

General

Inspect shipping crates/cartons closely. If shipping crates/cartons are damaged, contents may also be damaged. Note any visible damage on the trucker's receipt. Contact the **freight company** within 24 hours for a representative to inspect the damage.

Only unpack dampers once you are ready to install them. If possible, avoid rehandling the damper.

Do not install a damaged damper; it is easier to repair a damper on the floor than up in the duct.

Do not stack dampers on each other or allow debris to fall on them.

Damper Installation

Prior to installing the damper, inspect the ductwork and surrounding area for any obstructions that might interfere with the linkage, blade rotation or actuator mounting. Care must be taken not to drop, drag, crush, or apply excessive bending twisting, racking or skewing loads upon the damper frame, blades, linkage or accessories (see fig. 1 on page 2). Never use a chain or hook inside the damper frame for lifting, as this could damage blades, seals or frame.

- A. We recommend lubricating moving parts with dry graphite.
- B. Manual dampers should be run through a full-open to full-close cycle by hand to insure proper operation of the damper.
- C. Motorized dampers should be checked by a preliminary attempt to operate with the motor. If binding occurs, disconnect one end of the driving linkage (and note its exact position before-hand) to operate damper manually and check per above. Reconnect linkage and check again.
- D. If an externally mounted operator is being utilized, a 1" diameter hole must be drilled in the duct to accommodate the operator (see fig. 4 on reverse side). Locate drive blade axle. Measure from bottom of damper to center of drive blade axle. Transfer this to wall of duct and drill 1" diameter hole.
- E. Lift panels into duct (or opening) by its frame. Do not lift by any blade or by any attached hardware. Final position must be square, straight, plumb, and without twist (see fig. 1 on page 2).
- F. Due to shipping and handling, dampers may arrive at the site slightly racked or twisted. Dampers are to be squared and not twisted prior to installation into square duct or sleeves.
- G. See fig. 2 on page 2 for attachment methods.
- H. Damper should be shimmed in the opening to prevent distortion of the frame by the fasteners holding it in place. Dampers with seals should be caulked to prevent leakage between the frame and duct.
- I. Check the damper for free operation.

Multiple Panel Installation

Multi-panel dampers will be tagged for ease of assembly (see figure 3 of page 2).

Operator

- A. An extended shaft kit (see fig. 4 on page 2) is supplied if no operator is specified.
- B. Reference specific installation instructions supplied with damper operator for motorized dampers.
- C. Multi-panel dampers with jackshafting: See separate instructions for installation of jackshafting when not factory installed.

Maintenance

In general, this unit must be kept clean and free from grit. Dirt, dust, and foreign material may impede normal movement and the seating of blades and seals (if applicable). A cleaning schedule should be established to keep the damper clean. This schedule will be dependent upon the environment into which the damper is placed. The damper will require regular lubrication and seal inspection as indicated below:

BEARINGS AND LINKAGE PIVOTS: Lubricate with dry graphite as required to provide free movement.

MCDLG dampers and louvers are designed to be trouble-free under normal operation. Only when installed plumb and square can you expect maximum service life.

Here are some maintenance suggestions to allow continued trouble-free operation. Dampers and adjustable louvers should be checked and serviced on an annual basis.

1. Check for and remove any foreign matter that may have collected on blades, linkage, bird screen or other surfaces, which would cause interference with movement or resistance to air flow.
2. Make sure all moving parts (e.g.) blades, linkage, bearings, and shafts, are free and can move easily. Inspect, clean and lightly lubricate these surfaces with moly-spray oil as required. Never use regular lubricants as it tends to attract dirt and grit.
3. Should any component be accidentally damaged and part-replacement appears practical, please record information found on the MCDLG brand label (job no., etc.) and contact your MCDLG brand representative.
4. Lubrication is not required on "Double-Sealed", oilite, or nylon bearings. Those dampers and louvers utilizing ball bearings without grease fittings are pre-lubricated by the manufacturer and fitted with either seals or shields (or both) to prevent dirt and moisture penetration. Remove any particles around bearings and shaft which could interfere with rotation. For bearings with fittings, provide only a very small amount of grease.
5. Check and remove any foreign materials that may interfere with complete blade-closure or effective sealing.
6. Observe the unit through full operating cycle. Tighten any loose linkage connections at the actuator. If the unit does not open properly or does not close tightly, adjustments should be made at the actuator linkage. It may be advisable to have this adjustment accomplished by a local control contractor.
7. On completion of inspection, all data may be logged and filed for reference. On the back of this sheet is an inspection log. When data is to be compiled, this log may provide a useful product history.

Figure 1

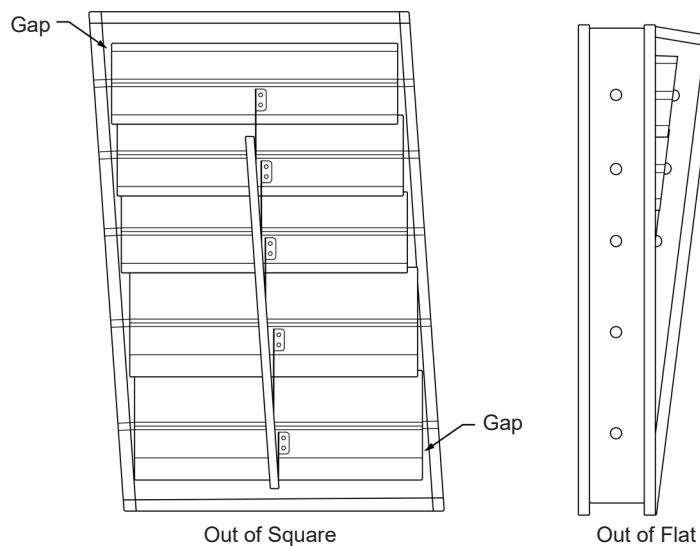
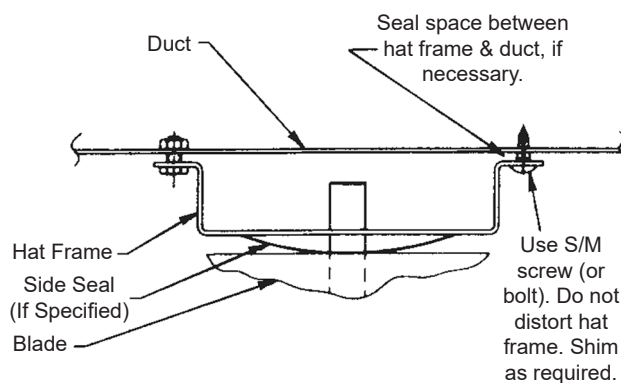


Figure 2

**Warning**

Improperly installed dampers and damper panels prevent the blades from sealing properly. Gaps between the blades indicate a damper installed out of flat. Out of square installations can cause damage to side seals and will also require excessive actuator torque.

Figure 4

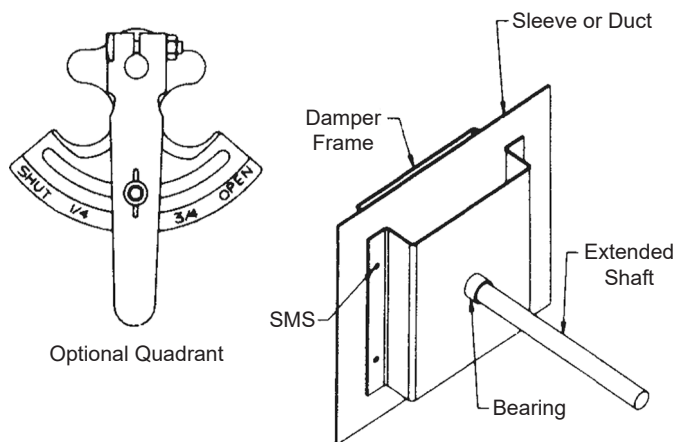
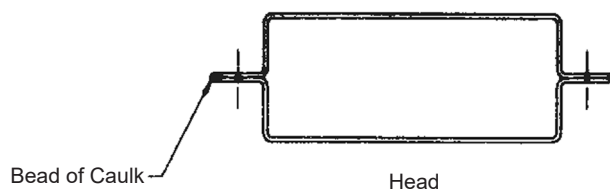


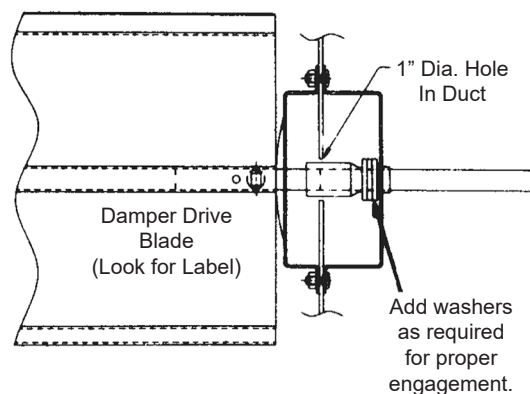
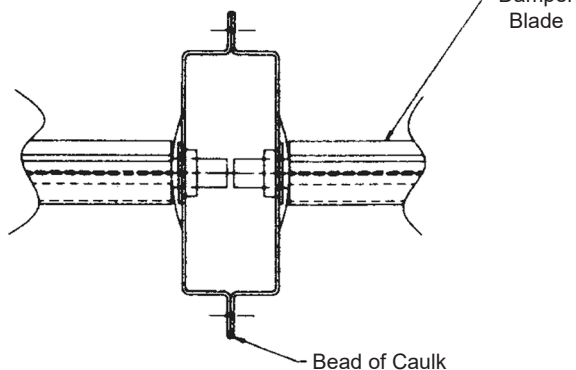
Figure 3

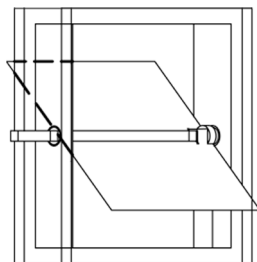
Horizontal Mullions
(Multiple High Units)

Sill



Vertical Mullions
(Multiple Wide Units)

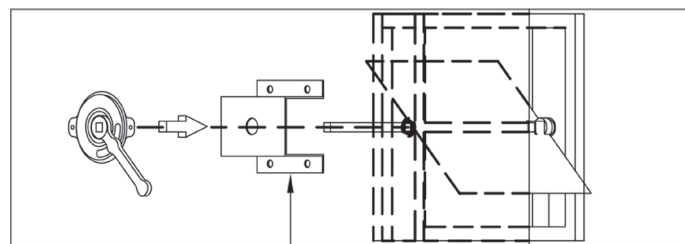
Section View



Square Balancing
Damper

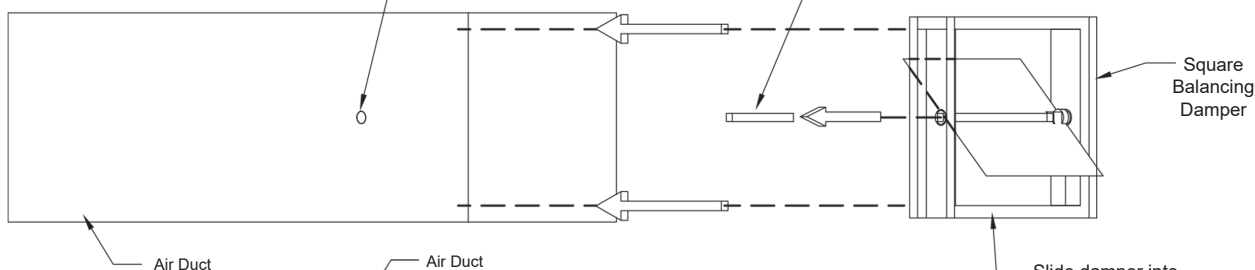


Manual Quadrant



Stand-Off Bracket
Optional Stand-Off Bracket

Pre-drill ($\frac{9}{16}$ " dia. hole) in duct at manual quadrant mounting location where the manual quadrant lever arm is most accessible and free of rotational restrictions.



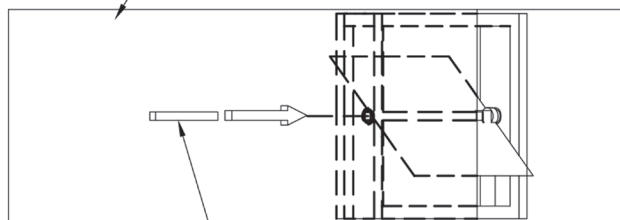
Air Duct

Air Duct

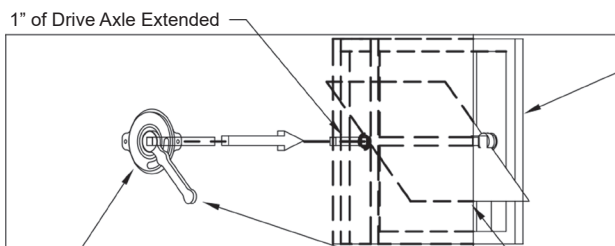
Remove 3" drive axle.

Square
Balancing
Damper

Slide damper into duct and align pre-drilled hole with empty drive axle bearing.



Tap 2" of the 3" long drive axle through the $\frac{9}{16}$ " pre-drilled hole into the damper bearing. This leaves an approximate 1" extension of the drive axle for the assembly of the manual quadrant.



1" of Drive Axle Extended

Manual Quadrant

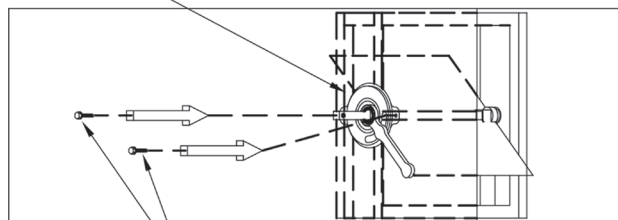
Mechanically fasten the damper to the duct.

Caution: If screws are used, placement should not restrict blade rotation

Stand-Off Bracket Option: See details at the top of the page for placement.

Loosen wing nut on the manual quadrant and align mounting tabs parallel to duct length.

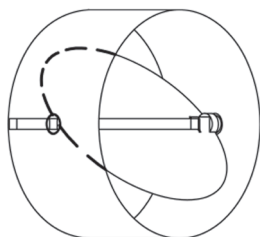
Align manual quadrant lever arm parallel to damper blade and slide manual quadrant onto the drive axle.



Mechanically fasten manual quadrant to the duct.

Note: Ensure damper is open when manual quadrant indication states open.

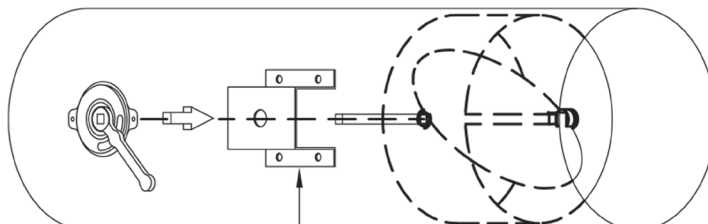
Caution: If screws are used, placement should not restrict blade rotation



Round Balancing Damper



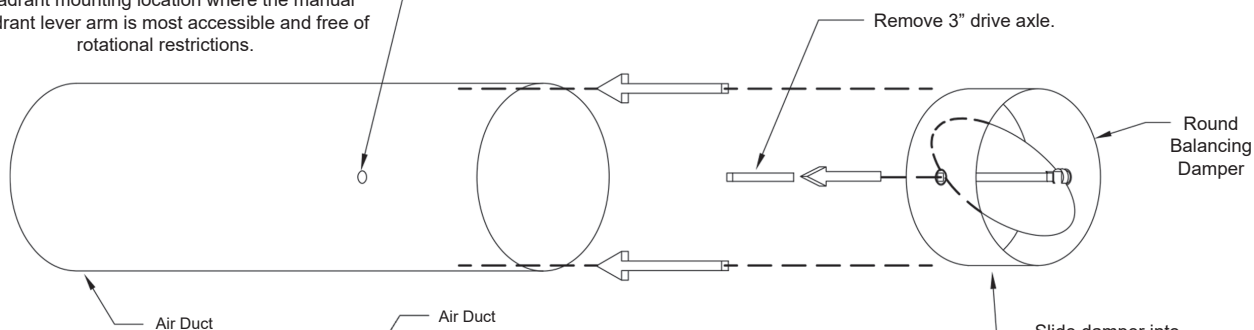
Manual Quadrant



Stand-Off Bracket

Optional Stand-Off Bracket

Pre-drill ($\frac{3}{16}$ " dia. hole) in duct at manual quadrant mounting location where the manual quadrant lever arm is most accessible and free of rotational restrictions.



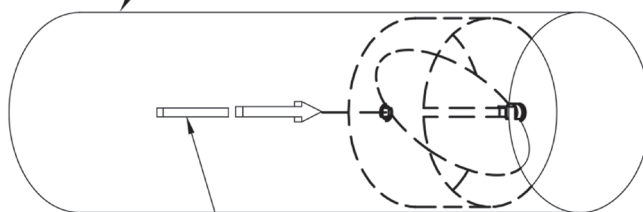
Remove 3" drive axle.

Round Balancing Damper

Slide damper into duct and align pre-drilled hole with empty drive axle bearing.

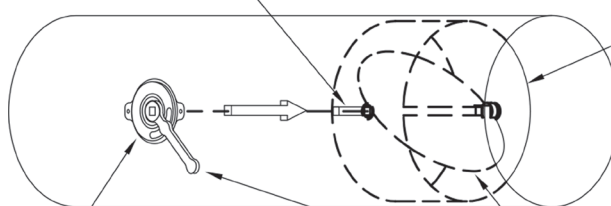
Air Duct

Air Duct



Tap 2" of the 3" long drive axle through the $\frac{3}{16}$ " pre-drilled hole into the damper bearing. This leaves an approximate 1" extension of the drive axle for the assembly of the manual quadrant.

1" of Drive Axle Extended



Manual Quadrant

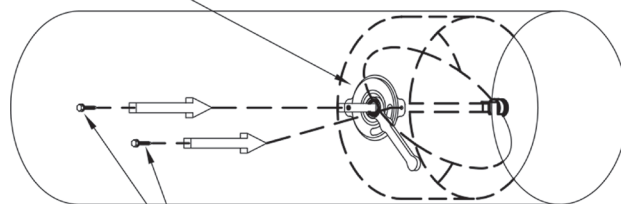
Mechanically fasten the damper to the duct.

Caution: If screws are used, placement should not restrict blade rotation

Stand-Off Bracket Option: See details at the top of the page for placement.

Loosen wing nut on the manual quadrant and align mounting tabs parallel to duct length.

Align manual quadrant lever arm parallel to damper blade and slide manual quadrant onto the drive axle.



Mechanically fasten manual quadrant to the duct.

Note: Ensure damper is open when manual quadrant indication states open.

Caution: If screws are used, placement should not restrict blade rotation