

Valve Positioners

Series 74 Valve Positioners

Introduction

Features & Benefits

- ▶ Double-acting or single-acting service accommodates installation in a variety of environments
- ▶ Field reversibility reduces downtime and simplifies maintenance
- ▶ Choice of continuously adjustable standard stroke ranging from 1/4" to 48" and continuous span and zero adjustability within range spring limits provide application versatility
- ▶ Extra high capacity pilots ensure maximum frequency response and optimum stroking speeds for all actuator sizes
- ▶ Negative feedback pilot circuit allows the positioner to operate with a push-pull gain of more than 900:1 (using 100 psig supply) with no sacrifice in stability

Description

The Model Series 74 Valve Positioners are universal positioners that provide versatility, dynamic performance, and high positioning accuracy. They use the piston or diaphragm in a pneumatic actuator to position a valve to what is required by a control instrument and hold that position, regardless of the presence of forces that change valve position. As such, supply pressure variations have little or no effect on the positioner output, which eliminates the need for a supply pressure regulator.

These valve positioners are two-stage, pilot-operated instruments. The pilot circuit activates dual-output boosters, which perform opposite actions (when one booster is supplying air, the other is exhausting air.) This "push-pull" action applies to a full differential (supply pressure to atmosphere) across the actuator to drive the valve to the position required by the control instrument signal.

Model 74 Valve Positioners can also be used for single-acting service on a spring-loaded actuator. In this case, one of the pilot-booster connections is plugged. See below for rotary-type actuators.

Specifications

Input Ranges

3-15, 3-9, 3-27, 0-15, and 0-30 psig including split ranges within these basic ranges

Valve-Stroke Ranges¹

1/4" minimum
48" maximum

Supply Pressure

3 psig above full actuator pressure minimum
150 psig maximum

Air Consumption

0.2 scfm (inbalanced condition with 20 psig supply)



Overload Protection

150 psig at any connection

Response Level

Output is sensitive to control signal changes as small as 0.1% of full range

Ambient Temperature Range

-40 to 180°F (-40 to 82°C)

Materials of Construction

Aluminum, brass, stainless steel, and Buna-N

Rotary Actuators Kit

The Series 74 Rotary Actuator Kits allows for compact installation of a complete assembly (positioner and mounting) to fit inside a 5"x 5"x2-2/3" envelope. The kit's direct connected feedback spring eliminates error-prone connections and levers, while its spiral feedback spring provides inherent reliability.

Response Level

0.1% F.S.

Linearity

±1.5% F.S.

Input Range

3-9, 9-15², 3-15 psig

Actuator Motion

90° Rotation

1) See next page for additional performance data, design specifications, and a range spring selection chart.

2) 9-15 psig range requires a suppression spring.

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Ordering data

Model Number

Valve Positioner

Sensitivity

Standard Pilot & Standard Gain

- Stabilizing Pilot & Reduced Gain

Gauge Option

- With 3 Gauges
- Without Gauges

Intermediate Sensitivity

- Standard Pilot & Reduced Gain (74S only)

Order No.

74-



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-1

Accessories

- Rectilinear Range Spring Kits - Rectilinear range spring kits include a range spring, zero screw, (2) range spring seats, and instructions. All kits include the (2) range spring seats, P/N 12372-384 (not listed below).
- Rotary Range Spring Kits - The table below lists the kit numbers, spring assembly numbers, and their color codes.
- Zero Suppression Spring Kits - Zero suppression spring kits include a suppression spring and a spring seat. All kits include the P/N 12372-254 spring seat (not listed below).

3

Range Spring Kit Table

Actuator Stroke - Inches -	Kit and Parts	Instrument Input Pressure Range - psig				
		3-15	3-9	3-27	0-30	0-15
1/4 to 1-1/2	Kit No. Spring No. Color Code Screw No.	14995-101 14996-1 Black 12372-274				
1-1/2 to 2-3/4	Kit No. Spring No. Color Code Screw No.	14995-102 14996-2 White 12372-273	<i>Consult Factory</i>			
2-3/4 to 4	Kit No. Spring No. Color Code Screw No.	14995-103 14996-3 Blue 12372-273				
4 to 6	Kit No. Spring No. Color Code Screw No.	14995-119 14996-102 Brown 12372-292	N/A			
6 to 9	Kit No. Spring No. Color Code Screw No.	14995-117 14996-104 Green 12372-292			N/A	
9 to 12	Kit No. Spring No. Color Code Screw No.	14995-120 14996-106 Red 12372-3034	<i>Consult Factory</i>		N/A	
12 to 19	Kit No. Spring No. Color Code Screw No.	14995-118 14996-110 Orange 12372-303	N/A			
48	Kit No. Spring No. Color Code Screw No.	14995-121 14996-111 None 12372-296	N/A			

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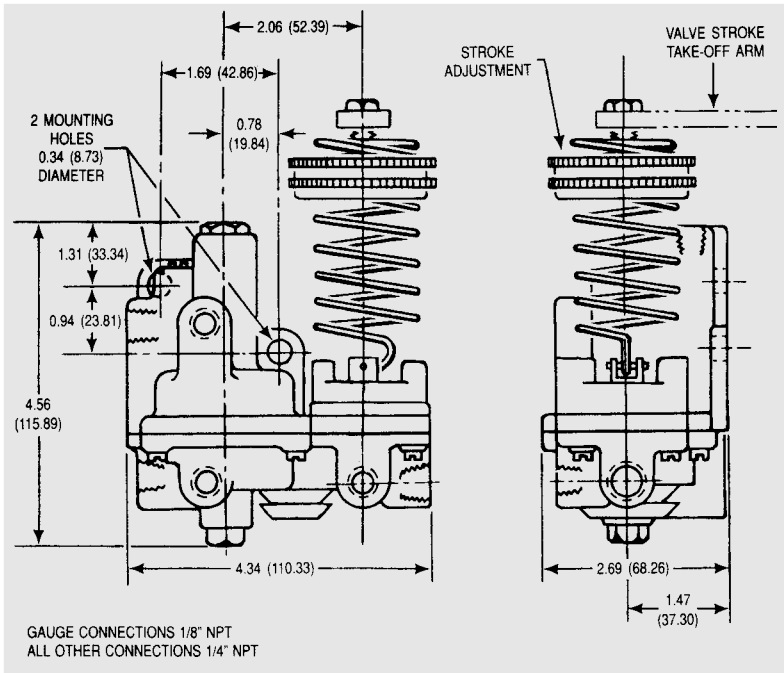
Technical data

Rotary Range Spring Kit

	Rotation of Actuator Shaft	Clockwise		Counterclockwise	
	Instrument Input Range -psig-	3-9	3-15	3-9	3-15
Kit Supplied Without Mounting Plate	Kit No. Spring No. Color Code	Consult Factory	14923-154 14923-70 White	Consult Factory	14923-104 14923-71 Red
Kit Supplied With Mounting Plate	Kit No. Spring No. Color Code	Consult Factory	14923-154 14923-70 White	Consult Factory	14923-103 14923-71 Red

3

Mounting Dimensions



Mounting Dimensions, Rotary Kit

The actuator extension shaft must be 0.3125" ±0.0010" and capable of withstanding 100 inch-pounds of torque (pinned assembly recommended).

Installer to drill and mount the base plate so that the appropriate feedback hole (clockwise or counter-clockwise rotation) is concentric with actuator extension shaft.

