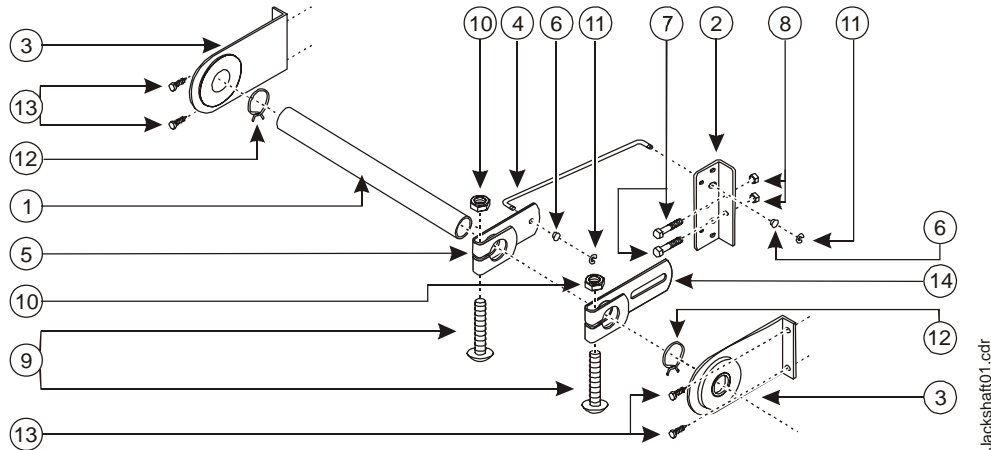


## DMPR-KC210, DMPR-KC211, and DMPR-KC212 Jackshaft Kits

### Installation

#### Parts Included



**Figure 1: Jackshaft Kit Components**

**Table 1: Jackshaft Kit Components**

Item	Description	Quantity: DMPR-KC-		
		210	211	212
1	Jackshaft: 1 in. (25 mm) Diameter <span style="float: right;">Length:</span>	5 ft	5 ft	10 ft
2	Blade Bracket, Galvanized, Double V-Groove and Airfoil (Not Shown)	1	2	3
	Blade Bracket, Galvanized (Single V-Groove, Shown)	1	2	3
3	Bearing Bracket: 1 in. (25 mm) Diameter, 3-3/4 in. (95 mm) to Center	2	2	3
4	Tie-Rod	1	2	3
5	Crank Arm, 1 in. (25 mm), Galvanized	1	2	3
6	Nylon Bushing	2	4	6
7	1/4 x 1-1/4 in. Hex-Head Bolt, Standard Thread	2	4	6
8	Nylon Insert Locknut, 1/4-20	2	4	6
9	Carriage Bolt 3/8-16 x 2-1/2 in. (64 mm)	2	4	6
10	Locknut 3/8-16	2	4	6
11	TRUARC Ring	2	4	6
12	Spring Hose Clamp, 1 in. (25 mm)	2	2	3
13	Self-Drilling Screws: No. 10 x 1/2 in. (13 mm)	4	4	6
14	Drive Arm, 1 in. (25 mm) Diameter	1	2	3

Note: Cut jackshaft tubing as required.  
 Items 5, 9, and 10 are available as kit DMPR-KC215.  
 Items 9, 10, and 14 are available as kit DMPR-KC216.

## Mounting

### Location Considerations

Jackshaft operation requires a minimum height (clearance) of 11 in. (279 mm). To mount the jackshaft, select the labeled preferred driving blade. If the labeled driving blade is not available, select the drive blade from Table 2.

**Note:** Mount to a drive blade near the center of the panel height to distribute torque evenly.

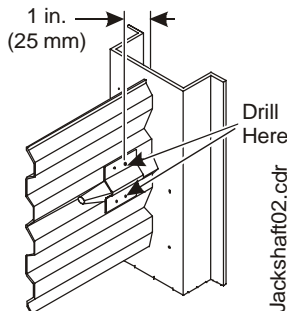
**Table 2: Jackshaft Location**

Damper Height, in. (mm)	Blade Number
Minimum 11 (279), Maximum 24 (610)	1 or 3
Minimum 24 (610), Maximum 48 (1219)	3 or 5
Minimum 48 (1220), Maximum 76 (1930)	5 or 7

### Mounting the Blade Bracket

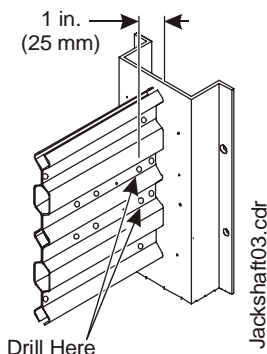
To mount the bracket:

1. Drill two holes for the blade bracket ② (shown in Figure 1) using a 1/4 in. (or equivalent) bit.
2. Position the drilled mounting holes as follows for:
  - **16-Gauge Blades** (Figure 2) - drill out the first punch marks from the end channel.



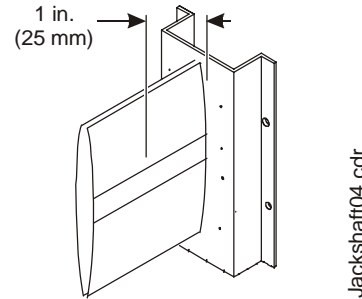
**Figure 2: Single-Piece Blades**

- **Double-Piece Blades** (Figure 3) - drill out the second set of nuggets from the end channel.



**Figure 3: Double-Piece Blades**

- **Airfoil Blades** (Figure 4) - measure 1 in. (25 mm) from the end channel, and drill on the lines etched in the blade.



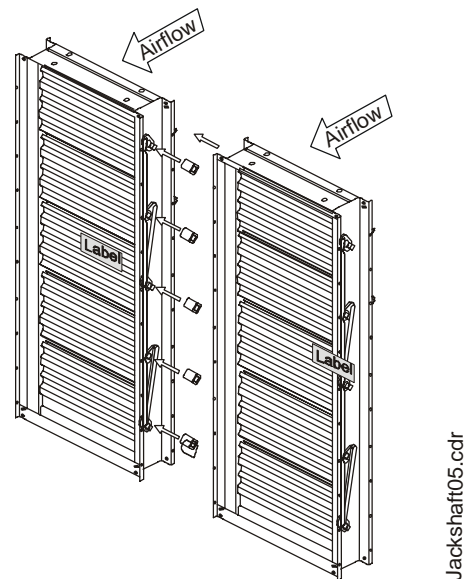
**Figure 4: Airfoil Blades**

3. Secure the blade bracket to the preferred driving blade using two 12-24 x 1/2 in. self-tapping screws (not provided).

### Connecting Multiple Dampers

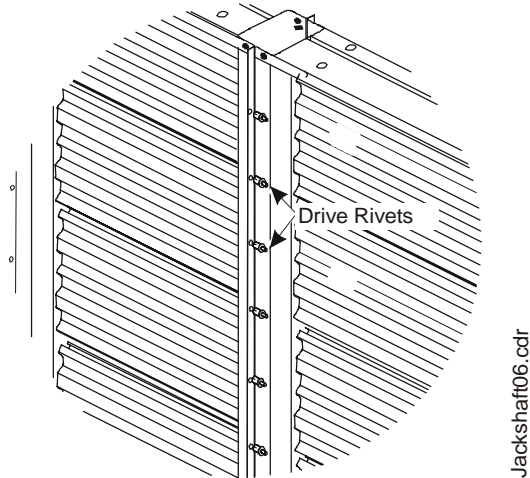
To mount **single-panel dampers**, continue with the *Mounting the Bearing Bracket* section. For multiple dampers:

1. Position the panels side-by-side on the floor with the blades closed and the labeled sides facing the same direction.
2. Place couplers (not provided) on each blade pin on one panel as shown in Figure 5.



**Figure 5: Coupling Dampers**

- Slide the panel without the couplers toward the panel with the couplers. The blade pins should line up with the couplers as shown in Figure 6.



Jackshaft06.cdr

**Figure 6: Securing Dampers Together**

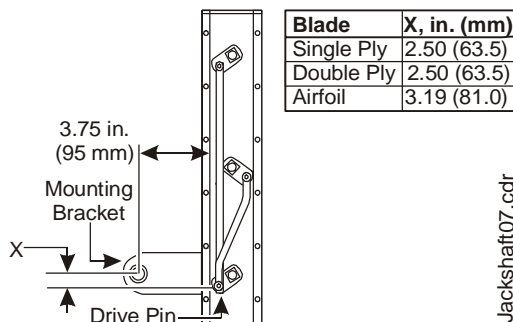
- Make sure to align the bottoms of the dampers.
- Insert drive rivets (not provided) in each hole along the end channels of the two adjoining dampers to secure the damper connection.
- Repeat Step 1 through Step 5 for three-panel configurations.
- Remove the shipping clips securing the blades and operate by hand to verify operation.

### Mounting the Bearing Bracket

To mount the bearing bracket:

- Position the bearing bracket ③ on the framework (see Figure 7). Repeat for each bearing bracket.

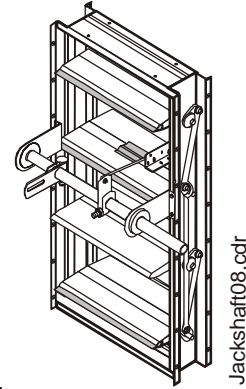
**Note:** Be sure to position the bearing bracket flush with the inside of the damper frame.



Jackshaft07.cdr

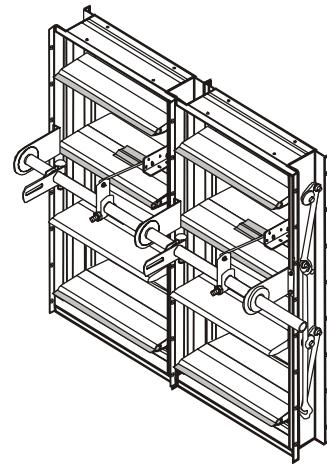
**Figure 7: Side View of Mounting Bracket Position**

- Hold the brackets in place and secure with the self-drilling No. 10 screws ⑬.



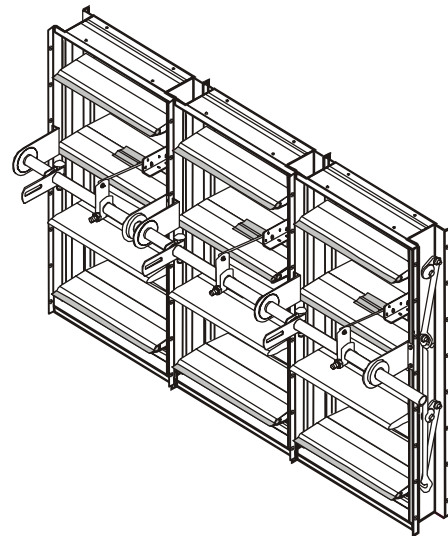
Jackshaft08.cdr

**Figure 8: One-Panel Connection (DMPR-KC204)**



Jackshaft09.cdr

**Figure 9: Two-Panel Connection (DMPR-KC205)**



Jackshaft10.cdr

**Figure 10: Three-Panel Connection (DMPR-KC206)**

- Attach each bearing bracket to the framework using two No. 10-HWH x 1/2 in. CG self-drilling screws ⑬ per mounting bracket.

## Mounting the Jackshaft, Crank Arm, and Drive Arm

To mount the jackshaft, crank arm, and drive arm:

1. Slide the jackshaft tubing ① through one mounting bracket until it almost reaches the other mounting bracket.
2. Install one spring hose clamp ⑫ onto the jackshaft and position it against the first mounting bracket.
3. Install one crank arm ⑤ and one drive arm ⑭ onto the jackshaft; secure each with a carriage bolt ⑨ and lock nut ⑩.

**Note:** Complete all connections before tightening the nut to the carriage bolt holding the crank arm to the jackshaft.

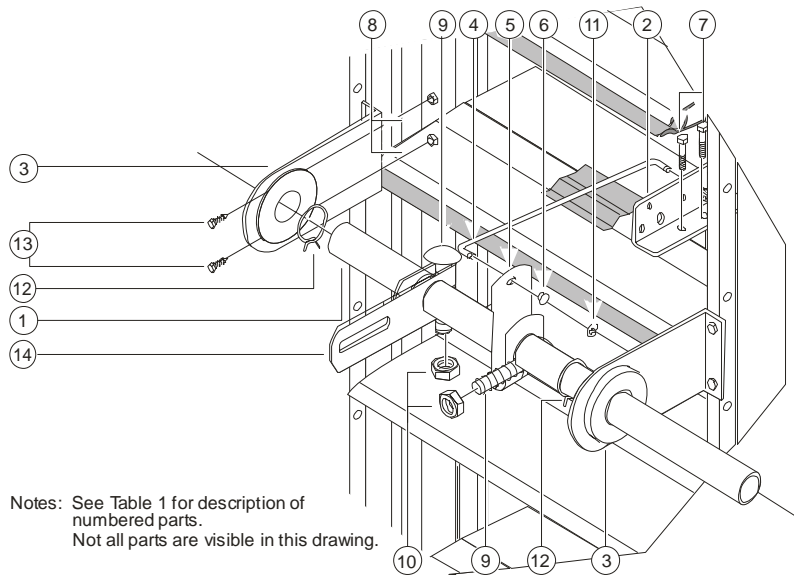
4. Repeat Step 1 through Step 3 for two- and three-panel configurations.
5. Install the second spring hose clamp ⑫ on the inside edge of the final mounting bracket, leaving enough room to insert the jackshaft through the other mounting bracket.

6. After threading the jackshaft through all mounting brackets, position the two spring hose clamps against each mounting bracket to prevent side-to-side movement. Make sure to allow enough tubing (outside one of the mounting brackets) to install the final crank arm.

## Jackshaft Connections

To make the jackshaft connections:

1. Secure the tie-rod ④ to the crank arm using the nylon bushing ⑥ and the E-Ring ⑪.
2. Secure the other end of the tie-rod to the Blade Bracket ② using the other Nylon bushing ⑥ and the other E-Ring ⑪.
3. Slide the remaining crank arm onto the jackshaft; secure it with a carriage bolt ⑨ and lock nut ⑩.
4. Make the appropriate drive connections.
5. Manually rotate the jackshaft to check for proper operation before attaching the actuators.



**Figure 11: Installing the Crank Arm and Drive Arm**

*The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.*

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