

GS High Temperature Valve

Model 8023-GS3 DN 15 - DN 200

TetraTec[®]
Instruments

Pneumatic control valve for the control of neutral through to highly aggressive media in process engineering, chemical industries and for plant equipment.

- Space-saving wafer-type design
- Lowest possible weight
- Quiet operation
- Fast response
- Control of high differential pressures with small actuators
- Greatly reduced energy consumption rates due to short strokes and low actuating forces on the throttle element
- High Kvs-values

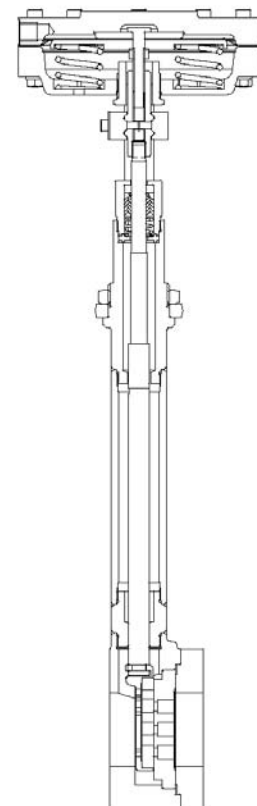
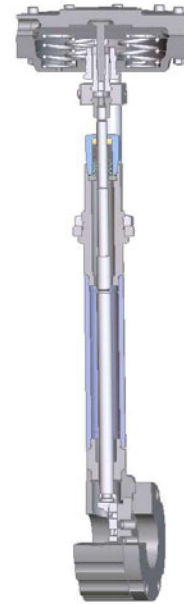
Technical Data

Design	wafer-type design other versions see data sheet 8023 - GS1	
Nominal sizes	DN 15 up to DN 200	
Nominal pressure	PN 40 (fits also to PN 10-25)	DN 15 - DN 150
	PN 100	DN 15 - DN 80
	PN 16	DN 200
Nominal pressure acc. ANSI	ANSI 150	DN15 - DN 200
	ANSI 300	DN 15 - DN 150
	ANSI 600	DN 15 - DN 80
Supply pressure	max. 6 bar	
Fluid temperature	-60°C up to +450°C for function unit carbon-stainless steel -60°C up to +450°C for function unit STN2 up to +530°C with bellows from Inconel 625 and function unit STN2	
Ambient temperature	-30°C up to +80°C	
Rangeability	40 : 1	
Leakage rate (% of Kvs-value)	function unit carbon-stainless steel <0,0001 function unit STN2 <0,001	

K_{vs}-values see data sheet 8001.

Options

- Metal bellows
- Positioner
 - pneumatic
 - electro-pneumatic
 - electro-pneumatic
(Ex, intrinsically safe)
- Limit switches
- Position transmitter
- Manual override

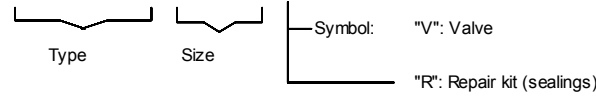


GS High Temperature Valve 8023-GS3



Ordering Number System

8	0	2	3	/			V	Q					M							Z				S
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1 - 5 : Please quote all 5 sections.
6 - 16 : Quote only if required.

1. Function	2. Body design	3. Body materials	4. Pilot function	5. Actuator	6. Special versions	7. Springs	8. Stem sealing
Q Control valve with pneumatic actuator (8023)	E GS3 - flangeless design acc. ANSI 150 F GS3 - flangeless design acc. ANSI 300 K GS3 - flangeless design acc. ANSI 600 G GS3 - flangeless design acc. DIN, PN 10-PN 40 H GS3 - flangeless design acc. DIN, PN 100	1 Stainless Steel 1.4571 / 1.4581	0 spring to close 1 spring to open	3 Diaphragm actuator 125 cm ² 4 Diaphragm actuator 250 cm ²	M to state, if some sections 7-16 are quoted A Nut and nut acc. DIN2512 C Nut and tongue acc. DIN 2512 E 2x lowered face acc. DIN 2513 H Lowered and raised face acc. DIN 2513	- Standard 1 2 springs 2 4 springs 3 6 springs 4 8 springs 5 10 springs D Set of springs 0,2-1 bar (4 springs)	- PTFE-V-shaped seal, self-adjusting (Standard) 1 Additional bellows 1.4571 3 Additional Inconel 625 bellows 2.4856

9. Sliding disc	10. Fixed plate	11. Kvs-values	12. Flow characteristic	13. Accessories	14. Positioner	15. Signalling equipment	16. Special version
- Carbon material B Carbon material fiber enforced 9 STN2	- stainless steel 1.4571 coated 1 STN 2-plate (only in combination with the positioner "9" STN2-disc)	- 100 % (Stand.) A red. to 63 % 1 red. to 40 % 2 red. to 16 % 3 red. to 6,3 % 4 red. to 2,5 % 5 red. to 1 %	- linear 1 Equal percentage	Z To state, if in sections 14 and 15 accessories are quoted	- without 1 p/p - without gauges 2 p/p - with gauges 3 i/p - without gauges 4 i/p - with gauges meter 6 i/p intrinsically safe 7 dto. with gauges	- without 0 2 limit switches inductive, M12x1 10-30 V DC PNP 1 2 limit switches inductive, integrated in positioner 2 i/p-converter 5 2 limit switches inductive, M 12x1 10-55 V DC PNP/NPN	S Other special versions have to be quoted in letters

Ordering Example: 8023/080VQG103M4 - - - - - Z3
GS3-Control Valve with pneumatic actuator, DN 80, PN 10/40, stainless steel, spring closes, actuator area 125 cm², 8 springs, PTFE-V-shaped sealings, function unit carbon-stainless steel 1.4571 coated, linear characteristic, i/p-positioner

Materials

Body	Stainless steel 1.4571	
Head section	Stainless steel 1.4571	
Diaphragm housing	Aluminium, KTL coated	
Packing	PTFE (Carbon filled), spring 1.4310	
Actuating stem	Stainless steel 1.4571, roller burnished	
Bellows	Stainless steel 1.4571	
Fixed disc	Stainless steel 1.4571, coated	STN2-disc
Sliding disc	Special carbon material	STN2-disc
Guide ring for sliding disc	Stainless steel 1.4581	

GS High Temperature Valve 8023-GS3



Admissible Differential Pressures (for temperatures up to 120°C)

For temperatures exceeding 120°C:
apply operation limits

Unit: Carbon-stainless steel, coated

Diaphragm area	125 cm ²					250 cm ²				
	0.2 to 1,0	1.0 to 2,0	1.5 to 3,0	1.8 to 3,8	2.1 to 4,5	0.2 to 1,0	0.8 to 1,4	1.2 to 2,2	1.5 to 2,7	1.7 to 3,2
Spring range (bar)	0.2 to 1,0	1.0 to 2,0	1.5 to 3,0	1.8 to 3,8	2.1 to 4,5	0.2 to 1,0	0.8 to 1,4	1.2 to 2,2	1.5 to 2,7	1.7 to 3,2
Supply air (bar)	1,2	2,8	4,2	5,2	6,0	1,2	2,1	3,2	4	4,6
DN	Admissible differential pressures in bar (see pressure diagram for GS-Valves)									
15	20	100	100	100	100	37	100	100	100	100
20 *	16	80	80	80	80	34	80	80	80	80
25	10	100	100	100	100	23	100	100	100	100
32 *	6	80	80	80	80	19	80	80	80	80
40	4	66	100	100	100	11	100	100	100	100
50	-	36	57	70	84	6,5	63	97	100	100
65	-	29	45	56	67	5	51	78	80	80
80	-	17	26	33	39	3	30	45	48	48
100	-	10	16	20	24	1,8	18	27	33	33
125	-	6,5	10	13	15	1,2	12	18	22	23
150	-	5	7,5	9	11	0,7	8,5	13	16	16
200	-	2,5	4,5	5,5	6,5	0,5	5	7,5	9	10
Springconfiguration	D	2	3	4	5	D	2	3	4	5

Standard

P max.	Upper limits for admissible pressures in bar					
	PN16	PN40	PN100	ANSI 150	ANSI 300	ANSI 600
	16	40	100	16	40	80

Unit: STN 2

Diaphragm area	125 cm ²					250 cm ²				
	0.2 to 1,0	1.0 to 2,0	1.5 to 3,0	1.8 to 3,8	2.1 to 4,5	0.2 to 1,0	0.8 to 1,4	1.2 to 2,2	1.5 to 2,7	1.7 to 3,7
Spring range (bar)	0.2 to 1,0	1.0 to 2,0	1.5 to 3,0	1.8 to 3,8	2.1 to 4,5	0.2 to 1,0	0.8 to 1,4	1.2 to 2,2	1.5 to 2,7	1.7 to 3,7
Supply air (bar)	1,2	2,8	4,2	5,2	6,0	1,2	2,1	3,2	4	4,6
DN	Admissible differential pressures in bar (see pressure diagram for GS-Valves)									
15	12	100	100	100	100	30	100	100	100	100
20 *	8	57	80	80	80	20	80	80	80	80
25	6	57	88	100	100	15	100	100	100	100
32 *	3	38	59	73	80	12	66	80	80	80
40	2	23	37	45	54	5,5	41	63	72	72
50	-	13	20	25	30	3	23	35	42	49
65	-	10	16	20	24	2	18	28	34	40
80	-	6	9	11	14	1,3	10	16	19	23
100	-	3,5	5,5	7	8,5	0,7	6,5	10	12	14
125	-	2,5	3,5	4,5	5,5	0,5	4	6,5	8	9
150	-	1,5	2,5	3,5	4	0,4	3	4,5	5,5	6,5
Springconfiguration	D	2	3 Standard	4	5	D	2	3 Standard	4	5

Standard

P max.	Upper limits for admissible pressures in bar					
	PN16	PN40	PN100	ANSI 150	ANSI 300	ANSI 600
	16	40	100	16	40	80

Supply pressure values in the tables are minimum values. They are valid if no positioner is used. When using a positioner the required supply pressure is fixed by its adjustment values. As a standard this value is 4 bar. The spring configuration "D" allows direct operation without positioner and reduced performance concerning the differential pressures. The valve then can be controlled directly by a process controller using a standard 0,2 to 1 bar signal.

* Flanges DN 20 and DN 32 are not standardised in pressure numbers PN 63 and PN 100.

GS High Temperature Valve 8023-GS3



Operation Limits For GS3-Valves From Stainless Steel

These pressures on stainless steel GS-valves series GS3 must not be exceeded even if the actuator thrust would allow it.

PN 40

DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15 - 65	35	32	28	24	21	18
80	35	32	28	24	21	18
100	29	27	25	24	21	18
125	20	19	18	17	16	16
150	14	13	12	12	11	11
200 (PN16 only)	14	13	11	10	8	6

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15 - 65	35	32	28	24	21	18	13	3
80	33	26	22	19	21	14	13	3
100	29	24	20	17	15	13	12	3
125	20	16	13	11	10	8,5	8	3
150	14	11	9,5	8,5	7	6,0	5,5	3

PN 100

DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15	80	70	60	56	50	43
25	80	70	60	56	50	43
40	80	70	60	56	50	43
50	80	70	60	56	50	43
65	72	67	60	56	50	43
80	43	40	37	36	35	33

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15	80	70	60	56	50	43	31	8
25	80	70	60	56	50	43	31	8
40	65	63	43	37	32	29	26	8
50	70	56	46	40	35	31	28	8
65	56	45	37	32	28	25	22	8
80	33	26	22	19	16	14	13	8

GS High Temperature Valve 8023-GS3



ANSI #150

DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15 - 125	13	12	10	8,5	6,5	4,5
150	13	12	10	8,5	6,5	4,5
200	13	12	10	8,5	6,5	4,5
125	20	19	18	17	16	16
150	14	13	12	12	11	11
200 (PN16 only)	14	13	11	10	8	6

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15 - 125	13	12	10	8,5	6,5	4,5	3	0,8
150	13	12	9,5	8,5	6,5	4,5	3	0,8

ANSI #300

DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15 - 65	35	32	28	24	21	18
80	35	32	28	24	21	18
100	29	27	25	24	21	18
125	20	19	18	17	16	16
150	14	13	12	12	11	11
200 (PN16 only)	14	13	11	10	8	6

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15 - 65	35	32	28	24	21	18	13	3
80	33	26	22	19	21	14	13	3
100	29	24	20	17	15	13	12	3
125	20	16	13	11	10	8,5	8	3
150	14	11	9,5	8,5	7	6,0	5,5	3

ANSI #600

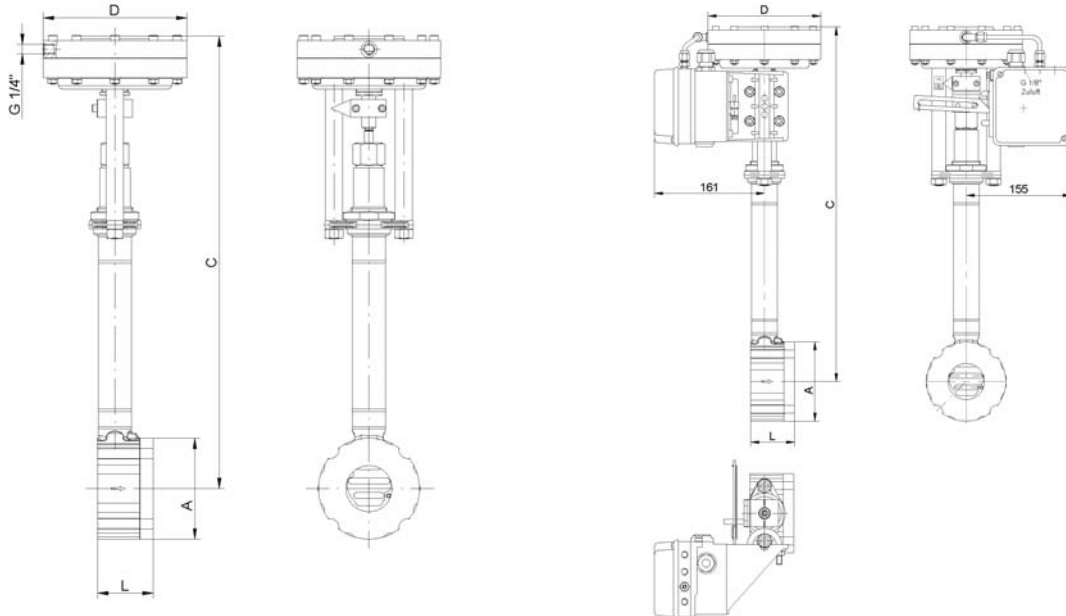
DN	Sliding unit: carbon - stainless steel, coated					
	max. admissible diff. pressures for GS3-valves					
	200°C	250°C	300°C	350°C	400°C	450°C
15 - 32	71	67	63	60	58	56
40	71	67	63	60	58	56
50	71	67	63	60	58	56
65	71	67	62	60	58	56
80	43	40	37	36	35	33

DN	Sliding unit: STN2							
	max. admissible diff. pressures for GS3-valves							
	200°C	250°C	300°C	350°C	400°C	450°C	500°C	530°C
15 - 32	71	67	63	60	52	46	40	10
40	65	63	43	37	32	29	26	10
50	70	56	46	40	35	31	28	10
65	56	45	37	32	28	25	22	10
80	33	26	22	19	16	14	13	10

GS High Temperature Valve 8023-GS3



Dimensions and weights



without positioner

with electropneumatic positioner

DN	A mm	C mm	Ø D actuator size		L mm	Weight kg actuator size		Stroke mm
			125	250		125	250	
15	64	495	165	222	56	7,5	9,7	6
20	72	500	165	222	56	7,7	9,9	6
25	82	505	165	222	56	8,2	10,4	6
32	89	510	165	222	56	8,5	10,7	6
40	99	515	165	222	56	9	11	6
50	116	525	165	222	64	10,5	13	8
65	138	535	165	222	68	12,5	15	8
80	153	545	165	222	70	13,5	16	8
100	184	555	165	222	75	16,5	19	8,5
125	212	570	165	222	80	19,5	22	8,5
150	242	585	165	222	80	23	25	8,5
200	302	615	165	222	95,5	40	42	8,5

Text and pictures are not binding. We reserve the right to alter the equipment.