

**INDUSTRIAL
BACKDRAFT DAMPER**

Application and Design

The **ICB-800** Series is a heavy duty flanged frame style industrial backdraft damper. It is designed to control backflow and provide shut off in HVAC or industrial process control systems. A variety of optional features (see page 3), makes Model **ICB-800** extremely versatile, allowing its capabilities to be tailored to the application.

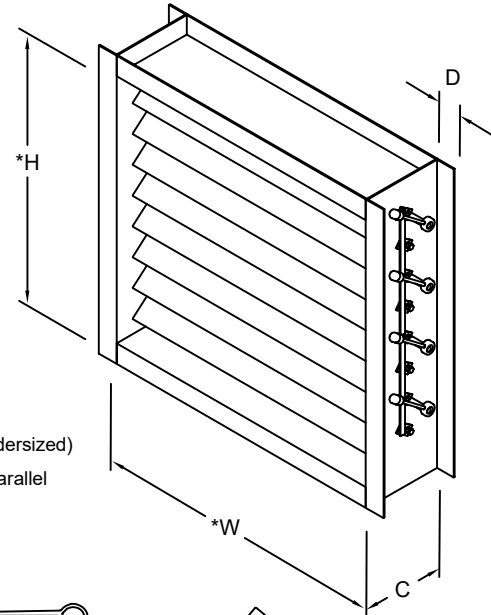
Ratings:

- Pressure:** 5 to 8-1/2 in. w.g. - differential pressure
- Velocity:** 4000 fpm
- Temperature:** 180° F [82.2° C]

Standard Construction:

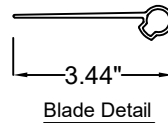
- Frame:** 2" x 8" [50.8 x 203.2mm] 14 Ga. Galvanized Steel Channel
- Blade:** 6060T5 Extruded Aluminum .125 [3.175] thickness
- Linkage:** Zinc plated concealed
- Axles:** 1/2" [12.7mm] diameter cast zinc
- Blade Seals:** PVC (180°F)
- Bearings:** Stainless Steel sleeve type

*Actual Inside Dimensions (not undersized)
** The W dimension is ALWAYS parallel with the damper blade length.



Size Limitations:

- Minimum Size:** Single blade- 6" w x 5" h [152.4 x 127]
Multiple blades- 6" w x 9" h [152.4 x 228.6]
- Maximum Single Section:** 48" w x 48" h [1219.2 x 1219.2]
- Maximum Double Section:** 96" w x 96" h [2438.4 x 2438.4]

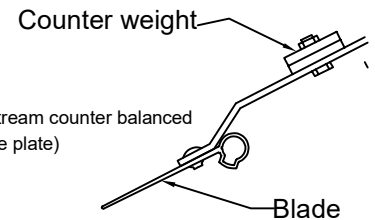


Options and Accessories:

- All Aluminum Construction (linkage epoxy coated)
- All #304 Stainless Steel Construction
- All #316 Stainless Steel Construction
- Pressed Ball Bearings
- Heavy Duty Ball Bearings (2 hole flange)
- 12 Ga. Galvanized Frame
- 10 Ga. Galvanized Frame
- Bolt Holes (both sides)
- 450°F Silicone Blade Seals



Precision Counter Balanced; both by rotation in hub or slide weight up or down the rod in addition to removal or adding weights.



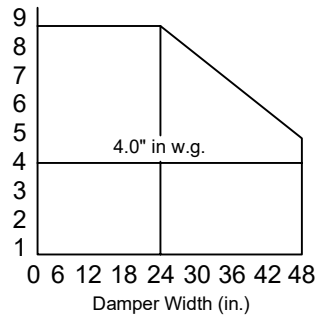
Quantity	'W' Width	'H' Height	Frame Depth 'C' (8" std.)	Flange Width 'D' (2" std.)	Bolt Hole Information (see page 3)							
					J	F	L Spacing	M Diameter	U	V	Y	

Job Name:	<input type="checkbox"/> MODEL ICB-800 (4000 FPM)						
Location:							
Architect:							
Engineer:							
Contractor:	<table border="1" style="width: 100%;"> <tr> <td style="width: 33%;">DRAWN BY: CLJ</td> <td style="width: 33%;">DATE: 12-03-99</td> <td style="width: 33%;">REV. DATE: 6-24-2020</td> </tr> <tr> <td>REV. NO. 19</td> <td>APPROVED BY: BGT</td> <td>DWG. NO.: F-14</td> </tr> </table>	DRAWN BY: CLJ	DATE: 12-03-99	REV. DATE: 6-24-2020	REV. NO. 19	APPROVED BY: BGT	DWG. NO.: F-14
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MODEL ICB-800 PERFORMANCE DATA

Pressure Limitations:

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



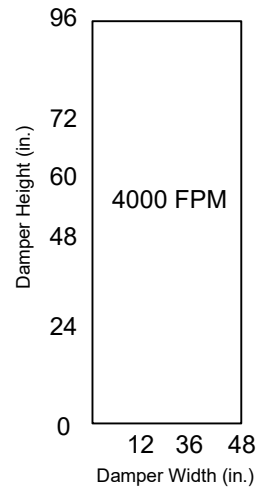
Pressure Limitations

Temperature Limitations:

Blade seals: PVC -40° to $+180^{\circ}$ F
(for higher temperatures, consult United Enertech)

Velocity Limitations:

The chart at the far right shows conservative velocity limitations.



Velocity Limitations

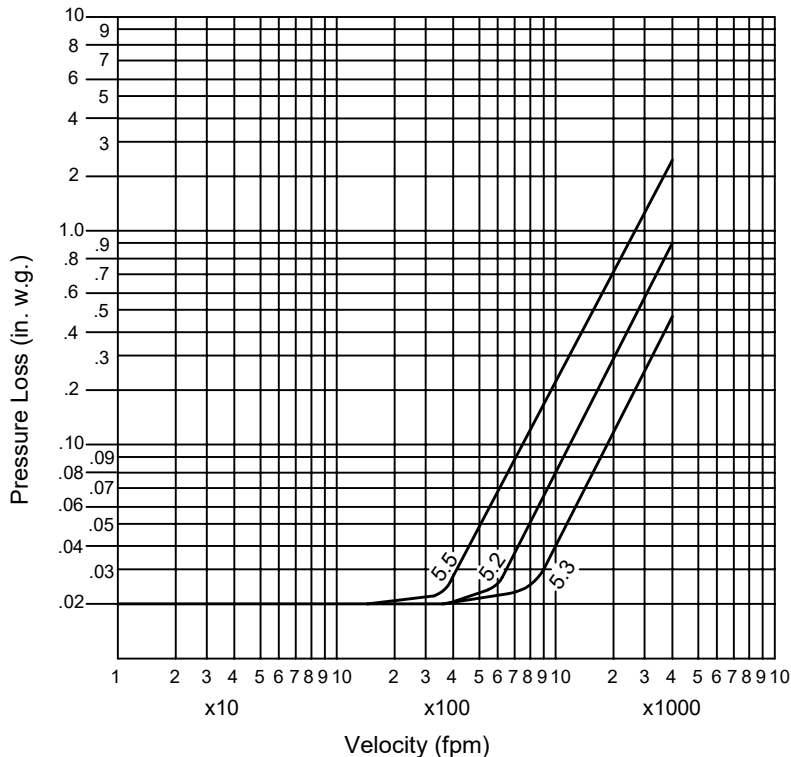
Pressure Drop Data:

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. (bottom left)

Leakage Data:

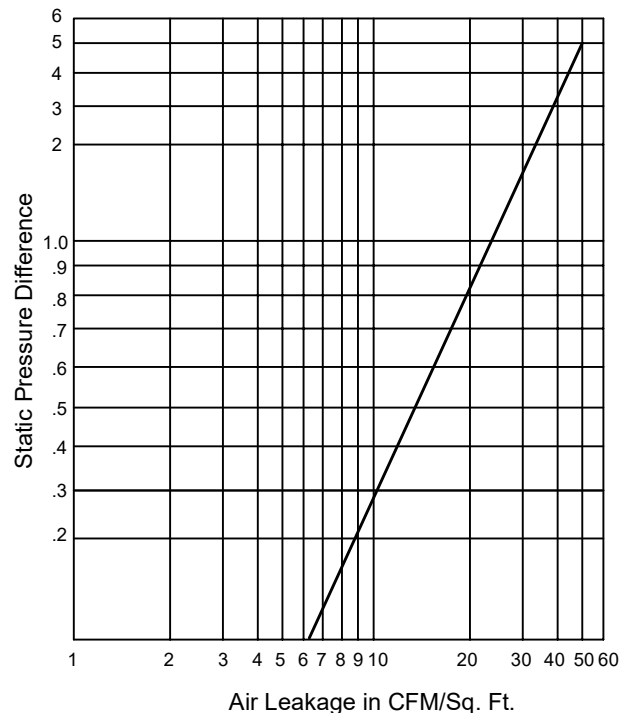
Damper leakage (with blades fully closed) varies based on the type of low leakage seals applied.

**Pressure Drop
36" x 36" Damper**



5.5, 5.2, & 5.3 AMCA Set-ups

**Leakage
36" x 36" Damper**



FRAME CONSTRUCTION OPTIONS

Flange (D Dim): Standard- 2" [50.8mm] Bolt holes: (Standard does not include bolt holes)

Optional- 1-1/2"- 4"
[38.1-101.6mm]

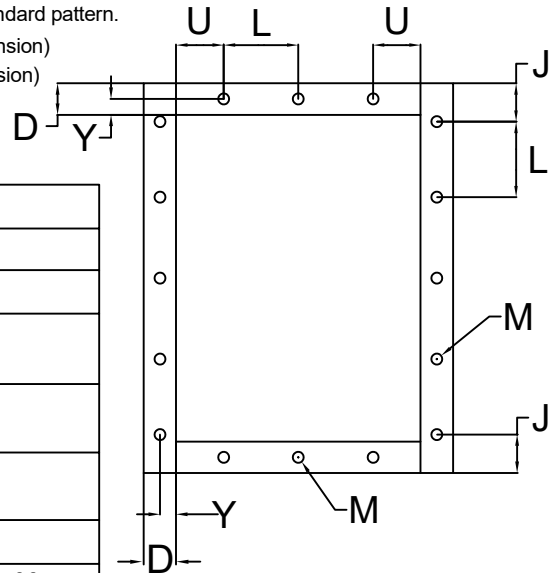
Optional- United Enertech recommended standard pattern.

7/16" [11.11mm] dia. holes (M dimension)
Spaced 6" [152.4mm] C-C (L dimension)

Web (C Dim): Standard- 10" [254mm]

Optional- 8" - 12"
[203.2-304.8mm]

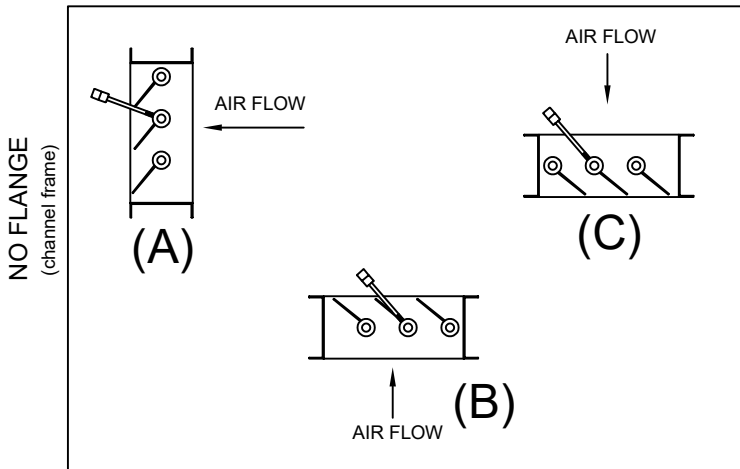
Optional- Customer may specify within
limits shown in table below.

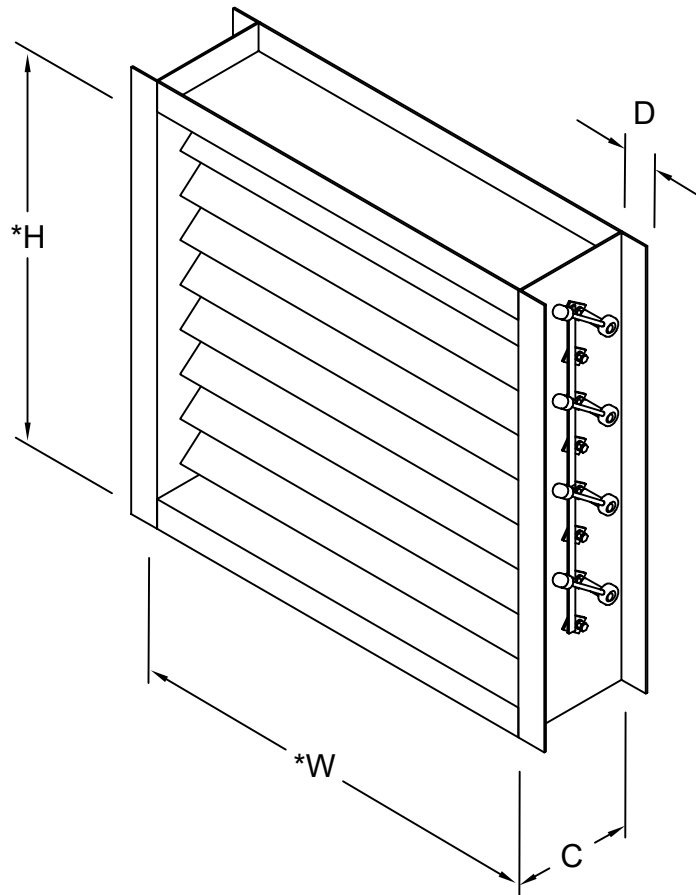


Dim.	Standard (Min./Max)	Description
J	(D/2 min.)	First/Last Space in Jamb
F	(1 min.)	No. of holes in Jamb
L	6" (2"/12") [152.4] [50.8/304.8]	Hole Spacing
M	7/16" (1/4"/11/16") [11.11] [6.35/279.4/406.4]	Mounting hole Diameter
U	(3/4" min.) [19.05]	First/Last Space in Head/Sill
V	(1 min.)	No. of holes in Head/Sill
Y	D/2M (3/4"/D-3/4") [19.05]	Centerline of bolt hole from inside edge of frame

ICB-800 AIR FLOW ARRANGEMENTS

Standard counter weights at jamb
(assist to close)





SPECIFICATIONS:

Industrial grade 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. galvanized steel channel frame with 8" [203.2mm] minimum depth and 2" [50.8mm] flanges; .125" [3.175mm] thick extruded aluminum blades, 1/2" [12.7mm] cast aluminum axles turning in stainless steel sleeve bearings; and external (out of the airstream). Damper manufacturer's printed application and performance data including pressures to 8-1/2" [215.9mm] w.g. velocities to 5000 fpm and temperatures to 180°F [82.2°C]. Basis of design is United Enertech Model ICB-800.

DISCLAIMER:

When used in fan discharge applications, the damper should be installed at LEAST $\frac{1}{2}$ the fan diameter away from the fan to mitigate premature product wear. Consult the factory for custom options to accommodate for damper installation within the suggested fan proximity.

