

Control Valve 8020

GS 1 series DN 15 up to DN 150



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 dimensions acc. DIN-EN 558-1 series 20 for flanges acc. DIN EN 1092-1 form B more versions see on data-sheet 8020-GS3		
Nominal sizes	DN 15 to DN 150		
Nominal pressure	PN 40, DIN 2401 also for flanges PN 10 to PN 25		
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 (% of Kvs)	disc pair carbon-stainless steel coated < 0,0001	disc pair SFC < 0,0005	disc pair STN 2 < 0,001

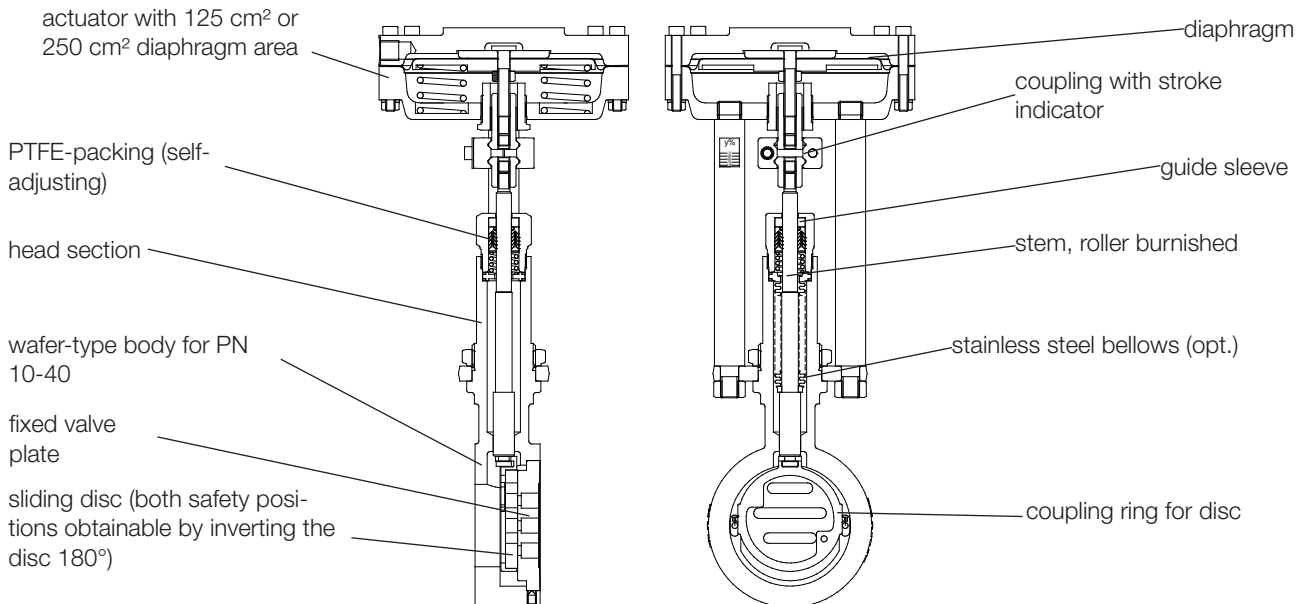
* Please consider the limitation of use of the positioner!

Kvs-values see data-sheet 8001



Options

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



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

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

Disc pair: carbon - stainless steel
SFC - stainless steel

Diaphragm area	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	4,0	4,6
DN	Admissible differential pressures in bar (see pressure diagram for GS-Valves)									
15	4,4	40	40	40	40	18,9	40	40	40	40
20	3,8	40	40	40	40	16,4	40	40	40	40
25	3,2	40	40	40	40	13,7	40	40	40	40
32	2,6	40	40	40	40	11,3	40	40	40	40
40	2,0	40	40	40	40	8,5	40	40	40	40
50	-	36	40	40	40	5,8	40	40	40	40
65	-	29	40	40	40	4,9	40	40	40	40
80	-	17	26	33	39	3,1	30	40	40	40
100	-	10	16	20	24	-	18	25	25	25
125	-	6,5	10	13	15	-	12	16	16	16
150	-	5	7,5	9	11	-	8,5	13	16	16
Springconfiguration	D	2	3	4	5	D	2	3	4	5

Standard

Disc pair: STN 2

Diaphragm area	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	4,0	4,6
DN	Admissible differential pressures in bar (see pressure diagram for GS-Valves)									
15	3,1	40	40	40	40	13,4	40	40	40	40
20	2,4	40	40	40	40	10,3	40	40	40	40
25	1,8	40	40	40	40	7,7	40	40	40	40
32	1,3	38	40	40	40	5,7	40	40	40	40
40	0,9	23	27	27	27	3,9	27	27	27	27
50	-	13	20	25	30	2,4	23	35	40	40
65	-	10	16	20	24	2,0	18	28	34	38
80	-	6	9	11	14	1,2	10	16	19	22
100	-	3,5	5,5	7	8,5	-	6,5	10	12	13
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

The quoted pilot pressure must be available as a minimum value for use without a positioner. If a positioner is applied the pilot pressure is determined by the adjustment of the positioner. The standard adjustment value is 4 bar gauge. The spring configuration D enables the use of the control valve without positioner in line with a restricted control capacity. In this case the valve can be driven by a controller with a standard signal of 0.2 to 1.0 bar.

Applications limits for GS1-Valves made of stainless steel

PN 40

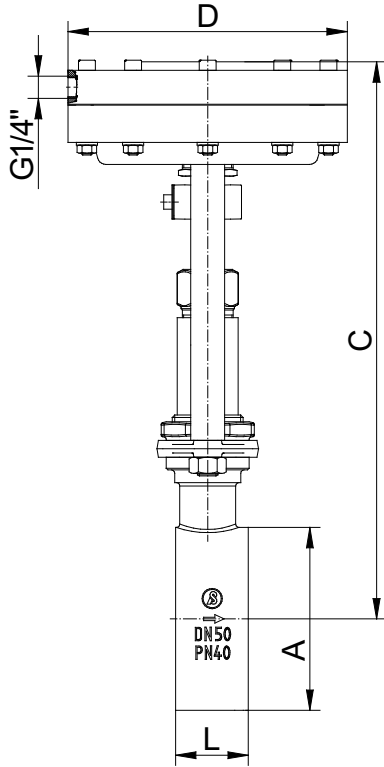
DN	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS1-valves						Sliding unit: carbon - STN2 max. admissible pressures for GS1-valves					
	100°C	150°C	200°C	250°C	300°C	350°C	100°C	150°C	200°C	250°C	300°C	350°C
15 - 25	40	38	34	33	31	29	40	38	34	33	31	29
32	40	38	34	33	31	29	40	38	34	31	25	22
40	40	38	34	33	31	29	27	25	24	19	16	14
50	40	38	34	33	31	29	40	38	34	33	28	24
65	40	38	34	33	31	29	37	35	33	27	22	19
80	40	38	34	31	26	23	22	21	20	16	13	11
100	24	23	22	19	16	14	13	12	12	10	8,0	7,0
125	16	15	14	12	10	9,0	8,8	8,4	8,0	6,5	5,3	4,6
150	16	15	14	13	12	12	11	10	9,8	7,9	6,5	5,6

Limitation for valves in carbon steel and SFC-sliding discs: 300°C

Materials

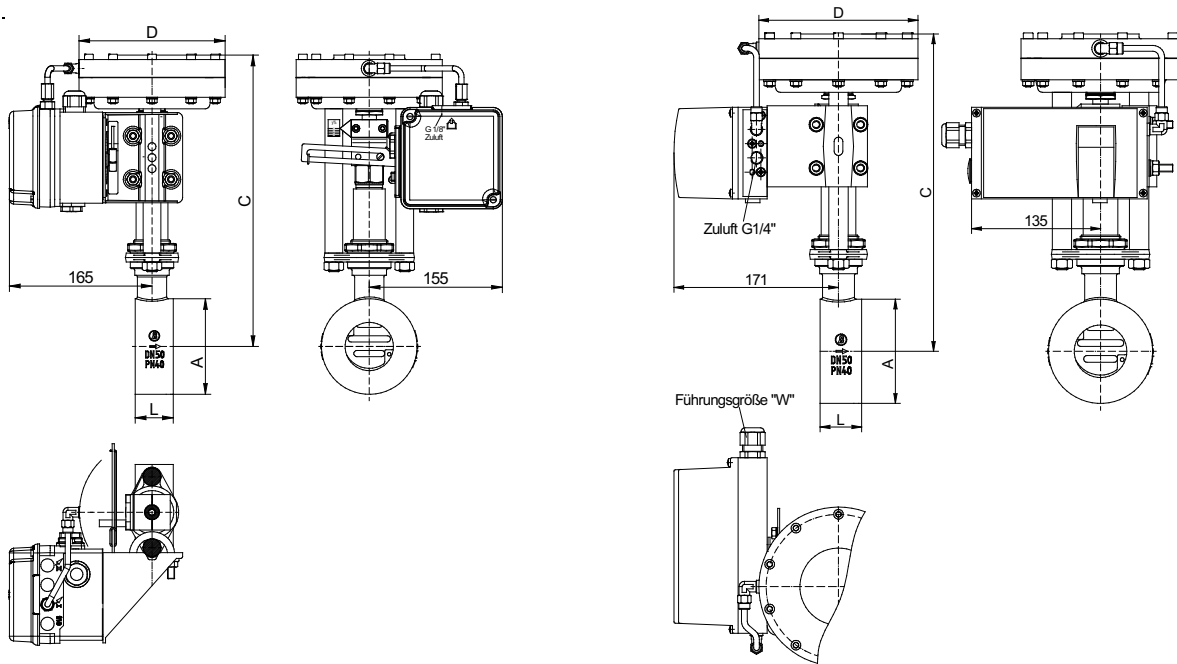
Body	Carbon steel 1.0570 /1.0619	Stainless steel 1.4571 /1.4581
Head section	Carbon steel 1.0570 /1.0619	Stainless steel 1.4571 /1.4581
Diaphragm housing	Aluminium KTL coated	
Packing	PTFE (Carbon filled), spring 1.4310	
Actuating stem	Stainless steel 1.4571, roller burnished	
Bellows	Stainless steel 1.4571	
Fixed disc	Stainless steel 1.4571, coated	STN2-disc
Sliding disc	Special carbon material or SFC	STN2-disc
Coupling ring	Stainless steel 1.4571	

Dimensions and Weights



DN	A mm	C mm	Ø D for actuator		L mm	Weight (Kg) for actuator		Stroke mm
			125	250		125	250	
15	53	305	165	222	33	5,9	8,1	6
20	62	310	165	222	33	6	8,2	6
25	72	315	165	222	33	6,2	8,4	6
32	82	320	165	222	33	6,5	8,7	6
40	92	325	165	222	33	6,7	8,9	6
50	108	335	165	222	43	7,9	10,1	8
65	127	345	165	222	46	8,7	10,9	8
80	142	355	165	222	46	9,3	11,5	8
100	164	365	165	222	52	10,5	12,7	8,5
125	194	380	165	222	56	12,7	14,9	8,5
150	219	395	165	222	56	14,2	16,4	8,5

Dimensions in mm



with pneumatic positioner

with electropneumatic positioner