



**FLO-TORK, INC.**

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## METRIDYNE PNEUMATIC ACTUATOR

### SPRING RETURN

(Page 1 of 2)

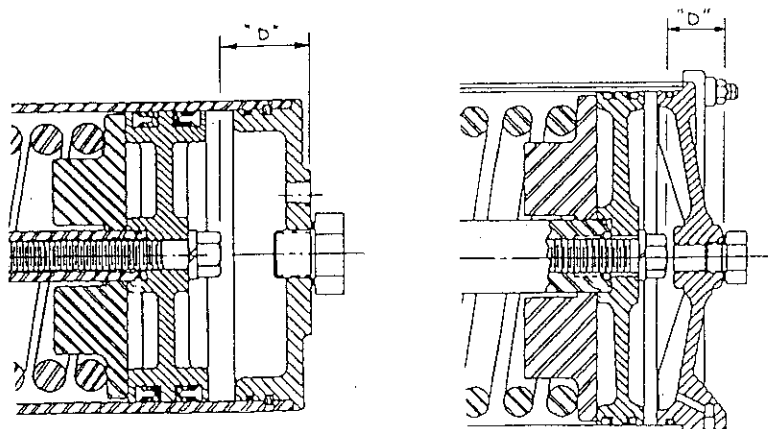
Supplementary Maintenance Information  
MS Series (Spring Return) Actuators

**CAUTION:** MS Actuators contain springs under compression. Extreme caution must be exercised in disassembling any spring return actuator to prevent injury. Only trained service personnel should perform this disassembly.

Do not disassemble cylinder (Item #37) from the actuator or remove end cap (Item #26) until spring return action has been verified. This can be accomplished by applying normal opening pressure to cause full open rotation. Upon removal of pressure, the spring should urge the actuator back to its full closed position (for fail open actuators, spring action would be reversed).

Alternately, if it is not possible to pressurize the actuator, verification of the spring return action can be accomplished by first assuring that the pressure has been exhausted from the actuator, and then removing the jackscrew or plug located on the cylinder end cap. After the end cap plug connection has been opened, measure the distance "D" from the outside of the end cap to the head of the piston bolt (Item #47). If the "D" measurement is greater than the minimum "D" dimension shown below, then the piston bolt is properly restraining the spring and disassembly of the end cap and cylinder may proceed. If the measured "D" DIMENSION IS NOT GREATER than the minimum "D" dimension, DO NOT PROCEED WITH DISASSEMBLY; the actuator should be returned to the factory for evaluation.

<u>BASE MODEL</u>	<u>MINIMUM "D"</u>
27 (All Sizes)	1.687"
37 (All Sizes)	2.446"
1047	2.214"
1247	2.524"
1447	2.524"
65	Consult Factory





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(Page 2 of 2)

**SUPPLEMENTARY MAINTENANCE INFORMATION  
MS SERIES (SPRING RETURN) ACTUATORS**

(Continued from Page 1)

**DO NOT ATTEMPT DISASSEMBLY UNLESS PROPER SPRING ACTION HAS BEEN VERIFIED**

After spring action has been verified, disassembly of the cylinder can proceed as described in the disassembly instructions.

Before beginning to remove the piston bolt (Item #47), verify that piston rod extension (Item #31) is fully engaged into piston rod (Item #32). Scribe match witness marks on the piston rod and the piston rod extension. Observe these match marks as the piston bolt (Item #47) is started to be rotated counterclockwise to relieve spring compression. If any relative movement between the marks is detected, **STOP** withdrawing the piston bolt (Item #47). Verify that roll pin (Item #35) is installed or otherwise restrain the piston rod extension (Item #31) to prevent rotation and continue rotating piston bolt (Item #47) counterclockwise until all spring compression is relieved and the bolt can be removed. **DO NOT** continue with disassembly if it is not possible to restrain the piston rod extension. Normally, the piston rod extension can be restrained by holding it with a wrench on the wrench flats adjacent to the piston rod.

Replace the piston rod (Item #32) and the piston rod extension (Item #31) before reassembly, if piston rod extension rotation was observed.

Proceed with disassembly and reassembly as described in the "Field Installation and Maintenance Instructions".

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