

DelVal[®] SERIES 44/45, 47/48 & 4M/4N



**Double Eccentric High Performance Butterfly Valves
Wafer and Lug**

Sizes 2" - 48" / DN 50 - DN 1200

ASME Class 150, Class 300 & Class 600



Leading the Industry with Innovation by Design



Jamieson Equipment Company
www.jamiesonequipment.com
toll free 800.875.0280

DelTech Controls is pleased to offer top-of-the-line products in pipeline flow control. The DelVal Series 44/45, 47/48, 4M/4N has been developed with extensive application, design and manufacturing expertise. These products are produced by employing modern manufacturing practices under a robust quality assurance system. These practices ensure consistent product quality and dependable performance. The DelVal Series 44/45, 47/48, 4M/4N has been designed to include state-of-the-art features that are described in this bulletin.

Features

Top Flange

The top flange is drilled as per EN ISO 5211 to accommodate direct mounting of a wide range of actuators.

Body

One-piece wafer body style or full lug style for dead end service. Both body styles offer bidirectional sealing as standard in conformance with full ASME class 150, class 300 and class 600 rating.

Pin

Pins are offset from the center of the stem which places them in compression rather than shear thus eliminating potential for failure. The pins are precision fit and wedge types which provide positive mechanical attachment of disc to stem.

Disc Stop

The disc stop is a machined position stop on the body that locates the disc in the seat to achieve maximum seat and seal life. The disc stop is designed to prevent disc from rotating in to the wrong direction and minimizing possible seat damage.

Seat Retainer

Retains seat in the body and is supplied in the same material as the body.

Stem Seal

Stem assembly is "live loaded" with two Bellville Spring Washers. This ensures continuous compression of packing and sealing contact at the stem and body. Rocker shaped gland bridge compensates for uneven adjustment of gland bolts.

Blow-out proof stem

Retainer circlip provides blow-out proof stem.

Stem

The high-strength stem is SS 316 or 17-4 ph stainless steel that provides maximum strength for high torque applications.

Extended Neck

Extended neck allows for 2" of pipeline insulation and easy access to stem packing adjustment and actuator mounting.

Bearings

Top and bottom bearings, consisting of a 316 stainless steel / TFE glass fabric liner bearing surface, securely support the stem.

Disc

The disc has been engineered to maximize flow and minimize resistance to provide a high flow coefficient (Cv). The standard disc material is 316 stainless steel.

Seat

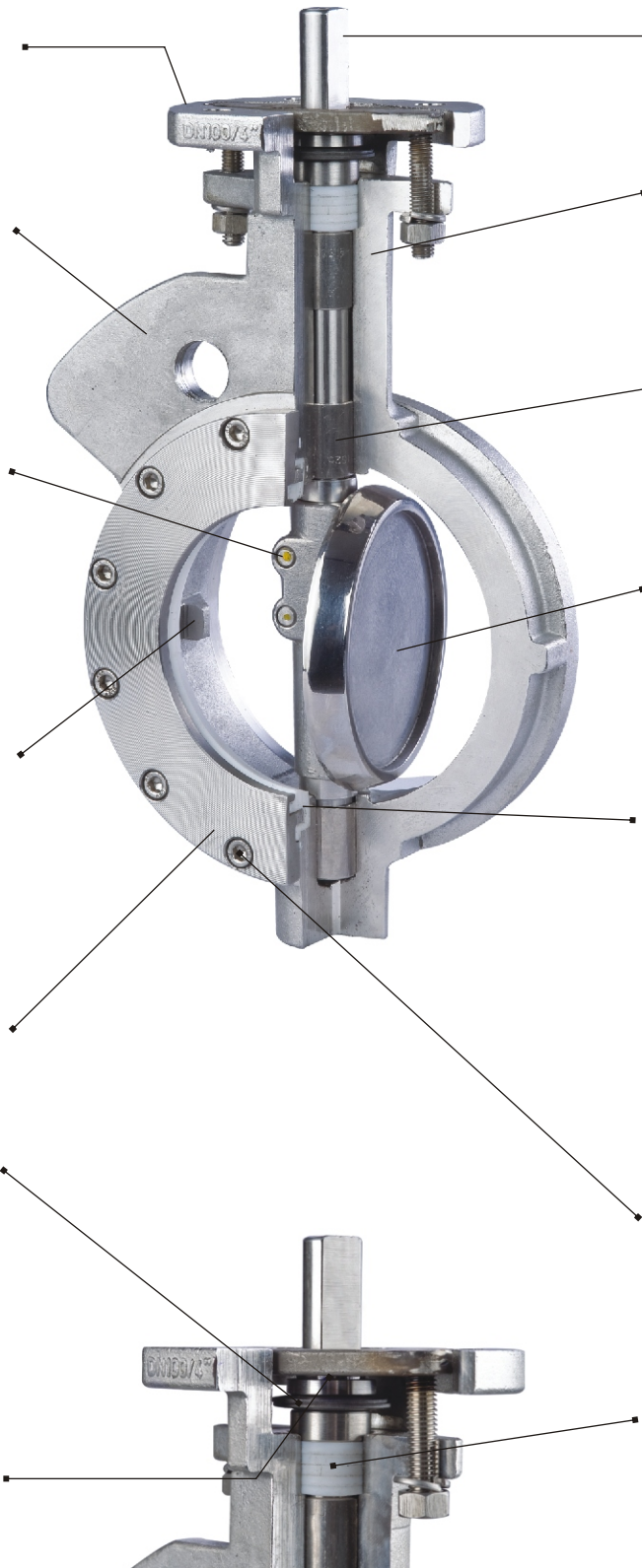
The unique seat design utilizes a flexible lip seal concept. When the disc closes, this action causes a slight deflection in the seat, energizing the seat. During this energized position, the seat has a stored energy force constantly pushing against the disc. In addition to this "energized" force, when pressure is on the insert side, the pressure pushes under the lip which further amplifies the sealing force between the disc and the seat.

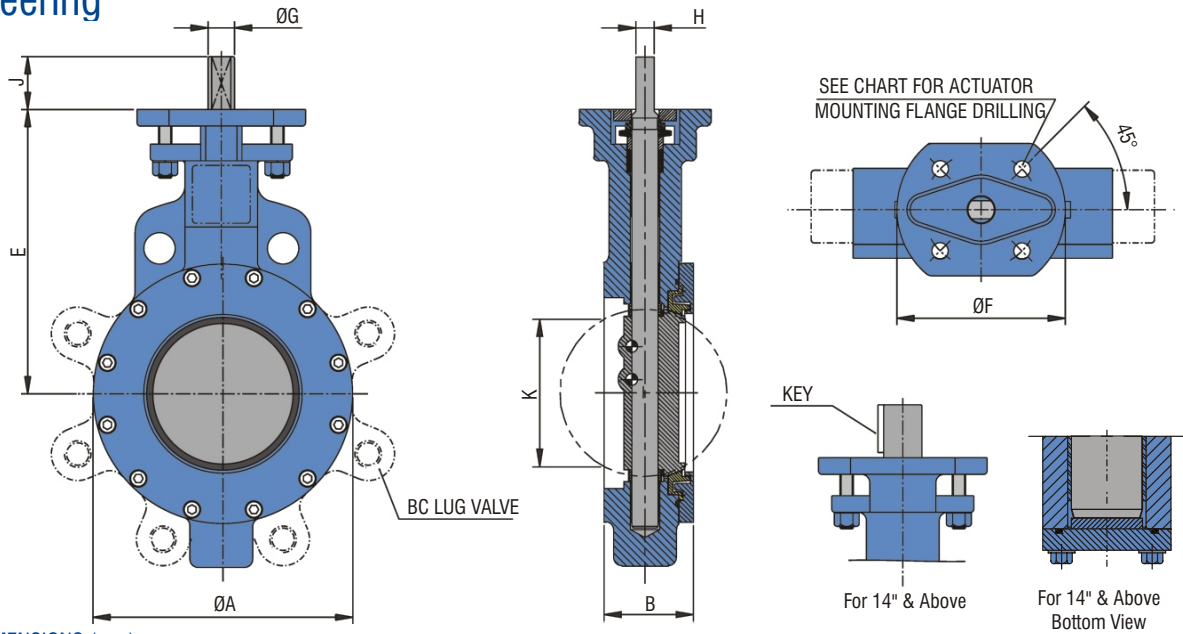
Bi-Directional Dead End Service

All lug valves are suitable for dead-end service to pull ANSI pressure rating, bi-directionally.

Adjustable Stem Packing

The stem packing system features a pull down gland with easy access to the adjusting hex head nuts without removal of the actuator.





DIMENSIONS (mm)

| Valve Size | | ØA | * B | E | ØF | Top Flange Drilling | | | ØG | H | J | Key Size | K | Lug Bolting Data | | | Weights In Kg. | |
|------------|------|------|-----|-----|-----|---------------------|--------------|-----------|-------|----|-----|--------------|-------|------------------|--------------|-------------------|----------------|-------|
| Inch | DN | | | | | BC | No. of holes | Hole Dia. | | | | | | BC | No. of holes | Threads UNC/UN-2B | Wafer | Lug |
| 2 | 50 | 95 | 43 | 125 | 102 | 70 | 4 | 10 | 14 | 10 | 32 | - | 39.8 | 120.7 | 4 | 5/8-11 | 3.5 | 4.0 |
| 2 1/2 | 65 | 105 | 46 | 146 | 102 | 70 | 4 | 10 | 16 | 11 | 32 | - | 53.3 | 139.7 | 4 | 5/8-11 | 4.0 | 4.9 |
| 3 | 80 | 127 | 48 | 151 | 102 | 70 | 4 | 10 | 16 | 11 | 32 | - | 66.0 | 152.4 | 4 | 5/8-11 | 4.9 | 6.0 |
| 4 | 100 | 157 | 54 | 172 | 102 | 70 | 4 | 10 | 16 | 11 | 32 | - | 86.4 | 190.5 | 8 | 5/8-11 | 7.1 | 11.1 |
| 5 | 125 | 186 | 57 | 188 | 125 | 70/102 | 4 | 10/12 | 19 | 13 | 32 | - | 114.3 | 215.9 | 8 | 3/4-10 | 8.9 | 13.4 |
| 6 | 150 | 216 | 57 | 209 | 125 | 70/102 | 4 | 10/12 | 19 | 13 | 32 | - | 139.7 | 241.3 | 8 | 3/4-10 | 11.3 | 16.1 |
| 8 | 200 | 270 | 64 | 239 | 152 | 125 | 4 | 14 | 22 | 16 | 32 | - | 185.4 | 298.5 | 8 | 3/4-10 | 11.6 | 21.3 |
| 10 | 250 | 324 | 71 | 280 | 152 | 125 | 4 | 14 | 30 | 22 | 51 | - | 233.7 | 362.0 | 12 | 7/8-9 | 27.7 | 40.8 |
| 12 | 300 | 381 | 81 | 310 | 152 | 125 | 4 | 14 | 35 | 24 | 51 | - | 297.2 | 431.8 | 12 | 7/8-9 | 50.4 | 57.2 |
| 14 | 350 | 423 | 92 | 335 | 210 | 125/165 | 4 | 14/21 | 40 | - | 51 | 12 x 8 | 322.6 | 476.2 | 12 | 1-8 | 62.0 | 82.7 |
| 16 | 400 | 470 | 102 | 407 | 210 | 165 | 4 | 21 | 50 | - | 64 | 12 x 10 | 370.8 | 539.7 | 16 | 1-8 | 93.0 | 112.5 |
| 18 | 450 | 534 | 114 | 427 | 210 | 165 | 4 | 21 | 55 | - | 64 | 16 x 10 | 416.6 | 577.8 | 16 | 1 1/8-8 | 105.8 | 139.0 |
| 20 | 500 | 584 | 127 | 450 | 210 | 165 | 4 | 21 | 60 | - | 102 | 18 x 11 | 466.1 | 635.0 | 20 | 1 1/8-8 | 114.3 | 187.3 |
| 24 | 600 | 692 | 154 | 530 | 300 | 254 | 8 | 18 | 70 | - | 102 | 20 x 12 | 553.7 | 749.3 | 20 | 1 1/4-8 | 230 | 318.2 |
| 26 | 650 | 750 | 165 | 560 | 300 | 254 | 8 | 18 | 88.9 | - | 102 | 22.23x15.88 | 605.0 | - | - | - | 300 | - |
| 28 | 700 | 805 | 165 | 600 | 300 | 254 | 8 | 18 | 88.9 | - | 102 | 22.23x15.88 | 660.5 | - | - | - | 385 | - |
| 30 | 750 | 860 | 191 | 640 | 350 | 298 | 8 | 21 | 88.9 | - | 102 | 22.23x15.88 | 715.0 | - | - | - | 450 | - |
| 32 | 800 | 911 | 191 | 670 | 350 | 298 | 8 | 21 | 101.6 | - | 134 | 25.4 x 19.05 | 767.0 | - | - | - | 525 | - |
| 36 | 900 | 1028 | 203 | 705 | 350 | 298 | 8 | 21 | 101.6 | - | 134 | 25.4 x 19.05 | 864.2 | - | - | - | 775 | - |
| 40 | 1000 | 1125 | 217 | 810 | 415 | 356 | 8 | 33 | 120 | - | 150 | 32 x 18 | 945.0 | - | - | - | 1100 | - |
| 44 | 1100 | 1250 | 254 | 845 | 415 | 356 | 8 | 33 | 120 | - | 150 | 32 x 18 | 1040 | - | - | - | 1275 | - |
| 48 | 1200 | 1360 | 254 | 915 | 415 | 356 | 8 | 33 | 120 | - | 150 | 32 x 18 | 1125 | - | - | - | 1435 | - |

ASME CLASS 150 (Series 44/45)

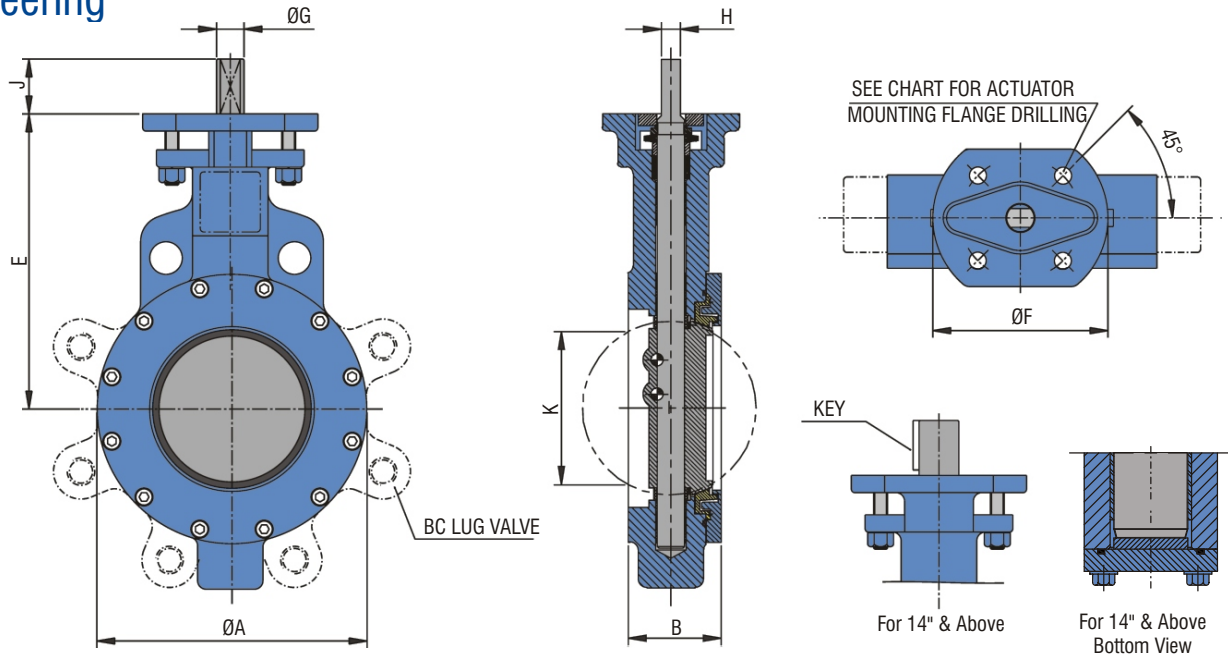
| Valve Size | | ØA | * B | E | ØF | Top Flange Drilling | | | ØG | H | J | Key Size | K | Lug Bolting Data | | | Weights In Kg. | |
|------------|-----|-----|-----|-----|-----|---------------------|--------------|-----------|-------|----|-----|-------------|-------|------------------|--------------|-------------------|----------------|-------|
| Inch | DN | | | | | BC | No. of holes | Hole Dia. | | | | | | BC | No. of holes | Threads UNC/UN-2B | Wafer | Lug |
| 2 | 50 | 95 | 43 | 125 | 102 | 70 | 4 | 10 | 14 | 10 | 32 | - | 39.8 | 127.0 | 8 | 5/8-11 | 3.5 | 4.0 |
| 2 1/2 | 65 | 105 | 46 | 146 | 102 | 70 | 4 | 10 | 16 | 11 | 32 | - | 53.3 | 149.2 | 8 | 3/4-10 | 4.0 | 4.9 |
| 3 | 80 | 127 | 48 | 151 | 102 | 70 | 4 | 10 | 16 | 11 | 32 | - | 66.0 | 168.3 | 8 | 3/4-10 | 4.9 | 6.0 |
| 4 | 100 | 157 | 54 | 172 | 102 | 70 | 4 | 10 | 16 | 11 | 32 | - | 86.4 | 200.0 | 8 | 3/4-10 | 7.1 | 11.1 |
| 5 | 125 | 186 | 59 | 193 | 125 | 70/102 | 4 | 10/12 | 19 | 13 | 32 | - | 114.3 | 235.0 | 8 | 3/4-10 | 9.2 | 14.2 |
| 6 | 150 | 216 | 59 | 220 | 152 | 125 | 4 | 14 | 22 | 16 | 32 | - | 139.7 | 269.9 | 12 | 3/4-10 | 14.2 | 31.2 |
| 8 | 200 | 280 | 73 | 265 | 152 | 125 | 4 | 14 | 30 | 22 | 51 | - | 180.3 | 330.2 | 12 | 7/8-9 | 24.1 | 35.9 |
| 10 | 250 | 336 | 83 | 300 | 152 | 125 | 4 | 14 | 35 | 24 | 51 | - | 228.6 | 387.4 | 16 | 1-8 | 40.2 | 52.8 |
| 12 | 300 | 390 | 92 | 340 | 210 | 125/165 | 4 | 14/21 | 40 | 29 | 51 | - | 271.8 | 450.8 | 16 | 1 1/8-8 | 68.8 | 91.2 |
| 14 | 350 | 413 | 117 | 375 | 210 | 165 | 4 | 21 | 55 | - | 64 | 16 x 10 | 307.3 | 514.4 | 20 | 1 1/8-8 | 129.7 | 148.0 |
| 16 | 400 | 470 | 133 | 425 | 210 | 165 | 4 | 21 | 55 | - | 64 | 16 x 10 | 348.0 | 571.5 | 20 | 1 1/4-8 | 153.1 | 182.8 |
| 18 | 450 | 545 | 149 | 475 | 300 | 254 | 8 | 18 | 70 | - | 102 | 20 x 12 | 396.2 | 628.6 | 24 | 1 1/4-8 | 177.5 | 233.8 |
| 20 | 500 | 584 | 159 | 505 | 300 | 254 | 8 | 18 | 88.9 | - | 102 | 22.23x15.88 | 436.9 | 685.8 | 24 | 1 1/4-8 | 230.8 | 334.5 |
| 24 | 600 | 692 | 181 | 580 | 350 | 298 | 8 | 21 | 101.6 | - | 134 | 25.4x19.05 | 523.2 | 812.8 | 24 | 1 1/2-8 | 333.4 | 460.8 |

ASME CLASS 300 (Series 47/48)

* Face to Face dimension "B", generally conforming to MSS SP 68 TABLE 1 / API 609 Category B / BS EN 558-1 / ISO 5752 / ASME B 16.10

All bolt holes 1 1/8" and larger have an 8-Un thread series as per MSS SP 68 & API 609.





DIMENSIONS (mm)

ASME CLASS 600 (Series 4M/4N)

| Valve Size | | ØA | *B | E | ØF | Top Flange Drilling | | | ØG | H | J | Key Size | K | Lug Bolting Data | | | Weights In Kg. | |
|------------|-----|-----|-----|-----|-----|---------------------|--------------|-----------|-------|----|-----|---------------|-------|------------------|--------------|-------------------|----------------|------|
| Inch | DN | | | | | BC | No. of holes | Hole Dia. | | | | | | BC | No. of holes | Threads UNC/UN-2B | Wafer | Lug |
| 3 | 80 | 145 | 54 | 178 | 102 | 70 | 4 | 10 | 19 | 13 | 32 | - | 66.0 | 168.3 | 8 | 3/4-10 | 10.5 | 13.6 |
| 4 | 100 | 175 | 64 | 216 | 152 | 125 | 4 | 14 | 22 | 16 | 32 | - | 86.4 | 215.9 | 8 | 7/8-9 | 18 | 25 |
| 5 | 125 | 205 | 78 | 235 | 152 | 125 | 4 | 14 | 30 | 22 | 51 | - | 114.3 | 266.7 | 8 | 1-8 | 28 | 40.5 |
| 6 | 150 | 236 | 78 | 250 | 152 | 125 | 4 | 14 | 30 | 22 | 51 | - | 139.7 | 292.1 | 12 | 1-8 | 35 | 53.5 |
| 8 | 200 | 295 | 102 | 310 | 152 | 125 | 4 | 14 | 35 | 24 | 51 | - | 175.3 | 349.2 | 12 | 1 1/8-8 | 69 | 102 |
| 10 | 250 | 350 | 117 | 360 | 210 | 165 | 4 | 21 | 50 | - | 64 | 12 x 10 | 218.6 | 431.8 | 16 | 1 1/4-8 | 126 | 180 |
| 12 | 300 | 415 | 140 | 400 | 210 | 165 | 4 | 21 | 50 | - | 64 | 12 x 10 | 261.8 | 489.0 | 20 | 1 1/4-8 | 173 | 246 |
| 14 | 350 | 450 | 155 | 475 | 300 | 254 | 8 | 17 | 63.5 | - | 102 | 15.88 x 15.88 | 277.4 | 527.0 | 20 | 1 3/8-8 | 250 | 338 |
| 16 | 400 | 520 | 178 | 550 | 300 | 254 | 8 | 17 | 76.2 | - | 102 | 19.05x19.05 | 325.0 | 603.2 | 20 | 1 1/2-8 | 340 | 495 |
| 18 | 450 | 590 | 200 | 600 | 350 | 298 | 8 | 21 | 88.9 | - | 102 | 22.23x15.88 | 374.8 | 654.0 | 20 | 1 5/8-8 | 492 | 663 |
| 20 | 500 | 640 | 216 | 652 | 350 | 298 | 8 | 21 | 101.6 | - | 134 | 25.4x19.05 | 418.4 | 723.9 | 24 | 1 5/8-8 | 615 | 835 |
| 24 | 600 | 745 | 232 | 785 | 415 | 356 | 8 | 33 | 120 | - | 150 | 32 x 18 | 506.5 | 838.2 | 24 | 1 7/8-8 | 975 | 1310 |

* Face to Face dimension "B", generally conforming to MSS SP 68 TABLE 1 / API 609 Category B / BS EN 558-1 / ASME B 16.10
All bolt holes 1 1/8" and larger have an 8-Un thread series as per MSS SP 68 & API 609.

TORQUE (Nm)

Maximum Seating & Unseating Torque for ASME Class 600

| Valve Size | | Soft Seat Design (Teflon / Elastomer) | | | Fire Safe Seat Design | | | Metal Seat Design | | |
|------------|-----|---------------------------------------|------|-----------|-----------------------|-------|-----------|-----------------------|-------|-----------|
| | | Differential Pressure | | | Differential Pressure | | | Differential Pressure | | |
| Inch | DN | Class 300 | PN64 | Class 600 | Class 300 | PN64 | Class 600 | Class 300 | PN64 | Class 600 |
| 3 | 80 | 81 | 91 | 116 | 113 | 130 | 164 | 136 | 156 | 197 |
| 4 | 100 | 140 | 175 | 232 | 215 | 245 | 305 | 258 | 294 | 366 |
| 5 | 125 | 238 | 278 | 336 | 340 | 375 | 480 | 408 | 450 | 576 |
| 6 | 150 | 322 | 395 | 485 | 463 | 520 | 655 | 556 | 624 | 786 |
| 8 | 200 | 711 | 810 | 1073 | 888 | 1020 | 1243 | 1066 | 1224 | 1492 |
| 10 | 250 | 1073 | 1265 | 1597 | 1205 | 1375 | 1687 | 1446 | 1650 | 2024 |
| 12 | 300 | 1480 | 1707 | 2259 | 2050 | 2250 | 2730 | 2460 | 2700 | 3276 |
| 14 | 350 | 2632 | 3026 | 3685 | 2660 | 3192 | 3724 | 2954 | 3397 | 3988 |
| 16 | 400 | 3174 | 3618 | 4602 | 3444 | 3960 | 4650 | 3947 | 4539 | 5328 |
| 18 | 450 | 4045 | 4651 | 5865 | 5895 | 6780 | 7960 | 7313 | 8410 | 9873 |
| 20 | 500 | 5506 | 6332 | 7984 | 8717 | 10024 | 11757 | 10402 | 11962 | 14043 |
| 24 | 600 | 7390 | 8495 | 10715 | 13530 | 15560 | 18265 | 16184 | 18611 | 21848 |

Note :- Above torque values are indicative and defined for flow in preferred direction i.e. Seat retainer upstream.
Torque values for flow in non preferred direction i.e. seat retainer downstream, multiply the above values by 1.25

TORQUE (Nm)

Maximum Seating and Unseating Torque for ASME Class 150

Soft Seat Design (Teflon / Elastomer)

| Valve Size | | Differential Pressure | | | | |
|------------|------|-----------------------|-------|-------|-------|-----------|
| Inch | DN | PN3.5 | PN7 | PN10 | PN16 | Class 150 |
| 2 | 50 | 24 | 26 | 27 | 28 | 29 |
| 2.5 | 65 | 27 | 28 | 29 | 31 | 32 |
| 3 | 80 | 32 | 33 | 34 | 37 | 40 |
| 4 | 100 | 43 | 46 | 49 | 53 | 68 |
| 5 | 125 | 59 | 65 | 70 | 78 | 83 |
| 6 | 150 | 88 | 95 | 104 | 116 | 124 |
| 8 | 200 | 148 | 162 | 175 | 199 | 214 |
| 10 | 250 | 193 | 219 | 244 | 283 | 315 |
| 12 | 300 | 235 | 285 | 336 | 413 | 465 |
| 14 | 350 | 389 | 482 | 579 | 735 | 836 |
| 16 | 400 | 496 | 618 | 744 | 936 | 1076 |
| 18 | 450 | 646 | 808 | 966 | 1224 | 1409 |
| 20 | 500 | 862 | 1087 | 1296 | 1663 | 1897 |
| 24 | 600 | 1305 | 1648 | 2008 | 2558 | 2958 |
| 26 | 650 | 1597 | 1950 | 2210 | 2610 | 3170 |
| 28 | 700 | 1755 | 2150 | 2490 | 2830 | 3360 |
| 30 | 750 | 2395 | 2912 | 3429 | 4256 | 4825 |
| 32 | 800 | 3099 | 3762 | 4529 | 5456 | 6325 |
| 36 | 900 | 3865 | 4762 | 5659 | 7094 | 8081 |
| 40 | 1000 | 6102 | 7601 | 9100 | 11499 | 13152 |
| 44 | 1100 | 7725 | 8960 | 10320 | 13040 | 14910 |
| 48 | 1200 | 9950 | 12450 | 14770 | 18806 | 21420 |

Maximum Seating and Unseating Torque for ASME Class 300

Soft Seat Design (Teflon / Elastomer)

| Valve Size | | Differential Pressure | | | | |
|------------|-----|-----------------------|-----------|------|------|-----------|
| Inch | DN | PN10 | Class 150 | PN25 | PN40 | Class 300 |
| 2 | 50 | 27 | 29 | 32 | 40 | 42 |
| 2.5 | 65 | 29 | 32 | 34 | 42 | 47 |
| 3 | 80 | 34 | 40 | 44 | 54 | 60 |
| 4 | 100 | 49 | 68 | 74 | 95 | 108 |
| 5 | 125 | 88 | 111 | 123 | 161 | 186 |
| 6 | 150 | 120 | 154 | 175 | 234 | 275 |
| 8 | 200 | 228 | 300 | 341 | 459 | 545 |
| 10 | 250 | 338 | 461 | 530 | 731 | 876 |
| 12 | 300 | 473 | 639 | 729 | 1002 | 1189 |
| 14 | 350 | 724 | 1058 | 1258 | 1807 | 2194 |
| 16 | 400 | 879 | 1270 | 1492 | 2181 | 2645 |
| 18 | 450 | 1136 | 1652 | 1935 | 2786 | 3371 |
| 20 | 500 | 1501 | 2191 | 2605 | 3761 | 4589 |
| 24 | 600 | 2047 | 2979 | 3485 | 5101 | 6158 |

Fire Safe Seat Design

| Valve Size | | Differential Pressure | | | | |
|------------|-----|-----------------------|------|------|------|-----------|
| Inch | DN | PN3.5 | PN7 | PN10 | PN16 | Class 150 |
| 2 | 50 | 52 | 54 | 56 | 59 | 61 |
| 2.5 | 65 | 54 | 57 | 58 | 61 | 63 |
| 3 | 80 | 69 | 71 | 73 | 77 | 80 |
| 4 | 100 | 85 | 90 | 94 | 101 | 107 |
| 5 | 125 | 96 | 104 | 113 | 127 | 137 |
| 6 | 150 | 161 | 175 | 190 | 213 | 226 |
| 8 | 200 | 264 | 293 | 315 | 355 | 387 |
| 10 | 250 | 398 | 443 | 494 | 572 | 628 |
| 12 | 300 | 593 | 682 | 768 | 896 | 997 |
| 14 | 350 | 704 | 807 | 905 | 1080 | 1190 |
| 16 | 400 | 812 | 944 | 1094 | 1313 | 1475 |
| 18 | 450 | 1034 | 1289 | 1571 | 1980 | 2285 |
| 20 | 500 | 1463 | 1858 | 2239 | 2896 | 3316 |
| 24 | 600 | 2304 | 2724 | 3172 | 3886 | 4322 |

Fire Safe Seat Design

| Valve Size | | Differential Pressure | | | | |
|------------|-----|-----------------------|-----------|------|------|-----------|
| Inch | DN | PN10 | Class 150 | PN25 | PN40 | Class 300 |
| 2 | 50 | 56 | 61 | 63 | 67 | 70 |
| 2.5 | 65 | 58 | 63 | 66 | 70 | 74 |
| 3 | 80 | 73 | 80 | 82 | 87 | 92 |
| 4 | 100 | 94 | 107 | 121 | 144 | 162 |
| 5 | 125 | 124 | 145 | 157 | 194 | 217 |
| 6 | 150 | 205 | 247 | 271 | 340 | 389 |
| 8 | 200 | 337 | 412 | 453 | 576 | 659 |
| 10 | 250 | 506 | 610 | 669 | 838 | 964 |
| 12 | 300 | 825 | 1078 | 1202 | 1616 | 1900 |
| 14 | 350 | 926 | 1207 | 1362 | 1827 | 2485 |
| 16 | 400 | 1123 | 1515 | 1730 | 2406 | 2870 |
| 18 | 450 | 1727 | 2552 | 3021 | 4385 | 5359 |
| 20 | 500 | 2405 | 3619 | 4247 | 6284 | 7580 |
| 24 | 600 | 3864 | 5705 | 6702 | 9708 | 11766 |

Metal Seat Design

| Valve Size | | Differential Pressure | | | | |
|------------|-----|-----------------------|------|------|------|-----------|
| Inch | DN | PN3.5 | PN7 | PN10 | PN16 | Class 150 |
| 2 | 50 | 58 | 60 | 63 | 66 | 70 |
| 2.5 | 65 | 68 | 70 | 73 | 76 | 79 |
| 3 | 80 | 84 | 89 | 91 | 94 | 99 |
| 4 | 100 | 107 | 113 | 117 | 125 | 134 |
| 5 | 125 | 119 | 129 | 143 | 159 | 171 |
| 6 | 150 | 201 | 219 | 236 | 265 | 280 |
| 8 | 200 | 333 | 369 | 394 | 446 | 482 |
| 10 | 250 | 490 | 544 | 624 | 707 | 795 |
| 12 | 300 | 747 | 846 | 964 | 1118 | 1254 |
| 14 | 350 | 880 | 1021 | 1132 | 1347 | 1485 |
| 16 | 400 | 1015 | 1184 | 1365 | 1654 | 1839 |
| 18 | 450 | 1302 | 1637 | 1944 | 2506 | 2829 |
| 20 | 500 | 1814 | 2304 | 2789 | 3638 | 4149 |
| 24 | 600 | 2880 | 3432 | 3957 | 4876 | 5388 |

Metal Seat Design

| Valve Size | | Differential Pressure | | | | |
|------------|-----|-----------------------|-----------|------|-------|-----------|
| Inch | DN | PN10 | Class 150 | PN25 | PN40 | Class 300 |
| 2 | 50 | 63 | 70 | 75 | 79 | 83 |
| 2.5 | 65 | 73 | 79 | 83 | 89 | 91 |
| 3 | 80 | 91 | 99 | 102 | 108 | 115 |
| 4 | 100 | 117 | 134 | 150 | 179 | 202 |
| 5 | 125 | 156 | 180 | 196 | 241 | 269 |
| 6 | 150 | 255 | 309 | 340 | 426 | 488 |
| 8 | 200 | 422 | 511 | 573 | 721 | 818 |
| 10 | 250 | 627 | 760 | 828 | 1039 | 1200 |
| 12 | 300 | 1040 | 1334 | 1511 | 2012 | 2394 |
| 14 | 350 | 1146 | 1508 | 1703 | 2303 | 2686 |
| 16 | 400 | 1392 | 1890 | 2162 | 3009 | 3588 |
| 18 | 450 | 2159 | 3217 | 3745 | 5435 | 6648 |
| 20 | 500 | 3032 | 4511 | 5351 | 7893 | 9456 |
| 24 | 600 | 4812 | 7189 | 8384 | 12122 | 14712 |

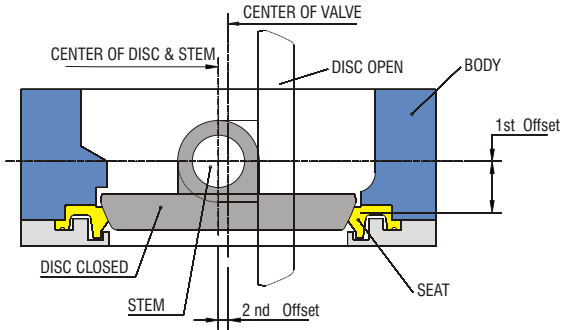
Note :- Above torque values are indicative and defined for flow in preferred direction i.e. Seat retainer upstream.

Torque values for flow in non preferred direction i.e. seat retainer downstream, multiply the above values by 1.25



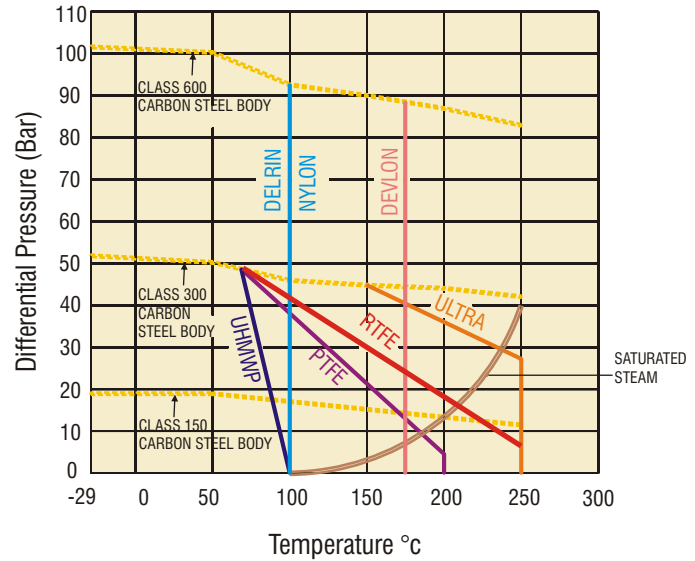
Feature and Selection

Double Offset Disc Design

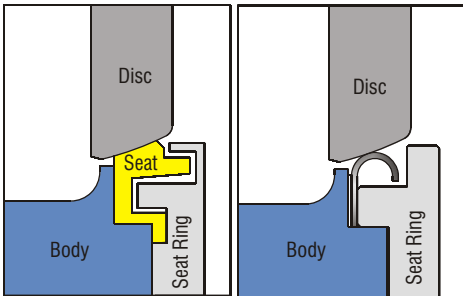


The offset disc produces a cam-like action, pulling the disc from the seat. This action reduces seat wear and eliminates seat deformation when the disc is in the open position. The disc does not contact the seat when the valve is in the open condition; therefore, seat service life is extended and torques are reduced. As the valve closes, the cam-like action converts the rotary motion of the disc to a linear type motion effectively pushing the disc onto the seat.

SEAT PRESSURE / TEMPERATURE

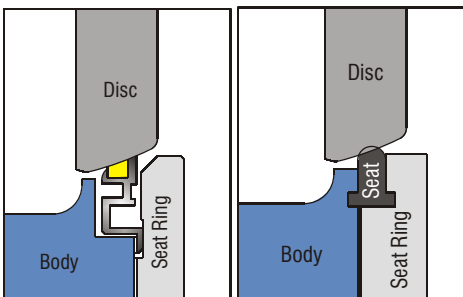


Seat Designs



1. Teflon Seat
2" - 24"

2. Metal Seat
2" - 24"



3. Fire Safe Seat
2" - 24"

4. Elastomer Seat
2" - 48"

1. **Teflon Seat** : Flexible lip seat design retains its original shape and maintain a seal against the disc regardless of the flow direction

2. **Metal Seat** : Flexible metal seat offers a very high sealing capability with an unusually low leakage rate. The mechanical properties and the shape of the metal seat allows it to flex and maintain constant positive sealing against the disc.

3. **Fire Safe Seat** : During and after fire, when the resilient material has been partially or completely destroyed, the metal seat ring provides a positive seal by remaining in constant contact with the disc in either direction of media flow.

4. **Elastomer Seat** : The heavy 'T' section seal ring is designed to eliminate the potential extrusion due to high shut-off delta P or high velocity.

Special Applications

ULTRA seat

An engineered fluorocarbon polymer that is rated for 260 °C. Excellent for handling aggressive fluids at high pressures. Ultra is recommended for extended service in hostile environments involving chemical, thermal, and mechanical stress . Ultra has excellent thermal stability and is ideal for steam, hot gases, and a variety of process chemicals where service can be also be subject to pressure cycling.

NACE service

All valves conform to NACE MRO 103 standard. These valves are well suited for oil and gas industry applications requiring resistant materials to sulfide stress cracking.

Steam

Valves are available for saturated steam at 14 Bar rating for series 44 / 45 and 31 Bar for series 47 / 48.

Vacuum

Standard valves are rated for tight shut-off of vacuum to 2×10^{-2} torr.

Oxygen

Valves for critical gaseous oxygen service are specially prepared, cleaned, inspected, assembled and tested to ensure removal of all burrs, sharp edges, dirt, hydrocarbon oil or grease and other contaminants.

CODES AND STANDARDS

General design and manufacturing :- API 609 Category B / MSS-SP-68 / EN 593

Inspection and Testing :- API 598 / MSS-SP-68 / EN 12266-1 / AISI / FCI 70-2

Fire safe testing :- API 607 / ISO 10497 / EN 12266-2

Pressure temperature rating :- ASME B 16.34 // BS EN 12516-1

Materials of Construction

BODY - D.I. ASTM A536 65-45-12 / Carbon Steel, ASTM A 216 WCB / ASTM A352 LCB
Stainless Steel, ASTM A 351 CF8M / CF8

DISC - Stainless Steel, ASTM A 351 CF8M / CF8

STEM - ASTM A 479 SS316 (Class 150 up to 12", soft seat)
ASTM A479 SS 410 (Class 150 / 300)
ASTM A 564 17-4-PH TYPE 630 (Class 600 / 300 / 150)

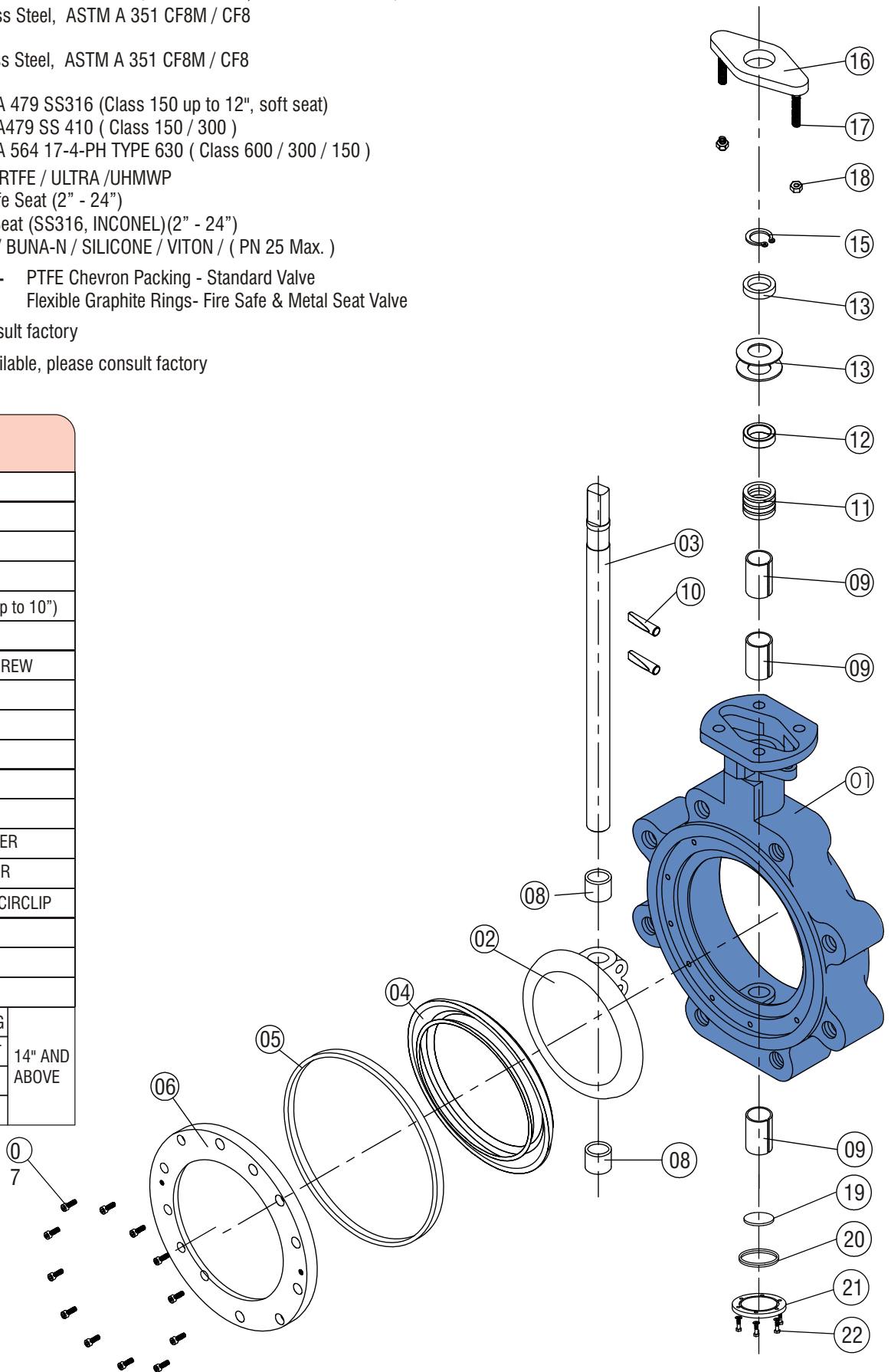
SEAT - * PTFE / RTFE / ULTRA / UHMWP
Fire Safe Seat (2" - 24")
Metal Seat (SS316, INCONEL)(2" - 24")
EPDM / BUNA-N / SILICONE / VITON / (PN 25 Max.)

STEM PACKING - PTFE Chevron Packing - Standard Valve
Flexible Graphite Rings- Fire Safe & Metal Seat Valve

* For 26" & above consult factory

Other materials are available, please consult factory
for specific application

| Sr. No. | DESCRIPTION | |
|---------|-------------------------|---------------|
| 01 | BODY | |
| 02 | DISC | |
| 03 | STEM | |
| 04 | SEAT | |
| 05 | BODY GASKET (Up to 10") | |
| 06 | SEAT RETAINER | |
| 07 | SOC. HD. CAP SCREW | |
| 08 | DISC SPACER | |
| 09 | BEARING | |
| 10 | DISC PIN | |
| 11 | STEM PACKING | |
| 12 | PACKING GLAND | |
| 13 | BELLVILLE WASHER | |
| 14 | GLAND FOLLOWER | |
| 15 | STEM RETAINER CIRCLIP | |
| 16 | GLAND FLANGE | |
| 17 | STUD | |
| 18 | HEX NUT | |
| 19 | THRUST BEARING | 14" AND ABOVE |
| 20 | BOTTOM GASKET | |
| 21 | BOTTOM FLANGE | |
| 22 | HEX BOLT | |



Operators



All valves can be direct mounted with pneumatic actuators or electric actuators and accessories for complete automation options such as fail open/close and positioner controlled. Valves can be mounted with manual overrides.



Valves up to size 48" can be direct mounted with gear operators for manual operation. Gear operators can also be attached with chain-wheel operators for opening or closing valves located on pipelines at high elevations.



Valves upto 6" for class 150 and upto 4" for class 300 can be supplied with lever handles for manual operation. Optional accessories for hand-lever operation can be provided for various flow control requirements. Pad locking can also be provided for preventing unauthorized operation.

How to order DeVal valves

| Series | | Size | | Trim / Other Variables / Special | | | | | |
|----------------------|-------------------|-----------|----------------|----------------------------------|--------------|-------------------|---------------|-----------|--------------|
| □ □ | | □ □ □ | | □ | □ | □ | □ | □ | □ |
| Valve Description | Valve Description | Body | Disc | Stem | Seat | Rating | Operator | Special | |
| 44 : Wafer class 150 | 020 : 2" | 140 : 14" | 2 - D.I. | 4-CF8M(SS316) | 1-SS410 | T- PTFE | 5 - Class 150 | B-BARE | 0-NO SPECIAL |
| 45 : Lug class 150 | 025 : 2.5" | 160 : 16" | 3- WCB | 8- CF8(SS304) | 4-SS316 | U-ULTRA | 6 - Class 300 | L - LEVER | REQUIREMENT |
| 47 : Wafer class 300 | 030 : 3" | 180 : 18" | 4- CF8M(SS316) | 6- 17-4-PH | G-UHMWP | R-RTFE | 7 - Class 600 | G - GEAR | S - SPECIAL |
| 48 : Lug class 300 | 040 : 4" | 200 : 20" | 8- CF8(SS304) | | M-METAL (SS) | N-METAL (INCONEL) | | | REQUIREMENT |
| 4M : Wafer class 600 | 050 : 5" | 240 : 24" | | | F-FIRE SAFE | E - EPDM | | | AS SPECIFIED |
| 4N : Lug class 600 | 060 : 6" | 260 : 26" | | | B - BUNA-N | S - SILICONE | | | BY CUSTOMER |
| | 080 : 8" | 280 : 28" | | | V - VITON | | | | |
| | 100 : 10" | 300 : 30" | | | | | | | |
| | 120 : 12" | 320 : 32" | | | | | | | |
| | | 360 : 36" | | | | | | | |
| | | 400 : 40" | | | | | | | |
| | | 440 : 44" | | | | | | | |
| | | 480 : 48" | | | | | | | |

FOR Example :- To order 300/12" , wafer body valve, Body-CF8M, Disc- CF8M, Stem-SS316, Seat-RTFE, Rating-Class 150, Gear operated, with no special requirements.