

LINEAR PNEUMATIC ACTUATORS PA206, PA281, PA341 and PA436 (140 cm² to 700 cm²)

DESCRIPTION

PA series pneumatic multi-spring actuators with rolling diaphragm, offering decreased hysteresis and good linearity throughout the operating range. Available in air to close and air to open versions, for modulating and on/off services.

MAIN FEATURES

Multi-spring compact design.
Actuators with rolling diaphragm.
High spring thrusts and stroking speeds.
Strokes up to 30 mm.
Sizes from 140 cm² to 700 cm².
Yoke and stem coupling with mounting according to NAMUR (DIN IEC 60534-6-1).
Operation temperature range from -20 °C to 80 °C.

OPTIONS AND

ACCESSORIES: Top mounted handwheel.
Stroke limiter.
Stainless steel construction.
Positioners, limit switches, I/P converters, volume boosters, feedback units and others.

USE: Actuation of Trol control valves, or others on request.

AVAILABLE MODELS:

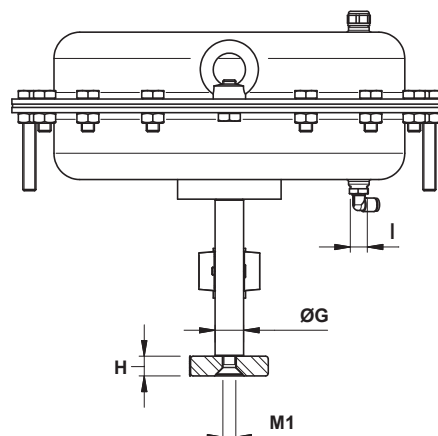
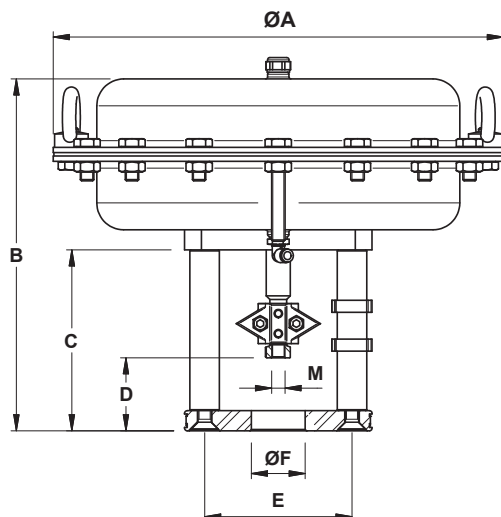
PA206, PA281, PA341 and PA436 – mild steel.
PA206i, PA281i, PA341i and PA436i – stainless steel.
For other models, please consult IS PV3.70 – PA linear pneumatic actuators.



SPRING RANGES AND ACTUATOR THRUSTS

ACTUATOR MODEL	DIAPHRAGM AREA (cm ²)	RATED STROKE (mm)	SPRING RANGE (bar)	SPRING QTY.	SPRING FORCE AT 0 mm TRAVEL (N)	SPRING FORCE AT RATED TRAVEL (N)	ACTUATOR FORCE (N) IN RELATION TO MOTIVE AIR PRESSURE (bar)							MAX. AIR SUPPLY (bar)
							1,4	2	3	3,5	4	5	6	
PA206	140	20	0,2 - 1 a)	1	280	1000	560	1400	2800	3500	-	-	-	3,5
			1 - 3 b)	2	1400	4200	-	-	-	700	-	-	-	
PA281	300	20	0,2 - 1 a)	4	600	3000	1200	3000	6000	7500	-	-	-	
			0,4 - 2 a)	8	1200	6000	-	-	3000	4500	-	-	-	
			0,8 - 1,6	4	2400	4200	-	1200	4200	5700	-	-	-	
			1,2 - 2,4	6	3600	7200	-	-	1800	3300	-	-	-	
			1,6 - 3,2	8	4800	9600	-	-	-	900	-	-	-	
PA341	445	30	0,2 - 1 a)	4	890	4450	1780	4450	8900	11125	-	-	-	
			0,4 - 2 a)	8	1780	8900	-	-	4450	6675	-	-	-	
			0,6 - 1,4	4	2670	6230	-	2670	7120	9345	-	-	-	
			0,9 - 2,1	6	4005	9345	-	-	4005	6230	-	-	-	
			1,2 - 2,8	8	5340	12460	-	-	-	3115	-	-	-	
PA436	700	30	0,2 - 1 a)	4	1400	7000	2800	7000	14000	17500	-	-	-	
			0,4 - 2 a)	8	2800	14000	-	-	7000	10500	-	-	-	
			1 - 2	4	7000	14000	-	-	7000	10500	-	-	-	
			1,5 - 3	6	10500	21000	-	-	-	3500	-	-	-	
			2 - 4	8	14000	28000	-	-	-	-	-	7000	14000	6

- a) Actuator with 25% additional possible spring compression, allowing setting of 0,4 - 1,2 bar (0,2 - 1 bar) and 0,8 - 2,4 (0,4 - 2 bar) operating ranges.
b) Not available in air to close, "stem retracts by spring force" version.



DIMENSIONS (mm)

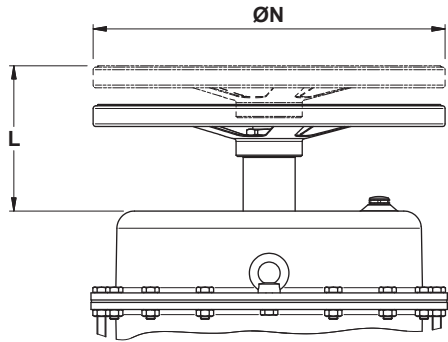
MODEL	ØA	B	C	D	E	ØF	ØG	H	I	M *	M1	WEIGHT (kg)
PA206	209	236	135	55	110	40	22	15	G 1/4"	M10 x 1	M10	6,5
PA281	275	243	135	55	110	40	22	15	G 1/4"	M10 x 1	M10	10
PA341	336	288 / 323	160 / 195	68	110	45	22	15	G 1/4"	M10 x 1 / M16 x 1,5	M10	16
PA436	430	316 / 351 336 / 371 **	160 / 195	68	110	45	22	15	G 1/4"	M10 x 1 / M16 x 1,5	M10	27 31 **

* Depending on valve stem thread. Can be coarse or fine thread. Other dimensions on request.

** Actuators with spring ranges 1 - 2 bar, 1,5 - 3 bar and 2 - 4 bar.

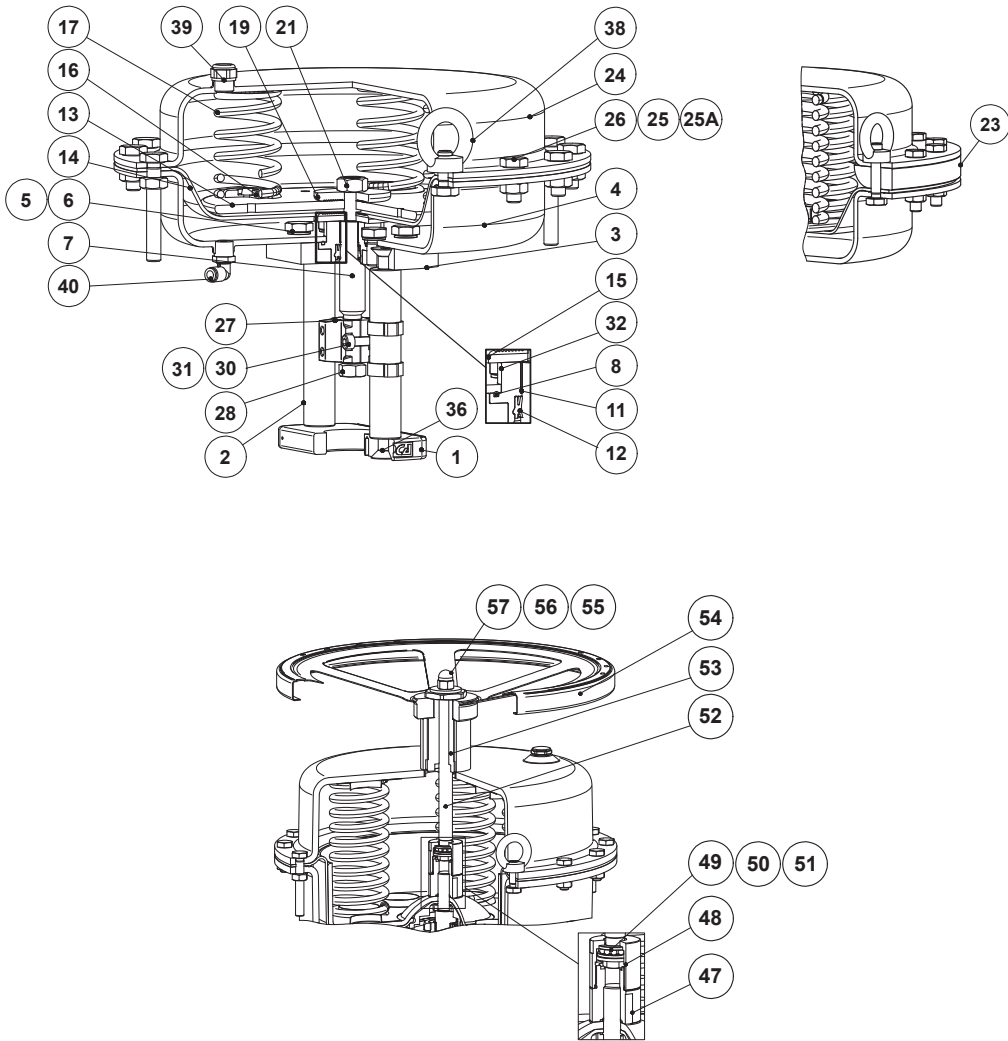
Remarks: Stem coupling, yoke dimensions and design may vary depending on the Trol control valve model. Refer to its corresponding information sheet or consult the manufacturer.

Mild steel and stainless steel construction share the same dimensions.



DIMENSIONS – ACTUATOR WITH TOP MOUNTED HANDWHEEL (mm)		
MODEL	$\varnothing N$	L
PA206	250	106
PA281	250	106
PA341	300	111
PA436	400	156

MATERIALS



MATERIALS

POS. N°	DESIGNATION	PA206, PA281, PA341 and PA436	PA206i, PA281i, PA341i and PA436i
1	Lower actuator flange	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2	Yoke columns	C45E / 1.1191	AISI 304 / 1.4301
3	Upper actuator flange	C45E / 1.1191	A351 CF8 / 1.4308; AISI 304 / 1.4301
4	Lower actuator cover	DD12 / 1.0398	AISI 304 / 1.4301
5	Washers	Zinc plated steel	Zinc plated steel
6	Bolts	Zinc plated steel	Stainless steel A2-70
7	Actuator stem	AISI 316 / 1.4401	AISI 316 / 1.4401
8	* O-ring	NBR	NBR
11	* Plain bearing	Steel / PTFE	Steel / PTFE
12	* Seal ring	Polyurethane	Polyurethane
13	Diaphragm plate	S235JR / 1.0038	S235JR / 1.0038
14	* Diaphragm	Reinforced NBR	Reinforced NBR
15	Diaphragm disk	C45E / 1.1191	C45E / 1.1191
16	Spring guide	C45E / 1.1191	C45E / 1.1191
17	* Springs	Spring steel	Spring steel
19	Spacer	C45E / 1.1191	C45E / 1.1191
21	Nut	Zinc plated steel	Zinc plated steel
23	Cover spacer	Aluminium	Aluminium
24	Upper actuator cover	DD12 / 1.0398	AISI 304 / 1.4301
25	Nuts	Zinc plated steel	Stainless steel A2-70
25A	Washers	Zinc plated steel	Stainless steel A2-70
26	Bolts	Zinc plated steel	Stainless steel A2-70
27	Coupling / Travel indicator	A351 CF8 / 1.4308	A351 CF8 / 1.4308
28	Adaptor	AISI 304 / 1.4301	AISI 304 / 1.4301
30	Bolts	Zinc plated steel	Stainless steel A2-70
31	Nuts	Zinc plated steel	Stainless steel A2-70
32	* Stem guide	AISI 304 / 1.4301	AISI 304 / 1.4301
36	Bolts	Zinc plated steel	Stainless steel A2-70
38	Eyebolts	Zinc plated steel	AISI 304 / 1.4301
39	Vent plug	Brass; Plastic	Brass; Plastic
40	Fitting	Zinc plated steel; Plastic	Zinc plated steel; Plastic
47	Nut	AISI 316 / 1.4401	AISI 316 / 1.4401
48	Nut	AISI 316 / 1.4401	AISI 316 / 1.4401
49	Plain bearing	Steel / PTFE	Steel / PTFE
50	Washer	Zinc plated steel	Zinc plated steel
51	Bolt	AISI 304 / 1.4301	AISI 304 / 1.4301
52	Stem	AISI 316 / 1.4401	AISI 316 / 1.4401
53	Spindle	AISI 304 / 1.4301	AISI 304 / 1.4301
54	Handwheel	Steel	Steel
55	Washer	Zinc plated steel	Zinc plated steel
56	Locknut	C45E / 1.1191	C45E / 1.1191
57	Nut	AISI 304 / 1.4301	AISI 304 / 1.4301

* Available spare parts.

ACCESSORIES	
AIR FILTER REGULATOR	SOLENOID VALVE
	
INDUCTIVE LIMIT SWITCH BOX	MECHANICAL LIMIT SWITCHES
	
POSITION FEEDBACK UNIT	I/P CONVERTER
	

POSITIONERS *		
PNEUMATIC	ELECTROPNEUMATIC	INTELLIGENT ELECTROPNEUMATIC
		

* Different models are available within each category.

ORDERING CODES PA

Group designation	PA	206	S	R	2	A	XX	A1
PA series linear pneumatic actuators	PA							
Actuator model								
PA206 (140 cm²)		206						
PA281 (300 cm²)		281						
PA341 (445 cm²)		341						
PA436 (700 cm²)		436						
Actuator construction								
Mild steel construction (standard)			S					
Stainless steel construction			I					
Direction of action								
Air to open (stem extends by spring force)				R				
Air to close (stem retracts by spring force)				D				
Rated stroke								
20 mm					2			
30 mm					3			
Spring range a)								
0,2 – 1 bar						A		
0,4 – 2 bar						B		
0,6 – 1,4 bar						J		
0,8 – 1,6 bar						C		
0,9 – 2,1 bar						K		
1 – 2 bar						D		
1 – 3 bar						E		
1,2 – 2,4 bar						F		
1,2 – 2,8 bar						L		
1,5 – 3 bar						G		
1,6 – 3,2 bar						H		
2 – 4 bar						I		
Options								
None							XX	
Top mounted handwheel b)							HX	
Stroke limiter							LX	
Yoke design and coupling								
VPC26, V16/2 and V25/2 series (DN 15 to DN 50 – 1/2" to 2")								A1
Pure V926H, V926A (1/2" to 2 1/2") and V928 series (DN 15 to DN 50)								A3
V16/2 series (DN 65 to DN 100 – 2 1/2" to 4")								B1
V25/2 series (DN 65 to DN 100 – 2 1/2" to 4")								B2
V926H (3" and 4") and V928 series (DN 65 to DN 100)								B3
Other Trol valves c)								XX
Special versions / Extras								
Full description or additional codes have to be added in case of a non-standard combination								E

a) Not every spring range/stroke combination is available for each actuator model.

b) Not available in actuators with stainless steel construction (e.g. PA206i).

c) Exact model and size must be specified – consult the manufacturer.

How to size: For selection of suitable actuator to use with ADCATrol control valves, consult IS PV15.00 – Maximum permissible pressure drops for ADCATrol control valves – or consult the manufacturer.