

Globe Control Valve, Metal

Construction

The GEMÜ 530 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

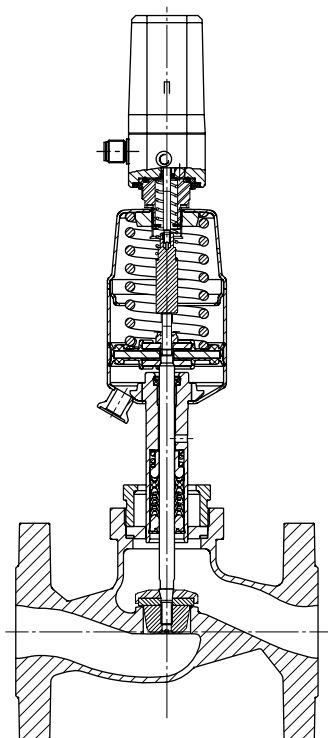
- Linear or modified equal-percentage control characteristics
- Kv values from approx. 0.16 - 40.0 m³/h, depending on nominal size, valve seat and regulating cone design
- PID control system can be implemented with GEMÜ 1436
- Suitable for inert, corrosive*, liquid and gaseous media and steam
- Max. 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 530
+ 1434 μ Pos



GEMÜ 530
+ 1435 ePos



GEMÜ 530
+ 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 mm ² /s (cSt)

Control medium

Inert gases, max. 60°C

Max. control pressure:	8 bar	
Filling volume	Actuator size 1G1:	0.025 dm ³
	Actuator size 2G1:	0.084 dm ³
	Actuator size 3G1:	0.245 dm ³
	Actuator size 4G1:	0.437 dm ³

Leakage rate

DIN IEC 60534-4 VI L 1	PTFE seal
DIN IEC 60534-4 IV L 1	metal seal

Ambient conditions

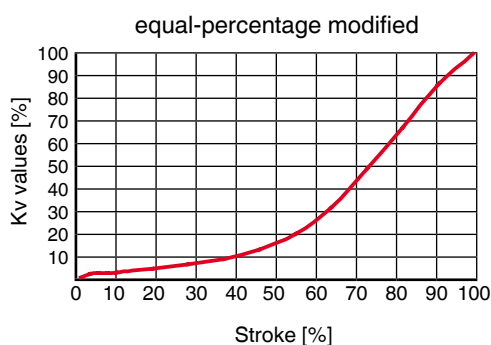
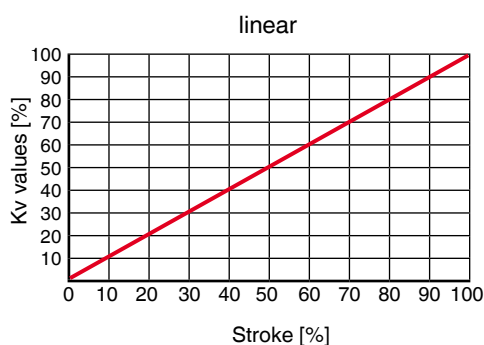
Max. ambient temperature	60 °C
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Pressure / temperature correlation for globe valve bodies

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.

Technical data

Correlation Kv value, operating pressure, regulating cone number Valve body material: 1.4408 (code 37), EN-GJS-400-18-LT (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	10	1G1	RS121	RS131
	4.0	22	2G1	RS120	RS130
20	6.3	12	2G1	RS122	RS132
25	10.0	7	2G1	RS123	RS133
32	16.0	10	3G1	RS124	RS134
40	25.0	6	3G1	RS125	RS135
50	40.0	7	4G1	RS126	RS136

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	2G1	RB104	RA304
	0.25*	36	2G1	RB105	RB303
	0.40*	36	2G1	RB106	RB304
	0.63*	36	2G1	RC103	RC303
	1.00*	36	2G1	RC104	RC304
	1.60	36	2G1	RD103	RD303
	2.50	36	2G1	RE104	RE304
20	1.60	36	2G1	RD104	RD304
	2.50	36	2G1	RE105	RE305
	4.00	36	2G1	RF104	RF304
25	2.50	36	2G1	RE106	RE306
	4.00	36	2G1	RF105	RF305
	6.30	18	2G1	RG104	RG304
32	4.00	25	2G1	RF106	RF306
	6.30	18	2G1	RG105	RG305
	10.00	10	2G1	RH104	RH304
40	6.30	25	3G1	RG106	RG306
	10.00	24	3G1	RH105	RH305
	16.00	15	3G1	RJ103	RJ303
50	10.00	16	3G1	RH106	RH306
	16.00	12	3G1	RJ104	RJ304
	25.00	16	4G1	RK102	RK302

* Standard - metal seated (with no soft seat)

Order data

Body configuration	Code
2/2-way body	D

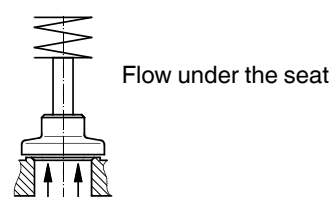
Connection	Code
Flanges EN 1092 / PN16 / form B, length EN 558, series 1, ISO 5752, basic series 1	8
Flanges EN 1092 / PN25 / form B, length EN 558, series 1, ISO 5752, basic series 1	10
Flanges EN 1092 / PN40 / form B, length EN 558, series 1, ISO 5752, basic series 1	11
Flanges ANSI CLASS 125/150 RF, 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	Code
Actuator 1 piston ø 42 mm	1G1
Actuator 2 piston ø 60 mm	2G1
Actuator 3 piston ø 80 mm	3G1
Actuator 4 piston ø100 mm	4G1



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

Order example	530	25	D	10	37	5	1	2G1	RS133	-
Type	530									
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)								2G1		
Regulating cone (R-No.)									RS133	
K number (code)										-

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 530 [mm]

GEMÜ 530 without positioner / Installation dimensions

DN	SW1 metric	Number of bolt holes	L	G	Actuator 1G1			Actuator 2G1			Actuator 3G1			Actuator 4G1		
					CT	M	Weight [kg]	CT	M	Weight [kg]	CT	M	Weight [kg]	CT	M	Weight [kg]
15	36	4	130	G1/8	167	M16x1	2.9	213	M16x1	3.2	-	-	-	-	-	-
20	41	4	150	G1/8	174	M16x1	3.8	220	M16x1	4.0	-	-	-	-	-	-
25	46	4	160	G1/4	-	-	-	231	M16x1	4.8	247	M16x1	5.5	-	-	-
32	55	4	180	G1/4	-	-	-	236	M16x1	6.6	252	M16x1	7.3	290	M22x1.5	8.7
40	60	4	200	G1/4	-	-	-	-	-	-	263	M16x1	8.4	301	M22x1.5	9.8
50	55	4	230	G1/4	-	-	-	-	-	-	271	M16x1	10.7	309	M22x1.5	12.1

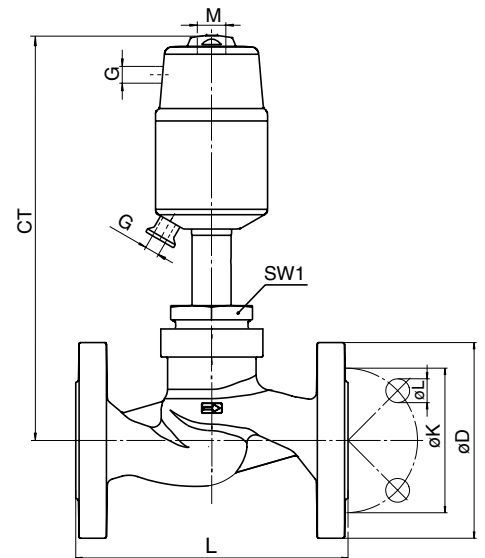
For materials see overview below

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



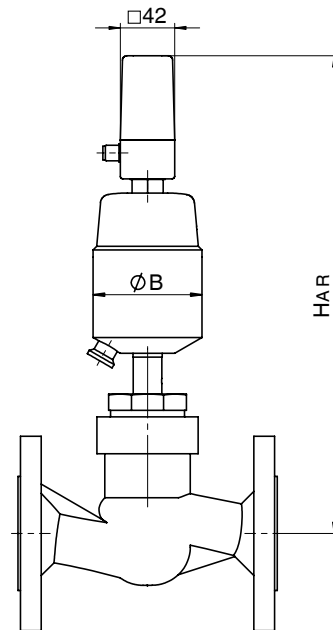
Overview of metal bodies for GEMÜ 530

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 530 [mm]

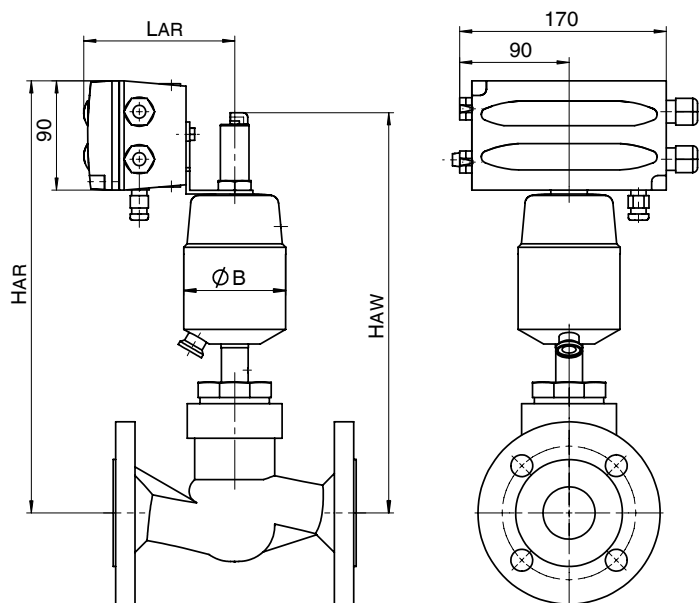
GEMÜ 530 with 1434 μ Pos

DN	Actuator size	Control function	$\varnothing B$	HAR
15	1G1	1	46	271
	2G1	1	63	317
20	2G1	1	63	324
25	2G1	1	63	335
32	2G1	1	63	340
	3G1	1	-	-
40	3G1	1	-	-
50	4G1	1	-	-



GEMÜ 530 with 1435 ePos

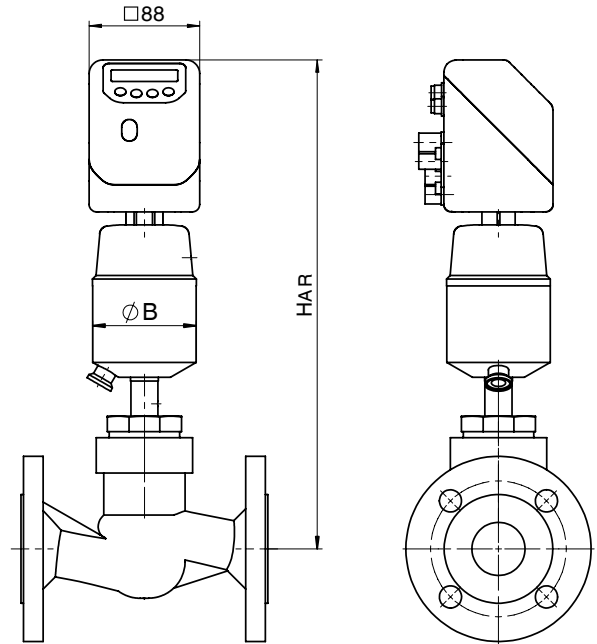
DN	Actuator size	Control function	$\varnothing B$	HAR	HAW	LAR
15	1G1	1	46	255	228	118
		3 and 8	46	279	252	118
	2G1	1	63	301	274	118
		3 and 8	63	325	298	118
20	2G1	1	63	308	281	118
		3 and 8	63	332	305	118
25	2G1	1	63	319	292	118
		3 and 8	63	343	316	118
32	2G1	1	63	324	297	118
		3 and 8	63	348	321	118
	3G1	1	84	340	335	118
		3 and 8	84	364	359	118
40	3G1	1	84	351	346	118
		3 and 8	84	375	370	118
50	3G1	1	84	359	354	118
		3 and 8	84	383	378	118
	4G1	1	104	402	397	138
		3 and 8	104	444	439	138



Dimensions - GEMÜ 530 [mm]

GEMÜ 530 with 1436 cPos

DN	Actuator size	Control function	øB	HAR
15	2G1	1	63	346
		8	63	370
20	2G1	1	63	353
		8	63	377
25	2G1	1	63	364
		8	63	388
32	2G1	1	63	369
		8	63	393
	3G1	1	84	408
		8	84	431
40	3G1	1	84	418
		8	84	442
	4G1	1	104	462
		8	104	480
50	3G1	1	84	426
		8	84	450
	4G1	1	104	470
		8	104	488



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"/> 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 4G1.
For actuator size 1G1 please order GEMÜ 1434 with K number 2442.



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 532
+ 1435 ePos



GEMÜ 534
+ 1436 cPos



GEMÜ 550
+ 1434 μ Pos



GEMÜ 554
+ 1435 ePos