

# Angle Seat Control Valve

with integrated positioner

7020

1/4" up to 3"

SCHUBERT & SALZER  
INC.

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

- Integrated positioner
- Compact design
- All wetted parts made from stainless steel
- Temperatures up to 392°F
- Wide range of Cv's



**Type 7020  
with i/p-positioner  
Type 8047**

**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



**Type 7020  
with digital positioner  
Type 8049**

## Technical Information

Body material	Stainless steel 316 L
Nominal sizes	1/4" up to 3"
Connections	
NPT thread	1/4" up to 3"
Tri Clamp	1/2" up to 3"
Tube ends	1/2" up to 3"
Socket weld	1/2" up to 2 1/2"
Nominal pressure	580 psi
Fluid temperature	-22°F up to + 392°F

### Options:

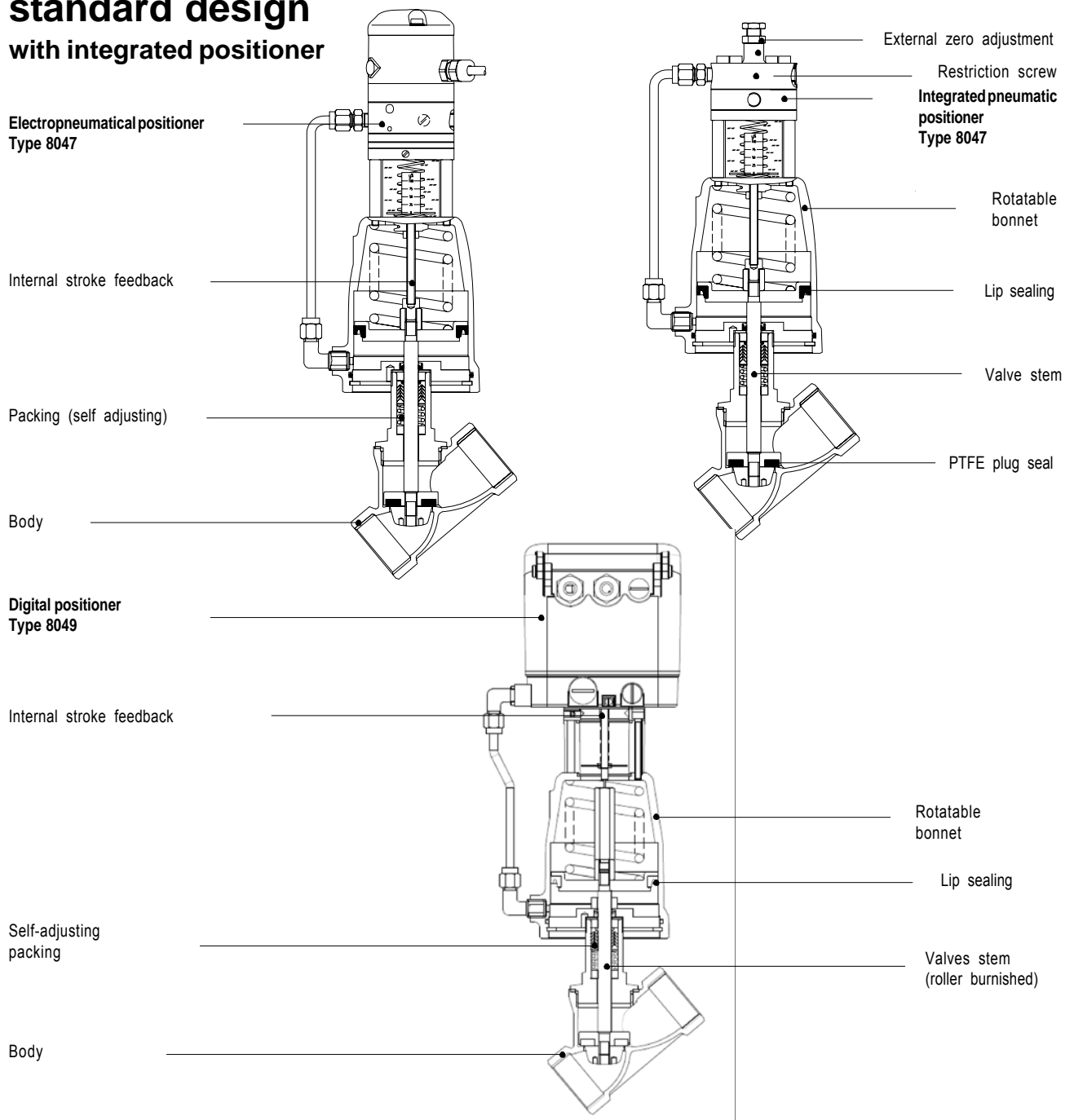
- Optical position indicator
- External I/P-converter  
Type 8045
- Ex -i/p- positioner

(Ex) II 2 G EEx ib IIC T6)

SCHUBERT & SALZER  
**CONTROL**<sup>®</sup>  
**SYSTEMS**

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# Angle Seat Control Valve 7020, standard design with integrated positioner



## Materials

Body	Stainless steel 316 L
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)

# Angle Seat Control Valve 7020

## with integrated positioner



### Positioner

	i/p-positioner Type 8047	p/p-positioner Type 8047
Input signal range	0/4 - 20 mA, 0/2 - 10 V	3 - 15 psi
Supply voltage, electrical	none	none
Supply air pressure	max. 87 psi	max. 87 psi
Hysteresis	< 1 %	< 1 %
Rangeability	25 : 1	25 : 1
Characteristics	Characteristics of function unit	Characteristics of function unit
Adjustment (Stroke, zero point)	mechanical	mechanical
Ambient temperature	-4°F up to +140°F	-4°F up to +176°F
Protection class acc. DIN 40050	IP 54	IP 54
Ex-proof (Optional)	ⓧ II 2 G EEx ib IIC T6 up to 113°F ⓧ II 2 G EEx ib IIC T5 up to 140°F	-

### Digital Positioner Type 8049

Version	4-wire	2-wire	AS-I
Set point signal	0/4 - 20 mA	4 - 20 mA	Single Slave, Slave Profil S - 7.3.4
Burden voltage	1,2 V	14 V	-
Supply energy, electrical	24 VDC	none	supply with AS-I
Adaption to range and zero	self-calibrating		
Configuration	with PC-Software		
Air capacity* to actuator	1.75 SCFM	varies with design	1.75 SCFM
System air consumption	none		
Ambient temperature limits	-4 to +167°F	-14 to +167°F	-4 to +167°F
Supply connection	NPT 1/8"		
Class of protection	IP 65		
Accessories	Analogue feedback module RM-1		
	2 wire design, feedback signal 4 - 20 mA		
	Analogue feedback module RM-2		
	4 wire design, feedback signal 4 - 20 mA		

\*90 psi supply air

# Angle Seat Control Valve 7020, standard design with integrated positioner



## Admissible Pressures

digital positioner

DN	Pressure	Supply pressure range	Piston Ø	Spring configuration
	psi	psi	inch	Number
1/4"	235	60 - 90	3"	2 *
1/2"	235	60 - 90	3"	2
3/4"	235	60 - 90	3"	2
1"	235	60 - 90	3"	1
1 1/4"	145	60 - 90	3"	1
1 1/4"	235	45 - 90	5"	2
1 1/2"	85	60 - 90	3"	1
1 1/2"	235	60 - 90	5"	3

\* special springs

i/p-positioner p/p-positioner

DN	Pressure	Supply pressure Range	Piston Ø	Spring configuration
	psi	psi	inch	Number
1/4"	235	60 - 90	3"	2 *
1/2"	235	60 - 90	3"	2
3/4"	235	60 - 90	3"	2
1"	175	60 - 90	3"	1
1 1/4"	100	60 - 90	3"	1
1 1/4"	190	45 - 90	5"	2
1 1/2"	60	60 - 90	3"	1
1 1/2"	160	60 - 90	5"	3

\* special springs

diaphragm actuator direct pressure range

DN	Maximum pressure (psi)		Supply air (psi)		Diaphragm area
	spring range		spring range		inch
	3 - 15 psi	6 - 29 psi	3 - 15 psi	6 - 29 psi	
1/2"	235	235	20	35	10"
3/4"	235	235	20	35	10"
1"	130	235	20	35	10"
1 1/4"	75	220	20	35	10"
1 1/2"	45	145	20	35	10"
2"	30	90	20	35	10"

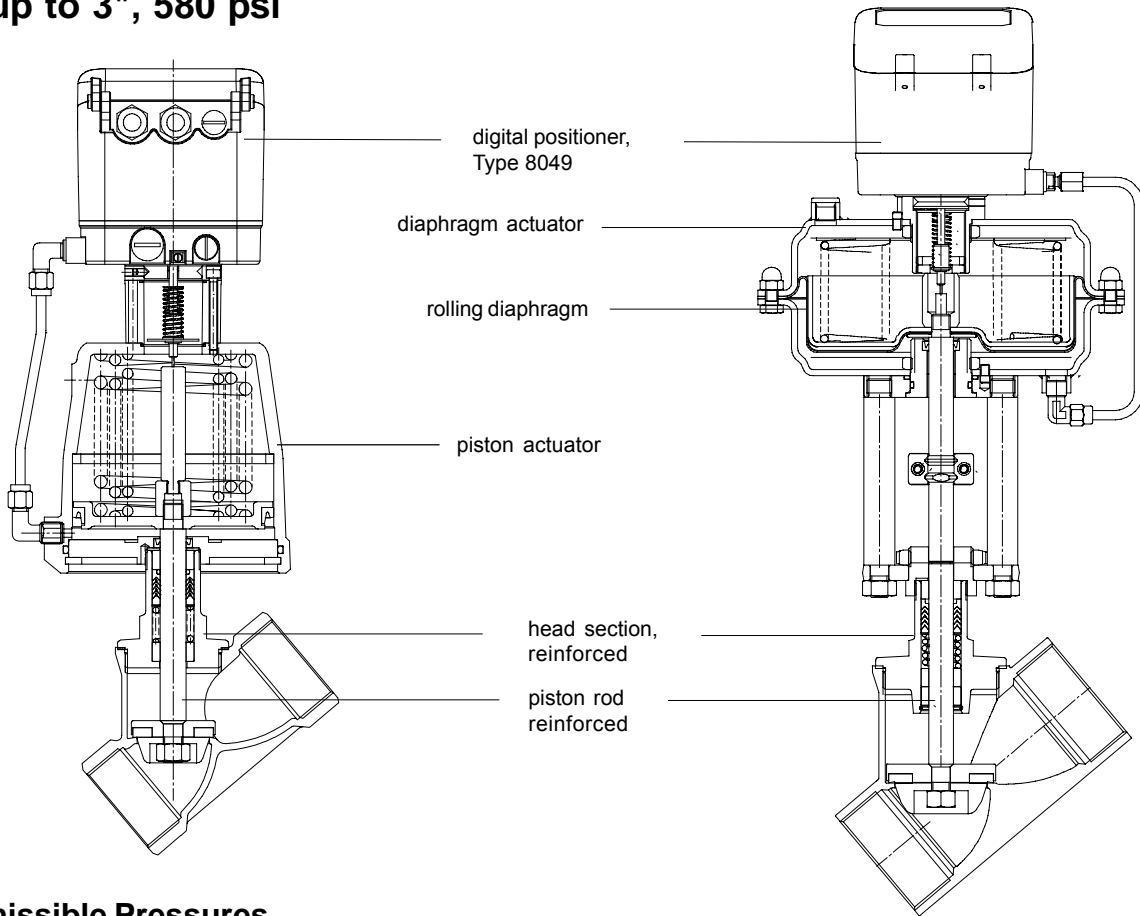
## Cv- Values

DN	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	-	-	-	-

# Angle Seat Control Valve 7020, reinforced design with integrated positioner



2" up to 3", 580 psi



## Admissible Pressures

digital positioner

DN	Max. pressure (psi)		Supply pressure range psi	Piston Ø inch	Spring configuration Number
	PTFE	PEEK			
2"	45	-	60 - 90	3"	1
2"	130	45	60 - 90	5"	3
2"	175	75	45 - 90	10"	6
2"	230	205	60 - 90	10"	12
2 1/2"	75	-	60 - 90	5"	3
2 1/2"	160	85	60 - 90	10"	12
3"	45	-	60 - 90	5"	3
3"	100	45	60 - 90	10"	12

i/p-positioner p/p-positioner

DN	Differential pressure (psi)	Supply pressure range psi	Piston Ø inch	Springs number
	PTFE			
2"	29	60 - 90	3"	1
2"	87	60 - 90	5"	3

## Cv- Values

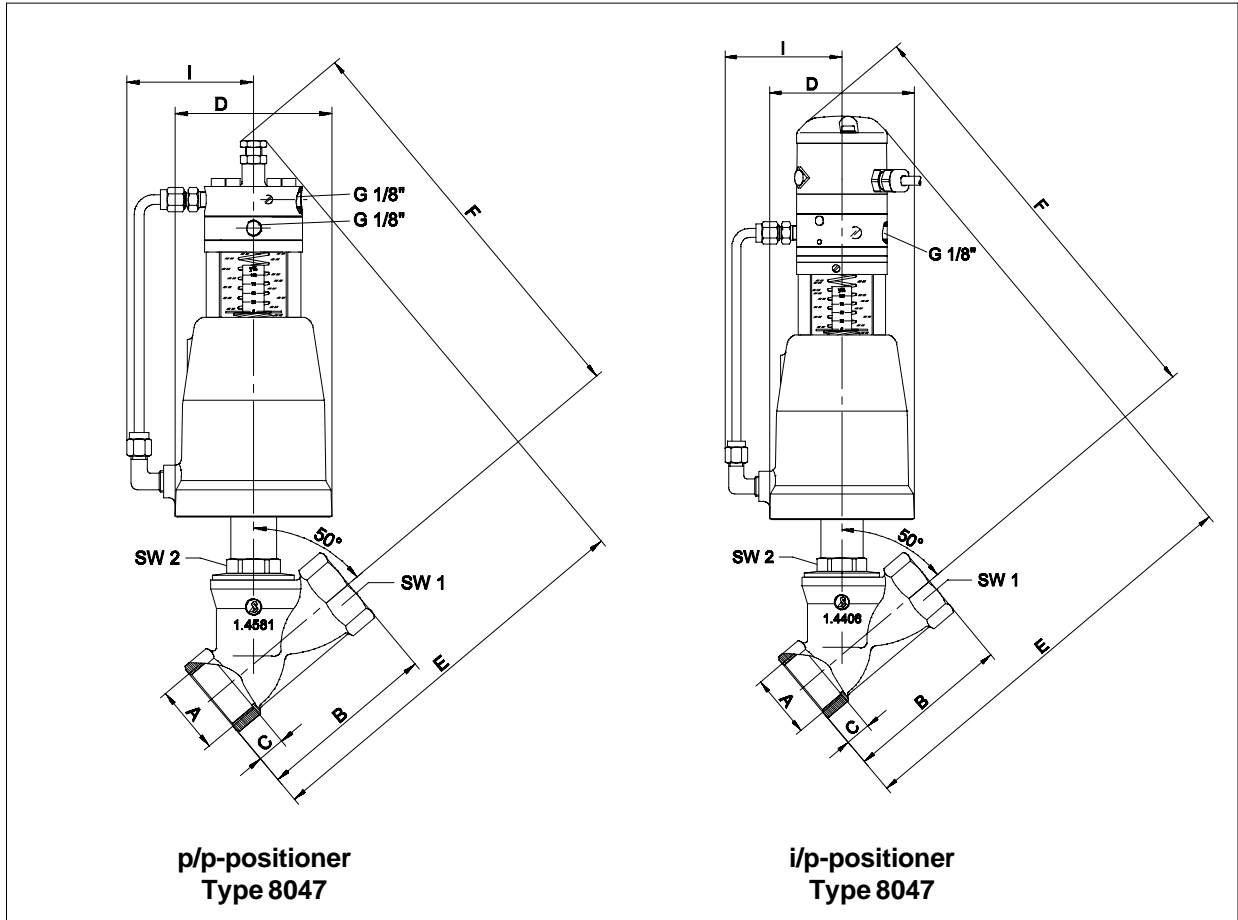
DN	linear			equal percentage		
	2"	2 1/2"	3"	2"	2 1/2"	3"
100%	49.9	60.3	80	39.4	51	68.4
63%	30.2	37.1	-	26.7	33.6	-



# Angle Seat Control Valve 7020, piston actuator with integrated positioner



## Dimensions and Weights



DN	Actuator	A Rp/NPT	B	C	D	E		F		I	SW1	SW2	Weight (lbs)	
						Positioner		Positioner					p/p	i/p
						p/p	i/p	p/p	i/p					
1/4"	2"	1/4"	2.36	0.47	2.44	-	-	-	-	2.44	0.79	1.18	-	-
1/4"	3"	1/4"	2.36	0.47	3.78	8.66	9.84	9.06	10.24	3.15	0.79	1.18	8	9
1/2"	3"	1/2"	2.56	0.59	3.78	8.66	9.84	9.06	10.24	3.15	0.98	1.18	8	9
3/4"	3"	3/4"	2.95	0.64	3.78	8.86	10.04	9.25	10.43	3.15	1.22	1.18	8.5	9
1"	3"	1"	3.54	0.75	3.78	9.25	10.43	9.45	10.63	3.15	1.54	1.18	9	9.5
1 1/4"	3"	1 1/4"	4.33	0.84	3.78	9.84	11.02	10.04	11.22	3.15	1.89	1.18	9.5	10
1 1/4"	5"	1 1/4"	4.33	0.84	5.75	10.43	11.61	10.83	12.01	4.13	1.89	1.18	15	16
1 1/2"	3"	1 1/2"	4.72	0.84	3.78	10.04	11.22	10.24	11.42	3.15	2.17	1.18	10	11
1 1/2"	5"	1 1/2"	4.72	0.84	5.75	10.63	11.81	11.02	12.2	4.13	2.17	1.18	16	16.5

reinforced design:

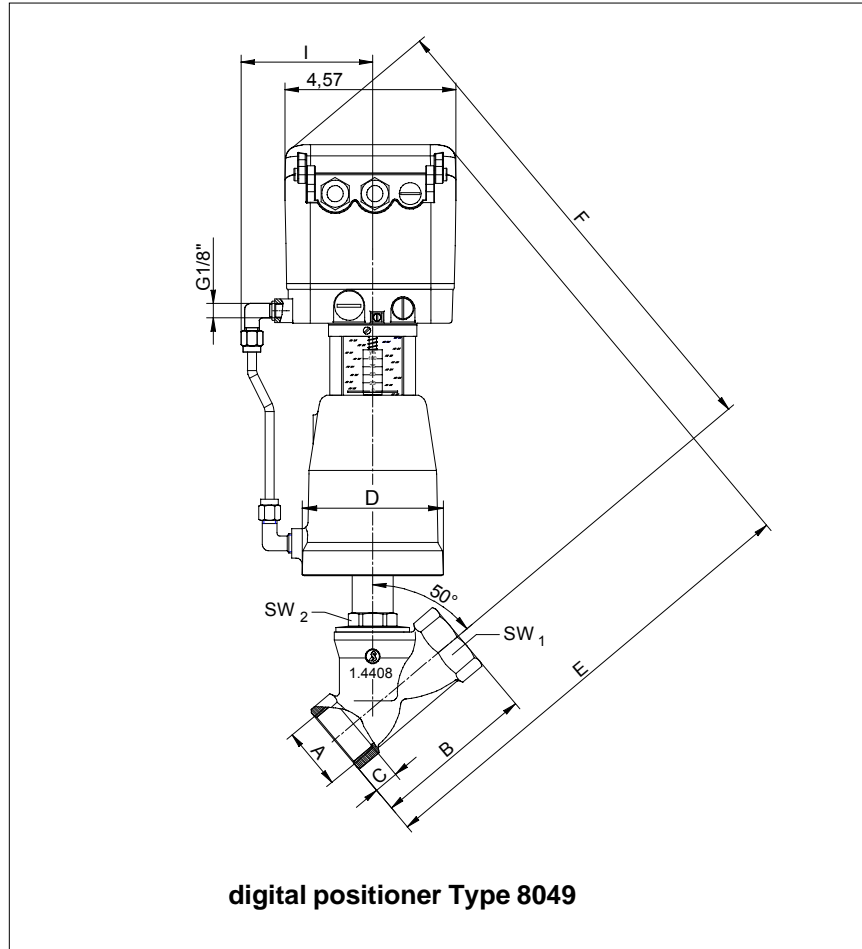
2"	3"	2"	5.91	0.83	3.78	10.83	12.01	10.63	11.81	3.15	2.68	1.26	11.5	12
2"	5"	2"	5.91	1.01	5.75	11.22	12.4	11.22	12.4	4.13	2.68	1.26	17	18

Dimensions in inch

# Angle Seat Control Valve 7020, piston actuator with integrated positioner



## Dimensions and Weights



DN	Actuator	A Rp/NPT	B	C	D	E	F	Hub	I	SW1	SW2	Cv- value	Weight (lbs)
1/2"	3"	1/2"	2.56	0.47	3.78	12.17	11.85	0.28	3.15	0.98	1.18	4	9.7
3/4"	3"	3/4"	2.95	0.51	3.78	12.36	12.05	0.47	3.15	1.22	1.18	9.5	9.9
1"	3"	1"	3.54	0.59	3.78	12.76	12.24	0.63	3.15	1.54	1.18	18.5	10.3
1 1/4"	3"	1 1/4"	4.33	0.67	3.78	13.35	12.83	0.79	3.15	1.89	1.18	28	11
1 1/4"	5"	1 1/4"	4.33	0.67	5.75	14.53	14.02	0.79	4.13	1.89	1.18	28	16.7
1 1/2"	3"	1 1/2"	4.72	0.75	3.78	13.54	13.03	0.91	3.15	2.17	1.18	40.5	11.7
1 1/2"	5"	1 1/2"	4.72	0.75	5.75	14.72	14.21	0.91	4.13	2.17	1.18	40.5	17.4

reinforced design:

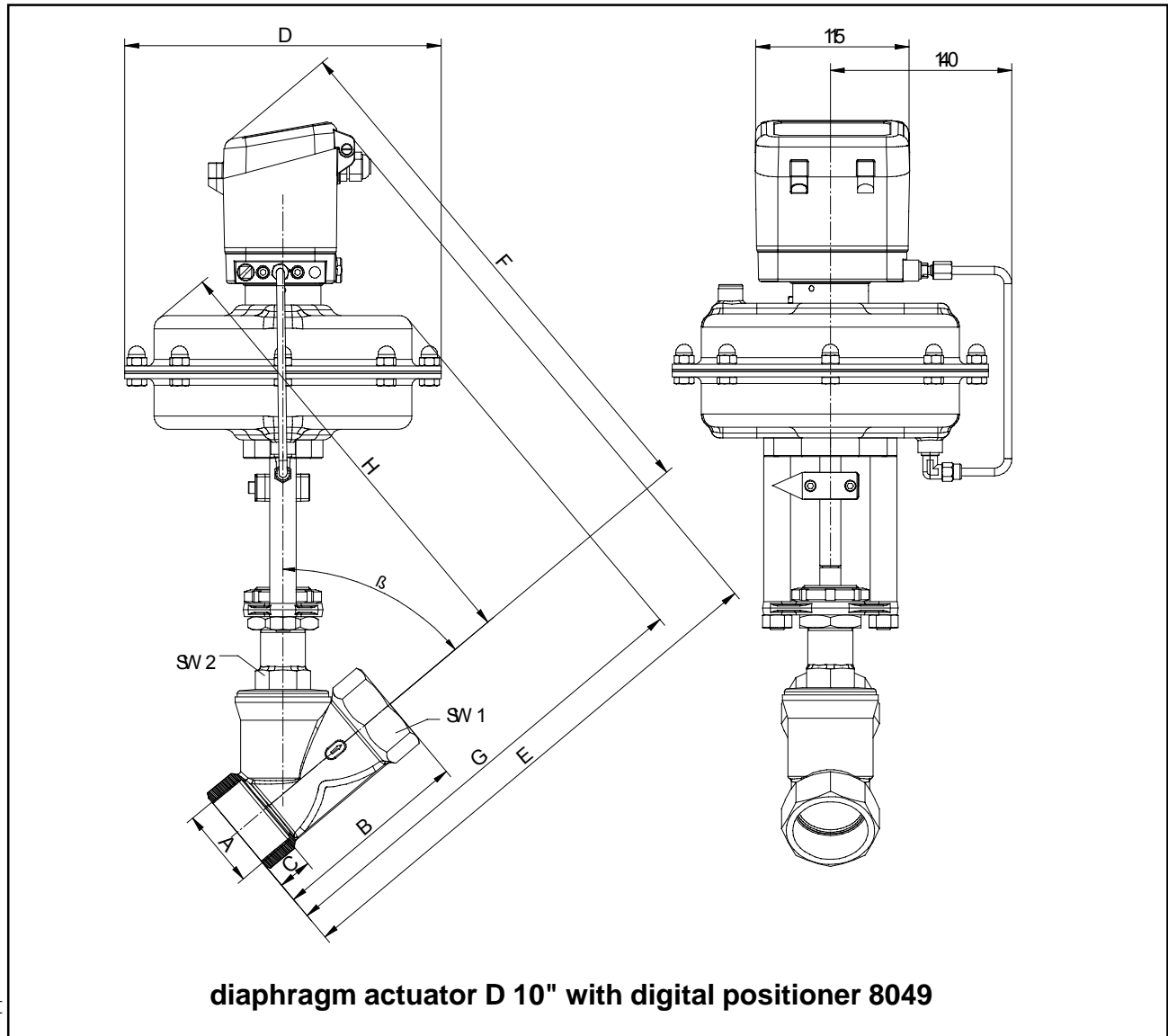
2"	3"	2"	5.91	1.01	3.78	13.78	13.78	0.94	3.15	2.68	1.26	50	13
2"	5"	2"	5.91	1.01	5.75	14.37	14.37	0.94	4.13	2.68	1.26	50	18.7
2 1/2"	5"	2 1/2"	7.09	1.18	5.75	15.16	14.96	0.94	4.13	3.35	1.42	60.5	19.6
3"	5"	3"	8.43	1.32	5.75	17.13	14.96	0.94	4.13	3.94	1.61	81	25.1

Dimensions in inch

# Angle Seat Control Valve 7020, diaphragm actuator with integrated positioner



## Dimensions and Weights



DN	A	B	C	D	E	F	G	H	SW1	SW2	Angle $\beta$	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 1/2"	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

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