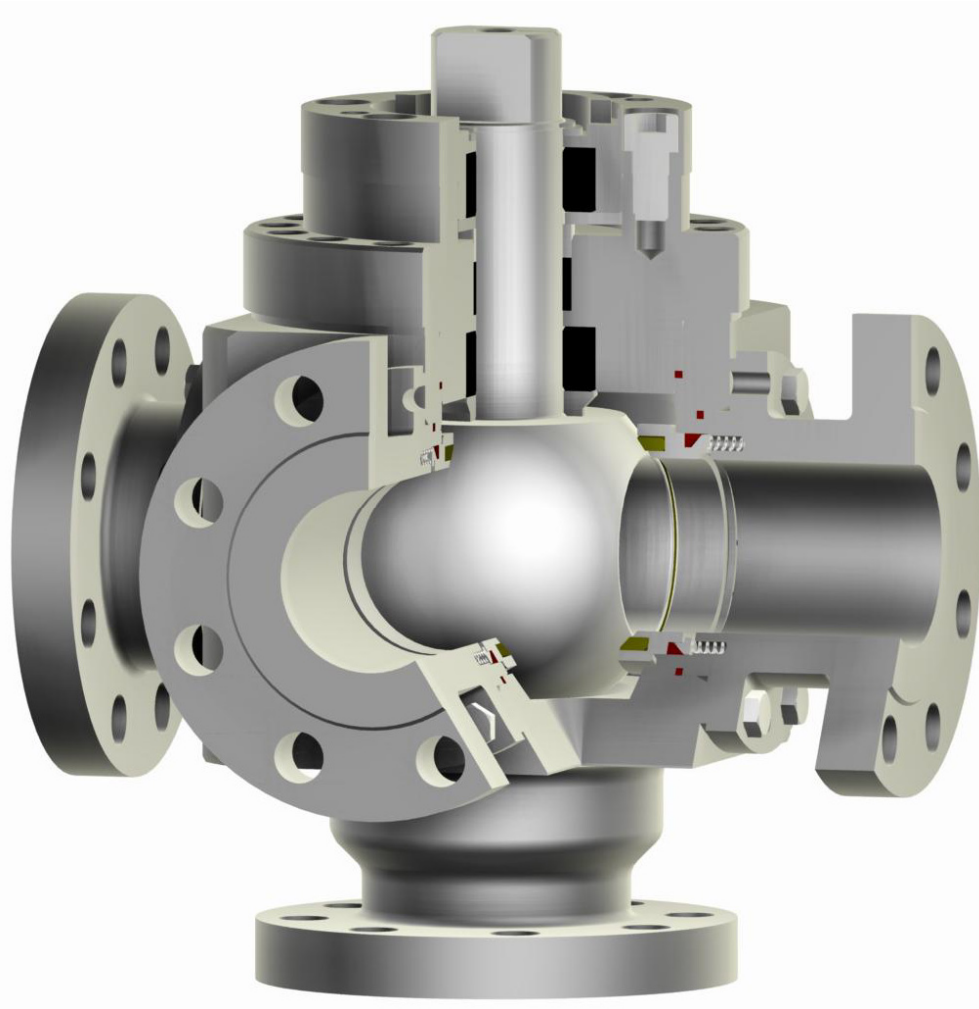




## **Multiway Ball Valve with Vertical In-/Outlet Soft Seated Type 24-S**



### **Design Characteristics**

- ✓ Split body
- ✓ Trunnion mounted ball with integral stem
- ✓ Live loaded stem packing
- ✓ Spring loaded seat system
- ✓ Fire Safe design optional

### **Design Standards**

- ✓ EN 12516, EN 1983, ISO 5211, AD-2000
- ✓ ASME B 16.34, API 608

### **Range of Application**

- ✓ Diameter ½" to 20" / DN 15 to 500
- ✓ Class 150 to 1500 / PN 10 to 250
- ✓ -20°F to +450°F / -60°C to +250°C

### **Approvals**

- ✓ "TA-Luft" certified for low fugitive emissions

### **Testing Standards**

- ✓ EN 12266-1/2
- ✓ API 598



## Main Parts

- 1 Body
- 2 Body End Connection
- 3 Retainer Ring
- 4 Retainer Ring
- 5 Ball with Stem
- 8 Gland Washer
- 10 Bearing Cover
- 12 Cover
- 14 Distance Disc
- 16 Plate Spring
- 17 Coil Spring
- 20 Sealing Ring
- 21 Seat Ring
- 23 Body Gasket
- 24 Stem Packing
- 25 Bearing Ring
- 26 Bearing Ring
- 27 Body Gasket
- 28 Hexagonal Screw
- 29 Socket Screw
- 30 Socket Screw
- 50 Distance Disc
- 51 Locking Ring

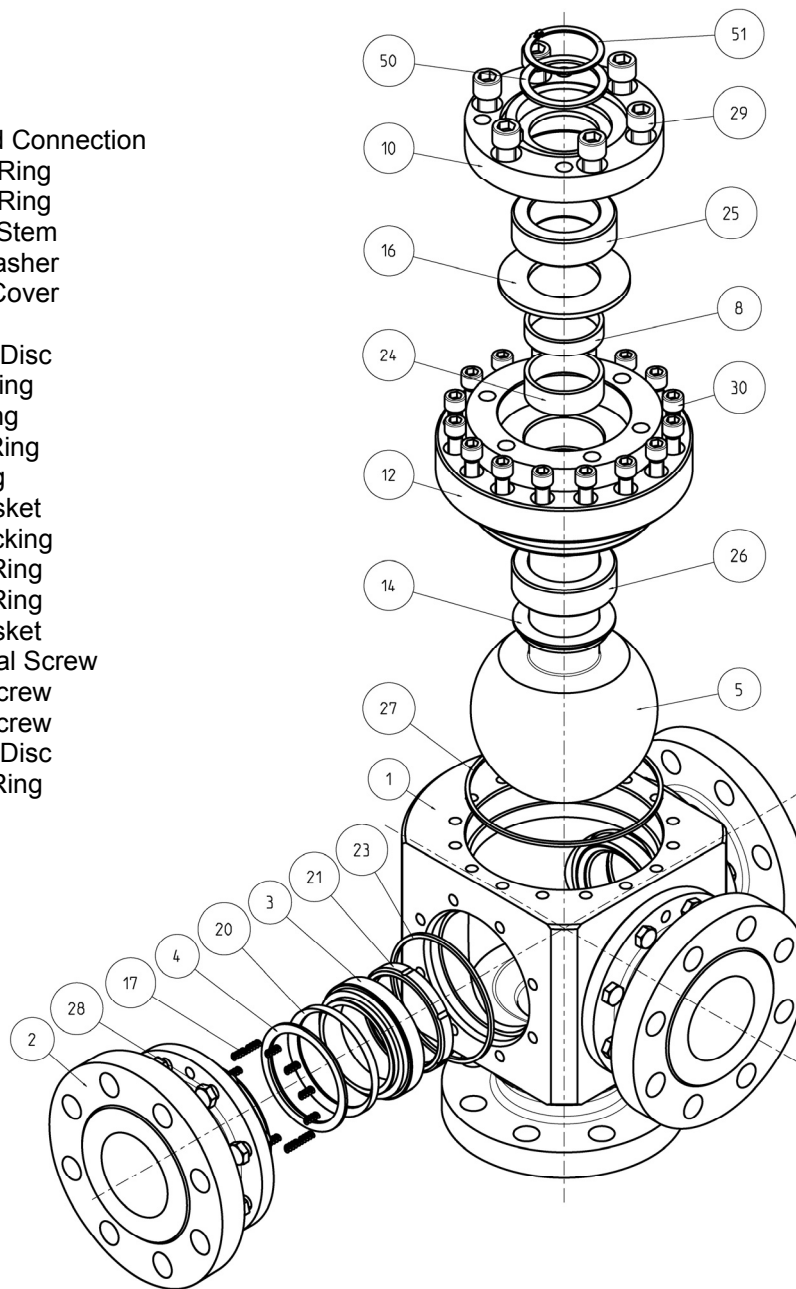


Fig. 1

## Description

This PERRIN ball valve is a trunnion mounted ball design with split body housing and integral stem. The spring loaded seat system and live loaded stem packing also provide continuous tightness during rapid temperature changes. This valve can have up to four connections and the ball can be designed with L- or double L-port.

The valve is equipped with an integral actuator mounting flange for actuator connection according to ISO 5211 standard. Stem extensions, locking devices and actuators with accessories, can be attached without operating interruptions.

The ball valve has an antistatic design. The stem packing and sealings are "TA-Luft" certified for low fugitive emissions.

## Parts List / Materials

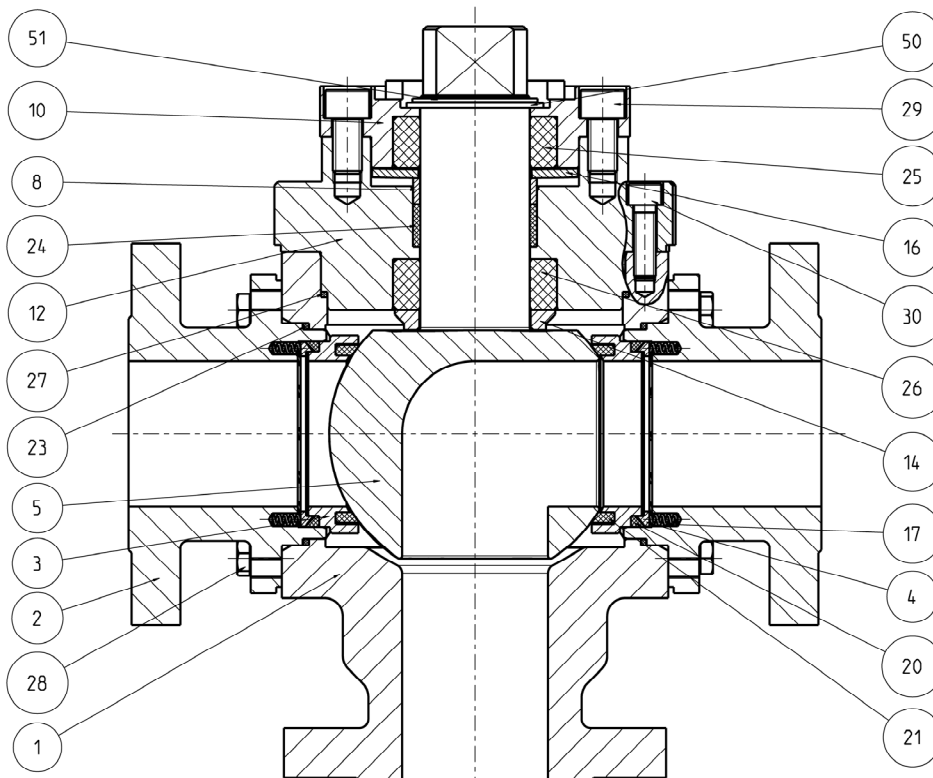


Fig. 2

| Item | Designation                | ASME                  |                       | DIN EN             |                    |
|------|----------------------------|-----------------------|-----------------------|--------------------|--------------------|
|      |                            | -20°F up to +450°F    | -20°F up to +450°F    | -60°C up to +250°C | -10°C up to +250°C |
| 1    | Body                       | A351 CF8M             | A216 WCB              | 1.4408             | 1.0619             |
| 2    | Body End Connection        | Type 316 (up to 2")   | A105 (up to 2")       | 1.4571 (up to 2")  | 1.0460 (up to 2")  |
| 3    | Retainer Ring              | Type 316              | Type 316              | 1.4571             | 1.4571             |
| 4    | Retainer Ring              | Type 316              | Type 316              | 1.4571             | 1.4571             |
| 5    | Ball with Stem             | Type 316<br>A351 CF8M | Type 316<br>A351 CF8M | 1.4571<br>1.4408   | 1.4571<br>1.4408   |
| 8    | Gland Washer               | Type 316              | Type 316              | 1.4571             | 1.4571             |
| 10   | Bearing Cover              | Type 316              | A105                  | 1.4571             | 1.0460             |
| 12   | Cover                      | Type 316<br>A351 CF8M | A216 WCB<br>A105      | 1.4571<br>1.4408   | 1.0619<br>1.0460   |
| 14   | Distance Disc              | PTFE-Glass            | PTFE-Glass            | PTFE-Glass         | PTFE-Glass         |
| 16   | Plate Spring <sup>1)</sup> | Type 301              | Type 6150             | 1.4310             | 1.8159             |
| 17   | Coil Spring                | Type 316              | Type 316              | 1.4571             | 1.4571             |
| 20   | Sealing Ring               | Mod. PTFE TFM 1600    | Mod. PTFE TFM 1600    | Mod. PTFE TFM 1600 | Mod. PTFE TFM 1600 |
| 21   | Seat Ring                  | Mod. PTFE TFM 1600    | Mod. PTFE TFM 1600    | Mod. PTFE TFM 1600 | Mod. PTFE TFM 1600 |
| 23   | Body Gasket                | PTFE-Glass            | PTFE-Glass            | PTFE-Glass         | PTFE-Glass         |
| 24   | Stem Packing               | PTFE-Con. Pigment     | PTFE-Con. Pigment     | PTFE-Con. Pigment  | PTFE-Con. Pigment  |
| 25   | Bearing Ring               | Carbon                | Carbon                | Carbon             | Carbon             |
| 26   | Bearing Ring               | Carbon-Antimony       | Carbon-Antimony       | Carbon-Antimony    | Carbon-Antimony    |
| 27   | Body Gasket                | PTFE-Glass            | PTFE-Glass            | PTFE-Glass         | PTFE-Glass         |
| 28   | Hexagonal Screw            | SS                    | SS                    | SS                 | SS                 |
| 29   | Socket Screw               | SS                    | SS                    | SS                 | SS                 |
| 30   | Socket Screw               | SS                    | SS                    | SS                 | SS                 |
| 50   | Distance Disc              | PTFE-Glass            | PTFE-Glass            | PTFE-Glass         | PTFE-Glass         |
| 51   | Locking Ring               | SS                    | SS                    | SS                 | SS                 |

Tab. 1

1) Material 2.4668 (Inconel 718) is generally required for operating temperature over 200°C [392°F]  
 2) Materials for lower / higher temperature on request



## Technical Data

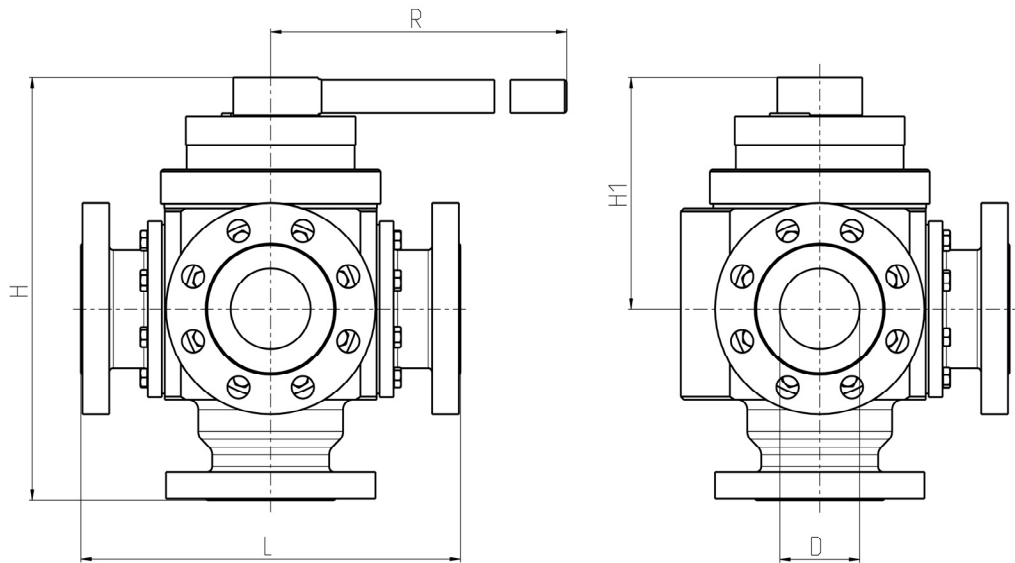


Fig.3

D = NPS = DN

| Nominal Size  |            | Class 150 - Full Bore<br>Dimensions acc. to ASME Standards |           |              |            |             |           | Face to Face<br>Perrin Standard |           | Cv<br>[gal/min] | Weights |     |
|---------------|------------|------------------------------------------------------------|-----------|--------------|------------|-------------|-----------|---------------------------------|-----------|-----------------|---------|-----|
| NPS<br>[inch] | DN<br>[mm] | H<br>[inch]                                                | H<br>[mm] | H1<br>[inch] | H1<br>[mm] | R<br>[inch] | R<br>[mm] | L<br>[inch]                     | L<br>[mm] |                 | kg      | lbs |
| ½             | 15         | 4.9                                                        | 124       | 2.3          | 58         | 7           | 180       | 8                               | 210       | 23              | 8.5     | 19  |
| ¾             | 20         | 5.4                                                        | 137       | 2.8          | 70         | 7           | 180       | 9                               | 230       | 42              | 11      | 24  |
| 1             | 25         | 6                                                          | 153       | 2.9          | 74         | 12          | 300       | 9                               | 230       | 67              | 15      | 33  |
| 1¼            | 32         | 6.4                                                        | 163       | 3.1          | 80         | 12          | 300       | 10                              | 260       | 110             | 23      | 51  |
| 1½            | 40         | 8.4                                                        | 213       | 3.9          | 100        | 18          | 450       | 10                              | 260       | 173             | 33      | 72  |
| 2             | 50         | 9.1                                                        | 230       | 4.4          | 112        | 18          | 450       | 12                              | 300       | 270             | 46      | 100 |
| 2½            | 65         | 9.6                                                        | 244       | 4.7          | 119        | 18          | 450       | 13                              | 340       | 459             | 65      | 143 |
| 3             | 80         | 11.9                                                       | 301       | 6            | 156        | 31          | 800       | 15                              | 380       | 695             | 88      | 193 |
| 4             | 100        | 13                                                         | 323       | 6.6          | 167        | 31          | 800       | 17                              | 430       | 1087            | 122     | 268 |

Tab.2

| Nominal Size  |                | Class 150 - *Single Reduced Bore<br>Dimensions acc. to ASME Standards |           |              |            |             |           | Face to Face<br>Perrin Standard |           | Cv<br>[gal/min] | Weights |     |
|---------------|----------------|-----------------------------------------------------------------------|-----------|--------------|------------|-------------|-----------|---------------------------------|-----------|-----------------|---------|-----|
| NPS<br>[inch] | *SRB<br>[inch] | H<br>[inch]                                                           | H<br>[mm] | H1<br>[inch] | H1<br>[mm] | R<br>[inch] | R<br>[mm] | L<br>[inch]                     | L<br>[mm] |                 | kg      | lbs |
| ½             | -              | -                                                                     | -         | -            | -          | -           | -         | -                               | -         | -               | -       | -   |
| ¾             | ½              | 4.9                                                                   | 124       | 2.3          | 58         | 7           | 180       | 9                               | 230       | 23              | 10      | 22  |
| 1             | ¾              | 5.4                                                                   | 137       | 2.8          | 70         | 7           | 180       | 9                               | 230       | 42              | 13      | 28  |
| 1¼            | 1              | 6                                                                     | 153       | 2.9          | 74         | 12          | 300       | 10                              | 260       | 67              | 17      | 38  |
| 1½            | 1¼             | 6.4                                                                   | 163       | 3.1          | 80         | 12          | 300       | 10                              | 260       | 110             | 27      | 59  |
| 2             | 1½             | 8.4                                                                   | 213       | 3.9          | 100        | 18          | 450       | 12                              | 300       | 173             | 38      | 84  |
| 2½            | 2              | 9.1                                                                   | 230       | 4.4          | 112        | 18          | 450       | 13                              | 340       | 270             | 54      | 118 |
| 3             | 2½             | 9.6                                                                   | 244       | 4.7          | 119        | 18          | 450       | 15                              | 380       | 459             | 75      | 165 |
| 4             | 3              | 11.9                                                                  | 301       | 6            | 156        | 31          | 800       | 17                              | 430       | 695             | 102     | 225 |

Tab.3



| Nominal Size  |            | Class 300 - Full Bore<br>Dimensions acc. to ASME Standards |           |              |            |             |           | Face to Face<br>Perrin Standard |           | Cv<br>[gal/min] | Weights |     |
|---------------|------------|------------------------------------------------------------|-----------|--------------|------------|-------------|-----------|---------------------------------|-----------|-----------------|---------|-----|
| NPS<br>[inch] | DN<br>[mm] | H<br>[inch]                                                | H<br>[mm] | H1<br>[inch] | H1<br>[mm] | R<br>[inch] | R<br>[mm] | L<br>[inch]                     | L<br>[mm] |                 | kg      | lbs |
| ½             | 15         | 4.9                                                        | 124       | 2.3          | 58         | 7           | 180       | 8                               | 210       | 23              | 10      | 21  |
| ¾             | 20         | 5.4                                                        | 137       | 2.8          | 70         | 7           | 180       | 9                               | 230       | 42              | 13      | 29  |
| 1             | 25         | 6                                                          | 153       | 2.9          | 74         | 12          | 300       | 9                               | 230       | 67              | 18      | 39  |
| 1¼            | 32         | 6.4                                                        | 163       | 3.1          | 80         | 12          | 300       | 10                              | 260       | 110             | 27      | 59  |
| 1½            | 40         | 8.4                                                        | 213       | 3.9          | 100        | 18          | 450       | 10                              | 260       | 173             | 38      | 83  |
| 2             | 50         | 9.1                                                        | 230       | 4.4          | 112        | 18          | 450       | 12                              | 300       | 270             | 49      | 109 |
| 2½            | 65         | 9.6                                                        | 244       | 4.7          | 119        | 18          | 450       | 13                              | 340       | 459             | 70      | 154 |
| 3             | 80         | 11.9                                                       | 301       | 6            | 156        | 31          | 800       | 15                              | 380       | 695             | 97      | 213 |
| 4             | 100        | 13                                                         | 323       | 6.6          | 167        | 31          | 800       | 17                              | 430       | 1087            | 139     | 306 |

Tab.4

| Nominal Size  |                | Class 300 - *Single Reduced Bore<br>Dimensions acc. to ASME Standards |           |              |            |             |           | Face to Face<br>Perrin Standard |           | Cv<br>[gal/min] | Weights |     |
|---------------|----------------|-----------------------------------------------------------------------|-----------|--------------|------------|-------------|-----------|---------------------------------|-----------|-----------------|---------|-----|
| NPS<br>[inch] | *SRB<br>[inch] | H<br>[inch]                                                           | H<br>[mm] | H1<br>[inch] | H1<br>[mm] | R<br>[inch] | R<br>[mm] | L<br>[inch]                     | L<br>[mm] |                 | kg      | lbs |
| ½             | -              | -                                                                     | -         | -            | -          | -           | -         | -                               | -         | -               | -       | -   |
| ¾             | ½              | 4.9                                                                   | 124       | 2.3          | 58         | 7           | 180       | 9                               | 230       | 23              | 10.5    | 23  |
| 1             | ¾              | 5.4                                                                   | 137       | 2.8          | 70         | 7           | 180       | 9                               | 230       | 42              | 13      | 29  |
| 1¼            | 1              | 6                                                                     | 153       | 2.9          | 74         | 12          | 300       | 10                              | 260       | 67              | 18      | 40  |
| 1½            | 1¼             | 6.4                                                                   | 163       | 3.1          | 80         | 12          | 300       | 10                              | 260       | 110             | 28      | 62  |
| 2             | 1½             | 8.4                                                                   | 213       | 3.9          | 100        | 18          | 450       | 12                              | 300       | 173             | 39      | 86  |
| 2½            | 2              | 9.1                                                                   | 230       | 4.4          | 112        | 18          | 450       | 13                              | 340       | 270             | 55      | 120 |
| 3             | 2½             | 9.6                                                                   | 244       | 4.7          | 119        | 18          | 450       | 15                              | 380       | 459             | 77      | 170 |
| 4             | 3              | 11.9                                                                  | 301       | 6            | 156        | 31          | 800       | 17                              | 430       | 695             | 107     | 235 |

Tab.5



| Nominal Size | PN 16<br>Dimensions [mm]<br>acc. to DIN EN Standards |     |     | Face to Face<br>Perrin Standard | Kv<br>[m³/h] | Weights<br>[kg] |
|--------------|------------------------------------------------------|-----|-----|---------------------------------|--------------|-----------------|
| DN           | H                                                    | H1  | R   | L                               |              |                 |
| 15           | 124                                                  | 58  | 180 | 210                             | 20           | 9               |
| 20           | 137                                                  | 70  | 180 | 230                             | 36           | 11              |
| 25           | 153                                                  | 74  | 300 | 230                             | 57           | 15              |
| 32           | 163                                                  | 80  | 300 | 260                             | 94           | 24              |
| 40           | 213                                                  | 100 | 450 | 260                             | 148          | 33              |
| 50           | 230                                                  | 112 | 450 | 300                             | 231          | 46              |
| 65           | 244                                                  | 119 | 450 | 340                             | 392          | 64              |
| 80           | 301                                                  | 156 | 800 | 380                             | 594          | 87              |
| 100          | 323                                                  | 167 | 800 | 430                             | 929          | 120             |

Tab.6

| Nominal Size | PN 40<br>Dimensions [mm]<br>acc. to DIN EN Standards |     |     | Face to Face<br>Perrin Standard | Kv<br>[m³/h] | Weights<br>[kg] |
|--------------|------------------------------------------------------|-----|-----|---------------------------------|--------------|-----------------|
| DN           | H                                                    | H1  | R   | L                               |              |                 |
| 15           | 124                                                  | 58  | 180 | 210                             | 20           | 9               |
| 20           | 137                                                  | 70  | 180 | 230                             | 36           | 11              |
| 25           | 153                                                  | 74  | 300 | 230                             | 57           | 15              |
| 32           | 163                                                  | 80  | 300 | 260                             | 94           | 24              |
| 40           | 213                                                  | 100 | 450 | 260                             | 148          | 33              |
| 50           | 230                                                  | 112 | 450 | 300                             | 231          | 50              |
| 65           | 244                                                  | 119 | 450 | 340                             | 392          | 70              |
| 80           | 301                                                  | 156 | 800 | 380                             | 594          | 95              |
| 100          | 323                                                  | 167 | 800 | 430                             | 929          | 133             |

Tab.7

**Other dimensions and pressure classes on request.**

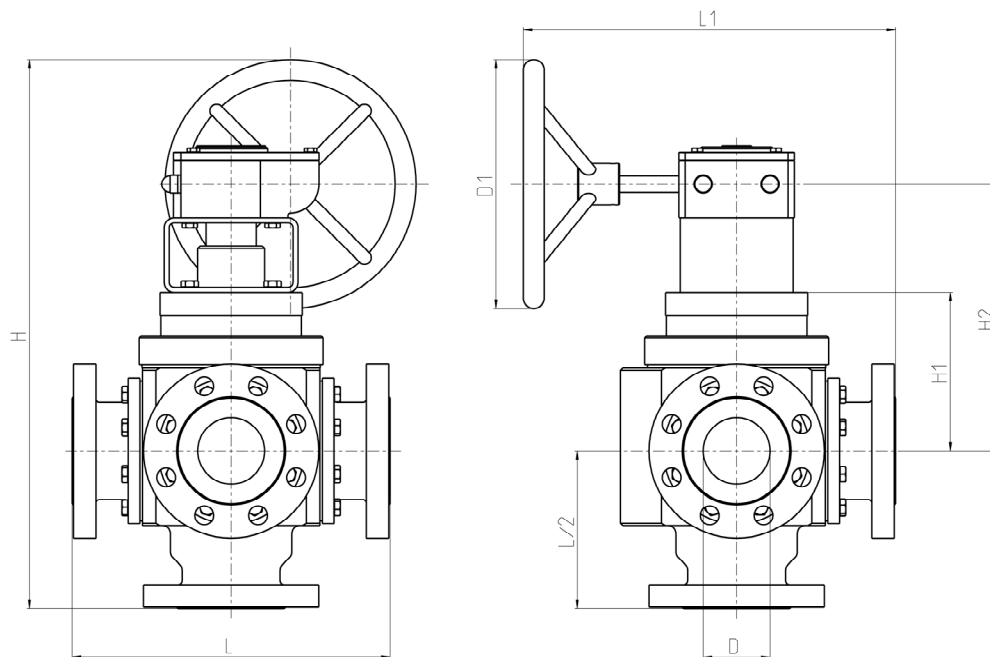


Fig.4

D = NPS = DN

| Nominal Size  |            | Class 150 - Full Bore<br>Dimensions acc. to ASME Standards |           |              |            |              |            |              |            |              |            | Face to Face<br>Perrin Standard |           | Cv<br>[gal/min] | Weights |      |
|---------------|------------|------------------------------------------------------------|-----------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|---------------------------------|-----------|-----------------|---------|------|
| NPS<br>[inch] | DN<br>[mm] | H<br>[inch]                                                | H<br>[mm] | H1<br>[inch] | H1<br>[mm] | H2<br>[inch] | H2<br>[mm] | L1<br>[inch] | L1<br>[mm] | D1<br>[inch] | D1<br>[mm] | L<br>[inch]                     | L<br>[mm] |                 | kg      | lbs  |
| 6             | 150        | 32.3                                                       | 821       | 7.9          | 201        | 13           | 331        | 20.3         | 515        | 28           | 700        | 22                              | 550       | 2448            | 171     | 375  |
| 8             | 200        | 34.5                                                       | 877       | 10.5         | 266        | 18           | 456        | 23           | 588        | 20           | 500        | 26                              | 650       | 4351            | 400     | 879  |
| 10            | 250        | 42                                                         | 1057      | 11.2         | 284        | 19.8         | 504        | 29           | 725        | 28           | 700        | 31                              | 775       | 7070            | 540     | 1188 |
| 12            | 300        | 41                                                         | 1053      | 12           | 312        | 20.2         | 512        | 30           | 770        | 24           | 600        | 35                              | 900       | 9789            | 978     | 2151 |
| 14            | 350        | 45.3                                                       | 1152      | 13.6         | 345        | 25           | 635        | 39           | 995        | 20           | 500        | 40                              | 1025      | 13324           | 1408    | 3098 |
| 16            | 400        | 55                                                         | 1408      | 18.5         | 470        | 29.9         | 760        | 42           | 1075       | 28           | 700        | 45                              | 1150      | 17405           | 1741    | 3829 |
| 20            | 500        | 78.2                                                       | 1987      | 30           | 763        | 46.5         | 1181       | 47           | 1202       | 36           | 914        | 49                              | 1250      | 27195           | 2547    | 5602 |

Tab.8

| Nominal Size  |                | Class 150 - *Single Reduced Bore<br>Dimensions acc. to ASME Standards |           |              |            |              |            |              |            |              |            | Face to Face<br>Perrin Standard |           | Cv<br>[gal/min] | Weights |      |
|---------------|----------------|-----------------------------------------------------------------------|-----------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|---------------------------------|-----------|-----------------|---------|------|
| NPS<br>[inch] | *SRB<br>[inch] | H<br>[inch]                                                           | H<br>[mm] | H1<br>[inch] | H1<br>[mm] | H2<br>[inch] | H2<br>[mm] | L1<br>[inch] | L1<br>[mm] | D1<br>[inch] | D1<br>[mm] | L<br>[inch]                     | L<br>[mm] |                 | kg      | lbs  |
| 6             | 4              | 27                                                                    | 687       | 6.6          | 167        | 12           | 297        | 19.4         | 492        | 20           | 500        | 22                              | 550       | 1699            | 160     | 352  |
| 8             | 6              | 33.6                                                                  | 852       | 7.9          | 201        | 13           | 331        | 20.3         | 515        | 28           | 700        | 26                              | 650       | 2448            | 202     | 444  |
| 10            | 8              | 35.8                                                                  | 909       | 10.5         | 266        | 18           | 456        | 23           | 588        | 20           | 500        | 31                              | 775       | 4351            | 463     | 1019 |
| 12            | 10             | 43                                                                    | 1095      | 11.2         | 284        | 19.8         | 504        | 29           | 725        | 28           | 700        | 35                              | 900       | 7070            | 630     | 1386 |
| 14            | 12             | 42                                                                    | 1079      | 12           | 312        | 20.2         | 512        | 30           | 770        | 24           | 600        | 40                              | 1025      | 9789            | 1131    | 2487 |
| 16            | 14             | 46.6                                                                  | 1183      | 13.6         | 345        | 25           | 635        | 39           | 995        | 20           | 500        | 45                              | 1150      | 13324           | 1625    | 3574 |
| 20            | 16             | 57                                                                    | 1459      | 18.5         | 470        | 29.9         | 760        | 42           | 1075       | 28           | 700        | 49                              | 1250      | 17405           | 2425    | 5334 |

Tab.9



| Nominal Size  |            | Class 300 - Full Bore<br>Dimensions acc. to ASME Standards |           |              |            |              |            |              |            |              |            | Face to Face<br>Perrin Standard |           | Cv<br>[gal/min] | Weights |      |
|---------------|------------|------------------------------------------------------------|-----------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|---------------------------------|-----------|-----------------|---------|------|
| NPS<br>[inch] | DN<br>[mm] | H<br>[inch]                                                | H<br>[mm] | H1<br>[inch] | H1<br>[mm] | H2<br>[inch] | H2<br>[mm] | L1<br>[inch] | L1<br>[mm] | D1<br>[inch] | D1<br>[mm] | L<br>[inch]                     | L<br>[mm] |                 | kg      | lbs  |
| 6             | 150        | 33                                                         | 840       | 12.1         | 307        | 17           | 431        | 24           | 610        | 20           | 500        | 22                              | 550       | 2448            | 349     | 768  |
| 8             | 200        | 39.3                                                       | 998       | 14.4         | 366        | 20           | 507        | 31           | 790        | 24           | 600        | 31                              | 800       | 4351            | 665     | 1463 |
| 10            | 250        | 49                                                         | 1255      | 17.8         | 452        | 24.9         | 633        | 28           | 718        | 31           | 800        | 37                              | 940       | 7070            | 941     | 2070 |
| 12            | 300        | 52                                                         | 1313      | 24           | 610        | 32.6         | 828        | 31           | 792        | 18           | 450        | 41                              | 1050      | 9789            | 1236    | 2719 |
| 14            | 350        | 58.9                                                       | 1495      | 23.6         | 600        | 35           | 898        | 37           | 937        | 24           | 610        | 45                              | 1150      | 13324           | 1679    | 3693 |
| 16            | 400        | 61                                                         | 1559      | 24.9         | 632        | 36.6         | 930        | 38           | 975        | 24           | 610        | 45                              | 1150      | 17405           | 1941    | 4270 |
| 20            | 500        | 82.6                                                       | 2097      | 34           | 863        | 49.3         | 1253       | 50           | 1278       | 36           | 914        | 49                              | 1250      | 27195           | 2911    | 6404 |

Tab.10

| Nominal Size  |                | Class 300 - *Single Reduced Bore<br>Dimensions acc. to ASME Standards |           |              |            |              |            |              |            |              |            | Face to Face<br>Perrin Standard |           | Cv<br>[gal/min] | Weights |      |
|---------------|----------------|-----------------------------------------------------------------------|-----------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|---------------------------------|-----------|-----------------|---------|------|
| NPS<br>[inch] | *SRB<br>[inch] | H<br>[inch]                                                           | H<br>[mm] | H1<br>[inch] | H1<br>[mm] | H2<br>[inch] | H2<br>[mm] | L1<br>[inch] | L1<br>[mm] | D1<br>[inch] | D1<br>[mm] | L<br>[inch]                     | L<br>[mm] |                 | kg      | lbs  |
| 6             | 4              | 31                                                                    | 796       | 6.6          | 167        | 13           | 337        | 22           | 560        | 24           | 600        | 22                              | 550       | 1699            | 327     | 720  |
| 8             | 6              | 34                                                                    | 872       | 12.1         | 307        | 17           | 431        | 24           | 610        | 20           | 500        | 31                              | 800       | 2448            | 451     | 992  |
| 10            | 8              | 40.5                                                                  | 1029      | 14.4         | 366        | 20           | 507        | 31           | 790        | 24           | 600        | 37                              | 940       | 4351            | 773     | 1700 |
| 12            | 10             | 51                                                                    | 1293      | 17.8         | 452        | 24.9         | 633        | 28           | 718        | 31           | 800        | 41                              | 1050      | 7070            | 1095    | 2408 |
| 14            | 12             | 53                                                                    | 1345      | 24           | 610        | 32.6         | 828        | 31           | 792        | 18           | 450        | 45                              | 1150      | 9789            | 1436    | 3159 |
| 16            | 14             | 60.1                                                                  | 1527      | 23.6         | 600        | 35           | 898        | 37           | 937        | 24           | 610        | 45                              | 1150      | 13324           | 1862    | 4096 |
| 20            | 16             | 64                                                                    | 1622      | 24.9         | 632        | 36.6         | 930        | 38           | 975        | 24           | 610        | 49                              | 1250      | 17405           | 2273    | 5001 |

Tab.11

| Nominal Size | PN 16<br>Dimensions [mm]<br>acc. to DIN EN Standards |     |      |      |     | Face to Face<br>Perrin Standard | Kv<br>[m³/h] | Weights<br>[kg] |      |
|--------------|------------------------------------------------------|-----|------|------|-----|---------------------------------|--------------|-----------------|------|
|              | DN                                                   | H   | H1   | H2   | L1  | D1                              |              |                 | L    |
| 150          | 824                                                  | 201 | 331  | 515  | 700 |                                 | 550          | 2092            | 147  |
| 200          | 1026                                                 | 266 | 456  | 588  | 800 |                                 | 650          | 3719            | 344  |
| 250          | 1007                                                 | 284 | 504  | 679  | 600 |                                 | 775          | 6043            | 465  |
| 300          | 992                                                  | 312 | 512  | 770  | 500 |                                 | 900          | 8367            | 840  |
| 350          | 1145                                                 | 345 | 635  | 888  | 500 |                                 | 1025         | 11388           | 1215 |
| 400          | 1275                                                 | 470 | 760  | 953  | 450 |                                 | 1150         | 14876           | 1502 |
| 500          | 1996                                                 | 763 | 1181 | 1202 | 914 |                                 | 1250         | 23244           | 2207 |

Tab.12

| Nominal Size | PN 40<br>Dimensions [mm]<br>acc. to DIN EN Standards |     |      |      |     | Face to Face<br>Perrin Standard | Kv<br>[m³/h] | Weights<br>[kg] |      |
|--------------|------------------------------------------------------|-----|------|------|-----|---------------------------------|--------------|-----------------|------|
|              | DN                                                   | H   | H1   | H2   | L1  | D1                              |              |                 | L    |
| 150          | 924                                                  | 307 | 431  | 515  | 700 |                                 | 550          | 2092            | 299  |
| 200          | 1077                                                 | 366 | 507  | 588  | 800 |                                 | 650          | 3719            | 573  |
| 250          | 1136                                                 | 452 | 633  | 679  | 600 |                                 | 775          | 6043            | 815  |
| 300          | 1308                                                 | 610 | 828  | 770  | 500 |                                 | 900          | 8367            | 1068 |
| 350          | 1408                                                 | 600 | 898  | 888  | 500 |                                 | 1025         | 11388           | 1455 |
| 400          | 1445                                                 | 632 | 930  | 953  | 450 |                                 | 1150         | 14876           | 1694 |
| 500          | 2068                                                 | 863 | 1253 | 1202 | 914 |                                 | 1250         | 23244           | 2524 |

Tab.13

Other dimensions and pressure classes on request.



## Top Works

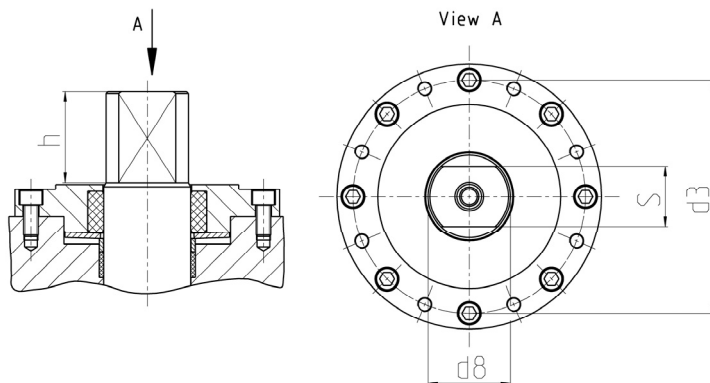


Fig.5

| Dimensions |    |      |    |      |     |      |    |      |
|------------|----|------|----|------|-----|------|----|------|
| F          | h  |      | s  |      | d3  |      | d8 |      |
|            | mm | inch | mm | inch | mm  | inch | mm | inch |
| F07        | 22 | 0.9  | 12 | 0.5  | 70  | 2.8  | 17 | 0.7  |
| F10        | 27 | 1.1  | 18 | 0.7  | 102 | 4    | 27 | 1.1  |
| F12        | 38 | 1.5  | 32 | 1.3  | 125 | 4.9  | 40 | 1.6  |
| F14        | 38 | 1.5  | 38 | 1.5  | 140 | 5.5  | 57 | 2    |
| F16        | 48 | 1.9  | 44 | 1.7  | 165 | 6.5  | 68 | 2.7  |
| F25        | 48 | 1.9  | 55 | 2.2  | 254 | 10   | 82 | 3.2  |
| F35        | 94 | 3.7  | 65 | 2.6  | 356 | 14   | 98 | 3.9  |

Tab.14

| Nominal Size  |            | Actuator-Connection<br>ISO 5211<br>Full Bore |           | **Feather keyway | Nominal Size  |                | Actuator-Connection<br>ISO 5211<br>*Single Reduced Bore |           |
|---------------|------------|----------------------------------------------|-----------|------------------|---------------|----------------|---------------------------------------------------------|-----------|
| NPS<br>[inch] | DN<br>[mm] | Class 150                                    | Class 300 |                  | NPS<br>[inch] | *SRB<br>[inch] | Class 150                                               | Class 300 |
| ½             | 15         | F07                                          | F07       |                  | ½             | -              | -                                                       | -         |
| ¾             | 20         | F07                                          | F07       |                  | ¾             | -              | -                                                       | -         |
| 1             | 25         | F07                                          | F07       |                  | 1             | ¾              | F07                                                     | F07       |
| 1¼            | 32         | F07                                          | F10       |                  | 1¼            | 1              | F07                                                     | F07       |
| 1½            | 40         | F07                                          | F10       |                  | 1½            | 1¼             | F07                                                     | F10       |
| 2             | 50         | F10                                          | F10       |                  | 2             | 1½             | F07                                                     | F10       |
| 2½            | 65         | F10                                          | F10       |                  | 2½            | 2              | F10                                                     | F10       |
| 3             | 80         | F12                                          | F12       |                  | 3             | 2½             | F10                                                     | F12       |
| 4             | 100        | F12                                          | F12       |                  | 4             | 3              | F12                                                     | F12       |
| 6             | 150        | F12                                          | F14       |                  | 6             | 4              | F12                                                     | F14       |
| 8             | 200        | F14                                          | F16**     |                  | 8             | 6              | F12                                                     | F14       |
| 10            | 250        | F16                                          | F25**     |                  | 10            | 8              | F14                                                     | F16       |
| 12            | 300        | F16**                                        | F25**     |                  | 12            | 10             | F16                                                     | F25**     |
| 14            | 350        | F25**                                        | F35**     |                  | 14            | 12             | F16**                                                   | F25**     |
| 16            | 400        | F25**                                        | F35**     |                  | 16            | 14             | F25**                                                   | F35**     |
| 20            | 500        | F35**                                        | F40**     |                  | 20            | 16             | F25**                                                   | F35**     |

Tab.15



## Pressure / Temperature Diagrams

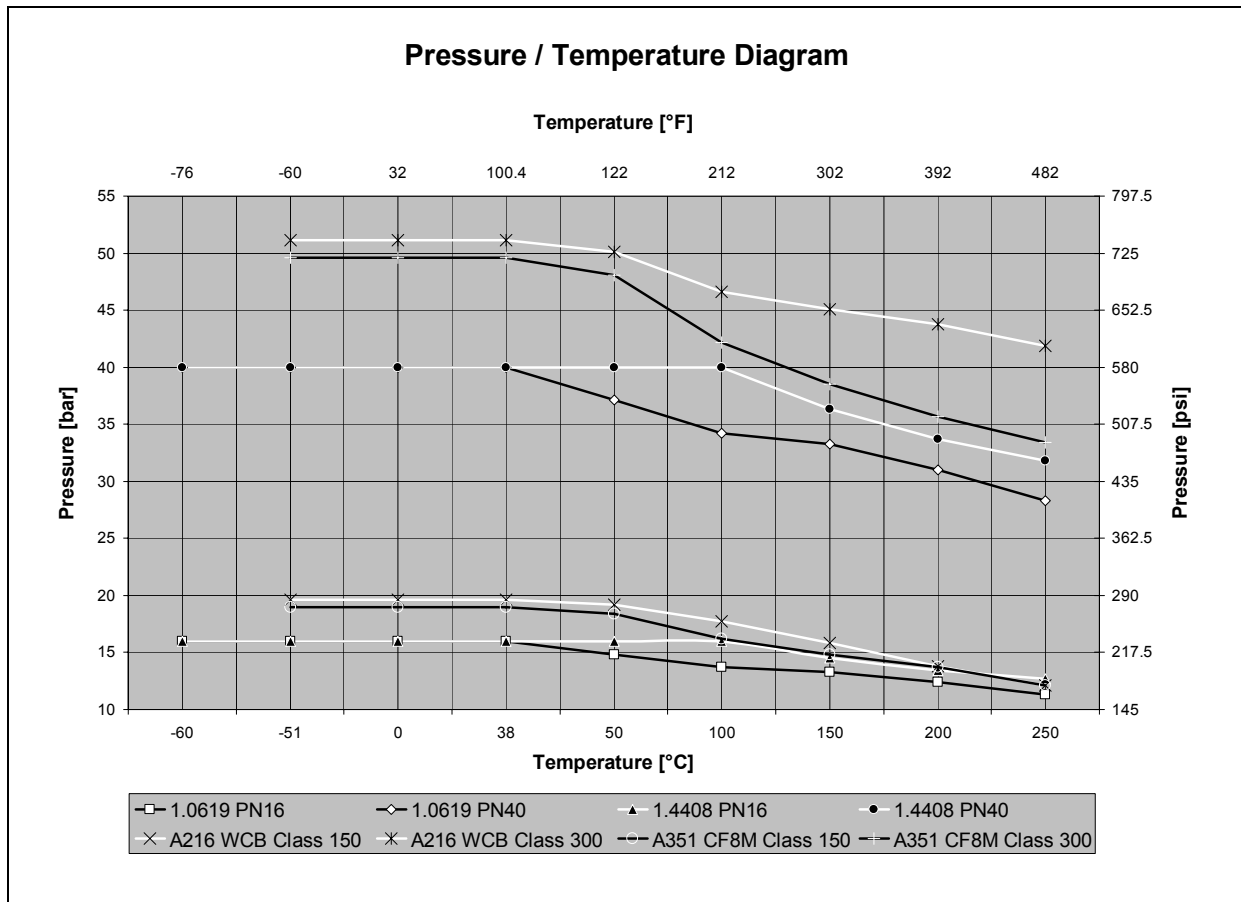


Fig. 6

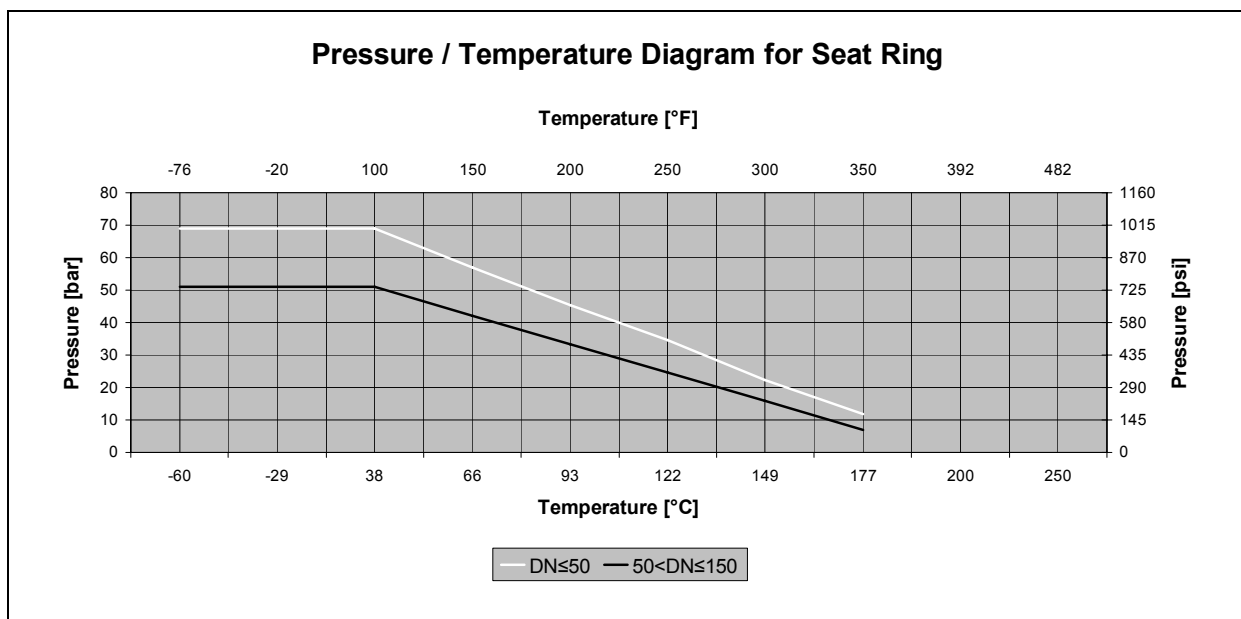


Fig. 7

## Options

### 1) Seat system with protected spring area

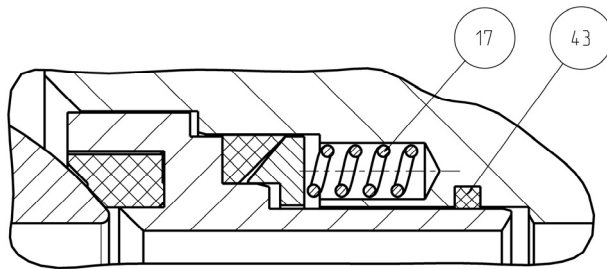


Fig.8

The area where the springs (17) are located is protected by graphite-based seal (43). This seal prevents material from entering the spring area or recess but allow the spring chamber to be energized by line pressure.

### 2) Adjustable stem packing

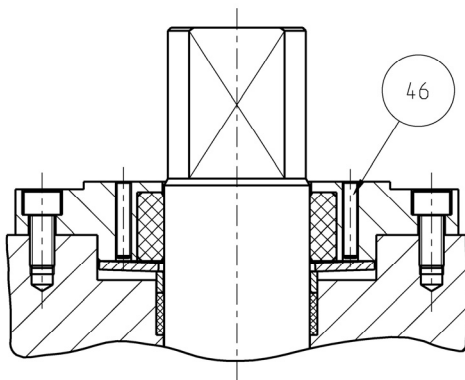


Fig.9

Additionally the live loaded stem packing may be equipped with hexagon socket screws (46). To fasten these screws it is possible to increase the spring force on the packing in the event of leakage.

### 3) Double-stage gland packing with purge connection

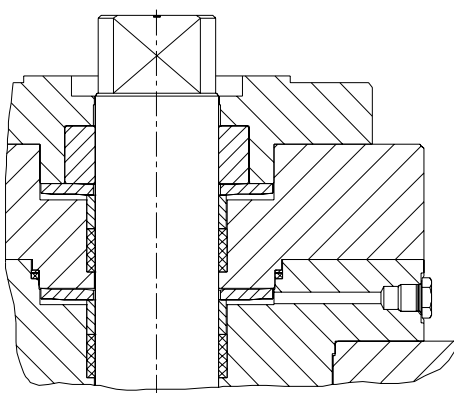


Fig.10

**Technical modifications are reserved.**

