

## Application

The TICD-51 and TICD-52 control dampers employ thermally insulated and broken aluminum airfoil blades and a rugged channel frame to eliminate the transfer of heat or cold penetration and reduce condensation. The TICD-51 and TICD-52 dampers provide extremely low leakage and exceptional air control in medium to high pressure and velocity applications. Both models comply with the IECC (International Energy Conservation Code) with a leakage rating of 3 cfm/ft<sup>2</sup>@ 1 in. wg. (0.015 m<sup>3</sup>/s/m<sup>2</sup> @ 0.25 kPa) or less.

## Standard Construction

**Frame:** 4" x 1" x 0.081" (102 x 25 x 2) top/bottom and 4" x 1-1/8" x 0.081" (102 x 29 x 2) jambs, extruded aluminum channel.

**Blades:** 6" (152) heavy gauge, dual wall thermally insulated and broken extruded aluminum - airfoil. Parallel (TICD-51) or opposed (TICD-52) action.

**Axles:** 1/2" (13) diameter plated steel hex.

**Linkage:** Concealed in frame.

**Bearings:** Synthetic.

**Seals:** Silicone - blade edge and jambs. Both are mechanically fastened.

**Control Shaft:** 1/2" x 6" (13 x 152) round drive axle with outboard shaft support bracket and bearing supplied for field installation. Factory installed 3/4" (19) diameter jackshaft on all multiple section dampers more than 2 sections wide.

**Minimum Size:** TICD-51 (one blade): 6" x 6.5" (152 x 165)  
TICD-51 and TICD-52 (two blades):  
6" x 12" (152 x 305)

**Maximum Size:** Single section: 60" x 72" (1524 x 1829)  
Multiple sections: Unlimited

## Options

- Factory installed external mount actuator:
  - Manual locking quadrant (supplied loose)
  - 24 VAC    120 VAC    230 VAC
    - Pneumatic    Modulating
  - External mount (requires sleeve or sideplate option)
  - Internal mount (requires jackshafting)
- Factory installed sleeve.    Factory installed sideplate.
  - Gauge:  20 (1.0)    16 (1.5)
  - Length:  16" (406)    24" (610)    Other \_\_\_\_\_
- Transitions (sleeve required):  Flanged
  - Round    Oval
  - Duct connections:  DM-25    DM-35    S & Drive
- Extended perimeter mounting flange.
- Actuator/Quadrant standoff bracket — accommodates up to 3" (76) thick insulated duct.
- Jackshafting (required with internal mounted actuators and standard on all multiple section dampers).

## Ratings

Damper Width	Maximum System Pressure	Maximum System Velocity
12" (305)	11.8 in. wg (3.0 kPa)	4000 fpm (20.3 m/s)
24" (610)	9.7 in. wg (2.4 kPa)	4000 fpm (20.3 m/s)
36" (914)	7.5 in. wg (1.9 kPa)	4000 fpm (20.3 m/s)
48" (1219)	5.3 in. wg (1.3 kPa)	4000 fpm (20.3 m/s)
60" (1524)	3 in. wg (0.75 kPa)	4000 fpm (20.3 m/s)

**Temperature:** -45° to 212°F (-43°C to 100°C)

### AMCA Certified Air Leakage

Maximum Damper Width	*Leakage Class			
	@ 1" in. wg (0.25 kPa)	@ 4" in. wg (1.0 kPa)	@ 8" in. wg (2.0 kPa)	@ 10" in. wg (2.5 kPa)
60" (1524)	1A	1	1	1

### \* Leakage Class Definitions:

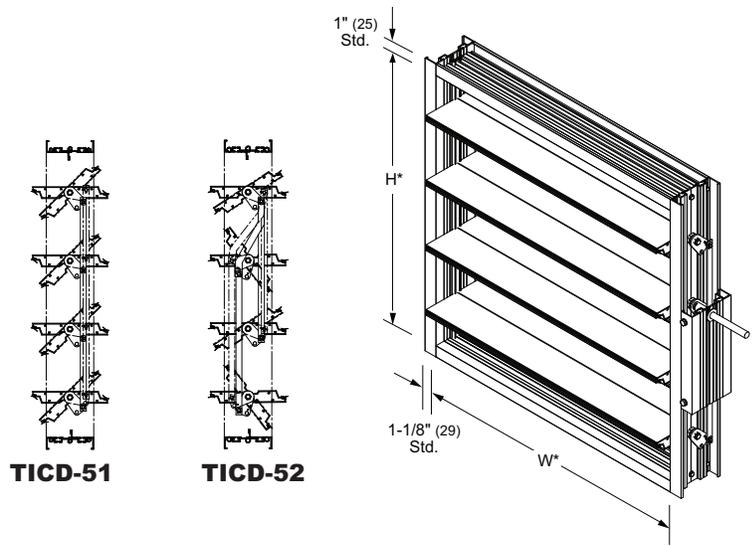
Leakage Class 1A - 3 cfm/ft<sup>2</sup> @ 1 in. wg (0.015 m<sup>3</sup>/s/ m<sup>2</sup> @ 0.25 kPa)

Leakage Class 1 - 4 cfm/ft<sup>2</sup> @ 1 in. wg (0.020 m<sup>3</sup>/s/ m<sup>2</sup> @ 0.25 kPa)

8 cfm/ft<sup>2</sup> @ 4 in. wg (0.41 m<sup>3</sup>/s/ m<sup>2</sup> @ 1.0 kPa)

11 cfm/ft<sup>2</sup> @ 8 in. wg (0.056 m<sup>3</sup>/s/ m<sup>2</sup> @ 2.0 kPa)

12.6 cfm/ft<sup>2</sup> @ 10 in. wg (0.064 m<sup>3</sup>/s/ m<sup>2</sup> @ 2.5 kPa)

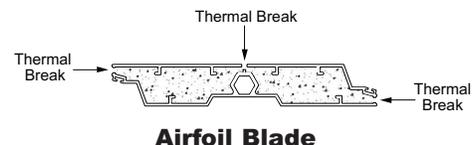


Model **TICD-51**  
(standard)

\*Damper dimensions furnished approximately net I.D.

### Certified Ratings:

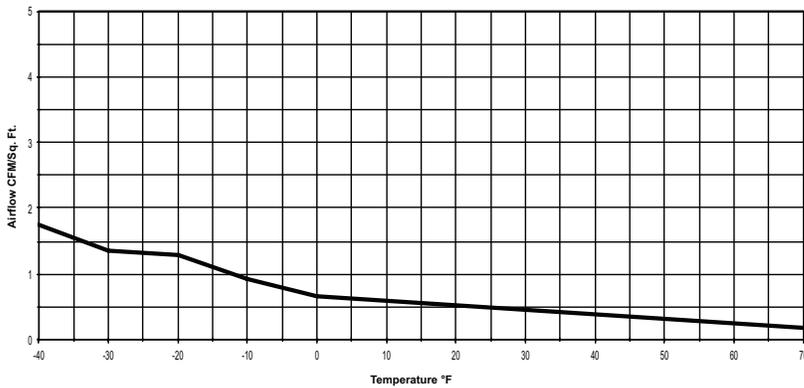
Pottorff certifies that the models TICD-51 and TICD-52 shown herein are licensed to bear the AMCA seal. The ratings shown are based on test and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings seal applies to Air Performance and Air Leakage.



**Airfoil Blade**

# Leakage Results At Temperature

## Leakage At Temperature @ 1.2 in. wg. (36" x 36" test sample)



## Airflow Performance Data

### Pressure Loss vs. Velocity

Figure 5.2 — Ducted Inlet

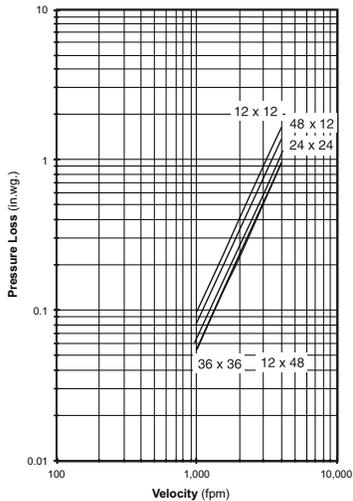


Figure 5.3 — Ducted Inlet and Outlet

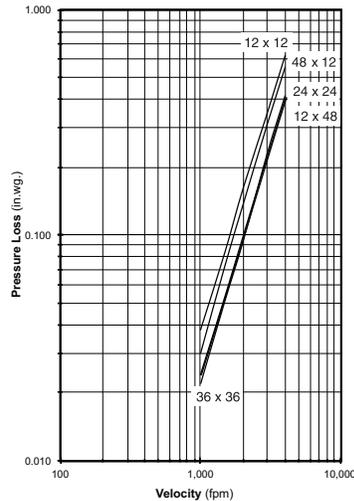
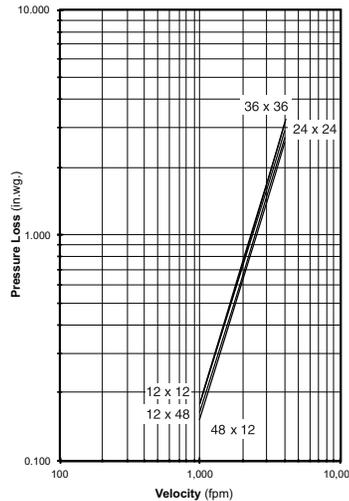


Figure 5.5 Plenum Mount



#### Certified Ratings:

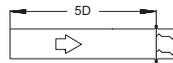
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Pressure drop testing was performed in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent air density of 0.075 lb/ft. Actual pressure drop in any ducted HVAC system is a combination of many elements. This information, along with analysis of other system influences, should be used to estimate actual pressure losses for a damper installed in a given HVAC system.



#### Ducted Inlet and Outlet

AMCA Figure 5.3 illustrates a fully ducted damper. This configuration represents the lowest pressure drop of the three test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



#### Ducted Inlet

AMCA Figure 5.2 illustrates a ducted damper exhausting air into an open area. This configuration has a lower pressure drop than Figure 5.5 because entrance losses are minimized by a straight duct run upstream of the damper.



#### Plenum Mount

AMCA Figure 5.5 illustrates a plenum mounted damper. This configuration has the highest pressure drop because of extremely high entrance and exit losses due to the sudden changes of area in the system.

## Installation

1. Dampers must be installed square and free from racking.
2. Dampers are designed to be self-supporting in the maximum single section size. When dampers are installed in multiple section assemblies, bracing may be required to support the weight of the dampers and to ensure structural integrity against system pressures. It is recommended that multiple sections be appropriately braced. In horizontal installations, it is recommended that suitable supports be installed every 8 feet of damper width. Dampers installed in vertical multiple assemblies and/or higher system pressures, may require additional bracing.
4. See Model TICD Installation Instructions for further installation details.