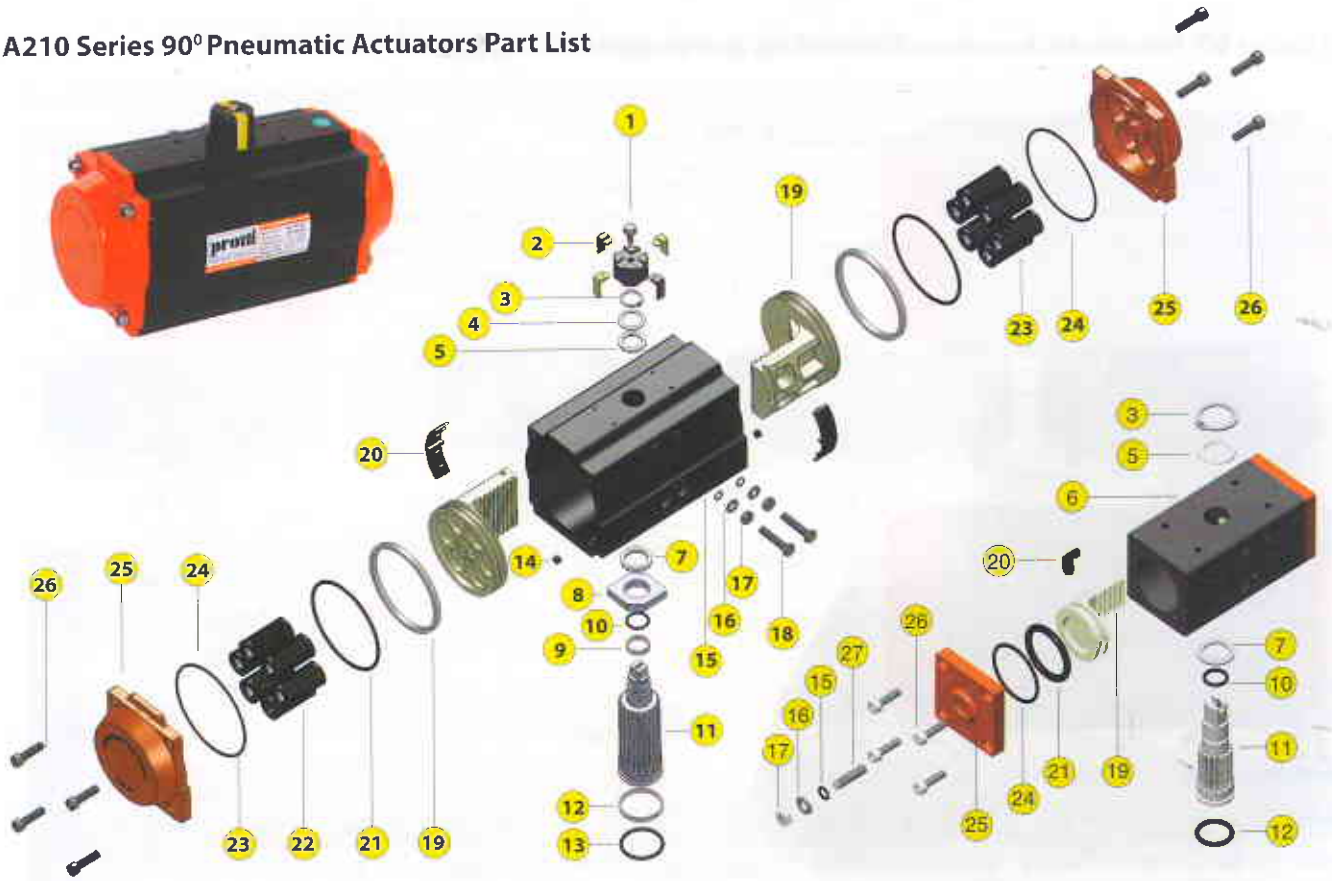
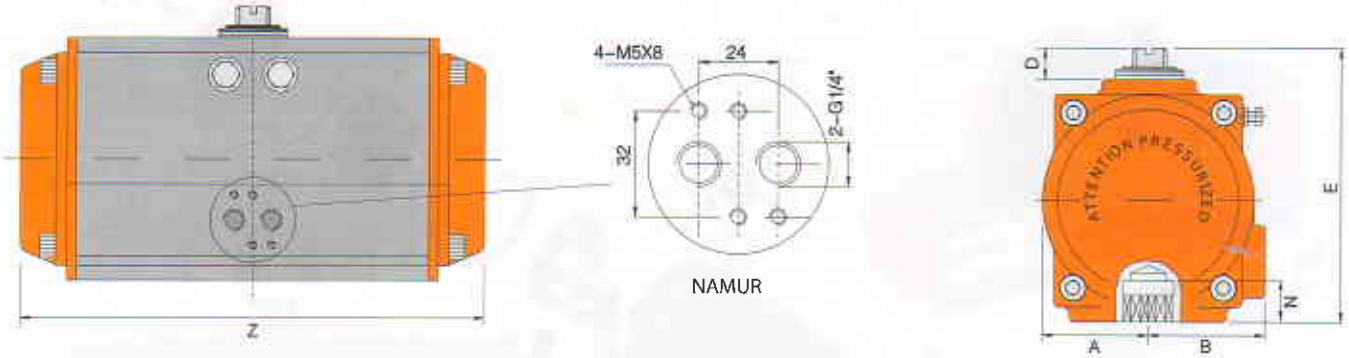
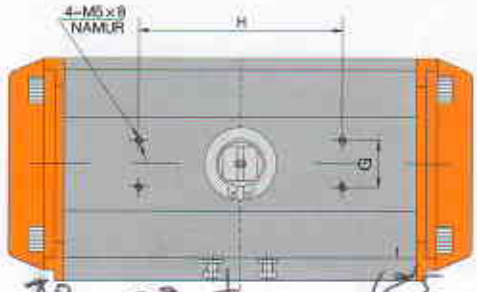
A210 Series 90° Pneumatic Actuators Part List

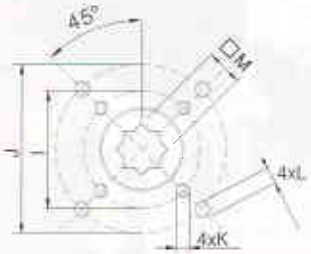


No.	Description	Qty	Standard Material	Protection	Optional Material
1	Indicator Screw	1	Carbon Steel	Galvanizing	Stainless Steel
2	Indicator	1	Plastic		
3	Circlip	1	Stainless Steel		
4	Metal Washer	1	Stainless Steel		
5	Washer	1	Engineering Plastics		
6	Body	1	Extruded Aluminum Alloy	Hard Anodizing	Polyester, ENP, PFA, ECTFE Coatings
7	Inner Washer	1	Engineering Plastics		
8	Cam	1	Alloy Steel		
9	Pinion Upper Bearing	1	Engineering Plastics		Viton/Silicon
10	Pinion Upper O-Ring	1	NBR		
11	Pinion	1	Alloy steel	Nickel Plating	Stainless Steel
12	Pinion Lower Bearing	1	NBR		
13	Pinion Lower O-Ring	1	Engineering Plastics		
14	Sealing Plug	2	NBR		Viton/Silicon
15	Adjustment Bolt O-Ring	2	NBR		Viton/Silicon
16	Washer (Adjustment Bolt)	2	Stainless Steel		
17	Nut (Adjustment Bolt)	2	Stainless Steel		
18	Stroke Adjustment Bolt	2	Stainless Steel		
19	Piston	2	Aluminum Die Cast (52-270) Engineered Plastics (40)	Cr+6 Coating	Stainless Steel
20	Guide Piston	2	Engineering Plastics		
21	Piston Bearing	2	Engineering Plastics		
22	Piston O-Ring	2	NBR		Viton/Silicon
23	Cartridge Springs	0~12	Spring Steel	Cataphoresis Coating	
24	End Cap O-Ring	2	NBR		Viton/Silicon
25	End Cap	2	Cast Aluminum	Epoxy Powder Coating	ENP, PFA, ECTFE Coatings
26	Cap Screw	8	Stainless Steel		

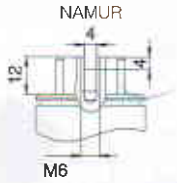
A210 Series 90° Pneumatic Actuators Dimensions and Weight Information







ISO5211
Drilling Pattern



140 32 → 1/2 6.5

Dimensions (mm)

	Model	A	B	D	E	G	H	I	J	K	L	M	N	Z	Air Supply
150	PA 40	40	36	60	81	30	80	Ø36	Ø50	M5x8	M6x10	9-11	14	124	G1/4"
170	PA 52	30	41,5	72	92	30	80	Ø36	Ø50	M5x8	M6x10	9-11	14	154	G1/4"
200	PA 63	36	47	87,5	107,5	30	80	Ø50	Ø70	M6x10	M8x13	9-11-14	18	166	G1/4"
260	PA 75	42	53	99,5	119,5	30	80	Ø50	Ø70	M6x10	M8x13	11-14	18	186	G1/4"
300	PA 83	46	57	108,7	128,7	30	80	Ø50	Ø70	M6x10	M8x13	14-17	21	205	G1/4"
340	PA 92	50	58,5	116,8	136,8	30	80	Ø50	Ø70	M6x10	M8x13	14-17	21	253	G1/4"
420	PA 105	57,5	64	133	153	30	80	Ø70	Ø102	M8x13	M10x16	17-22	26	268	G1/4"
650	PA 125	67,5	74,5	155	175	30	80	Ø70	Ø102	M8x13	M10x16	22	26	301	G1/4"
900	PA 140	75	77	171,5	191,5	30	80	Ø102	Ø125	M10x16	M12x20	27	31	392	G1/4"
1300	PA 160	87	87	197	217	30	80	Ø102	Ø125	M10x16	M12x20	27	31	451	G1/4"
2650	PA 190	103	103	230	260	30	130		Ø140		M16x25	36	40	525	G1/4"
2200	PA 210	113	113	255	285	30	130		Ø140		M16x25	36	40	532	G1/4"
5	PA 240	130	130	288	318	30	130		Ø165		M20x25	46	50	610	G1/4"
7,5	PA 270	147	147	326	356	30	130		Ø165		M20x25	46	50	722	G1/2" G1/4"

Actuator Unit Weights (Kg/Pc)

Model	PA 40	PA 52	PA 63	PA 75	PA 83	PA 92	PA 105	PA 125	PA 140	PA 160	PA 190	PA 210	PA 240	PA 270
Spring Return	-	1,5	2,2	2,9	3,6	5,5	6,7	10,4	14,4	23,3	46,1	53,1	73,3	115,9
Double Acting	0,7	1,4	2,1	2,7	3,3	5,0	5,9	9,0	12,0	19,0	39,1	44,1	59,0	93,6

Air Consumption of Actuators (Lt/Stroke)

Model	PA 40	PA 52	PA 63	PA 75	PA 83	PA 92	PA 105	PA 125	PA 140	PA 160	PA 190	PA 210	PA 240	PA 270
Opening (Lt)	0,06	0,12	0,21	0,30	0,43	0,64	0,88	1,4	2,2	3,2	5,4	6,8	9	14
Closing (Lt)	0,08	0,16	0,23	0,34	0,47	0,73	0,95	1,6	2,5	3,7	5,9	7,5	11	17

A210 Series 90° Double Acting Pneumatic Actuators Working Principles

Double acting actuators are rotated by supplying air to related port until it reaches desired position.

Counterclockwise Rotation (CCWR)

Air to port B forces the pistons inwards, causing the pinion to rotate clockwise while the air is exhausted from port A.

Air to port A forces the pistons outwards, causing the pinion to rotate counterclockwise while the air is exhausted from port B.

Clockwise Rotation (CWR)

Air to port B forces the pistons inwards, causing the pinion to rotate counterclockwise while the air is exhausted from port A.

Air to port A forces the pistons outwards, causing the pinion to rotate clockwise while the air is exhausted from port B.

Double Acting Actuators Torque Values (Nm)

Model	Air Supply Pressure (bar)									
	2	2,5	3	4	4,5	5	5,5	6	7	8
PA 40DA	6	8	10	13	14	16	18	20	22	26
PA 52DA	8	10	12	16	18	20	22	24	28	32
PA 63DA	15	19	22	30	33	37	40	44	52	58
PA 75DA	20	26	30	40	45	50	55	60	70	80
PA 83DA	33	40	48	63	71	79	86	94	110	125
PA 92DA	45	57	68	90	102	113	124	136	158	182
PA 105DA	66	83	100	132	149	166	182	200	232	265
PA 125DA	101	126	151	202	226	252	276	301	352	402
PA 140DA	171	214	257	342	385	428	471	513	599	684
PA 160DA	266	333	399	532	600	665	732	798	932	1064
PA 190DA	426	532	639	852	958	1064	1170	1277	1490	1702
PA 210DA	532	665	798	1064	1198	1330	1463	1596	1862	2128
PA 240DA	770	962	1155	1540	1732	1924	2117	2309	2693	3078
PA 270DA	1169	1462	1755	2340	2632	2925	3217	3510	4095	4680

A210 Series 90° Spring Return Pneumatic Actuators Working Principles

Single acting actuators are rotating one side by air while the springs are loaded and return action is done by means of spring force

Counterclockwise Rotation (CCWR)

Loss of air at port B, causing the energy stored springs to force the pistons inwards and rotating the pinion clockwise.

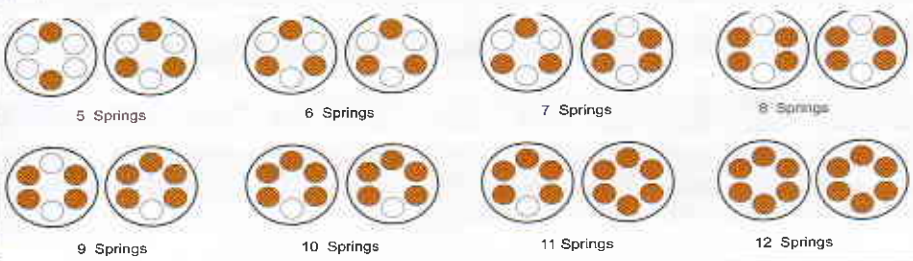
Air to port A forces the pistons outwards, causing the pinion to rotate counterclockwise while the springs are compressed.

Clockwise Rotation (CWR)

Loss of air at port B, causing the energy stored springs to force the pistons inwards and rotating the pinion counterclockwise.

Air to port A forces the pistons outwards, causing the pinion to rotate clockwise while the springs are compressed.

Positioning of Springs for Spring Return Actuators



Preloaded Cardridge Springs