

MP953A Positive Positioner Retrofit Kits

REPLACEMENT DATA

GENERAL

The following retrofit kits (Fig. 1 and 2, and Table 1) will replace the old style Gradutrol Relay, on the direct acting MP953A Pneumatic Valve Actuators, with the new style positive positioner and bracket assembly that is used on the MP953E models.

Table 1. MP953A Positive Positioner Retrofit Kits.

Kit Part Number	Actuator Description
14004139-001	8 and 13 in. 3/4 in. (19 mm) stroke
14004140-001	8 and 13 in. 1-1/2 (38 mm) stroke
14004212-001	5 in. 3/4 in. (19 mm) stoker

Replacing the Gradutrol Relay with the positive positioner retrofit kit converts the MP953A to the equivalent of an MP953E.

APPLICATION

MP953 actuators operate the V5011 and V5013 Valve Assemblies, and were sometimes adapted to certain other coil, line, or zone valve assemblies which proportionally control steam, or hot and cold liquids in HVAC systems. Replacing the Gradutrol Relay with the positive positioner retrofit kit updates the operator to the latest model.



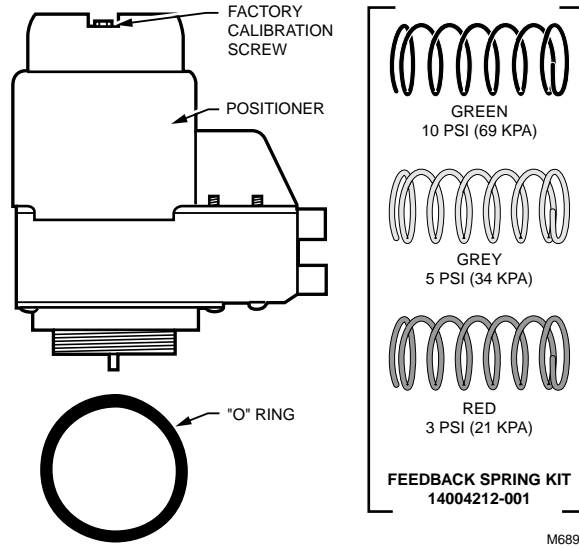


Fig. 1. Positive Positioner Retrofit Kit, Part No. 14004140-001.

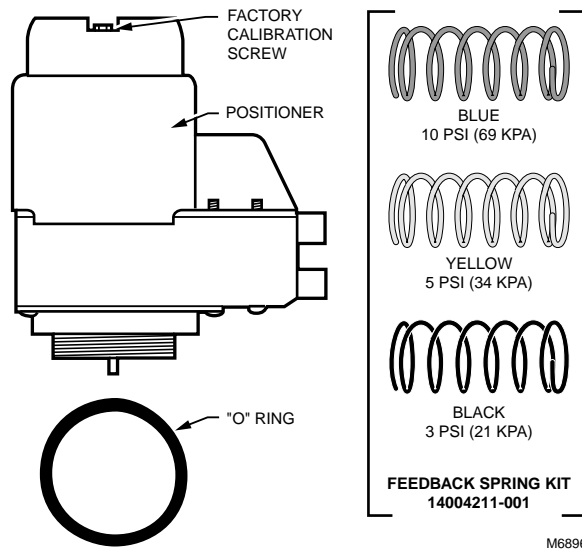
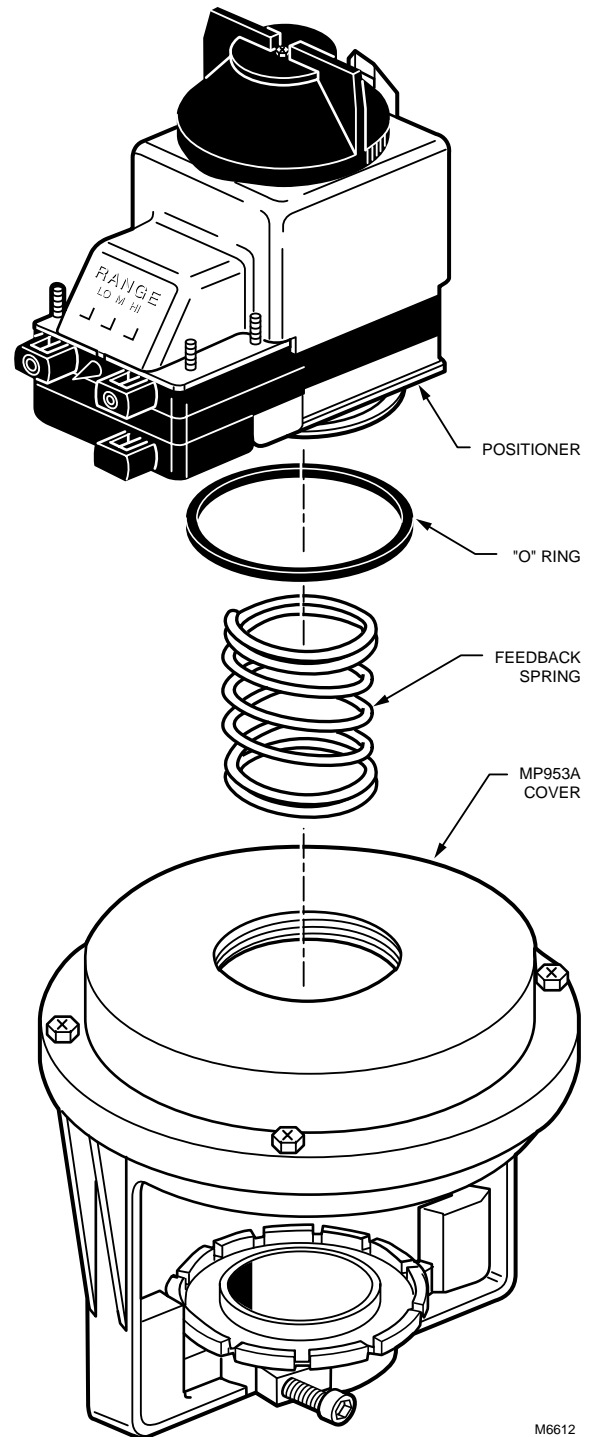


Fig. 2. Positive Positioner Retrofit Kits, Part No. 14004139-001 and 14004214-001.

POSITIONER REPLACEMENT PROCEDURE

- 1 Reduce air pressure to actuator by adjusting controller setpoint to obtain 0 psi (0 kPa) pressure.
- 2 Disconnect air lines.
- 3 Unscrew positioner from actuator cover. Unhook feedback spring and discard.
- 4 Seat O-ring into groove at bottom of new positioner (Fig. 3).
- 5 Install new feedback spring of 3, 5, or 10 psi (21, 34, or 69 kPa) spring range into valve and to positioner.
- 6 Screw positioner into top of valve.
- 7 Set start point on positioner by turning knob to any setting between 1-1/2 and 13 psi (0 to 90 kPa). Each detent on the knob equals 1/4 psi (1.8 kPa).
- 8 Connect air lines and perform operation check.
- 9 Set controller to desired setpoint.
- 10 Adjust start point if necessary.



M6612

Fig. 3. Installation of Positioner Retrofit Kit.

OPERATION CHECK AND START POINT ADJUSTMENT

- ❶ If none exists, temporarily install gages in main and pilot lines. Main line pressure should be equal to or more than top of sequencing range, or 13 psi (90 kPa) minimum.
- ❷ Vary the branch line pressure through the operating range of the actuator in both directions. The valve should open and close smoothly.
- ❸ Adjust pilot pressure to 0 psi (0 kPa). Slowly increase pressure and note that pressure at which the valve stem travel starts. This pressure should be within 1 psi (7 kPa) of the start point.
- ❹ If positioner calibration is off, recalibrate by adjusting the factory calibration screw (Fig. 1) found in the center of the knob.
- ❺ Increase pilot pressure until the valve stem travel is complete. This pressure should be the start point pressure plus the operating range.
- ❻ To adjust start point, set knob to any desired start point between 1-1/2 and 13 psi (10 and 90 kPa). Each detent on the knob equals 1/4 psi (1.8 kPa).
- ❼ After adjustment or calibration, recheck operation.

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