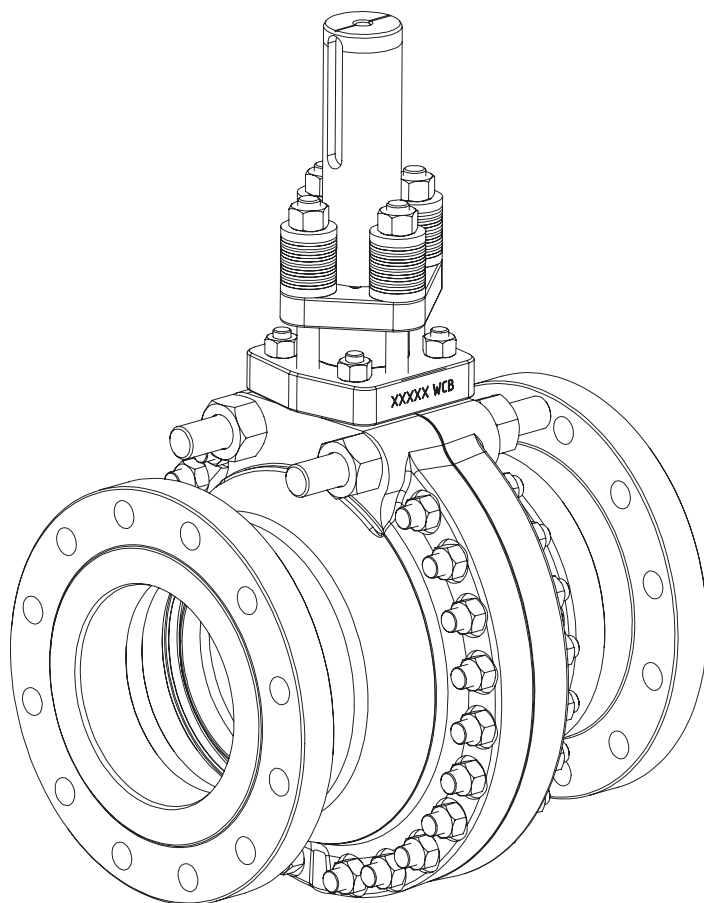


# BALL VALVE

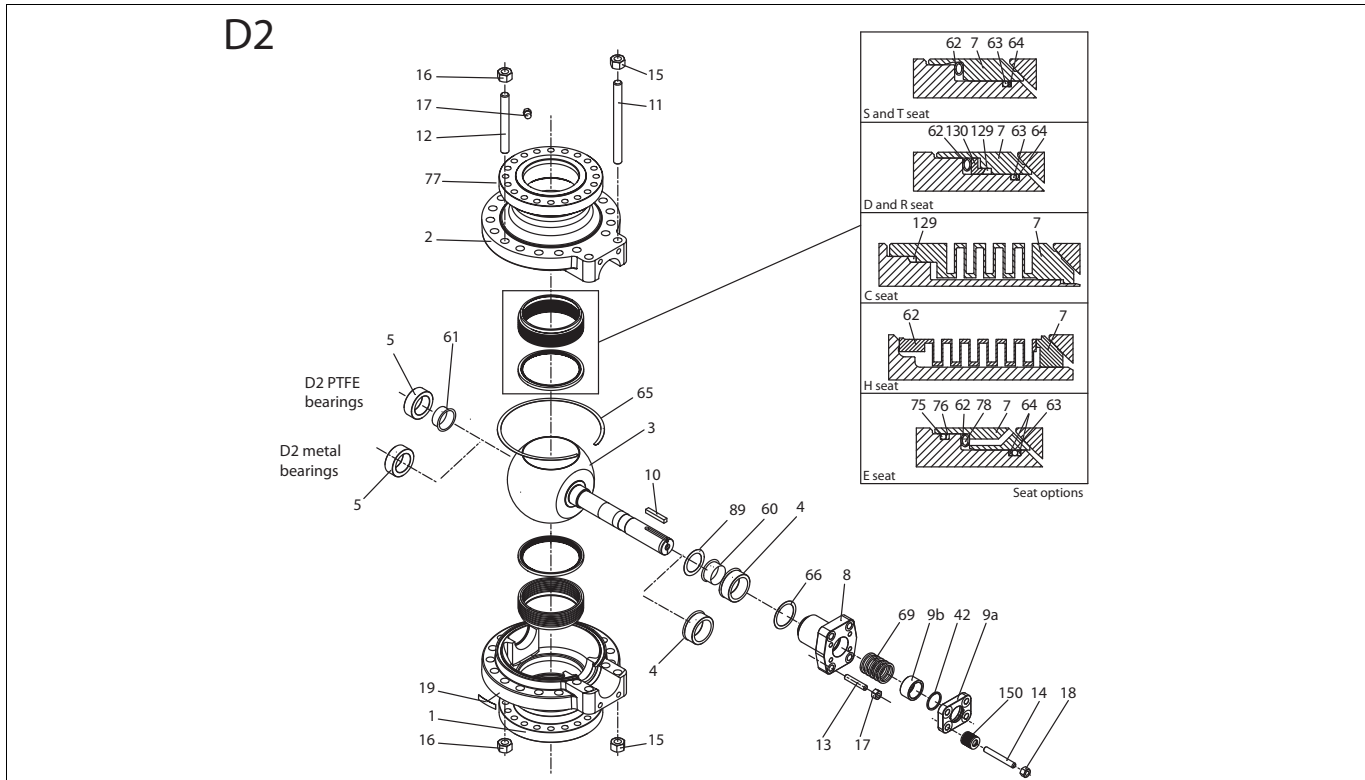
## Series D

Installation, Maintenance and  
Operating Instructions



## 10 EXPLODED VIEWS AND LISTS OF PARTS

### 10.1 D2 valves



| Part | Qty | Description          | Spare part category |
|------|-----|----------------------|---------------------|
| 1    | 1   | Body half, female    |                     |
| 2    | 1   | Body half, male      |                     |
| 3    | 1   | Ball                 | 3                   |
| 4    | 1   | Trunnion bearing     | 3                   |
| 5    | 1   | Trunnion bearing     | 3                   |
| 7    | 2   | Ball seat            | 2                   |
| 8    | 1   | Bonnet               |                     |
| 9a   | 1   | Gland                |                     |
| 9b   | 1   | Compression sleeve   |                     |
| 10   | 1   | Key                  | 3                   |
| 11   |     | Stud                 |                     |
| 12   |     | Stud                 |                     |
| 13   |     | Stud                 |                     |
| 14   |     | Stud                 |                     |
| 15   |     | Hexagon nut          |                     |
| 16   |     | Hexagon nut          |                     |
| 17   |     | Hexagon nut          |                     |
| 18   |     | Hexagon nut          |                     |
| 19   | 1   | Identification plate |                     |
| 42   | 1   | Retainer ring        |                     |
| 60 * | 1   | Bearing strip        | 1                   |
| 61 * | 1   | Bearing strip        | 1                   |
| 62   | 2   | Spring               | 1                   |
| 63   | 2   | O-ring               | 1                   |
| 64   | 2   | Back-up ring         | 1                   |
| 65   | 2   | Seal strip           | 1                   |
| 66   | 1   | Sheet ring           | 1                   |
| 69   |     | Packing ring         | 1                   |
| 75   | 1   | O-ring               |                     |
| 76   | 1   | Back-up ring         |                     |
| 77   | 1   | Hexagon plug         |                     |
| 78   | 1   | Spring pin           |                     |
| 89 * | 1   | Thrust bearing       | 1                   |
| 129  | 1   | Back seal            | 1                   |
| 130  | 1   | Set ring             |                     |
| 150  | 4   | Disc spring set      |                     |

Spare part (spare part set) category 1: Recommended soft parts, always needed for the repair. Delivered as a set.

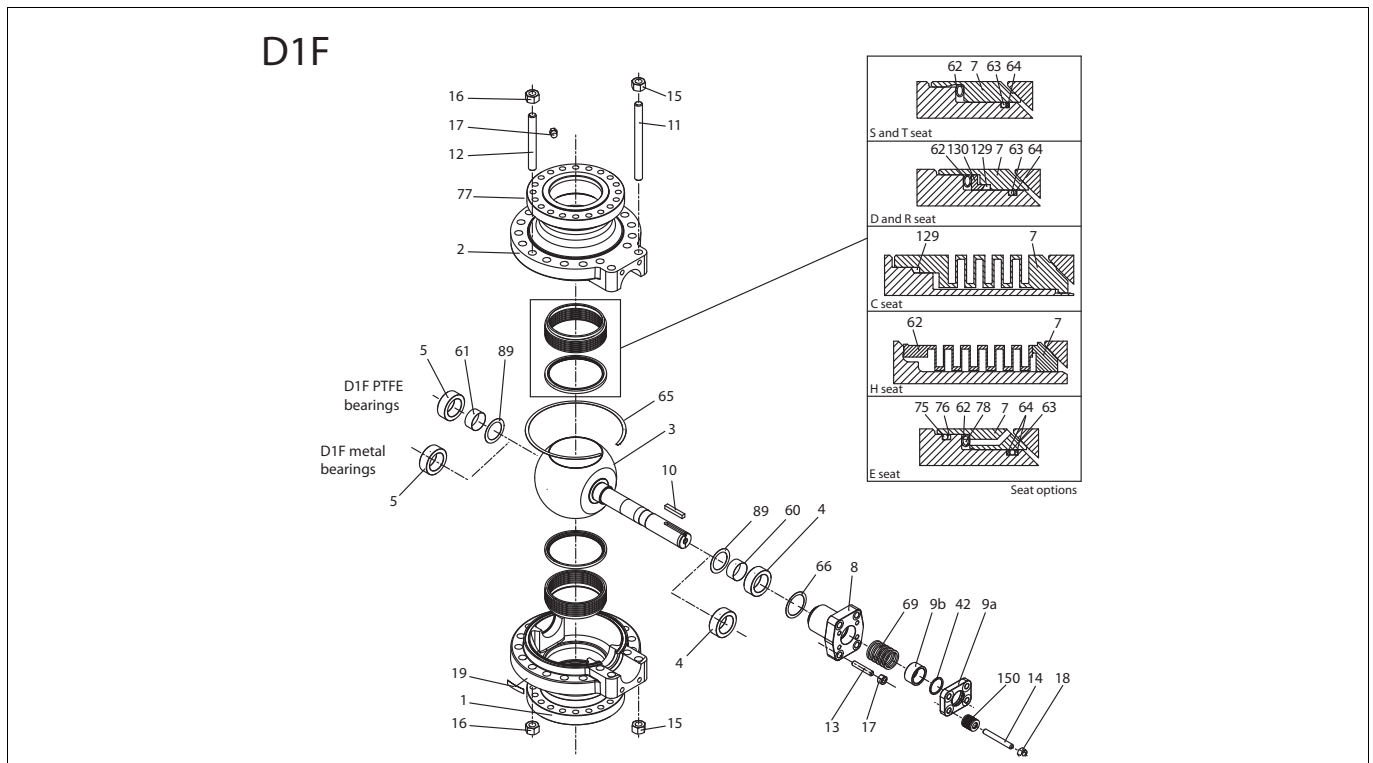
Spare part category 2: Parts for replacing of the seat. Available also as a set.

Spare part category 3: Parts for replacing of the closing element.

Spares for the full overhaul: All parts from the categories 1, 2 and 3.

Note: \* Only in PTFE bearing construction.

## 10.2 D1F valves



| Part | Qty | Description          | Spare part category |
|------|-----|----------------------|---------------------|
| 1    | 1   | Body half, female    |                     |
| 2    | 1   | Body half, male      |                     |
| 3    | 1   | Ball                 | 3                   |
| 4    | 1   | Trunnion bearing     | 3                   |
| 5    | 1   | Trunnion bearing     | 3                   |
| 7    | 2   | Ball seat            | 2                   |
| 8    | 1   | Bonnet               |                     |
| 9a   | 1   | Gland                |                     |
| 9b   | 1   | Compression sleeve   |                     |
| 10   | 1   | Key                  | 3                   |
| 11   |     | Stud                 |                     |
| 12   |     | Stud                 |                     |
| 13   |     | Stud                 |                     |
| 14   |     | Stud                 |                     |
| 15   |     | Hexagon nut          |                     |
| 16   |     | Hexagon nut          |                     |
| 17   |     | Hexagon nut          |                     |
| 18   |     | Hexagon nut          |                     |
| 19   | 1   | Identification plate |                     |
| 42   | 1   | Retainer ring        |                     |
| 60 * | 1   | Bearing strip        | 1                   |
| 61 * | 1   | Bearing strip        | 1                   |
| 62   | 2   | Spring               | 1                   |
| 63   | 2   | O-ring               | 1                   |
| 64   | 2   | Back-up ring         | 1                   |
| 65   | 2   | Seal strip           | 1                   |
| 66   | 1   | Sheet ring           | 1                   |
| 69   |     | Packing ring         | 1                   |
| 75   | 1   | O-ring               |                     |
| 76   | 1   | Back-up ring         |                     |
| 77   | 1   | Hexagon plug         |                     |
| 78   | 1   | Spring pin           |                     |
| 89 * | 2   | Thrust bearing       | 1                   |
| 129  | 1   | Back seal            | 1                   |
| 130  | 1   | Set ring             |                     |
| 150  | 4   | Disc spring set      |                     |

Spare part (spare part set) category 1: Recommended soft parts, always needed for the repair. Delivered as a set.

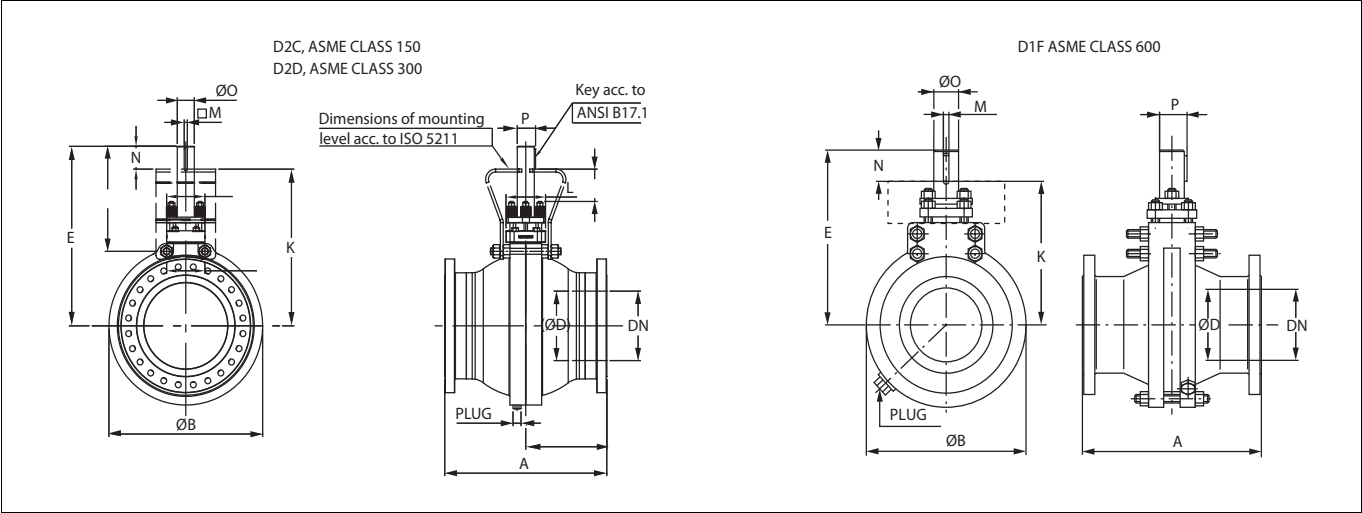
Spare part category 2: Parts for replacing of the seat. Available also as a set.

Spare part category 3: Parts for replacing of the closing element.

Spares for the full overhaul: All parts from the categories 1, 2 and 3.

Note: \* Only in PTFE bearing construction.

11 DIMENSIONS AND WEIGHTS



D2C, ASME CLASS 150

| Type   | Dimensions, mm |      |      |     |      |      |       |     |         |       | Mounting face      | Plug NPTF | kg   |
|--------|----------------|------|------|-----|------|------|-------|-----|---------|-------|--------------------|-----------|------|
|        | DN             | A    | ØB   | ØD  | E    | K    | M     | N   | ØO      | P     |                    |           |      |
| D2C 12 | 300            | 610  | 596  | 304 | 756  | 600  | 22.22 | 156 | 95      | 104.8 | F16, F25, F30      | 1         | 420  |
| D2C 14 | 350            | 686  | 668  | 337 | 818  | 662  | 22.22 | 156 | 95/105  | 104.8 | F16, F25, F30      | 1         | 550  |
| D2C 16 | 400            | 762  | 744  | 387 | 840  | 684  | 22.22 | 156 | 95/120  | 104.8 | F16, F25, F30      | 1         | 720  |
| D2C 18 | 450            | 864  | 814  | 440 | 890  | 734  | 22.22 | 156 | 95/120  | 104.8 | F16, F25, F30      | 1         | 1300 |
| D2C 20 | 500            | 914  | 904  | 490 | 969  | 789  | 25.40 | 180 | 95/105  | 116.1 | F16, F25, F30, F35 | 1         | 1500 |
| D2C 24 | 600            | 1067 | 1084 | 590 | 1128 | 923  | 31.75 | 205 | 95/120  | 133.8 | F25, F30, F35, F40 | 1         | 2300 |
| D2C 28 | 700            | 1244 | 1245 | 692 | 1263 | 1038 | 31.75 | 225 | 105/135 | 149   | F30, F35, F40      | 1         | 3800 |
| D2C 30 | 750            | 1295 | 1318 | 740 | 1485 | 1235 | 38.10 | 250 | 150     | 166.6 | F30, F35, F40      | 1         | 4400 |
| D2C 36 | 900            | 1524 | 1560 | 880 | 1661 | 1381 | 38.10 | 280 | 165     | 181.8 | F40, F48           | 1         | 6500 |

| Type   | Dimensions, inch |       |       |       |       |       |      |       |           |      | Mounting face      | Plug NPTF | lb    |
|--------|------------------|-------|-------|-------|-------|-------|------|-------|-----------|------|--------------------|-----------|-------|
|        | Size             | A     | ØB    | ØD    | E     | K     | M    | N     | ØO        | P    |                    |           |       |
| D2C 12 | 12               | 24.02 | 23.46 | 11.97 | 29.76 | 23.62 | 0.87 | 6.14  | 3.74      | 4.13 | F16, F25, F30      | 1         | 924   |
| D2C 14 | 14               | 27.01 | 26.30 | 13.27 | 32.20 | 26.06 | 0.87 | 6.14  | 3.74/4.13 | 4.13 | F16, F25, F30      | 1         | 1210  |
| D2C 16 | 16               | 30.00 | 29.29 | 15.24 | 33.07 | 26.93 | 0.87 | 6.14  | 3.74/4.72 | 4.13 | F16, F25, F30      | 1         | 1584  |
| D2C 18 | 18               | 34.02 | 32.05 | 17.32 | 35.04 | 28.90 | 0.87 | 6.14  | 3.74/4.72 | 4.13 | F16, F25, F30      | 1         | 2860  |
| D2C 20 | 20               | 35.98 | 35.59 | 19.29 | 38.15 | 31.06 | 1.00 | 7.09  | 3.74/4.13 | 4.57 | F16, F25, F30, F35 | 1         | 3300  |
| D2C 24 | 24               | 42.01 | 42.68 | 23.23 | 44.41 | 36.34 | 1.25 | 8.07  | 3.74/4.72 | 5.27 | F25, F30, F35, F40 | 1         | 5060  |
| D2C 28 | 28               | 48.98 | 49.02 | 27.24 | 49.72 | 40.87 | 1.25 | 8.86  | 4.13/5.31 | 5.87 | F30, F35, F40      | 1         | 8360  |
| D2C 30 | 30               | 50.98 | 51.89 | 29.13 | 58.46 | 48.62 | 1.50 | 9.84  | 5.91      | 6.56 | F30, F35, F40      | 1         | 9680  |
| D2C 36 | 36               | 60.00 | 61.42 | 34.65 | 65.39 | 54.37 | 1.50 | 11.02 | 6.50      | 7.16 | F40, F48           | 1         | 14300 |

**D2D, ASME CLASS 300**

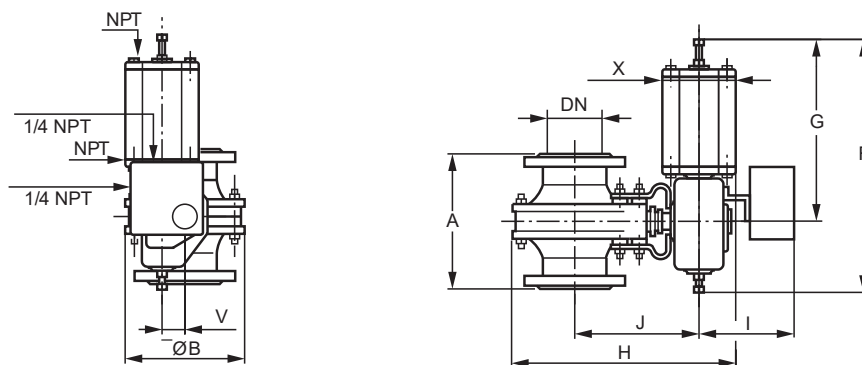
| Type   | Dimensions, mm |      |      |     |       |       |       |     |     |       | Mounting face      | Plug<br>NPTF | kg   |
|--------|----------------|------|------|-----|-------|-------|-------|-----|-----|-------|--------------------|--------------|------|
|        | DN             | A    | ØB   | ØD  | E     | K     | M     | N   | ØO  | P     |                    |              |      |
| D2D 04 | 100            | 305  | 262  | 100 | 373   | 305   | 9.52  | 68  | 40  | 44.2  | F10, F12, F14      | 1/2          | 60   |
| D2D 06 | 150            | 403  | 368  | 152 | 480   | 390   | 12.70 | 90  | 55  | 60.6  | F12, F14, F16      | 3/4          | 140  |
| D2D 08 | 200            | 502  | 454  | 202 | 575   | 456   | 19.05 | 119 | 70  | 78.2  | F14, F16, F25      | 3/4          | 240  |
| D2D 10 | 250            | 568  | 558  | 254 | 684.5 | 538.5 | 22.22 | 146 | 85  | 94.6  | F16, F25, F30      | 1            | 380  |
| D2D 12 | 300            | 648  | 630  | 304 | 756   | 600   | 22.22 | 156 | 95  | 104.8 | F16, F25, F30, F35 | 1            | 590  |
| D2D 14 | 350            | 762  | 706  | 337 | 818   | 638   | 25.40 | 180 | 105 | 116.2 | F25, F30, F35      | 1            | 770  |
| D2D 16 | 400            | 838  | 792  | 387 | 910.5 | 705.5 | 31.75 | 205 | 120 | 133.8 | F25, F30, F35      | 1            | 1050 |
| D2D 18 | 450            | 914  | 884  | 440 | 1005  | 849   | 22.22 | 156 | 95  | 104.8 | F25, F30, F35      | 1            | 1250 |
| D2D 20 | 500            | 991  | 966  | 490 | 1085  | 905   | 25.40 | 180 | 105 | 116.2 | F25, F30, F35, F40 | 1            | 1950 |
| D2D 24 | 600            | 1143 | 1130 | 590 | 1229  | 1024  | 31.75 | 205 | 120 | 133.8 | F30, F35, F40      | 1            | 3100 |
| D2D 28 | 700            | 1346 | 1340 | 690 | 1323  | 1098  | 31.75 | 225 | 135 | 149   | F35, F40           | 1            | 5250 |
| D2D 30 | 750            | 1397 | 1414 | 740 | 1485  | 1235  | 38.10 | 250 | 150 | 166.6 | F35, F40, F48      | 1            | 5500 |
| D2D 32 | 800            | 1524 | 1490 | 785 | 1521  | 1271  | 38.10 | 250 | 150 | 166.6 | F35, F40           | 1            | 6700 |
| D2D 36 | 900            | 1727 | 1684 | 880 | 1720  | 1440  | 38.10 | 280 | 165 | 181.8 | F40, F48           | 1            | 8700 |

| Type   | Dimensions, inch |       |       |       |       |       |      |       |      |      | Mounting face      | Plug<br>NPTF | lb    |
|--------|------------------|-------|-------|-------|-------|-------|------|-------|------|------|--------------------|--------------|-------|
|        | Size             | A     | ØB    | ØD    | E     | K     | M    | N     | ØO   | P    |                    |              |       |
| D2D 4  | 4                | 12.01 | 10.31 | 3.94  | 14.69 | 12.01 | 0.37 | 2.68  | 1.57 | 1.74 | F10, F12, F14      | 1/2          | 132   |
| D2D 6  | 6                | 15.87 | 14.49 | 5.98  | 18.90 | 15.35 | 0.50 | 3.54  | 2.17 | 2.39 | F12, F14, F16      | 3/4          | 308   |
| D2D 8  | 8                | 19.76 | 17.87 | 7.95  | 22.64 | 17.95 | 0.75 | 4.69  | 2.76 | 3.08 | F14, F16, F25      | 3/4          | 528   |
| D2D 10 | 10               | 22.36 | 21.97 | 10.00 | 26.95 | 21.20 | 0.87 | 5.75  | 3.35 | 3.72 | F16, F25, F30      | 1            | 836   |
| D2D 12 | 12               | 25.51 | 24.80 | 11.97 | 29.76 | 23.62 | 0.87 | 6.14  | 3.74 | 4.13 | F16, F25, F30, F35 | 1            | 1298  |
| D2D 14 | 14               | 30.00 | 27.80 | 13.27 | 32.20 | 25.12 | 1.00 | 7.09  | 4.13 | 4.57 | F25, F30, F35      | 1            | 1694  |
| D2D 16 | 16               | 32.99 | 31.18 | 15.24 | 35.85 | 27.78 | 1.25 | 8.07  | 4.72 | 5.27 | F25, F30, F35      | 1            | 2310  |
| D2D 18 | 18               | 35.98 | 34.80 | 17.32 | 39.57 | 33.43 | 0.87 | 6.14  | 3.74 | 4.13 | F25, F30, F35      | 1            | 2750  |
| D2D 20 | 20               | 39.02 | 38.03 | 19.29 | 42.72 | 35.63 | 1.00 | 7.09  | 4.13 | 4.57 | F25, F30, F35, F40 | 1            | 4290  |
| D2D 24 | 24               | 45.00 | 44.49 | 23.23 | 48.39 | 40.31 | 1.25 | 8.07  | 4.72 | 5.27 | F30, F35, F40      | 1            | 6820  |
| D2D 28 | 28               | 52.99 | 52.76 | 27.17 | 52.09 | 43.23 | 1.25 | 8.86  | 5.31 | 5.87 | F35, F40           | 1            | 11550 |
| D2D 30 | 30               | 55.00 | 55.67 | 29.13 | 58.46 | 48.62 | 1.50 | 9.84  | 5.91 | 6.56 | F35, F40, F48      | 1            | 12100 |
| D2D 32 | 32               | 60.00 | 58.66 | 30.90 | 59.88 | 50.04 | 1.50 | 9.84  | 5.91 | 6.56 | F35, F40           | 1            | 14740 |
| D2D 36 | 36               | 68.00 | 66.30 | 34.65 | 67.72 | 56.69 | 1.50 | 11.02 | 6.50 | 7.16 | F40, F48           | 1            | 19140 |

**D1F, ASME CLASS 600**

| Type   | Dimensions, mm |      |      |     |      |      |       |     |     |       | Plug<br>NPTF | kg   |
|--------|----------------|------|------|-----|------|------|-------|-----|-----|-------|--------------|------|
|        | DN             | A    | ØB   | ØD  | E    | K    | M     | N   | ØO  | P     |              |      |
| D1F 02 | 50             | 292  | 206  | 50  | 305  | 300  | 6.35  | 46  | 25  | 27.8  | 1/2          | 35   |
| D1F 03 | 80             | 356  | 262  | 77  | 375  | 340  | 9.52  | 58  | 35  | 39.1  | 1/2          | 60   |
| D1F 04 | 100            | 432  | 314  | 100 | 427  | 387  | 9.52  | 68  | 40  | 44.2  | 1/2          | 120  |
| D1F 06 | 150            | 559  | 404  | 152 | 540  | 485  | 12.70 | 90  | 55  | 60.6  | 3/4          | 280  |
| D1F 08 | 200            | 660  | 507  | 202 | 645  | 575  | 19.05 | 119 | 70  | 78.2  | 3/4          | 380  |
| D1F 10 | 250            | 787  | 610  | 254 | 765  | 680  | 22.22 | 146 | 85  | 94.6  | 1            | 690  |
| D1F 12 | 300            | 838  | 748  | 302 | 890  | 795  | 22.22 | 156 | 95  | 104.8 | 1            | 1134 |
| D1F 14 | 350            | 889  | 824  | 340 | 970  | 865  | 25.40 | 180 | 105 | 116.1 | 1            | 1500 |
| D1F 16 | 400            | 991  | 954  | 390 | 1068 | 948  | 31.75 | 205 | 120 | 133.8 | 1            | 2500 |
| D1F 18 | 450            | 1092 | 1090 | 440 | 1200 | 1065 | 31.75 | 225 | 135 | 149.0 | 1            | 3300 |
| D1F 20 | 500            | 1194 | 1176 | 490 | 1355 | 1205 | 38.10 | 250 | 150 | 166.6 | 1            | 3880 |
| D1F 24 | 600            | 1397 | 1224 | 591 | 1440 | 1275 | 38.10 | 280 | 165 | 181.8 | 1            | 6500 |

| Type   | Dimensions, inch |       |       |       |       |       |      |       |      |      | Plug<br>NPTF | lb    |
|--------|------------------|-------|-------|-------|-------|-------|------|-------|------|------|--------------|-------|
|        | Size             | A     | ØB    | ØD    | E     | K     | M    | N     | ØO   | P    |              |       |
| D1F 2  | 2                | 11.50 | 8.11  | 1.97  | 12.01 | 11.81 | 0.25 | 1.81  | 0.98 | 1.09 | 1/2          | 77    |
| D1F 3  | 3                | 14.02 | 10.31 | 3.03  | 14.76 | 13.39 | 0.37 | 2.28  | 1.38 | 1.54 | 1/2          | 132   |
| D1F 4  | 4                | 17.01 | 12.36 | 3.94  | 16.81 | 15.24 | 0.37 | 2.68  | 1.57 | 1.74 | 1/2          | 264   |
| D1F 6  | 6                | 22.01 | 15.91 | 5.98  | 21.26 | 19.09 | 0.50 | 3.54  | 2.17 | 2.39 | 3/4          | 616   |
| D1F 8  | 8                | 25.98 | 19.96 | 7.95  | 25.39 | 22.64 | 0.75 | 4.69  | 2.76 | 3.08 | 3/4          | 836   |
| D1F 10 | 10               | 30.98 | 24.02 | 10.00 | 30.12 | 26.77 | 0.87 | 5.75  | 3.35 | 3.72 | 1            | 1518  |
| D1F 12 | 12               | 32.99 | 29.45 | 11.89 | 35.04 | 31.30 | 0.87 | 6.14  | 3.74 | 4.13 | 1            | 2495  |
| D1F 14 | 14               | 35.00 | 32.44 | 13.39 | 38.19 | 34.06 | 1.00 | 7.09  | 4.13 | 4.57 | 1            | 3300  |
| D1F 16 | 16               | 39.02 | 37.56 | 15.35 | 42.05 | 37.32 | 1.25 | 8.07  | 4.72 | 5.27 | 1            | 5500  |
| D1F 18 | 18               | 42.99 | 42.91 | 17.32 | 47.24 | 41.93 | 1.25 | 8.86  | 5.31 | 5.87 | 1            | 7260  |
| D1F 20 | 20               | 47.01 | 46.30 | 19.29 | 53.35 | 47.44 | 1.50 | 9.84  | 5.91 | 6.56 | 1            | 8536  |
| D1F 24 | 24               | 55.00 | 48.19 | 23.27 | 56.69 | 50.20 | 1.50 | 11.02 | 6.50 | 7.16 | 1            | 14300 |



### D2C + BC

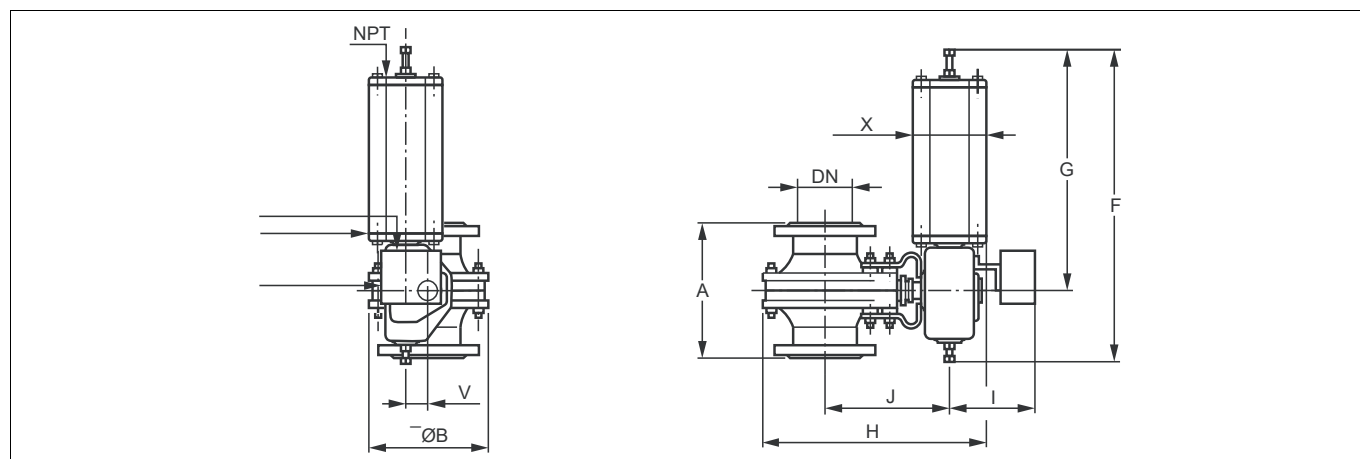
| Type          | Dimensions, mm |      |      |      |      |      |     |      |     |     | UNC | kg   |
|---------------|----------------|------|------|------|------|------|-----|------|-----|-----|-----|------|
|               | DN             | A    | B    | F    | G    | H    | I   | J    | V   | X   |     |      |
| D2C 12 - BC25 | 300            | 610  | 596  | 1040 | 710  | 1215 | 310 | 752  | 121 | 265 | 1/2 | 560  |
| D2C 12 - BC32 | 300            | 610  | 596  | 1330 | 910  | 1290 | 350 | 790  | 153 | 395 | 3/4 | 680  |
| D2C 14 - BC25 | 350            | 686  | 668  | 1040 | 710  | 1313 | 310 | 813  | 121 | 265 | 1/2 | 690  |
| D2C 14 - BC32 | 350            | 686  | 668  | 1330 | 910  | 1373 | 350 | 835  | 153 | 395 | 3/4 | 820  |
| D2C 14 - BC40 | 350            | 686  | 668  | 1660 | 1150 | 1478 | 370 | 889  | 194 | 505 | 3/4 | 1015 |
| D2C 16 - BC32 | 400            | 762  | 744  | 1330 | 910  | 1435 | 350 | 859  | 153 | 395 | 3/4 | 1340 |
| D2C 16 - BC40 | 400            | 762  | 744  | 1660 | 1150 | 1515 | 370 | 889  | 194 | 505 | 3/4 | 1185 |
| D2C 18 - BC40 | 450            | 864  | 814  | 1660 | 1150 | 1620 | 370 | 961  | 194 | 505 | 3/4 | 1775 |
| D2C 18 - BC50 | 450            | 864  | 814  | 1970 | 1350 | 1735 | 415 | 1021 | 242 | 610 | 1   | 2160 |
| D2C 20 - BC40 | 500            | 914  | 904  | 1660 | 1150 | 1719 | 370 | 1014 | 194 | 505 | 3/4 | 1975 |
| D2C 20 - BC50 | 500            | 914  | 904  | 1970 | 1350 | 1839 | 415 | 1082 | 242 | 610 | 1   | 2360 |
| D2C 24 - BC40 | 600            | 1067 | 1084 | 1660 | 1150 | 1943 | 370 | 1148 | 194 | 505 | 3/4 | 2795 |
| D2C 24 - BC50 | 600            | 1067 | 1084 | 1970 | 1350 | 2048 | 415 | 1198 | 242 | 610 | 1   | 3180 |
| D2C 28 - BC50 | 700            | 1244 | 1245 | 1970 | 1350 | 2324 | 415 | 1395 | 242 | 610 | 1   | 4680 |

### D2D + BC

| Type          | Dimensions, mm |      |      |      |      |      |     |      |     |     | UNC | kg   |
|---------------|----------------|------|------|------|------|------|-----|------|-----|-----|-----|------|
|               | DN             | A    | B    | F    | G    | H    | I   | J    | V   | X   |     |      |
| D2D 04 - BC13 | 100            | 305  | 262  | 645  | 445  | 619  | 235 | 394  | 65  | 175 | 3/8 | 96   |
| D2D 04 - BC17 | 100            | 305  | 262  | 770  | 545  | 649  | 255 | 409  | 78  | 215 | 1/2 | 120  |
| D2D 04 - BC20 | 100            | 305  | 262  | 840  | 575  | 689  | 270 | 428  | 97  | 215 | 1/2 | 140  |
| D2D 06 - BC17 | 150            | 403  | 368  | 770  | 545  | 795  | 255 | 499  | 78  | 215 | 1/2 | 200  |
| D2D 06 - BC20 | 150            | 403  | 368  | 840  | 575  | 830  | 270 | 518  | 97  | 215 | 1/2 | 220  |
| D2D 08 - BC20 | 200            | 502  | 454  | 840  | 575  | 946  | 270 | 591  | 97  | 215 | 1/2 | 320  |
| D2D 08 - BC25 | 200            | 502  | 454  | 1040 | 710  | 1006 | 310 | 614  | 121 | 265 | 1/2 | 380  |
| D2D 10 - BC25 | 250            | 568  | 558  | 1040 | 710  | 1146 | 310 | 701  | 121 | 265 | 1/2 | 520  |
| D2D 10 - BC32 | 250            | 568  | 558  | 1330 | 910  | 1221 | 350 | 738  | 153 | 395 | 3/4 | 645  |
| D2D 12 - BC25 | 300            | 648  | 630  | 1040 | 710  | 1230 | 310 | 753  | 121 | 265 | 1/2 | 730  |
| D2D 12 - BC32 | 300            | 648  | 630  | 1330 | 910  | 1305 | 350 | 790  | 153 | 395 | 3/4 | 855  |
| D2D 14 - BC25 | 350            | 762  | 706  | 1040 | 710  | 1333 | 310 | 817  | 121 | 265 | 1/2 | 915  |
| D2D 14 - BC32 | 350            | 762  | 706  | 1330 | 910  | 1393 | 350 | 839  | 153 | 395 | 3/4 | 1040 |
| D2D 14 - BC40 | 350            | 762  | 706  | 1660 | 1150 | 1498 | 370 | 889  | 194 | 505 | 3/4 | 1255 |
| D2D 16 - BC32 | 400            | 838  | 792  | 1330 | 910  | 1531 | 350 | 932  | 153 | 395 | 3/4 | 1330 |
| D2D 16 - BC40 | 400            | 838  | 792  | 1660 | 1150 | 1611 | 370 | 960  | 194 | 505 | 3/4 | 1525 |
| D2D 18 - BC40 | 450            | 914  | 884  | 1660 | 1150 | 1790 | 370 | 1092 | 194 | 505 | 3/4 | 1735 |
| D2D 18 - BC50 | 450            | 914  | 884  | 1970 | 1350 | 1885 | 415 | 1136 | 242 | 610 | 1   | 2130 |
| D2D 20 - BC40 | 500            | 991  | 966  | 1660 | 1150 | 1890 | 370 | 1154 | 194 | 505 | 3/4 | 2435 |
| D2D 20 - BC50 | 500            | 991  | 966  | 1970 | 1350 | 1990 | 415 | 1198 | 242 | 610 | 1   | 2840 |
| D2D 24 - BC40 | 600            | 1143 | 1130 | 1660 | 1150 | 2089 | 370 | 1249 | 194 | 505 | 3/4 | 3600 |
| D2D 24 - BC50 | 600            | 1143 | 1130 | 1970 | 1350 | 2194 | 415 | 1299 | 242 | 610 | 1   | 3990 |
| D2D 28 - BC50 | 700            | 1346 | 1340 | 1970 | 1350 | 2287 | 415 | 1393 | 242 | 610 | 1   | 6140 |
| D2D 30 - BC50 | 750            | 1397 | 1414 | 1970 | 1350 | 2550 | 415 | 1535 | 242 | 610 | 1   | 6410 |

**D1F + BC**

| Type          | Dimensions, mm |      |      |      |      |      |     |      |     |     | UNC | kg   |
|---------------|----------------|------|------|------|------|------|-----|------|-----|-----|-----|------|
|               | DN             | A    | B    | F    | G    | H    | I   | J    | V   | X   |     |      |
| D1F 02 - BC9  | 50             | 292  | 206  | 455  | 315  | 505  | 220 | 325  | 43  | 110 | 1/4 | 47   |
| D1F 02 - BC11 | 50             | 292  | 206  | 540  | 375  | 510  | 225 | 324  | 51  | 135 | 3/8 | 52   |
| D1F 02 - BC13 | 50             | 292  | 206  | 635  | 445  | 545  | 235 | 347  | 65  | 175 | 3/8 | 68   |
| D1F 02 - BC17 | 50             | 292  | 206  | 770  | 545  | 575  | 255 | 362  | 78  | 215 | 1/2 | 91   |
| D1F 03 - BC13 | 80             | 356  | 262  | 635  | 445  | 630  | 235 | 404  | 65  | 175 | 3/8 | 94   |
| D1F 03 - BC17 | 80             | 356  | 262  | 770  | 545  | 660  | 255 | 419  | 78  | 215 | 1/2 | 120  |
| D1F 03 - BC20 | 80             | 56   | 262  | 840  | 575  | 695  | 270 | 438  | 97  | 215 | 1/2 | 140  |
| D1F 04 - BC13 | 100            | 432  | 314  | 635  | 445  | 700  | 235 | 448  | 65  | 175 | 3/8 | 155  |
| D1F 04 - BC17 | 100            | 432  | 314  | 770  | 545  | 730  | 255 | 463  | 78  | 215 | 1/2 | 180  |
| D1F 04 - BC20 | 100            | 432  | 314  | 840  | 575  | 765  | 270 | 482  | 97  | 215 | 1/2 | 200  |
| D1F 04 - BC25 | 100            | 432  | 314  | 1040 | 710  | 825  | 310 | 505  | 121 | 265 | 1/2 | 255  |
| D1F 06 - BC17 | 150            | 559  | 404  | 770  | 545  | 870  | 255 | 554  | 78  | 215 | 1/2 | 340  |
| D1F 06 - BC20 | 150            | 559  | 404  | 840  | 575  | 915  | 270 | 573  | 97  | 215 | 1/2 | 360  |
| D1F 06 - BC25 | 150            | 559  | 404  | 1040 | 710  | 960  | 310 | 596  | 121 | 265 | 1/2 | 415  |
| D1F 06 - BC32 | 150            | 559  | 404  | 1330 | 910  | 1035 | 350 | 633  | 153 | 395 | 3/4 | 535  |
| D1F 08 - BC20 | 200            | 660  | 507  | 840  | 575  | 1030 | 270 | 655  | 97  | 215 | 1/2 | 470  |
| D1F 08 - BC25 | 200            | 660  | 507  | 1040 | 710  | 1090 | 310 | 678  | 121 | 265 | 1/2 | 525  |
| D1F 08 - BC32 | 200            | 660  | 507  | 1330 | 910  | 1165 | 350 | 715  | 153 | 395 | 3/4 | 645  |
| D1F 08 - BC40 | 200            | 660  | 507  | 1660 | 1150 | 1270 | 370 | 765  | 194 | 505 | 3/4 | 840  |
| D1F 10 - BC25 | 250            | 787  | 610  | 1040 | 710  | 1245 | 310 | 775  | 121 | 265 | 1/2 | 835  |
| D1F 10 - BC32 | 250            | 787  | 610  | 1330 | 910  | 1320 | 350 | 812  | 153 | 395 | 3/4 | 960  |
| D1F 10 - BC40 | 250            | 787  | 610  | 660  | 1150 | 1420 | 370 | 862  | 194 | 505 | 3/4 | 1155 |
| D1F 12 - BC32 | 300            | 838  | 748  | 1330 | 910  | 1498 | 350 | 923  | 153 | 395 | 3/4 | 1410 |
| D1F 12 - BC40 | 300            | 838  | 748  | 1660 | 1150 | 1603 | 370 | 973  | 194 | 505 | 3/4 | 1605 |
| D1F 12 - BC50 | 300            | 838  | 748  | 1970 | 1350 | 1703 | 415 | 1023 | 242 | 610 | 1   | 1990 |
| D1F 14 - BC32 | 350            | 889  | 824  | 1330 | 910  | 1600 | 350 | 987  | 153 | 395 | 3/4 | 1890 |
| D1F 14 - BC40 | 350            | 889  | 824  | 1660 | 1150 | 1705 | 370 | 1037 | 194 | 505 | 3/4 | 2085 |
| D1F 14 - BC50 | 350            | 889  | 824  | 1970 | 1350 | 1805 | 415 | 1087 | 242 | 610 | 1   | 2470 |
| D1F 16 - BC40 | 400            | 991  | 954  | 1660 | 1150 | 1850 | 370 | 1113 | 194 | 505 | 3/4 | 2980 |
| D1F 16 - BC50 | 400            | 991  | 954  | 1970 | 1350 | 1945 | 415 | 1163 | 242 | 610 | 1   | 3370 |
| D1F 18 - BC40 | 450            | 1092 | 1090 | 1660 | 1150 | 2025 | 370 | 1223 | 194 | 505 | 3/4 | 3820 |
| D1F 18 - BC50 | 450            | 1092 | 1090 | 1970 | 1350 | 2125 | 415 | 1273 | 242 | 610 | 1   | 4210 |
| D1F 20 - BC50 | 500            | 1194 | 1176 | 1970 | 1350 | 2300 | 415 | 1404 | 242 | 610 | 1   | 4810 |
| D1F 24 - BC50 | 600            | 1397 | 1402 | 1970 | 1350 | 2385 | 415 | 1465 | 242 | 610 | 1   | 7360 |



### D2C + BJ

| Type          | Dimensions, mm |      |      |      |      |      |     |      |     |     | UNC | kg   |
|---------------|----------------|------|------|------|------|------|-----|------|-----|-----|-----|------|
|               | DN             | A    | B    | F    | G    | H    | I   | J    | V   | X   |     |      |
| D2C 12 - BJ25 | 300            | 610  | 596  | 1530 | 1200 | 1305 | 310 | 752  | 121 | 505 | 3/4 | 770  |
| D2C 12 - BJ32 | 300            | 610  | 596  | 1830 | 410  | 360  | 350 | 790  | 153 | 540 | 1   | 1085 |
| D2C 14 - BJ25 | 350            | 686  | 668  | 1530 | 1200 | 1403 | 310 | 813  | 121 | 505 | 3/4 | 900  |
| D2C 14 - BJ32 | 350            | 686  | 668  | 1830 | 1410 | 1443 | 350 | 835  | 153 | 540 | 1   | 1220 |
| D2C 16 - BJ32 | 400            | 762  | 744  | 1830 | 1410 | 1505 | 350 | 859  | 153 | 540 | 1   | 1390 |
| D2C 18 - BJ32 | 450            | 864  | 814  | 1830 | 1410 | 1590 | 350 | 911  | 153 | 540 | 1   | 1970 |
| D2C 20 - BJ32 | 500            | 914  | 904  | 1830 | 1410 | 1689 | 350 | 964  | 153 | 540 | 1   | 2170 |
| D2C 24 - BJ32 | 600            | 1067 | 1084 | 1830 | 1410 | 1903 | 350 | 1098 | 153 | 540 | 1   | 2970 |
| D2C 28 - BJ32 | 700            | 1244 | 1245 | 1830 | 1410 | 2192 | 350 | 1298 | 153 | 540 | 1   | 4470 |

### D2D + BJ

| Type          | Dimensions, mm |     |     |      |      |      |     |      |     |     | UNC | kg   |
|---------------|----------------|-----|-----|------|------|------|-----|------|-----|-----|-----|------|
|               | DN             | A   | B   | F    | G    | H    | I   | J    | V   | X   |     |      |
| D2D 04 - BJ16 | 100            | 305 | 262 | 990  | 760  | 674  | 255 | 409  | 78  | 265 | 1/2 | 160  |
| D2D 04 - BJ20 | 100            | 305 | 262 | 1200 | 935  | 759  | 270 | 428  | 97  | 395 | 3/4 | 235  |
| D2D 06 - BJ16 | 150            | 403 | 368 | 990  | 760  | 820  | 255 | 499  | 78  | 265 | 1/2 | 240  |
| D2D 06 - BJ20 | 150            | 403 | 368 | 1200 | 935  | 900  | 270 | 518  | 97  | 395 | 3/4 | 315  |
| D2D 08 - BJ20 | 200            | 502 | 454 | 1200 | 935  | 1016 | 270 | 591  | 97  | 395 | 3/4 | 415  |
| D2D 08 - BJ25 | 200            | 502 | 454 | 1530 | 1200 | 1096 | 310 | 614  | 121 | 505 | 3/4 | 590  |
| D2D 10 - BJ25 | 250            | 568 | 558 | 1530 | 1200 | 1236 | 310 | 701  | 121 | 505 | 3/4 | 730  |
| D2D 10 - BJ32 | 250            | 568 | 558 | 1830 | 1410 | 1291 | 350 | 738  | 153 | 540 | 1   | 1050 |
| D2D 12 - BJ32 | 300            | 648 | 630 | 1830 | 1410 | 1375 | 350 | 790  | 153 | 540 | 1   | 1260 |
| D2D 14 - BJ32 | 350            | 762 | 706 | 1830 | 1410 | 1463 | 350 | 839  | 153 | 540 | 1   | 1440 |
| D2D 16 - BJ32 | 400            | 838 | 792 | 1830 | 1410 | 1601 | 530 | 932  | 153 | 540 | 1   | 1720 |
| D2D 18 - BJ32 | 450            | 914 | 884 | 1830 | 1410 | 1750 | 350 | 1036 | 153 | 540 | 1   | 1920 |

### D1F + BJ

| Type          | Dimensions, mm |     |     |      |      |      |     |     |     |     | UNC | kg   |
|---------------|----------------|-----|-----|------|------|------|-----|-----|-----|-----|-----|------|
|               | DN             | A   | B   | F    | G    | H    | I   | J   | V   | X   |     |      |
| D1F 02 - BJ10 | 50             | 292 | 206 | 650  | 490  | 525  | 225 | 331 | 51  | 175 | 3/8 | 65   |
| D1F 02 - BJ12 | 50             | 292 | 206 | 800  | 620  | 560  | 235 | 347 | 65  | 215 | 1/2 | 92   |
| D1F 02 - BJ16 | 50             | 292 | 206 | 990  | 760  | 600  | 255 | 362 | 78  | 265 | 1/2 | 135  |
| D1F 03 - BJ12 | 80             | 356 | 262 | 800  | 620  | 645  | 235 | 404 | 65  | 215 | 1/2 | 120  |
| D1F 03 - BJ16 | 80             | 356 | 262 | 990  | 760  | 685  | 255 | 419 | 78  | 265 | 1/2 | 160  |
| D1F 03 - BJ20 | 80             | 356 | 262 | 1200 | 935  | 770  | 270 | 438 | 97  | 395 | 3/4 | 235  |
| D1F 04 - BJ12 | 100            | 432 | 314 | 800  | 620  | 715  | 235 | 448 | 65  | 215 | 1/2 | 180  |
| D1F 04 - BJ16 | 100            | 432 | 314 | 990  | 760  | 815  | 255 | 463 | 78  | 265 | 1/2 | 220  |
| D1F 04 - BJ20 | 100            | 432 | 314 | 1200 | 935  | 840  | 270 | 482 | 97  | 395 | 3/4 | 295  |
| D1F 06 - BJ20 | 150            | 559 | 404 | 1200 | 935  | 975  | 270 | 573 | 97  | 395 | 3/4 | 455  |
| D1F 06 - BJ25 | 150            | 559 | 404 | 1530 | 1200 | 1055 | 310 | 596 | 121 | 505 | 3/4 | 630  |
| D1F 06 - BJ32 | 150            | 559 | 404 | 1830 | 1410 | 1105 | 350 | 633 | 153 | 540 | 1   | 950  |
| D1F 08 - BJ25 | 200            | 660 | 507 | 1530 | 1200 | 1180 | 310 | 678 | 121 | 505 | 3/4 | 730  |
| D1F 08 - BJ32 | 200            | 660 | 507 | 1830 | 1410 | 1235 | 350 | 715 | 153 | 540 | 1   | 1050 |
| D1F 10 - BJ25 | 250            | 787 | 610 | 1530 | 1200 | 1335 | 310 | 775 | 121 | 505 | 3/4 | 1040 |
| D1F 10 - BJ32 | 250            | 787 | 610 | 1830 | 1410 | 1390 | 350 | 812 | 153 | 540 | 1   | 1360 |
| D1F 12 - BJ32 | 300            | 838 | 748 | 1830 | 1410 | 1568 | 350 | 923 | 153 | 540 | 1   | 1805 |
| D1F 14 - BJ32 | 350            | 889 | 824 | 1830 | 1410 | 1670 | 350 | 987 | 153 | 540 | 1   | 2170 |



## 12 TYPE CODE

### BALL VALVE, Series D

| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. |
|----|----|----|----|----|----|----|----|----|-----|-----|
| D2 | D  | E  | 06 | D  | A  | E  | 02 | G  | /   | -   |

| Q-CODE     | PRODUCT OPTIONS                                                                                                               |
|------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Q</b>   | Standard low noise trim for gas and liquid application, single seated (const. E or B) with open down stream side ball surface |
| <b>Q2G</b> | Q2-trim for gas application (single seated const.E or B)                                                                      |

| 1.               | SERIES                                      |
|------------------|---------------------------------------------|
| <b>D</b>         | Center split body, trunnion mounted, bonnet |
| STANDARD         |                                             |
| <b>D2, D1(F)</b> | Full bore, flanged                          |
| NON-STANDARD     |                                             |
| <b>D3</b>        | Full bore, weld ends                        |
| <b>D4</b>        | Reduced bore, weld ends                     |
| <b>D5</b>        | Reduced bore, flanged                       |

| 2.       | PRESSURE RATING |
|----------|-----------------|
| <b>C</b> | ASME class 150  |
| <b>D</b> | ASME class 300  |
| <b>F</b> | ASME class 600  |

| 3.           | CONSTRUCTION                                                                                                                 |
|--------------|------------------------------------------------------------------------------------------------------------------------------|
| STANDARD     |                                                                                                                              |
| <b>A</b>     | General construction, PTFE bearings, 2 seats, temperature range: -50 °C to +230 °C.                                          |
| <b>B</b>     | Single seated, one-way tight, metal bearings, temperature range: -50 °C to +450/600 °C                                       |
| <b>E</b>     | Single seated, one-way tight, PTFE bearings, temperature range: -50 °C to +230 °C                                            |
| <b>H</b>     | High-temperature construction, metal bearings, 2 seats, temperature range: -50 °C to +450/600 °C                             |
| NON-STANDARD |                                                                                                                              |
| <b>C</b>     | Cryogenic construction, PTFE bearings, temperature range: -200 °C to +230 °C                                                 |
| <b>S</b>     | Subsea construction                                                                                                          |
| <b>Z</b>     | OXYGEN CONSTRUCTION<br>BAM tested non-metallic materials<br>temperature range: -50 °C to +200 °C.<br>See IMO '100270EN.pdf'. |
| <b>Y</b>     | Special construction                                                                                                         |

| 4.         | SIZE (in)                                                       |
|------------|-----------------------------------------------------------------|
| <b>D1F</b> | 02, 03, 04, 06, 08, 10, 12, 14, 16, 18, 20, 24, 28              |
| <b>D2D</b> | 04, 06, 08, 10, 12, 14, 16, 18, 20, 24, 26*, 28*, 30*, 32*, 36* |
| <b>D2C</b> | 10, 12, 14, 16, 18, 20, 24, 28*, 30*, 36*                       |
| <b>D5F</b> | 03, 04, 06, 08, 10, 12, 14, 16, 18, 20, 24                      |
| <b>D5D</b> | 06, 08, 10, 12, 14, 16, 18, 20, 24, 28*, 30*, 32*, 36*          |
| <b>D5C</b> | 12, 14, 16, 18, 20, 24, 28*, 30*, 36*                           |

\*) Flanges acc. to ASME B16.47 series A in sizes 26" or larger.  
Flanges in sizes up to NPS 24" are acc. to ASME B 16.5.

| 5.                 | BODY    | BOLTING   |
|--------------------|---------|-----------|
| STANDARD MATERIALS |         |           |
| <b>A</b>           | CF8M    | B8M / 8M  |
| <b>D</b>           | WCB     | L7M / 2HM |
| <b>Y</b>           | Special |           |

\*\*) When soft seat, then ball without chrome.

| 6.       | BALL                                    |
|----------|-----------------------------------------|
| <b>A</b> | CF8M / AISI 316 + Chrome**              |
| <b>D</b> | CF8M / AISI 316 + NiBo, only size ≤ 24" |
| <b>Y</b> | Special                                 |

| 7.        | SEAT TYPE               |
|-----------|-------------------------|
| <b>T</b>  | Soft seat               |
| <b>D</b>  | Soft seat, fire safe    |
| <b>S</b>  | Metal seat              |
| <b>E</b>  | Metal seat              |
| <b>H</b>  | Bellows seat            |
| <b>C</b>  | Bellows seat            |
| <b>K</b>  | Solids Proof metal seat |
| <b>R</b>  | Fire safe metal seat    |
| <b>F6</b> | Special metal seat.     |

| 8.        | STANDARD MATERIALS |                      |                      |                                |                      |
|-----------|--------------------|----------------------|----------------------|--------------------------------|----------------------|
|           | Seat seal          | Body gasket          | Gland packing        | Wound spring or bellows spring |                      |
| <b>02</b> | Viton GF           | Graphite             | Graphite             | W                              | X-750                |
| <b>03</b> |                    | Graphite<br>Graphite | Graphite<br>Graphite | B<br>W                         | W.no.1.4418<br>X-750 |

| NON-STANDARD MATERIALS |                    |          |          |   |       |
|------------------------|--------------------|----------|----------|---|-------|
| <b>63</b>              | Viton GF, graphite | Graphite | Graphite | W | X-750 |
| <b>64</b>              | Lip seal, grafoil  | Graphite | Graphite | W | X-750 |

| 9.       | PACKING CONSTRUCTION CODE                                             |
|----------|-----------------------------------------------------------------------|
| <b>G</b> | Standard packing, live loaded graphite packing, ISO 15848-1 certified |
| -        | Non-live loaded packing. Obsolete.                                    |

| 10.       | FLANGE FACING                                                                       |
|-----------|-------------------------------------------------------------------------------------|
| -         | ASME B16.5 raised face Ra 3.2-6.3 or EN 1092-1 Type B1 (Ra 3.2-12.5) (without sign) |
| <b>05</b> | Ring Joint                                                                          |

| 11.      | FLANGE DRILLING                                        |
|----------|--------------------------------------------------------|
| -        | Acc. to valve pressure rating, without sign (standard) |
| <b>C</b> | ASME class 150***                                      |
| <b>D</b> | ASME class 300***                                      |
| <b>F</b> | ASME class 600***                                      |
| <b>J</b> | EN PN 10                                               |
| <b>K</b> | EN PN 16                                               |
| <b>L</b> | EN PN 25                                               |
| <b>M</b> | EN PN 40                                               |
| <b>N</b> | EN PN 64                                               |
| <b>P</b> | EN PN 100                                              |
| <b>R</b> | JIS 10K                                                |
| <b>S</b> | JIS 16K                                                |
| <b>T</b> | JIS 20K                                                |
| <b>U</b> | JIS 30K                                                |
| <b>W</b> | JIS 40K                                                |
| <b>Y</b> | Special                                                |

\*\*\*) Flange drilling acc. to ASME B16.47 series A in sizes 26" or larger.  
Flange drilling in sizes up to NPS 24" are acc. to ASME B 16.5