

GEMÜ SUPM SUMONDO

Pneumatic actuator for single-use valves



Features

- Impact resistant, corrosion resistant
- Integral optical position indicator
- Wide range of adaptation options for add-on components and accessories
- Tried-and-tested, reliable actuator design (remains in system)
- Hermetic separation between medium and actuator
- Autoclavable actuator

Description

The GEMÜ SUPM pneumatic actuator of the GEMÜ SUMONDO single-use valve is joined to the GEMÜ SUB valve body 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.

Technical specifications

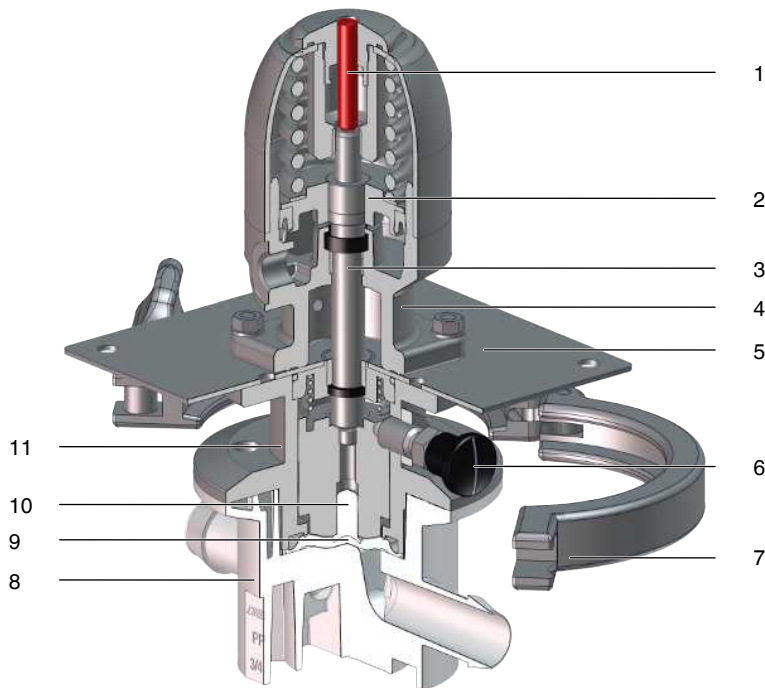
- **Media temperature:** 5 to 40 °C
- **Ambient temperature:** 0 to 40 °C
- **Operating pressure:** 0 to 4.9 bar
- **Nominal sizes:** 1/4" (DN 8) to 1" (DN 25)
- **Body configurations:** 2/2-way body | Angle valve body | T-body
- **Connection types:** Clamp | Hose barb
- **Body materials:** PP-R, natural
- **Diaphragm materials:** TPE
- **Conformities:** EAC | USP

Technical data depends on the respective configuration



Product description

Construction



Item	Name	Materials
1	Optical position indicator	1.4305
2	Piston	1.4571
3	Valve spindle	1.4571
4	Actuator	1.4408
5	Mounting plate	1.4404
6	Indexing plunger	PA6
7	Tri-clamp	1.4401
8	Valve body	PP-R
9	Diaphragm	TPE
10	Diaphragm pin	PP-R
11	Distance piece	1.4435

Availability

MG Code	Connection size ¹⁾	2/2-way body		T body		Angle valve body, right
		Hose barb	Clamp connection	Hose barb	Clamp connection	Hose barb
B	8	X	-	-	-	-
	10	X	-	X	-	X
	15	X	-	X	-	X
C	15	X	-	-	-	-
	20	X	X	X	X	-
	25	X	X	X	X	-
D	20	X	X	-	-	-
	25	X	X	-	-	-

MG = diaphragm size, X = standard

1) **Connection size 1**

Code 8: DN 8 (1/4")

Code 10: DN 10 (3/8")

Code 15: DN 15 (1/2")

Code 20: DN 20 (3/4")

Code 25: DN 25 (1")

Order data

The order data provide an overview of standard configurations.

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

Pneumatic actuator SUPM

Order codes

1 Type	Code
Pneumatically operated actuator, metal version	SUPM

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

5 Actuator size	Code
Actuator size 1T1 (based on type 650)	1T1

Order example SUPM

Ordering option	Code	Description
1 Type	SUPM	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	1T1	Actuator size 1T1 (based on type 650)

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

Technical data

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: Oil concentration Class 4
(max. oil concentration 25 mg/m³)

Temperature

Media temperature: 5 – 40 °C

Ambient temperature: 0 – 40 °C

Control medium temperature: max. 40 °C

Storage temperature: 0 – 40 °C

Pressure

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

Control pressure: Control function 1 = 4.5 - 7.0 bar
Control function 2 = 3.5 - 5.5 bar

Filling volume: Control function 1 = 0.03 dm³
Control function 2 = 0.07 dm³

Kv values

AG ¹⁾	MG	Connection type code ²⁾	Body configuration code ³⁾	Kv value [m ³ /h]	Cv value [US-gpm]
8	B	HB	D	0.47	0.55
10			D	1.08	1.26
			T	1.03	1.21
		R	1.02	1.19	
15		HB	D	1.59	1.86
			T	1.47	1.72
	R		1.44	1.68	
15	C	HB	D	2.17	2.54
20			D	3.29	3.85
		T	2.15	2.52	
25		CA	D	3.29	3.85
			T	2.15	2.52
25		HB	D	4.55	5.32
			T	3.81	4.46
		CA	D	4.55	5.32
	T		3.81	4.46	

AG ¹⁾	MG	Connection type code ²⁾	Body configuration code ³⁾	Kv value [m ³ /h]	Cv value [US-gpm]
20	D	CA, HB	D	9.21	10.78
25		CA, HB	D	12.19	14.26

Kv values in m³/h (Cv values in gpm)

MG = diaphragm 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 (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.

1) **Connection size 1**

- Code 8: DN 8 (1/4")
- Code 10: DN 10 (3/8")
- Code 15: DN 15 (1/2")
- Code 20: DN 20 (3/4")
- Code 25: DN 25 (1")

2) **Connection**

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

3) **Body configuration**

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

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

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

Type	Con- nection Code ¹⁾	Body config- uration Code ²⁾	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	-	-

Technical data

Type	Con- nection Code ¹⁾	Body config- uration Code ²⁾	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)
SUPM			2167	2167	2167	2605	2605	2605	2847	2847

Weight in g, MG = diaphragm size

1) **Connection**

Code CA: Clamp connection similar to ASME-BPE

Code HB: Hose barb

2) **Body configuration**

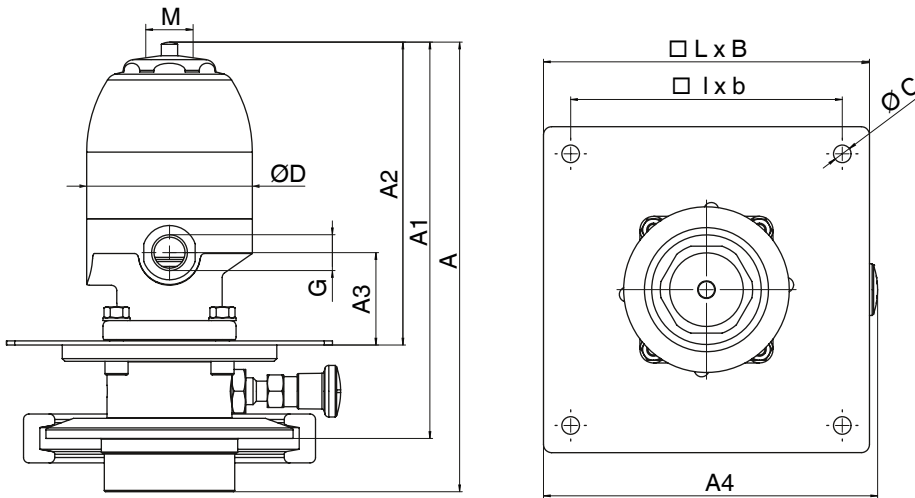
Code D: 2/2-way body

Code R: Angle valve body, right

Code T: T body

Dimensions

Actuator dimensions

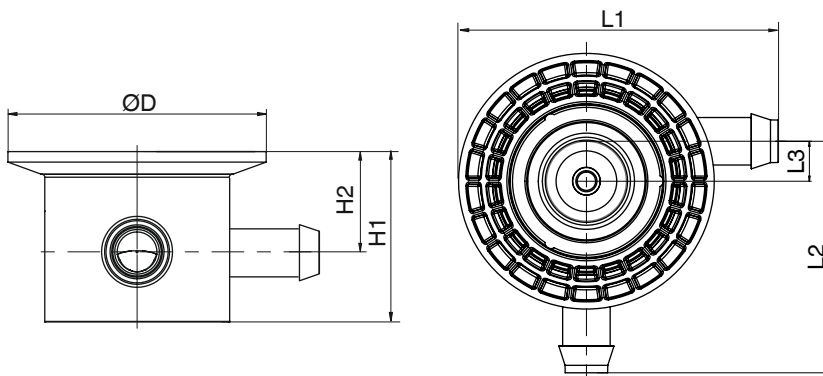


	MG B	MG C	MG D
	1/4" (DN 8), 1/2" (DN 15)	3/4" (DN 20), 1" (DN 25)	3/4" (DN 20), 1" (DN 25)
A	153.2	166.0	176.7
A1	148.1	146.4	150.8
A2	110.7	112.0	110.6
A3	34.0	34.0	34.0
A4	123.0	123.0	123.0
G	G1/4	G1/4	G1/4
$\square L \times B$	120.0	120.0	120.0
$\varnothing C$	6.5	6.5	6.5
$\varnothing D$	61.0	61.0	61.0
$\square l \times b$	100.0	100.0	100.0
M	M16x1	M16x1	M16x1

Dimensions in mm, MG = diaphragm size

Body dimensions

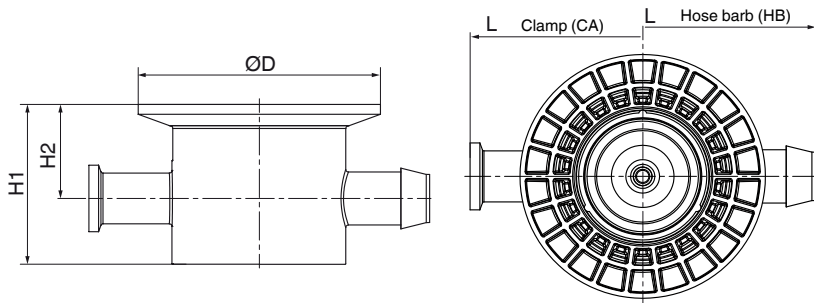
Angle valve body, right (code R)



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

Dimensions in mm, MG = diaphragm size

2/2-way body (code D)



	Con- nection Code ¹⁾	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)
L	CA	-	-	-	-	128.0	137.4	134.6	134.6
H1		-	-	-	-	60.0	60.0	58.5	58.5
H2		-	-	-	-	35.3	35.3	38.0	39.5
ØD		-	-	-	-	91.0	91.0	91.6	91.6
L	HB	80.6	95.9	111.5	126.0	128.0	140.0	139.0	139.0
H1		33.3	33.3	33.3	60.0	60.0	60.0	58.5	58.5
H2		22.3	22.3	22.3	35.3	35.3	35.3	38.0	39.5
ØD		64.0	64.0	64.0	91.0	91.0	91.0	91.6	91.6

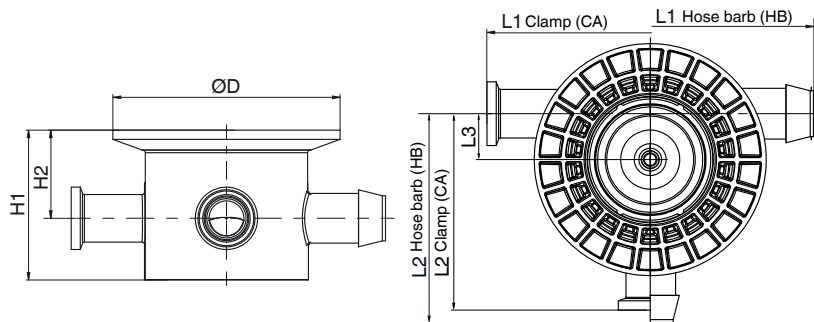
Dimensions in mm, MG = diaphragm size

1) **Connection**

Code CA: Clamp connection similar to ASME-BPE

Code HB: Hose barb

T valve body (Code T)



	Connection Code ¹⁾	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

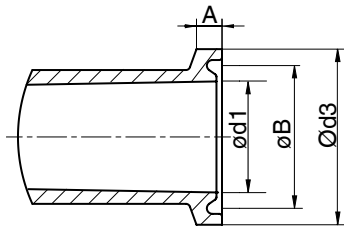
1) **Connection**

Code CA: Clamp connection similar to ASME-BPE

Code HB: Hose barb

Connection dimensions

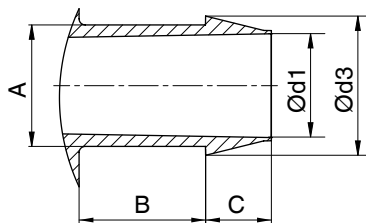
Clamp (code CA)



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

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



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