

Angle Seat Globe Valve, Metal

Construction

The GEMÜ 550 pneumatically operated 2/2 way angle seat globe valve has a low maintenance piston actuator. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. The wiper ring fitted in front of the gland packing protects it against contamination and damage.

Features

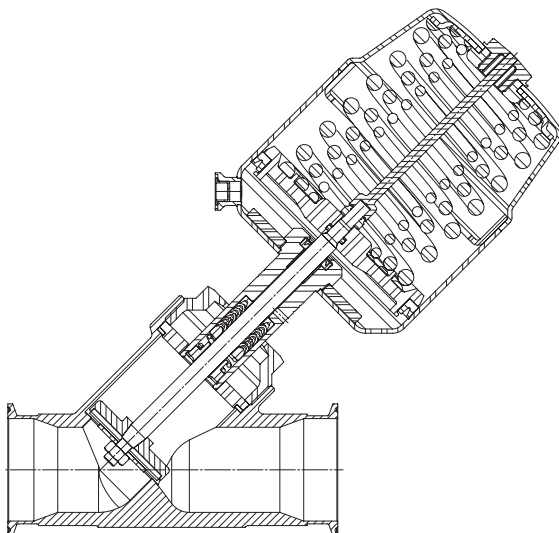
- Suitable for inert and corrosive* liquid and gaseous media
- Substantially reduced installation dimensions when using the body with male threads which can be installed using union nuts
- Materials of all medium wetted parts can be selected to suit relevant applications
- Higher media temperatures
- Versions according to ATEX on request

Advantages

- Stainless steel actuator for simple cleanability, corrosive atmospheres
- Various types of valve body connections
- Good flow capability
- Low weight
- Optical position indicator is standard for NC control function (optional for NO and DA control functions).
- Accessories:
 - Electrical position indicators
 - Combi switchboxes
 - Electro-pneumatic positioners/process controllers (see data sheet GEMÜ 550 control valve)
 - Stroke limiter
- Suitable for contact with food according to Regulation (EC) No. 1935/2004
- Standard gland packing suitable for vacuum up to 0.59 inHg (abs.)

*See information on working medium on page 2

Sectional drawing



GEMÜ® 550

Connection code 80 /
Valve body material code C2

Technical data

Working medium

Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and seal material.

Max. perm. pressure of working medium see table

Medium temperature 14 °F to 356 °F

Max. permissible viscosity 600 mm²/s (cSt)

Other versions for lower/higher temperatures and viscosities on request.

Ambient conditions

Max. ambient temperature 140 °F

Technical data / Actuator

Actuator size	Filling volume	Piston diameter
1K1, 1L1	1.53 cu in	1.65 in
2K1, 2L1	5.13 cu in	2.36 in
3K1, 3L1	14.95 cu in	3.15 in
4K1	26.67 cu in	3.94 in
5K1	48.7 cu in	5.12 in

Control medium

Inert gases

Max. control pressure: 116 psi

Max. perm. temperature of control medium: 140 °F

Maximum permissible seat leakage rate / Open-Closed-Valve

Seat seal	Standard	Test procedure	Leakage rate	Test medium
PTFE	DIN EN 12266-1	P12	A	air

Maximum permissible seat leakage class / Control valve

Seat seal	Standard	Test procedure	Leakage rate	Test medium
PTFE	DIN EN 60534-4	1	VI	air

Control pressure [psi]

C. f. 1 Normally closed (NC) / Flow direction: under the seat

Actuator size	Control pressure [psi]
1K1, 2K1, 3K1, 4K1	58 - 116
5K1	73 - 116

C. f. 1 Normally closed (NC) / Flow direction: over the seat

1L1, 2L1, 3L1 max. 102 psi

Higher control pressures on request.

C. f. 2 Normally open (NO) / Flow direction: under the seat

for values see diagram see page 4

Max. operating pressure [psi]

Actuator size	DN 15	DN 20	DN 25	DN 40	DN 50	DN 65
C. f. 1 Normally closed (NC) / Flow direction: under the seat						
1K1	150	150	90	-	-	-
2K1	319	319	174	60	36	-
3K1	-	-	232	150	90	45
4K1	-	-	-	261	174	105
5K1	-	-	-	-	232	218
C. f. 1 Normally closed (NC) / Flow direction: over the seat						
1L1	150	150	150	-	-	-
2L1	150	150	150	-	-	-
3L1	-	-	150	150	150	150
C. f. 2 Normally open (NO) / C. f. 3 Double acting (DA) / Flow direction: under the seat						
1K1	363	363	261	-	-	-
2K1	363	363	363	247	120	-
3K1	-	-	-	363	232	203
4K1	-	-	-	-	-	232
5K1	-	-	-	-	-	-

All pressures are gauge pressures. When the flow is over the plug (M), there may be the danger of water hammer with liquid media!

Pressure / temperature correlation for angle seat globe valve bodies

Connection code	Material code	Max. allowable operating pressures in psi at temperature °F*					
		RT	212	302	392	482	572
80 (DN 15 - 40)	C2	363	307	280	260**	-	-
80 (DN 50 - 65)	C2	232	232	232	232**	-	-

* The valves can be used down to 14 °F ** max. temperature 356 °F
 RT = Room Temperature All pressures are gauge pressures.

Cv value Standard

DN	Cv value [gpm]	max. Operating pressure [psi]	Actuator size
15	2.5	150	1K1
15	2.5	319	2K1
20	5.4	150	1K1
20	5.4	319	2K1
25	11.5	174	2K1
40	26.9	150	3K1
50	51.5	75	3K1
65	60.3	105	4K1

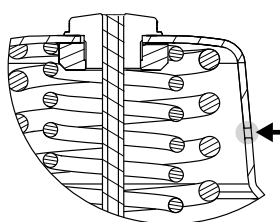
Correlation Cv value, operating pressure, regulating cone number Valve body material: 1.4435 (code C2)

DN	Cv value [gpm]	Operating pressure [psi]	Actuator size	Regulating cone number	
				linear	equal-percentage (mod.)
15	2.3	150	1K1	RS215	RS216
				RS217	RS218
20	4.7	150	1K1	RS219	RS220
				RS221	RS222
25	10.5	174	2K1	RS223	RS224
40	23.4	150	3K1	RS225	RS226
50	42.1	90	3K1	RS227	RS228
65	52.7	105	4K1	RS229	RS230

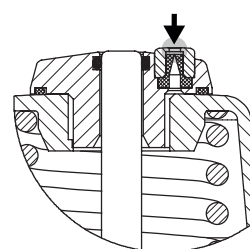
Cv values determined with 1 psi pressure drop across valve. The Cv value data refers to control function 1 (NC) and the largest actuator for each nominal size.
 The Cv values for other product configurations (e.g. other connections or body materials) may differ.

Bleed hole in the actuator

To bleed the control medium, the pneumatic actuator has a bleed hole that is located on the side of the actuator housing (control function normally closed). In certain areas of application (e.g. the foodstuff industry), dirty water or cleaning media could enter through this bleed hole and penetrate the actuator, thereby adversely affecting correct operation. A special bleed system with lip check valve is available for these applications, which prevents such functional impairment. The bleed hole at the side is then closed.



Standard bleed hole

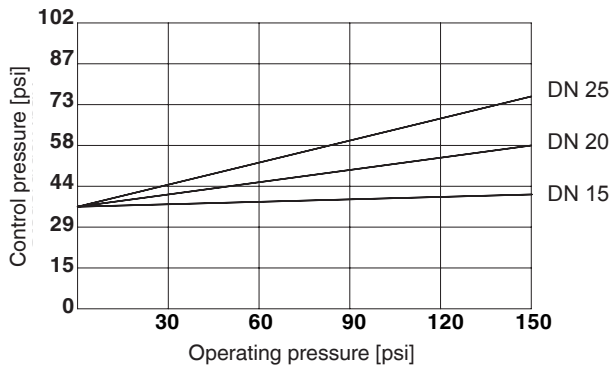


Special bleed system
K no. 6996

Operating pressure / Control pressure characteristics
Control function 1: normally closed (NC) / Flow direction: over the seat

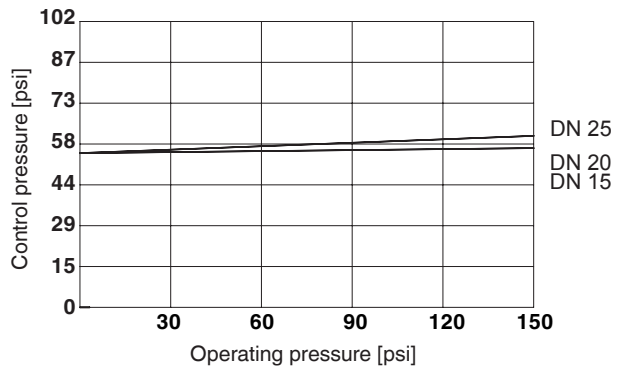
Actuator size 1L1

Min. control pressure dependent on operating pressure



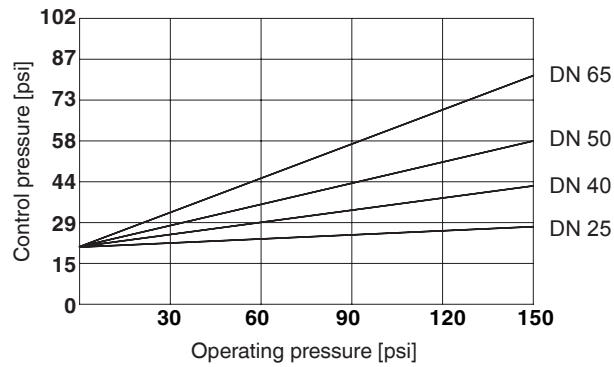
Actuator size 2L1

Min. control pressure dependent on operating pressure



Actuator size 3L1

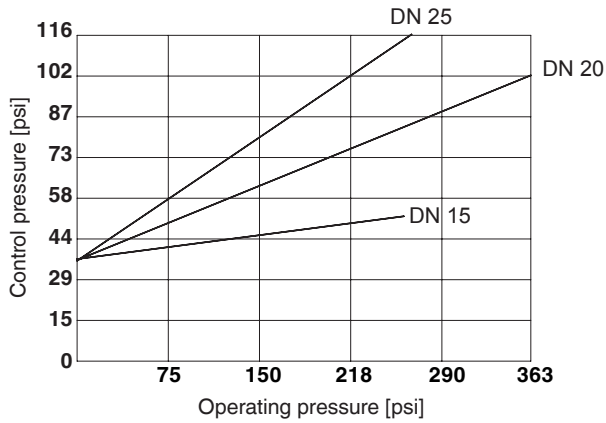
Min. control pressure dependent on operating pressure



Operating pressure / Control pressure characteristics
Control function 2: normally open (NO) / Control function 3: double acting (DA)
Flow direction: under the seat

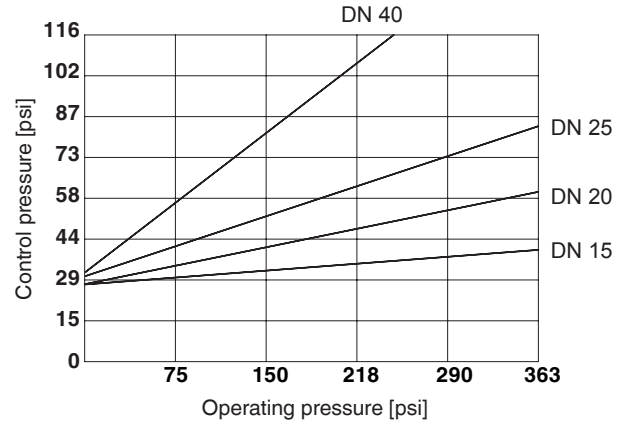
Actuator size 1K1

Min. control pressure dependent on operating pressure



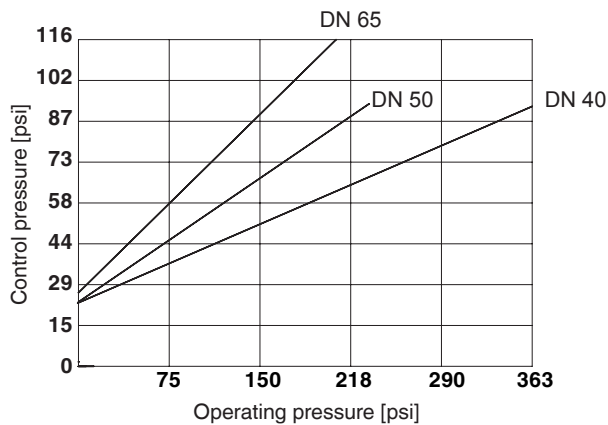
Actuator size 2K1

Min. control pressure dependent on operating pressure



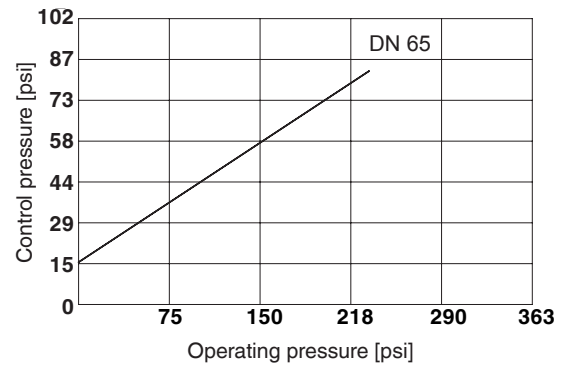
Actuator size 3K1

Min. control pressure dependent on operating pressure



Actuator size 4K1

Min. control pressure dependent on operating pressure



Order data

Body configuration	Code
2/2-way body	D

Nominal size		Code
DN 15	NPS 1/2"	15
DN 20	NPS 3/4"	20
DN 25	NPS 1"	25
DN 32	NPS 1 1/4"	32
DN 40	NPS 1 1/2"	40
DN 50	NPS 2"	50
DN 65	NPS 2 1/2"	65

Connection	Code
Clamps ASME BPE for pipe ASME BPE, length ASME BPE	80

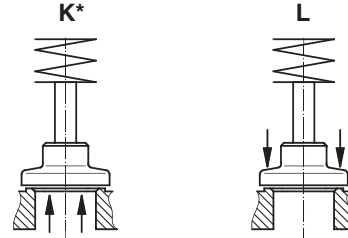
Valve body material	Code
1.4435, Investment casting Material equivalency 316 L, $\Delta Fe < 2,0\%$	C2
A surface finish from the order code table "K number" must be specified for valve body material.	

Seat seal	Code
PTFE	5
PTFE, glass fibre reinforced	5G
PTFE, USP Class VI	5P

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

Actuator size			Code
Actuator 1	piston \varnothing	1.65 in	1
Actuator 2	piston \varnothing	2.36 in	2
Actuator 3	piston \varnothing	3.15 in	3
Actuator 4	piston \varnothing	3.94 in	4
Actuator 5	piston \varnothing	5.12 in	5

Flow direction	Code
Under the seat	K*
Over the seat	L**
** only control function NC	



* Preferred flow direction with incompressible media to avoid "water hammer"

Spring set	Code
Standard	1

Version	Code
Media temperature 14 to 410 °F (only with seat seal Code 5G and 10)	2023
Special bleed system in the actuator	6996
All special versions only available ex works	
Surface finish for valve body material C2	
Ra ≤ 0,60 µm (25 µinch) for process contact surfaces, in accordance with ASME BPE SF2 + SF3, mechanically polished internal	1903
Ra ≤ 0,80 µm (30 µinch) for process contact surfaces, in accordance with DIN 11866 H3, mechanically polished internal	1904
Ra ≤ 0,40 µm (15 µinch) for process contact surfaces, in accordance with DIN 11866 H4, ASME BPE SF1, mechanically polished internal	1909
Ra ≤ 0,60 µm for process contact surfaces, in accordance with ASME BPE SF6, electropolished internal/external	1953
Ra ≤ 0,80 µm for process contact surfaces, in accordance with DIN 11866 HE3, electropolished internal/external	1954
Ra ≤ 0,40 µm for process contact surfaces, in accordance with DIN 11866 HE4/ASME BPE SF5, electropolished internal/external	1959

Order data

Order example	550	15	D	80	C2	5	1	1	K	1	-
Type	550										
Nominal size		15									
Body configuration (code)			D								
Connection (code)				80							
Valve body material (code)					C2						
Seat seal (code)						5					
Control function (code)							1				
Actuator size (code)								1			
Flow direction (code)									K		
Spring set (code)										1	
Version (code)											-

Version for food contact

For food contact, the product must be ordered with the following ordering options:

Seat seal code 5, 5G

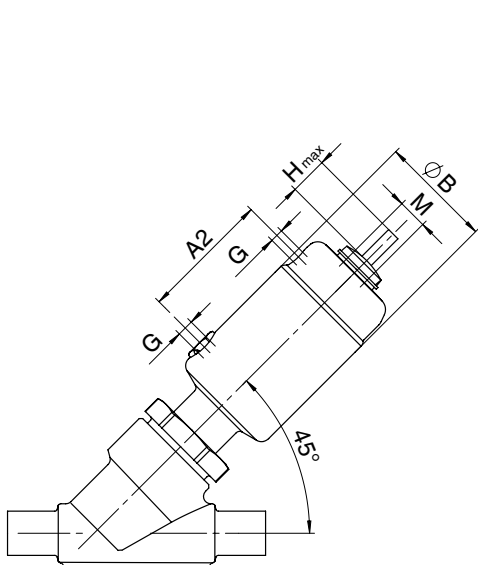
Valve body material code C2

Dimensions [inch]

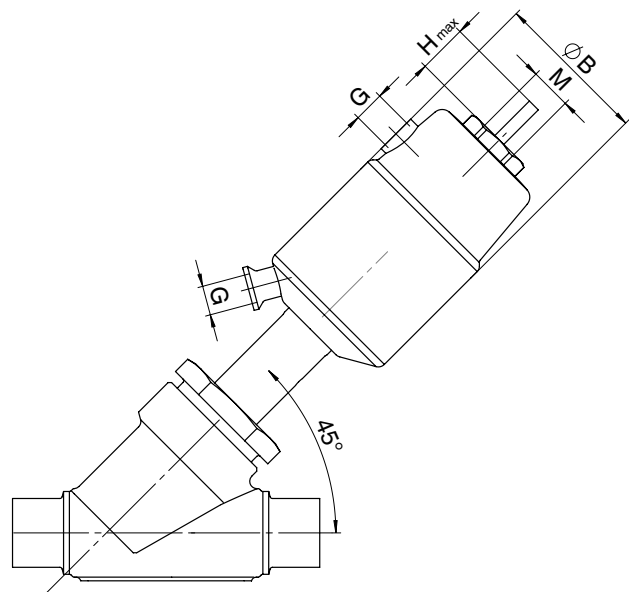
Actuator dimensions

Actuator size	ϕB	M	H max*	G	A2
1	1.81	M 16x1	0.47	G 1/8	2.09
2	2.48	M 16x1	0.87	G 1/8	-
3	3.31	M 16x1	1.10	G 1/4	-
4	4.09	M 22x1.5	1.26	G 1/4	-
5	5.31	M 22x1.5	1.61	G 1/4	-

H max*: dependent on nominal size



Actuator size 1



Actuator size 2 - 5

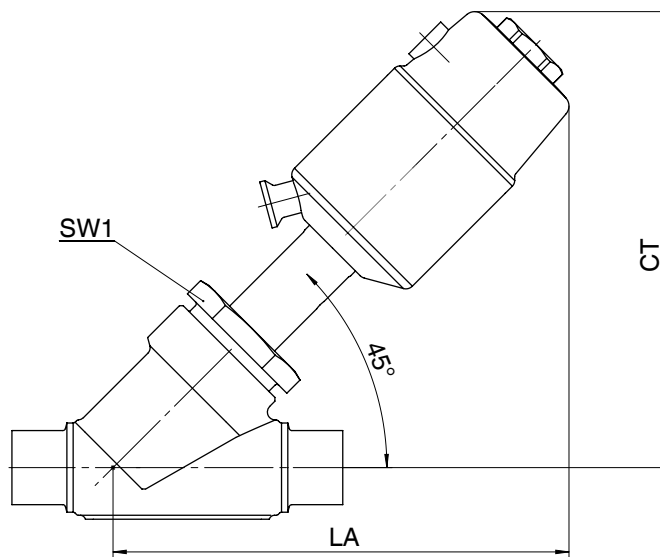
Dimensions

Installation dimensions / Weight

DN	Wrench size SW1 [mm]	Actuator size 1			Actuator size 2			Actuator size 3		
		CT/LA [in]	Weight Actuator [lbs]	Weight Body [lbs]	CT/LA [in]	Weight Actuator [lbs]	Weight Body [lbs]	CT/LA [in]	Weight Actuator [lbs]	Weight Body [lbs]
15	36	5.31	2.0	0.8	6.77	2.1	0.8	-	-	-
20	36	5.31	1.6	0.7	6.77	2.2	0.7	-	-	-
25	41	5.51	1.8	1.1	6.97	2.4	1.1	7.68	4.0	1.1
40	55	-	-	-	7.44	3.1	2.2	8.15	2.9	2.2
50	60	-	-	-	7.72	3.1	3.1	8.43	5.1	3.1
65	55	-	-	-	-	-	-	8.82	5.5	5.3

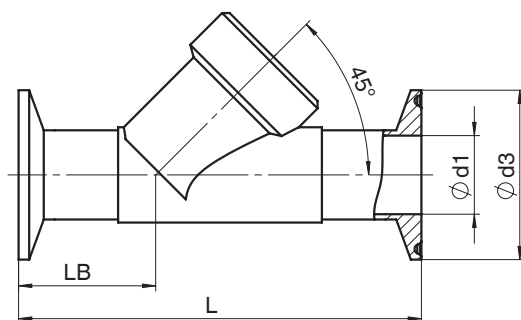
Installation dimensions / Weight [lb]

DN	Wrench size SW1 [mm]	Actuator size 4			Actuator size		
		CT/LA [in]	Weight Actuator [lbs]	Weight Body [lbs]	CT/LA [in]	Weight Actuator [lbs]	Weight Body [lbs]
40	55	9.45	7.7	2.2	-	-	-
50	60	9.72	7.7	3.1	10.75	15.0	3.1
65	55	10.12	8.8	5.3	11.14	16.3	5.3



Clamp connections, connection code 80
Valve body material: 1.4435 (code C2)

DN	NPS	LB	L	ø d1	ø d3
15	1/2"	1.12	3.50	0.370	0.984
20	3/4"	1.38	4.00	0.620	0.984
25	1"	1.30	4.50	0.870	1.988
40	1 1/2"	1.57	5.50	1.370	1.988
50	2"	1.73	6.25	1.870	2.520
65	2 1/2"	2.14	7.63	2.370	3.051



under the seat

Nominal size	1K1	2K1	3K1	4K1	5K1
DN 15	X	X	-	-	-
DN 20	X	X	-	-	-
DN 25	X	X	X	-	-
DN 40	-	X	X	X	-
DN 50	-	X	X	X	X
DN 65	-	-	X	X	X

over the seat

Nominal size	1M1	2M1	3M1
DN 15	X	X	-
DN 20	X	X	-
DN 25	X	X	X
DN 40	-	-	X
DN 50	-	-	X
DN 65	-	-	X

For further globe valves, accessories and other products, please see our Product Range catalogue and Price List.
 Contact GEMÜ.

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 AND CONTROL SYSTEMS**

