

# Specification sheet for designing regulating cones for globe valves

Project (customer) \_\_\_\_\_ Calculation number (GEMÜ) \_\_\_\_\_  
 Date \_\_\_\_\_ Telephone \_\_\_\_\_  
 Contact person \_\_\_\_\_ E-Mail \_\_\_\_\_

## Technical requirements

Medium <sup>1)</sup> \_\_\_\_\_

Requirement characteristic	1st operating point maximum flow	2nd operating point medium flow	3rd operating point minimum flow
Media temperature <sup>4)</sup>			
Inlet pressure			
Outlet pressure			
<b>Flow rate <sup>2, 3)</sup></b>			
in [m <sup>3</sup> /h] for liquids			
Gases			
in [kg/h] for steam			
<b>Accuracy requirement <sup>6)</sup></b>			
for flow	% full flow	% full flow	% full flow

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

- 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.
- 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.
- GEMÜ recommends a positioning ratio of 1: 10 (e.g. minimum flow rate is 10 m<sup>3</sup>/h and the maximum flow rate is 100 m<sup>3</sup>/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.
- The media temperature range must be specified for steam applications. T = 20°C is assumed unless specified otherwise.
- This data is not absolutely necessary. A room temperature of 20° C is assumed unless specified otherwise.
- 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* [m³/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* [m³/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

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DN	Kv value [m³/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.