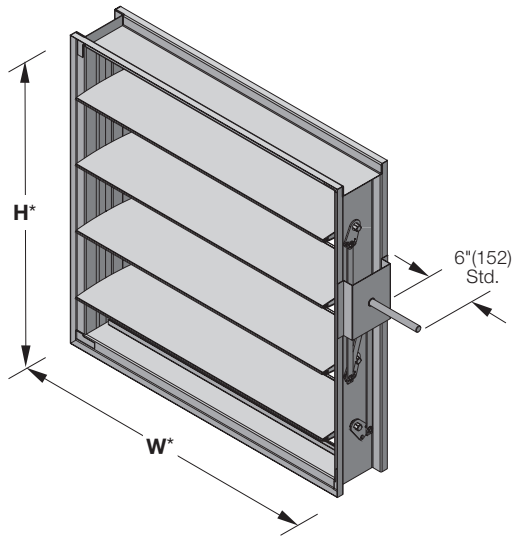
POTTORFF®

CD-51, CD-52

Control Damper
Aluminum Airfoil Blade



CD-52
(standard)
*Damper dimensions furnished approximately 1/4" (6) undersize. (Drive axle supplied loose for field installation)

CD-51 and CD-52 control dampers employ aluminum airfoil blades and a rugged hat channel frame to provide extremely low leakage and exceptional air control in medium to high pressure and velocity applications.

Standard Construction

Frame: 5" × 1" (127 × 25) galvanized steel hat channel with interlocking corner gusset. Equivalent to 13 gauge (2.4) channel frame. Low profile head and sill are used on sizes less than 13" (330) high.

Blades: 6" (152) heavy gauge, dual wall extruded aluminum — airfoil. Parallel (CD-51) or opposed (CD-52) action

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

Linkage: Concealed in frame

Bearings: Synthetic sleeve-type bearings

Seals: TPV blade edge seals and flexible metal jamb seals

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

Minimum Size: Model CD-51 (one blade): 6" × 5" (152 × 127)
Model CD-51 and CD-52 (two blades): 6" × 10" (152 × 254)

Maximum Size: Single Section: 60" × 72" (1524 × 1829)
Multiple sections: Unlimited

Options

- **Factory-installed actuators:**
  - 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 side plate**
  Gauge: ▪ 20 (1.0) ▪ 16 (1.6)
  Length: ▪ 16" (406) ▪ 24" (610) ▪ Other_____
- **Transitions (sleeve required):**
  - Round ▪ Oval
  - Duct connections: ▪ DM-25 ▪ DM-35 ▪ S & Drive
- **Flanged frame:** ▪ One side ▪ Both sides
- **PI-50 –** Dual position indicator switch package
- **Actuator/Quadrant standoff bracket —** accommodates up to 3" (76) thick insulated duct
- **Stainless steel oilite sleeve-type bearings**
- **Extruded aluminum 13 ga. frame construction**
- **Jackshafting** (required with internal mounted actuators and standard on all multiple section dampers)
  - Standard diameter ▪ 1" (25) diameter
- **Vertical mounted blades**
- **Finish**
  - Mill ▪ Clear Anodized ▪ Baked enamel – Gray
  - High-performance fluoropolymer – Gray
- **Face and by-pass assemblies:**
  - Model MDFBR ▪ Model MDFBH ▪ Model MDFBV
- **High temperature damper construction** (275°F)

Ratings

Damper Width	Maximum System Pressure	Maximum System Velocity
12" (305)	10.0 in. wg. (2.5 kPa)	6,000 fpm (30.5 m/s)
24" (610)	8.4 in. wg. (2.1 kPa)	5,000 fpm (25.4 m/s)
36" (914)	6.1 in. wg. (1.5 kPa)	4,000 fpm (20.3 m/s)
48" (1219)	5.3 in. wg. (1.3 kPa)	3,000 fpm (15.2 m/s)
60" (1524)	3.1 in. wg. (0.8 kPa)	3,000 fpm (15.2 m/s)

AMCA Certified Leakage

Maximum Damper Width	*Leakage Class		
	@ 1 in.wg. (0.25 kPA)	@ 4 in.wg. (1.0 kPA)	@ 6 in.wg. (1.5 kPA)
x ≤ 48" (1219)	1A	1	1
48" (1219) < x ≤ 60" (1524)	1A	N/A	N/A

***Leakage Class Definitions:**

Leakage Class 1A - 3 cfm/ft² @ 1 in. wg. (0.015 m³/s/ m² @ 0.25 kPa)
Leakage Class 1 - 8 cfm/ft² @ 4 in. wg. (0.041 m³/s/ m² @ 1.0 kPa)
Leakage Class 1 - 9.8 cfm/ft² @ 6 in. wg. (0.049 m³/s/ m² @ 1.5 kPa)

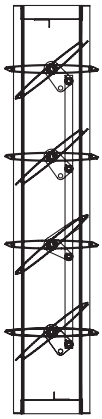
Temperature:

–25°F to 180°F (–32°C to 82°C) with synthetic bearings
–72°F to 275°F (–58°C to 135°C) with stainless bearings

Air Performance
Pottorff certifies that the model CD-51 and CD-52 shown herein is licensed to bear the AMCA seal. The ratings shown are based on tests 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 Ratings.

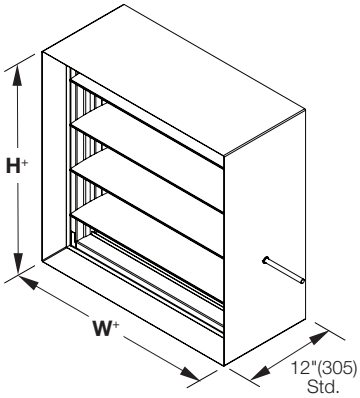
NOTE: Dimensions in parentheses ( ) are millimeters.
Information is subject to change without notice or obligation.

Typical Damper Dimensional Details

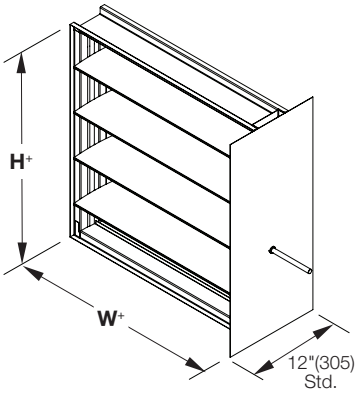


CD-51
(Parallel Action)

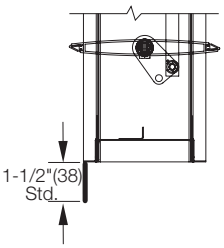
CD-52
(Opposed Action)



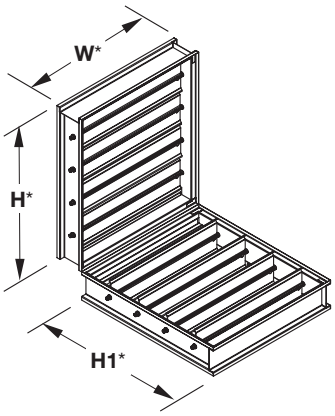
Sleeve (Optional)
+Damper dimensions furnished approximately 1/4" (6) undersize. (sleeve thickness not included)



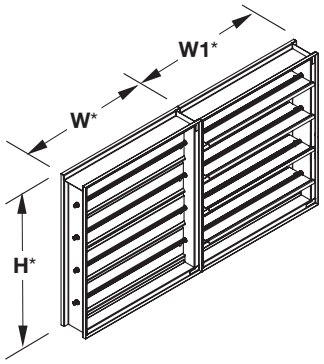
Sideplate (Optional)



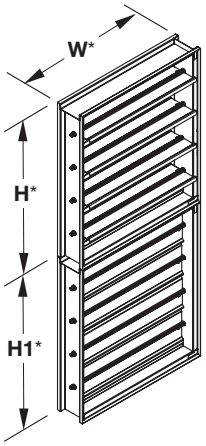
Flange Frame



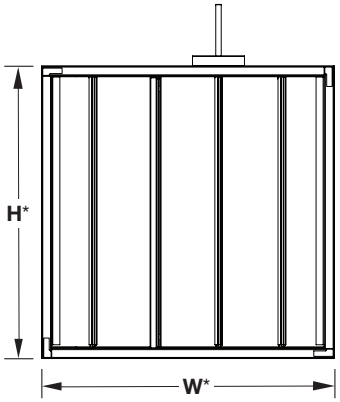
Model **MDFBR**



Model **MDFBH**

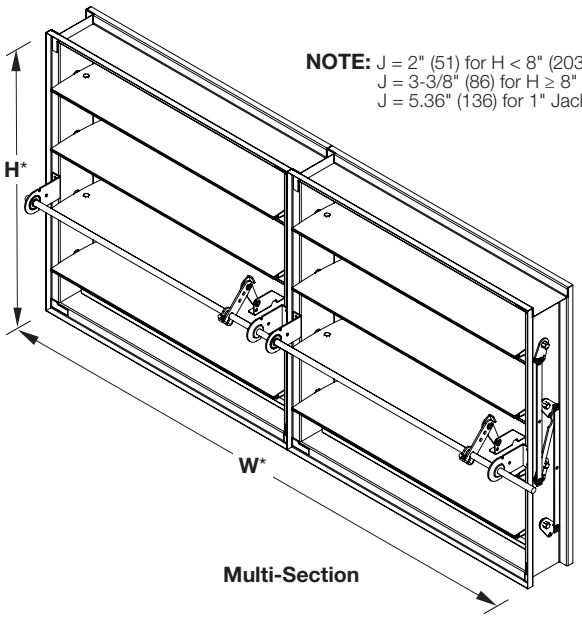


Model **MDFBV**

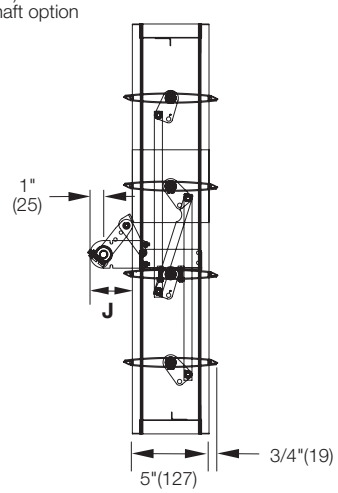


Vertical Bladed

NOTE: J = 2" (51) for H < 8" (203)
J = 3-3/8" (86) for H ≥ 8" (203)
J = 5.36" (136) for 1" Jackshaft option



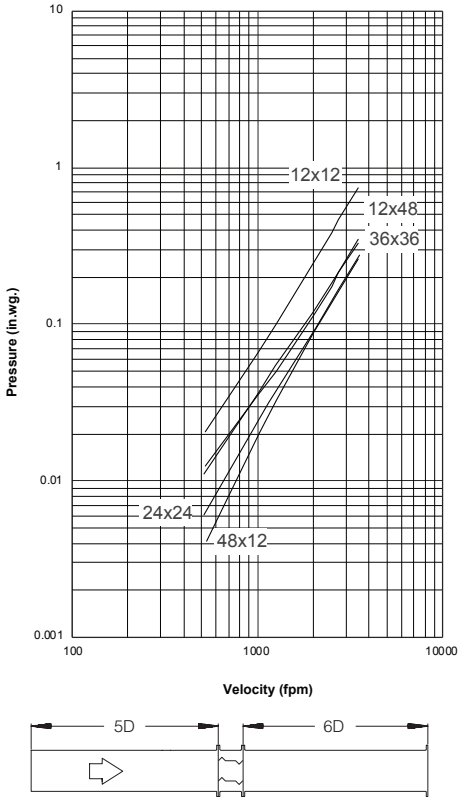
Multi-Section



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.
*Damper dimensions furnished approximately 1/4" (6) undersize.

Pressure Loss vs. Velocity

Figure 5.3 — Ducted Inlet and Outlet



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.

Air Performance

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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.