

PRO UNI-D CO., LTD.

PNEUMATIC ACTUATOR

PERFORMANCE

Operating Pressure Range: 40 to 120PSIG.

Maximum allowable Working Pressure: 150PSIG.

Maximum operating pressure: 120PSIG.

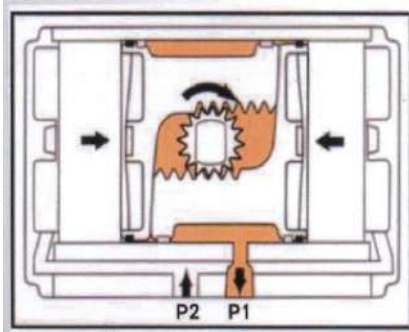
Operating Media: Dry or lubricated non-corrosive gas.

Operating Temperature Standard: -40°F~+200°F



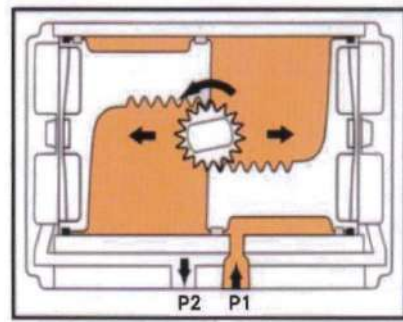
OPERATION

Double-Acting (Top View A)



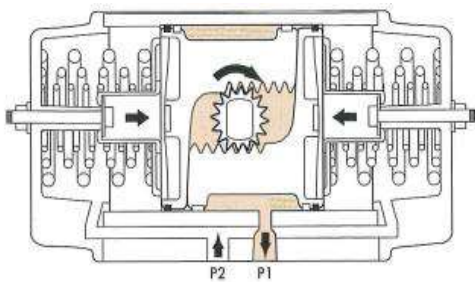
For clockwise output, apply pressure to P2, which force the pistons to move together. The volume between the pistons is exhausted at P1.

Double-Acting (Top View B)



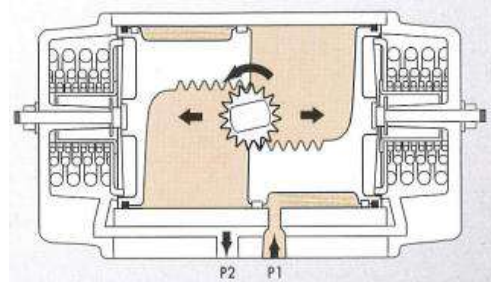
For counterclockwise output, apply pressure to P1, which force the pistons apart. The linear travel of the pistons is converted to a rotation of the drive shaft by the rack to pinion connection. The volume outside each piston is exhausted at P2.

Spring-Acting (Top View A)



For clockwise output, the volume between the pistons is exhausted at P1, causing the springs to force the pistons together. The volume outside the pistons is vented at P2.

Spring-Acting (Top View B)



For counterclockwise output, apply pressure to P1, which force the pistons apart and compress the springs. The linear travel at the pistons is converted to a rotation of the drive shaft by the rack to pinion connection. The volume outside each piston is exhausted at P2.

※ When required Reverse Rotation the pistons can be inverted in the housing resulting in a clockwise rotation when pressure is applied to P1.

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※ Single acting - Spring-Return Actuator

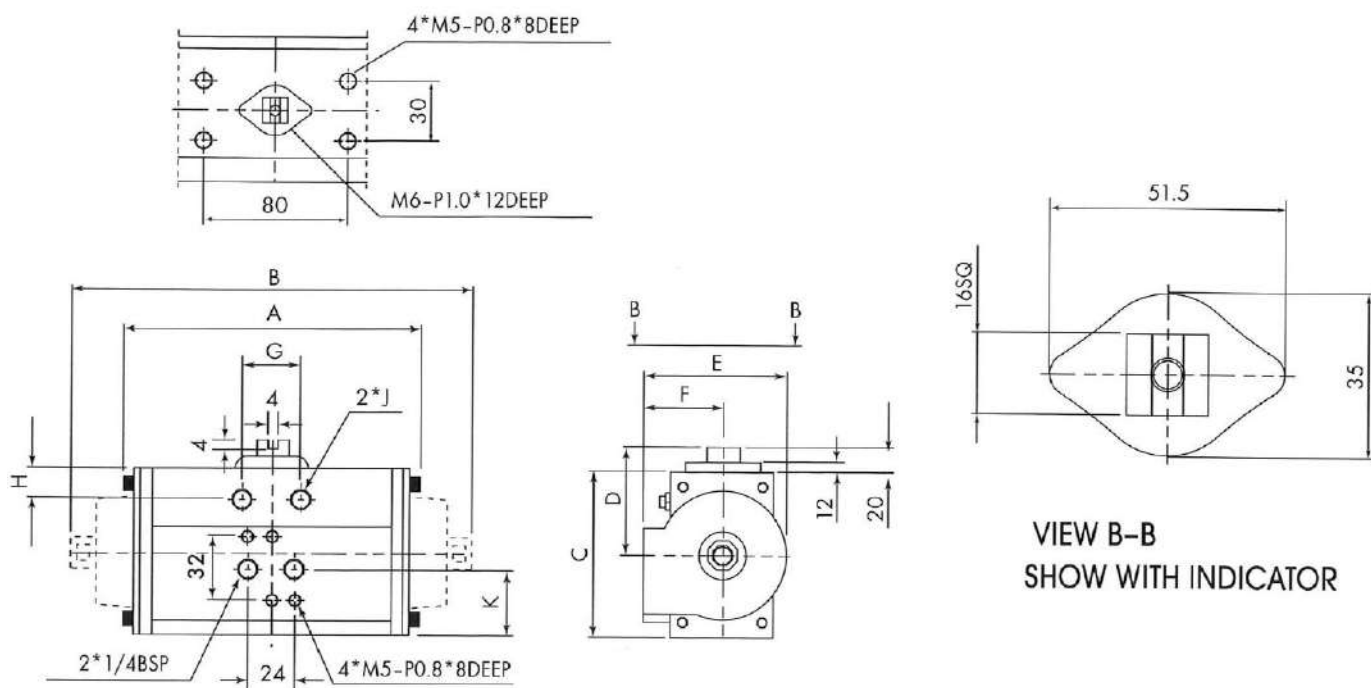
Model no.		Spring Torque Output		Air Torque Output at Operating Pressure-Psig									
Basic	Spring			40		60		80		100		120	
	Set	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
UP-250	2	69	45	76	47	138	109	201	172	263	234	326	312
	3	104	67			113	70	176	133	229	195	301	258
	4	140	90			88	31	151	93	213	156	276	218
	5	175	112					126	54	189	116	251	179
	6	209	135							164	77	227	139
UP-450	2	126	81	135	83	248	196	361	309	473	421	586	533
	3	190	121			203	125	316	238	428	350	541	463
	4	254	162			158	54	271	167	383	279	496	392
	5	317	202					226	96	339	209	451	321
	6	381	243							293	137	406	251
UP-1000	2	279	179	300	184	549	433	798	682	1048	931	1297	1181
	3	418	270			449	278	698	526	947	775	1196	1025
	4	559	360			350	120	599	371	848	618	1097	867
	5	698	450					500	212	749	464	998	710
	6	839	540							650	304	899	557
UP-2250	2	659	394	690	395	1253	958	1816	1521	2379	2084	2939	2647
	3	990	590			1034	591	1596	1154	2159	1717	2722	2280
	4	1320	787			816	226	1379	788	2029	1351	2505	1914
	5	1650	984					1161	424	1724	984	2287	1549
	6	1980	1181							1506	621	2069	1181
UP-3650	2	1053	607	1152	659	2063	1570	2975	2482	3886	3393	4797	4305
	3	1573	912			1726	996	2637	1907	3549	2819	4460	3730
	4	2091	1217			1388	423	2300	1335	3211	2246	4123	3157
	5	2625	1519					1967	744	2878	1655	3789	2566
	6	3144	1824							2540	1082	3452	1994
UP-5000	2	1560	785	1590	803	2780	1990	3970	3180	5160	4380	6350	5570
	3	2340	1180			2380	1200	3570	2400	4760	3590	5960	4780
	4	3130	1570			1980	414	3180	1600	4370	2800	5560	3990
	5	3910	1960					2780	815	3970	2010	5160	3200
	6	4690	2360							3570	1220	4760	2410
UP-11000	2	3400	1720	3460	1760	6060	4360	8660	6960	11300	9560	13900	12200
	3	5100	2570			5200	2650	7790	5240	10400	7840	13000	10400
	4	6790	3430			4330	932	6930	3530	9520	6130	12100	8730
	5	8490	4290					6060	1810	8660	4410	11300	7010
	6	10200	5150							7790	2700	10400	5300

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※Pneumatic Rack & Pinion Actuators TORQUE RATINGS (IN-Lbs)

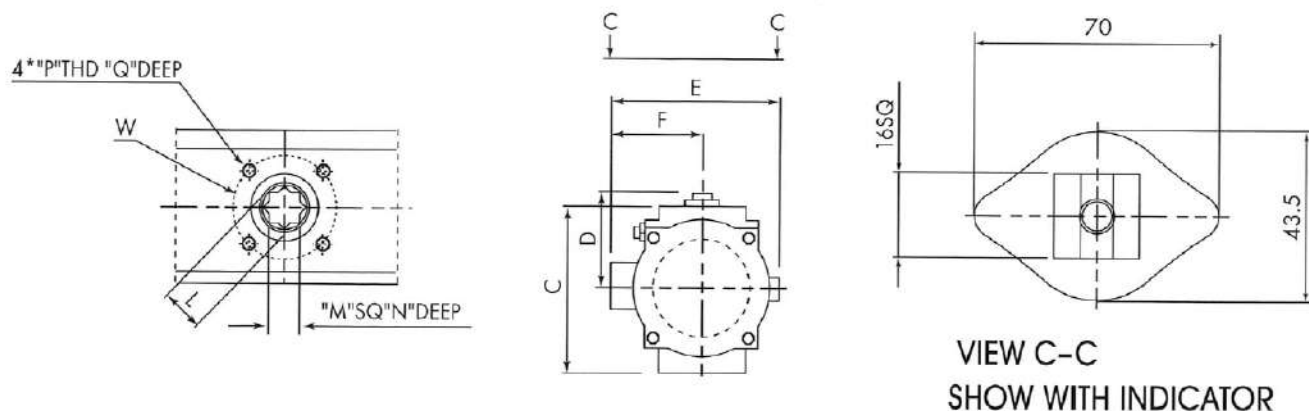
Double-Acting Actuators

Model	Air Torque Output at Operating Pressure - Psig				
	40	60	80	100	120
UP-125	63	94	125	156	188
UP-250	125	187	250	312	375
UP-450	225	337	450	562	675
UP-1000	500	750	1000	1250	1500
UP-2250	1125	1687	2250	2812	3375
UP-3650	1825	2738	3650	4563	5475
UP-5000	2500	3750	5000	6250	7500
UP-11000	5500	8250	11000	13750	16500



UP125~2250

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UP3650~11000

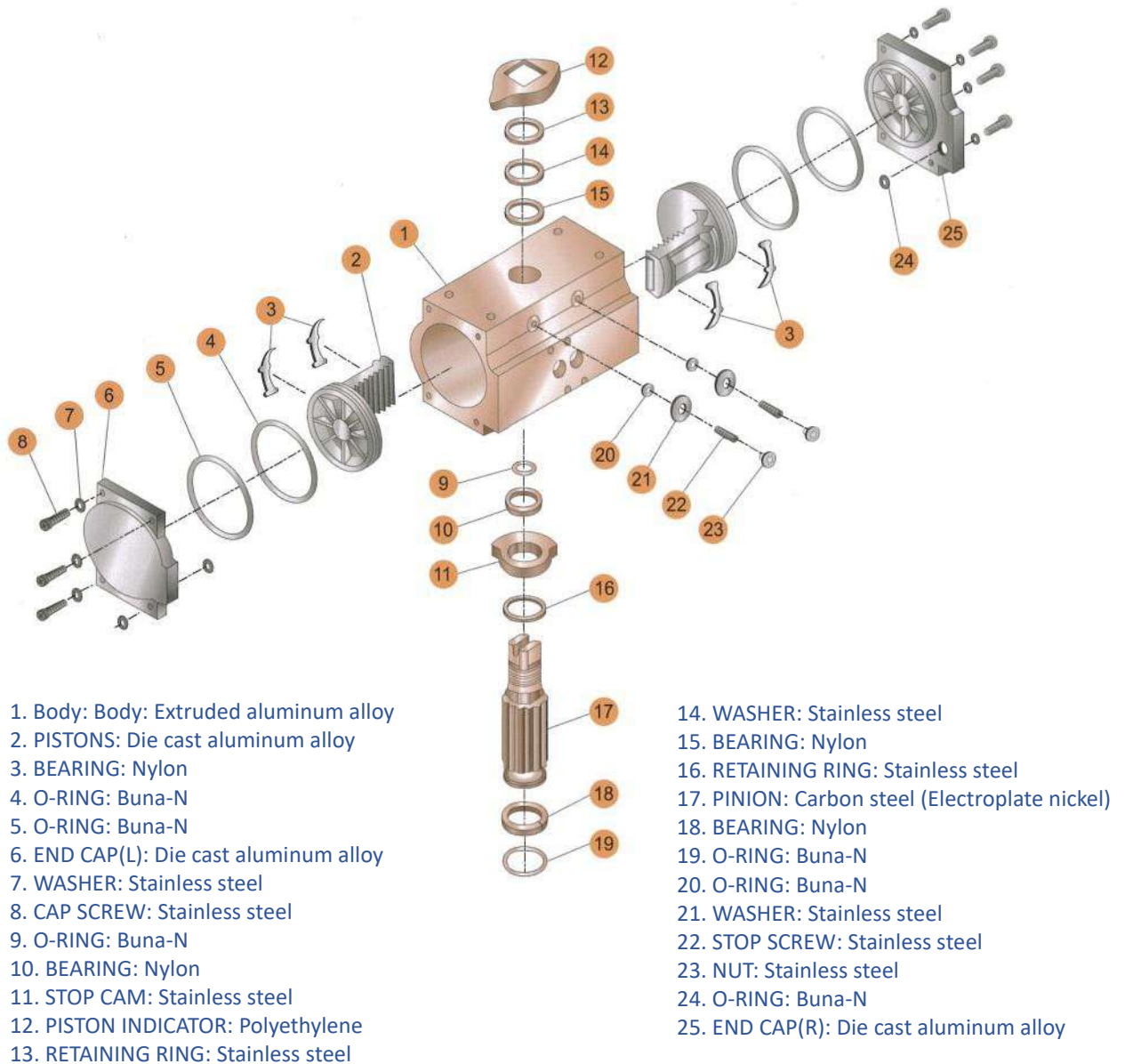
DIMENSIONS

Model	ISO PATTERN	A	B	C	D	E	F	G	H	J
UP-125	F04	120	--	64	52.5	62.2	33.7	24	11	M*P0.8
UP-250	F04 or F05	144.3	194.6	79	57.7	81.4	47.8	32.5	12.6	M5*P0.8
UP-450	F05 or F07	149.2	205.6	98	67.4	95	51.5	32.5	13.8	M6*P1.0
UP-1000	F05 or F07	183.0	250.6	121.0	79.2	119.0	64.5	46.2	16.6	M8*P1.25
UP-2250	F07 or F10	277.5	364.0	141.0	89.5	140.5	75.5	54.0	18.6	M10*P1.5
UP-3650	F10 or F12	304.3	422.0	176.0	99.1	185.2	105.5	79.7	27.3	M12*P1.75
UP-5000	F10 or F12	364.4	487.0	196.0	116.5	204.8	107.8	79.4	28.3	M12*P1.75
UP-11000	F14	490.0	642.0	243.7	138.5	238.2	125.0	95.3	35.8	M16*P2.0

	K	L	M	N	P	Q	W
UP-125	23.5	12.5	9.0	10.0	M5-P0.8	8.0	42.0
UP-250	29.7	14.5	11.0	17.0	M5*P0.8/M6*P1.0	8.0 or 100	42.0 or 50.0
UP-450	30.2	18.8	14.0	21.0	M6*P1.0/M8*P1.25	10.0/12.0	50.0/70.0
UP-1000	33.5	23.0	17.0	25.5	M6*P1.0/M8*P1.25	10.0/12.0	50.0/70.0
UP-2250	39.0	29.5	22.0	31.0	M8*P1.25/M10*P1.5	12.0/15.0	70.0/102.0
UP-3650	97.4	35.5	27.0	35.0	M10*P1.5/M12*P1.75	15.0/19.0	102.0/125.0
UP-5000	99.0	35.5	27.0	35.0	M10*P1.5/M12*P1.75	15.0/19.0	102.0/125.0
UP-11000	124.7	47.5	36.0	45.0	M16*P2.0	24.0	140.0

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DESIGN and CONSTRUCTION

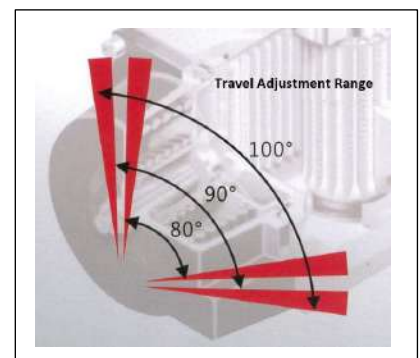


BI-DIRECTIONAL TRAVEL STOP ILLUSTRATION

Our pneumatic actuators feature bi-directional pinion travel stops. Side located stops allow a full $\pm 5\%$ of valve travel adjustment, giving a guaranteed range of adjustment between 80° and 100° of actuator travel. These travel stops are designed to absorb the maximum rated torque of the actuator and the maximum impact loads associated with recommended stroke speed.

Standard Assembly

Adjustment of the counterclockwise and clockwise rotation limits are accomplished by turning the respective left and right stop adjustment screws to reduce or increase output rotation.

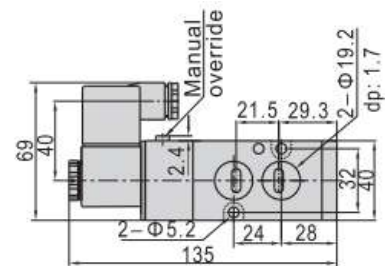
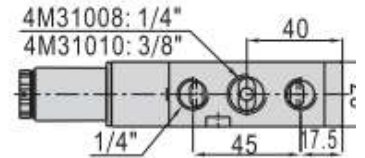


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Solenoid valve (5/2way)

Specification

Model	4M310008 / 4M31010
Fluid	Air (to be filtered by 40 μ m filter element)
Acting	Internal piloted
Port size	1/4" / 3/8", PT, PF (G), NPT available
Orifice size	25 mm ² (cv=1.40) / 30mm ² (cv=1.67)
Valve type	5 port 2 position
Operating pressure	0.1-0.8MPa (21-114psi)
Proof pressure	1.5MPa (215psi)
Temperature $^{\circ}$ C	-20~+70
Material of body	Aluminum alloy
Lubrication	Not required
Max. frequency	4cycle/sec (no-load state)
Weight	310g



Coil specification

Standard voltage	AC220V, AC110V, AC24V, DC24V, DC12V
Scope of voltage	AC: $\pm$ 15% DC: $\pm$ 10%
Power consumption	AC: 3.5VA DC: 3.0W
Protection	IP65(DIN40050)
Temperature classification	B Class
Electrical entry	Terminal, Grommet
Activating time	0.05 sec and below



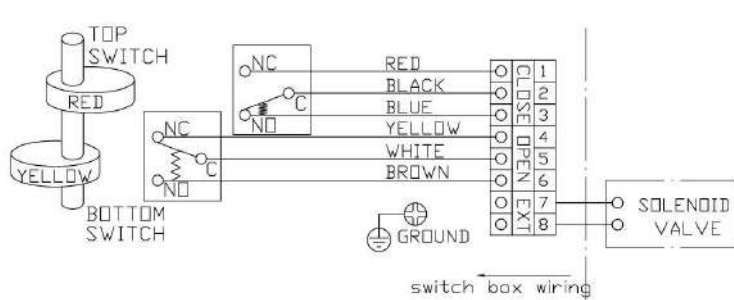
Product feature

1. Internally piloted structure.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Install in the side plate with the surface upward, which can be used by directly connecting with the actuators.
7. Affiliated manual devices are equipped to facilitate installation and debugging.
8. Several standard voltage grades are optional.

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Position indicator for Pneumatic actuator

Enclosure	Waterproof IP67
Temperature	-20°C to 80°C
Conduit Entries	NPT 1/2
Terminal Strips	8 points (.08-2.5mm ²)
Position Indicator	Closed: Red, Open: Yellow
Switches	Mechanical switch x 2 SPDT
External Coating	Polyester powder coating (black)
Shaft	ISO Standard (17mm long)
Housing	Powder coated die cast aluminum
Cam	Quick Set spring loaded splined cam (no need to adjust again after initial setting, set without tools)
Mounting Interface	Namur
Max Current	5 A/AC125V, 3A/250V, 5A/DC8V & 14V, 4A/DC30V, 0.4A/DC125V, 0.2A/DC250V
Mounting Bracket	Standard Bracket included to suit 80mm x 30mm Mounting with 30mm height (the bracket can be adjusted).



Wiring Diagram

