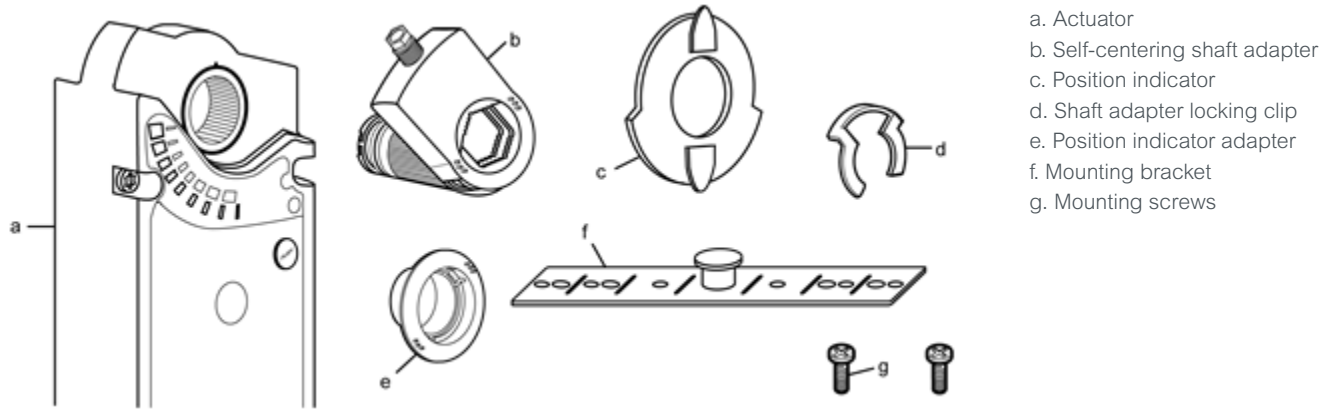


SmartX MS41-6353

310 lb-in (35 Nm) Direct-coupled Damper Actuator
Non-Spring Return



- a. Actuator
- b. Self-centering shaft adapter
- c. Position indicator
- d. Shaft adapter locking clip
- e. Position indicator adapter
- f. Mounting bracket
- g. Mounting screws

Figure 1. MS41-6353 Damper Actuator Parts.

Product Description

The steps for direct-coupled mounting of the Schneider Electric MS41-6353 non-spring return modulating control damper actuator.

Prerequisites

The actuator is shipped from the factory with a 5° pre-load to ensure tight close-off of the damper. To release the pre-load, press the PUSH button before mounting the actuator.

Required Tools

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

Mounting Positions

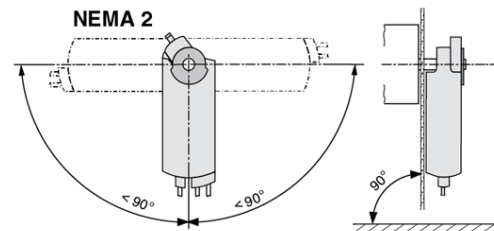


Figure 2. Acceptable NEMA 2- Mounting Positions

1. Place the actuator on the damper shaft with the front of the actuator accessible. The label and the manual override button are on the front side.
2. Determine the rotation of the damper shaft. Set the direction of rotation arrow to match the rotation.



Figure 3. Direction of Rotation Switch.

3. See Figure 4 and Figure 5 for clockwise-to-open (CW) installation. See Figure 6 and Figure 7 for counterclockwise-to-open (CCW) installation.

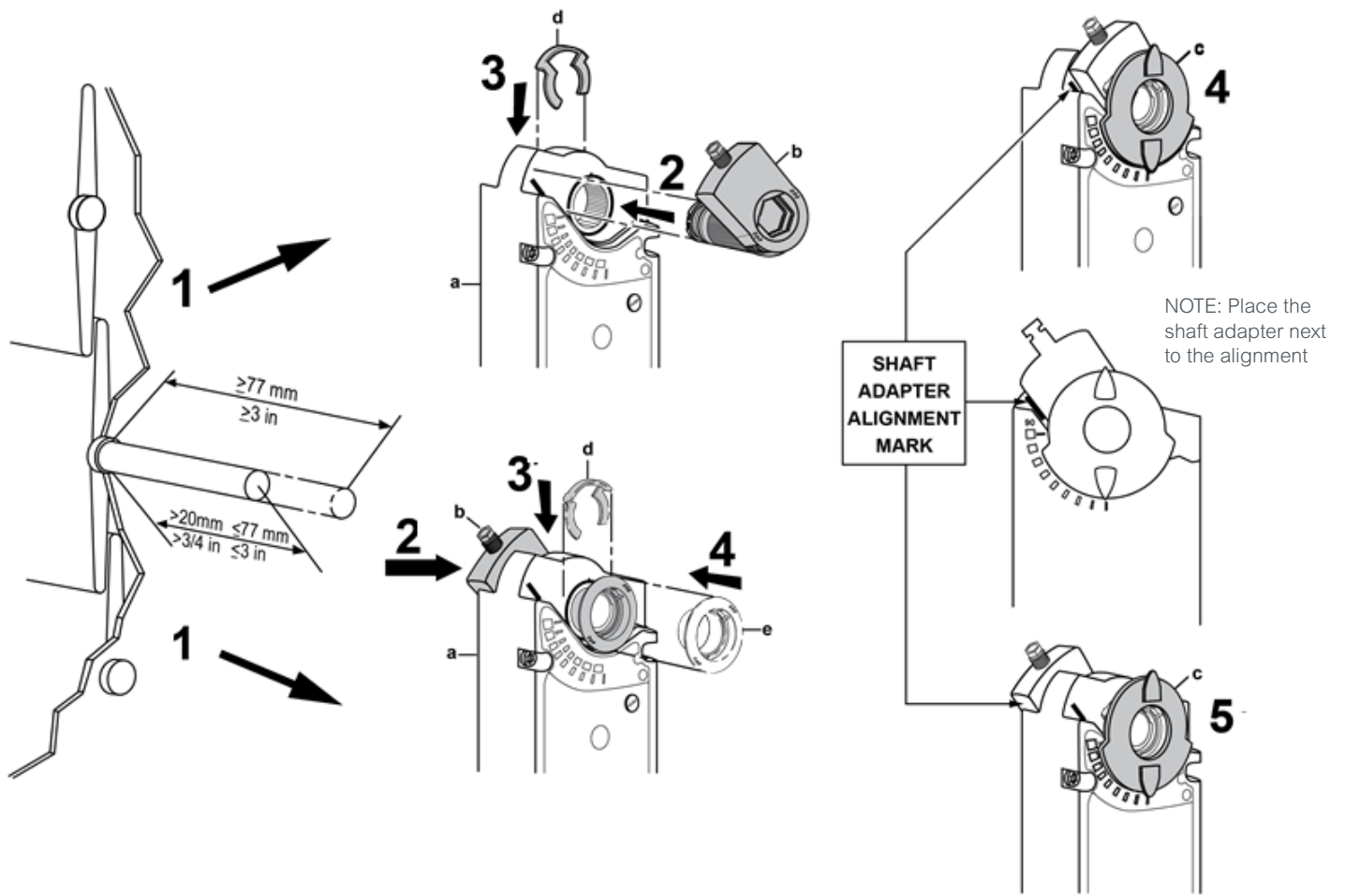


Figure 4. Shaft Adapter Placement for Clockwise Rotation on Short and Long Shafts.

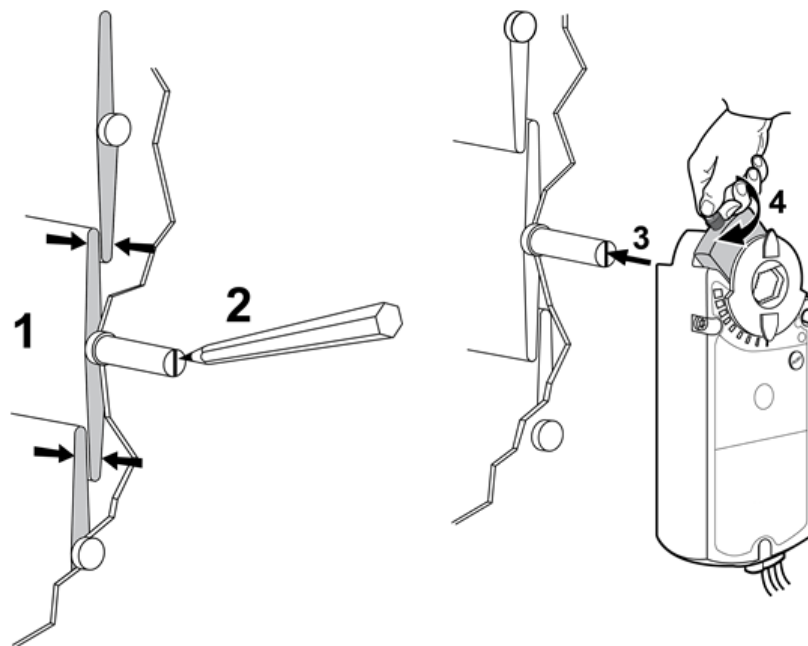


Figure 5. Mount the Actuator to the Damper Shaft.

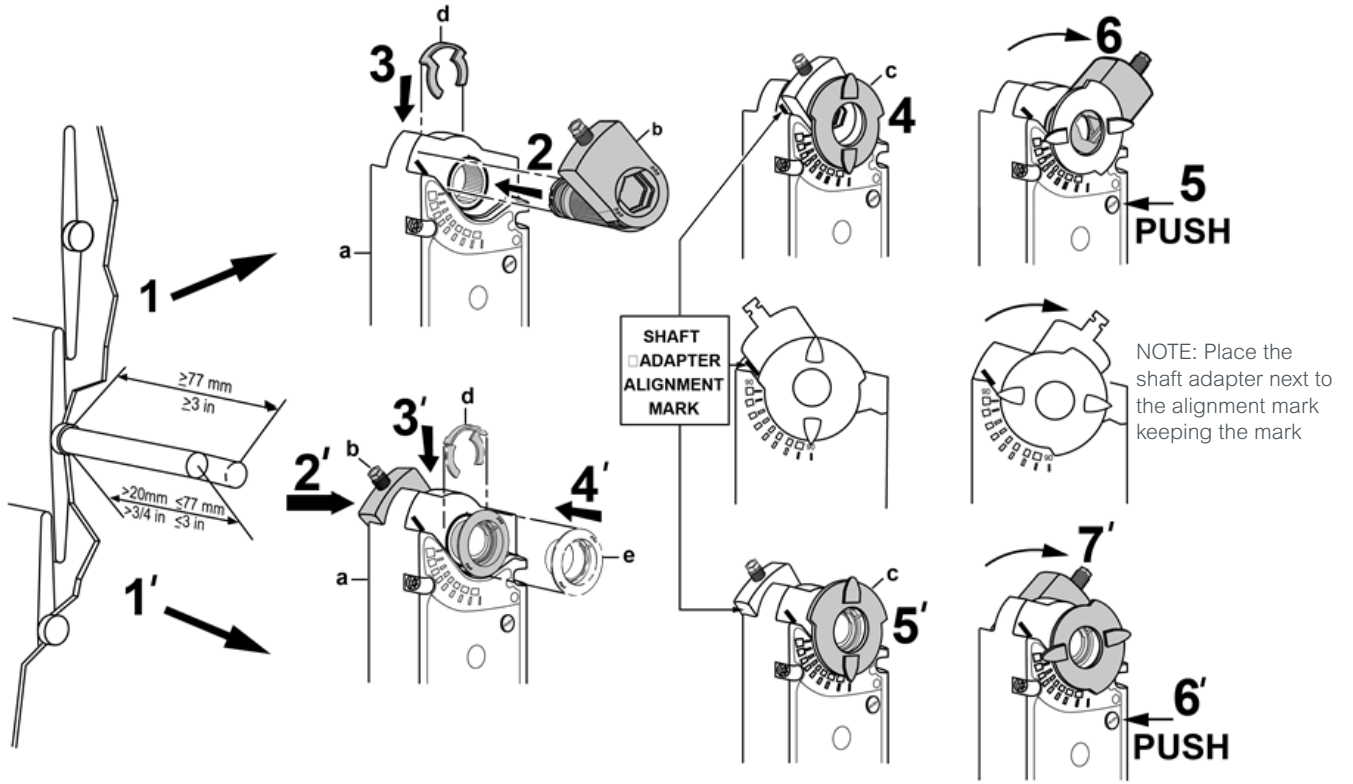


Figure 6. Shaft Adapter Placement for Counterclockwise Rotation on Short and Long Shafts.

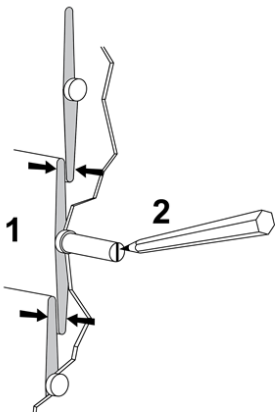


Figure 7. Mount the Actuator to the Damper Shaft.

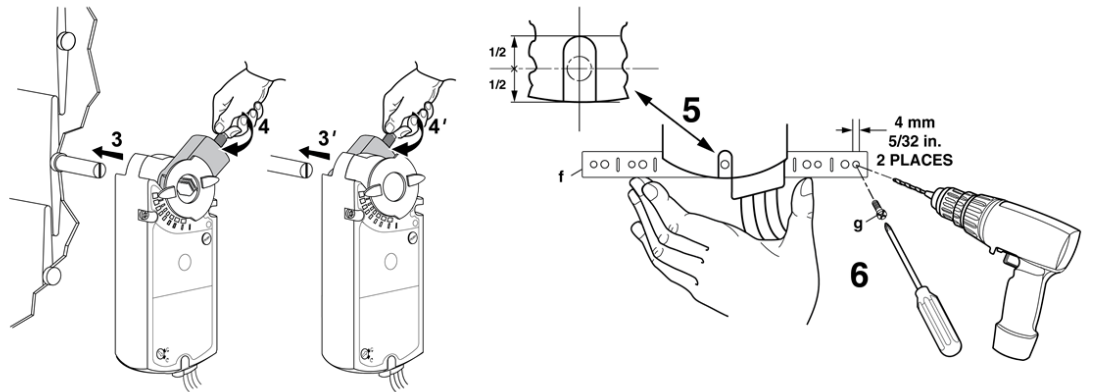


Figure 8. Attach the Mounting Bracket.

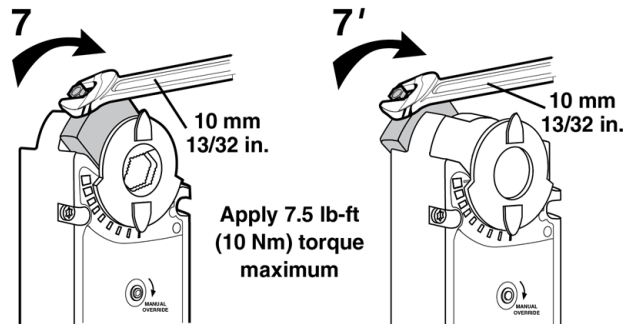


Figure 9. Fasten the Shaft Adapter to the Damper Shaft.

Manual Override

To move the damper blades without power present, do the following:

1. See Figure 10.
2. Hold down the PUSH button.
3. Make adjustments to the damper position. Release the PUSH button.

NOTE: If there is no load, the actuator will hold the new damper position. If load conditions exist, the actuator might not be able to hold.

Once power is restored, the actuator returns to automated control.

Mechanical Range Adjustment

The angular rotation is adjustable between 0° and 90° at 5-degree intervals.

See Figure 11. Loosen the shaft adapter from the damper shaft and remove the actuator from the damper shaft.

1. Remove the clip and ...
2. Shaft adapter from the actuator. Return the actuator gear train to the 0 position using the steps which follow for the clockwise or counterclockwise damper shaft rotation.

Clockwise to open:

1. Figure 12. Insert the shaft adapter to the right as close as possible to the raised stop.
2. Figure 13. Hold down the PUSH button and rotate the shaft adapter to the left until it stops.
3. Release the PUSH button.
4. If the shaft adapter is not resting against the left raised stop, remove the adapter and insert it against the left stop.
5. Figure 14. Place the position indicator to the 0 position on the outside scale.

Counterclockwise to open:

1. Insert the shaft adapter to the left as close as possible to the raised stop.
2. Hold down the PUSH button and rotate the shaft adapter to the right until it stops.
3. Release the PUSH button.
4. If the shaft adapter is not resting against the right raised stop, remove the adapter and insert it against the right stop.
5. Place the position indicator to 0 on the inside scale.
6. Determine the angle of rotation for the damper blade shaft. Subtract that amount from 90°.
7. Figure 15. Remove the shaft adapter and insert it with the position indicator pointing to mark on the scale calculated in the previous step.
8. Attach the clip.
9. Rotate the damper blade shaft to its 0 position.
10. Return the actuator to the damper shaft and tighten the shaft adapter to the damper shaft.

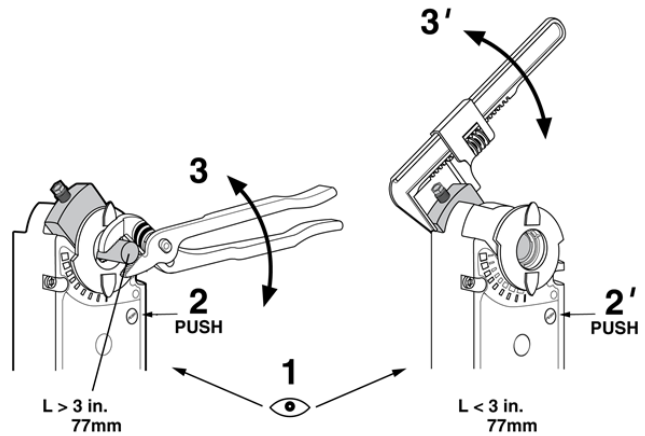


Figure 10. Manual Override for Long and Short Damper Shafts.

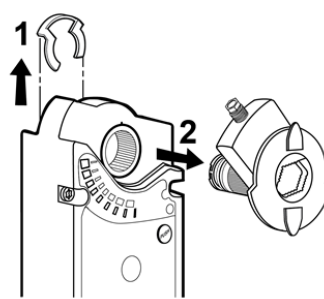


Figure 11

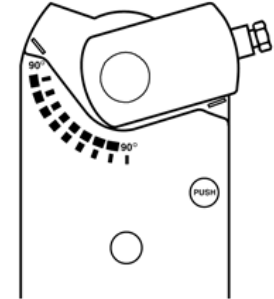


Figure 12

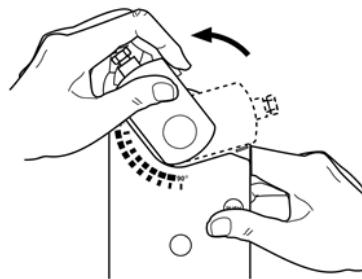


Figure 13

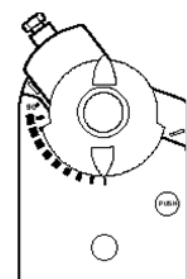


Figure 14

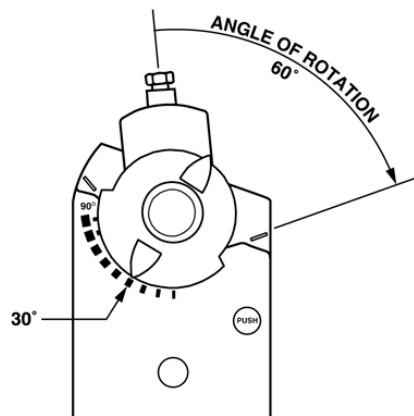


Figure 15

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.
- 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 no more than 10 actuators are powered by one transformer.

Notice

- Do not parallel wire MS41-6353 actuators with any other type of actuator.
- It is recommended to switch off the power during two-position control when the actuator has reached the open or closed position to enhance life span and reduce power consumption.
- With plenum cables, only UL-Class 2 voltage is permitted.

Wiring Diagram

Figure 16. MS41-6353 Modulating Control, 24 Vac.

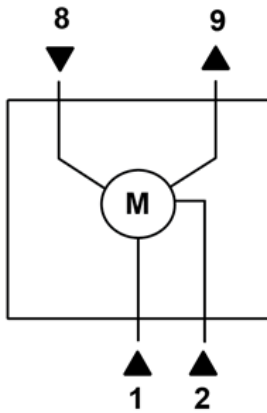


Table 1. Wire Designations

Symbol	Function	Terminal Designations	Color
1	Supply (SP)	G	Red
2	Neutral (SN)	G0	Black
8	0...10 Vdc input signal	Y	Gray
9	Output for 0...10 Vdc position indication	U	Pink

