

# Diaphragm Valve, Plastic

## Construction

The GEMÜ 630 pneumatically operated 2/2-way valve has a low maintenance piston actuator which can be controlled by inert gaseous media. It has an integral optical position indicator as standard. It is available with control function Normally Closed.

## Features

- Suitable for inert and corrosive\* liquid and gaseous media
- Valve body and diaphragm available in various materials and designs
- Control connection positioned in-line with flow direction as standard, thus installable in extremely restricted spaces
- Optional flow direction and mounting position

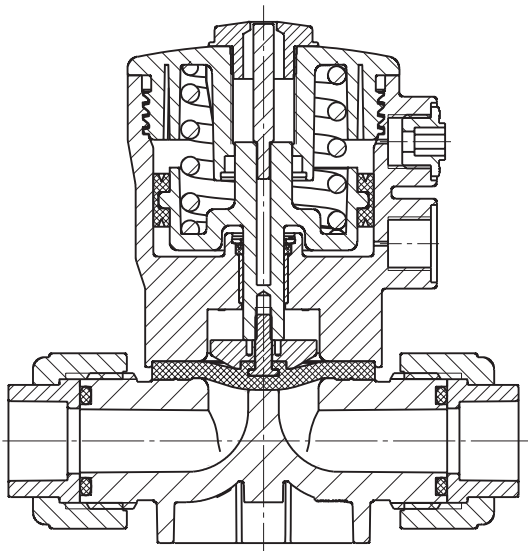
## Advantages

- Variable spring set for operating pressures up to 150 psi upstream and downstream
- Mounting plates for height compensation of differing body dimensions and nominal sizes
- Actuator top rotatable 4 x 90° (diaphragm size 25 - 50)
- Optional accessories
  - Electrical position indicator with microswitches or proximity switches
  - Pneumatic or electro-pneumatic positioners and process controllers

\*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.

### Working medium temperature

|                     |              |
|---------------------|--------------|
| Valve body PVC-U    | 50 to 140 °F |
| Valve body PP, PP-H | 41 to 176 °F |
| Valve body PVDF     | 14 to 176 °F |

The permissible operating pressure depends on the working medium temperature.

### Ambient temperature

|                      |              |
|----------------------|--------------|
| Valve body PVC-U     | 50 to 122 °F |
| Valve body PP / PP-H | 41 to 122 °F |
| Valve body PVDF      | 14 to 122 °F |

### Control medium

Inert gases

|  |                 |
|--|-----------------|
| Min. required control pressure           | see table below |
| Max. permiss. control pressure           | 87 psi          |
| Max. perm. temperature of control medium | 104 °F          |
| Filling volume:<br>Actuator size 1/N     | 1.22 cu in      |

### O-ring material for valve bodies with union ends

| Diaphragm material            | O-ring material |
|-------------------------------|-----------------|
| NBR                           | EPDM            |
| FPM                           | FPM             |
| EPDM                          | EPDM            |
| PTFE                          | FPM             |
| Other combinations on request |                 |

### Pressure / temperature correlation for plastic

| Temperature in °F (plastic body) |             | -4                                   | 14 | 32 | 41 | 50 | 68 | 77 | 86 | 104 | 122 | 140  | 158 | 176  |
|----------------------------------|-------------|--------------------------------------|----|----|----|----|----|----|----|-----|-----|------|-----|------|
| Valve body material              |             | Permissible operating pressure [psi] |    |    |    |    |    |    |    |     |     |      |     |      |
| PVC-U                            | Code 1      | -                                    | -  | -  | -  | 90 | 90 | 90 | 70 | 52  | 30  | 13.1 | -   | -    |
| PP / PP-H                        | Code 5 / N5 | -                                    | -  | -  | 90 | 90 | 90 | 90 | 74 | 61  | 48  | 35   | 23  | 13.1 |
| PVDF                             | Code 20     | -                                    | 90 | 90 | 90 | 90 | 90 | 90 | 78 | 70  | 62  | 55   | 46  | 41   |

| MG | DN | Control function 1 [psi] |        |                  | Cv value [gpm] |
|----|----|--------------------------|--------|------------------|----------------|
|    |    | Operating pressure       |        | Control pressure |                |
|    |    | EPDM/FPM                 | PTFE   |                  |                |
| 10 | 12 | 0 - 90                   | 0 - 90 | 46 - 87          | 3.3            |
|    | 15 |                          |        |                  | 4.1            |
|    | 20 |                          |        |                  | 4.1            |

All pressures are gauge pressures.

Cv values determined acc. to inlet pressure 75 psi, Δp 15 psi, PVC-U valve body and soft elastomer diaphragm.

The Cv values for other product configurations (e.g. other diaphragm or body materials) may differ. In general, all diaphragms are subject to the influences of pressure, temperature, the process and their tightening torques. Therefore the Cv values may exceed the tolerance limits of the standard.

The Cv value curve (Cv value dependent on valve stroke) can vary depending on the diaphragm material and duration of use.

## Order data

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

| Nominal size   | Code |
|----------------|------|
| DN 12 NPS      | 12   |
| DN 15 NPS 1/2" | 15   |
| DN 20 NPS 3/4" | 20   |

| Connection                                       | Code |
|--|------|
| Threaded sockets DIN ISO 228                     | 1    |
| Solvent cement sockets DIN                       | 2    |
| Union ends with DIN insert (socket)              | 7    |
| Spigots for IR butt welding, BCF                 | 28   |
| Union ends with inch insert - BS (socket)        | 33   |
| Flare connection with PVDF union nut             | 75   |
| Union ends with DIN insert (for IR butt welding) | 78   |

| Valve body material        | Code |
|----------------------------|------|
| PVC-U, grey                | 1    |
| PP, glass fibre reinforced | 5    |
| PVDF                       | 20   |
| PP-H natural               | N5*  |

\* only with integrated mounting plate (code M)

| Diaphragm material     | Code |
|------------------------|------|
| NBR                    | 2    |
| FPM                    | 4    |
| EPDM                   | 14   |
| PTFE / EPDM, one-piece | 54   |

| Control function   | Code |
|--------------------|------|
| Normally closed NC | 1    |

| Actuator version | Code |
|------------------|------|
| Piston ø 54      | 1/N  |

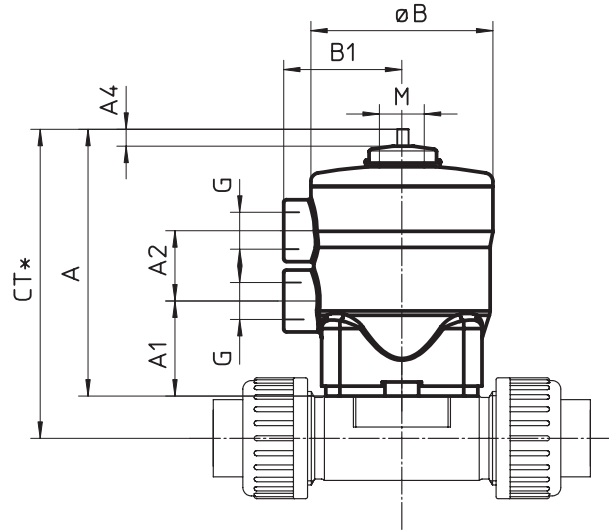
| Integrated mounting plate                              | Code |
|--|------|
| With integrated mounting plate<br>Material code 20, N5 | M    |
| Without mounting plate<br>Material code 20             | O    |
| Without mounting plate                                 | -    |

| Order example                    | 630 | 15 | D | 7 | 1 | 14 | 1 | 1/N | - |
|----------------------------------|-----|----|---|---|---|----|---|-----|---|
| Type                             | 630 |    |   |   |   |    |   |     |   |
| Nominal size                     |     | 15 |   |   |   |    |   |     |   |
| Body configuration (code)        |     |    | D |   |   |    |   |     |   |
| Connection (code)                |     |    |   | 7 |   |    |   |     |   |
| Valve body material (code)       |     |    |   |   | 1 |    |   |     |   |
| Diaphragm material (code)        |     |    |   |   |   | 14 |   |     |   |
| Control function (code)          |     |    |   |   |   |    | 1 |     |   |
| Actuator version (code)          |     |    |   |   |   |    |   | 1/N |   |
| Integrated mounting plate (code) |     |    |   |   |   |    |   |     | - |

## Dimensions [inch]

### Actuator dimensions

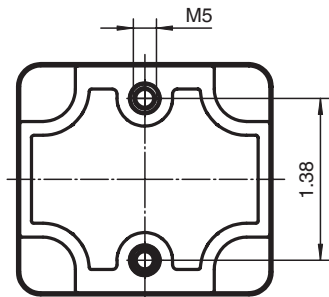
| Diaphragm size | B      | B1   | A    | A1   | A2   | A4 ca. | G     | M     | Weight [lbs] |
|----------------|--------|------|------|------|------|--------|-------|-------|--------------|
| 10             | ø 2.64 | 1.69 | 3.70 | 1.34 | 0.98 | 0.24   | G 1/4 | M16x1 | 0.7          |



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

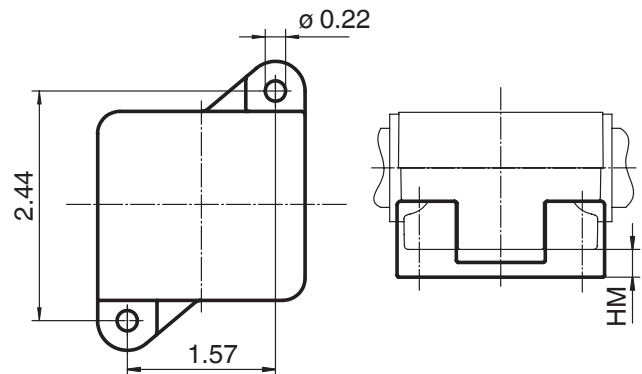
### Valve body mounting dimensions

| Diaphragm size | M  | f    |
|----------------|----|------|
| 10             | M5 | 1.38 |



### Dimensions of mounting plate Code M

| Diaphragm size | Material code 20, N5 | HM   |
|----------------|----------------------|------|
| 10             | DN 12                | 0.20 |
|                | DN 15                | 0.18 |
|                | DN 20                | 0.18 |



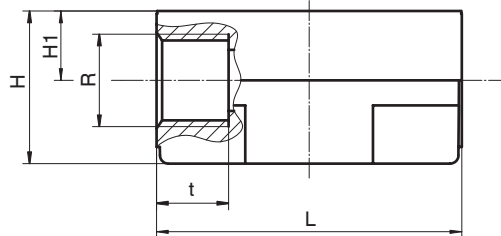
## Body dimensions [inch]

### Threaded sockets, connection code 1 Valve body material: PVC-U (code 1), PP (code 5), PVDF (code 20)

| MG | DN | R    | t    | H                  |                  | H1                 |                  | L    | Weight [lbs] |
|----|----|------|------|--------------------|------------------|--------------------|------------------|------|--------------|
|    |    |      |      | Material code 1, 5 | Material code 20 | Material code 1, 5 | Material code 20 |      |              |
| 10 | 12 | G3/8 | 0.51 | 1.08               | 1.24             | 0.49               | 0.49             | 2.17 | 0.2          |

For materials see overview on page 8

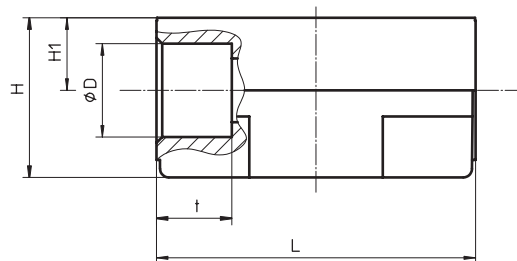
MG = diaphragm size



### Solvent cement sockets, connection code 2 Valve body material: PVC-U (code 1)

| MG | DN | $\varnothing D$ | t    | H    | H1   | L    | Weight [lbs] |
|----|----|-----------------|------|------|------|------|--------------|
| 10 | 12 | 0.63            | 0.51 | 1.08 | 0.49 | 2.17 | 0.1          |

MG = diaphragm size



## Body dimensions [inch]

### Union ends with DIN insert (socket), connection code 7 Valve body material: PVC-U (code 1), PP (code 5), PVDF (code 20)\*, PP-H (Code N5)\*

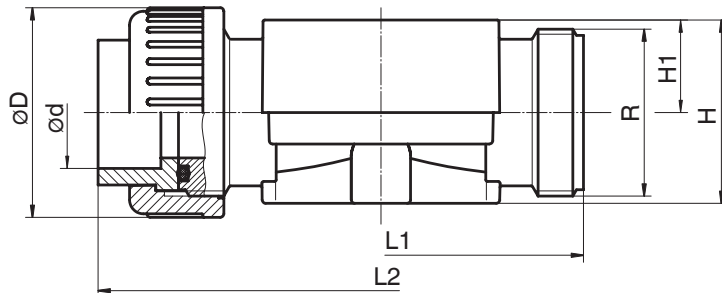
| MG | DN | L1   | L2            |      |       | H    |        | H1   |        | øD   | ød    | R   | Weight [lbs] |
|----|----|------|---------------|------|-------|------|--------|------|--------|------|-------|-----|--------------|
|    |    |      | Material code |      |       |      |        |      |        |      |       |     |              |
|    |    |      | 1             | 20   | 5, N5 | 1, 5 | 20, N5 | 1, 5 | 20, N5 |      |       |     |              |
| 10 | 15 | 3.54 | 5.04          | 5.04 | 4.92  | 1.18 | 1.61   | 0.59 | 0.63   | 1.69 | 0.787 | G 1 | 0.4          |

\* with integrated mounting plate (code M), note dimension HM (see page 4)  
For materials see overview on page 8      MG = diaphragm size

### Union ends with inch insert (socket), connection code 33 Valve body material: PVC-U (code 1)

| MG | DN | NPS  | L1   | L2   | H    | H1   | øD   | ød    | R   | Weight [lbs] |
|----|----|------|------|------|------|------|------|-------|-----|--------------|
| 10 | 15 | 1/2" | 3.54 | 5.04 | 1.18 | 0.59 | 1.69 | 0.843 | G 1 | 0.3          |

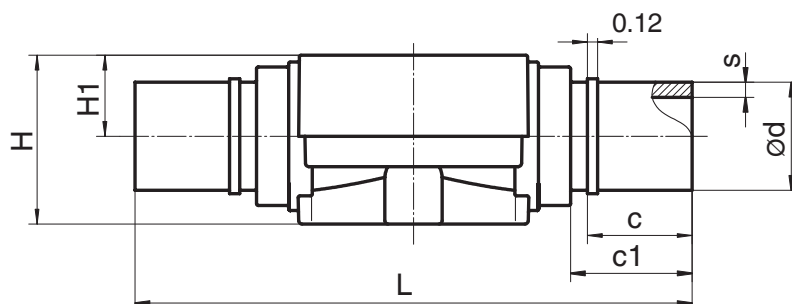
MG = diaphragm size



### Spigots for IR butt welding, BCF, connection code 28 Valve body material: PVDF (code 20)

| MG | DN | L    | H    | H1   | ød    | c    | c1   | s     | Weight [lbs] |
|----|----|------|------|------|-------|------|------|-------|--------------|
| 10 | 15 | 5.28 | 1.61 | 0.63 | 0.787 | 1.22 | 1.46 | 0.075 | 0.3          |

MG = diaphragm size

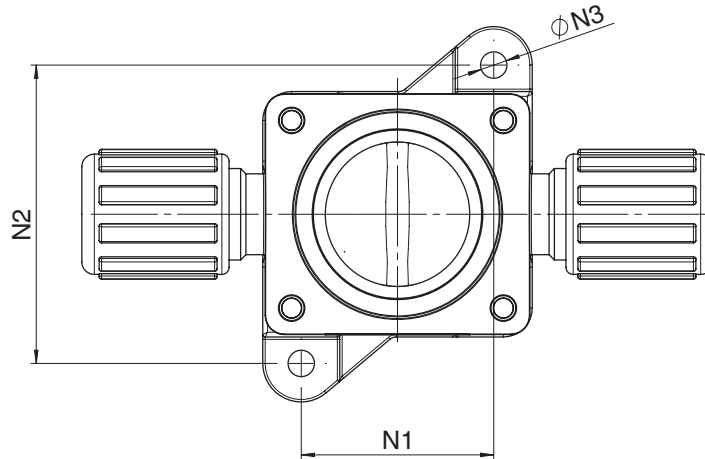
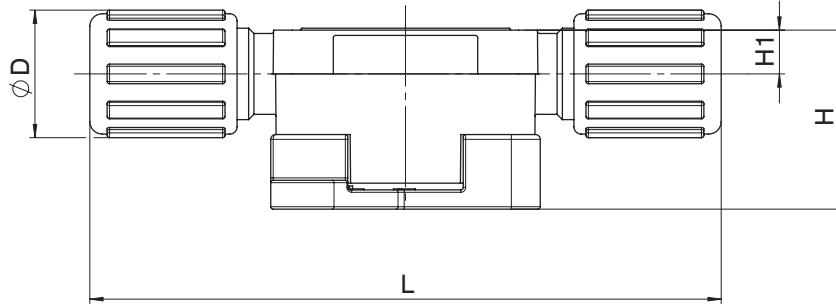


**Body dimensions [inch]**

**Flare connection with PVDF union nut, connection code 75  
Valve body material: PP-H (code N5)**

| MG | DN | L    | H    | H1   | øD   | N1   | N2   | øN3  | Weight [lbs] |
|----|----|------|------|------|------|------|------|------|--------------|
| 10 | 15 | 5.2  | 1.50 | 0.39 | 1.04 | 1.57 | 2.44 | 0.22 | 0.2          |
|    | 20 | 5.28 | 1.75 | 0.59 | 1.04 | 1.57 | 2.44 | 0.22 | 0.3          |

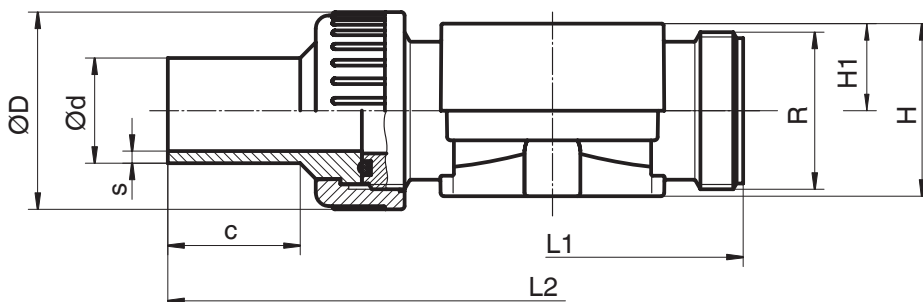
MG = diaphragm size



**Union ends with insert, connection code 78  
Valve body material: PP (code 5), PVDF (code 20)\*, PP-H (code N5)\***

| MG | DN | L1   | L2   | H             |        | H1   |        | øD   | ød    | R   | s             |       | c    | Weight [lbs] |
|----|----|------|------|---------------|--------|------|--------|------|-------|-----|---------------|-------|------|--------------|
|    |    |      |      | Material code |        |      |        |      |       |     | Material code |       |      |              |
|    |    |      |      | 5             | 20, N5 | 5    | 20, N5 |      |       |     | 5, N5         | 20    |      |              |
| 10 | 15 | 3.54 | 7.72 | 1.18          | 1.61   | 0.59 | 0.63   | 1.65 | 0.787 | G 1 | 0.075         | 0.075 | 1.42 | 0.4          |

\* with integrated mounting plate (code M), note dimension HM (see page 4)  
For materials see overview on page 8      MG = diaphragm size



## Overview of valve bodies for GEMÜ 630

| Connection code |    | 1 |   |    | 2 | 7 |   |    |    | 28 | 33 | 75 | 78 |    |    |
|-----------------|----|---|---|----|---|---|---|----|----|----|----|----|----|----|----|
| Material code   |    | 1 | 5 | 20 | 1 | 1 | 5 | 20 | N5 | 20 | 1  | N5 | 5  | 20 | N5 |
| MG              | DN |   |   |    |   |   |   |    |    |    |    |    |    |    |    |
| 10              | 12 | X | X | X  | X | - | - | -  | -  | -  | -  | -  | -  | -  | -  |
|                 | 15 | - | - | -  | - | X | X | X  | X  | X  | X  | X  | X  | X  | X  |
|                 | 20 | - | - | -  | - | - | - | -  | -  | -  | -  | X  | -  | -  | -  |

MG = diaphragm size

## Accessories



**GEMÜ 1470**

NAMUR control air adapter  
for GEMÜ 600,  
Diaphragm size 40 and 50

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