

## GEMÜ 610

### Pneumatically operated diaphragm valve



#### Features

- Ideal for space-saving system design
- Integral optical position indicator and closing stroke limiter as standard
- Option with electrical position indicator

#### Description

The GEMÜ 610 2/2-way diaphragm valve has a low maintenance plastic piston actuator and is pneumatically operated. An integral optical position indicator is standard. Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available.

#### Technical specifications

- **Media temperature :** -10 to 80 °C
- **Ambient temperature:** -10 to 50 °C
- **Operating pressure :** 0 to 6 bar
- **Nominal sizes:** DN 12 to 20
- **Body configurations:** Straight through body
- **Connection standards :** BS | DIN | ISO
- **Connection types:** Flare | Solvent cement socket | Spigot | thread | Union end
- **Body materials:** PP, reinforced | PP-H, natural | PVC-U, grey | PVDF
- **Diaphragm materials:** EPDM | FKM | NBR | PTFE/EPDM
- **Conformities:** ACS | EAC | FDA | FMEDA | System 1+

Technical data depends on the respective configuration

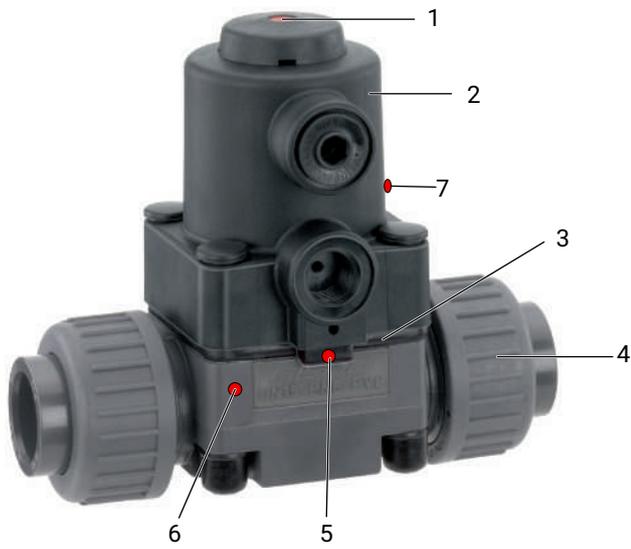


further information  
webcode: GW-610



## Product description

### Construction



Item	Name	Materials
1	Optical position indicator	
2	Membrane actuator	
3	Diaphragm	NBR, FKM, EPDM, PTFE/EPDM, one-piece
4	Valve body	PVC-U, grey PP, glass fibre reinforced PVDF PP-H natural
5	CONEXO diaphragm RFID chip (see Conexo information)	
6	CONEXO body RFID chip (see Conexo information)	
7	CONEXO actuator RFID chip (see Conexo information)	

## GEMÜ CONEXO

The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.



Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the "installation qualification" process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly provides him with all the information assigned to the valve, such as test reports, testing documentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process all data.

**For further information on GEMÜ CONEXO please visit:**

[www.gemu-group.com/conexo](http://www.gemu-group.com/conexo)

### Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO".

## Availabilities

### Availability of valve bodies

#### Threaded socket

MG	DN	Connection type code 1 <sup>1)</sup>
		Material code 1, 5, 20 <sup>2)</sup>
10	12	X
	15	-
	20	-

MG = diaphragm size, X = standard

- 1) **Connection type**  
Code 1: Threaded socket DIN ISO 228
- 2) **Valve body material**  
Code 1: PVC-U, grey  
Code 5: PP, reinforced  
Code 20: PVDF

#### Solvent cement socket

MG	DN	Connection type code 2 <sup>1)</sup>
		Material code 1 <sup>2)</sup>
10	12	X
	15	-
	20	-

MG = diaphragm size, X = standard

- 1) **Connection type**  
Code 2: Solvent cement socket DIN
- 2) **Valve body material**  
Code 1: PVC-U, grey

**Union end**

MG	DN	Connection type code <sup>1)</sup>							
		7, 7X				33	78		
		Material code <sup>2)</sup>							
		1	5	20	N5	1	5	20	N5
10	12	-	-	-	-	-	-	-	-
	15	X	X	X	X	X	X	X	X
	20	-	-	-	-	-	-	-	-

MG = diaphragm size, X = standard

1) **Connection type**

- Code 7: Fitting screw connection with insert (socket) – DIN
- Code 7X: Threaded spigot for fitting screw connection
- Code 33: Fitting screw connection with insert inch - BS (socket)
- Code 78: Fitting screw connection with insert (IR butt welding) – DIN

2) **Valve body material**

- Code 1: PVC-U, grey
- Code 5: PP, reinforced
- Code 20: PVDF
- Code N5: PP-H, natural

**Spigot**

MG	DN	Connection type code 28 <sup>1)</sup>
		Material code 20 <sup>2)</sup>
10	12	-
	15	X
	20	-

MG = diaphragm size, X = standard

1) **Connection type**

- Code 28: Spigot for IR butt welding, WNF

2) **Valve body material**

- Code 20: PVDF

**Flare**

MG	DN	Connection type code 75 <sup>1)</sup>
		Material code N5 <sup>2)</sup>
10	12	-
	15	X
	20	X

MG = diaphragm size, X = standard

1) **Connection type**

- Code 75: Flare connection with union nut PVDF

2) **Valve body material**

- Code N5: PP-H, natural

**Availability of product conformity – drinking water hygiene suitability according to system 1+ (special function 1)**

MG	DN	Connection type code <sup>1)</sup>				Material code	Diaphragm material code
		1	2	7	33		
10	12	X	X	-	-	X	X
	15	-	-	X	X	X	X

MG = diaphragm size

1) **Connection type**

Code 1: Threaded socket DIN ISO 228

Code 2: Solvent cement socket DIN

Code 7: Fitting screw connection with insert (socket) – DIN

Code 33: Fitting screw connection with insert inch - BS (socket)

## Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

## Order codes

1 Type	Code
Diaphragm valve, pneumatically operated, plastic piston actuator, optical position indicator	610

2 DN	Code
DN 12	12
DN 15	15
DN 20	20

3 Body configuration	Code
2/2-way body	D

4 Connection type	Code
Threaded socket DIN ISO 228	1
Solvent cement socket DIN	2
Fitting screw connection with insert (socket) – DIN	7
Spigot for IR butt welding, WNF	28
Fitting screw connection with insert inch - BS (socket)	33
Flare connection with union nut PVDF	75
Fitting screw connection with insert (IR butt welding) – DIN	78
Threaded spigot for fitting screw connection	7X

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

6 Diaphragm material	Code
<b>Elastomer</b>	
NBR	2
FKM	4
EPDM	17
EPDM	29
<b>PTFE</b>	
PTFE/EPDM one-piece	54

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

8 Actuator version	Code
Actuator size 1/N control air connector 90° offset to flow direction	1/N
Actuator size 1RN control air connector in-line with flow direction	1RN

9 Mounting plate	Code
including mounting plate	M
Without mounting plate	O
Without	

10 Special version	Code
Drinking water hygiene suitability according to system 1+, UBA-BWGL for plastics and other organic materials, Cold and hot water (23 °C–60 °C)	1

11 CONEXO	Code
Integrated RFID chip for electronic identification and traceability	C
Without	

**Order codes**

Ordering option	Code	Description
1 Type	610	Diaphragm valve, pneumatically operated, plastic piston actuator, optical position indicator
2 DN	15	DN 15
3 Body configuration	D	2/2-way body
4 Connection type	7	Fitting screw connection with insert (socket) – DIN
5 Valve body material	1	PVC-U, grey
6 Diaphragm material	17	EPDM
7 Control function	1	Normally closed (NC)
8 Actuator version	1/N	Actuator size 1/N control air connector 90° offset to flow direction
9 Mounting plate		Without
10 Special version	1	Drinking water hygiene suitability according to system 1+, UBA-BWGL for plastics and other organic materials, Cold and hot water (23 °C–60 °C)
11 CONEXO		Without

## Technical data

### Medium

**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.

**Control medium:** Inert gases

### Temperature

**Media temperature:**

Valve body material	
PVC-U, grey (code 1)	10 – 60 °C
PP, reinforced (code 5)	5 – 80 °C
PVDF (code 20)	-10 – 80 °C
PP-H, natural (code N5)	5 – 80 °C

**Ambient temperature:**

Valve body material	
PVC-U, grey (code 1)	10 – 50 °C
PP, reinforced (code 5)	5 – 50 °C
PVDF (code 20)	-10 – 50 °C
PP-H, natural (code N5)	5 – 50 °C

**Storage temperature:** 0 – 40 °C

**Control medium temperature:** max. 40 °C

### Pressure

**Operating pressure:** 0 – 6 bar

**Pressure rating:** PN 6

**Pressure/temperature correlation:**

MG	Valve body		Temperatures in °C										
	Material	Code	-10	0	5	10	20	30	40	50	60	70	80
10	PVC-U	1	-	-	-	6.0	6.0	6.0	6.0	3.5	1.5	-	-
	PP-H	5	-	-	6.0	6.0	6.0	6.0	6.0	5.5	4.0	2.7	1.5
	PVDF	20	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.4	4.7
	PP-H-Natur	N5	-	-	6.0	6.0	6.0	6.0	6.0	5.5	4.0	2.7	1.5

All pressures are gauge pressures.

The permissible operating pressure depends on the working medium temperature.

Data for extended temperature ranges on request. Please note that the ambient temperature and media temperature generate a combined temperature at the valve body which must not exceed the above values.

**Filling volume:** 0.02 dm<sup>3</sup>

Technical data

**Kv values:**

MG	DN	Kv values
10	12	2.8
	15	3.5
	20	3.5

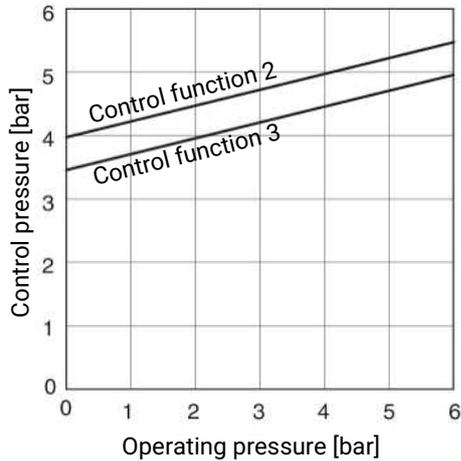
MG = diaphragm size, Kv values in m³/h  
 Kv values determined acc.to DIN EN 60534 standard, inlet pressure 5 bar, Δp 1 bar, PVC-U valve body and soft elastomer diaphragm.  
 The Kv values for other product configurations (e.g. other diaphragm or body materials) may differ. In general, all diaphragms are subject to the influences of pressure, temperature, the process and their tightening torques. Therefore the Kv values may exceed the tolerance limits of the standard.  
 The Kv value curve (Kv value dependent on valve stroke) can vary depending on the diaphragm material and term of use.

**Control pressure:**

MG	DN	Control function 1	Control function 2	Control function 3
10	12 - 20	5.0–7.0	max. 5.5 see diagram	Max. 5.0

MG = diaphragm size  
 All pressures are gauge pressures.

**Control pressure/operating pressure diagram – Control function 2 and 3**



The control pressure depending on the prevailing operating pressure, as shown in the diagram, is intended as a guide for operating the system with low wear on the diaphragm.

**Product conformity**

**Machinery Directive:** 2006/42/EC

**Pressure Equipment Directive:** 2014/68/EU

**Food:** FDA\*

**EAC:** TR CU 010/2011

**Drinking water:** Drinking water hygiene suitability according to system 1+ (special function 1)  
 UBA-BWGL for plastics and other organic materials,  
 Cold and hot water (23 °C–60 °C)  
 System 1+

## Materials

Materials:

Diaphragm material	O-ring material
PTFE	FKM
NBR	EPDM
FKM	FKM
EPDM	EPDM

## Mechanical data

Weight:

Actuator

0.18 kg

Valve body

MG	DN	Spigot	Union end				Threaded socket	Solvent cement socket	Flare		
			Connection type code								
			28	7	33	78				1	2
10	12	-	-	-	-	0.08	0.06	-			
	15	0.13	0.18	0.13	0.20	-	-	0.08			
	20	-	-	-	-	-	-	0.125			

MG = diaphragm size, weight in kg

Installation position:

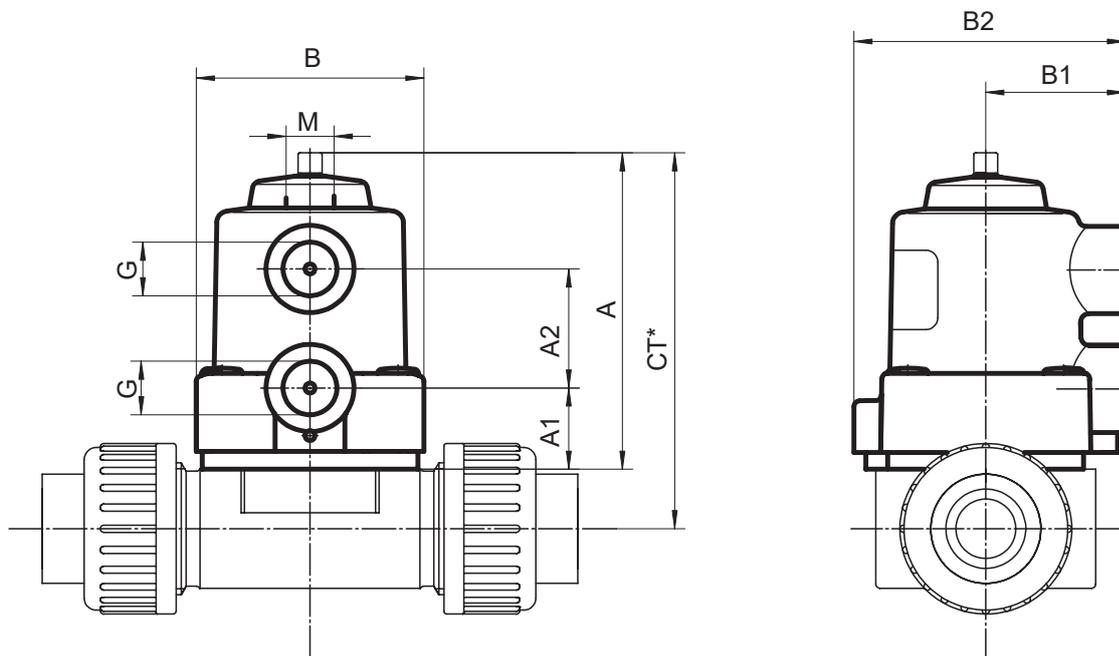
Optional

Flow direction:

Optional

## Dimensions

### Actuator dimensions



MG	A	A1	A2	B	B1	B2	G	M
10	82	21	30.0	57.0	35.0	68.0	G 1/4	M12x1

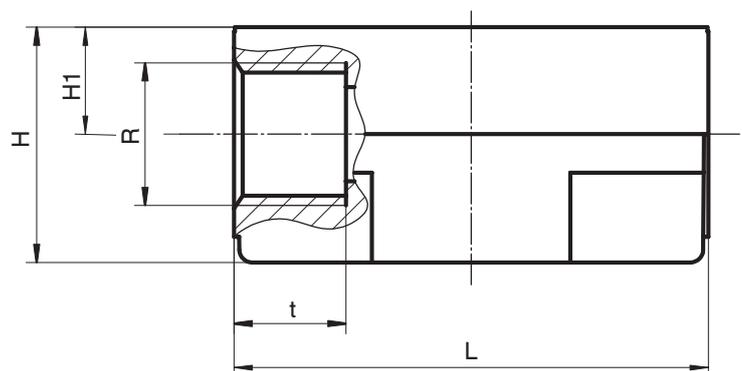
MG = diaphragm size

Dimensions in mm

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

## Body dimensions

### Threaded socket (code 1)



Connection type threaded socket (code 1)<sup>1)</sup>, body materials PVC-U (code 1), PP (code 5), PVDF (code 20)<sup>2)</sup>

MG	DN	NPS	H		H1	L	R	t
			Material					
			1, 5	20				
10	12	3/8"	27.5	31.5	12.5	55.0	G3/8	13.0

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 1: Threaded socket DIN ISO 228

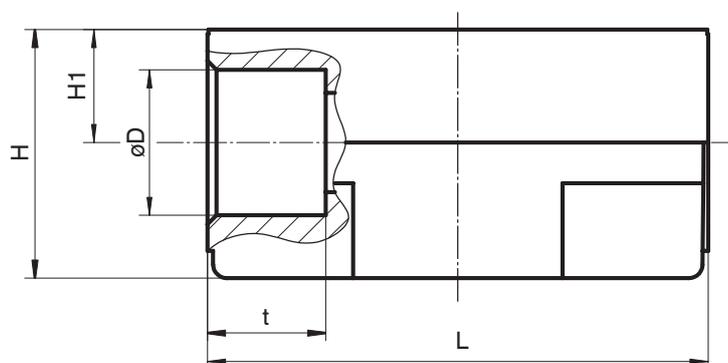
2) **Valve body material**

Code 1: PVC-U, grey

Code 5: PP, reinforced

Code 20: PVDF

### Solvent cement socket (code 2)



Connection type solvent cement socket (code 2)<sup>1)</sup>, body material PVC-U (code 1)<sup>2)</sup>

MG	DN	NPS	ø D	H	H1	L	t
10	12	3/8"	16.0	27.5	12.5	55.0	13.0

Dimensions in mm

MG = diaphragm size

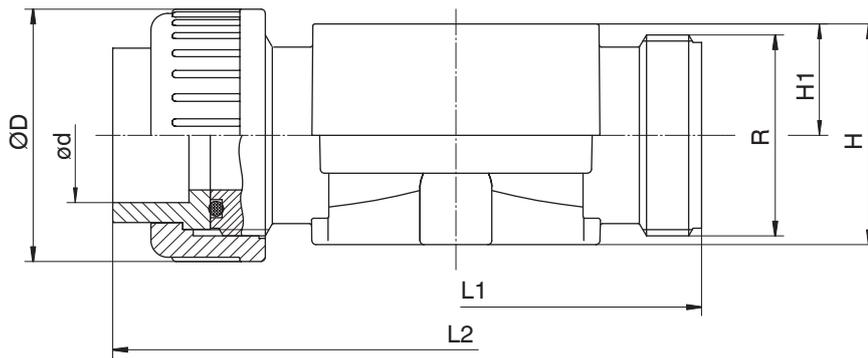
1) **Connection type**

Code 2: Solvent cement socket DIN

2) **Valve body material**

Code 1: PVC-U, grey

**DIN union end (code 7)**



Connection type union end DIN (code 7)<sup>1)</sup>, body material PVC-U (code 1), PP (code 5), PVDF (code 20), PP-H (code N5)<sup>2)</sup>, diaphragm size 10

MG	DN	NPS	ød	øD	H		H1		L1	L2		R
					Material		Material			Material		
					1, 20	5, N5	1, 20	5, N5		1, 20	5, N5	
10	15	1/2"	20.0	43.0	30.0	41.0	15.0	16.0	90.0	128.0	125.0	G 1

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 7: Fitting screw connection with insert (socket) – DIN

2) **Valve body material**

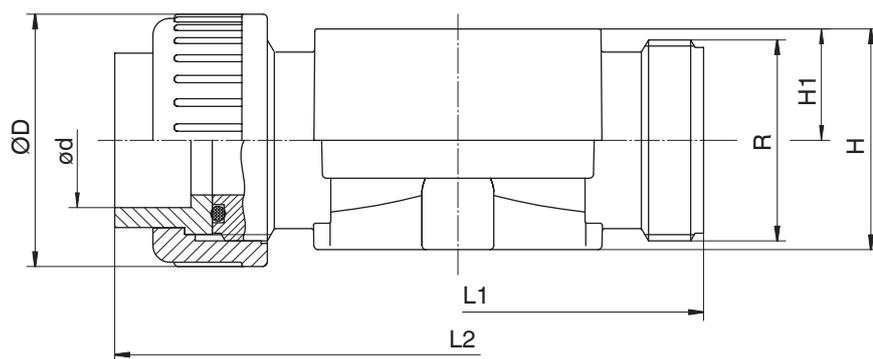
Code 1: PVC-U, grey

Code 5: PP, reinforced

Code 20: PVDF

Code N5: PP-H, natural

Valve body material PVDF (code 20), PP-H (code N5) with integrated mounting plate (code M), observe dimension HM (see "Mounting plate", page 18)

**Inch union end (code 33)****Connection type inch union end (code 33)<sup>1)</sup>, body material PVC-U (code 1)<sup>2)</sup>, diaphragm size 10**

MG	DN	NPS	ød	øD	H	H1	L1	L2	R
10	15	1/2"	21.4	43.0	30.0	15.0	90.0	128.0	G1

Dimensions in mm

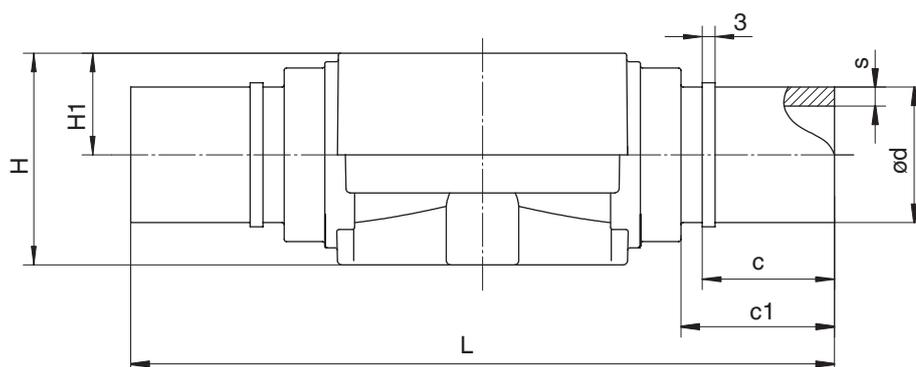
MG = diaphragm size

**1) Connection type**

Code 33: Fitting screw connection with insert inch - BS (socket)

**2) Valve body material**

Code 1: PVC-U, grey

**Spigot (code 28)****Connection type spigot (code 28)<sup>1)</sup>, body material PVDF (code 20)<sup>2)</sup>**

MG	DN	NPS	c	c1	ød	H	H1	L	s
10	15	1/2"	31.0	37.0	20.0	41.0	16.0	134.0	1.9

Dimensions in mm

MG = diaphragm size

**1) Connection type**

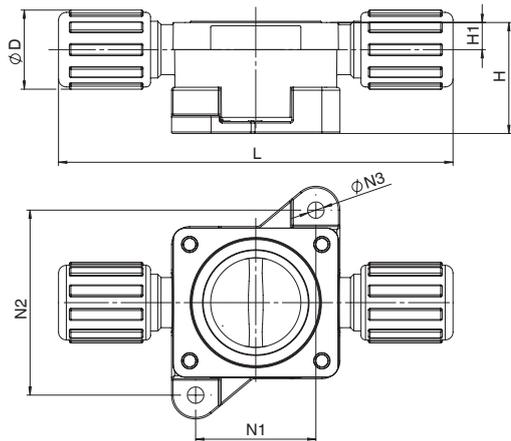
Code 28: Spigot for IR butt welding, WNF

**2) Valve body material**

Code 20: PVDF

## Dimensions

### Flare (code 75)



### Connection type flare (code 75)<sup>1)</sup>, body material PP-H (code N5)<sup>2)</sup>

MG	DN	NPS	$\phi D$	H	H1	L	N1	N2	$\phi N3$
10	15	1/2"	26.5	38.1	10.0	132.0	40.0	62.0	5.5
	20	3/4"	26.5	44.5	15.0	134.0	40.0	62.0	5.5

Dimensions in mm

MG = diaphragm size

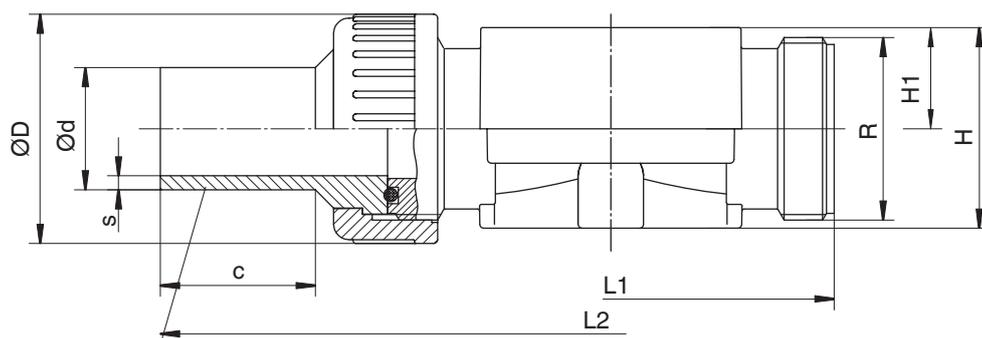
#### 1) Connection type

Code 75: Flare connection with union nut PVDF

#### 2) Valve body material

Code N5: PP-H, natural

**DIN union end, IR butt welding (code 78)**



Connection type DIN union end, IR butt welding (code 78)<sup>1)</sup>, body materials PP (code 5), PVDF (code 20), PP-H (code N5)<sup>2)</sup>

MG	DN	NPS	c	ød	øD	H		H1		L1	L2	R	s
						Material		Material					
						5	20, N5	5	20, N5				
10	15	1/2"	36.0	20.0	42.0	30.0	41.0	15.0	16.0	90.0	196.0	G 1	1.9

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 78: Fitting screw connection with insert (IR butt welding) – DIN

2) **Valve body material**

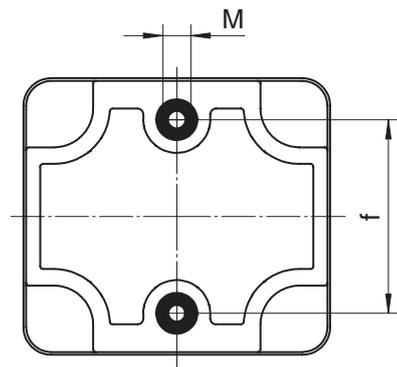
Code 5: PP, reinforced

Code 20: PVDF

Code N5: PP-H, natural

Valve body material PVDF (code 20), PP-H (code N5) with integrated mounting plate (code M), observe dimension HM (see "Mounting plate", page 18)

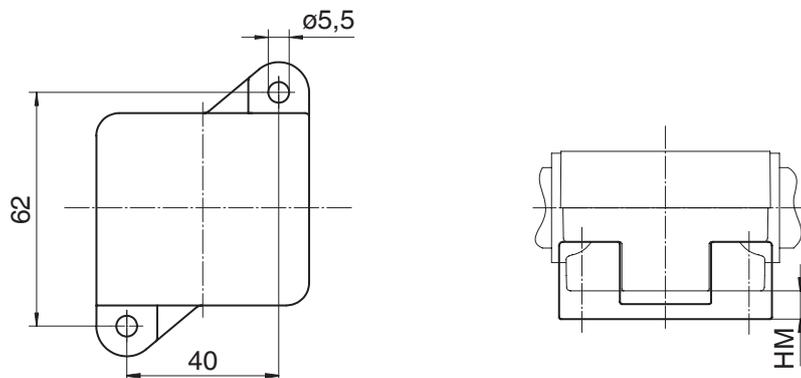
### Valve body mounting



Diaphragm size	DN	M	f
10	10 - 20	M5	35.0

Dimensions in mm  
 MG = diaphragm size

### Mounting plate



MG	DN	HM
10	12	5.0
	15	4.5
	20	4.5

Dimensions in mm  
 MG = diaphragm size



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