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P Series Pneumatic Actuators

CHEMLINE Plastics Limited
Your Pipeline To Quality

for Chemline Ball Valves up to 6" and Butterfly Valves to 24"†

SERIES: PPD – Polyamide‡ Double Acting
PPS – Polyamide‡ Spring Return
PAD – Aluminum Double Acting
PAS – Aluminum Spring Return

CONTROL PRESSURE: 40 to 120 psi

OUTPUT TORQUES:
up to 26,600 in.-lb. Double Acting and 7,700 in.-lb. Spring Return

Chemline P Series are quarter turn pneumatic actuators specially chosen for all sizes of Chemline ball and butterfly valves. The plastic (Polyamide‡) body units compliment Chemline valves in an "all-plastic" actuated valve package. The aluminum models are epoxy and Rilsan coated for high corrosion resistance. 316 stainless steel models are available for special applications. All offer long cycling life. Control accessories of similar plastic construction are available.

P Series is one in a range of actuators specially selected for Chemline ball and butterfly valves. Hardware kits are available for mounting of actuators in the field. Chemline also offers complete actuated valves, fully assembled and bench tested.

Economical

Long Cycling Life

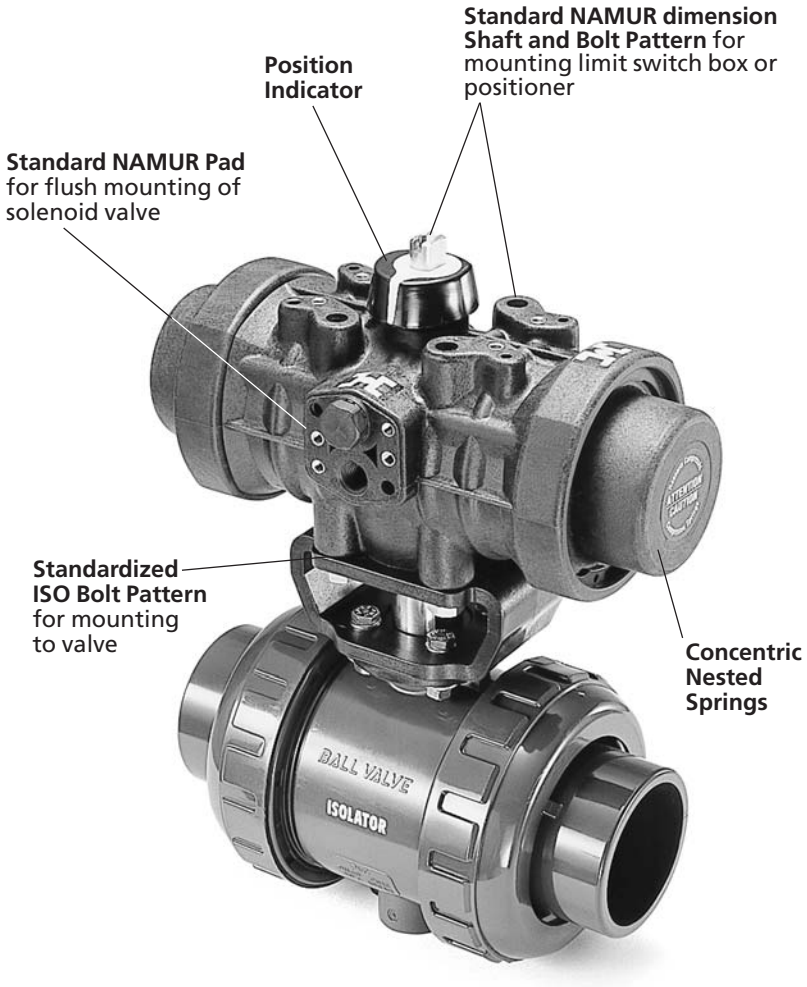
Features

Long Cycling Life
- Double O-ring shaft seals
- Massive teeth engagement between racks and pinion
- Balanced internal forces
- Minimal backlash and no play in parts

Compact, Simple Design
- Double piston, double rack and pinion design supplies constant torque output
- All porting is integral

Light Weight
- High torque to weight ratio

Standard ISO and NAMUR Dimensions
- Permits easy mounting of control accessories to actuator and actuator to valve



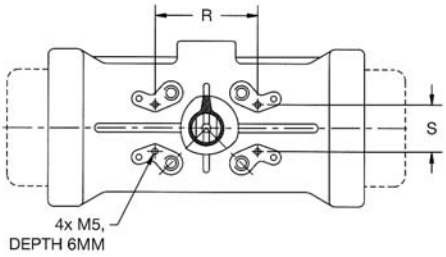
P Series on Type 21 ISOLATOR Ball Valve

† Largest Double Acting unit will power up to 24". Largest Spring Return will power up to 18".
‡ 50% Glass Reinforced Polyamide, also know as "Nylon 66".

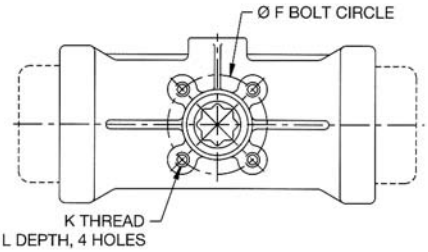
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P Series Pneumatic Actuators

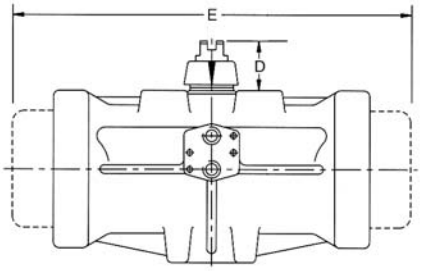
TOP VIEW



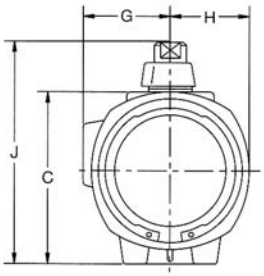
BOTTOM VIEW



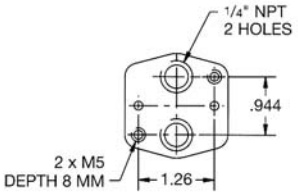
FRONT VIEW



END VIEW



SOLENOID PAD: NAMUR



DIMENSIONS INCHES

Model No.	C	D	E SR	E DA	F	G	H	J	K	L	R	S
0	2.56		5.55	4.21	1.65	1.47	1.21	3.34	5 mm	0.39	3.15	1.18
1	3.15		5.86	4.92	1.96	1.73	1.42	4.43	6 mm	0.47	3.15	1.18
15	3.62		7.64	5.75	2.75	2.08	1.38	4.80	8 mm	0.47	3.15	1.18
2	3.82		8.74	7.00	2.75	1.97	1.85	5.00	8 mm	0.59	3.15	1.18
25	4.64		10.07	8.03	2.75	2.36	1.85	5.83	8 mm	0.59	3.15	1.18
3	5.16		11.49	9.21	2.75	2.56	2.36	6.34	8 mm	0.59	3.15	1.18
35	6.34		14.37	10.87	4.02	3.07	2.91	7.52	10 mm	0.79	3.15	1.18
4	7.09		18.50	12.12	4.02	3.54	3.07	8.26	10 mm	0.79	3.15	1.18
5	8.86		25.28	16.46	4.92	4.13	3.78	10.80	12 mm	0.79	5.12	1.18
6	10.71		27.32	20.63	5.51	5.20	4.76	12.05	16 mm	0.98	5.12	1.18

Model No.	Spring Return						Double Acting						
	Weight Lbs.			Air Consumption (Standard cubic inches)	Cycle Time (sec.)		Weight Lbs.			Air Consumption		Cycle Time (sec.)	
	Alum.	GFP	316 SS		Open Port A	Close Port B	Alum.	GFP	316 SS	Open Port A	Close Port B	Open Port A	Close Port B
0	1.4	1.0	-	4.58	0.15	0.3	1.08	0.73	-	4.58	3.05	0.10	0.10
1	2.9	2.3	5.1	9.15	0.2	0.4	2.3	1.7	4.6	9.15	6.1	0.15	0.15
15	4.2	-	-	15.9	0.4	0.8	3.1	-	-	15.9	12.2	0.20	0.20
2	5.7	4.7	9.9	21.4	0.6	1.1	4.1	3.1	8.4	21.4	19.5	0.25	0.25
25	8.6	-	-	35.4	1.0	1.5	5.7	-	-	35.4	34.8	0.3	0.3
3	12.7	10.9	19.5	48.8	1.7	2.0	7.9	6.5	15.6	48.8	42.7	0.4	0.4
35	20.2	-	-	91.5	2.7	3.9	13.0	-	-	91.5	73.2	0.5	0.5
4	35.9	-	-	125.	3.8	5.5	19.4	-	-	125.	116.	0.6	0.6
5	71.4	-	-	243.	5.8	12.	42.8	-	-	243.	219.	1.2	1.2
6	135.5	-	-	640.	18.2	19.	77.0	-	-	640.	427.	2.0	2.0

GFP = Glass filled polyamide.

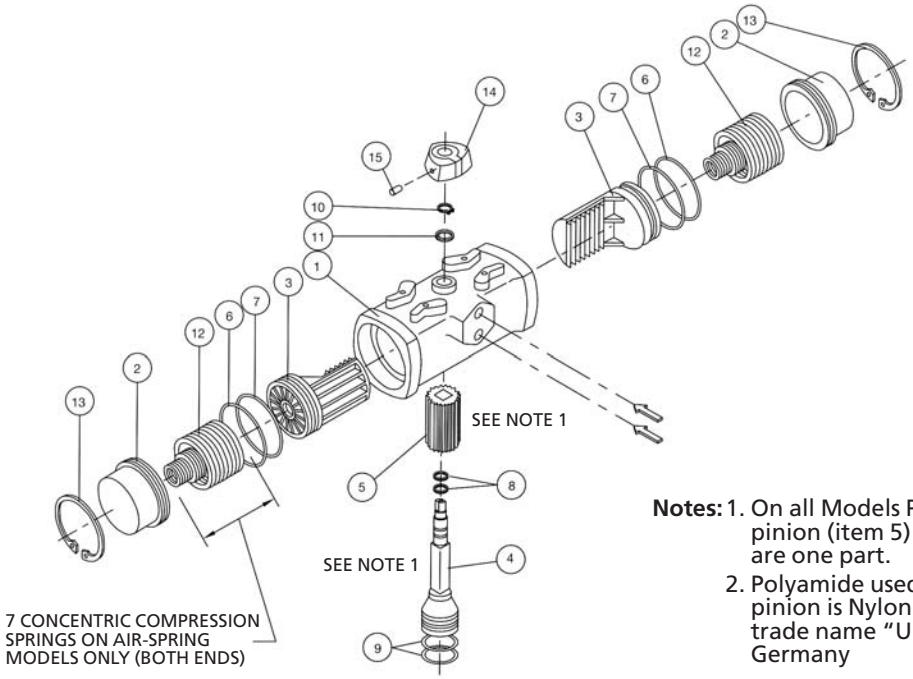
P Series Pneumatic Actuators

PARTS

Item	Description	Pcs.	Material
1	Actuator body	1	Polyamide with Glass Fiber
2	End Cap	2	Polyamide with Glass Fiber
3	Piston (with Rack)	2	Polyamide with Glass Fiber
4	Shaft	1	Stainless Steel (300 Series)
5	Pinion	1	Polyamide with Glass Fiber
6	O-Ring (End Cap)	2	Self-Lubricating Nitrile Buna-N
7	O-Ring (Piston)	2	Self-Lubricating Nitrile Buna-N
8	O-Ring (Shaft Top)	2	Self-Lubricating Nitrile Buna-N

PARTS

Item	Description	Pcs.	Material
9	O-Ring (Shaft Bottom)	2	Self-Lubricating Nitrile Buna-N
10	Retaining Ring (Shaft)	1	Stainless Steel (300 Series)
11	Flat Washer	1	Nylon
12	Spring (Set of 7 Different)	2	Carbon Steel
13	Retaining Ring (End Cap)	2	Stainless Steel (300 Series)
14	Position Indicator	1	PVC
15	Set Screw	1	Stainless Steel



Notes: 1. On all Models PPD1 and PPS1 pinion (item 5) and shaft (item 4) are one part.

2. Polyamide used for pistons, racks and pinion is Nylon 66, marketed under the trade name "ULTRAMID" from BASF, Germany

TORQUE – AIR TO AIR INCH POUNDS

Model No.	Supply Pressure (psi)					Model No.	Supply Pressure (psi)				
	40	60	80	100	120		40	60	80	100	120
PxD0	69	103	137	172	208	PxD3	665	979	1294	1698	2020
PxD1	101	147	202	257	308	PxD35	855	1654	2349	2988	3311
PxD15	204	290	369	496	535	PxD4	1859	2737	3618	4734	5641
PxD2	285	418	576	730	867	PxD5	3507	5063	6798	8974	10637
PxD25	475	691	929	1162	1367	PxD6	8797	12861	17098	22446	26696

TORQUE – AIR TO SPRING INCH POUNDS

Model No.	Supply Pressure (psi)								Spring Stroke	
	60		80		100		120			
	Start	End	Start	End	Start	End	Start	End	Start	End
PxS0	-	-	79	45	114	80	150	116	92	58
PxS1	-	-	102	61	157	116	208	167	141	100
PxS15	-	-	184	97	306	228	367	274	270	192
PxS2	-	-	290	163	444	317	581	454	413	286
PxS25	-	-	487	298	769	594	922	713	575	398
PxS3	422	29	738	345	1141	748	1463	1070	950	557
PxS35	-	-	1186	605	1825	1244	2148	1567	1744	1163
PxS4	-	-	1692	812	2808	1928	3715	2835	2806	1926
PxS5	1686	143	3421	1878	5597	4054	7260	5717	4920	3377
PxS6	-	-	9371	4151	14719	9499	18969	13749	12947	7727

x = A for Aluminum, P for glass filled polyamide, S for 316 Stainless Steel.

P Series Pneumatic Actuators

OTHER ACTUATORS TYPES

High Temperature Actuators

The High Temperature Pneumatic Actuator is designed to operate in ambient temperatures up to 450°F.

The housing and end caps are of die-cast aluminum specially treated to prevent deformation at high temperatures. The housing is coated with DACROMET (a corrosion inhibitor) with a top layer of 10 mils of PTFE.

180° Pneumatic Actuator

The 180 Actuator is for multiport or three-way valves, diverting the flow from one port to another. It is also offered with a center-off position. Its aluminum body is Rilsan coated, with polyarilamide racks and pinion and a stainless steel shaft.

ACCESSORIES

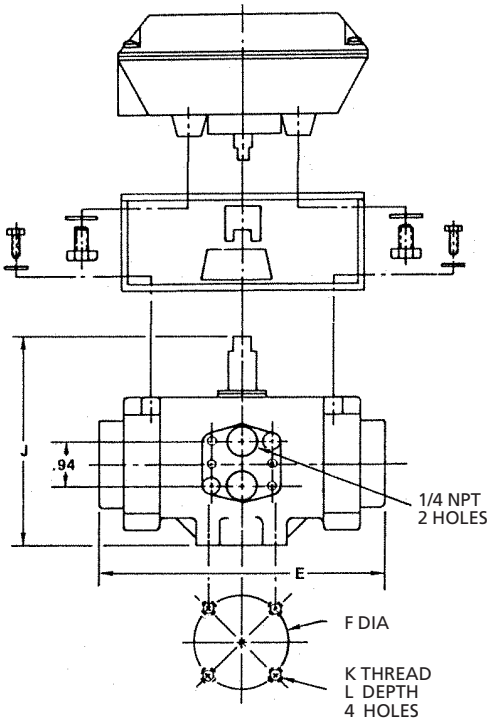
Limit Switch Box

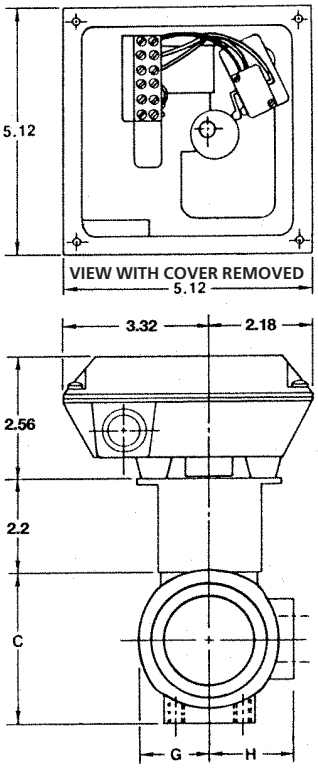
Limit switches are supplied with the actuator in order to operate position-indicating lights on control panels, to control other equipment such as pumps, compressors and mixers, or to sequence other valves. Two single-pole, double-throw (SPDT) switches are contained in one enclosure and are activated by individual, adjustable cams.

The cams are connected to the cam shaft, which is coupled to the actuator shaft. Switches can be set to be activated in fully open or closed positions, or in any position in the quadrant of the actuator's operation.

The limit switch box is available in NEMA IV (PLS4) and NEMA VII (PLS7) enclosures, and switches can be supplied in mechanical or proximity models. Optional high visibility beacon also available for these switch boxes.

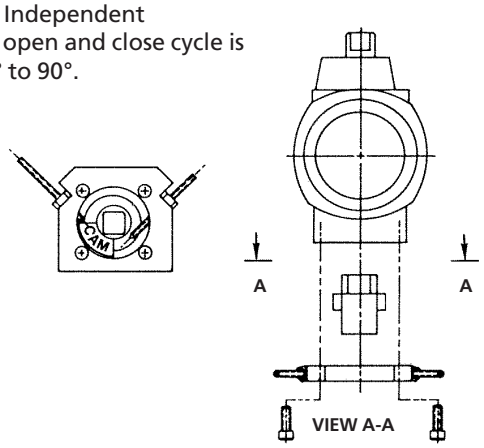
The electrical rating of these switches is 15 AMP, 250 VAC, suitable for the following voltages: 12 VDC, 24 VDC, 12 VAC, and 115 VAC.





TRAVEL STOP

The travel stop is used to limit the amount of actuator travel. Independent adjustment of the open and close cycle is adjustable from 0° to 90°.



OTHER ACCESSORIES

- **Solenoid Valves** – Brass, aluminum or plastic with different voltages, optional speed controls
- **Limit Switch Boxes** – CSA approved with mechanical or proximity switches, NEMA 4X or 7, optional high visibility beacon
- **Positioners** – For 3-15 psi or 4-20 mA signal inputs
- **Other Accessories** – Travel stops, filter/regulator sets, etc.

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