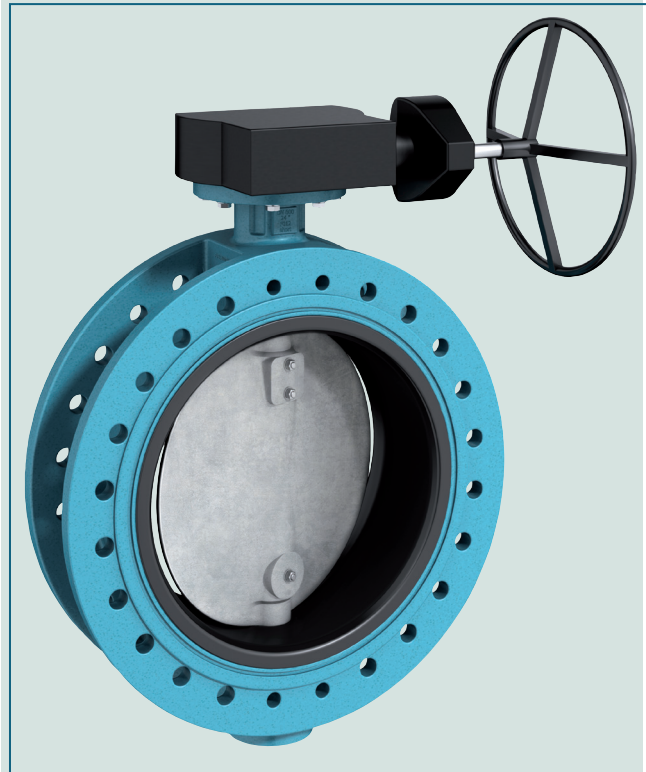


DOUBLE FLANGED BUTTERFLY VALVE F012-A



Soft seated double flanged butterfly valve designed for high pressure applications. The combination of vulcanized liner and thrugoing shaft allows pressure loads up to 25 bar.

FEATURES

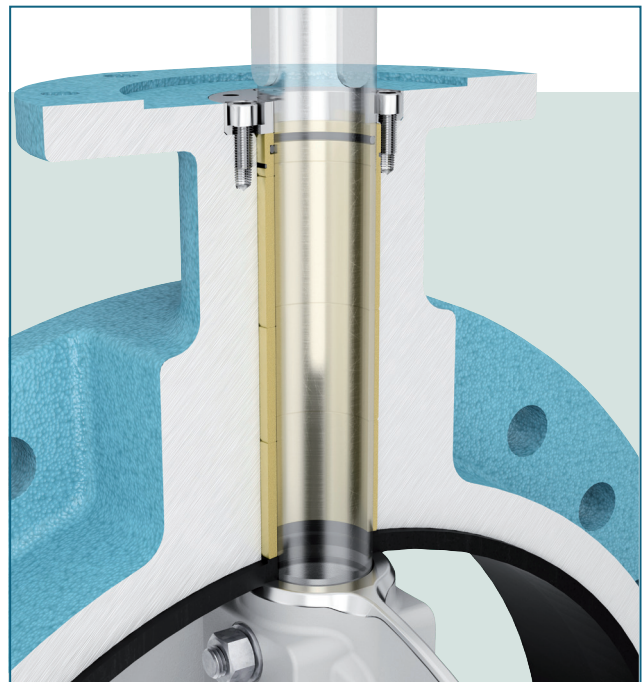
- Butterfly valve in double flanged design
- Can be installed in any desired position
- Triple shaft bearings
- Single flange mounting possible
- Maintenance-free
- Vulcanized liner and thrugoing shaft for high pressure applications
- Adjustable bearings up to DN600 \geq 16 bar

GENERAL APPLICATIONS

- Offshore
- Water and waste water technology
- Power plants
- Desalination technology
- Trunk mains
- Pipeline applications
- Pumping stations

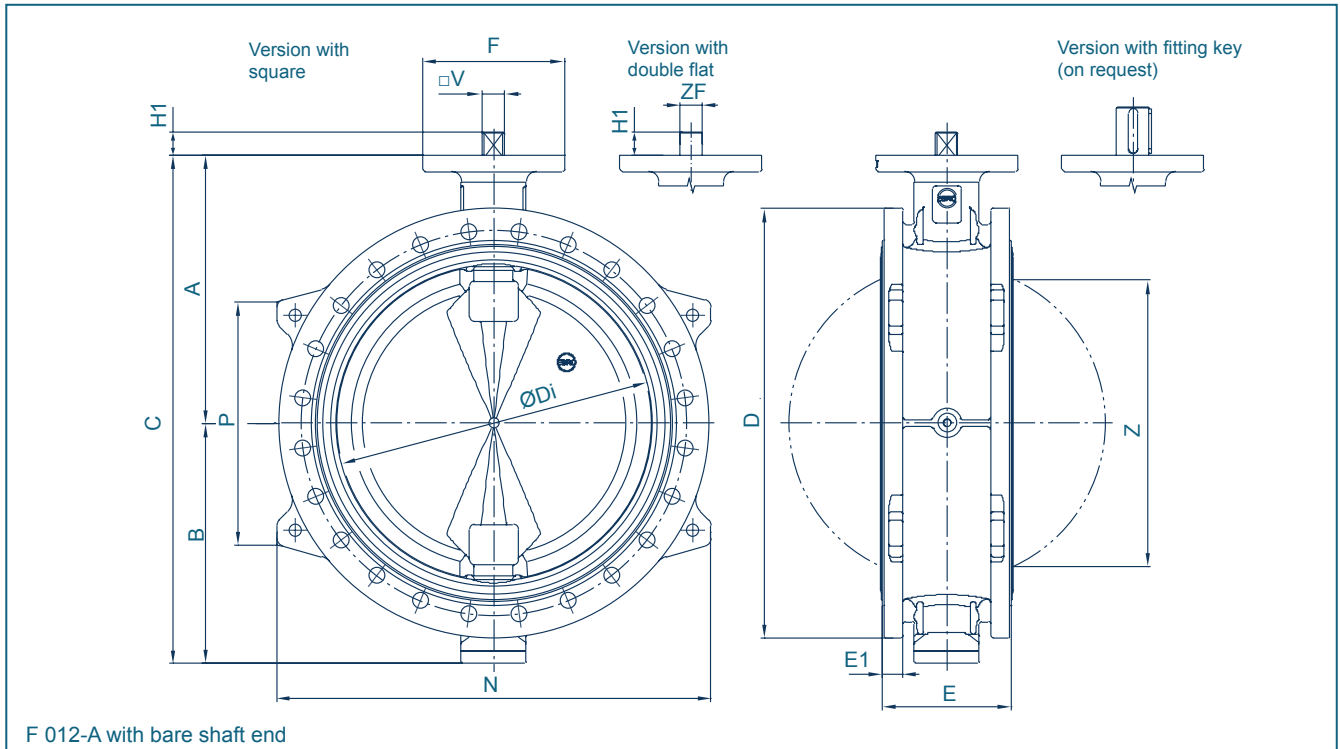
TECHNICAL DATA

| | |
|------------------------|--|
| Nominal diameter: | DN 50 - DN 1400 |
| Face-to-face: | EN 558 Series 13 ISO 5752 Series 13 |
| Flange accommodation: | EN 1092 PN 6/10/16/25 ASME B16.5 / B16.47 ASME Class 150 (PS max=19 bar) ASME Class 300 (PS max=25 bar) AS/NZS 4087 PN 16 / PN21 / PN35 AS 2129 Tab.E / Tab.F JIS B 2220 10K |
| | Flange accommodation not in all Sizes available. Others on request |
| Flange Surface Design: | EN 1092 Form A / B ASME RF, FF |
| Top flange: | EN ISO 5211 |
| Marking: | EN 19 |
| Tightness check: | EN 12266 (Leakage rate A) ISO 5208, Kategorie 3 |
| Temperature range: | -40°C to +200°C (depending on pressure, medium and material) |
| Operating pressure: | max. 25 bar |
| Differential pressure: | max. Δp 25 bar |
| Vakuum: | up to 1 mbar absolute |



Adjustable bearings ensure tightness even with max. pressure loads. This feature allows refixing during operation.

DOUBLE FLANGED BUTTERFLY VALVE F012-A



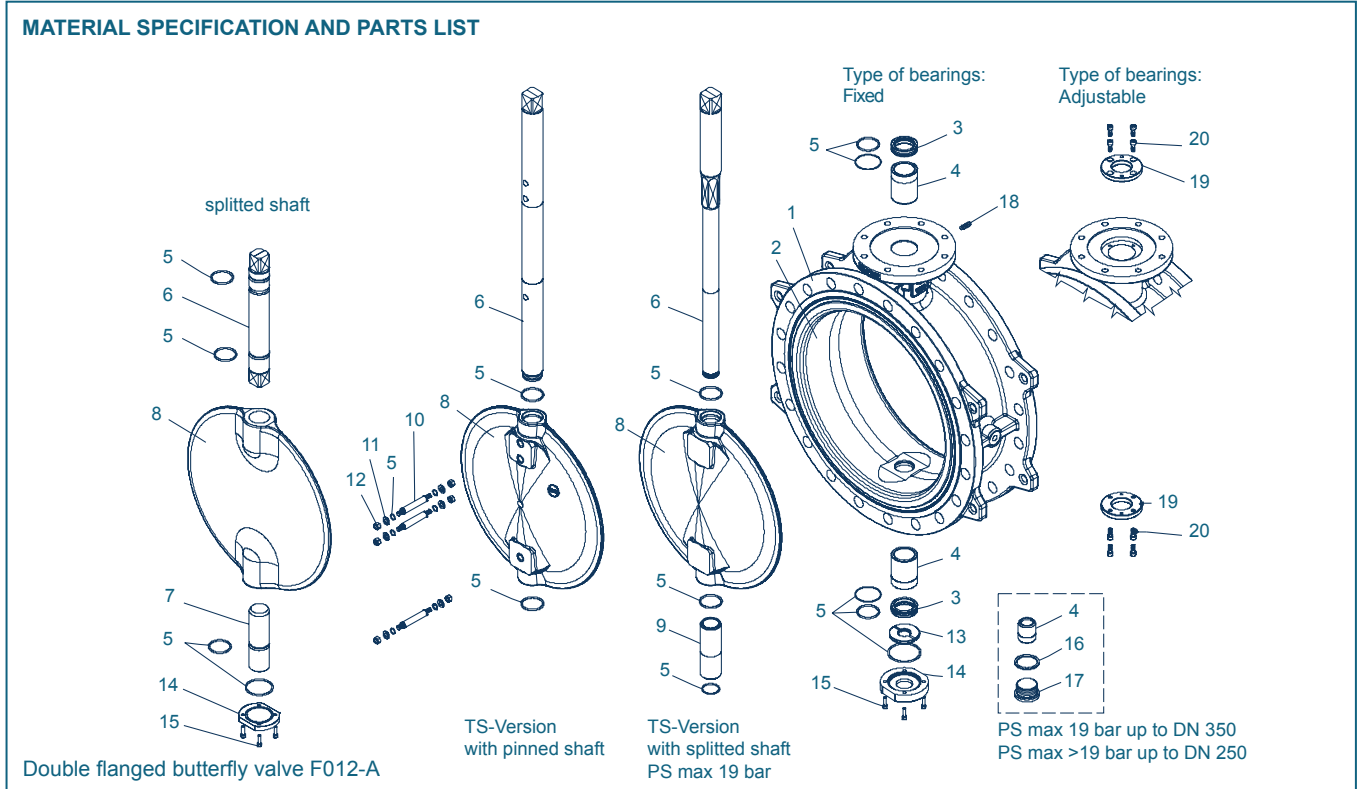
| DN [mm] | Size [inch] | Dimensions [mm] | | | | | | | | | | | | | | Bearings | | Weight [kg] (EN-JS1030) |
|---------|-------------|-----------------|------|------|------|------|----|-----|-----|-------------|------|----|------|-----|------|----------|------------|-------------------------|
| | | A | B | C | ØDi | ØD | E1 | E | ØF | Flange | ZF/V | H1 | N | P | Z | fixed | adjustable | |
| 50 | 2 | 126 | 84 | 210 | 48 | 165 | 18 | 108 | 54 | F04 | 11 | 12 | - | - | - | x | - | 6 |
| 65 | 2 1/2 | 134,5 | 93,5 | 228 | 63 | 185 | 18 | 112 | 54 | F04 | 11 | 12 | - | - | - | x | - | 10 |
| 80 | 3 | 157 | 104 | 261 | 78 | 200 | 20 | 114 | 65 | F05 | 14 | 16 | - | - | - | x | - | 12 |
| 100* | 4 | 168 | 127 | 295 | 98 | 254 | 22 | 127 | 65 | F05 | 14 | 16 | - | - | - | x | - | 18 |
| 100 | 4 | 168 | 114 | 282 | 98 | 228 | 20 | 127 | 65 | F05 | 14 | 16 | - | - | - | x | - | 18 |
| 125* | 5 | 180 | 140 | 320 | 123 | 280 | 26 | 140 | 90 | F07 | 14 | 16 | - | - | - | x | - | 24 |
| 150* | 6 | 203 | 150 | 353 | 148 | 285 | 22 | 140 | 90 | F07 | 17 | 19 | - | - | 56 | x | - | 26 |
| 150 | 6 | 203 | 153 | 356 | 148 | 305 | 29 | 140 | 90 | F07 | 17 | 19 | - | - | 56 | x | - | 30 |
| 200 | 8 | 229 | 177 | 406 | 198 | 345 | 24 | 152 | 90 | F07 | 17 | 19 | - | - | 131 | x | - | 30 |
| 200* | 8 | 260 | 215 | 475 | 198 | 381 | 30 | 152 | 125 | F10 | 17 | 20 | - | - | 131 | x | - | 56 |
| 250 | 10 | 266 | 213 | 479 | 248 | 406 | 26 | 165 | 125 | F10 | 22 | 24 | - | - | 189 | x | - | 40 |
| 250* | 10 | 305 | 250 | 555 | 248 | 445 | 28 | 165 | 150 | F12 | 22 | 24 | - | - | 189 | x | - | 79 |
| 250* | 10 | 266 | 215 | 481 | 248 | 430 | 27 | 165 | 125 | F10 | 22 | 24 | - | - | 189 | x | - | 57 |
| 250* | 10 | 305 | 250 | 555 | 248 | 430 | 21 | 165 | 150 | F12 | 22 | 24 | - | - | 189 | x | - | 75 |
| 300 | 12 | 291 | 237 | 528 | 296 | 483 | 28 | 178 | 125 | F10 | 22 | 24 | - | - | 240 | x | - | 73 |
| 300* | 12 | 350 | 285 | 635 | 296 | 521 | 33 | 178 | 150 | F12 | 22 | 24 | - | - | 240 | x | - | 110 |
| 300* | 12 | 335 | 285 | 620 | 296 | 515 | 36 | 178 | 150 | F12 | 22 | 24 | 520 | 150 | 240 | x | - | 108 |
| 350 | 14 | 332 | 278 | 610 | 337 | 533 | 33 | 190 | 150 | F12 | ** | ** | 540 | 300 | 282 | x | - | 103 |
| 350* | 14 | 390 | 322 | 712 | 338 | 584 | 32 | 190 | 175 | F14 | 27 | 29 | 590 | 300 | 282 | x | - | 150 |
| 400 | 16 | 363 | 322 | 685 | 390 | 597 | 32 | 216 | 175 | F12/F14 | ** | ** | 610 | 310 | 328 | x | - | 150 |
| 400 | 16 | 363 | 322 | 685 | 390 | 580 | 32 | 216 | 150 | F12 | ** | ** | - | - | 328 | x | - | 140 |
| 400* | 16 | 435 | 360 | 795 | 390 | 660 | 42 | 216 | 210 | F16 | 27 | 29 | 665 | 200 | 328 | x | - | 215 |
| 400* | 16 | 430 | 360 | 790 | 390 | 648 | 37 | 216 | 175 | F14 | 27 | 29 | - | - | 328 | x | - | 210 |
| 450* | 18 | 397 | 368 | 765 | 426 | 640 | 33 | 222 | 175 | F14 | 36 | 38 | 680 | 310 | 367 | x | - | 179 |
| 450* | 18 | 465 | 385 | 850 | 426 | 711 | 37 | 222 | 210 | F16 | 36 | 38 | 720 | 300 | 367 | x | - | 250 |
| 500 | 20 | 437 | 404 | 841 | 489 | 715 | 38 | 229 | 210 | F14/F16 | ** | ** | 740 | 350 | 436 | x | - | 204 |
| 500* | 20 | 500 | 415 | 915 | 489 | 775 | 44 | 229 | 300 | F25 | ** | ** | 790 | 370 | 436 | x | - | 310 |
| 600 | 24 | 498 | 469 | 967 | 581 | 840 | 42 | 267 | 300 | F16/F25 | ** | ** | 870 | 420 | 521 | - | x | 330 |
| 600 | 24 | 498 | 469 | 967 | 581 | 790 | 45 | 267 | 300 | F14/F16/F25 | ** | ** | - | - | 521 | x | - | 467 |
| 600* | 24 | 580 | 500 | 1080 | 581 | 914 | 44 | 267 | 300 | F25 | ** | ** | 930 | 440 | 521 | - | x | 457 |
| 700 | 28 | 581 | 526 | 1107 | 674 | 935 | 46 | 292 | 350 | F25/F30 | ** | ** | 940 | 510 | 612 | - | x | 480 |
| 700* | 28 | 635 | 560 | 1195 | 674 | 995 | 50 | 292 | 350 | F30 | ** | ** | 1010 | 350 | 612 | - | x | 600 |
| 800 | 32 | 630 | 591 | 1221 | 781 | 1060 | 52 | 318 | 350 | F25/F30 | ** | ** | 1080 | 450 | 717 | - | x | 598 |
| 800 | 32 | 660 | 590 | 1250 | 781 | 1060 | 50 | 318 | 350 | F25/F30 | ** | ** | 1070 | 600 | 717 | - | x | 666 |
| 800* | 32 | 660 | 595 | 1255 | 781 | 1085 | 55 | 318 | 415 | F35 | ** | ** | 1100 | 450 | 717 | - | x | 760 |
| 900* | 36 | 800 | 685 | 1485 | 881 | 1185 | 61 | 330 | 415 | F30/F35 | ** | ** | 1210 | 600 | 821 | - | x | 941 |
| 900 | 36 | 800 | 685 | 1485 | 881 | 1185 | 52 | 330 | 350 | F25/F30 | ** | ** | 1190 | 620 | 821 | x | - | 932 |
| 900 | 36 | 696 | 645 | 1341 | 881 | 1122 | 52 | 330 | 300 | F25 | ** | ** | - | - | 821 | x | - | 650 |
| 1000* | 40 | 771 | 680 | 1451 | 980 | 1290 | 51 | 410 | 475 | F30/F35/F40 | ** | ** | 1300 | 680 | 895 | - | x | 1100 |
| 1000 | 40 | 771 | 675 | 1446 | 980 | 1255 | 56 | 410 | 415 | F25/F30/F35 | ** | ** | 1270 | 680 | 895 | - | x | 1092 |
| 1000 | 40 | 850 | 725 | 1575 | 980 | 1275 | 59 | 410 | 475 | F35/F40 | ** | ** | 1310 | 600 | 895 | x | - | 1245 |
| 1000* | 40 | 850 | 725 | 1575 | 980 | 1275 | 62 | 410 | 475 | F35/F40 | ** | ** | 1310 | 600 | 895 | - | x | 1239 |
| 1000* | 40 | 850 | 725 | 1575 | 980 | 1360 | 67 | 410 | 475 | F35/F40 | ** | ** | 1370 | 600 | 895 | - | x | 1426 |
| 1200 | 48 | 935 | 810 | 1745 | 1176 | 1511 | 54 | 470 | 475 | F35/F40 | ** | ** | 1520 | 800 | 1083 | - | x | 1722 |
| 1200* | 48 | 1004 | 862 | 1866 | 1176 | 1575 | 63 | 470 | 560 | F40/F48 | ** | ** | 1590 | 800 | 1085 | - | x | 1785 |
| 1200 | 48 | 905 | 810 | 1715 | 1176 | 1455 | 60 | 470 | 350 | F25/F30 | ** | ** | 1475 | 600 | 1083 | x | - | 1440 |
| 1400* | 56 | 1120 | 958 | 2078 | 1372 | 1795 | 86 | 530 | 560 | F48 | ** | ** | 1830 | 800 | 1271 | - | x | 3060 |

*Operating pressure ≥19 bar

**In accordance to the actuator

Subject to change without notice

DOUBLE FLANGED BUTTERFLY VALVE F012-A



| Pos. | Description | Material | Material-No. | Pos. | Description | Material | Material-No. | | | | |
|-----------------|----------------------------------|-------------------|---|--------|------------------------|-------------------|-----------------------|--------------------|------------------------------|-----------------|-------------------|
| 1 | Body | Nodular Cast Iron | EN-GJS-400-15 | 10 | Taper pin | Stainless Steel | X5CrNi18-10 | | | | |
| | | Carbon Steel | GP240GH | | | 1.0619 | Stainless Steel | G-X5CrNiMo19-11-2* | 1.4408* | | |
| 2 | Seat/vulcanization | NBR | Nitrile butadiene rubber | 11 | Washer | Stainless Steel | A4 | | | | |
| | | EPDM | Ethylene propylene diene monomer rubber | | | 12 | Hex nut | Stainless Steel | A4 | | |
| 3/4 | Bearing bush | Brass | CuZn39Pb3 | 13 | Shaft retention | | | Brass | CuZn39Pb3 | | |
| | | | CW614N | | | Stainless Steel | 16MnCr5* | 1.7131* | | | |
| 5 | O-Ring | NBR | Nitrile butadiene rubber | 14 | Cover plate | Sectional steel | S235JR | | | | |
| | | EPDM | Ethylene propylene diene monomer rubber | | | Nodular Cast Iron | EN-GJS-400-15 | EN-JS1030 | | | |
| 6/7 | Shaft | X14CrMoS17 | 1.4104 | 15 | Screw | Steel | 45 H galvanized | | | | |
| | | X2CrNiMo17-12-2 | 1.4122 | | | Stainless Steel | A4-70 | | | | |
| | | X5CrNiMo17-12-2 | 1.4401 | | | 16 | Seal DIN 915 | Cooper | Cu | | |
| | | X2CrNiMo17-12-2 | 1.4404 | | | | | 17 | Plug screw DIN 908 | Machining steel | 11SMnPb30 |
| | | G-X5CrNiMo19-11-2 | 1.4408 | | | | | | | Stainless Steel | G-X5CrNiMo19-11-2 |
| | | G-X2CrNiMoN26-7-4 | 1.4462 | | | | | 18 | Threaded pin DIN 915 | Steel | 45 H galvanized |
| CuAl10Fe5Ni5-C | 1.4469 | Stainless Steel | X5CrNiMo17-12-2 | 1.4401 | | | | | | | |
| 8 | Disc | X5CrNiCuNb 16-4* | 1.4452* | 19 | Clamping ring | Sectional steel | S235JR | | | | |
| | | Nodular Cast Iron | EN-GJS-400-15 | | | 20 | Cylinder screw | Stainless Steel | A4 | | |
| | | Stainless Steel | G-X5CrNiMo19-11-2 | | | | | 1.4408 | Other materials upon request | | |
| | | Aluminium Bronze | CuAl10Fe5Ni5-C | | | | | CC333G | | | |
| | | Coating | Halar, Rilsan, Nonstick | | | | | | | | |
| Surface quality | electropolished, mirror finished | | | | | | | | | | |
| 9 | Sleeve | Stainless Steel | X5CrNi18-10 | 1.4301 | | | | | | | |

*Materials for valves ≥ 19 bar

Subject to change without notice

DOUBLE FLANGED BUTTERFLY VALVE F012-A

TORQUE

- The values listed in the table are initial breakaway torques, taken with liquids and lubricant media.

- Please regard these as approximate values, as the objective value depends on different factors like pressure, medium, rubber, quality, temperature ... etc.

- Our engineers look forward to help you with exact values for your application.

- Powdery (non-lubricant) media
Md x 1,3

- Dry gases/high viscous media
Md x 1,2

| DN [mm] | Size [in] | Operating pressure | | | | | | |
|---------|-----------|--------------------|------------|-------------|-------------|-------------|-------------|-------------|
| | | 3 bar disc | 6 bar disc | 10 bar disc | 16 bar disc | 19 bar disc | 21 bar disc | 25 bar disc |
| 50 | 2 | 5 | 7 | 7 | 9 | - | - | 30 |
| 65 | 2½ | 7 | 9 | 13 | 18 | - | - | 40 |
| 80 | 3 | 8 | 10 | 18 | 24 | - | - | 58 |
| 100 | 4 | 9 | 18 | 28 | 37 | 53 | 66 | 90 |
| 125 | 5 | 15 | 22 | 45 | 59 | - | - | 150 |
| 150 | 6 | 36 | 45 | 78 | 125 | 156 | 182 | 230 |
| 200 | 8 | 59 | 76 | 140 | 200 | 242 | 278 | 350 |
| 250 | 10 | 150 | 180 | 200 | 240 | 355 | 440 | 600 |
| 300 | 12 | 200 | 240 | 280 | 360 | 570 | 710 | 950 |
| 350 | 14 | 350 | 540 | 610 | 700 | 910 | 1080 | 1400 |
| 400 | 16 | 420 | 620 | 750 | 850 | 1320 | 1610 | 2050 |
| 450 | 18 | 720 | 746 | 860 | 1500 | 2000 | 2410 | 3200 |
| 500 | 20 | 900 | 1100 | 2255 | 3690 | 4170 | 4630 | 5500 |
| 600 | 24 | 1050 | 1800 | 3000 | 5830 | 6550 | 7130 | 8000 |
| 700 | 28 | 1600 | 2240 | 3450 | 8100 | 9860 | 11100 | 13000 |
| 800 | 32 | 2200 | 3900 | 6600 | 11200 | 14250 | 16450 | 20000 |
| 900 | 36 | 2800 | 4900 | 7100 | 14500 | 19150 | 229000 | 30000 |
| 1000 | 40 | 4800 | 6760 | 11500 | 24400 | 30500 | 35300 | 44000 |
| 1200 | 48 | 7800 | 12000 | 21000 | 44000 | 53800 | 62300 | 78000 |
| 1400 | 48 | - | - | - | - | 77100 | 90900 | 116000 |

*Maximum torques (Nm)

K_V-VALUES

- The K_V-value [m³ per hour] is the flow of water at a temperature of 5°C to 30°C (41°F to 86°F) at a Δp of 1 bar

- Permissible velocity of flow
- Vmax 4,5 m/s for liquids
- Vmax 70 m/s for gases

- The throttle function is linear at an angle 30° to 70°

- Avoid cavitation

For further values, please contact our engineers.

| DN [mm] | Size [in] | Opening angle α° | | | | | | | |
|---------|-----------|------------------|------|-------|-------|-------|-------|--------|--------|
| | | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
| 50 | 2 | 1,2 | 8 | 13 | 22 | 38 | 50 | 65 | 85 |
| 65 | 2½ | 2 | 9 | 22 | 42 | 77 | 115 | 170 | 215 |
| 80 | 3 | 8 | 24 | 50 | 95 | 150 | 240 | 330 | 420 |
| 100 | 4 | 13 | 25 | 61 | 120 | 210 | 320 | 460 | 630 |
| 125 | 5 | 26 | 65 | 130 | 230 | 350 | 530 | 870 | 1010 |
| 150 | 6 | 50 | 95 | 170 | 305 | 510 | 810 | 1230 | 1780 |
| 200 | 8 | 65 | 150 | 320 | 590 | 980 | 1515 | 2220 | 3115 |
| 250 | 10 | 175 | 290 | 560 | 1020 | 1700 | 2630 | 3830 | 5350 |
| 300 | 12 | 205 | 410 | 835 | 1520 | 2510 | 3820 | 5510 | 7590 |
| 350 | 14 | 320 | 590 | 1120 | 2000 | 3310 | 5140 | 7570 | 10700 |
| 400 | 16 | 460 | 865 | 1730 | 3120 | 5110 | 7760 | 11160 | 15360 |
| 450 | 18 | 570 | 1070 | 2140 | 3860 | 6330 | 9620 | 13830 | 19035 |
| 500 | 20 | 710 | 1335 | 2600 | 4810 | 7880 | 11980 | 17215 | 23700 |
| 600 | 24 | 760 | 1420 | 2900 | 5120 | 8380 | 12740 | 18315 | 25215 |
| 700 | 28 | 770 | 1430 | 4000 | 7560 | 12380 | 18820 | 27050 | 37240 |
| 800 | 32 | 915 | 1800 | 4360 | 9480 | 16790 | 26250 | 37815 | 51440 |
| 900 | 36 | 1160 | 2100 | 5560 | 12080 | 21400 | 33450 | 48200 | 65560 |
| 1000 | 40 | 1450 | 2370 | 6920 | 15030 | 26630 | 41640 | 59900 | 81605 |
| 1200 | 48 | 2120 | 3470 | 10130 | 22000 | 38990 | 60950 | 87815 | 119460 |
| 1400 | 66 | 2930 | 4790 | 14000 | 30400 | 53840 | 84190 | 121290 | 165000 |

Subject to change without notice