

# spirax sarco®

## PN6000 Series Fail Open Pneumatic Actuators

### Description

A range of compact linear actuators having 6 diaphragm sizes for matching the requirements of different valves at various differential pressures. Each actuator is fitted with mechanical stroke indicators and incorporates a rolling diaphragm to give linearity over the full operating stroke. For precise valve positioning on modulating applications and when using higher pressure spring range actuators a positioner must be used. The actuators are designed for easy conversion to spring extend spindle operation (and vice versa) in the field using the same components and without the need of special tools.

### Actuator Travel Valve type

3/4" (20mm)	1/2" to 2"	L and K series
1-3/16" (30mm)	2-1/2" to 4"	L and K series

### Technical data

<b>Temperature range</b>		-4 to 230°F
<b>Maximum operating pressure</b>	PN6100, PN6200, PN6300 & PN6400	90 psig
	PN6500 & PN6600	35 psig

### Spring ranges

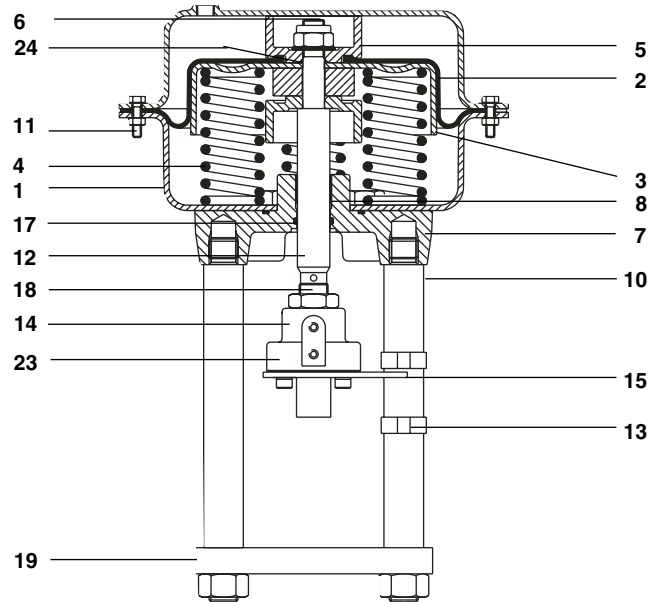
Actuator types	Spring range	Travel
PN6120	3 - 15	3/4"
PN6220	3 - 15	3/4"
PN6320	3 - 15	3/4"
PN6330	3 - 15	1-3/16"
PN6420	3 - 15	3/4"
PN6430	3 - 15	1-3/16"
PN6520	3 - 15	3/4"
PN6530	3 - 15	1-3/16"
PN6620	3 - 15	3/4"
PN6630	3 - 15	1-3/16"

### Air supply connection

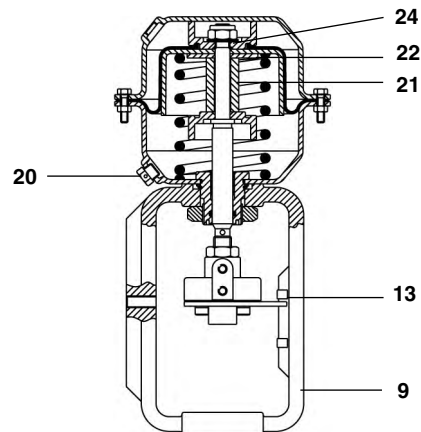
Actuator type	Connection
6100 and 6200 series	1/8" NPT
6300 and 6400 series	1/4" NPT
6500 and 6600 series	1/4" NPT

### Materials

No Part	Material
1 Diaphragm housing	Pressed steel
2 Rolling diaphragm	Fabric reinforced nitrile rubber
3 Piston	Pressed steel
4 Spring	Spring steel
5 Diaphragm clamp casting	Stainless steel
6 Nyloc nut	Steel
7 Baseplate	SG iron
8 DU bearing	PTFE/Steel composite
9 Yoke (6100 Series)	Aluminium
10 Pillars	Steel
11 Housing securing nuts & bolts	Steel



PN6200, PN6300, PN6400,  
PN6500 and PN6600 Series actuators









PN6100 Series actuators

No Part	Material
12 Spindle	Stainless steel
13 Travel indicators	Spring steel
14 Connector	Steel
15 Indicator plate	Steel
17 'O' ring	Rubber
18 Lock nut	Steel
19 Mounting flange	Stainless steel
20 Cap (with vent hole)	Nickel plated brass
21 Spacer	Steel
22 Spring Location Washer (PN6100 series)	Steel
23 Adaptor	Steel
24 'O' ring	Rubber

## Differential pressures for valves and PN6000 series actuators.

<b>Size</b>	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3	4"
<b>Travel inches</b>	3/4"						1-3/16"		
<b>Standard C<sub>VS</sub> value</b>	0.5 to 4.7	7.4	11.7	18.7	29.3	42	74	117	187

## PN6000 series actuators (Spring retract spindle)

Type	Model	Spring range	Air pressure required (min) psi	Positioner required	Maximum closing pressures <sup>1</sup> in psi (* see note reference differential pressures)								
					1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3	4"
 PN6100 Series	6120	3 - 15	20	Optional	110	70	15	-	-	-	-	-	-
		3 - 15	25	Optional	255	145	60	-	-	-	-	-	-
		3 - 15	60	Yes	580	580	580	330	215	115	-	-	-
 PN6200 Series	6220	3 - 15	20	Optional	305	175	80	30	25	10	-	-	-
		3 - 15	25	Optional	580	355	190	85	65	30	-	-	-
		3 - 15	60	Yes	-	580	580	580	435	300	-	-	-
 PN6300 Series	6320	3 - 15	20	Optional	495	275	145	60	45	20	-	-	-
		3 - 15	25	Optional	580	470	320	150	105	55	-	-	-
		3 - 15	60	Yes	-	580	580	580	435	435	-	-	-
	6330	3 - 15	20	Optional	-	-	-	-	-	-	10	-	-
		3 - 15	60	Yes	-	-	-	-	-	-	275	185	115
		3 - 15	20	Optional	580	450	250	120	85	40	-	-	-
 PN6400 Series	6420	3 - 15	25	Optional	-	580	535	265	180	95	-	-	-
		3 - 15	60	Yes	-	-	580	580	435	435	-	-	-
		3 - 15	25	Optional	-	-	-	-	-	-	35	15	5
	6430	3 - 15	60	Yes	-	-	-	-	-	-	435	300	200
		3 - 15	20	Optional	-	580	230	230	165	80	-	-	-
		3 - 15	25	Optional	-	-	520	520	350	185	-	-	-
 PN6500 Series	6520	3 - 15	40	Yes	-	-	580	580	435	435	-	-	-
		3 - 15	20	Optional	-	-	-	-	-	-	55	35	20
		3 - 15	25	Optional	-	-	-	-	-	-	110	75	45
	6530	3 - 15	40	Yes	-	-	-	-	-	-	410	280	170
		3 - 15	20	Optional	-	580	320	320	230	110	-	-	-
		3 - 15	25	Optional	-	-	580	580	435	260	-	-	-
 PN6600 Series	6620	3 - 15	40	Yes	-	-	-	-	-	435	-	-	-
		3 - 15	20	Optional	-	-	-	-	-	-	75	50	30
		3 - 15	25	Optional	-	-	-	-	-	-	155	105	65
	6630	3 - 15	40	Yes	-	-	-	-	-	-	580	390	245

<sup>1</sup>(THE ABOVE CLOSING PRESSURES ARE BASED ON ZERO AIR IN ACTUATOR!)

Maximum delta P on L Series Valves is 200 psig

## \*Differential pressures

Differential pressures shown above to valves having chevron or below sealed stems with either metal to metal or PTFE soft seat. For valves having graphite packed stem seals refer to Spirax Sarco.

## Reduced capacity (C<sub>VS</sub>) valves

For valves having reduced capacity C<sub>VS</sub> trims differential pressures should be selected from the above chart using the actual C<sub>VS</sub> value column and not the valve size column.

\*For product compatibility with 2-1/2", 3" and 4" valves 1-3/16" travel actuators must be selected for all trim options. For valves having 3/4" travel reduced C<sub>VS</sub> trims it is therefore recommended to use a positioner to obtain the desired travel.

## Installation

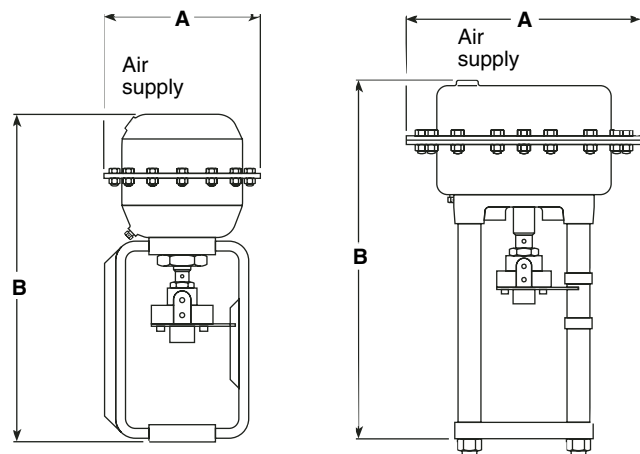
Actuators should be mounted with the stem in a vertical position. Installation Maintenance Instructions are supplied with the product.

## Spare parts

Information regarding spare parts available is given on TIS 1.514.

## How to order

1 off PN6220 Pneumatic Actuator



## Dimensions/weights (approximate) in inches and lbs.

Actuator	A	B	Weight
<b>6100 Series</b>	5-3/4"	11-3/8"	7.5
<b>6200 Series</b>	8-1/2"	12-3/4"	13.2
<b>6300 Series</b>	9-7/8"	13"	20.5
<b>6400 Series</b>	12"	14-1/2"	35.2
<b>6500 Series</b>	15-7/8"	15-3/4"	57.0
<b>6600 Series</b>	18-3/8"	15-3/4"	79.3