

## 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

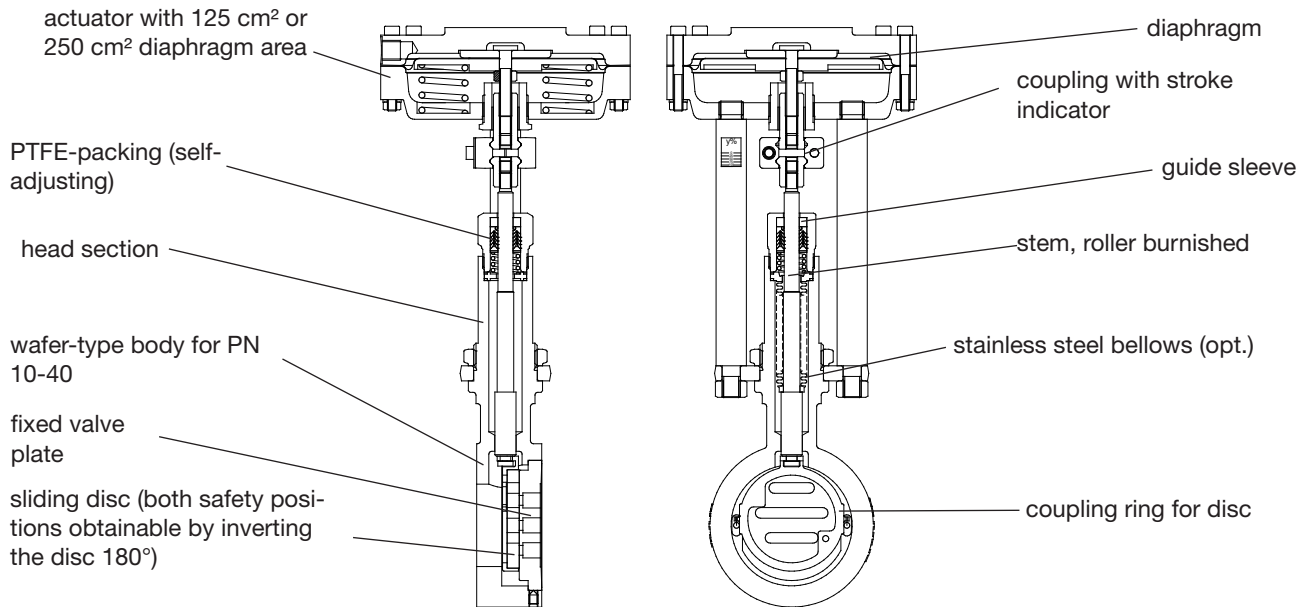


### Technical Information

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 8011-GS3		
Nominal sizes	DN 15 to DN 125		
Nominal pressure	PN 40 acc. DIN 2401 also for flanges PN 10 to PN 25		
Pressure range	0,5 up to 10 bar (see table)		
Media temperature	-60°C up to +230°C at special versions up to +300°C		
Max. ambient temperature	+80°C		
Max. working temperatures for the actuator	Diaphragm material CR: , -20°C up to + 80°C EPDM: , -30°C up to +130°C EPDM (FDA): , -30°C up to +130°C FKM: , -15°C up to +150°C		
Leakage	Disc pair Carbon-stainless steel	Disc pair SFC	Disc pair STN 2
% of Kvs	< 0,0001	< 0,0005	< 0,001
IEC 60534-4	IV-S1	IV-S1	IV
EN 12266-1	E	F	F
Packing leakage	tested according to TA-Luft as defined in DIN EN ISO 15848-1 and VDI 2440		

\* Please consider the limitation of use of the positioner!

\*\* With DN15 with reduction of less than 25%, different leakage rates possible.  
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 <sup>2</sup>					250 cm <sup>2</sup>				
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 <sup>2</sup>					250 cm <sup>2</sup>				
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

### 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	36	31	28	26	24	40	36	31	28	26	24
32	40	36	31	28	26	24	40	36	31	28	25	22
40	40	36	31	28	26	24	26	25	24	19	16	14
50	40	36	31	28	26	24	40	36	31	28	26	24
65	40	36	31	28	26	24	37	35	31	27	22	19
80	40	36	31	28	26	24	22	20	19	16	13	11
100	24	23	22	19	17	16	13	12	12	9	8	6
125	16	15	14	13	11	10	8	8	7	6	5	4
150	16	16	16	16	14	13	10	10	9	7	6	5

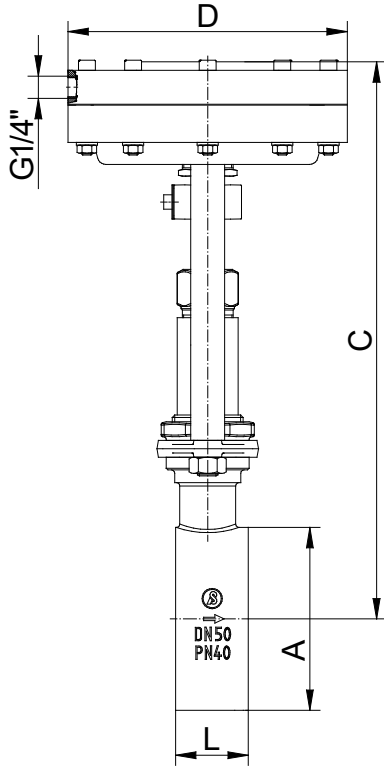
Limitation for SFC-sliding discs: 300°C

## Materials

Body	Carbon steel 1.0619	Stainless steel 1.4408
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	

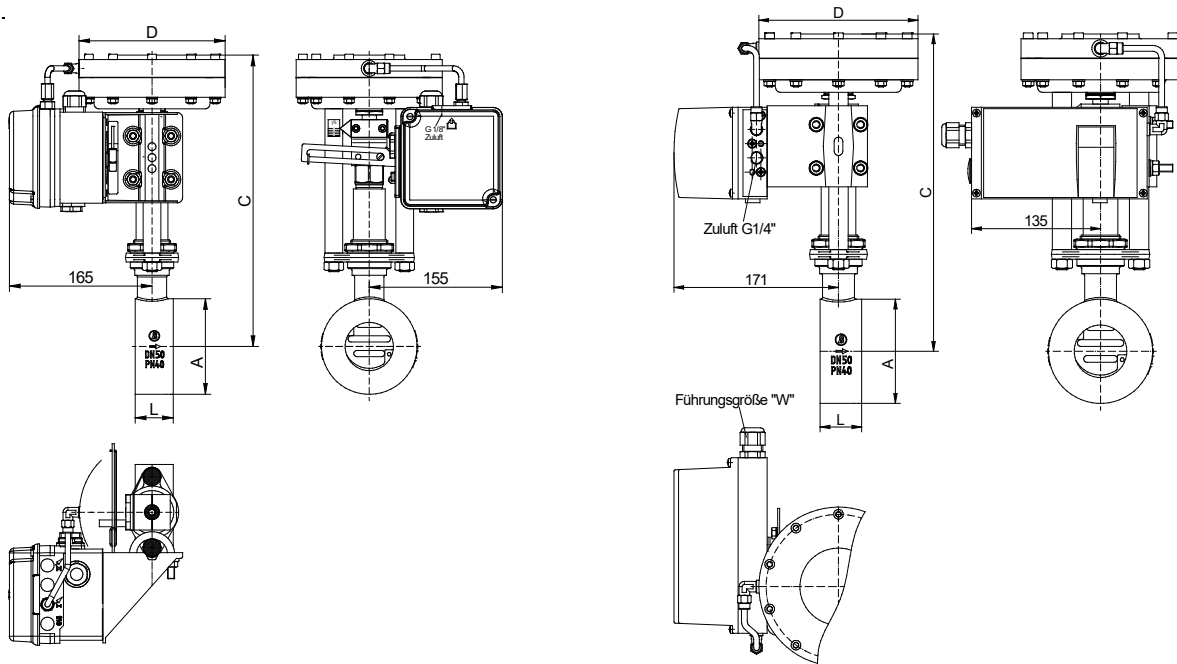


## Dimensions and Weights



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