

# GEMÜ SUHK SUMONDO

Manual operator for single-use valves

EN

## Operating instructions



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## 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.

#### Control medium

The medium whose increasing or decreasing pressure causes the GEMÜ product to be actuated and operated.

#### Control function

The possible actuation functions of the GEMÜ product.



### 1.4 Warning notes



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



SIGNAL WORD	
Possible symbol for the specific danger	<b>Type and source of the danger</b> <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>	
	<b>Imminent danger!</b> <ul style="list-style-type: none"> <li>► Non-observance can cause death or severe injury.</li> </ul>

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

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

<b>NOTICE</b>	
	<b>Potentially dangerous situation!</b> <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 - corrosive materials
	Danger from potentially explosive atmosphere

## 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:

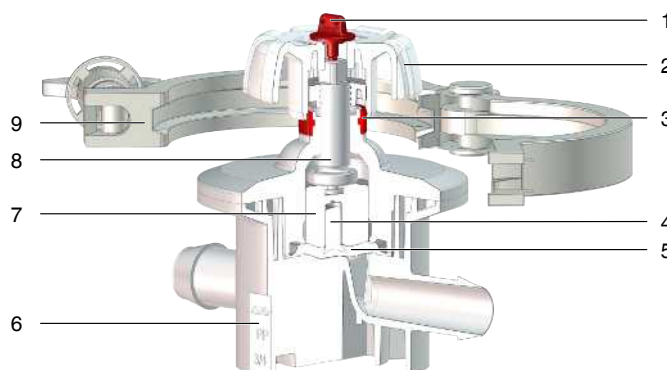
9. Keep this document available at the place of use.
10. Observe the safety information.
11. Operate the product in accordance with this document.
12. Operate the product in accordance with the specifications.
13. Maintain the product correctly.
14. Do not carry out any maintenance work and repairs not 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	Special screw	PVDF
2	Handwheel	PVDF
3	Optical position indicator	PES
4	Diaphragm pin	PP-R
5	Diaphragm	TPE
6	Valve body	PP-R
7	Compressor	PVDF
8	Threaded spindle	PEEK
9	Tri-clamp	PA-glass reinforced

### 3.2 Description

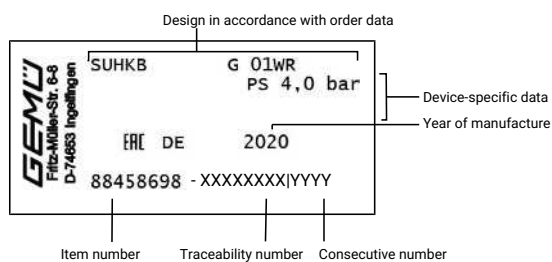
The GEMÜ SUHK manual operator of the GEMÜ SUMONDO single-use valve is joined to the valve body GEMÜ SUB with a clamp. It is equipped with an internally welded diaphragm. The valve body and the actuator are locked with a defined opening and closing procedure. After a single use, the valve body and its diaphragm are removed from the actuator and disposed of. The actuator remains in the system and can be used multiple times.

### 3.3 Function

The GEMÜ single-use diaphragm valve, consisting of the SUB single-use diaphragm valve body and the SUHK manual operator, is designed for installation in single-use systems in plastic pipe and hose lines. It controls a flowing medium by manual operation.

### 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

⚠ <b>DANGER</b>	
	<p><b>Danger of explosion!</b></p> <ul style="list-style-type: none"> <li>► Risk of death or severe injury</li> <li>● Do <b>not</b> use the product in potentially explosive zones.</li> </ul>
⚠ <b>WARNING</b>	
<p><b>Improper use of the product!</b></p> <ul style="list-style-type: none"> <li>► Risk of severe injury or death</li> <li>► Manufacturer liability and guarantee will be void.</li> <li>● Only use the product in accordance with the operating conditions specified in the contract documentation and in this document.</li> </ul>	

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.

### 5.1 Manual operator SUHK

#### Order codes

1 Type	Code
Manual operator, plastic version	SUHK

2 Diaphragm size	Code
Diaphragm size B	B
Diaphragm size C	C
Diaphragm size D	D

3 Diaphragm mounting	Code
Pin	G

4 Control function	Code
Manually operated	0

5 Actuator size	Code
Actuator size 1WR	1WR

#### Order example SUHK

Order option	Code	Description
1 Type	SUHK	Manual operator, plastic version
2 Diaphragm size	B	Diaphragm size B
3 Diaphragm mounting	G	Pin
4 Control function	0	Manually operated
5 Actuator size	1WR	Actuator size 1WR

**5.2 Diaphragm valve body SUB****Order codes**

1 Type	Code
Single-use body	SUB

2 Diaphragm size	Code
Diaphragm size B	B
Diaphragm size C	C
Diaphragm size D	D

3 Connection size 1	Code
DN 8 (1/4")	8
DN 10 (3/8")	10
DN 15 (1/2")	15
DN 20 (3/4")	20
DN 25 (1")	25

4 Body configuration	Code
2/2-way body	D
Angle valve body, right	R
T body	T

5 Connection	Code
Clamp connection similar to ASME-BPE	CA
Hose barb	HB

6 Body material	Code
PP-R, natural	B8

7 Diaphragm material	Code
TPE	K8

8 Connection size 2	Code
1/4" (DN 8)	8
3/8" (DN 10)	10
1/2" (DN 15)	15
3/4" (DN 20)	20
1" (DN 25)	25

9 Connection of spigot 2	Code
Clamp connection similar to ASME-BPE	CA
Hose barb	HB

**Order example SUB**

Ordering option	Code	Description
1 Type	SUB	Single-use body
2 Diaphragm size	B	Diaphragm size B
3 Connection size 1	10	DN 10 (3/8")
4 Body configuration	T	T body
5 Connection	HB	Hose barb
6 Body material	B8	PP-R, natural
7 Diaphragm material	K8	TPE
8 Connection size 2	10	3/8" (DN 10)
9 Connection of spigot 2	HB	Hose barb



## 6 Technical data

### 6.1 Medium

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

### 6.2 Temperature

**Media temperature:** 5 to 40 °C

**Ambient temperature:** 0 to 40 °C

**Storage temperature:** 0 to 40 °C

### 6.3 Pressure

**Operating pressure:** 0 – 4.9 bar (Diaphragm size code B, C),  
0 – 4.5 bar (Diaphragm size code D)

#### 6.3.1 Kv values

NPS	MG	Connection Code <sup>1)</sup>	Body configuration Code <sup>2)</sup>	Kv value	Cv value
1/4"	B	HB	D	0.47	0.54
3/8"	B	HB	D	1.08	1.25
			T	1.03	1.19
			R	1.02	1.18
1/2"	B	HB	D	1.59	1.84
			T	1.47	1.70
			R	1.44	1.67
1/2"	C	HB	D	2.17	2.51
3/4"	C	HB	D	3.29	3.81
			T	2.15	2.49
		CA	D	3.29	3.81
			T	2.15	2.49
1"	C	HB	D	4.55	5.27
			T	3.81	4.41
		CA	D	4.55	5.27
			T	3.81	4.41
3/4"	D	CA, HB	D	9.21	10.66
1"	D	CA, HB	D	12.19	14.11

#### 1) Connection

Code CA: Clamp connection similar to ASME-BPE  
Code HB: Hose barb

#### 2) Body configuration

Code D: 2/2-way body  
Code R: Angle valve body, right  
Code T: T body

Kv values determined based on standard DIN EN 60534-2-3:1998, inlet pressure 4 bar,  $\Delta p$  1 bar

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.

Kv values in m³/h (Cv values in gpm)

MG = diaphragm size

## 6.4 Product compliance

### Certifications:

- USP Bacterial Endotoxins Test, USP <85>
- USP Biological Reactivity Test in vitro, USP <87>
- USP Biological Reactivity Tests in vivo for Class VI, USP <88>
- USP Physicochemical Tests for Plastics, USP <661>
- USP Particulate Matter in Injections, USP <788>, USP <790>
- Validation guide on request

## 6.5 Mechanical data

### Service life:

Manual operator:	3 years from date of first use
Diaphragm valve body (SUB):	100.000 switching cycles (according to GEMÜ product validation) or max. 4.5 years from production date (1.5 years before sterilization/3 years after sterilization)

### 6.5.1 Weight

Type	Con- nection Code <sup>1)</sup>	Body config- uration Code <sup>2)</sup>	MG B			MG C			MG D	
			1/4" (DN 8)	3/8" (DN 10)	1/2" (DN 15)	1/2" (DN 15)	3/4" (DN 20)	1" (DN 25)	3/4" (DN 20)	1" (DN 25)
SUB	HB	D	36	40	42	91	94	99	80	80
		T	-	44	47	-	108	113	-	-
		R	-	43	46	-	-	-	-	-
	CA	D	-	-	-	-	97	100	99	100
		T	-	-	-	-	111	112	-	-
SUHK			186	186	186	272	272	272	326.5	326.5

Weight in g, MG = diaphragm size

#### 1) Connection

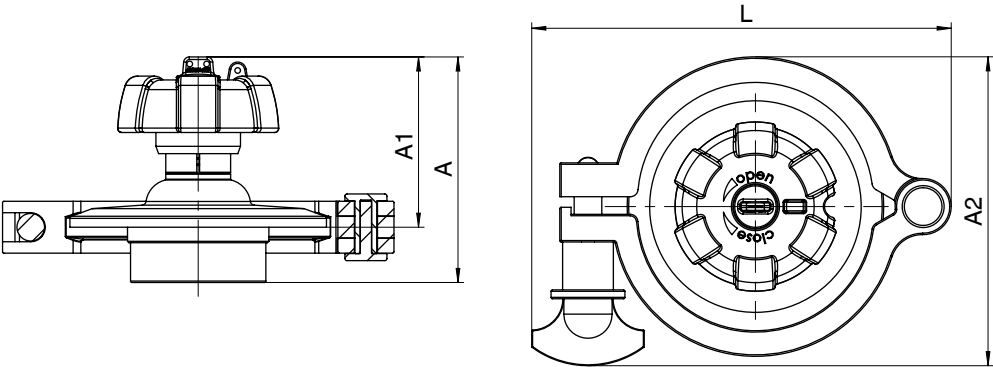
Code CA: Clamp connection similar to ASME-BPE  
Code HB: Hose barb

#### 2) Body configuration

Code D: 2/2-way body  
Code R: Angle valve body, right  
Code T: T body

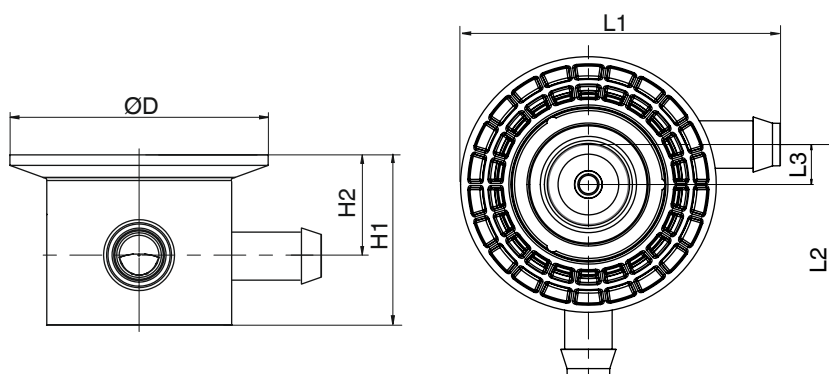
# 7 Dimensions

## 7.1 Actuator dimensions



	MG B	MG C	MG D
	1/4" (DN 8), 1/2" (DN 15)	3/4" (DN 20), 1" (DN 25)	3/4" (DN 20), 1" (DN 25)
<b>A</b>	80.5	80.0	81.2
<b>A1</b>	74.9	60.4	55.3
<b>A2</b>	86.5	109.6	109.6
<b>L</b>	122.5	148.8	148.8

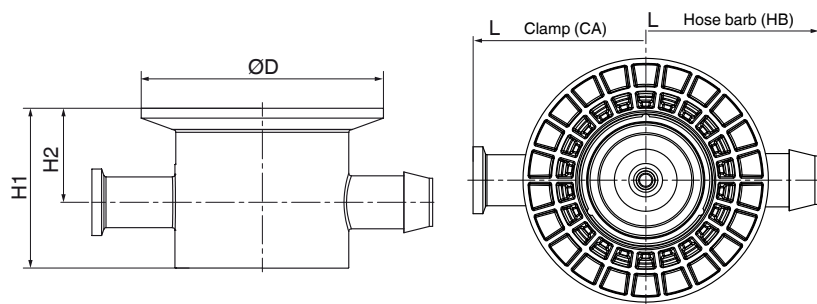
Dimensions in mm, MG = diaphragm size

**7.2 Body dimensions****7.2.1 Angle valve body, right (code R)**

	MG B	
	3/8" (DN 10)	1/2" (DN 15)
<b>L1</b>	48.0	55.8
<b>L2</b>	58.0	66.8
<b>L3</b>	10.0	10.0
<b>H1</b>	33.3	33.3
<b>H2</b>	22.3	22.3
<b>ØD</b>	64.0	64.0

Dimensions in mm, MG = diaphragm size

### 7.2.2 2/2-way body (code D)



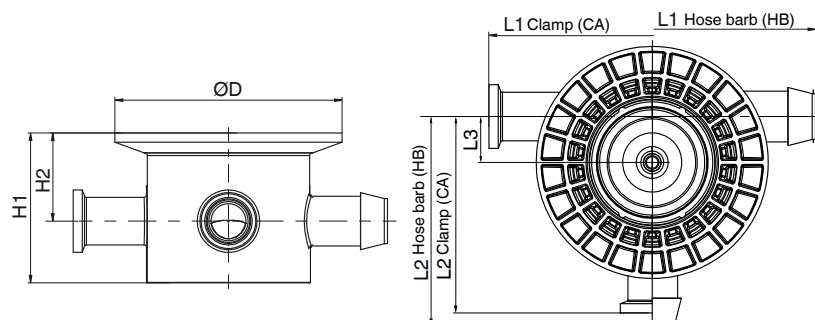
	Conne- ction Code <sup>1)</sup>	MG B			MG C			MG D	
		1/4" (DN 8)	3/8" (DN 10)	1/2" (DN 15)	1/2" (DN 15)	3/4" (DN 20)	1" (DN 25)	3/4" (DN 20)	1" (DN 25)
<b>L</b>	<b>CA</b>	-	-	-	-	128.0	137.4	134.6	134.6
<b>H1</b>		-	-	-	-	60.0	60.0	58.5	58.5
<b>H2</b>		-	-	-	-	35.3	35.3	38.0	39.5
<b>ØD</b>		-	-	-	-	91.0	91.0	91.6	91.6
<b>L</b>	<b>HB</b>	80.6	95.9	111.5	126.0	128.0	140.0	139.0	139.0
<b>H1</b>		33.3	33.3	33.3	60.0	60.0	60.0	58.5	58.5
<b>H2</b>		22.3	22.3	22.3	35.3	35.3	35.3	38.0	39.5
<b>ØD</b>		64.0	64.0	64.0	91.0	91.0	91.0	91.6	91.6

Dimensions in mm, MG = diaphragm size

#### 1) Connection

Code CA: Clamp connection similar to ASME-BPE

Code HB: Hose barb

**7.2.3 T valve body (Code T)**

	Connection Code <sup>1)</sup>	MG B		MG C	
		3/8" (DN 10)	1/2" (DN 15)	3/4" (DN 20)	1" (DN 25)
L1_C A	CA	-	-	128.0	137.4
L2_C A		-	-	82.0	82.0
L3_C A		-	-	18.0	18.0
H1_C A		-	-	60.0	60.0
H2_C A		-	-	35.3	35.3
ØD_C A		-	-	91.0	91.0
L1_H B	HB	96.0	111.5	128.0	140.0
L2_H B		58.0	65.8	82.0	88.0
L3_H B		10.0	10.0	18.0	18.0
H1_H B		33.3	33.3	60.0	60.0
H2_H B		22.3	22.3	35.3	35.3
ØD_H B		64.0	64.0	91.0	91.0

Dimensions in mm, MG = diaphragm size

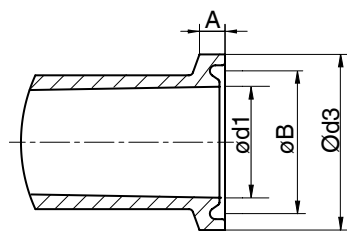
1) **Connection**

Code CA: Clamp connection similar to ASME-BPE

Code HB: Hose barb

### 7.3 Connection dimensions

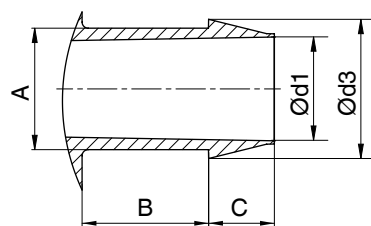
#### 7.3.1 Clamp (code CA)



MG	DN	A	øB	ød1	ød3
<b>C</b>	<b>3/4" (DN 20)</b>	3.6	21.9	15.75	25.0
	<b>1" (DN 25)</b>	3.6	31.0	22.1	34.0
<b>D</b>	<b>3/4" (DN 20)</b>	2.85	43.4	19.05	50.5
	<b>1" (DN 25)</b>	2.85	43.4	25.4	50.5

Dimensions in mm, MG = diaphragm size  
Tolerance  $\pm 0.2$  mm

#### 7.3.2 Hose barb (code HB)



MG	DN	A	B	C	ød1	ød3
<b>B</b>	<b>1/4" (DN 8)</b>	7.9	10.6	4.5	5.9	9.3
	<b>3/8" (DN 10)</b>	11.9	16.0	6.7	9.4	13.8
	<b>1/2" (DN 15)</b>	15.9	21.4	9.1	12.6	18.8
<b>C</b>	<b>1/2" (DN 15)</b>	15.9	21.4	9.1	12.6	18.8
	<b>3/4" (DN 20)</b>	19.9	20.7	10.8	17.0	22.8
	<b>1" (DN 25)</b>	28.0	24.7	11.5	25.3	30.8
<b>D</b>	<b>3/4" (DN 20)</b>	22.0	21.4	7.5	19.0	25.0
	<b>1" (DN 25)</b>	28.0	22.2	11.5	25.4	30.8

Dimensions in mm, MG = diaphragm size  
Tolerance  $\pm 0.2$  mm

## 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.

## 9 Installation in piping

### 9.1 Preparing for installation

#### **WARNING**

**The equipment is subject to pressure!**

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

#### **WARNING**



**Corrosive chemicals!**

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

#### **CAUTION**

**Exceeding the maximum permissible pressure.**

- Damage to the product.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

#### **CAUTION**

**Use as step.**

- Damage to the product.
- Risk of slipping-off.
- Choose the installation location so that the product cannot be used as a foothold.
- Do not use the product as a step or a foothold.

#### **CAUTION**

**Leakage**

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

#### **CAUTION**



**Only apply pressure to the single-use diaphragm valve body when it is assembled to the manual operator!**

- Otherwise the single-use diaphragm valve body may be damaged.

#### **CAUTION**



**Damage to the manual operator!**

- The function of the manual operator is no longer ensured.
- Do not dismantle the manual operator into individual components.



**CAUTION****Damage to the handwheel!**

- ▶ The function of the manual operator is no longer ensured.
- Only open the manual operator manually (without tools).

**CAUTION****Damage to the seal contour!**

- ▶ Avoid damaging the seal contour.
- Always leave the manual plastic operator without single-use diaphragm valve body in the open position.

**NOTICE****Suitability of the product!**

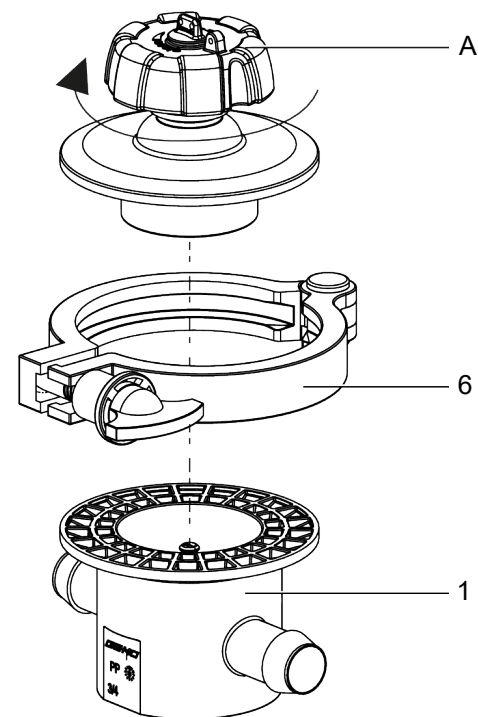
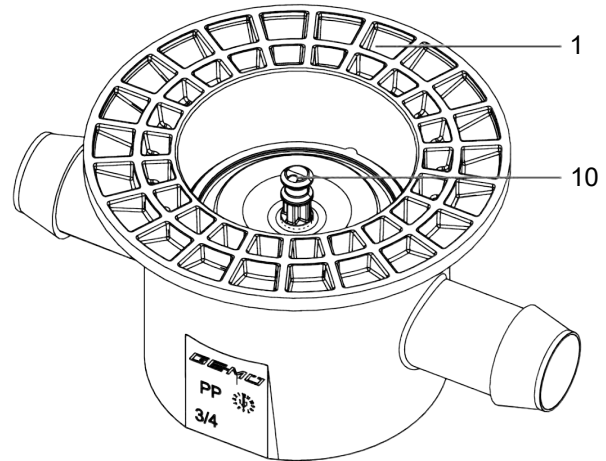
- ▶ The product must be appropriate for the piping system operating conditions (medium, medium concentration, temperature and pressure) and the prevailing ambient conditions.

**NOTICE****Tools**

- ▶ The tools required for installation and assembly are not included in the scope of delivery.
  - Use appropriate, functional and safe tools.
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. Decontaminate, rinse and ventilate the plant or plant component properly.
  12. Lay piping so that the product is protected against transverse and bending forces, and also from vibrations and tension.
  13. Only mount the product between matching aligned pipes (see following chapters).
  14. Optional installation position.

**9.2 Assembling the single-use diaphragm valve body to the manual operator****NOTICE**

- ▶ For assembly instructions for the SUB single-use diaphragm valve body, see the annex.

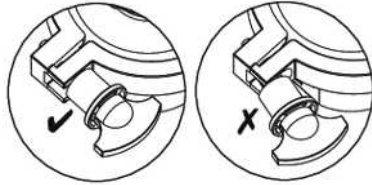


1. Close the manual operator **A**.
2. Place the single-use diaphragm valve body **1** on the manual operator **A** so that the diaphragm pin **10** is inserted into the compressor of the manual operator **A**.
3. Open the manual operator **A** with 2 turns anticlockwise.
4. Firmly compress the manual operator **A** and single-use diaphragm valve body **1** with a clamp **6**.

**⚠ CAUTION**

The connection between the manual operator and single-use diaphragm valve body is loose.

- ▶ Medium flows out.
- Tighten the bolt until the cams fit closely against the clamp.



⇒ The system is now ready for use.

### 9.3 Disassembling single-use diaphragm valve body - manual operator

**⚠ CAUTION**

Risk of damaging the single-use diaphragm valve body during disassembly!

- ▶ Depressurize the plant before disassembly.
- ▶ The single-use diaphragm valve body 1 cannot be used after disassembly.

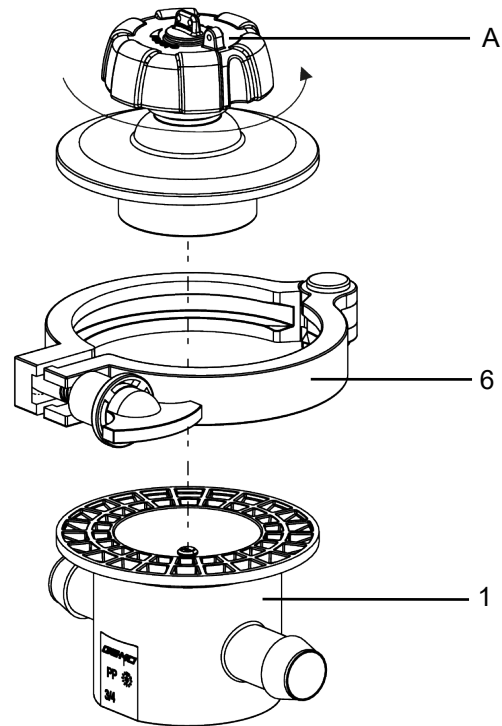
**⚠ CAUTION**

Risk of damaging the diaphragm during disassembly.

- ▶ Diaphragm pin was not decoupled.
- ▶ Only remove the manual operator from the single-use diaphragm valve body in the closed position.

**NOTICE**

- ▶ For assembly instructions for the SUB single-use diaphragm valve body, see the annex.



1. Open the manual operator **A**.
2. Undo and remove the clamp **6**.
3. Close the manual operator **A**.
4. Pull the single-use diaphragm valve body **1** downwards.

⇒ The single-use diaphragm valve body is now disassembled.

### 9.4 Installing the single-use diaphragm valve body in the piping

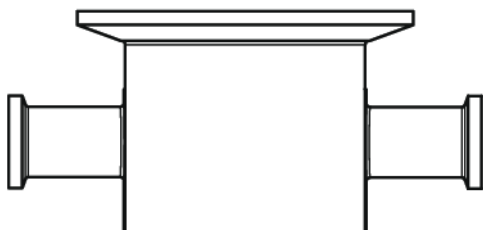
#### NOTICE

- For assembly instructions for the SUB single-use diaphragm valve body, see the annex.

#### NOTICE

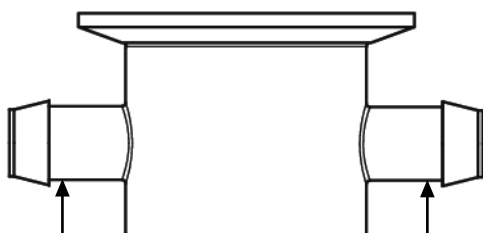
- The single-use diaphragm valve body can only be used once and must be disposed of after use.

#### Installation - Clamp connections:



1. When installing the clamp connection, insert a gasket between the single-use diaphragm valve body clamp and the adjacent pipe connection and join them using the clamp. The gasket and the clamps are not included in the scope of delivery.

#### Installation - Hose barbs:



2. When installing the hose barbs, pull hoses (e.g. made of silicone) over the hose barbs.
3. Mount and fasten cable ties or hose clips behind the hose barbs (arrows).

#### After the installation:

4. Re-attach or reactivate all safety and protective devices.

### 9.5 Operation

#### ⚠ CAUTION



#### Do not overtighten the special screw!

- The special screw may break off, which may cause damage to the manual operator.
- Do not remove the special screw.
- Only retighten the special screw slightly (if necessary).

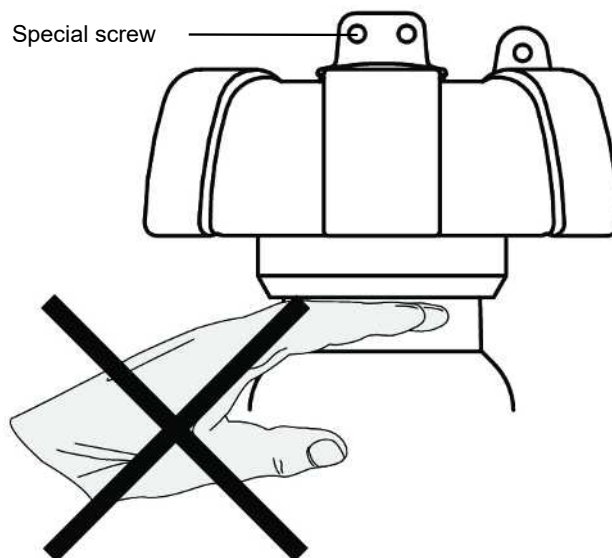
#### ⚠ CAUTION



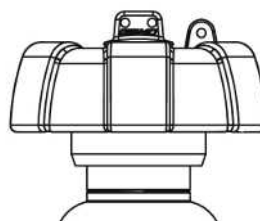
#### Risk of crushing due to rising handwheel!

- Danger of crushing fingers.

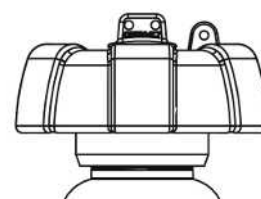
Special screw



#### Optical position indicator



Valve open



Valve closed

## 10 Commissioning

### ⚠ WARNING



#### Corrosive chemicals!

- ▶ Risk of caustic burns.
- Wear suitable 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).

#### The operator must

1. ensure that the permissible pressure in the plant is adhered to.
2. carry out tests to ensure compatibility of materials and medium prior to commissioning.
3. assemble the product and the manual operators before prior to commissioning.

#### Cleaning the manual operator:

### ⚠ CAUTION



#### Damage to the manual operator!

- ▶ The function of the manual operator is no longer ensured.
- Do not dismantle the manual operator into individual components during cleaning.

### ⚠ CAUTION



#### Do not autoclave the valve!

- ▶ Risk of damage to the valve.

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

## 10.1 Gamma-sterilizing the valve

### ⚠ CAUTION



#### Gamma sterilization!

- ▶ Possible discolouration of material caused by gamma sterilization (does not affect the functionality of the manual operator).

### ⚠ CAUTION



#### Possible reduction in the seat leak tightness caused by gamma sterilization.

- ▶ Deformation of the diaphragm in the case of gamma sterilization in the open position.
- Only gamma-sterilize the manual operator with fitted single-use diaphragm valve body in the closed position.

1. Move the manual operator **A** to the closed position.
2. Gamma-sterilize the valve.

## 10.2 Cleaning the valve

### ⚠ CAUTION



#### Cleaning!

- ▶ Possible discolouration of material caused by chemical cleaning agents (does not affect the functionality of the manual operator).

1. Move the manual operator **A** to the open position.
2. Clean the valve.
3. Open and close the handwheel several times after every cleaning process.

## 11 Troubleshooting

Error	Error cause	Troubleshooting
The product does not open or does not open fully	Diaphragm pin broken off in the compressor	Remove the diaphragm pin from the compressor, replace the valve body
	Clamp not fitted	Fit clamp
	Diaphragm pin is damaged	Perform visual inspection of the diaphragm pin for damage, replace the valve body if necessary
The product doesn't open or doesn't open fully	Manual operator was not assembled correctly	Correctly assemble manual operator
The product is leaking downstream (does not close or does not close fully)	Diaphragm pin broken off in the compressor	Remove the diaphragm pin from the compressor, replace the valve body
	Clamp not fitted	Fit clamp
	Diaphragm pin is damaged	Perform visual inspection of the diaphragm pin for damage, replace the valve body if necessary
	Operating pressure too high	Operate the product with the operating pressure specified in the datasheet
Connection between valve body and piping leaking	Incorrect installation	Check installation of valve body in piping
Valve body connection to piping is leaking	Clamp/hose clips/cable ties are loose	Tighten clamps/hose clips/cable ties
	Gasket faulty	Replace gasket
	Connection spigot damaged	Replace the valve body
The product is leaking between manual operator and valve body	Diaphragm torn/torn off	Replace the valve body
	Operating pressure too high	Replace the valve body
	Clamp is loose	Replace the valve body
Valve body is leaking	Valve body faulty	Replace the valve body
Handwheel cannot be turned	Handwheel defective	Replace the handwheel
Handwheel/special screw is loose	Special screw is loose	Carefully retighten the special screw

## 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**

- Servicing and maintenance work must be performed by trained personnel only.
- GEMÜ shall assume no liability whatsoever for damages caused by improper handling or third-party actions.
- GEMÜ shall assume no liability whatsoever for damages caused by using third-party actuators or third-party valve bodies.
- In case of doubt, contact GEMÜ prior to commissioning.

The operator must carry out regular visual examination of the GEMÜ products depending 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 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.

## 13 Removal from piping

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

## 14 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.

## 15 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.

**16 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 SUMONDO single-use diaphragm valve  
**Notified body:** TÜV Rheinland  
Berlin Brandenburg  
**Number:** 0035  
**Certificate no.:** 01 202 926/Q-02 0036  
**Conformity assessment procedure:** Module H1  
**Technical standard used:** 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.

2020-09-16



Joachim Brien  
Head of BU Industry



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Subject to alteration

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