

GEMÜ SU40 SUMONDO

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


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:




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

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

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

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

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

Symbol	Meaning
	Danger - corrosive materials
	Risk posed by sharp edges
	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:

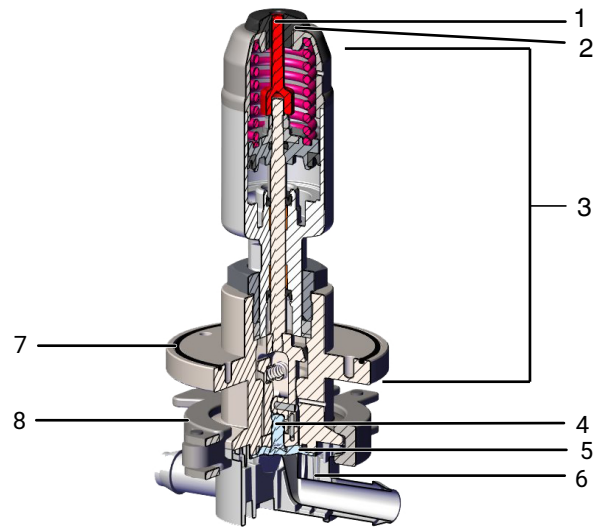
9. Keep this document available at the place of use.
10. Observe the safety information.
11. Operate the product in accordance with this document.
12. Operate the product in accordance with the specifications.
13. Maintain the product correctly.
14. Do not carry out any maintenance work and repairs not 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	Optical position indicator	PP (red)
2	Sealing plug	PP
3	Actuator with distance piece	Stainless steel
4	Diaphragm pin	PP-R
5	Diaphragm	TPE
6	Body	PP-R
7	O-ring	EPDM
8	Clamping device	Stainless steel

3.2 Description

The pneumatically operated GEMÜ SU40 actuator guarantees a high level of performance and a long service life thanks to its high-quality stainless steel components. The actuator is joined to the media wetted GEMÜ SUB unit, comprising a valve body and welded sealing diaphragm, by means of a clamp connection.

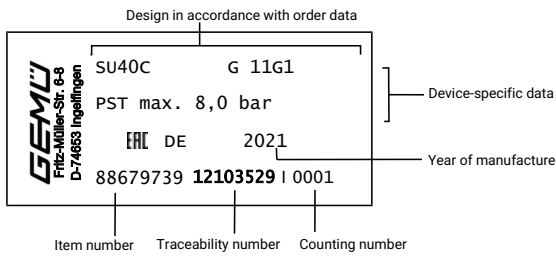
After use, the media wetted GEMÜ SUB unit can easily be disconnected from the actuator and replaced. The actuator remains in the plant.

3.3 Function

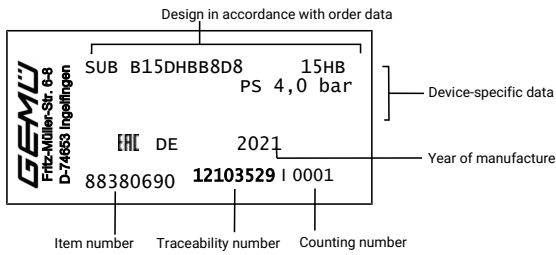
The GEMÜ single-use diaphragm valve, comprising the SUB single-use diaphragm valve body and the SU40 pneumatic stainless steel actuator, is designed for installation in single-use systems in plastic pipe and hose lines. It controls a flowing medium insofar as it can be opened by a control medium.

3.4 Product label

3.4.1 Actuator



3.4.2 Valve body packaging



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.

5.1 SU40 pneumatic actuator

Order codes

1 Type	Code
Pneumatically operated actuator metal version	SU40

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
Normally closed (NC)	1
Normally open (NO)	2
Double acting (DA)	3

5 Actuator size	Code
Actuator size 1G1	1G1

Order example SU40

Ordering option	Code	Description
1 Type	SU40	Pneumatically operated actuator metal version
2 Diaphragm size	B	Diaphragm size B
3 Diaphragm mounting	G	Pin
4 Control function	1	Normally closed (NC)
5 Actuator size	1G1	Actuator size 1G1

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.

Control medium: Inert gases
Class 4, max. oil concentration 25 mg/m³

6.2 Temperature

Media temperature: 5 – 40 °C

Ambient temperature: 0 – 40 °C

Control medium temperature: max. 40 °C

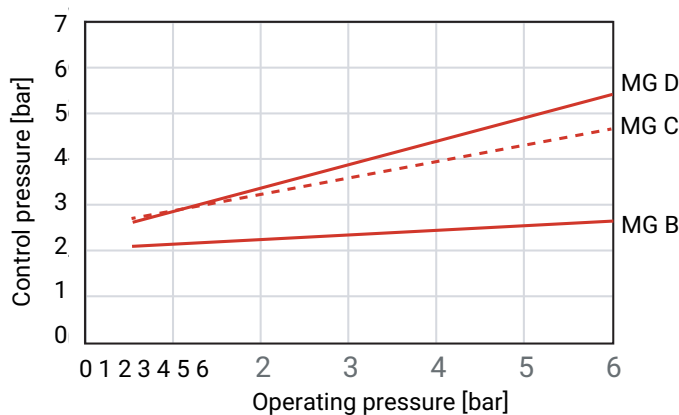
Storage temperature: 0 – 40 °C

6.3 Pressure

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

Vacuum: All three actuator sizes open fully in control function 2, including when there is an upcoming vacuum of -930 mbar after the control pressure is removed.

Control pressure: Control function 1: 6.0–8.0 bar
Control function 2 and 3: See diagram



MG = diaphragm size

Filling volume: Control function 1, 2, 3: 0.03 dm³

Cv values:

MG	AG	Connection type (code)	Body configuration (code)	Kv values [m ³ /h]	Cv values [US-gpm]	
B	1/4"	HB	D	0.47	0.55	
		HB	D	1.08	1.26	
	3/8"	HB	T	1.03	1.21	
		HB	R	1.02	1.19	
		HB	D	1.59	1.86	
	1/2"	HB	T	1.47	1.72	
		HB	R	1.44	1.68	
		HB	D	2.17	2.54	
	C	1/2"	HB	D	2.17	2.54
HB			D	3.29	3.85	
3/4"		HB	T	2.15	2.52	
		CA	D	3.29	3.85	
		CA	T	2.15	2.52	
		CA	D	4.55	5.32	
1"		HB	T	3.81	4.46	
		CA	D	4.55	5.32	
		CA	T	3.81	4.46	
		CA	D	3.81	4.46	
D		3/4"	CA, HB	D	9.21	10.78
		1"	CA, HB	D	12.19	14.26

MG = diaphragm size

AG = connection size

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

The Kv values for other product configurations may deviate. 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.

6.4 Product conformities valve body SUB

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:

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)

Weight:**Actuator with distance piece**

MG	Weights
B	2.4
C	2.5
D	2.6

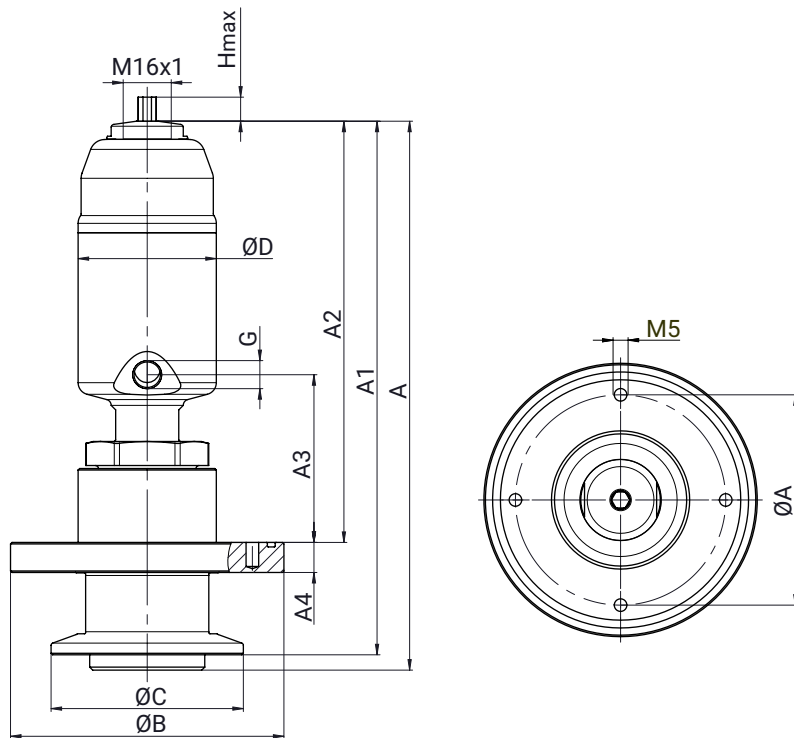
Weights in kg

Valve bodies

MG	AG	DN	Connection type (code)				
			HB	HB	HB	CA	CA
			Body configurations (code)				
			D	T	R	D	T
B	1/4"	8	36,0	-	-	-	-
	3/8"	10	40,0	44,0	43,0	-	-
	1/2"	15	42,0	47,0	46,0	-	-
C	1/2"	15	91,0	-	-	-	-
	3/4"	20	94,0	108,0	-	97,0	111,0
	1"	25	99,0	113,0	-	100,0	112,0
D	3/4"	20	80,0	-	-	99,0	-
	1"	25	80,0	-	-	100,0	-

Weight in g, MG = diaphragm size

AG = connection size

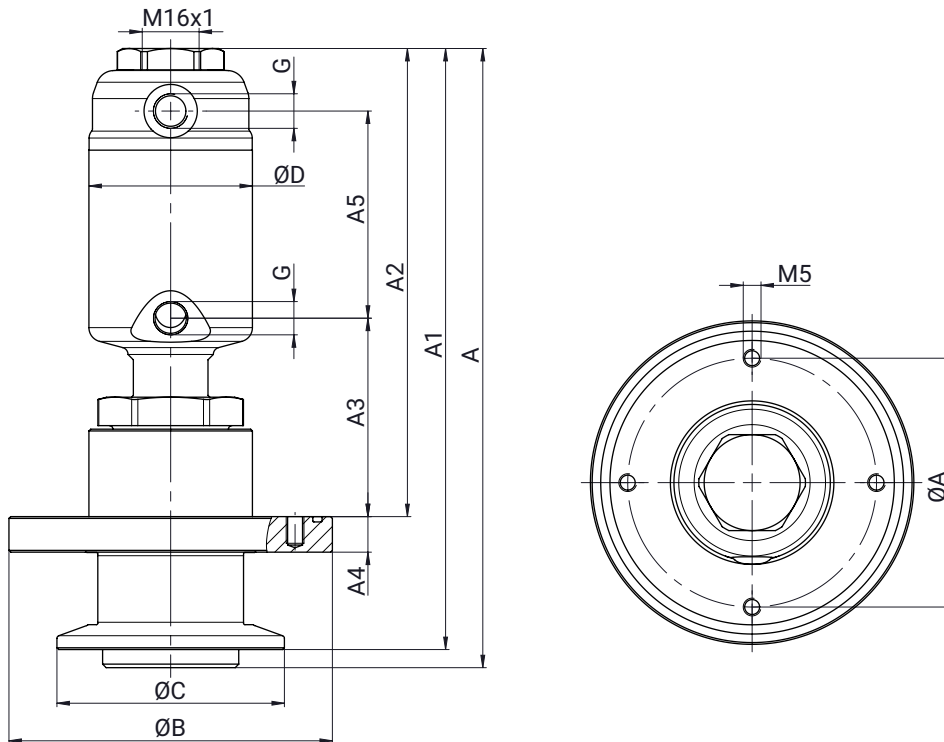
7 Dimensions**7.1 Actuator dimensions****Actuator (control function 1)**

MG	A	A1	A2	A3	A4	G	ØA	ØB	ØC	ØD	Hmax
B	182.7	177.6	140.2	55.8	10.0	G1/8	70.0	91.0	64.0	46.0	8.0
C	184.0	164.4	130.0	45.6	10.0	G1/8	70.0	91.0	91.0	46.0	9.0
D	183.1	157.2	118.4	34.0	10.0	G1/8	70.0	91.0	91.0	46.0	12.0

Dimensions in mm

MG = diaphragm size

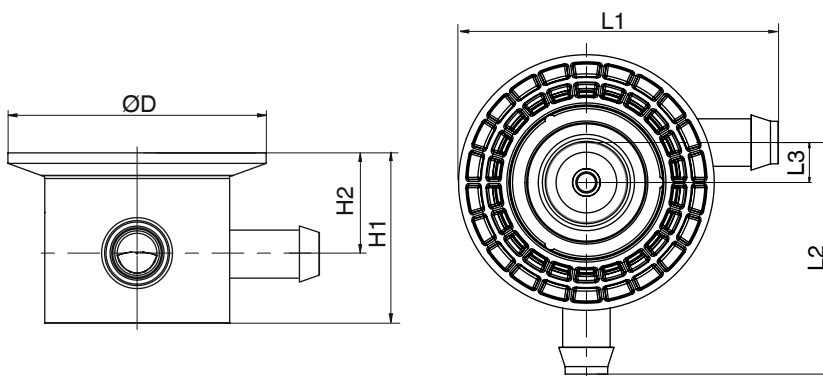
Actuator (control function 2, 3)



MG	A	A1	A2	A3	A4	A5	G	ØA	ØB	øC	øD
B	174.2	169.1	131.7	55.8	10.0	56.5	G1/8	70.0	91.0	64.0	46.0
C	175.7	155.9	121.5	45.6	10.0	56.5	G1/8	70.0	91.0	91.0	46.0
D	174.6	148.7	109.9	34.0	10.0	56.5	G1/8	70.0	91.0	91.0	46.0

Dimensions in mm

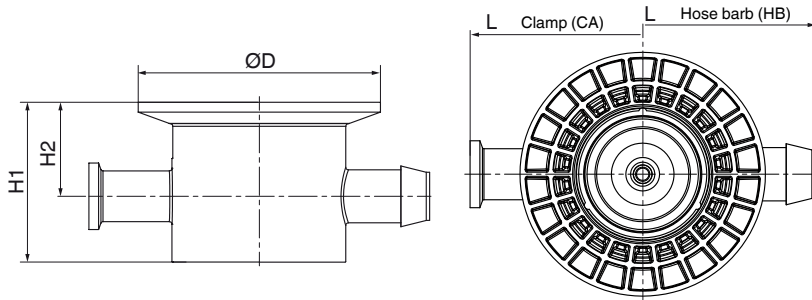
MG = diaphragm size

7.2 Body dimensions**7.2.1 Angle valve body, right (code R)****Connection type hose barb (code HB)**

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

Dimensions in mm, MG = diaphragm size

7.2.2 2/2-way body (code D)

Connection type clamp (code CA)¹⁾

MG	DN	øD	H1	H2	L
C	3/4" (DN 20)	91.0	60.0	35.3	128.0
	1" (DN 25)	91.0	60.0	35.3	137.4
D	3/4" (DN 20)	91.6	58.5	38.0	134.6
	1" (DN 25)	91.6	58.5	39.5	134.6

Connection type hose barb (code HB)¹⁾

MG	DN	øD	H1	H2	L
B	1/4" (DN 8)	64.0	33.3	22.3	80.6
	3/8" (DN 10)	64.0	33.3	22.3	95.9
	1/2" (DN 15)	64.0	33.3	22.3	111.5
C	1/2" (DN 15)	91.0	60.0	35.3	126.0
	3/4" (DN 20)	91.0	60.0	35.3	128.0
	1" (DN 25)	91.0	60.0	35.3	140.0
D	3/4" (DN 20)	91.6	58.5	38.0	139.0
	1" (DN 25)	91.6	58.5	39.5	139.0

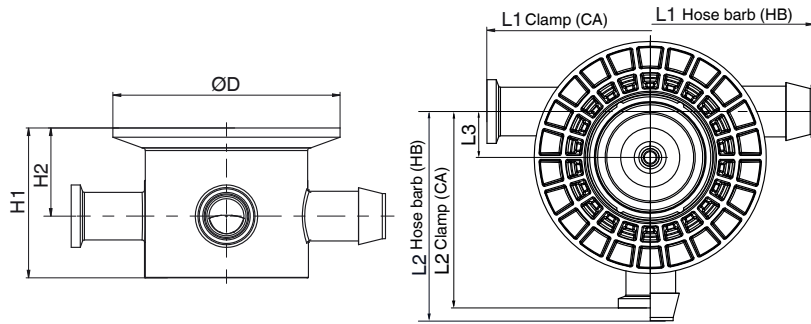
Dimensions in mm, MG = diaphragm size

1) Connection

Code CA: Clamp connection similar to ASME-BPE

Code HB: Hose barb

7.2.3 T valve body (code T)

Connection type clamp (code CA) ¹⁾

MG	DN	ØD	H1	H2	L1	L2	L3
C	3/4" (DN 20)	91.0	60.0	35.3	128.0	82.0	18.0
	1" (DN 25)	91.0	60.0	35.3	137.4	82.0	18.0

Connection type hose barb (code HB) ¹⁾

MG	DN	ØD	H1	H2	L1	L2	L3
B	3/8" (DN 10)	64.0	33.3	22.3	96.0	58.0	10.0
	1/2" (DN 15)	64.0	33.3	22.3	111.5	65.8	10.0
C	3/4" (DN 20)	91.0	60.0	35.3	128.0	82.0	18.0
	1" (DN 25)	91.0	60.0	35.3	140.0	88.0	18.0

Dimensions in mm, MG = diaphragm size

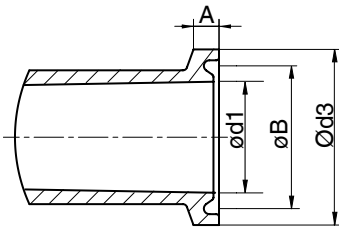
1) Connection

Code CA: Clamp connection similar to ASME-BPE

Code HB: Hose barb

7.3 Connection dimensions

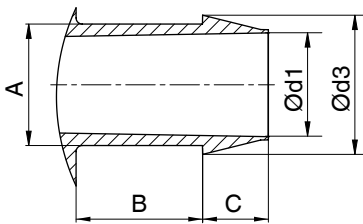
7.3.1 Clamp (code CA)



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

Dimensions in mm, MG = diaphragm size
Tolerance ± 0.2 mm

7.3.2 Hose barb (code HB)



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

Dimensions in mm, MG = diaphragm size
Tolerance ± 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!	
<ul style="list-style-type: none"> ▶ Risk of severe injury or death. ● Depressurize the plant. ● Completely drain the plant. 	


 WARNING	
	The actuator cover is under spring pressure!
	<ul style="list-style-type: none"> ▶ Risk of severe injury or death! ● Do not open the actuator.

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

 CAUTION	
	Sharp edges
	<ul style="list-style-type: none"> ▶ Risk of cuts! ● Wear protective gloves.

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

 CAUTION	
Leakage	
<ul style="list-style-type: none"> ▶ Emission of dangerous materials. ● Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer). 	

CAUTION

Only apply media pressure to the single-use diaphragm valve body when it is assembled to the pneumatic stainless steel actuator!

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

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 pneumatic stainless steel actuator – housing

1. Use control function 1 to move the pneumatic stainless steel actuator **A** into the closed position (not activated).

Preparing the housing 10

2. Rework the housing before assembling the pneumatic stainless steel actuator **A** according to the borehole pattern below, so that the pneumatic stainless steel actuator **A** can be guided through the recess from below.

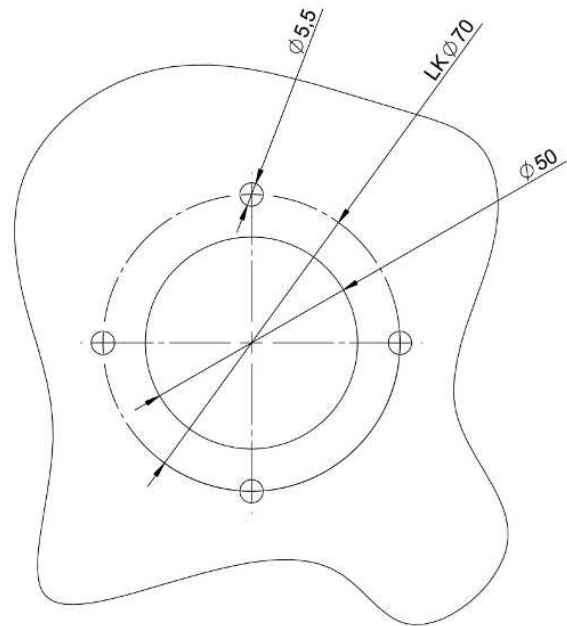


Fig. 1: Borehole pattern for housing (housing not included)

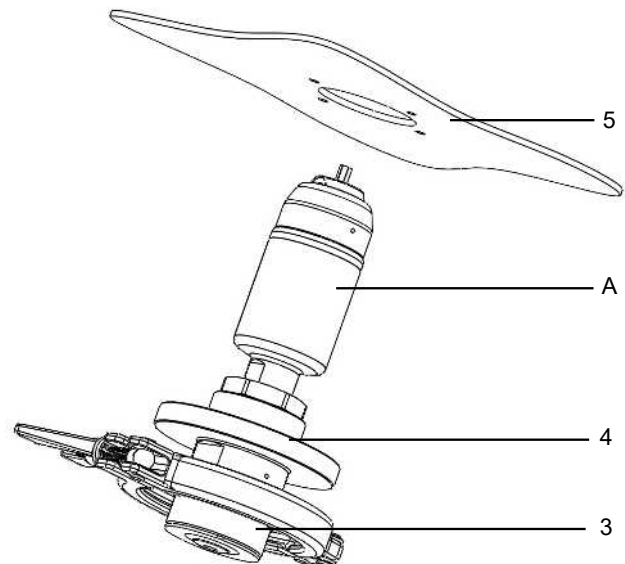


Fig. 2: Assembling the pneumatic stainless steel actuator in the housing

- ⇒ Where necessary, the O-ring (80 x 2 mm) supplied with the product can be used for sealing. To do this, insert the O-ring above the actuator **A** in the O-ring recess of the mounting flange **4**.
- 3. Guide the stainless steel actuator **A** through the recess of the housing **5** from below. The mounting flange **4** of the pneumatic stainless steel actuator **A** must lie flush on the housing **5**.
- 4. Connect the mounting flange **4** and housing **5** using suitable bolts and washers (not included in the scope of delivery).
- 5. Connect the control medium line and, if necessary, attach accessories to the pneumatic stainless steel actuator **A**.
- 6. Valve body assembly (see "Installing the single-use diaphragm valve body on the pneumatic stainless steel actuator", page 20).

9.3 Disassembling the pneumatic stainless steel actuator – housing

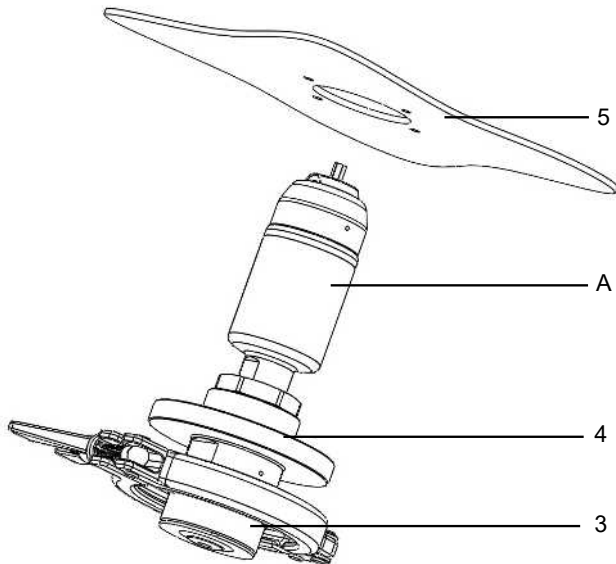


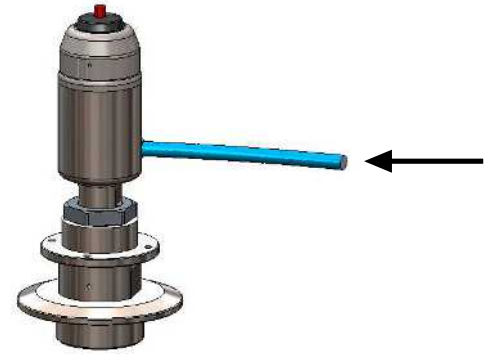
Fig. 3: Disassembling the pneumatic stainless steel actuator – housing

1. Depressurize the pneumatic stainless steel actuator **A**.
2. Disconnect the control medium line and remove any accessories fitted from the pneumatic stainless steel actuator **A**.
3. Undo the bolts between the mounting flange **4** and the housing **5**.
4. Pull the pneumatic stainless steel actuator **A** downwards through the recess of the housing **5**.
5. Valve body disassembly (see "Disassembling the single-use diaphragm valve body – pneumatic stainless steel actuator", page 21).

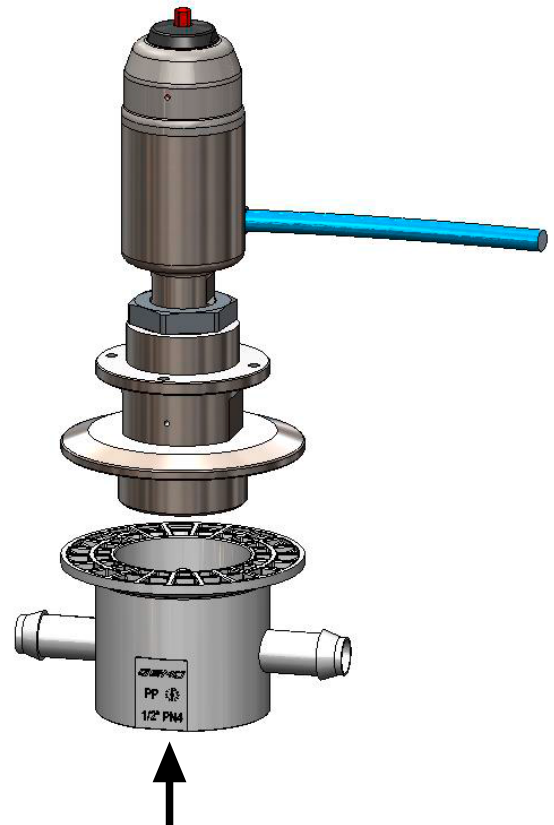
9.4 Installing the single-use diaphragm valve body on the pneumatic stainless steel actuator

NOTICE

Please note:
 ► The coupling function of the actuator must be checked after the valve body has been coupled and decoupled 5000 times, at the very latest

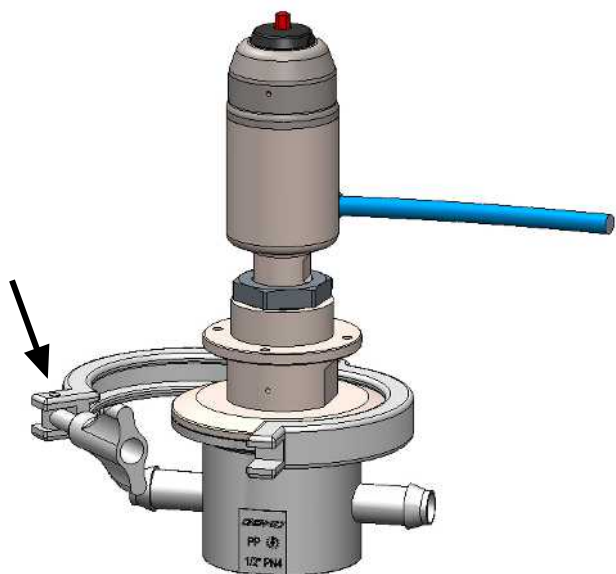


1. Activate the valve.
 ⇒ Move the actuator to the open position.

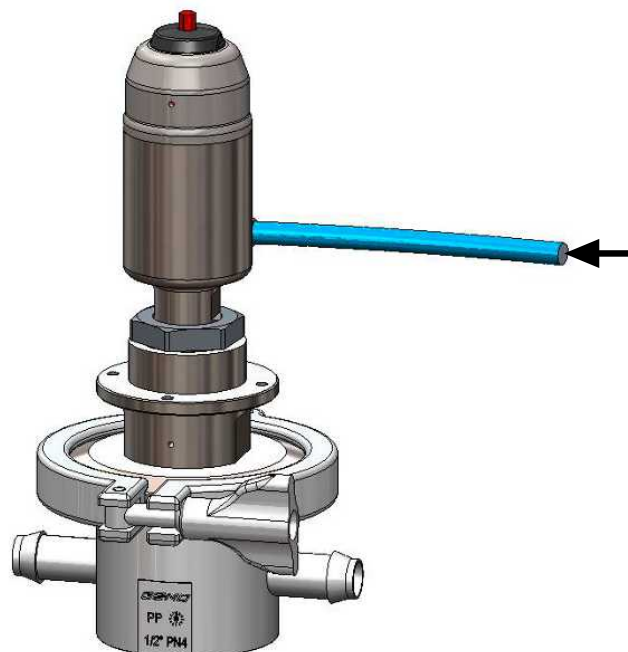


2. Push the valve body onto the actuator.

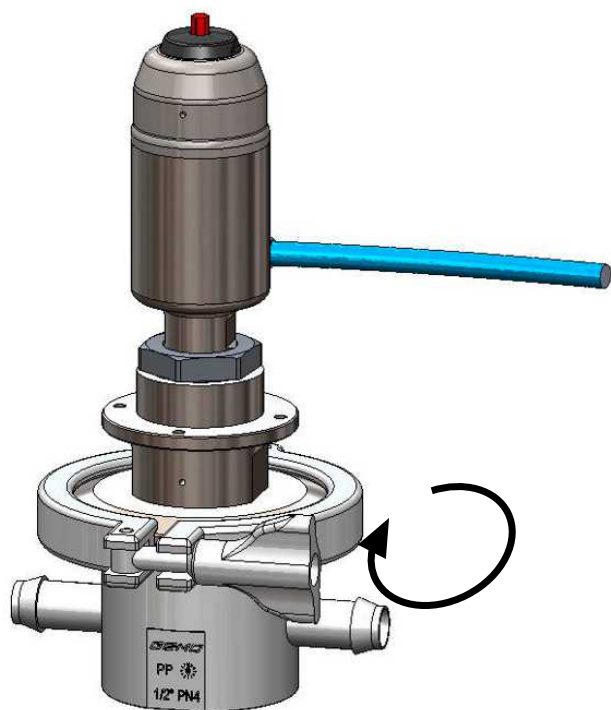
9.5 Disassembling the single-use diaphragm valve body – pneumatic stainless steel actuator



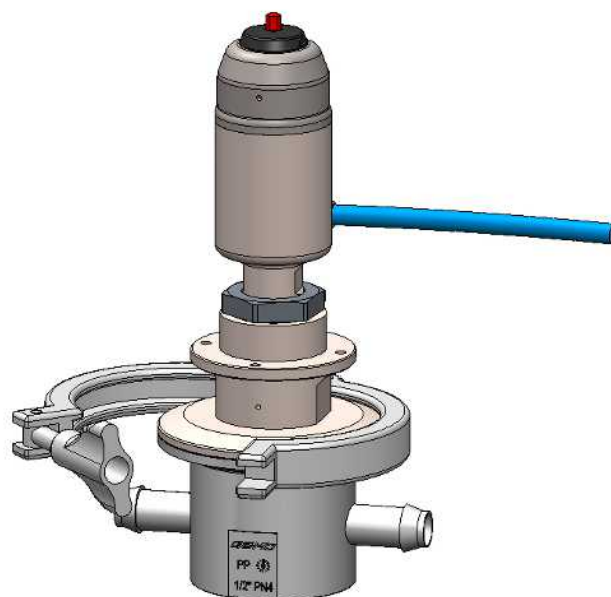
3. Fit the clamp connection at the junction between actuator and valve body.



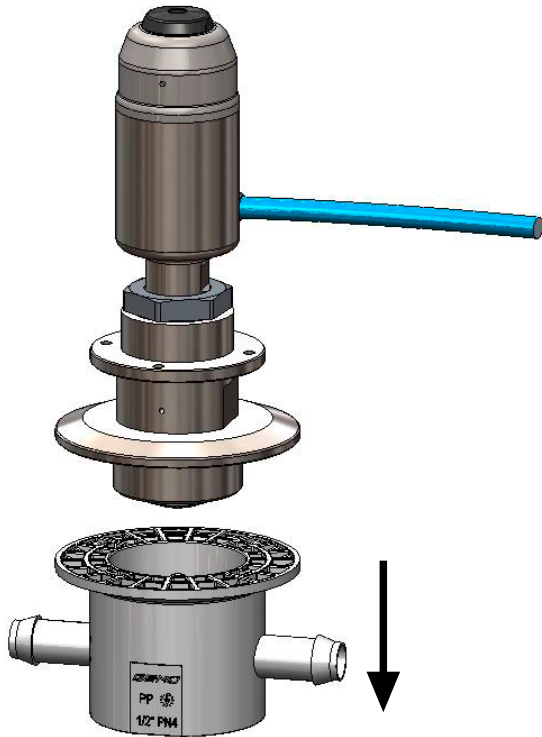
1. Activate the valve.
⇒ Move the valve to the open position.



4. Close the clamp connection.
5. Move the valve to the closed position.
⇒ Valve is ready for use.



2. Remove the clamp connection.



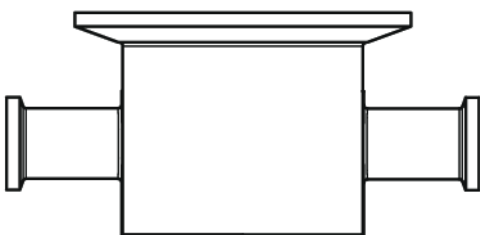
3. Move the actuator to the closed position.
⇒ Valve body is ejected.

9.6 Installing the single-use diaphragm valve body in the piping

NOTICE

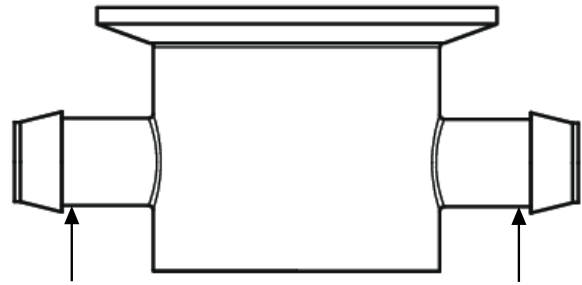
► The single-use diaphragm valve body can only be used once and must be disposed of after use!

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 installation:

Re-attach or reactivate all safety and protective devices.

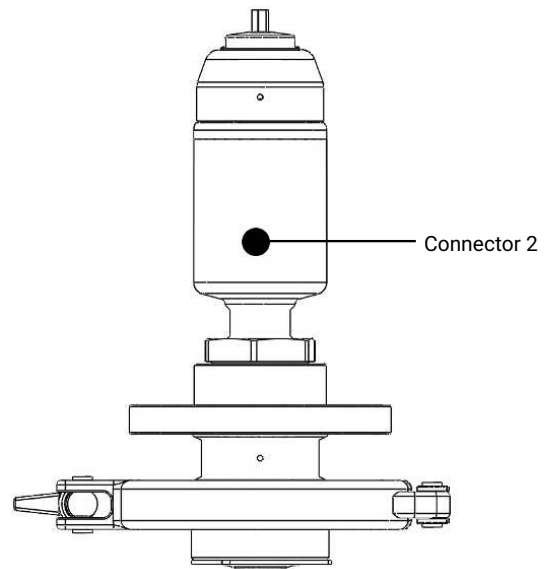
9.7 Control function

The following control functions are available:

Control function 1

Normally closed (NC):

Single-use diaphragm valve resting position: Closed by spring force. Activation of the pneumatic stainless steel actuator (connector 2) opens the single-use diaphragm valve. When the pneumatic stainless steel actuator is vented, the single-use diaphragm valve is closed by spring force.

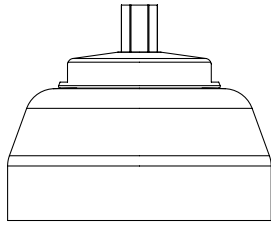


Control function 1

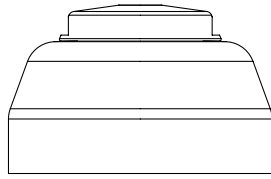
9.8 Connecting the control medium

1. Connect the control medium lines tension-free and without any bends or knots!
2. Use appropriate connector according to the application.
Thread size of the control medium connector: G1/8

9.9 Optical position indicator



Valve open



Valve closed

10 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

Important:

- ▶ Reinitialize mounted control accessories after each time the product is replaced.

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 SUB and SU40 prior to commissioning.

10.1 Initialization

For initialization of the body to the actuator, only the installation process according to the operating instructions is required. If an accessory (such as 1434) is installed, an initialization of 3–5 switching cycles is recommended.

11 Troubleshooting

Error	Error cause	Troubleshooting
Control medium escaping via optical position indicator	Piston faulty	Replace pneumatic stainless steel actuator and check control medium for impurities
Control medium escaping from leak detection hole	Spindle seal leaking	Replace pneumatic stainless steel actuator and check control medium for impurities
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
	Control pressure too low	Operate the product with the control pressure specified in the datasheet
	Pilot valve faulty	Replace the pilot valve
	Actuator spring faulty (indicator spindle no longer moves to the stop)	Replace pneumatic stainless steel actuator
	Control medium not connected	Connect the control medium
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
	Actuator spring faulty (indicator spindle no longer moves to the stop)	Replace pneumatic stainless steel actuator
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 the distance piece and valve body	Diaphragm torn/torn off	Replace the valve body
Valve body is leaking	Valve body faulty	Replace the valve body

12 Inspection and maintenance

WARNING

The equipment is subject to pressure!

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

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 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 EU Declaration of Incorporation according to the EC Machinery Directive 2006/42/EC, Annex II B



EU Declaration of Incorporation

according to the EC Machinery Directive 2006/42/EC, Annex II B

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

hereby declare under our sole responsibility that the below-mentioned product complies with the relevant essential health and safety requirements in accordance with Annex I of the above-mentioned Directive.

Product: GEMÜ SU40
Product name: Pneumatic actuator for single-use valves
The following essential health and safety requirements of the EC Machinery Directive 2006/42/EC, Annex I have been applied or adhered to: 1.1.3.; 1.1.5.; 1.1.7.; 1.2.1.; 1.3.1.; 1.3.2.; 1.3.3.; 1.3.4.; 1.3.7.; 1.3.9.; 1.5.3.; 1.5.5.; 1.5.6.; 1.5.7.; 1.6.1.; 1.7.1.; 1.7.1.1.; 1.7.2.; 1.7.3.; 1.7.4.; 1.7.4.1.; 1.7.4.2.; 1.7.4.3.
The following harmonized standards (or parts thereof) have been applied: EN ISO 12100:2010

We also declare that the specific technical documents have been created in accordance with part B of Annex VII.
The manufacturer undertakes to transmit relevant technical documents on the partly completed machinery to the national authorities in response to a reasoned request. This communication takes place electronically.
This does not affect the industrial property rights.

The partly completed machinery may be commissioned only if it has been determined, if necessary, that the machinery into which the partly completed machinery is to be installed meets the provisions of the Machinery Directive 2006/42/EC.

M. Barghoorn
Head of Global Technics

Ingelfingen, 17/03/2023

17 Manufacturer's declaration according to the Pressure Equipment Directive 2014/68/EU



Manufacturer's declaration

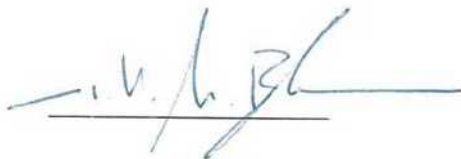
according to the Pressure Equipment Directive 2014/68/EU

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

declare that the below-mentioned product is designed and manufactured in compliance with sound engineering practice according to Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU.

Product: GEMÜ SU40
Product name: Pneumatic actuator for single-use valves

The product has been developed and produced according to GEMÜ's in-house process instructions and standards of quality 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, this product must not be identified by a CE-marking.



M. Barghoorn
Head of Global Technics
Ingelfingen, 17/03/2023



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Subject to alteration

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