

# Diaphragm Valve, Metal

## Construction

The GEMÜ 615 2/2-way diaphragm valve has a low maintenance piston actuator which can be controlled by inert gases. Normally Closed, Normally Open and Double Acting control functions are available. An optical position indicator is integrated as standard.

## Features

- Suitable for inert and corrosive\* liquid and gaseous media
- Insensitive to particulate media
- Valve body and diaphragm available in various materials and designs
- Compact design (ideal when space is at a premium)
- Versions according to ATEX on request

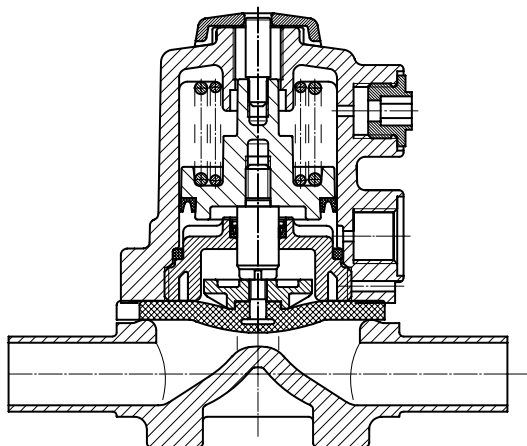
## Advantages

- Hermetic separation between medium and actuator
- Optional flow direction
- Installation for an optimized draining is possible
- Optional accessories:
  - Stroke limiter
  - Electrical position indicators with microswitches or proximity switches

\*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.

### Temperatures

|                            |               |
|----------------------------|---------------|
| <b>Media temperature</b>   | -10 ... 80 °C |
| <b>Ambient temperature</b> | 0 ... 60 °C   |

### Control medium

#### Inert gases

|   |                      |
|---|----------------------|
| <b>Max. perm. temperature of control medium</b> | 40 °C                |
| <b>Filling volume</b>                           | 0.02 dm <sup>3</sup> |

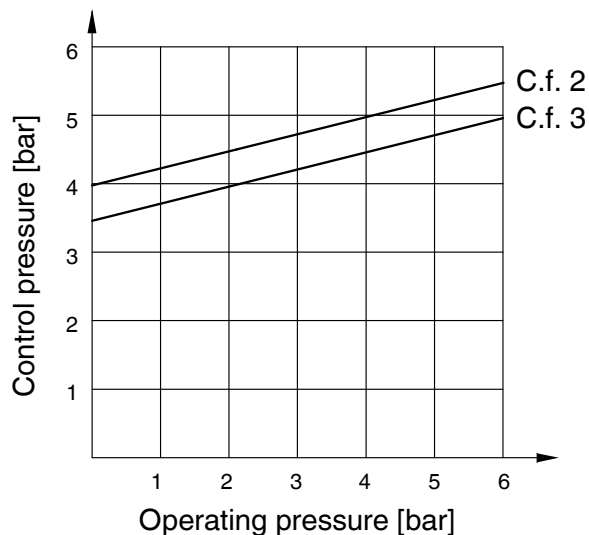
| Diaphragm size | Operating pressure [bar] |       | Control pressure [bar] |          |          |
|----------------|--------------------------|-------|------------------------|----------|----------|
|                | EPDM/FPM                 | PTFE  | C.f. 1                 | C.f. 2   | C.f. 3   |
| 10             | 0 - 6                    | 0 - 6 | 5 - 7                  | max. 5.5 | max. 5.0 |

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.

| Diaphragm size | DN | Kv values [m <sup>3</sup> /h] |                            |                            |                            |                  |                     |
|----------------|----|-------------------------------|----------------------------|----------------------------|----------------------------|------------------|---------------------|
|                |    | DIN Code 0                    | DIN 11850 series 1 Code 16 | DIN 11850 series 2 Code 17 | DIN 11850 series 3 Code 18 | ASME BPE Code 59 | EN ISO 1127 Code 60 |
| 10             | 10 | -                             | 2.4                        | 2.4                        | 2.4                        | 2.2              | 3.3                 |
|                | 15 | 3.3                           | 3.8                        | 3.8                        | 3.8                        | 2.2              | 4.0                 |
|                | 20 | -                             | -                          | -                          | -                          | 3.8              | -                   |

Kv values determined acc. to DIN EN 60534, inlet pressure 6 bar, Δp 1 bar, stainless steel valve body and soft elastomer diaphragm.

### Control pressure/operating pressure diagram



## Order data

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

| Connection                              | Code |
|---|------|
| <b>Butt weld spigots</b>                |      |
| Spigots DIN                             | 0    |
| Spigots DIN 11850, series 1             | 16   |
| Spigots DIN 11850, series 2             | 17   |
| Spigots DIN 11850, series 3             | 18   |
| Spigots DIN 11866, series A             | 1A   |
| Spigots DIN 11866, series B             | 1B   |
| Spigots JIS-G 3459                      | 36   |
| Spigots BS 4825, part 1                 | 55   |
| Spigots ASME BPE                        | 59   |
| Spigots EN ISO 1127                     | 60   |
| Spigots ANSI/ASME B36.19M, Schedule 10s | 63   |
| Spigots ANSI/ASME B36.19M, Schedule 40s | 65   |

| Threaded connections  |    |
|---|----|
| Threaded sockets DIN ISO 228  | 1  |
| Threaded spigots DIN 11851  | 6  |
| One side threaded spigot, other side cone spigot and union nut, DIN 11851 | 62 |
| Aseptic unions on request   |    |

| Clamp connections  |    |
|--|----|
| Clamps ASME BPE for pipe ASME BPE, length ASME BPE                     | 80 |
| Clamp DIN 32676 series B for pipe EN ISO 1127, length EN 558, series 7 | 82 |
| Clamp ASME BPE for pipe ASME BPE, length EN 558, series 7              | 88 |
| Clamps DIN 32676 series A for pipe DIN 11850, length EN 558, series 7  | 8A |

For overview of available valve bodies for GEMÜ 615 see page 8.

| Valve body material   | Code |
|---|------|
| CW617N (Brass)  | 12   |
| 1.4435 - BN2 (CF3M), investment casting Fe<0.5%               | 32   |
| 1.4435 (ASTM A 351 CF3M $\triangle$ 316L), investment casting | 34   |
| 1.4408, investment casting                                    | 37   |
| 1.4435 (316 L), forged body                                   | 40   |
| 1.4435 (BN2), forged body Fe<0.5%                             | 42   |
| 1.4539, forged body   | F4   |

| Diaphragm material  | Code |
|---|------|
| FPM   | 4    |
| EPDM  | 13   |
| EPDM  | 14   |
| EPDM  | 17   |
| PTFE/EPDM, PTFE laminated                                     | 52   |
| Material complies with FDA requirements, except code 4 and 14 |      |

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

| Actuator size    | Code |
|------------------|------|
| Standard version | 1/N  |

| Surface finish  | Code |
|-----------------|------|
| Code see page 4 |      |

| Order example                    | 615 | 15 | D | 60 | 34 | 17 | 1 | 1/N | 1500 |
|----------------------------------|-----|----|---|----|----|----|---|-----|------|
| Type                             | 615 |    |   |    |    |    |   |     |      |
| Nominal size                     |     | 15 |   |    |    |    |   |     |      |
| Body configuration (code)        |     |    | D |    |    |    |   |     |      |
| Connection (code)                |     |    |   | 60 |    |    |   |     |      |
| Valve body material (code)       |     |    |   |    | 34 |    |   |     |      |
| Diaphragm material (code)        |     |    |   |    |    | 17 |   |     |      |
| Control function (code)          |     |    |   |    |    |    | 1 |     |      |
| Actuator size (code)             |     |    |   |    |    |    |   | 1/N |      |
| Surface finish (code see page 4) |     |    |   |    |    |    |   |     | 1500 |

## Order data

### Valve body surface finish, internal contour

|  | Hygienic class<br>DIN 11866 | Designation<br>ASME BPE<br>(2014) | Forged body<br>Code 40, 42, F4 | Investment<br>casting<br>Code 32, 34 | Code |
|--|-----------------------------|-----------------------------------|--------------------------------|--------------------------------------|------|
| Ra ≤ 6,3 µm (250 µinch)<br>for media wetted surfaces,<br>blasted internal/external         | -                           | -                                 | -                              | X                                    | 1500 |
| Ra ≤ 6,3 µm (250 µinch)<br>for media wetted surfaces,<br>electropolished internal/external | -                           | -                                 | -                              | X                                    | 1509 |
| Ra ≤ 0,8 µm (30 µinch)<br>for media wetted surfaces,<br>mechanically polished internal     | H3                          | SF3                               | X                              | X                                    | 1502 |
| Ra ≤ 0,8 µm (30 µinch)<br>for media wetted surfaces,<br>electropolished internal/external  | HE3                         | -                                 | X                              | -                                    | 1503 |
| Ra ≤ 0,6 µm (25 µinch)<br>for media wetted surfaces,<br>mechanically polished internal     | -                           | SF2                               | X*                             | X*                                   | 1507 |
| Ra ≤ 0,6 µm (25 µinch)<br>for media wetted surfaces,<br>electropolished internal/external  | -                           | SF6                               | X*                             | -                                    | 1508 |
| Ra ≤ 0,5 µm (20 µinch)<br>for media wetted surfaces,<br>mechanically polished internal     | -                           | SF1                               | X*                             | -                                    | 1927 |
| Ra ≤ 0,5 µm (20 µinch)<br>for media wetted surfaces,<br>electropolished internal/external  | -                           | SF5                               | X*                             | -                                    | 1928 |
| Ra ≤ 0,4 µm (15 µinch)<br>for media wetted surfaces,<br>mechanically polished internal     | H4                          | -                                 | X*                             | -                                    | 1536 |
| Ra ≤ 0,4 µm (15 µinch)<br>for media wetted surfaces,<br>electropolished internal/external  | HE4                         | -                                 | X*                             | -                                    | 1537 |
| Ra ≤ 0,4 µm (15 µinch)<br>for media wetted surfaces,<br>electropolished internal/external  | -                           | SF4                               | X*                             | -                                    | 1929 |
| Ra ≤ 0,25 µm (10 µinch)<br>for media wetted surfaces,<br>electropolished internal/external | HE5                         | -                                 | X*                             | -                                    | 1516 |
| Ra ≤ 0,25 µm (10 µinch)<br>for media wetted surfaces,<br>mechanically polished internal    | H5                          | -                                 | X*                             | -                                    | 1527 |

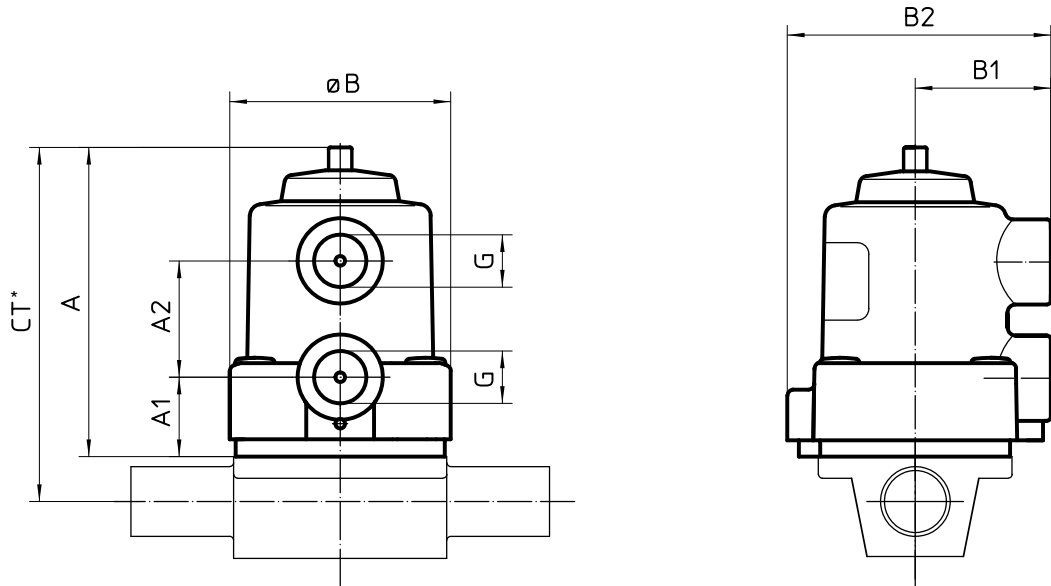
Ra acc. to DIN 4768; at defined reference points.

\* For pipe inside diameter < 6 mm, the surface inside the spigot is Ra ≤ 0.8 µm.

## Dimensions [mm]

### Actuator dimensions

| Diaphragm size | A  | A1 | A2 | Ø B | B1 | B2 | G     | Weight [kg] |
|----------------|----|----|----|-----|----|----|-------|-------------|
| 10             | 80 | 21 | 30 | 57  | 35 | 68 | G 1/4 | 0.18        |



\* CT = A + H1 (see body dimensions)

## Body dimensions [mm]

### Butt weld spigots, connection code 0, 16, 17, 18 Valve body material: investment casting (code 34), forged body (code 40, F4)

|    |    |      |    |      |     |    |      | DIN Series 0 Code 0 |     | DIN 11850 Series 1 Code 16 |     | DIN 11850 Series 2 Code 17 |     | DIN 11850 Series 3 Code 18 |     | Weight [kg] |
|----|----|------|----|------|-----|----|------|---------------------|-----|----------------------------|-----|----------------------------|-----|----------------------------|-----|-------------|
| MG | DN | NPS  | f* | øg*  | L   | c  | H1   | ød                  | s   | ød                         | s   | ød                         | s   | ød                         | s   |             |
| 10 | 10 | 3/8" | 30 | 13.5 | 108 | 25 | 12.5 | -                   | -   | 12                         | 1.0 | 13                         | 1.5 | 14                         | 2.0 | 0.30        |
|    | 15 | 1/2" | 30 | 13.5 | 108 | 25 | 12.5 | 18                  | 1.5 | 18                         | 1.0 | 19                         | 1.5 | 20                         | 2.0 | 0.30        |

\* only for investment cast design      MG = diaphragm size      For materials see overview on page 8

### Butt weld spigots, connection code 1A, 1B, 60 Valve body material: investment casting (code 34), forged body (code 40, F4)

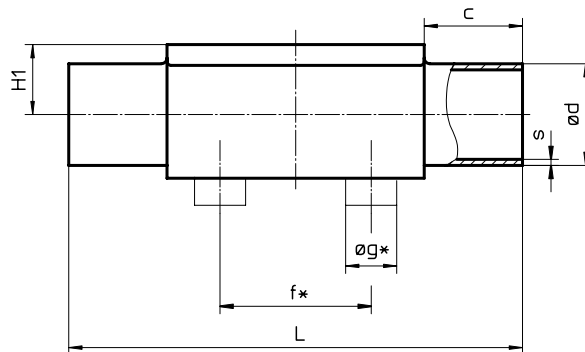
|    |    |      |    |      |     |    |      | DIN 11866 Series A Code 1A |     | DIN 11866 Series B Code 1B |     | EN ISO 1127 Code 60 |     | Weight [kg] |
|----|----|------|----|------|-----|----|------|----------------------------|-----|----------------------------|-----|---------------------|-----|-------------|
| MG | DN | NPS  | f* | øg*  | L   | c  | H1   | ød                         | s   | ød                         | s   | ød                  | s   |             |
| 10 | 10 | 3/8" | 30 | 13.5 | 108 | 25 | 12.5 | 13                         | 1.5 | 17.2                       | 1.6 | 17.2                | 1.6 | 0.30        |
|    | 15 | 1/2" | 30 | 13.5 | 108 | 25 | 12.5 | 19                         | 1.5 | 21.3                       | 1.6 | 21.3                | 1.6 | 0.30        |

\* only for investment cast design      MG = diaphragm size      For materials see overview on page 8

### Butt weld spigots, connection code 36, 55, 59, 63, 65 Valve body material: investment casting (code 34), forged body (code 40, F4)

|    |    |      |    |      |     |    |      | JIS-G 3459 Code 36 |      | BS 4825 Code 55 |     | ASME BPE Code 59 |      | ANSI/ASME B36.19M 10s Code 63 |      | ANSI/ASME B36.19M 40s Code 65 |      | Weight [kg] |
|----|----|------|----|------|-----|----|------|--------------------|------|-----------------|-----|------------------|------|-------------------------------|------|-------------------------------|------|-------------|
| MG | DN | NPS  | f* | øg*  | L   | c  | H1   | ød                 | s    | ød              | s   | ød               | s    | ød                            | s    | ød                            | s    |             |
| 10 | 10 | 3/8" | 30 | 13.5 | 108 | 25 | 12.5 | 17.3               | 1.65 | 9.53            | 1.2 | 9.53             | 0.89 | 17.1                          | 1.65 | 17.1                          | 2.31 | 0.30        |
|    | 15 | 1/2" | 30 | 13.5 | 108 | 25 | 12.5 | 21.7               | 2.10 | 12.70           | 1.2 | 12.70            | 1.65 | 21.3                          | 2.11 | 21.3                          | 2.77 | 0.30        |
|    | 20 | 3/4" | 30 | 13.5 | 108 | 25 | 12.5 | -                  | -    | 19.05           | 1.2 | 19.05            | 1.65 | -                             | -    | -                             | -    | 0.30        |

\* only for investment cast design      MG = diaphragm size      For materials see overview on page 8



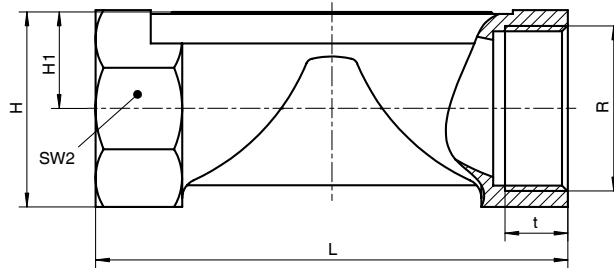
## Body dimensions [mm]

### Threaded sockets, connection code 1 Valve body material: brass (code 12), investment casting (code 37)

| MG | DN | R     | Material code 12 |    |    |    |     |                 | Material code 37 |    |    |    |     |                 | Weight [kg] |
|----|----|-------|------------------|----|----|----|-----|-----------------|------------------|----|----|----|-----|-----------------|-------------|
|    |    |       | H                | H1 | t  | L  | SW2 | Number of flats | H                | H1 | t  | L  | SW2 | Number of flats |             |
| 10 | 12 | G 3/8 | 23               | 11 | 13 | 55 | 22  | 2               | 25               | 13 | 12 | 55 | 22  | 2               | 0.17        |
|    | 15 | G 1/2 | 29               | 14 | 15 | 75 | 25  | 2               | 30               | 15 | 15 | 68 | 27  | 2               | 0.26        |

MG = diaphragm size

For materials see overview on page 8



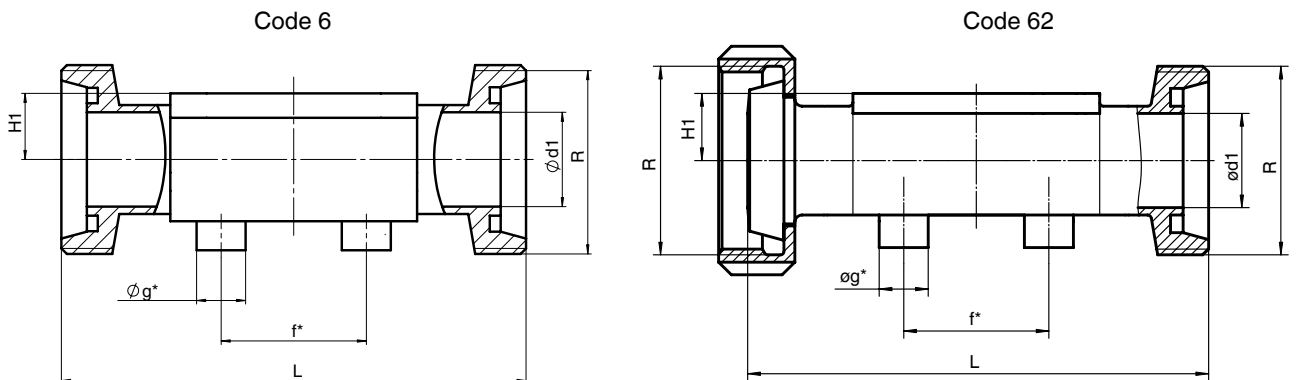
### Threaded connections, connection code 6, 62 Valve body material: investment casting (code 34), forged body (code 40)

| MG | DN | H1   | f*   | øg*  | ød1  | Thread to DIN 405 R | Code 6 L | Code 62 L | Weight [kg] |
|----|----|------|------|------|------|---------------------|----------|-----------|-------------|
| 10 | 10 | 12.5 | 30.0 | 13.5 | 10.0 | RD 28 x 1/8         | 118      | 116       | 0.33        |
|    | 15 | 12.5 | 30.0 | 13.5 | 16.0 | RD 34 x 1/8         | 118      | 116       | 0.35        |

\* only for investment cast design

MG = diaphragm size

For materials see overview on page 8

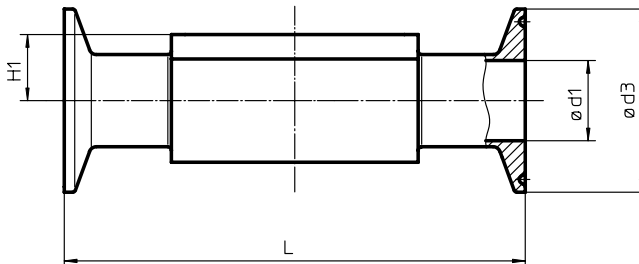


## Body dimensions [mm]

### Clamp connections, connection code 80, 82, 88, 8A Valve body material: forged body (code 40, F4)

| MG | DN | NPS  | H1   | for pipe ASME BPE Code 80 |      |       | for pipe EN ISO 1127 Code 82 |      |     | for pipe ASME BPE Code 88 |      |     | for pipe DIN 11850 Code 8A |      |     | Weight [kg] |
|----|----|------|------|---------------------------|------|-------|------------------------------|------|-----|---------------------------|------|-----|----------------------------|------|-----|-------------|
|    |    |      |      | ød1                       | ød3  | L     | ød1                          | ød3  | L   | ød1                       | ød3  | L   | ød1                        | ød3  | L   |             |
| 10 | 10 | 3/8" | 12.5 | -                         | -    | -     | 14.0                         | 25.0 | 108 | -                         | -    | -   | 10                         | 34.0 | 108 | 0.30        |
|    | 15 | 1/2" | 12.5 | 9.40                      | 25.0 | 88.9  | 18.1                         | 50.5 | 108 | 9.40                      | 25.0 | 108 | 16                         | 34.0 | 108 | 0.43        |
|    | 20 | 3/4" | 12.5 | 15.75                     | 25.0 | 101.6 | -                            | -    | -   | 15.75                     | 25.0 | 117 | -                          | -    | -   | 0.43        |

MG = diaphragm size



### Overview of valve bodies for GEMÜ 615

| Connection code | Threaded connections |    |    |    |    |    | Spigots |    |    |    |    |    |    |    |    |    |    |    |    |    | Clamps |    |    |    |    |    |    |    |    |    |    |    |    |
|-----------------|----------------------|----|----|----|----|----|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|----|----|----|
|                 | 1                    | 6  | 62 | 0  | 16 | 17 | 18      | 1A | 1B | 36 | 55 | 59 | 60 | 63 | 65 | 80 | 82 | 88 | 8A |    |        |    |    |    |    |    |    |    |    |    |    |    |    |
| Material code   | 12                   | 37 | 34 | 40 | 34 | 40 | 34      | 40 | 34 | 40 | 34 | 40 | 34 | 40 | 40 | 40 | 34 | 40 | 34 | 40 | 34     | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| MG              | DN                   |    |    |    |    |    |         |    |    |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |    |    |    |    |    |
| 10              | 10                   | -  | -  | W  | W  | W  | W       | -  | -  | X  | X  | X  | X  | X  | X  | X  | X  | X  | -  | X  | -      | X  | X  | X  | X  | X  | X  | X  | X  | -  | K  | -  | K  |
|                 | 12                   | X  | X  | -  | -  | -  | -       | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -      | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |    |
|                 | 15                   | X  | X  | W  | W  | W  | W       | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X      | X  | X  | X  | X  | X  | X  | X  | K  | W  | K  | K  |    |
|                 | 20                   | -  | -  | -  | -  | -  | -       | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | X  | X      | X  | X  | -  | -  | -  | -  | -  | -  | -  | -  | K  | -  |

X = Standard

K = Connections completely machined (not welded)

W = Welded construction

MG = diaphragm size

Availability of material code 32: same as code 34, availability of material code 42, F4: same as code 40

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

**GEMÜ**® VALVES, MEASUREMENT  
AND CONTROL SYSTEMS

