

# GEMÜ 675

Manually operated diaphragm valve

EN

## Operating instructions



further information  
webcode: GW-675



All rights including copyrights or industrial property rights are expressly reserved.

Keep the document for future reference.

© GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG  
27.06.2023

---

## Contents

<b>1</b>	<b>General information</b>	<b>4</b>
1.1	Information	4
1.2	Symbols used	4
1.3	Definition of terms	4
1.4	Warning notes	4
<b>2</b>	<b>Safety information</b>	<b>5</b>
<b>3</b>	<b>Product description</b>	<b>5</b>
3.1	Construction	5
3.2	Description	5
3.3	Function	5
3.4	Product label	5
<b>4</b>	<b>Correct use</b>	<b>6</b>
<b>5</b>	<b>Order data</b>	<b>7</b>
5.1	Order codes	7
5.2	Order example	8
<b>6</b>	<b>Technical data</b>	<b>9</b>
6.1	Medium	9
6.2	Temperature	9
6.3	Pressure	9
6.4	Product compliance	10
6.5	Mechanical data	11
<b>7</b>	<b>Dimensions</b>	<b>12</b>
7.1	Actuator dimensions	12
7.2	Body dimensions	13
<b>8</b>	<b>Manufacturer's information</b>	<b>19</b>
8.1	Delivery	19
8.2	Packaging	19
8.3	Transport	19
8.4	Storage	19
<b>9</b>	<b>Installation in piping</b>	<b>19</b>
9.1	Preparing for installation	19
9.2	Installation with flanged connection	20
9.3	Installation with threaded sockets	20
<b>10</b>	<b>Operation</b>	<b>20</b>
10.1	Optical position indicator	20
10.2	Lockable handwheel	20
<b>11</b>	<b>Commissioning</b>	<b>21</b>
<b>12</b>	<b>Inspection and maintenance</b>	<b>21</b>
12.1	Spare parts	21
12.2	Removing the actuator	22
12.3	Removing the diaphragm	22
12.4	Mounting the diaphragm	22
12.4.1	Mounting the convex diaphragm	22
12.4.2	Mounting the concave diaphragm	23
12.5	Mounting the actuator	23
<b>13</b>	<b>Troubleshooting</b>	<b>24</b>
<b>14</b>	<b>Removal from piping</b>	<b>25</b>
<b>15</b>	<b>Disposal</b>	<b>25</b>
<b>16</b>	<b>Returns</b>	<b>25</b>
<b>17</b>	<b>Declaration of conformity according to 2014/68/ EU (Pressure Equipment Directive)</b>	<b>26</b>

## 1 General information

### 1.1 Information

- The descriptions and instructions apply to the standard versions. For special versions not described in this document the basic information contained herein applies in combination with any additional special documentation.
- Correct installation, operation, maintenance and repair work ensure faultless operation of the product.
- Should there be any doubts or misunderstandings, the German version is the authoritative document.
- Contact us at the address on the last page for staff training information.

### 1.2 Symbols used

The following symbols are used in this document:

Symbol	Meaning
●	Tasks to be performed
▶	Response(s) to tasks
-	Lists

### 1.3 Definition of terms

#### Working medium

The medium that flows through the GEMÜ product.

#### Diaphragm size

Uniform seat size of GEMÜ diaphragm valves for different nominal sizes.

### 1.4 Warning notes


Wherever possible, warning notes are organised according to the following scheme:


SIGNAL WORD	
Possible symbol for the specific danger	<p>Type and source of the danger</p> <ul style="list-style-type: none"> <li>▶ Possible consequences of non-observance.</li> <li>● Measures for avoiding danger.</li> </ul>

Warning notes are always marked with a signal word and sometimes also with a symbol for the specific danger.





The following signal words and danger levels are used:

<b>⚠ DANGER</b>	
	<p><b>Imminent danger!</b></p> <ul style="list-style-type: none"> <li>▶ Non-observance can cause death or severe injury.</li> </ul>
<b>⚠ WARNING</b>	
	<p><b>Potentially dangerous situation!</b></p> <ul style="list-style-type: none"> <li>▶ Non-observance can cause death or severe injury.</li> </ul>

<b>⚠ CAUTION</b>	
	<p><b>Potentially dangerous situation!</b></p> <ul style="list-style-type: none"> <li>▶ Non-observance can cause moderate to light injury.</li> </ul>

<b>NOTICE</b>	
	<p><b>Potentially dangerous situation!</b></p> <ul style="list-style-type: none"> <li>▶ Non-observance can cause damage to property.</li> </ul>

The following symbols for the specific dangers can be used within a warning note:

Symbol	Meaning
	Danger of explosion!
	Corrosive chemicals!
	Hot plant components!
	Handwheel can become hot during operation!

## 2 Safety information

The safety information in this document refers only to an individual product. Potentially dangerous conditions can arise in combination with other plant components, which need to be considered on the basis of a risk analysis. The operator is responsible for the production of the risk analysis and for compliance with the resulting precautionary measures and regional safety regulations.

The document contains fundamental safety information that must be observed during commissioning, operation and maintenance. Non-compliance with these instructions may cause:

- Personal hazard due to electrical, mechanical and chemical effects.
- Hazard to nearby equipment.
- Failure of important functions.
- Hazard to the environment due to the leakage of dangerous substances.

The safety information does not take into account:

- Unexpected incidents and events, which may occur during installation, operation and maintenance.
- Local safety regulations which must be adhered to by the operator and by any additional installation personnel.

### Prior to commissioning:

1. Transport and store the product correctly.
2. Do not paint the bolts and plastic parts of the product.
3. Carry out installation and commissioning using trained personnel.
4. Provide adequate training for installation and operating personnel.
5. Ensure that the contents of the document have been fully understood by the responsible personnel.
6. Define the areas of responsibility.
7. Observe the safety data sheets.
8. Observe the safety regulations for the media used.

### During operation:

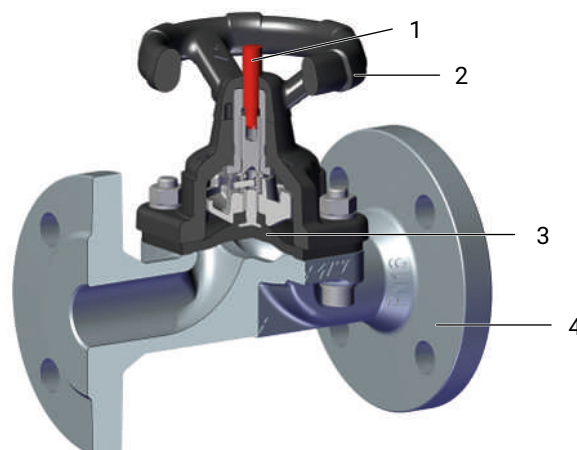
9. Keep this document available at the place of use.
10. Observe the safety information.
11. Operate the product in accordance with this document.
12. Operate the product in accordance with the specifications.
13. Maintain the product correctly.
14. Do not carry out any maintenance work and repairs not described in this document without consulting the manufacturer first.

### In cases of uncertainty:

15. Consult the nearest GEMÜ sales office.

## 3 Product description

### 3.1 Construction



Item	Name	Materials
1	Optical position indicator	PP red
2	Actuator	Cast iron
3	Diaphragm	NBR FKM CR EPDM PTFE / EPDM (one-piece) PTFE / EPDM (two-piece) PTFE / FKM (two-piece) PTFE / PVDF / EPDM (three-piece)
4	Valve body	EN-GJL-250 (GG 25) EN-GJS-400-18-LT (GGG 40.3) EN-GJS-400-18-LT (GGG 40.3), PFA lined EN-GJS-400-18-LT (GGG 40.3), PP lined EN-GJS-400-18-LT (GGG 40.3), hard rubber lined EN-GJS-500-7 (GGG 50), PFA lined EN-GJS-500-7 (GGG 50), PP lined

### 3.2 Description

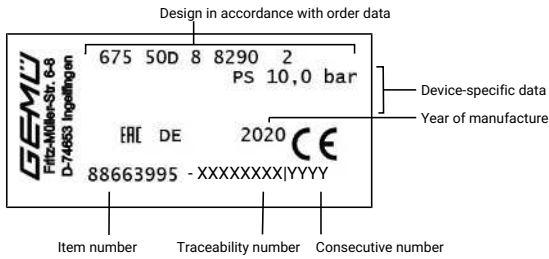
The GEMÜ 675 2/2-way diaphragm valve has a metal hand-wheel and is manually operated. An integral optical position indicator is standard.

### 3.3 Function

The product controls a flowing medium by manual operation. The product has an optical position indicator as standard. The optical position indicator indicates the OPEN and CLOSED positions.

### 3.4 Product label

The product label is located on the actuator. Product label data (example):



The month of manufacture is encoded in the traceability number and can be obtained from GEMÜ. The product was manufactured in Germany.

The operating pressure stated on the product label applies to a media temperature of 20 °C. The product can be used up to the maximum stated media temperature. You can find the pressure/temperature correlation in the technical data.

**4 Correct use**

**⚠ DANGER**

**Danger of explosion!**

- ▶ Risk of death or severe injury
- Do **not** use the product in potentially explosive zones.

**⚠ WARNING**

**Improper use of the product!**

- ▶ Risk of severe injury or death
- ▶ Manufacturer liability and guarantee will be void
- Only use the product in accordance with the operating conditions specified in the contract documentation and in this document.

The product is designed for installation in piping systems and for controlling a working medium.

The product is not intended for use in potentially explosive areas.

- Use the product in accordance with the technical data.

## 5 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, manually operated, metal handwheel, metal distance piece, optical position indicator	675

2 DN	Code
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65
DN 80	80
DN 100	100
DN 125	125
DN 150	150

3 Body configuration	Code
2/2-way body	D

4 Connection type	Code
<b>Threaded connection</b>	
Threaded socket DIN ISO 228	1
NPT female thread	31
<b>Flange</b>	
Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	8
Flange ANSI Class 150 RF, face-to-face dimension FTF MSS SP-88, length only for body configuration D	38
Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	39
Flange BS 10 Table E, face-to-face dimension FTF EN 558 series 7, ISO 5752, basic series 7, length only for body configuration D	51
Flange EN 1092, PN 16, form A, face-to-face dimension FTF EN 558 series 7, ISO 5752, basic series 7, length only for body configuration D	53
Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 7, ISO 5752, basic series 7, length only for body configuration D	56

5 Valve body material	Code
<b>Cast iron material</b>	
EN-GJL-250 (GG 25)	8

5 Valve body material	Code
<b>SG iron material</b>	
EN-GJS-400-18-LT (GGG 40.3), PFA lined	17
EN-GJS-400-18-LT (GGG 40.3), PP lined	18
EN-GJS-500-7 (GGG 50), PFA lined	81
EN-GJS-400-18-LT (GGG 40.3), hard rubber lined	83
EN-GJS-400-18-LT (GGG 40.3)	90
EN-GJS-500-7 (GGG 50), PP lined	91

6 Diaphragm material	Code
<b>Elastomer</b>	
NBR	2
FKM	4
CR	8
EPDM	29
<b>PTFE</b>	
PTFE/EPDM one-piece	54
PTFE/EPDM two-piece	5M
PTFE/FKM two-piece	5T
PTFE/PVDF/EPDM three-piece	71
<b>Note:</b> The PTFE/PVDF/EPDM diaphragm (code 71) can only be combined with PFA lined valve bodies.	

7 Control function	Code
Manually operated	0
Manually operated, with lockable handwheel	L
Manually operated with lockable handwheel, (without proprietary padlock)	B

8 Actuator version	Code
DN 15 - 25, diaphragm size 25	
Actuator size 0	0
DN 32 - 40, diaphragm size 40	
Actuator size 1	1
DN 50 - 65, diaphragm size 50	
Actuator size 2	2
DN 65, diaphragm size 65	
Actuator size 3	3

8 Actuator version	Code
DN 80, diaphragm size 80	
Actuator size 4	4
DN 100 - 125, diaphragm size 100	
Actuator size 5	5
DN 125, diaphragm size 125	
Actuator size 6	6
DN 150, diaphragm size 150	
Actuator size 7	7

**Order example**

Ordering option	Code	Description
1 Type	675	Diaphragm valve, manually operated, metal handwheel, metal distance piece, optical position indicator
2 DN	50	DN 50
3 Body configuration	D	2/2-way body
4 Connection type	8	Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D
5 Valve body material	90	EN-GJS-400-18-LT (GGG 40.3)
6 Diaphragm material	29	EPDM
7 Control function	0	Manually operated
8 Actuator version	2	Actuator size 2



## 6 Technical data

### 6.1 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.

### 6.2 Temperature

**Media temperature:**

NBR (code 2)	-10 – 100 °C
FKM (code 4)	-10 – 90 °C
CR (code 8)	-10 – 100 °C
EPDM (code 29)	-10 – 100 °C
PTFE / EPDM (code 54)	-10 – 100 °C
PTFE / EPDM (code 5M)	-10 – 100 °C
PTFE / FKM (code 5T)	-10 – 100 °C
PTFE / PVDF / EPDM (code 71)	-10 – 100 °C

**Ambient temperature:** 0 – 60 °C

**Storage temperature:** 0 – 40 °C

### 6.3 Pressure

**Operating pressure:**

MG	DN	EPDM	PTFE
25	15 - 25	0 - 10	0 - 6
40	32 - 40	0 - 10	0 - 6
50	50 - 65	0 - 10	0 - 6
65	65	0 - 10	0 - 6
80	80	0 - 10	0 - 6
100	100 - 125	0 - 10	0 - 6
125	125	0 - 10	0 - 6
150	150	0 - 8	0 - 5

MG = diaphragm size

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.

**Pressure rating:** PN 16

**Leakage rate:** Leakage rate A (acc. to EN 12266-1)

**Kv values:**

MG	DN	SG iron 40.3 connection type 1, 31	SG iron 40.3 connection type 8, 39	PFA / PP	Hard rubber
<b>25</b>	<b>15</b>	8.0	10.0	5.0	6.0
	<b>20</b>	11.5	14.0	9.0	11.0
	<b>25</b>	11.5	17.0	13.0	15.0
<b>40</b>	<b>32</b>	28.0	36.0	23.0	29.0
	<b>40</b>	28.0	40.0	26.0	32.0
<b>50</b>	<b>50</b>	60.0	68.0	47.0	64.0
	<b>65</b>	-	68.0	-	-
<b>65</b>	<b>65</b>	-	-	72.0	80.0
<b>80</b>	<b>80</b>	-	130.0	110.0	128.0
<b>100</b>	<b>100</b>	-	200.0	177.0	190.0
	<b>125</b>	-	200.0	-	-
<b>125</b>	<b>125</b>	-	-	214.0	230.0
<b>150</b>	<b>150</b>	-	484.0	365.0	397.0

MG = diaphragm size, Kv values in m<sup>3</sup>/h

Kv values determined in accordance with DIN EN 60534, inlet pressure 5 bar,  $\Delta p$  1 bar, with connection flange EN 1092 length EN 558 series 1 (or threaded socket DIN ISO 228 for body material GGG40.3) 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 duration of use.

**6.4 Product compliance**

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

**Food:** FDA\*  
Regulation (EC) No. 1935/2004\*  
Regulation (EC) No. 10/2011\*

**EAC:** TR CU 010/2011

**TA Luft (German Clean Air Act):** The product complies with the equivalence requirements of section 5.2.6.4 of the German Clean Air Act (TA Luft / VDI 2440 according to section 3.3.1.3)\*

The product complies with the requirements according to VDI 2440 (November 2000), VDI 3479, DIN EN ISO 158481, certificate no. 18 11 090235 002\*

\* see availability

**6.5 Mechanical data****Weight:****Actuator**

Actuator version	Weight
0	1.1
1	2.1
2	2.7
3	5.9
4	9.5
5	12.0
6	15.0
7	25.0

Weights in kg

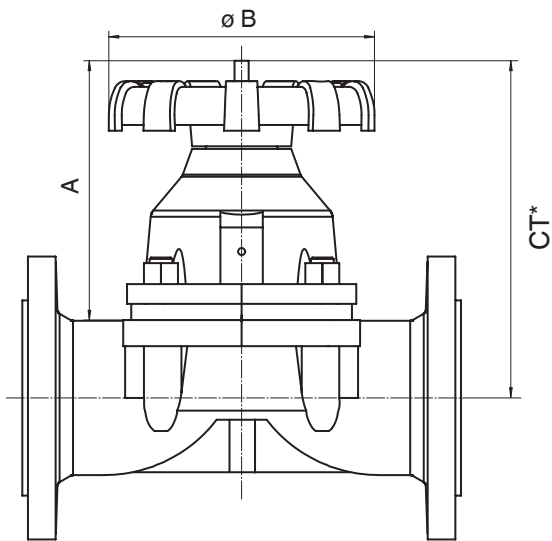
**Body**

MG	DN	Threaded socket	Flange
		Connection types code	
		1, 31	8, 38, 39, 51, 53, 56
25	15	0.50	1.50
	20	0.60	2.20
	25	0.90	2.80
40	32	1.40	3.40
	40	1.90	4.50
50	50	2.70	6.30
	65	-	10.30
80	80	-	13.80
100	100	-	20.80
	125	-	26.30
150	150	-	37.30

**Installation position:** Optional**Flow direction:** Optional

## 7 Dimensions

### 7.1 Actuator dimensions



MG	DN	Actuator version	ø B	A
25	15 - 25	0	96	89
40	32 - 40	1	131	112
50	50 - 65	2	131	126
65	65	3	188	171
80	80	4	231	202
100	100 - 125	5	231	221
125	125	6	316	300
150	150	7	316	325

MG = diaphragm size

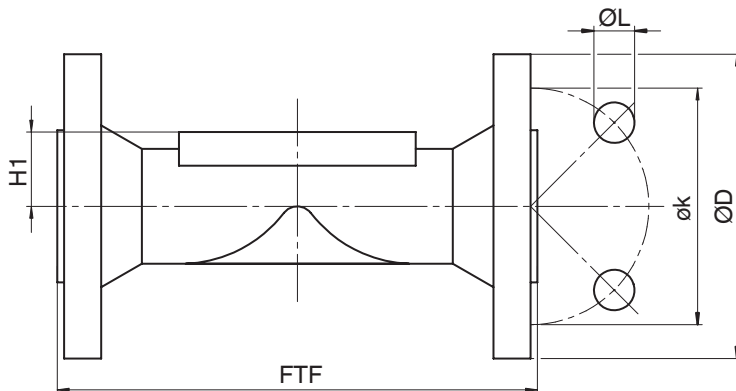
Dimensions in mm

Dimensions in mm, MG = diaphragm size

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

## 7.2 Body dimensions

### 7.2.1 Flange EN (code 8)



MG	DN	Connection type code 8 <sup>1)</sup>							
		Material code <sup>2)</sup>							
						17, 18, 83	90	17, 18, 83	90
		øD	øk	øL	n	H1	H1	FTF	FTF
25	15	95.0	65.0	14.0	4	18.0	14.0	130.0	130.0
	20	105.0	75.0	14.0	4	20.5	16.5	150.0	150.0
	25	115.0	85.0	14.0	4	23.0	19.5	160.0	160.0
40	32	140.0	100.0	19.0	4	28.7	23.0	180.0	180.0
	40	150.0	110.0	19.0	4	33.0	27.0	200.0	200.0
50	50	165.0	125.0	19.0	4	39.0	32.0	230.0	230.0
	65	185.0	145.0	19.0	4	-	38.7	-	290.0
65	65	185.0	145.0	19.0	4	51.0	-	290.0	-
80	80	200.0	160.0	19.0	8	59.5	31.5	310.0	310.0
100	100	220.0	180.0	19.0	8	73.0	43.0	350.0	350.0
	125	250.0	210.0	19.0	8	-	58.0	-	400.0
125	125	250.0	210.0	19.0	8	87.0	-	400.0	-
150	150	285.0	240.0	23.0	8	109.0	58.0	480.0	480.0

n = number of bolt holes

MG = diaphragm size

#### 1) Connection type

Code 8: Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

#### 2) Valve body material

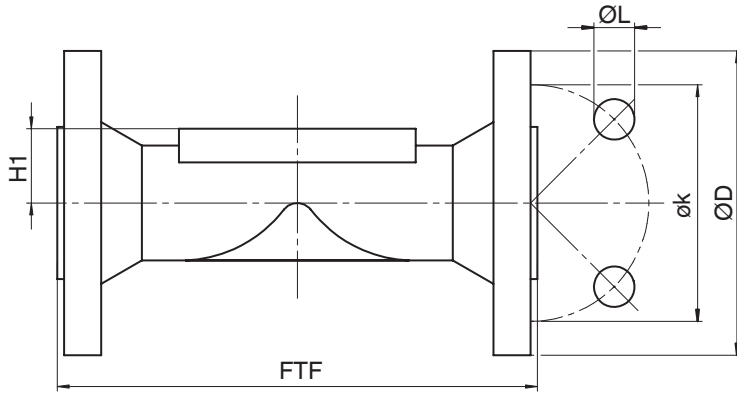
Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 18: EN-GJS-400-18-LT (GGG 40.3), PP lined

Code 83: EN-GJS-400-18-LT (GGG 40.3), hard rubber lined

Code 90: EN-GJS-400-18-LT (GGG 40.3)

## 7.2.2 Flange EN (code 53)



MG	DN	Connection type code 53 <sup>1)</sup>								
		Material code <sup>2)</sup>								
		8	17				8	17	8	17
		øD	øD	øk	øL	n	H1	H1	FTF	FTF
25	15	95.0	-	65.0	14.0	4	19.0	-	117.0	-
	20	105.0	-	75.0	14.0	4	19.0	-	117.0	-
	25	115.0	-	85.0	14.0	4	19.0	-	127.0	-
40	32	140.0	-	100.0	19.0	4	28.0	-	-	-
	40	150.0	-	110.0	19.0	4	28.0	-	159.0	-
50	50	165.0	-	125.0	19.0	4	35.0	-	191.0	-
65	65	185.0	-	145.0	19.0	4	27.5	-	216.0	-
80	80	200.0	-	160.0	19.0	8	33.0	-	254.0	-
100	100	220.0	-	180.0	19.0	8	43.0	-	305.0	-
125	125	250.0	-	210.0	19.0	8	65.0	-	356.0	-
150	150	285.0	280.0 <sup>3)</sup>	240.0	23.0	8	58.0	109.0	406.0	416.0

n = number of bolt holes

MG = diaphragm size

Dimensions in mm

## 1) Connection type

Code 53: Flange EN 1092, PN 16, form A, face-to-face dimension FTF EN 558 series 7, ISO 5752, basic series 7, length only for body configuration D

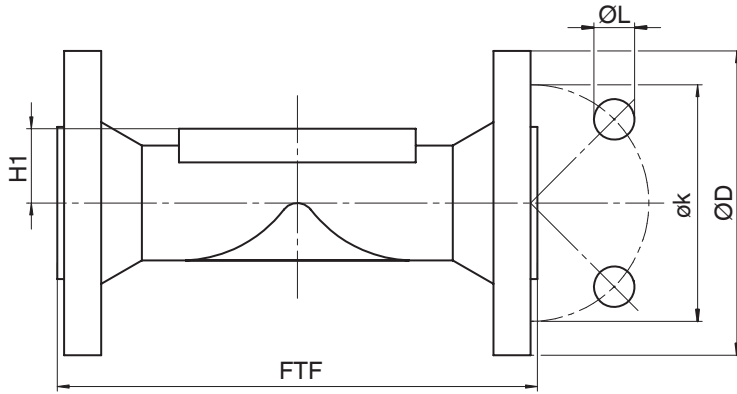
## 2) Valve body material

Code 8: EN-GJL-250 (GG 25)

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

## 3) Diameter deviates from standard

### 7.2.3 Flange ANSI Class (code 38, 39)



MG	DN	Connection types code <sup>1)</sup>									
						38	38	39	39		
		Material code <sup>2)</sup>									
				17, 18, 83	90	17, 18	83	17, 18, 83	90		
		øD	øk	øL	n	H1	H1	FTF	FTF	FTF	FTF
25	15	90.0	60.3	15.9	4	18.0	14.0	-	-	130.0	130.0
	20	100.0	69.9	15.9	4	20.5	16.5	146.0	146.4	150.0	150.0
	25	110.0	79.4	15.9	4	23.0	19.5	146.0	146.4	160.0	160.0
40	32	115.0	88.9	15.9	4	28.7	23.0	-	-	180.0	180.0
	40	125.0	98.4	15.9	4	33.0	27.0	175.0	171.4	200.0	200.0
50	50	150.0	120.7	19.0	4	39.0	32.0	200.0	197.4	230.0	230.0
	65	180.0	139.7	19.0	4	-	38.7	-	-	-	290.0
65	65	180.0	139.7	19.0	4	51.0	-	226.0	222.4	290.0	-
80	80	190.0	152.4	19.0	4	59.5	31.5	260.0	260.4	310.0	310.0
100	100	230.0	190.5	19.0	8	73.0	43.0	327.0	324.4	350.0	350.0
	125	255.0	215.9	22.2	8	-	58.0	-	-	-	400.0
125	125	255.0	215.9	22.2	8	87.0	-	-	-	400.0	-
150	150	280.0	241.3	22.2	8	109.0	58.0	416.0	416.0	480.0	480.0

n = number of bolt holes

MG = diaphragm size

Dimensions in mm

#### 1) Connection type

Code 38: Flange ANSI Class 150 RF, face-to-face dimension FTF MSS SP-88, length only for body configuration D

Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

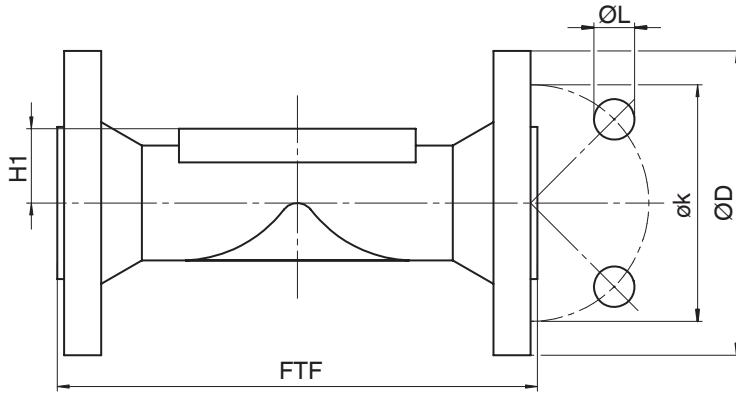
#### 2) Valve body material

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 18: EN-GJS-400-18-LT (GGG 40.3), PP lined

Code 83: EN-GJS-400-18-LT (GGG 40.3), hard rubber lined

Code 90: EN-GJS-400-18-LT (GGG 40.3)

**7.2.4 Flange ANSI Class (code 56)**

MG	DN	Connection type code 56 <sup>1)</sup>							
		Material code <sup>2)</sup>				17	81, 91	17	81, 91
		øD	øk	øL	n	H1	H1	FTF	FTF
25	25	110.0	79.4	15.9	4	-	23.0	-	127.0
40	40	125.0	98.4	15.9	4	-	32.0	-	165.0
50	50	150.0	120.7	19.0	4	-	40.0	-	191.0
80	80	190.0	152.4	19.0	4	-	58.0	-	254.0
100	100	230.0	190.5	19.0	8	-	70.0	-	311.0
150	150	280.0	241.3	22.2	8	109.0	-	416.0	-

n = number of bolt holes

MG = diaphragm size

Dimensions in mm

**1) Connection type**

Code 56: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 7, ISO 5752, basic series 7, length only for body configuration D

**2) Valve body material**

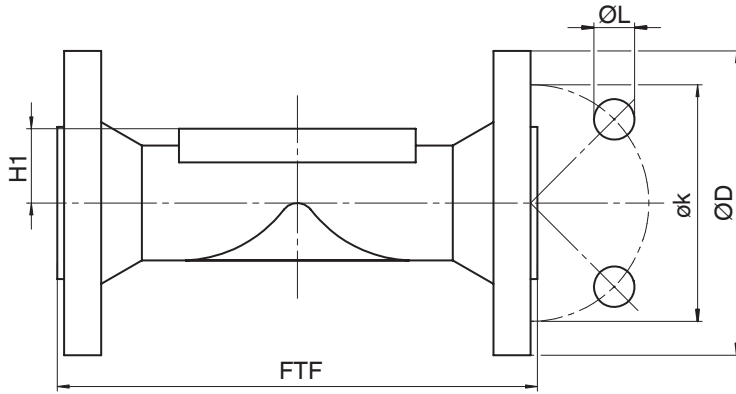
Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 81: EN-GJS-500-7 (GGG 50), PFA lined

Code 91: EN-GJS-500-7 (GGG 50), PP lined



### 7.2.5 Flange BS (code 51)



MG	DN	Connection type code 51 <sup>1)</sup>							
		Material code <sup>2)</sup>				17	81, 91	17	81, 91
		øD	øk	øL	n	H1	H1	FTF	FTF
25	25	114.0	83.0	14.0	4	-	23.0	-	127.0
40	40	125.0	98.0	14.0	4	-	32.0	-	165.0
50	50	152.0	114.0	17.0	4	-	40.0	-	191.0
80	80	184.0	146.0	17.0	4	-	58.0	-	254.0
100	100	216.0	178.0	17.0	8	-	70.0	-	311.0
150	150	279.0	235.0	22.0	8	109.0	-	416.0	-

n = number of bolt holes

MG = diaphragm size

Dimensions in mm

#### 1) Connection type

Code 51: Flange BS 10 Table E, face-to-face dimension FTF EN 558 series 7, ISO 5752, basic series 7, length only for body configuration D

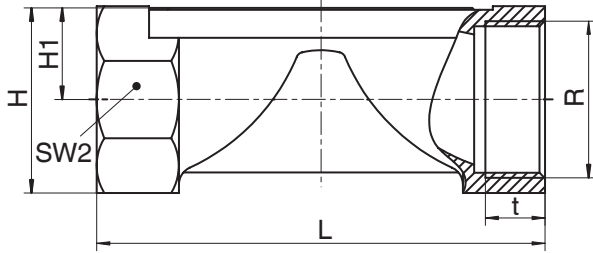
#### 2) Valve body material

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 81: EN-GJS-500-7 (GGG 50), PFA lined

Code 91: EN-GJS-500-7 (GGG 50), PP lined

**7.2.6 Threaded socket DIN (code 1)**



Connection type threaded socket (code 1)<sup>1)</sup>, SG iron material (code 90)<sup>2)</sup>

MG	DN	NPS	H	H1	L	n	R	SW 2	t
25	15	1/2"	32.7	16.7	85.0	6	G 1/2	32	15.0
	20	3/4"	42.0	21.5	85.0	6	G 3/4	41	16.3
	25	1"	46.7	23.7	110.0	6	G 1	46	19.1
40	32	1 1/4"	56.0	28.5	120.0	6	G 1 1/4	55	21.4
	40	1 1/2"	66.0	33.5	140.0	6	G 1 1/2	65	21.4
50	50	2"	76.0	38.5	165.0	6	G 2	75	25.7

n = number of flats

MG = diaphragm size

Dimensions in mm

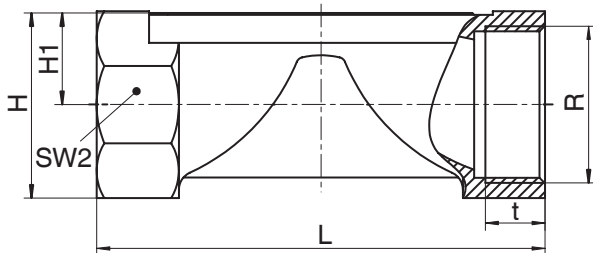
1) **Connection type**

Code 1: Threaded socket DIN ISO 228

2) **Valve body material**

Code 90: EN-GJS-400-18-LT (GGG 40.3)

**7.2.7 Threaded socket NPT (code 31)**



Connection type threaded socket NPT (code 31)<sup>1)</sup>, SG iron material (code 90)<sup>2)</sup>

MG	DN	NPS	H	H1	L	n	R	SW 2	t
25	15	1/2"	32.7	16.7	85.0	6	NPT 1/2	32	13.6
	20	3/4"	42.0	21.5	85.0	6	NPT 3/4	41	14.1
	25	1"	46.7	23.7	110.0	6	NPT 1	46	16.8
40	32	1 1/4"	56.0	28.5	120.0	6	NPT 1 1/4	55	17.3
	40	1 1/2"	66.0	33.5	140.0	6	NPT 1 1/2	65	17.3
50	50	2"	76.0	38.5	165.0	6	NPT 2	75	17.7

n = number of flats

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 31: NPT female thread

2) **Valve body material**

Code 90: EN-GJS-400-18-LT (GGG 40.3)

## 8 Manufacturer's information

### 8.1 Delivery

- Check that all parts are present and check for any damage immediately upon receipt.

The product's performance is tested at the factory. The scope of delivery is apparent from the dispatch documents and the design from the order number.

### 8.2 Packaging

The product is packaged in a cardboard box which can be recycled as paper.

### 8.3 Transport


1. Only transport the product by suitable means. Do not drop. Handle carefully.
2. After the installation dispose of transport packaging material according to relevant local or national disposal regulations / environmental protection laws.



### 8.4 Storage



1. Store the product free from dust and moisture in its original packaging.
2. Avoid UV rays and direct sunlight.
3. Do not exceed the maximum storage temperature (see chapter "Technical data").
4. Do not store solvents, chemicals, acids, fuels or similar fluids in the same room as GEMÜ products and their spare parts.
5. Store the product in the "open" position.


## 9 Installation in piping


### 9.1 Preparing for installation

 <b>WARNING</b>	
<b>The equipment is subject to pressure!</b>	
<ul style="list-style-type: none"> <li>▶ Risk of severe injury or death</li> <li>● Depressurize the plant.</li> <li>● Completely drain the plant.</li> </ul>	

 <b>WARNING</b>	
	<b>Corrosive chemicals!</b>
	<ul style="list-style-type: none"> <li>▶ Risk of caustic burns</li> <li>● Wear appropriate protective gear.</li> <li>● Completely drain the plant.</li> </ul>

 <b>CAUTION</b>	
	<b>Hot plant components!</b>
	<ul style="list-style-type: none"> <li>▶ Risk of burns</li> <li>● Only work on plant that has cooled down.</li> </ul>

 <b>CAUTION</b>	
<b>Exceeding the maximum permissible pressure.</b>	
<ul style="list-style-type: none"> <li>▶ Damage to the product</li> <li>● Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).</li> </ul>	

 <b>CAUTION</b>	
<b>Use as step.</b>	
<ul style="list-style-type: none"> <li>▶ Damage to the product</li> <li>▶ Risk of slipping-off</li> <li>● Choose the installation location so that the product cannot be used as a foothold.</li> <li>● Do not use the product as a step or a foothold.</li> </ul>	

<b>NOTICE</b>	
<b>Suitability of the product!</b>	
<ul style="list-style-type: none"> <li>▶ The product must be appropriate for the piping system operating conditions (medium, medium concentration, temperature and pressure) and the prevailing ambient conditions.</li> </ul>	

<b>NOTICE</b>	
<b>Tools</b>	
<ul style="list-style-type: none"> <li>▶ The tools required for installation and assembly are not included in the scope of delivery.</li> <li>● Use appropriate, functional and safe tools.</li> </ul>	

1. Ensure the product is suitable for the relevant application.
2. Check the technical data of the product and the materials.
3. Keep appropriate tools ready.
4. Wear appropriate protective gear, as specified in the plant operator's guidelines.
5. Observe appropriate regulations for connections.
6. Have installation work carried out by trained personnel.
7. Shut off plant or plant component.
8. Secure plant or plant component against recommissioning.
9. Depressurize the plant or plant component.
10. Completely drain the plant (or plant component) and let it cool down until the temperature is below the media vaporization temperature and cannot cause scalding.
11. Correctly decontaminate, rinse and ventilate the plant or plant component.
12. Lay piping so that the product is protected against transverse and bending forces, and also from vibrations and tension.
13. Only install the product between matching aligned pipes (see chapters below).

### 9.2 Installation with flanged connection

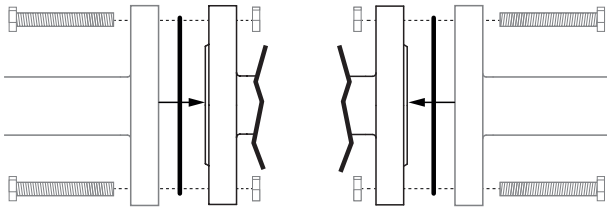


Fig. 1: Flanged connection

#### NOTICE

##### Sealing material

- ▶ The sealing material is not included in the scope of delivery.
- Only use appropriate sealing material.

#### NOTICE

##### Connector elements

- ▶ The connector elements are not included in the scope of delivery.
- Only use connector elements made of approved materials.
- Observe permissible tightening torque of the bolts.

1. Keep sealing material ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Ensure clean, undamaged sealing surfaces on the connection flanges.
4. Align flanges carefully before installing them.
5. Clamp the product centrally between the piping with flanges.
6. Centre the gaskets.
7. Connect the valve flange and the piping flange using appropriate sealing materials and matching bolting.
8. Use all flange holes.
9. Tighten the bolts diagonally.
10. Re-attach or reactivate all safety and protective devices.

### 9.3 Installation with threaded sockets

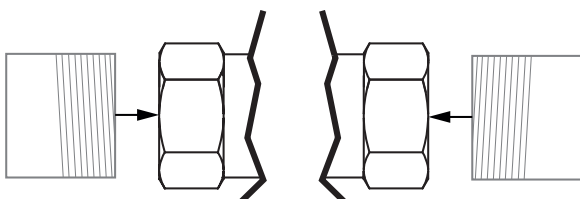


Fig. 2: Threaded socket

#### NOTICE

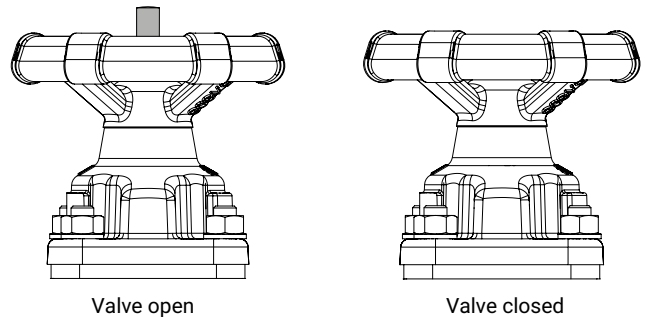
##### Sealing material

- ▶ The sealing material is not included in the scope of delivery.
- Only use appropriate sealing material.

1. Keep thread sealant ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Screw the threaded connections into the pipe in accordance with valid standards.
4. Screw the body of the product onto the piping using appropriate thread sealant.
5. Re-attach or reactivate all safety and protective devices.

### 10 Operation

#### 10.1 Optical position indicator



Valve open

Valve closed

#### CAUTION



##### Handwheel can become hot during operation!

- ▶ Risk of burns!
- Ensure protective gloves are worn when operating handwheel.

#### 10.2 Lockable handwheel




#### NOTICE

##### Lockable handwheel

- ▶ A lockable handwheel is optionally available. It can be secured with a padlock.

## 11 Commissioning

**WARNING**



**Corrosive chemicals!**

- ▶ Risk of caustic burns
- Wear appropriate protective gear.
- Completely drain the plant.

**CAUTION**

**Leakage**

- ▶ Emission of dangerous materials.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

**NOTICE**

**Cleaning!**

- ▶ The plant operator is responsible for selecting the cleaning material and performing the procedure.

1. Check the tightness and the function of the product (close and reopen the product). Due to the setting behavior of elastomers, the bolts may need to be retightened following the installation and commissioning of the valve.
2. Flush the piping system of new plant and following repair work (the product must be fully open).
  - ⇒ Harmful foreign matter has been removed.
  - ⇒ The product is ready for use.
3. Commission the product.

## 12 Inspection and maintenance

**WARNING**

**The equipment is subject to pressure!**


- ▶ Risk of severe injury or death
- Depressurize the plant.
- Completely drain the plant.

**CAUTION**

**Use of incorrect spare parts!**

- ▶ Damage to the GEMÜ product
- ▶ Manufacturer liability and guarantee will be void
- Use only genuine parts from GEMÜ.

**CAUTION**



**Hot plant components!**

- ▶ Risk of burns
- Only work on plant that has cooled down.

**NOTICE**

**Exceptional maintenance work!**

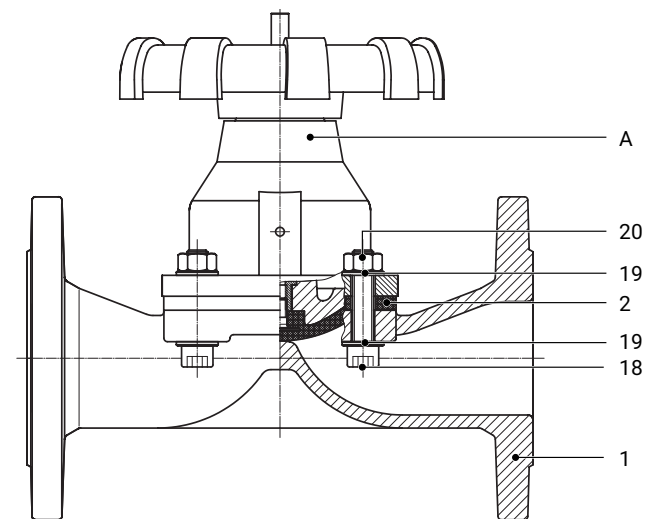
- ▶ Damage to the GEMÜ product
- Any maintenance work and repairs not described in these operating instructions must not be performed without consulting the manufacturer first.

The operator must carry out regular visual examination of the GEMÜ products dependent on the operating conditions and the potential danger in order to prevent leakage and damage.

The product also must be disassembled and checked for wear in the corresponding intervals.

1. Have servicing and maintenance work performed by trained personnel.
2. Wear appropriate protective gear as specified in plant operator's guidelines.
3. Shut off plant or plant component.
4. Secure the plant or plant component against recommissioning.
5. Depressurize the plant or plant component.
6. Actuate GEMÜ products which are always in the same position four times a year.

### 12.1 Spare parts



Item	Name	Order designation
1	Valve body	K600... K620...
2	Diaphragm	600...M... (DN 15-50) 620...M... (from DN 65)
18	Bolt	675...S30...
19	Washer	
20	Nut	
A	Actuator	9675...

### 12.2 Removing the actuator

1. Move the actuator **A** to the open position.
2. Loosen the fastening elements between actuator **A** and valve body **1** diagonally and remove them.
3. Lift actuator **A** off valve body **1**.
4. Move the actuator **A** to the closed position.
5. Clean all parts of contamination (do not damage parts during cleaning).
6. Check parts for potential damage, replace if necessary (only use genuine parts from GEMÜ).

### 12.3 Removing the diaphragm

1. Remove actuator **A** (see chapter "Removing the actuator").
2. Unscrew the diaphragm **2**.
3. Clean all parts of contamination (do not damage parts during cleaning).
4. Check parts for potential damage, replace if necessary (only use genuine parts from GEMÜ).

### 12.4 Mounting the diaphragm

#### NOTICE

- Fit the diaphragms suitable for the product (suitable for medium, medium concentration, temperature and pressure). The diaphragm is a wearing part. Check the technical condition and function of the product before commissioning and during the whole term of use. Carry out checks regularly and determine the check intervals in accordance with the conditions of use and/or the regulatory codes and provisions applicable for this application.

#### NOTICE

- If the diaphragm is not screwed into the adapter far enough, the closing force is transmitted directly onto the diaphragm pin and not via the compressor. This will cause damage and early failure of the diaphragm and leakage of the product. If the diaphragm is screwed in too far, perfect sealing at the valve seat will not be achieved. The function of the product is no longer ensured.

#### NOTICE

- Incorrectly mounted diaphragms cause the product leakage and emission of medium. In this case, remove the diaphragms, check the complete valve and diaphragms and reassemble again proceeding as described above.

#### NOTICE

##### Compressor!

- The compressor is screwed in tight.

### 12.4.1 Mounting the convex diaphragm

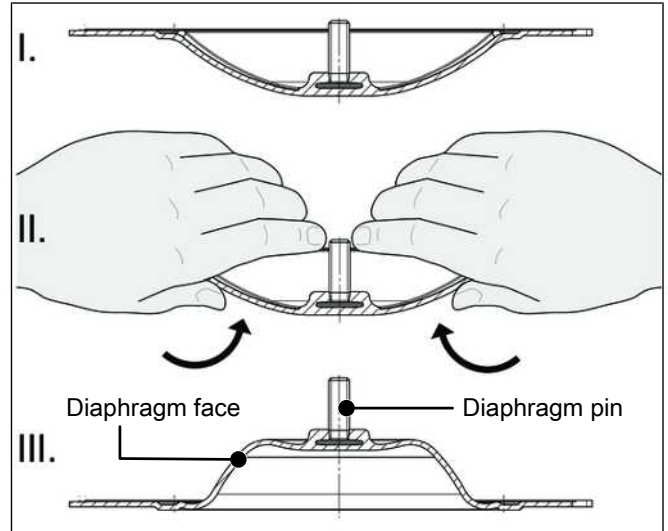


Fig. 3: Inverting the diaphragm face

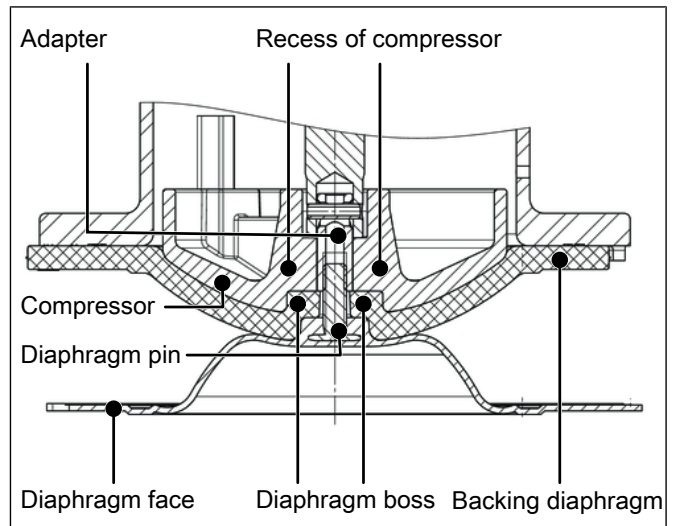
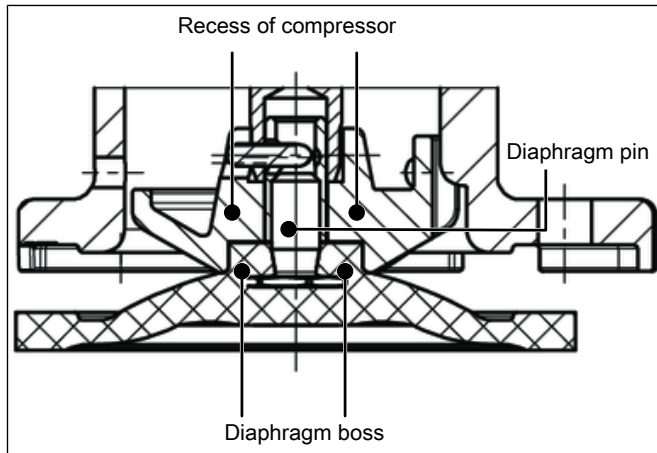


Fig. 4: Screwing in the diaphragm face

1. Move the actuator **A** to the closed position.
2. Invert the new diaphragm face manually (use a clean, padded mat with larger nominal sizes).
3. Position the new backing diaphragm onto the compressor.
4. Position the diaphragm face onto the backing diaphragm.
5. Screw diaphragm face tightly into the compressor manually.
  - ⇒ The diaphragm boss must fit closely in the recess of the compressor.
6. If it is difficult to screw it in, check the thread and replace damaged parts.
7. When definitive resistance is felt, turn back the diaphragm until its bolt holes are in correct alignment with the bolt holes of the actuator.
8. Press the diaphragm face tightly onto the backing diaphragm manually so that it returns to its original shape and fits closely on the backing diaphragm.
9. Align the weir of compressor and diaphragm in parallel.

### 12.4.2 Mounting the concave diaphragm



1. Move the actuator **A** to the closed position.
2. Manually screw new diaphragm tightly into the compressor.
3. Check if the diaphragm boss fits closely in the recess of the compressor.
4. If it is difficult to screw it in, check the thread and replace damaged parts.
5. When definitive resistance is felt, turn back the diaphragm until its bolt holes are in correct alignment with the bolt holes of the actuator.
6. Align the weir of compressor and diaphragm in parallel.

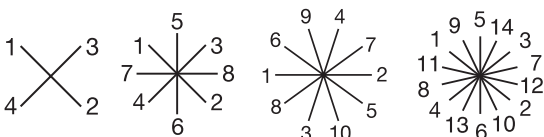
### 12.5 Mounting the actuator

#### NOTICE

##### Diaphragms set in the course of time.

- ▶ Leakage
- After disassembly/assembly of the product, check that the bolts and nuts on the body are tight and retighten if required.
- Retighten the bolts and nuts at the very latest after the first sterilization process.

1. Move the actuator **A** to the closed position.
2. Open actuator **A** approx. 50%.
3. Position actuator **A** with the mounted diaphragm on the valve body **1**.
4. Screw in bolts, washers and nuts hand tight.
  - ⇒ Fastening elements may vary depending on the diaphragm size and/or valve body version.
5. Fully tighten the bolts with nuts diagonally.



6. Ensure even compression of the diaphragm (approx. 10 to 15%).
  - ⇒ Even compression is detected by an even bulge to the outside.
  - Please note:** For a code 5M diaphragm (convex dia-

phragm), the PTFE diaphragm face and the EPDM backing diaphragm must be positioned level with and parallel to the valve body.

7. With the valve fully assembled, check the function and tightness.

**13 Troubleshooting**

Error	Possible cause	Troubleshooting
Working medium escapes from leak detection hole	Diaphragm faulty	Check diaphragm for potential damage, replace diaphragm if necessary
The product does not open or does not open fully	Actuator defective	Replace the actuator
	Shut-off diaphragm incorrectly mounted	Remove the actuator, check the diaphragm mounting, replace the shut-off diaphragm if necessary
The product is leaking downstream (does not close or does not close fully)	Operating pressure too high	Operate the product with operating pressure specified in datasheet
	Foreign matter between shut-off diaphragm and valve body	Remove the actuator, remove foreign matter, check diaphragm and valve body for potential damage, replace damaged parts if necessary
	Valve body leaking or damaged	Check valve body for potential damage, replace valve body if necessary
	Shut off diaphragm faulty	Check shut off diaphragm for potential damage, replace the shut off diaphragm if necessary
The product is leaking between actuator and valve body	Shut-off diaphragm incorrectly mounted	Remove the actuator, check the diaphragm mounting, replace the shut-off diaphragm if necessary
	Bolting between valve body and actuator loose	Tighten bolting between valve body and actuator
	Shut off diaphragm faulty	Check shut off diaphragm for potential damage, replace the shut off diaphragm if necessary
	Actuator/valve body damaged	Replace actuator/valve body
Connection between valve body and piping leaking	Incorrect installation	Check installation of valve body in piping
	Threaded connections / unions loose	Tighten threaded connections / unions
	Sealing material faulty	Replace sealing material
Valve body leaking	Valve body leaking or corroded	Check valve body for damage, replace valve body if necessary
Handwheel cannot be turned	Handwheel defective	Replace the handwheel
	Handwheel clamp locked	Unlock handwheel clamp



### **14 Removal from piping**

1. Disassemble the product. Observe warning notes and safety information.
2. Remove in reverse order to installation.

### **15 Disposal**

1. Pay attention to adhered residual material and gas diffusion from penetrated media.
2. Dispose of all parts in accordance with the disposal regulations/environmental protection laws.

### **16 Returns**

Legal regulations for the protection of the environment and personnel require that the completed and signed return delivery note is included with the dispatch documents. Returned goods can be processed only when this note is completed. If no return delivery note is included with the product, GEMÜ cannot process credits or repair work but will dispose of the goods at the operator's expense.

1. Clean the product.
2. Request a return delivery note from GEMÜ.
3. Complete the return delivery note.
4. Send the product with a completed return delivery note to GEMÜ.

**17 Declaration of conformity according to 2014/68/EU (Pressure Equipment Directive)**

# EU Declaration of Conformity

## *in accordance with 2014/68/EU (Pressure Equipment Directive)*

We, the company  
GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG  
Fritz-Müller-Strasse 6-8  
74653 Ingelfingen-Criesbach, Germany

declare that the product listed below complies with the safety requirements of the Pressure Equipment Directive 2014/68/EU.

**Description of the pressure equipment:** GEMÜ 675  
**Notified body:** TÜV Rheinland Industrie Service GmbH  
**Number:** 0035  
**Certificate no.:** 01 202 926/Q-02 0036  
**Conformity assessment procedure:** Module H1  
**Technical standard used (in parts):** AD 2000

**Note for products with a nominal size  $\leq$  DN 25:**

The products are developed and produced according to GEMÜ process instructions and quality standards which comply with the requirements of ISO 9001 and ISO 14001.

According to Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU these products must not be identified by a CE-label.

2022-04-21



Joachim Brien  
Head of Technical Department



GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG  
Fritz-Müller-Straße 6-8, 74653 Ingelfingen-Criesbach, Germany  
Phone +49 (0) 7940 1230 · info@gemue.de  
www.gemu-group.com

Subject to alteration

06.2023 | 88710491