

Application

Model HPR-230 is a heavy duty pressure relief damper with double flanged channel frame and streamlined airfoil blades. It is designed to protect HVAC systems and industrial processes by relieving air pressure. External heavy duty linkage, ball bearings, blade counterbalance, and adjustable pressure setting weights are standard.

Ratings (see page 3 for specific limitations)

Velocity

Up to 5150 fpm (26.2 m/s)

Pressure Relief

0.25 in. wg (0.062 kPa) minimum;
4.0 in. wg (1 kPa) maximum

Back Pressure

6 - 13.5 in. wg (1.49 - 3.36 kPa)

Temperature

-40° to 250°F (-40° to 121°C)

Consult factory for temperatures above 250°F (121°C)

Construction

	Standard	Optional
Frame Depth	8 in. (203 mm)	8 in. - 12 in. (203 mm - 305 mm)
Frame Material	Galvanized steel	Painted steel, 304SS, 316SS
Frame Type	Flanged channel	
Frame Thickness	14 ga. (2 mm)	10 ga. (3.5 mm), 12 ga. (2.7 mm)
Flange Width	2 in. (51 mm)	1½ in. (38 mm)
Blade Material	Galvanized steel	Painted steel, 304SS, 316SS
Blade Seals	Silicone	EPDM, None
Blade Thickness*	18 ga. (1.3 mm)	16 ga. (1.5 mm)
Blade Type	Airfoil	
Linkage	External heavy duty type with galvanized steel clevis arms and plated steel tie bars & pivot pins with nylon pivot bearings	304SS, 316SS
Axle Diameter	¾ in. (19 mm)	-
Axle Bearing	Galvanized ball	External ball
Axle Material	Plated steel	303SS, 316SS
Pressure set	Adjustable arms and weights	
Paint Finishes	None	Hi Pro Polyester, Industrial Epoxy
Mounting Holes	None	Standard, Standard with corner holes
Airflow	Horizontal, Vertical Up, or Vertical Down	



RH

LH

Actual Inside Dimensions.

** RH counterbalance and pressure setting are standard.

*** Counterbalance and pressure setting weights extend beyond flanges in the open/closed positions.

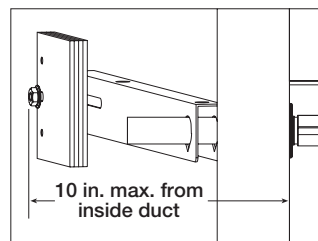
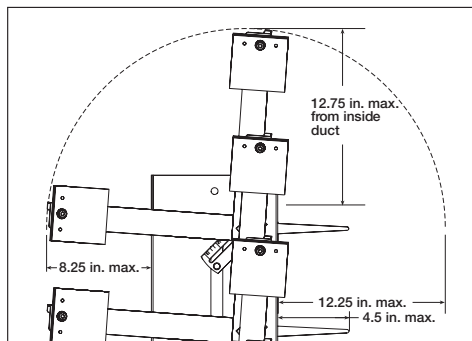
Size Limitations

W x H		Inches	mm
Minimum Size		6x6	152x152
Maximum Size	Single Section	48x96	1219x2438
	Multi - Section	96x96	2438x2438

* When blade is galvanized steel, the blade thickness is 18 ga. When the blade is stainless steel (304 or 316), the blade thickness is 16 ga.

Counterbalance & Pressure Setting Weight Dimensions

Side View

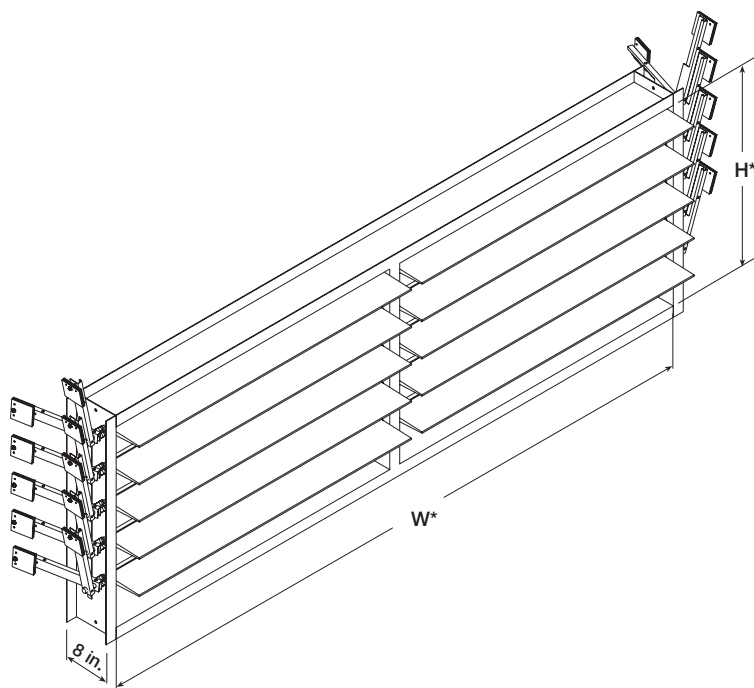


Front View

Advise air flow direction, relief pressure, & counterbalance weight location when ordering

Multi Section Assembly

Damper sizes larger than 48 in. x 96 in. (1219mm x 2438mm) and less than 96 in. x 96 in. (2438mm x 2438mm) will be supplied in one frame with two sets of blades separated by a mullion as shown below. Counterbalance and pressure set weights supplied on right hand and left hand side. For sizes larger than 96 in. x 96 in. (2438mm x 2438mm), consult factory.



Performance Data

Back Pressure Limitations

The chart at the right shows conservative pressure limitations based on a maximum blade deflection of $w/360$.

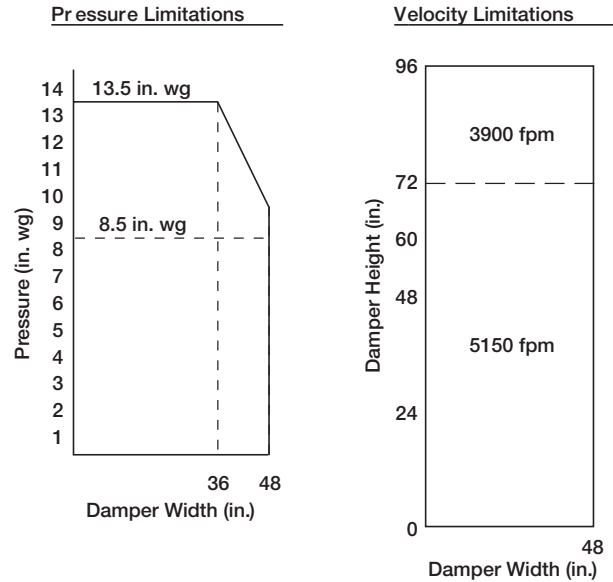
Temperature Limitations

-40°F to 250°F (-40°C to 121°C)

For higher temperatures, consult factory.

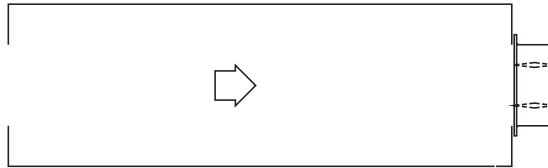
Velocity Limitations

The chart at far right shows conservative velocity limitations based on damper size.



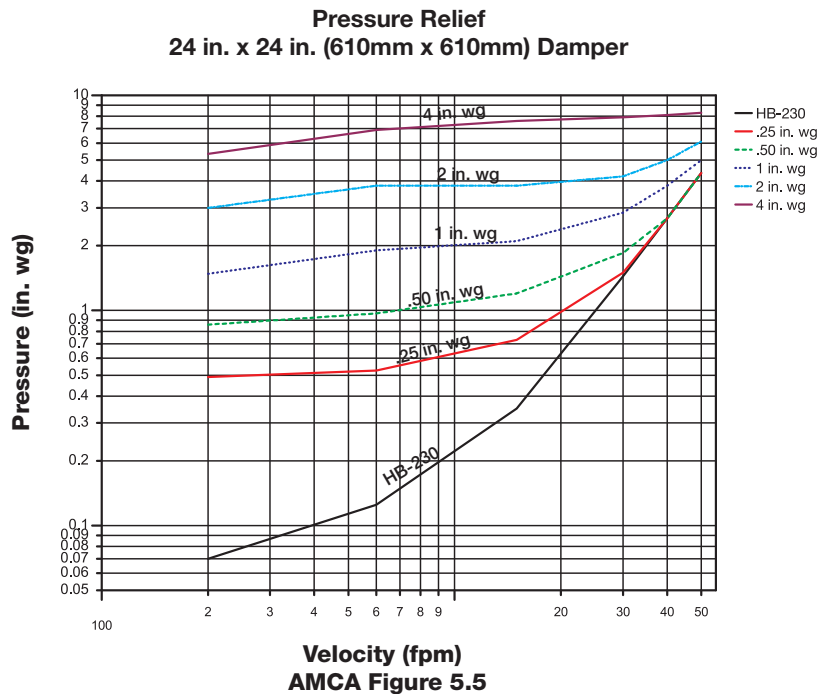
AMCA Test Figure

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



Pressure Relief/Leakage Data

This pressure drop data was conducted in accordance with AMCA Standard 500-D using the configuration shown. All data has been corrected to represent standard air at a density of 0.075 lb/ft^3 (1.2 kg/m^3). (The HB-230 data was included as a reference.)

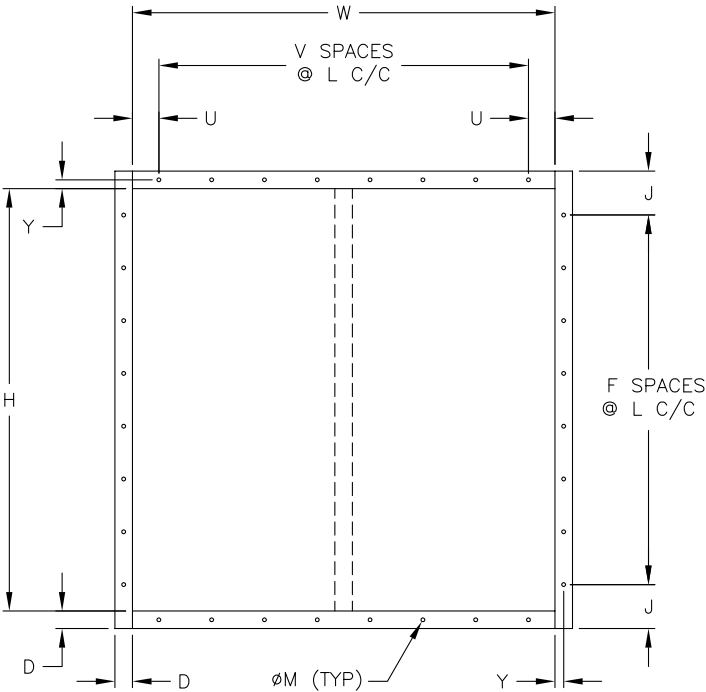


Mounting Holes

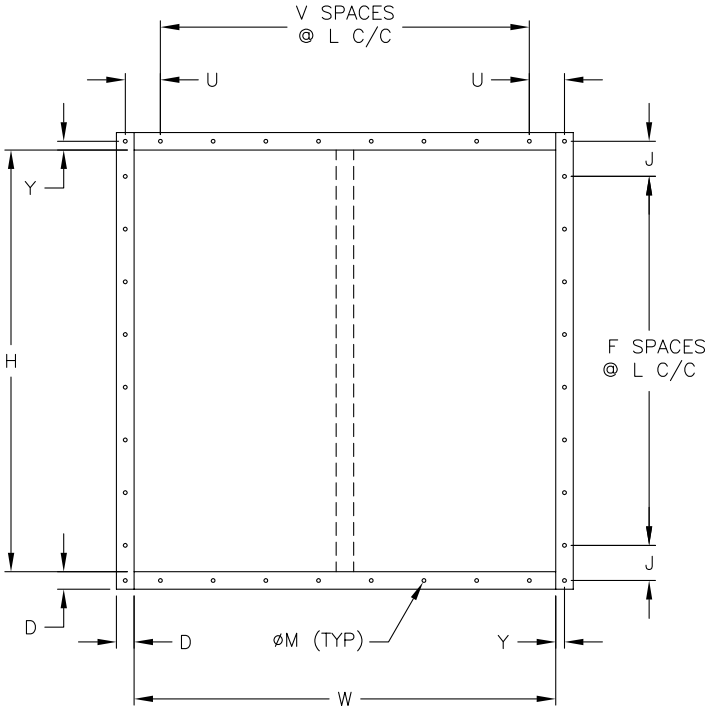
HPR-230

Industrial Pressure Relief Damper

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 pattern is available within the limitations of the chart below.



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

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