GEMÜ®

Angle Seat Globe Valve, Metal

Construction

The GEMÜ 554 pneumatically operated 2/2-way valve has a plastic pneumatic piston actuator. The valve spindle is sealed by a self-adjusting gland packing or a compact seal cartridge, dependent on the size and version. A wiper ring or the wiper contour of the seal cartridge additionally protects the valve spindle against contamination and damage thus providing low maintenance and reliable valve spindle sealing even after a long service life.

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
- Control valves with control cone available (see data sheet GEMÜ 554 control valve)
- Versions according to ATEX on request

Advantages

- Various types of valve body connections: Threaded sockets, threaded spigots, butt weld spigots
- Good flow capability
- Extensive range of accessories
- Low weight
- Optionally suitable for contact with food according to Regulation (EC) No. 1935/2004 (K-No. 1935)
- Standard gland packing suitable for vacuum up to 20 mbar (abs.)

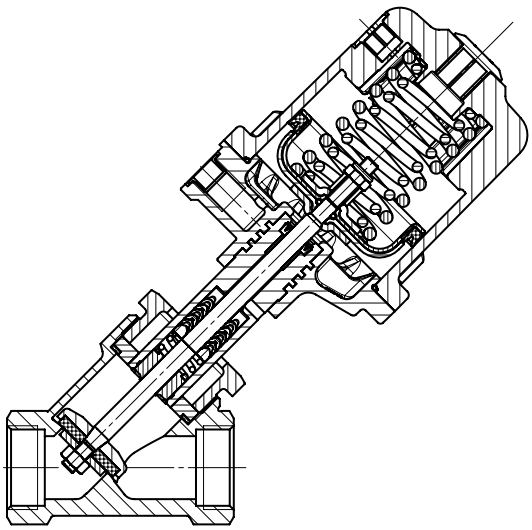
*See information on working medium on page 2







Sectional drawing



GEMÜ® 554

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 materials.	
Max. perm. pressure of working medium	see table
Medium temperature	
Actuator B	-10 to 160 °C
Actuator 0 - 4	-10 to 180 °C
Max. permissible viscosity	600 mm^2/s (cSt)
Other versions for higher 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. perm. temperature of control medium:	60 °C

Technical data / Actuator

Actuator size	Filling volume	Piston diameter
B	0.01 dm^3	30 mm
0, 3	0.05 dm^3	50 mm
1, 4	0.125 dm^3	70 mm
2	0.625 dm^3	120 mm

Control pressure [bar]

Normally closed (NC)	
Actuator size	
B	4 - 8
0	4.8 - 7.0
1	5.5 - 7.0
2	4 - 7 (DN 20 - 40) 5 - 7 (DN 50 - 80)
3, 4	min. control pressure see diagram / max. control pressure 7 bar
Normally open (NO) / Double acting (DA)	
0, 1, 2	max. 7 bar (for values see diagram)

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											
B	10.0	10.0	10.0	10.0	-	-	-	-	-	-	-
0	-	-	12.0	12.0	6.0	2.5	-	-	-	-	-
1	-	-	25.0	25.0	20.0	10.0	7.0	4.5	3.0	-	-
2	-	-	-	-	25.0	25.0	20.0	12.0	10.0	7.0	5.0
Normally closed (NC) / Flow direction: over the seat											
3	-	-	10.0	10.0	10.0	10.0	-	-	-	-	-
4	-	-	10.0	10.0	10.0	10.0	10.0	10.0	10.0	-	-
Normally open (NO) / Double acting (DA) / Flow direction: under the seat											
0	-	-	25.0	25.0	20.0	12.0	-	-	-	-	-
1	-	-	25.0	25.0	25.0	25.0	20.0	12.0	8.0	-	-
2	-	-	-	-	25.0	25.0	25.0	25.0	25.0	18.0	10.0

For max. operating pressures the pressure/temperature correlation must be observed (see table on page 3).
All pressures are gauge pressures.

Kv values [m^3/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, 3C, 3D, 9 (up to DN 50)	9	16.0	16.0	16.0	16.0	13.5	-	-
1, 9 (from DN 65)	9	10.0	10.0	10.0	10.0	8.5	-	-
1, 9, 17, 37, 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 (DN 15 - DN 40)	34	25.0	24.2	21.2	19.3**	-	-	-
80, 88 (DN 50 - DN 80)	34	16.0	16.0	16.0	16.0**	-	-	-
82 (DN 15 - DN 32)	34	25.0	24.2	21.2	19.3**	-	-	-
82 (DN 40 - DN 65)	34	16.0	16.0	16.0	16.0**	-	-	-
86 (DN 15 - DN 40)	34	25.0	24.2	21.2	19.3**	-	-	-
86 (DN 50 - DN 65)	34	16.0	16.0	16.0	16.0**	-	-	-
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, 59	C2	25.0	24.2	21.2	19.3	17.9	16.8	15.9

* The valves can be used down to -10 °C
All pressures are gauge pressures.

** max. temperature 140 °C

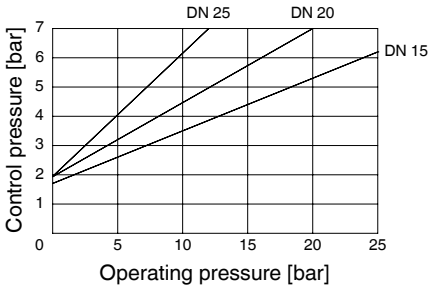
RT = Room Temperature

Operating pressure/Control pressure characteristics

Actuator size 0
Normally open (NO)
Double acting (DA)

Min. control pressure dependent on operating pressure

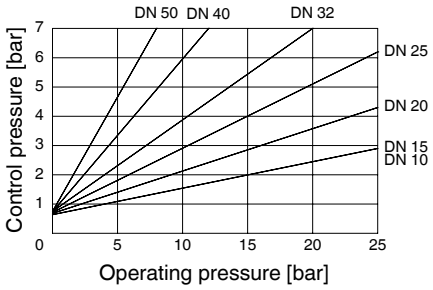
(Flow direction: under the seat)



Actuator size 1
Normally open (NO)
Double acting (DA)

Min. control pressure dependent on operating pressure

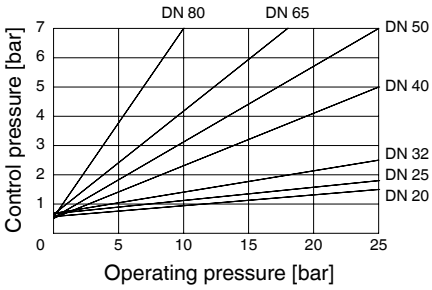
(Flow direction: under the seat)



Actuator size 2
Normally open (NO)
Double acting (DA)

Min. control pressure dependent on operating pressure

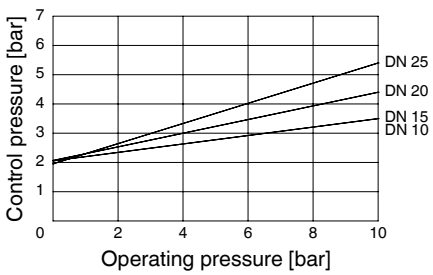
(Flow direction: under the seat)



Actuator size 3
Normally closed (NC)

Min. control pressure dependent on operating pressure

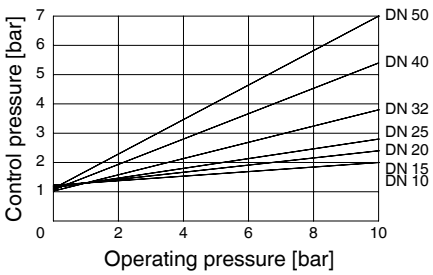
(Flow direction: over the seat)



Actuator size 4
Normally closed (NC)

Min. control pressure dependent on operating pressure

(Flow direction: over the seat)



Order data

Body configuration	Code
2/2-way body	D
Angle body only in material code 37 (DN 15 - 50)	E

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 1A	1A
Spigots DIN 11866, series 1B	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 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

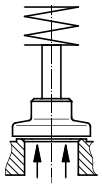
Valve body material	Code
(Rg 5) CC499K, Cast bronze	9
1.4435 (ASTM A 351 CF3M ≙ 316L), Investment casting	34
1.4408, Cast stainless steel	37
1.4435 (316 L), forged body	40
1.4435, Investment casting Material equivalency 316L	C2*
* A surface finish from the order code table “K number“ must be specified for valve body material C2.	

Seat seal		Code
PTFE		5
PTFE, glass reinforced		5G
PFA	(Actuator B)	30
Other seat seals on request		

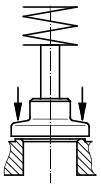
Control function			Code
Normally closed	(NC)		1
Normally open	(NO)	(not Actuator B)	2
Double acting	(DA)	(not Actuator B)	3

Actuator size		Flow	Code
Actuator B	piston ø 30 mm	under the seat	B*
Actuator 0	piston ø 50 mm	under the seat	0*
Actuator 1	piston ø 70 mm	under the seat	1*
Actuator 2	piston ø 120 mm	under the seat	2*
Actuator 3	piston ø 50 mm	over the seat	3**
Actuator 4	piston ø 70 mm	over the seat	4**
* Preferred flow direction with incompressible liquid media to avoid “water hammer“			
** only control function NC			

GEMÜ 554
Actuators
B, 0, 1, 2



Flow
under the seat



Flow
over the seat

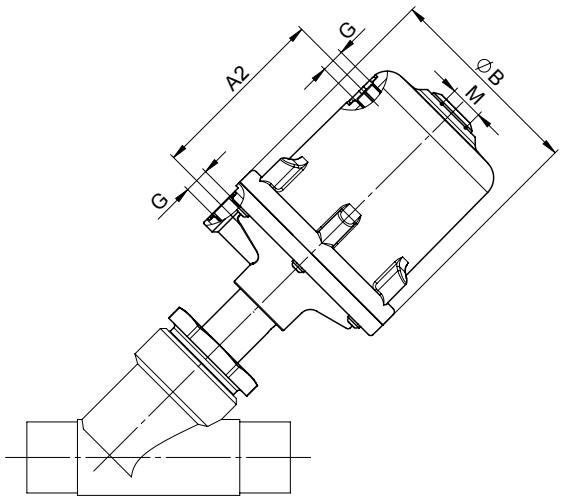
GEMÜ 554
Actuators 3, 4

K number	Code
Surface finish only for valve body material C2	
external surface electrolytically gloss polished / mechanically polished internal Ra ≤ 0.6 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	554	15	D	1	9	5	1	1	-
Type	554								
Nominal size		15							
Body configuration (code)			D						
Connection (code)				1					
Valve body material (code)					9				
Seat seal (code)						5			
Control function (code)							1		
Actuator size (code)								1	
K number (code)									-

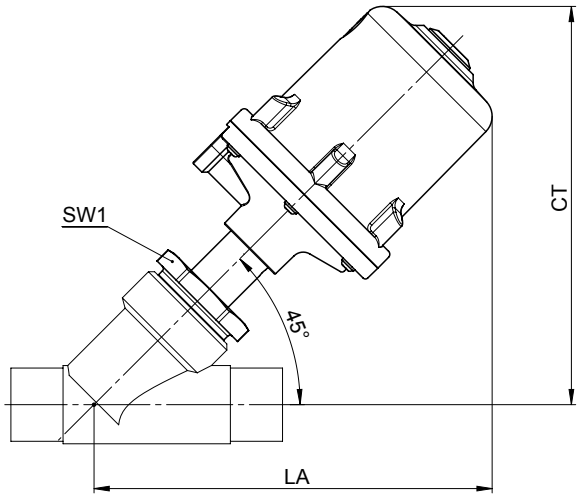
Actuator dimensions / Installation dimensions - Valve with 2/2-way body [mm]

Actuator dimensions				
Actuator size	**ø B**	**M**	**A2**	**G**
B	43.0	M 12x1	-	G 1/8
0 + 3	72.0	M 16x1	70	G 1/4
1 + 4	96.0	M 16x1	86	G 1/4
2	168.0	M 22x1.5	149	G 1/4

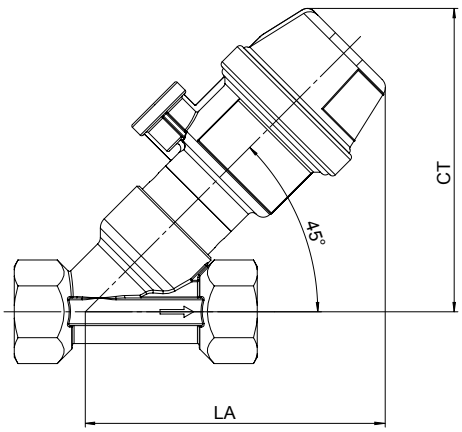


Installation dimensions / Weight [kg]									
		Actuator size B		**Actuator size 0 and 3**		**Actuator size 1 and 4**		**Actuator size 2**	
DN	**Wrench size SW1**	**H/LA**	**Weight**	**H/LA**	**Weight**	**H/LA**	**Weight**	**H/LA**	**Weight**
6	-	82	0.3	-	-	-	-	-	-
8	-	82	0.3	-	-	-	-	-	-
10	-	82	0.3	-	-	-	-	-	-
15	-	82	0.3	-	-	-	-	-	-
10	36	-	-	153	0.9	180	1.4	-	-
15	36	-	-	155	0.9	182	1.4	-	-
20	41	-	-	165	1.1	192	1.6	279	-
25	46	-	-	165	1.3	192	1.8	279	-
32	55	-	-	-	-	200	2.4	287	5.1
40	60	-	-	-	-	206	2.7	293	6.0
50	75	-	-	-	-	214	3.4	301	6.9
65	75	-	-	-	-	-	-	313	8.5
80	75	-	-	-	-	-	-	330	10.1

Installation dimensions - Actuator size 0, 1, 2, 3, 4



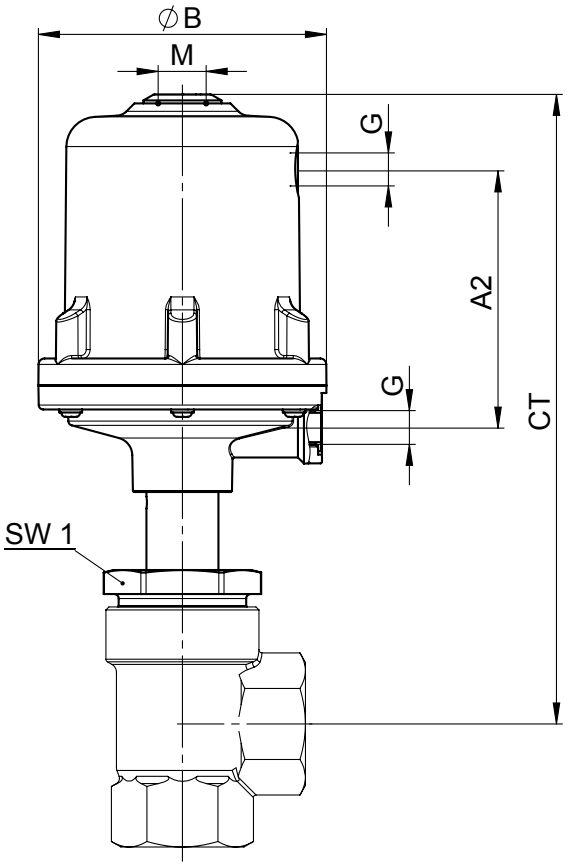
Installation dimensions - Actuator size B



Actuator dimensions / Installation dimensions - Valve with angle body [mm]

Actuator dimensions				
Actuator size	**ø B**	**M**	**A2**	**G**
B	43.0	M 12x1	-	G 1/8
0 + 3	72.0	M 16x1	70	G 1/4
1 + 4	96.0	M 16x1	86	G 1/4
2	168.0	M 22x1.5	149	G 1/4

Installation dimensions / Weight [kg]							
		Actuator size 0 and 3		**Actuator size 1 and 4**		**Actuator size 2**	
DN	**Wrench size SW1**	**CT**	**Weight**	**CT**	**Weight**	**CT**	**Weight**
15	36	172	0.9	200	1.4	-	-
20	41	175	1.1	203	1.6	298	-
25	46	179	1.3	207	1.8	302	-
32	55	-	-	210	2.4	305	5.1
40	60	-	-	215	2.7	310	6.0
50	75	-	-	222	3.4	317	6.9



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)

	Material code 34		Material code 37		Connection code													
					0		16		17		18		37		59		60	
DN	L	LB	L	LB	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	1.5	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 last page

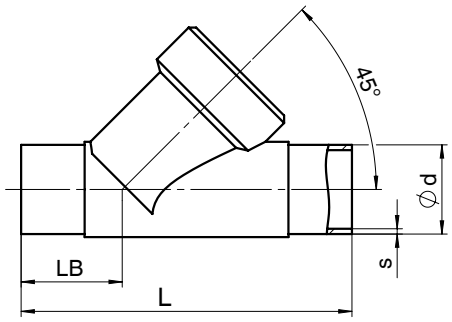
Butt weld spigots, Actuator size B
connection code 0, 16, 17, 18, 59, 60
Valve body material: Forged body (code 40)

			Connection code											
			0		16		17		18		59		60	
DN	L	LB	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	.	.

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

			Connection code					
			1A		1B		59	
DN	L	LB	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



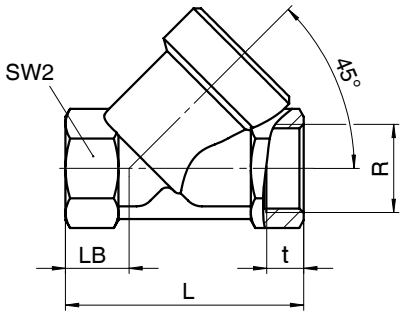
Body dimensions [mm]

Threaded sockets DIN, connection code 1 Valve body material: Cast bronze (code 9), 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	30.2	85	octagonal
80	220	50.0	G 3	33.3	100	octagonal

* only with actuator size B For materials see overview on last page.

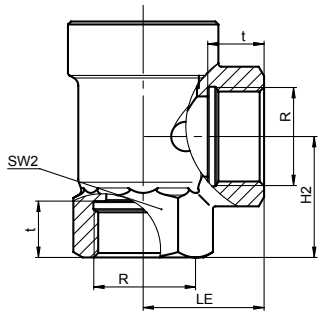
Threaded sockets NPT, BS 21 Rc, connection code 3C, 3D Valve body material: Cast bronze (code 9), 1.4408 (code 37)								
					Connection code			
					3C		**3D**	
DN	**L**	**LB**	**SW2**		**R**	**t**	**R**	**t**
8*	65	19.0	17	hexagonal	-	-	1/4” NPT	10.1
10*	65	27.0	24	hexagonal	-	-	3/8” NPT	10.4
15*	65	27.0	24	hexagonal	-	-	1/2” NPT	13.6
15	65	16.5	27	hexagonal	Rc 1/2	15.0	1/2” NPT	13.6
20	75	17.5	32	hexagonal	Rc 3/4	16.3	3/4” NPT	14.1
25	90	24.0	41	hexagonal	Rc 1	19.1	1” NPT	17.0
32	110	33.0	50	octagonal	Rc 1 1/4	21.4	1 1/4” NPT	17.5
40	120	30.0	55	octagonal	Rc 1 1/2	21.4	1 1/2” NPT	17.3
50	150	40.0	70	octagonal	Rc 2	25.7	2” NPT	17.8
65	190	46.0	85	octagonal	Rc 2 1/2	30.2	2 1/2” NPT	23.7
80	220	50.0	100	octagonal	Rc 3	33.3	3” NPT	25.8

* only with actuator size B For materials see overview on last page.



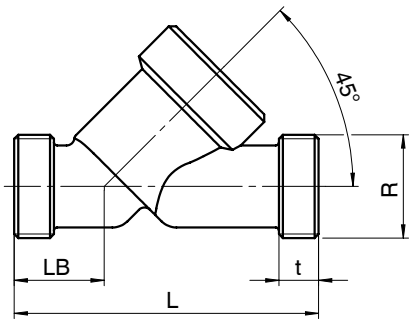
Body dimensions [mm]

Threaded sockets DIN, connection code 1, 3D / Angle body Valve body material: 1.4408 (code 37)							
				Connection code 1		Connection code 3D	
DN	SW2	LE	H2	R	t	R	t
15	27	30	30.0	G 1/2	15.0	1/2” NPT	13.6
20	32	35	37.5	G 3/4	16.3	3/4” NPT	14.1
25	41	41	41.0	G 1	19.1	1” NPT	17.0
32	50	50	48.0	G 1 1/4	21.4	1 1/4” NPT	17.5
40	55	50	55.0	G 1 1/2	21.4	1 1/2” NPT	17.3
50	70	60	62.0	G 2	25.7	2” NPT	17.8



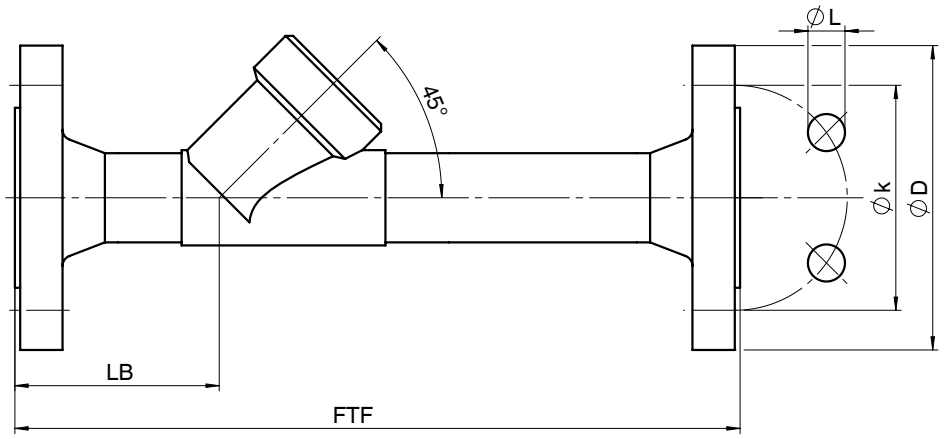
Threaded spigots, connection code 9 Valve body material: Cast bronze (code 9), investment casting (code 37), Forged body (code 40)				
DN	L	LB	t	R
6*	65	19	12	G 1/4
8*	65	19	12	G 3/8
10*	65	19	12	G 1/2
15*	65	19	12	G 3/4
15	90	25	12	G 3/4
20	110	30	15	G 1
25	118	30	15	G 1 1/4
32	130	38	13	G 1 1/2
40	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 B For materials see overview on last page.

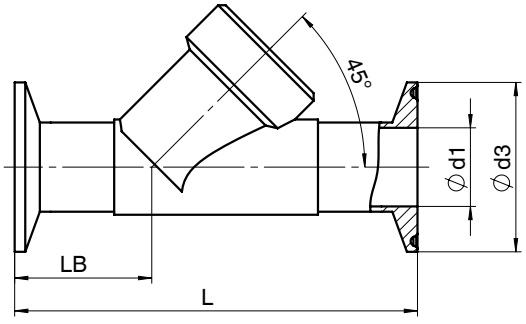


Body dimensions [mm]

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



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



Overview of metal bodies for GEMÜ 554 Actuator size B

	Threaded connections				Spigots					
Connection code	**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 554 Actuator size 0 - 4

	Spigots												
Connection code	**0**	**16**	**17**		**18**	**1A**	**1B**	**37**		**59**			**60**	
Material code	**34**	**34**	**34**	**37**	**34**	**C2**	**C2**	**34**	**37**	**34**	**37**	**C2**	**34**	**37**
DN 8	-	-	-	-	-	-	X	-	-	-	-	-	-	-
DN 10	-	X	X	-	X	X	X	-	-	-	-	-	X	-
DN 15	X	X	X	X	X	X	X	-	-	X	-	X	X	X
DN 20	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
DN 32	-	X	X	X	X	X	X	-	-	-	-	-	X	X
DN 40	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
DN 65	-	-	-	X	-	X	X	-	X	-	X	X	-	X
DN 80	-	-	-	X	-	X	X	-	X	-	X	X	-	X

Overview of metal bodies for GEMÜ 554 Actuator size 0 - 4

	Threaded connections									Clamp				Flanges	
Connection code	**1**			**3C**	**9**		**3D**			**80**	**82**	**86**	**88**	**13**	**47**
Material code	**9**	**37**	**37**	**37**	**9**	**37**	**9**	**37**	**37**	**34**	**34**	**34**	**34**	**34**	**34**
Body configuration		**2/2-way body**	**Angle body**					**2/2-way body**	**Angle body**						
DN 10	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
DN 15	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
DN 25	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
DN 40	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
DN 65	X	X	-	X	X	X	-	X	-	-	-	-	-	-	-
DN 80	X	X	-	X	X	X	-	X	-	-	-	-	-	-	-

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Should there be any doubts or misunderstandings, the German version of this data sheet is the authoritative document!

Subject to alteration · 01/2015 · 88048746