

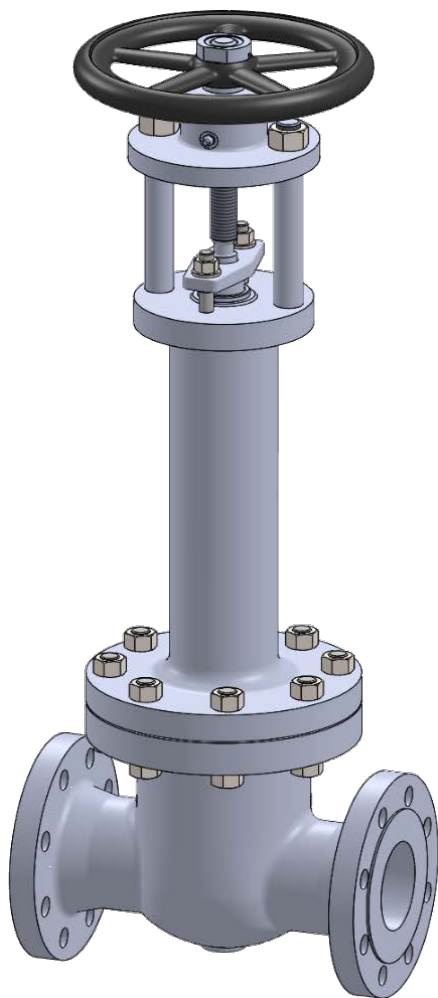


**PHÖNIX**

**STRACK**

**DAUME**  
REGELARMATUREN

**SIP** Solent & Pratt  
Phönix Ltd



# Gate Valve Type 834 PN 160

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**Model 834**

Superlong Protected Bellows

**Applications & Design Features**

**Applications**

Model 834 is designed for critical service applications involving lethal, toxic, corrosive, inflammable, volatile, radiating, or expensive fluids. Common applications are refineries as well as chemical plants to eliminate constant emissions monitoring involved with conventional packed gland valves.

The most common applications are:

- Benzene
- Ammonia
- Ethylene
- Dry Chlorine (Cl<sub>2</sub>)
- Fuel / petrol
- heat transfer fluid application (steam, hot oil, etc.) and
- fluids of similar nature

The unique valve design guarantees reliable and excellent protection against leaks or fugitive emissions. The stem seal requires virtually no maintenance due to leak free weld connections of the bellows with bonnet and stem. Constant valve monitoring and re-adjustment of the packing is eliminated. In the unlikely event of a bellows failure the backup packing guarantees safe valve performance until the next scheduled shutdown.

**Design Features**

**Bellows and Packing**

- bellows protected in extended bonnet against direct impingement from product flow
- multiple walls and hydroformed bellows
- large sizes with multiple stage, telescopic bellows assembly for long cycle life

**Stem**

- non-rotating stem prevents bellows torsion
- back seat for added safety
- guided stem on top and bottom

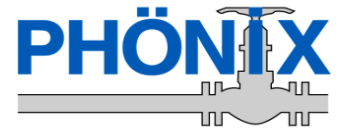
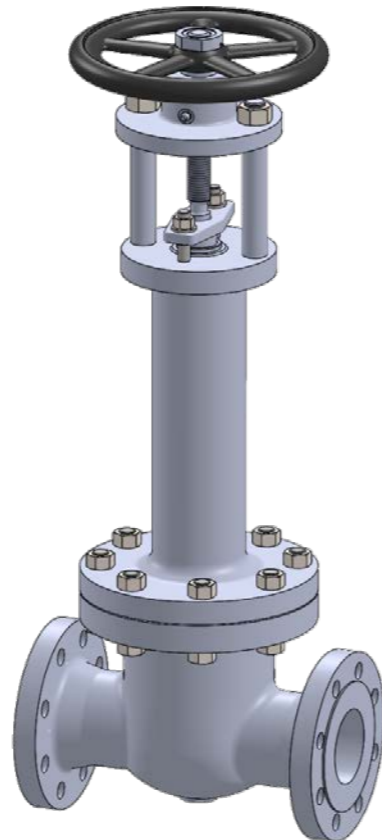
**Body and Bonnet**

- full-port bodies
- bolted body-bonnet joint for ease of maintenance and quick servicablilty, seal welded design optional
- body bonnet joint gasket is fully confined to prevent gasket flow or blowout

**Seats**

- solid hardfacings for outstanding corrosion and wear resistance
- flexible, solid, or split wedge design
- replaceable wedge for inexpensive maintenance

**= zero emissions, zero seat leakage, low maintenance**



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**Standard Materials of Construction**

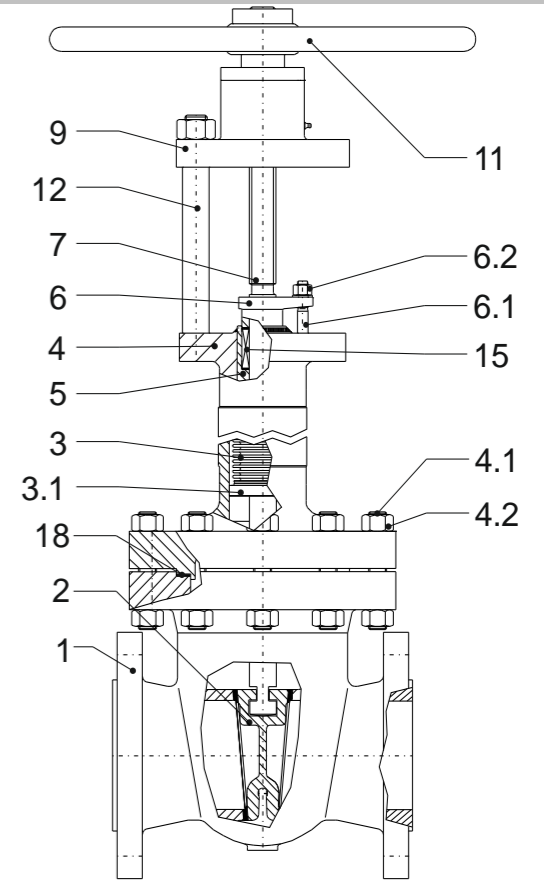
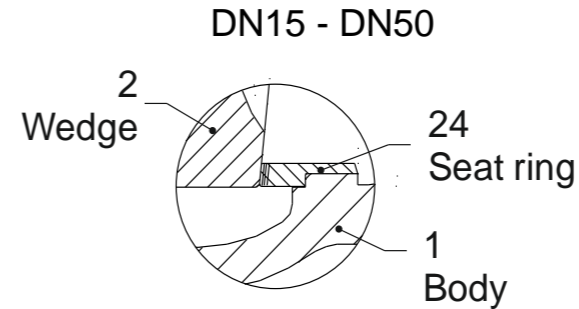
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**Options**

Other materials per customer requirements are available!

**Notes**

Phönix reserves the right to change product design and specification without notice!



**Materials**

| Item | Part Name         | Carbon steel<br>Model 834C<br>up to 450°C | low temp. Carbon steel<br>Model 834T<br>-50°C up to 300°C | Stainless steel<br>Model 834V<br>-200°C up to 400°C |
|------|-------------------|---|---|---|
| 1    | Body              | 1.0460 / 1.0619                           | 1.0566 / 1.6220 / 1.1138                                  | 1.4404 / 1.4408                                     |
|      | Seat overlay      | 1.4370** (≈ 200HRB)                       | 1.4370** (≈ 200HRB)                                       | like body** (≈ 200HRB)                              |
| 2    | Disc              | 1.4027                                    | 1.4408  | 1.4408  |
|      | Overlay           | 1.0619 with overlay                       | 1.6220  |   |
|      |                   | 1.4009 ** (≈ 300HRB)                      | Stellite 6 (≈ 42HRC)                                      | Stellite 6 (≈ 42HRC)                                |
| 3    | Bellows           | 1.4571                                    | 1.4571  | 1.4571  |
| 3.1  | Guide ring        | 1.4571                                    | 1.4571  | 1.4571  |
| 4    | Bonnet            | 1.0460 / 1.0619                           | 1.0566 / 1.6220 / 1.1138                                  | 1.4404 / 1.4408                                     |
| 4.1  | Stud bolt         | 1.7709                                    | A4-70   | A4-70   |
| 4.2  | Hex. nut          | 1.7218                                    | A4-70   | A4-70   |
| 5    | Stuffing box body | 1.4571                                    | 1.4571  | 1.4571  |
| 6    | Gland follower    | 1.0619                                    | 1.5638  | 1.4408  |
| 6.1  | Stud bolt         | Steel 5.6                                 | A4-70   | A4-70   |
| 6.2  | Hex. nut          | Steel 5                                   | A4-70   | A4-70   |
| 7    | Lower stem        | 1.4571                                    | 1.4571  | 1.4571  |
| 9    | Bridge            | 1.0460                                    | 1.0460  | 1.0460  |
| 11   | Handwheel         | Cast iron                                 | Cast iron   | Cast iron   |
| 12   | Pillar            | 1.0501                                    | 1.4057  | 1.4057  |
| 15   | Packing           | Graphite                                  | PTFE-silk *   | Graphite  |
| 18   | Gasket            | Grooved SS / graphite                     | Grooved SS / graphite                                     | Grooved SS / graphite                               |
| 24   | Seat              | 1.4571                                    | 1.4571  | 1.4571  |
|      | Overlay           | **  | **  | **  |

\* 220°C Packing of pure graphite

\*\* Stellite or Antinit Dur 300 on request, Stellite 6 (42HRC) or Stellite 21 (32HRC)



Model 834

Superlong Protected Bellows

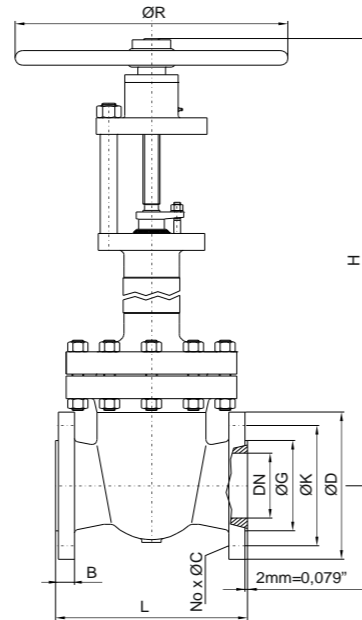
PN160 Sizes DN15 - DN80

Options

- Other customer specific designs on request

Notes

- Design acc. PED 2014/68/EU and harmonized standards
- Marking acc. to EN 19, AD-A4, PED 2014/68/EU, CE
- Standard tests acc. to DIN EN 12266, ISO 5208
- Preservation acc. to manufacturer standard
- Connections:
  - Flanges acc. to DIN EN 1092-1
  - Butt Weld Ends acc. to DIN EN 12627
  - Socket Weld Ends acc. to DIN EN 12760
- F-T-F Dimensions:
  - Flanges acc. to DIN EN 558-1
  - Butt Weld Ends acc. to DIN EN 12982
  - Socket Weld Ends acc. to manufacturer standard



Dimensions & Weights & Flow Coefficients

| DN | Unit | L     | Lift | closed<br>H | ØR    | Flange facing type B1 |      |          |      |      | Weight  | Kv [m³/h]      |  |
|----|------|-------|------|-------------|-------|-----------------------|------|----------|------|------|---------|----------------|--|
|    |      |       |      |             |       | ØG                    | ØK   | No x ØC  | ØD   | B    |         | cv [USGal/min] |  |
| 15 | [mm] | 210   | 25   | 360         | 150   | 45                    | 75   | 4 x 14   | 105  | 20   | 10 kg   | 18             |  |
|    | [in] | 8.27  | 0.98 | 14.17       | 5.91  | 1.77                  | 2.95 | 4 x 0.55 | 4.13 | 0.79 | 22 lbs  | 20.93          |  |
| 20 | [mm] | 230   | 25   | 360         | 150   | on request            |      |          |      |      | 10 kg   | 32             |  |
|    | [in] | 9.06  | 0.98 | 14.17       | 5.91  |                       |      |          |      |      | 22 lbs  | 37             |  |
| 25 | [mm] | 230   | 27   | 360         | 150   | 68                    | 100  | 4 x 18   | 140  | 24   | 11 kg   | 50             |  |
|    | [in] | 9.06  | 1.06 | 14.17       | 5.91  | 2.68                  | 3.94 | 4 x 0.71 | 5.51 | 0.94 | 24 lbs  | 58             |  |
| 40 | [mm] | 260   | 54   | 615         | 200   | 88                    | 125  | 4 x 22   | 170  | 28   | 19 kg   | 127            |  |
|    | [in] | 10.24 | 2.13 | 24.21       | 7.87  | 3.46                  | 4.92 | 4 x 0.87 | 6.69 | 1.10 | 42 lbs  | 148            |  |
| 50 | [mm] | 300   | 54   | 615         | 200   | 102                   | 145  | 4 x 26   | 195  | 30   | 23 kg   | 199            |  |
|    | [in] | 11.81 | 2.13 | 24.21       | 7.87  | 4.02                  | 5.71 | 4 x 1.02 | 7.68 | 1.18 | 51 lbs  | 231            |  |
| 80 | [mm] | 310   | 93   | 900         | 400   | 138                   | 180  | 8 x 26   | 230  | 36   | 75 kg   | 511            |  |
|    | [in] | 12.20 | 3.66 | 35.43       | 15.75 | 5.43                  | 7.09 | 8 x 1.02 | 9.06 | 1.42 | 165 lbs | 594            |  |



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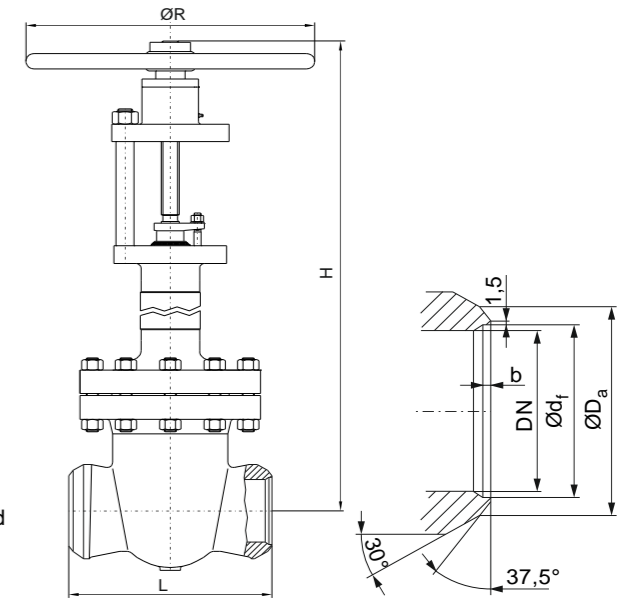
PN160 Sizes DN15 - DN80

Options

- Other customer specific designs on request

Notes

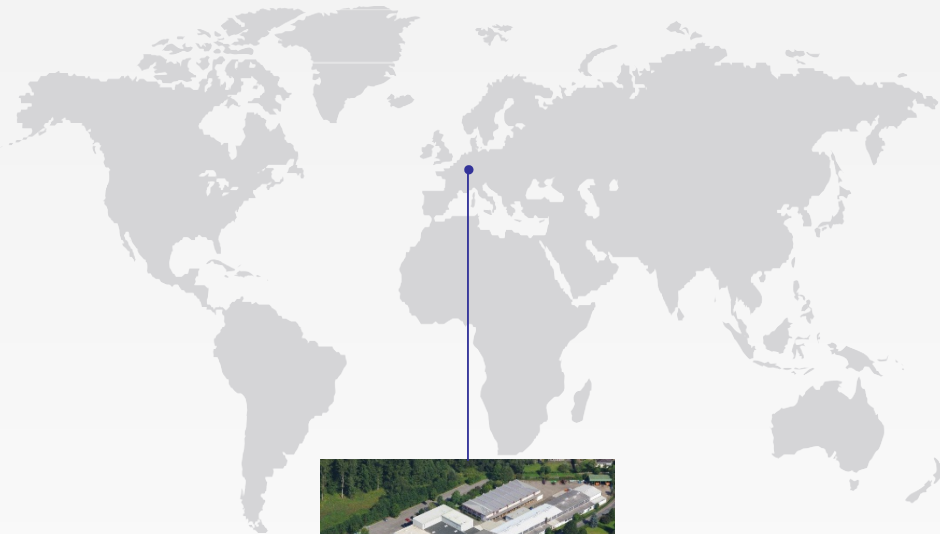
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- F-T-F Dimensions:
  - Flanges acc. to DIN EN 558-1
  - Butt Weld Ends acc. to DIN EN 12982
  - Socket Weld Ends acc. to manufacturer standard



Dimensions & Weights & Flow Coefficients

| DN | Unit | L     | Lift | closed<br>H | ØR    | Butt Weld Ends  |                 |      |  | for pipe     | Weight   | Kv [m³/h]      |  |
|----|------|-------|------|-------------|-------|-----------------|-----------------|------|--|--------------|----------|----------------|--|
|    |      |       |      |             |       | ØD <sub>a</sub> | Ød <sub>i</sub> | b    |  |              |          | cv [USGal/min] |  |
| 15 | [mm] | 210   | 25   | 360         | 150   | 22              | 17              | 3    |  | Ø21.3 x 2.0  | 8 kg     | 18             |  |
|    | [in] | 8.27  | 0.98 | 14.17       | 5.91  | 0.87            | 0.67            | 0.12 |  | Ø0.84 x 0.08 | 17.6 lbs | 20.93          |  |
| 20 | [mm] | 230   | 25   | 360         | 150   | 28              | on request      |      |  |              | 7 kg     | 32             |  |
|    | [in] | 9.06  | 0.98 | 14.17       | 5.91  | 1.10            |                 |      |  |              | 15.4 lbs | 37             |  |
| 25 | [mm] | 230   | 27   | 360         | 150   | 35              | 27              | 5    |  | Ø33.7 x 3.2  | 7 kg     | 50             |  |
|    | [in] | 9.06  | 1.06 | 14.17       | 5.91  | 1.38            | 1.06            | 0.20 |  | Ø1.33 x 0.13 | 15.4 lbs | 58             |  |
| 40 | [mm] | 260   | 54   | 615         | 200   | 50              | 41              | 6    |  | Ø48.3 x 3.6  | 11 kg    | 127            |  |
|    | [in] | 10.24 | 2.13 | 24.21       | 7.87  | 1.97            | 1.61            | 0.24 |  | Ø1.90 x 0.14 | 24 lbs   | 148            |  |
| 50 | [mm] | 260   | 54   | 615         | 200   | 62              | 53.5            | 5    |  | Ø60.3 x 3.2  | 12 kg    | 199            |  |
|    | [in] | 10.24 | 2.13 | 24.21       | 7.87  | 2.44            | 2.11            | 0.20 |  | Ø2.37 x 0.13 | 26 lbs   | 231            |  |
| 80 | [mm] | 300   | 93   | 900         | 400   | 91              | 76              | 10   |  | Ø88.9 x 6.3  | 59 kg    | 511            |  |
|    | [in] | 11.81 | 3.66 | 35.43       | 15.75 | 3.58            | 2.99            | 0.39 |  | Ø3.50 x 0.25 | 130 lbs  | 594            |  |

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Printed in Germany  
09/22-R0