

The following installation details apply to models **TICD-50 Series, TICD-50BF Series, TICD-50BFX Series**

General

The following guidelines provide basic assembly installation instructions for models TICD-51/52, TICD-51/52BF, TICD-51/52BFX thermally insulated dampers. (Failure to follow instructions will void warranty).

Warning: Read the installation instructions thoroughly before installing or servicing this equipment. Improper installation, adjustment, service or maintenance can cause property damage, injury or death.

Receiving and Handling

Check for obvious and hidden package damage after receiving. Check to be sure that all parts of the shipment, including accessories, are in the package. Dampers must be kept clean and dry. Indoor storage and protection from dirt is highly recommended.

Storage of Dampers Prior to Installation:

The intent of a proper storage of heavy duty industrial control damper is to prevent physical damage, material corrosion and deterioration of organic material.

A. After visually inspecting the damper for damage, store indoors, protect from sunlight, moisture and flooding. Protect dampers from debris and dirt accumulation. Keep all conduit entry plugs and actuator access covers in place.

B. Dampers may be stored and stacked horizontally if wood or equivalent spacers are placed between flanges. Do NOT store with axles vertical. Place dampers on pallets or supports to allow air circulation.

C. Consult manufacturer if storage time exceeds two years.

Don'ts

- A. Do not use axles, linkage, or actuator as lifting point.
- B. Do not lift damper with chain/strap with blade open and with chain/strap through frame as this could damage blade and stop seal.
- C. Do not tighten mounting bolts around the damper by starting at one point as uneven flange compression can result.
- D. Do not use prybar to match frame holes to matching ductwork as frame can be warped or pulled out-of-round by excessive force.

Installation Guidelines

Pottorff Dampers are designed to be trouble and hassle free under normal operation. The intent of a proper installation is to secure the control damper into the opening in such a manner as to prevent distortion and disruption of damper operation. The following items will aid in completing the damper installation.

- A. Dampers are supplied standard without mounting holes (Fig. 1). Drill or punch as required.
- B. If mounting holes are supplied, use appropriate gasketing between mating flanges. Closed cell sponge rubber, solid rubber, maximum 60 durometer, or fiberglass drop warp tape is recommended.
- C. Dampers are to be installed square, straight and to flat surface to prevent binding during operation. Damper must not be stretched or squeezed into duct or opening. Racked, out of square, twisted or misaligned installation can cause excessive torque and torque requirements that exceed damper design.
- D. Mating flange must be flat and in the same plane.
- E. If the new damper is replacing an existing damper, clean mating surfaces prior to installing new damper.
- F. Damper blades will open past the frame depth.
- G. Damper may be installed with flow from either direction.
- H. Damper blade must be horizontal.
- I. Isolate damper from high vibratory loadings.
- J. Install all mounting bolts before tightening. Tighten in even and staggered pattern to evenly compress flange gasketing.
- K. Ensure that the bolts or screws used for installation do not interfere with linkage.
- L. When blade is in the open position, verify that damper does not strike mating ductwork or internal ductwork reinforcing. Clearance of $\frac{1}{8}$ " (3.2) shall be from the inside of the damper to the inside of duct.

M. Most common types of installation - standard flange out of opening (Fig. 2), standard flange inside opening (Fig. 3) and extended flange (Fig. 4).

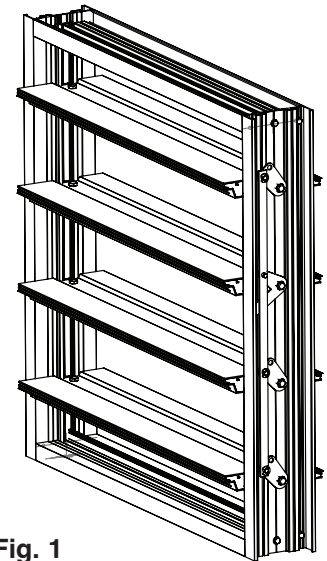


Fig. 1

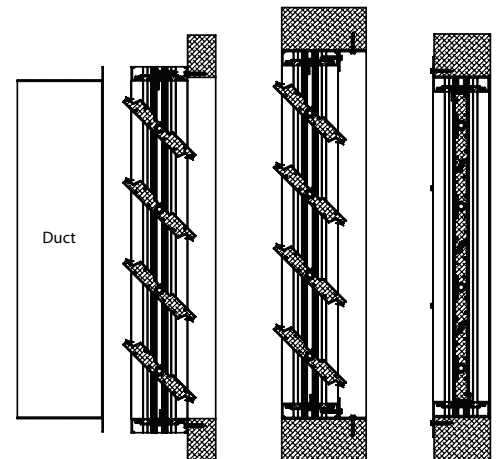


Fig. 2

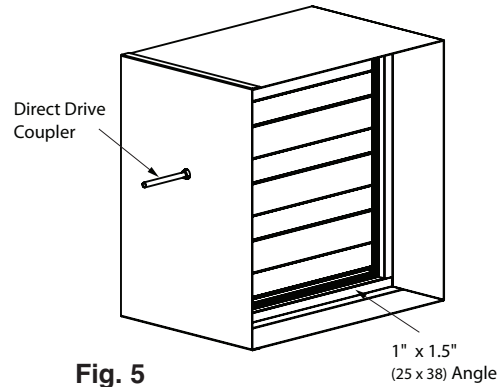
Fig. 3

Fig. 4

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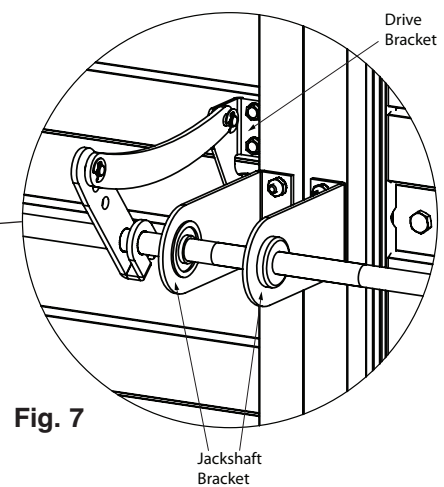
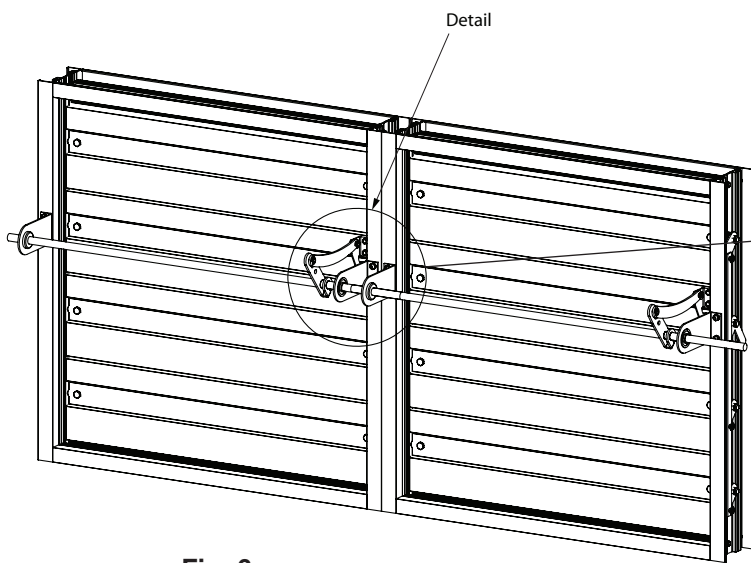
In-Duct Installation

- A. Inspect ductwork or opening where damper is to be installed for any obstructions or irregularities that might interfere with blade or linkage rotation or actuator mounting.
- B. Duct shall be square to permit damper to be installed square and should measure approximately $\frac{1}{4}$ " (6.4) larger than the damper dimension.
- C. Bottom of damper frame shall sit flat on duct to prevent twisting or sagging.
- D. Make sure the damper is square in the duct and secure top and bottom using a $1" \times 1.5"$ (25 x 38) x 90 degree mounting angle using #10 x $\frac{1}{2}$ " (12.7) tek screws every 6". (Fig. 5)
- E. After mounting angles were installed, check damper operation.
- F. If needed, make hole in duct work to install direct drive coupler.
- G. Use caulk on all joints.



Multiple Sections Installation

- A. The damper sections must be attached together using an aluminum mullion plate on front face and back face.
- B. Multiple sections have the jackshaft drive as standard.
- C. Use #10 x $\frac{3}{8}$ " (9.5) long, self-drilling screw to install the pre-drilled mullion (supplied with the dampers).
- D. Make sure the screws do not interfere with the damper linkage.
- E. When dampers are installed in multiple section assemblies, bracing may be required to support the weight of the dampers and ensure structural integrity.
- F. If the jackshaft is supplied loose, see Fig. 6 and Fig. 7 to install the jackshaft.
- G. Use a jackshaft that is $\frac{1}{2}$ " (12.7) for sections 36" (914) wide or smaller or $\frac{3}{4}$ " (19) diameter for sections wider than 36" (914).
- H. Jackshaft need to be supported on both ends with mount bracket and ball bearings.
- I. Install the provided mount brackets in the pre-drilled holes using serrated flange #10-32 x $\frac{1}{2}$ " (12.7) bolts and #10-32 serrated flange nut.
- J. Install the drive bracket as seen in Fig. 7 using the axle bolt and 2 self-drilling screws #10 x $\frac{3}{8}$ " (9.5) long.



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Multiple sections configurations - extended mounting flange examples shown:

3 WIDE X 1 HIGH

LEFT DAMPER	MIDDLE DAMPER	RIGHT DAMPER
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1 WIDE X 3 HIGH

TOP DAMPER
MIDDLE DAMPER
BOTTOM DAMPER

3 WIDE X 3 HIGH

TOP LEFT DAMPER	TOP MIDDLE DAMPER	TOP RIGHT DAMPER
MIDDLE LEFT DAMPER	MIDDLE DAMPER	MIDDLE RIGHT DAMPER
BOTTOM LEFT DAMPER	BOTTOM MIDDLE DAMPER	BOTTOM RIGHT DAMPER

Configuration 3 wide x 1 high may have the Middle Damper quantity greater than 1.
Configuration 1 wide x 3 high may have the Middle Damper quantity greater than 1.
Configuration 3 wide x 3 high may have the (Middle Left Damper, Top Middle Damper, Middle Damper, Bottom Middle Damper, Middle Right Damper) quantity greater than 1.

Manual Locking Quadrant

To install a manual locking quadrant:

- Slide the manual locking quadrant on to the drive axle direct drive coupler (Fig. 8)
- Tight the set screw
- Secure with minimum one #10 tek screw on to the pre-installed bracket

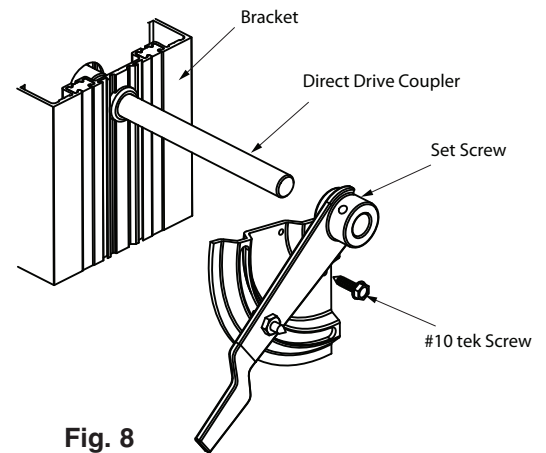
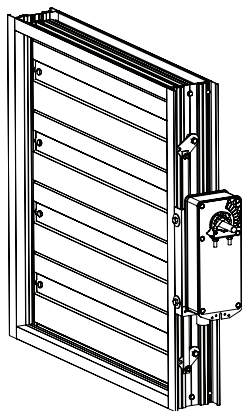
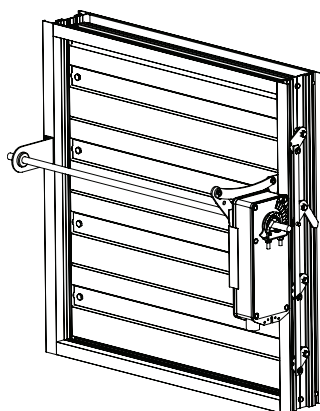


Fig. 8

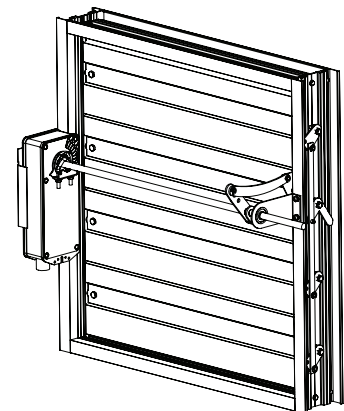
Electric Actuator Installation Configurations



Direct Drive



External Mount



Internal Mount

- Direct drive - install actuator on the direct drive coupler and install provided pin to prevent actuator from spinning.
- External mount - install actuator on the jackshaft outside the damper air stream. Use a Pottorff actuator mounting bracket to prevent actuator from spinning.
- Internal mount - install actuator in the damper airstream. Use a Pottorff actuator mounting bracket to prevent actuator from spinning.