

High Temperature Valve 8023-GS3

GS3 series 1/2" up to 8"

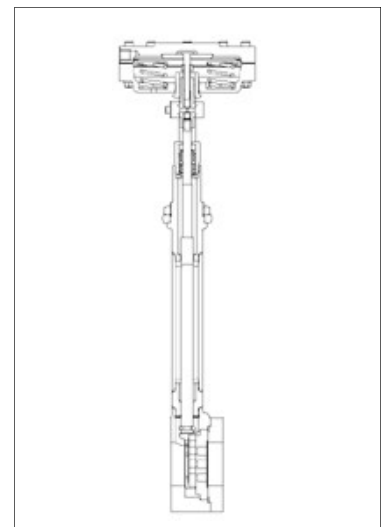


Pneumatic control valve for the control of neutral through to highly aggressive media in process engineering, chemical industries and for plant equipment.

- 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 Cv-values

Technical Information

Body design	ANSI flange wafer (self-aligning)	
Nominal sizes	1/2" up to 8"	
Nominal pressure acc. DIN 2401	580 psi (fits also to 145-365psi)	1/2" - 6"
	1450 psi	1/2" - 3"
	235 psi	8"
Nominal pressure acc. ANSI	ANSI 150	1/2" - 8"
	ANSI 300	1/2" - 6"
	ANSI 600	1/2" - 3"
Supply air pressure	max. 90 psi	
Media temperature	-76°F up to +842°F for function unit carbon-stainless steel	
	-76°F up to +842°F for function unit STN2	
	up to +986°F with bellows from Inconel 625 and function unit STN2	
Ambient temperature	-22°F up to +176°F	
Leakage rate (% of Cv-value)	Carbon, FUY	STN2
	< 0.0001	< 0.001



Materials

Body	Stainless steel 316 Ti
Head section	Stainless steel 316 Ti
Diaphragm housing	Aluminium, KTL coated
Packing	PTFE (Carbon filled), spring SST 301
Actuating stem	Stainless steel 316 Ti, roller burnished
Bellows	Stainless steel 316 Ti
Fixed disc	Stainless steel 316 Ti, Stellite
Sliding disc	Carbon material, FUY (1/2" up to 4"), SIC (1/2", 1", 1 1/2", 2")
Guide ring for sliding disc	Stainless steel 316 Ti

Options

- Bellows (stainless steel)
- Positioner
 - pneumatic
 - electro-pneumatic
 - electro-pneumatic (Ex, intrinsically safe)
- Limit switches
- Position transmitter
- Manual override



High Temperature Valve 8023-GS3



Admissible Pressures

For temperatures exceeding 250°F:
apply operation limits

Disc pair: carbon - stainless steel, coated

Diaphragm area	20 in ²					40 in ²				
Spring range (psi)	3 to 15	15 to 29	22 to 44	26 to 55	30 to 65	3 to 15	12 to 20	17 to 32	20 to 39	25 to 46
Supply air (psi)	17	41	61	75	87	17	30	46	58	67
DN	Maximum pressures					Maximum pressures				
1/2"	65	1450	1450	1450	1450	275	1450	1450	1450	1450
3/4"	55	1450	1450	1450	1450	240	1450	1450	1450	1450
1"	45	1450	1450	1450	1450	200	1450	1450	1450	1450
1 1/4"	40	1450	1450	1450	1450	165	1450	1450	1450	1450
1 1/2"	30	955	1450	1450	1450	125	1450	1450	1450	1450
2"	-	520	825	1015	1220	85	915	1405	1450	1450
2 1/2"	-	420	655	810	970	70	740	1130	1160	1160
3"	-	245	375	480	565	45	435	655	695	695
4"	-	145	230	290	350	-	260	390	480	480
5"	-	95	145	190	220	-	175	260	320	335
6"	-	75	110	130	160	-	125	190	230	230
8"	-	35	65	80	95	-	75	110	130	145
Spring configuration	D	2	3	4	5	D	2	3	4	5

Standard

	Pressure limits DIN and ANSI					
	PN16	PN40	PN100	ANSI 150	ANSI 300	ANSI 600
P max.	235	580	1450	235	580	1160

Disc pair: STN 2

Diaphragm area	20 in ²					40 in ²				
Spring range (psi)	3 to 15,0	15 to 29,0	22 to 44,0	26 to 55,0	30 to 65,0	3 to 15,0	12 to 20,0	17 to 32,0	20 to 39,0	25 to 54,0
Supply air (psi)	17	41	61	75	87	17	30	46	58	67
DN	Maximum pressures					Maximum pressures				
1/2"	45	1450	1450	1450	1450	195	1450	1450	1450	1450
3/4"	35	825	1450	1450	1450	150	1450	1450	1450	1450
1"	25	825	1275	1450	1450	110	1450	1450	1450	1450
1 1/4"	20	550	855	1060	1260	85	955	1450	1450	1450
1 1/2"	15	335	535	655	785	55	595	915	1045	1045
2"	-	190	290	365	435	35	335	510	610	710
2 1/2"	-	145	230	290	350	30	260	405	495	580
3"	-	85	130	160	205	15	145	230	275	335
4"	-	50	80	100	125	-	95	145	175	205
5"	-	35	50	65	80	-	60	95	115	130
6"	-	20	35	50	60	-	45	65	80	95
Spring configuration	D	2	3	4	5	D	2	3	4	5

Standard

	Pressure limits DIN and ANSI					
	PN16	PN40	PN100	ANSI 150	ANSI 300	ANSI 600
P max.	235	580	1450	235	580	1160

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 barg. 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 3 - 15 psi signal.

SCHUBERT SALZER
INC.

8	0	2	3	/					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
V	Q								M												Z			S

Type: [8, 0, 2, 3, /]
 Size: [V, Q]
 Symbol: "V": Valve
 "R": Repair kit (sealings)

6 - 16: Quote only if required.

GS3-Control Valve with pneumatic actuator, 3" , flangeless design acc. ANSI 150, stainless steel 316 Ti, spring to close, actuator diaphragm 20 in², 8 springs, PTFE-V-shaped sealing, function unit carbon-stainless steel 316 Ti coated, flow characteristic linear, i/p-positioner ex-proof

High Temperature Valve 8023-GS3



Pressure - Temperature ratings for GS3 Valves

580 psi (PN 40)

	Sliding unit: carbon - stainless steel, coated					
	maximum pressures for GS3-valves (psi)					
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F
1/2" - 2 1/2"	495	465	450	420	390	365
3"	495	465	450	420	390	365
4"	420	390	365	350	350	335
5"	290	275	260	245	230	230
6"	205	190	175	175	160	160
8" (PN16 only)	205	190	175	160	145	130

	Sliding unit: carbon - STN2							
	maximum pressures for GS3-valves (psi)							
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F	930 °F	990 °F
1/2" - 2 1/2"	495	465	450	420	390	365	220	75
3"	480	375	320	275	230	205	190	75
4"	375	350	290	245	220	190	175	75
5"	245	230	190	160	145	125	115	75
6"	190	160	130	115	100	85	80	75

1450 psi (PN 100)

	Sliding unit: carbon - stainless steel, coated					
	maximum pressures for GS3-valves (psi)					
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F
1/2"	1260	1190	1115	1045	970	930
3/4"	1260	1190	1115	1045	970	930
1"	1260	1190	1115	1045	970	930
1 1/4"	1260	1190	1115	1045	970	930
1 1/2"	1260	1190	1115	1045	970	930
2"	1260	1190	1115	1045	970	930
2 1/2"	1045	970	900	870	840	810
3"	625	580	535	520	510	480

	Sliding unit: carbon - STN2							
	maximum pressures for GS3-valves (psi)							
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F	930 °F	990 °F
1/2"	1260	1190	1115	1045	970	930	535	190
1"	1260	1190	1115	1045	970	930	535	190
1 1/2"	945	770	625	535	465	420	375	190
2"	1015	810	665	580	510	450	405	190
2 1/2"	810	655	535	465	405	365	320	190
3"	480	375	320	275	230	205	190	175

High Temperature Valve 8023-GS3



ANSI #150

	Sliding unit: carbon - stainless steel, coated					
	maximum pressures for GS3-valves (psi)					
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F
1/2" - 5"	190	175	145	115	95	65
6"	190	175	145	115	95	65
8"	190	175	145	115	95	65

	Sliding unit: carbon - STN2							
	maximum pressures for GS3-valves (psi)							
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F	930 °F	990 °F
1/2" - 5"	190	175	145	115	95	65	20	5
6"	190	160	140	115	95	65	20	5

ANSI #300

	Sliding unit: carbon - stainless steel, coated					
	maximum pressures for GS3-valves (psi)					
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F
1/2" - 2 1/2"	510	480	450	435	420	405
3"	510	480	450	435	420	405
4"	420	390	365	350	350	335
5"	290	275	260	245	230	230
6"	205	190	175	175	160	160
8" (PN16 only)	205	190	175	160	145	130

	Sliding unit: carbon - STN2							
	maximum pressures for GS3-valves (psi)							
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F	930 °F	990 °F
1/2" - 2 1/2"	510	465	450	420	390	365	230	75
3"	480	375	320	275	230	205	190	75
4"	375	350	290	245	220	190	175	75
5"	245	230	190	160	145	125	115	75
6"	190	160	130	115	100	85	80	75

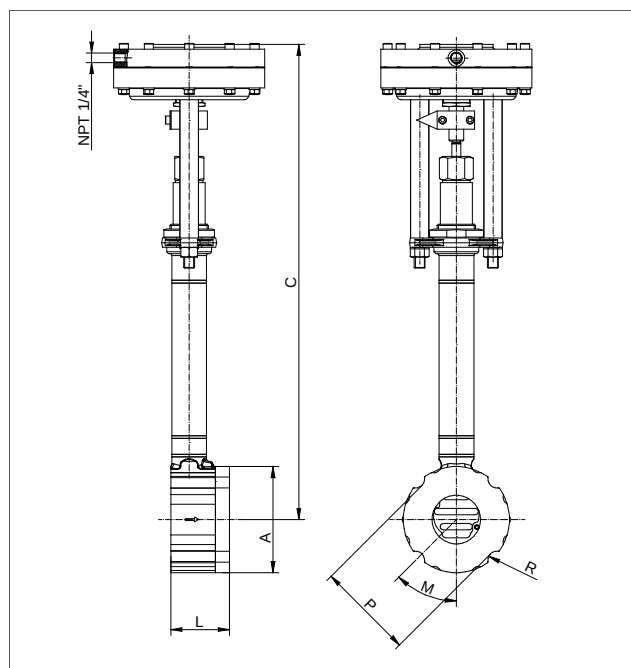
ANSI #600

	Sliding unit: carbon - stainless steel, coated					
	maximum pressures for GS3-valves (psi)					
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F
1/2" - 1 1/4"	1030	955	915	870	840	810
1 1/2"	1030	955	915	870	840	810
2"	1030	955	915	870	840	810
2 1/2"	1030	955	900	870	840	810
3"	625	580	535	520	510	480

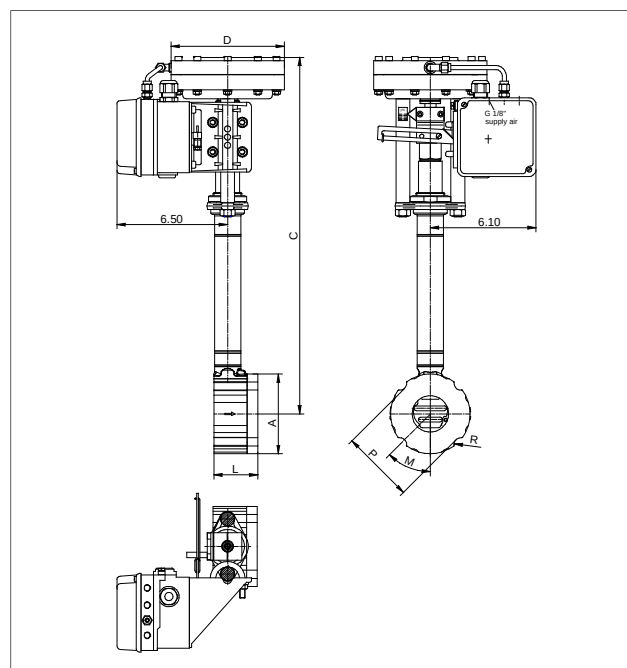
	Sliding unit: carbon - STN2							
	maximum pressures for GS3-valves (psi)							
DN	400 °F	480 °F	570 °F	660 °F	750 °F	840 °F	930 °F	990 °F
1/2" - 1 1/4"	1030	955	915	870	755	665	480	160
1 1/2"	945	770	625	535	465	420	375	160
2"	1015	810	665	580	510	450	405	160
2 1/2"	810	655	535	465	405	365	320	160
3"	480	375	320	275	230	205	190	160

High Temperature Valve 8023-GS3

Dimensions and Weights



without positioner



with electropneumatic positioner

DN	A inch	C inch	Ø D actuator size		L inch	Weight lb actuator size		Stroke inch
			20 in ²	40 in ²		20 in ²	40 in ²	
1/2"	2,50	19,50	6,50	8,75	2,20	16,5	21,3	0,25
3/4"	2,85	19,70	6,50	8,75	2,20	16,9	21,8	0,25
1"	3,25	19,90	6,50	8,75	2,20	18,0	22,9	0,25
1 1/4"	3,50	20,10	6,50	8,75	2,20	18,7	23,5	0,25
1 1/2"	3,90	20,30	6,50	8,75	2,20	19,8	24,2	0,25
2"	4,55	20,65	6,50	8,75	2,50	23,1	28,6	0,30
2 1/2"	5,45	21,05	6,50	8,75	2,70	27,5	33,0	0,30
3"	6,00	21,45	6,50	8,75	2,75	29,7	35,2	0,30
4"	7,25	21,85	6,50	8,75	2,95	36,3	41,8	0,35
5"	8,35	22,45	6,50	8,75	3,15	42,9	48,4	0,35
6"	9,55	23,05	6,50	8,75	3,15	50,6	55,0	0,35
8"	11,90	24,20	6,50	8,75	3,75	88,0	92,4	0,35

Dimensions in inch

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Flow Coefficients - Cv-Values

Ordering code		-	A	1	B	6	2	7	C	3	4	8	5	9
DN	Charact.	100 %	63 %	40 %	25 %	20%	16 %	12 %	10 %	6,3 %	2,5 %	2 %	1 %	0,4%
1/2"	(mod.) linear	4.6	3	2	1.6	-	0.82	0.57	0.51	0.3	0.16	-	0.05	-
	eq. perc.	2	-	1.3	-	-	-	-	-	0.12	-	-	-	-
3/4"	(mod.) lin.	7.4	-	-	-	-	1.16	-	-	-	-	0.15	-	-
	eq. perc.	3.5	-	-	-	-	-	-	-	-	-	-	-	-
1"	(mod.) linear	13	7.4	4.6	-	-	1.9	-	1.08	0.72	-	-	-	0.05
	eq. perc.	5.8	-	2.8	-	1.3	-	-	-	-	-	-	-	-
1 1/4"	(mod.) linear	19	12	-	-	-								
	eq. perc.	9.3	-	-	-	-								
1 1/2"	(mod.) lin.	30	19	13	8.1	-								
	eq. perc.	13	9.9	-	3.2	-								
2"	(mod.) linear	52	32	23	14	12								
	eq. perc.	22	14	-	-	-								
2 1/2"	(mod.) linear	60	41	-	-									
	eq. perc.	35	-	-	9.3									
3"	(mod.) linear	107	67	46										
	eq.perc.	56	41	-										
4"	(mod.) linear	179	110	72										
	eq.perc.	89	56	-										
5"	(mod.) linear	275	-	110										
	eq.perc.	135	-	-										
6"	(mod.) linear	392	246	-										
	eq.perc.	171	104	-										
8"	(mod.) linear	650	408	-										
	eq.perc.	-	-	-										