

# → Series 682

682

Pressure reducing valves  
made of gunmetal  
with flange connections



## ■ MATERIAL



## ■ SPECIFICATION



DN 15 to DN 100 – 20°C to + 120°C

**Inlet pressure:**  
up to 40 bar  
**Outlet pressure:**  
0,5 to 15 bar  
depending on version

## ■ SUITABLE FOR

|                        |                         |  |
|------------------------|-------------------------|--|
| Liquids                | neutral and non-neutral |  |
| Air, gases and vapours | neutral and non-neutral |  |
| Potable water cold     | up to 40°C              |  |
| Potable water hot      | up to 95°C              |  |

## ■ EXAMPLES OF USE

For the protection of:

- domestic water supply systems
- commercial and industrial plants

against an excess supply pressure.  
Pressure reducers are used, if within a piping system despite of varying pressures on the inlet side a certain pressure must not be exceeded on the outlet side.

- potable water supply according to DIN 1988
- process water supply in industrial- and building technology applications
- fire-fighting equipment and sprinkler systems
- shipbuilding industry and offshore plants

## ■ APPROVALS

DIN-DVGW type examination (up to 80°C)

Type approval ACS

Type approval WRAS (up to 85°C)

Type approval PZH

TR ZU 032/2013 - TR ZU 010/2011

Type approval ÜA (R-15.2.4-21-17231 Land Salzburg)

### Requirements

DIN DVGW guidelines  
DIN EN 1567  
DIN 1988

DIN EN ISO 3822  
DGR 2014/68/EU

### Classification society

DNV  
Lloyd's Register EMEA  
American Bureau of Shipping  
Bureau Veritas  
Registro Italiano Navale

DNV  
LR EMEA  
ABS  
BV  
RINA

## ■ MATERIALS

| Component           | Material                               | DIN EN | ASME      |
|---------------------|----------------------------------------|--------|-----------|
| Inlet body          | Gunmetal                               | CC499K | CC499K    |
| Outlet body         | Gunmetal                               | CC499K | CC499K    |
| Inner parts, wetted | Gunmetal                               | CC499K | CC499K    |
|                     | Stainless Steel                        | 1.4404 | 316 L     |
| Spring              | Spring steel with anti-rust protection | 1.1200 | ASTM A228 |
| Strainer            | Stainless Steel                        | 1.4404 | 316 L     |

|                                                                                                                                               |                                   |                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| m                                                                                                                                             | with diaphragm                    | High-quality, heat-resistant moulded elastomere, fabric-reinforced diaphragm. Pressure adjustment by means of non-rising spindle. Valve insert with fully balanced seat, in sizes DN 15 up to DN 50 made of gunmetal and stainless steel, from DN65 up to DN100 made of stainless steel. |
| k                                                                                                                                             | with piston                       | Stainless steel piston (only for DN 100)<br>Adjustment by means of non-rising spindle. Balanced single seat valve.                                                                                                                                                                       |
| Complete valve cartridge SP/HP (order code: 682 Insert-DN...-seal) available as replacement part can be exchanged without removing the valve. |                                   |                                                                                                                                                                                                                                                                                          |
| Complete valve cartridge LP (order code: 682 LP Insert-DN...-seal) available as replacement part can be exchanged without removing the valve. |                                   |                                                                                                                                                                                                                                                                                          |
| Built-in dirt trap made of stainless steel.                                                                                                   |                                   |                                                                                                                                                                                                                                                                                          |
| Mesh size:                                                                                                                                    | DN 15 to DN 32<br>DN 40 to DN 100 | 0,60 mm<br>0,75 mm                                                                                                                                                                                                                                                                       |

■ MEDIUM

|    |                    |                                                                                                                                                                                                                     |
|----|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GF | gaseous and liquid | for water, neutral and non-sticking liquids, compressed air and neutral gases; optionally with FPM elastomere seals for non-neutral media i.e. oils, fuels, oil-laden compressed air, etc. Not suitable with steam. |
|----|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

■ TYPE OF LIFTING MECHANISM

|   |                        |
|---|------------------------|
| 0 | without lifting device |
|---|------------------------|

■ OUTLET PRESSURE RANGES

|    |                                                           |                                                           |                                                                        |
|----|-----------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|
| SP | Standard version                                          | Inlet pressure: up to 16 bar (PN 16)<br>or 40 bar (PN 40) | Outlet pressure: from 1 to 8 bar                                       |
| HP | High-pressure version<br>(not for DN 65 and DN 80)        | Inlet pressure: up to 16 bar (PN 16)<br>or 40 bar (PN 40) | Outlet pressure: from 5 to 15 bar<br>(5 to 13 bar, DN 100 with piston) |
| LP | Low-pressure version<br>(not for DN 65, DN 80 and DN 100) | Inlet pressure: up to 16 bar (PN 16)<br>or 25 bar (PN 40) | Outlet pressure: from 0,5 to 2 bar                                     |

■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

|                     |       |       |       |       |       |       |       |       |         |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| Nominal diameter DN | 15    | 20    | 25    | 32    | 40    | 50    | 65    | 80    | 100     |
| Inlet / Outlet      | 15/15 | 20/20 | 25/25 | 32/32 | 40/40 | 50/50 | 65/65 | 80/80 | 100/100 |
|                     | ■     | ■     | ■     | ■     | ■     | ■     | ■     | ■     | ■       |

■ TYPE OF CONNECTION INLET / OUTLET FLANGE CONNECTIONS

|               |                                                                                                                       |
|---------------|-----------------------------------------------------------------------------------------------------------------------|
| FCD2A / FCD2A | Flange connection DIN EN 1092-3 PN16 sealing strip form B / Flange connection DIN EN 1092-3 PN16 sealing strip form B |
| FCD4A / FCD4A | Flange connection DIN EN 1092-3 PN40 sealing strip form B / Flange connection DIN EN 1092-3 PN40 sealing strip form B |

■ SEALS

|      |                          |                                                                                        |                                                                                              |
|------|--------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| EPDM | Ethylene propylene diene | Elastomere moulded diaphragm and seals approvals according to drinking water directive | –20°C to +120°C (up to 8 bar outlet pressure)<br>–20°C to +95°C (from 8 bar outlet pressure) |
| FKM  | Fluorocarbon             | Elastomere moulded diaphragm and seals                                                 | –10°C to +120°C (up to 8 bar outlet pressure)<br>–10°C to +95°C (from 8 bar outlet pressure) |

## ■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

| Series 682: Connection, installation dimensions, ranges of adjustment |                   |                            |                            |                            |                            |                            |                            |             |             |             |                         |
|-----------------------------------------------------------------------|-------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------|-------------|-------------|-------------------------|
| Connection                                                            |                   | DN15                       | DN20                       | DN25                       | DN32                       | DN40                       | DN50                       | DN65        | DN65        | DN80        | DN100                   |
|                                                                       |                   | PN16 / PN40                | PN16 / PN40                | PN16 / PN40                | PN16 / PN40                | PN16 / PN40                | PN16 / PN40                | PN16        | PN40        | PN16 / PN40 | PN16                    |
| Inlet pressure SP, HP up to                                           | bar               | 16 / 40                    | 16 / 40                    | 16 / 40                    | 16 / 40                    | 16 / 40                    | 16 / 40                    | 16          | 40          | 16 / 40     | 16                      |
| Inlet pressure LP up to                                               | bar               | 16 / 25                    | 16 / 25                    | 16 / 25                    | 16 / 25                    | 16 / 25                    | 16 / 25                    |             |             |             |                         |
| Outlet pressure                                                       | bar               | 0,5 – 2<br>1 – 8<br>5 – 15 | 0,5 – 2<br>1 – 8<br>5 – 15 | 0,5 – 2<br>1 – 8<br>5 – 15 | 0,5 – 2<br>1 – 8<br>5 – 15 | 0,5 – 2<br>1 – 8<br>5 – 15 | 0,5 – 2<br>1 – 8<br>5 – 15 | 1 – 8       | 1 – 8       | 1 – 8       | 1 – 8<br>5 – 13         |
| Installation dimensions in mm                                         | D                 | 95                         | 105                        | 115                        | 140                        | 150                        | 165                        | 185         | 185         | 200         | 220                     |
|                                                                       | L                 | 130                        | 150                        | 160                        | 180                        | 200                        | 230                        | 290         | 290         | 310         | 350                     |
|                                                                       | H (H1)            | 102 (128 <sup>1</sup> )    | 130 (150 <sup>1</sup> )    | 130 (150 <sup>1</sup> )    | 130 (150 <sup>1</sup> )    | 165 (185 <sup>1</sup> )    | 165 (185 <sup>1</sup> )    | 235         | 235         | 235         | 320 (340 <sup>3</sup> ) |
|                                                                       | H2 (H3)           | 124 (150 <sup>2</sup> )    | 161 (181 <sup>2</sup> )    | 161 (181 <sup>2</sup> )    | 161 (181 <sup>2</sup> )    | 198 (218 <sup>2</sup> )    | 198 (218 <sup>2</sup> )    |             |             |             |                         |
|                                                                       | h                 | 46                         | 50                         | 55                         | 68                         | 73                         | 80                         | 89          | 89          | 96          | 112                     |
|                                                                       | K / nxd           | 65 / 4xM12                 | 75 / 4xM12                 | 85 / 4xM12                 | 100 / 4xM16                | 110 / 4xM16                | 125 / 4xM16                | 145 / 4xM16 | 145 / 8xM16 | 160 / 8xM16 | 180 / 8xM16             |
|                                                                       | G1                |                            |                            |                            |                            |                            |                            | 1/4" radial | 1/4" radial | 1/4" radial | 1/4" axial              |
| Pressure gauge connections Inlet pressure                             | G1                |                            |                            |                            |                            |                            |                            | 1/4" radial | 1/4" radial | 1/4" radial | 1/4" axial              |
| Pressure gauge connections Outlet pressure                            | G1                | 1/4" axial                 | 1/4" axial                 | 1/4" axial                 | 1/4" axial                 | 1/4" axial                 | 1/4" axial                 | 1/4" radial | 1/4" radial | 1/4" radial | 1/4" axial              |
| Weight                                                                | kg                | 2,8 (3,1 <sup>1</sup> )    | 4,2 (4,6 <sup>1</sup> )    | 4,7 (5,1 <sup>1</sup> )    | 5,9 (6,3 <sup>1</sup> )    | 8,6 (9,3 <sup>1</sup> )    | 10,5 (11,2 <sup>1</sup> )  | 20          | 20          | 22          | 40 (43 <sup>3</sup> )   |
| Coefficient of flow K <sub>vs</sub> <sup>4</sup>                      | m <sup>3</sup> /h | 3                          | 5,8                        | 6,7                        | 7,6                        | 12,5                       | 15                         | 25          | 25          | 26          | 80                      |

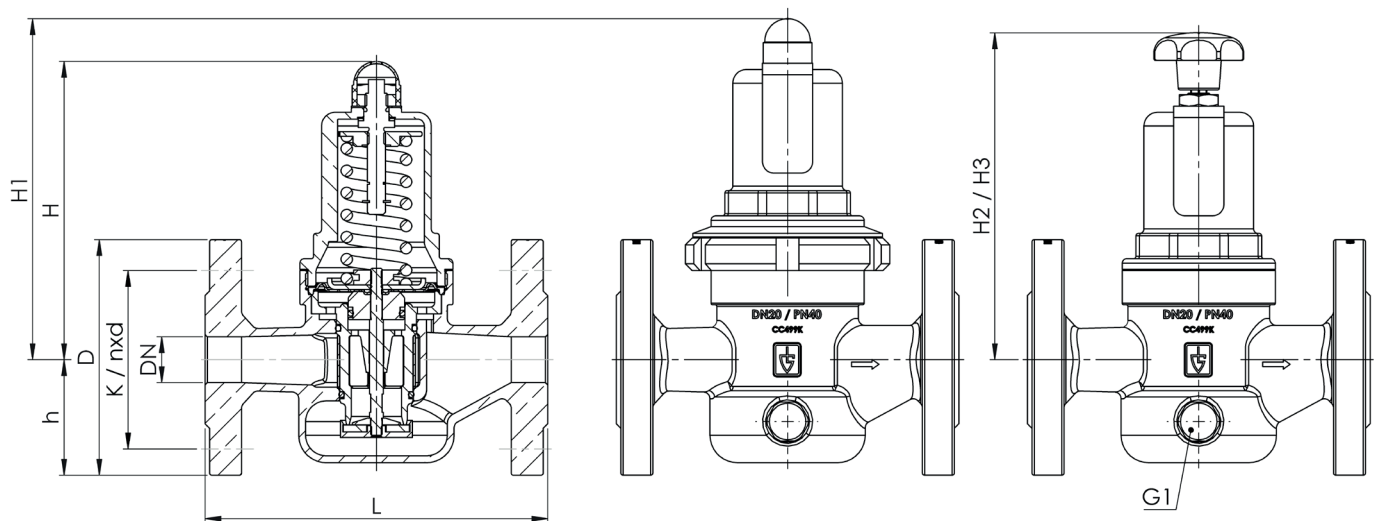
<sup>1</sup>for type 682mGFO-LP

<sup>2</sup>for type 682mGFO-LP S15

<sup>3</sup>for type 682kGFO-HP

<sup>4</sup>The K<sub>vs</sub> value was determined according to DIN EN 60534-2-3. Instructions on how to determine size and capacity are to be found under section 2.

## ■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



| Series | Valve version | Medium | Lifting device | Outlet pressure | Nominal diameter DN | Connection type |        | Connection size |        | Seal | Options | Optional: fixed setting | Quantity |
|--------|---------------|--------|----------------|-----------------|---------------------|-----------------|--------|-----------------|--------|------|---------|-------------------------|----------|
|        |               |        |                |                 |                     | Inlet           | Outlet | Inlet           | Outlet |      |         |                         |          |
| 682    | m             | GF     | 0              | HP              | 50                  | FCD4A           | FCD4A  | 50              | 50     | EPDM |         |                         | 5        |
| 682    | k             | GF     | 0              | SP              | 100                 | FCD2A           | FCD2A  | 100             | 100    | FKM  | S71     | 7                       | 2        |
| 682    |               | GF     | 0              |                 |                     |                 |        |                 |        |      |         |                         |          |
| 682    |               | GF     | 0              |                 |                     |                 |        |                 |        |      |         |                         |          |

■ PROPERTIES

|     |                                                                                              |                          |  |                          |
|-----|----------------------------------------------------------------------------------------------|--------------------------|--|--------------------------|
| S15 | Hand wheel (plastic) for tool-free setting of setpressure <sup>1</sup>                       | <input type="checkbox"/> |  | <input type="checkbox"/> |
| S17 | Supplied with pressure gauges suitable for the valve type (not included with the GOX option) | <input type="checkbox"/> |  | <input type="checkbox"/> |
| S71 | Preliminary setup for protection against manipulation of the preset pressure (seal)          | <input type="checkbox"/> |  | <input type="checkbox"/> |

<sup>1</sup>For nominal diameters DN15 to DN50 outlet pressure ranges LP and SP

■ OPTIONS

|     |                                                                                                                                                                                                                |                          |     |                                   |                          |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----|-----------------------------------|--------------------------|
| GOX | Especially for gaseous O2 applications by employment of specific materials including oil- and grease free production process, in nominal sizes DN15 - DN50   Inlet pressure max. 30 bar, temperature max. 60°C | <input type="checkbox"/> | P03 | Galvanically nickel-plated finish | <input type="checkbox"/> |
| P01 | Oil- and grease-free production                                                                                                                                                                                | <input type="checkbox"/> | FE  | Setting and sealing               | <input type="checkbox"/> |
| P02 | Chemically nickel-plated finish                                                                                                                                                                                | <input type="checkbox"/> |     |                                   | <input type="checkbox"/> |

■ CERTIFICATES / APPROVALS

|     |                                                                                     |                          |     |                                                                                                                            |                          |
|-----|-------------------------------------------------------------------------------------|--------------------------|-----|----------------------------------------------------------------------------------------------------------------------------|--------------------------|
| C01 | Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2)                                 | <input type="checkbox"/> | C05 | Sealing material<br>Manufacturer certification (FDA, USP 3, 3-A,...),<br>Please indicate description of certificate: ..... | <input type="checkbox"/> |
| C02 | Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1)                                    | <input type="checkbox"/> | C06 | ATEX evaluation acc. to 2014/34/EU                                                                                         | <input type="checkbox"/> |
| C03 | Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part) | <input type="checkbox"/> | C10 | Certificate of oil- and grease free production                                                                             | <input type="checkbox"/> |
| C04 | TÜV/DEKRA individual inspection acc. EN 10204 3.2 (TÜV/DEKRA-APZ)                   | <input type="checkbox"/> | C11 | Certification of the production process especially for gaseous oxygen applications by employment of specific materials     | <input type="checkbox"/> |

■ ADMISSIONS / ACCREDITATIONS

|     |                                                                                          |                                     |     |                                                                                  |                          |
|-----|------------------------------------------------------------------------------------------|-------------------------------------|-----|----------------------------------------------------------------------------------|--------------------------|
| AA1 | EC Type examination acc. to Directive 2014/68/EU                                         | <input checked="" type="checkbox"/> | AK1 | Det Norske Veritas (DNV) type approval                                           | <input type="checkbox"/> |
| AA4 | EAC - certificate/declaration with passport for the valve and laser marking of the valve | <input type="checkbox"/>            | AK2 | Lloyd's Register (LR) type approval                                              | <input type="checkbox"/> |
| AB1 | Deutscher Verein des Gas- und Wasserfaches, DVGW type approval                           | <input type="checkbox"/>            | AK3 | American Bureau of Shipping (ABS) type approval                                  | <input type="checkbox"/> |
| AB2 | Water regulations and advisory scheme WRAS type approval                                 | <input type="checkbox"/>            | AK4 | Bureau Veritas (BV) type approval                                                | <input type="checkbox"/> |
| AB3 | Attestation de Conformité Sanitaire, ACS type approval                                   | <input type="checkbox"/>            | AK6 | Registro Italiano Navale (RINA) type approval                                    | <input type="checkbox"/> |
|     |                                                                                          | <input type="checkbox"/>            | AL  | Individual inspection by notified body inspector – (body to be indicated): ..... | <input type="checkbox"/> |

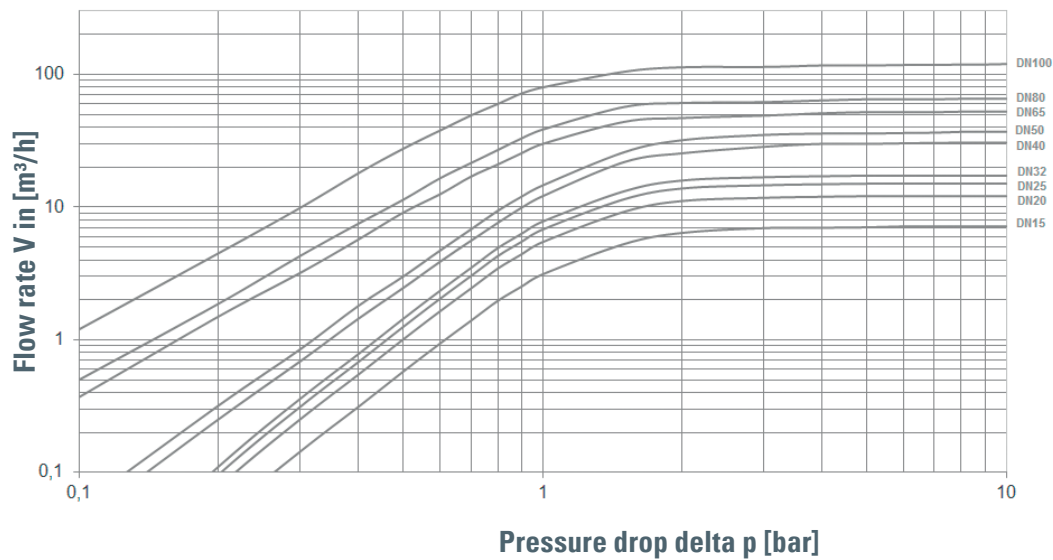
■ ENQUIRY

Copy and send to: [order@goetze.de](mailto:order@goetze.de).

Series 682:

Dimensioning by pressure loss on the outlet pressure side

Flow chart water



Dimensioning by flow velocity

For liquids:

With help of the chart you can determine the nominal diameter (DN) for a given flow volume  $V$  ( $\text{m}^3/\text{h}$ ). According to DVGW-guidelines (DIN 1988) a flow velocity of 2 m/s in domestic water supply systems should not be exceeded.

For compressed air and other gaseous media:

The usual flow velocity for compressed air is 10 - 20 m/s. For gaseous media the flow volume  $V$  should always be shown in actual cubic meters/hour. If the flow volume is given in standard cubic meters, these should be converted into actual cubic meters before using the diagram.

$$V (\text{m}^3/\text{h}) = \frac{V_{\text{Norm}} (\text{Nm}^3/\text{h})}{p_{\text{absolut}} (\text{bar})} = \frac{V_{\text{Norm}}}{p_0 + 1}$$

Actual cubic meters are based on the prevailing pressure of the medium on the outlet side of the pressure reducer.

