



Product Datasheet

ENGLISH

Pneumatic Actuator



Operating Conditions:

1. Pressure Ranges

40 psig to 100 psig
3 bar to 8 bar

2. Temperature Ranges

-20°C (-4°F) to +80°C (+176°F)

3. Operating Media

Filtered dry or lubricated air for non-corrosive gas, water or light hydraulic oil. The maximum particle size must not exceed 30 microns.

4. Stroke Adjustment

0° and 90° with standard adjustment $\pm 5^\circ$.

5. Lubrication

All moving parts are factory lubricated for entire life cycle of actuator.

6. Construction

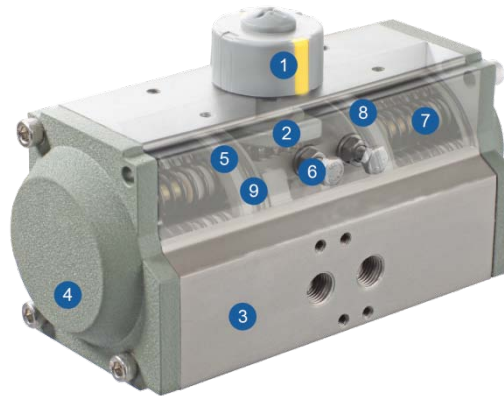
Twin piston rack and pinion actuator design, suitable for indoor and outdoor installation.

7. Connections

Bottom drilling complies with ISO 5211/DIN 3337 to match valve. Interface for solenoid valve, shaft top end and top drilling for assembling accessories are in accordance with VDI/VDE-3845, NAMUR standard.

8. Inspection

Every actuator is hydraulically tested, certified and guaranteed for a minimum of 500,000 cycles.

**Features:****1. Indicator**

A position indicator with Namur mounting is standard on all pneumatic actuators for mounting accessories.

2. Pinion

The hardened alloy steel pinion is precision ground and Nickel plated (over 25um) in order to reduce friction, provide maximum wear resistance. Full conformance with the newest standards of ISO5211 & DIN3337. The dimensions can be customized and as options, stainless steel and aluminium are also available.

3. Actuator Body

The aluminium extrusion is hard anodized (over 30um) to protect against wear and corrosion while reducing piston friction to the absolute minimum. Other options such as Nickel plating, PTFE and powder polyester painting are available.

4. End Caps

Epoxy coated (over 150um) die cast aluminium end caps provide maximum resistance against potentially corrosive elements.

5. Pistons

The precisely-balanced and hard anodized treatment (over 30um) die cast aluminium pistons are fitted with high quality rings and guides. The twin rack and piston design creates a constant torque output on all actuators.

6. Travel Adjustment The standard adjustment is $\pm 5^\circ$ in both the open and closed positions through easily accessible external adjustment bolts.

7. High Performance Springs

The high tensile steel springs are coated with zinc phosphate for corrosion resistance and longer service. The pre-loaded springs can be safely & rapidly disassembled.

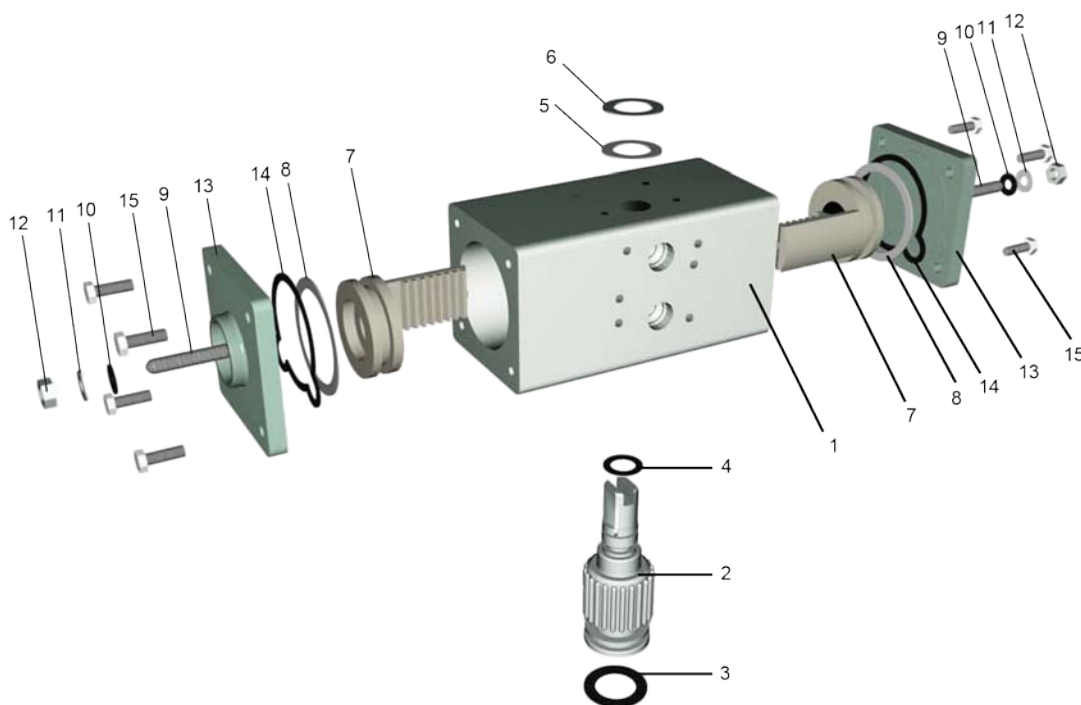
8. Bearings & Guides

The highly durable compound material provides high trust stability with minimum friction and long life.

9. O-Rings

NBR O-rings provide trouble-free operation at standard temperature ranges.

8056036 Parts List:

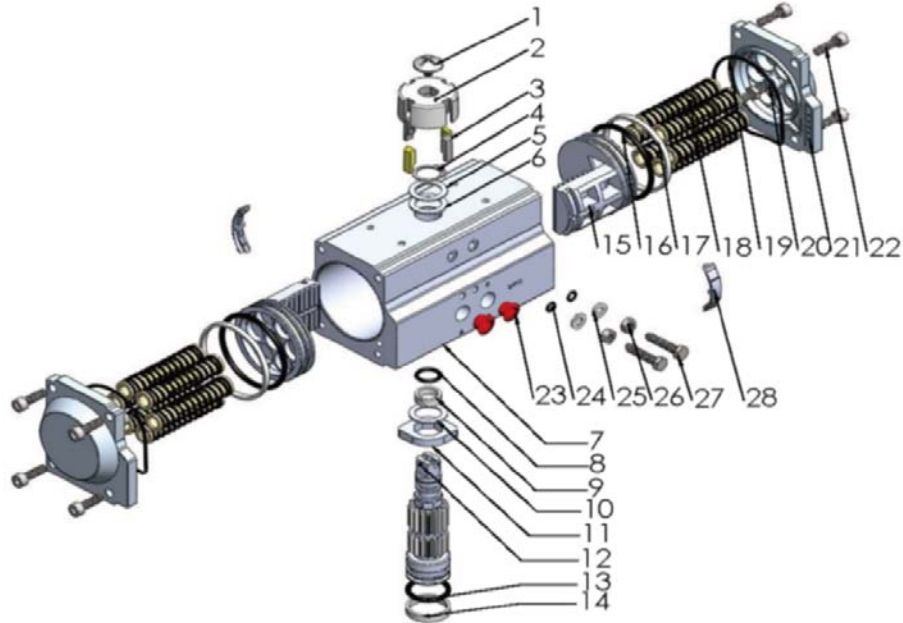


Item	Description	Material	Protection	Q'ty
1	Actuator Body	Extruded Aluminium Alloy	Hard Anodized (over 30um)	1
2	Pinion	Alloy Steel	Nickel Plated (over 25um)	1
3	O-Ring (Low Pinion)	NBR	-----	1
4	O-Ring (Top Pinion)	NBR	-----	1
5	Thrust Bearing (Pinion)	POM	-----	1
6	Spring Clip	Stainless Steel	-----	1
7	Piston	Die Cast Aluminium Alloy	Hard Anodized (over 30um)	2
8	Piston Seal	NBR	-----	2
9	Stroke Bolt	Stainless Steel	-----	2
10	Stroke Bolt O-Ring	NBR	-----	2
11	Stroke Bolt Washer	Stainless Steel	-----	2
12	Stroke Bolt Retaining Nut	Stainless Steel	-----	2
13	End Cap	Die Cast Aluminium	Epoxy Coated (over 150um)	2
14	End Cap Seals	NBR	-----	2
15	End Cap Bolts	Stainless Steel	-----	8



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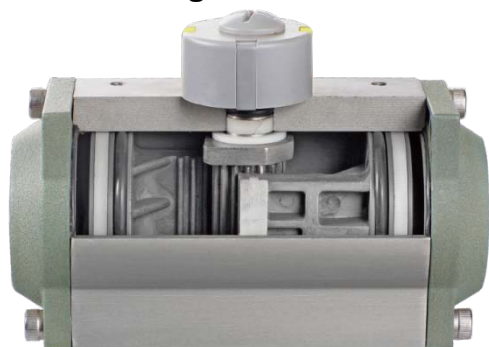
8056045, 8056048, 8056042, 8056051, 8056054 and 8056058 Parts List:



Item	Description	Material	Protection	Q'ty
1	Screw	ABS + 304	-----	1
2	Indicator	Plastic	-----	1
3	Indicator Pin	ABS	-----	4
4	Spring Clip	Stainless Steel	-----	1
5	Thrust Washer (Pinion)	Stainless Steel	-----	1
6	Thrust Bearing (Pinion)	POM	-----	1
7	Actuator Body Extruded	Extruded Aluminium Alloy	Hard Anodized (over 30um)	1
8	O-Ring (Top Pinion)	NBR	-----	1
9	Bearing (Top Pinion)	POM	-----	1
10	Thrust Bearing (Pinon)	POM	-----	1
11	Stroke Cam	Stainless Steel	-----	1
12	Pinion	Alloy Steel	Nickel Plated (over 25um)	1
13	Bearing (Lower Pinion)	POM	-----	1
14	O-Ring (Lower Pinion)	NBR	-----	1
15	Piston	Die Cast Aluminium Alloy	Hard Anodized (over 30um)	2
16	Piston Seal	NBR	-----	2
17	Piston Bearing	POM	-----	2
18	Spring (Cartridge)	High Performance Spring Steel	Zinc Phosphate Coated	10
19	End Cap Seals	NBR	-----	2
20	Stroke Bolt	Stainless Steel	-----	1
21	End Cap	Die Cast Aluminium	Epoxy Coated (over 150um)	2
22	End Cap Bolts	Stainless Steel	-----	8
23	Plug	PE	-----	2
24	Stroke Bolt O-Ring	NBR	-----	2
25	Stroke Bolt Washer	Stainless Steel	-----	2
26	Stroke Bolt Retaining Nut	Stainless Steel	-----	2
27	Stroke Bolt	Stainless Steel	-----	2
28	Piston Guide	POM	-----	2

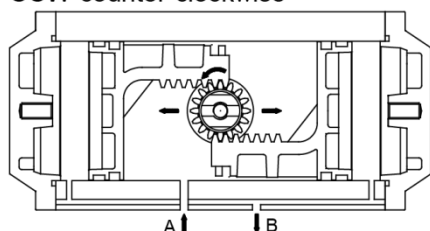


Double Acting Information:



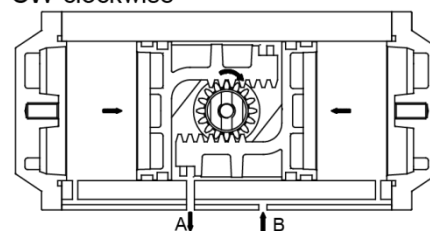
The operating principle of double acting actuator

CCW-counter-clockwise



Air to port A forces the pistons outwards, causing the piston to turn counter-clockwise while air is being exhausted from port B.

CW-clockwise



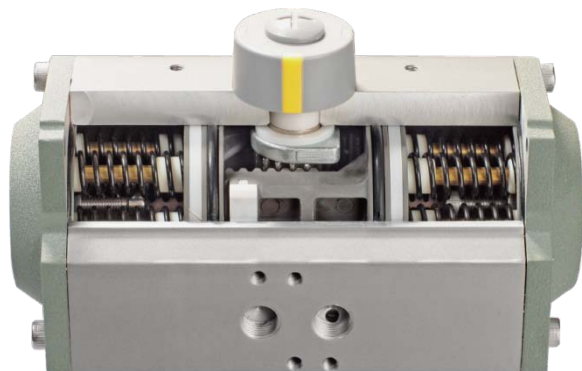
Air to port B forces the pistons inwards, causing the piston to turn clockwise while air is being exhausted from port A.

Torque Table of Double Acting Actuator

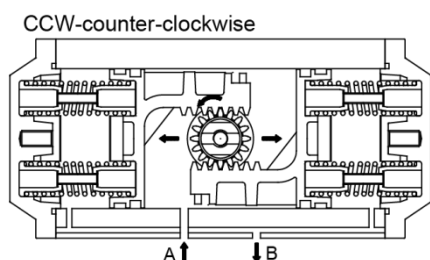
Model	Air Supply Pressure							Unit:	Air Supply Pressure						Unit: N.m
	in.lbs														
	40 Psi	50 Psi	60 Psi	70 Psi	80 Psi	90 Psi	100 Psi		3 Bar	4 Bar	5 Bar	6 Bar	7 Bar	8 Bar	
8056036	34	44	55	64	73	81	90		4.2	6	7.5	9	10	11.5	
8056045	102	127	152	178	203	229	254		12.48	16.64	20.8	24.96	29.12	33.28	
8056048	179	223	268	313	357	402	447		21.96	29.28	36.6	43.92	51.24	58.56	



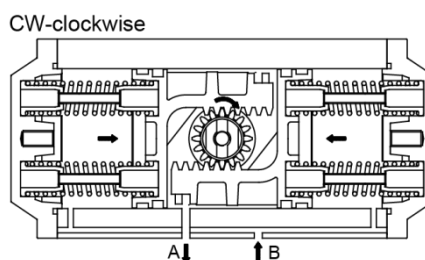
Spring Return (Fail Safe) information:



The operating principle of single acting spring return actuator



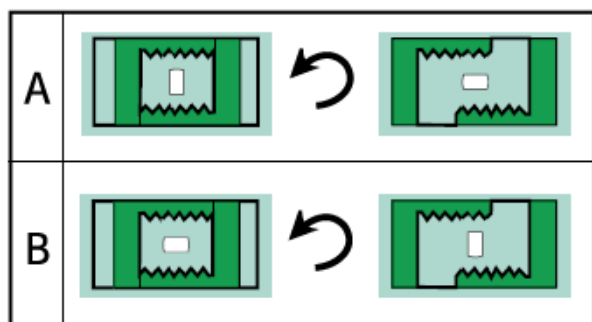
Air to port A forces the pistons outwards, causing the springs to compress. The pinion turns counter-clockwise while air is being exhausted through port B.



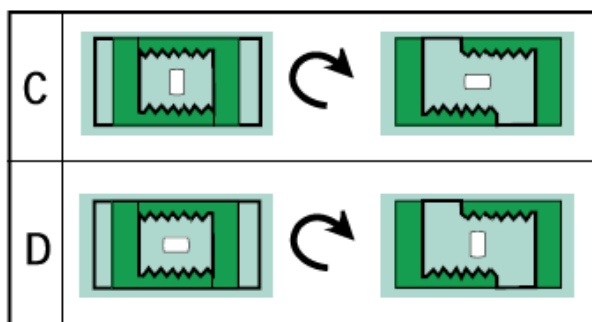
Loss of air pressure through port A allows the stored energy in the springs to force the pistons inwards. The pinion turns clockwise while air is being exhausted through port A.

Mounting Variations

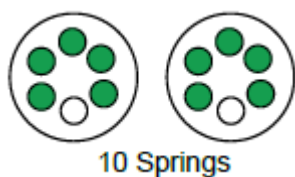
CCW-counter-clockwise



CW-clockwise



Spring Arrangement





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Torque Table (in.lbs)

Unit: in.lbs

Model	Spring Torque		Air Supply Pressure									
			60 Psi		70 Psi		80 Psi		90 Psi		100 Psi	
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
8056042	70	110	82	43	108	68	133	93	159	119	184	144
8056051	124	191	144	77	189	122	234	166	278	211	323	256
8056054	210	310	293	221	365	293	437	364	508	436	580	508
8056058	257	384	394	315	485	405	575	496	666	586	756	677

Torque Table (N.m)

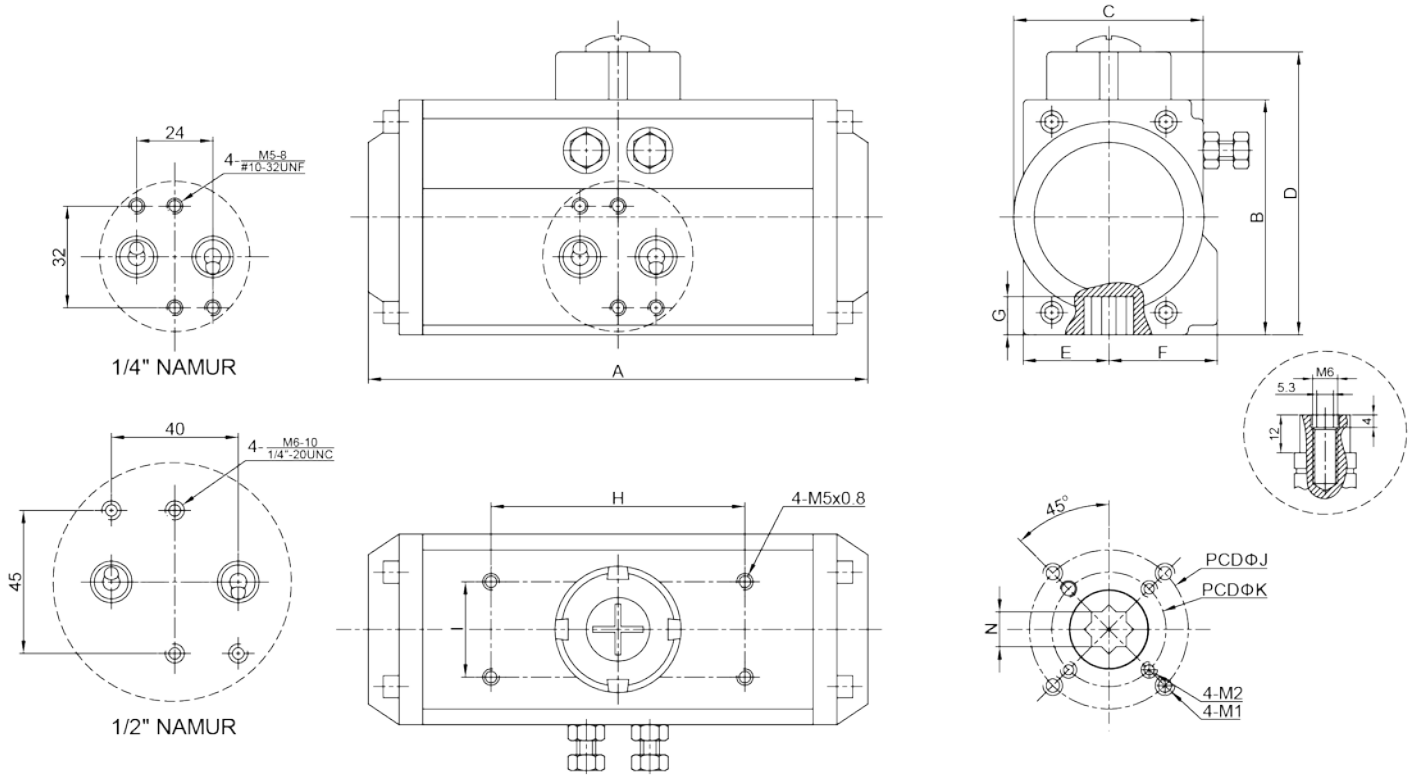
Unit: N.m

Model	Spring Torque		Air Supply Pressure							
			4 Bar		5 Bar		6 Bar		7 Bar	
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
8056042	7.9	12.4	8.7	4.1	12.9	8.4	17.1	12.6	-----	-----
8056051	14.0	21.6	15.3	7.7	22.6	15.0	29.9	22.3	37.2	29.6
8056054	23.7	35.0	23.3	12.0	35.1	23.8	46.8	35.5	58.6	47.3
8056058	29.0	43.4	31.6	17.2	46.8	32.4	62.0	47.6	77.1	62.7



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Dimension:



Model	Unit	A	B	C	D	E	F	G	H	I	N	J	K	M1	M2	Air Inlet
8056036	mm	114	45	47	65	23.5	23.5	14	50	25	9	F03	----	M5x8	-----	1/8"
	inch	4.49	1.77	1.85	2.56	0.93	0.93	0.55	1.97	0.98	0.35			#10-24UNC		
8056045/ 8056042	mm	158.4	74	60	94	30	41	14	80	30	11	F05	F03	M6x11	M5x10	1/8" or 1/4"
	inch	6.24	2.91	2.36	3.7	1.18	1.61	0.55	3.15	1.18	0.43			1/4"-20UNC	#10-24UNC	
8056048/ 8056051	mm	190	88	69	108	36	45	18	80	30	14	F07	F05	M8x15	M6x12	1/8" or 1/4"
	inch	7.48	3.46	2.72	4.25	1.42	1.77	0.71	3.15	1.18	0.55			5/16"-18UNC	1/4"-20UNC	
8056054	mm	207	100	79	120	42	52	20	80	30	14	F07	F05	M8x13	M6x11	1/8" or 1/4"
	inch	8.15	3.94	3.11	4.72	1.65	2.05	0.79	3.15	1.18	0.55			5/16"-18UNC	1/4"-20UNC	
8056058	mm	213	109	88	129	46	52.5	21	80	30	17	F07	F05	M8x15	M6x12	1/8" or 1/4"
	inch	8.39	4.29	3.46	5.08	1.81	2.07	0.83	3.15	1.18	0.67			5/16"-18UNC	20UNC	



Air Consumption – Air Volume Opening & Closing:

Model	Unit	Air Volume at Opening	Air Volume at Closing
8056036	liter	0.03	0.04
	cu.in	1.71	2.32
8056045/ 8056042	liter	0.09	0.12
	cu.in	5.49	7.32
8056048/ 8056051	liter	0.14	0.20
	cu.in	8.54	12.20
8056054	liter	0.21	0.30
	cu.in	12.81	18.30
8056058	liter	0.29	0.41
	cu.in	17.69	25.02

The Table of Actuators Weight & Opening Closing Time:

Model	8056036	8056045	8056042	8056048	8056051	8056054	8056058
Screw stroke adj. for 1° adj. need	-----	1/5 turn	1/5 turn	1/5 turn	1/5 turn	1/5 turn	1/5 turn
Opening time (Sec.)	0.03	0.2	0.25	0.25	0.3	0.35	0.5
Closing time (Sec.)	0.03	0.25	0.3	0.3	0.35	0.5	0.6
Approximate Weight (Kg/Lbs)	0.5/1.1	1.0/2.2	1.0/2.2	1.6/3.5	1.8/4.0	3.1/6.8	3.6/7.9

Information of suitable Ball Valve:

Model	RS Number of suitable Ball Valve
8056036	7644212,7644216,7644234,7644238,4991865,4991922
8056045	7644225, 7644228, 7644222, 7644247, 7644240, 7644244, 4991871, 4991887,4991893,4991900,4991938,4991944,4991950,4991966
8056048	7644231, 7644253
8056042	7644212, 7644216, 7644234, 7644238
8056051	7644225, 7644247, 4991865,4991871,4991887,4991922,4991938,4991944
8056054	7644228, 7644222,7644240,7644244,4991893,4991900,4991950,4991966
8056058	7644231, 7644253