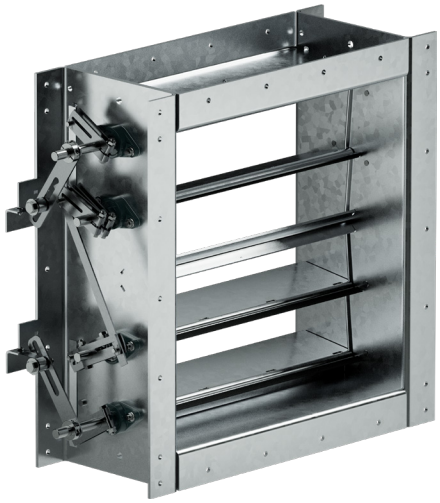
HTOD-330
Heavy Duty Tornado Damper

Application
Models HTOD-330 is a heavy duty backdraft damper with double flanged channel frame and double thickness fabricated airfoil blades. The tornado damper is design to protect against tornadoes and instantaneous pressure changes. External clevis type linkage and external mount ball bearings are standard.



Damper Ratings

Velocity
Up to 4000 fpm (2.5 to 20.3 m/s)
Pressure
Up to 3 psi (83 in. wg) (20.7 kPa) - pressure differential
Temperature
-40°F to 250°F (-40°C to 121°C).

Construction

	Standard	Optional
Frame Material	Painted Steel	304SS, 316SS
Frame Material Thickness	¼ in. (6.3 mm)	-
Frame Type	12 in. x 3 in. (305 mm x 76 mm) flanged channel	-
Flange Width	3 in. (76 mm)	
Blade Material	Painted Steel	304SS, 316SS
Blade Type	Airfoil	-
Blade Thickness	16 ga. (1.6 mm)	-
Axle Material	Plated steel, full length with reinforcing tube	303SS, 316SS
Axle Size	¾ in. (19 mm)	-
Axle Bearings	External Ball	-
Blade Seals	EPDM	Silicone
Jamb Seal	EPDM	Silicone
Linkage Material	Plated Steel	304SS, 316SS
Paint Finishes	Hi Pro Polyester	Industrial Epoxy; Mill (304SS or 316SS)
Air Flow	Horizontal	-
Pressure Suction	With Air Flow	Opposite Air Flow
Mounting Holes	None	Standard; Standard w/corner holes

Size Limitations

W x H	Minimum Size	Maximum Size
		Single Section
Inches	12 x 12	48 x 60
mm	305 x 305	1219 x 1524

* Actual Inside Dimension.
** The W dimension is ALWAYS parallel with the damper blade length.

Performance Data

Pressure Drop Data (not valid for opposite air flow operation)

This pressure drop data 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^3 (1.2 kg/m^3).

Actual pressure drop found in any 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 a given HVAC system.

AMCA Test Figures

Figure 5.3 illustrates a fully ducted damper. This configuration has the lowest pressure drop of the three test configurations because the 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 the 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 the high entrance and exit losses due to the sudden changes of area in the system.

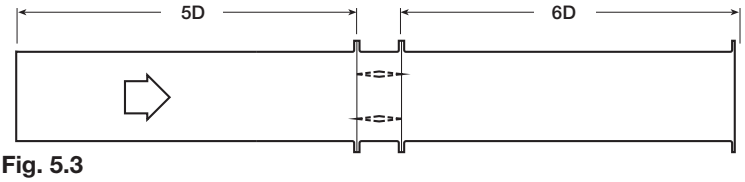
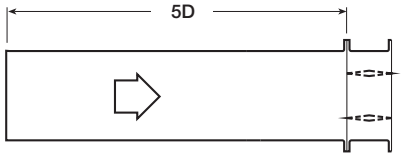


Fig. 5.3



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

Fig. 5.2

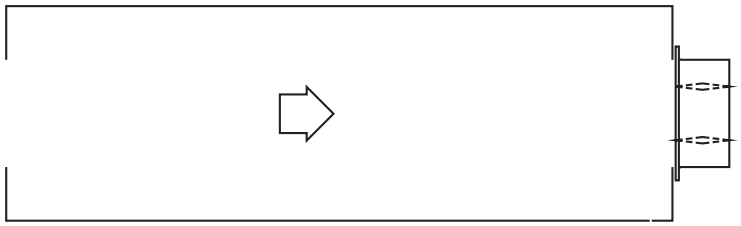
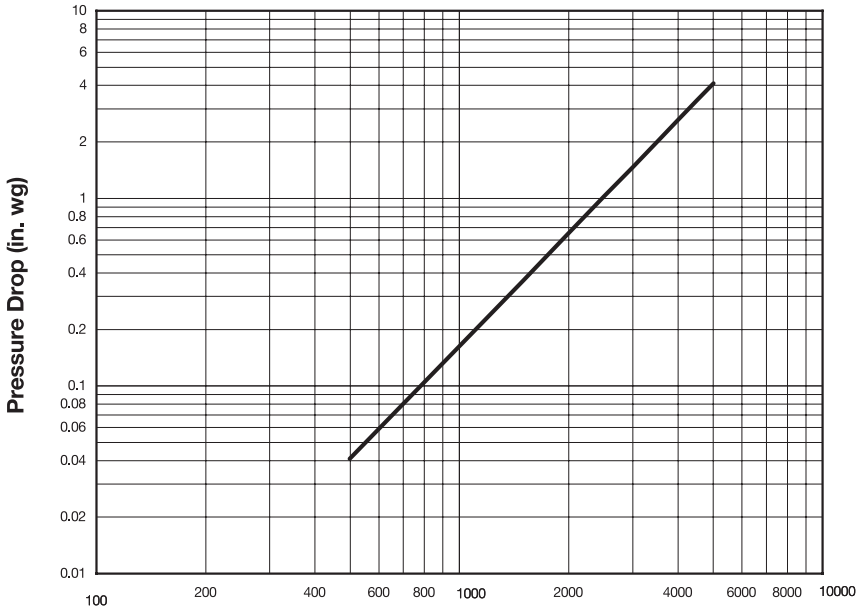


Fig. 5.5

Pressure Drop

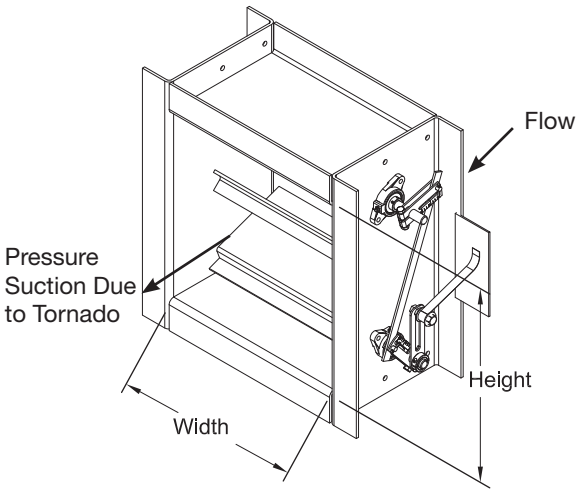
36 in. x 36 in. (914mm x 914mm) Damper



AMCA Fig. 5.5

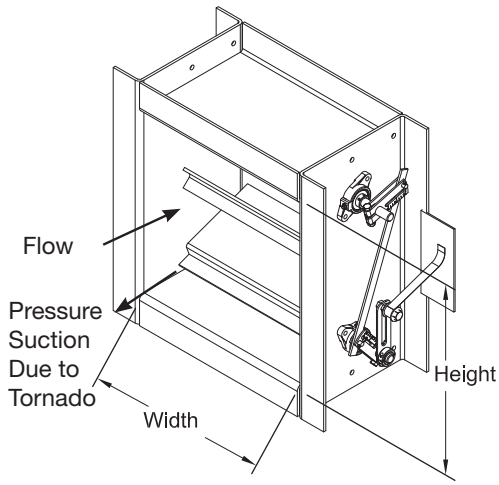
Blast Direction

With Air Flow

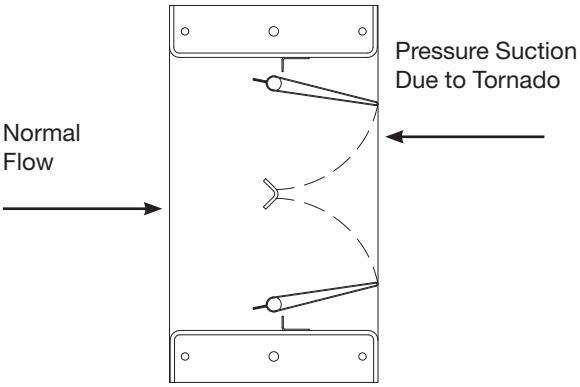


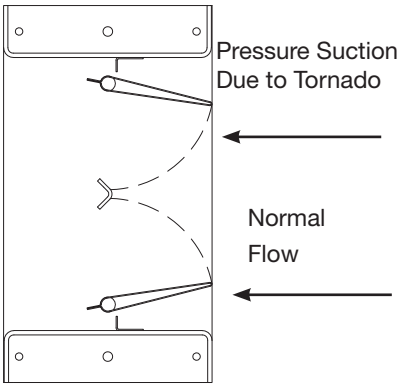
Building Exterior

Opposite Air Flow



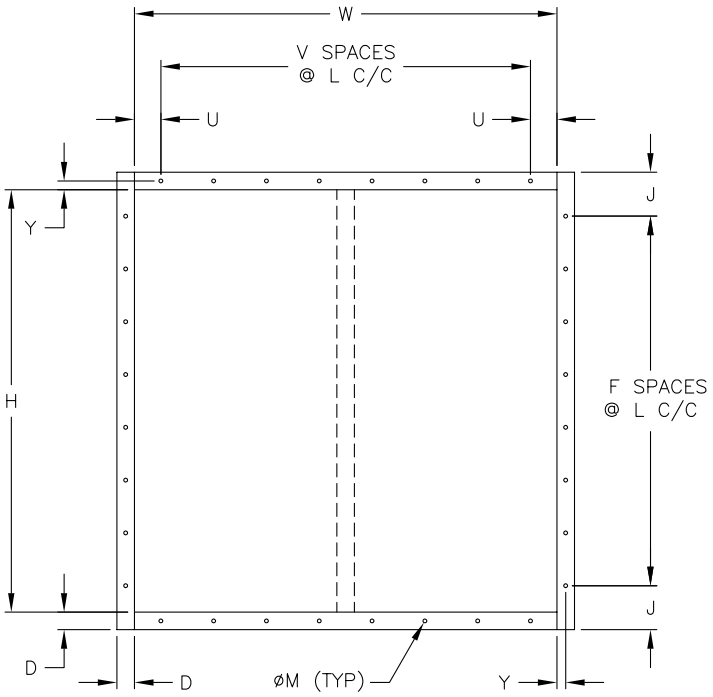
Building Exterior



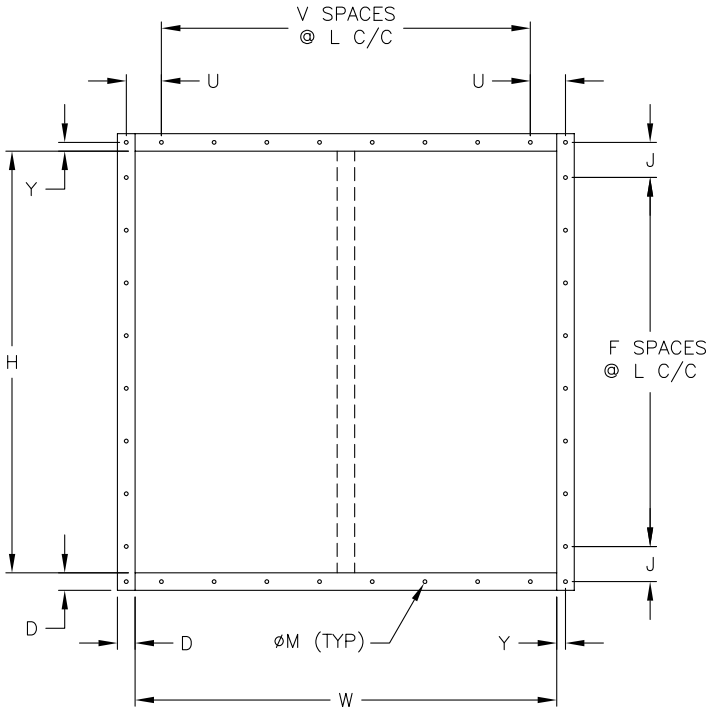


Mounting Holes

Bolt holes are available as an option. The standard pattern is 7/16 in. (11mm) diameter holes (M dimension) spaced 6 in. (152mm) on center (L dimension). Custom bolt hole patterns are available. Contact factory for the limitations.



Standard Mounting Hole Pattern
Typical for single or double wide panel



Standard Mounting Hole Pattern with Corner Holes
Typical for single or double wide panel

Links

INSTALLATION

CATALOG

HEAVY DUTY SELECTION GUIDE

SELECTION GUIDE

WARRANTY

SPECIFICATIONS

GREENHECK
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