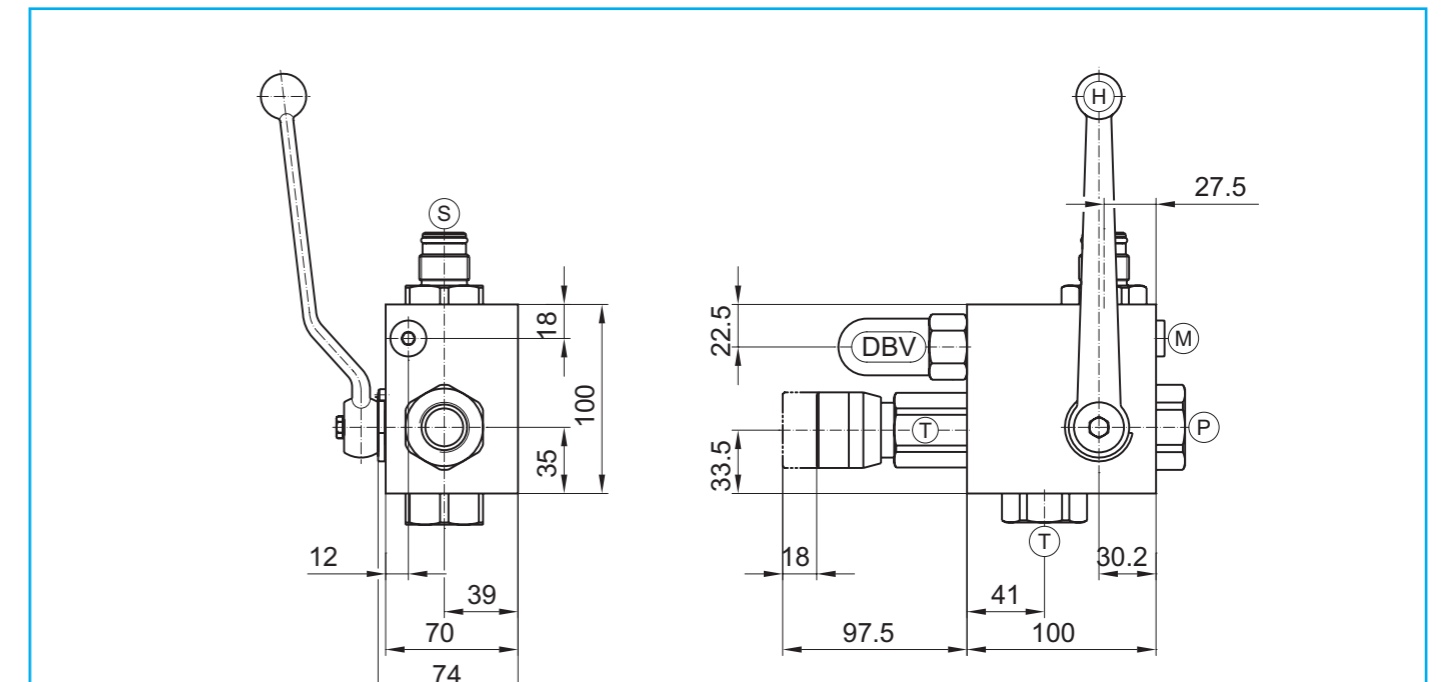
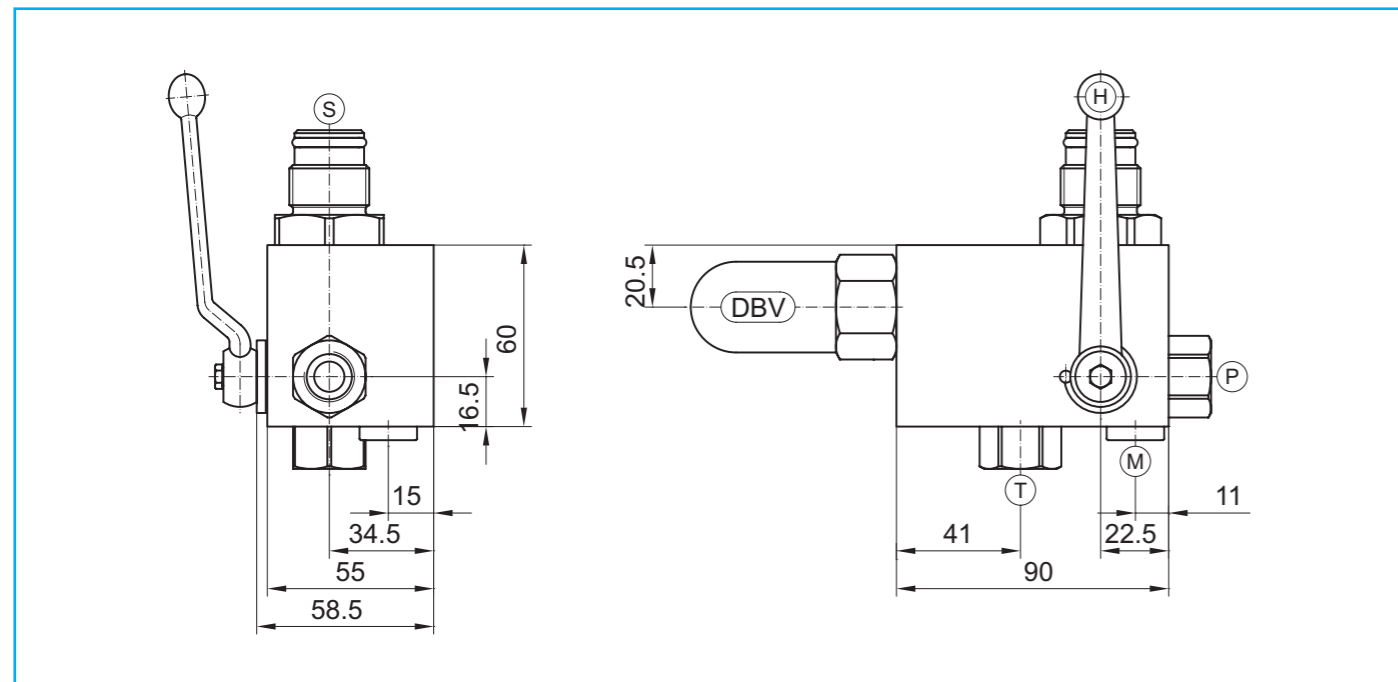
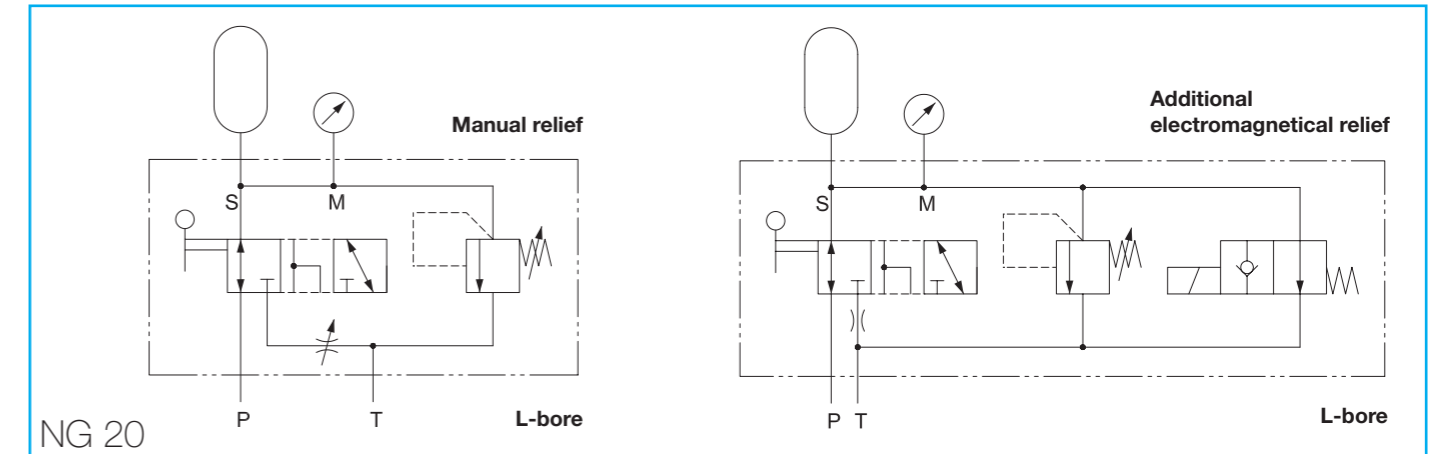
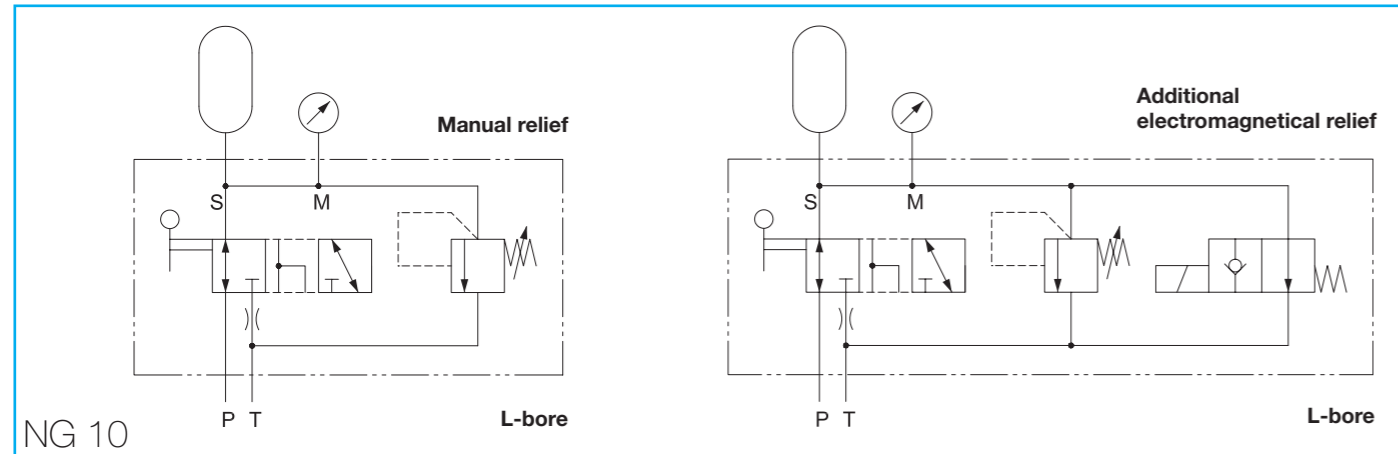
Fig. 2

| Fig. | D ₁ 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 |
| 2 | G 2 A | S 503 | 65 | 54 | 44 | - | 48 x 3 |
| | 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 connections

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

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



All dimensions subject to change without notice

All dimensions subject to change without notice

- P = Pump connection**
M-version 500 bar
E-version 350 bar
- T = Tank connection**
- S = Accumulator connection**
- M = Pressure gauge connection (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 valve**
manifold mounting
drilling pattern ISO 4401-03-02-0-94
(DIN 24340-A6)
- H = Handle Code 13 (8kt8)**
refer to chapter "Attachments, accessories"

Adapter fittings for accumulator connection S

| Fig. | D ₁ 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 connections

- EV = Pressure relief valve**
(selectively manually electromagnetic)
- P = Pump connection**
M-version 315 bar
E-version 315 bar
- T = Tank connection**
- S = Accumulator connection**
- M = Pressure gauge connection (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 valve**
manifold mounting
drilling pattern ISO 4401-03-02-0-94
(DIN 24340-A6)
- H = Handle Code 15 (8kt14)**
refer to chapter "Attachments, accessories"

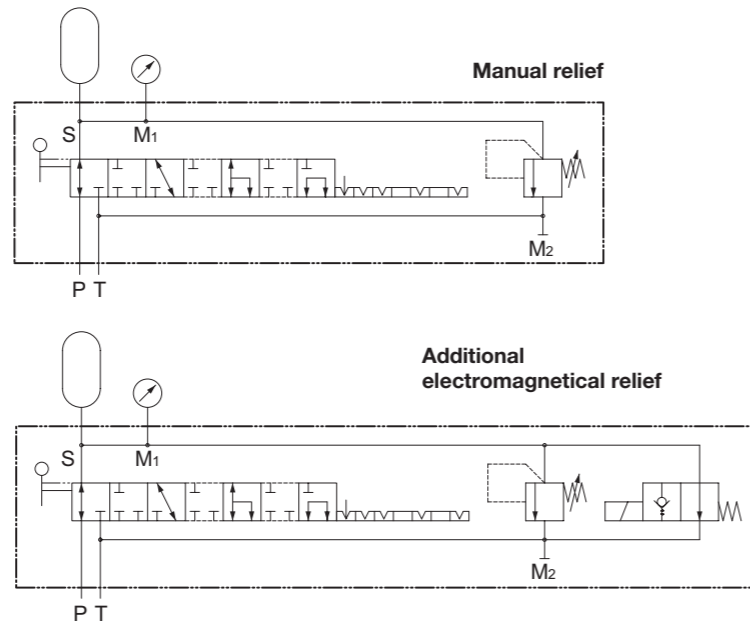
Adapter fittings for accumulator connection S

| Fig. | D ₁ 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 connections

Ball valve-function systems

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.

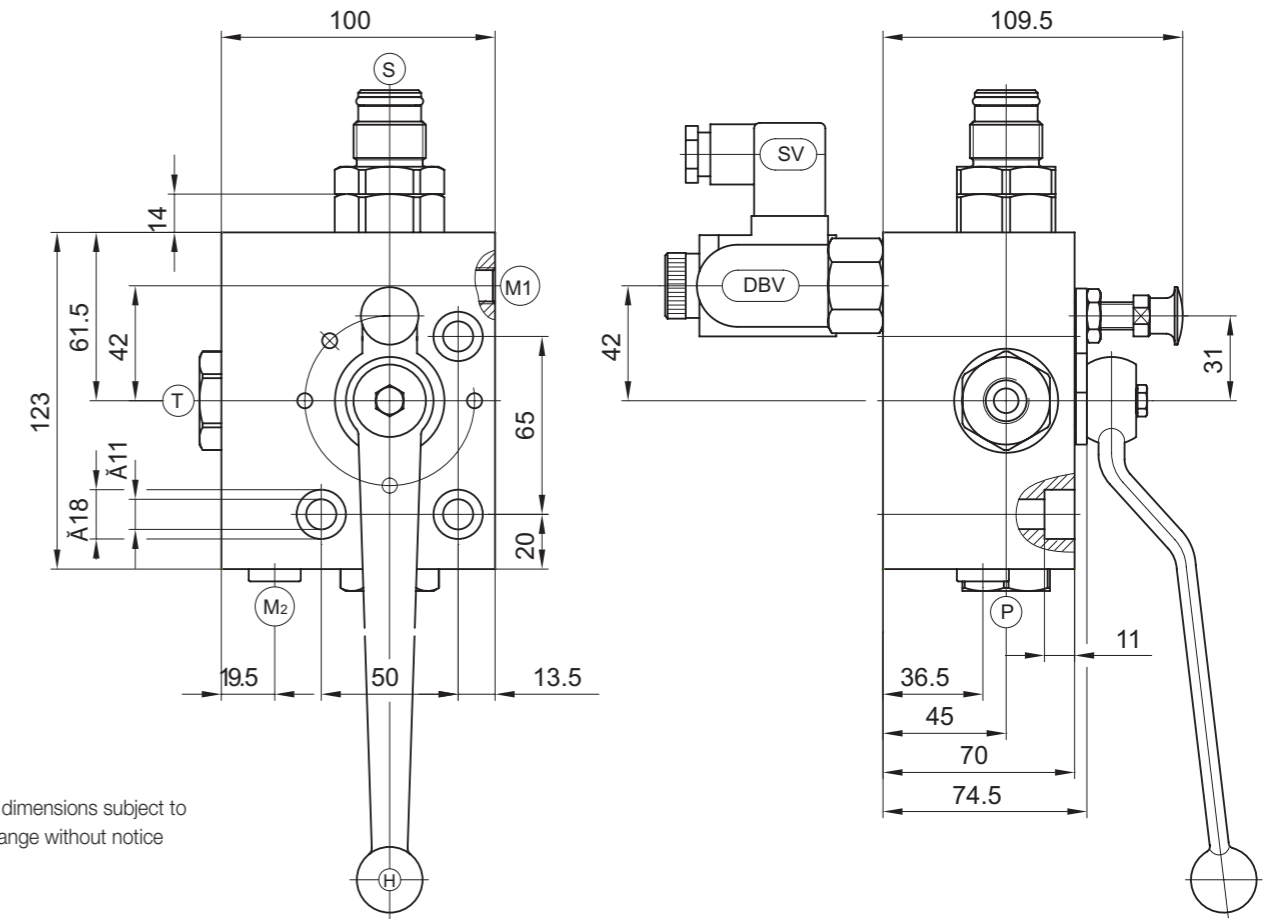
Custom orders on request

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

NG 10



All dimensions subject to change without notice

- P = Pump connection**
 M-version 400 bar
 E-version 350 bar
- T = Tank connection**
- S = Accumulator connection**
- M₁ = Test gauge connection**
 G 1/4 (DIN EN ISO 228-1)
- M₂ = Pressure gauge connection (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
- H = Handle Code 15 (8kt14)**
 refer to chapter "Attachments, accessories"

Adapter fittings for accumulator connection S

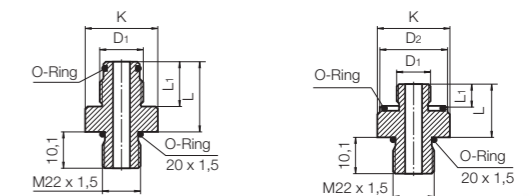


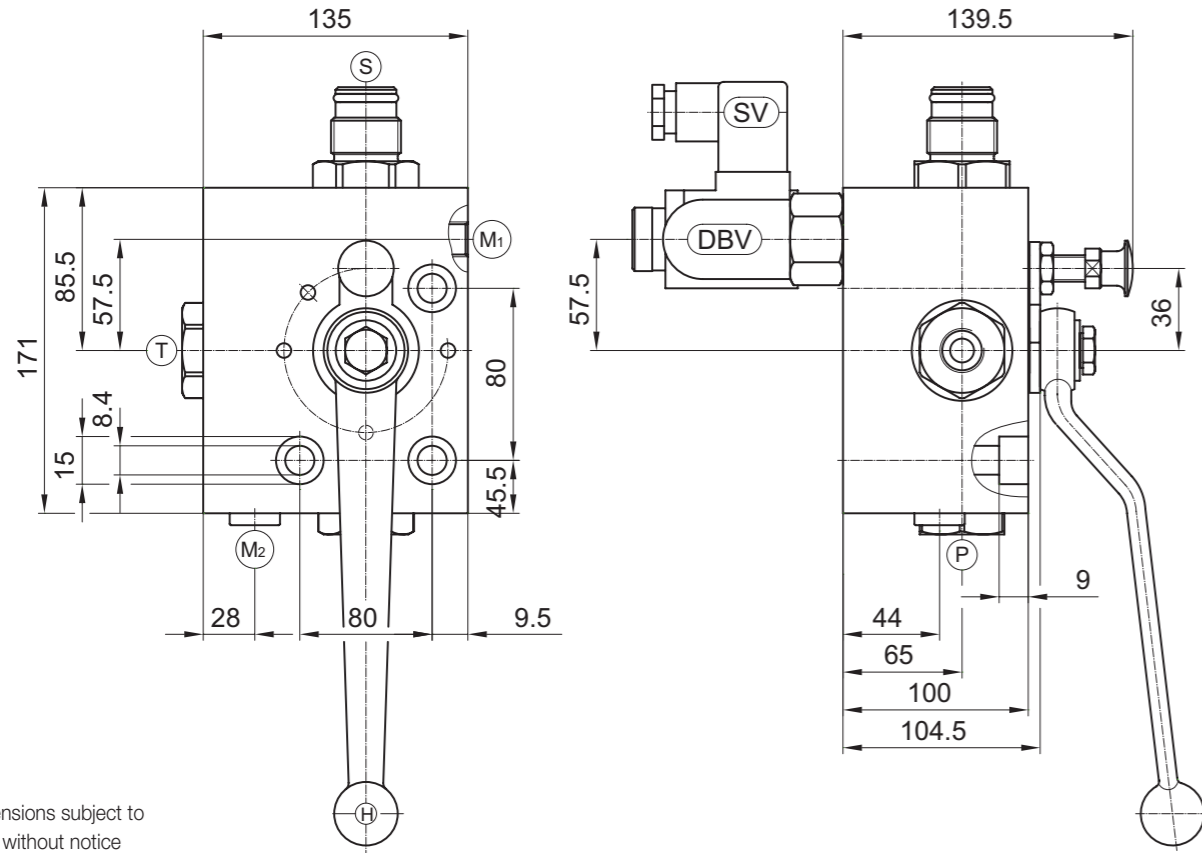
Fig. 1

Fig. 2

| Fig. | D ₁ 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 |
| 2 | G 2 A | S 503 | 65 | 54 | 44 | - | 48 x 3 |
| | 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 |

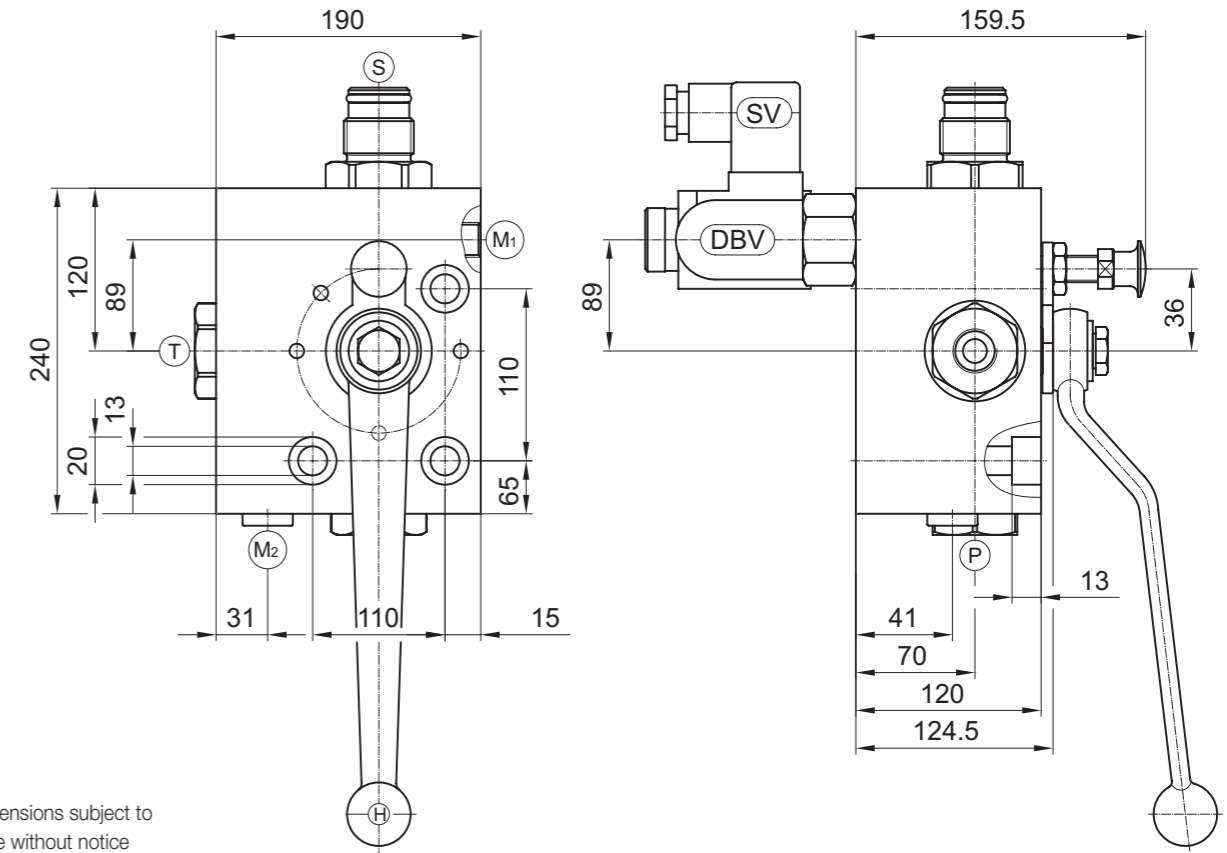
Also available with most other connections

NG 20



All dimensions subject to change without notice

NG 32



All dimensions subject to change without notice

NEW!

- P = Pump connection**
M-version 400 bar
E-version 350 bar
- T = Tank connection**
- S = Accumulator connection**
- M₁ = Test gauge connection**
G 1/4 (DIN EN ISO 228-1)
- M₂ = Pressure gauge connection (closed)**
G 1/4 (DIN EN ISO 228-1)
- DBV = Pressure relief valve**
cavity-thread M35 x 1.5
assembly torque 80⁺⁵ Nm
- SV = 2-way-solenoid valve**
cavity-thread M20 x 1.5
assembly torque 25⁺⁵ Nm
- H = Handle Code 23 (8kt19)**
refer to chapter "Attachments, accessories"

Adapter fittings for accumulator connection S

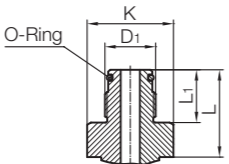


Abb. 1

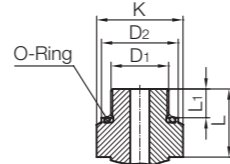


Abb. 2

| Fig. | D ₁ Connection-thread | Adapter-fitting | K (SW) | L | L ₁ | D ₂ | O-Ring |
|------|----------------------------------|-----------------|--------|----|----------------|----------------|--------|
| 1 | G 1 1/4 A | S 701 | 50 | 47 | 37 | - | 30 x 3 |
| | G 2 A | S 702 | 65 | 54 | 44 | - | 48 x 3 |
| 2 | M 40 x 1,5 | S 751 | 60 | 30 | 20 | 54 | 43 x 3 |
| | M 50 x 1,5 | S 752 | 70 | 30 | 20 | 64 | 53 x 3 |

Also available with most other connections

NEW!

- P = Pump connection**
GM-version 400 bar
E-version 350 bar
- T = Tank connection**
- S = Accumulator connection**
- M₁ = Test gauge connection**
G 1/4 (DIN EN ISO 228-1)
- M₂ = Pressure gauge connection (closed)**
G 1/4 (DIN EN ISO 228-1)
- DBV = Pressure relief valve**
cavity-thread M35 x 1.5
assembly torque 80⁺⁵ Nm
- SV = 2-way-solenoid valve**
cavity-thread M20 x 1.5
assembly torque 25⁺⁵ Nm
- H = Handle Code 23 (8kt19)**
refer to chapter "Attachments, accessories"

Adapter fittings for accumulator connection S

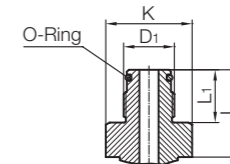


Fig. 1

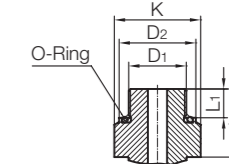
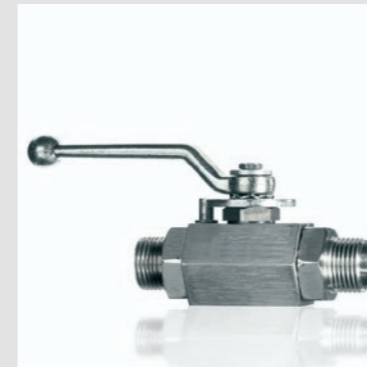


Fig. 2

| Fig. | D ₁ Connection-thread | Adapter-fitting | K (SW) | L | L ₁ | D ₂ | O-Ring |
|------|----------------------------------|-----------------|--------|----|----------------|----------------|--------|
| 1 | G 2 A | S 803 | 70 | 54 | 44 | - | 48 x 3 |
| 2 | M 50 x 1,5 | S 852 | 70 | 30 | 20 | 64 | 53 x 3 |

Also available with most other connections



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)

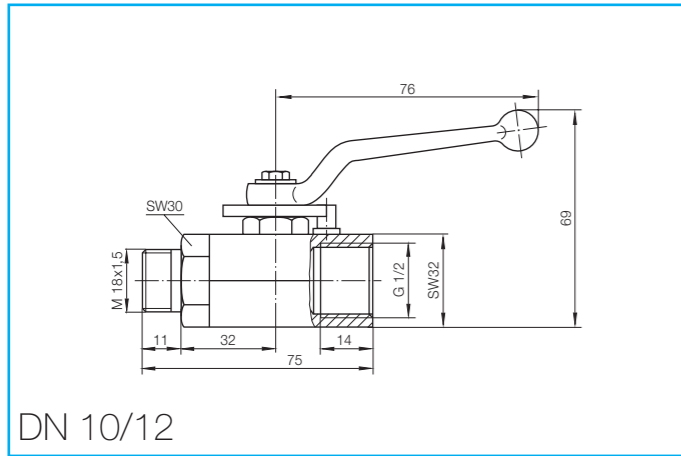


Test valves MBV 5000

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 seals: | PTFE |
| Stem seals: | PTFE |

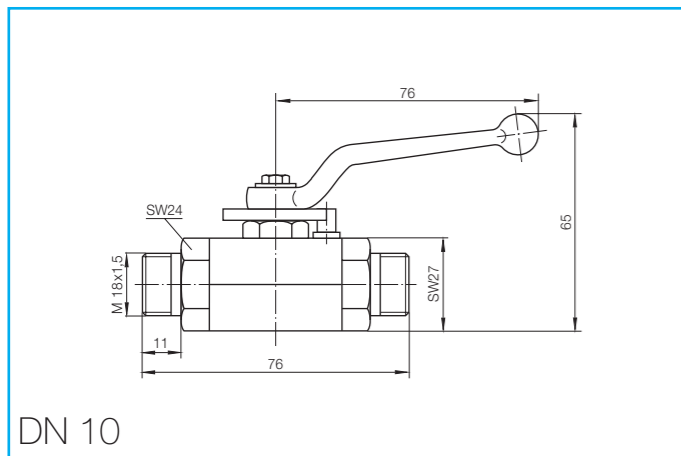
Type of connection

| | |
|------------|---|
| 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 | PN | Article-No. |
|--------------------|-----|-------------|
| M 18 x 1,5 / G 1/2 | 100 | 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 SO 8434-1 (with cut (clamp) ring and nut) |
|------------|--|

| Connections | PN | Article-No. |
|-------------|-----|-------------|
| M 18 x 1,5 | 100 | 101 030 |



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

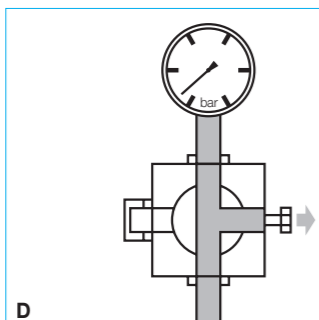
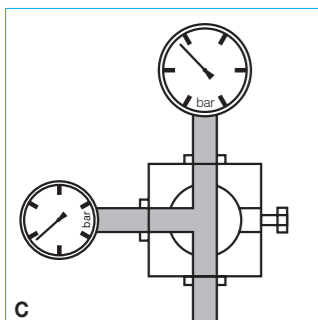
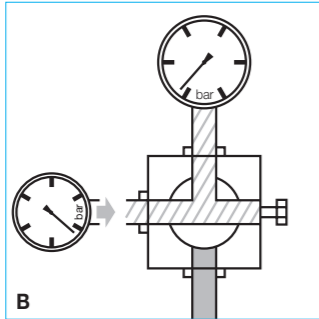
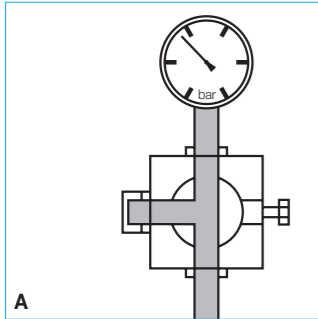


Advantages of the ball valve for the pressure gauge:

- 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 gauge
- no leakage in the normal operating position if the bleed screw is opened erroneously

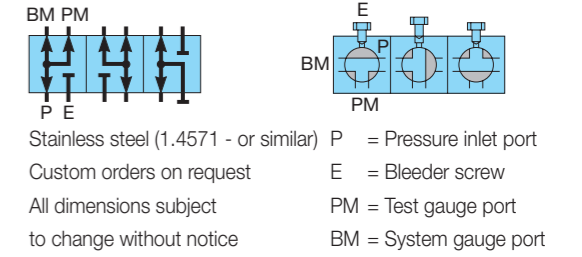
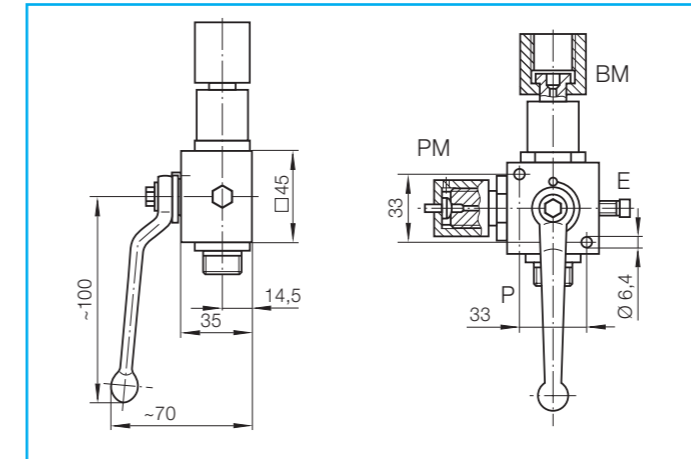
Operating functions:

- 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



| | |
|-------------|-----------------|
| Body: | stainless steel |
| Ball: | stainless steel |
| Stem: | stainless steel |
| Ball seals: | PTFE |
| Stem seals: | FKM |

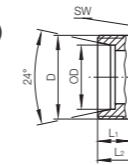
Connections

| BM | PM | P |
|-------|------------|------------|
| G 1/2 | G 1/2 | M 18 x 1,5 |
| G 1/2 | M 20 x 1,5 | M 18 x 1,5 |
| G 1/2 | G 1/2 | G 1/2 |
| G 1/2 | M 20 x 1,5 | G 1/2 |

| PN | Article-No. |
|-----|-------------|
| 100 | 101 072 |
| 100 | 101 074 |
| 100 | 101 076 |
| 100 | 101 078 |

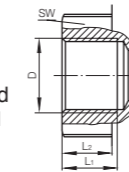
Connection

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



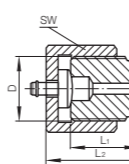
| Thread D | OD | L1 | L2 | SW |
|------------|----|----|----|----|
| M 18 x 1,5 | 12 | 11 | 15 | 24 |

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



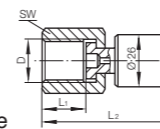
| | | | | |
|-------|---|----|----|----|
| G 1/2 | - | 15 | 21 | 27 |
|-------|---|----|----|----|

PM
 Thread connection
 nipple with
 coupling sleeve
 meeting,
 DIN 16287-C



| | | | | |
|------------|---|----|----|----|
| M 20 x 1,5 | - | 22 | 35 | 24 |
|------------|---|----|----|----|

BM
 Adapter with
 DIN 16284
 swivel nut
 connector
 nipple and
 spindle, for
 pressure gauge
 mounting
 bracket as per
 DIN 16271-B
 meter bracket
 DIN 16281



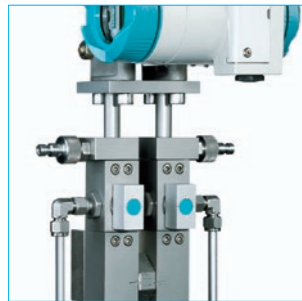
| | | | | |
|-------|---|----|----|----|
| G 1/2 | - | 19 | 66 | 27 |
|-------|---|----|----|----|



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

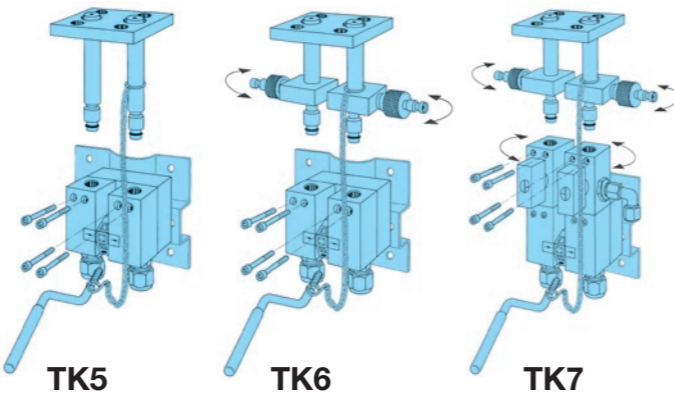


Modular design:

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.



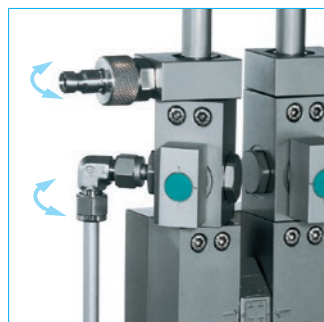
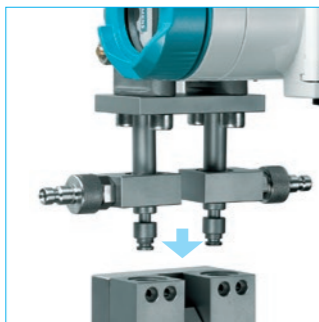
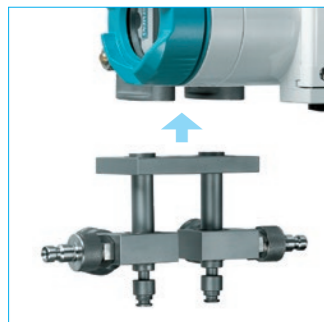
Installation is completed

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.

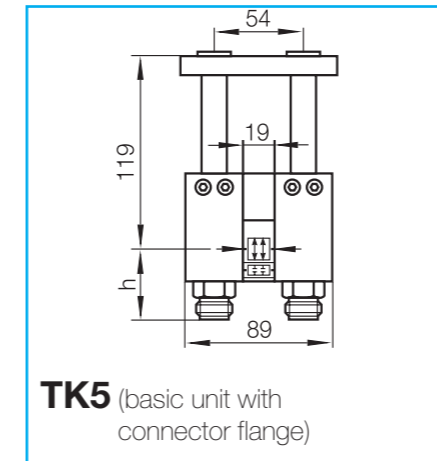
The sturdy bracket is used to mount the directional ball valve - either on a wall or on a pipe. This makes it possible to detach the gauge itself with the fitting remaining in the pipe circuit.

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.

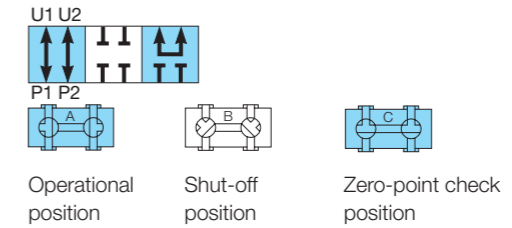


Directional ball valves for differential pressure transducers (TK5 - TK7)

Stainless steel



TK5 (basic unit with connector flange)

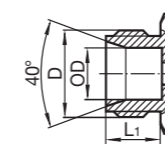


Stainless steel (material no. 1.4571 - or other stainless steels)
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Pressure in bar

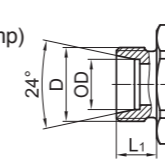
| | | |
|-------------|-----------------|-----------------|
| Body: | stainless steel | stainless steel |
| Ball: | stainless steel | stainless steel |
| Stem: | stainless steel | stainless steel |
| Ball seals: | PTFE | PTFE |
| Stem seals: | FKM | FKM |

Connection P1/P2

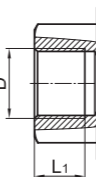
Swagelok pipe fitting



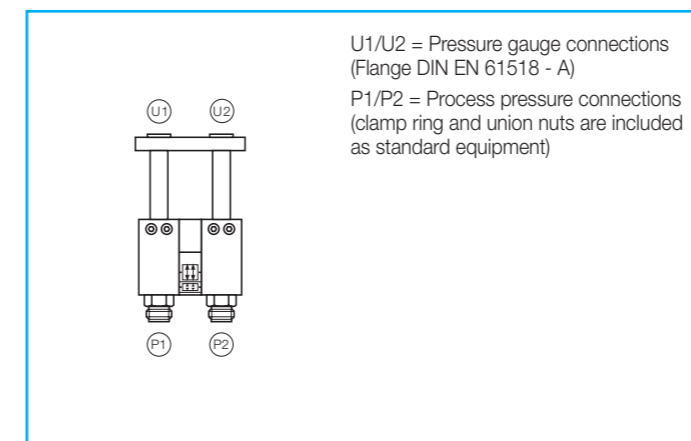
For cut (clamp) ring tube fittings DIN 2353 light series ISO 8434-1



BSP-female thread DIN EN ISO 228-1



| Connection P1/P2 | Thread D | OD | 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 |



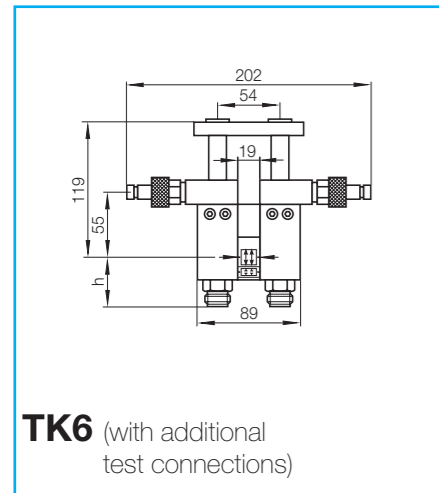
U1/U2 = Pressure gauge connections (Flange DIN EN 61518 - A)
 P1/P2 = Process pressure connections (clamp ring and union nuts are included as standard equipment)



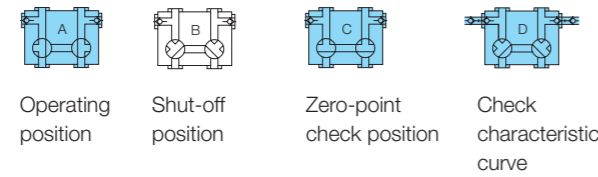
Ball valves for instrumentation technology

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

Stainless steel

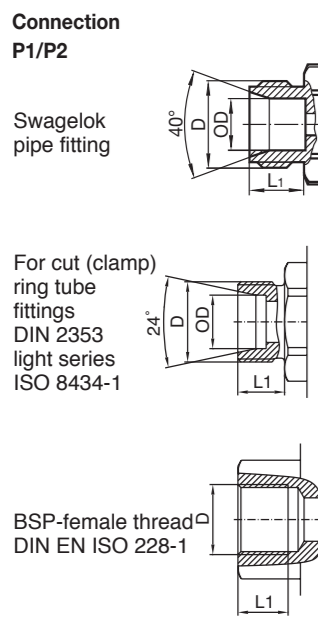


TK6 (with additional test connections)

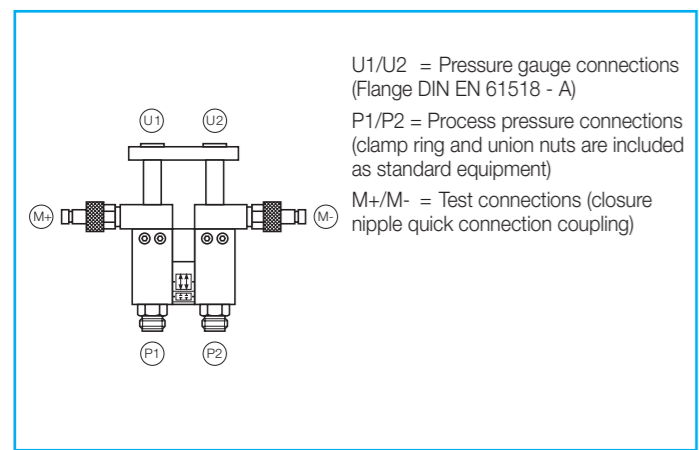


Stainless steel (material no. 1.4571 - or other stainless steels)
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm

| Pressure | in bar | Body: | stainless steel | stainless steel |
|----------|--------|-------------|-----------------|-----------------|
| | | Ball: | stainless steel | stainless steel |
| | | Stem: | stainless steel | stainless steel |
| | | Ball seals: | PTFE | PTFE |
| | | Stem seals: | FKM | FKM |

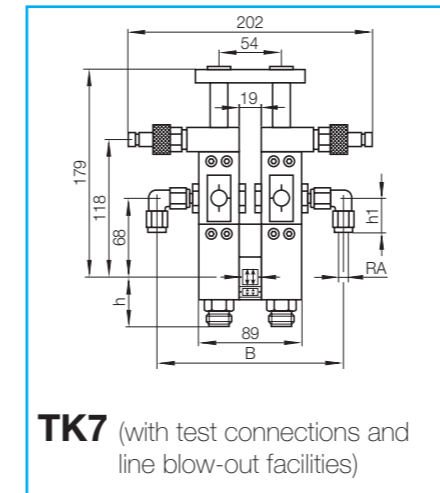


| Connection P1/P2 | Thread D | OD | L1 | h | PN | | For oxygen PN | |
|---|---------------|----|----|----|-------------|-------------|---------------|-------------|
| | | | | | Article-No. | Article-No. | Article-No. | Article-No. |
| Swagelok pipe fitting | 3/4 - 20 UNEF | 12 | 12 | 58 | 100 | 101 228 | 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 |

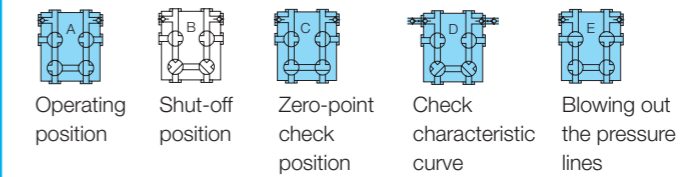


Directional ball valves for differential pressure transducers (TK5 - TK7)

Stainless steel

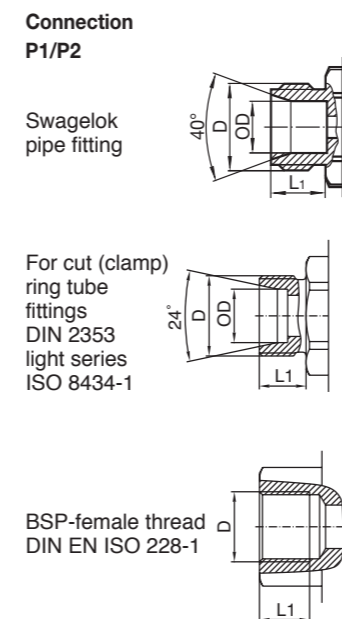


TK7 (with test connections and line blow-out facilities)

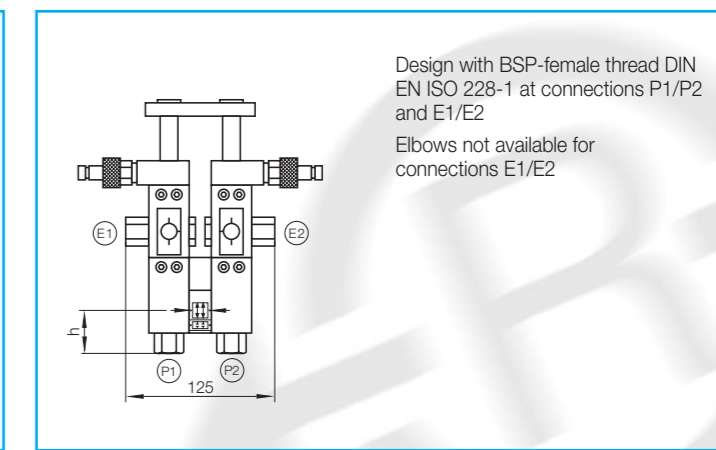
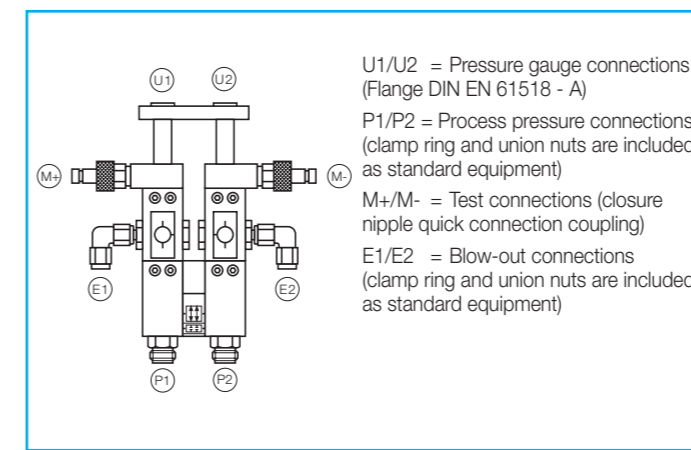


Stainless steel (material no. 1.4571 - or other stainless steels)
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm

| Pressure | in bar | Body: | stainless steel | stainless steel |
|----------|--------|-------------|-----------------|-----------------|
| | | Ball: | stainless steel | stainless steel |
| | | Stem: | stainless steel | stainless steel |
| | | Ball seals: | PTFE | PTFE |
| | | Stem seals: | FKM | FKM |

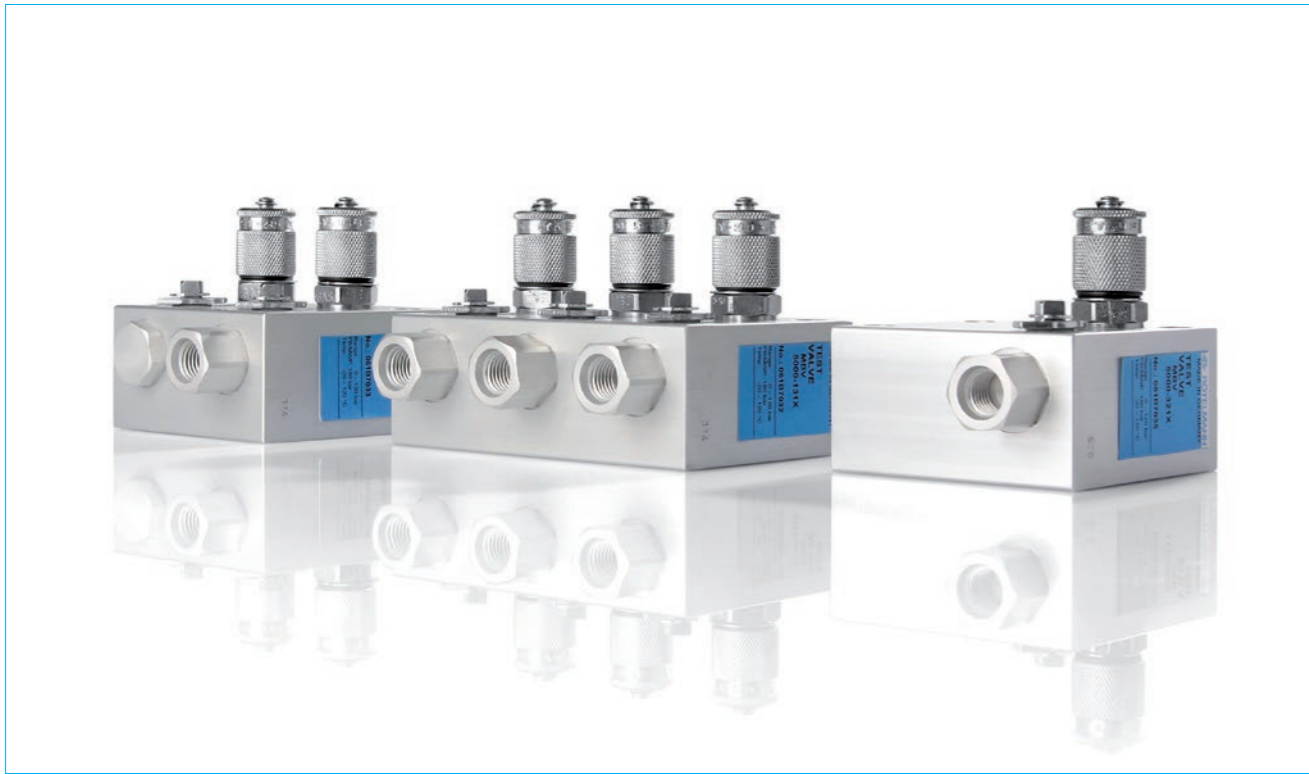


| Connection P1/P2 | Thread D | OD P1/P2 | OD E1/E2 | L1 | h | h1 | B | PN | | For oxygen PN | |
|---|---------------|----------|----------|----|----|----|-----|-------------|-------------|---------------|-------------|
| | | | | | | | | Article-No. | Article-No. | Article-No. | Article-No. |
| Swagelok 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 |



Ball valves for instrumentation technology

Test valves MBV 5000



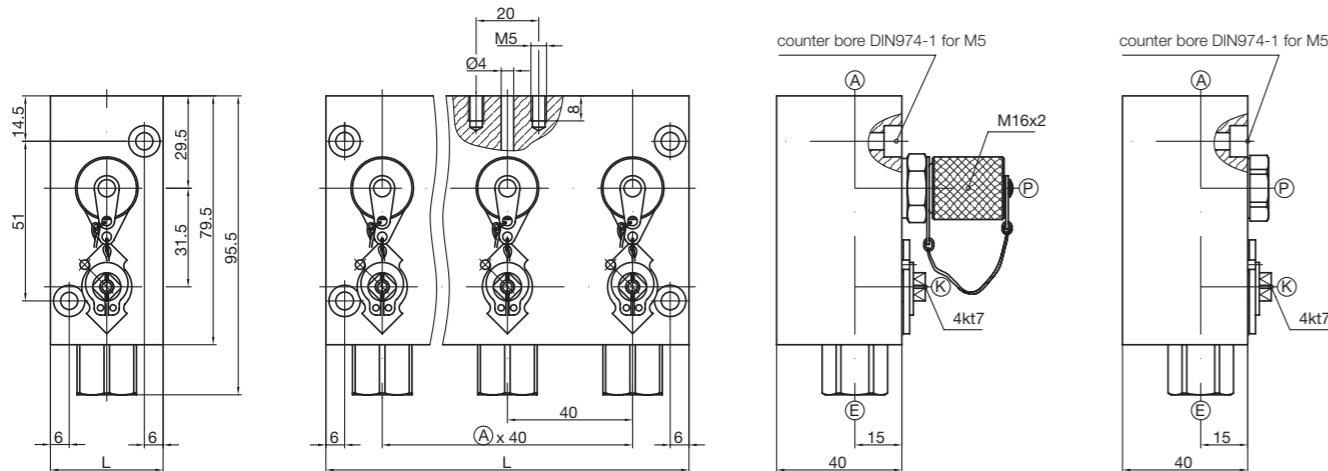
MBV 5000 is a block valve for applications mainly in maritime industrie, that has been designed in many different configurations.

Advantages:

- compact design
- light materials
- many configuration possibilities
- low installation costs
- fast and easy to operate

The valve meets the demands of fast installation, simple operation, easy connection to the test pressure as well as time-saving assembly. The block concept was developed to save space and weight and to reduce costs at the same time. The products are used in supervision, shut-down and diagnosis of engines, gear boxes, control elements, pumps, filters, compressors, and so on.

The concept is meeting the strict demands to maritime products and is according EU-directives.



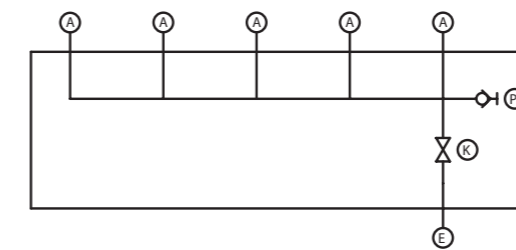
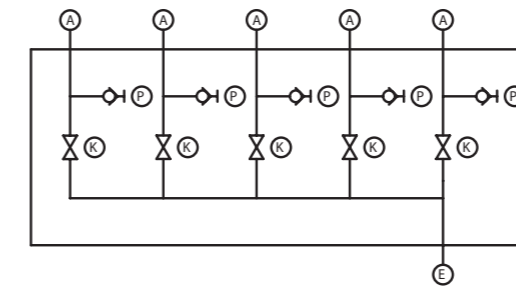
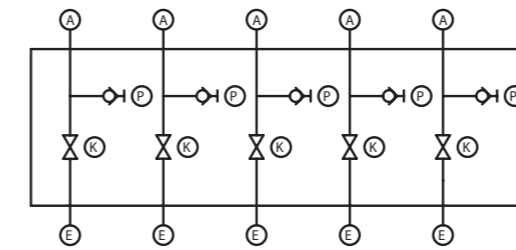
All dimensions subject to change without notice

Dimensions in mm

Weight in kg

Pressure in bar

| | |
|------------------------|---------------------------------------|
| Burst pressure: | 250 bar |
| Operating pressure: | up to 120 bar |
| Operating temperature: | -20°C to 120°C |
| Ambient temperature: | -20°C to 120°C |
| Medium temperature: | -20°C to 120°C |
| Body: | aluminium |
| Connector: | aluminium |
| Ball: | 1.4571 |
| Sealing: | PEEK-FKM |
| Pressure connection: | inlet: G 1/4 outlet: flange - M5/8 |



| Type | No. of outlets | Weight | L | Type-No. | Article-No. |
|------|----------------|--------|-----|----------------|-------------|
| 1 | 1x | 0,4 | 36 | MBV5000-1111MK | 206 201 |
| | | | | MBV5000-1101VS | 206 202 |
| | 2x | 0,8 | 76 | MBV5000-1211MK | 206 203 |
| | | | | MBV5000-1201VS | 206 204 |
| | 3x | 1,2 | 116 | MBV5000-1311MK | 206 205 |
| 1 | | | | MBV5000-1301VS | 206 206 |
| | 4x | 1,6 | 156 | MBV5000-1411MK | 206 207 |
| | | | | MBV5000-1401VS | 206 208 |
| | 5x | 2,0 | 196 | MBV5000-1511MK | 206 209 |
| | | | | MBV5000-1501VS | 206 210 |
| 2 | 2x | 0,8 | 76 | MBV5000-2211MK | 206 211 |
| | | | | MBV5000-2201VS | 206 212 |
| | 3x | 1,2 | 116 | MBV5000-2311MK | 206 213 |
| | | | | MBV5000-2301VS | 206 214 |
| | 4x | 1,6 | 156 | MBV5000-2411MK | 206 215 |
| 2 | | | | MBV5000-2401VS | 206 216 |
| | 5x | 2,0 | 196 | MBV5000-2511MK | 206 217 |
| | | | | MBV5000-2501VS | 206 218 |
| 3 | 2x | 0,7 | 76 | MBV5000-3211MK | 206 219 |
| | | | | MBV5000-3201VS | 206 220 |
| | 3x | 1,0 | 116 | MBV5000-3311MK | 206 221 |
| | | | | MBV5000-2301VS | 206 222 |
| | 4x | 1,3 | 156 | MBV5000-3411MK | 206 223 |
| 3 | | | | MBV5000-3401VS | 206 224 |
| | 5x | 1,6 | 196 | MBV5000-3511MK | 206 225 |
| | | | | MBV5000-3501VS | 206 226 |

MK= with test point, VS= with screw plug



Check valves

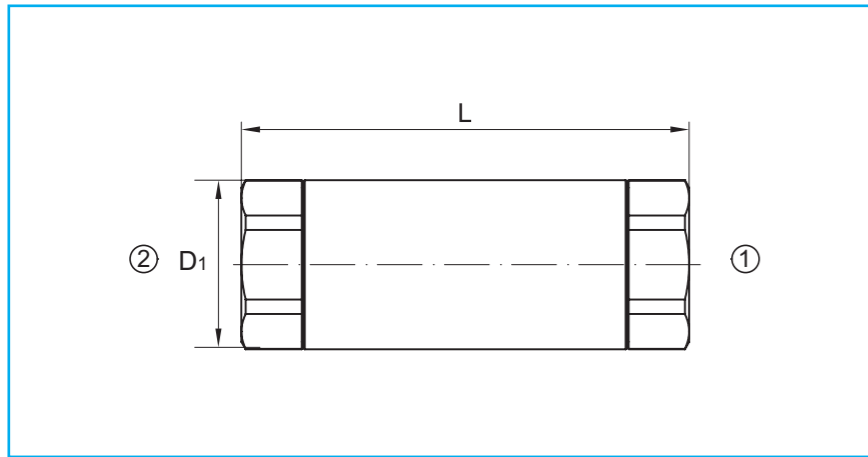


Needle valves

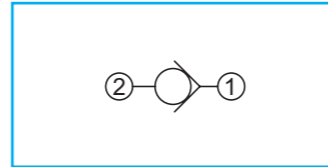


Flow control valves

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



**Full flow,
no reduction!**

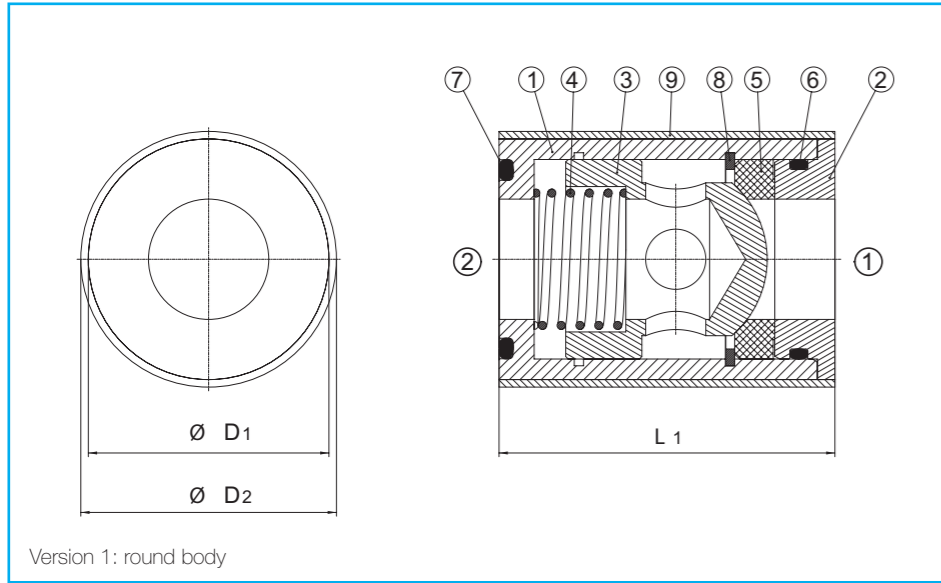


Please check pressure rating of the pipe fittings!
 Custom orders on request
 All dimensions subject to change without notice
 Also available with most other connections
 Dimensions in mm
 Weight in kg
 Pressure in bar

Body: steel, zinc plated
 Seat: POM
 O-Rings: FKM

| Connection | DN | Thread D | OD | L | L ₁ | D ₁ | SW | Opening-pressure | Weight | DN | 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 | 21,0 | 19 | 1,0 | 0,18 | 4 | 420 | 233 033 |
| | 6 | M14 x 1,5 | 8 | 88,0 | 10 | 21,0 | 19 | 1,0 | 0,18 | 6 | 420 | 233 034 |
| | 8 | M16 x 1,5 | 10 | 85,0 | 11 | 27,0 | 24 | 0,5 | 0,27 | 8 | 420 | 233 036 |
| | 10 | M18 x 1,5 | 12 | 87,0 | 11 | 27,0 | 24 | 0,5 | 0,27 | 10 | 420 | 233 037 |
| | 12 | M22 x 1,5 | 15 | 105,0 | 12 | 33,5 | 30 | 0,5 | 0,46 | 12 | 420 | 233 038 |
| | 16 | M26 x 1,5 | 18 | 100,0 | 12 | 45,0 | 36 | 0,5 | 0,78 | 16 | 420 | 233 040 |
| | 20 | M30 x 2 | 22 | 126,0 | 14 | 45,0 | 41 | 0,5 | 1,00 | 20 | 420 | 233 041 |
| | 25 | M36 x 2 | 28 | 137,0 | 14 | 55,0 | 50 | 0,5 | 1,75 | 25 | 420 | 233 042 |
| | 32 | M45 x 2 | 35 | 174,5 | 16 | 70,0 | 60 | 0,5 | 3,00 | 32 | 420 | 233 044 |
| | 40 | M52 x 2 | 42 | 196,5 | 16 | 86,0 | 75 | 0,5 | 5,40 | 40 | 420 | 233 045 |
| For cut (clamp) ring tube fittings DIN 2353 heavy series ISO 8434-1 | 4 | M16 x 1,5 | 8 | 94,0 | 12 | 21,0 | 19 | 1,0 | 0,18 | 4 | 420 | 233 031 |
| | 6 | M18 x 1,5 | 10 | 94,0 | 12 | 21,0 | 19 | 1,0 | 0,18 | 6 | 420 | 233 054 |
| | 8 | M20 x 1,5 | 12 | 89,0 | 12 | 27,0 | 24 | 0,5 | 0,27 | 8 | 420 | 233 032 |
| | 10 | M22 x 1,5 | 14 | 93,0 | 14 | 27,0 | 24 | 0,5 | 0,27 | 10 | 420 | 233 055 |
| | 12 | M24 x 1,5 | 16 | 109,0 | 14 | 33,5 | 30 | 0,5 | 0,46 | 12 | 420 | 233 056 |
| | 16 | M30 x 2 | 20 | 108,0 | 16 | 45,0 | 36 | 0,5 | 0,83 | 16 | 420 | 233 035 |
| | 20 | M36 x 2 | 25 | 134,0 | 18 | 45,0 | 41 | 0,5 | 1,00 | 20 | 420 | 233 057 |
| | 25 | M42 x 2 | 30 | 149,0 | 20 | 55,0 | 50 | 0,5 | 1,75 | 25 | 420 | 233 058 |
| | 32 | M52 x 2 | 38 | 185,5 | 22 | 70,0 | 60 | 0,5 | 3,20 | 32 | 420 | 233 053 |
| | BSP-female thread DIN EN ISO 228-1 | 4 | G 1/8 | - | 90,0 | 12 | 21,0 | 19 | 1,0 | 0,18 | 4 | 420 |
| 6 | | G 1/4 | - | 90,0 | 12 | 21,0 | 19 | 1,0 | 0,18 | 6 | 420 | 233 059 |
| 10 | | G 3/8 | - | 85,0 | 14 | 27,0 | 24 | 0,5 | 0,27 | 10 | 420 | 233 060 |
| 12 | | G 1/2 | - | 104,0 | 15 | 33,5 | 30 | 0,5 | 0,46 | 12 | 420 | 233 061 |
| 16 | | G 5/8 | - | 106,0 | 18 | 45,0 | 36 | 0,5 | 0,90 | 16 | 420 | 233 043 |
| 20 | | G 3/4 | - | 120,0 | 18 | 45,0 | 41 | 0,5 | 1,00 | 20 | 420 | 233 062 |
| 25 | | G 1 | - | 142,0 | 18 | 55,0 | 50 | 0,5 | 1,75 | 25 | 420 | 233 063 |
| 32 | | G 1 1/4 | - | 151,5 | 20 | 70,0 | 60 | 0,5 | 2,90 | 32 | 420 | 233 046 |
| 40 | | G 1 1/2 | - | 184,5 | 22 | 86,0 | 75 | 0,5 | 5,60 | 40 | 420 | 233 047 |
| 50 | | G 2 | - | 225,0 | 24 | 106,0 | 95 | 0,5 | 10,00 | 50 | 420 | 233 048 |
| NPT-female thread ANSI/ASME B1.20.1-1983 | 4 | 1/8 - 27 NPT | - | 90,0 | 6,9 | 21,0 | 19 | 1,0 | 0,18 | 4 | 420 | 233 049 |
| | 6 | 1/4 - 18 NPT | - | 90,0 | 10,0 | 21,0 | 19 | 1,0 | 0,18 | 6 | 420 | 233 064 |
| | 10 | 3/8 - 18 NPT | - | 85,0 | 10,3 | 27,0 | 24 | 0,5 | 0,27 | 10 | 420 | 233 065 |
| | 12 | 1/2 - 14 NPT | - | 104,0 | 13,6 | 33,5 | 30 | 0,5 | 0,46 | 12 | 420 | 233 066 |
| | 20 | 3/4 - 14 NPT | - | 120,0 | 14,1 | 45,0 | 41 | 0,5 | 1,00 | 20 | 420 | 233 067 |
| | 25 | 1 - 11 1/2 NPT | - | 142,0 | 16,8 | 55,0 | 50 | 0,5 | 1,75 | 25 | 420 | 233 068 |
| | 32 | 1 1/4 - 11 1/2 NPT | - | 151,5 | 17,3 | 70,0 | 60 | 0,5 | 2,85 | 32 | 420 | 233 050 |
| | 40 | 1 1/2 - 11 1/2 NPT | - | 184,5 | 17,3 | 86,0 | 75 | 0,5 | 5,60 | 40 | 420 | 233 051 |
| | 50 | 2 - 11 1/2 NPT | - | 225,0 | 17,7 | 106,0 | 95 | 0,5 | 10,00 | 50 | 420 | 233 052 |

Check valves with ISO-flange connection (SAE) · steel · DN 13 - DN 51



Please check pressure rating acc. to ISO 6162
Custom orders on request

All dimensions subject to change without notice

To turn the direction of the flow switch part 3, 4, 5 and 8

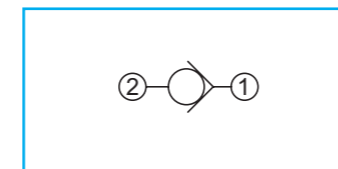
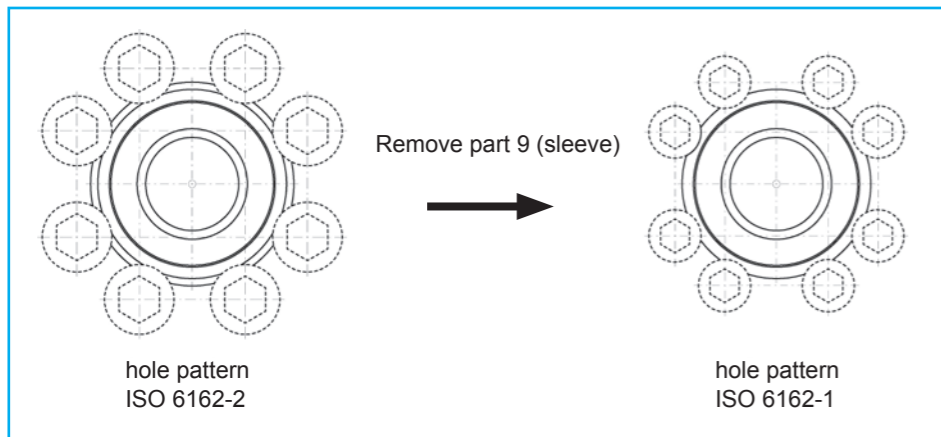
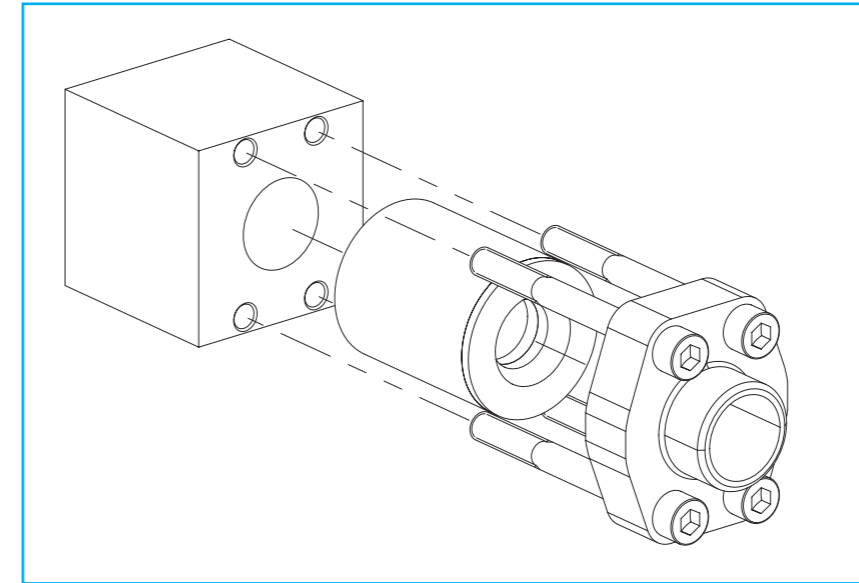
Remove part 9 for ISO 6162-1

Dimensions in mm

Weight in kg

Pressure in bar

- ① Body
- ② Cap
- ③ Piston
- ④ Spring
- ⑤ Seat
- ⑥ O-Ring
- ⑦ O-Ring
- ⑧ Inverted ring
- ⑨ Sleeve



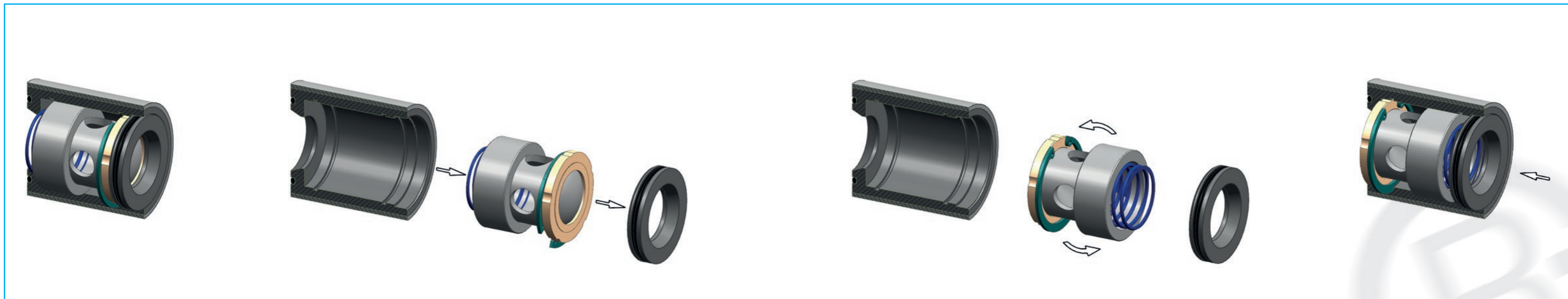
Connection

ISO 6162-1/2

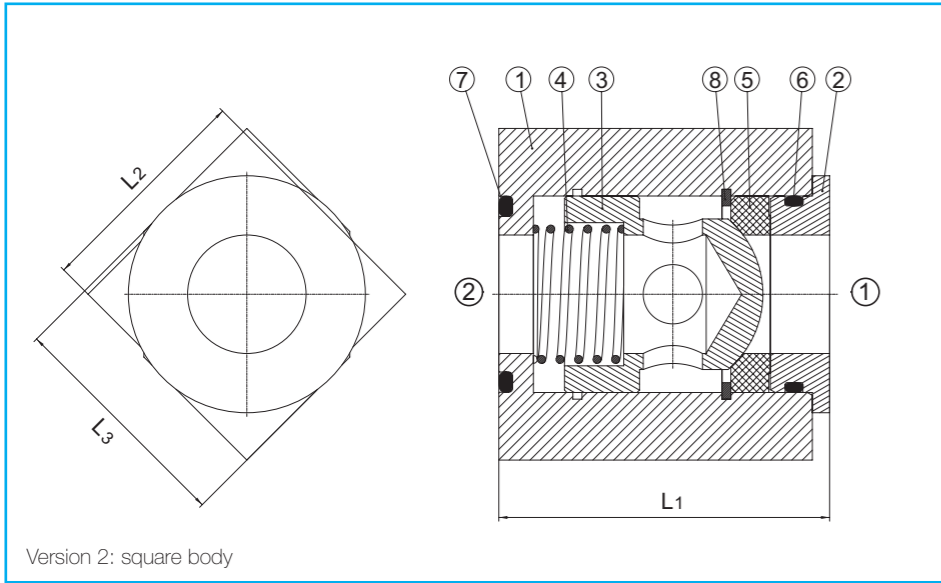
| DN | L1 | D1 | D2 | Opening-pressure | Weight |
|-------|------|------|------|------------------|--------|
| 13 | 47,0 | 33,5 | 36,0 | 1 | 0,24 |
| 19 | 59,0 | 42,0 | 46,0 | 1 | 0,40 |
| 25 | 67,0 | 48,0 | 51,0 | 1 | 0,57 |
| 32/25 | 70,0 | 55,0 | 61,0 | 1 | 0,92 |
| 38/32 | 80,0 | 65,0 | 70,0 | 1 | 1,28 |
| 51/32 | 82,0 | 76,0 | 86,0 | 1 | 2,12 |

Steel, zinc plated/POM-FKM

| PN | Article-No. |
|-----|-------------|
| 420 | 233 091 |
| 420 | 233 092 |
| 420 | 233 093 |
| 420 | 233 094 |
| 420 | 233 095 |
| 420 | 233 096 |



Check valves with ISO-flange connection (SAE) · steel · DN 13 - DN 51



Please check pressure rating acc. to ISO 6162
Custom orders on request

All dimensions subject to change without notice

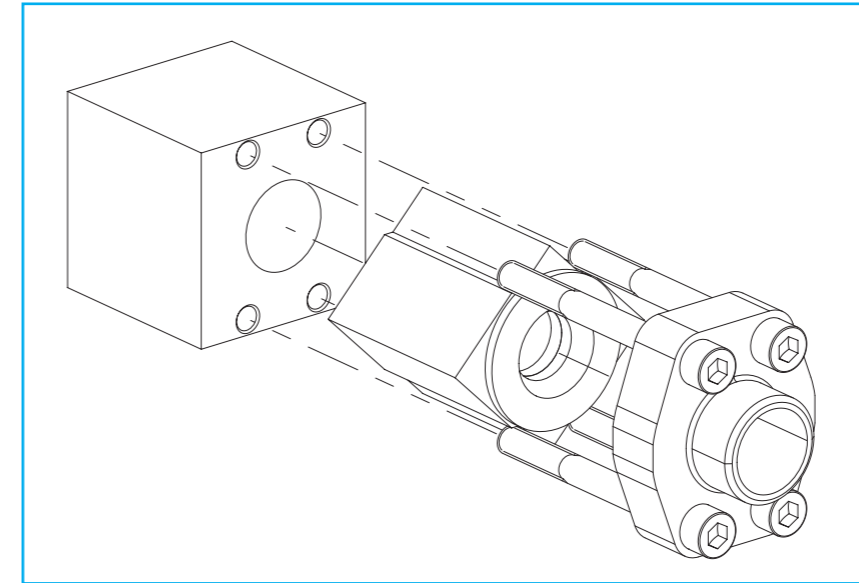
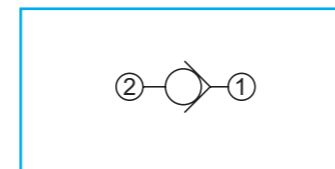
**To turn the direction of the flow switch
part 3, 4, 5 and 8**

Dimensions in mm

Weight in kg

Pressure in bar

- ① Body
- ② Cap
- ③ Piston
- ④ Spring
- ⑤ Seat
- ⑥ O-Ring
- ⑦ O-Ring
- ⑧ Inverted ring



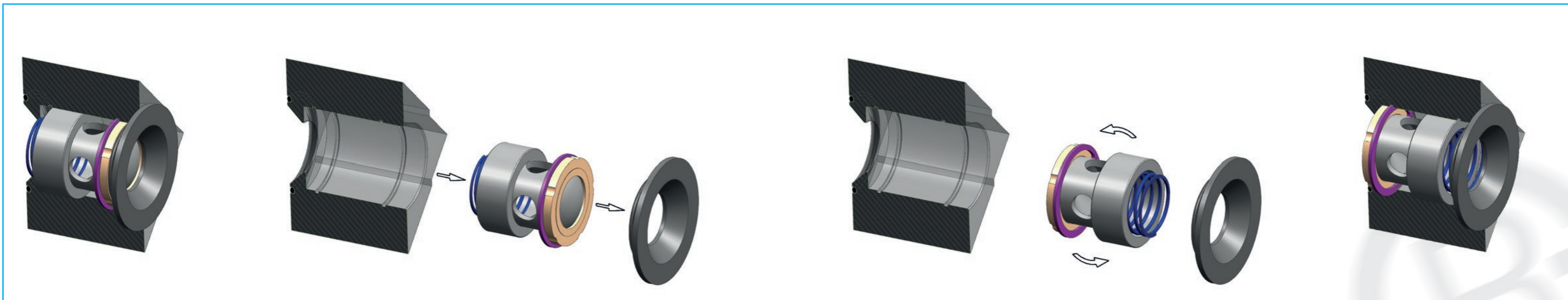
Connection

ISO 6162-1/-2

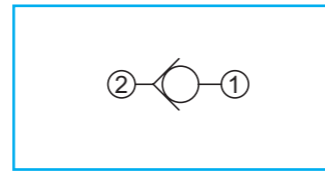
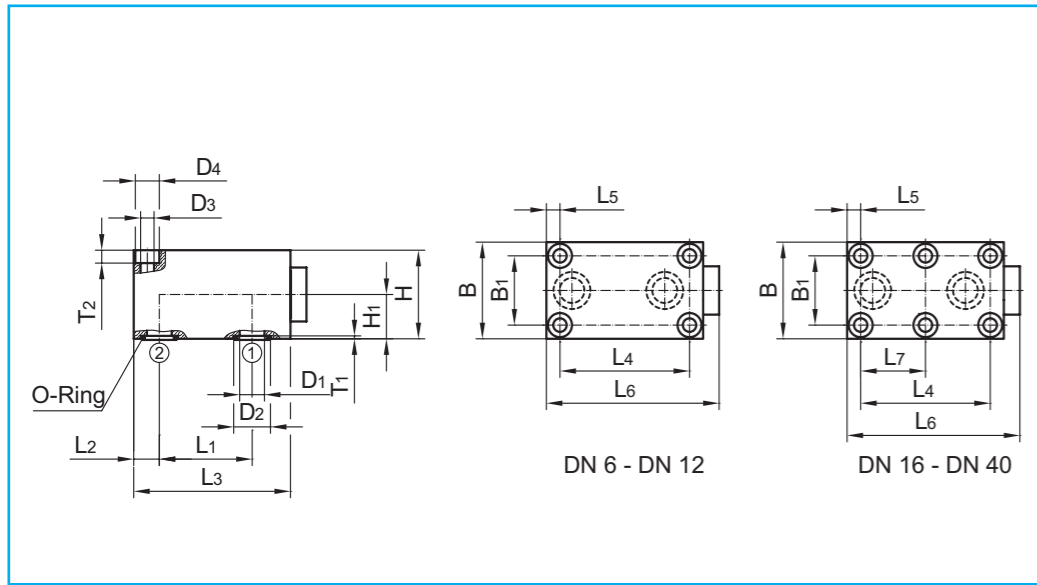
| DN | L1 | L2 | L3 | Opening-pressure | Weight |
|-------|------|------|------|------------------|--------|
| 13 | 47,0 | 31,0 | 33,4 | 1 | 0,30 |
| 19 | 59,0 | 39,0 | 41,5 | 1 | 0,50 |
| 25 | 67,0 | 45,5 | 47,5 | 1 | 0,74 |
| 32/25 | 70,0 | 52,0 | 57,0 | 1 | 1,22 |
| 38/32 | 80,0 | 62,0 | 65,0 | 1 | 1,67 |
| 51/32 | 82,0 | 73,0 | 79,0 | 1 | 2,87 |

Steel/POM-FKM

| PN | Article-No. |
|-----|-------------|
| 420 | 233 097 |
| 420 | 233 098 |
| 420 | 233 099 |
| 420 | 233 100 |
| 420 | 233 101 |
| 420 | 233 102 |



Check valves for manifold mounting · steel · DN 6 - DN 40



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

Body: steel, zinc plated
 O-Rings: FKM

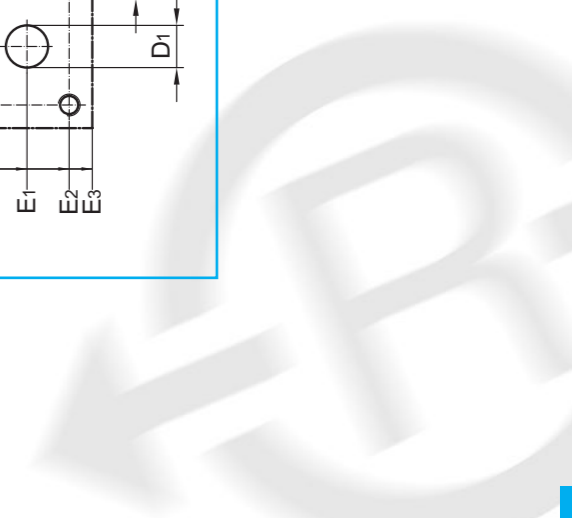
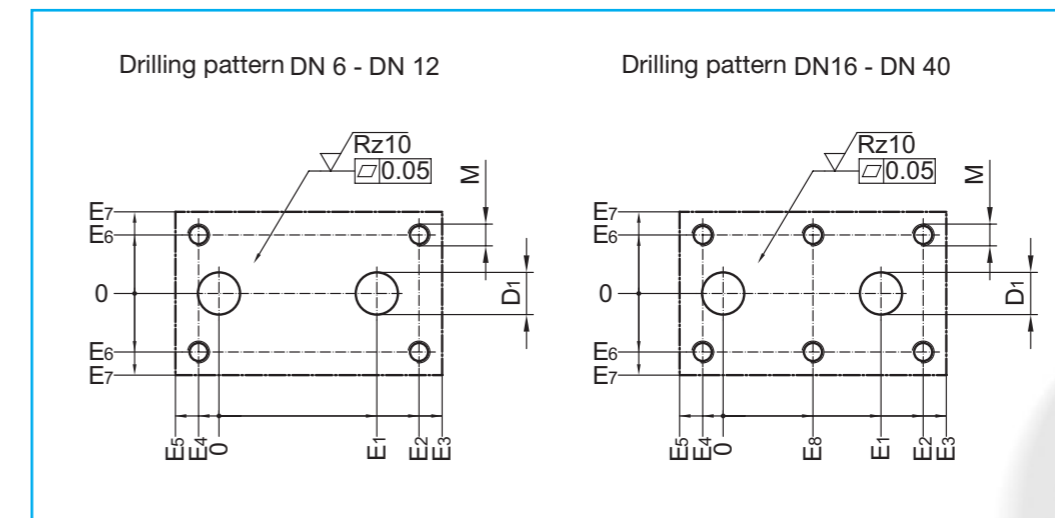
| Connection | DN | L1 | L2 | L3 | L4 | L5 | L6 | L7 | B | B1 | H | H1 |
|------------------------------------|----|------|------|-------|-------|------|-------|------|-------|-------|-------|------|
| Body flange with O-Ring-sealing | 6 | 16,0 | 8,0 | 39,0 | 19,0 | 6,4 | 43,0 | - | 41,5 | 28,5 | 16,0 | 8,0 |
| | 8 | 25,5 | 11,0 | 57,0 | 35,0 | 6,5 | 62,0 | - | 46,0 | 33,5 | 20,0 | 10,0 |
| | 10 | 25,5 | 13,0 | 60,0 | 33,5 | 9,0 | 65,0 | - | 51,0 | 38,0 | 25,0 | 12,5 |
| | 12 | 30,0 | 15,0 | 70,0 | 38,0 | 11,0 | 75,0 | - | 57,5 | 44,5 | 32,0 | 16,0 |
| | 16 | 54,0 | 21,4 | 104,0 | 76,0 | 10,0 | 109,0 | 38,0 | 70,0 | 54,0 | 45,0 | 22,5 |
| | 20 | 57,0 | 28,0 | 120,0 | 95,0 | 9,0 | 127,0 | 47,5 | 76,5 | 60,0 | 50,0 | 25,0 |
| | 25 | 79,5 | 32,6 | 152,0 | 120,0 | 12,0 | 158,0 | 60,0 | 100,0 | 76,0 | 55,0 | 27,5 |
| | 30 | 95,0 | 36,8 | 178,0 | 143,0 | 13,0 | 184,0 | 71,5 | 115,0 | 92,0 | 75,0 | 37,5 |
| | 40 | 89,0 | 39,5 | 170,0 | 133,5 | 14,0 | 178,0 | 67,0 | 140,0 | 111,0 | 100,0 | 50,0 |

| DN | D1 | D2 | D3 | D4 | T1 | T2 | Weight | Opening- pressure | For cylinderhead screw DIN EN ISO 4762 (DIN 912) |
|----|------|------|------|------|-----|------|--------|----------------------|--|
| 6 | 5,0 | 9,7 | 6,4 | 10,5 | 1,3 | 6,8 | 0,2 | 0,5 | M6 - 8.8 |
| 8 | 6,0 | 12,3 | 6,4 | 10,5 | 1,5 | 6,8 | 0,4 | 0,5 | M6 - 8.8 |
| 10 | 8,0 | 15,7 | 6,4 | 10,5 | 1,5 | 6,8 | 0,5 | 0,5 | M6 - 8.8 |
| 12 | 10,0 | 18,7 | 6,4 | 10,5 | 1,5 | 6,8 | 0,9 | 0,5 | M6 - 8.8 |
| 16 | 12,0 | 23,6 | 8,4 | 13,5 | 1,9 | 9,0 | 2,2 | 0,5 | M8 - 8.8 |
| 20 | 19,0 | 30,5 | 8,4 | 13,5 | 2,2 | 9,0 | 3,1 | 0,5 | M8 - 8.8 |
| 25 | 25,0 | 37,5 | 10,5 | 18,0 | 2,2 | 11,0 | 5,2 | 0,5 | M10 - 8.8 |
| 30 | 30,0 | 43,5 | 13,0 | 20,0 | 2,2 | 13,0 | 10,3 | 0,5 | M12 - 8.8 |
| 40 | 40,0 | 57,5 | 13,0 | 20,0 | 2,2 | 13,0 | 15,8 | 0,5 | M12 - 8.8 |

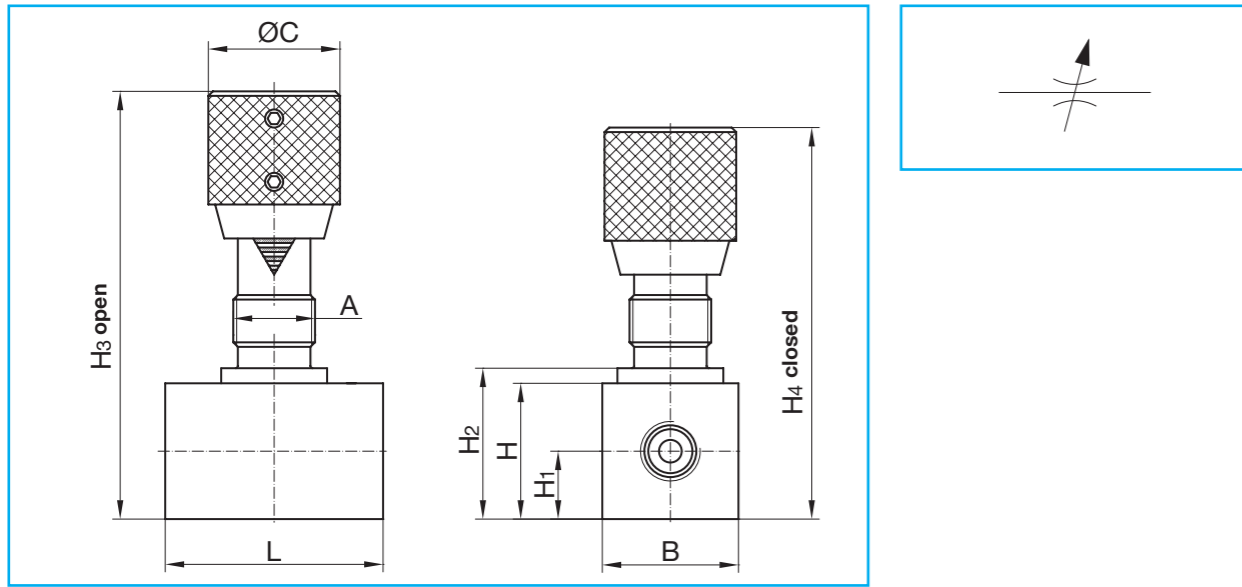
| PN | Article-No. |
|-----|-------------|
| 350 | 233081 |
| 350 | 233082 |
| 350 | 233083 |
| 350 | 233084 |
| 350 | 233085 |
| 350 | 233086 |
| 350 | 233087 |
| 350 | 233088 |
| 350 | 233089 |

| DN | D1 | E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 | M | O-Ring |
|----|------|------|-------|-------|------|------|-------|-------|------|-----|--------------|
| 6 | 5,0 | 16,0 | 17,4 | 31,0 | 1,6 | 8,0 | 14,25 | 20,75 | - | M6 | 6,30 x 1,80 |
| 8 | 6,0 | 25,5 | 30,5 | 46,0 | 4,5 | 11,0 | 16,75 | 23,00 | - | M6 | 8,50 x 2,00 |
| 10 | 8,0 | 25,5 | 29,5 | 47,0 | 4,0 | 13,0 | 19,00 | 25,50 | - | M6 | 12,00 x 2,00 |
| 12 | 10,0 | 30,0 | 34,0 | 55,0 | 4,0 | 15,0 | 22,25 | 28,75 | - | M6 | 15,00 x 2,00 |
| 16 | 12,0 | 54,0 | 64,6 | 82,6 | 11,4 | 21,4 | 27,00 | 35,00 | 26,6 | M8 | 19,00 x 2,50 |
| 20 | 19,0 | 57,0 | 76,0 | 92,0 | 19,0 | 28,0 | 30,00 | 38,25 | 28,5 | M8 | 25,00 x 3,00 |
| 25 | 25,0 | 79,5 | 99,4 | 119,4 | 20,6 | 32,6 | 38,00 | 50,00 | 39,4 | M10 | 32,00 x 3,00 |
| 30 | 30,0 | 95,0 | 119,2 | 141,2 | 23,8 | 36,8 | 46,00 | 57,50 | 47,7 | M12 | 38,00 x 3,00 |
| 40 | 40,0 | 89,0 | 108,0 | 130,5 | 25,5 | 39,5 | 55,50 | 70,00 | 41,5 | M12 | 52,00 x 3,00 |

General tolerances
 DIN ISO 2768
 Surfaces
 DIN EN ISO 4287

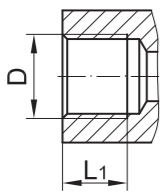
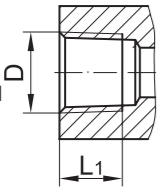
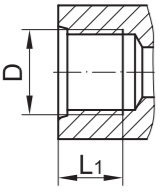


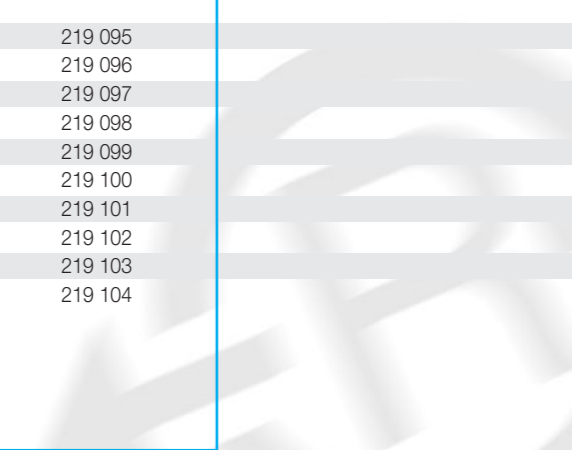
Needle valves with threaded connector · DN 4 - DN 50



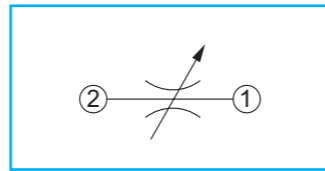
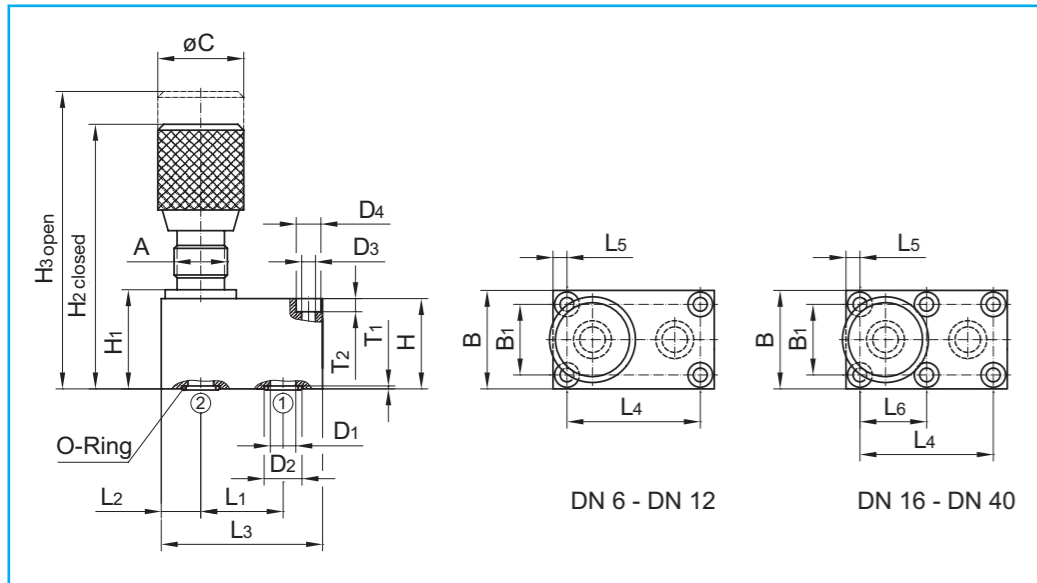
Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

| | | |
|--------------|--------------------|-----------------|
| Body: | steel, zinc plated | stainless steel |
| Spindle: | steel | stainless steel |
| Rotary knob: | aluminium | aluminium |
| O-Rings: | FKM | FKM |

| Connection | DN | Thread D | L | L1 | A | B | C | H | H1 | H2 | H3 | H4 | Weight | DN | PN | Article-No. | PN | Article-No. |
|---|---|--------------------|-----------------|------|---------|---------|----|----|------|------|-----|-----|--------|------|-----|-------------|---------|-------------|
| 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 | 0,22 | 4 | 350 | 219 028 | 350 | 219 076 |
| | 6 | G 1/4 | 48 | 12,0 | M18x1,5 | 25 | 29 | 25 | 12,5 | 28 | 92 | 83 | 0,31 | 6 | 350 | 219 029 | 350 | 219 077 |
| | 10 | G 3/8 | 58 | 14,0 | M18x1,5 | 30 | 29 | 30 | 15,0 | 33 | 98 | 88 | 0,47 | 10 | 350 | 219 030 | 350 | 219 078 |
| | 12 | G 1/2 | 68 | 15,0 | M18x1,5 | 35 | 29 | 35 | 17,5 | 38 | 103 | 93 | 0,66 | 12 | 350 | 219 031 | 350 | 219 079 |
| | 16 | G 5/8 | 78 | 16,0 | M22x1,5 | 45 | 38 | 45 | 22,5 | 49 | 123 | 111 | 1,25 | 16 | 350 | 219 058 | 350 | 219 080 |
| | 20 | G 3/4 | 78 | 16,0 | M22x1,5 | 45 | 38 | 45 | 22,5 | 49 | 123 | 111 | 1,25 | 20 | 350 | 219 032 | 350 | 219 081 |
| | 25 | G1 | 108 | 20,0 | M22x1,5 | 50 | 38 | 50 | 25,0 | 54 | 128 | 116 | 1,95 | 25 | 350 | 219 033 | 350 | 219 082 |
| | 32 | G1 1/4 | 108 | 20,0 | M36x1,5 | 60 | 50 | 60 | 30,0 | 66 | 183 | 164 | 3,26 | 32 | 350 | 219 034 | 350 | 219 083 |
| | 40 | G1 1/2 | 108 | 23,0 | M36x1,5 | 70 | 50 | 70 | 35,0 | 76 | 193 | 174 | 4,20 | 40 | 350 | 219 035 | 350 | 219 084 |
| | 50 | G2 | 130 | 24,5 | M36x1,5 | 90 | 50 | 90 | 45,0 | 96 | 213 | 194 | 7,65 | 50 | 350 | 219 036 | 350 | 219 085 |
| 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 | 0,22 | 4 | 350 | 219 037 | 350 | 219 086 |
| | 6 | 1/4 - 18 NPT | 48 | 10,0 | M18x1,5 | 25 | 29 | 25 | 12,5 | 28 | 92 | 83 | 0,31 | 6 | 350 | 219 038 | 350 | 219 087 |
| | 10 | 3/8 - 18 NPT | 58 | 10,3 | M18x1,5 | 30 | 29 | 30 | 15,0 | 33 | 98 | 88 | 0,47 | 10 | 350 | 219 039 | 350 | 219 088 |
| | 12 | 1/2 - 14 NPT | 68 | 13,6 | M18x1,5 | 35 | 29 | 35 | 17,5 | 38 | 103 | 93 | 0,66 | 12 | 350 | 219 040 | 350 | 219 089 |
| | 20 | 3/4 - 14 NPT | 78 | 14,1 | M22x1,5 | 45 | 38 | 45 | 22,5 | 49 | 123 | 111 | 1,25 | 20 | 350 | 219 041 | 350 | 219 090 |
| | 25 | 1 - 11 1/2 NPT | 108 | 16,8 | M22x1,5 | 50 | 38 | 50 | 25,0 | 54 | 128 | 116 | 1,95 | 25 | 350 | 219 042 | 350 | 219 091 |
| | 32 | 1 1/4 - 11 1/2 NPT | 108 | 17,3 | M36x1,5 | 60 | 50 | 60 | 30,0 | 66 | 183 | 164 | 3,26 | 32 | 350 | 219 043 | 350 | 219 092 |
| | 40 | 1 1/2 - 11 1/2 NPT | 108 | 17,3 | M36x1,5 | 70 | 50 | 70 | 35,0 | 76 | 193 | 174 | 4,20 | 40 | 350 | 219 044 | 350 | 219 093 |
| | 50 | 2 - 11 1/2 NPT | 130 | 17,7 | M36x1,5 | 90 | 50 | 90 | 45,0 | 96 | 213 | 194 | 7,65 | 50 | 350 | 219 045 | 350 | 219 094 |
| | Female thread ISO 11926-1  | 4 | 7/16 -20 UNF-2B | 42 | 6,9 | M18x1,5 | 20 | 29 | 20 | 10,0 | 23 | 87 | 78 | 0,22 | 4 | 350 | 219 047 | 350 |
| 6 | | 1/2 -20 UNF-2B | 48 | 10,0 | M18x1,5 | 25 | 29 | 25 | 12,5 | 28 | 92 | 83 | 0,31 | 6 | 350 | 219 059 | 350 | 219 096 |
| 8 | | 9/16 -18 UNF-2B | 58 | 12,7 | M18x1,5 | 30 | 29 | 30 | 15,0 | 33 | 98 | 88 | 0,47 | 8 | 350 | 219 048 | 350 | 219 097 |
| 10 | | 3/4 -16 UNF-2B | 60 | 14,3 | M18x1,5 | 30 | 29 | 30 | 15,0 | 33 | 98 | 88 | 0,47 | 10 | 350 | 219 049 | 350 | 219 098 |
| 12 | | 7/8 -14 UNF-2B | 72 | 16,7 | M18x1,5 | 35 | 29 | 35 | 17,5 | 38 | 103 | 93 | 0,66 | 12 | 350 | 219 060 | 350 | 219 099 |
| 16 | | 1 1/16 -12 UN -2B | 84 | 19,0 | M22x1,5 | 45 | 38 | 45 | 22,5 | 49 | 123 | 111 | 1,25 | 16 | 350 | 219 050 | 350 | 219 100 |
| 20 | | 1 5/16 -12 UN -2B | 108 | 19,0 | M22x1,5 | 50 | 38 | 50 | 25,0 | 54 | 128 | 116 | 1,95 | 20 | 350 | 219 051 | 350 | 219 101 |
| 25 | | 1 5/8 -12 UN -2B | 108 | 16,8 | M22x1,5 | 60 | 50 | 60 | 30,0 | 66 | 183 | 164 | 3,26 | 25 | 350 | 219 052 | 350 | 219 102 |
| 32 | | 1 7/8 -12 UN -2B | 108 | 19,0 | M36x1,5 | 70 | 50 | 70 | 35,0 | 76 | 193 | 174 | 4,20 | 32 | 350 | 219 053 | 350 | 219 103 |
| 40 | | 2 1/2 -12 UN -2B | 130 | 19,0 | M36x1,5 | 90 | 50 | 90 | 45,0 | 96 | 213 | 194 | 7,65 | 40 | 350 | 219 054 | 350 | 219 104 |



Needle valves for manifold mounting · steel · DN 6 - DN 40

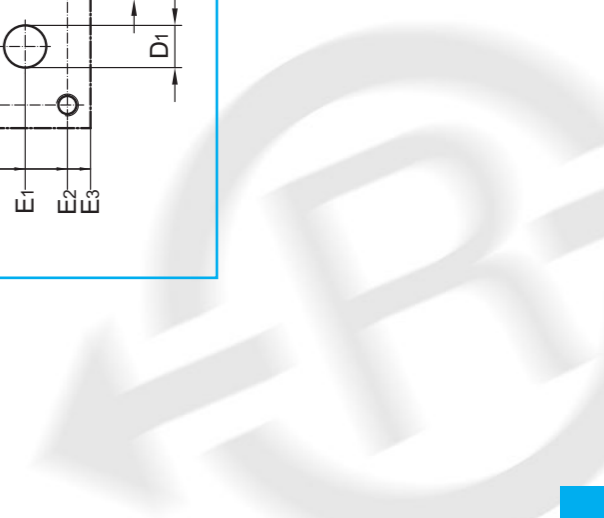
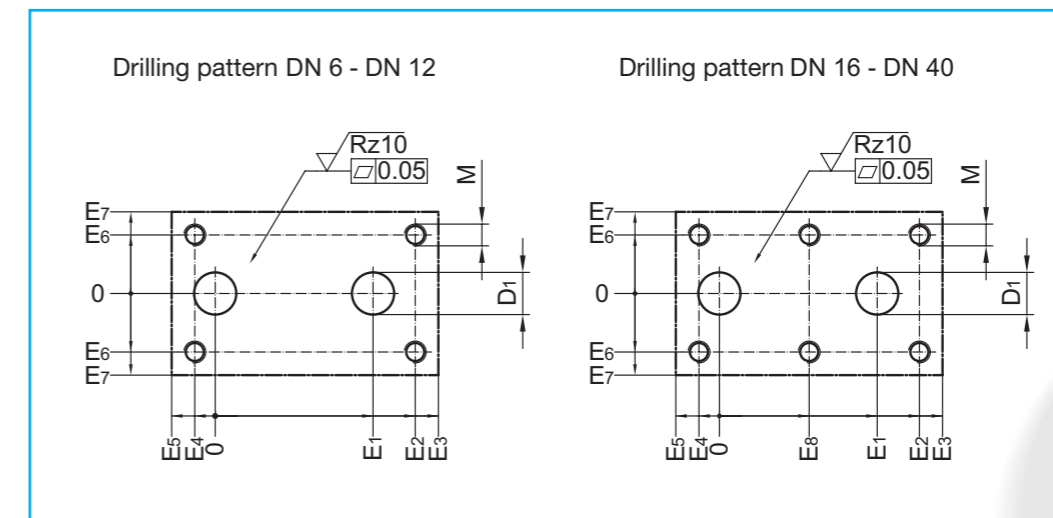


O-Rings included in delivery
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

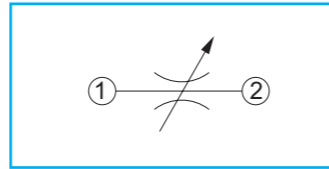
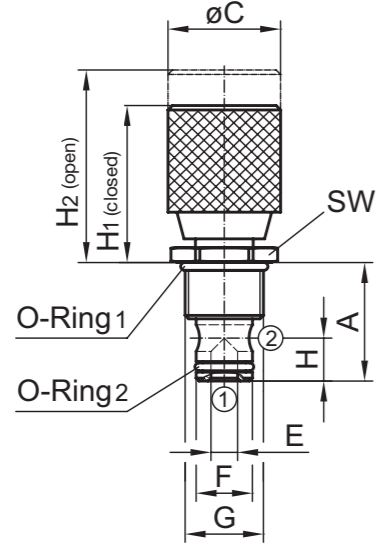
Body: steel, zinc plated
 O-Rings: FKM

| Connection | DN | L1 | L2 | L3 | L4 | L5 | L6 | B | B1 | øC | H | H1 | H2 | H3 | A | DN | D1 | D2 | D3 | D4 | T1 | T2 | Weight | For cylinderhead screw DIN EN ISO 4762 (DIN 912) | | PN | Article-No. |
|------------------------------------|----|------|------|-------|-------|------|------|-------|-------|----|----|----|-----|-----|-----------|----|------|------|------|------|-----|------|--------|--|----------|--------|-------------|
| | | | | | | | | | | | | | | | | | | | | | | | | M6 - 8.8 | M8 - 8.8 | | |
| Body flange with O-Ring-sealing | 6 | 16,0 | 9,5 | 35,0 | 19,0 | 8,0 | - | 41,5 | 28,5 | 29 | 16 | 19 | 74 | 84 | M18 x 1,5 | 6 | 5,0 | 9,7 | 6,4 | 10,5 | 1,3 | 6,8 | 0,2 | M6 - 8.8 | 350 | 219061 | |
| | 8 | 25,5 | 11,0 | 48,0 | 35,0 | 6,5 | - | 46,0 | 33,5 | 29 | 20 | 23 | 78 | 88 | M18 x 1,5 | 8 | 7,0 | 12,3 | 6,4 | 10,5 | 1,5 | 6,8 | 0,4 | M6 - 8.8 | 350 | 219062 | |
| | 10 | 25,5 | 12,7 | 51,0 | 33,5 | 8,5 | - | 50,0 | 38,0 | 29 | 24 | 27 | 82 | 92 | M18 x 1,5 | 10 | 10,0 | 15,7 | 6,4 | 10,5 | 1,5 | 6,8 | 0,6 | M6 - 8.8 | 350 | 219063 | |
| | 12 | 30,0 | 22,5 | 75,0 | 38,0 | 18,5 | - | 57,5 | 44,5 | 29 | 25 | 28 | 83 | 93 | M18 x 1,5 | 12 | 13,0 | 18,7 | 6,4 | 10,5 | 1,5 | 6,8 | 1,0 | M6 - 8.8 | 350 | 219064 | |
| | 16 | 54,5 | 19,5 | 93,5 | 76,0 | 8,5 | 38,0 | 70,0 | 54,0 | 38 | 30 | 34 | 96 | 108 | M22 x 1,5 | 16 | 17,0 | 23,7 | 8,4 | 14,0 | 1,9 | 9,0 | 1,6 | M8 - 8.8 | 350 | 219065 | |
| | 20 | 57,0 | 27,0 | 111,0 | 95,0 | 8,0 | 47,5 | 76,5 | 60,0 | 38 | 45 | 49 | 111 | 123 | M22 x 1,5 | 20 | 22,0 | 30,5 | 8,4 | 14,0 | 2,3 | 9,0 | 3,5 | M8 - 8.8 | 350 | 219066 | |
| | 25 | 79,5 | 32,0 | 143,0 | 120,5 | 11,0 | 60,0 | 100,0 | 76,0 | 38 | 45 | 49 | 111 | 123 | M22 x 1,5 | 25 | 28,5 | 37,5 | 10,5 | 17,0 | 2,3 | 11,0 | 5,2 | M10 - 8.8 | 350 | 219067 | |
| | 30 | 95,0 | 37,0 | 169,0 | 143,0 | 13,0 | 71,5 | 115,0 | 92,0 | 50 | 50 | 56 | 154 | 173 | M36 x 1,5 | 30 | 35,0 | 43,5 | 13,0 | 20,0 | 2,3 | 13,0 | 7,5 | M12 - 8.8 | 350 | 219068 | |
| | 40 | 89,0 | 39,5 | 163,0 | 133,5 | 14,0 | 67,0 | 140,0 | 111,0 | 50 | 50 | 56 | 154 | 173 | M36 x 1,5 | 40 | 47,5 | 57,5 | 13,0 | 20,0 | 2,3 | 13,0 | 7,0 | M12 - 8.8 | 350 | 219069 | |

| General tolerances DIN ISO 2768 Surfaces DIN EN ISO 4287 | DN | D1 | E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 | M | O-Ring |
|---|----|------|------|-------|-------|------|------|-------|-------|------|-----|--------------|
| | | | | | | | | | | | | |
| | 6 | 5,0 | 16,0 | 17,5 | 25,5 | 1,5 | 9,5 | 14,25 | 20,75 | - | M6 | 6,30 x 1,80 |
| | 8 | 7,0 | 25,5 | 30,5 | 37,0 | 4,5 | 11,0 | 16,75 | 23,00 | - | M6 | 8,50 x 2,00 |
| | 10 | 10,0 | 25,5 | 29,3 | 38,3 | 4,2 | 12,7 | 19,00 | 25,00 | - | M6 | 12,00 x 2,00 |
| | 12 | 13,0 | 30,0 | 34,0 | 52,5 | 4,0 | 22,5 | 22,25 | 28,75 | - | M6 | 15,00 x 2,00 |
| | 16 | 17,0 | 54,5 | 65,0 | 74,0 | 11,0 | 19,5 | 27,00 | 35,00 | 27,0 | M8 | 19,00 x 2,50 |
| | 20 | 22,0 | 57,0 | 76,0 | 84,0 | 19,0 | 27,0 | 30,00 | 38,25 | 28,5 | M8 | 25,00 x 3,00 |
| | 25 | 28,5 | 79,5 | 99,5 | 111,0 | 21,0 | 32,0 | 38,00 | 50,00 | 39,0 | M10 | 32,00 x 3,00 |
| | 30 | 35,0 | 95,0 | 119,0 | 132,0 | 24,0 | 37,0 | 46,00 | 57,50 | 47,5 | M12 | 38,00 x 3,00 |
| | 40 | 47,5 | 89,0 | 108,0 | 123,5 | 25,5 | 39,5 | 55,50 | 70,00 | 41,5 | M12 | 52,00 x 3,00 |



Needle valves for manifold insertion as cartridge type · steel · DN 8 - DN 16



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

Body: steel, zinc plated
 O-Rings: FKM

| Connection | DN | A | C | E | F | G | H | H ₁ | H ₂ | SW |
|---------------------------------------|----|----|----|---|----|-------------------|------|----------------|----------------|----|
| Screw-in threaded DIN EN ISO 228-1 | 8 | 28 | 29 | 5 | 14 | G $\frac{1}{2}$ A | 12,0 | 45 | 55 | 27 |
| | 10 | 31 | 29 | 6 | 16 | G $\frac{1}{2}$ A | 14,5 | 44 | 53 | 27 |
| | 12 | 40 | 38 | 8 | 19 | G $\frac{3}{4}$ A | 17,5 | 53 | 64 | 32 |
| | 16 | 44 | 38 | 8 | 27 | G1 A | 21,1 | 52 | 63 | 41 |

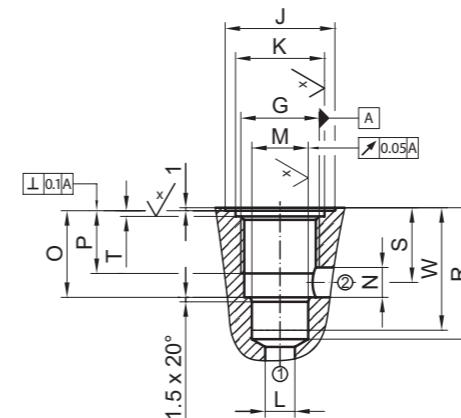
| DN | O-Ring 1 | O-Ring 2 | Assembly torque [Nm] | Weight |
|----|--------------|--------------|----------------------|--------|
| 8 | 18,72 x 2,62 | 11,10 x 1,78 | 30 ⁺⁵ | 0,2 |
| 10 | 18,72 x 2,62 | 13,29 x 1,78 | 40 ⁺⁵ | 0,3 |
| 12 | 23,47 x 2,62 | 13,94 x 2,62 | 50 ⁺⁵ | 0,5 |
| 16 | 29,82 x 2,62 | 21,89 x 2,62 | 75 ⁺⁵ | 0,7 |

| PN | Article-No. |
|-----|-------------|
| 350 | 219071 |
| 350 | 219072 |
| 350 | 219073 |
| 350 | 219074 |

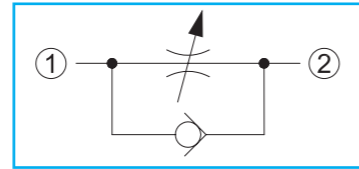
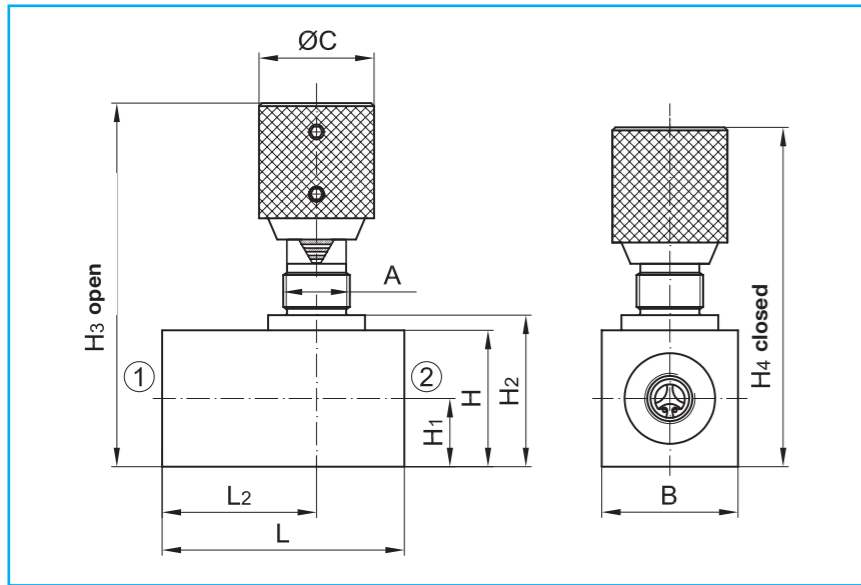
| DN | G | J | K +0.1 | L max. | M H ₈ | N max. | O | P min. | R +1 | S | T +0.1 | W min. |
|----|-----------------|----|-----------|-----------|---------------------|-----------|------|-----------|---------|----|-----------|-----------|
| 8 | G $\frac{1}{2}$ | 32 | 24 | 5 | 14 | 5 | 17,5 | 14 | 29 | 15 | 1,9 | 28 |
| 10 | G $\frac{1}{2}$ | 32 | 24 | 8 | 16 | 8 | 20,5 | 14 | 33 | 17 | 1,9 | 32 |
| 12 | G $\frac{3}{4}$ | 37 | 30 | 10 | 19 | 11 | 29,0 | 21 | 43 | 24 | 1,9 | 41 |
| 16 | G1 | 47 | 36 | 12 | 27 | 12 | 30,0 | 21 | 47 | 24 | 1,9 | 45 |

General tolerances
 DIN ISO 2768
 Surfaces
 DIN EN ISO 4287

Drilling pattern DN 8 - DN 16



Flow control valves with threaded connector · DN 4 - DN 50

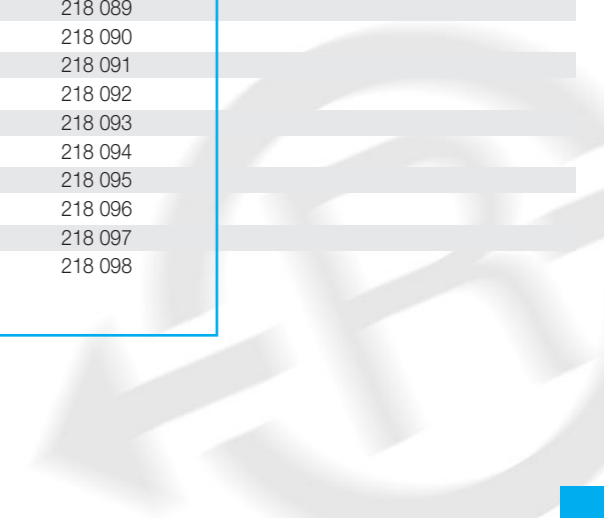


Opening pressure: 0,5
 Custom orders on request
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

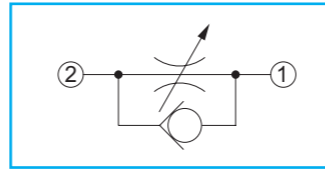
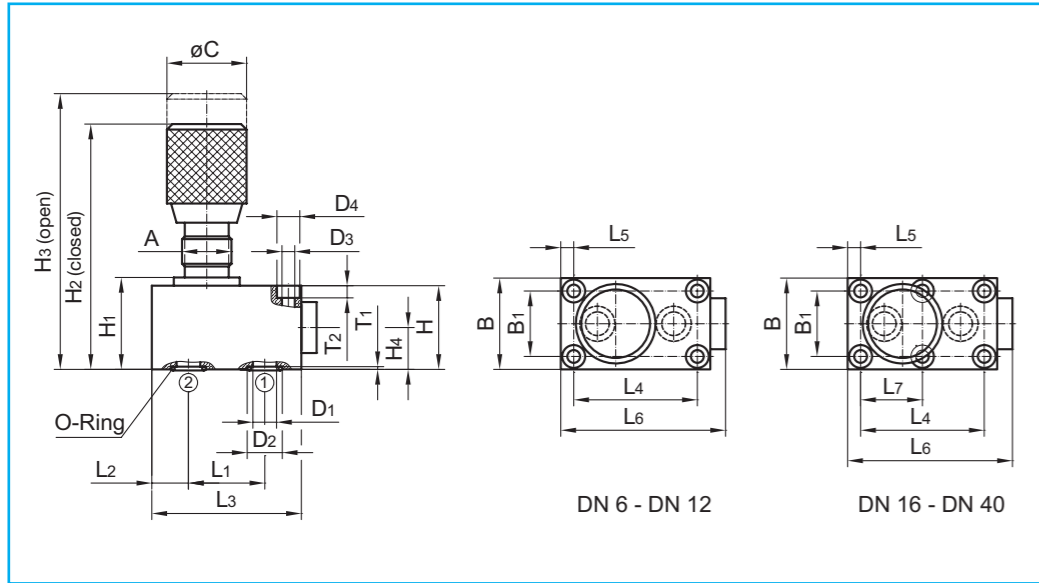
| | | |
|--------------|--------------------|-----------------|
| Body: | steel, zinc plated | stainless steel |
| Spindle: | steel | stainless steel |
| Rotary knob: | aluminium | aluminium |
| O-Rings: | FKM | FKM |

| Connection | DN | Thread | D | L | L1 | L2 | A | B | C | H | H1 | H2 | H3 | H4 | Weight | DN | PN | Article-No. | PN | Article-No. |
|--|------------|----------------|--------|------|-------|---------|---------|----|----|------|------|-----|-----|------|--------|-----|---------|-------------|---------|-------------|
| BSP-female thread DIN EN ISO 228-1 | 4 | G 1/8 | | 45 | 10,0 | 28 | M18x1,5 | 20 | 29 | 20 | 10,0 | 23 | 87 | 78 | 0,25 | 4 | 350 | 218 028 | 350 | 218 071 |
| | 6 | G 1/4 | | 55 | 12,0 | 35 | M18x1,5 | 25 | 29 | 25 | 12,5 | 28 | 92 | 83 | 0,36 | 6 | 350 | 218 029 | 350 | 218 072 |
| | 10 | G 3/8 | | 65 | 14,0 | 41 | M18x1,5 | 30 | 29 | 30 | 15,0 | 33 | 98 | 88 | 0,52 | 10 | 350 | 218 030 | 350 | 218 073 |
| | 12 | G 1/2 | | 73 | 15,0 | 48 | M18x1,5 | 35 | 29 | 35 | 17,5 | 38 | 103 | 93 | 0,68 | 12 | 350 | 218 031 | 350 | 218 074 |
| | 20 | G 3/4 | | 88 | 16,0 | 57 | M22x1,5 | 45 | 38 | 45 | 22,5 | 49 | 123 | 111 | 1,37 | 20 | 350 | 218 032 | 350 | 218 075 |
| | 25 | G1 | | 127 | 20,0 | 77 | M22x1,5 | 50 | 38 | 50 | 25,0 | 54 | 128 | 116 | 2,17 | 25 | 350 | 218 033 | 350 | 218 076 |
| | 32 | G1 1/4 | | 143 | 20,0 | 93 | M36x1,5 | 60 | 50 | 60 | 30,0 | 66 | 183 | 164 | 3,96 | 32 | 350 | 218 034 | 350 | 218 077 |
| NPT-female thread ANSI/ASME B1.20.1-1983 | 4 | 1/8 - 27 | NPT | 45 | 6,9 | 28 | M18x1,5 | 20 | 29 | 20 | 10,0 | 23 | 87 | 78 | 0,25 | 4 | 350 | 218 037 | 350 | 218 080 |
| | 6 | 1/4 - 18 | NPT | 55 | 10,0 | 35 | M18x1,5 | 25 | 29 | 25 | 12,5 | 28 | 92 | 83 | 0,36 | 6 | 350 | 218 038 | 350 | 218 081 |
| | 10 | 3/8 - 18 | NPT | 65 | 10,3 | 41 | M18x1,5 | 30 | 29 | 30 | 15,0 | 33 | 98 | 88 | 0,52 | 10 | 350 | 218 039 | 350 | 218 082 |
| | 12 | 1/2 - 14 | NPT | 73 | 13,6 | 48 | M18x1,5 | 35 | 29 | 35 | 17,5 | 38 | 103 | 93 | 0,68 | 12 | 350 | 218 040 | 350 | 218 083 |
| | 20 | 3/4 - 14 | NPT | 88 | 14,1 | 57 | M22x1,5 | 45 | 38 | 45 | 22,5 | 49 | 123 | 111 | 1,37 | 20 | 350 | 218 041 | 350 | 218 084 |
| | 25 | 1 - 11 1/2 | NPT | 127 | 16,8 | 77 | M22x1,5 | 50 | 38 | 50 | 25,0 | 54 | 128 | 116 | 2,17 | 25 | 350 | 218 042 | 350 | 218 085 |
| | 32 | 1 1/4 - 11 1/2 | NPT | 143 | 17,3 | 93 | M36x1,5 | 60 | 50 | 60 | 30,0 | 66 | 183 | 164 | 3,86 | 32 | 350 | 218 043 | 350 | 218 086 |
| Female thread ISO 11926-1 | 40 | 1 1/2 - 11 1/2 | NPT | 143 | 17,3 | 98 | M36x1,5 | 70 | 50 | 70 | 35,0 | 76 | 193 | 174 | 5,03 | 40 | 350 | 218 044 | 350 | 218 087 |
| | 50 | 2 - 11 1/2 | NPT | 165 | 17,7 | 111 | M36x1,5 | 90 | 50 | 90 | 45,0 | 96 | 213 | 194 | 9,10 | 50 | 350 | 218 045 | 350 | 218 088 |
| | 4 | 7/16 -20 | UNF-2B | 49 | 11,5 | 28,0 | M18x1,5 | 20 | 29 | 20 | 10,0 | 23 | 87 | 78 | 0,25 | 4 | 350 | 218 047 | 350 | 218 089 |
| | 6 | 1/2 -20 | UNF-2B | 55 | 11,5 | 33,5 | M18x1,5 | 25 | 29 | 25 | 12,5 | 28 | 92 | 83 | 0,38 | 6 | 350 | 218 057 | 350 | 218 090 |
| | 8 | 9/16 -18 | UNF-2B | 67 | 12,7 | 42,0 | M18x1,5 | 30 | 29 | 30 | 15,0 | 33 | 98 | 88 | 0,52 | 8 | 350 | 218 048 | 350 | 218 091 |
| | 10 | 3/4 -16 | UNF-2B | 67 | 14,3 | 42,0 | M18x1,5 | 30 | 29 | 30 | 15,0 | 33 | 98 | 88 | 0,52 | 10 | 350 | 218 049 | 350 | 218 092 |
| | 12 | 7/8 -14 | UNF-2B | 77 | 16,7 | 50,0 | M18x1,5 | 35 | 29 | 35 | 17,5 | 38 | 103 | 93 | 0,68 | 12 | 350 | 218 058 | 350 | 218 093 |
| 16 | 1 1/16 -12 | UN -2B | 94 | 19,0 | 60,0 | M22x1,5 | 45 | 38 | 45 | 22,5 | 49 | 123 | 111 | 1,37 | 16 | 350 | 218 050 | 350 | 218 094 | |
| 20 | 1 5/16 -12 | UN -2B | 127 | 19,0 | 77,0 | M22x1,5 | 50 | 38 | 50 | 25,0 | 54 | 128 | 116 | 2,17 | 20 | 350 | 218 051 | 350 | 218 095 | |
| 25 | 1 5/8 -12 | UN -2B | 143 | 19,0 | 93,0 | M22x1,5 | 60 | 50 | 60 | 30,0 | 66 | 183 | 164 | 3,96 | 25 | 350 | 218 052 | 350 | 218 096 | |
| 32 | 1 7/8 -12 | UN -2B | 143 | 19,0 | 98,0 | M36x1,5 | 70 | 50 | 70 | 35,0 | 76 | 193 | 174 | 5,03 | 32 | 350 | 218 053 | 350 | 218 097 | |
| 40 | 2 1/2 -12 | UN -2B | 165 | 19,0 | 111,0 | M36x1,5 | 90 | 50 | 90 | 45,0 | 96 | 213 | 194 | 9,10 | 40 | 350 | 218 054 | 350 | 218 098 | |

| DN | PN | Article-No. | PN | Article-No. |
|----|-----|-------------|-----|-------------|
| 4 | 350 | 218 028 | 350 | 218 071 |
| 6 | 350 | 218 029 | 350 | 218 072 |
| 10 | 350 | 218 030 | 350 | 218 073 |
| 12 | 350 | 218 031 | 350 | 218 074 |
| 20 | 350 | 218 032 | 350 | 218 075 |
| 25 | 350 | 218 033 | 350 | 218 076 |
| 32 | 350 | 218 034 | 350 | 218 077 |
| 40 | 350 | 218 035 | 350 | 218 078 |
| 50 | 350 | 218 036 | 350 | 218 079 |
| 4 | 350 | 218 037 | 350 | 218 080 |
| 6 | 350 | 218 038 | 350 | 218 081 |
| 10 | 350 | 218 039 | 350 | 218 082 |
| 12 | 350 | 218 040 | 350 | 218 083 |
| 20 | 350 | 218 041 | 350 | 218 084 |
| 25 | 350 | 218 042 | 350 | 218 085 |
| 32 | 350 | 218 043 | 350 | 218 086 |
| 40 | 350 | 218 044 | 350 | 218 087 |
| 50 | 350 | 218 045 | 350 | 218 088 |
| 4 | 350 | 218 047 | 350 | 218 089 |
| 6 | 350 | 218 057 | 350 | 218 090 |
| 8 | 350 | 218 048 | 350 | 218 091 |
| 10 | 350 | 218 049 | 350 | 218 092 |
| 12 | 350 | 218 058 | 350 | 218 093 |
| 16 | 350 | 218 050 | 350 | 218 094 |
| 20 | 350 | 218 051 | 350 | 218 095 |
| 25 | 350 | 218 052 | 350 | 218 096 |
| 32 | 350 | 218 053 | 350 | 218 097 |
| 40 | 350 | 218 054 | 350 | 218 098 |



Flow control valves for manifold mounting · steel · DN 6 - DN 40

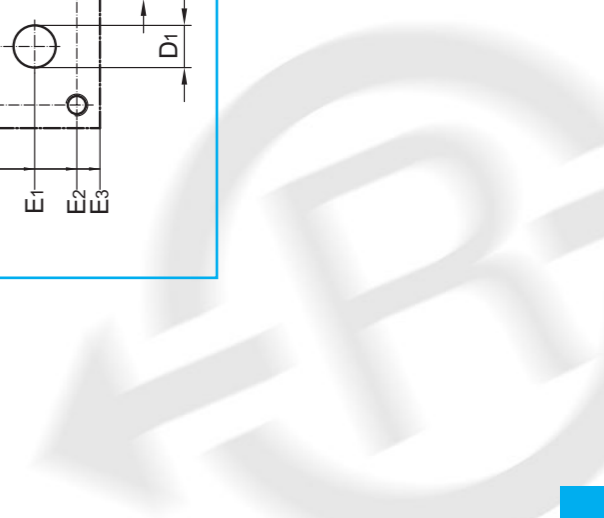
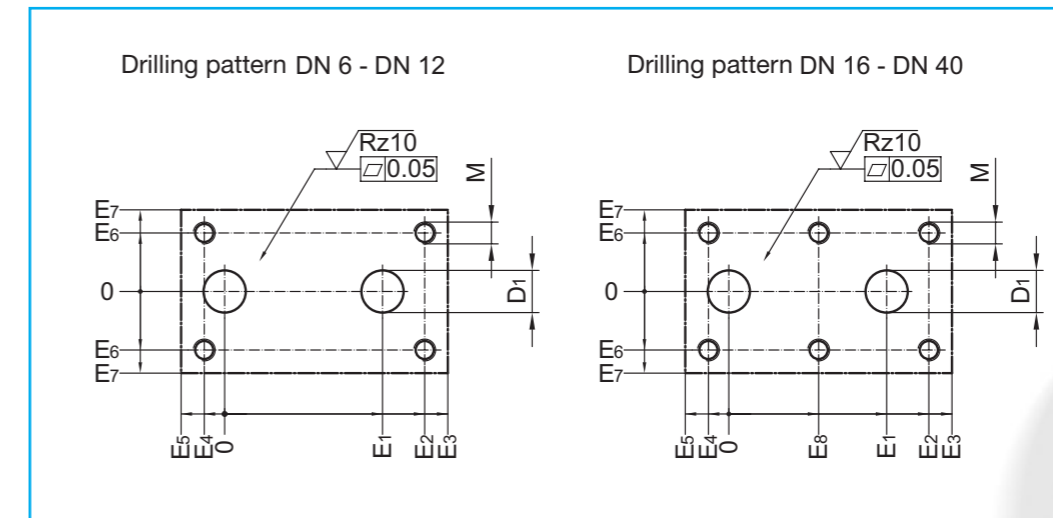


O-Rings included in delivery
 Opening pressure: 0,5
 All dimensions subject to change without notice
 Dimensions in mm
 Weight in kg
 Pressure in bar

Body: steel, zinc plated
 O-Rings: FKM

| Connection | DN | L1 | L2 | L3 | L4 | L5 | L6 | L7 | B | B1 | øC | H | H1 | H2 | H3 | H4 | A | DN | D1 | D2 | D3 | D4 | T1 | T2 | Weight | For cylinderhead screw DIN EN ISO 4762 (DIN 912) | | PN | Article-No. |
|------------------------------------|----|------|------|-------|-------|------|-------|------|-------|-------|----|-----|-----|-----|-----|------|-----------|----|------|------|------|------|-----|------|--------|--|----------|--------|-------------|
| | | | | | | | | | | | | | | | | | | | | | | | | | | M6 - 8.8 | M8 - 8.8 | | |
| Body flange with O-Ring-sealing | 6 | 16,0 | 8,0 | 41,5 | 19,0 | 6,4 | 41,5 | - | 41,5 | 28,5 | 29 | 16 | 19 | 74 | 84 | 8,0 | M18 x 1,5 | 6 | 5,0 | 9,7 | 6,5 | 10,5 | 1,3 | 6,8 | 0,3 | M6 - 8.8 | 350 | 218061 | |
| | 8 | 25,5 | 18,7 | 63,5 | 35,0 | 14,2 | 68,5 | - | 46,0 | 33,5 | 29 | 20 | 23 | 78 | 87 | 10,0 | M18 x 1,5 | 8 | 7,0 | 12,3 | 6,5 | 10,5 | 1,5 | 6,8 | 0,5 | M6 - 8.8 | 350 | 218062 | |
| | 10 | 25,5 | 22,0 | 70,0 | 33,5 | 18,0 | 75,0 | - | 51,0 | 38,0 | 29 | 25 | 28 | 83 | 93 | 12,5 | M18 x 1,5 | 10 | 10,0 | 15,7 | 6,5 | 10,5 | 1,5 | 6,8 | 0,8 | M6 - 8.8 | 350 | 218063 | |
| | 12 | 30,0 | 25,0 | 80,0 | 38,0 | 21,0 | 85,0 | - | 57,5 | 44,5 | 29 | 32 | 35 | 90 | 100 | 16,0 | M18 x 1,5 | 12 | 13,0 | 18,7 | 6,5 | 10,5 | 1,5 | 6,8 | 1,2 | M6 - 8.8 | 350 | 218064 | |
| | 16 | 54,0 | 21,4 | 104,0 | 76,0 | 10,0 | 111,0 | 38,0 | 70,0 | 54,0 | 38 | 45 | 49 | 111 | 123 | 22,5 | M22 x 1,5 | 16 | 17,0 | 23,7 | 8,4 | 14,0 | 2,0 | 9,0 | 2,5 | M8 - 8.8 | 350 | 218065 | |
| | 20 | 57,0 | 35,0 | 127,0 | 95,0 | 16,0 | 133,0 | 47,5 | 80,0 | 60,0 | 38 | 49 | 53 | 115 | 127 | 24,5 | M22 x 1,5 | 20 | 22,0 | 30,5 | 8,4 | 14,0 | 2,3 | 9,0 | 4,0 | M8 - 8.8 | 350 | 218066 | |
| | 25 | 79,5 | 35,6 | 165,0 | 120,0 | 15,0 | 165,0 | 60,0 | 100,0 | 76,0 | 38 | 55 | 59 | 121 | 133 | 27,5 | M22 x 1,5 | 25 | 28,5 | 37,5 | 10,5 | 17,0 | 2,3 | 11,0 | 6,7 | M10 - 8.8 | 350 | 218067 | |
| | 30 | 95,0 | 38,8 | 186,0 | 143,0 | 15,0 | 192,0 | 71,5 | 120,0 | 92,0 | 50 | 75 | 81 | 179 | 198 | 37,5 | M36 x 1,5 | 30 | 35,0 | 43,5 | 13,0 | 19,0 | 2,3 | 13,0 | 11,5 | M12 - 8.8 | 350 | 218068 | |
| | 40 | 89,0 | 39,5 | 170,0 | 133,5 | 14,0 | 178,0 | 67,0 | 140,0 | 111,0 | 50 | 100 | 106 | 204 | 223 | 50,0 | M36 x 1,5 | 40 | 40,0 | 57,5 | 13,0 | 20,0 | 2,3 | 13,0 | 16,5 | M12 - 8.8 | 350 | 218069 | |

| General tolerances DIN ISO 2768 Surfaces DIN EN ISO 4287 | DN | D1 | E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 | M | O-Ring |
|---|----|------|------|-------|-------|------|------|-------|-------|-------|-----|--------------|
| | | 6 | 5,0 | 16,0 | 17,4 | 33,5 | 1,6 | 8,0 | 14,25 | 20,75 | - | M6 |
| | 8 | 7,0 | 25,5 | 30,5 | 44,8 | 4,5 | 18,7 | 16,75 | 23,00 | - | M6 | 8,50 x 2,00 |
| | 10 | 10,0 | 25,5 | 29,5 | 48,0 | 4,0 | 22,0 | 19,00 | 25,50 | - | M6 | 12,00 x 2,00 |
| | 12 | 13,0 | 30,0 | 34,0 | 55,0 | 4,0 | 25,0 | 22,25 | 28,75 | - | M6 | 15,00 x 2,00 |
| | 16 | 17,0 | 54,0 | 64,6 | 82,6 | 11,4 | 21,4 | 27,00 | 35,00 | 26,6 | M8 | 19,00 x 2,50 |
| | 20 | 22,0 | 57,0 | 76,0 | 92,0 | 19,0 | 35,0 | 30,00 | 40,00 | 28,5 | M8 | 25,00 x 3,00 |
| | 25 | 28,5 | 79,5 | 99,4 | 129,4 | 20,6 | 35,6 | 38,00 | 50,00 | 39,4 | M10 | 32,00 x 3,00 |
| | 30 | 35,0 | 95,0 | 119,2 | 147,2 | 23,8 | 38,8 | 46,00 | 60,00 | 47,7 | M12 | 38,00 x 3,00 |
| | 40 | 40,0 | 89,0 | 108,0 | 130,5 | 25,5 | 39,5 | 55,50 | 70,00 | 41,5 | M12 | 52,00 x 3,00 |

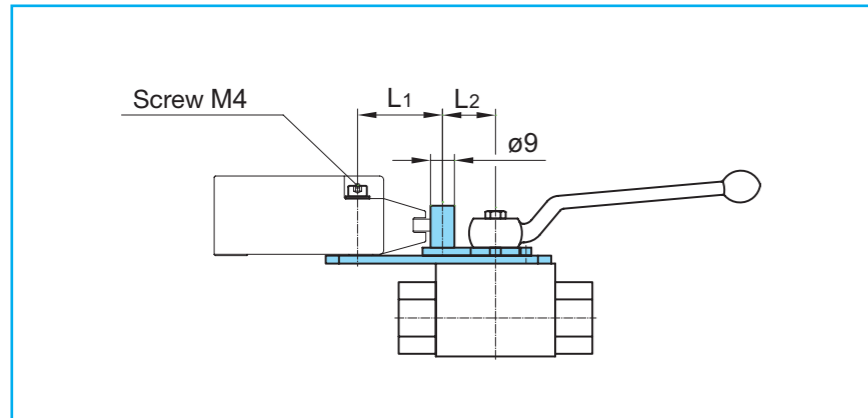


Product overview

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



Mounting kits for limit switches



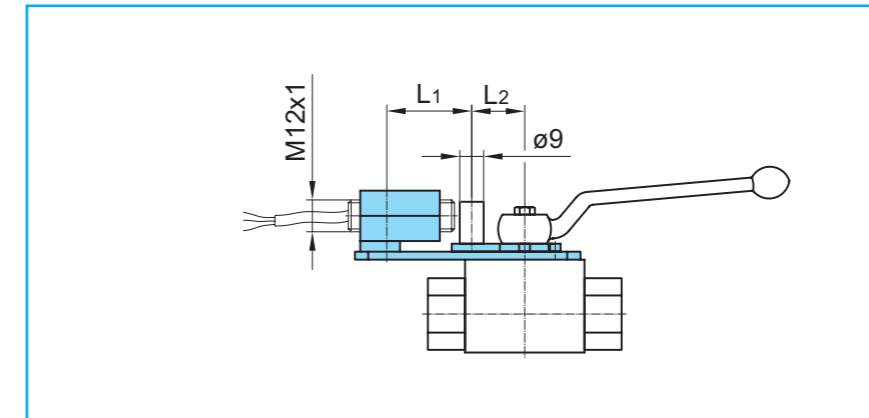
For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
 Mounting kits for other types of ball valves on request
 All dimensions subject to change without notice
Also completely assembled available

Steel

Steel

| Switching positions | DN | 2-way- and multi-way ball valves with floating ball | | | Multi-way ball valves with trunnion ball | | |
|---------------------|-------|---|------|----|--|------|------|
| | | Article-No. | L1 | L2 | Article-No. | L1 | L2 |
| open | 4/6 | 204 001 | 50,5 | 20 | 204 031 | 58,0 | 27,5 |
| | 8/10 | 204 002 | 50,5 | 20 | 204 032 | 61,5 | 31,0 |
| | 12 | 204 003 | 61,5 | 31 | 204 032 | 61,5 | 31,0 |
| | 16 | 204 003 | 61,5 | 31 | 204 032 | 61,5 | 31,0 |
| | 20/25 | 204 005 | 61,5 | 31 | 204 033 | 64,5 | 34,0 |
| | 32 | 204 006 | 64,5 | 34 | 204 033 | 64,5 | 34,0 |
| closed | 4/6 | 204 011 | 50,5 | 20 | 204 041 | 58,0 | 27,5 |
| | 8/10 | 204 012 | 50,5 | 20 | 204 042 | 61,5 | 31,0 |
| | 12 | 204 013 | 61,5 | 31 | 204 042 | 61,5 | 31,0 |
| | 16 | 204 013 | 61,5 | 31 | 204 042 | 61,5 | 31,0 |
| | 20/25 | 204 015 | 61,5 | 31 | 204 043 | 64,5 | 34,0 |
| | 32 | 204 016 | 64,5 | 34 | 204 043 | 64,5 | 34,0 |
| open and closed | 4/6 | 204 021 | 50,5 | 20 | 204 051 | 58,0 | 27,5 |
| | 8/10 | 204 022 | 50,5 | 20 | 204 052 | 61,5 | 31,0 |
| | 12 | 204 023 | 61,5 | 31 | 204 052 | 61,5 | 31,0 |
| | 16 | 204 023 | 61,5 | 31 | 204 052 | 61,5 | 31,0 |
| | 20/25 | 204 025 | 61,5 | 31 | 204 053 | 64,5 | 34,0 |
| | 32 | 204 026 | 64,5 | 34 | 204 053 | 64,5 | 34,0 |
| | 40 | 204 026 | 64,5 | 34 | 204 054 | 64,5 | 34,0 |
| | 50 | 204 026 | 64,5 | 34 | - | | |

Mounting kits for proximity switches

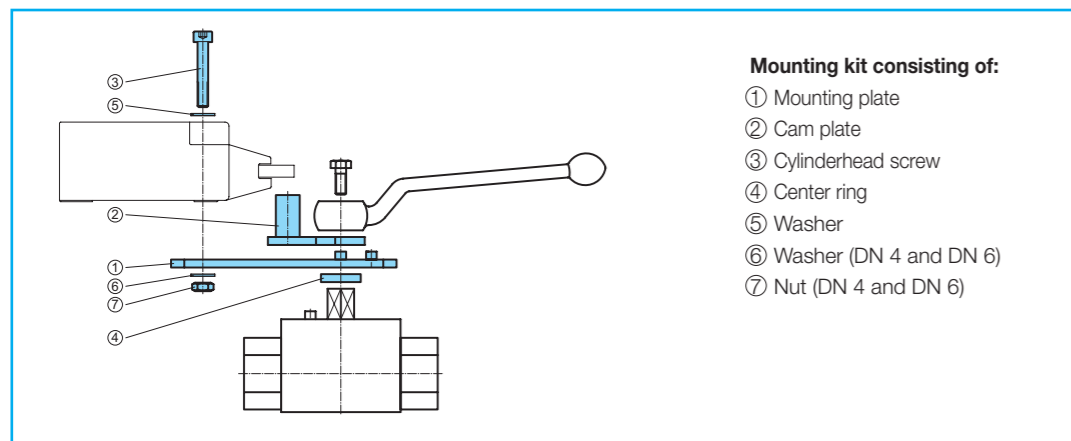


For dimensions and article-numbers for ball valve bodies refer to the respective chapter.
 Mounting kits for other types of ball valves on request
 All dimensions subject to change without notice
Also completely assembled available

Steel

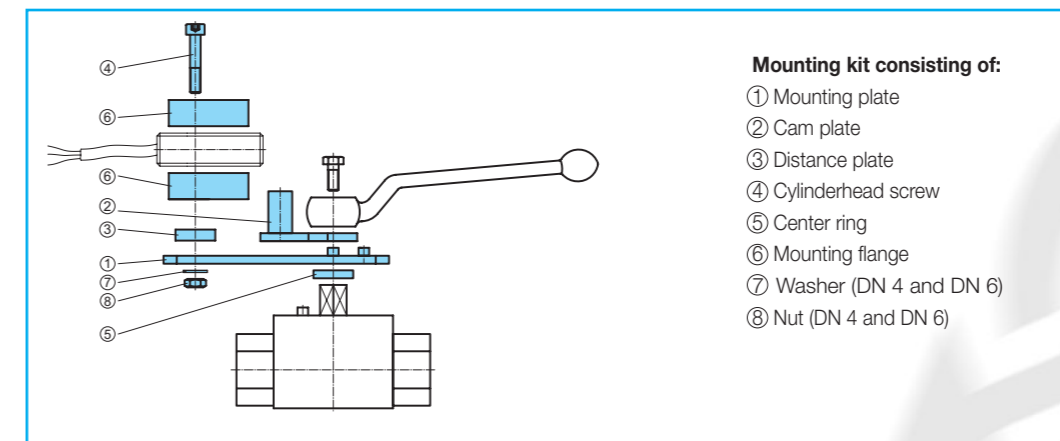
Steel

| Switching positions | DN | 2-way- and multi-way ball valves with floating ball | | Multi-way ball valves with trunnion ball | |
|---------------------|-------|---|-------------|--|-------------|
| | | Article-No. | Article-No. | Article-No. | Article-No. |
| open | 4/6 | 204 061 | 204 061 | 204 091 | |
| | 8/10 | 204 062 | 204 062 | 204 092 | |
| | 12 | 204 063 | 204 063 | 204 092 | |
| | 16 | 204 063 | 204 063 | 204 092 | |
| | 20/25 | 204 065 | 204 065 | 204 093 | |
| | 32 | 204 066 | 204 066 | 204 093 | |
| closed | 4/6 | 204 071 | 204 071 | 204 101 | |
| | 8/10 | 204 072 | 204 072 | 204 102 | |
| | 12 | 204 073 | 204 073 | 204 102 | |
| | 16 | 204 073 | 204 073 | 204 102 | |
| | 20/25 | 204 075 | 204 075 | 204 103 | |
| | 32 | 204 076 | 204 076 | 204 103 | |
| open and closed | 4/6 | 204 076 | 204 076 | 204 104 | |
| | 8/10 | 204 076 | 204 076 | - | |
| | 12 | 204 081 | 204 081 | 204 111 | |
| | 16 | 204 082 | 204 082 | 204 112 | |
| | 20/25 | 204 083 | 204 083 | 204 112 | |
| | 32 | 204 083 | 204 083 | 204 112 | |
| | 40 | 204 085 | 204 085 | 204 113 | |
| | 50 | 204 086 | 204 086 | 204 113 | |
| | | 204 086 | 204 086 | 204 114 | |
| | | 204 086 | 204 086 | - | |



Mounting kit consisting of:

- ① Mounting plate
- ② Cam plate
- ③ Cylinderhead screw
- ④ Center ring
- ⑤ Washer
- ⑥ Washer (DN 4 and DN 6)
- ⑦ Nut (DN 4 and DN 6)

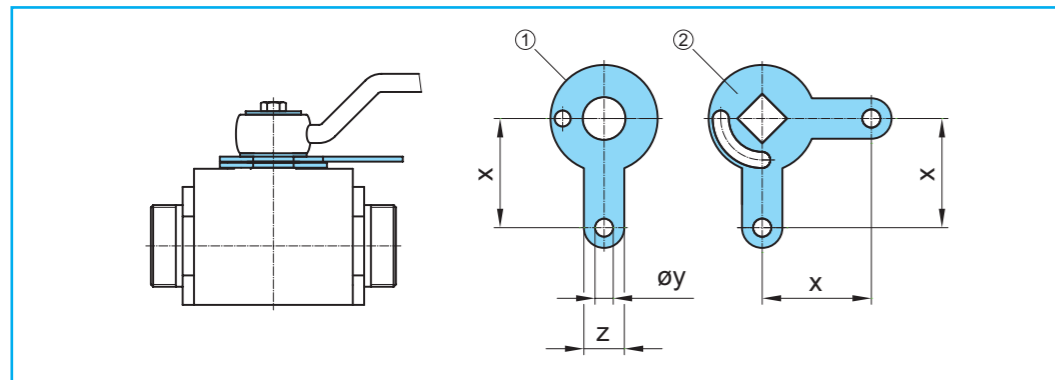


Mounting kit consisting of:

- ① Mounting plate
- ② Cam plate
- ③ Distance plate
- ④ Cylinderhead screw
- ⑤ Center ring
- ⑥ Mounting flange
- ⑦ Washer (DN 4 and DN 6)
- ⑧ Nut (DN 4 and DN 6)

Attachments, accessories

Locking devices for 2- and multi-way ball valves with floating ball · 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

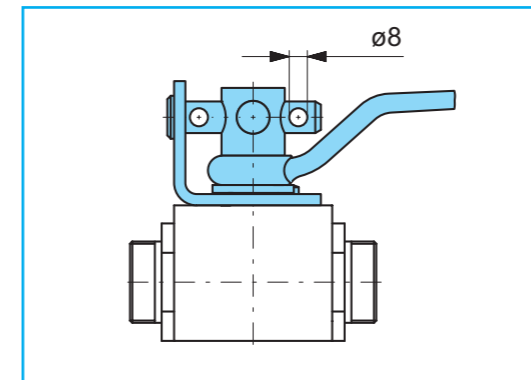
All dimensions subject to change without notice

Also completely assembled available

Material: stainless steel

| Switching position | DN | t | x | y | z | Article-No. |
|--------------------|----------|------|----|---|----|-------------|
| | 4/6 | 0,80 | 18 | 9 | 20 | 100 836 |
| | 8/10 | 1,20 | 21 | 9 | 20 | 100 837 |
| | 12 | 1,20 | 29 | 9 | 20 | 100 838 |
| | 16 | 1,20 | 29 | 9 | 20 | 100 838* |
| | 20/25 | 1,50 | 34 | 9 | 20 | 100 840 |
| | 32/40/50 | 1,75 | 54 | 9 | 20 | 100 841 |

* DN 16 stainless steel 100840



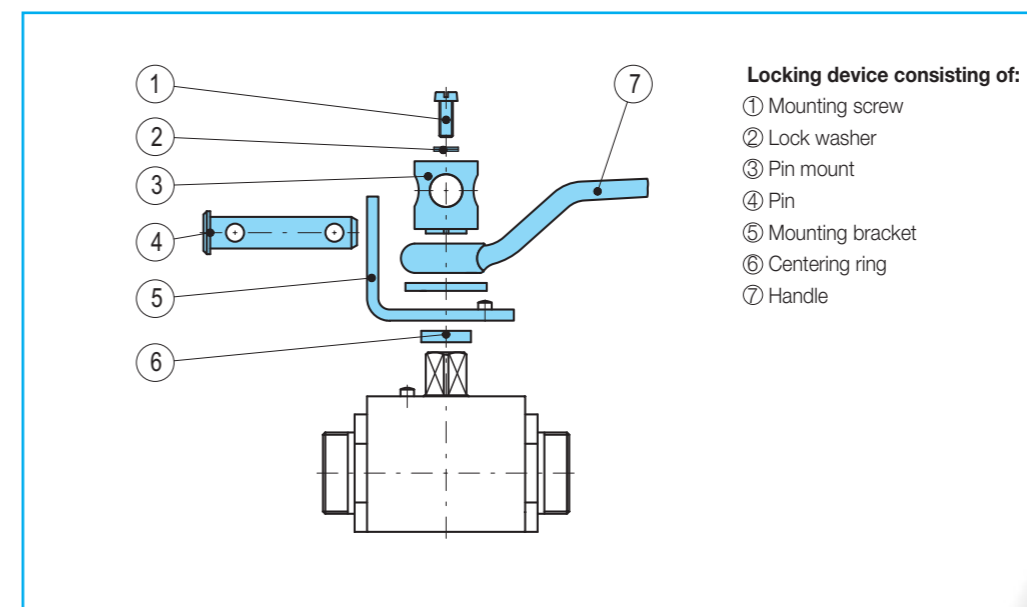
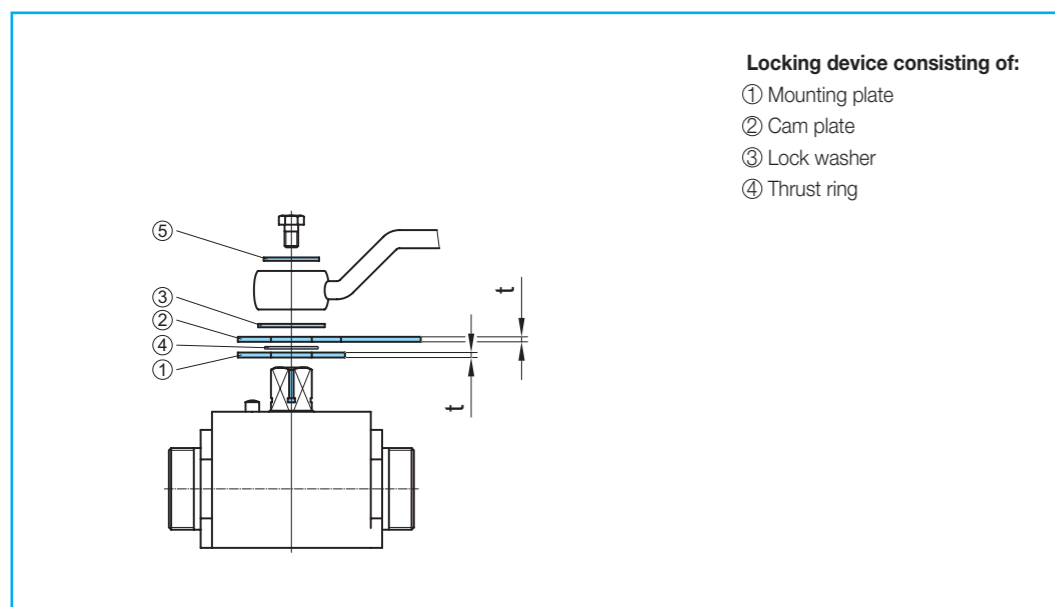
For dimensions and article-numbers for ball valve bodies refer to the respective chapter.

Locking devices for other types of ball valves on request

All dimensions subject to change without notice

Also completely assembled available

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

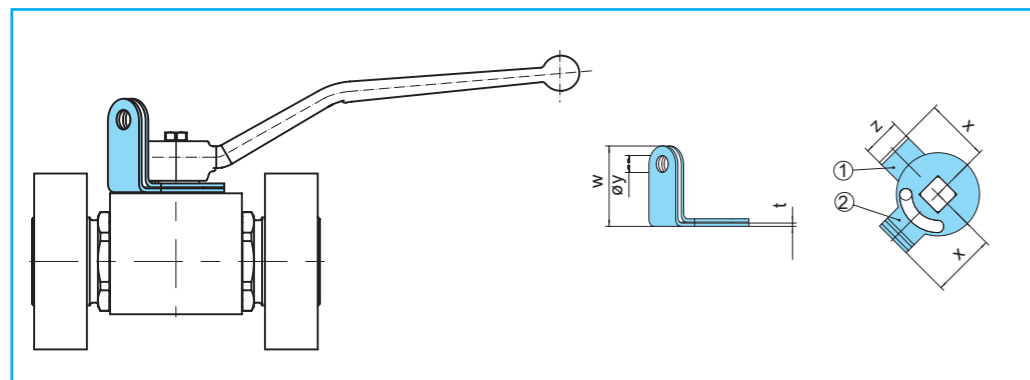


| DN | Article-No. |
|------------|-------------|
| 76/102/127 | 100 830 |

NEW!

Attachments, accessories

Locking devices for 2- and multi-way ball valves with floating ball · Steel and stainless steel



NEW!

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

Locking devices for other types of ball valves on request

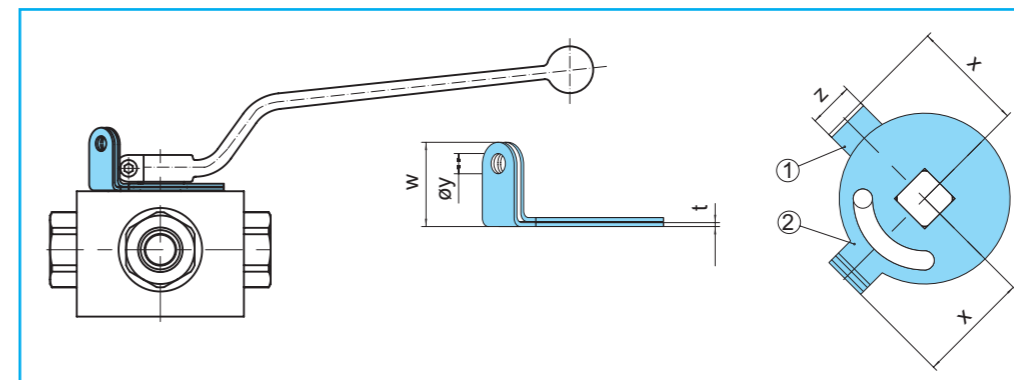
All dimensions subject to change without notice

Also completely assembled available

Material: stainless steel

| Switching position | DN | t | w | x | y | z | Article-No. |
|--------------------|----------|------|------|------|---|----|-------------|
| | 4/6 | 1,25 | 28,0 | 18,5 | 9 | 20 | 100 980 |
| | 8/10 | 1,25 | 30,0 | 20,5 | 9 | 20 | 100 981 |
| | 12/16 | 1,25 | 32,0 | 28,0 | 9 | 20 | 100 982 |
| | 20/25 | 1,75 | 42,5 | 34,0 | 9 | 20 | 100 983 |
| | 32/40/50 | 1,75 | 29,0 | 46,0 | 9 | 20 | 100 984 |

Locking devices for 2- and multi-way ball valves with trunning ball · Steel and stainless steel



NEW!

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

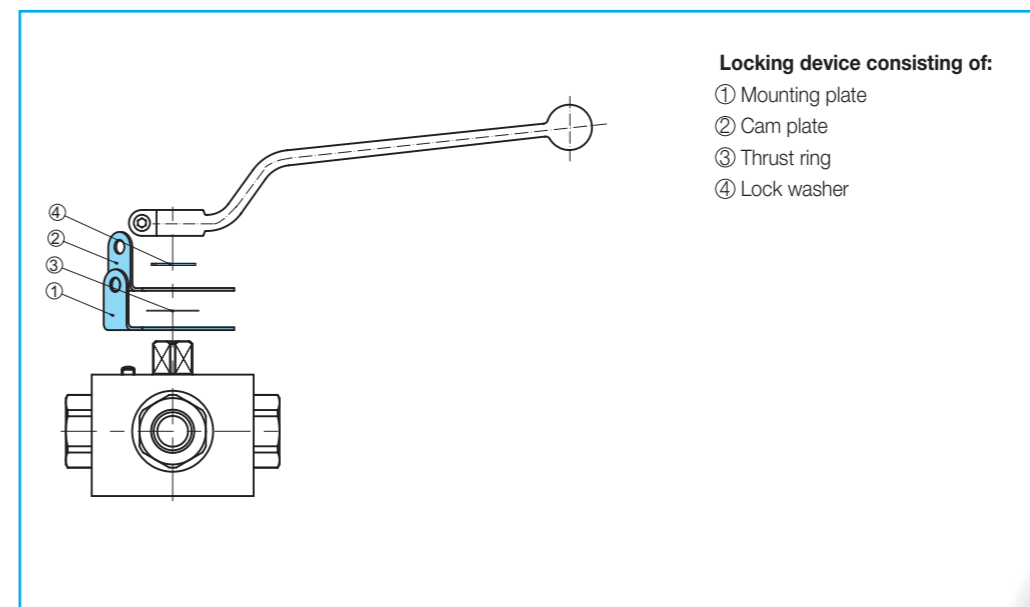
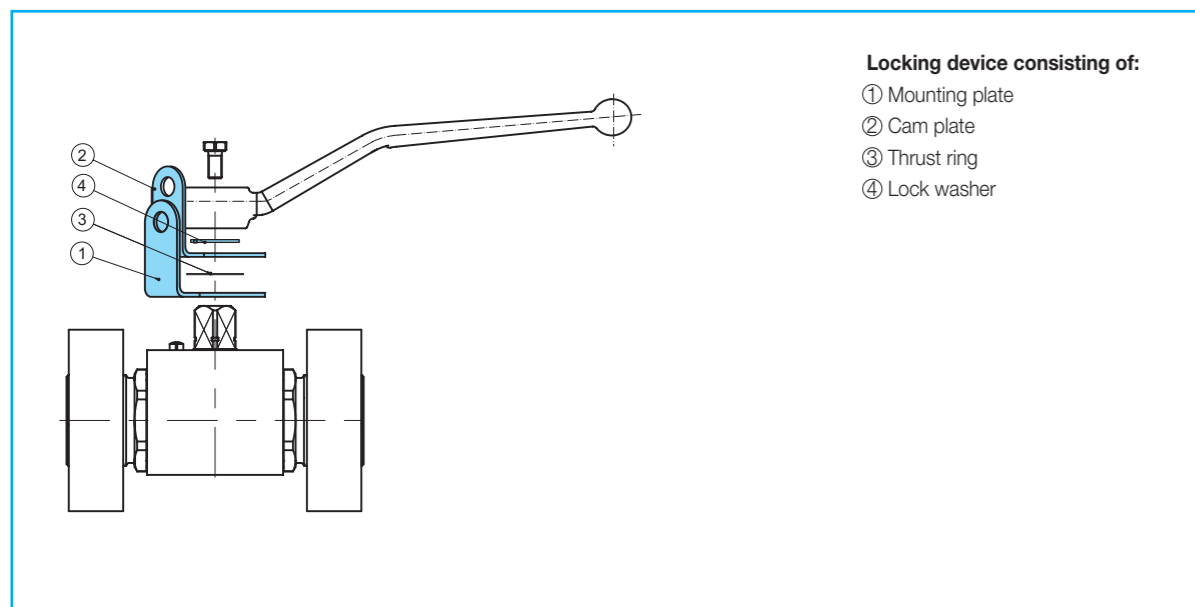
Locking devices for other types of ball valves on request

All dimensions subject to change without notice

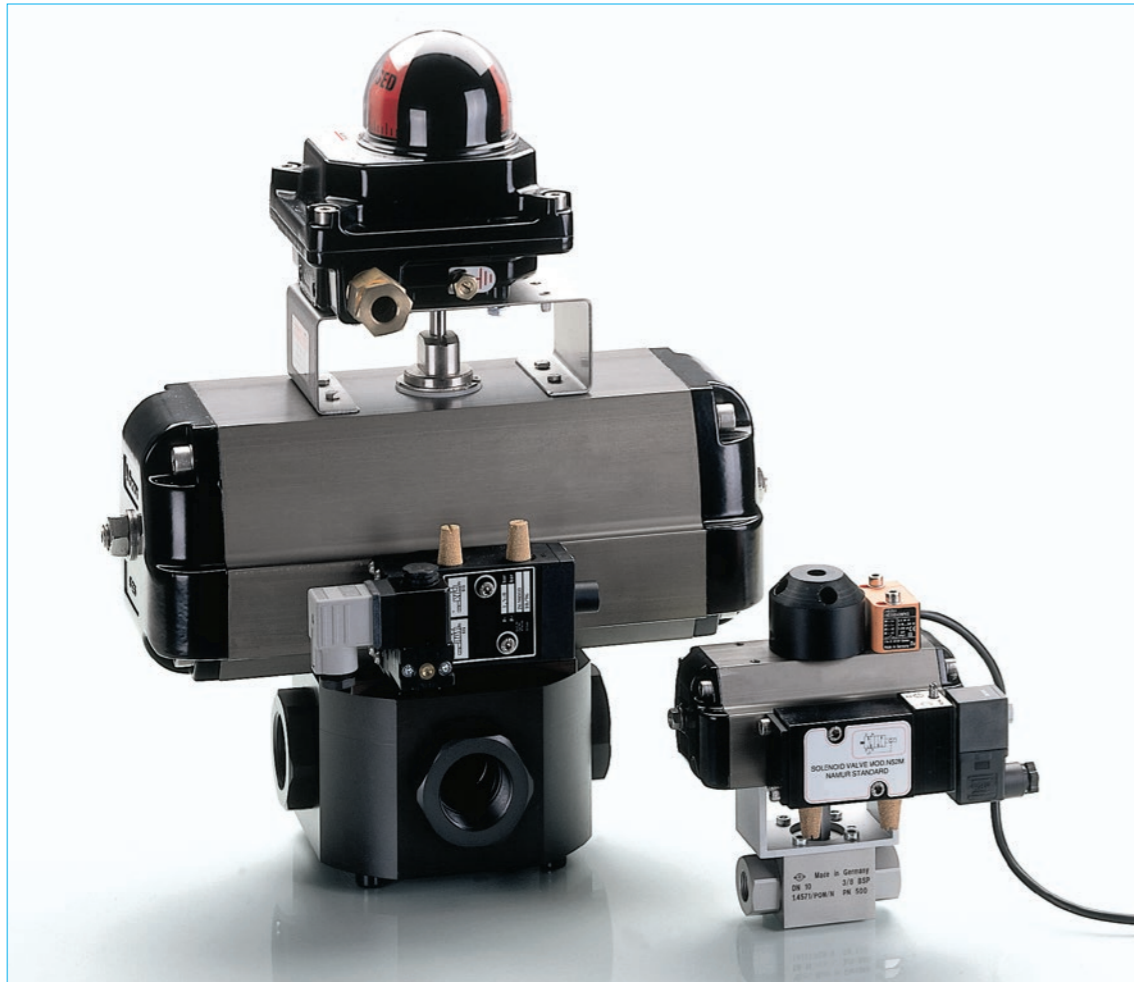
Also completely assembled available

Material: stainless steel

| Switching position | DN | t | w | x | y | z | Article-No. |
|--------------------|-------------|------|------|-------|---|----|-------------|
| | 4/6 | 1,75 | 37,5 | 35,00 | 9 | 20 | 203 905 |
| | 8/10/12 | 1,75 | 37,5 | 37,00 | 9 | 20 | 203 906 |
| | 20/25/32/40 | 1,75 | 37,5 | 50,25 | 9 | 20 | 203 907 |



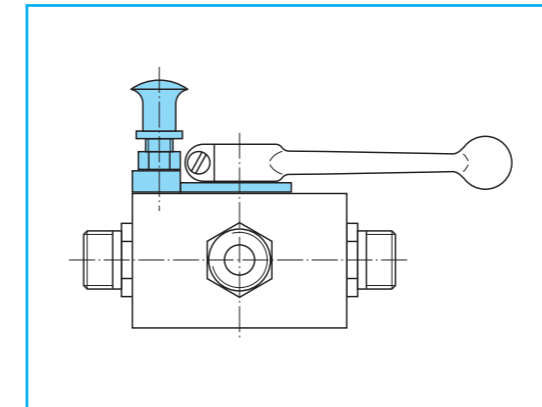
Actuators



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 with trunnion ball
Steel and stainless steel



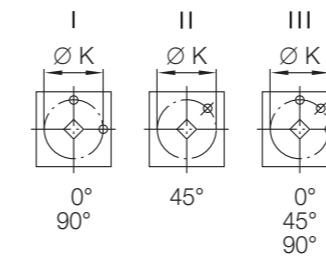
For dimensions and article-numbers for ball valve bodies refer to the respective chapter.

Detents for other types of ball valves on request

All dimensions subject to change without notice

Also completely assembled available

Common detent position at:



DN K

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

Steel

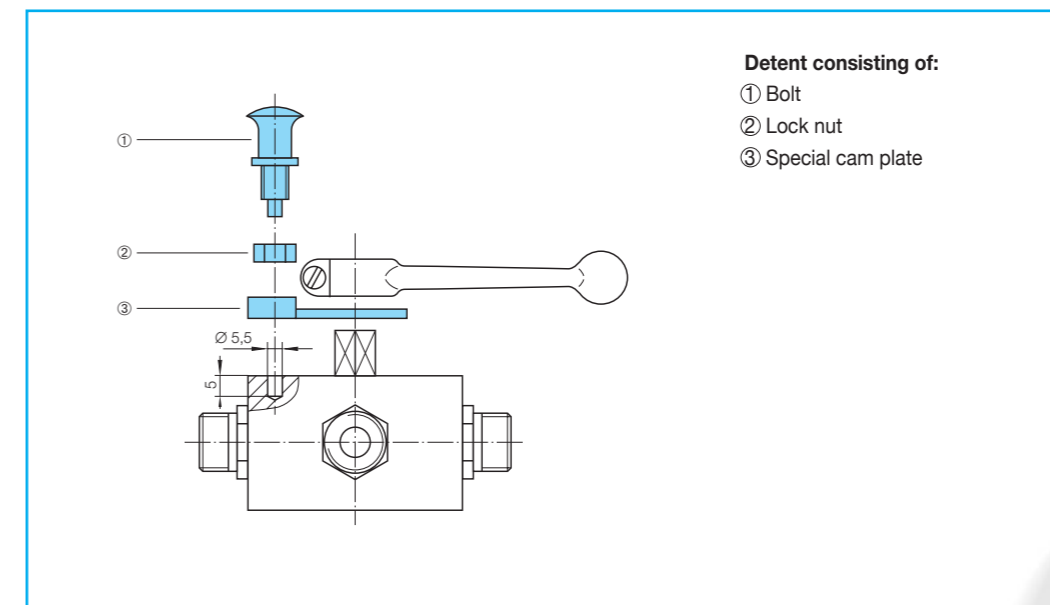
Stainless steel

Article-No.

Article-No.

| |
|---------|
| 203 897 |
| 203 898 |
| 203 898 |
| 203 898 |
| 203 899 |
| 203 899 |
| 203 899 |
| 203 899 |
| 203 900 |

| |
|---------|
| 203 901 |
| 203 902 |
| 203 902 |
| 203 902 |
| 203 903 |
| 203 903 |
| 203 903 |
| 203 903 |
| 203 904 |



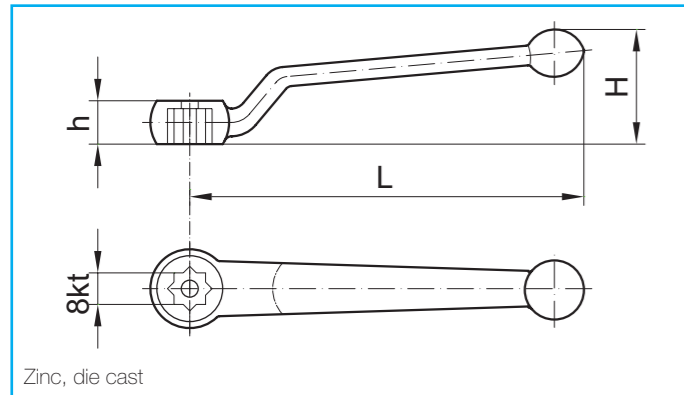
Detent consisting of:

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



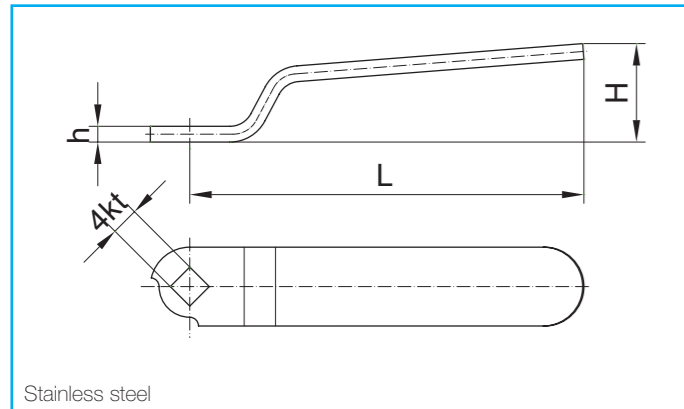
Attachments, accessories

Handles

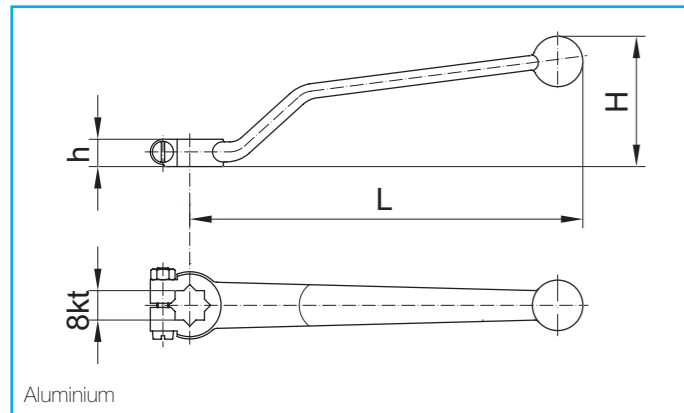


All dimensions subject to change without notice
Dimensions in mm

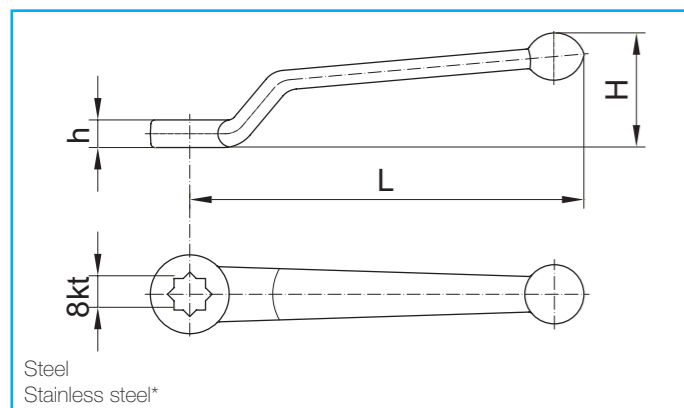
| 8kt | Code | L | H | h | Art.-No. |
|-----|------|-----|----|------|----------|
| 7 | 12 | 76 | 27 | 8,5 | 903709 |
| 8 | 13 | 100 | 29 | 11,0 | 903708 |
| 10 | 14 | 113 | 54 | 14,0 | 903706 |
| 14 | 15 | 184 | 57 | 18,0 | 903694 |



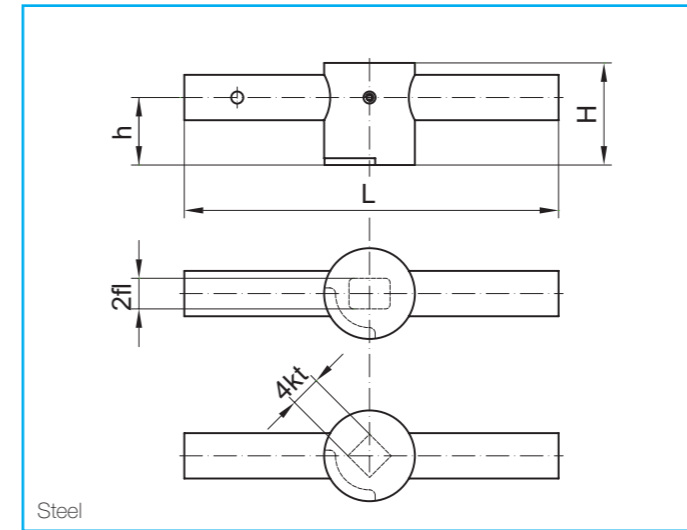
| 4kt | Code | L | H | h | Art.-No. |
|-----|------|-------|----|---|----------|
| 7 | 32 | 76,0 | 23 | 4 | 903749 |
| 8 | 33 | 130,0 | 40 | 4 | 903750 |
| 10 | 34 | 130,0 | 40 | 4 | 903751 |
| 14 | 35 | 185,0 | 45 | 5 | 903752 |



| 8kt | Code | L | H | h | Art.-No. |
|-----|------|-----|----|------|----------|
| 8 | 4 | 91 | 24 | 9,0 | 903020 |
| 9 | 54 | 130 | 47 | 11,0 | 903636 |
| 12 | 7 | 187 | 54 | 13,0 | 903009 |
| 14 | 8 | 187 | 62 | 13,0 | 903004 |
| 17 | 9 | 227 | 70 | 14,0 | 903027 |
| 19 | 10 | 259 | 81 | 16,5 | 903028 |
| 22 | 11 | 361 | 68 | 18,0 | 903610 |

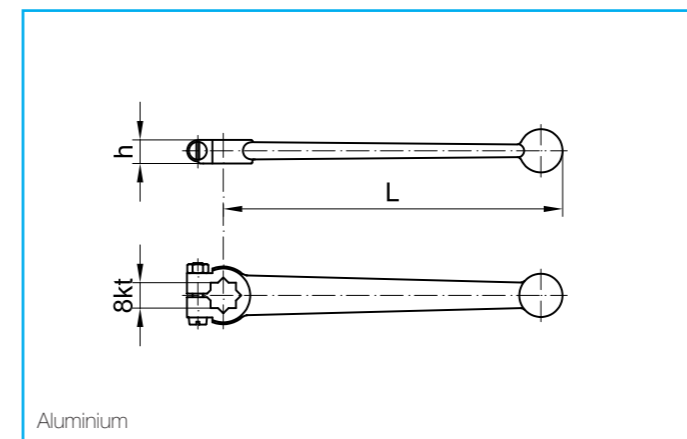


| 8kt | Code | L | H | h | Art.-No. |
|-----|------|-----|----|------|----------|
| 7 | 16 | 96 | 40 | 9,0 | 903804 |
| 8 | 17 | 96 | 40 | 9,0 | 903803 |
| 10 | 19 | 116 | 48 | 12,5 | 903414 |
| 14 | 20 | 187 | 54 | 13,0 | 903634 |
| 17 | 21 | 211 | 66 | 14,0 | 903440 |
| 17* | 37 | 211 | 66 | 14,0 | 903758 |
| 17 | 22 | 320 | 76 | 17,0 | 903539 |
| 17* | 38 | 320 | 76 | 17,0 | 903759 |
| 19 | 23 | 320 | 76 | 17,0 | 903548 |



All dimensions subject to change without notice
Dimensions in mm

| 2fl | Code | L | H | h | Art.-No. |
|-----|------|------|----|------|----------|
| 27 | 57 | 1000 | 90 | 59,5 | 903755 |

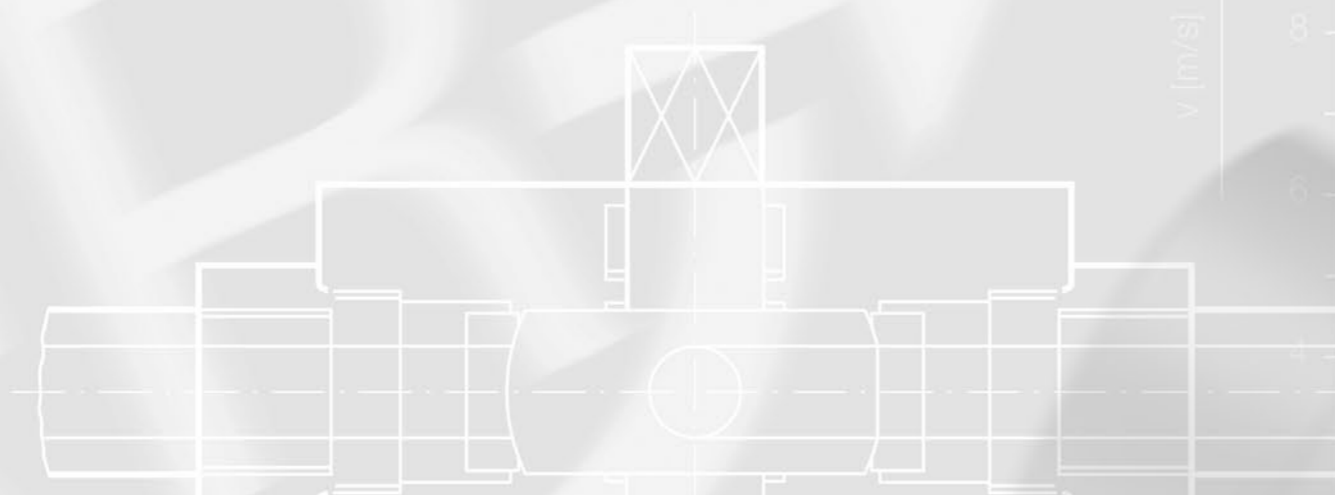
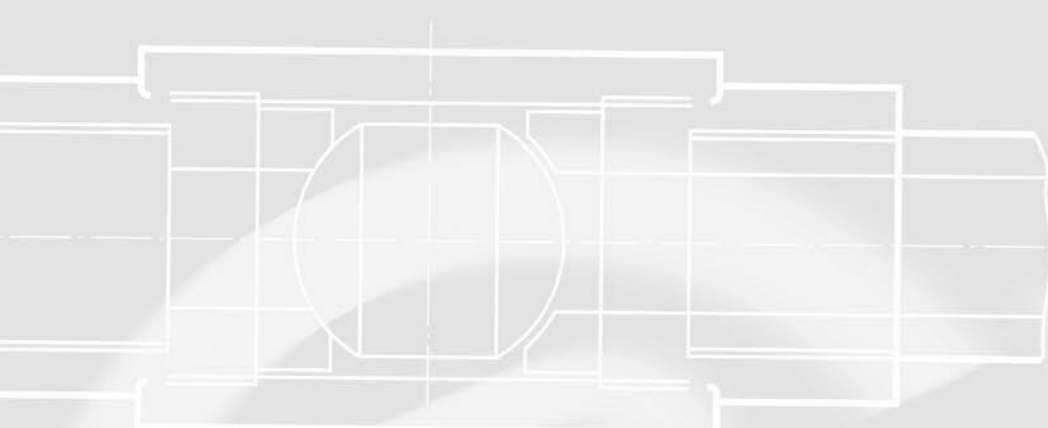


| 4kt | Code | L | H | h | Art.-No. |
|-----|------|-----|----|------|----------|
| 19 | 58 | 600 | 80 | 53,0 | 903754 |

| 8kt | Code | L | h | Art.-No. |
|-----|------|-----|----|----------|
| 11 | 41 | 176 | 12 | 903029 |
| 12 | 42 | 200 | 14 | 903030 |
| 14 | 43 | 200 | 13 | 903031 |
| 17 | 44 | 240 | 14 | 903005 |
| 19 | 45 | 279 | 16 | 903032 |
| 22 | 46 | 321 | 19 | 903620 |
| 24 | 47 | 321 | 19 | 903010 |

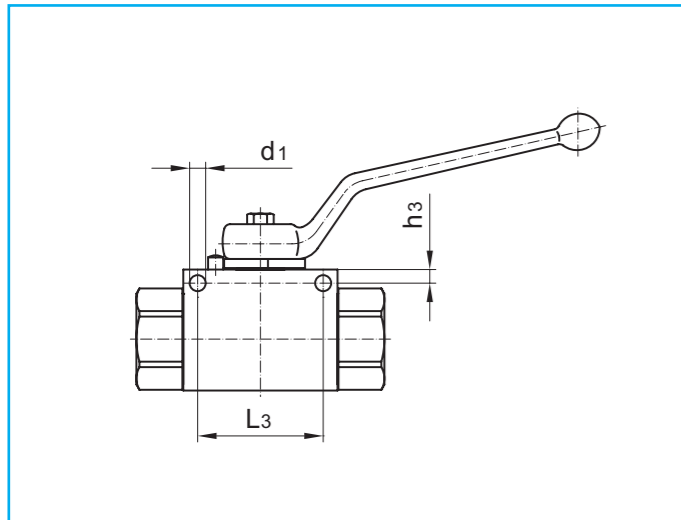


- Mounting holes
- Design principle of ball valves
- Seals of ball valves
- Sealing materials
- Compatibility table
- Ball valve size selection
- Pressure/temperature-diagram
- Δp -characteristics



Technical information

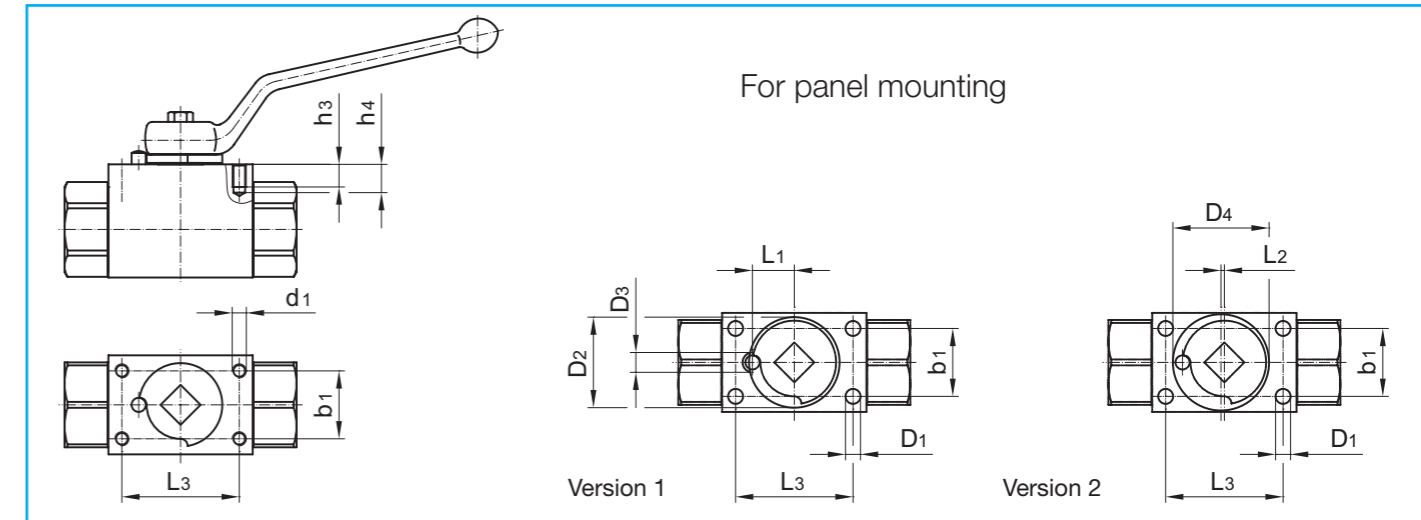
Mounting holes for 2-way and multi-way ball valves with floating ball Steel and stainless steel · DN 4 - DN 25



For wall mounting and stack design

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

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

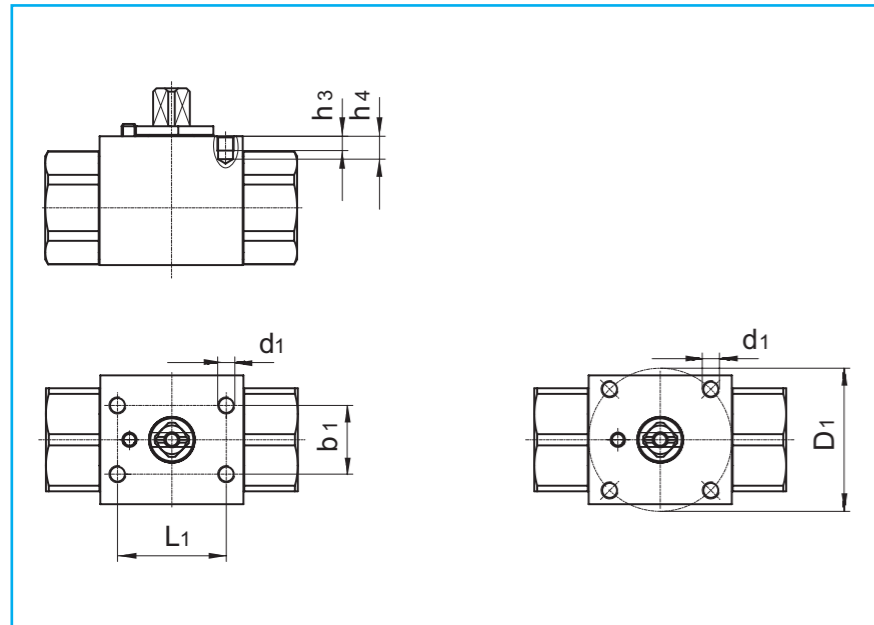
| DN | L3 | b1 | d1 | h3 | h4 | D1 | D2 | D3 | D4 | L1 | L2 |
|-----|------|------|----|----|----|-----|------|-----|------|------|-----|
| 4 | 27,5 | 12,0 | M4 | 5 | 6 | 4,3 | 21,5 | 5,0 | 22,5 | 10,0 | 0,7 |
| 6 | 27,5 | 12,0 | M4 | 5 | 6 | 4,3 | 21,5 | 5,0 | 22,5 | 10,0 | 0,7 |
| 8 | 35,0 | 22,0 | M5 | 6 | 8 | 5,3 | 26,0 | 6,0 | 27,0 | 11,5 | 0,8 |
| 10 | 35,0 | 22,0 | M5 | 6 | 8 | 5,3 | 26,0 | 6,0 | 27,0 | 11,5 | 0,8 |
| 12 | 41,5 | 24,0 | M5 | 8 | 10 | 5,3 | 32,0 | 7,0 | 34,0 | 14,8 | 1,2 |
| 16* | 39,0 | 28,0 | M5 | 8 | 10 | 5,3 | 32,0 | 7,0 | 34,0 | 14,8 | 1,2 |
| 20 | 48,0 | 33,0 | M6 | 9 | 12 | 6,4 | 38,0 | 8,0 | 40,0 | 17,0 | 1,0 |
| 25 | 54,0 | 40,0 | M6 | 9 | 12 | 6,4 | 38,0 | 8,0 | 40,0 | 17,0 | 1,0 |

* Body stainless steel DN 16 similar to DN 20



Technical information

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

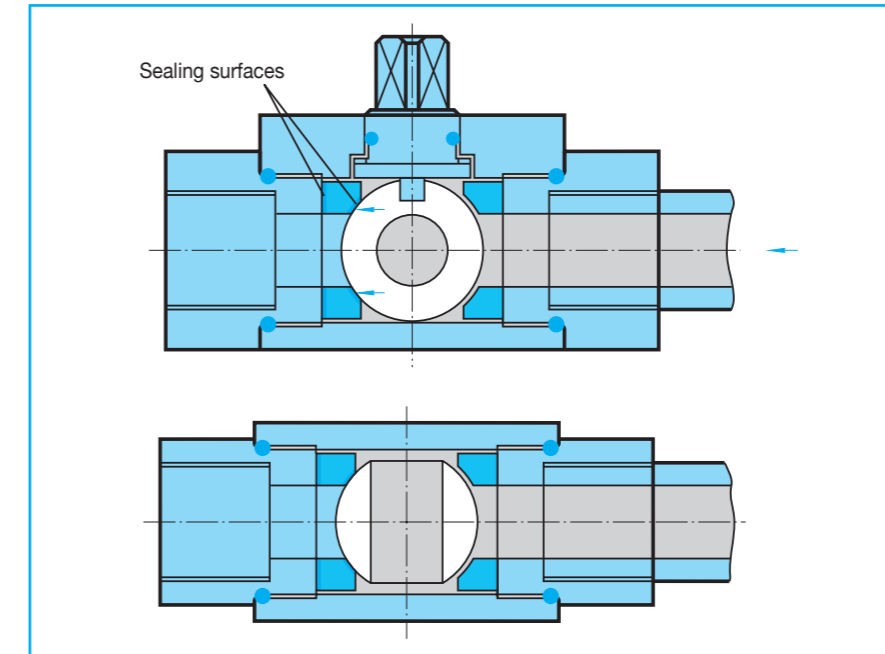


For installation of actuators

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

| DN | D1 | L1 | b1 | d1 | h3 | h4 |
|----|-----|------|----|----|----|----|
| 4 | - | 27,5 | 11 | M4 | 5 | 6 |
| 6 | - | 27,5 | 11 | M4 | 5 | 6 |
| 8 | - | 27,5 | 11 | M4 | 5 | 6 |
| 10 | - | 27,5 | 11 | M4 | 5 | 6 |
| 12 | Ø36 | - | - | M5 | 6 | 8 |
| 16 | Ø50 | - | - | M6 | 6 | 8 |
| 20 | Ø50 | - | - | M6 | 6 | 8 |
| 25 | Ø50 | - | - | M6 | 6 | 8 |

Design principle of 2-way ball valves with floating ball



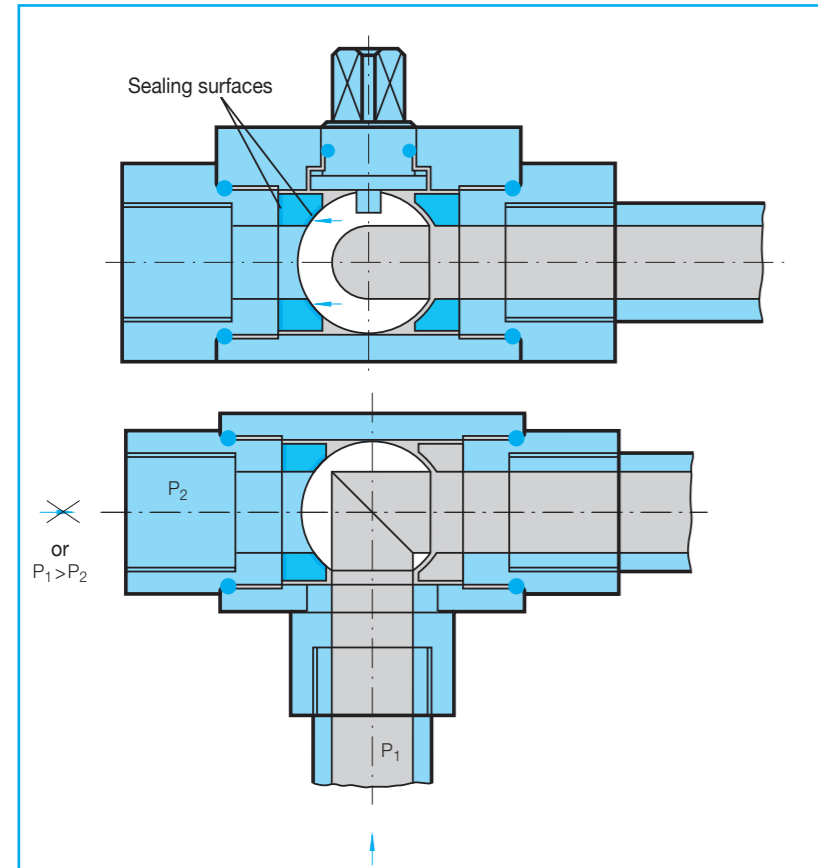
Bearing:
The seats also serve as the bearings for the floating ball.

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



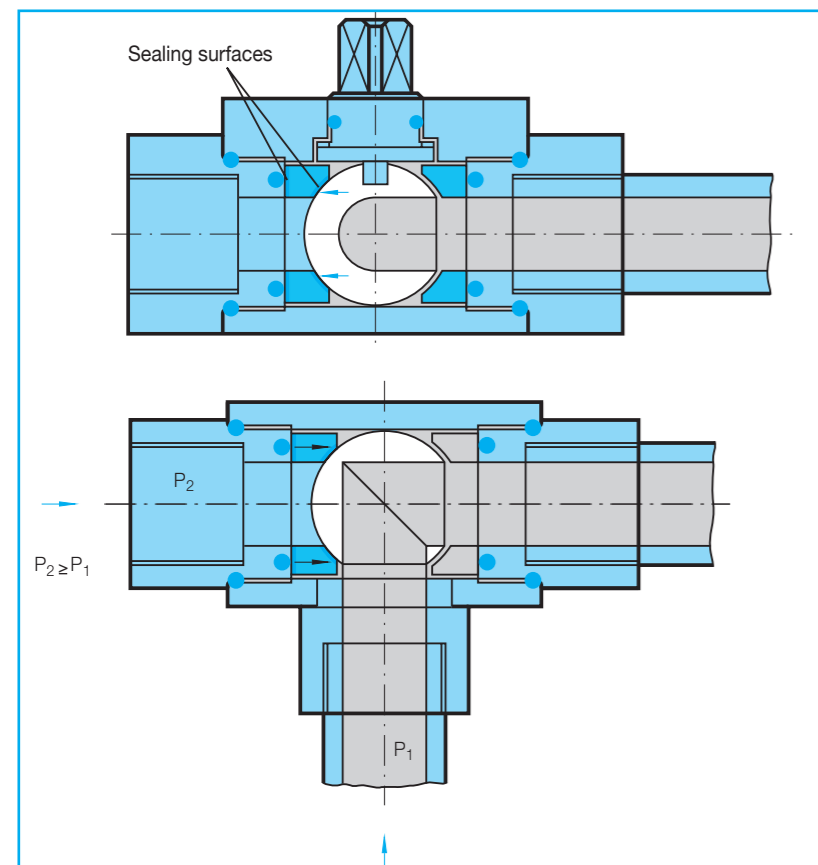
Design principle of multi-way ball valves with floating ball



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.

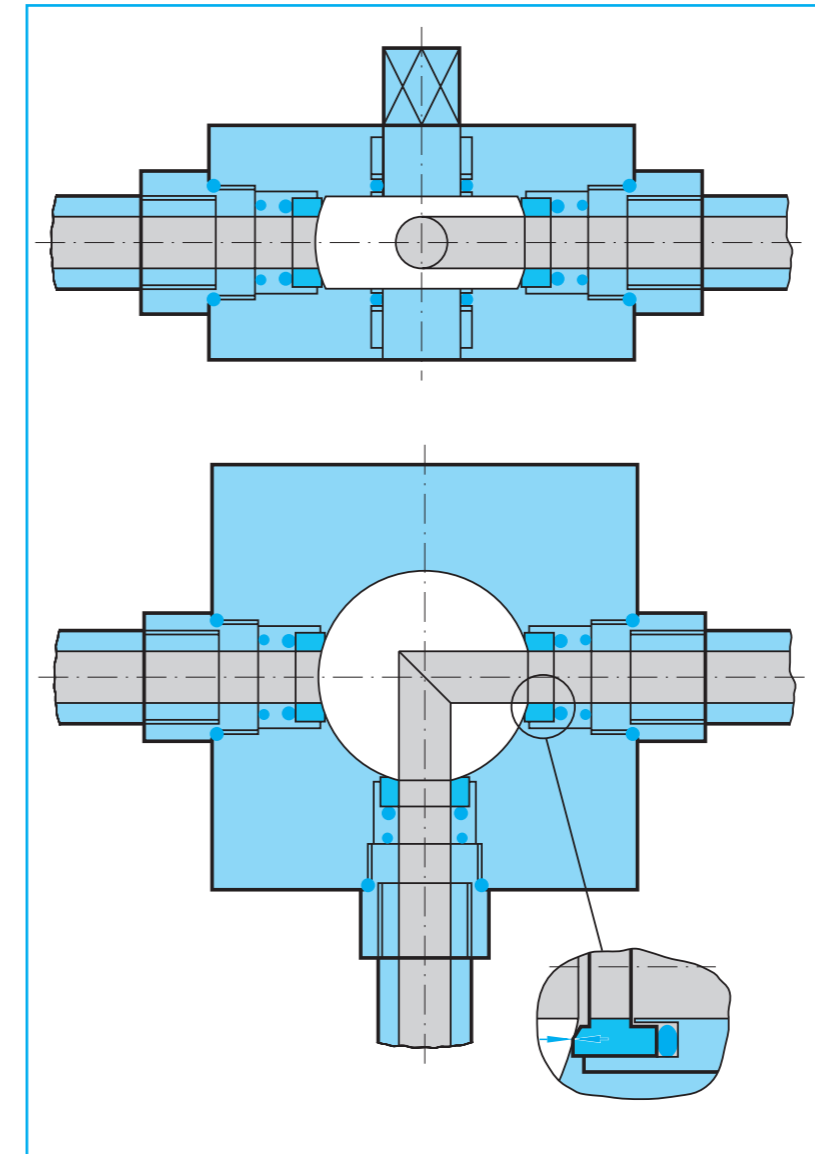
Leakage:
A - DIN EN 12266-1



A.D.-VERSION:
If the pressure from the closed port is higher or equal, the seat at the closed port is pressed against the ball and is sealing tightly.

Leakage:
A - DIN EN 12266-1

Design principle of multi-way ball valves with trunnion ball



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

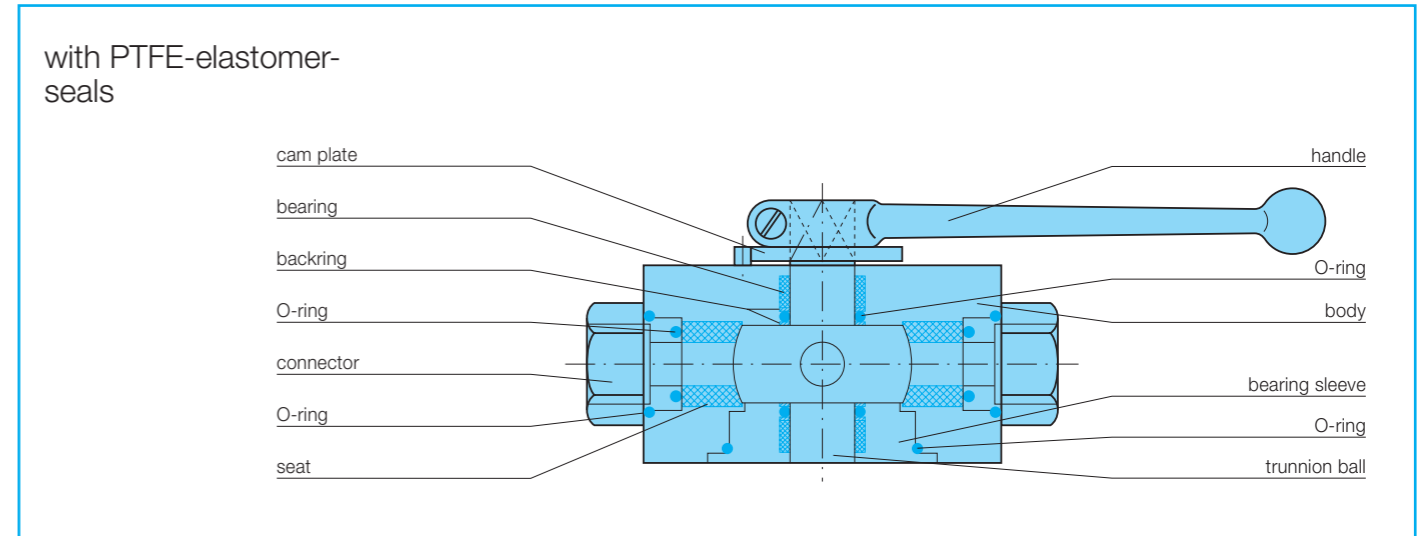
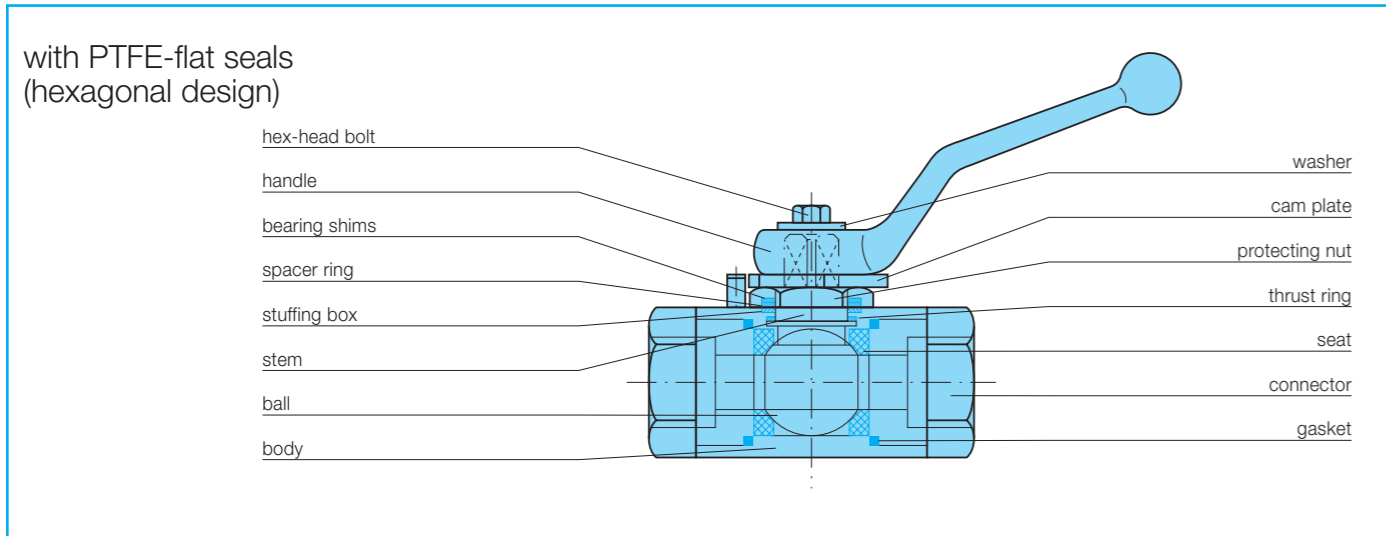
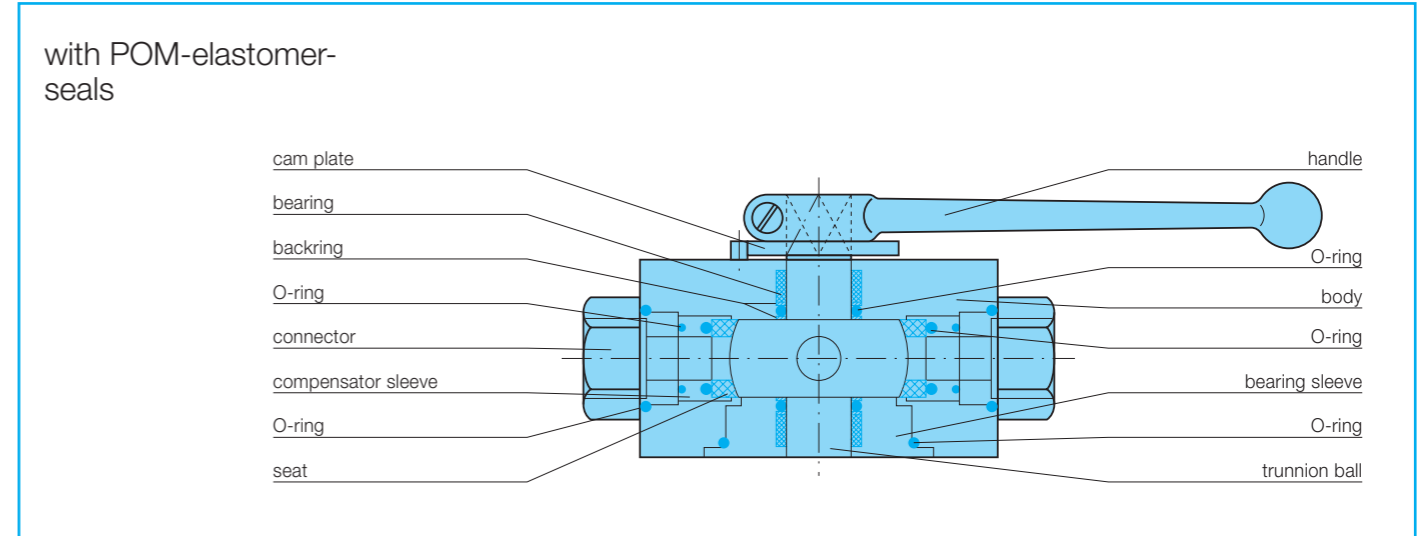
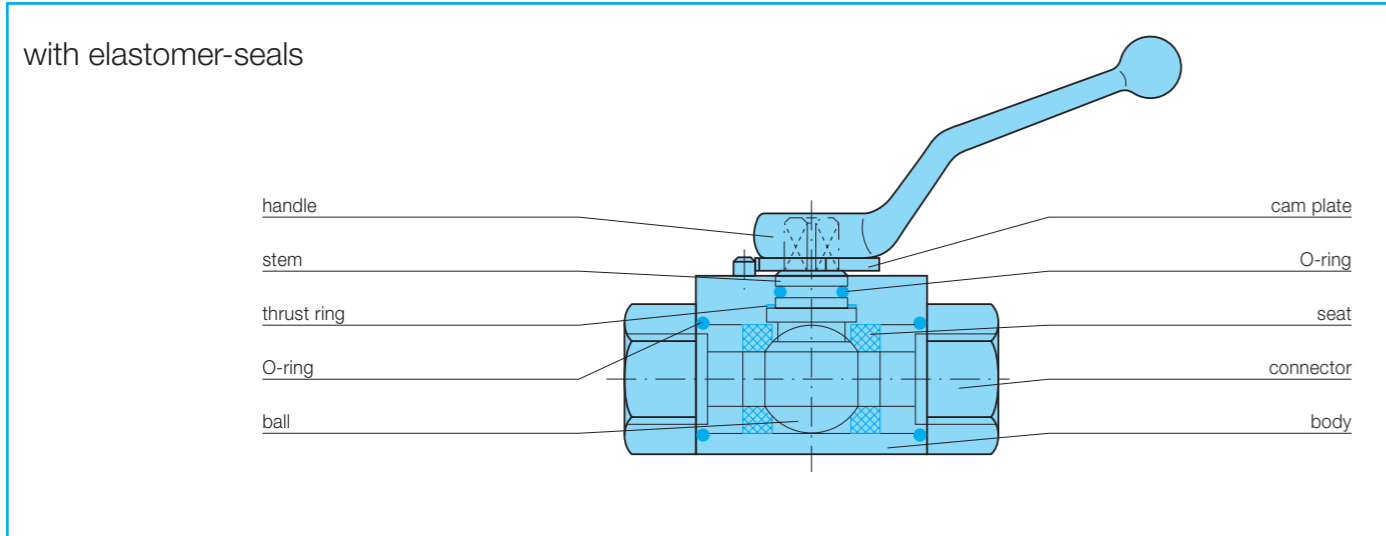
Sealing:
Tight seal at the trunnion ball due to pressure equalized Rötelmann telescopic seal.

Leakage:
A - DIN EN 12266-1



Seals in ball valves with floating ball

Seals in multi-way ball valves with trunnion ball



Sealing 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 Hostaflon Fluon | Thermoplastic | PTFE | Ball seal | -200°C to +260°C | High chemical and temperature resistance; good slip properties. Modifying the crosskage can extend the application range to 250°C or 315 bar. |
| PVDF | Polyvinylidene 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 | Polychlorotrifluorethylene | 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 to +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 | -60°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 | VespeI Kapton | 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 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 | Hydrogenated nitrile rubber | Therban 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 diene rubber | Buna AP Vistalon Dutral Keltan | Elastomer | EPDM | Body- and stem-seal | -40°C to +140°C* | Excellent swelling resistance with heating-circuit water and steam, very good ozone-, aging- and atmospheric condition resistance |
| FKM | Fluor rubber | Viton Tecnoflon Fluorel | Elastomer | FKM | Body- and stem-seal | -15°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 |
| VMQ | Silicone rubber | Silopren Silastic Blensil | Elastomer | VMQ | Body- and stem-seal | -60°C to +180°C | Stable mechanical properties throughout the entire temperature, good resistance against heat, ozone and aging |

* Temperature range: DIN 3771-3
More significant compounds on request

Compatibility table

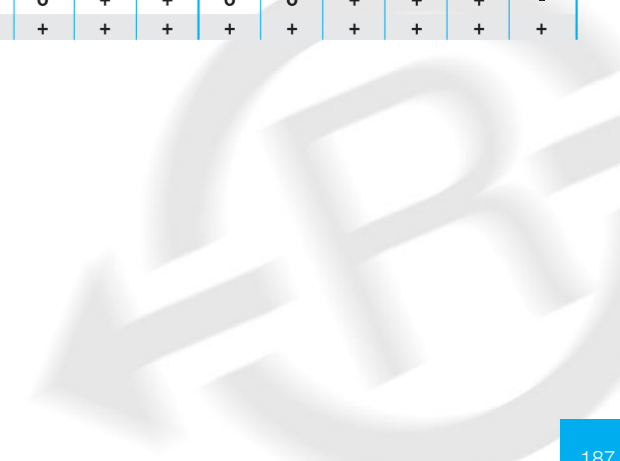
This compatibility table is for information only and without responsibility. The data presented are guidelines and recommendations based on common practice. The resistance of the materials might be affected through specific, on the location prevailing operating conditions as pressure, temperature, static or dynamic strain, but also through modified concentrations of the media exposed to the material. All information referring to room temperature (23°C)

CAS number: unique numeral identifier to every chemical substance

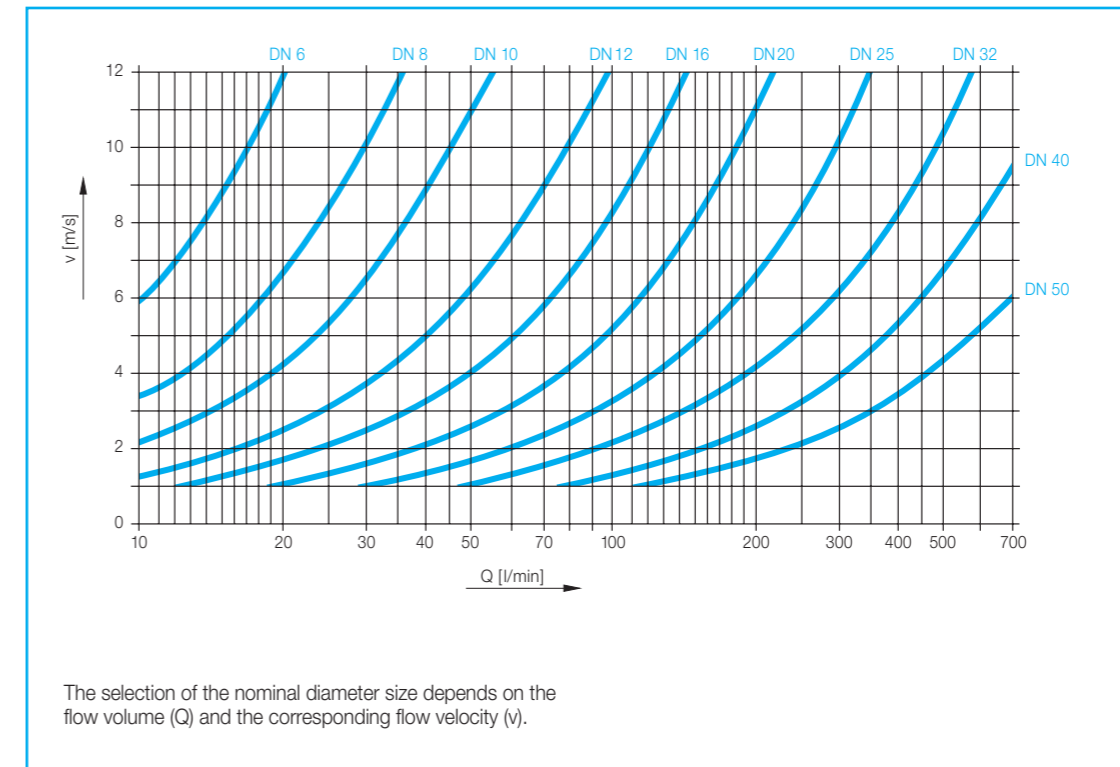
+ = resistant - = not resistant o = not specified

| Medium | Chem. formula | CAS no. | Steel | 1.4571 | Has-telloy | Br | Al | POM | PCTFE | PEEK | PTFE | PVDF | HNBR | NBR | EPDM | FKM | FFKM | VMQ |
|-----------------------|---|-------------|-------|--------|------------|----|----|-----|-------|------|------|------|------|-----|------|-----|------|-----|
| N | | | | | | | | | | | | | | | | | | |
| naphtalene | C ₁₀ H ₈ | 000091-20-3 | + | + | + | + | o | + | + | + | + | + | - | - | - | + | + | - |
| natural gas | - | 008006-14-2 | + | + | + | + | - | + | + | + | + | + | + | + | - | + | + | + |
| neon | Ne | 007440-01-9 | + | + | + | + | + | o | + | + | + | + | + | + | + | + | + | + |
| nickel(II)-chloride | NiCl ₂ | 007718-54-9 | - | + | + | - | - | + | o | + | + | + | + | + | + | + | + | + |
| nickel(II)-nitrate | NiN ₂ O ₆ | 013138-45-9 | - | + | + | - | - | + | o | + | + | + | + | + | + | + | + | + |
| nickel(II)-sulfate | NiSO ₄ | 007786-81-4 | - | + | + | - | - | + | o | + | + | + | + | + | + | - | + | + |
| nitrogen | N ₂ | 007727-37-9 | + | + | + | + | + | - | o | + | + | + | - | + | + | + | + | + |
| nitric acid | HNO ₃ | 007697-37-2 | - | + | + | - | - | - | + | o | + | + | - | - | - | - | + | - |
| nitrobenzene | C ₆ H ₅ NO ₂ | 000098-95-3 | + | + | + | + | + | - | + | o | + | + | - | - | - | - | + | - |
| nitrous oxide | N ₂ O | 010024-97-2 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| O | | | | | | | | | | | | | | | | | | |
| octane | C ₈ H ₁₈ | 000111-65-9 | - | + | + | o | o | o | o | o | + | + | - | - | - | + | + | - |
| oxalic acid | C ₂ H ₂ O ₄ | 000144-62-7 | - | + | + | - | - | - | + | + | + | + | - | - | + | + | + | - |
| oxygen | O ₂ | 007782-44-7 | - | + | + | + | + | + | + | + | + | + | o | o | o | o | + | - |
| ozone | O ₃ | 010028-15-6 | + | + | + | - | - | - | + | o | + | + | - | - | + | + | + | + |
| P | | | | | | | | | | | | | | | | | | |
| palmitic acid | C ₁₆ H ₃₂ O ₂ | 000057-10-3 | + | + | + | - | + | - | o | o | + | + | + | + | - | + | + | - |
| paraffin | - | 008012-95-1 | + | + | + | + | + | + | + | + | + | + | + | + | - | + | + | - |
| pentane | C ₅ H ₁₂ | 000109-66-0 | o | + | + | o | + | + | o | + | + | + | + | + | - | + | + | - |
| pentanol, 2- | C ₅ H ₁₂ O | 006032-29-7 | + | + | + | + | + | + | o | + | + | + | - | - | + | - | + | - |
| petroleum | - | 008002-05-9 | + | + | + | o | + | + | + | + | + | + | + | + | - | + | + | - |
| phenol | C ₆ H ₆ O | 000108-95-2 | - | + | + | - | + | - | + | o | + | + | - | - | + | + | + | - |
| phosphonic acid | H ₃ PO ₄ | 007664-38-2 | - | + | + | - | - | - | + | + | + | + | - | - | - | + | + | - |
| picric acid | C ₆ H ₃ N ₃ O ₇ | 000088-89-1 | + | + | + | + | o | - | o | + | + | + | - | - | - | + | + | - |
| potassium carbonate | K ₂ CO ₃ | 000584-08-7 | - | + | + | - | - | + | + | + | + | + | + | + | + | + | + | + |
| potassium hydroxide | KOH | 001310-58-3 | - | + | + | - | - | - | + | + | + | + | - | - | + | - | + | - |
| potassium nitrate | KNO ₃ | 007757-79-1 | + | + | + | + | + | + | o | + | + | + | + | + | + | + | + | + |
| potassium sulphate | K ₂ SO ₄ | 007778-80-5 | + | + | + | - | + | o | o | + | + | + | + | + | + | + | + | - |
| propane | C ₃ H ₈ | 000074-98-6 | + | + | + | + | o | + | o | + | + | + | + | + | - | + | + | - |
| propionic acid | C ₃ H ₆ O ₂ | 000079-09-4 | - | + | + | - | - | - | + | o | + | + | + | + | - | + | + | - |
| propylene | C ₃ H ₆ | 000115-07-1 | + | + | + | o | + | o | o | o | + | + | - | - | - | + | + | - |
| propylen glycol, 1,2- | C ₃ H ₈ O ₂ | 000057-55-6 | + | + | + | + | + | + | o | + | + | + | + | + | + | + | + | - |

| Medium | Chem. formula | CAS no. | Steel | 1.4571 | Has-telloy | Br | Al | POM | PCTFE | PEEK | PTFE | PVDF | HNBR | NBR | EPDM | FKM | FFKM | VMQ |
|------------------------|---|-------------|-------|--------|------------|----|----|-----|-------|------|------|------|------|-----|------|-----|------|-----|
| S | | | | | | | | | | | | | | | | | | |
| salicylic acid | C ₇ H ₆ O ₃ | 000069-72-7 | + | + | + | - | + | - | + | o | + | + | - | - | + | + | + | - |
| sea water | - | - | - | + | + | - | - | + | + | + | + | + | + | + | + | + | + | o |
| silicone oil | - | 063148-62-9 | + | + | + | + | + | + | + | + | + | + | + | + | - | + | + | + |
| silver nitrate | AgNO ₃ | 007761-88-8 | - | + | + | - | - | - | o | + | + | + | - | - | + | + | + | + |
| skydrol | - | - | + | + | + | o | + | + | o | + | + | o | - | - | + | + | + | - |
| sodium silicate | Na ₂ Si ₃ O ₇ | 001344-09-8 | + | + | + | o | + | o | o | o | + | + | + | + | + | + | + | - |
| solvents | - | - | o | + | + | - | + | o | + | + | + | + | o | + | - | + | + | o |
| sulfur | S ₈ | 007704-34-9 | + | + | + | o | + | + | + | + | + | + | - | - | + | + | + | - |
| sulfur dioxide | SO ₂ | 007446-09-5 | - | + | + | - | - | - | + | + | + | + | - | - | + | - | + | - |
| sulfur trioxide | SO ₃ | 007446-11-9 | - | + | + | - | - | - | o | - | + | - | - | - | - | + | + | - |
| sulfuric acid | H ₂ SO ₄ | 007664-93-9 | - | + | + | - | - | - | + | - | + | + | - | - | - | + | + | - |
| T | | | | | | | | | | | | | | | | | | |
| tannic acid | C ₇₆ H ₅₂ O ₄₆ | 001401-55-4 | - | + | + | - | - | - | + | o | + | + | - | - | - | + | + | - |
| tetrachloro-methane | CCl ₄ | 000056-23-5 | - | + | + | - | - | + | - | + | + | + | - | - | - | + | + | - |
| thermo oil | - | - | + | + | + | - | - | - | - | + | - | - | - | - | - | - | + | - |
| tin(II) chloride | SnCl ₂ | 007772-99-8 | - | o | + | - | - | o | + | + | + | + | o | + | + | + | + | - |
| transformer oil | - | - | + | + | + | + | + | + | o | + | + | + | o | o | - | + | + | o |
| transmission lubricant | - | - | + | + | + | + | + | + | o | + | + | + | + | + | - | + | + | - |
| trichloroethylene | C ₂ HCl ₃ | 000079-01-6 | - | + | + | - | - | - | - | + | + | + | - | - | + | + | + | - |
| triethylene glycol | C ₆ H ₁₄ O ₄ | 000112-27-6 | - | + | + | o | + | + | o | o | + | + | - | - | + | + | + | o |
| U | | | | | | | | | | | | | | | | | | |
| urea | CH ₄ N ₂ O | 000057-13-6 | - | + | + | - | - | + | o | + | + | + | + | + | + | + | + | + |
| V | | | | | | | | | | | | | | | | | | |
| vaseline | - | - | o | + | + | o | + | + | o | + | + | + | + | + | - | + | + | - |
| vinyl chloride | C ₂ H ₃ Cl | 000075-01-4 | - | + | + | - | - | - | o | o | + | + | - | - | - | + | + | - |
| W | | | | | | | | | | | | | | | | | | |
| water | H ₂ O | 007732-18-5 | o | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| X | | | | | | | | | | | | | | | | | | |
| xenon | Xe | 007440-63-3 | + | + | + | + | o | o | o | + | + | + | + | + | + | + | + | + |
| xylene | C ₈ H ₁₀ | 001330-20-7 | + | + | + | + | + | + | - | + | + | + | - | - | - | + | + | - |
| Z | | | | | | | | | | | | | | | | | | |
| zinc chloride | ZnCl ₂ | 007646-85-7 | - | + | + | - | - | - | o | + | + | + | + | + | + | + | + | + |
| zinc nitrate | ZnN ₂ O ₆ | 007779-88-6 | o | + | + | o | - | o | o | o | + | + | o | o | + | + | + | - |
| zinc sulphate | ZnSO ₄ | 007733-02-0 | - | + | + | - | - | o | + | + | + | + | + | + | + | + | + | + |

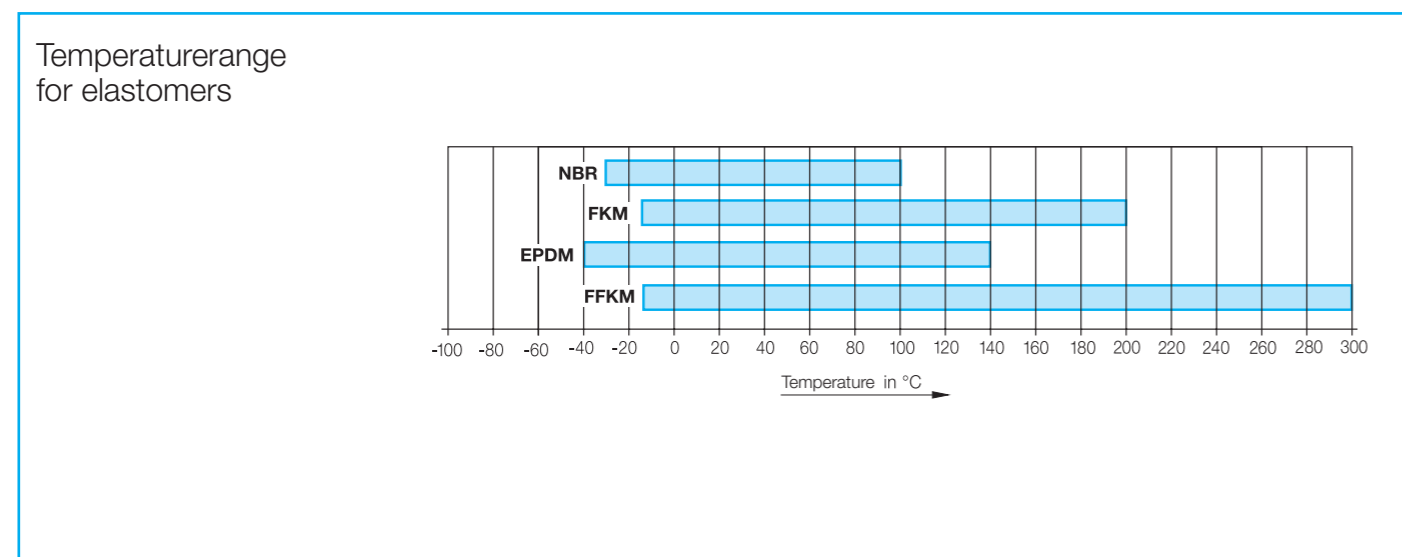
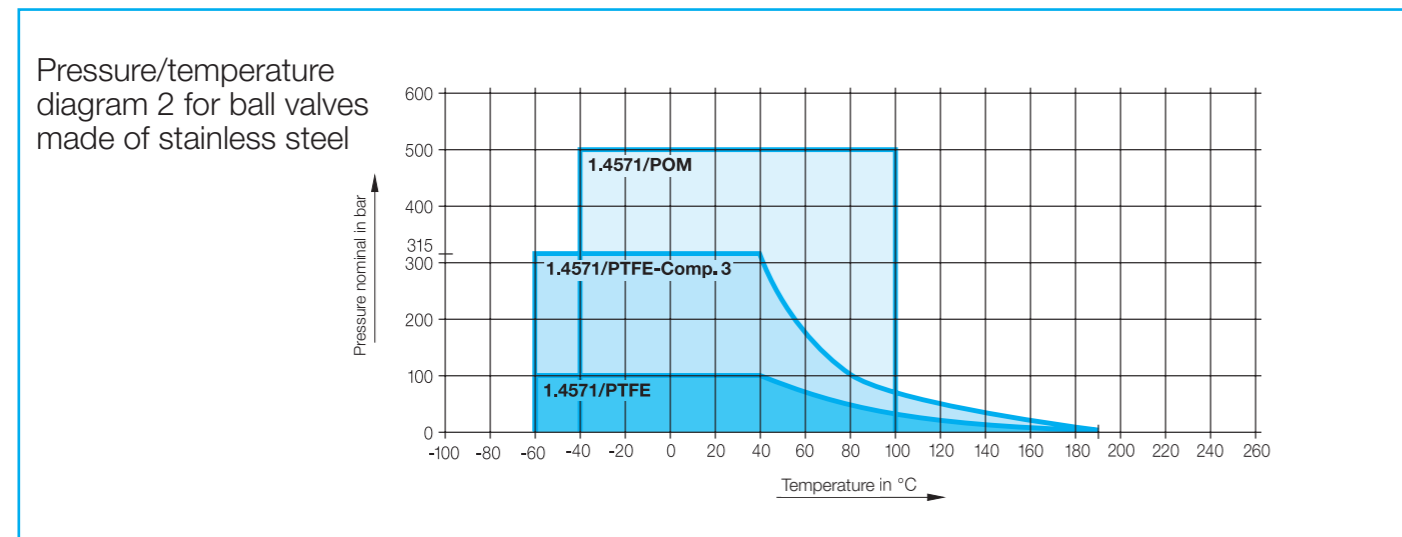
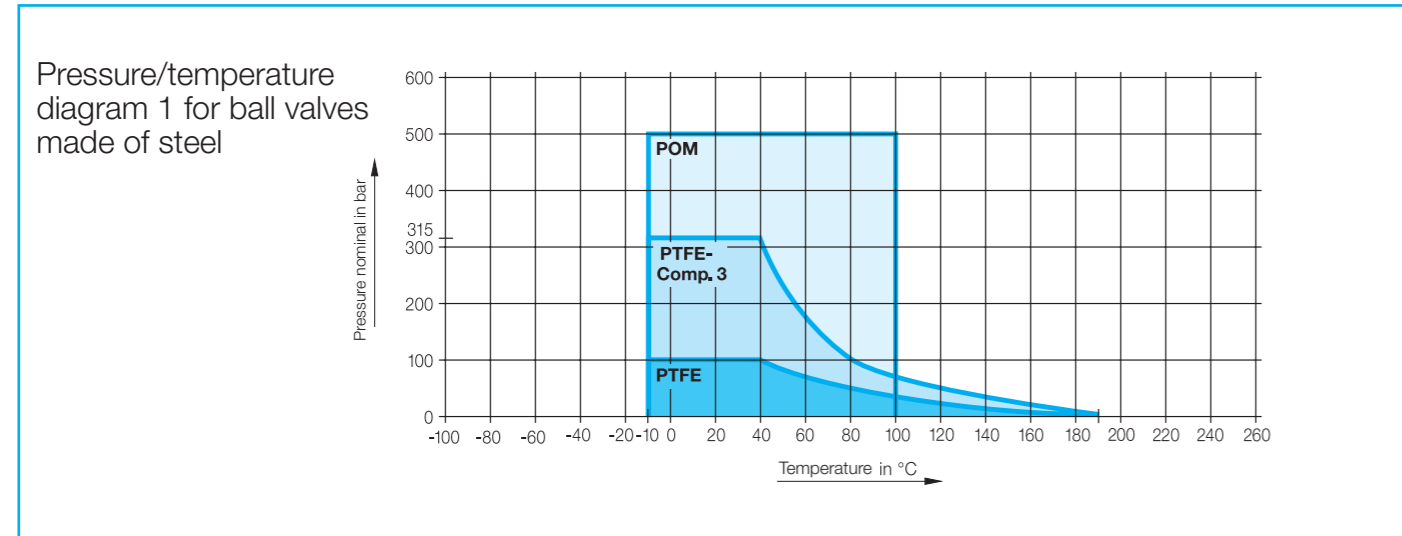


Ball valves size selection

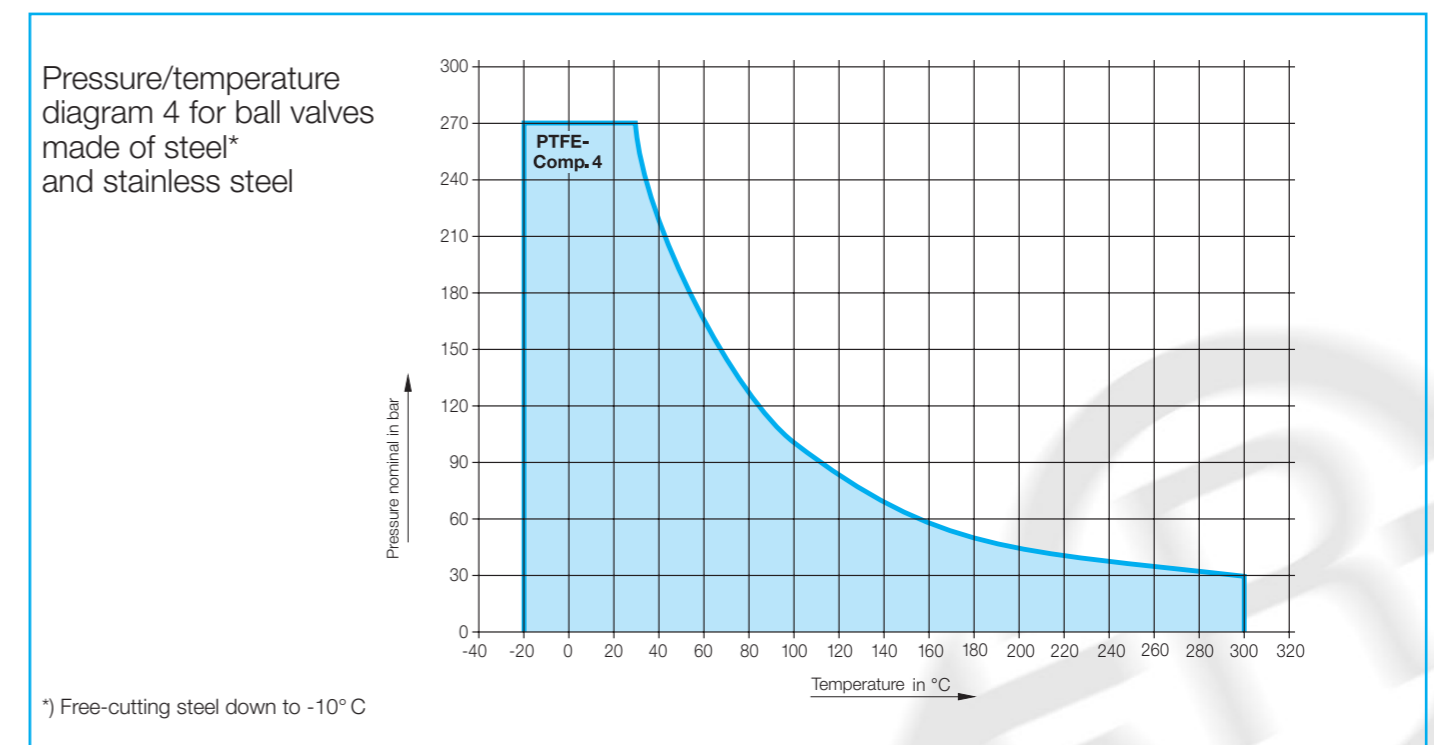
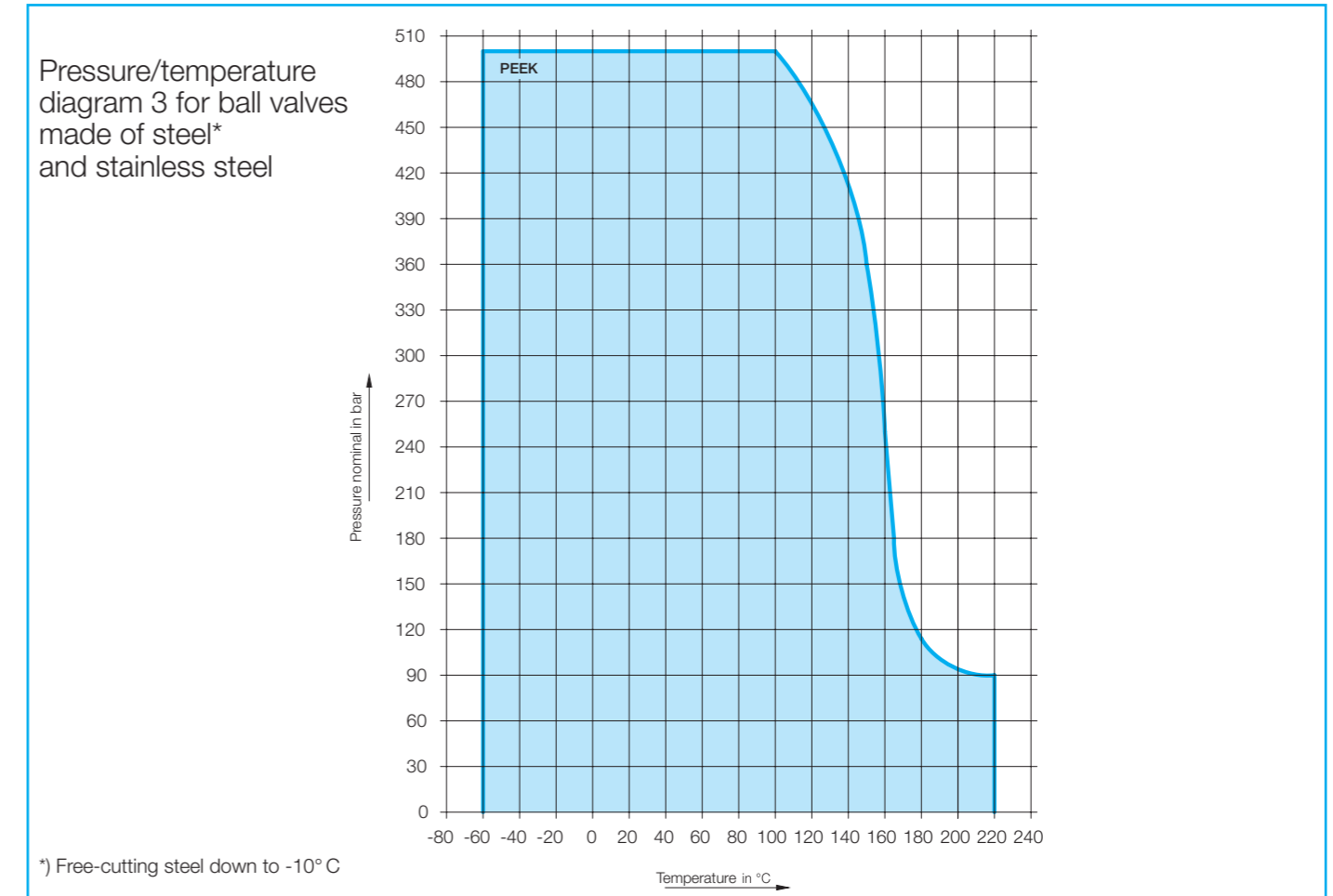


Pressure/temperature diagrams

Please observe max. pressure of ball valves!

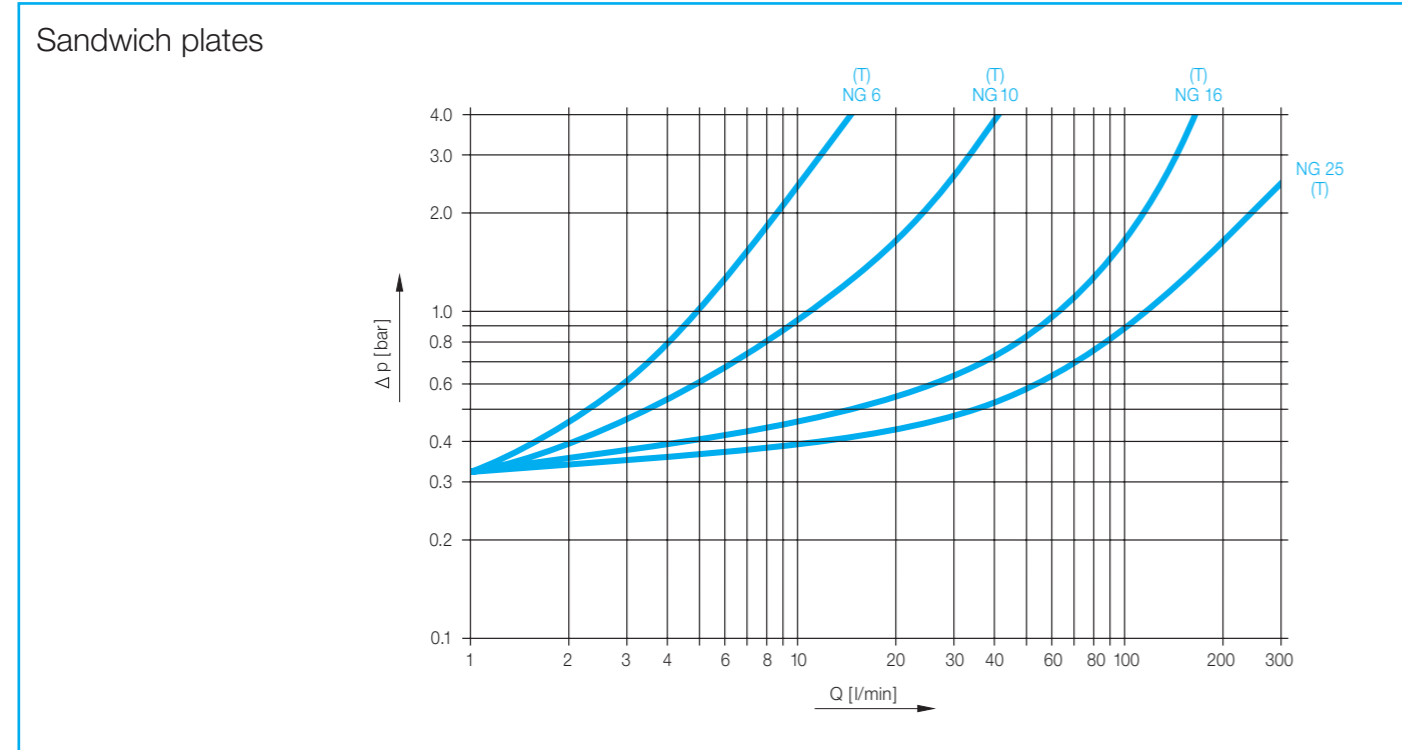


Please observe max. pressure of ball valves!

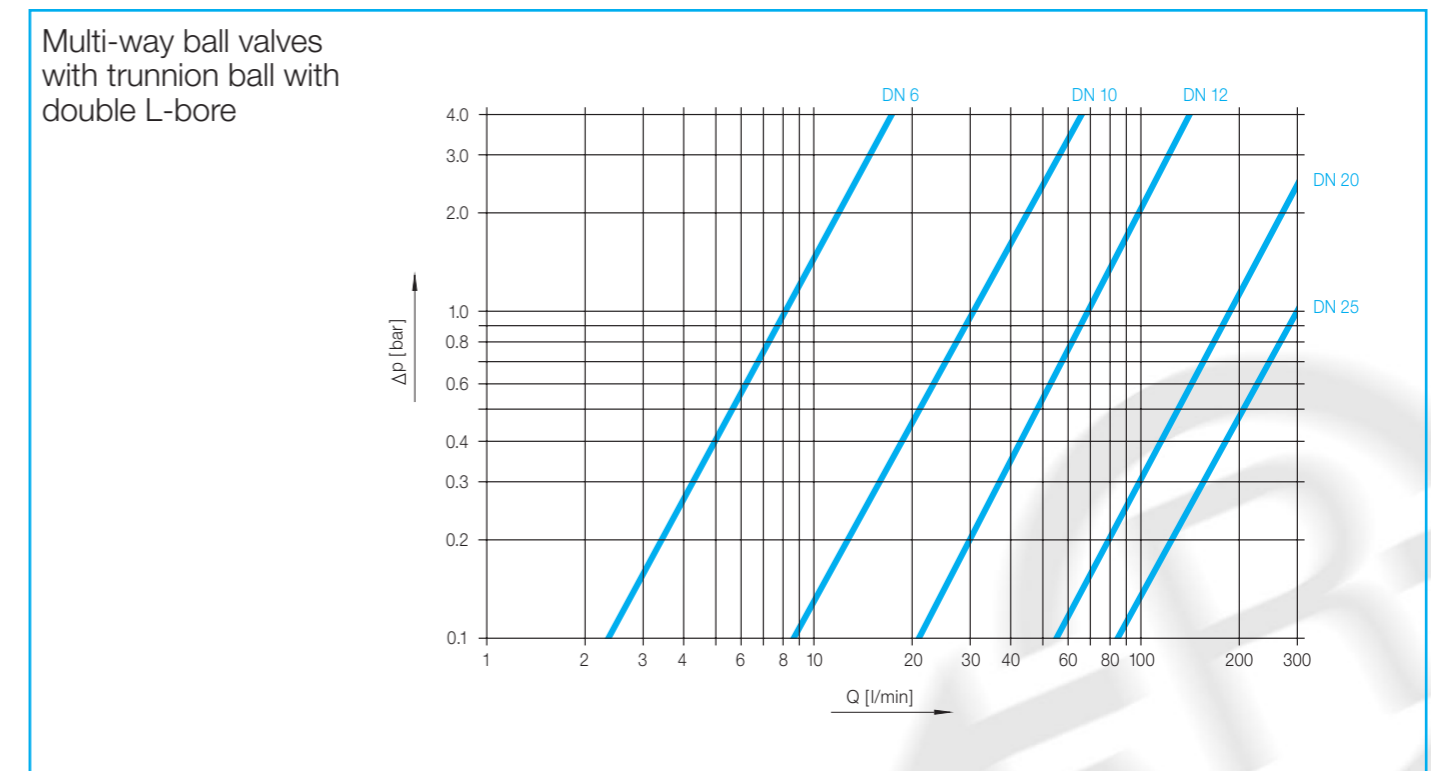
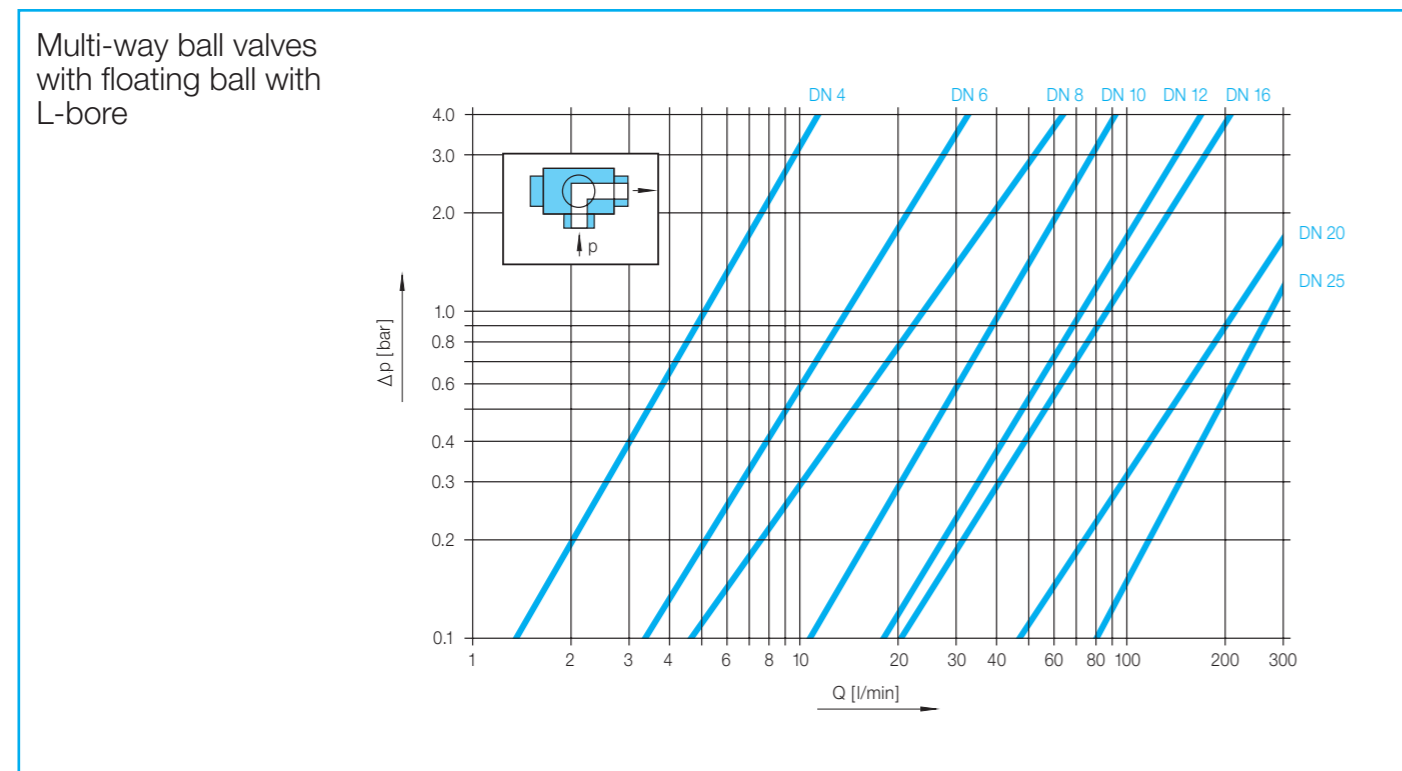
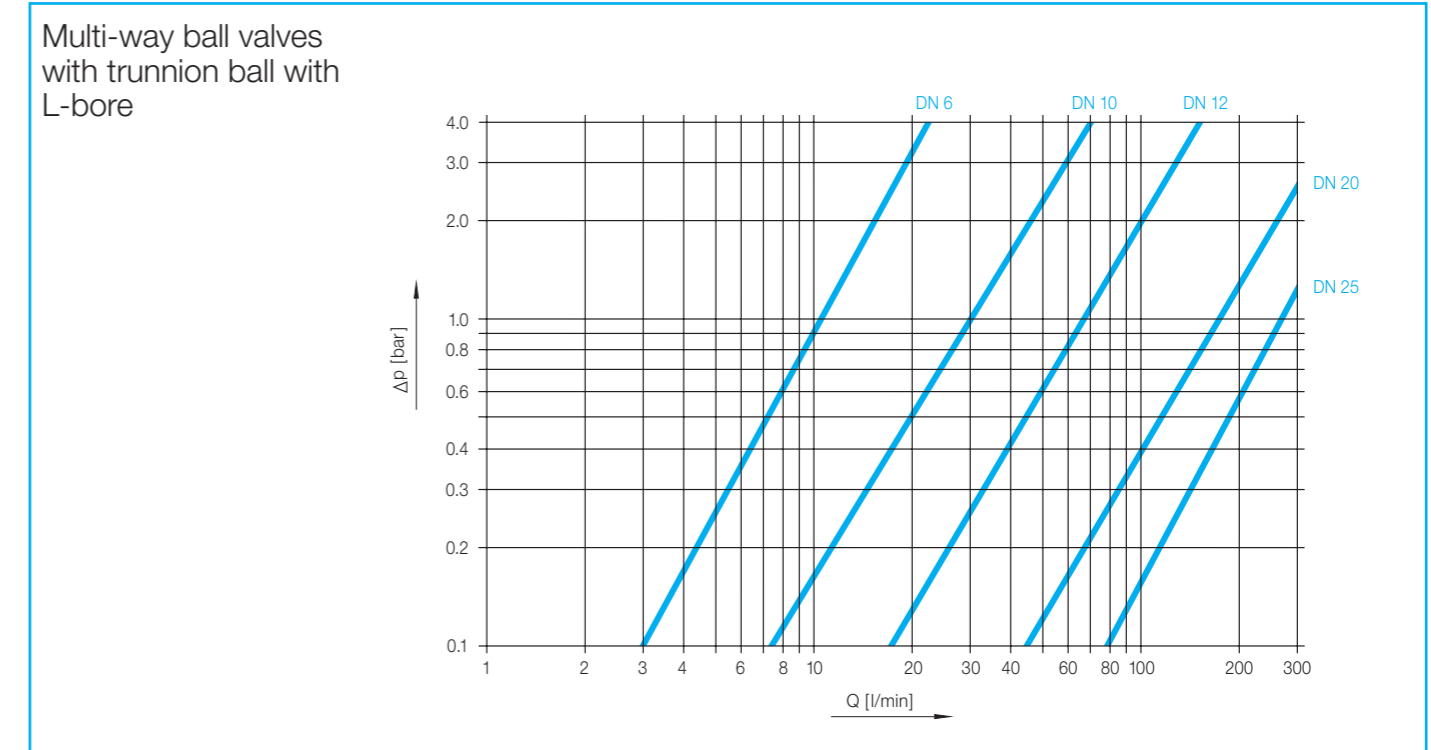


Δp -characteristics

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

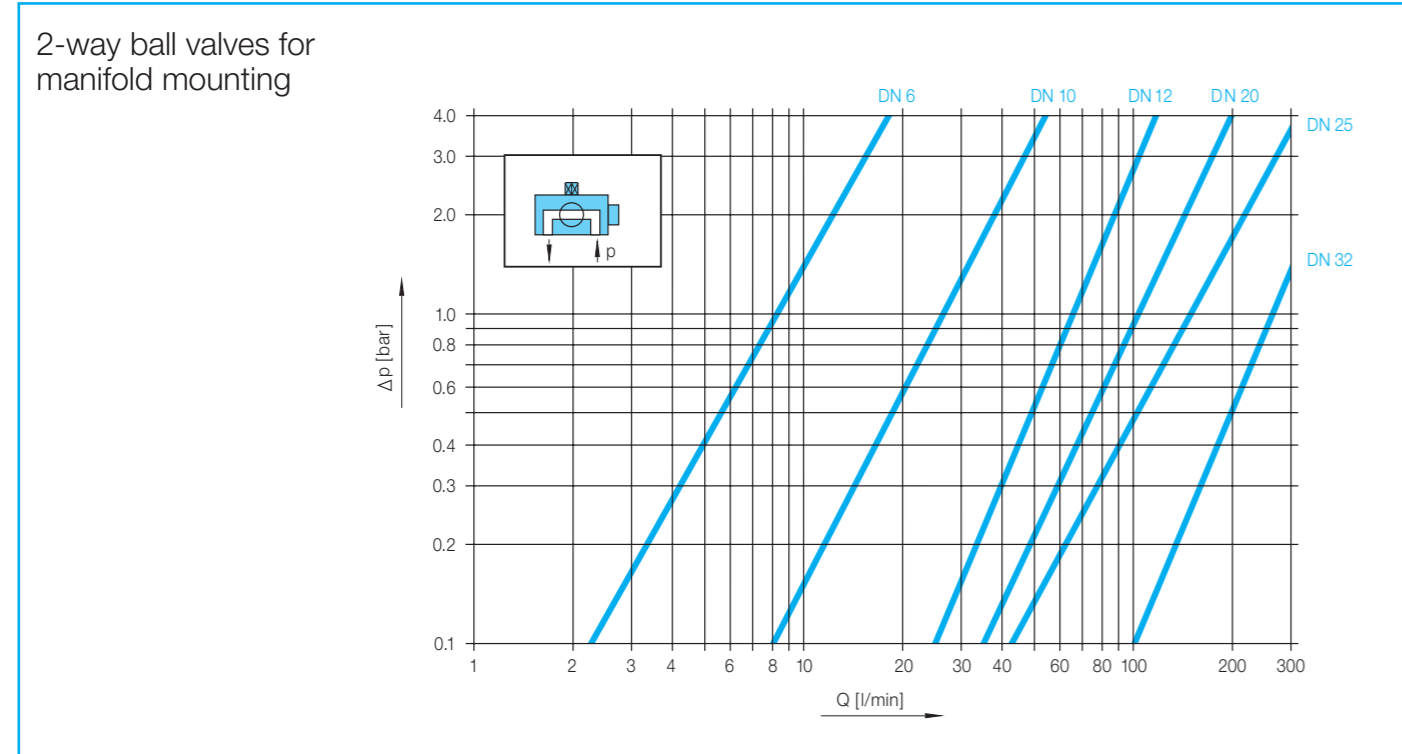


Test medium : hydraulic oil
 Viscosity : 33 mm²/s (cSt)

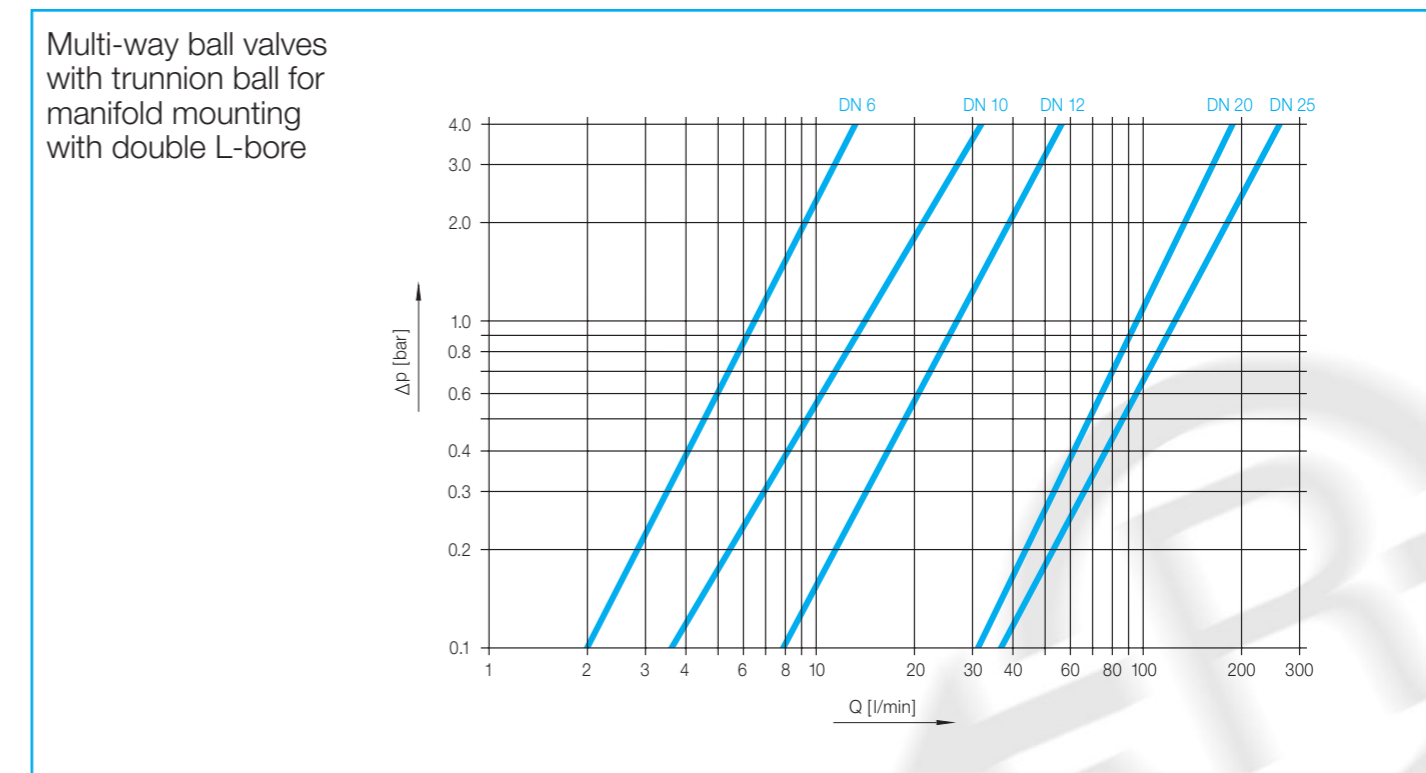
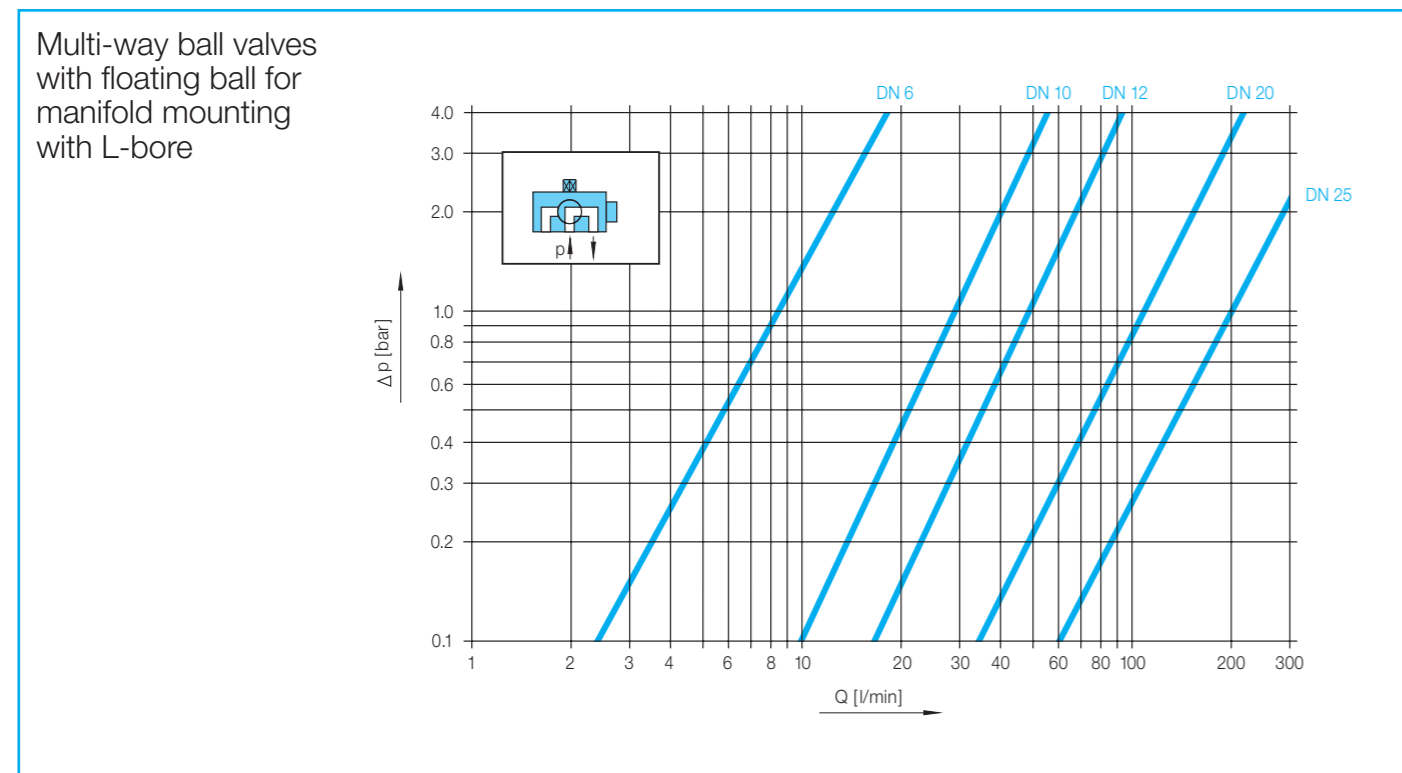
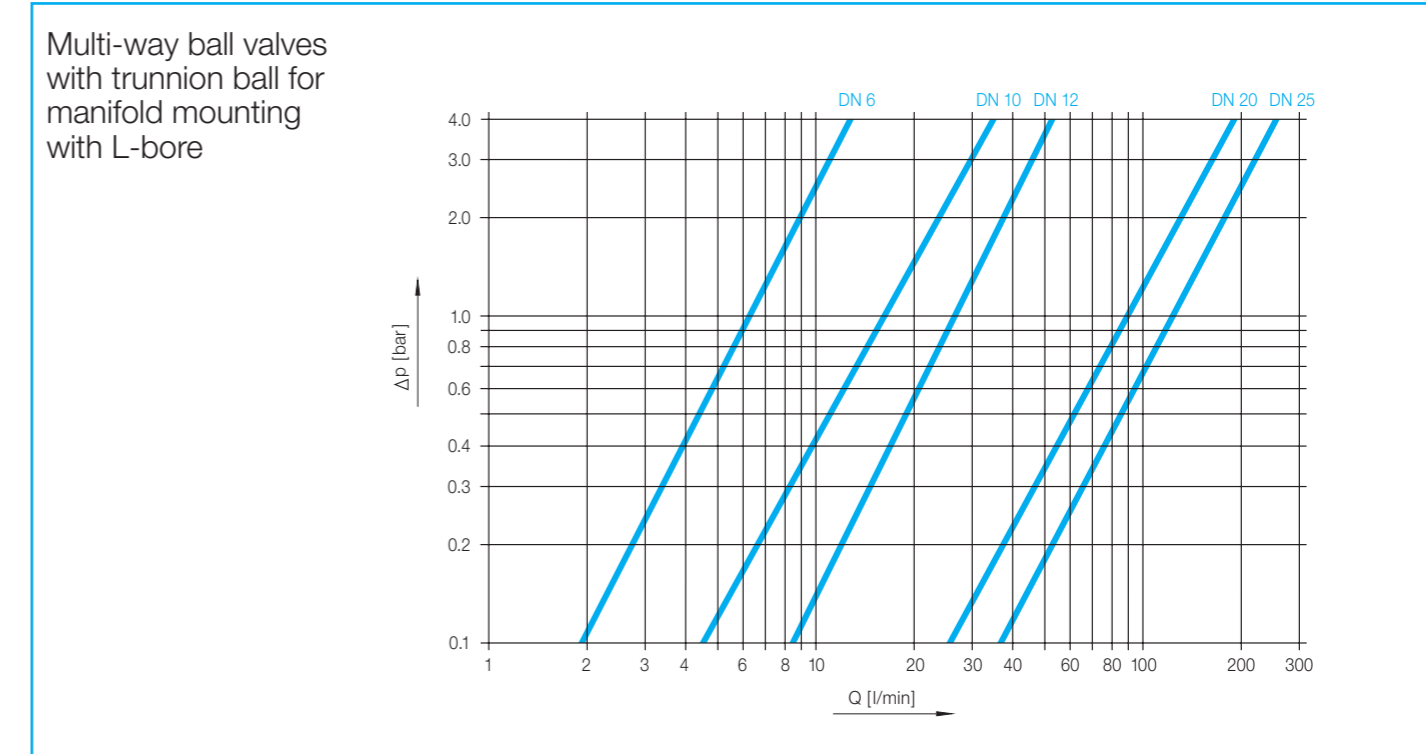


Δp-characteristics

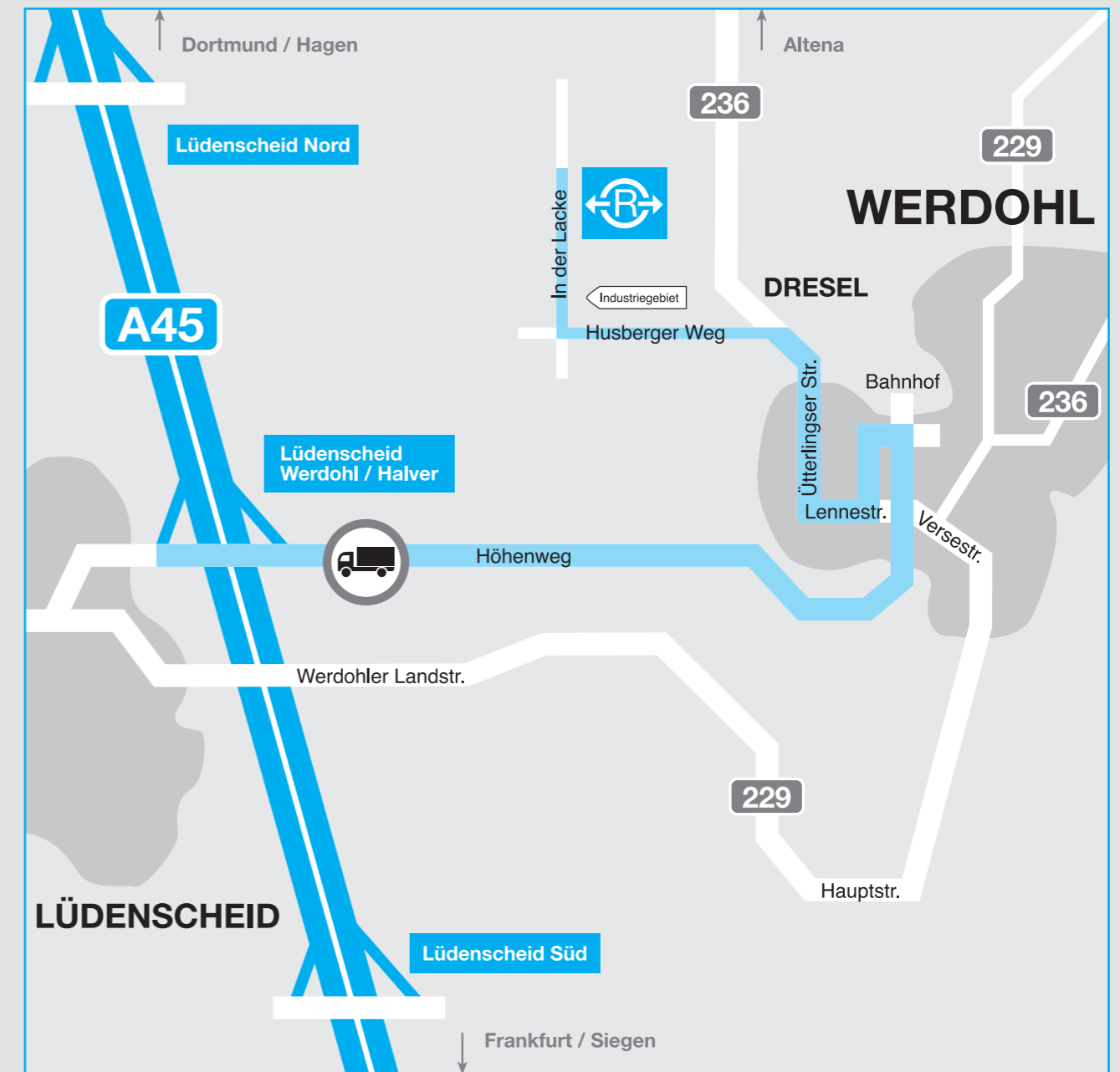
Test medium : hydraulic oil
 Viscosity : 33 mm²/s (cSt)

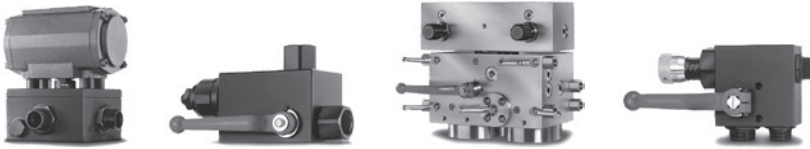


Test medium : hydraulic oil
 Viscosity : 33 mm²/s (cSt)



Highway A 45, exit Lüdenscheid Werdohl Halver, turn left into direction Werdohl, after approximately 10 km you reach Werdohl. At the traffic light turn left, at the second traffic light turn right on the federal road B 236 into direction Altena. After approximately 5 km turn left into the industrial area Werdohl-Dresel, at the first crossing turn right and then it's only 500 m to go.





Rötelmann GmbH

In der Lacke 10 · 58791 Werdohl

P.O. Box 1560 · 58775 Werdohl

Phone : +49 (0)23 92/91 91-0

Fax : +49 (0)23 92/91 91 -14

Email : info@roetelmann.de

URL : www.roetelmann.de

