

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

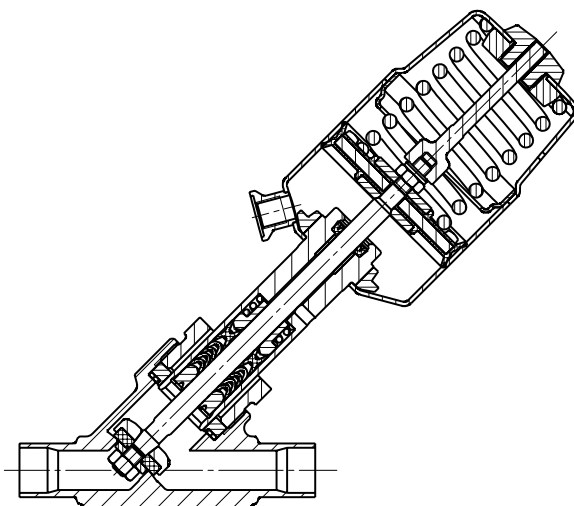


Actuator 0 and 1



Actuator 2 to 5

Sectional drawing



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 mm²/s (cSt)

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

Leakage rate

Leakage rate A to P11/P12 EN 12266-1

Ambient conditions

Max. ambient temperature 60 °C

Control medium

Inert gases

Max. control pressure: 8 bar

Max. perm. temperature of control medium: 60 °C

Technical data / Actuator

Actuator size	Filling volume	Piston diameter
0G, 0M	0.006 dm ³	28 mm
1G, 1M	0.025 dm ³	42 mm
2G, 2M	0.084 dm ³	60 mm
3G, 3M	0.245 dm ³	80 mm
4G	0.437 dm ³	100 mm
5G	0.798 dm ³	130 mm

Control pressure [bar]

Normally closed (NC) / Flow direction: under the seat

Actuator size	
0G, 1G, 2G, 3G, 4G	4 - 8
5G	5 - 8

Normally closed (NC) / Flow direction: over the seat

0M, 1M, 2M, 3M	5 - 8
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Higher control pressures on request.

Max. operating pressure [bar]

Actuator size	DN 6	DN 8	DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80
Normally closed (NC) / Flow direction: under the seat											
0G	10	10	10	10	-	-	-	-	-	-	-
1G	-	-	10	10	6	-	-	-	-	-	-
2G	-	-	22	22	12	7	4	2.5	-	-	-
3G	-	-	-	-	25	16	10	6.0	3	-	-
4G	-	-	-	-	-	25	18	12.0	7	-	-
5G	-	-	-	-	-	-	25	20.0	15	10	7
Normally closed (NC) / Flow direction: over the seat											
0M	10	10	10	10	-	-	-	-	-	-	-
1M	-	-	10	10	10	-	-	-	-	-	-
2M	-	-	-	10	10	10	-	-	-	-	-
3M	-	-	-	-	10	10	10	10	10	-	-

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

Kv values [m³/h]

	DN 6	DN 8	DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80
Butt weld spigots, DIN 11850	1.6	1.8	2.4	2.4	-	-	-	-	-	-	-
Butt weld spigots, DIN 11866	-	2.2	4.5	5.5	11.7	20.5	33.0	51.0	61.0	110.0	117.0
Threaded sockets, DIN ISO 228	-	-	4.5	5.4	10.0	15.2	23.0	41.0	68.0	95.0	130.0

Kv values determined acc. to IEC 534. The Kv value data refers to control function 1 (NC) and the largest actuator for each nominal size. Kv values may be different for other combinations. Consult GEMÜ.

Pressure / temperature correlation for angle seat globe valve bodies

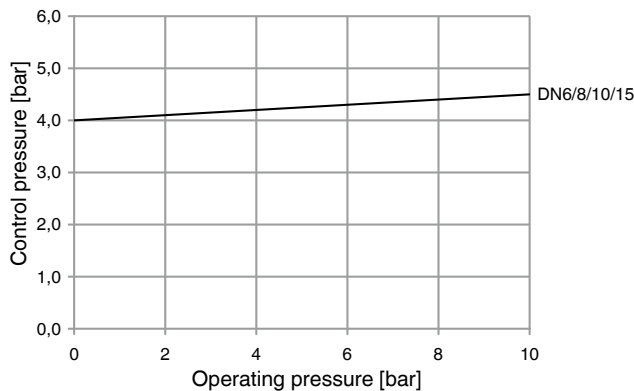
Connection code	Material code	Max. allowable operating pressures in bar at temperature °C*						
		RT	50	100	150	200	250	300
1, 9, 10, 17, 37, 59, 60, 3C, 3D	37	25.0	23.7	21.3	19.2	17.7	16.4	15.4
0, 13, 16, 17, 18, 37, 59, 60	34	25.0	24.2	21.2	19.3	17.9	16.8	15.9
80, 88 (up to DN 65)	34	13.8	13.1	11.9	11.4**	-	-	-
80, 88 (DN 80)	34	13.8	12.7	11.0	10.3**	-	-	-
82, 86 (up to DN 65)	34	16.0	16.0	16.0	16.0***	-	-	-
82, 86 (DN 80)	34	10.0	10.0	10.0	10.0***	-	-	-
47	34	19.0	19.0	16.0	14.8	13.6	12.1	10.2
0, 16, 17, 18, 59, 60	40	25.0	22.8	20.6	18.7	17.1	15.8	14.8
1A, 1B	C2	25.0	24.2	21.2	19.3	17.9	16.8	15.9

* The valves can be used down to -10°C ** max. temperature 121 °C *** max. temperature 140 °C RT = Room Temperature
All pressures are gauge pressures.

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

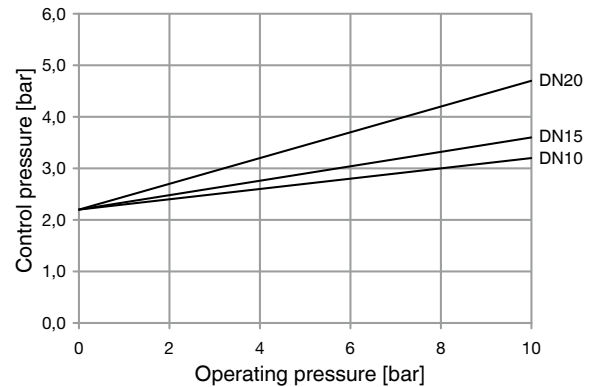
Actuator size 0 M

Min. control pressure dependent on operating pressure



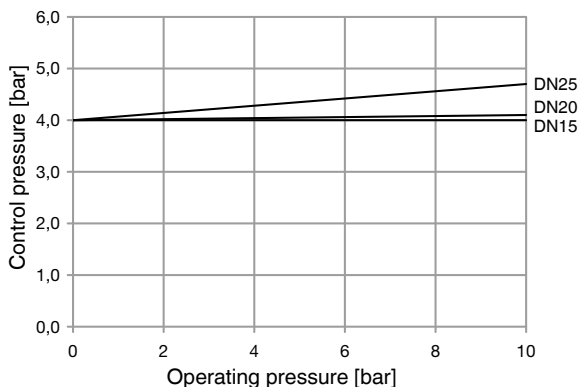
Actuator size 1M

Min. control pressure dependent on operating pressure



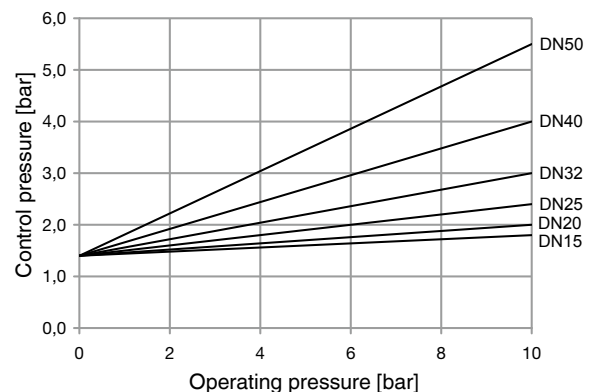
Actuator size 2 M

Min. control pressure dependent on operating pressure



Actuator size 3 M

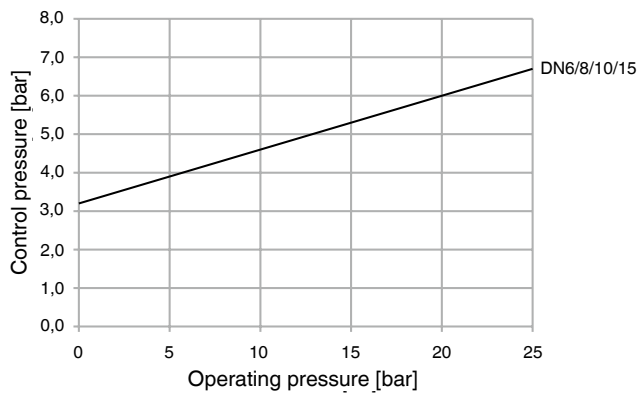
Min. control pressure dependent on operating pressure



Operating pressure / Control pressure characteristics
 Flow direction: under the seat / Control function: normally open (NO)

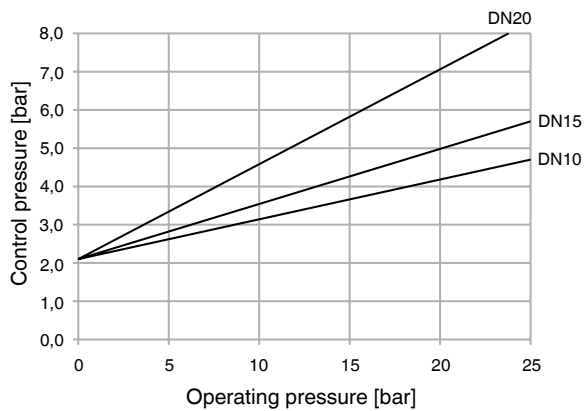
Actuator size 0 G

Min. control pressure dependent on operating pressure



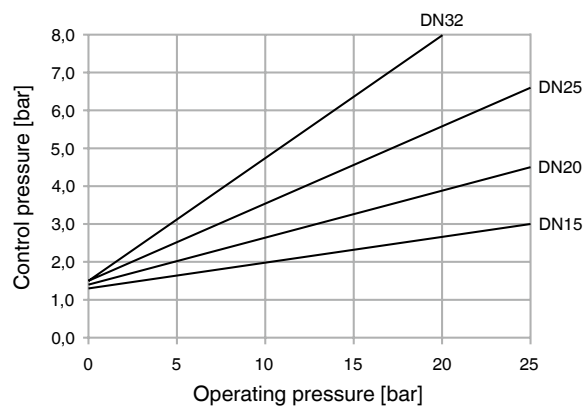
Actuator size 1 G

Min. control pressure dependent on operating pressure



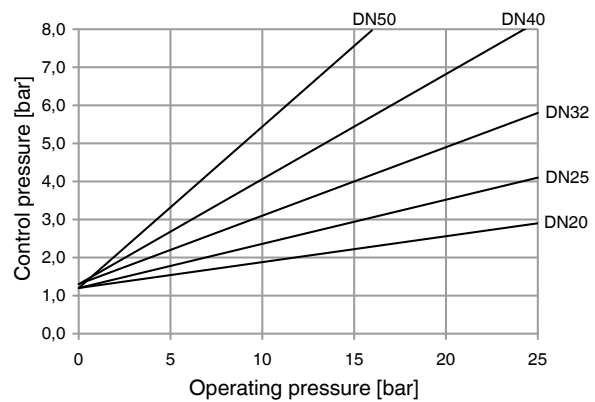
Actuator size 2 G

Min. control pressure dependent on operating pressure



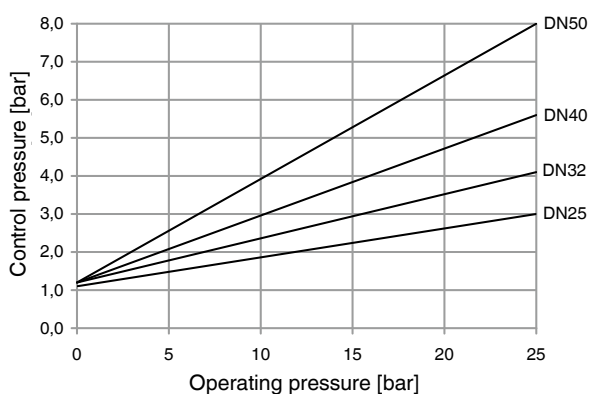
Actuator size 3 G

Min. control pressure dependent on operating pressure



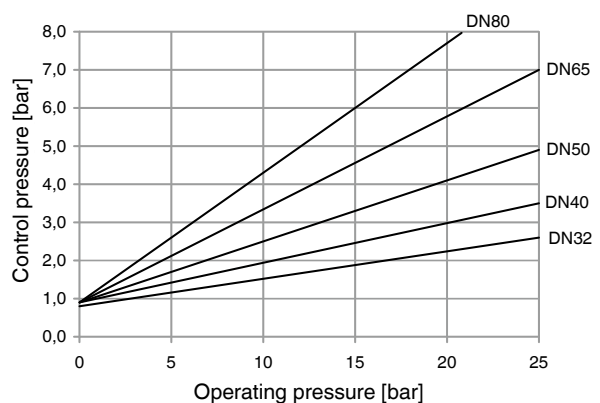
Actuator size 4 G

Min. control pressure dependent on operating pressure



Actuator size 5 G

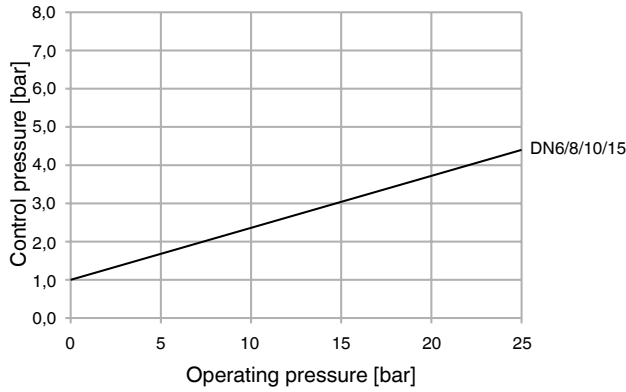
Min. control pressure dependent on operating pressure



Operating pressure / Control pressure characteristics
 Flow direction: under the seat / Control function: double acting (DA)

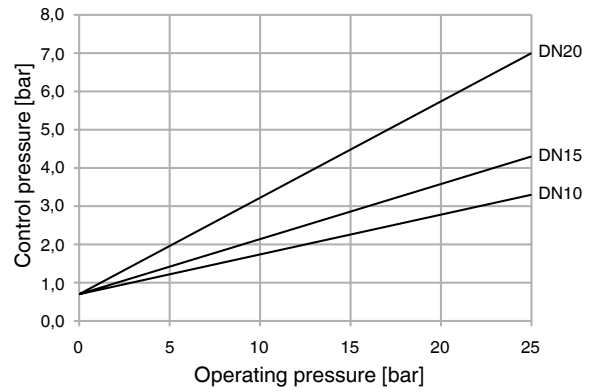
Actuator size 0 G

Min. control pressure dependent on operating pressure



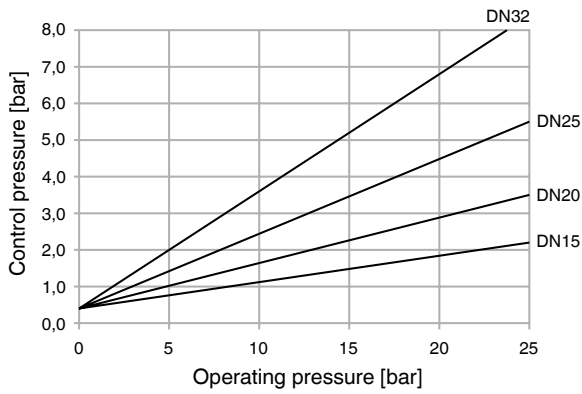
Actuator size 1 G

Min. control pressure dependent on operating pressure



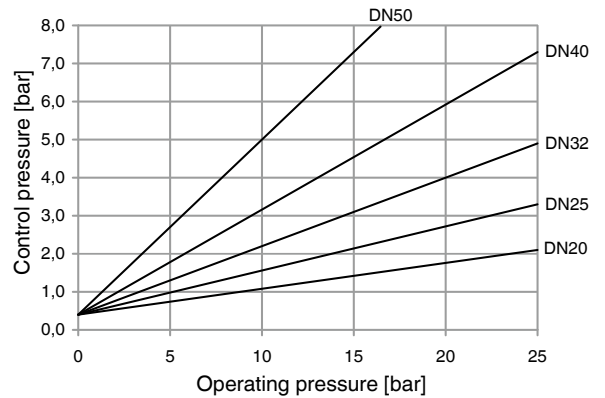
Actuator size 2 G

Min. control pressure dependent on operating pressure



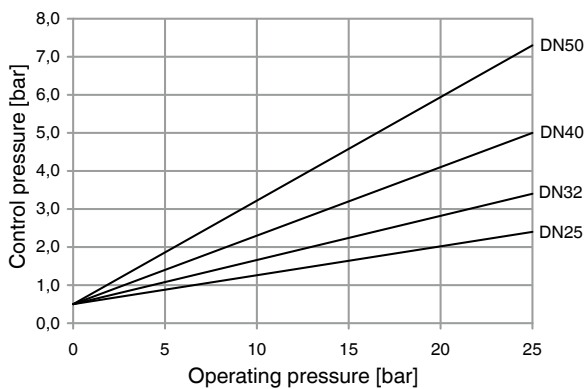
Actuator size 3 G

Min. control pressure dependent on operating pressure



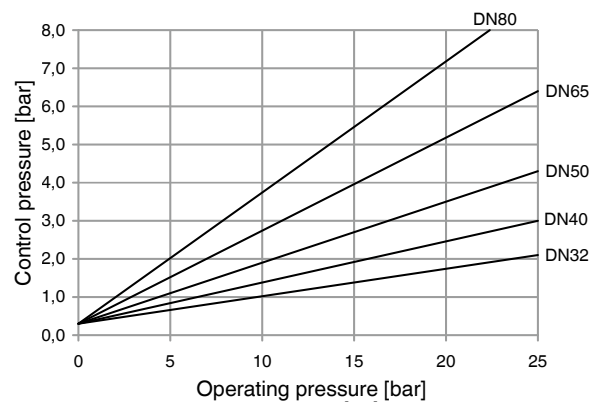
Actuator size 4 G

Min. control pressure dependent on operating pressure



Actuator size 5 G

Min. control pressure dependent on operating pressure



Order data

Body configuration	Code
2/2-way body	D

Connection	Code
Butt weld spigots	
Spigots DIN	0
Spigots DIN 11850, series 1	16
Spigots DIN 11850, series 2	17
Spigots DIN 11850, series 3	18
Spigots DIN 11866, series A	1A
Spigots DIN 11866, series B	1B
Spigots SMS 3008	37
Spigots ASME BPE	59
Spigots EN ISO 1127	60

Threaded connections	
Threaded sockets DIN ISO 228	1
Threaded sockets BS 21 Rc length DIN 3202-4 series M8	3C
Threaded spigots DIN ISO 228	9
Threaded sockets NPT length DIN 3202-4 series M8	3D

Flanges	
Flanges EN 1092 / PN25 / form B, length EN 558, series 1	10
Flanges EN 1092 / PN25 / form B, length see body dimensions	13
Flanges ANSI CLASS 125/150 RF, length see body dimensions	47

Clamp connections	
Clamps ASME BPE for pipe ASME BPE, length ASME BPE	80
Clamps DIN 32676 series B for pipe EN ISO 1127, length EN 558, series 1	82
Clamps DIN 32676 series A for pipe DIN 11850, length EN 558, series 1	86
Clamps ASME BPE for pipe ASME BPE, length EN 558, series 1	88

Valve body material	Code
1.4435 (ASTM A 351 CF3M \cong 316L), Investment casting	34
1.4408, Cast stainless steel	37
1.4435 (316 L), Forged body	40
1.4435, Investment casting Material equivalency 316L	C2*

* A surface finish from the order code table „K number“ must be specified for valve body material C2.

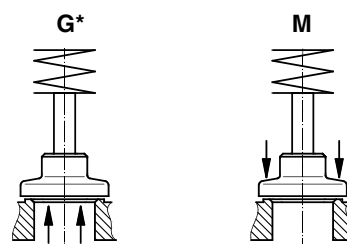
Seat seal	Code
PTFE	5
PTFE, glass reinforced	5G

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

Actuator size	Code
Actuator 0 piston \varnothing 28 mm	0
Actuator 1 piston \varnothing 42 mm	1
Actuator 2 piston \varnothing 60 mm	2
Actuator 3 piston \varnothing 80 mm	3
Actuator 4 piston \varnothing 100 mm	4
Actuator 5 piston \varnothing 130 mm	5

Flow direction	Code
Under the seat	G*
Over the seat	M**

** only control function NC



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

Spring set	Code
Standard	1

K number	Code
Actuator electropolished	1781
Special venting for the food industry (only supplied ex works)	6996
Surface finish for valve body material C2	
external surface electrolytically gloss polished / mechanically polished internal Ra \leq 0.6 μ m	1903
external surface electrolytically gloss polished / mechanically polished internal Ra \leq 0.8 μ m	1904
external surface electrolytically gloss polished / mechanically polished internal Ra \leq 0.4 μ m	1909

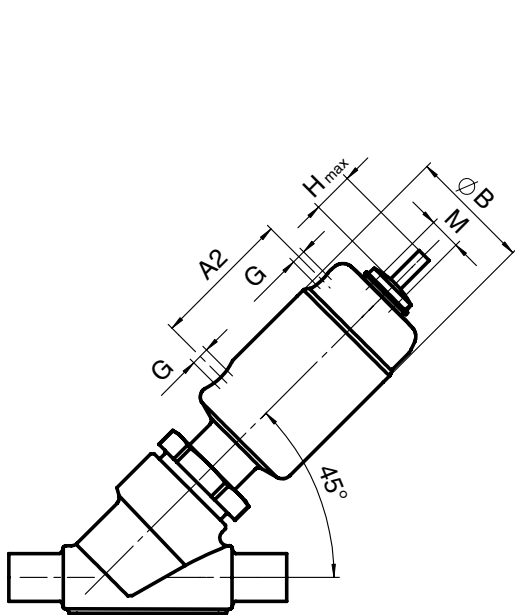
For further order data see page 7

Order example	550	15	D	1	34	5	1	1	G	1	1781
Type	550										
Nominal size		15									
Body configuration (code)			D								
Connection (code)				1							
Valve body material (code)					34						
Seat seal (code)						5					
Control function (code)							1				
Actuator size (code)										1	
Flow direction (code)									G		
Spring set (code)											1
K number (code)											1781

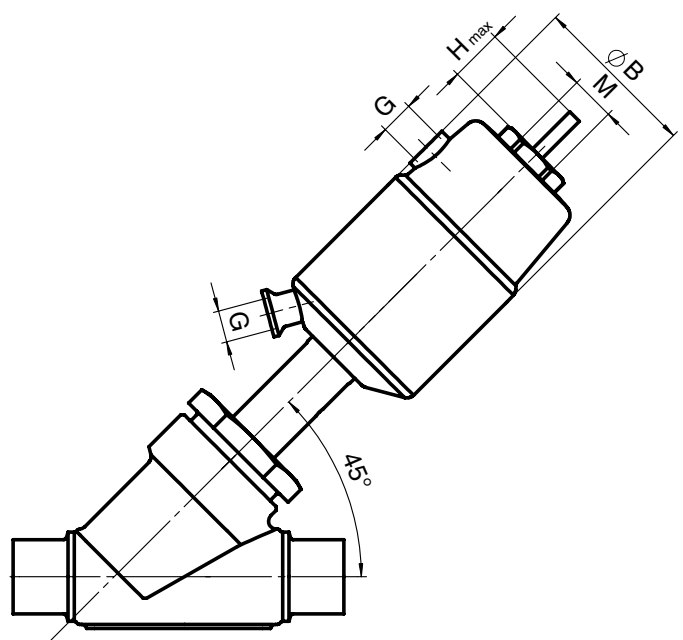
Actuator dimensions [mm]

Actuator dimensions					
Actuator size	øB	M	H max*	G	A2
0	32	M 12x1	6	M5	35.4
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 0, 1

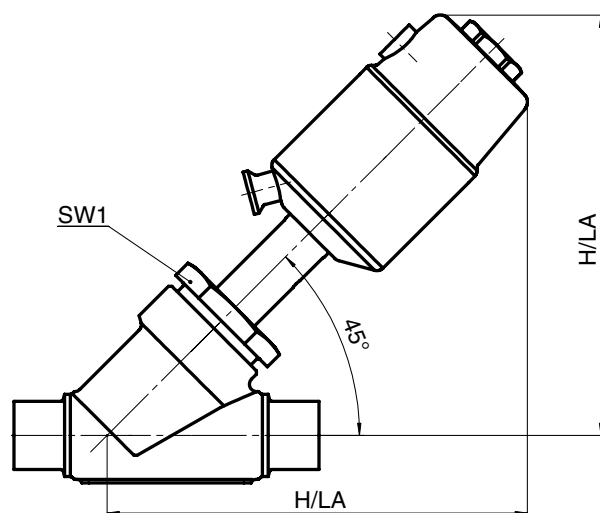


Actuator size 2 - 5

Installation dimensions [mm]

Installation dimensions [mm] / Actuator weight (without body) [kg]

DN	Nut size SW1	Actuator size 0		Actuator size 1		Actuator size 2		Actuator size 3		Actuator size 4		Actuator size 5	
		H/LA	Weight	H/LA	Weight	H/LA	Weight	H/LA	Weight	H/LA	Weight	H/LA	Weight
6	24	88	0.24	-	-	-	-	-	-	-	-	-	-
8	24	88	0.24	-	-	-	-	-	-	-	-	-	-
10	24	88	0.24	-	-	-	-	-	-	-	-	-	-
15	24	88	0.24	-	-	-	-	-	-	-	-	-	-
10	36	-	-	131	0.62	168	0.90	-	-	-	-	-	-
15	36	-	-	131	0.66	168	0.97	-	-	-	-	-	-
20	41	-	-	136	0.73	173	1.00	191	1.7	-	-	-	-
25	46	-	-	-	-	178	1.10	196	1.8	229	3.2	-	-
32	55	-	-	-	-	185	1.30	203	2.0	236	3.4	262	6.5
40	60	-	-	-	-	-	-	210	2.1	243	3.5	269	6.6
50	55	-	-	-	-	-	-	220	2.3	253	3.7	279	6.8
65	75	-	-	-	-	-	-	-	-	-	-	291	7.4
80	75	-	-	-	-	-	-	-	-	-	-	308	8.1



Body dimensions [mm]

Butt weld spigots, connection code 0, 16, 17, 18, 37, 59, 60 Valve body material: 1.4435 (code 34), 1.4408 (code 37)

DN	Material code 34 L LB		Material code 37 L LB		Connection code													
					0		16		17		18		37		59		60	
					ø d	s	ø d	s	ø d	s	ø d	s	ø d	s	ø d	s	ø d	s
10	105	35.5	-	-	-	-	12	1.0	13	1.0	14	2.0	-	-	-	-	17.2	1.6
15	105	35.5	100	33	18	1.5	18	1.0	19	1.5	20	2.0	-	-	12.70	1.65	21.3	1.6
20	120	39.0	108	33	22	1.5	22	1.0	23	1.5	24	2.0	-	-	19.05	1.65	26.9	1.6
25	125	38.5	112	32	28	1.5	28	1.0	29	1.5	30	2.0	25.0	1.2	25.40	1.65	33.7	2.0
32	155	48.0	137	39	-	-	34	1.0	35	1.5	36	2.0	-	-	-	-	42.4	2.0
40	160	47.0	146	40	40	1.5	40	1.0	41	1.5	42	2.0	38.0	1.2	38.10	1.65	48.3	2.0
50	180	48.0	160	38	52	1.5	52	1.0	53	1.5	54	2.0	51.0	1.2	50.80	1.65	60.3	2.0
65	-	-	290	96	-	-	-	-	70	2.0	-	-	63.5	1.6	63.50	1.65	76.1	2.0
80	-	-	310	95	-	-	-	-	85	2.0	-	-	76.1	1.6	76.20	1.65	88.9	2.3

For materials see overview on page 13

Butt weld spigots, connection code 0, 16, 17, 18, 59, 60 Valve body material: Forged body (code 40)

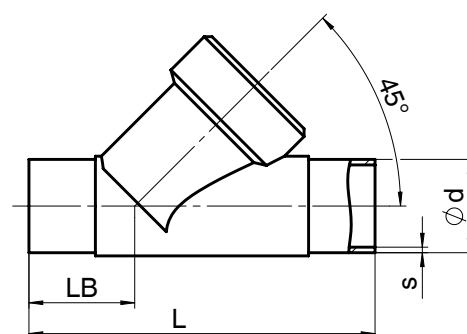
DN	L LB		Connection code														
			0		16		17		18		59		60				
			ø d	s	ø d	s	ø d	s	ø d	s	ø d	s	ø d	s			
6*	80	26.5	8	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-
8*	80	26.5	10	1.0	-	-	-	-	-	-	-	-	-	-	13.5	1.6	-
10*	80	26.5	-	-	12	1.0	13	1.5	14	2.0	9.53	0.89	-	-	-	-	-
15*	80	26.5	-	-	-	-	-	-	-	-	12.70	1.65	-	-	-	-	-

* only with actuator size 0

Butt weld spigots, connection code 1A, 1B, 59 Valve body material: 1.4435 (code C2)

DN	L LB		Connection code					
			1A		1B		59	
			ø d	s	ø d	s	ø d	s
8	105*	35.5*	-	-	13.5	1.6	-	-
10	105	35.5	13	1.5	17.2	1.6	-	-
15	105	35.5	19	1.5	21.3	1.6	12.70	1.65
20	120	39.0	23	1.5	26.9	1.6	19.05	1.65
25	125	39.5	29	1.5	33.7	2.0	25.40	1.65
32	155	48.0	35	1.5	42.4	2.0	-	-
40	160	47.0	41	1.5	48.3	2.0	38.10	1.65
50	180	48.0	53	1.5	60.3	2.0	50.80	1.65
65	290	96.0	70	2.0	76.1	2.0	63.50	1.65
80	310	95.0	85	2.0	88.9	2.3	76.20	1.65

* Connection code 1A: L = 100, LB = 33,5



Body dimensions [mm]

Threaded sockets DIN, connection code 1 Valve body material: 1.4408 (code 37)

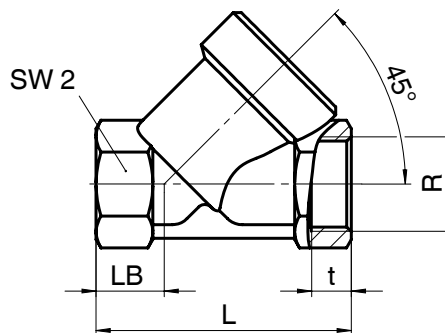
DN	L	LB	R	t	SW2	
8*	65	19.0	G 1/4	9.0	17	hexagonal
10*	65	19.0	G 3/8	9.0	24	hexagonal
15*	65	19.0	G 1/2	9.0	24	hexagonal
10	65	16.5	G 3/8	9.0	27	hexagonal
15	65	16.5	G 1/2	15.0	27	hexagonal
20	75	17.5	G 3/4	16.3	32	hexagonal
25	90	24.0	G 1	19.1	41	hexagonal
32	110	33.0	G 1 1/4	21.4	50	octagonal
40	120	30.0	G 1 1/2	21.4	55	octagonal
50	150	40.0	G 2	25.7	70	octagonal
65	190	46.0	G 2 1/2	24.0	85	octagonal
80	220	50.0	G 3	27.0	100	octagonal

* only with actuator size 0

Threaded sockets NPT, BS 21 Rc, connection code 3C, 3D Valve body material: 1.4408 (code 37)

					Connection code			
					3C		3D	
DN	L	LB	SW2		R	t	R	t
8*	65	19.0	17	6	-	-	1/4" NPT	10.1
10*	65	27.0	24	6	-	-	3/8" NPT	10.4
15*	65	27.0	24	6	-	-	1/2" NPT	13.6
15	65	16.5	27	6	Rc 1/2	16.0	1/2" NPT	16.0
20	75	17.5	32	6	Rc 3/4	16.3	3/4" NPT	16.3
25	90	24.0	41	6	Rc 1	19.1	1" NPT	17.0
32	110	33.0	50	8	Rc 1 1/4	21.4	1 1/4" NPT	18.0
40	120	30.0	55	8	Rc 1 1/2	21.4	1 1/2" NPT	18.0
50	150	40.0	70	8	Rc 2	25.7	Rc 2	18.0

* only with actuator size 0



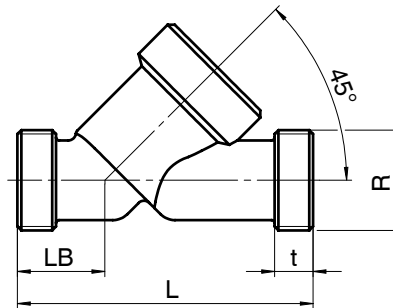
Body dimensions [mm]

Threaded spigots, connection code 9 Valve body material: 1.4408 (code 37), Forged body (code 40)

DN	L	LB	t	R
6*	65	19	12	G 1/4
8*	65	19	12	G 3/8
10*	65	19	12	G 1/2
15*	65	19	12	G 3/4
15	90	25	12	G 3/4
20	110	30	15	G 1
25	118	30	15	G 1 1/4
32	130	38	13	G 1 1/2
40	140	35	13	G 1 3/4
50	175	50	15	G 2 3/8
65	216	52	15	G 3
80	254	64	18	G 3 1/2

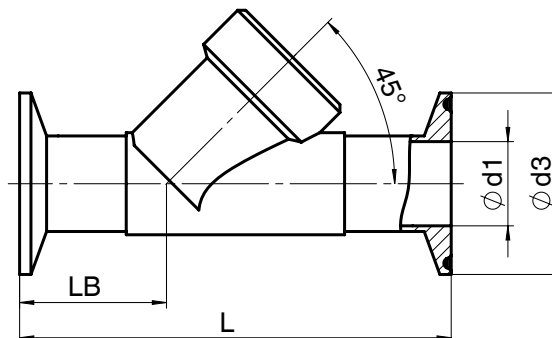
*only with actuator size 0

For materials see overview on page 13



Clamp connections, connection code 80, 82, 86, 88 Valve body material: 1.4435 (code 34)

DN	NPS	Connection code								Connection code			
		LB	L	82		86		88		80			
				ø d1	ø d3	ø d1	ø d3	ø d1	ø d3	LB	L	ø d1	ø d3
15	1/2"	35.5	130	18.1	50.5	16	34.0	9.40	25.0	33.5	101.6	9.40	25.0
20	3/4"	39,0	150	23.7	50.5	20	34.0	15.75	25.0	30.0	101.6	15.75	25.0
25	1"	38,5	160	29.7	50.5	26	50.5	22.10	50.5	33.0	114.3	22.10	50.5
32	1 1/4"	48,0	180	38.4	64.0	32	50.5	-	-	-	-	-	-
40	1 1/2"	47,0	200	44.3	64.0	38	50.5	34.80	50.5	37.0	139.7	34.80	50.5
50	2"	48,0	230	56.3	77.5	50	64.0	47.50	64.0	36.5	158.8	47.50	64.0

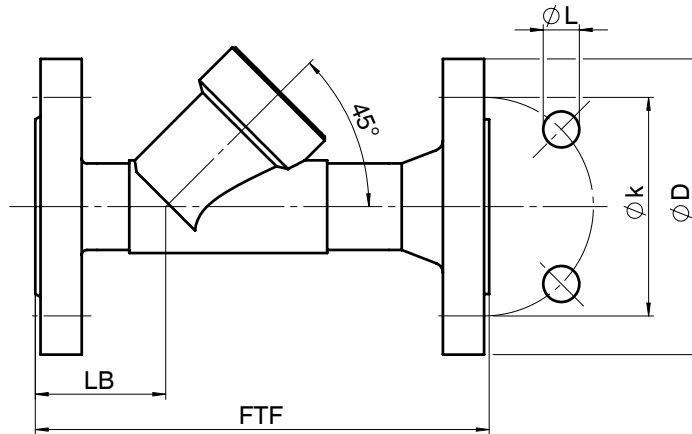


Body dimensions [mm]

Flanges, connection code 10 Valve body material: 1.4408 (code 37)

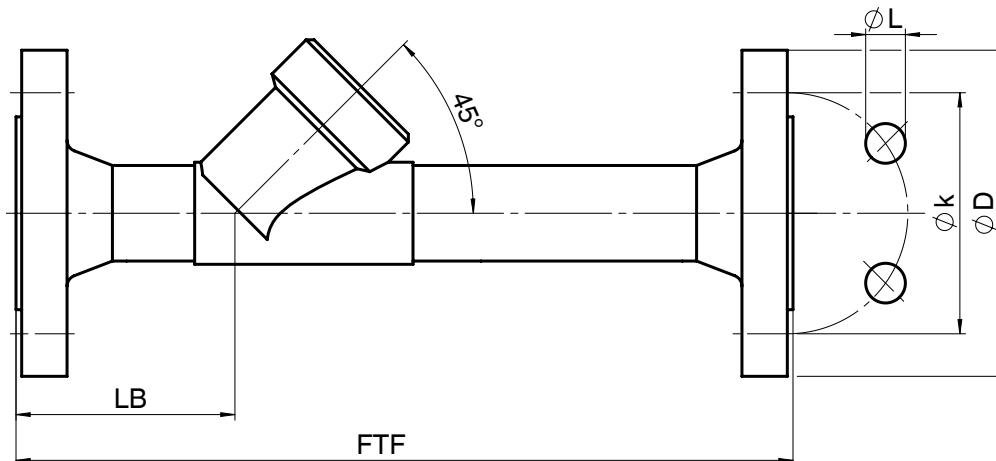
DN	FTF	LB	ø D	ø L	ø k	Number of bolts
15	130	33	95	14	65	4
20	150	45	105	14	75	4
25	160	44	115	14	85	4
32	180	51	140	18	100	4
40	200	52	150	18	110	4
50	230	50	165	18	125	4

For possible combinations with actuator sizes see page 13



Flanges, connection code 13, 47 Valve body material: 1.4435 (code 34)

DN	FTF	Connection code 13					Connection code 47			
		LB	ø D	ø L	ø k	Number of bolts	ø D	ø L	ø k	Number of bolts
15	210	72	95	14	65	4	89.0	15.7	60.5	4
20	280	78	105	14	75	4	98.6	15.7	69.8	4
25	280	77	115	14	85	4	108.0	15.7	79.2	4
32	310	89	140	18	100	4	117.3	15.7	88.9	4
40	320	91	150	18	110	4	127.0	15.7	98.6	4
50	330	95	165	18	125	4	152.4	19.1	120.7	4



Overview of metal bodies for GEMÜ 550 with actuator size 0

Connection code	Threaded connections				Spigots					
	1	9		3D	0	16	17	18	59	60
Material code	37	37	40	37	40	40	40	40	40	40
DN 6	-	-	X	-	X	-	-	-	-	-
DN 8	X	X	-	X	X	-	-	-	-	X
DN 10	X	X	-	X	-	X	X	X	X	-
DN 15	X	X	-	X	-	-	-	-	X	-

Overview of metal bodies for GEMÜ 550 with actuator size 1, 2, 3, 4, 5

Connection code	Threaded connections				Spigots										Clamps				Flanges							
	1	3C	9	3D	0	16	17	18	1A	1B	37	59			60		80	82	86	88	10	13	47			
Material code	37	37	37	37	34	34	34	37	34	C2	C2	34	37	34	37	C2	34	37	34	34	34	34	34	37	34	34
DN 8	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DN 10	X	-	-	-	-	X	X	-	X	X	X	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
DN 15	X	X	X	X	X	X	X	X	X	X	X	-	-	X	-	X	X	X	X	X	X	X	X	X*	X	X
DN 20	X	X	X	X	X	X	X	X	X	X	X	-	-	X	-	X	X	X	X	X	X	X	X	X*	X	X
DN 25	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	X	X	X*	X	X
DN 32	X	X	X	X	-	X	X	X	X	X	X	-	-	-	-	-	X	X	-	X	X	-	X*	X	X	
DN 40	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	X	X	X*	X	X
DN 50	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	X	X	X*	X	X
DN 65	X	-	X	-	-	-	-	X	-	X	X	-	X	-	X	X	-	X	-	-	-	-	-	-	-	-
DN 80	X	-	X	-	-	-	-	X	-	X	X	-	X	-	X	X	-	X	-	-	-	-	-	-	-	-

*For possible combinations with actuator sizes see table below

Actuators for connection code 10:

DN 15	Actuator 1 + 2
DN 20	Actuator 1 + 2 + 3
DN 25	Actuator 2 + 3 + 4
DN 32	Actuator 2 + 4
DN 40	Actuator 4
DN 50	Actuator 3 + 4

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