



BD-1600, ID-1210, ID-1230, ID-1400, VD-1250, and VD-1600 Rectangular Dampers Installation Instructions

Part No. 44-598-329, Rev. B
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Refer to the [QuickLIT website](#) for the most up-to-date version of this document.

Installation

IMPORTANT: Upon delivery, inspect shipping containers and contents closely. If shipping containers are damaged, contents could also be damaged. Note any damage on trucker's receipt. Contact the freight company within 24 hours for a representative to come and inspect the container and contents.

IMPORTANT: Store in a safe location away from construction traffic and material to prevent damage. Cover with plastic sheeting to protect from excessive moisture, dirt, and debris or store in an area protected from the elements.

Inspect the damper for damage and corrosion prior to installation.

Only handle the damper by the frame. Do not lift the damper by the blades, linkage, axle, actuator, or jackshaft components.

When handling multiple section assemblies, use sufficient support to evenly lift the damper at each section mullion. Do not drop, drag, step on, or apply excessive bending, twisting, or racking.

Use the operator shaft to cycle the damper. Do not twist or turn the damper blades to cycle the damper.

Use the following procedure to install the dampers:

1. Inspect the ductwork (or the opening where the damper will be installed) for any obstruction or irregularity that might interfere with mounting the actuator or rotating the blades or linkage.
2. Ensure that the duct opening measures 1/4 in. (6 mm) larger than damper dimension and is straight and level.

3. Support the ductwork (in the area of the damper) to prevent sagging due to the weight of the damper.
4. Determine the proper location of the extended shaft or jackshaft before installing the damper. A sticker on the damper face shows the recommended extended shaft location.
5. Use appropriate shims between the damper frame and the duct opening to prevent distortion of the frame by those fasteners that hold the frame in place.

Note: Step 6 and Step 7 apply to single sections that use an extended shaft.

6. For the BD-1600, VD-1250 and VD-1600 dampers, attach the shaft on the labeled side of the damper, and preferably to that labeled blade. Use the shaft support bracket with a snap-on extended shaft. See Figure 1.

Figure 1: Using an Extended Shaft

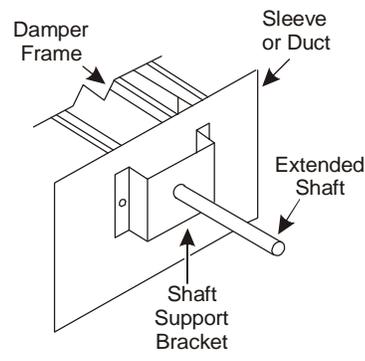


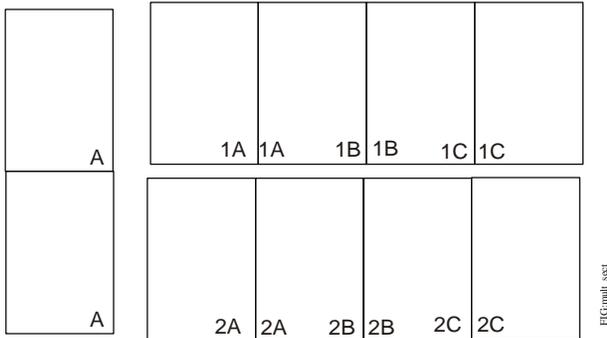
FIG. 044L_Support

7. For the BD-1600, VD-1250 and VD-1600 dampers, attach the shaft to a power blade. On parallel blade units, all blades are power blades. On opposed blade units, the blade with the sticker and alternating blades from the stickered blade are power blades.

Note: Step 8 through Step 14 apply to multiple section assemblies or single sections that use a jackshaft.

- If the damper is shipped in multiple sections, position the shipped damper sections in the duct or opening. Align and match the frame markings or labels on adjacent sections. See Figure 2.

Figure 2: Aligning Multiple Sections



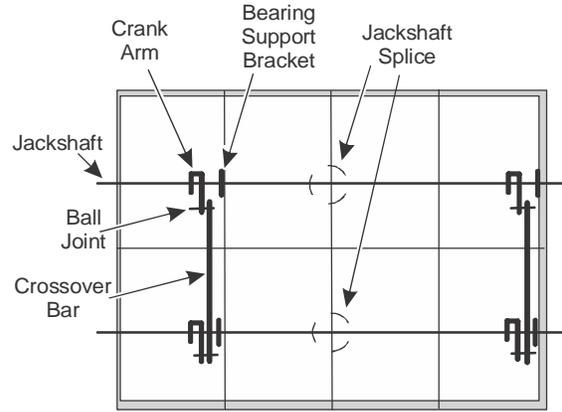
Note: Unless specifically designed and ordered for vertical blade application, all dampers must be mounted with the blade axis horizontal.

- If no holes are present in the frame, drill 1/4 in. (6 mm) diameter holes at 6 in. (52 mm) centers and fasten the frames together with 1/4 in. 20 UNC (6 mm 1.0 UNC) bolts and nuts.
- Appropriately brace the damper at every horizontal mullion and vertically brace at every 8 feet (2.4 m) of damper width for strength. Dampers in high velocity systems (2,000 fpm [610 m per minute]) require more bracing.

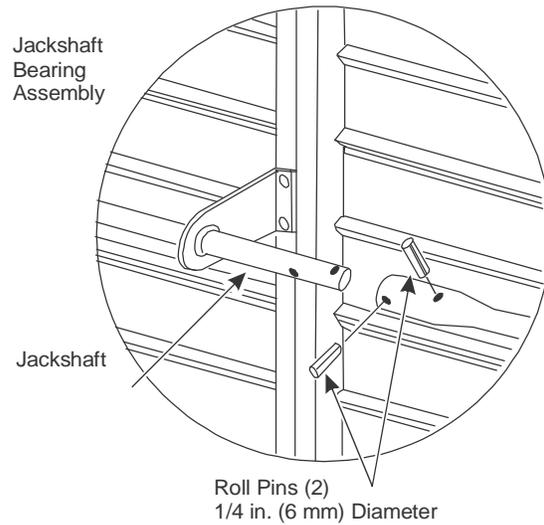
Note: Dampers are specifically designed and engineered for structural integrity based on model and conditions. The installer must ensure proper attachment, framing, mating flanges, and anchoring of damper assemblies into openings, ductwork, or walls. Field engineers for a particular installation should determine design calculations for these retaining and supporting members.

- If the damper assembly is provided with unjoined jackshaft ends, drill two 1/4 in. (6 mm) diameter holes and install roll pins as shown in Figure 3. Completely drive the roll pins through the jackshaft.
- The jackshaft may have been repositioned to prevent damage during shipment. To reposition, loosen the bolts on the crank arms, reposition the clamps, and slide the jackshaft to the desired position.

Figure 3: Jackshaft Splice



Jackshaft Splice Detail View

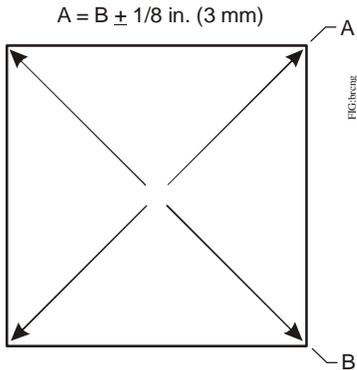


- If the damper actuator is mounted out of the airstream, ensure that the jackshaft extends through the jackshaft bearing assembly and approximately 6 in. (152 mm) beyond the frame. Secure the jackshafts in place with the clamps provided and retighten the bolts on the crank arms.
- If applicable, link the lower and upper jackshafts with the crossover bar through the ball joint on the crank arm at each jackshaft. Locate the crank arm close to the jackshaft bearing assembly. See Figure 3.

FIG:jackshft_crssvr.des

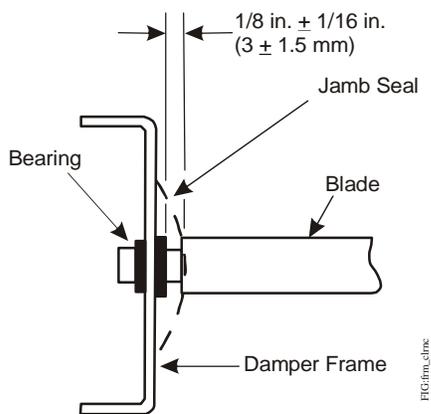
- Ensure that individual damper sections, as well as entire multiple section assemblies, are completely square and free from racking, twisting, or bending. Measure diagonally from the upper corners to the opposite lower corners of each section as shown in Figure 4. Both dimensions must be equal $\pm 1/4$ in. (3 mm).

Figure 4: Determining Squareness Dimensions, in. (mm)



- Maintain a clearance of $1/8 \pm 1/16$ in. (3 ± 1.5 mm) between the bearings within the frame and the blade end. Move the blade solidly against a bearing on one side and measure the clearance at the other end of the blade. See Figure 5. If jamb seals are present, compress the jamb seals to determine the clearance.

Figure 5: Frame Clearance Dimensions, in. (mm)



- Ensure that damper blades, axles, and linkage operate without binding. After installation, but before system operation, cycle the damper to ensure proper operation. On multiple section assemblies, all sections should open and close simultaneously.
- After installation of low leakage dampers with seals, apply caulk between the frame and the duct or the opening to prevent leakage around the perimeter of damper.
- Verify that the hardware used to install the damper does not contact moving parts of the damper.

Dimensions

See Figure 6 for dimensions for the BD-1600, VD-1250 and VD-1600 dampers. See Figure 7 for dimensions for the ID-1210, ID-1230, and ID-1400 Dampers.

Figure 6: BD-1600, VD-1250 and VD-1600 Damper Dimensions, in. (mm)

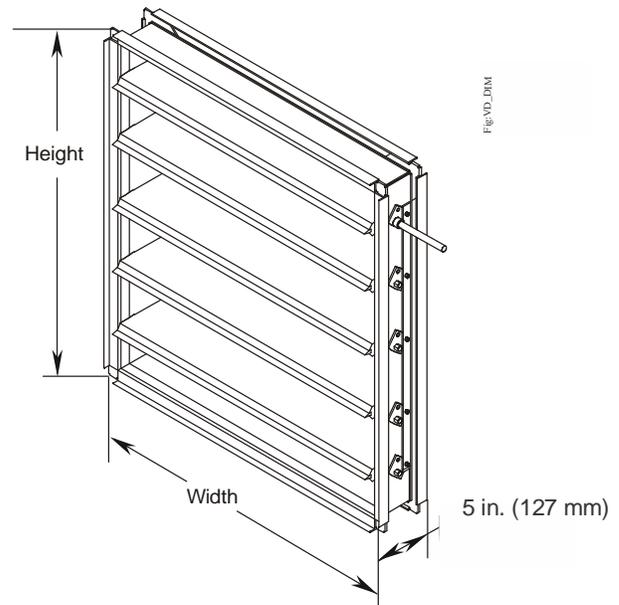
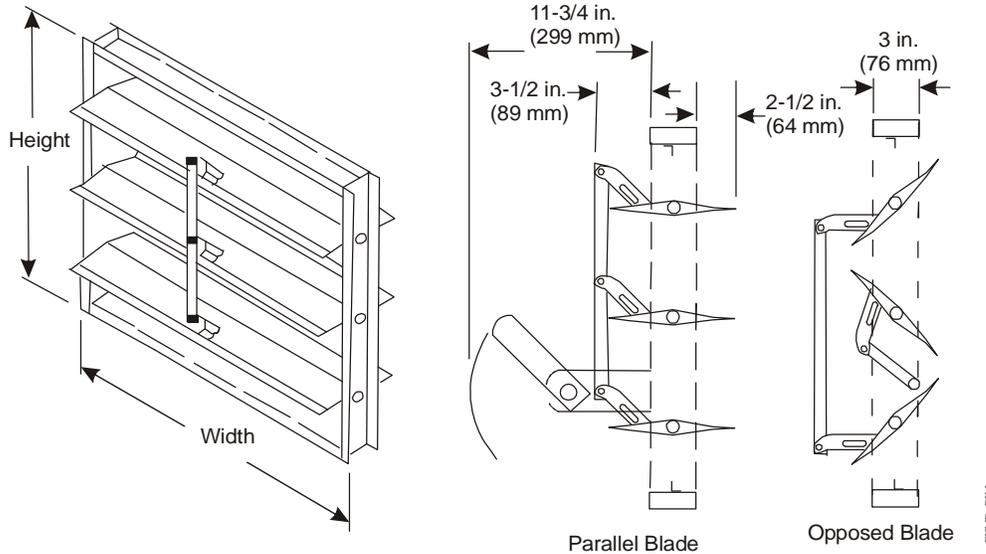


Figure 7: ID-1210, ID-1230, and ID-1400 Damper Dimensions, in. (mm)



Operation

Perform regular maintenance to ensure that a building’s air control system performs as intended under normal conditions.

- Perform periodic testing of all equipment associated with the air control system, such as initiating devices, fans, dampers, and controls.
- Cycle and test each damper every 6 months and in accordance with local codes. If the damper has an actuator, perform cycling and testing in accordance with the actuator manufacturer’s recommendations and with local codes.
 - Ensure that the damper blades fully close and fully reopen.
 - Remove any foreign material from the blade operating path.

- Check for loose linkage from the actuator (if used) through the jackshafting (if multi-section) and the damper-side linkage. Tighten the linkage where required.
- Clean damper blades and other working parts, if necessary.
- Lubricate the linkage, bearings, and other moveable parts with a silicone lubricant.

IMPORTANT: Do not use a petroleum-based lubricant. Petroleum-based lubricants can cause excessive dust collection.

Repair Information

If a BD-1600, ID-1210, ID-1230, ID-1400, VD-1250, or VD-1600 Rectangular Damper fails to operate within its specifications, replace the unit. For a replacement rectangular damper, contact the nearest Johnson Controls® representative.

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