

Angle Seat Control Valve 7020

with integrated positioner

1/4" up to 3"



Type 7020 with digital positioner Type 8049

Control valve with integrated digital positioner for the control of neutral through to aggressive media in process engineering, chemical industry and for plant equipment.



- Space saving design and low weight
- No steady- state air consumption
- Operation independent of mounting position and supply pressure variations
- Not sensitive to vibration
- Instrument grade air not essential
- Software configurable flow characteristics
- Protection Class IP65
- For temperatures from -148°F up to +428°F

Type 7020 with i/p-positioner Type 8047

Pneumatically operated control valves for neutral through highly aggressive media. Ideal for steam, gas and liquids.



- Integrated positioner
- Compact design
- All parts contacting the fluid made from stainless steel
- Temperatures up to 392°F
- Working pressure up to 247 psi
- For temperatures from -148°F up to +428°F

Technical Information

Body material	Stainless steel CF8M	Bronze CC491K
Nominal sizes	1/4" up to 3"	1/2" up to 2"
Connections		
NPT thread	1/4" up to 3"	1/2" up to 2"
Tri Clamp	1/2" up to 3"	-
Tube ends	1/2" up to 3"	-
Socket weld	1/2" up to 3"	-
Nominal pressure	580 psi	230 psi
Fluid temperature*	-22°F up to +392°F	
Ambient temperature**	digital positioner +14°F up to +167°F analog positioner +5°F up to +140°F	
Packing leakage	tested according to TA-Luft as defined in DIN EN ISO 15848-1 and VDI 2440	

*: Please consider further temperature versions and limits in technical bulletin 32

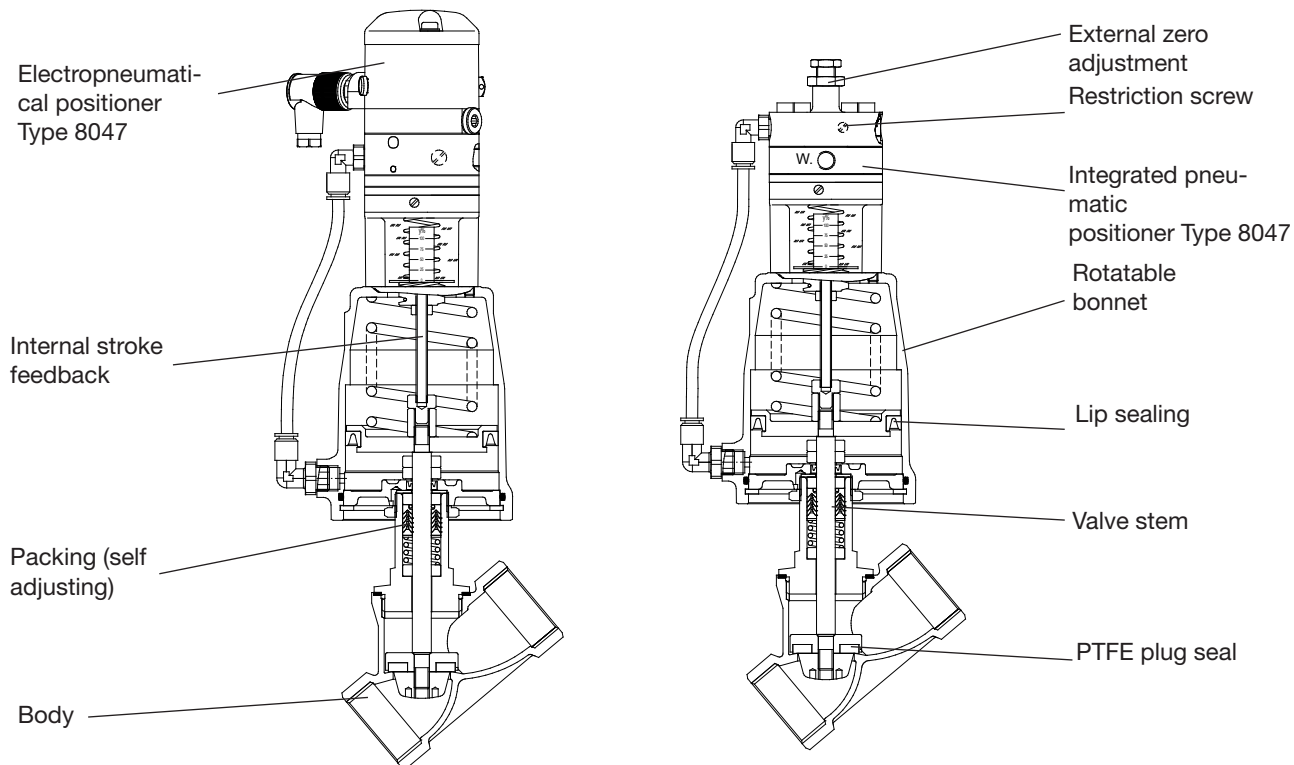
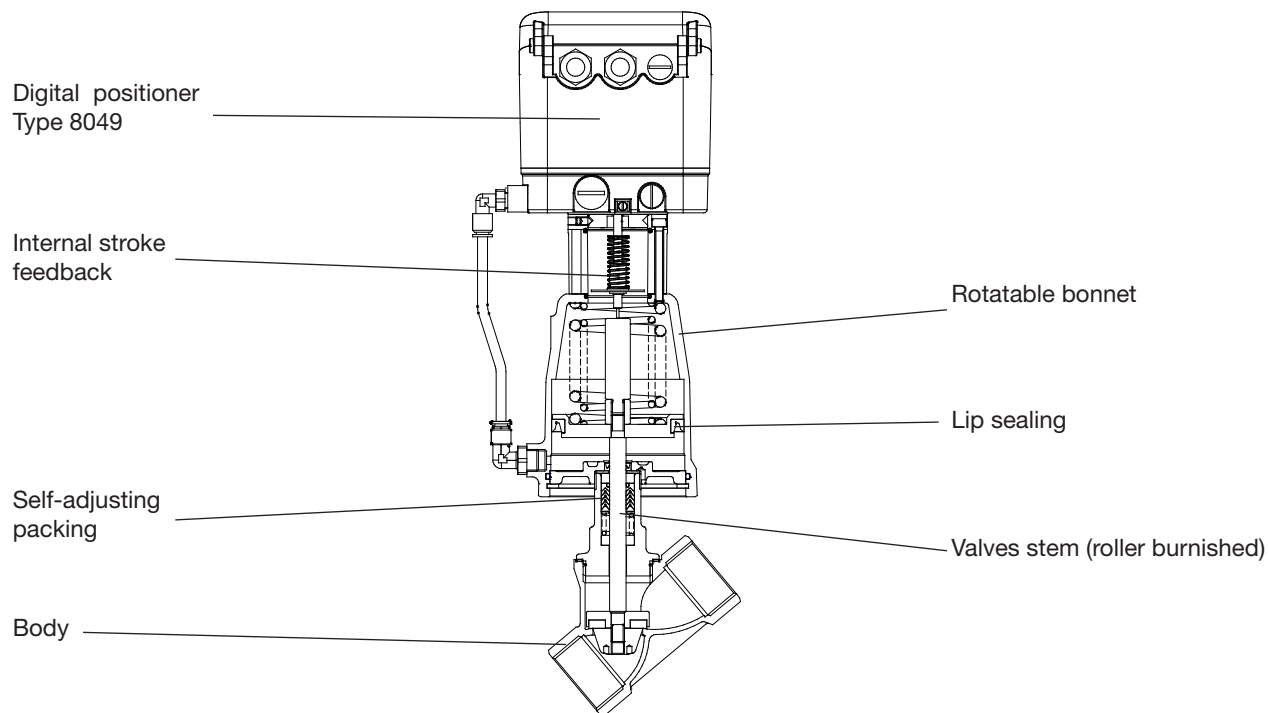
** : Please consider the limitation of use of the positioner

Options:

- Optical position indicator
- External I/P-converter Type 8045
- Ex -i/p- positioner (Ex II 2 G EEx ib IIC T6)

Angle Seat Control Valve 7020

with integrated positioner standard design



Angle Seat Control Valve 7020



with integrated positioner standard design

Materials

Body	Stainless steel CF8M / Bronze CC491K
Seating seal	PTFE
Bonnet	Brass chrome plated (actuator Ø 2", 3") Aluminium corrosion protected (actuator Ø 5")
Diaphragm actuator	Stainless steel ASTM A313 304
Actuator springs	Stainless steel ASTM A313 302 (actuator Ø 2", 3", diaph. act.) Spring steel wire C, zinc coated (actuator Ø 5")
Packing	PTFE (carbon filled), spring ASTM A313 302
Valve stem	Stainless steel 316 Ti, roller burnished
Position indicator	PA Trogamid (clear)

Positioner

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

Admissible Pressures

digital positioner

Size	Differential pressure 1)	Supply pressure range psi	Piston Ø inch	Spring configuration Number
	psi			
1/4"	250	60 - 90	3"	2 *
1/2"	250	60 - 90	3"	2
3/4"	250	60 - 90	3"	2
1"	250	60 - 90	3"	1
1"	250	45 - 90	5"	2
1"	250	45 - 90	10"	4
1 1/4"	145	60 - 90	3"	1
1 1/4"	250	45 - 90	5"	2
1 1/4"	250	45 - 90	10"	4
1 1/2"	87	60 - 90	3"	1
1 1/2"	250	60 - 90	5"	3
1 1/2"	250	45 - 90	10"	6

1) Maximum 230 bar for bronze case

* special springs

i/p-positioner p/p-positioner

Size	Pressure 1)	Supply pressure Range psi	Piston Ø inch	Spring configuration Number
1/4"	250	60 - 90	3"	2 *
1/2"	250	60 - 90	3"	2
3/4"	250	60 - 90	3"	2
1"	174	60 - 90	3"	1
1"	160	40 - 90	10"	4
1 1/4"	102	60 - 90	3"	1
1 1/4"	189	45 - 90	5"	2
1 1/4"	250	40 - 90	10"	6
1 1/2"	58	60 - 90	3"	1
1 1/2"	160	60 - 90	5"	3
1 1/2"	218	50 - 90	10"	8

1) Maximum 230 bar for bronze case

* special springs

Diaphragm actuator direct pressure range

Size	Max. pressure NC (psi) 1)		Max. pressure NO (psi) 1)		Supply air (psi)		Diaphragm area inch
	spring range		spring range		spring range		
	3 - 15 psi	6 - 29 psi	3 - 15 psi	6 - 29 psi	3 - 15 psi	6 - 29 psi	
1/2"	250	250	250	250	18	35	10"
3/4"	245	250	250	250	18	35	10"
1"	130	250	175	230	18	35	10"
1 1/4"	75	215	100	200	18	35	10"
1 1/2"	45	145	40	75	18	35	10"
2"	30	90	15	30	18	35	10"

1) Maximum 16 bar for bronze case

Cv- Values

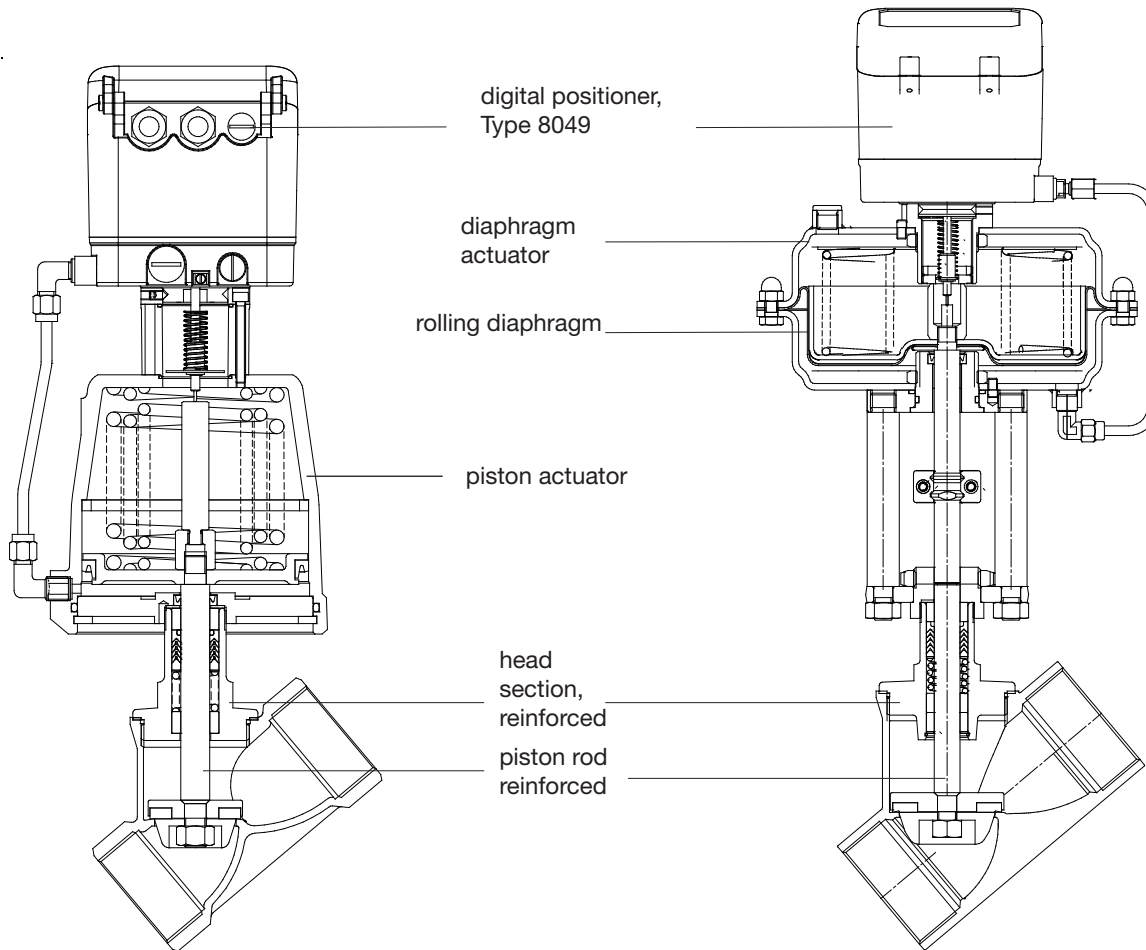
Size	linear						equal percentage					
	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"
100%	0.7	4.4	10.2	16.2	23.2	31.3	0.7	3.5	7	11.6	18.6	29
40%	0.28	1.7	4.1	6.7	9.3	12.8	-	1.4	2.8	4.6	7	11.6
25%	0.17	1.1*	2.6	4.2	-	-	-	0.93*	1.7	3	-	-
15%	-	-	-	-	-	-	-	0.53*	-	-	-	-
10%	-	0.46*	-	-	-	-	-	-	-	-	-	-
7.5%	-	-	-	-	-	-	-	0.27*	-	-	-	-

*Cvs-values not possible with bronze housing

Angle Seat Control Valve 7020

with integrated positioner reinforced design

2" up to 3", 580 psi



Admissible Pressures

digital positioner

DN	differential pressure (psi) 1)		Supply pressure range (psi)	Piston-Ø	Springs configuration (number)
	PTFE	PEEK			
2"	45	-	60 - 90	3"	1
2"	160	45	60 - 90	5"	3
2"	175	75	45 - 90	10"	6 *
2"	250	145	60 - 90	10"	8
2"	250	250	60 - 90	10"	12 *
2 1/2"	85	-	60 - 90	5"	3
2 1/2"	190	115	60 - 90	10"	12
3"	45	-	60 - 90	5"	3
3"	130	75	60 - 90	10"	12

1) Maximum 16 bar for bronze case

* special spring configuration

p/p- and i/p-positioner

DN	differential pressure (psi) 1)	Supply pressure range (psi)	Piston-Ø	Springs configuration (number)
	PTFE			
2"	25	60 - 90	3"	1
2"	85	60 - 90	5"	3
2"	185	60 - 90	10"	10*
2"	245	60 - 90	10"	12
2 1/2"	130	60 - 90	10"	12
3"	90	60 - 90	10"	12

Cv- Values

Size	linear			equal percentage		
	2"	2 1/2"	3"	2"	2 1/2"	3"
100%	49.9	60.3	80	39.4	51	68.4
63%	30.2	37.1	-	26.7	33.6	-

Angle Seat Control Valve 7020



with integrated positioner pressure balanced design

2" up to 3", 580 psi; with stainless steel case

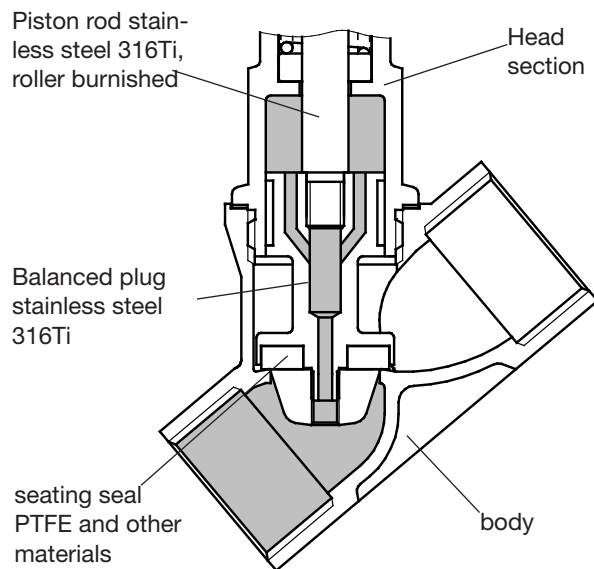
Admissible Differential Pressures

digital positioner

Size	Pressure (PTFE) psi	Supply pressure range psi	Piston Ø inch	Spring configuration Number
2"	250	60 - 90	5"	3
2 1/2"	250	60 - 90	5"	3
3"	250	60 - 90	5"	3

p/p- and i/p-positioner

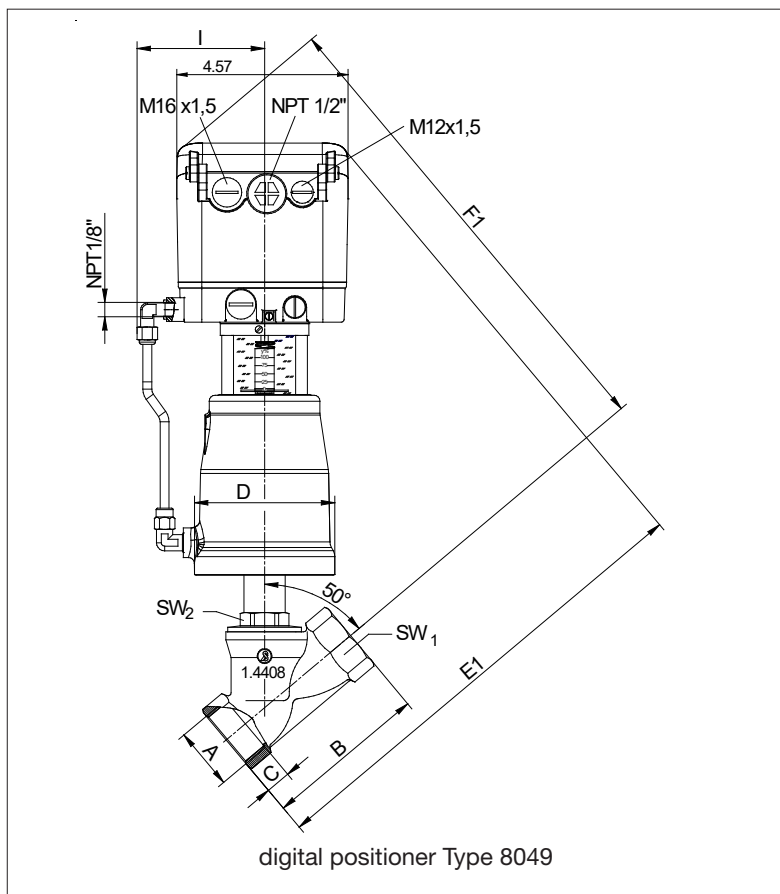
Size	Differential pressure (PTFE) psi	Supply pressure range psi	Piston Ø inch	Springs number
2"	250	60 - 90	5"	3
2 1/2"	250	60 - 90	5"	3
3"	250	60 - 90	5"	3



Angle Seat Control Valve 7020

with integrated positioner piston actuator

Dimensions and Weights



Size	Actuator	A G/NPT	B	C	D	E	F	I	SW1	SW2	Weight (lbs)
1/4"	3"	3/8"	2.36	0.47	3.78	11.3	11.97	3.15	0.79	1.18	9.2
1/2"	3"	1/2"	2.56	0.47	3.78	12.17	11.85	3.15	0.98	1.18	9.7
3/4"	3"	3/4"	2.95	0.51	3.78	12.36	12.05	3.15	1.22	1.18	9.9
1"	3"	1"	3.54	0.59	3.78	12.76	12.24	3.15	1.54	1.18	10.3
1 1/4"	3"	1 1/4"	4.33	0.67	3.78	13.35	12.83	3.15	1.89	1.18	11
1 1/4"	5"	1 1/4"	4.33	0.67	5.75	14.53	14.02	4.13	1.89	1.18	16.7
1 1/2"	3"	1 1/2"	4.72	0.75	3.78	13.54	13.03	3.15	2.17	1.18	11.7
1 1/2"	5"	1 1/2"	4.72	0.75	5.75	14.72	14.21	4.13	2.17	1.18	17.4

reinforced design:

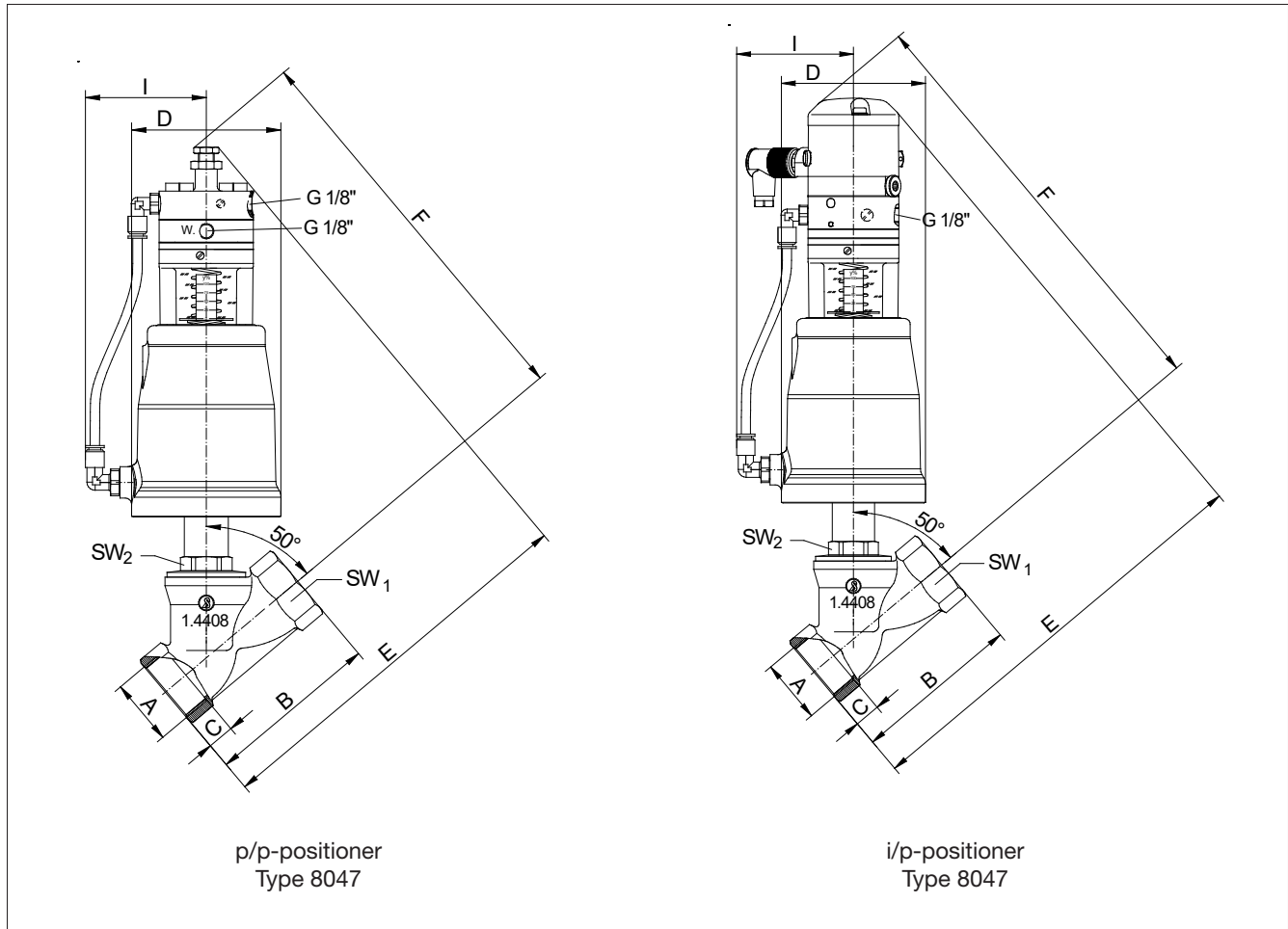
2"	3"	2"	5.91	1.01	3.78	13.78	13.78	3.15	2.68	1.26	13
2"	5"	2"	5.91	1.01	5.75	14.37	14.37	4.13	2.68	1.26	18.7
2 1/2"	5"	2 1/2"	7.09	1.18	5.75	15.16	14.96	4.13	3.35	1.42	19.6
3"	5"	3"	8.43	1.32	5.75	17.13	14.96	4.13	3.94	1.61	25.1

Dimensions in inch

Angle Seat Control Valve 7020

with integrated positioner piston actuator

Dimensions and Weights



p/p-positioner
Type 8047

i/p-positioner
Type 8047

DN	Antrieb	A G/NPT	B	C	D	E		F		I	SW1	SW2	Gewicht (kg)	
						Stellungsregler p/p	Stellungsregler i/p	Stellungsregler p/p	Stellungsregler i/p				p/p	i/p
8	80	1/4"	60	12,0	96	220	250	230	260	80	20	30	3,7	4,0
15	80	1/2"	65	15,0	96	220	250	230	260	80	25	30	3,7	4,0
20	80	3/4"	75	16,3	96	225	255	235	265	80	31	30	3,8	4,1
25	80	1"	90	19,1	96	235	265	240	270	80	39	30	4,0	4,3
32	80	1 1/4"	110	21,4	96	250	280	255	285	80	48	30	4,3	4,6
32	125	1 1/4"	110	21,4	146	265	295	275	305	105	48	30	6,9	7,2
40	80	1 1/2"	120	21,4	96	255	285	260	290	80	55	30	4,6	4,9
40	125	1 1/2"	120	21,4	146	270	300	280	310	105	55	30	7,2	7,5

Verstärkte Ausführung:

50	80	2"	150	21	96	275	305	270	300	80	68	32	5,3	5,5
50	125	2"	150	25,7	146	285	315	285	315	105	68	32	7,8	8,1

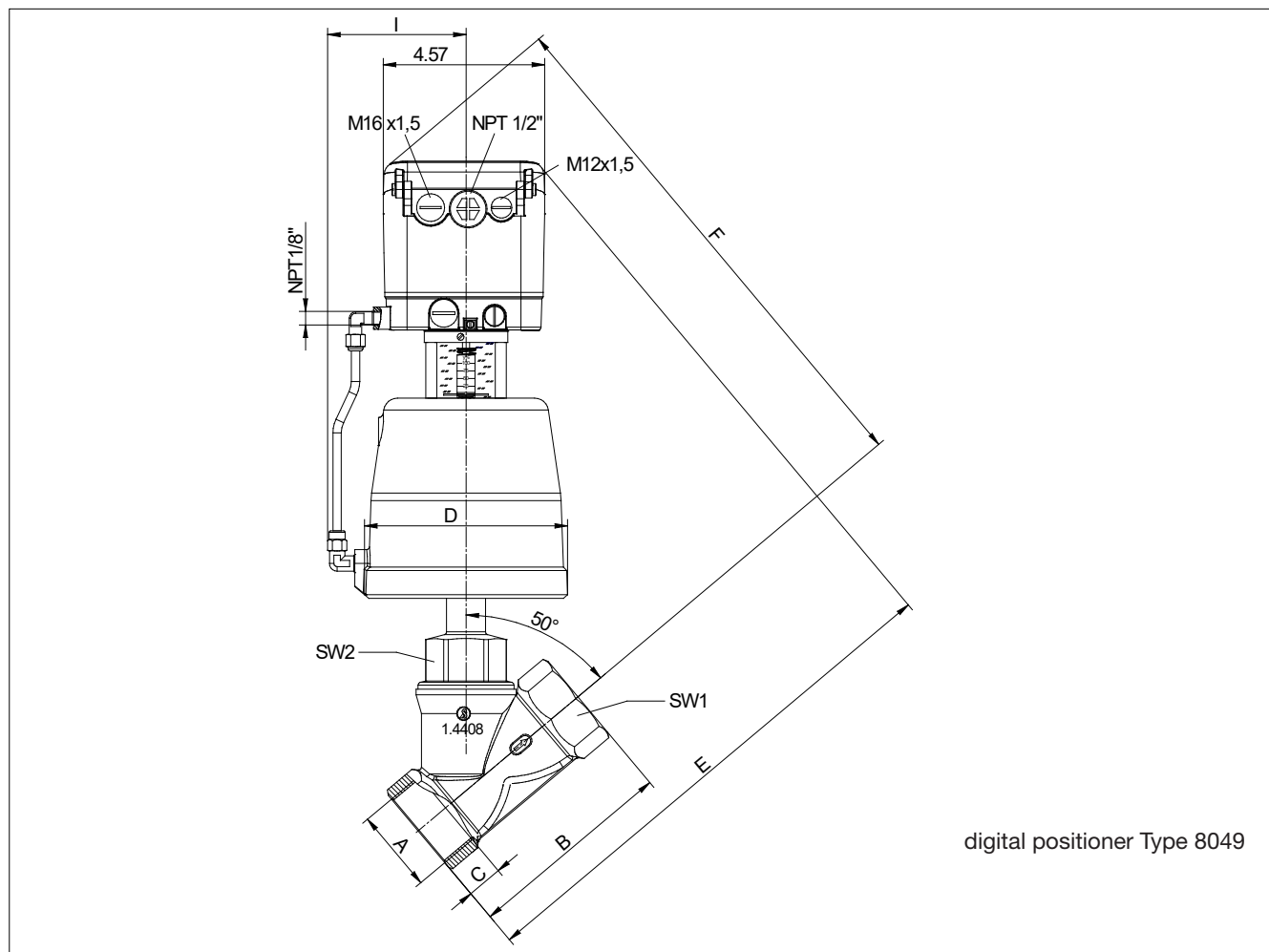
Dimensions in inch

Angle Seat Control Valve 7020



with integrated positioner pressure balanced design

Dimensions and Weights



Size	Actuator	A G/NPT	B	C	D	E	F	I	SW1	SW2	Weight (lbs)
2"	5"	2"	5.91	1.01	5.75	14.76	15	4.13	2.68	2.05	14.5
2 1/2"	5"	2 1/2"	7.09	1.19	5.75	15.75	15.75	4.13	3.35	1.42	19.4
3"	5"	3"	8.43	1.31	5.75	18.31	17.13	4.13	3.94	1.81	28.2

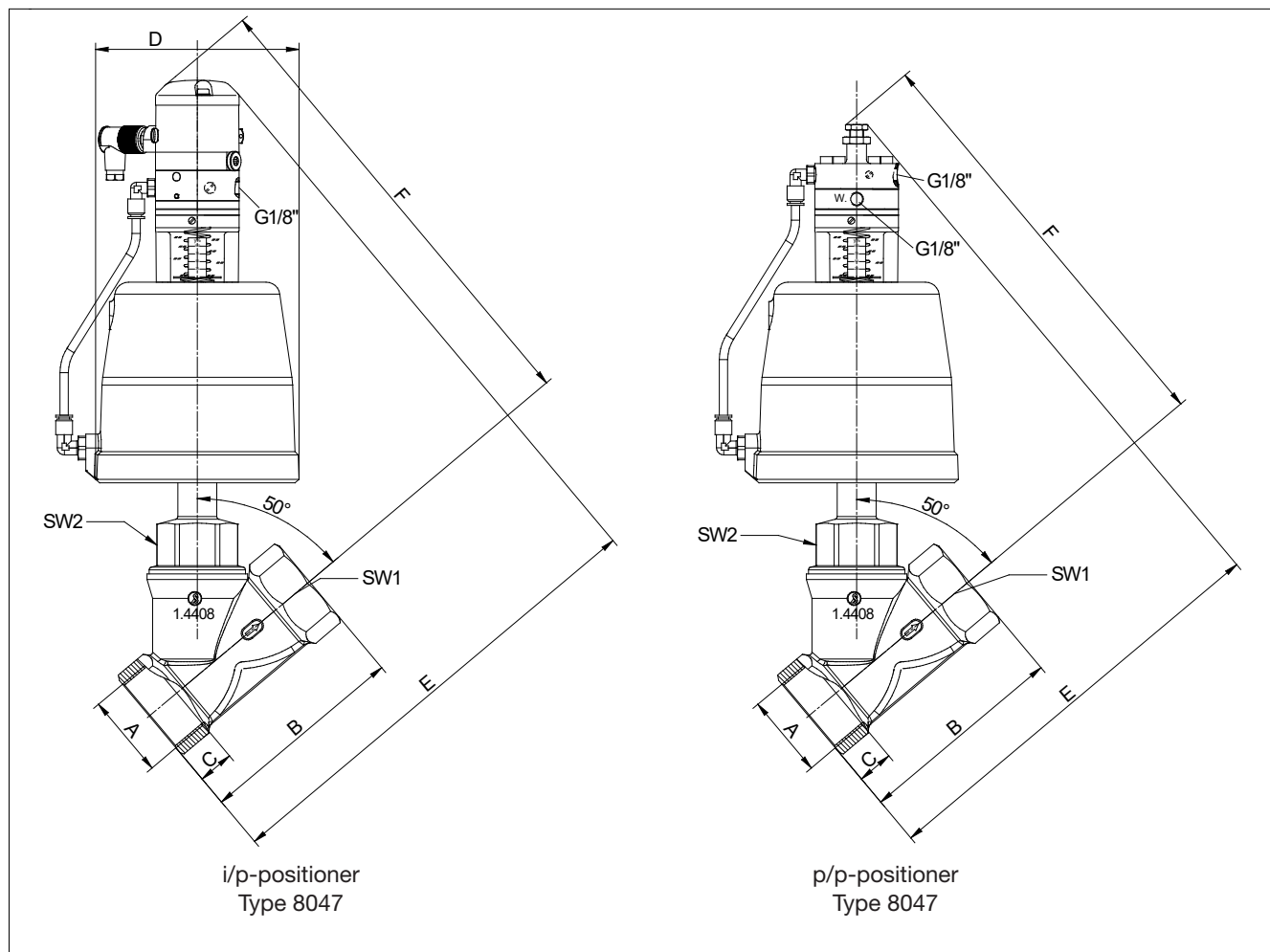
Dimensions in inch

Angle Seat Control Valve 7020



with integrated positioner pressure balanced design

Dimensions and Weights



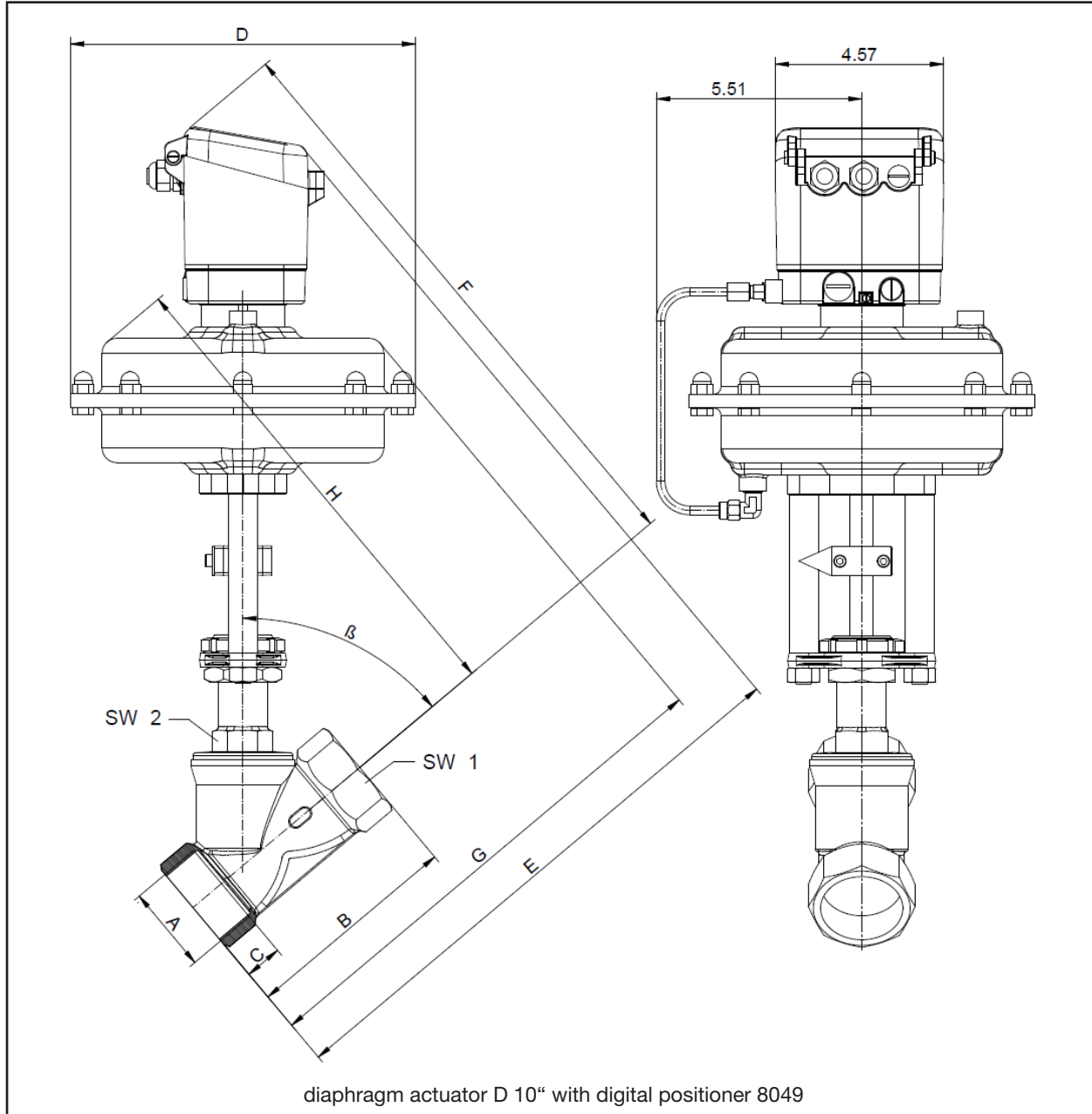
Size	Actuator	A G/NPT	B	C	D	E		F		I	SW1	SW2	Weight (lbs)	
						Positioner p/p	Positioner i/p	Positioner p/p	Positioner i/p				p/p	i/p
2"	5"	2"	5.91	1.01	5.75	12.01	13.23	12.13	13.39	4.13	2.68	2.05	13	13.5
2 1/2"	5"	2 1/2"	7.09	1.19	5.75	12.87	14.06	12.68	13.94	4.13	3.35	1.42	18	18.5
3"	5"	3"	8.43	1.31	5.75	15.87	17.13	13.66	14.88	4.13	3.94	1.81	26.5	27.5

Dimensions in inch

Angle Seat Control Valve 7020

with integrated positioner diaphragm actuator

Dimensions and Weights



Size	A	B	C	D	E	F	G	H	SW1	SW2	Angle β	Weight lbs
1/2"	G 1/2"	2.56	0.59	9.37	13.39	13.78	11.22	11.02	0.98	1.18	50°	34.5
3/4"	G 3/4"	2.95	0.64	9.37	13.78	14.17	11.61	11.42	1.22	1.18	50°	34.5
1"	G 1"	3.54	0.75	9.37	14.17	14.57	12.01	11.81	1.54	1.18	50°	35
1 1/4"	G 1 1/4"	4.33	0.84	9.37	14.57	15.16	12.4	12.2	1.89	1.18	50°	35
1 1/2"	G 1 1/2"	4.72	0.84	9.37	14.96	15.55	12.8	12.6	2.17	1.18	50°	35.5
2"	G 2"	5.91	1.01	9.37	16.14	16.14	13.78	13.19	2.68	1.42	50°	36.5
2 1/2"	G 2 1/2"	7.09	1.19	9.37	16.73	16.54	14.57	13.78	3.35	1.42	50°	37
3"	G 3"	8.43	1.32	9.37	18.7	16.14	16.14	13.98	3.94	1.61	45°	42.5

Dimensions in inch