

## Data sheet

# Full bore JIP™ ball valves (PN 16/25/40)

## Description



Danfoss JIP™ full bore ball valves are shut off valves developed for District Heating and District Cooling networks, with circulating medium.

It is a range of steel ball valves with fully welded body.

The valve design makes them ideal for building installation due to:

- Energy saving: with optimum flow design valves have highest  $k_v$  on the market and consequently lowest pump energy costs.

- Long lifetime and optimal tightness due to design and material selection in ball seal (carbon reinforced PTFE) and stem seal (graphite).
- The valves are maintenance free, besides the shut off valves in the core distribution network Danfoss offers a range of supplementary valves, e.g. hot tap valves, branching valves, house insertions and twin valves.

**Main data:**

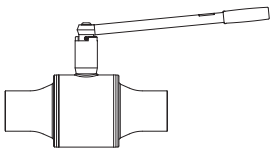
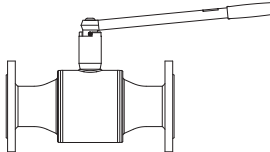
- DN 15-400
- $k_{vs} = 11-37500 \text{ m}^3/\text{h}$
- PN 16 / 25 / 40
- Leakage rate A (according to EN12266-1) - both directions
- Temperature: 0 ... 180 °C
- Medium: Circulation water / glycolic water up to 50 %
- Min. storage and transport temperature: -40 °C

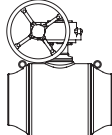
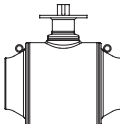
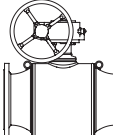
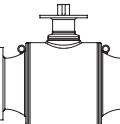
**Approvals and norms:**

- 100 % final inspection. Leak and shell test as well as dimension and functionality test is performed on each and every valve according to applicable standard (EN 12266 part 1 P10-P11-P12 & part 2 F20).
- PED Directive 2014/68/EU Modul H1
- Danfoss A/S is certified according to ISO 9001
- Furthermore certified according to ISO 14001 and ISO 45001.

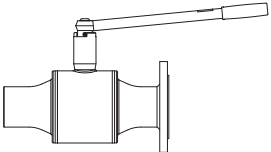
**Ordering**

JIP-WW welding  
JIP-FF flange

|   |                 |             |   |             |             |
|---|-----------------|-------------|---|-------------|-------------|
|  |                 |             |  |             |             |
| <b>JIP-WW welding</b>   |                 |             | <b>JIP-FF flange</b>  |             |             |
| <b>DN</b><br>(mm)   | <b>Code No.</b> |             | <b>Code No.</b>   |             |             |
|   | <b>PN25</b>     | <b>PN40</b> | <b>PN16</b>   | <b>PN25</b> | <b>PN40</b> |
| 15  |                 | 065N0100    |   |             | 065N0300    |
| 20  |                 | 065N1105    |   |             | 065N1305    |
| 25  |                 | 065N1110    |   |             | 065N1310    |
| 32  |                 | 065N1115    |   |             | 065N1315    |
| 40  |                 | 065N1120    |   |             | 065N1320    |
| 50  |                 | 065N1125    |   |             | 065N1325    |
| 65  | 065N1130        |             | 065N1230  | 065N1330    |             |
| 80  | 065N1135        |             | 065N1235  | 065N1335    |             |
| 100   | 065N1740        |             | 065N1840  | 065N1940    |             |
| 125   | 065N1745        |             | 065N1845  | 065N1945    |             |
| 150   | 065N1751        |             | 065N1851  | 065N1951    |             |

|  |                             |  |                             |  |                             |   |  |
|--|-----------------------------|--|-----------------------------|--|-----------------------------|---|--|
|  |                             |  |                             |  |                             |  |  |
| <b>JIP-WW welding</b>  |                             | <b>JIP-FF flange</b>   |                             | <b>JIP-FF flange</b>   |                             |   |  |
| <b>DN</b><br>(mm)  | <b>Code No. WW PN25</b>     |  | <b>Code No. FF PN16</b>     |  | <b>Code No. FF PN25</b>     |   |  |
|  | <b>Valve with worm gear</b> | <b>Valve with gear flange</b>  | <b>Valve with worm gear</b> | <b>Valve with gear flange</b>  | <b>Valve with worm gear</b> | <b>Valve with gear flange</b>   |  |
| 50   | 065N1123                    | 065N1128   |                             |  |                             |   |  |
| 65   | 065N1131                    | 065N1132   |                             |  |                             |   |  |
| 80   | 065N1136                    | 065N1137   |                             |  |                             |   |  |
| 100  | 065N1141                    | 065N1142   |                             |  |                             |   |  |
| 125  | 065N1146                    | 065N1147   |                             |  |                             |   |  |
| 150  | 065N1151                    | 065N1152   | 065N1251                    | 065N1252   | 065N1351                    | 065N1352  |  |
| 200  | 065N1156                    | 065N1157   | 065N1256                    | 065N1257   | 065N1356                    | 065N1357  |  |
| 250  | 065N1161                    | 065N1162   | 065N1261                    | 065N1262   | 065N1361                    | 065N1362  |  |
| 300  | 065N1166                    | 065N1167   | 065N1266                    | 065N1267   | 065N1366                    | 065N1367  |  |
| 350  | 065N1173                    | 065N1174   | 065N1273                    | 065N1274   | 065N1373                    | 065N1374  |  |
| 400  | 065N1176                    | 065N1177   | 065N1276                    | 065N1277   | 065N1376                    | 065N1377  |  |

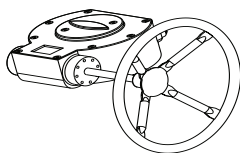
JIP-FW flange / welding

|   |                 |             |             |
|---|-----------------|-------------|-------------|
|  |                 |             |             |
| <b>JIP-FW flange / welding</b>  |                 |             |             |
| <b>DN</b><br>(mm)   | <b>Code No.</b> |             |             |
|   | <b>PN16</b>     | <b>PN25</b> | <b>PN40</b> |
| 15  |                 |             | 065N0700    |
| 20  |                 |             | 065N1705    |
| 25  |                 |             | 065N1710    |
| 32  |                 |             | 065N1715    |
| 40  |                 |             | 065N1720    |
| 50  |                 |             | 065N1725    |
| 65  | 065N1530        | 065N1630    |             |
| 80  | 065N1535        | 065N1635    |             |
| 100   | 065N1955        | 065N1970    |             |
| 125   | 065N1961        | 065N1975    |             |
| 150   | 065N1965        | 065N1981    |             |

**Data sheet**
**Full bore JIP™ ball valves (PN 16/25/40)**
**Ordering (continuous)**  
Actuators

|                   |                                |                                 |
|-------------------|--------------------------------|---------------------------------|
|                   |                                |                                 |
| <b>DN</b><br>(mm) | <b>Code No.</b>                |                                 |
|                   | <b>Auma NORM</b> <sup>1)</sup> | <b>Auma MATIC</b> <sup>1)</sup> |
| 50                | <b>065N8397</b>                | <b>065N8398</b>                 |
| 65                | <b>065N8199</b>                | <b>065N8399</b>                 |
| 80                | <b>065N8200</b>                | <b>065N8400</b>                 |
| 100-150           | <b>065N8205</b>                | <b>065N8405</b>                 |
| 200               | <b>065N8220</b>                | <b>065N8420</b>                 |
| 250               | <b>065N8225</b>                | <b>065N8425</b>                 |
| 300               | <b>065N8235</b>                | <b>065N8435</b>                 |
| 350               | <b>065N8240</b>                | <b>065N8440</b>                 |
| 400               | <b>065N8265</b>                | <b>065N8266</b>                 |

<sup>1)</sup> More information on page 12. For additional information related to the electric actuator ordering, please contact local Danfoss representative.

**Worm gear**


| <b>Description</b>                     | <b>Code No.</b>  |   |
|--|------------------|---|
|  | <b>Worm gear</b> | <b>Position indicator with end switch</b> |
| Worm gear for DN50                     | <b>065N0683</b>  | <b>065N0694</b>                           |
| Worm gear for DN65-80                  | <b>065N0684</b>  | <b>065N0695</b>                           |
| Worm gear for DN 100/125/150 full bore | <b>065N0685</b>  | <b>065N0695</b>                           |
| Worm gear for DN 200 full bore         | <b>065N0691</b>  | <b>065N0696</b>                           |
| Worm gear for DN 250 full bore         | <b>065N0687</b>  | <b>065N0697</b>                           |
| Worm gear for DN 300 full bore         | <b>065N0688</b>  | <b>065N0698</b>                           |
| Worm gear for DN 350 full bore         | <b>065N0689</b>  | <b>065N0699</b>                           |
| Worm gear for DN 400 full bore         | <b>065N0690</b>  | <b>065N0699</b>                           |

**Accessories**

| <b>Replacement handles</b>                     |                 |                 |
|--|-----------------|-----------------|
| <b>Type of handle</b>                          | <b>Fixation</b> | <b>Code No.</b> |
| L Steel DN 15-25 full bore with plastic grip   | spring pin      | <b>065N8256</b> |
| L Steel DN 32-40 full bore with plastic grip   | spring pin      | <b>065N8257</b> |
| L Steel DN 50 full bore with plastic grip      | spring pin      | <b>065N3720</b> |
| L Steel DN 65-80 full bore with plastic grip   | spring pin      | <b>065N3721</b> |
| L Steel DN 100 full bore with plastic grip     | screw           | <b>065N3725</b> |
| L Steel DN 125-150 full bore with plastic grip | screw           | <b>065N3726</b> |

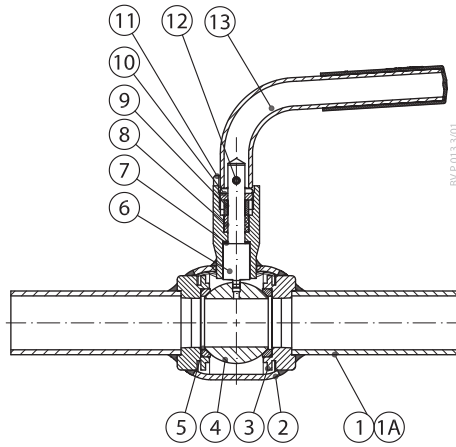
| <b>Handles with extended shaft for pipes with thick insulation</b> |                 |                 |          |          |          |                |
|--|-----------------|-----------------|----------|----------|----------|----------------|
| <b>Type of handle</b>  | <b>Code No.</b> | <b>Valve DN</b> | <b>H</b> | <b>h</b> | <b>S</b> | <b>Picture</b> |
| Handle DN 15-25 FB L115-H  | <b>065N8350</b> | 15              | 142      | 196      | 115      |                |
|  |                 | 20              | 142      | 199      | 115      |                |
|  |                 | 25              | 141      | 204      | 115      |                |
| Handle DN 32-40 FB L157-H  | <b>065N8351</b> | 32              | 201      | 279      | 157      |                |
|  |                 | 40              | 200      | 284      | 157      |                |
| Handle DN 50 FB L205-H   | <b>065N8352</b> | 50              | 208      | 310      | 205      |                |
| Handle DN 65-80 FB L405-H  | <b>065N8353</b> | 65              | 224      | 351      | 405      |                |
|  |                 | 80              | 224      | 364      | 405      |                |
| Handle DN 100-150FB/ DN200RB L645-HexT-H                           | <b>065N8356</b> | 100             | 241      | 449      | 645      |                |
|  |                 | 125             | 251      | 472      | 645      |                |
|  |                 | 150             | 245      | 492      | 645      |                |

**Technical data**

| <b>DN</b>  | <b>mm</b>         | <b>15</b>                                     | <b>20</b> | <b>25</b> | <b>32</b> | <b>40</b> | <b>50</b> | <b>65</b> | <b>80</b> | <b>100</b> | <b>125</b> | <b>150</b> | <b>200</b> | <b>250</b> | <b>300</b> | <b>350</b> | <b>400</b> |  |
|------------|-------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|--|
| $k_{vs}$   | m <sup>3</sup> /h | 11  | 50        | 90        | 160       | 235       | 395       | 820       | 1100      | 2300       | 3700       | 6100       | 11000      | 17500      | 24000      | 30000      | 37500      |  |
| PN         |                   | 40  |           |           |           |           |           | 16/25     |           |            |            |            |            |            |            |            |            |  |
| Temp range |                   | 0 ... 180 °C                                  |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |  |
| Medium     |                   | Circulation water / glycolic water up to 50 % |           |           |           |           |           |           |           |            |            |            |            |            |            |            |            |  |

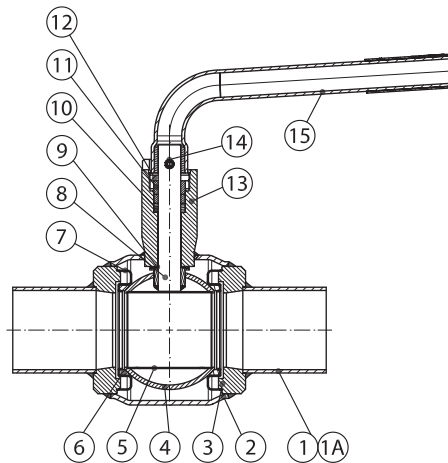
Design & material

|    |                    |                          |
|----|--------------------|--------------------------|
| 1  | Welding end        | *Weldable mild steel 20# |
| 1A | Flange             | P245GH                   |
| 2  | Shell              | *Weldable mild steel 20# |
| 3  | Ball seal retainer | *Weldable mild steel 20# |
| 4  | Ball               | Stainless steel          |
| 5  | Ball seal          | Carbon reinforced PTFE   |
| 6  | Stem               | Stainless steel          |
| 7  | Washer             | Carbon reinforced PTFE   |
| 8  | Stem sealing       | Graphite                 |
| 9  | Compression ring   | Steel                    |
| 10 | Compression nut    | Steel                    |
| 11 | Packing box        | *Weldable mild steel 20# |
| 12 | Pin                | Spring steel             |
| 13 | Handle             | Steel                    |



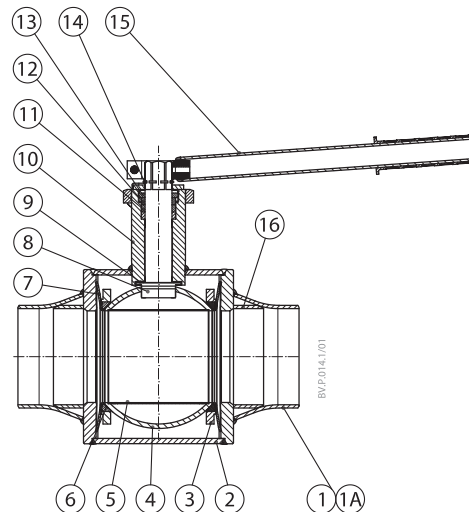
DN 15-40 with handle

|    |                    |                          |
|----|--------------------|--------------------------|
| 1  | Welding end        | *Weldable mild steel 20# |
| 1A | Flange             | P245GH                   |
| 2  | Shell              | *Weldable mild steel 20# |
| 3  | Ball seal retainer | *Weldable mild steel 20# |
| 4  | Ball               | Stainless steel          |
| 5  | Pipe insert        | Stainless steel          |
| 6  | Ball seal          | Carbon reinforced PTFE   |
| 7  | Spring             | Stainless Steel          |
| 8  | Stem               | Stainless steel          |
| 9  | Washer             | Carbon reinforced PTFE   |
| 10 | Stem sealing       | Graphite                 |
| 11 | Compression ring   | Steel                    |
| 12 | Compression nut    | Steel                    |
| 13 | Packing box        | *Weldable mild steel 20# |
| 14 | Pin                | Spring steel             |
| 15 | Handle             | Steel                    |



DN 50-80 with handle

|    |                    |                          |
|----|--------------------|--------------------------|
| 1  | Welding end        | *Weldable mild steel 20# |
| 1A | Flange             | P245GH                   |
| 2  | Shell              | *Weldable mild steel 20# |
| 3  | Ball seal retainer | *Weldable mild steel 20# |
| 4  | Ball               | Stainless steel          |
| 5  | Pipe insert        | Stainless steel          |
| 6  | Ball seal          | Carbon reinforced PTFE   |
| 7  | Disc spring        | Domex 650 MC             |
| 8  | Stem               | Stainless steel          |
| 9  | Washer             | Carbon reinforced PTFE   |
| 10 | Packing box        | *Weldable mild steel 20# |
| 11 | Stem sealing       | Graphite                 |
| 12 | Compression ring   | Steel                    |
| 13 | Compression nut    | Steel                    |
| 14 | Retaining ring     | Stainless steel          |
| 15 | Handle             | Steel                    |
| 16 | Guiding pipe       | *Weldable mild steel 20# |

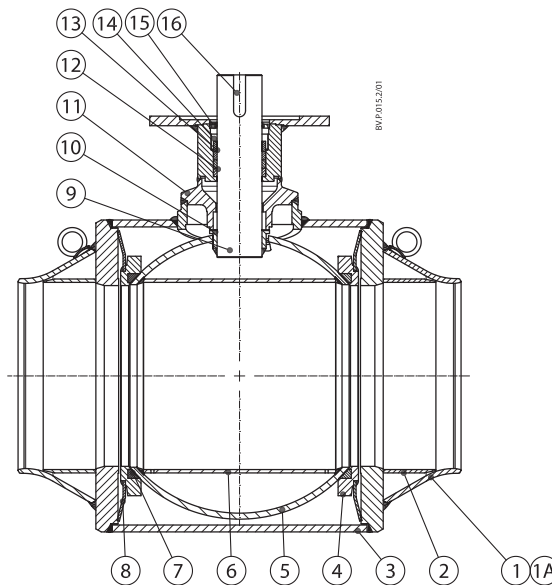


DN 100-150 with handle

Design & material (continuous)

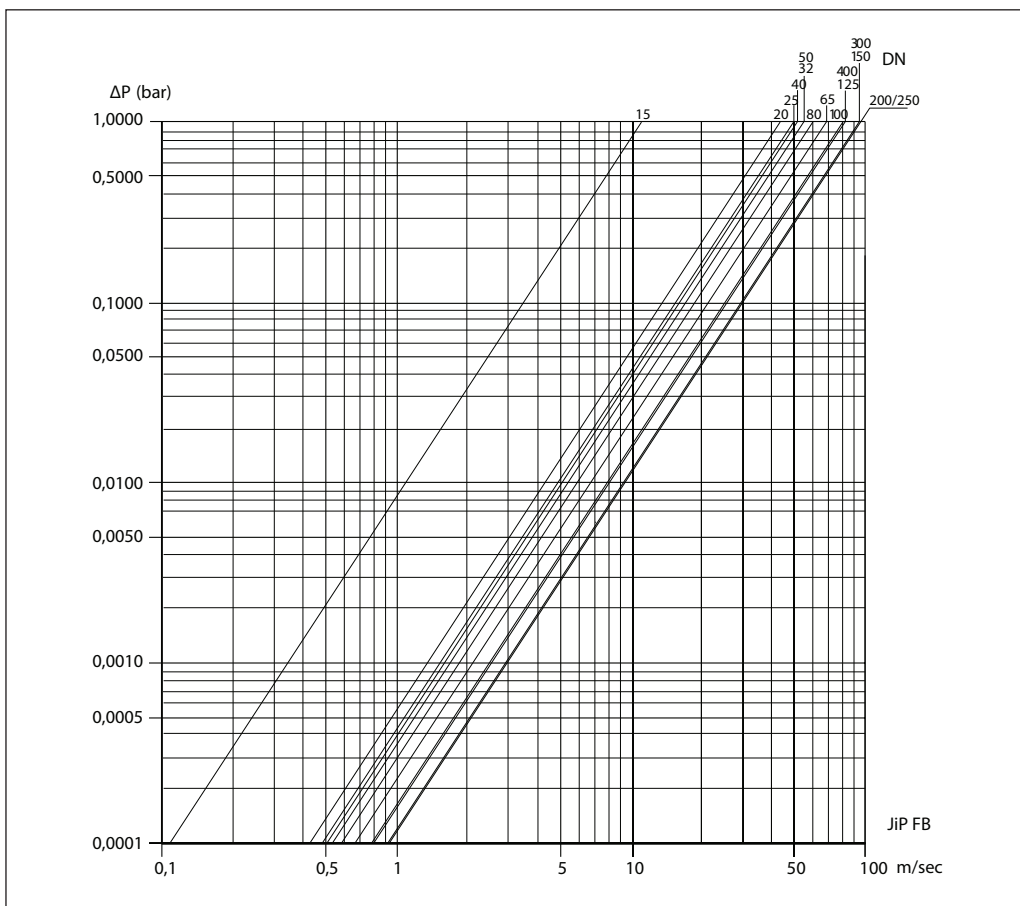
|    |                    |                          |
|----|--------------------|--------------------------|
| 1  | Welding end        | *Weldable mild steel 20# |
| 1A | Flange             | P245GH                   |
| 2  | Guiding pipe       | *Weldable mild steel 20# |
| 3  | Shell              | *Weldable mild steel 20# |
| 4  | Ball seal retainer | *Weldable mild steel 20# |
| 5  | Ball               | Stainless steel          |
| 6  | Pipe insert        | Stainless steel          |
| 7  | Ball seal          | Carbon reinforced PTFE   |
| 8  | Disc spring        | Domex 650 MC             |
| 9  | Stem               | Stainless steel          |
| 10 | Washer             | Carbon reinforced PTFE   |
| 11 | Packing box        | *Weldable mild steel 20# |
| 12 | Stem sealing       | Graphite                 |
| 13 | Compression ring   | Steel                    |
| 14 | Compression nut    | Steel                    |
| 15 | Retaining ring     | Stainless steel          |
| 16 | Key                | Steel                    |

\* According to the GB/T8163. Or equivalent mild steel in accordance with CE-PED

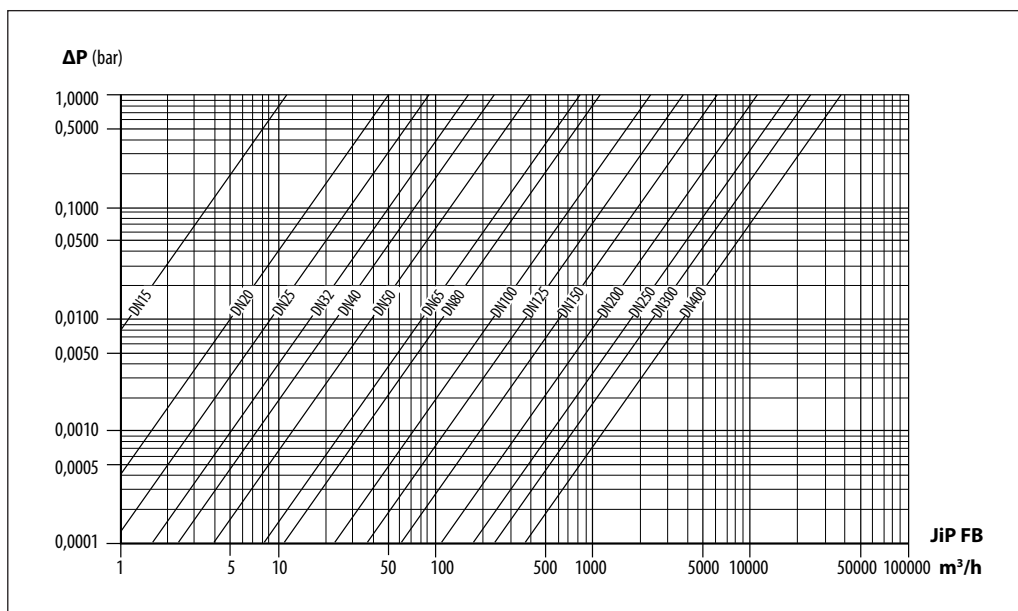


DN 50-400 with gear flange

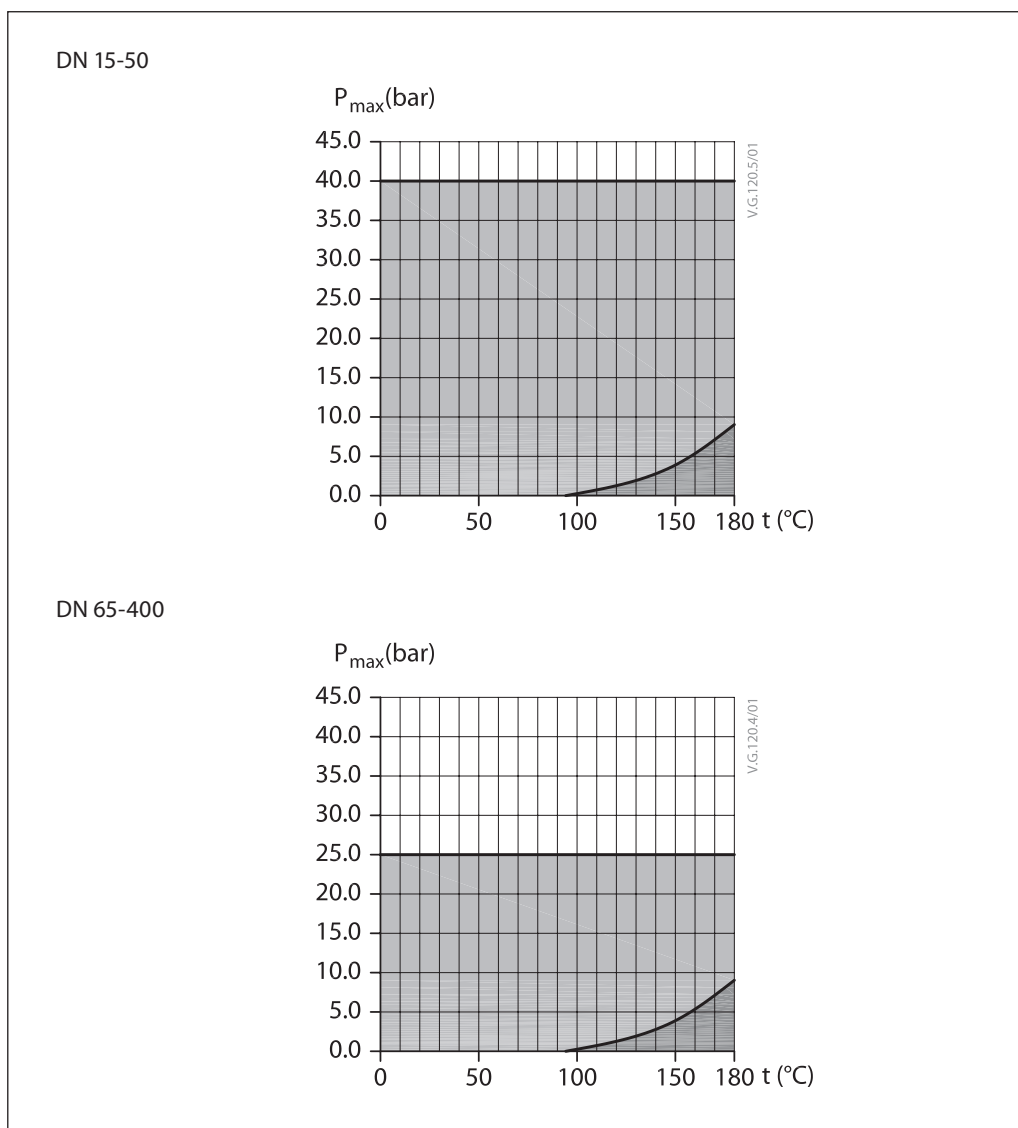
Pressure drop / velocity diagram



Pressure drop / flow diagram



Pressure / temperature diagram  
JIP-WW

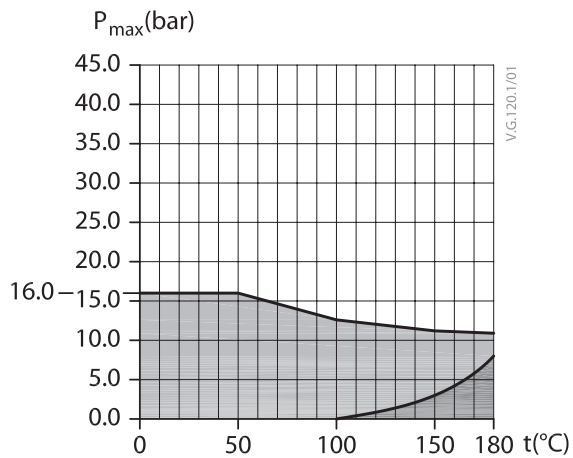


Legend:

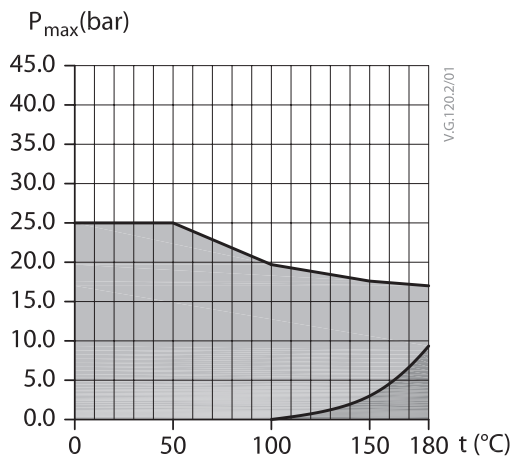
- Normal operating area (water)
- Steam area

Pressure / temperature  
JIP-FF

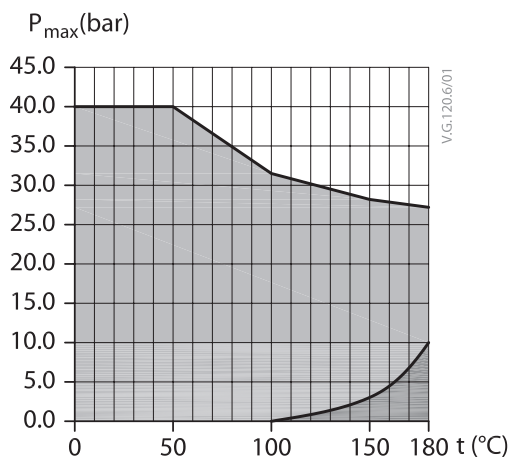
PN 16, DN 65-400



PN 25, DN 65-400



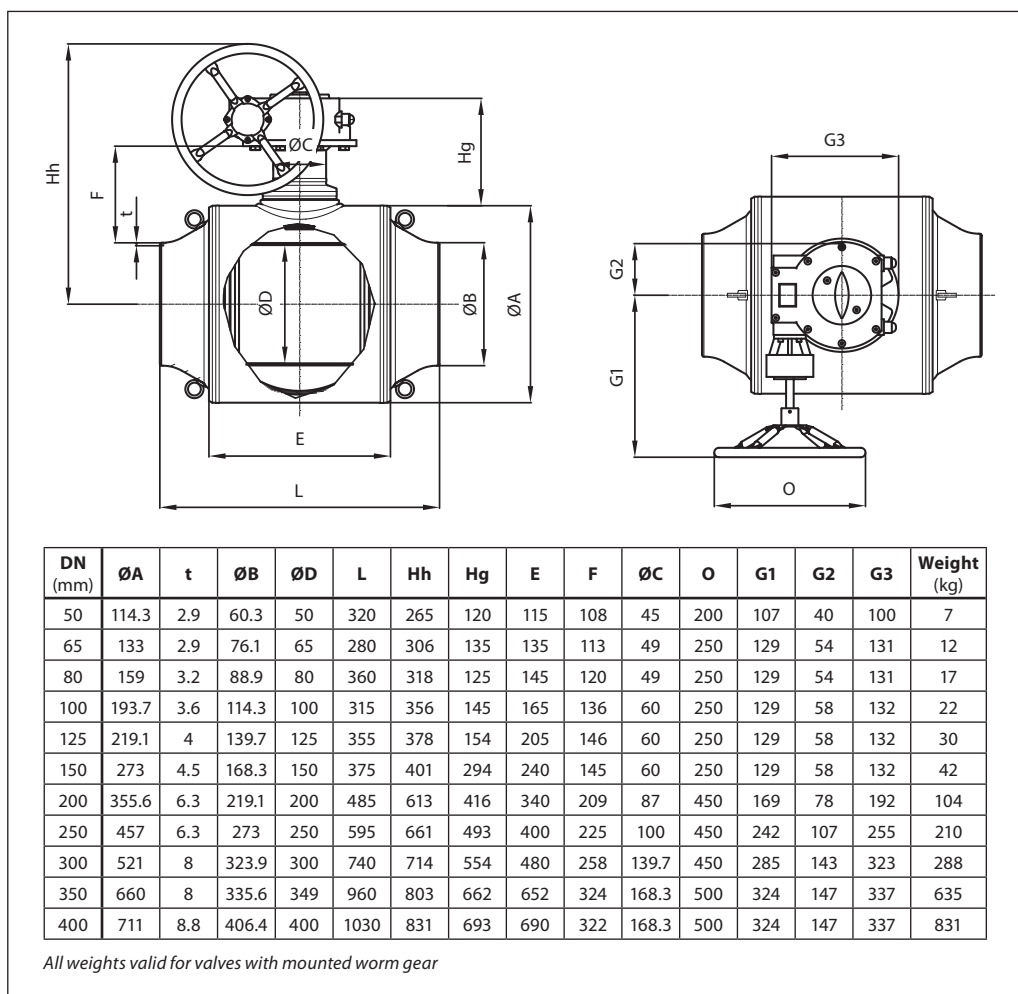
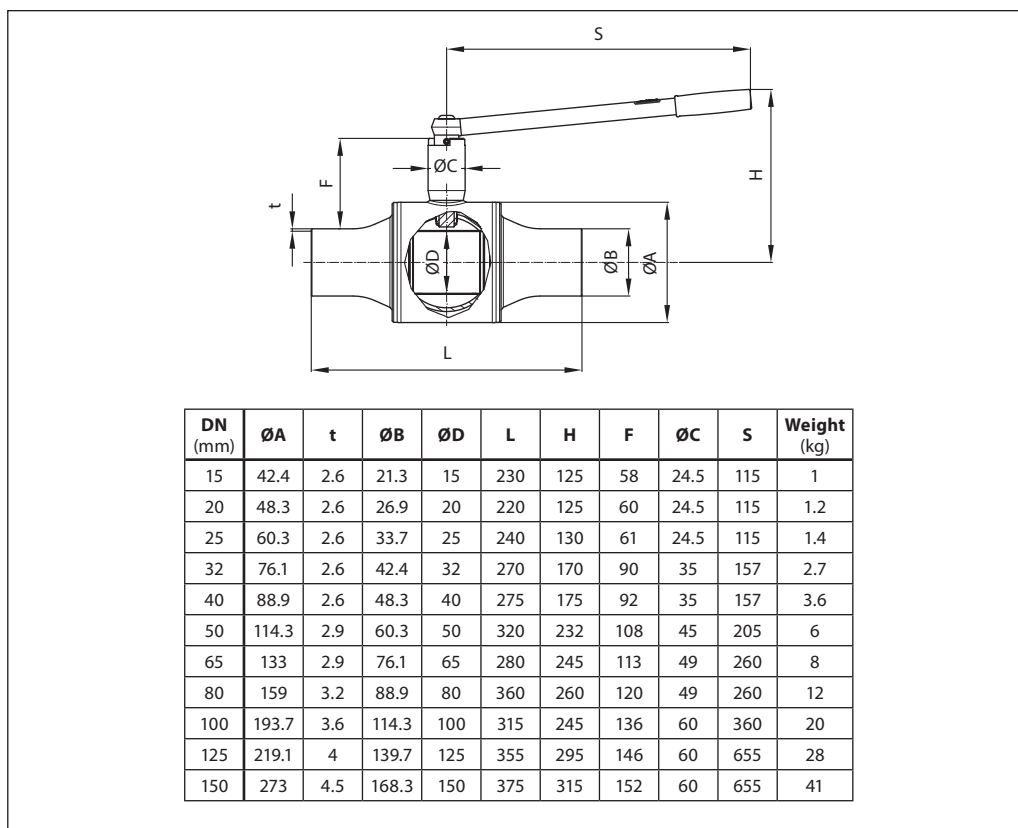
PN 40, DN 15-50



Legend:

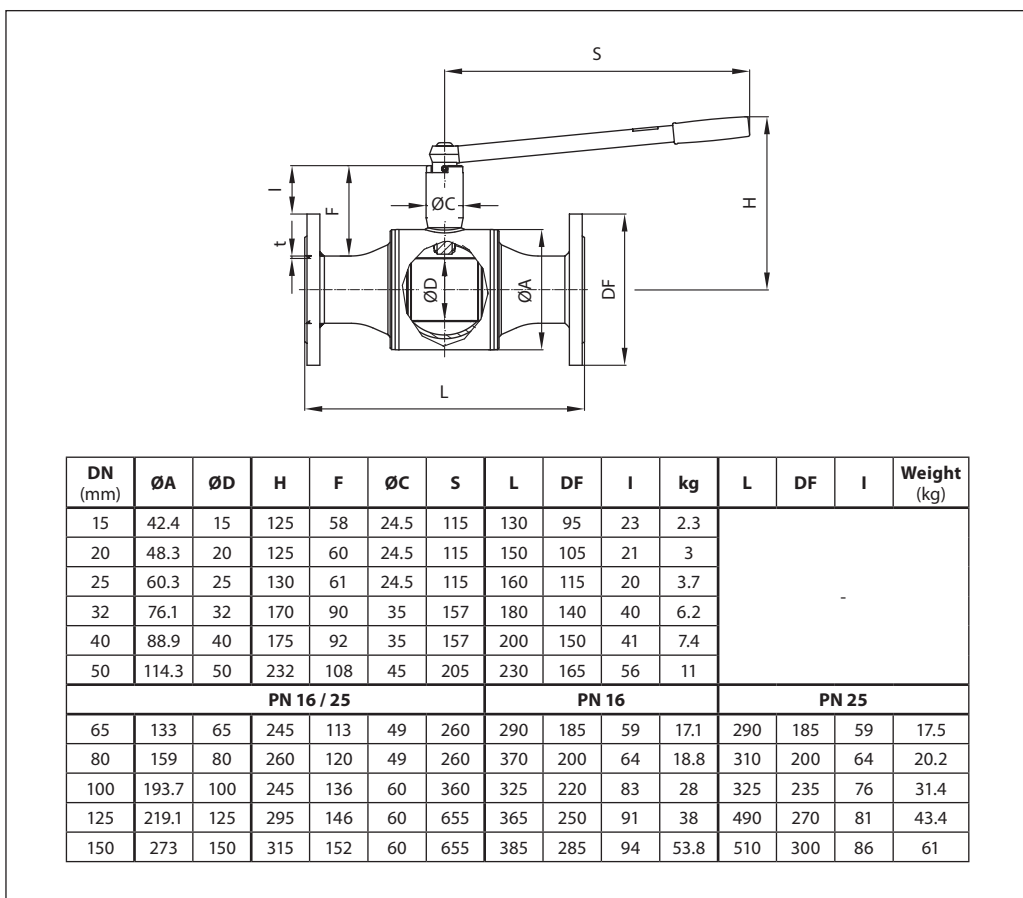
- Normal operating area (water)
- Steam area

Dimensions  
JIP WW welding

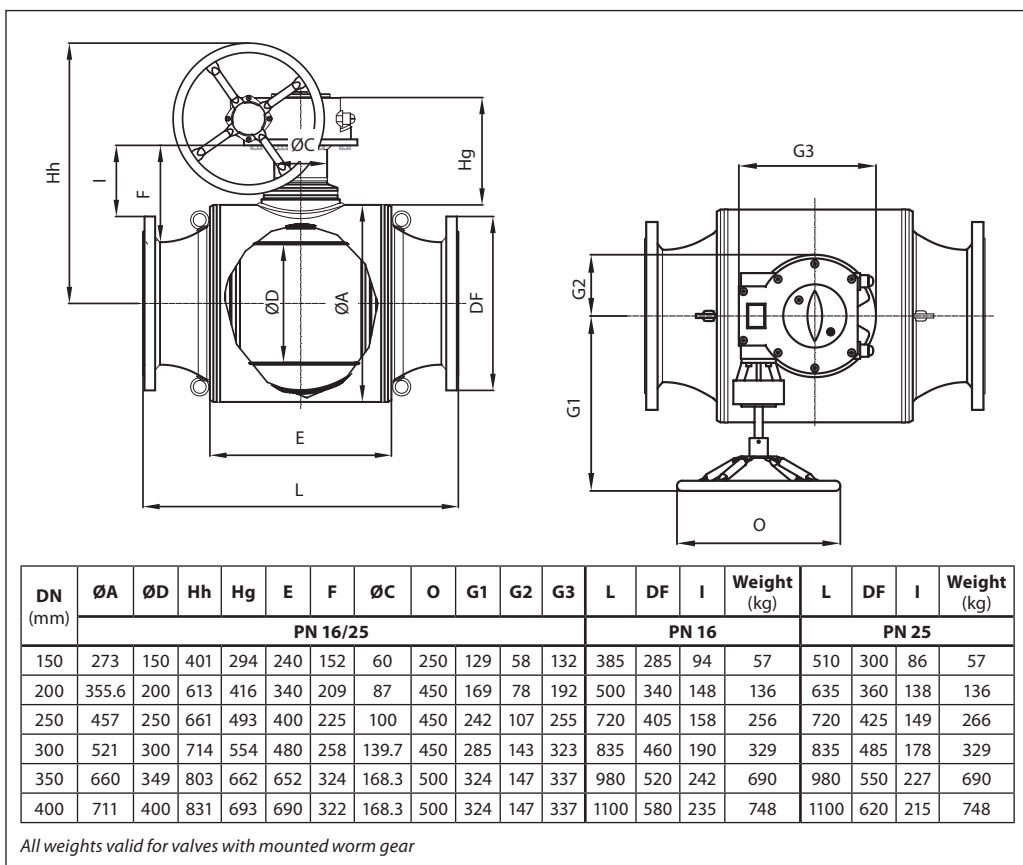




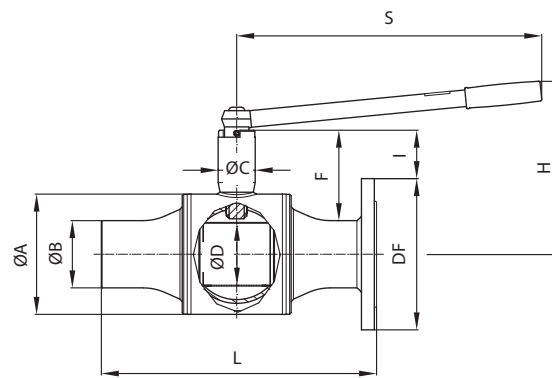
Dimensions (continuous)  
JIP FF flanged



Dimensions (continuous)  
JIP FF flanged

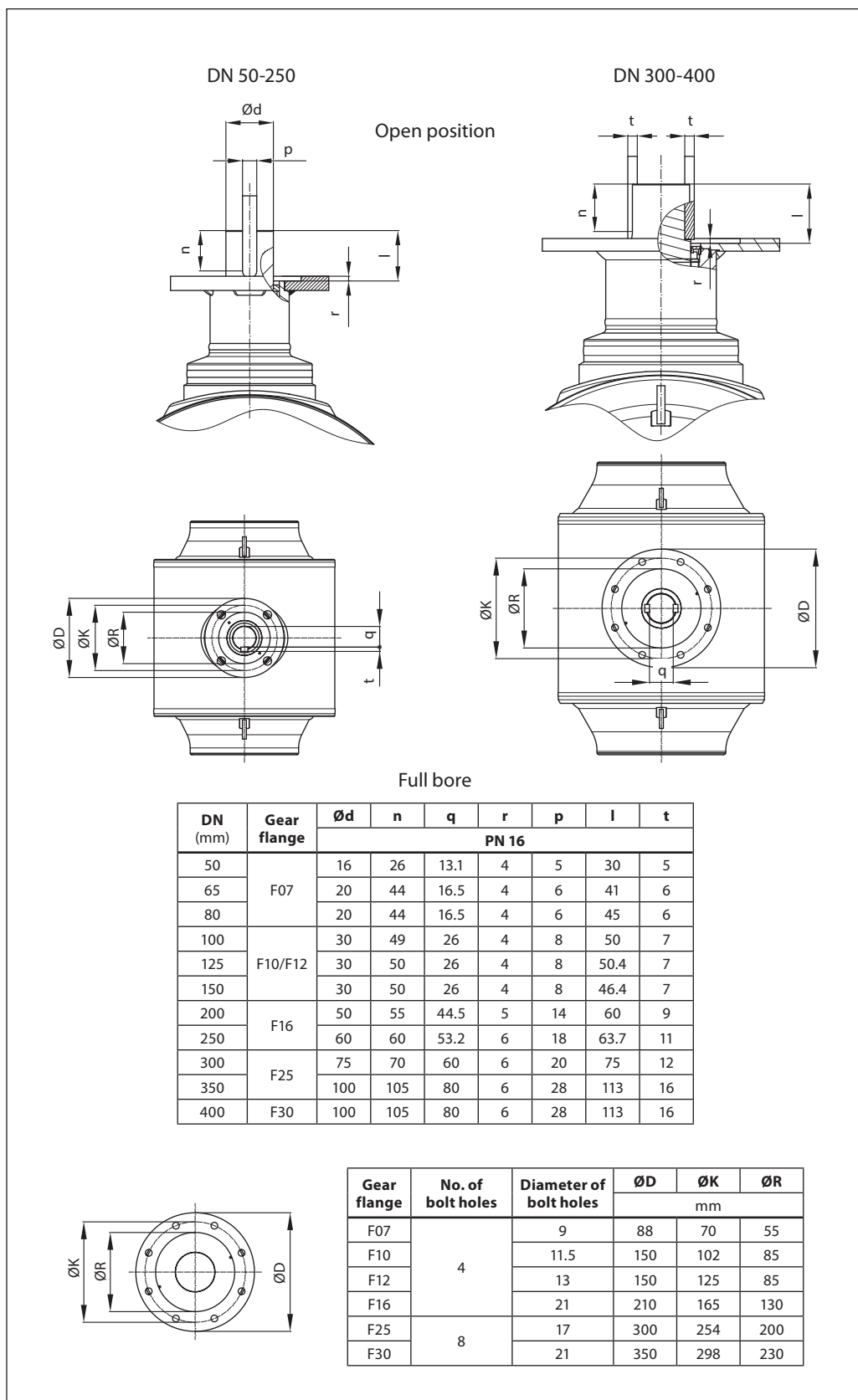


Dimensions (continuous)  
JIP FW flanged/welding



| DN (mm)           | ØA    | ØB  | H   | F   | ØC   | S   | L            | DF  | I  | kg   | L            | DF  | I  | Weight (kg) |
|-------------------|-------|-----|-----|-----|------|-----|--------------|-----|----|------|--------------|-----|----|-------------|
| 15                | 42.4  | 15  | 125 | 58  | 24.5 | 115 | 180          | 95  | 23 | 1.6  |              |     |    |             |
| 20                | 48.3  | 20  | 125 | 60  | 24.5 | 115 | 185          | 105 | 21 | 2.1  |              |     |    |             |
| 25                | 60.3  | 25  | 130 | 61  | 24.5 | 115 | 200          | 115 | 20 | 2.6  |              |     |    |             |
| 32                | 76.1  | 32  | 170 | 90  | 35   | 157 | 230          | 140 | 40 | 4.5  |              |     |    |             |
| 40                | 88.9  | 40  | 175 | 92  | 35   | 157 | 235          | 150 | 41 | 5.6  |              |     |    |             |
| 50                | 114.3 | 50  | 232 | 108 | 45   | 205 | 275          | 165 | 56 | 8.5  |              |     |    |             |
| <b>PN 16 / 25</b> |       |     |     |     |      |     | <b>PN 16</b> |     |    |      | <b>PN 25</b> |     |    |             |
| 65                | 133   | 65  | 245 | 113 | 49   | 260 | 285          | 185 | 59 | 10.7 | 285          | 185 | 59 | 10.7        |
| 80                | 159   | 80  | 260 | 120 | 49   | 260 | 365          | 200 | 64 | 15.8 | 335          | 200 | 64 | 15.9        |
| 100               | 193.7 | 100 | 245 | 136 | 60   | 360 | 320          | 220 | 83 | 22.5 | 320          | 235 | 76 | 24          |
| 125               | 219.1 | 125 | 295 | 146 | 60   | 655 | 360          | 250 | 91 | 32.5 | 360          | 270 | 81 | 35.2        |
| 150               | 273   | 150 | 315 | 152 | 60   | 655 | 380          | 285 | 94 | 47.1 | 380          | 300 | 86 | 50.9        |

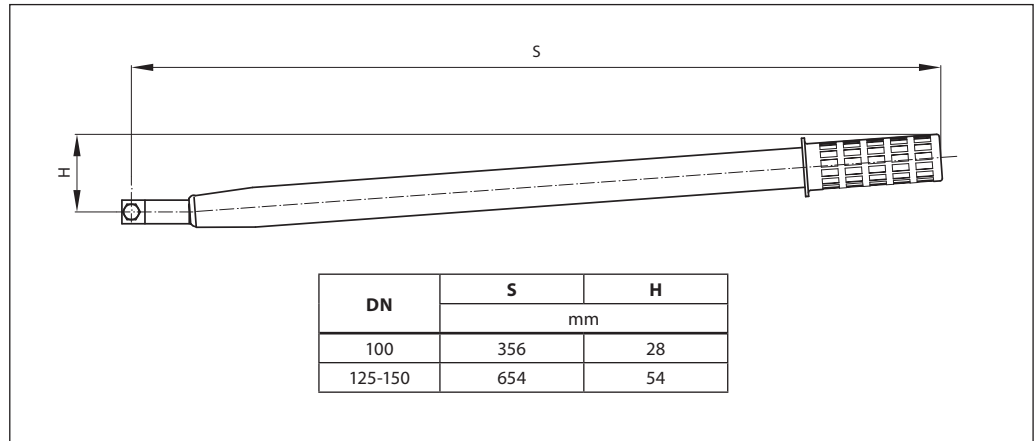
**Dimensions** (continuous)  
Valve top and gear flange



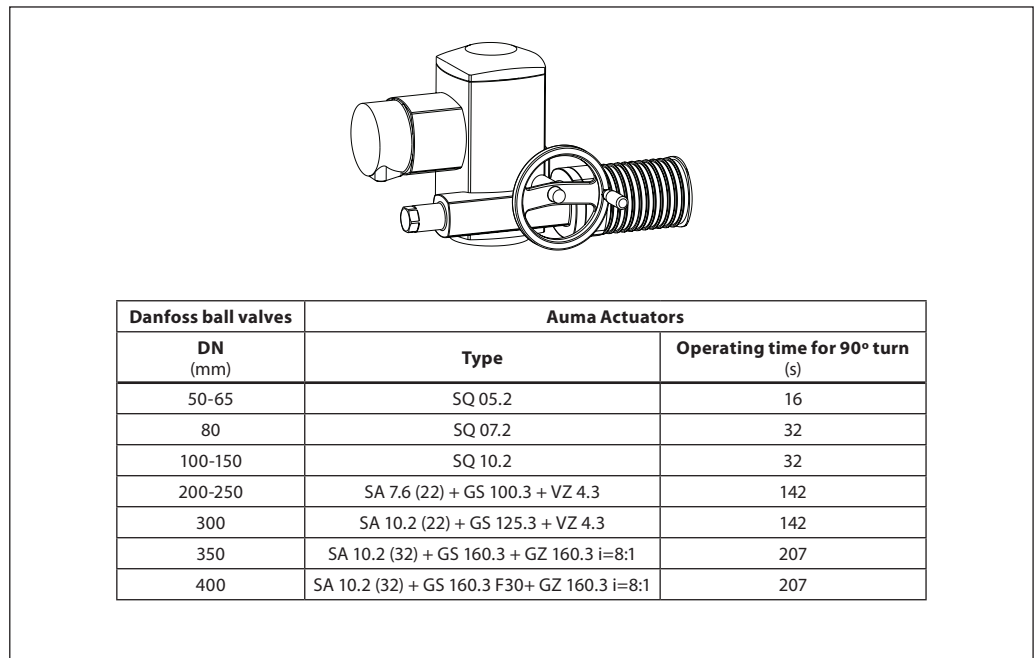
Data sheet

Full bore JIP™ ball valves (PN 16/25/40)

Dimensions (continuous)  
Handles



AUMA NORM electrical  
actuators for Danfoss  
ball valves



Features:

- 2 limit switches – opening / closing
- 2 torque switches - opening / closing
- Heater
- Blinker switch for operating phase
- Manual operation with hand wheel
- Thermo switch

Main Data:

- Nominal voltage:  
- 3×400 VAC, 50 Hz
- Grade of enclosure: IP 68
- Wiring diagram: TPA 00R1AA-000

The actuators can be equipped with various accessories.

Control and regulating unit AUMA Matic in the basis design can be supplied. For other mains voltages than 3×400 V/50 Hz or additional questions please contact us.

When commissioning and under certain problematic system conditions, it can be necessary to choose slower actuators to avoid water hammering and oscillations.

Danfoss A/S

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