

# Motor Valve 8036

## GS 3 series, 1/2" up to 10"

**Motor valve for 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 (especially in larger sizes)
- Low operation noise level (quiet operation)
- Control of high differential pressures with small actuators
- Fast response time

### Technical Information

Design	ANSI flange wafer (self-aligning)		
Nominal size	1/2" up to 10"		
Nominal pressure acc. DIN 2401 for flanges with facing type B	580 psi (fits also to 145-365 psi)	1/2" - 6"	
	1450 psi	1/2" - 3"	
	230 psi	8" - 10"	
Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF	ANSI 150	1/2" - 10"	
	ANSI 300	1/2" - 6"	
	ANSI 600	1/2" - 3"	
Nominal pressure acc. JIS for „raised face“ flanges	10K	1/2" - 2"	
	20K	1/2" - 1 1/2"	
Media temperature	Versions from -76°F up to +660°F		
Rangeability	30 : 1		
Leakage (% of Cv)	Carbon, FUY	SFC	STN 2
	< 0,0001	< 0,0005	< 0,001
Packing leakage	tested according to TA-Luft as defined in DIN EN ISO 15848-1 and VDI 2440		



Cvs-values see data sheet 8001.

### Fluid temperature

Rating	PN40	PN 16	PN 100	ANSI 150	ANSI 300	ANSI 600
<b>Body material cpl. stainless steel</b>						
Tmin [°F]	-76	-76	-76	-20	-20	-20
Tmax [°F]	662	662	662	662	662	662
<b>Body material cpl. carbon steel</b>						
Tmin [°F]	-76	-76	14	-4	-4	14
Tmax [°F]	572	572	572	572	572	572
<b>Body material carbon steel with stainless steel body cover</b>						
Tmin [°F]	-76	-76	14	-4	-4	-4
Tmax [°F]	662	662	662	662	662	662

### Materials

Body	Stainless steel 316 Ti /318	Carbon steel ASTM A572, A216
Head section	Stainless steel 316 Ti /318	
Packing	PTFE (carbon filled), spring SST 301	
Actuating stem	Stainless steel, roller burnished	
Bellow	Stainless steel 316 Ti	
Fixed disc	stainless steel 1.4571, plated	STN2-disc
Sliding disc	carbon material	SFC-disc STN2-disc
Coupling ring for discs	Stainless steel 318	

## Actuator with Position Electronic

### Technical Information

Driving force	510 lbf
Type of duty (according IEC-34)	S2 30min S4 - 1200 c/h 50% ED
Power connections	24 V DC
	24 V AC
	110/120 V AC 230 V AC
Ambient temperature	-5°F up to +140°F
Mounting position	choice horizontal or vertical actuator only
Protection class (DIN 60529)	IP 65
max. Power consumption	30 Watt
Set point range	adjustable 0 - 20 mA, 0 - 10 V
Feed back	adjustable 0 - 20 mA, 0 - 10 V
Self Monitoring	torque, set point, temperature
Diagnostic function	storage of motor and total service life, number of motor starts, etc.
Valve adaptation	automatic stroke adjustment to suit valve limits

### Stroking Time (sec.)

Size	Stroking speed for the complete stroke		
	0,02 inch/s (50%)	0,03 inch/s (75%)	0,04 inch/s (100%)
1/2" - 1 1/2"	13,9	9,3	6,9
2" - 3"	18,4	12,3	9,2
4" - 10"	19,5	13,1	9,7

= Standard

### Options

2 additional stroke limit switches	free adjustable volt free contacts (open/close)
Heater	anti condensation heater
Process controller	PI - process controller integrated in the actuator
Fair Safe Protection	via battery pack
	open or closed
Local control	mounted on the actuator
Communication software	by use of data care to configure actuator

### Admissible Pressures

(For temperatures of up to 100°F for ANSI-classes and up to 250°F for PN-classes)

For temperatures exceeding 100°F (ANSI) or 250°F (PN): consider operation limits

Size	max. pressure (psi)			
	carbon/SFC - stainless steel coated control	carbon/SFC - stainless steel coated on - off	STN2 control	STN2 on - off
1/2"	1480	1480	1480	1480
3/4"	1480	1480	1480	1480
1"	1276 (1480)*	1276 (1480)*	1276	1276 (1480)*
1 1/4"	1480	1480	950	1480
1 1/2"	1276 (1411)*	1276 (1450)*	655	1055
2"	925	1450	390	780
2 1/2"	780	1160	320	640
3"	495	695	195	385
4"	315	480	120	240
5"	215	335	80	160
6"	160	230	60	120
8"	95	185	-	-
10"	60	115	-	-

\*: figures in brackets for bodys made of carbon steel

	Pressure limits ANSI and DIN in psi					
	ANSI150	ANSI 300	ANSI 600	PN16	PN40	PN100
P max. carbon steel	284	741	1480	232	580	1450
P max. stainless steel	276	719	1440			

## Actuator without Position Electronic (function: open/close or 3-step-drive)

### Technical Information

Driving force	220 lbf, 450 lbf, 990 lbf
Type of duty (according VDE 0530)	S2 30min S4 - 1200 c/h 50%ED
Power connections	24 V AC 110/120V AC 230 V AC
Ambient temperature	-5°F bis +175°F (S2) / -5°F bis +140°F (S4)
Mounting position	free of choice, but motor not top-down
Protection class (EN 60529)	IP 65
max. Power consumption	220lbf: 26W, 450lbf: 30W, 990lbf: 47 W
Actuator protection	torque switch

### Options

2 additional stroke limit switches	free adjustable volt free contacts (open/close)
Heater	anti condensation heater
Feed back 4-20 mA	in 2-wire or 3-wire design
Local control	mounted key pad on actuator

### Stroking Time (sec.)

Size	Stroking speed for the complete stroke		
	220 lbf	450 lbf	990 lbf
1/2" - 1 1/2"	25	25	12,5
2" - 3"	33	33	16,5
4" - 10"	35	35	17,5

(other regulating speeds on request)

### Admissible Pressures (For temperatures of up to 100°F for ANSI-classes and up to 250°F for PN-classes)

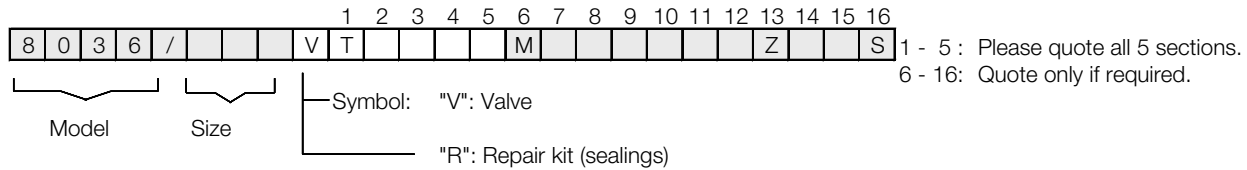
**For temperatures exceeding 100°F  
(ANSI) or 250°F (PN):  
consider operation limits**

Size	max. pressure (psi)					
	carbon/SFC - stainless steel coated			STN2		
	220 lbf	450 lbf	990 lbf	220 lbf	450 lbf	990 lbf
1/2"	1280	1480	1480	910	1480	1480
3/4"	1110	1480	1480	700	1480	1480
1"	930	1276 (1480)*	1276 (1480)*	525	1105	1276 (1480)*
1 1/4"	765	1480	1480	390	820	1480
1 1/2"	575	1220	1276 (1450)*	265	565	1055
2"	380	800	1450	160	335	780
2 1/2"	320	675	1160	130	275	640
3"	205	430	695	80	165	385
4"	130	275	480	50	105	240
5"	90	185	335	35	70	160
6"	65	140	230	25	50	120
8"	40	80	185	-	-	-
10"	25	50	115	-	-	-

\*: figures in brackets for bodys made of carbon steel

	Pressure limits ANSI and DIN in psi					
	ANSI150	ANSI 300	ANSI 600	PN16	PN40	PN100
P max. carbon steel	284	741	1480	232	580	1450
P max. stainless steel	276	719	1440			

## Ordering Number System



1. Function	2. Body design	3. Body material	4. Security position	5. Actuator	6. Special versions	7. Motor voltages	8. Stem sealing
T GS-motor valve (type 8036)	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, 145-580 psi H GS3 - flangeless design acc. DIN, 1450 psi	0 carbon-steel ASTM A572 ASTM A216 1 stainless steel 316 Ti / 318	- without 1 Safety position closed in the case of power failure 2 Safety position open at power failure	R 510 lbf, position-electronic, IP65 450 lbf, IP65 (On - Off) 2 990 lbf, IP65 (On - Off) 4 220 lbf, IP65 (On - Off)	M to state, if some sections 7-16 are quoted	- 230V 50/60 Hz (Standard) 1 24V 50/60 Hz 3 24V DC (only with 510 lbf) 4 115V 50/60 Hz	- PTFE-V-shaped seal, self-adjusting (Standard) 1 additional stainless steel bellow 316 Ti (max. 479 psi pressure)

9. Sliding disc	10. Fixed disc	11. Cvs-values	12 Seat characteristics	13. Accessories	14. Input signal	15. Limit switches	16. Special versions
- Carbon material 9 STN2/STN3 S SFC	- stainless steel/stellite 1 STN2 (only in combination with the position "9" STN2-disc) 3 STN3 (only in combination with the position "9" STN3-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 % 6 red. to 20 % 7 red. to 12 % 8 red. to 2 % 9 red. to 0,4 %	- linear 1 equal percentage	Z to state, if in sections 14 and 15 accessories are quoted	- Standard with electronic positioner 4-20 mA 3 0-10 V 4 2-10 V	- without 2 2 limit switches	S Other special versions have to be quoted in letters

17. Stroking time	18. Special treatment	19. Positioner
- Standard 1 0,04 inch/sec 510 lbf) 2 0,02 inch/sec 510 lbf)	-	- Standard (for controlling as input signal) 2 feed back 4-20 mA, 2 wire for open/close

Ordering example:                      8036/100VTE11RM- - - - - Z-2  
 GS3-control valve with motor actuator, size 4", ANSI 150, stainless steel, safety position closed, actuator 510 lbf, 230 V 50/60 Hz, PTFE-packing, discs: carbon - stainless steel coated, seat characteristics linear, 2 limit switches

## 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.

### ANSI150

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in stainless steel								max. admissible pressures for GS3-valves in stainless steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 5"	275,0	265,0	235,0	215,0	200,0	175,0	150,0	120,0	275,0	265,0	235,0	215,0	200,0	175,0	150,0	120,0
6"	230,0	230,0	230,0	215,0	200,0	175,0	150,0	120,0	235,0	235,0	235,0	215,0	200,0	170,0	140,0	120,0
8"	230,0	230,0	230,0	215,0	200,0	175,0	150,0	120,0	-	-	-	-	-	-	-	-
10"	150,0	150,0	150,0	145,0	135,0	120,0	105,0	100,0	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

### ANSI300

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in stainless steel								max. admissible pressures for GS3-valves in stainless steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 2 1/2"	720,0	695,0	610,0	560,0	520,0	485,0	460,0	440,0	720,0	695,0	610,0	560,0	520,0	485,0	460,0	440,0
3"	695,0	695,0	610,0	560,0	520,0	485,0	460,0	440,0	530,0	530,0	530,0	505,0	480,0	390,0	320,0	275,0
4"	480,0	480,0	480,0	480,0	480,0	480,0	460,0	440,0	480,0	480,0	480,0	460,0	435,0	355,0	290,0	250,0
5"	335,0	335,0	335,0	335,0	335,0	335,0	335,0	335,0	320,0	320,0	320,0	305,0	290,0	235,0	190,0	165,0
6"	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	225,0	210,0	170,0	140,0	120,0

Limitation for SFC-sliding discs: 570°F

### ANSI600

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in stainless steel								max. admissible pressures for GS3-valves in stainless steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 3/4"	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	880,0	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	880,0
1"	1275,0	1275,0	1225,0	1115,0	1015,0	925,0	830,0	785,0	1275,0	1275,0	1225,0	1115,0	1015,0	925,0	830,0	785,0
1 1/4"	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	880,0	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	875,0
1 1/2"	1275,0	1275,0	1225,0	1115,0	1015,0	925,0	830,0	785,0	1050,0	1050,0	1050,0	1000,0	950,0	770,0	630,0	545,0
2"	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	880,0	1125,0	1125,0	1125,0	1070,0	1020,0	825,0	675,0	585,0
2 1/2"	1160,0	1160,0	1160,0	1115,0	1035,0	970,0	915,0	880,0	905,0	905,0	605,0	865,0	820,0	665,0	545,0	470,0
3"	695,0	695,0	695,0	695,0	695,0	695,0	695,0	645,0	530,0	530,0	530,0	505,0	480,0	390,0	320,0	275,0

Limitation for SFC-sliding discs: 570°F

### PN40

Size	Sliding unit: carbon/SFC - stainless steel, coated							Paarung: STN 2					
	maximum pressures for GS3-valves in stainless steel							maximum pressures for GS3-valves in stainless steel					
	210°F	300°F	390°F	480°F	570°F	660°F	210°F	300°F	390°F	480°F	570°F	660°F	
1/2"-1 1/4"	580	580	580	580	580	580	580	580	580	580	580	580	
1 1/2"	580	580	580	580	580	580	580	580	580	580	580	535	
2"	580	580	580	580	580	580	580	580	580	580	580	580	
2 1/2"	580	580	580	580	580	580	580	580	580	580	535	465	
3"	580	580	580	580	580	580	520	495	480	375	320	275	
4"	480	480	480	480	480	480	465	450	435	350	290	245	
5"	335	335	335	335	335	335	305	305	275	230	190	160	
6"	230	230	230	230	230	230	220	220	205	160	130	115	
8" (only PN16)	230	230	220	190	175	160	-	-	-	-	-	-	
10" (only PN16)	145	130	130	115	100	85	-	-	-	-	-	-	

Limitation for SFC-sliding discs: 570°F

### PN100

Size	Sliding unit: carbon/SFC - stainless steel, coated							Paarung: STN 2					
	maximum pressures for GS3-valves in stainless steel							maximum pressures for GS3-valves in stainless steel					
	210°F	300°F	390°F	480°F	570°F	660°F	210°F	300°F	390°F	480°F	570°F	660°F	
1/2"	1450	1450	1450	1350	1220	1145	1450	1450	1450	1350	1220	1145	
3/4"	1450	1450	1290	1175	1060	985	1450	1450	1290	1175	1060	985	
1"	1275	1175	1015	915	825	785	1275	1175	1015	915	825	785	
1 1/4"	1450	1350	1160	1060	945	900	1450	1350	1160	1060	945	870	
1 1/2"	1275	1175	1015	915	825	785	1045	1000	945	770	625	535	
2"	1450	1450	1450	1450	1450	1365	1115	1060	1015	810	665	580	
2 1/2"	1160	1160	1160	1145	1030	970	900	855	810	655	535	465	
3"	695	695	695	695	695	640	520	495	480	375	320	275	

Limitation for SFC-sliding discs: 570°F

## Application limitations for GS3 valves in carbon steel

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

### ANSI150

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in carbon steel								max. admissible pressures for GS3-valves in carbon steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-5"	285	280	255	230	200	175	150	120	285	280	255	230	200	175	150	120
6"	230	230	230	230	200	175	150	120	235	235	235	225	200	170	140	115
8"	230	230	230	230	200	175	150	120	-	-	-	-	-	-	-	-
10"	150	150	150	145	135	120	105	87	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

### ANSI300

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in carbon steel								max. admissible pressures for GS3-valves in carbon steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-2"	740	725	675	655	635	610	285	580	740	725	675	655	635	610	285	545
2 1/2"	740	725	675	655	635	610	285	580	605	605	605	575	545	485	285	470
3"	695	695	675	655	635	610	285	580	530	530	530	505	480	390	285	275
4"	480	480	480	480	480	480	285	475	480	480	480	460	435	355	285	245
5"	335	335	335	335	335	335	285	330	320	320	320	305	290	235	190	155
6"	230	230	230	230	230	230	230	230	230	230	230	225	210	170	140	115

Limitation for SFC-sliding discs: 570°F

### ANSI600

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in carbon steel								max. admissible pressures for GS3-valves in carbon steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-1"	1480	1455	1350	1310	1270	1215	1155	1085	1480	1455	1350	1310	1270	1215	1155	1085
1 1/4"	1480	1455	1350	1310	1270	1215	1155	1085	1480	1455	1350	1310	1270	1215	1010	870
1 1/2"	1450	1450	1350	1310	1270	1215	1155	1085	1050	1050	1050	1000	950	770	630	535
2"	1450	1450	1350	1310	1270	1215	1155	1085	1125	1125	1125	1070	1020	825	675	580
2 1/2"	1160	1160	1160	1160	1160	1160	1155	1085	905	905	905	865	820	665	545	460
3"	695	695	695	695	695	695	695	635	530	530	530	535	480	390	320	275

Limitation for SFC-sliding discs: 570°F

### PN40

Size	Sliding unit: carbon/SFC - stainless steel, coated							Sliding unit: STN2					
	max. admissible pressures for GS3-valves in carbon steel							max. admissible pressures for GS3-valves in carbon steel					
	210°F	300°F	390°F	480°F	570°F	660°F	210°F	300°F	390°F	480°F	570°F	660°F	
1/2" - 2"	580	580	580	580	580	580	580	580	580	580	580	580	
2 1/2"	580	580	580	580	580	580	580	580	580	580	535	460	
3"	580	580	580	580	580	580	520	495	480	375	320	275	
4"	480	480	480	480	480	475	480	450	435	350	290	245	
5"	335	335	335	335	335	330	320	305	275	230	190	155	
6"	230	230	230	230	230	230	230	220	205	160	130	115	
8" (only 235 psi)	230	230	220	190	175	155	-	-	-	-	-	-	
10" (only 235 psi)	145	130	130	115	100	87	-	-	-	-	-	-	

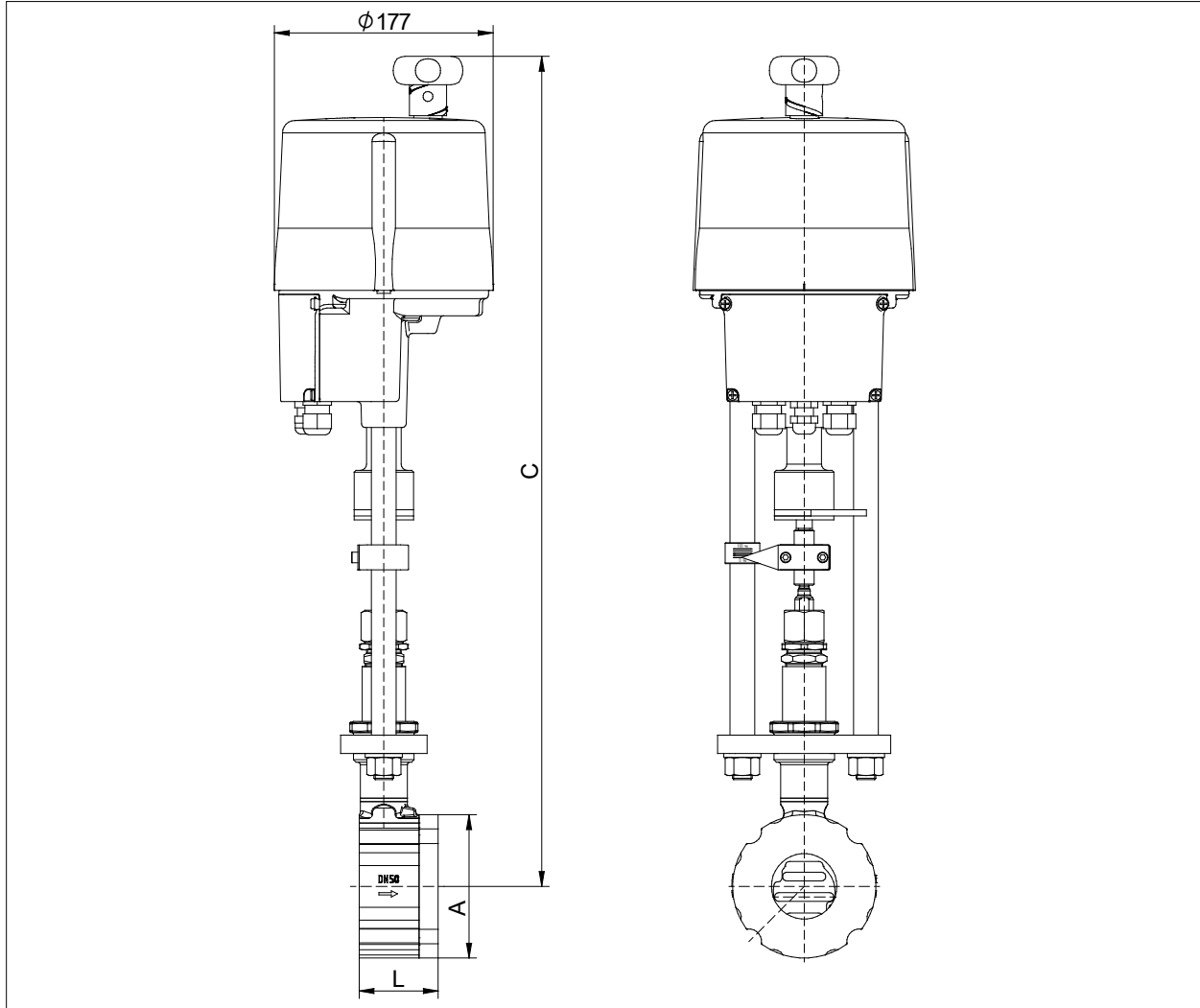
Limitation for SFC-sliding discs: 570°F

### PN100

Size	Sliding unit: carbon/SFC - stainless steel, coated							Sliding unit: STN2					
	max. admissible pressures for GS3-valves in carbon steel							max. admissible pressures for GS3-valves in carbon steel					
	210°F	300°F	390°F	480°F	570°F	660°F	210°F	300°F	390°F	480°F	570°F	660°F	
1/2" - 3/4"	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	
1"	1450	1450	1450	1450	1365	1260	1450	1450	1450	1450	1365	1260	
1 1/4"	1450	1450	1450	1450	1450	1435	1450	1450	1450	1220	1000	870	
1 1/2"	1450	1450	1450	1450	1365	1260	1045	1000	945	770	625	535	
2"	1450	1450	1450	1450	1450	1360	1115	1060	1015	810	665	580	
2 1/2"	1160	1160	1160	1160	1160	1100	900	855	810	655	535	460	
3"	695	695	695	695	695	635	520	495	480	375	320	275	

Limitation for SFC-sliding discs: 570°F

Dimensions and Weights



Size	$\phi A$ inch	C inch	L inch	Stroke inch	Weight lbs
1/2"	2.52	23.31	2.2	0.24	18
3/4"	2.83	23.5	2.2	0.24	18
1"	3.23	23.7	2.2	0.24	19
1 1/4"	3.5	23.9	2.2	0.24	19
1 1/2"	3.9	24.09	2.2	0.24	20
2"	4.57	24.49	2.52	0.31	24
2 1/2"	5.43	24.88	2.68	0.31	27
3"	6.02	25.08	2.76	0.31	30
4"	7.24	25.67	2.95	0.33	37
5"	8.35	26.26	3.15	0.33	42
6"	9.53	26.85	3.15	0.33	50
8"	11.89	28.03	3.66	0.33	87
10"	14.17	29.06	3.78	0.33	99

Dimensions in inch

# Motor Valve 8036-GS3



## Flow Coefficients - Cv-values

Ordering code		-	A	1	B	6	2	7	C	3	4	8	5	9
Size	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	0.09	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	0.3	-	0.16	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	-	17									
	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.	-	-	-										
10"	(mod.) linear	1056												
	eq.perc.	-												