HTG-230
Industrial Toxic Gas Damper

Application
Model HTG-230 is heavy duty industrial toxic gas damper with a flanged frame.

Ratings

Velocity

Up to 5000 fpm (25.4 m/s)

Temperature

-40° to 250°F (-40° to 121°C)

Pressure

Up to 15 in. wg (3.7 kPa) - differential pressure

Construction

	Standard	Optional
Frame Depth	8 in. (203 mm)	-
Frame Material	316SS	304SS, Galvanized steel
Frame Type	Flanged channel	
Frame Thickness	0.188 in. (4.8mm)	-
Flange Width (D)	2 in. (51 mm)	-
Blade Action	Parallel	-
Blade Material	316SS	304SS, Galvanized steel
Blade Seals	EPDM	Silicone, None
Blade Thickness	14 ga. (2 mm)	-
Blade Type	Fabricated Airfoil	
Linkage	Plated steel	304SS, 316SS
Jamb Seals	316SS	None
Axle Diameter	¾ in. (12.7mm)	-
Axle Bearing	External bronze	-
Axle Material	316SS	303SS, Plated steel
Axle Seals	None	-
Paint Finishes	None	-
Mounting Holes	Standard	Standard with corner holes
Actuator	Manual Quadrant	Schischek InMax-15-SF-S7 (24V - 230V)

*Actual inside dimension. The width is ALWAYS parallel with the damper blade length.

Model HTG-230 toxic gas damper meets the requirements established by:

United States Department of the Navy

MIL-S-901D Shock Tests, High Impact Shipboard Machinery, Equipment, and Systems

4130 Ser 501/1942 (24 Aug 16)

Test Category: Medium Weight, Shock Grade A

Size Limitations

W x H	Minimum Size	Maximum Size	
		Single Section	Multi - Section
Inches	6 x 6	21½ x 20	45 x 20
mm	152 x 152	546 x 508	1143 x 508

Features:

- When actuator is supplied, NEMA 4X enclosure is included.

Performance

Pressure Limitations

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

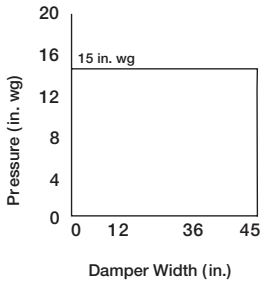
Temperature Limitations

Blade seals: Silicone -40° to 400°F (-40° to 204°C)
EPDM -20° to 250°F (-29° to 121°C)

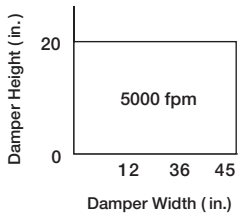
Jamb seals: Flexible stainless steel -40° to 400°F (-40° to 204°C)

Velocity Limitations

The chart to the right shows velocity limitations based on damper size.



Pressure Limitations



Velocity Limitations

Pressure Drop Data

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.

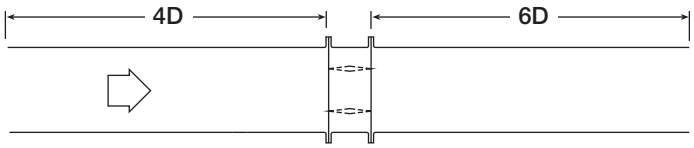
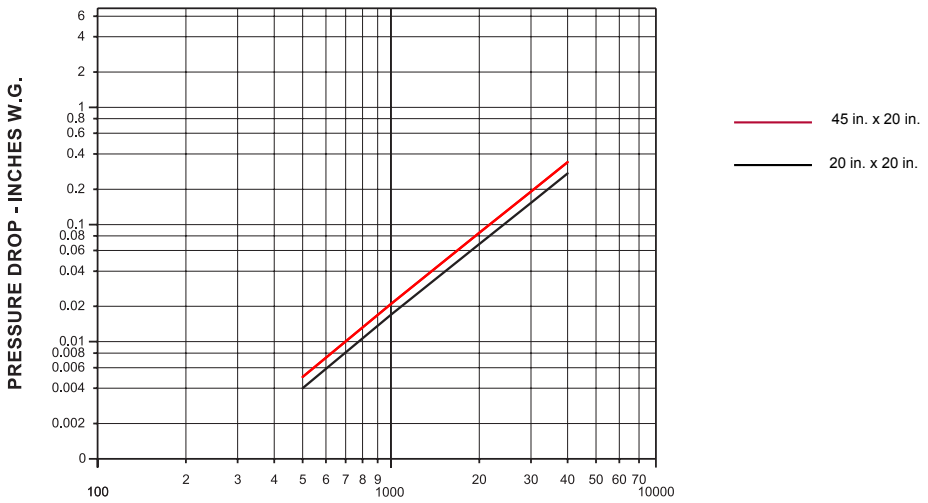


Fig. 5.3



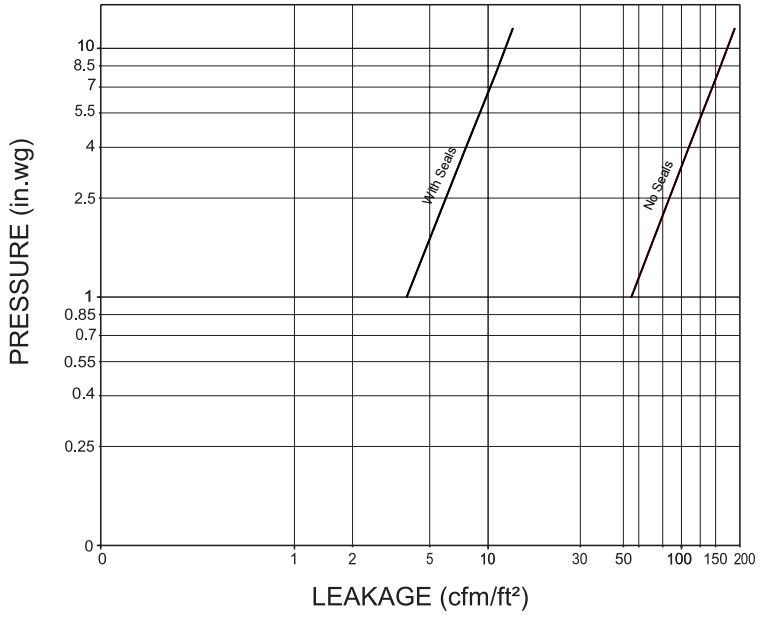
AMCA FIG. 5.3

Leakage

Damper leakage (with blades fully closed) varies based on the type of low leakage seals applied. Model HTG-230 is available with no jamb seals (standard) or with stainless steel jamb seals and EPDM, or silicone rubber blade seals. Leakage testing was conducted in accordance with AMCA Standard 500-D and is expressed as CFM per sq. ft. of damper face area. All data has been corrected to represent standard air at a density of .075 lb/ft³ (1.2 kg/m³).

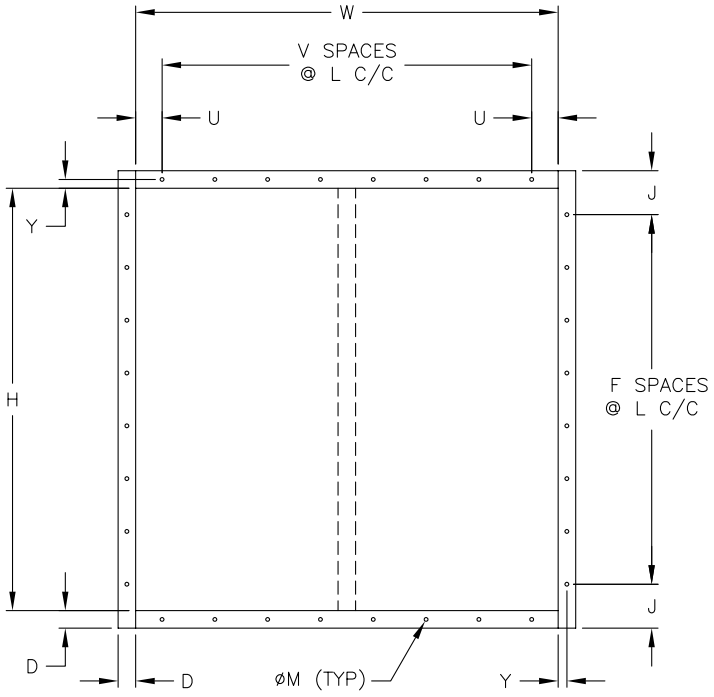
Leakage

20 x 20 in. (508mm x 508mm) Damper

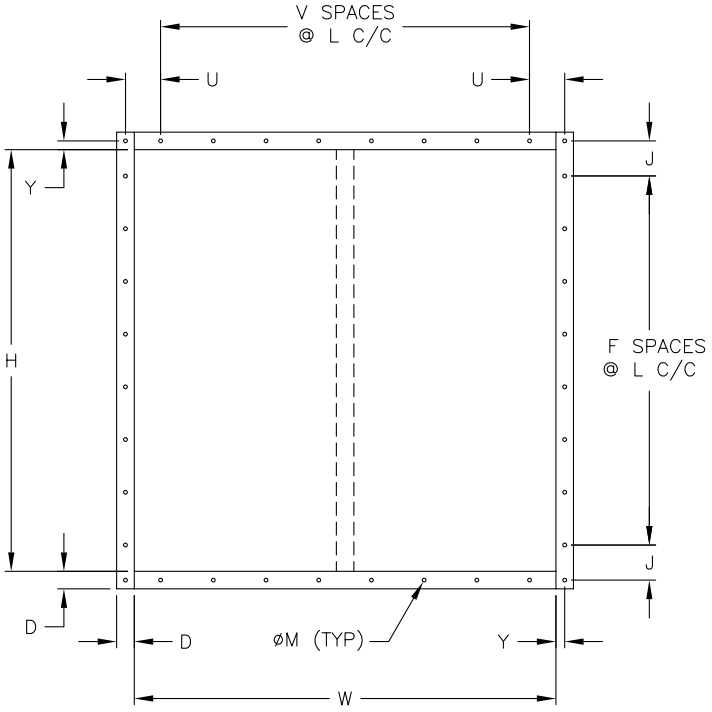


Mounting Holes

Bolt holes are available as an option. Greenheck's 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 Greenheck 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

Document Links

Heavy Duty/Industrial Damper Catalog

Damper Interactive Selection Guide

Warranty

Specifications

Industrial grade toxic gas dampers meeting the following specifications shall be furnished and installed where shown on plans and/or as described in schedules.

Dampers shall meet the requirements of the United States Department of the Navy; MIL-S-901D Shock Tests, High Impact Shipboard Machinery, Equipment, and Systems (4130 Ser 501/1942); and Test Category: Medium Weight, Shock Grade A.

Dampers shall consist of: a 0.188 (4.8mm) 316 stainless steel channel frame with 8 in. (203mm) minimum depth and 2 in. (51mm) flanges; double skin airfoil blades fabricated from two layers of 14 ga. (2mm) 316 stainless steel with an attached EPDM blade seal; ¾ in. (19mm) dia. 316 stainless steel axles turning in external bronze sleeve bearings; flexible stainless steel jamb seals and external (out of the airstream) blade-to-blade linkage. Damper actuator shall be a manual quadrant.

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 15 in. wg (3.7 kPa), velocities to 5,000 fpm (25.4 m/s) and temperatures to 250°F (121°C).

Specifier may add the following:
Damper shall be equipped with blade and jamb seals for low leakage performance. Blade seals shall be silicone rubber for 400°F (204°C) maximum temperature. Testing and ratings shall be per AMCA Standard 500-D.

Basis of design is Greenheck model HTG-230.

GREENHECK
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HTG-230, R3, April 2023