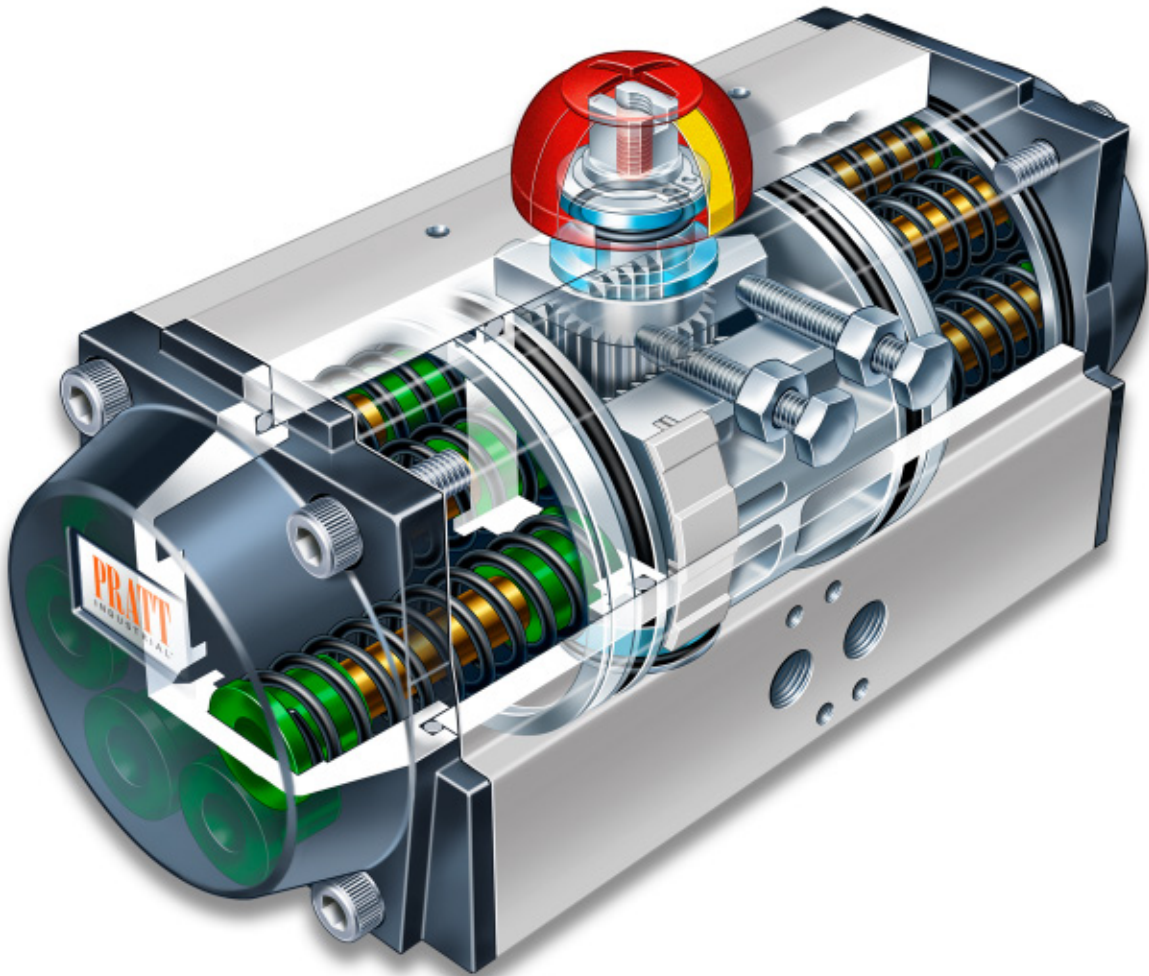


PRATT[®]
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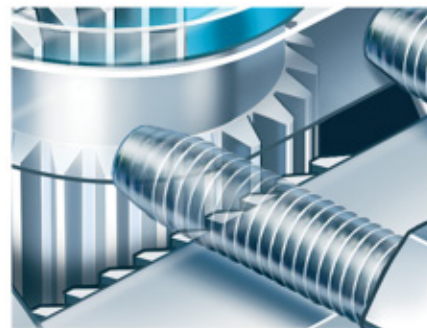
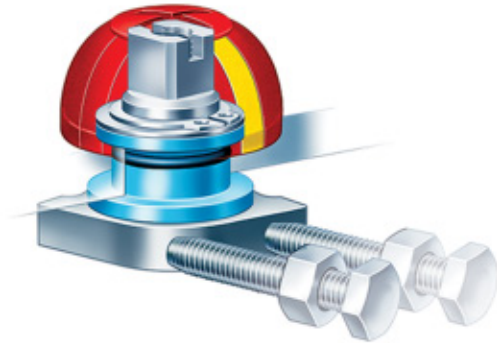
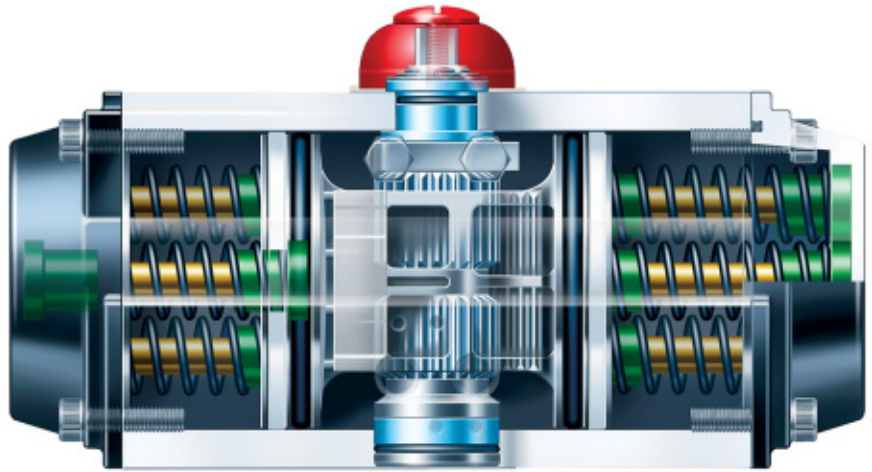
Pneumatic Actuator PIK Series



Engineering Creative Solutions
for Fluid Systems Since 1901

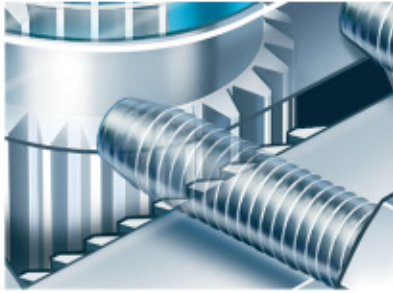
INTRODUCTION

- Pratt Industrial designs and provides high quality actuators and services related to valve automation.
- Our many years of experience in the automation field enables us to launch our PIK Series Pneumatic Actuator which sets new standards in design, performance and reliability to integrate fully into sophisticated control systems.



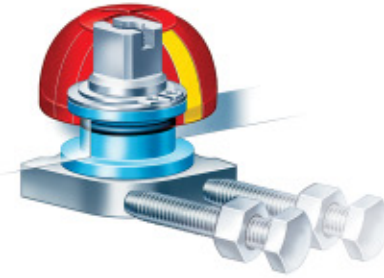
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FEATURES



Improved Travel Stop Design

- Allows the actuator to stop off the pinion rather than the pistons.
- The standard actuator will have 100 degrees of travel with +5 or -5 degrees of adjustment on the open and close stop.
- The forged steel travel stop can be machined to any length of travel.



Upgraded Top Hat Thrust Bearing Design

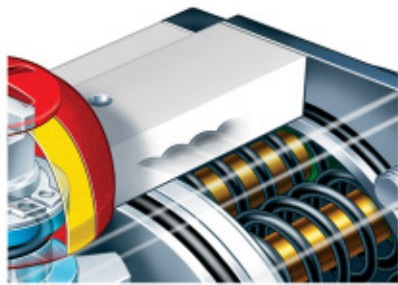
- Provides the largest pinion bearing surface in the industry.
- This upgraded Thrust Bearing limits friction between the actuator body and pinion, increases durability by absorbing side-load forces, and extends the cycle life of pinion o-rings.



Increased Tooth Engagement

- A minimum of two teeth are engaged at all times during the stroke for consistent torque output and accuracy.

OPTIONS AVAILABLE



Mounting Options

- 3.25" and 5" bolt circles along with "Double D" and keyway pinions available for direct valve automation.

Actuator Options

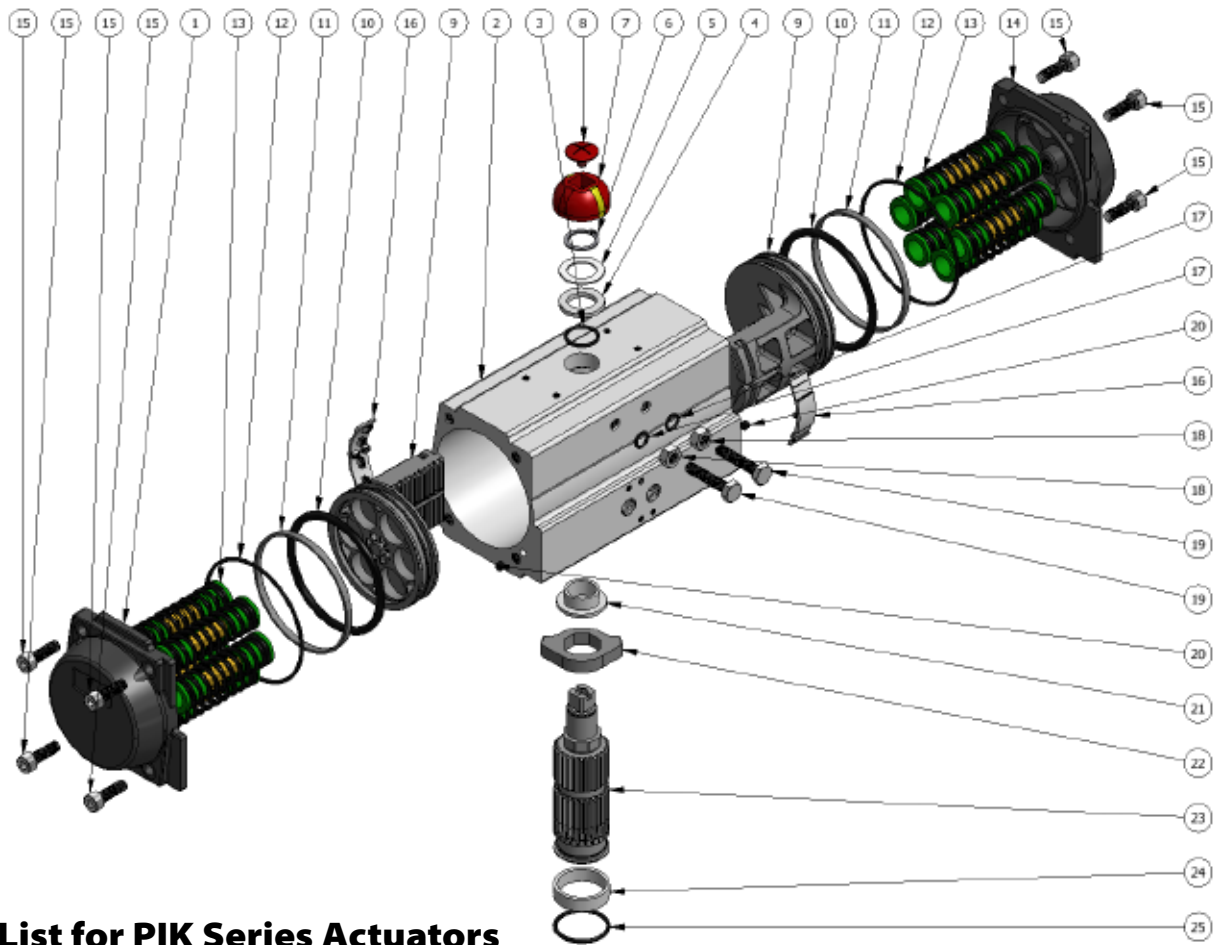
- 120°, 135°, 180° rotation in double acting and spring return
- Low and high temperature
- Fast acting/quick exhaust
- 100% travel stop adjustment
- 3 position actuators

Coating Options

- Anodized type II
- Hard Anodized type III
- Anodized type II / epoxy polyester powder coat
- ANI - high phosphorus nickel impregnated
- Anodized type II or III / PTFE sealed

Several new options are available to provide the level of corrosion protection needed for the required application. Whether your application's pharmaceutical, food and beverage, oil and gas, refining, marine, or chemical processing, our standard and optional coatings will ensure reliable performance.

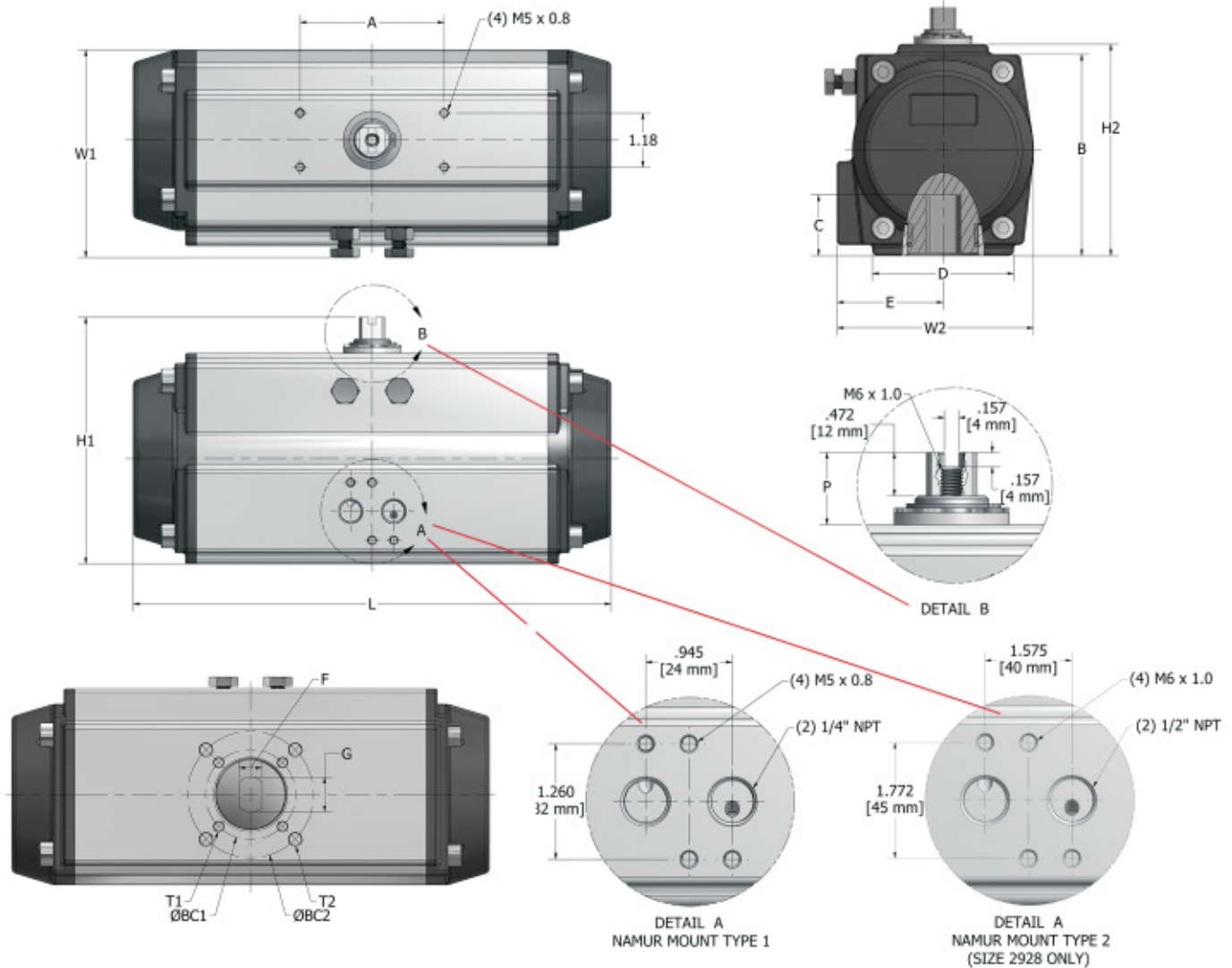
TECHNICAL INFORMATION



Part List for PIK Series Actuators

Item #	Qty.	Part Name	Material
1	1	Left End Cap	ASTM 384 Cast Aluminum
2	1	Body	6005T5 Extruded Aluminum
3	1	Upper Pinion O-Ring	NBR/Viton*/Low Temp NBR**
4	1	Flange Bearing	Delrin/Polysulphone (PSU)*
5	1	Pinion Washer	Stainless Steel
6	1	Pinion Circlip	Stainless Steel
7	1	Indicator	ABS
8	1	Indicator Screw	ABS
9	2	Piston	ASTM A23320 Anodized
10	2	Piston O-Ring	NBR/Viton*/Low Temp NBR**
11	2	Piston Guide	Bronze Impregnated PTFE
12	2	End Cap O-Ring	NBR/Viton*/Low Temp NBR**
13	0-12	Spring Cartridge	Epoxy Coated Spring Steel
14	1	Right End Cap	ASTM 384 Cast Aluminum
15	8	End Cap Socket Head Cap Screw	Stainless Steel
16	2	Piston Skate	Delrin/Polysulphone (PSU)*
17	2	Stop O-Ring	NBR/Viton*/Low Temp NBR**
18	2	Stop Nut	Stainless Steel
19	2	Stop Bolt	Stainless Steel
20	2	Air Channel Plug	NBR/Viton*/Low Temp NBR**
21	1	Thrust Bearing	Delrin/Polysulphone (PSU)*
22	1	Pinion Cam	Electroless Nickel/Forged 1045 Carbon Steel
23	1	Pinion	Electroless Nickel/Alloy Steel
24	1	Lower Pinion Bearing	Delrin/Polysulphone (PSU)*
25	1	Lower Pinion O-Ring	NBR/Viton*/Low Temp NBR**

TECHNICAL DIMENSIONS



Size	L	W1	W2	H1	H2	P	BC1	T1	BC2	T2	A	B	C	D	E	F	G
PIK10	4.91	3.11	2.38	3.17	2.38	0.79 (20mm)	1.417 (F03)	#10-32 UNF	1.969 (F05)	1/4-20 UNC	3.15	-	0.55	1.89	1.44	0.433 (11mm)	-
PIK20	5.79	3.15	2.80	3.62	2.83	0.79 (20mm)	1.417 (F03)	#10-32 UNF*	1.969 (F05)	1/4-20 UNC*	3.15	-	0.59	2.09	1.61	0.433 (11mm)	-
PIK34	6.69	3.50	3.30	4.24	3.46	0.79 (20mm)	1.417 (F03)	1/4-20 UNC	2.756 (F07)	5/19-18 UNC	3.15	3.19	0.71	2.67	1.85	0.511 (14mm)	-
PIK48	7.32	3.90	3.74	4.71	3.93	0.79 (20mm)	3.25	3/8-16 UNC X 0.59 DP	-	-	3.15	3.70	1.30	3.07	2.09	0.57	0.38
PIK75	8.35	4.43	4.06	5.08	4.29	0.79 (20mm)	3.25	3/8-16 UNC X 0.59 DP	-	-	3.15	3.88	1.30	3.07	2.25	0.76	0.51
PIK105	10.43	4.72	4.27	5.38	4.59	0.79 (20mm)	3.25	3/8-16 UNC X 0.59 DP	-	-	3.15	4.37	1.32	3.07	2.30	0.76	0.51
PIK157	10.67	5.16	4.78	6.06	5.28	0.79 (20mm)	3.25	3/8-16 UNC X 0.59 DP	-	-	3.15	4.84	1.34	3.62	2.52	0.76	0.51
PIK237	12.28	5.87	5.61	7.32	6.14	1.18 (30mm)	3.25	3/8-16 UNC X 0.59 DP	-	-	3.15/5.12**	5.75	2.32	3.94	2.93	1.13	.25 key
PIK331	15.04	6.08	5.75	7.68	6.50	1.18 (30mm)	3.25	3/8-16 UNC X 0.59 DP	5.00	1/2-13 UNC X 0.71 DP	3.15/5.12**	6.10	2.36	4.33	2.95	1.13	.25 key
PIK406	15.51	6.24	5.98	7.99	6.81	1.18 (30mm)	3.25	3/8-16 UNC X 0.59 DP	5.00	1/2-13 UNC X 0.71 DP	3.15/5.12**	6.36	2.32	4.72	3.03	1.13	.25 key
PIK633	18.11	7.26	6.85	8.98	7.80	1.18 (30mm)	5.00	1/2-13 UNC X 0.71 DP	-	-	3.15/5.12**	7.26	2.36	4.72	3.43	1.13	.25 key
PIK1009	20.87	8.78	8.11	10.28	9.09	1.18 (30mm)	5.00	1/2-13 UNC X 0.71 DP	-	-	5.12	8.52	3.11	5.12	4.06	1.63	.38 key
PIK1260	21.50	9.70	8.90	11.26	10.08	1.18 (30mm)	5.00	1/2-13 UNC X 0.71 DP	-	-	5.12	9.29	3.11	5.12	4.45	1.63	.38 key
PIK1831	25.28	11.42	10.24	12.64	11.46	1.18 (30mm)	6.50	3/4-10 UNC X 1.18 DP	-	-	5.12	10.45	3.62	6.30	5.12	1.88	.50 key
PIK2928	29.13	12.48	11.57	14.17	12.99	1.18 (30mm)	6.50	3/4-10 UNC X 1.18 DP	-	-	5.12	11.85	3.62	6.30	5.79	1.88	.50 key

* The size 20 is also available with an F04 (#10-32 UNF on a 1.654 BC) mounting pattern in place of the F03 / F05.

** Sizes 237-633 have 3.15 x 1.18 and a 5.12 x 1.18 top mounting with (8) M5 x 0.8 threaded holes.

TECHNICAL INFORMATION

Actual air consumption is calculated using the internal volume and supply pressure in the following equation.

Air Consumption (Standard Cubic feet) per Stroke =

$$\frac{V}{1728} \left(\frac{\text{Supply Pressure} + 14.7}{14.7} \right)$$

Weights (lbs)

Size	DA	K55	Single Spring
PIK10	2.00	-	-
PIK20	3.00	3.30	0.03
PIK34	4.65	5.05	0.04
PIK48	5.75	6.25	0.05
PIK75	7.65	8.65	0.10
PIK105	10.45	11.95	0.15
PIK157	13.25	14.75	0.15
PIK237	21.00	23.50	0.25
PIK331	26.85	30.35	0.35
PIK406	30.05	34.55	0.45
PIK633	45.05	51.55	0.65
PIK1009	72.45	82.95	1.05
PIK1260	87.20	104.70	1.75
PIK1831	124.00	149.00	2.50
PIK2928	180.00	222.00	4.20

Free Internal Air Volume (in³)

Size	Opening Stroke	Closing Stroke (DA only)
PIK10	4.27	5.49
PIK20	5.49	11.59
PIK34	8.54	15.87
PIK48	13.43	23.19
PIK75	20.75	32.34
PIK105	30.51	56.75
PIK157	46.99	72.62
PIK237	76.28	104.96
PIK331	111.06	163.54
PIK406	131.81	195.28
PIK633	206.87	294.74
PIK1009	341.12	484.53
PIK1260	405.20	642.58
PIK1831	590.71	994.08
PIK2928	911.08	1502.40

Speed of Operation (sec)

Size	Double Acting			Spring Return		
	Opening Stroke	Closing Stroke	Per Cycle	Opening Stroke	Closing Stroke	Per Cycle
PIK10	0.2	0.2	0.4	-	-	-
PIK20	0.2	0.2	0.4	0.3	0.3	0.6
PIK34	0.3	0.3	0.6	0.3	0.4	0.7
PIK48	0.3	0.4	0.7	0.4	0.5	0.9
PIK75	0.4	0.5	0.9	0.5	0.6	1.1
PIK105	0.6	0.6	1.2	0.7	0.9	1.6
PIK157	0.8	0.8	1.6	0.9	1.1	2.0
PIK237	0.9	1.1	2.0	1.2	1.4	2.6
PIK331	1.2	1.3	2.5	1.4	1.5	2.9
PIK406	1.4	1.4	2.8	1.5	1.8	3.3
PIK633	1.7	1.8	3.5	1.8	2.1	3.9
PIK1009	2.4	2.5	4.9	2.5	2.8	5.3
PIK1260	2.7	3.2	5.9	3.5	4.0	7.5
PIK1831	3.5	4.0	7.5	4.1	4.6	8.7
PIK2928	4.0	4.5	8.5	4.5	5.0	9.5

Temperature Specifications

Temp Designation	Temp Range (F°)	Temp Range (C°)	Bearing Material	O-ring Material	Grease
Standard Temp	-4° to 176°	-20° to 80°	Delrin/Bronze Impregnated PTFE	NBR	Standard
High Temp	5° to 320°	-15° to 160°	PPSU/Bronze Impregnated PTFE	Viton	High Temp
Low Temp	-58° to 176°	-50° to 70°	Delrin/Bronze Impregnated PTFE	Low Temp TBR	Standard

PNEUMATIC ACTUATOR PIK SERIES ORDERING INFORMATION

Series		Actuator Size		Action		X		X	
XX		XXX		X(X)		X		X	
PIK	Pneumatic	0048	48	DA	Double Acting	1	One Spring Left Side	1	One Spring Right Side
		0075	75	K	Spring Return	2	Two Springs Left Side	2	Two Springs Right Side
		0105	105			3	Three Springs Left Side	3	Three Springs Right Side
		0157	157			4	Four Springs Left Side	4	Four Springs Right Side
		0237	237			5	Five Springs Left Side	5	Five Springs Right Side
		0331	331			6	Six Springs Left Side	6	Six Springs Right Side
		0406	406						
		0633	633						
		1009	100						
		1260	1260						
		1831	1831						
		2928	2928						

Pneumatic Actuator Ordering Examples

Example P/N: PIK-0075-K55

PIK Series actuator, Model 75, with five springs per side

NOTE: Standard spring configuration is "K55"

PRATT®

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Pratt Industrial

Emporia, Kansas

Tel. 620.208.8100

FAX 620.208.8111

prattindl.com