GEMÜ®

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

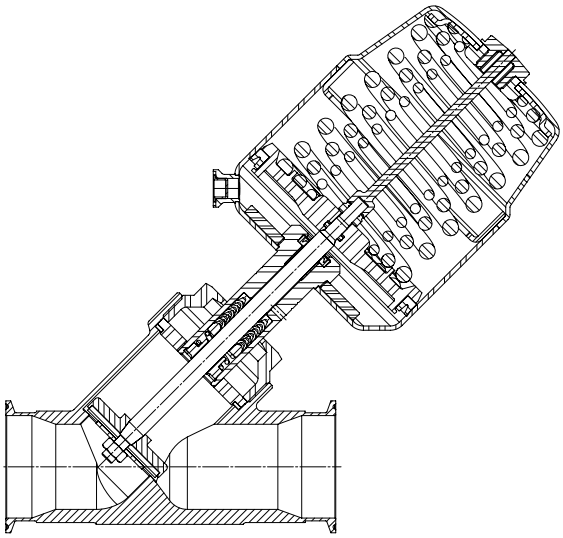
- Suitable for inert and corrosive* liquid and gaseous media
- Substantially reduced installation dimensions when using the body with male threads which can be installed using union nuts
- Materials of all medium wetted parts can be selected to suit relevant applications
- Higher media temperatures
- 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
- Standard gland packing suitable for vacuum
- 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
- Optionally suitable for contact with food according to Regulation (EC) No. 1935/2004 (K-No. 1935)

*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	-10 °C to 180 °C
Max. permissible viscosity	600 mm^2/s (cSt)
Other versions for lower/higher temperatures and viscosities on request.	

Technical data / Actuator

Actuator size	Filling volume	Piston diameter
1K1, 1L1	0.025 dm^3	42 mm
2K1, 2L1	0.084 dm^3	60 mm
3K1, 3L1	0.245 dm^3	80 mm
4K1	0.437 dm^3	100 mm
5K1	0.798 dm^3	130 mm

Leakage rate

Leakage rate A to P11/P12 EN 12266-1

Control medium

Inert gases	
Max. control pressure:	8 bar
Max. perm. temperature of control medium:	60 °C

Ambient conditions

Max. ambient temperature	60 °C

Control pressure [bar]

Actuator size	
C. f. 1 Normally closed (NC) / Flow direction: under the seat	
1K1, 2K1, 3K1, 4K1	4 - 8
5K1	5 - 8
C. f. 1 Normally closed (NC) / Flow direction: over the seat	
1L1, 2L1, 3L1	5 - 8
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 [bar]

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	10.0	10.0	6.0	-	-	-
2K1	22.0	22.0	12.0	4.0	2.5	-
3K1	-	-	16.0	10.0	6.0	3.0
4K1	-	-	-	18.0	12.0	7.0
5K1	-	-	-	-	16.0	15.0
C. f. 1 Normally closed (NC) / Flow direction: over the seat						
1L1	10	10	10	-	-	-
2L1	10	10	10	-	-	-
3L1	-	-	10	10	10	10
C. f. 2 Normally open (NO) / C. f. 3 Double acting (DA) / Flow direction: under the seat						
1K1	25.0	25.0	18.0	-	-	-
2K1	25.0	25.0	25.0	17.0	8.0	-
3K1	-	-	-	25.0	16.0	14.0
4K1	-	-	-	-	-	16.0
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 bar at temperature °C*						
		RT	50	100	150	200	250	300
80 (DN 15 - 40)	C2	25,0	24,2	21,2	19,3	17,9**	-	-
80 (DN 50 - 65)	C2	16,0	16,0	16,0	16,0	16,0**	-	-

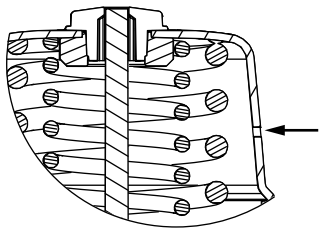
* The valves can be used down to -10 °C ** max. temperature 180 °C
RT = Room Temperature All pressures are gauge pressures.

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

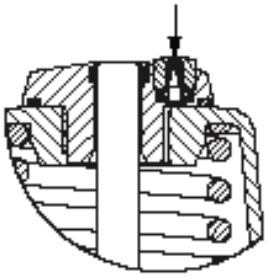
Nominal size	Kv value [m^3/h]	Operating pressure [bar]	Actuator size	Regulating cone number	
DN				linear	equal-percentage (mod.)
15	2.7	10.0	1K1	RS215	RS216
	2.7	13.8	2K1	RS217	RS218
20	5.0	10.0	1K1	RS219	RS220
	5.0	13.8	2K1	RS221	RS222
25	10.0	12.0	2K1	RS223	RS224
40	24.0	10.0	3K1	RS225	RS226
50	38.0	6.0	3K1	RS227	RS228
65	60.0	7.0	4K1	RS229	RS230

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

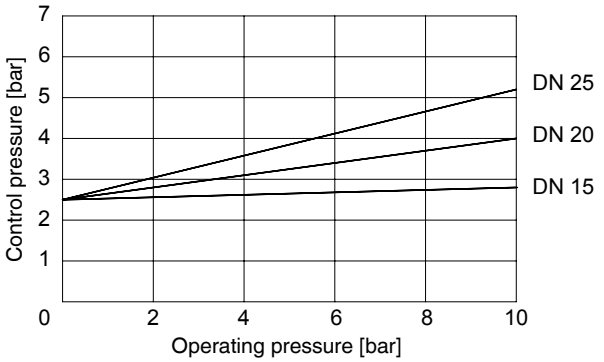


Special bleed system
K no. 6996

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

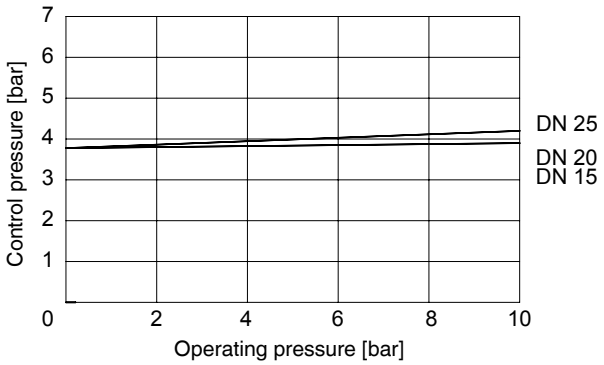
Actuator size 1L1

Min. control pressure dependent on operating pressure



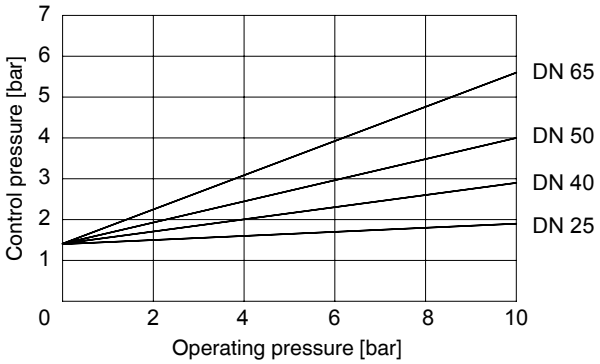
Actuator size 2L1

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

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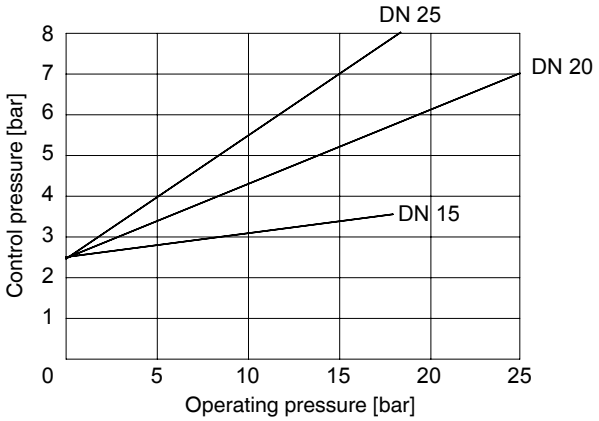

Actuator size 2K1

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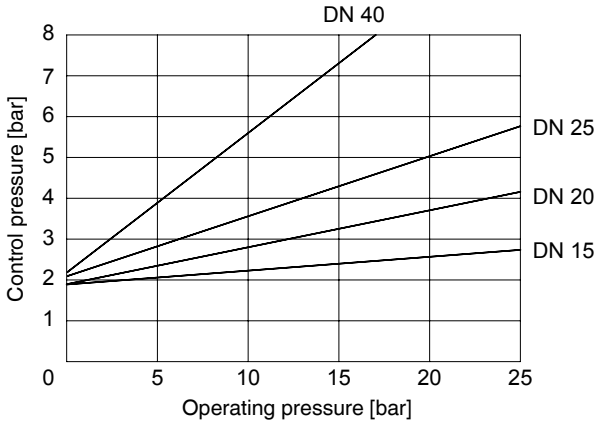

Actuator size 3K1

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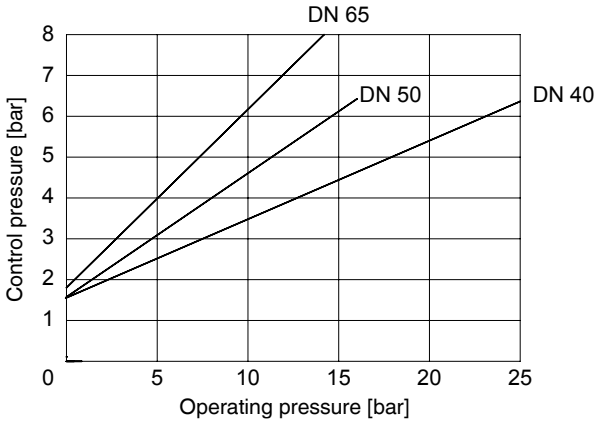

Actuator size 4K1

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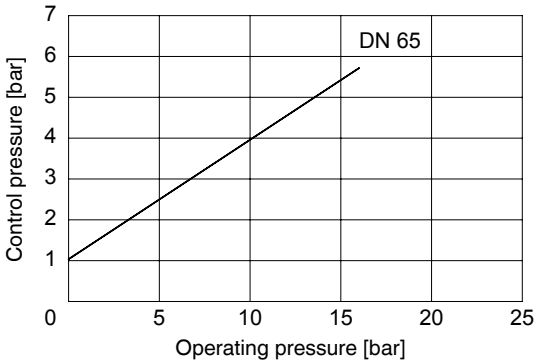


Order data

Body configuration	Code
2/2-way body	D

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

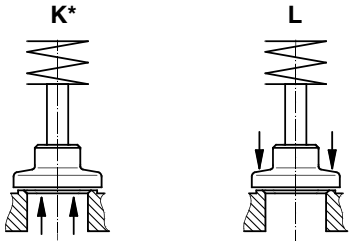
Valve body material	Code
1.4435, Investment casting	C2
A surface finish from the order code table “K number“ must be specified for valve body material C2.	

Seat seal	Code
PTFE	5
PTFE, glass reinforced	5G

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

Actuator size			Code
Actuator 1	piston ø	42 mm	1
Actuator 2	piston ø	60 mm	2
Actuator 3	piston ø	80 mm	3
Actuator 4	piston ø	100 mm	4
Actuator 5	piston ø	130 mm	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

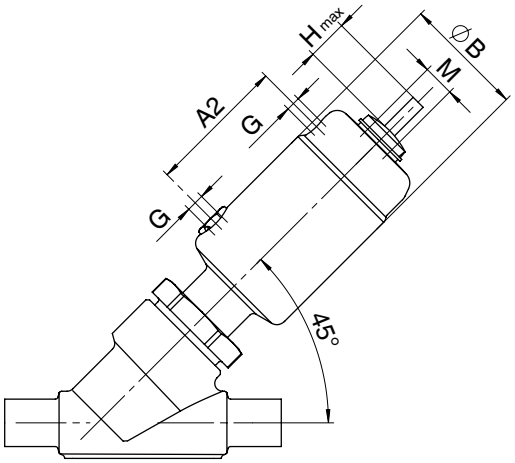
Special versions	Code
Special bleed system in the actuator	K-Nr. 6996
All special versions only available ex works	
Surface finish for valve body material C2	
external surface electrolytically gloss polished / mechanically polished internal Ra ≤ 0.4 µm	1903
external surface electrolytically gloss polished / mechanically polished internal Ra ≤ 0.8 µm	1904
external surface electrolytically gloss polished / mechanically polished internal Ra ≤ 0.4 µm	1909

Order example	550	15	D	80	C2	5	1	1	K	1	1781
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	
Special versions (code)											1781

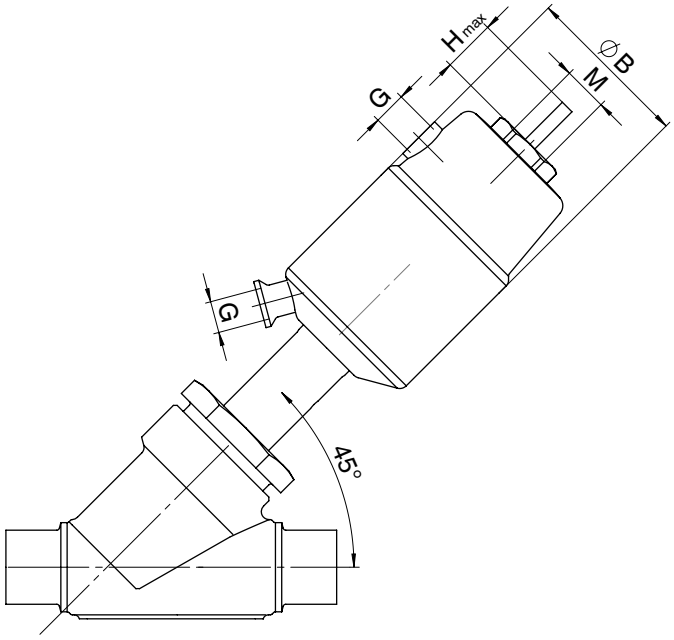
Dimensions [mm]

Actuator dimensions					
Actuator size	**øB**	**M**	**H max***	**G**	**A2**
1	46	M 16x1	12	G 1/8	53.0
2	63	M 16x1	22	G 1/8	-
3	84	M 16x1	28	G 1/4	-
4	104	M 22x1.5	32	G 1/4	-
5	135	M 22x1.5	41	G 1/4	-

H max*: dependent on nominal size



Actuator size 1

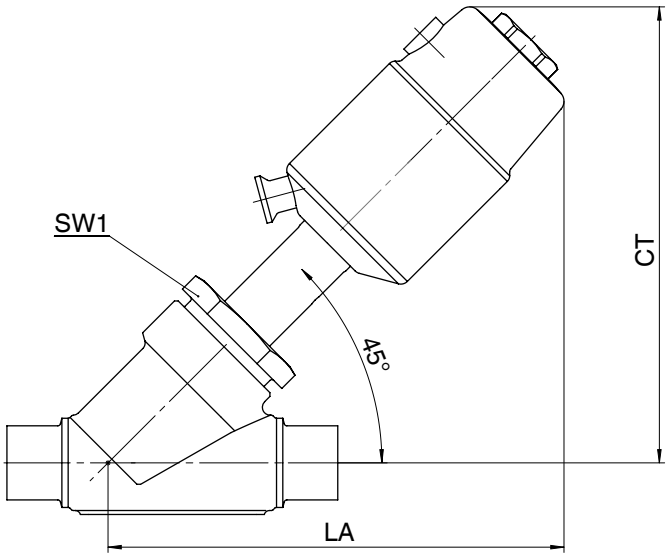


Actuator size 2 - 5

Dimensions [mm]

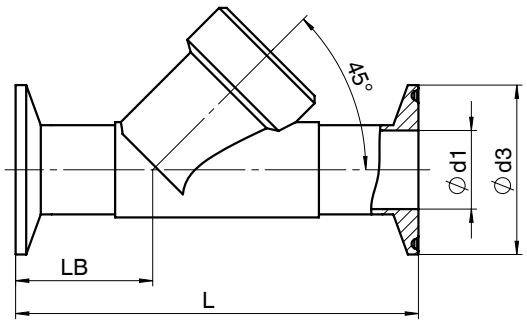
Installation dimensions / Weight [kg]										
DN	Wrench size SW1	Actuator size 1			Actuator size 2			Actuator size 3		
		CT/LA	Weight Actuator	Weight Body	CT/LA	Weight Actuator	Weight Body	CT/LA	Weight Actuator	Weight Body
15	36	135	0.90	0.35	172	0.97	0.35	-	-	-
20	36	135	0.73	0.30	172	1.00	0.30	-	-	-
25	41	140	0.80	0.50	177	1.10	0.50	195	1.80	0.50
40	55	-	-	-	189	1.40	1.00	207	1.30	1.00
50	60	-	-	-	196	1.40	1.40	214	2.30	1.40
65	55	-	-	-	-	-	-	224	2.50	2.40

Installation dimensions / Weight [kg]							
DN	Wrench size SW1	Actuator size 4			Actuator size		
		CT/LA	Weight Actuator	Weight Body	CT/LA	Weight Actuator	Weight Body
40	55	240	3.50	1.00	-	-	-
50	60	247	3.50	1.40	273	6.80	1.4
65	55	257	4.00	2.40	283	7.40	2.4



Dimensions [mm]

Clamp connections, connection code 80 Valve body material: 1.4435 (code C2)					
DN	**NPS**	**LB**	**L**	**ø d1**	**ø d3**
15	1/2“	28.5	88.9	9.40	25.0
20	3/4“	35.0	101.6	15.75	25.0
25	1“	33.0	114.3	22.10	50.5
40	1 1/2“	40.0	139.7	34.80	50.5
50	2“	44.0	158.8	47.50	64.0
65	2 1/2“	54.3	193.8	60.20	77.5



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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