



TECHNICAL BULLETIN

Kämmer® LinedFlow™ - 132000 Corrosive Application Valves

FCD KMENTB3221-02 06/14



Description

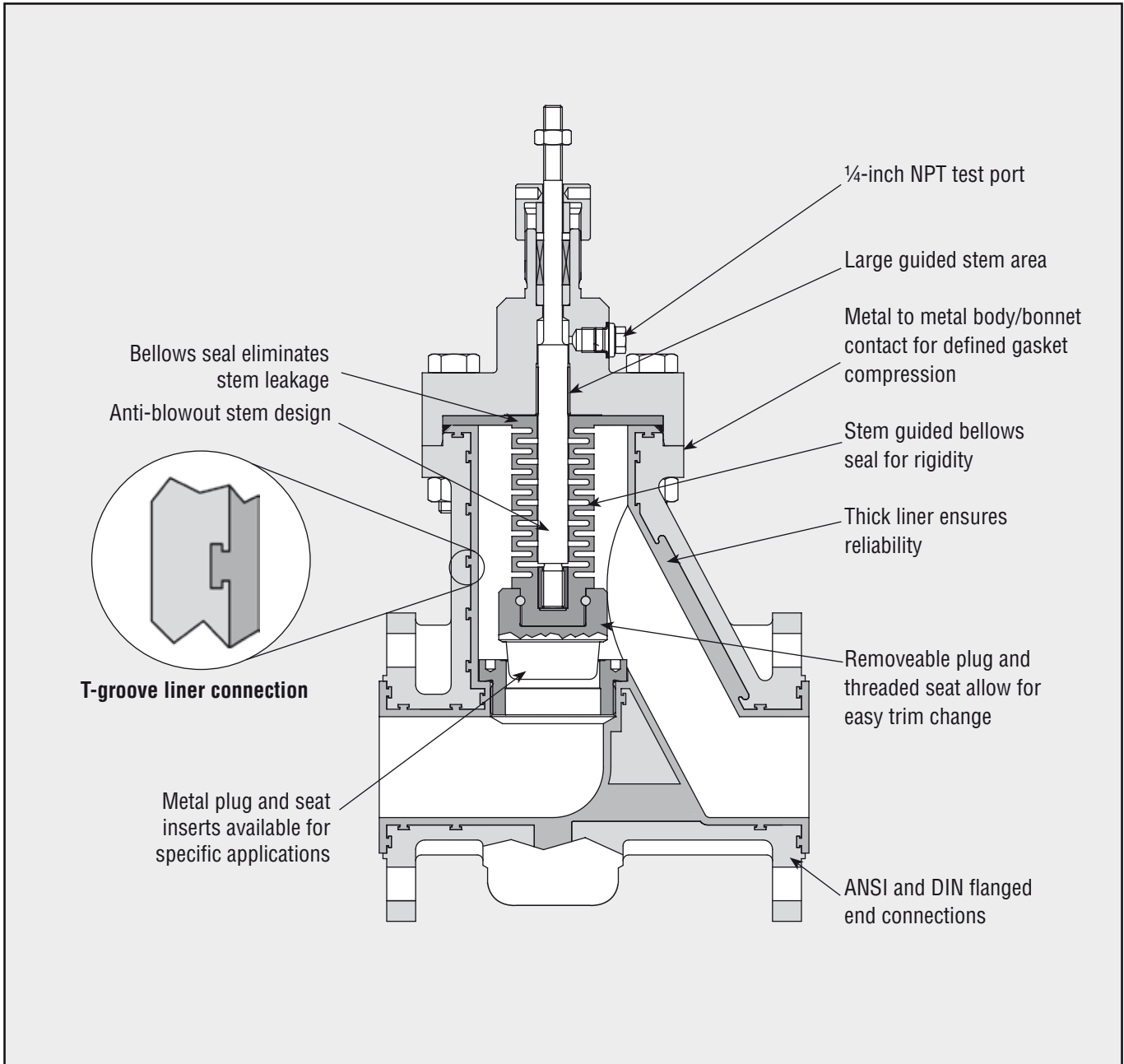


Figure 1: 132000 Series Body Assembly

Flowserve's Kammer 132000 Series control valves combine many years of expertise in manufacturing both plastic lined valve bodies and precision globe control valves. With a variety of high quality linings available, this

valve can be used in many corrosive mediums, and the unique bellows design allows for working pressures of up to 232 psig. In addition, the 132000 series has high flow capacities verified by flow testing.

Features and Benefits

Table 1: 132000 Series Features and Benefits

| Features | Benefits |
|------------------------------------|--|
| Liner Materials | Multiple high quality liner materials are available to cover most corrosive applications, including: PFA and PFA anti-static. |
| Liner Thickness | The liner thickness provides a high degree of protection from corrosive medias., |
| Liner Connection | T-grooves ensure a positive mechanical connection between the liner material and the valve body. This feature is especially important in vacuum applications. |
| Bellows Seal | The unique bellows design allows for working pressures up to 232 psig. Very high cycle life bellows (based on extensive cycle testing) are separable from plug to allow easy maintenance. |
| Trim Design | Large selection of precision and custom flow curves High rangeability Very large flow capacity (C_v) per valve size Separable plug head and threaded seat ring for easy maintenance |
| Metal Plug and Seat Inserts | Metal plug and seat inserts enable smaller C_v values Wear resistance Higher rangeability |
| End Connections | ANSI 150# flanges with ANSI face-to-face ANSI 150# flanges with DIN face-to-face DIN PN 16 flanges with DIN face-to-face |
| Safety | Anti-blowout stem design ¼-inch NPT leak detection port Backup packing for additional protection |

Trim

The seat and plug are threaded, i.e, replacement is possible at any time when a K_{vs} value change is required or for repair purposes. The plug is threaded into the bellows and secured against loosening by a PTFE insert. For smaller K_{vs} values, a Hastelloy insert can be provided in the plug or in the seat,

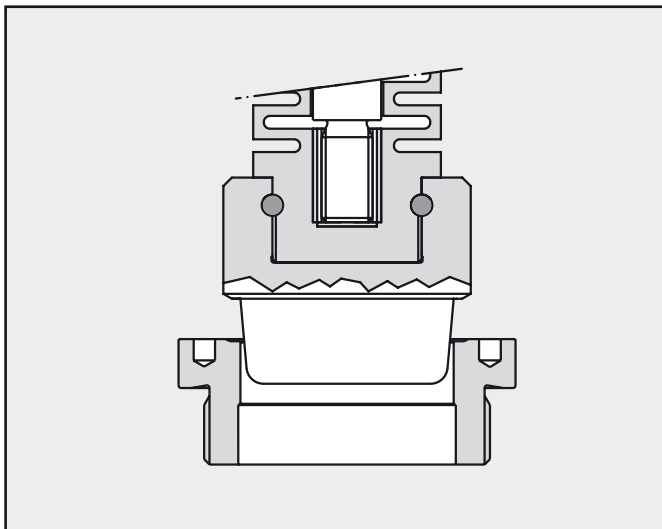


Figure 2: Separable Plug, Seat and Bellows

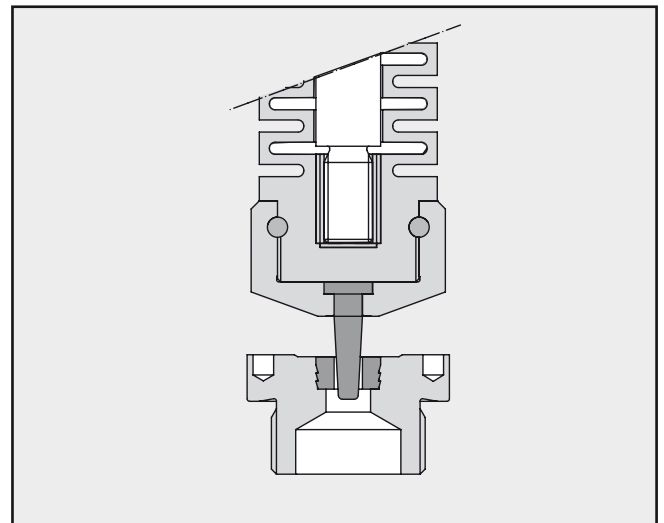


Figure 3: Metal Plug and Seat Inserts

Lining Materials

High quality lining material, such as PFA (Perfluoroalkoxy resin), protects the metal parts of the valve assembly. T-grooves provide an extremely reliable connection between the liner and the metal valve body, which is especially important in vacuum applications. The liner thickness is at least 5 mm for 1-inch to 6-inch (DN 25-

150) valve sizes (3,5 mm liner thickness for ½-inch and ¾-inch (DN 15-20) valves). A variety of other liner materials including FEP, PP, PVDF, ETFE and anti-static PFA are available to meet the requirements for most applications.

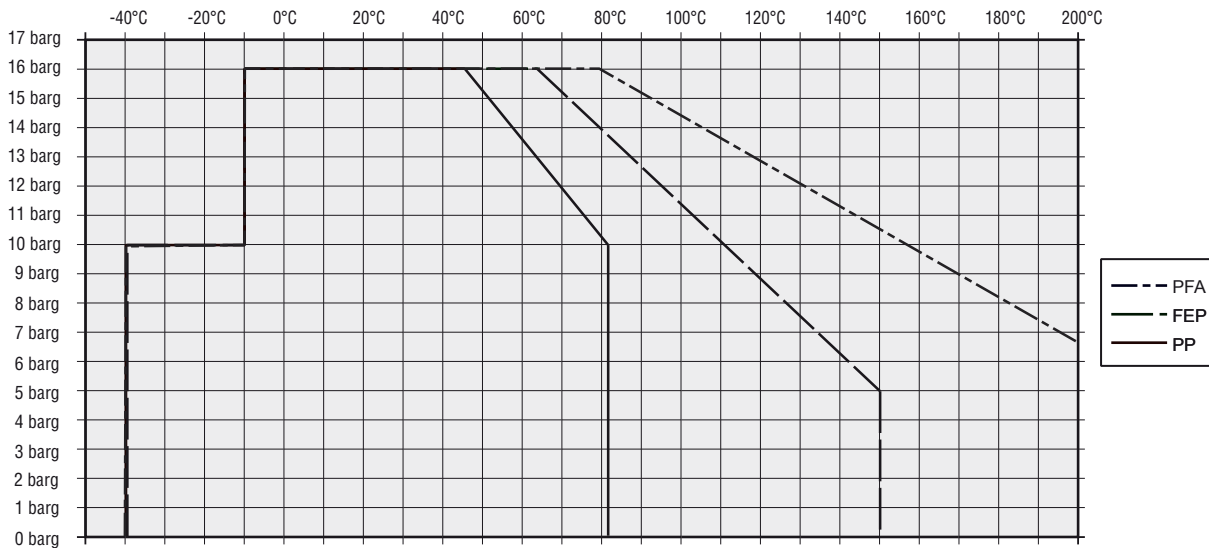


Figure 4: Pressure Temperature Diagram

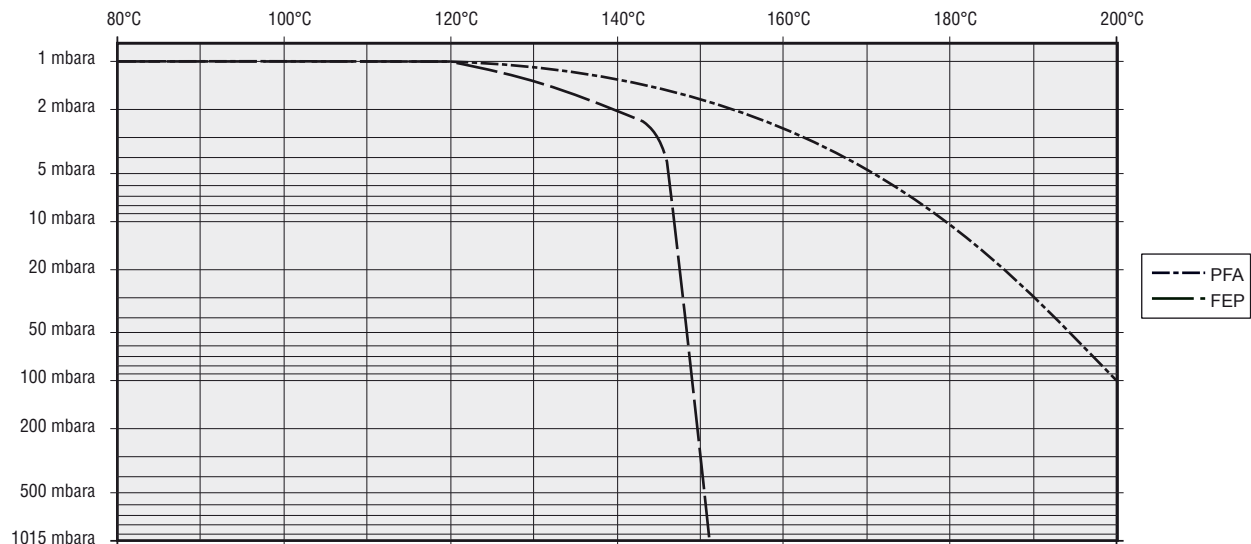


Figure 5: Vacuum Temperature Diagram

K_{VS} / C_V Table

| K _{VS} | C _V | Seat ø | | Valve Size | | | | | | | Trim Material | | | | |
|-----------------|----------------|--------|------|-------------------|---------|---------|---------|---------|---------|---------|---------------|-----------|-----------|---------|---|
| | | | | DN15/20 | DN25 | DN 40 | DN 50 | DN 80 | DN 100 | DN 150 | Plug | Hastelloy | Hastelloy | TFM1600 | |
| | | | | ½" / ¾" | 1" | 1½" | 2" | 3" | 4" | 6" | Seat | Hastelloy | TFM1600 | TFM1600 | |
| | | mm | in. | Stroke (mm / in.) | | | | | | | | | | | |
| 0.011 | 0.013 | 3 | 0.12 | 10/0.39 | 10/0.39 | | | | | | | | x | | |
| 0.017 | 0.020 | 3 | 0.12 | 10/0.39 | 10/0.39 | | | | | | | | x | | |
| 0.025 | 0.029 | 3 | 0.12 | 10/0.39 | 10/0.39 | | | | | | | | x | | |
| 0.040 | 0.047 | 3 | 0.12 | 10/0.39 | 10/0.39 | | | | | | | | x | | |
| 0.063 | 0.074 | 3 | 0.12 | 10/0.39 | 10/0.39 | | | | | | | | x | | |
| 0.10 | 0.12 | 4.5 | 0.18 | 10/0.39 | 20/0.79 | | | | | | | | | x | |
| 0.16 | 0.19 | 4.5 | 0.18 | 10/0.39 | 20/0.79 | | | | | | | | | x | |
| 0.25 | 0.29 | 4.5 | 0.18 | 10/0.39 | 20/0.79 | | | | | | | | | x | |
| 0.40 | 0.47 | 4.5 | 0.18 | 10/0.39 | 20/0.79 | | | | | | | | | x | |
| 0.63 | 0.74 | 4.5 | 0.18 | 10/0.39 | 20/0.79 | | | | | | | | | x | |
| 1.0 | 1.2 | 7 | 0.28 | 10/0.39 | 20/0.79 | | | | | | | | | | x |
| 1.6 | 1.9 | 7 | 0.28 | 10/0.39 | 20/0.79 | | | | | | | | | | x |
| 2.5 | 2.9 | 10 | 0.38 | 10/0.39 | 20/0.79 | | | | | | | | | | x |
| 4.0 | 4.7 | 12 | 0.47 | | 20/0.79 | 20/0.79 | | | | | | | | | x |
| 5.0 | 5.8 | 15 | 0.59 | 10/0.39 | | | | | | | | | | | x |
| 6.3 | 7.4 | 16 | 0.63 | | 20/0.79 | 20/0.79 | 20/0.79 | | | | | | | | x |
| 10 | 12 | 20 | 0.79 | | | 20/0.79 | 20/0.79 | | | | | | | | x |
| 13 | 15 | 25 | 0.98 | | 20/0.79 | | | | | | | | | | x |
| 16 | 19 | 25 | 0.98 | | | 20/0.79 | 20/0.79 | 40/1.57 | | | | | | | x |
| 25 | 29 | 32 | 1.26 | | | | 20/0.79 | 40/1.57 | | | | | | | x |
| 32 | 37 | 40 | 1.57 | | | 20/0.79 | | | | | | | | | x |
| 40 | 47 | 40 | 1.57 | | | | | 40/1.57 | 40/1.57 | | | | | | x |
| 47 | 55 | 50 | 1.97 | | | | 20/0.79 | | | | | | | | x |
| 63 | 74 | 50 | 1.97 | | | | | 40/1.57 | 40/1.57 | | | | | | x |
| 100 | 120 | 63 | 2.48 | | | | | | 40/1.57 | 40/1.57 | | | | | x |
| 120 | 139 | 80 | 3.15 | | | | | 40/1.57 | | | | | | | x |
| 160 | 190 | 80 | 3.15 | | | | | | | 40/1.57 | | | | | x |
| 180 | 210 | 100 | 3.94 | | | | | | 40/1.57 | | | | | | x |
| 250 | 290 | 100 | 3.94 | | | | | | | 40/1.57 | | | | | x |
| 340 | 400 | 125 | 4.92 | | | | | | | 40/1.57 | | | | | x |

Specifications

Table 3: Body and Lining materials

| | |
|--------------------------------|---|
| Body/Bonnet material | 0.7043 (Ductile Iron) |
| Sizes | DN 15 to 150 ½-inch to 6-inch |
| Working Pressure Rating | PN 16 ANSI Class 150 |
| End Connections | ANSI Class 150 RF Flanges DIN PN 16 Flanges |
| Lining material | PFA (standard), FEP, PVDF PP, ETFE antistatic PFA |
| Liner thickness | 3,5 mm (minimum) for ½-inch & ¾-inch valve sizes 5 mm (minimum) for 1-inch to 6-inch valve sizes |

Table 4: Trim

| | |
|--|--|
| C_v-values | See table 2 |
| Rangeability | 50 : 1 |
| Valve Plug and Seat Ring Material | Modified PTFE for small K _{vs} -/C _v values: Hastelloy C276 Kegel and/or seat inserts |
| Leakage class | ANSI Class VI |
| Characteristics | Equal percentage Linear On - Off |

Table 5: Bellows seal

| | |
|-------------------------|--|
| Material | TF 1620 for ½-inch to 1-inch valve sizes TFM 1600 for 1½-inch to 6-inch valve sizes |
| Working Pressure | 232 psig at 250 °F (120 °C) |

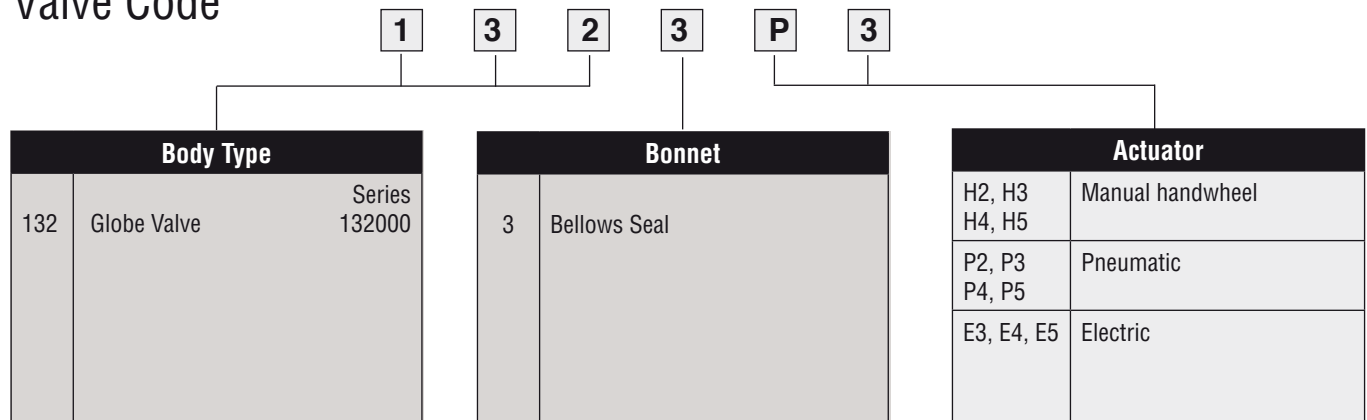
Table 6: Options

| | |
|---------------------|----------------|
| Bellows seal | Hastelloy C276 |
| Stem | Hastelloy C276 |

Table 7: Bellows Seal Options

| Size | | Effective Area | | Stroke | |
|------|--------|---------------------|-----------------|--------|----|
| ANSI | DIN | Inches ² | cm ² | Inches | mm |
| ½ | DN 15 | 0.99 | 6.4 | 0.39 | 10 |
| ¾ | DN 20 | 0.99 | 6.4 | 0.39 | 10 |
| 1 | DN 25 | 1.33 | 8.6 | 0.79 | 20 |
| 1½ | DN 40 | 1.33 | 8.6 | 0.79 | 20 |
| 2 | DN 50 | 1.33 | 8.6 | 0.79 | 20 |
| 3 | DN 80 | 2.05 | 13.2 | 1.57 | 40 |
| 4 | DN 100 | 2.05 | 13.2 | 1.57 | 40 |
| 6 | DN 150 | 2.05 | 13.2 | 1.57 | 40 |

Valve Code



Weights lbs. (kg) and Dimensions in. (mm)

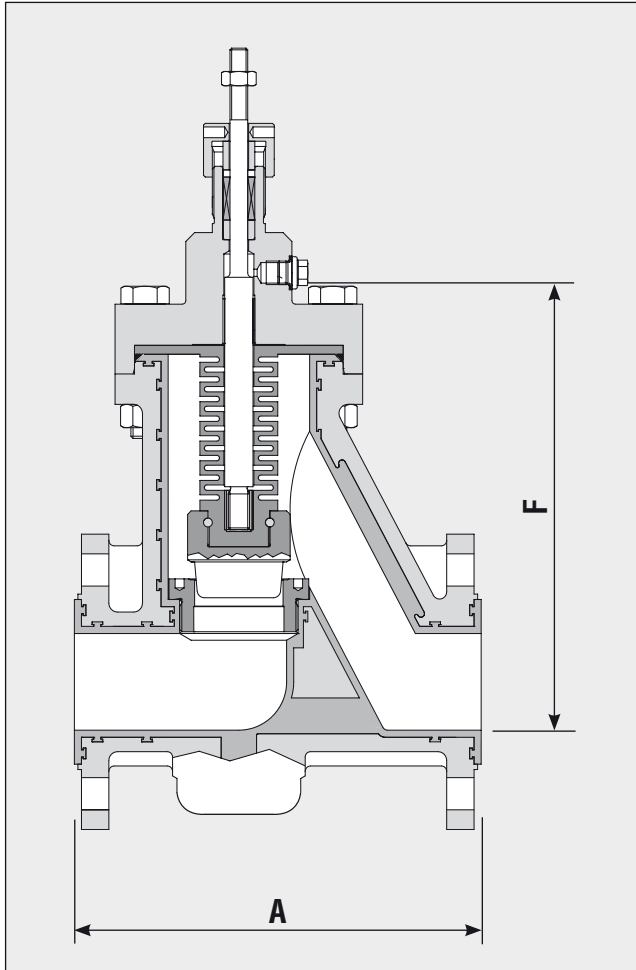


Table 8: Weights

| Size | | ANSI | | DIN | |
|--------|--------|------|-----|-----|-----|
| Inches | DN | lb | kg | lb | kg |
| ½ | DN 15 | 13 | 6 | 13 | 6 |
| ¾ | DN 20 | 13 | 6 | 13 | 6 |
| 1 | DN 25 | 26 | 11 | 26 | 12 |
| 1½ | DN 40 | 42 | 17 | 42 | 19 |
| 2 | DN50 | 46 | 19 | 46 | 21 |
| 3 | DN 80 | 82 | 39 | 82 | 37 |
| 4 | DN 100 | 97 | 44 | 97 | 44 |
| 6 | DN 150 | 330 | 150 | 330 | 150 |

Table 9: Dimensions

| Valve Size | Dimensions | | | | | | | |
|-------------|----------------|-------|-----------------------|-------|------------------------|-------|-----|-------|
| | A DIN PN 16 | | A Class 150 DIN | | A Class 150 ANSI | | F | |
| | mm | in. | mm | in. | mm | in. | mm | in. |
| DN 15 / ½" | 130 | 5.12 | 130 | 5.12 | 130 | 5.12 | 185 | 7.28 |
| DN 20 / ¾" | 130 | 5.12 | 130 | 5.12 | 130 | 5.12 | 185 | 7.28 |
| DN 25 / 1" | 160 | 6.30 | 160 | 6.30 | 184 | 7.25 | 240 | 9.45 |
| DN 40 / 1½" | 200 | 7.87 | 200 | 7.87 | 222 | 8.75 | 245 | 9.65 |
| DN50 / 2" | 230 | 9.06 | 230 | 9.06 | 254 | 10.00 | 250 | 9.84 |
| DN 80 / 3" | 310 | 12.20 | 310 | 12.20 | 298 | 11.75 | 400 | 15.75 |
| DN 100 / 4" | 350 | 13.78 | 350 | 13.78 | 350 | 13.78 | 450 | 17.72 |
| DN 150 / 6" | 480 | 18.90 | 480 | 18.90 | 480 | 18.90 | 470 | 18.50 |



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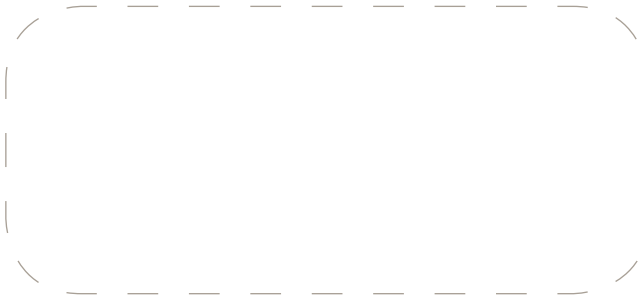
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