

**LINEAR PNEUMATIC ACTUATORS  
 PA  
 (140 cm<sup>2</sup> to 700 cm<sup>2</sup>)**

**DESCRIPTION**

PA series pneumatic multi-spring actuators with rolling diaphragm, offering decreased hysteresis and good linearity throughout the operating range. Available with direct or reverse action 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 cm<sup>2</sup> to 700 cm<sup>2</sup>.  
 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, feedback units and others.

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

**AVAILABLE**

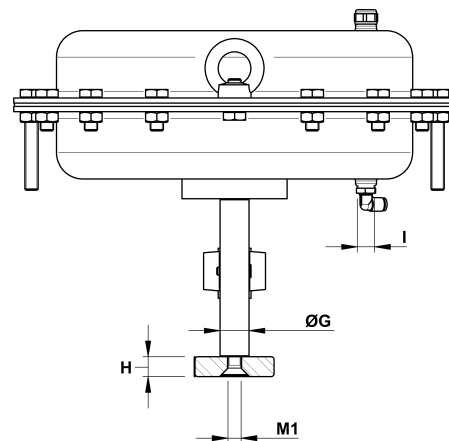
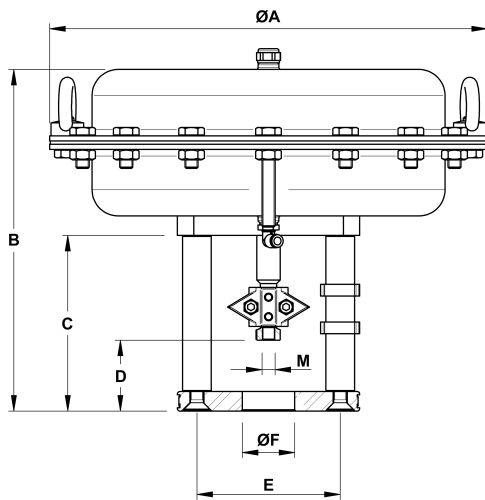
**MODELS:** PA206, PA281, PA341 and PA436 – mild steel.  
 PA206i, PA281i, PA341i and PA436i – stainless steel.



**SPRING RANGES AND ACTUATOR THRUSTS**

ACTUATOR MODEL	DIAPHRAGM AREA (cm <sup>2</sup> )	RATED STROKE (mm)	SPRING RANGE (bar)	SPRING QTY.	SPRING FORCE AT 0 mm STROKE (N)	SPRING FORCE AT RATED STROKE (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	4800	-	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	

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



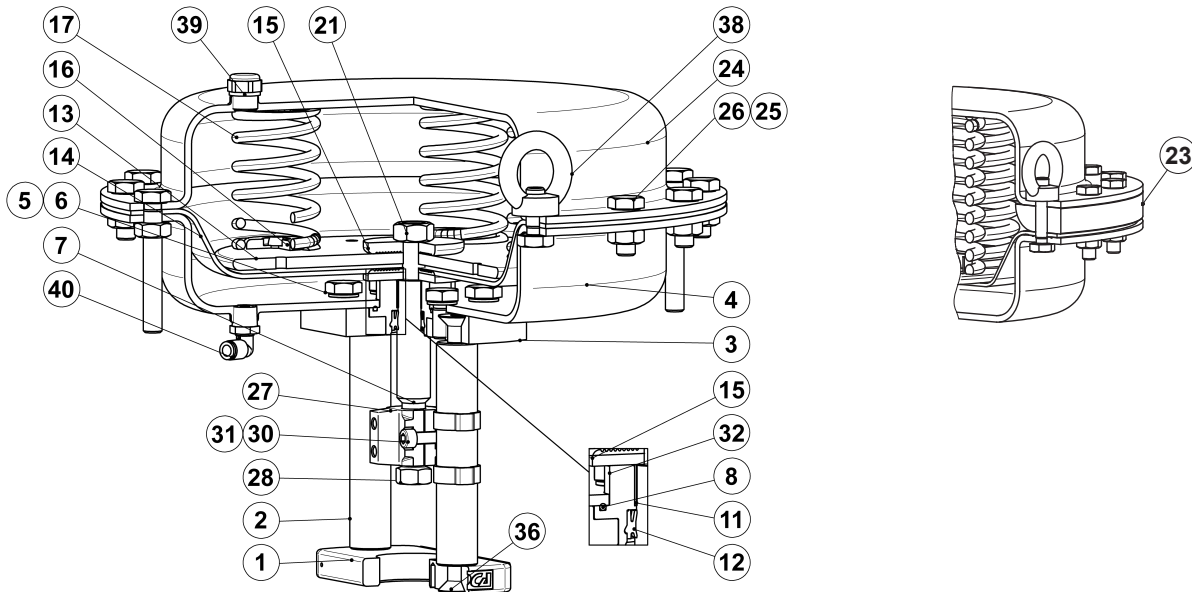
**DIMENSIONS (mm)**

MODEL	A	B	C	D	E	F	G	H	I	M *	M1	WEIGHT (kg)
PA206	209	236	135	55	110	40	22	15	G 1/4"	M10 x 1	M10	6,2
PA281	275	243	135	55	110	40	22	15	G 1/4"	M10 x 1	M10	9,6
PA341	336	323	195	68	110	45	22	15	G 1/4"	M10 x 1 / M16 x 1,5	M10	15,9
PA436	430	351 / 371 **	195	68	110	45	22	15	G 1/4"	M10 x 1 / M16 x 1,5	M10	26,6 / 31 **

\* Depending on valve stem thread. Can be coarse or fine thread.

\*\* For actuators with spring ranges 1 - 2 bar, 1,5 - 3 bar and 2 - 4 bar.

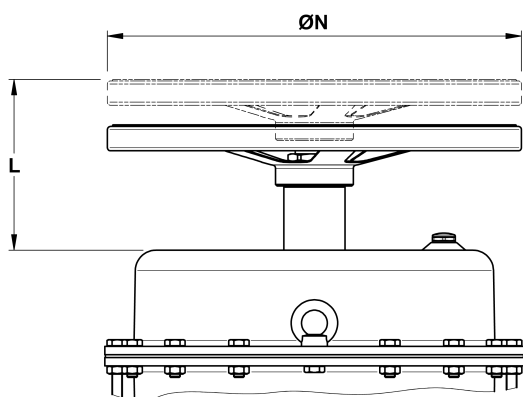
Remark: Stem coupling, yoke dimensions and design may vary depending on the ADCATrol control valve model. Refer to its corresponding information sheet or consult the manufacturer.



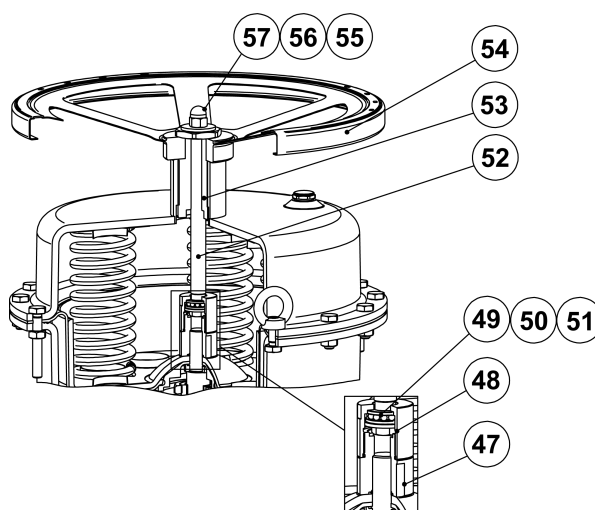
MATERIALS			
POS. N°	DESIGNATION	PA206 / PA281 / PA341 / PA436	PA206i / PA281i / PA341i / PA436i
1	Lower actuator flange	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2	Yoke columns	C45E / 1.1191	AISI 304 / 1.4301
3	Upper actuator flange	C45E / 1.1191	A351 CF8 / 1.4308; AISI 304 / 1.4301
4	Lower actuator cover	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
21	Nut	Zinc plated steel	Stainless steel A2-70
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
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	Countersunk head screws	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	Zinc plated steel

\* Available spare parts.

### TOP MOUNTED HANDWHEEL









DIMENSIONS (mm)		
MODEL	N	L
PA206 / PA281	250	106
PA341	300	111
PA436	400	156



MATERIALS		
POS. N°	DESIGNATION	MATERIAL
47	Nut	AISI 316 / 1.4401
48	Nut	AISI 316 / 1.4401
49	Plain bearing	Zinc plated steel
50	Washer	Zinc plated steel
51	Bolt	AISI 304 / 1.4301
52	Stem	AISI 316 / 1.4401
53	Spindle	AISI 304 / 1.4301
54	Handwheel	Steel
55	Washer	Zinc plated steel
56	Lock nut	C45E / 1.1191
57	Nut	AISI 304 / 1.4301

\* Available spare parts.

ACCESSORIES

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

POSITIONERS \*

<p>PNEUMATIC</p> 	<p>ELECTROPNEUMATIC</p> 	<p>INTELLIGENT ELECTROPNEUMATIC</p> 
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\* Different models are available within each category.

ORDERING CODES PA										
Group designation	PA	206	S	R	2	A	XX	A1		
PA series pneumatic linear actuators	PA									
Actuator model										
PA206 (140 cm <sup>2</sup> )		206								
PA281 (300 cm <sup>2</sup> )		281								
PA341 (445 cm <sup>2</sup> )		341								
PA436 (700 cm <sup>2</sup> )		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							HX			
Stroke limiter							LX			
Yoke design and coupling										
ADCATrol VPC26 and V16/2 series (DN 15 to DN 50 – 1/2" to 2")								A1		
ADCATrol V16/2 series (DN 65 to DN 100 – 3" to 4")								B1		
Other ADCATrol valves b)								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 (size).

b) 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.