

D-3062-100 Universal Mounting Kit Installation

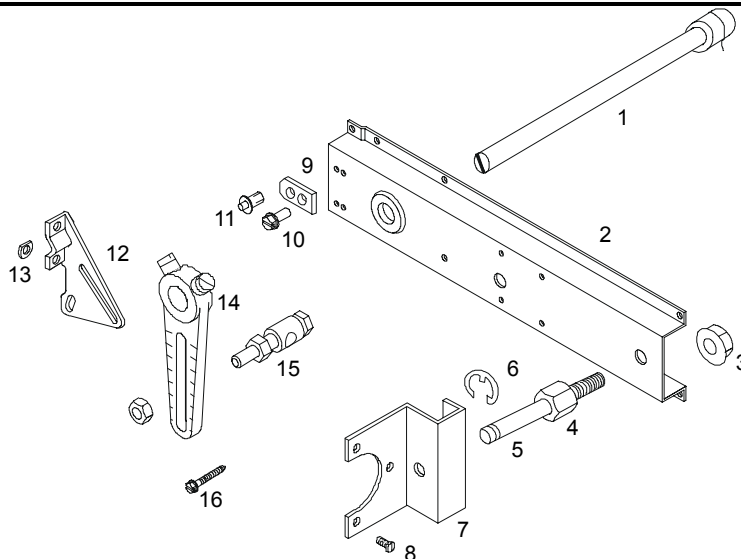


Figure 1: Component Identification

Table 1: List of Components

Item	Description	Quantity	Item	Description	Quantity
1	Blade Pin Extension	1	9	Reinforcement Link	1
2	Universal Mounting Bracket Assembly	1	10	No. 12-24 x 1/2 inch Thread-forming, Hex-head Screws	5
3	Adaptor Nut	1	11	1/4 inch Diameter x 13/32 inch Drive Rivet	1
4	Flange Nut	5	12	Blade Arm	1
5	Pivot Post	1	13	Spacers for 16-gauge Blades	1
6	E-ring Clip, 1 spare	2	14	Crank Arm	3
7	Swivel Mounting Bracket	1	15	Swivel Ball Joint w/ Nut	2
8	No. 8-32 x 3/8 inch Hex-head, Taptite® Screws	3	16	No. 12 x 1 inch type AB Screws	4

Individual Parts

- Item 1 is available as kit DMPR-KC003.
- Item 2 is available as kit DMPR-KC251.
- Items 12 and 13 are available as kit DMPR-KC054.
- Item 14 is available as kit DMPR-KC050.
- Item 15 is available as kit DMPR-KC300.

Tools Required

- screwdriver, 6 inch shank with 5/16 inch flat blade
- wrench, adjustable to 1 inch
- drill bit (3/16 inch, 1/4 inch, No. 9 or 10) and drill
- hammer
- nut driver, 5/16 inch
- 1/8 inch hex Allen-head wrench
- center punch

General

The D-3062 Pneumatic Actuator is a multipurpose positioning device used primarily for operating ventilating dampers in response to the output signals of a pneumatic controller or electro-pneumatic transducer.

The D-3062 is also rated for use on life safety dampers up to 250°F. All models are UL Component Recognized.

All models incorporate several internal and external features that add functional flexibility:

- All actuators have a telescoping piston rod for easy linkage to the damper for attachment points up to 5-3/4 inches away from the face of the actuator.
- A swivel ball joint and slotted crank arm connector are furnished for optional methods of linkage to the damper.

The universal mounting bracket is used for damper positioning in two types of mountings:

- duct or wall mounting for both Power Fail Open and Power Fail Closed applications.
- inside frame mounting for Power Fail Closed applications only.

Field repairs must not be made. For a replacement D-3062 body, contact the nearest Johnson Controls representative.

Table 2: Single-Drive Location

Panel Height, inches	Blade
24 or less	No. 1 or 3
Greater than 24 but less than 48	No. 3 or 5
Greater than 48	No. 5 or 7

Table 3: Multiple-Drive Location

Panel Height, inches	Blade
30 or less	Nos. 3 and 5
Greater than 30 but less than 48	Nos. 3 and 7
Greater than 48	Nos. 3 and 9

The actuator mounting should be made to the linkage side of the preferred driving blade, which is identified by a blue label. If the labeled driving blade is not available, locate the blade pin to be extended from Table 2 or Table 3. Opposed operation will always use odd-numbered blades.

All illustrations and instructions used in this document cover the attachment of a D-3062 actuator to a Johnson Controls damper utilizing a universal mounting bracket.

A 1/8 inch NPT straight, barbed fitting for 5/32 or 1/4 inch O.D. polytubing is furnished for standard HVAC installation. When used for life safety applications, the straight, barbed fitting will have to be replaced by compression fitting F-200-3 for 1/4 inch O.D. copper tubing, which is ordered separately. Use a pipe-thread sealant on the compression fitting during installation.

Outside Duct Mounting

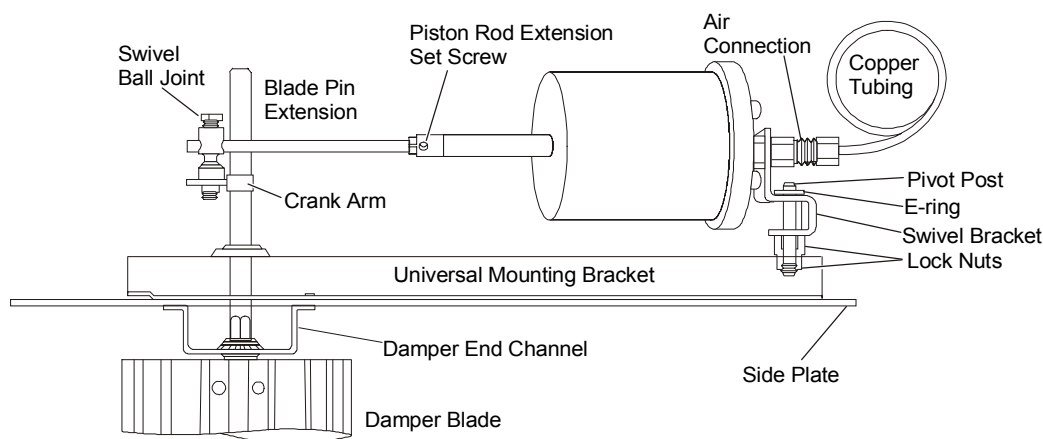


Figure 2: D-3062 Duct Mounting Components

Blade Pin Extension

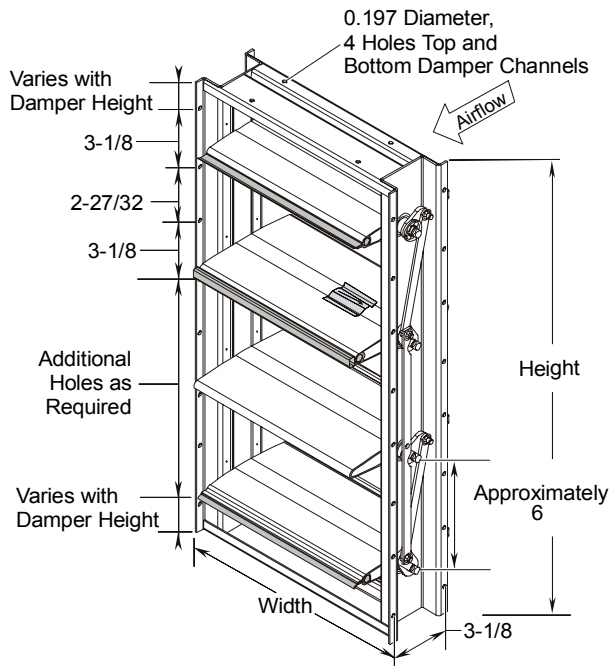


Figure 3: CD-1300 Mounting Holes, inches

1. Locate the labeled preferred driving blade. If the labeled driving blade is not available, locate the blade pin to be extended from Table 2 or Table 3. Opposed operation will always use odd-numbered blades.

Note: It is preferable to use a drive blade near the center of the panel height to distribute the torque evenly.

2. Cut a 1-1/4 inch hole in the duct at the pin locations determined in Step 1.

Note: If a hole saw is used, be sure that the pilot drill does not damage the blade pin.

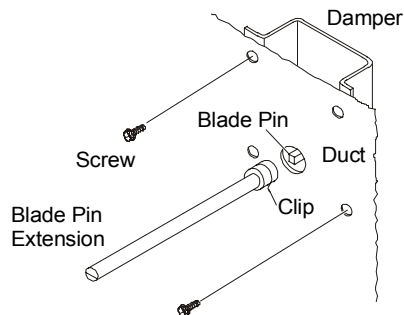


Figure 4: Installing Blade Pin Extension

3. Align the blade pin extension such that the slot indicates the position of the damper blade (vertical is closed and horizontal is open) and then snap the blade pin extension onto the blade pin. The blade pin has a groove that allows the clip to lock in place.

Universal Mounting Bracket

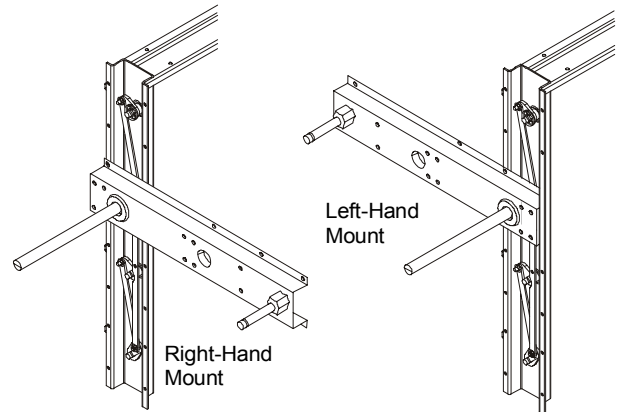


Figure 5: Bracket Positions (Duct Not Shown)

1. Slide the universal mounting bracket over the blade pin extension and position it as it will be mounted. Mark the position of the four mounting holes and remove the universal mounting bracket.
2. Using a 3/16 inch drill bit, drill four holes in the duct to align with the mounting holes in the damper frame as marked.
3. Slide the universal mounting bracket onto the blade pin extension and secure it to the damper frame using four No. 12-24 x 1/2 inch thread-forming, hex-head screws.

Note: If it is not possible to secure the universal mounting bracket to the damper frame as shown, it may be secured to the duct by using four No. 12 x 1 inch type AB sheet metal screws at the slots provided in the bracket.

Actuator

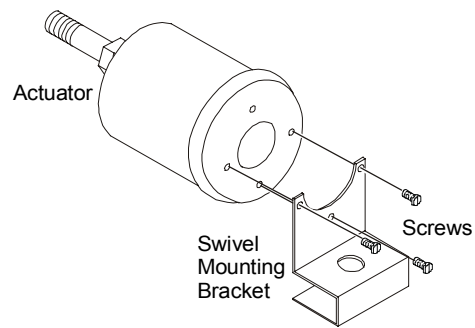


Figure 6: Attaching Swivel Mounting Bracket

- 1. Attach the swivel mounting bracket to the back of the D-3062 actuator using three No. 8-32 x 3/8 inch hex-head, Taptite screws (furnished).
- 2. Place the swivel mounting bracket onto the pivot post and secure it to the post with the E-ring from the package.

Table 4: Crank Arm Position

Damper Application	Actuator Mount	Direction to Open	Crank Arm Position
Power Fail Open	Right Side	CW CCW	45° 135°
	Left Side	CW CCW	225° 315°
	Above	CW CCW	315° 45°
	Below	CW CCW	135° 225°
Power Fail Closed	Right Side	CW CCW	135° 45°
	Left Side	CW CCW	315° 225°
	Above	CW CCW	45° 315°
	Below	CW CCW	225° 135°

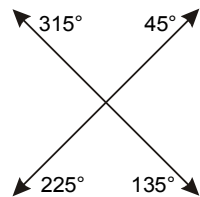


Figure 7: Crank Arm Positions

- 3. Determine whether Clockwise (CW) or Counterclockwise (CCW) damper shaft rotation is required and position the crank arm.
- 4. Loosen the piston rod set screw and remove the piston rod from the actuator.
- 5. Insert the piston rod back into the actuator, threaded end first. Doing so provides a smooth surface for connecting the swivel ball joint.
- 6. Telescope the piston rod to allow attachment to the swivel ball joint connector on the crank arm.
- 7. Slide the crank arm onto the blade pin extension and align the actuator axis in a level position, parallel to the universal mounting bracket, before tightening the set screws on the crank arm.

Note: A 2-inch stroke requires approximately 1-13/32 inch radius for 90° rotation.

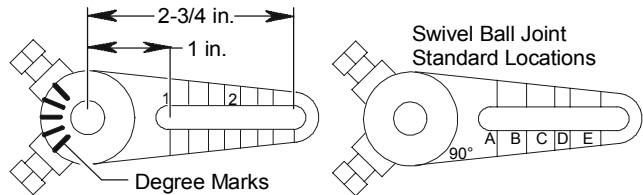


Figure 8: Crank Arm Details

- 8. The swivel ball joint is factory assembled to the crank arm with a radius of 1-13/32 inches to provide 90° rotation with a 2-inch stroke. When looking at the crank arm, the ball joint will be approximately in the “B” position, shown in Figure 8.
- 9. Make sure that all linkage fasteners are secure before making air line connections.

IMPORTANT: For safety dampers, copper tubing must be used between the actuator and the controller. The tubing must be looped at the actuator so that pivoting of the actuator does not cause stress on the tubing.

Inside Frame Mounting

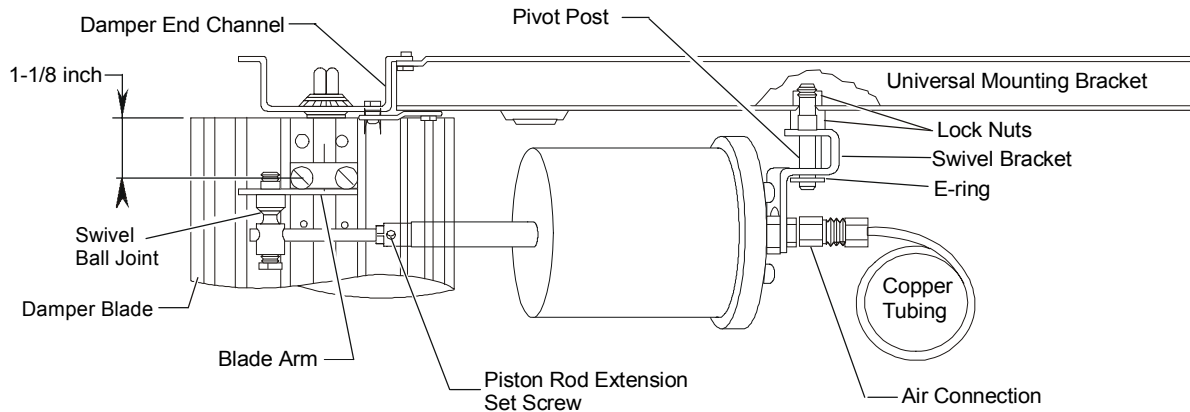


Figure 9: Frame Mounting Components (Power Fail Closed), Right-Hand Side Shown

Changing Pivot Post

The pivot post comes from the factory assembled for duct or wall mounting applications. For inside frame mounting applications, the post will have to be moved to the center hole prior to installation.

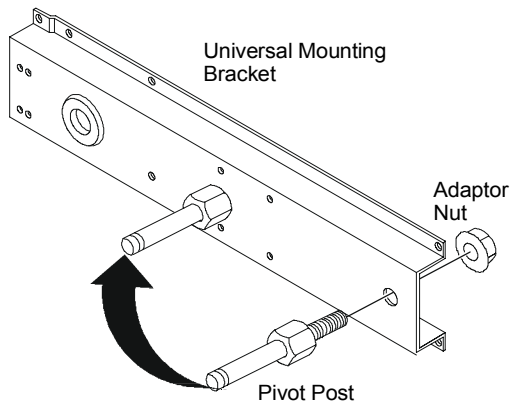


Figure 10: Moving Pivot Post

1. Remove the nut securing the pivot post from the universal mounting bracket channel.
2. Move the pivot post from the factory-assembled hole at the end and mount it to the similar hole in the middle of the universal mounting bracket, as shown in Figure 10.

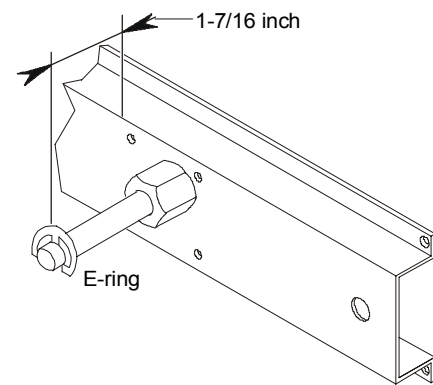


Figure 11: Mounting Distance, inches

3. Verify that the distance from the E-ring to the bracket is approximately 1-7/16 inches, as shown in Figure 11.
4. Thread the nut onto the pivot bracket in the channel of the universal mounting bracket and tighten.

Universal Mounting Bracket

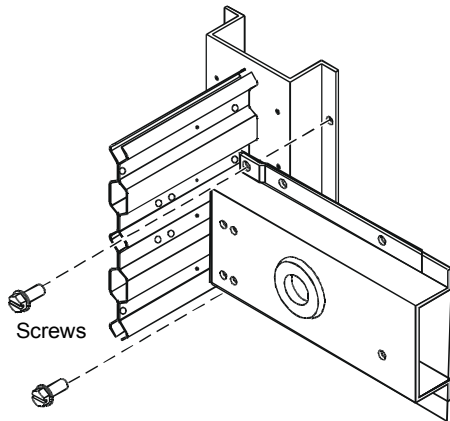


Figure 12: Installing Universal Mounting Bracket

1. Install the universal mounting bracket to the inside of the damper frame using the two holes next to the preferred drive blade. Secure by using two No. 12-24 x 1/2 inch thread-forming, hex-head screws (included in kit), as shown in Figure 12.

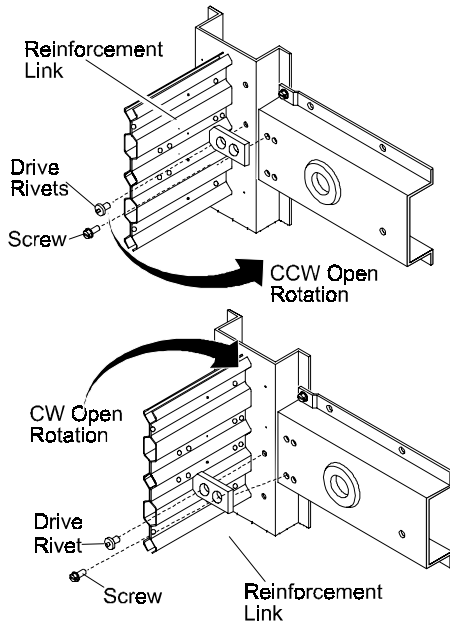


Figure 13: Installing Reinforcement Link

2. Install the reinforcement link to the universal mounting bracket with one No. 12-24 x 1/2 inch thread-forming, hex-head screw, as shown in Figure 13. Do not tighten.
 - For right-hand, CCW-open dampers, position the link above the blade centerline, 1-1/8 inch from the blade edge.
 - For right-hand, CW-open dampers, position the link below the blade centerline, 1-3/4 inch from the blade edge.

3. Rotate the damper blades to their full open position. Make sure that the reinforcement link does not interfere with blade rotation, and mark the position of the hole for the drive rivet.
4. With the blades closed and the reinforcement link out of the way, use a hammer and center punch to provide two drill guides.
5. Using a 1/4 inch (or equivalent) bit, drill one hole for the reinforcement link at the drill guide just made.
6. Reposition the reinforcement link and insert the drive rivet, as shown in Figure 13.
7. Hammer the pin in the rivets flush with the rivet head to secure the link to the frame.

Installing Blade Arm

1. Using a 3/16 inch (or equivalent) bit, drill two holes for the blade arm. For best results:

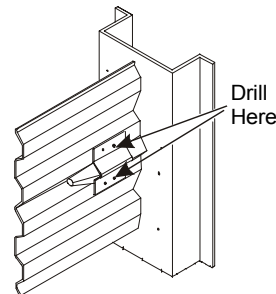


Figure 14: 16-Gauge Blades

- 16-gauge Blades--Drill out the first punch marks from the end channel.

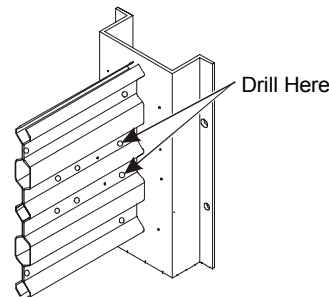


Figure 15: Double-Piece Blades

- Double-piece Blades--Drill out the second set of nuggets from the end channel.

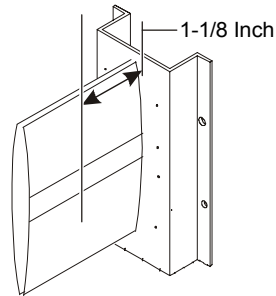


Figure 16: Airfoil Blades

- Airfoil Blades--Measure 1-1/8 inches from the end channel and drill on the lines etched in the blade.

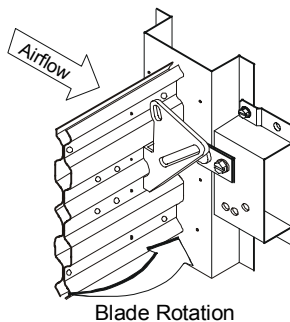


Figure 17: Power Fail Closed with Actuator Mounted Downstream on Right Side of Damper

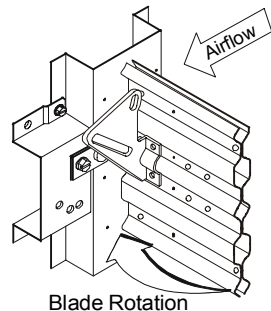


Figure 18: Power Fail Closed with Actuator Mounted Downstream on Left Side of Damper

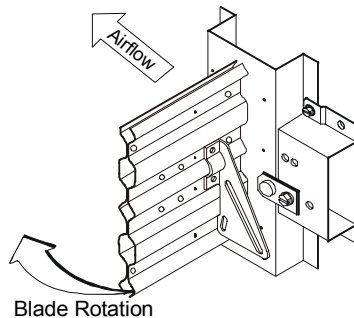


Figure 19: Power Fail Closed with Actuator Mounted Upstream on Right Side of Damper

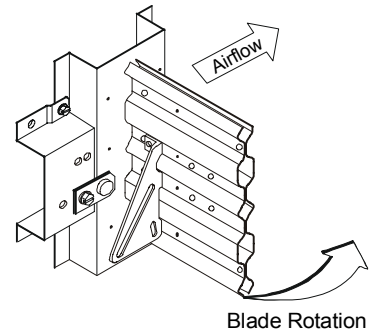


Figure 20: Power Fail Closed with Actuator Mounted Upstream on Left Side of Damper

2. Secure the blade arm to the preferred driving blade for your application. Refer to Figures 17 through 20 for applications.

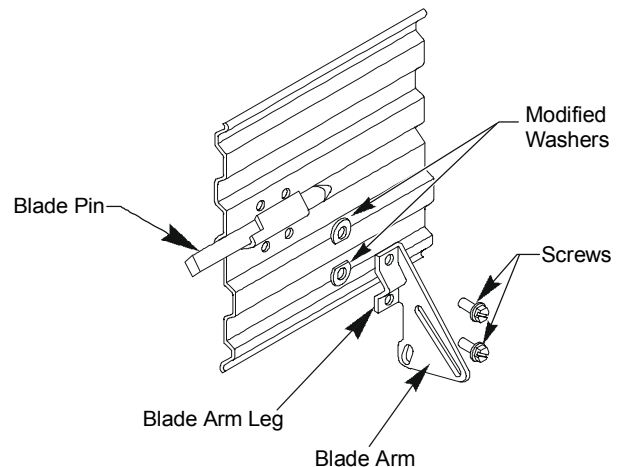


Figure 21: Attaching to 16-Gauge Blades

- 16-gauge Blades--Use two No. 12-24 x 1/2 inch thread-forming, hex-head screws and modified washers.
- Double-piece Blades--Use two No. 12-24 x 1/2 inch thread-forming, hex-head screws.
- Airfoil Blades--Use two No. 10-32 hex-head screws and two No. 10-32 hex nuts.

Actuator

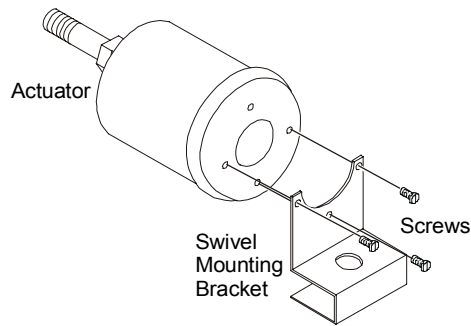


Figure 22: Attaching Swivel Mounting Bracket

1. Attach the swivel mounting bracket to the D-3062 Actuator using three No. 8-32 x 3/8 inch hex-head, Taptite screws (furnished).
2. Place the swivel mounting bracket onto the pivot post and secure it to the post with the E-ring from the package.
3. Loosen the piston rod set screw and remove the piston rod from the actuator.
4. Insert the piston rod back into the actuator, threaded end first. Doing so provides a smooth surface for connecting the swivel ball joint.
5. Install the swivel ball joint onto the piston rod extension until the rod is flush with the edge of the swivel ball joint. Use a 7/16 inch wrench to tighten the swivel ball joint onto the rod.
6. Telescope the piston rod at a 1-11/32 inch radius on the blade arm slot to allow attachment of the swivel ball joint to the blade arm for standard value or performance blades. Attach at 1 inch mark on airfoil blades.

7. Tighten the swivel ball joint nut.
8. Hold the damper blade tightly closed and tighten the piston rod extension set screw.
9. Make sure that all linkage fasteners are secure before making air line connections.

IMPORTANT:	For safety dampers, copper tubing must be used between the actuator and the controller. The tubing must be looped at the actuator so that pivoting of the actuator does not cause stress on the tubing.
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Checkout Procedures

1. Supply air pressure to the actuator and operate the damper for at least three complete cycles.
2. Verify that the damper blades open and close fully.
3. Run the actuator to close the damper. If the blades are not fully closed, adjust the position of the linkage rod.
4. Run the actuator to open the damper. The blades should not rotate more than 90°, or past full open. Adjust the crank arm or blade arm radius by repositioning the ball joint if necessary.
5. Repeat procedures until full open and closed operation is achieved.

The performance specifications are nominal and conform to acceptable industry standards. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

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