

# SmartX MS41-7183

160 lb-in (18 Nm) Direct-coupled Damper Actuator  
Spring Return

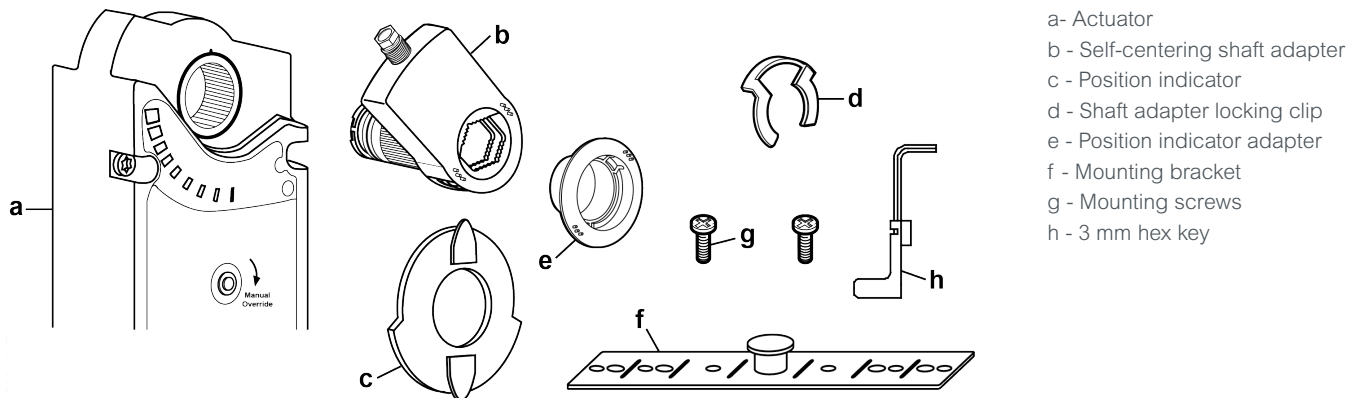


Figure 1. MS41-7183 Damper Actuator Parts.

## Product Description

The steps for direct-coupled mounting of the Schneider Electric MS41-7183 spring return (SR) modulating control damper actuator.

### Prerequisites

The actuator is shipped from the factory with 5° preload. When power is applied to the actuator, the preload is released. To manually release the preload, insert the 3 mm hex key in the override opening and turn the key in the direction of the arrow. See Manual Override.

### Required Tools

- 10 mm (13/32-inch) open-end wrench
- Drill and 4 mm (5/32-inch) drill bit
- 3 mm hex key (provided)
- Phillips screwdriver
- Marker or pencil
- Adjustable pliers
- Estimated Installation Time: 30 minutes

## Mounting Positions

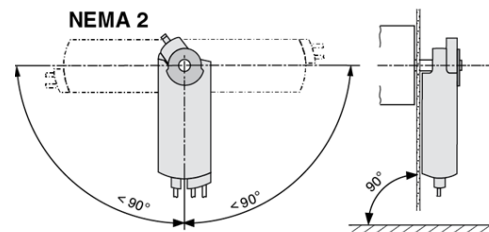


Figure 2. Acceptable NEMA 2- Mounting Positions

Installation

Table 1. Actuator Positioning and Damper Control.

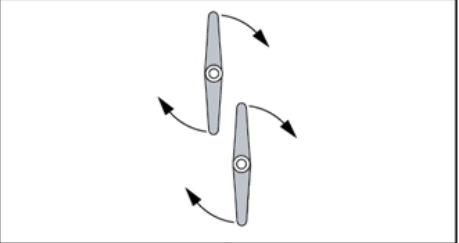
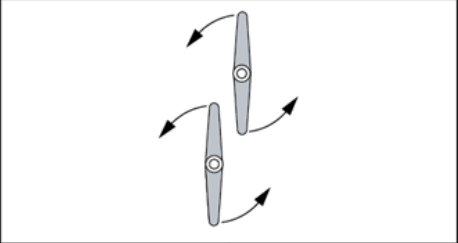
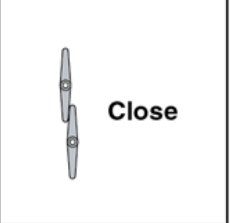
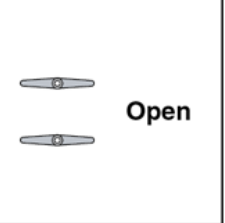
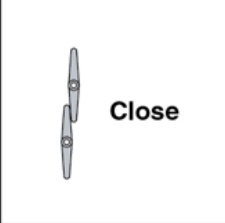

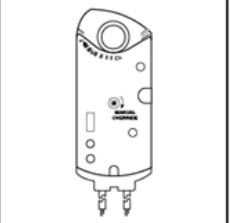
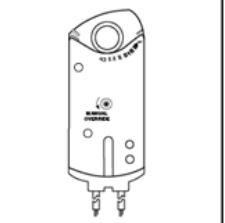
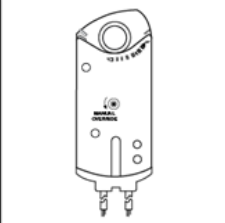
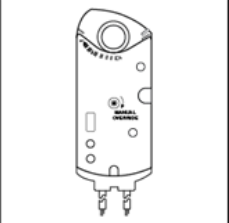
|   |  |   |   |   |  |
|---|--|---|---|---|--|
| Determining the Actuator Mounting Orientation | ①<br>Damper Type                       |       |   |        |  |
|   | ②<br>Power Fail Spring Return Position |  Close |  Open |  Close |  Open |
|   | ③<br>Actuator Mounting Orientation     |       |      |       |      |

Figure 3. Shaft Length and Proper Shaft Adapter Location.

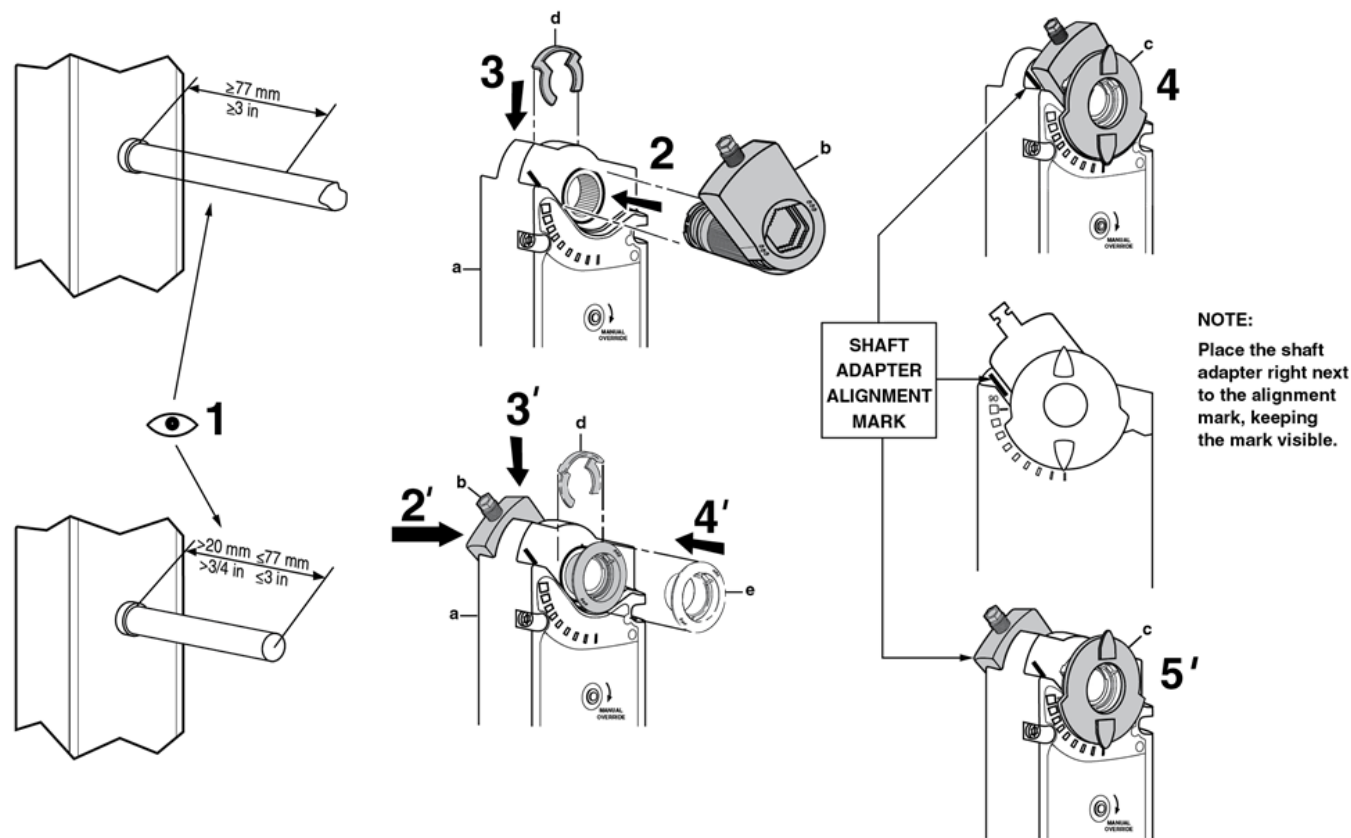
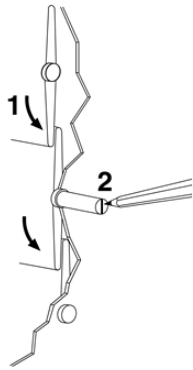


Figure 4. Close the Damper.



**NOTE:** If the damper fail-safe position is open, change the actuator preload from the factory-set 5° to 85°. See *Manual Override*.

Figure 5. Place the Actuator on the Shaft.

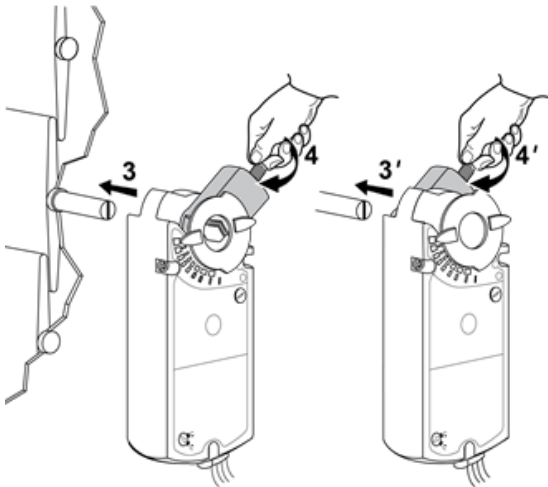


Figure 6. Fasten the Mounting Bracket

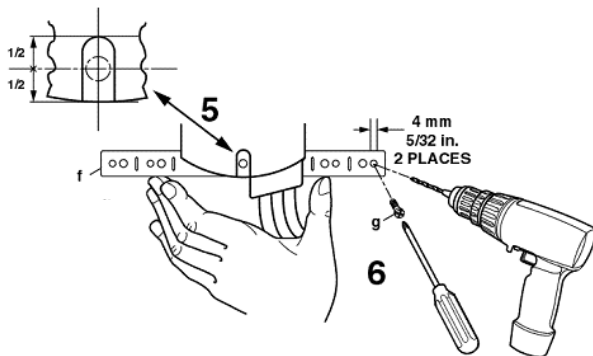
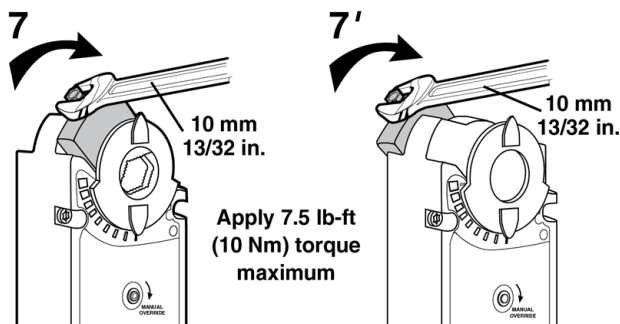


Figure 7. Mount the Actuator to the Damper Shaft.



## Manual Override

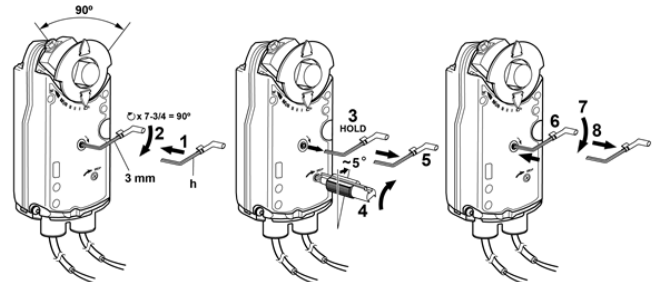
### Fasten the Shaft Adapter to the Damper Shaft: (Figure 8)

1. Insert the 3 mm hex key in the override opening (Step 1).
2. Turn the key in the direction of the arrow until you reach the desired degree of opening, (Step 2).
3. Hold the key in place, (Step 3).
4. Insert a small Phillips screwdriver into the gear train lock pin. Turn the screwdriver in the same direction as the arrow until you hear a click or meet slight resistance, (Step 4).

Notice: When engaging the gear train lock pin, cautiously turn only about 5 degrees until you hear a click or meet slight resistance. Turning too far will strip the lock pin.

5. Remove the key or keep it in place (Step 5).

Figure 8. Manual Override.



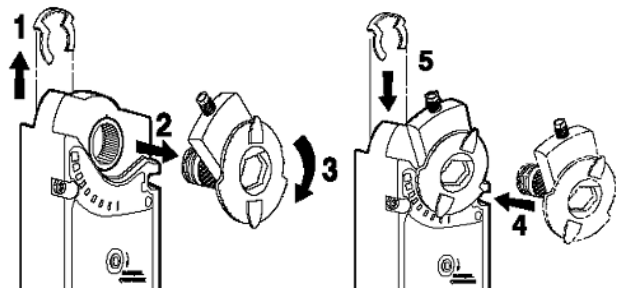
### To release manual override or preload

1. Insert the 3 mm hex key in the override opening (Step 6).
2. Turn the key only a short distance in the direction of the arrow, (Step 7).
3. Remove the key, (Step 8). The actuator will return to 0 (fail-safe) position.

Notice: Applying power and sending a control signal will release manual override.

## Mechanical Range Adjustment

Figure 9. The Angular Rotation is Adjustable Between 0° and 90° at 5-Degree Intervals.



Ensure that the actuator is in the 0 (fail-safe) position when making this adjustment. If making the adjustment before the actuator is in service, note the factory set 5° preload. To release the preload, see To Release Manual Override or Preload section.

Wiring

- All wiring must conform to NEC and local codes and regulations.
- Use earth ground isolating step-down Class 2 transformers. Do not use auto transformers.

Wiring Diagram

Figure 11. Modulating 0 to 10 Vdc Control, 24 Vac: MS41-7183

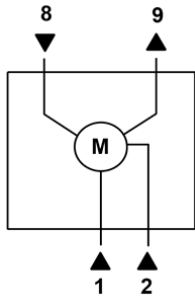


Table 2. Wire Designations

| Symbol | Function                   | Terminal Designations | Color Standard or Plenum |
|--------|----------------------------|-----------------------|--------------------------|
| 1      | Supply (SP)                | G                     | Red                      |
| 2      | Neutral (SN)               | G0                    | Black                    |
| 8      | 0...10 Vdc input signal    | Y                     | Gray                     |
| 9      | Position Output 0...10 Vdc | U                     | Pink                     |

Notice

- The maximum rating for a Class 2 step-down transformer is 100 VA. Determine the supply transformer rating by summing the total VA of all actuators and components used. It is recommended that not more than 80% of the transformer VA be utilized. The MS41-7183 actuator consumes 8 VA or less.
- With Plenum cables, only UL-Class 2 voltage is permitted.

Dimensions

Figure 10. Dimensions of the Schneider Electric SmartX MS41-7183 Actuator and Mounting Bracket in Inches (Millimeters).

