

## Positioning Relay Mounting Kit No. 147-276

### Product Description

This kit contains the parts needed to field mount the RL 147 Positioning Relay on the No. 6 Pneumatic Damper Actuator.

### Product Number

147-276

### Required Tools

- Flat-blade screwdriver
- Two 5/8-inch (16 mm) open-end hex wrenches

### Expected Installation Time

10 minutes

### Prerequisites

- Clean, dry, oil-free air supply
- 147-2000 Positioning Relay
- If the actuator is already mounted to the damper, disconnect the crank arm by pulling the clevis pin before mounting the relay.

### Installation

1. Attach the mounting bracket (1) to the actuator by loosening two of the housing cap screws and inserting the mounting brackets as shown in *Figure 1*. Tighten the housing cap screws.
2. Attach the relay to the mounting bracket with two captive screws furnished on the relay body. Loosen the cover screw to remove the cover for access to one of the screws.
3. Attach the relay feedback arm to the lever assembly of the relay using the two lock washers and the two screws provided. The feedback arm must clear the mounting bracket and the actuator lower housing.
4. Thread one hex nut (8) onto the actuator shaft. Put spring arm (7) against the nut and thread the other hex nut onto the shaft against the spring arm as shown in *Figure 1*.
5. Align the opening in the spring arm with the spring guide. Tighten the hex nuts to hold the spring arm in position.

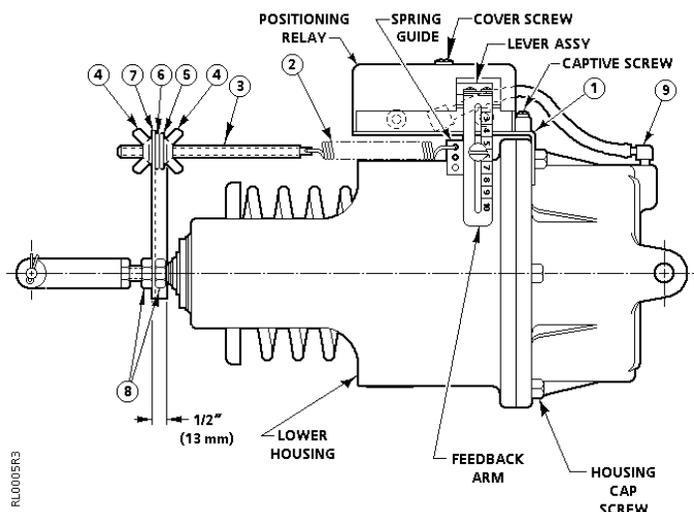


Figure 1. Positioning Relay Mounting Kit 147-276 on the No. 6 Damper Actuator.

Table 1. Mounting Kit 147-276.

Item	Description	Qty.
1	Mounting bracket	1
2	Feedback spring 4" (102 mm) stroke (blue)	1
	Feedback spring 3" (76 mm) stroke (Cadmium)	1
3	Adjusting screw 4-1/2" (114 mm) long	1
	Adjusting screw 1-3/4" (44 mm) long	1
4	Wing nut	2
5	Lock washer	1
6	Flat washer	1
7	Spring arm	1
8	3/8-24 hex nut	2
9	90° Elbow connector	1

## Installation, Continued

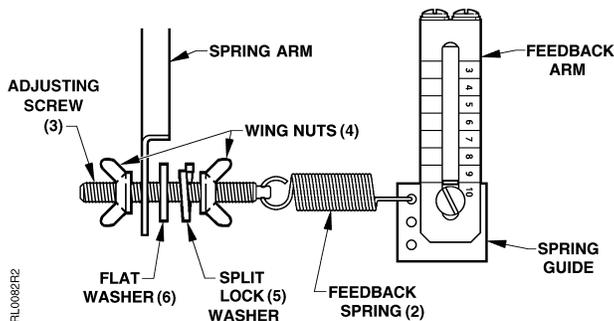
6. Select the feedback spring and adjusting screw appropriate for this installation. The factory setting is 4 inches (102 mm). See *Table 2*.

**Table 2. Spring Selection.**

Actuator Stroke	Feedback Spring			Adjusting Screw
	Color	Nominal	Max.	
3-1/4 to 4 (82 to 102)	Blue	4 (102)	4-1/4 (108)	4-1/2 (114) long
2-29/32 to 3-1/4 (74 to 82)	Cadmium	3 (76)	3-1/4 (82)	1-3/4 (44) long

Dimensions in inches (millimeters)

7. Connect the feedback spring (2) between the spring guide and the adjusting screw (3).
8. Thread one wing nut (4), the lock washer (5) and the flat washer (6) onto the adjusting screw. See *Figure 2*.

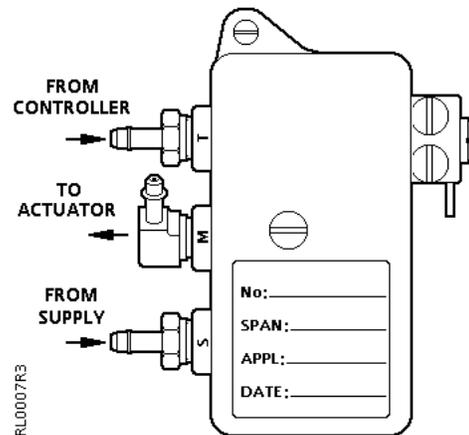


**Figure 2. Attaching the Adjusting Screw to the Spring Arm.**

9. Slide the adjusting screw through the spring arm. Thread the remaining wing nut onto the adjusting screw. Tighten the wing nuts so that there is no slack in the spring, but do not stretch the spring.

**NOTE:** Adjust the spring arm so that the adjusting screw and the feedback spring are parallel to the actuator shaft.

10. Attach the connector (9) to the actuator. See *Figure 1*.
11. Make pneumatic piping connections to the actuator and relay. The "S" Port is the air supply port. The "M" Port goes to the connector (9) on the actuator. The "T" Port is the signal from the controller. See *Figures 1 and 3*.



**Figure 3. Mounting Relay Ports.**

12. Place the calibration label on the cover as shown in *Figure 3*. Mark for reference. (Optional) Attach the relay cover if you are not calibrating immediately.
13. Calibrate the relay by following the instructions included with the positioning relay.

The installation is now complete.

## Reference

Technical Instructions

RL 147-2  
 155-038P25

Installation Instructions

RL 147 Positioning Relay Calibration  
 129-125

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