

Globe Control Valve, Metal

Construction

The GEMÜ 532 2/2-way globe control valve is designed for demanding flow control applications. It can be paired with the GEMÜ 1434 μ Pos, GEMÜ 1435 ePos positioners or the GEMÜ 1436 cPos positioner and process controller dependent on the control requirements (for features see page 8). The positioners are specially designed for GEMÜ valves and achieve optimum results when used as a system. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable sealing even after a long service life with high cycle duties. A wiper ring protects the gland packing against contamination and damage.

Features

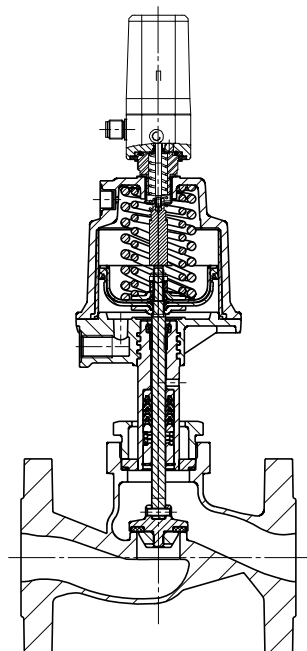
- Linear or modified equal-percentage control characteristics
- Kv values from approx. 0.16 - 40.0 m³/h, depending on nominal size, valve seat and regulating cone design
- PID control system can be implemented with GEMÜ 1436
- Suitable for inert, corrosive*, liquid and gaseous media and steam
- Flanged bodies in SG iron GGG 40.3 and stainless steel 1.4408 to EN 1092 and ANSI 125/150
- Max. operating pressure 25 bar
- Max. operating temperature 180 °C

Advantages

- Simple and fast commissioning
- Valve and positioner are optimally adapted to each other.
(For positioner details please refer to the relevant data sheets)

*see information on working medium on page 2

Sectional drawing



**GEMÜ 532
+ 1434 μ Pos**



**GEMÜ 532
+ 1435 ePos**



**GEMÜ 532
+ 1436 cPos**

Technical data

Working medium

Corrosive, inert, gaseous and liquid media and steam 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

Media temperature -10° to 180 °C

Max. permissible viscosity 600 mm²/s (cSt)

Control medium

Inert gases, max. 60 °C

Filling volume	Actuator size 0:	0.050 dm ³
	Actuator size 1:	0.125 dm ³
	Actuator size 2:	0.625 dm ³

Ambient conditions

Max. ambient temperature 60 °C

Leakage rate

DIN IEC 60534-4 VI L 1 PTFE seal

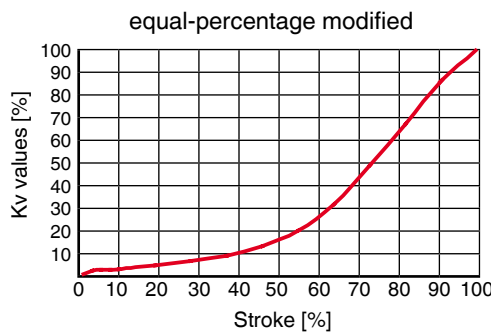
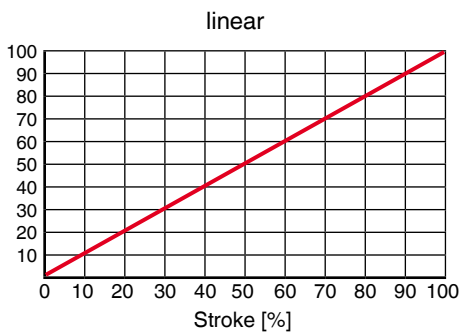
DIN IEC 60534-4 IV L 1 metal seal

Pressure / temperature correlation for globe valve bodies

Connection code	Material code	Max. allowable operating pressures in bar at temperature °C*						
		RT	50	100	150	200	250	300
8	37	14.6	13.9	12.4	11.2	10.3	9.6	9.0
10	37	25.0	23.7	21.3	19.2	17.7	16.4	15.4
11	37	36.4	34.7	31.1	28.1	25.8	24.0	22.6
39	37	19.0	19.0	16.0	14.8	13.6	12.1	10.2
8	90	16.0	16.0	16.0	15.5	14.7	13.9	11.2
39	90	17.2	17.0	16.0	14.8	13.9	12.1	10.2

* The valves can be used down to -10°C RT = Room Temperature All pressures are gauge pressures.
 Pressure/temperature correlation for connection code 48: DN 15 - 40 see connection code 10, DN 50 see connection code 8.

Example Kv value diagram



The adjacent diagram shows the approximative curve of the Kv value characteristic. The characteristic may deviate dependent on valve body, nominal size, regulating cone and valve stroke.

Correlation Kv value, operating pressure, regulating cone number
Valve body material: 1.4408 (code 37), GGG 40.3 (code 90)

Nominal size DN	Kv value [m ³ /h]	Operating pressure [bar]	Actuator size	Regulating cone number	
				linear	equal-percentage (mod.)
15	4.0	12	0	RS621	RS631
	4.0	36	1	RS620	RS630
20	6.3	6	0	RS622	RS632
	6.3	20	1	RS623	RS633
25	10.0	10	1	RS624	RS634
32	16.0	22	2	RS625	RS635
40	25.0	12	2	RS626	RS636
50	40.0	10	2	RS627	RS637

Correlation Kv value, operating pressure, regulating cone number
Valve body material: 1.4408 (code 37)

Nominal size DN	Kv value [m ³ /h]	Operating pressure [bar]	Actuator size	Regulating cone number	
				linear	equal-percentage (mod.)
15	0.16*	36	1	RB107	RA306
	0.25*	36	1	RB108	RB305
	0.40*	36	1	RB109	RB306
	0.63*	36	1	RC105	RC305
	1.00*	36	1	RC106	RC306
	1.60	36	1	RD105	RD305
	2.50	36	1	RE107	RE307
20	1.60	36	1	RD106	RD306
	2.50	36	1	RE108	RE308
	4.00	36	1	RF107	RF307
25	2.50	36	1	RE109	RE309
	4.00	36	1	RF108	RF308
	6.30	36	1	RG107	RG307
32	4.00	25	1	RF109	RF309
	6.30	25	1	RG108	RG308
	10.00	16	1	RH107	RH307
40	6.30	25	1	RG109	RG309
	10.00	18	1	RH108	RH308
	16.00	11	1	RJ105	RJ305
50	10.00	16	1	RH109	RH309
	16.00	12	1	RJ106	RJ306
	25.00	16	2	RK103	RK303

* Standard - metal seated (with no soft seat)

Order data

Body configuration	Code
2/2-way body	D

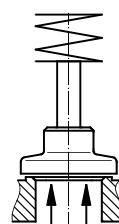
Connection	Code
Flanges EN 1092 / PN16 / form B, length EN 558, series 1, ISO 5752, basic series 1	8
Flanges EN 1092 / PN25 / form B, length EN 558, series 1, ISO 5752, basic series 1	10
Flanges EN 1092 / PN40 / form B, length EN 558, series 1, ISO 5752, basic series 1	11
Flanges ANSI CLASS 125/150 RF, length EN 558, series 1, ISO 5752, basic series 1	39
Flanges drilled according to JIS 20K (DN 15 - 40), Flanges drilled according to JIS 10K (DN 50), length EN 558, series 10, ASME/ANSI B 16.10 table 1, column 16	48

Valve body material	Code
1.4408, cast stainless steel	37
EN-GJS-400-18-LT (GGG 40.3) SG iron	90

Seat seal	Code
PTFE	5
PTFE, glass reinforced	5G
Steel (standard up to Kv value 1.00 m ³ /h)	10*
* R-No. on request	

Control function	Code
Normally closed (NC)	1
Double acting (DA)	3*
Double acting (normally open)	8*
* R-No. on request	

Actuator size	Flow	Code
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



Flow under the seat

Regulating cone	R-No.
For the regulating cone no. (R-No.) - linear or equal-percentage (mod.) - please refer to the table	

Order example	532	25	D	10	37	5	1	1	RS634
Type	532								
Nominal size		25							
Body configuration (code)			D						
Connection (code)				10					
Valve body material (code)					37				
Seat seal (code)						5			
Control function (code)							1		
Actuator size (code)								1	
Regulating cone (R-No.)									RS634

For the technical data and order data of the positioners please refer to data sheets GEMÜ 1434, 1435 and 1436. Please also note the table on the last page.

Dimensions - GEMÜ 532 [mm]

GEMÜ 532 without positioner

DN	SW1 metric	Number of bolt holes	L	G	Actuator 0					Actuator 1					Actuator 2				
					CT	øB	M	A	Weight [kg]	CT	øB	M	A	Weight [kg]	CT	øB	M	A	Weight [kg]
15	36	4	130	G1/4	191	71	M16x1	-	3.25	201	96	M16x1	86	4.1	-	-	-	-	-
20	41	4	150	G1/4	198	71	M16x1	-	4.25	208	96	M16x1	86	5.1	-	-	-	-	-
25	46	4	160	G1/4	-	-	-	-	5.15	219	96	M16x1	86	6.0	-	-	-	-	-
32	55	4	180	G1/4	-	-	-	-	-	224	96	M16x1	86	8.2	299	164	M22x1.5	123	-
40	60	4	200	G1/4	-	-	-	-	-	235	96	M16x1	86	9.5	310	164	M22x1.5	123	-
50	75	4	230	G1/4	-	-	-	-	-	245	96	M16x1	86	12.3	318	164	M22x1.5	123	-

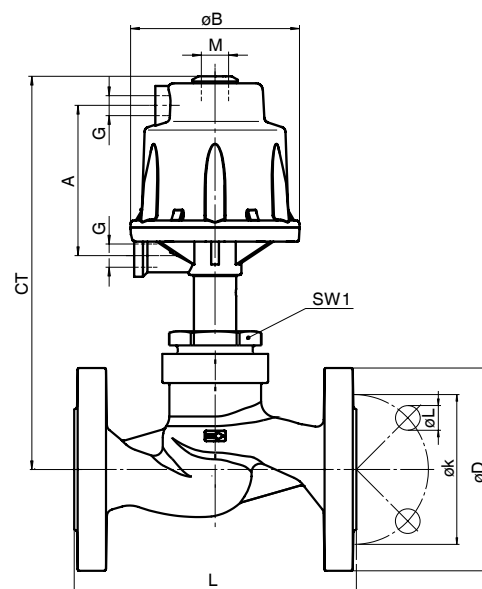
For materials see overview below

body dimensions [mm]

Flanges, connection code 8, 10, 11, 39, 48
Valve body material 1.4408 (code 37),
EN-GJS-400-18-LT (code 90)

DN	Connection code 8, 10, 11			Connection code 39			Connection code 48		
	øD	øk	øL	øD	øk	øL	øD	øk	øL
15	95	65	14	90	60.3	15.9	95	70	15
20	105	75	14	100	69.9	15.9	100	75	15
25	115	85	14	110	79.4	15.9	125	90	19
32	140	100	18	115	88.9	15.9	-	-	-
40	150	110	18	125	98.4	15.9	140	105	19
50	165	125	18	150	120.7	19.0	155	120	19

For materials see overview below



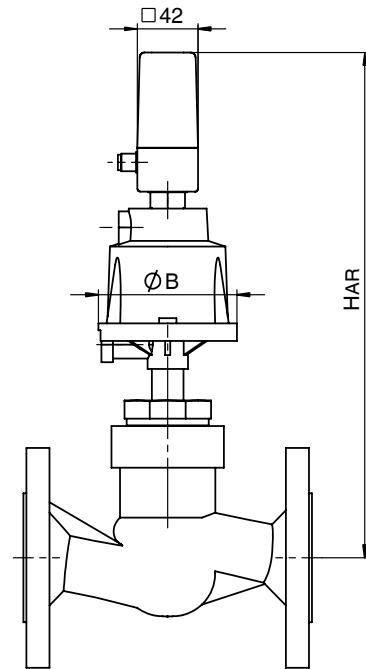
Overview of metal bodies for GEMÜ 532

Connection code	8		10	11	39		48
	37	90	37	37	37	90	37
DN 15	-	X	-	X	X	X	X
DN 20	-	X	-	X	X	X	X
DN 25	-	X	-	X	X	X	X
DN 32	-	X	X	-	X	X	-
DN 40	-	X	X	-	X	X	X
DN 50	X	X	-	-	X	X	X

Dimensions - GEMÜ 532 [mm]

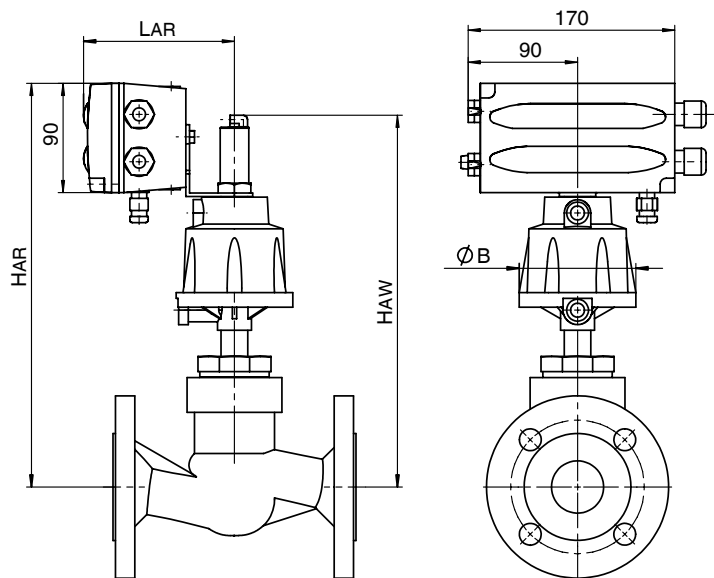
GEMÜ 532 with 1434 μ Pos

DN	Actuator size	Control function	ϕB	HAR
15	0	1	71	295
	1	1	96	305
20	0	1	71	302
	1	1	96	312
25	1	1	96	323
32	1	1	96	328
40	1	1	96	339
50	1	1	96	347



GEMÜ 532 with 1435 ePos

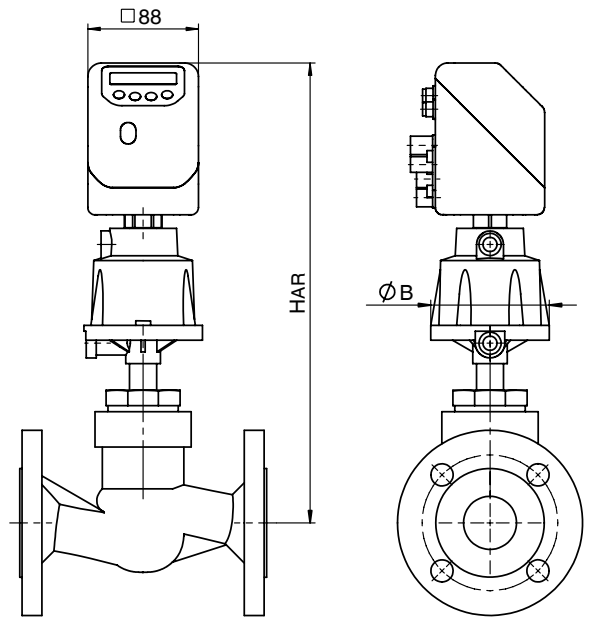
DN	Actuator size	Control function	ϕB	HAR	HAW	LAR
15	0	1	71	303	276	118
	1	1	96	289	262	118
		3 and 8	96	313	286	118
20	0	1	71	310	283	118
	1	1	96	296	269	118
		3 and 8	96	320	320	118
		2	1	164	376	376
	3 and 8	164	418	418	138	
25	1	1	96	307	280	118
		3 and 8	96	331	304	118
		2	1	96	312	285
32	2	3 and 8	96	336	309	118
		1	96	323	296	118
		3 and 8	96	347	320	118
40	1	1	96	323	296	118
		3 and 8	96	347	320	118
	2	1	164	403	398	168
		3 and 8	164	445	440	138
50	1	1	96	331	304	118
		3 and 8	96	355	328	118
	2	1	164	411	406	168
		3 and 8	164	453	448	138



Dimensions - GEMÜ 532 [mm]

GEMÜ 532 with 1436 cPos

DN	Actuator size	Control function	øB	HAR
15	0	1	71	348
	1	1	96	334
		3 and 8	96	358
20	0	1	71	355
	1	1	96	341
		3 and 8	96	365
25	1	1	96	352
		3 and 8	96	376
		1	96	357
32	1	3 and 8	96	381
		1	164	460
	2	3 and 8	164	478
40	1	1	96	368
		3 and 8	96	392
	2	1	164	470
		3 and 8	164	489
50	1	1	96	376
		3 and 8	96	400
	2	1	164	478
		3 and 8	164	497



Information - Specifications

Specification sheet for designing regulating cones for globe valves

Project (customer) _____ Calculation number (GEMÜ) _____

Date _____ Telephone _____

Contact person _____ E-Mail _____

Technical requirements

Medium ¹⁾ _____

Requirement characteristic	1st operating point maximum flow	2nd operating point medium flow	3rd operating point minimum flow
Media temperature ⁴⁾	°C	°C	°C
Inlet pressure	bar(g)	bar(g)	bar(g)
Outlet pressure	bar(g)	bar(g)	bar(g)
Flow rate ^{2, 3)}			
in [m ³ /h] for liquids	m ³ /h	m ³ /h	m ³ /h
Gases	Nm ³ /h	Nm ³ /h	Nm ³ /h
in [kg/h] for steam	kg/h	kg/h	kg/h
Accuracy requirement ⁶⁾			
for flow	% full flow	% full flow	% full flow

Valve body / Actuator	Type		
	Required valve DN		
	Max. operating pressure		
	Ambient temperature ⁵⁾		
	Max. media temperature		
	Connection		
	Body material		
	Seat seal	<input type="checkbox"/> PTFE	<input type="checkbox"/> Other _____
	Control function	<input type="checkbox"/> NC	<input type="checkbox"/> DA <input type="checkbox"/> Double acting (normally open)
Regulating cone	<input type="checkbox"/> linear		<input type="checkbox"/> equal-% (modified)
	<input type="checkbox"/> Other _____		

- 1) Liquid or gas?
For media other than water or air, it is useful to give data for the viscosity of liquids and the density of gases. Otherwise we will assume data for standard conditions.
- 2) For steam especially, the minimum or maximum flow rate should be assigned to the appropriate inlet or outlet pressure. The temperature of the medium should also be taken into account.
- 3) GEMÜ recommends a positioning ratio of 1: 10 (e.g. minimum flow rate is 10 m³/h and the maximum flow rate is 100 m³/h). Please note that the valve only controls reliably from a flow of about 10% of the max. Kv value on account of the valve opening behaviour. Other positioning ratios are possible on request or in the selection of standard regulating cones, see overleaf.
- 4) The media temperature range must be specified for steam applications. T = 20°C is assumed unless specified otherwise.
- 5) This data is not absolutely necessary. A room temperature of 20° C is assumed unless specified otherwise.
- 6) The accuracy of our control valves for the flow over the whole characteristic is a standard +/- 10% f.f. (=full flow). Greater accuracies are available on request.

GEMÜ standard regulating cones

DN	Kv value* [m ³ /h]	GEMÜ 514			GEMÜ 550			GEMÜ 554		
		Actuator size	Regulating cone number		Actuator size	Regulating cone number		Actuator size	Regulating cone number	
			linear	equal-% (mod.)		linear	equal-% (mod.)		linear	equal-% (mod.)
15	5	0	R S601	R S611	1G1	R S101	R S111	0	R S001	R S011
		1	R S600	R S610	2G1	R S100	R S110	1	R S000	R S010
20	10	0	R S602	R S612	2G1	R S102	R S112	0	R S002	R S012
		1	R S603	R S613				1	R S003	R S013
25	15	1	R S604	R S614	2G1	R S103	R S113	1	R S004	R S014
32	24	2	R S605	R S615	3G1	R S104	R S114	2	R S005	R S015
40	38	2	R S606	R S616	3G1	R S105	R S115	2	R S006	R S016
50	60	2	R S607	R S617	4G1	R S106	R S116	2	R S007	R S017

* Not for connection code 37 (butt weld spigots SMS 3008), 59 (butt weld spigots ASME BPE), 80 (Clamps ASME BPE for pipe ASME BPE, short design) and 88 (clamps ASME BPE for pipe ASME BPE, length EN 558, series 1).

DN	Kv value* [m ³ /h]	GEMÜ 514			GEMÜ 550			GEMÜ 554		
		Actuator size	Regulating cone number		Actuator size	Regulating cone number		Actuator size	Regulating cone number	
			linear	equal-% (mod.)		linear	equal-% (mod.)		linear	equal-% (mod.)
15	2,7	0	R S651	R S641	1G1	R S151	R S141	0	R S051	R S041
		1	R S650	R S640	2G1	R S150	R S140	1	R S050	R S040
20	6,3	0	R S652	R S642	2G1	R S152	R S142	0	R S052	R S042
		1	R S653	R S643				1	R S053	R S043
25	13,3	1	R S654	R S644	2G1	R S153	R S143	1	R S054	R S044
40	35,6	2	R S656	R S646	3G1	R S155	R S145	2	R S056	R S046
50	58	2	R S657	R S647	4G1	R S156	R S146	2	R S057	R S047

* Only for connection code 37 (butt weld spigots SMS 3008), 59 (butt weld spigots ASME BPE), 80 (Clamps ASME BPE for pipe ASME BPE, short design) and 88 (clamps ASME BPE for pipe ASME BPE, length EN 558, series 1).

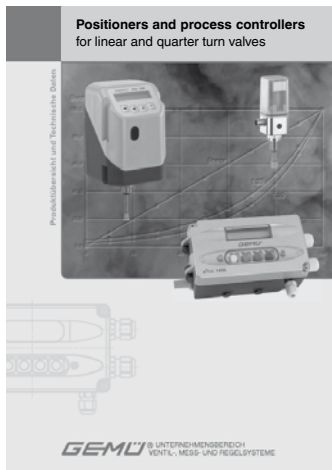
DN	Kv value [m ³ /h]	GEMÜ 532			GEMÜ 530			GEMÜ 534		
		Actuator size	Regulating cone number		Actuator size	Regulating cone number		Actuator size	Regulating cone number	
			linear	equal-% (mod.)		linear	equal-% (mod.)		linear	equal-% (mod.)
15	4	0	R S621	R S631	1G1	R S121	R S131	0	R S021	R S031
		1	R S620	R S630	2G1	R S120	R S130	1	R S020	R S030
20	6,3	0	R S622	R S632	2G1	R S122	R S132	0	R S022	R S032
		1	R S623	R S633				1	R S023	R S033
25	10	1	R S624	R S634	2G1	R S123	R S133	1	R S024	R S034
32	16	2	R S625	R S635	3G1	R S124	R S134	2	R S025	R S035
40	25	2	R S626	R S636	3G1	R S125	R S135	2	R S026	R S036
50	40	2	R S627	R S637	4G1	R S126	R S136	2	R S027	R S037

Notes for using standard regulating cones:

- 1) A tolerance of 10% of full flow is possible for the Kv value specifications according to the standard. This must be taken into account in the determination of the maximum Kv value. It is recommendable to allow for a reserve of at least 10%.
- 2) The regulating cone with the Kv value closest to the application should be selected. If regulating cones with too great Kv values are selected, inaccurate positioning and control properties result, especially in the lower Kv range.
- 3) It is possible that the selected valves may be able to regulate much smaller flows than assigned to the appropriate, specified, minimum Kv values. However, these values cannot be guaranteed on account of the mechanical production tolerances for standard control valves.
- 4) Standard regulating cones are only available with PTFE or Elastomer seals. Metal seals are not available.
- 5) Standard control function 1 (NC). Other control functions on request.

Positioner functions / features			
	1434 μ Pos	1435 ePos	1436 cPos
Controller type			
Positioner	X	X	X
Process controller			X
Control air flow			
Version 1	15 l/min	50 l/min	100 l/min
Version 2		90 l/min	180 l/min
Operation			
Local display / keypad		X	X
Status display	X	X	X
Web browser user			X
Field bus (Profibus DP, Device Net)			X
Signal			
24V DC / 3-wire	X	X	X
Body			
Plastic	X		X
Aluminium / industrial		X	
Functions			
Automatic initialisation	X	X	X
Alarm / error outputs		X	X
Min/max positions adjustable		X	X

GEMÜ 1434 μ Pos not available for actuator size 2



For detailed information on positioners and process controllers please refer to the adjacent brochure.

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

Other GEMÜ control valves



GEMÜ 514
+ 1434 μ Pos



GEMÜ 530
+ 1435 ePos



GEMÜ 534
+ 1436 cPos



GEMÜ 550
+ 1434 μ Pos



GEMÜ 554
+ 1435 ePos