

### Application

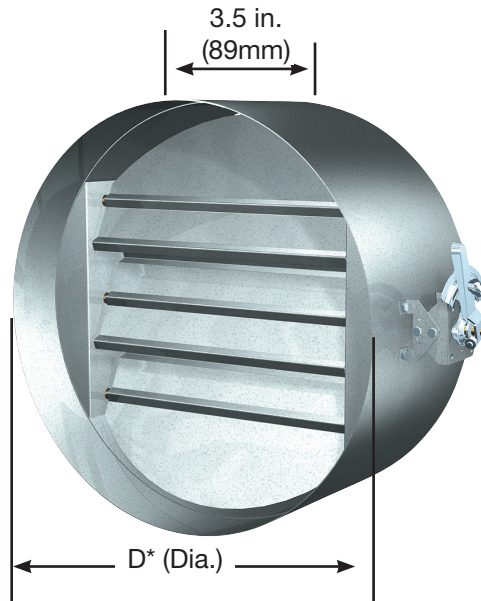
The VCDRM-50 is an insert type multi-blade round damper designed to provide optimum control of airflow in round HVAC ductwork. The VCDRM-50 is intended for applications in low to medium pressure and velocity systems.

### Damper Ratings

**Pressure:** Up to 5 in. wg (1.2 kPa) - pressure differential

**Velocity:** Up to 2500 fpm (12.7 m/s)

**Temperature:** Up to 180°F (82°C)



\*D dimension furnished approximately 1/4 in. (6mm) undersize.

Construction	Standard	Optional
Frame Material	Galvanized Steel	304SS
Frame Thickness	3 1/2 in. x 14 ga. (89mm x 2mm) under 22 in. dia. (559mm); 3 1/2 in. x 10 ga. (89mm x 3mm) and 22 in. and greater	
Blade Material	Galvanized Steel	304SS
Blade Action	Opposed	Parallel
Blade Thickness	16 ga. (1.5mm)	-
Blade Type	3V	-
Linkage	Plated Steel	316SS
Axle Bearings	316SS	-
Axle Material	Plated Steel	316SS

### Options

- Electric actuator and manual quadrant available. Factory supplied actuators are sized for 1500 fpm (7m/s) and fully closed differential pressure of 2 in. wg (.5 kPa). contact factory for actuator sizing on applications exceeding those limits.

Diameter*	Minimum	Maximum
in. (mm)	11 in. (279)	48 in. (1219)
* 1 in. (25mm) increments		

## Pressure Drop

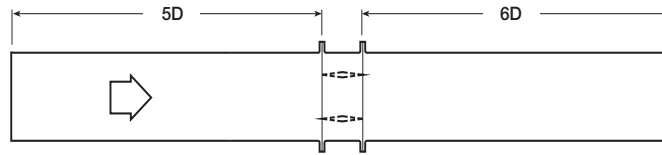
Pressure drop testing was conducted in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent standard air at a density of .075 lb/ft<sup>3</sup> (1.2 kg/m<sup>3</sup>).

Actual pressure drop found in an HVAC system is a combination of many factors. This pressure drop information, along with an analysis of other system influences should be used to estimate actual pressure losses for a damper installed in an HVAC system.

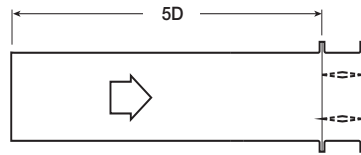
**Figure 5.3** Illustrates a fully ducted damper. This configuration has the lowest pressure drop of the three test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.

**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.

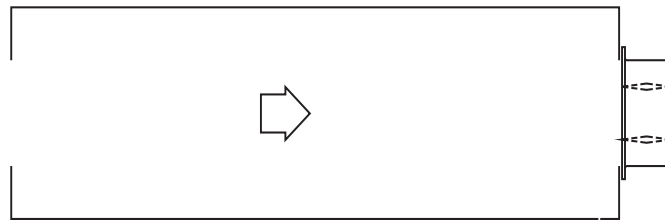
**Figure 5.5** Illustrates a plenum mounted damper. This configuration has the highest pressure drop because of high entrance and exit losses due to the sudden changes of area in the system.



- D = Duct length
- W = Damper width
- H = Damper height



$$D = \sqrt{\frac{4(W)(H)}{3.14}}$$

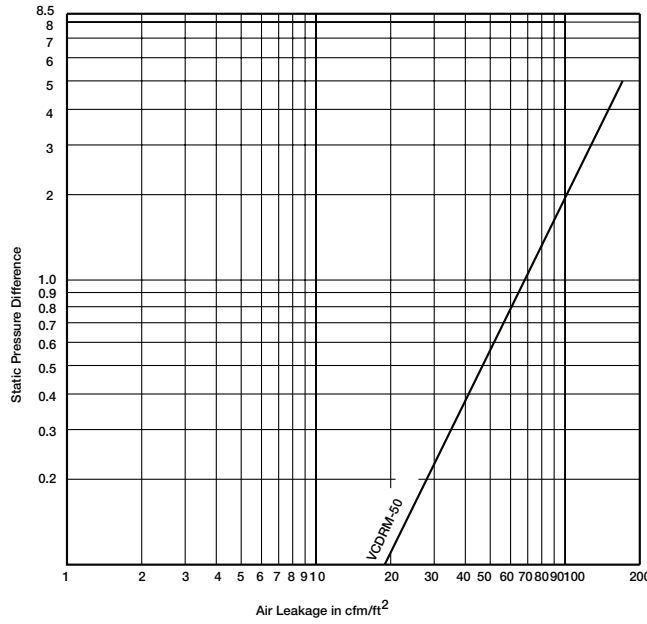


Dimension inches	12			24			36		
AMCA figure	5.2	5.3	5.5	5.2	5.3	5.5	5.2	5.3	5.5
Velocity (ft/min)	Pressure Drop in. wg								
500	.04	.03	.05	.03	.02	.04	.05	.05	.06
1000	.15	.11	.19	.13	.10	.15	.19	.20	.25
1500	.33	.25	.42	.29	.21	.33	.42	.44	.57
2000	.59	.45	.75	.51	.38	.59	.75	.79	1.01
2500	.93	.70	1.18	.79	.60	.92	1.18	1.23	1.58

## Leakage Data

Leakage testing was conducted in accordance with AMCA Standard 500-D and is expressed as cfm/ft<sup>2</sup> of damper face area. All data has been corrected to represent standard air at a density of 0.075 lb/ft<sup>3</sup> (1.201 kg/m<sup>3</sup>).

**36 in.  
(914mm)**



## Specifications

Round control dampers meeting the following specifications shall be furnished and installed where shown on plans and/or as described in schedules.

Dampers shall consist of a 14 ga. (2mm) galvanized steel frame, blades fabricated from 16 ga. (1.5mm) galvanized steel, plated steel axles turning in stainless steel bearings.

Damper manufacturer's printed application and performance data including pressure, velocity and temperature limitations shall be submitted for approval showing damper suitable for pressures to 5 in. wg (1.2 kPa), velocities to 2500 fpm (12.7 m/s) and temperatures to 180°F (82°C). Testing and ratings shall be in accordance with AMCA Standard 500-D.

Basis of design is model VCDRM-50.

