

Application and Design

The ES-40 series is a horizontally mounted backdraft damper that is designed to allow vertical airflow down and prevent reverse airflow. The damper is opened by air pressure differential and closed by gravity. Standard models include adjustable counterbalance weights to assist closing.

Ratings (See page 2 for specific limitations)

Pressure: 2.5 in. wg (622 Pa) - differential pressure

Velocity: 2000 fpm (10.2 m/s)

Temperature: 180°F (82°C)

Standard Construction

Frame: 6063T5 extruded aluminum
(0.063 in. [1.6mm] thickness)

Blades: 6063T5 extruded aluminum.
(0.050 in. [1.3mm] thickness)

Axle Bearings: Synthetic polycarbonate sleeve type

Linkage: 1/8 in. (3mm) aluminum

Blade Seals: Vinyl

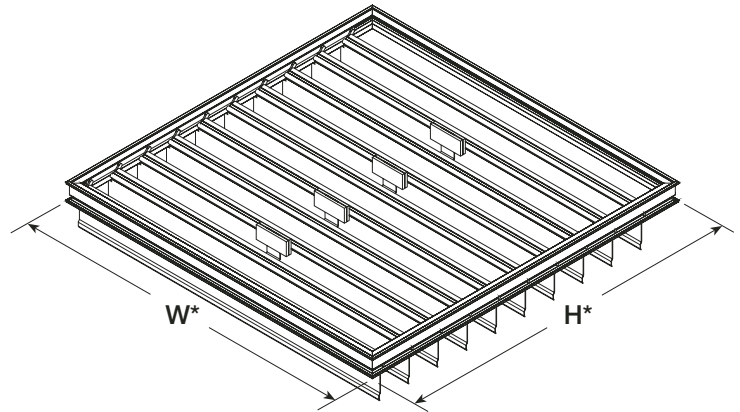
Size Limitations

Minimum Size: 6 in. W x 8 in. H
(152mm x 203mm)

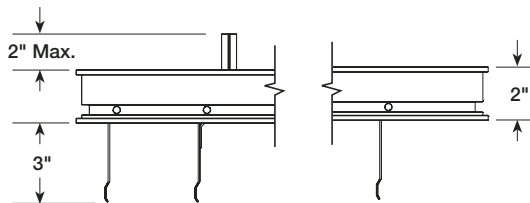
Maximum Size: 40 in. W x 52 in. H
(1016mm x 1321mm)

Options and Accessories

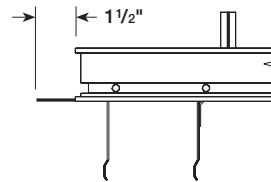
- 1 1/2 in. (38mm) flange on discharge: ES-41
- 1 1/2 in. (38mm) flange on intake: ES-42
- Pull Chain Actuator
- Wing Nut Actuator



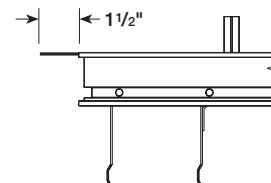
*W & H dimensions furnished approximately 1/4 in. (6mm) under size.



ES-40
No Flange



ES-41
Flange On Discharge



ES-42
Flange On Intake

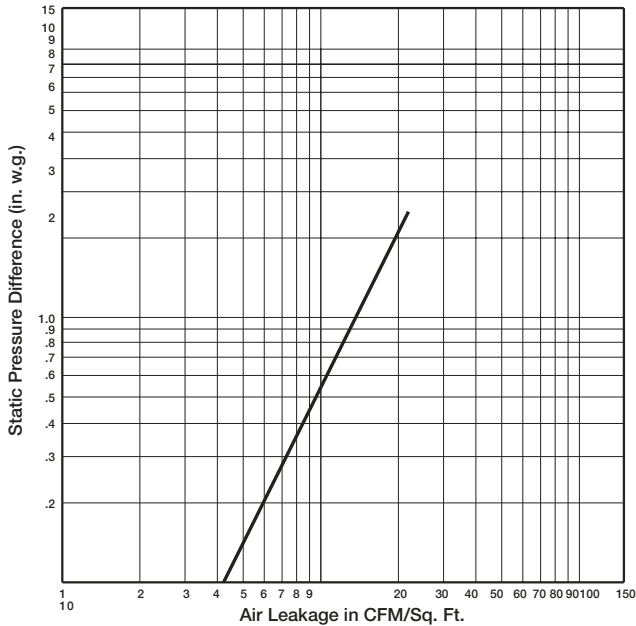
Leakage

Leakage testing was conducted in accordance with AMCA Standard 500 and is expressed as CFM per sq. ft. of damper face area. All data has been corrected to represent standard air at 0.075 lb/ft³ (1.201 kg/m³).

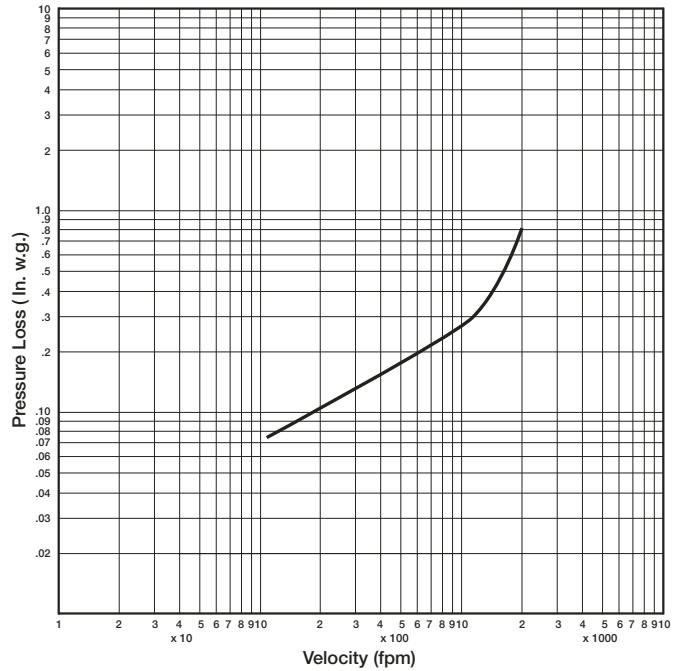
Pressure Drop

Performance data results from testing a 36" x 36" damper in accordance with AMCA Standard 500 using Figure 5.7A (no duct either side). All data has been corrected to represent standard air at 0.075 lb/ft³ (1.201 kg/m³).

Leakage
36" x 36" Damper



Pressure Drop
36" x 36" Damper



Operational Data	ΔP in. wg (Pa)	Velocity fpm (m/s)
Blades Start to Open	0.075 (18.7)	110 (.56)
Blades Fully Open	0.30 (74.7)	1150 (5.8)

Specifications

Backdraft dampers meeting the following specifications shall be furnished and installed where shown on plans and/or as described in schedules. Dampers shall consist of: 6063T5 extruded aluminum channel frame (0.063 in. [1.6mm] thick) with 2 in. (51mm) depth; blades from 0.050 in. (1.3mm) 6063T5 extruded aluminum; synthetic polycarbonate axle bearings; damper shall be equipped with extruded vinyl blade seals; and internal 1/8 in. (3mm) aluminum linkage. 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 2.5 in. wg (623 Pa), velocities to 2000 fpm (10.2m/s) and temperatures to 180°F (82°C). Testing and ratings to be in accordance with AMCA Standard 500.

Basis of design is Greenheck model ES-40.