

Diaphragm Valve, Metal

Construction

The GEMÜ 620 pneumatically operated 2/2-way diaphragm valve has a low maintenance membrane actuator which can be controlled by inert gaseous media.

Features

- Suitable for inert and corrosive* liquid and gaseous media
- Insensitive to particulate media
- Valve body and diaphragm available in various materials and designs
- Versions according to ATEX on request

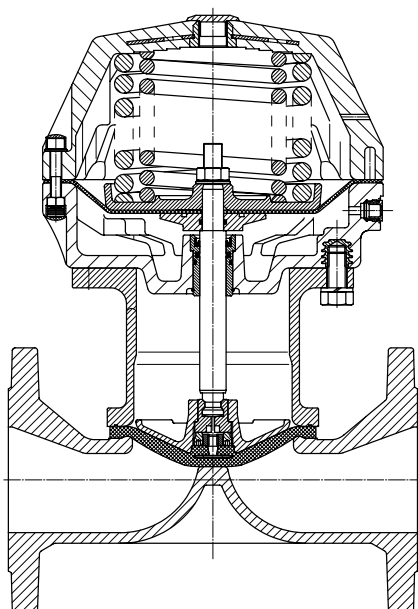
Advantages

- Optional flow direction, will seal in either flow direction up to full operating pressure
- Good flow capability
- Accessories:
 - Stroke limiter
 - Optical position indicator
 - Manual override (GEMÜ 1002, GEMÜ 1004)
 - Pilot valve with manual override (GEMÜ 0322 - 0326)
 - Electrical position indicator
 - Pneumatic or electro-pneumatic positioners

* see information on working medium on page 2



Sectional drawing



Technical data

Working medium

Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and diaphragm material.

Max. perm. temperature of working medium 150 °C
depending on medium, diaphragm and valve body material,
for more detailed information see our "Diaphragms" brochure.

Control medium

Inert gases

Max. perm. temperature of control medium 40 °C

Ambient conditions

Max. ambient temperature 60 °C

Filling volume

| | |
|-----------------|----------------------|
| Actuator size 0 | 0.15 dm ³ |
| Actuator size 1 | 0.35 dm ³ |
| Actuator size 2 | 1.10 dm ³ |
| Actuator size 3 | 2.5 dm ³ |
| Actuator size 4 | 6.8 dm ³ |

Operating pressure, Control pressure, Kv values

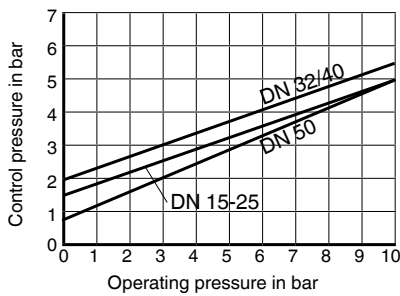
| | | Control function 1 | | | | | Kv value [m ³ /h] |
|-----|-----|-----------------------|--------------------------|-------|--|-----------------------------|---------------------------------|
| MG | DN | Actuator size Code | Operating pressure [bar] | | Control pressure for max. stroke [bar] | Weight with body [kg] | |
| | | | EPDM/FPM | PTFE | | | |
| 25 | 15 | 0/N | 0 - 10 | 0 - 6 | 5.5-7.0 | 4.1 | 7.0 |
| | 20 | | | | | 4.5 | 14.0 |
| | 25 | | | | | 4.8 | 20.0 |
| 40 | 32 | 1/N | 0 - 10 | 0 - 6 | 5.5 - 7.0 | 9.0 | 36.0 |
| | 40 | | | | | 9.3 | 40.0 |
| 50 | 50 | 2/N | 0 - 10 | 0 - 6 | 5.5 - 7.0 | 14.4 | 80.0 |
| 65 | 65 | 3/1 | 0 - 3 | 0 - 2 | 2.6 - 7.0 | 24.0 | 100.0 |
| | 65 | 3A1 | 0 - 3 | 0 - 2 | 3.0 - 7.0 | 24.0 | |
| | 65 | 3/2 | 0 - 6 | 0 - 4 | 4.5 - 7.0 | 26.0 | |
| | 65 | 3A2 | 0 - 6 | 0 - 4 | 4.5 - 7.0 | 26.0 | |
| | 65 | 3/3 | 0 - 10 | 0 - 6 | 5.5 - 7.0 | 27.0 | |
| | 65 | 3A3 | 0 - 10 | 0 - 6 | 6.0 - 7.0 | 27.0 | |
| 80 | 80 | 3/2 | 0 - 3 | 0 - 2 | 4.5 - 7.0 | 29.0 | 160.0 |
| | 80 | 3A2 | 0 - 3 | 0 - 2 | 5.0 - 7.0 | 29.0 | |
| | 80 | 3/3 | 0 - 7 | 0 - 5 | 5.6 - 7.0 | 30.0 | |
| | 80 | 3A3 | 0 - 7 | 0 - 5 | 6.5 - 7.0 | 30.0 | |
| | 80 | 4A2 | 0 - 10 | 0 - 6 | 3.5 - 7.0 | 73.0 | |
| 100 | 100 | 3/3 | 0 - 6 | 0 - 4 | 6.2 - 7.0 | 48.0 | 238.0 |
| | 100 | 3A3 | 0 - 6 | 0 - 4 | 6.5 - 7.0 | 48.0 | |
| | 100 | 4A3 | 0 - 10 | 0 - 6 | 4.5 - 7.0 | 81.0 | |
| 125 | 125 | 4A2 | 0 - 5 | 0 - 3 | 4.0 - 7.0 | 89.0 | 376.0 |
| | 125 | 4A3 | 0 - 8 | 0 - 5 | 5.5 - 7.0 | 91.0 | |
| 150 | 150 | 4A3 | 0 - 6 | 0 - 4 | 5.5 - 7.0 | 104.0 | 496.0 |

Technical data

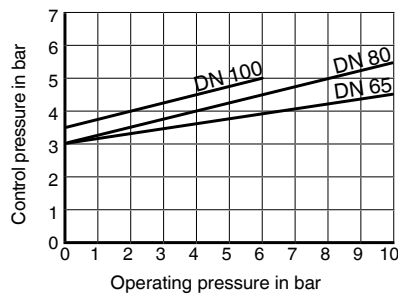
| | | Control function 2 | | | | | Control function 3 | | | | | Kv value [m ³ /h] | | | |
|-----|-----|--------------------|--------------------------|-------|------------------------------|------------------|--------------------|--------------------------|-------|------------------------------|------------------|---------------------------------|-----|-----|------|
| | | Actuator size | Operating pressure [bar] | | Control pressure see diagram | Weight with body | Actuator size | Operating pressure [bar] | | Control pressure see diagram | Weight with body | | | | |
| MG | DN | Code | EPDM/FPM | PTFE | [bar] | [kg] | Code | EPDM/FPM | PTFE | [bar] | [kg] | | | | |
| 25 | 15 | 0/F | 0 - 10 | 0 - 6 | max. 5.5 | 3.7 | 0/D | 0 - 10 | 0 - 6 | max. 5.5 | 3.6 | 7.0 | | | |
| | 20 | | | | | | | | | | | | 4.1 | 4.0 | 14.0 |
| | 25 | | | | | | | | | | | | 4.3 | 4.3 | 20.0 |
| 40 | 32 | 1/F | 0 - 10 | 0 - 6 | max. 5.5 | 8.6 | 1/D | 0 - 10 | 0 - 6 | max. 5.5 | 8.4 | 36.0 | | | |
| | 40 | | | | | | | | | | | | 9.5 | 9.3 | 40.0 |
| 50 | 50 | 2/F | 0 - 10 | 0 - 6 | max. 5.0 | 12.8 | 2/D | 0 - 10 | 0 - 6 | max. 5.0 | 12.5 | 80.0 | | | |
| 65 | 65 | 3/F 3AF | 0 - 10 | 0 - 6 | max. 4.5 | 30.0 | 3/D 3AD | 0 - 10 | 0 - 6 | max. 4.0 | 29.0 | 100.0 | | | |
| | 65 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | | |
| 80 | 80 | 3/F 3AF | 0 - 10 | 0 - 6 | max. 5.5 | 33.0 | 3/D 3AD | 0 - 10 | 0 - 6 | max. 5.0 | 32.0 | 160.0 | | | |
| | 80 | | | | | | | | | | | | | | |
| | 80 | | | | | | | | | | | | | | |
| | 80 | | | | | | | | | | | | | | |
| | 80 | | | | | | | | | | | | | | |
| 100 | 100 | 3/F | 0 - 6 | 0 - 4 | max. 5.0 | 41.0 | 3/D | 0 - 6 | 0 - 4 | max. 4.5 | 40.0 | 238.0 | | | |
| | 100 | 3AF | 0 - 6 | 0 - 4 | max. 5.0 | | 3AD | 0 - 6 | 0 - 4 | max. 4.5 | | | | | |
| | 100 | 4AF | 0 - 10 | 0 - 6 | max. 3.5 | | 4AD | 0 - 10 | 0 - 6 | max. 3.0 | | | | | |
| 125 | 125 | 4AF | 0 - 10 | 0 - 6 | max. 4.5 | 81.0 | 4AD | 0 - 10 | 0 - 6 | max. 4.0 | 80.0 | 376.0 | | | |
| 150 | 150 | 4AF | 0 - 8 | 0 - 5 | max. 4.5 | 94.0 | 4AD | 0 - 8 | 0 - 5 | max. 4.0 | 93.0 | 496.0 | | | |

All pressures are gauge pressures. Operating pressure values were determined with static operating pressure applied on one side of a closed valve. Sealing at the valve seat and atmospheric sealing is ensured for the given values.
 Information on operating pressures applied on both sides and for high purity media on request.
 Kv values determined acc. to IEC 534 standard, inlet pressure 6 bar, Δp 1 bar, valve body material cast iron EN-GJL-250 and flanges EN 1092 length EN 558-1 series 1 and soft elastomer diaphragm. MG = diaphragm size

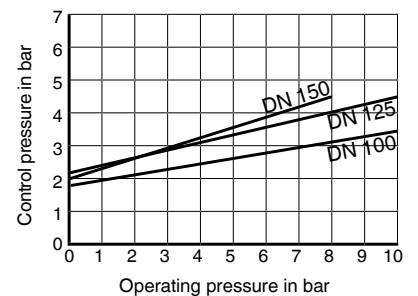
Operating pressure - Control pressure
Actuator 0/F*, 1/F*, 2/F*



Operating pressure - Control pressure
Actuator 3/F*, 3A/F*



Operating pressure - Control pressure
Actuator 4A/F*



Note: In the above diagrams, for normally open actuators (c.f. 2) the minimum necessary control pressure is given in accordance with the operating pressure.

* For double acting actuators (c.f.3) the necessary control pressure can be 1 bar less than that shown in the diagrams.

** For double acting actuators (c.f.3) the necessary control pressure can be 0.5 bar less than that shown in the diagrams.

Order data

| Body configuration | Code |
|--------------------|------|
| 2/2-way | D |

| Connection | Code |
|---|------|
| Threaded connections | |
| Threaded sockets DIN ISO 228 | 1 |
| Flanges | |
| Flanges EN 1092 / PN16 / form B, length EN 558, series 1, ISO 5752, basic series 1 | 8 |
| Flanges ANSI CLASS 125/150 RF, length MSS SP-88 | 38 |
| Flanges ANSI CLASS 125/150 RF, length EN 558, series 1, ISO 5752, basic series 1 | 39 |
| Flanges BS 10 Table "E", length EN 558, series 7, ISO 5752, basic series 7 | 51 |
| Flanges EN 1092 / PN16 / form A, length EN 558, series 7, ISO 5752, basic series 7 | 53 |
| Flanges ANSI CLASS 125/150 RF, length EN 558, series 7, ISO 5752, basic series 7 | 56 |
| Flange ratings refer to flange class only. For valve operating pressures see Technical data on page 2. | |

| Valve body material | Code |
|---|------|
| EN-GJL-250 (GG 25 Cast iron) | 8 |
| EN-GJS-400-18-LT (GGG 40.3 SG iron) PFA lined | 17 |
| EN-GJS-400-18-LT (GGG 40.3 SG iron) PP lined | 18 |
| EN-GJS-500-7 (GGG 50 Ductile iron) PFA lined | 81 |
| EN-GJS-400-18-LT (GGG 40.3 SG iron) Hard rubber lined | 83 |
| EN-GJS-500-7 (GGG 50 Ductile iron) PP lined | 91 |

| Diaphragm material | Code |
|---|------|
| NBR | 2 |
| FPM | 4 |
| CR | 8 |
| EPDM | 14 |
| PTFE/EPDM fully laminated | 52 |
| PTFE/EPDM convex PTFE loose | 5E* |
| The combination of PFA or PTFE lining with 5E diaphragms is only conditionally suitable for gaseous media. If low seat leakage rates are required for gaseous media, other combinations are preferable. | |
| *For use with valve bodies see page 8 | |

| Control function | Code |
|----------------------|------|
| Normally closed (NC) | 1 |
| Normally open (NO) | 2 |
| Double acting (DA) | 3 |

| Actuator version | | Code | | |
|--|-----------|----------------|----------------|----------------|
| Material of actuator cover: Plastic | | | | |
| MG | DN | C. f. 1 | C. f. 2 | C. f. 3 |
| 25 | 15 - 25 | 0/N | 0/F | 0/D |
| 40 | 32 + 40 | 1/N | 1/F | 1/D |
| 50 | 50 | 2/N | 2/F | 2/D |
| 65 - 100 | 65 - 100 | 3/1, 3/2, 3/3 | 3/F | 3/D |
| Material of actuator cover: Metal | | | | |
| MG | DN | C. f. 1 | C. f. 2 | C. f. 3 |
| 65 - 100 | 65 - 100 | 3A1, 3A2, 3A3 | 3AF | 3AD |
| 80 - 150 | 80 - 150 | 4A2, 4A3 | 4AF | 4AD |
| MG = Diaphragm size | | | | |

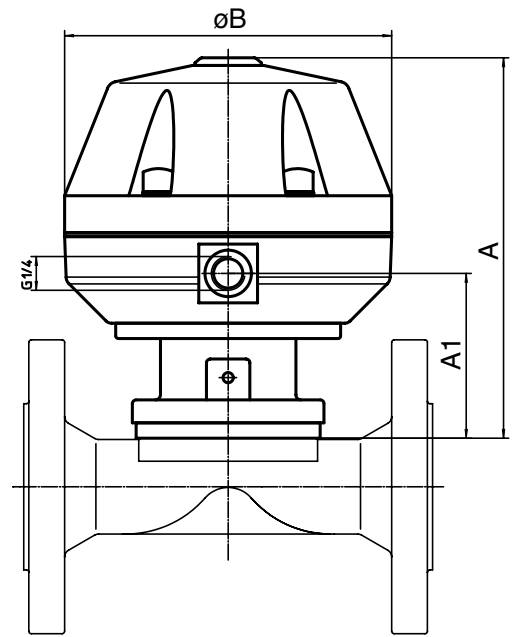
| Order example | 620 | 80 | D | 8 | 8 | 14 | 1 | 3/3 |
|----------------------------|-----|----|---|---|---|----|---|-----|
| Type | 620 | | | | | | | |
| Nominal size | | 80 | | | | | | |
| Body configuration (Code) | | | D | | | | | |
| Connection (Code) | | | | 8 | | | | |
| Valve body material (Code) | | | | | 8 | | | |
| Diaphragm material (Code) | | | | | | 14 | | |
| Control function (Code) | | | | | | | 1 | |
| Actuator version (Code) | | | | | | | | 3/3 |

Other connections, valve body materials, linings and diaphragm materials upon request.

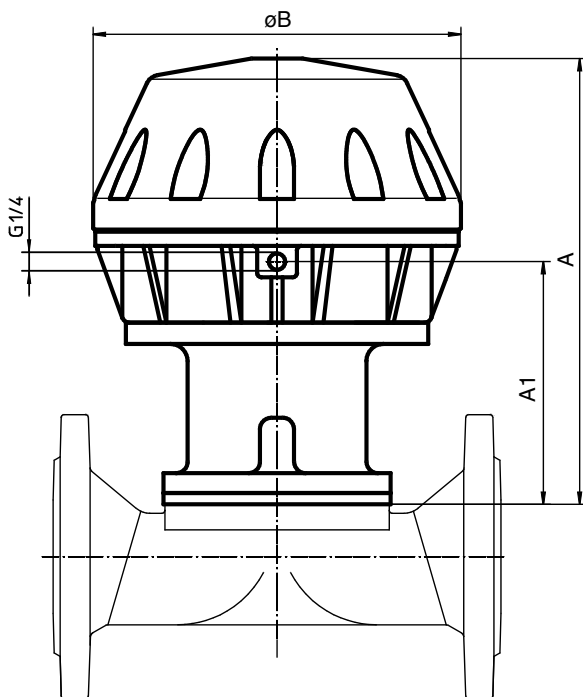
Actuator dimensions [mm]

Control function code 1

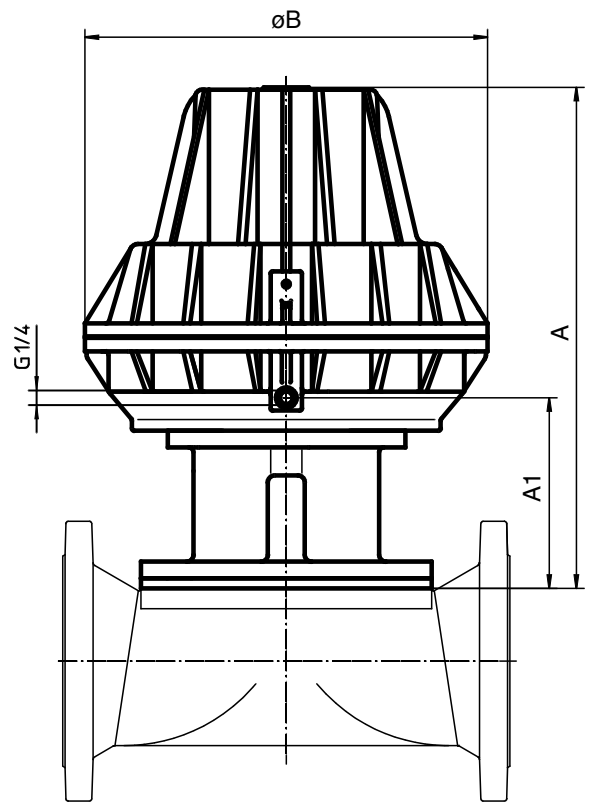
| Actuator size Code | Diaphragm size | DN | ø B | A | A1 |
|--------------------|----------------|---------|-----|-----|-----|
| 0/N | 25 | 15 - 25 | 128 | 152 | 65 |
| 1/N | 40 | 32 + 40 | 158 | 187 | 86 |
| 2/N | 50 | 50 | 213 | 221 | 97 |
| 3/1 | 65 | 65 | 259 | 333 | 173 |
| 3A1 | | 65 | | | |
| 3/2 | | 65 | | | |
| 3A2 | | 65 | | | |
| 3/3 | | 65 | | | |
| 3A3 | | 65 | | | |
| 3/2 | 80 | 80 | 256 | 307 | 172 |
| 3A2 | | 80 | | | |
| 3/3 | | 80 | | | |
| 3A3 | | 80 | | | |
| 4A2 | 100 | 80 | 360 | 439 | 159 |
| 3/3 | | 100 | 256 | 307 | 172 |
| 3A3 | | 100 | 360 | 439 | 159 |
| 4A3 | 125 | 100 | 360 | 439 | 159 |
| 4A2 | | 125 | 360 | 451 | 171 |
| 4A3 | 125 | 125 | 360 | 451 | 171 |
| 4A3 | 150 | 150 | 360 | 440 | 160 |



Actuator size 0 - 2



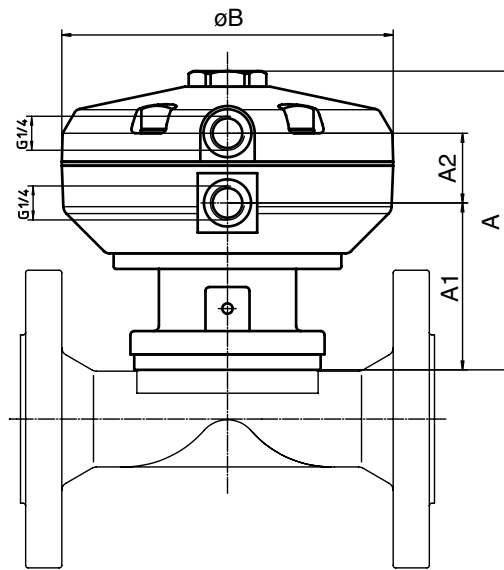
Actuator size 3



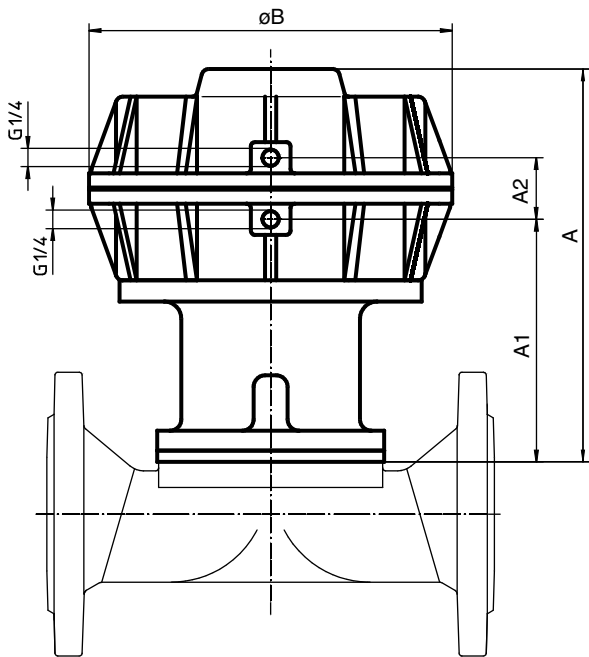
Actuator size 4

Dimensions - Actuator control function code 2 + 3

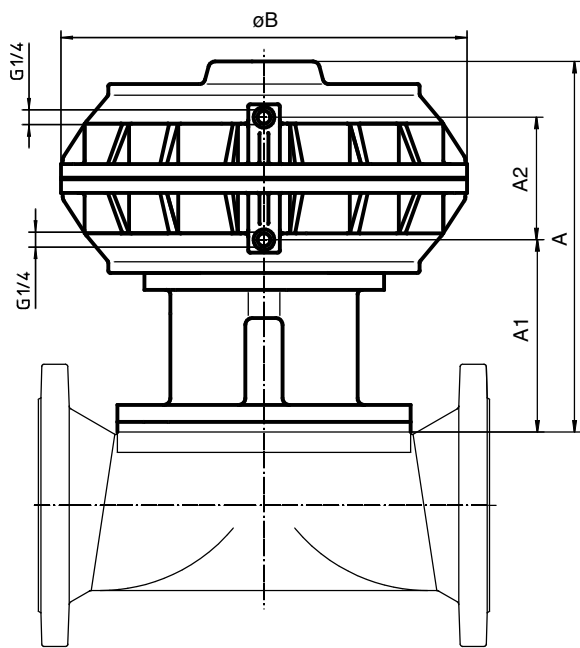
| Actuator size Code | Diaphragm size | DN | $\varnothing B$ | A | A1 | A2 |
|------------------------|----------------|---------|-----------------|-----|-----|-----|
| 0/F - 0/D | 25 | 15 - 25 | 128 | 117 | 66 | 28 |
| 1/F - 1/D | 40 | 32 + 40 | 158 | 143 | 84 | 27 |
| 2/F - 2/D | 50 | 50 | 213 | 167 | 96 | 28 |
| 3/F - 3/D 3AF - 3AD | 65 | 65 | 258 | 284 | 170 | 45 |
| 3/F - 3/D 3AF - 3AD | 80 | 80 | 256 | 282 | 169 | 45 |
| 3/F - 3/D 3AF - 3AD | 100 | 100 | 256 | 282 | 169 | 45 |
| 4AF - 4AD | | 100 | 360 | 322 | 156 | 109 |
| 4AF - 4AD | 125 | 125 | 360 | 334 | 168 | 109 |
| 4AF - 4AD | 150 | 150 | 360 | 323 | 156 | 109 |



Actuator size 0 - 2



Actuator size 3



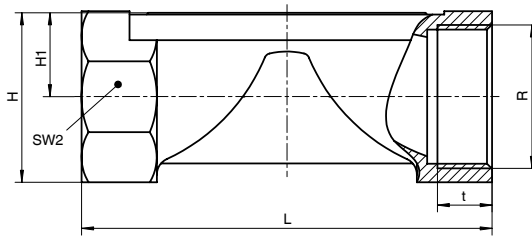
Actuator size 4

Body dimensions [mm]

Threaded sockets - DIN ISO 228, connection code 1 Valve body material: GG 25 (code 8)

| MG | DN | R | L | H | H1 | t | SW2 | Number of flats |
|----|----|---------|-----|----|----|----|-----|-----------------|
| 25 | 15 | G 1/2 | 85 | 35 | 19 | 12 | 32 | 6 |
| | 20 | G 3/4 | 85 | 40 | 19 | 13 | 41 | 6 |
| | 25 | G 1 | 110 | 42 | 19 | 16 | 46 | 6 |
| 40 | 32 | G 1 1/4 | 120 | 56 | 28 | 16 | 55 | 6 |
| | 40 | G 1 1/2 | 140 | 61 | 28 | 18 | 65 | 6 |
| 50 | 50 | G 2 | 165 | 73 | 35 | 18 | 75 | 6 |

MG = diaphragm size

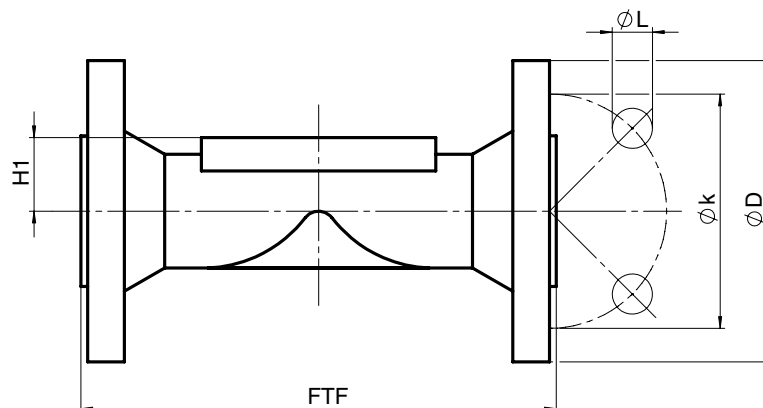


Flanges - DIN EN 1092, connection code 8, 53 Valve body material: GG 25 (code 8), GGG 40.3 (code 17, 18, 83)

| | | | | | | H1 | | FTF | | | |
|-----|-----|-----|-----|----|----------------|-------------------|------------|--------------------|---------------------------------------|---------------|--|
| | | | | | | Connection code 8 | | Connection code 53 | EN 558, series 1 Connection code 8 | | EN 558, series 7 Connection code 53 |
| MG | DN | øD | øk | øL | Number of bolt | Material code | | Material code 8 | Material code 8, 17, 18, 83 | Material code | |
| | | | | | | 8 | 17, 18, 83 | | | 8 | 17 |
| 25 | 15 | 95 | 65 | 14 | 4 | 19.0 | 18.0 | 19.0 | 130 | 117 | - |
| | 20 | 105 | 75 | 14 | 4 | 19.0 | 20.5 | 19.0 | 150 | 117 | - |
| | 25 | 115 | 85 | 14 | 4 | 19.0 | 23.0 | 19.0 | 160 | 127 | - |
| 40 | 32 | 140 | 100 | 18 | 4 | 28.0 | 28.7 | 28.0 | 180 | - | - |
| | 40 | 150 | 110 | 18 | 4 | 28.0 | 33.0 | 28.0 | 200 | 159 | - |
| 50 | 50 | 165 | 125 | 18 | 4 | 35.0 | 39.0 | 35.0 | 230 | 191 | - |
| 65 | 65 | 185 | 145 | 18 | 4 | 27.5 | 51.0 | 27.5 | 290 | 216 | - |
| 80 | 80 | 200 | 160 | 18 | 8 | 33.0 | 59.5 | 33.0 | 310 | 254 | - |
| 100 | 100 | 220 | 180 | 18 | 8 | 43.0 | 73.0 | 43.0 | 350 | 305 | - |
| 125 | 125 | 250 | 210 | 18 | 8 | 65.0 | 87.0 | 65.0 | 400 | 356 | - |
| 150 | 150 | 285 | 240 | 23 | 8 | 58.0 | 109.0 | 58.0 | 480 | 406 | 416 |

For materials see overview on last page.

MG = diaphragm size



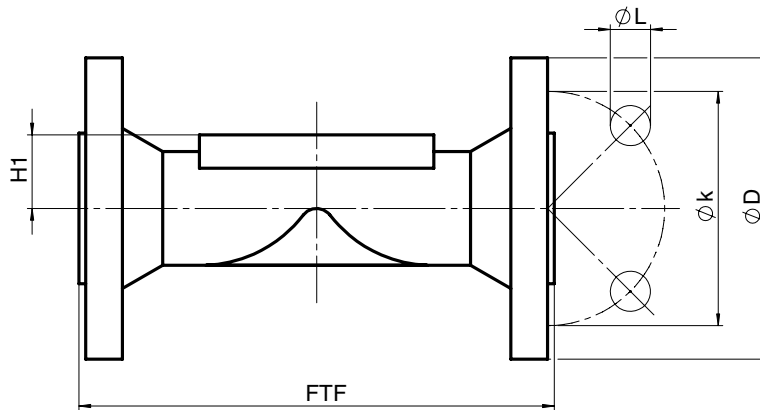
Body dimensions [mm]

Flanges - ANSI class 125/150 RF, connection code 38, 39, 56
Valve body material: GG 25 (code 8), GGG 40.3 (code 17, 18, 83), GGG 50 (code 81, 91)

| | | | | | | H1 | | | FTF | | | |
|-----|-----|-----|-------|------|----------------|------------------------|--------------------------|--------------------------|------------------------------|-------|------------------------------------|---|
| | | | | | | Connection code 38, 39 | | Connection code 56 | MSS Sp-88 Connection code 38 | | EN 558 series 1 Connection code 39 | similar to EN 558 series 7 Connection code 56 |
| MG | DN | øD | øk | øL | Number of bolt | Material code 8 | Material code 17, 18, 83 | Material code 17, 81, 91 | Material code 17, 18 | 83 | Material code 8, 17, 18, 83 | Material code 17, 81, 91 |
| 25 | 15 | 90 | 60.3 | 15.9 | 4 | 19.0 | 18.0 | - | - | - | 130 | - |
| | 20 | 100 | 69.9 | 15.9 | 4 | 19.0 | 20.5 | - | 146 | 146.4 | 150 | - |
| | 25 | 110 | 79.4 | 15.9 | 4 | 19.0 | 23.0 | 23 | 146 | 146.4 | 160 | 127 |
| 40 | 32 | 115 | 88.9 | 15.9 | 4 | 28.0 | 28.7 | - | - | - | 180 | - |
| | 40 | 125 | 98.4 | 15.9 | 4 | 28.0 | 33.0 | 32 | 175 | 171.4 | 200 | 165 |
| 50 | 50 | 150 | 120.7 | 19.0 | 4 | 35.0 | 39.0 | 40 | 200 | 197.4 | 230 | 191 |
| 65 | 65 | 180 | 139.7 | 19.0 | 4 | 27.5 | 51.0 | - | 226 | 222.4 | 290 | - |
| 80 | 80 | 190 | 152.4 | 19.0 | 4 | 33.0 | 59.5 | 58 | 260 | 260.4 | 310 | 254 |
| 100 | 100 | 230 | 190.5 | 19.0 | 8 | 43.0 | 73.0 | 70 | 327 | 324.4 | 350 | 311 |
| 125 | 125 | 255 | 215.9 | 22.2 | 8 | 65.0 | 87.0 | - | - | - | 400 | - |
| 150 | 150 | 280 | 241.3 | 22.2 | 8 | 58.0 | 109.0 | 109 | 416 | - | 480 | 416 |

For materials see overview on last page.

MG = diaphragm size



Flanges - BS 10 Table "E", connection code 51
Valve body material: GGG 40.3 (code 17), GGG 50 (code 81, 91)

| Diaphragm size | DN | øD | øk | øL | Number of bolt | H1 | FTF |
|----------------|-----|-----|-----|----|----------------|-----|-----|
| 25 | 25 | 114 | 83 | 14 | 4 | 23 | 127 |
| 40 | 40 | 133 | 98 | 14 | 4 | 32 | 165 |
| 50 | 50 | 152 | 114 | 17 | 4 | 40 | 191 |
| 80 | 80 | 184 | 146 | 17 | 4 | 58 | 254 |
| 100 | 100 | 216 | 178 | 17 | 8 | 70 | 311 |
| 150 | 150 | 279 | 235 | 22 | 8 | 109 | 416 |

For materials see overview on last page.

Overview of valve bodies for GEMÜ 620

| | | Threaded connections | Flanges | | | | | | | | | | | | | | | | | | | |
|-----------------|-----|----------------------|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| Connection code | | 1 | 8 | | | | | 38 | | | 39 | | | | 51 | | | 53 | | 56 | | |
| Material code | | 8 | 8 | 17 | 18 | 83 | 17 | 18 | 83 | 8 | 17 | 18 | 83 | 17 | 81 | 91 | 8 | 17 | 17 | 81 | 91 | |
| MG | DN | | | | | | | | | | | | | | | | | | | | | |
| 25 | 15 | X* | X* | X | X | X | - | - | - | X* | X | X | X | - | - | - | X* | - | - | - | - | |
| | 20 | X* | X* | X | X | X | X | X | X | X* | X | X | X | - | - | - | X* | - | - | - | - | |
| | 25 | X* | X* | X | X | X | X | X | X | X* | X | X | X | - | X | X | X* | - | - | X | X | |
| 40 | 32 | X* | X* | X | X | X | - | - | - | X* | X | X | X | - | - | - | - | - | - | - | - | |
| | 40 | X* | X* | X | X | X | X | X | X | X* | X | X | X | - | X | X | X* | - | - | X | X | |
| 50 | 50 | X* | X* | X | X | X | X | X | X | X* | X | X | X | - | X | X | X* | - | - | X | X | |
| 65 | 65 | - | X* | X* | X* | X* | X* | X* | X* | X* | X* | X* | X* | - | - | - | X* | - | - | - | - | |
| 80 | 80 | - | X* | X | X | X | X | X | X | X* | X | X | X | - | X | X | X* | - | - | X | X | |
| 100 | 100 | - | X* | X | X | X | X | X | X | - | X | X | X | - | X | X | X* | - | - | X | X | |
| 125 | 125 | - | X* | X | - | X | - | - | - | X* | X | - | X | - | - | - | X* | - | - | - | - | |
| 150 | 150 | - | X* | X | - | X | X | - | X | X* | X | - | X | X | - | - | X* | X | X | - | - | |

Connection code 38 / Material code 18 on request

*Valve bodies are not suitable for use with diaphragm code 5E

MG = Diaphragm size

For further metal diaphragm valves, accessories and other products,
please see our Product Range catalogue and Price List. Contact GEMÜ.

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AND CONTROL SYSTEMS

