

## Spring Kit Procedure for V-3801-8001 Pneumatic Actuators on Threaded Stem VG7000 Series Bronze Valves

This procedure describes the recommended method to install the spring used with the V-3801-8001 Pneumatic Valve Actuators on threaded stem VG7000 Series Bronze Valves.

### **Kit Includes**

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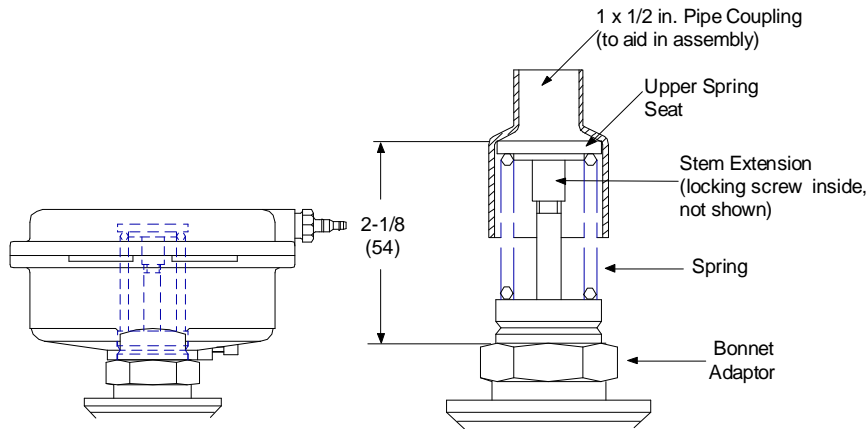
- one bonnet adaptor
- spring:

<u>Spring Ranges</u>	<u>Color Code</u>
3 to 6 psi	Red
4 to 8 psi	White
9 to 13 psi	Blue
- one upper spring seat
- one stem extension
- one stem locking screw (set screw)

### **Tools Required**

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- small blade screwdriver
- pliers
- adjustable or 1-1/4 in. open end wrench
- 1 x 1/2 in. plastic, iron, or steel pipe reducer coupling, or 1 x 1/2 in. copper tube reducer coupling (optional - to aid in spring compression)



**Figure 1: V-3801-8001 Actuator,  
in. (mm)**

### **Adaptor and Spring Assembly Procedures**

1. After the valve has been installed or is firmly restrained, thread the bonnet adaptor onto the valve bonnet.
  2. Using a 1-1/4 inch wrench, tighten the adaptor. Pull the valve stem to the full up position. Thread the stem extension onto the valve stem to the gauge height of 2-1/8 inch (54 mm). See Figure 1.
  3. Verify that the proper spring has been selected for the desired spring range using the color code listed on Page 1.
  4. Use a pliers to hold the stem extension while tightening the locking screw with a screwdriver. Place the spring onto the bonnet adaptor. Place the upper spring seat onto the spring, lining up the hole with the rectangular shape of the stem extension. Using hand pressure, compress the spring below the stem extension and rotate 90° (see note). Release the spring, allowing the stem extension to nest in the depressed area of the spring seat. Verify the spring seat gauge height of 2-1/8 inch (54 mm). See Figure 1.
- Note: A 1 x 1/2 in. pipe coupling can be used as an assembly aid on higher compression springs. Place the coupling over the spring seat and compress the spring using the coupling for better leverage.
5. Verify that all threaded parts are tightened as described in this document.

## **Actuator Assembly Procedure**

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The actuator is easily attached to the valve by placing the actuator over the spring and bonnet adaptor and tightening the set screw. Connect the air line to the barbed fitting on the actuator. Ensure the spring seat is parallel with the length of the actuator so it properly nests into the piston cup inside the actuator.

## **Commissioning Valve/Actuator**

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When the spring and actuator are installed, check the following items:

1. Verify that the actuator is tight or secured as described in this document.
2. Verify that when air is applied to the actuator, the valve stem moves to its full up or down position.

## **Actuator and Spring Removal Procedures**

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Disconnect the air line attached to the actuator and cap it to prevent control system operation problems. Make sure that the pressure in the actuator has been relieved.

For removal, follow the instructions in the *Adaptor and Spring Assembly Procedures* section in reverse order.



**CAUTION:** The spring under the actuator is attached to the valve stem and is precompressed. Unknown damage to the valve stem may create a hazardous condition.

