Pneumatic Linear Actuator
for Globe Control Valves

DESCRIPTION:

The Pennant Pneumatic Diaphragm Actuator is designed to work with Globe Control Valves.

FEATURES:

- Wide range of thrust values
- The diaphragm is designed for reliability and is tested for 1 million cycles for reliability.
- Faster response.
- Compatible with wide range of valve sizes.
- Both single spring and multi spring designs available.

TECHNICAL INFORMATION:

Temperature range	-13 ºC to +90 ºC
Max. operating pressure	4.5 bar
Linearity	< 3%
Hysterisis	< 3%
Air supply connection	¼" NPT

(Other connection sizes on request)

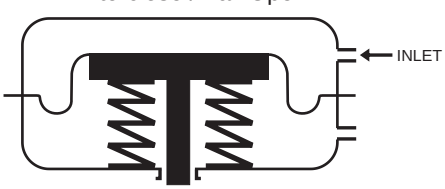
WORKING:

The actuator is designed to work in direct as well as reverse mode.

Fail-Open action (direct action):

Air pressure applied in the upper diaphragm casing, forces the spindle downward through diaphragm movement against the spring force, closing the valve. In case of insufficient control pressure, the spring force pushes the valve stem to the extreme top position.

Air-to-close / Fail Open

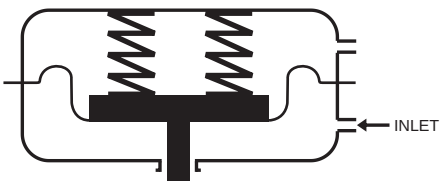


Fail-Close action (reverse action):

Air pressure applied in the lower diaphragm casing, forces the spindle upward through diaphragm movement against the spring force opening the valve.

In case of insufficient control pressure, the spring force pushes the valve stem downward to the extreme lower position closing the valve.

Air-to-open / Fail Close



MATERIAL:

PART	MATERIAL
Diaphragm housing	Mild steel
Diaphragm	Nitrile Butadine Rubber (fabric reinforced)
Springs	Chrome Silicon Steel
Spindle	Stainless Steel 420
Yoke	Aluminium / Carbon Steel

Table 1: Actuator mounting dimensions

Actuator Model	Effective Diaphragm Area		Yoke Boss Diameter	Stem Diameter	Maximum Travel	Weight
	(cm^2)	(sq.inch)	(mm)	(mm)	(mm)	(kg)
MULTI SPRING ACTUATORS						
PM36	230	36	32	16	17	9
PM60	385	60	32 & 54	16	40	13
SINGLE SPRING ACTUATORS						
PS35	225	35	68.25	19	19	9
PS55	354	55	68.25	22	40	20
PS85	548	85	68.25	25	54	32
PS135	870	135	88.9	32	76	80
PA1	320	50	58	20	30	23
PA2	720	112	58	20	60	37

Table 2: Air pressure range and thrust forces

MULTI SPRING ACTUATORS				
	Model PM36		Model PM60	
Effective Diaphragm Area	230 cm^2 (36 sq in)		385 cm^2 (60 sq in)	
Air pressure range (Bar)	Direct and reverse stroke (mm)	Load range - (kg)	Direct and reverse stroke (mm)	Load range - (kg)
0.2 to 1.0 (3 to 15 psi)	17	46 - 232	32	78 - 390
0.4 to 2.0 (6 to 30 psi)	17	93 - 464	32	146 - 780
0.6 to 3.0 (9 to 45 psi)	17	139 - 696	32	234 - 1160
1.4 to 2.3 (21 to 34.5 psi)	17	325 - 534	32	542 - 890
2.1 to 3.3 (31.5 to 49.5 psi)	17	487 - 766	32	813 - 1277

SINGLE SPRING ACTUATORS							
	Model PA1				Model PA2		
Effective Diaphragm Area	320 cm^2 (50 sq in)				720 cm^2 (112 sq in)		
Air pressure range (bar)	Direct and reverse stroke (mm)	Spring No.	Load range (kg)	Air pressure range (bar) stroke (mm)	Direct and reverse stroke (mm)	Spring No.	Load range (kg)
0.2 - 0.98 (3 to 15 psi)	20	304	64 - 314	0.2 - 0.92 (3 to 13 psi)	30	301	144 - 662
0.98 - 1.76 (15 to 25 psi)	20		314 - 558	1.2 - 1.92 (17 to 28 psi)	30	301	864 - 1380
0.9 - 2.0 (13 to 30 psi)	20	306	295 - 624	1.1 - 1.9 (16 to 27 psi)	30	303	790 - 1366
1.9 - 3.0 (27 to 45 psi)	20		607 - 940	2.2 - 3.0 (32 to 45 psi)	30	303	1584 - 2160
0.2 - 1.0 (3 to 15 psi)	30	305	64 - 320	----	----	----	----
1.0 - 1.8 (15 to 26 psi)	30		320 - 576	----	----	----	----
0.4 - 2.0 (6 to 30 psi)	30	306	132 - 624	----	----	----	----
1.4 - 3.0 (21 to 45 psi)	30		443 - 940	----	----	----	----

Local regulations may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only.
In the interest of development and improvement of the product, we reserve the right to change the specifications without prior notice.

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