

Control Valve 8020

GS 3 series DN 15 up to DN 250



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

- Space saving wafer type construction
- Lowest possible weight
- Quiet operation
- Fast response time
- 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 Information

Body design	flangeless, wafer-type construction more versions see on data-sheet 8020-GS1		
Nominal sizes	DN 15 to DN 250		
Nominal pressure acc. DIN 2401 for flanges with facing type B	PN 40 (fits also to PN 10-25)	DN 15 - DN 150	
	PN 100	DN 15 - DN 80	
	PN 16	DN 200 - DN 250	
Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF	ANSI 150	DN 15 - DN 250	
	ANSI 300	DN 15 - DN 150	
	ANSI 600	DN 15 - DN 80	
Nominal pressure acc. JIS for "raiced face" flanges	10K	DN 15 - DN 50	
	20K	DN 15 - DN 40	
Supply air pressure	max. 6 bar		
Media temperature	carbon steel body	-10°C up to +300°C	
	stainless steel body	-60°C up to +350°C (+300°C for SFC)	
Ambient temperature*	standard diaphragm	-30°C up to +100°C	
	silicone diaphragm	-50°C up to +100°C	
Rangeability / characteristic	40 : 1 linear / 80 : 1 equal percentage		
Leakage	Disc pair	Disc pair	Disc pair
	Carbon-stainless steel	SFC	STN 2
	< 0,0001	< 0,0005	< 0,001
	IV-S1	IV-S1	IV
% of Kvs IEC 60534-4 EN 12266-1	D	E	E

* Please consider the limitation of use of the positioner!

Kvs-values see data sheet 8001.



Options

- bellow (stainless steel)
- positione
- pneumatic
- electro-pneumatic
- electro-pneumatic for hazardous location use (EEX ib II C T5/T6)
- limit switches
- position feedback
- manual handwheel

actuator with 125 cm² or 250 cm² diaphragm area

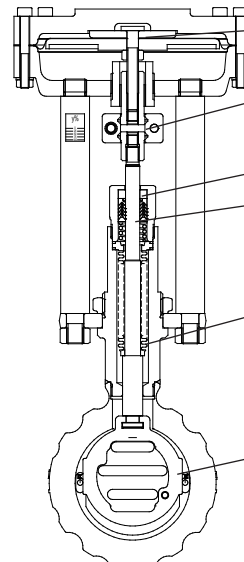
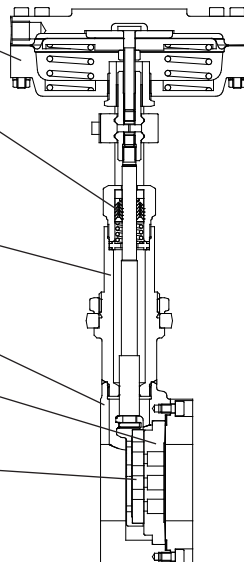
PTFE-packing (self-adjusting)

head section

wafer-type body

fixed valve plate

sliding disc (both safety positions obtainable by inverting the disc 180°)



diaphragm

coupling with stroke indicator

guide sleeve

stem, roller burnished

stainless steel bellows (opt.)

coupling ring for disc

Admissible Differential Pressures (For temperatures of up to 120°C)

**For temperatures of 120°C and above:
obey application limits !**

**Disc pair: carbon - stainless steel coated
SFC - stainless steel coated**

Actuator size	125 cm ²					250 cm 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	4,4	100	100	100	100	18,9	100	100	100	100
20	3,8	100	100	100	100	16,4	100	100	100	100
25	3,2	100	100	100	100	13,7	100	100	100	100
32	2,6	100	100	100	100	11,3	100	100	100	100
40	2	66	100	100	100	8,5	100	100	100	100
50	-	36	57	70	84	5,8	63	97	100	100
65	-	29	45	56	67	4,9	51	78	80	80
80	-	17	26	33	39	3,1	30	45	48	48
100	-	10	16	20	24	-	18	27	33	33
125	-	6,5	10	13	15	-	12	18	22	23
150	-	5	7,5	9	11	-	8,5	13	16	16
200	-	2,5	4,5	5,5	6,5	-	5	7,5	9	10
250	-	1,8	2,8	3,4	4,1	-	2,2	4,7	5,7	6,7
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

Disc pair: STN 2

Actuator size	125 cm ²					250 cm 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 3,7
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	3,1	100	100	100	100	13,4	100	100	100	100
20	2,4	57	100	100	100	10,3	100	100	100	100
25	1,8	57	88	100	100	7,7	100	100	100	100
32	1,3	38	59	73	87	5,7	66	100	100	100
40	0,9	23	37	45	54	3,9	41	63	72	72
50	-	13	20	25	30	2,4	23	35	42	49
65	-	10	16	20	24	2,0	18	28	34	40
80	-	6	9	11	14	1,2	10	16	19	23
100	-	3,5	5,5	7	8,5	-	6,5	10	12	14
125	-	2,5	3,5	4,5	5,5	-	4	6,5	8	9
150	-	1,5	2,5	3,5	4	-	3	4,5	5,5	6,5
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

The supply air pressure stated in the table is the minimum supply air pressure that has to be available. This is valid for the usage without positioner. For the usage with positioner the required supply air pressure is being determined by the adjustment of the positioner. For the standard version it is 4 bar ü. The spring configuration "D" allows the usage of a control valve without positioner but with limited performance. The valve can be controlled directly by a process controller with the norm signal of 0,2 up to 1 bar.

Application limitations for GS3 valves in stainless steel

These pressure must not be exceeded for GS-valves from the GS3-series made of stainless steel, even though the actuator power might allow it.

PN 40

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible diff. pressures for GS3-valves					
	100°C	150°C	200°C	250°C	300°C	350°C
15 - 65	40	38	34	32	31	29
80	40	38	34	32	31	29
100	33	31	29	27	25	24
125	23	21	20	19	18	17
150	16	15	14	13	12	12
200 (PN16 only)	16	15	14	13	12	11,0
250 (PN16 only)	10,5	10	9,5	8,4	7,4	6,9

100°C	150°C	200°C	250°C	300°C	350°C
40	38	34	32	31	29
36	34	33	26	22	19
33	31	26	24	20	17
22	21	17	16	13	11
16	15	13	11	9	8
-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

PN 100

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves					
	100°C	150°C	200°C	250°C	300°C	350°C
15	100	95	87	82	77	72
20	100	95	87	82	77	72
25	100	95	87	82	77	72
32	100	95	87	82	77	72
40	100	95	87	82	77	72
50	100	95	87	82	77	72
65	80	76	72	67	62	60
80	48	45	43	40	37	36

100°C	150°C	200°C	250°C	300°C	350°C
100	95	87	82	77	72
100	95	87	82	77	72
100	95	87	82	77	72
100	95	87	82	69	60
72	69	65	53	43	37
77	73	70	56	46	40
62	59	56	45	37	32
36	34	33	26	22	19

Limitation for SFC-sliding discs: 300°C

ANSI #150

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible diff. pressures for GS3-valves					
	100°C	150°C	200°C	250°C	300°C	350°C
15 - 125	16	15	13	12	10	8
150	16	15	13	12	10	8
200	16	15	13	12	10	8
250	10,5	10	9,5	8,4	7,4	6,9

100°C	150°C	200°C	250°C	300°C	350°C
16	15	13	12	10	8
16	15	13	11	9,5	8
-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

ANSI #300

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures in bar for GS3-valves					
	100°C	150°C	200°C	250°C	300°C	350°C
15 - 65	40	38	35	33	31	30
80	40	38	35	33	31	30
100	33	31	29	27	25	24
125	23	21	20	19	18	17
150	16	15	14	13	12	12

100°C	150°C	200°C	250°C	300°C	350°C
40	38	35	32	31	29
36	34	33	26	22	19
33	31	26	24	20	17
22	21	17	16	13	11
16	15	13	11	9	8

Limitation for SFC-sliding discs: 300°C

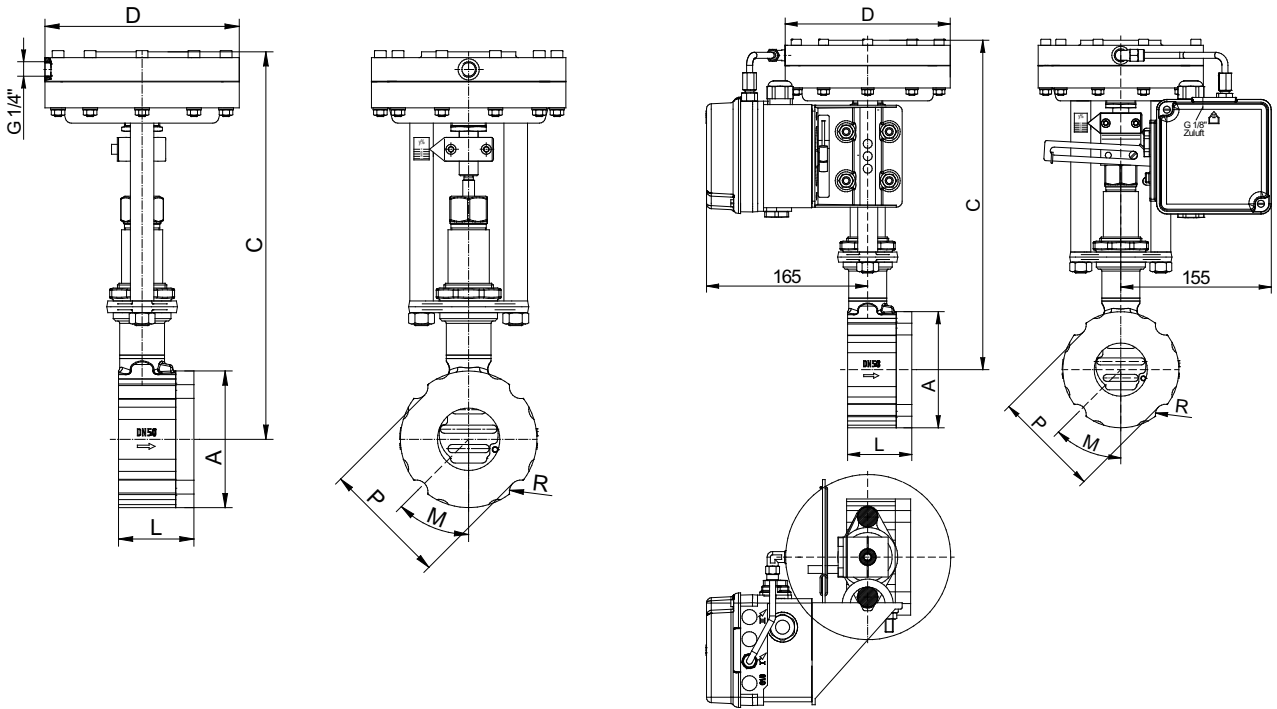
ANSI #600

DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves					
	100°C	150°C	200°C	250°C	300°C	350°C
15 - 32	80	77	71	66	63	60
40	80	77	71	66	63	60
50	80	77	71	66	63	60
65	80	76	71	66	62	60
80	48	45	43	40	37	36

100°C	150°C	200°C	250°C	300°C	350°C
80	77	71	66	63	60
72	69	65	53	43	37
77	73	70	56	46	40
62	59	56	45	37	32
36	34	33	26	22	19

Limitation for SFC-sliding discs: 300°C

Dimensions and Weights



with electro-pneumatic positioner

DN	A mm	C mm	Ø D actuator size		L mm	Weight kg actuator size		Stroke mm
			125	250		125	250	
15	64	305	165	222	56	6,5	8,7	6
20	72	310	165	222	56	6,7	8,9	6
25	82	315	165	222	56	7,2	9,4	6
32	89	320	165	222	56	7,5	9,7	6
40	99	325	165	222	56	8	10	6
50	116	335	165	222	64	9,5	12	8
65	138	345	165	222	68	11,5	14	8
80	153	355	165	222	70	12,5	15	8
100	184	365	165	222	75	15,5	18	8,5
125	212	380	165	222	80	18,5	21	8,5
150	242	395	165	222	80	22	24	8,5
200	302	425	165	222	93	39	41	8,5
250	360	450	165	222	96	44,5	46,5	8,5

Dimensions in mm