P Series Pneumatic Actuators

Chemline P Series Pneumatic Actuators offer economical quarter turn actuation for all sizes of Chemline ball and butterfly valves. The plastic (Polyamide‡) body units compliment Chemline valves in an "all-plastic" actuated valve package. 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.

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 13,800 in.-lb. Double Acting and 7,700 in.-lb. Spring Return*

Plastic Construction

Economical

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.

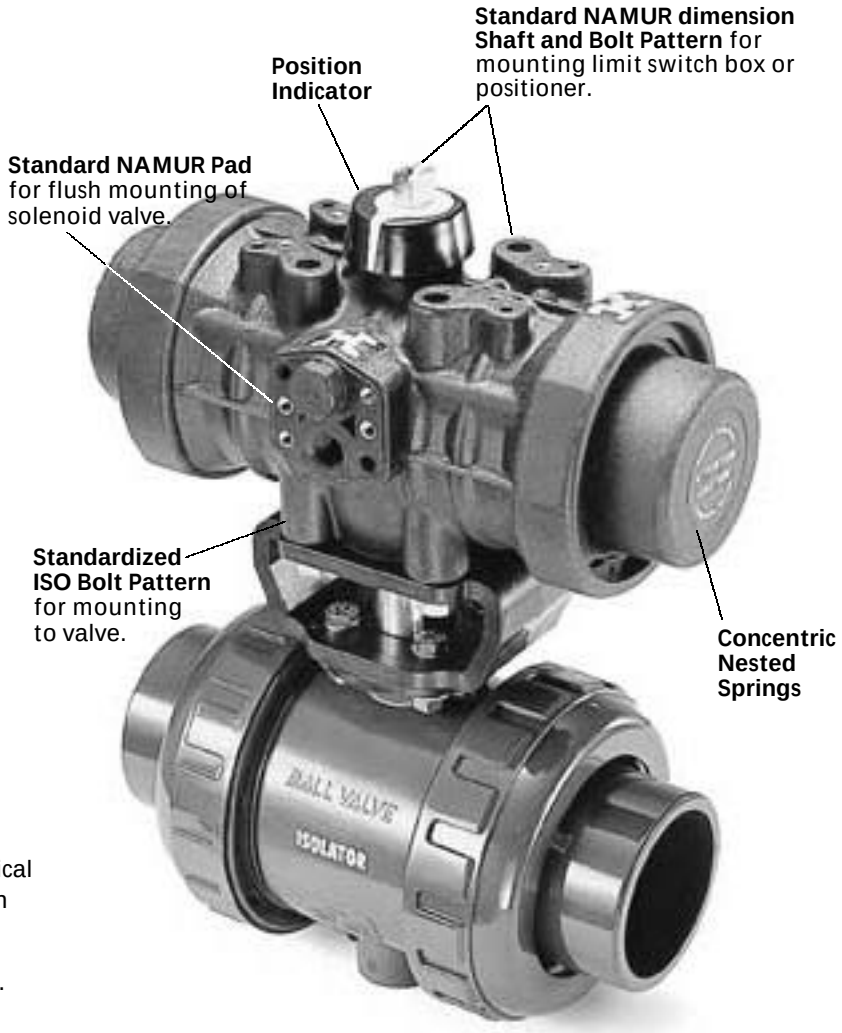
Compact, Simple Design
- Double piston, double rack and pinion design supplies constant torque output.
- All porting is integral.

Light Weight
- High torque to weight ratio.

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

Control 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.



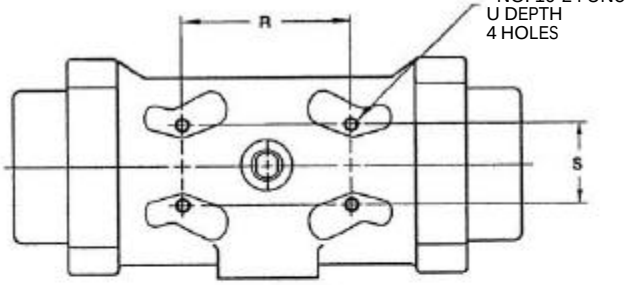
P Series on Type 21 ISOLATOR Ball Valve

† Largest Double Acting unit will power up to 24". Largest Spring Return will power up to 18".
* Output torques at 80 psi control pressure, end-of-spring stroke for Spring Return.
‡ 50% Glass Reinforced Polyamide, also know as "Nylon 66".

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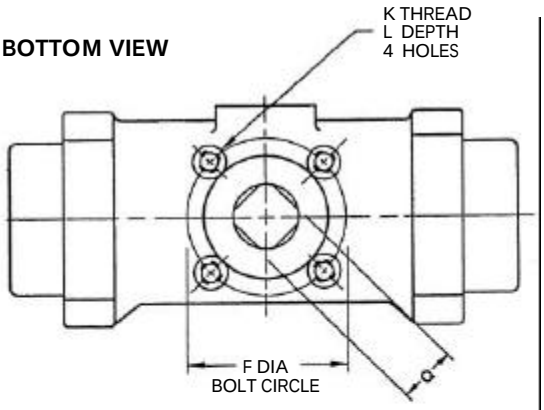
PP Pneumatic Actuators

TOP VIEW

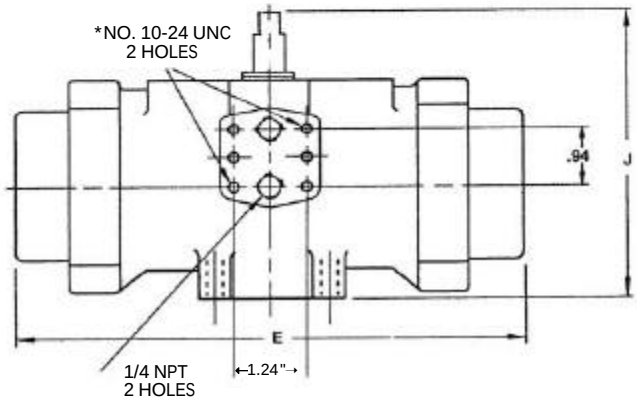


*PEG AND SS ACTUATOR 5 MM THREAD

BOTTOM VIEW

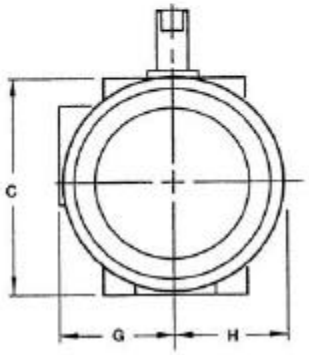


FRONT VIEW



*PEG AND SS ACTUATOR 5 MM THREAD

END VIEW



TEMPERATURE RANGE
(all models)
- 25°F to 195°F

DIMENSIONS INCHES

Actuator Model No.	C	E		F	G	H	J	K*	L	Q	R	S	U
		PPD	PPS										
PP1	3.15	4.92	5.87	1.97	1.73	1.42	4.33	6 mm	0.47	0.78	3.15	1.18	0.24
PP2	3.82	7.00	8.74	2.76	1.97	1.85	5.00	8 mm	0.59	0.94	3.15	1.18	0.24
PP3	5.20	9.21	12.00	2.76	2.56	2.36	6.90	8 mm	0.59	1.10	3.15	1.18	0.24

CYCLE TIME

Model No.	Double Acting		Spring Return	
	Open	Close	Open	Close
	Port A	Port B	Port A	Port B
PP1	0.15	0.15	0.25	0.40
PP2	0.35	0.30	0.50	1.00
PP3	0.58	0.55	1.50	2.00

AIR CONSUMPTION CUBIC INCHES

Model No.	Double Acting		Spring Return
	Open	Close	
	Port A	Port B	Air Stroke
PP1	9.0	7.5	9.0
PP2	19.5	17.0	19.5
PP3	52.0	40.0	52.0

WEIGHT LB.

Model No.	Double Acting	Spring Return
	PPD	PPS
PP1	1.66	2.27
PP2	3.11	4.73
PP3	6.47	10.90

P Series Pneumatic Actuators

TORQUE – SPRING RETURN

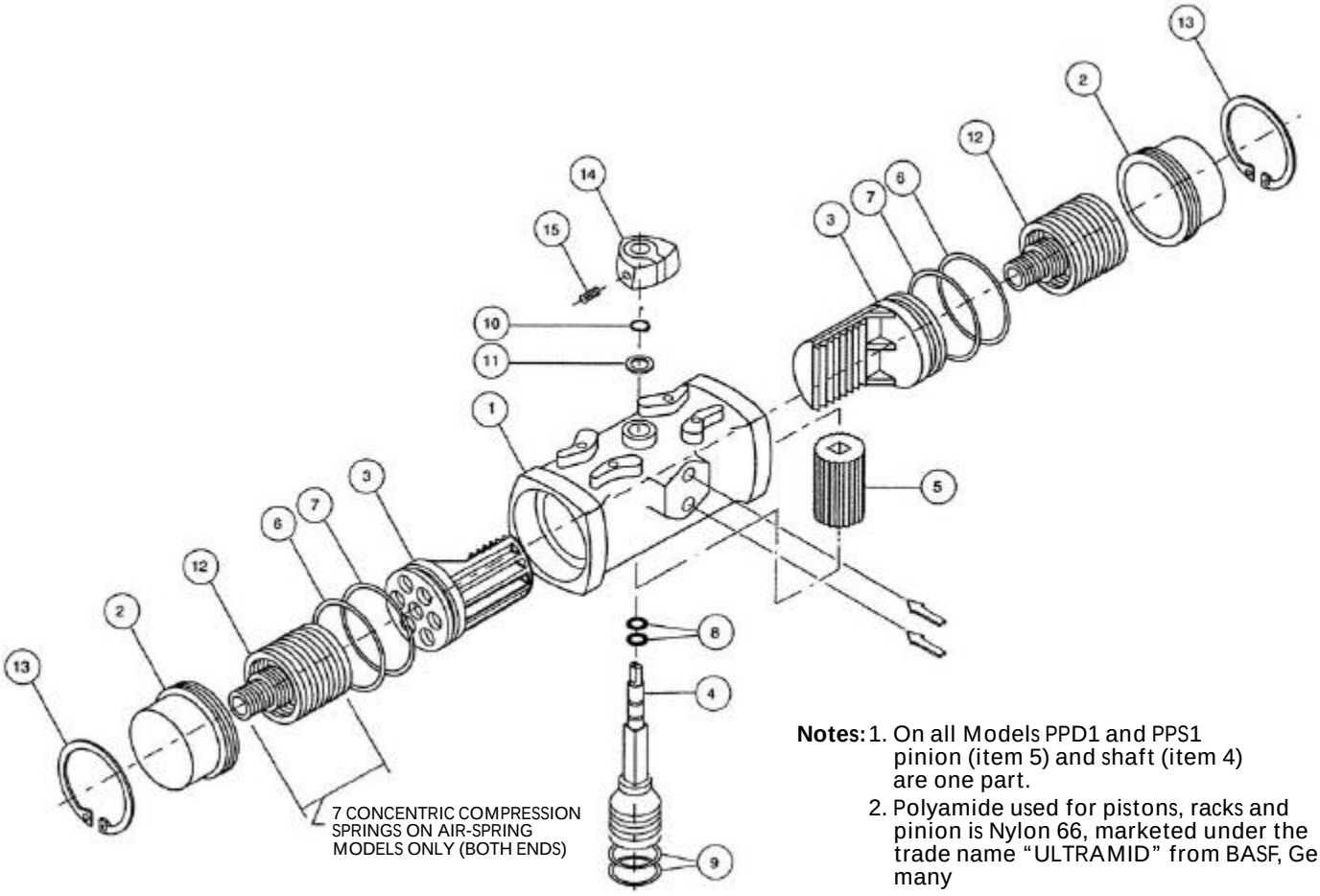
Model No.	Torque (inch – pounds) Supply Pressure (psi) 40 Start	40 End	60 Start	60 End	80 Start	80 End
PPS1	C.F.	C.F.	65	19	117	70
PPS2	C.F.	C.F.	197	76	341	219
PPS3	C.F.	C.F.	503	160	840	497

TORQUE – DOUBLE ACTING

Spring Stroke Start	Spring Stroke End	Model No.	Torque (inch – pounds) Supply Pressure (psi) 40	50	60	80	100
134	87	PPD1	90	115	138	185	230
358	237	PPD2	295	370	440	590	740
850	508	PPD3	680	850	1020	1360	1700

PARTS

Item	Description	Material	Qty.
1	Actuator body	Polyamide with Glass Fiber	1
2	End Cap	Polyamide with Glass Fiber	2
3	Piston (with Rack)	Polyamide with Glass Fiber	2
4	Shaft	Stainless Steel (300 Series)	1
5	Pinion	Polyamide with Glass Fiber	1
6	O-Ring (End Cap)	Nitrile Buna-N	2
7	O-Ring (Piston)	Nitrile Buna-N	2
8	O-Ring (Shaft Top)	Nitrile Buna-N	2
9	O-Ring (Shaft Bottom)	Nitrile Buna-N	2
10	Retaining Ring (Shaft)	Stainless Steel (300 Series)	1
11	Flat Washer	Nylon	1
12	Spring (Set of 7 Different)	Carbon Steel	2



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

P Series Pneumatic Actuators

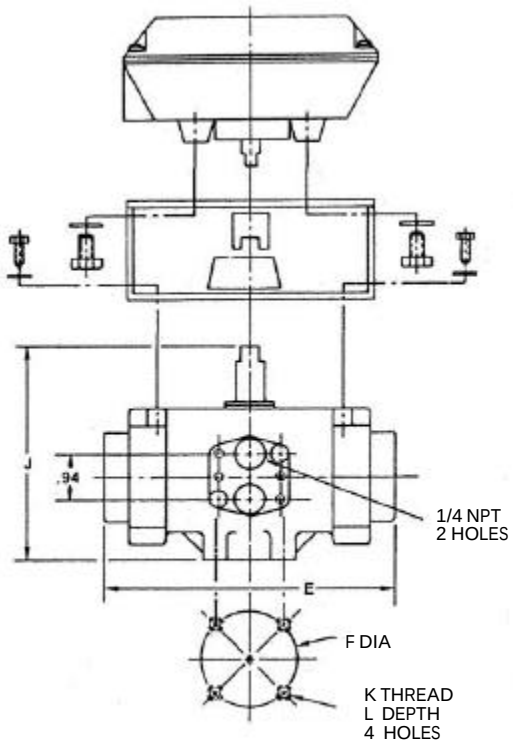
PLS TOP MOUNTED SWITCH BOX

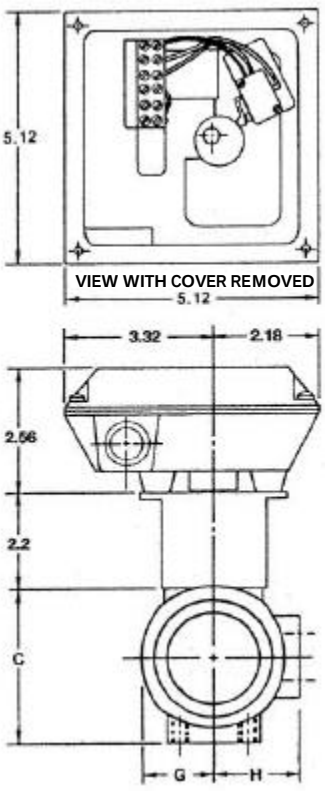
Limit switches are supplied with the actuator in order to operate position-indicating lights on control panels, to control other equipment such as pumps, compressors and mixers, or to sequence other valves. Two single-pole, double-throw (SPDT) switches are contained in one enclosure and are activated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



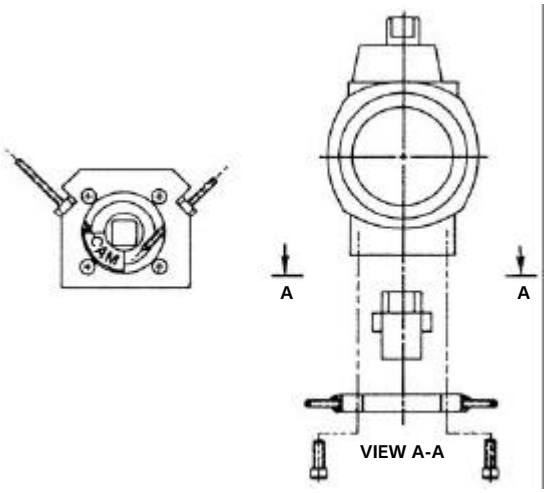


DIMENSIONS INCHES ACTUATOR WITH LIMIT SWITCH

Actuator Model No.	C	E		F	G	H	J	K*	L
		PPD	PPS						
PP1	3.15	4.92	5.87	1.97	1.42	1.73	4.43	6 mm	0.47
PP2	3.82	7.00	8.74	2.76	1.85	1.97	5.00	8 mm	0.59
PP3	5.16	9.21	11.50	2.76	2.36	2.56	6.34	8 mm	0.59

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°.



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