

Sliding Gate Valve 8621

GS3 series - 1/2" up to 8"

Pneumatic sliding gate flange valve optionally with integrated positioner for regulating and shutting off liquid and gaseous media for industrial applications

- Flange connection acc. to ASME B16.5 in ANSI150 or ANSI300
- Construction in match with the ASME B16.34, API RP 553, API 598, ASME B31.1 (Power Piping) and ASME B31.3 (Process Piping)
- Low energy usage due to small actuating forces for the closing element
- Fast response due to small strokes
- Controllability of high differential pressures with small actuators
- Quiet operation
- High Cv-values
- Versions acc. to NACE MR0175, ASME B31.5 (Refrigeration Piping and Heat Transfer Components), ASME B31.8 (Transmission and Distribution Piping Systems) and ASME B31.9 (Building Services Piping) on request



Technical data

Design	flange design acc. ASME B16.5 RF		
Nominal Sizes	1/2" - 8"	Class 150 Class 300	
Fluid Temperature	Stainless steel body Carbon steel body	-76°F up to +662°F -20°F up to +662°F	
Ambient Temperatur	digital positioner +14°F up to +167°F analog positioner +5°F up to +140°F		
Rangeability / Characteristic analog positioner digital positioner	30 : 1 40 : 1 linear / 80 : 1 equal percentage		
Leakage**	Disc pair Carbon-stainless steel	Disc pair SFC	Disc pair STN 2 / STN 3
% of Kvs IEC 60534-4 EN 12266-1	< 0.0001 IV-S1 E	< 0.0005 IV-S1 F	< 0.001 IV F
Spezific leakage rate shaft and body sealing	ISO FE-BH-CC3-SSA0-t(-40°C/+350°C)-PN40-ISO 15848-1		
Marking ATEX non electric	II 2G Ex h IIC T6...T1 X Gb II 2D Ex h IIIC 85°C...530°C X Db		

* Please consider the limitation of use of the positioner!

** With 1/2" with reduction of less than 25%, different leakage rates possible.
Cvs-values see data sheet 8001.

Positioner

For technical information of our positioners please refer to the corresponding data sheets.

Materials

stainless steel version			
Valve body	stainless steel, CF8M		
Endpiece	stainless steel, CF8M		
Valve stem	stainless steel 316T		
Coupling ring	stainless steel 1.4581		
Packing tube	stainless steel CF8M		
Packing	PTFE carbon filled (spring SST 301)		
Body seal	Graphite with stainless foil		
Fixed disc	stainless steel coated	STN2-disc	STN3-disc
Sliding disc	special carbon material	SFC-disc (max. +572°F)	STN2-disc

carbon steel version			
Valve body	carbon steel, WCC		
Endpiece	carbon steel, WCC		
Valve stem	stainless steel 316Ti		
Coupling ring	stainless steel 1.4581		
Packing tube	stainless steel CF8M		
Packing	PTFE carbon filled (spring SST 301)		
Body seal	Graphite with stainless foil		
Fixed disc	stainless steel coated	STN2-disc	STN3-disc
Sliding disc	special carbon material	SFC-disc (max. +572°F)	STN2-disc

For all versions	
Diaphragm casing	aluminium KTL-coated or stainless steel
Actuator springs	stainless steel
Coupling	zinc die-cast or stainless steel
Mounting parts	stainless steel

Sliding Gate Valve 8621

with integrated digital positioner, Type 8049
(also on-off valves and valves with other side-mounted positioner)



Admissible differential pressures

(For temperatures of up to 250°F with PN-rating
up to 100°F with ANSI-rating)

**For temperatures above 100°F:
obey application limits!**

**Disc pair:
Carbon - stainless steel coated /
SFC - stainless steel coated**

Actuator Size	20 in ²		40 in ²			80 in ²		
	65	80	44	58	83	44	65	74
Supply Pressure (psi)								
Size	maximum pressure psi							
1/2"	750	750	750	750	750	-	-	-
3/4"	750	750	750	750	750	-	-	-
1"	750	750	750	750	750	-	-	-
1 1/2"	750	750	750	750	750	-	-	-
2"	638	750	750	750	750	750	750	750
3"	334	421	580	696	696	696	696	696
4"	218	232	363	450	479	479	479	479
6"	102	116	189	218	232	232	232	232
8"	58	73	102	131	174	218	232	232
Spring Configuration	Code 3 (Standard)	Code 4	Code 3 (Standard)	Code 4	Code 6	Code 6 (Standard)	Code 8	Code B

Standard

**Disc pair:
STN 2 / STN 3**

Actuator size	20 in ²		40 in ²			80 in ²		
	65	80	44	58	83	44	65	78
Supply Pressure (psi)								
Size	maximum pressure psi							
1/2"	750	750	750	750	750	-	-	-
3/4"	750	750	750	750	750	-	-	-
1"	750	750	750	750	750	750	750	-
1 1/2"	450	551	750	750	750	750	750	-
2"	261	319	450	551	740	750	750	750
3"	131	145	218	276	363	464	522	537
4"	65	87	131	160	232	276	334	435
6"	29	36	58	65	116	131	160	218
8"	29	29	44	44	58	87	102	116
Spring Configuration	Code 3 (Standard)	Code 4	Code 3 (Standard)	Code 4	Code 6	Code 6 (Standard)	Code 8	Code B

Standard

Upper limits of the pressure rating

	Pressure limits ANSI and DIN in psi	
	ANSI150	ANSI 300
P max. carbon steel	284	750
P max. stainless steel	276	719

Sliding Gate Valve 8621



with integrated p/p-or i/p-positioner, Typ 8047

Admissible differential pressures

(For temperatures of up to 250°F with PN-rating
up to 100°F with ANSI-rating)

**For temperatures above 100°F:
obey application limits!**

**Disc pair:
Carbon - stainless steel coated /
SFC - stainless steel coated**

Actuator size	20 in ²		40 in ²		80 in ²	
Spring range (psi)	22 to 44	26 to 55	17 to 32	22 to 39	17 to 32	22 to 39
Supply Pressure (psi)	58	73	44	58	44	65
Size	maximum pressure psi					
1/2"	750	750	750	750	-	-
3/4"	750	750	750	750	-	-
1"	750	750	750	750	750	750
1 1/2"	421	522	711	750	750	750
2"	247	305	421	508	750	750
3"	116	145	203	247	421	508
4"	73	87	131	145	261	319
6"	29	44	58	73	131	145
8"	29	29	44	44	73	87
Spring Configuration	Code 3 (Standard)	Code 4	Code 3 (Standard)	Code 4	Code 3 (Standard)	Code 4

Standard

Disc pair: STN 2 / STN 3

Actuator Size	20 in ²		40 in ²		80 in ²	
Spring Range (psi)	22 to 44	26 to 55	17 to 32	22 to 39	17 to 32	22 to 39
Supply Pressure (psi)	58	73	44	58	44	65
Size	maximum pressure psi					
1/2"	750	750	750	750	750	750
3/4"	537	667	750	750	750	750
1"	363	450	624	750	750	750
1 1/2"	160	203	276	348	580	696
2"	87	116	160	189	334	392
3"	44	51	73	87	160	189
4"	22	29	44	58	87	116
6"	-	15	22	26	44	51
8"	-	-	13	16	26	32
Spring Configuration	Code 3 (Standard)	Code 4	Code 3 (Standard)	Code 4	Code 6 (Standard)	Code 8

Standard

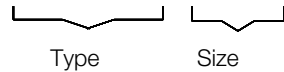
Upper limits of the pressure rating

	Pressure limits ANSI and DIN in psi	
	ANSI150	ANSI 300
P max. carbon steel	284	750
P max. stainless steel	276	719

Ordering Number System

8	6	2	1	/			V	N								M								Z				S
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1 - 5 : Please quote all 5 sections.
6 - 12: Quote only if required.



Symbol: "V": Valve
"R": Repair kit (sealings)

1. Function	2. Body design	3. Body material	4. Safety function	5. Actuator
N sliding gate valve with pneumatic actuator	E GS3-flangeless design acc. ASME B16.5 ANSI 150 F GS3-flangeless design acc. ASME B16.5 ANSI 300	0 Carbon steel WCC/1.0619 1 Stainless steel CF8M/1.4408	0 Spring closes 1 Spring opens	6 Diaphragm actuator 19.4 in ² NPT 7 Diaphragm actuator 38.8 in ² NPT 8 Diaphragm actuator 77.5 in ² NPT
6. Special version	7. Springs	8. Steam sealing	9. Moved disc	10. Fixed disc
M To state, if further sections are quoted	- Standard 4 8 springs 6 12 springs B 22 springs	- PTFE-packing, self adjusting (Standard)	- Carbon material 9 STN2 S SFC	- Stainless steel 1.4571 coated 1 STN2 (only in combination with pos. „9“ STN2) 2 STN3
11. Kvs-Values	12. Flow characteristic	13. Accesories	14. Positioner	15. Signaling equipment
- 100 %(Stand.) A red. up to 63 % 1 red. up to 40 % B red. up to 25 % 2 red. up to 16 % C red. up to 10 % 3 red. up to 6.3 % 4 red. up to 2.5 % 5 red. up to 1 % 6 red. up to 20 % 7 red. up to 12 % 8 red. up to 2 % 9 red. up to 0.4 %	- linear 1 equal-%	Z To state if further sections are quoted	- without 1 p/p-positioner Type 8047 3 i/p-positioner Type 8047 6 i/p-positioner type 8047 Eex ib IIC T6 with plug M12x1 8 i/p-positioner + connector M12x1 C dig. positioner, type 8049, 4-wire R dig. positioner, type 8049, 2-wire W dig. positioner, type 8049 ExPro, ATEX, IECEX K dig. positioner, type 8049 ExPro-FM N dig. positioner, type 8049 IO-Link version	- without 0 2 limit switches M12x1 DC 10-30V PNP Y Feedback module RM4 for positioner type 8049 with 2 integrated limit switches acc. Namur (EN60947-5-6) P Feedback module RM5 for positioner type 8049 with 2 integrated limit switches
16. Further versions	S Other special versions have to be quoted in letters!			

Ordering exmample:

8621/050VNF106M-----ZC
sliding gate valve type 8621 with integrated pneumatic actuator, DN 50, flange ANSI Class 300, body material stainless steel, spring closes, actuator 38.8 in², PTFE-packing, moving disc: carbon steel-stainless steel 1.4571 coated, flow characteristic, positioner 8049-4

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	150°F	200°F	300°F	400°F	500°F	600°F	650°F	100°F	150°F	200°F	300°F	400°F	500°F	600°F	650°F
1/2"-4"	275	265	230	210	195	175	145	120	275	265	230	210	195	175	145	120
6"	230	230	230	210	195	175	145	120	230	230	230	210	195	170	140	120
8"	230	230	230	210	195	175	145	120	150	145	120	110	100	80	65	55

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	150°F	200°F	300°F	400°F	500°F	600°F	650°F	100°F	150°F	200°F	300°F	400°F	500°F	600°F	650°F
1/2"-4"	715	695	610	555	515	480	455	435	715	695	610	555	515	480	455	435
3"	695	695	610	555	515	480	455	435	530	530	530	500	475	385	315	275
4"	475	475	475	475	475	475	455	435	475	475	475	455	435	350	290	250
6"	230	230	230	230	230	230	230	230	230	230	230	210	195	170	140	120
8"	230	230	230	210	195	175	145	120	230	230	220	200	180	155	140	130

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	150°F	200°F	300°F	400°F	500°F	600°F	650°F	100°F	150°F	200°F	300°F	400°F	500°F	600°F	650°F
1/2"-4"	285	280	255	225	200	175	145	120	280	275	255	225	200	175	145	120
6"	230	230	230	225	200	175	145	120	230	230	230	220	200	170	140	115
8"	230	230	230	210	195	175	145	120	150	145	120	110	100	65	65	55

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	150°F	200°F	300°F	400°F	500°F	600°F	650°F	100°F	150°F	200°F	300°F	400°F	500°F	600°F	650°F
1/2"-2"	745	745	745	725	700	670	620	580	745	745	745	725	700	670	620	580
3"	695	695	675	650	635	605	575	580	530	530	530	500	475	385	315	275
4"	475	475	475	475	475	475	475	475	475	475	475	455	435	350	290	245
6"	230	230	230	230	230	230	230	230	230	230	230	225	210	170	319	115

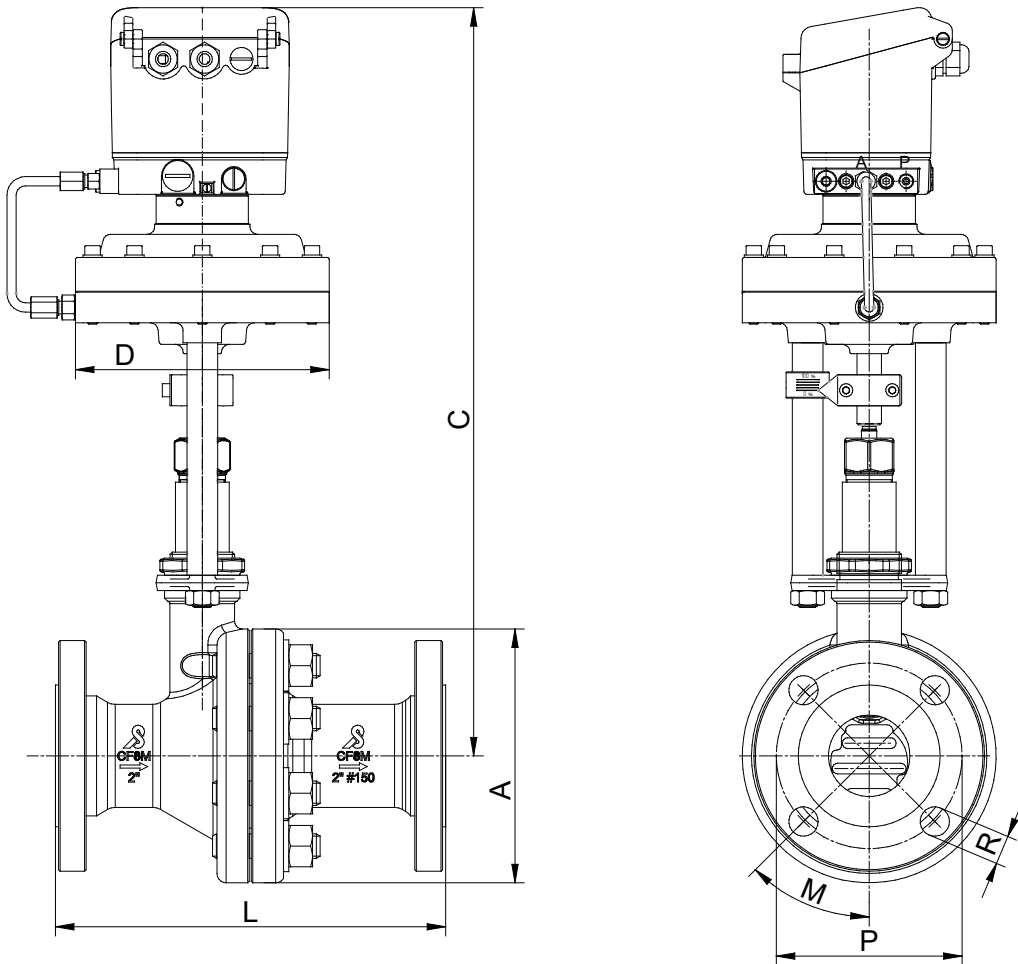
Limitation for SFC-sliding discs: 570°F

Sliding Gate Valve 8621

with integrated digital positioner type 8049



Dimensions and weights



Size	Ø A	ØC actuator size		ØD actuator size		ANSI 150							
		D125/ D250	D500	D 125	D250/ D500	P	M	numbers	L	R	weight (lbs)		
											D125	D250	D500
1/2"	3.74	18.11	20.08	6.5	8.74	2.37	45	4	7.24	0.63	22	26.9	35.1
3/4"	4.53	18.31	20.28	6.5	8.74	2.75	45	4	7.24	0.63	26	30.9	39
1"	4.92	18.5	20.47	6.5	8.74	3.13	45	4	7.24	0.63	29.3	34.2	42.3
1 1/2"	6.1	18.9	20.87	6.5	8.74	3.87	45	4	8.74	0.63	39.5	44.3	52.5
2"	6.5	19.29	21.26	6.5	8.74	4.75	45	4	10	0.75	45.9	50.7	58.9
3"	8.27	20.08	22.05	6.5	8.74	6	45	4	11.73	0.75	77.4	82.2	90.4
4"	9.76	20.47	22.44	6.5	8.74	7.5	22,5	8	13.86	0.75	105.6	110.5	118.6
6"	12.6	21.65	23.62	6.5	8.74	9.5	22,5	8	17.76	0.87	175	179.9	188.1
8"	14.96	21.5	22.44	6.5	8.74	11.77	15	12	21.38	1	288.8	295.4	304.2

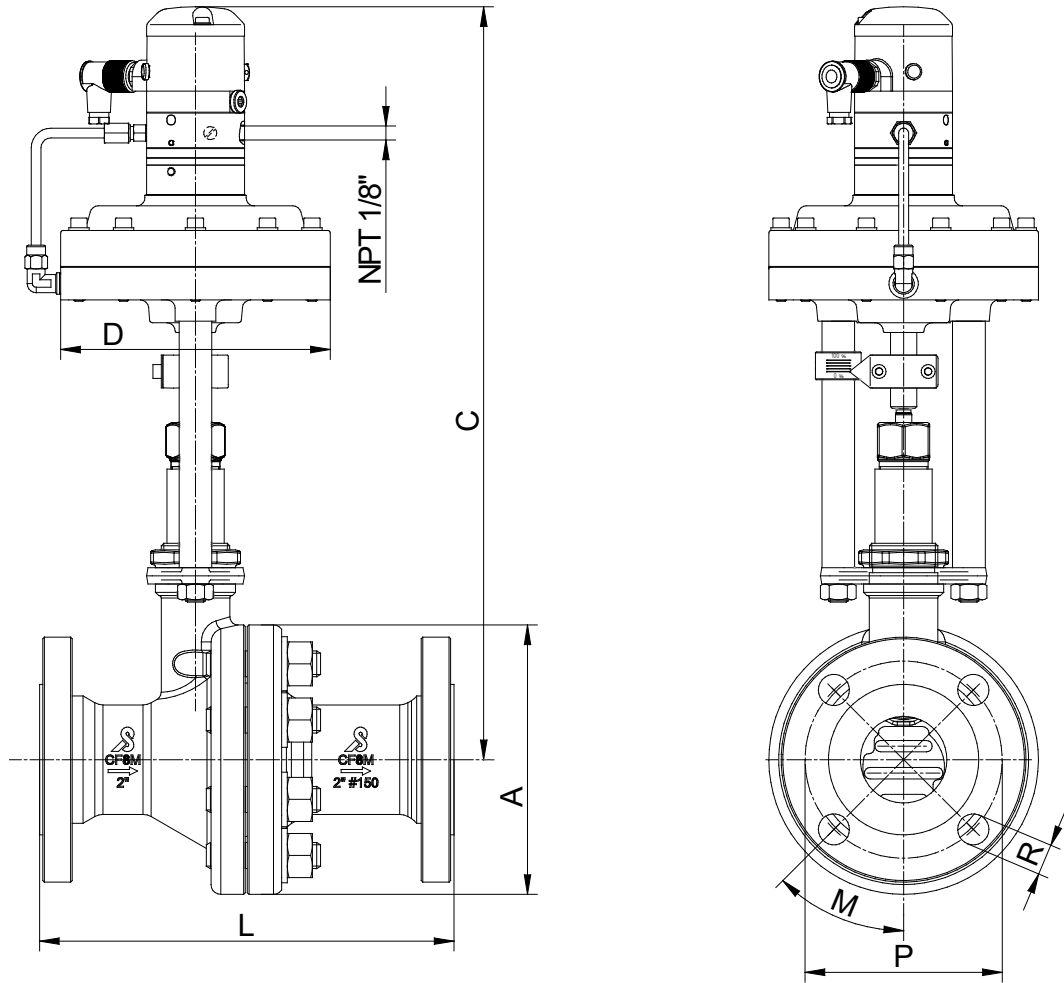
Size	ANSI 300						weight (lbs)			stroke
	P	M	numbers	L	R	D125	D250	D500		
									1/2"	
3/4"	3.25	45	4	7.64	0.75	28.7	33.5	41.7	0.24	
1"	3.5	45	4	7.76	0.75	31.7	36.6	44.8	0.24	
1 1/2"	4.5	45	4	9.25	0.87	45.6	50.5	58.6	0.24	
2"	5	22.5	8	10.51	0.75	50.5	55.3	63.5	0.31	
3"	6.63	22.5	8	12.52	0.87	86.4	91.3	99.4	0.31	
4"	7.87	22.5	8	14.49	0.87	124.6	129.4	137.6	0.33	
6"	10.63	15	12	18.62	0.87	216.9	221.8	229.9	0.33	
8"	12.99	15	13	22.36	1	352.7	357.1	366	0.33	

Sliding Gate Valve 8621



with integrated i/p-positioner type 8047

Dimensions and weights



Size	Ø A	ØC actuator size		ØD actuator size		ANSI 150							
		D125/ D250	D500	D 125	D250/D500	P	M	numbers	L	R	weight (lbs)		
											D125	D250	D500
1/2"	3.74	16.93	18.9	6.5	8.74	2.37	45	4	7.24	0.63	22	26.9	35.1
3/4"	4.53	17.13	19.09	6.5	8.74	2.75	45	4	7.24	0.63	26	30.9	39
1"	4.92	17.32	19.29	6.5	8.74	3.13	45	4	7.24	0.63	29.3	34.2	42.3
1 1/2"	6.1	17.72	19.69	6.5	8.74	3.87	45	4	8.74	0.63	39.5	44.3	52.5
2"	6.5	18.11	20.08	6.5	8.74	4.75	45	4	10	0.75	45.9	50.7	58.9
3"	8.27	18.9	20.87	6.5	8.74	6	45	4	11.73	0.75	77.4	82.2	90.4
4"	9.76	19.88	21.85	6.5	8.74	7.5	22.5	8	13.86	0.75	105.6	110.5	118.6
6"	12.6	20.47	22.44	6.5	8.74	9.5	22.5	8	17.76	0.87	175	179.9	188.1
8"	14.96	21.65	23.62	6.5	8.74	11.75	15	12	21.38	1	289.7	294.5	304.2

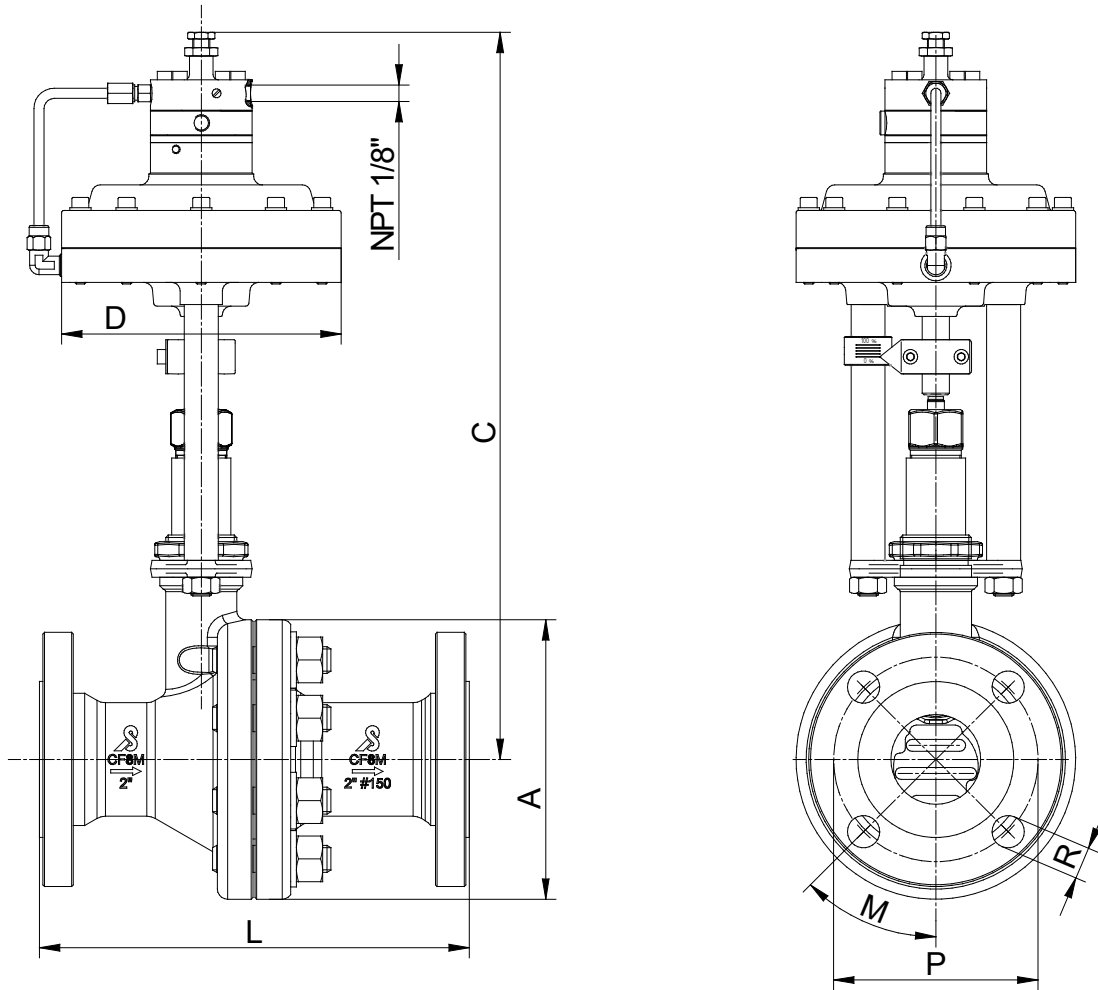
Size	ANSI 300					weight (lbs)			stroke
	P	M	numbers	L	R	D125	D250	D500	
1/2"	2.63	45,00	4	7.48	0.63	22.9	27.8	35.9	0.24
3/4"	3.25	45,00	4	7.64	0.75	28.7	33.5	41.7	0.24
1"	3.5	45,00	4	7.76	0.75	31.7	36.6	44.8	0.24
1 1/2"	4.5	45,00	4	9.25	0.87	45.6	50.5	58.6	0.24
2"	5	22,50	8	10.51	0.75	50.5	55.3	63.5	0.31
3"	6.63	22,50	8	12.52	0.87	86.4	91.3	99.4	0.31
4"	7.87	22,50	8	14.49	0.87	124.6	129.4	137.6	0.33
6"	10.63	15,00	12	18.62	0.87	216.9	221.8	229.9	0.33
8"	13	15,00	12	22.36	1	352.7	357.1	366	0.33

Sliding Gate Valve 8621



with integrated p/p-positioner type 8047

Dimensions and weights



Size	Ø A	ØC actuator size		ØD actuator size		ANSI 150							
		D125/ D250	D500	D 125	D250/ D500	P	M	numbers	L	R	weight (lbs)		
											D125	D250	D500
1/2"	3.74	15.75	17.72	6.5	8.74	2.37	45	4	7.24	0.63	22	26.9	35.1
3/4"	4.53	15.94	17.91	6.5	8.74	2.75	45	4	7.24	0.63	26	30.9	39
1"	4.92	16.14	18.11	6.5	8.74	3.13	45	4	7.24	0.63	29.3	34.2	42.3
1 1/2"	6.1	16.54	18.5	6.5	8.74	3.87	45	4	8.74	0.63	39.5	44.3	52.5
2"	6.5	16.93	18.9	6.5	8.74	4.75	45	4	10	0.75	45.9	50.7	58.9
3"	8.27	17.72	19.69	6.5	8.74	6	45	4	11.73	0.75	77.4	82.2	90.4
4"	9.76	18.11	20.08	6.5	8.74	7.5	22,5	8	13.86	0.75	105.6	110.5	118.6
6"	12.6	19.29	21.26	6.5	8.74	9.5	22,5	8	17.76	0.87	175	179.9	188.1
8"	14.96	21.5	22.44	6.5	8.74	11.75	15	12	21.38	1	289.7	294.5	304.2

Size	ANSI 300						stroke		
	P	M	numbers	L	R	weight (lbs)			
						D125		D250	D500
1/2"	2.63	45	4	7.48	0.63	22.9	27.8	35.9	0.24
3/4"	3.25	45	4	7.64	0.75	28.7	33.5	41.7	0.24
1"	3.5	45	4	7.76	0.75	31.7	36.6	44.8	0.24
1 1/2"	4.5	45	4	9.25	0.87	45.6	50.5	58.6	0.24
2"	5	22,5	4	10.51	0.75	50.5	55.3	63.5	0.31
3"	6.63	22,5	4	12.52	0.87	86.4	91.3	99.4	0.31
4"	7.87	22,5	8	14.49	0.87	124.6	129.4	137.6	0.33
6"	10.63	15	8	18.62	0.87	216.9	221.8	229.9	0.33
8"	13	15	12	22.36	1	352.7	357.1	366	0.33

Sliding Gate Valve 8621



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	0.021
	eq. perc.	2	-	1.3	-	0.4	-	-	-	0.12	-	-	-	-
3/4"	(mod.) lin.	7.4	-	-	-	-	1.16	-	-	-	-	0.15	-	-
	eq. perc.	3.5	-	1.7	-	-	-	-	-	-	-	-	-	-
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	-	-	-	0.41	-	-	-	-
1 1/4"	(mod.) linear	19	12	-	-	-	-	-	-	-	-	-	-	-
	eq. perc.	9.3	5.45	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	3.5	-	-	-	-	-	-	-
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.	329	-	-	-	-	-	-	-	-	-	-	-	-

Text and pictures are not binding. We reserve the right, to alter the equipment.