

MP8000 Series Actuated Valves with V-9502-95 Pneumatic Valve Actuator Positioner

Application

The V-9502-95 Pneumatic Valve Actuator Positioner is a precision relay device designed to operate a Johnson Controls MP8000 Series Valve Actuator in applications requiring stable, accurate control. The V-9502-95 provides maximum positioning power to resist external forces which might otherwise overcome the positioning power of the valve actuator. Adjustable operating span and starting point also make the V-9502-95 an ideal choice for valve sequencing applications.

The V-9502-95 Positioner is mounted to the MP8000 Series Actuator using an MP8000-6002 Positioner Mounting Kit (ordered separately). This mounting kit contains six color-coded springs and all of the necessary mounting hardware (as outlined in Table 1).

Installation

Table 1: Contents of MP8000-6002 Positioner Mounting Kit

Quantity	Description
2	Yoke Bushings
1	Connector Bracket
1	Connector Arm
1	Yellow Spring (5/16 in. Stroke)
1	Blue Spring (1/2 in. Stroke)
1	White Spring (3/4 in. Stroke)
1	Gray Spring (1 in. Stroke)
1	Green Spring (1-1/4 in. Stroke)
1	Red Spring (1-1/2 in. Stroke)
1	Phillips-Head, Taptite Screw, No. 8-32 x 1-1/4 in. (32 mm) Long
1	Phillips-Head, Taptite Screw, No. 8-32 x 5/8 in. (16 mm) Long
2	Phillips-Head, Taptite Screws, No. 6-32 x 1/4 in. (6 mm) Long
1	12 in. (305 mm) Length of Black Plastic Tubing

Mounting

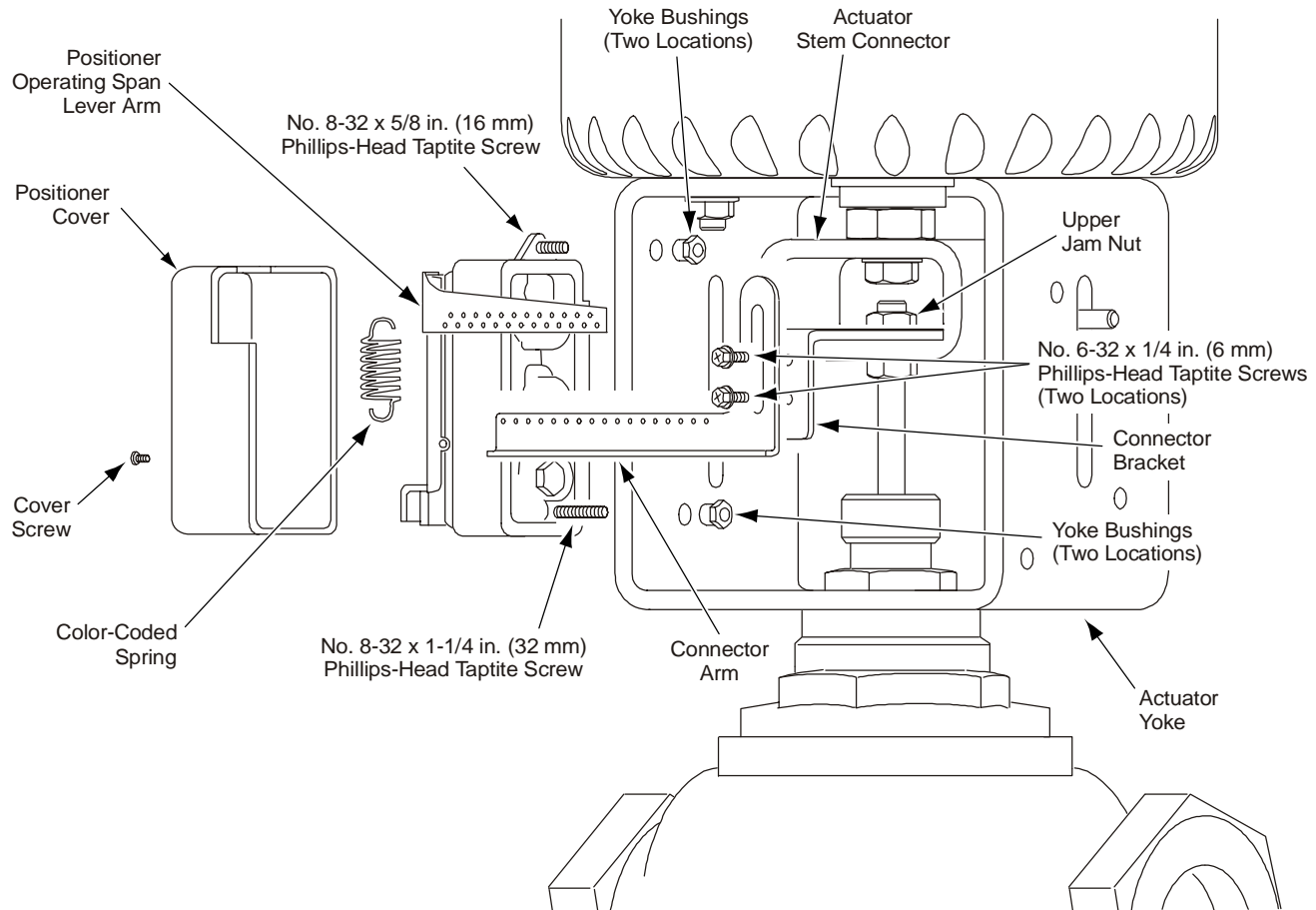


Figure 1: Mounting the V-9502-95 Pneumatic Valve Actuator Positioner

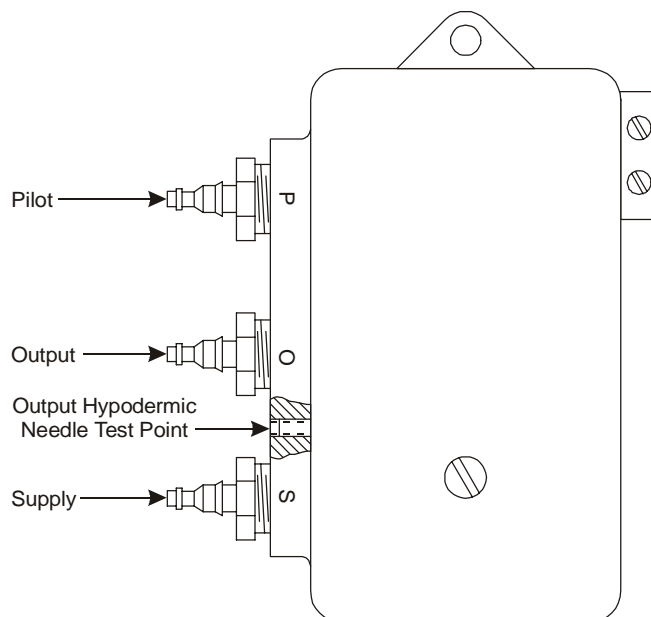


Figure 2: V-9502-95 Port Identification

Refer to Figures 1 and 2, and mount the V-9502-95 Pneumatic Valve Actuator Positioner to an MP8000 Series Valve Actuator using the MP8000-6002 Positioner Mounting Kit as follows:

1. Disconnect the supply air to the MP8000 Series Actuator.
2. Loosen the cover screw on the V-9502-95 Positioner and remove the cover.
3. Locate the side of the actuator yoke that has two circular holes.
4. Insert the two yoke bushings into the circular holes from the inside of the actuator yoke.
5. Secure the V-9502-95 Positioner to the side of the actuator yoke using the two No. 8-32 taptite screws and two yoke bushings.

Note: Be certain to orient the V-9502-95 Positioner so that the 5/8 in. (16 mm) taptite screw is closest to the MP8000 Series Actuator, and the 1-1/4 in. (32 mm) taptite screw is closest to the valve body.

6. Secure the connector arm to the connector bracket using the two No. 6-32 x 1/4 in. (6 mm) taptite screws.
7. Install the connector arm and connector bracket assembly onto the valve stem, between the actuator stem connector and the upper jam nut.

Note: The connector arm should be positioned below and parallel to the positioner operating span lever arm.

8. Select the appropriate color-coded spring for the required valve stroke. Refer to Table 1 for the color-coded stroke designations.
9. Install one end of the spring into the positioner operating span lever arm. Initially, install the spring into the seventh hole on the positioner operating span lever arm. This hole represents an operating span of approximately 4 psi (28 kPa).

Note: The hole closest to the V-9502-95 Positioner represents the first hole in the series.

10. Install the other end of the color-coded spring into the appropriate hole in the connector arm that allows the spring to be positioned parallel to the V-9502-95 Positioner body.
11. Loosen the two No. 6-32 taptite screws that secure the connector arm to the connector bracket, and reposition the connector arm until the color-coded spring is just taut but not stretched.

12. Tighten the two No. 6-32 taptite screws to secure the connector arm to the connector bracket.
13. Connect the pneumatic input signal to the Pilot **P** port of the V-9502-95 Positioner.
14. Use the 12 in. (305 mm) length of black plastic tubing included in the MP8000-6002 Kit to connect the Output **O** port of the V-9502-95 Positioner to the input of the MP8000 Series Actuator.
15. Connect a nominal 20 psig (138 kPa) supply pressure to the Supply **S** port of the V-9502-95 Positioner.
16. Commission the V-9502-95 Positioner as outlined in the *Setup and Adjustments* section. If the V-9502-95 Positioner will be commissioned at a later time, re-install the positioner cover and tighten the cover screw.

Setup and Adjustments

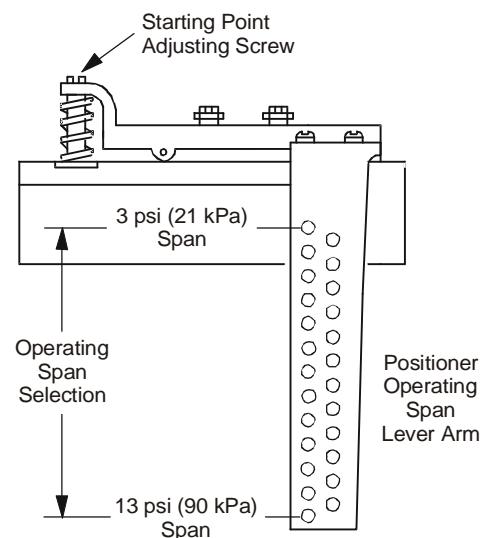


Figure 3: Setting Up the V-9502-95 Positioner for Operation

The following procedure is a typical example of how a V-9502-95 Pneumatic Valve Actuator Positioner is used to adjust the operating spring range and change the operating span of an MP8000 Series actuated valve assembly.

Assume that the MP8000 Series Actuator has an operating spring range of 4 to 8 psig (28 to 55 kPa) resulting in an operating span of 4 psi (28 kPa), and that it is desirable to obtain an operating spring range of 3 to 8 psig (21 to 55 kPa) resulting in an operating span of 5 psi (34 kPa).

To make the change, refer to Figure 3 and proceed as follows:

1. Connect a nominal 20 psig (138 kPa) supply pressure to the Supply **S** port of the V-9502-95 Positioner.
2. Install one end of the color-coded spring into the hole in the positioner operating span lever arm that corresponds to a 5 psi (34 kPa) operating span.

Note: The ninth hole on the positioner operating span lever arm represents an operating span of approximately 5 psi (34 kPa). The hole closest to the V-9502-95 Positioner represents the first hole in the series.

3. Reposition the other end of the color-coded spring so that the spring is parallel to the V-9502-95 Positioner body.
4. Connect a 3 psig (21 kPa) pneumatic input signal to the Pilot **P** port of the V-9502-95 Positioner.
5. If the V-9502-95 Positioner cover is not already removed, loosen the cover screw and remove the cover.

6. Turn the starting point adjusting screw clockwise until the actuator just begins to stroke. An output pressure reading can be taken either by using a pressure gauge in the V-9502-95 Positioner output line, or at the hypodermic needle test point on the positioner body.
7. Increase the pneumatic input signal to 8 psig (55 kPa). At this point, the valve should be fully stroked.

Note: In some instances, turning the starting point adjusting screw will affect the operating span of the actuator and valve assembly. If the operating span is affected, install the color-coded spring into a different hole on the positioner operating span lever arm and repeat Steps 3 through 7.

If the spring is re-installed into a top hole on the positioner operating span lever arm, the connector arm may need to be repositioned to ensure that the color-coded spring is not stretched beyond just taut. Refer to Step 11 in the *Mounting* section for more details.

8. Re-install the V-9502-95 Positioner cover and tighten the cover screw. The V-9502-95 Positioner is now ready to position the MP8000 Series Actuator over an operating spring range of 3 to 8 psig (21 to 55 kPa).



Controls Group
507 E. Michigan Street
P.O. Box 423
Milwaukee, WI 53201

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