

### Application and Design

The WD-400 series are non-motorized backdraft dampers which may be mounted either vertically for intake air or mounted horizontally to allow vertical airflow down and prevent reverse airflow. The dampers are opened by air pressure differential and closed by springs. Optional motor packs are not available.

### Ratings (See page 2 for specific limitations)

**Pressure:** 2.0 in. wg - differential pressure.

**Velocity:** 2500 fpm.

**Temperature:** 180°F.

### Standard Construction

**Frame:** 18 ga. galvanized steel.

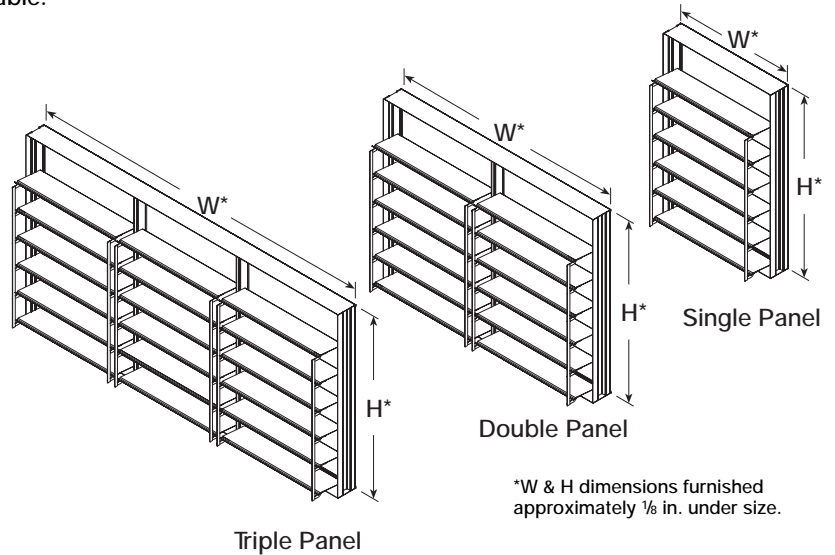
**Blades:** 0.025 in. aluminum.

**Axles:** 3/16 in. dia. zinc plated steel rod, full length.

**Bearings:** Synthetic (acetal).

**Linkage:** 0.064 in. 6061T6 aluminum tie bar.

**Blade Seals:** Vinyl.



### Size Limitations (see pages 3 & 4 for specific limitations)

#### Minimum Panel Size

8 in. W x 8 in. H

#### Maximum Panel Size

Single Panel: 31 in. W x 74 in. H

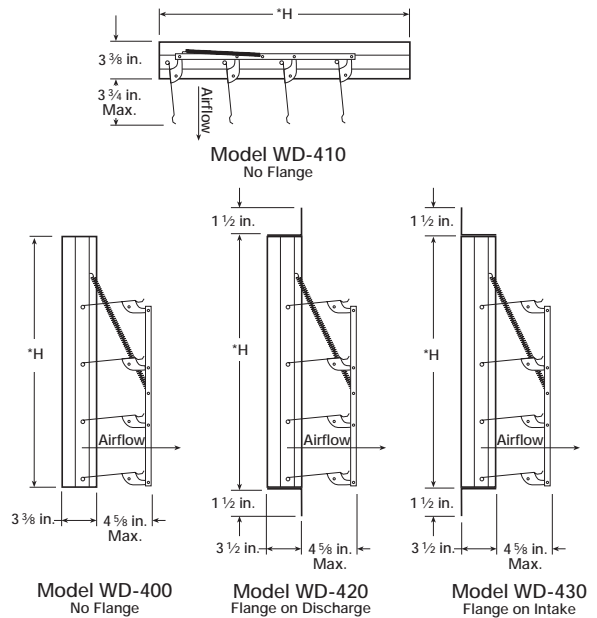
Double Panel (WD-400/410): 50 in. W x 74 in. H

Double Panel (WD-420/430): 63 in. W x 74 in. H

Triple Panel (WD-420/430): 74 in. W x 74 in. H

### Options and Accessories (at additional cost)

- 1 1/2 in. flange on discharge: WD-420
- 1 1/2 in. flange on intake: WD-430
- Aluminum Frame: WD-401/411/421/431
- Stainless Steel Axles



Quantity	Model	Size		
		W Width	H Height	
Project		Location		
Contractor		Design Specifier		

## Pressure Drop

Performance data results from testing a 36 in. x 36 in. damper in accordance with AMCA Standard 500 using Figure 5.3 for the WD-400 and Figure 5.7A for the WD-410. All data has been corrected to represent standard air at 0.075 lb/ft<sup>3</sup>.

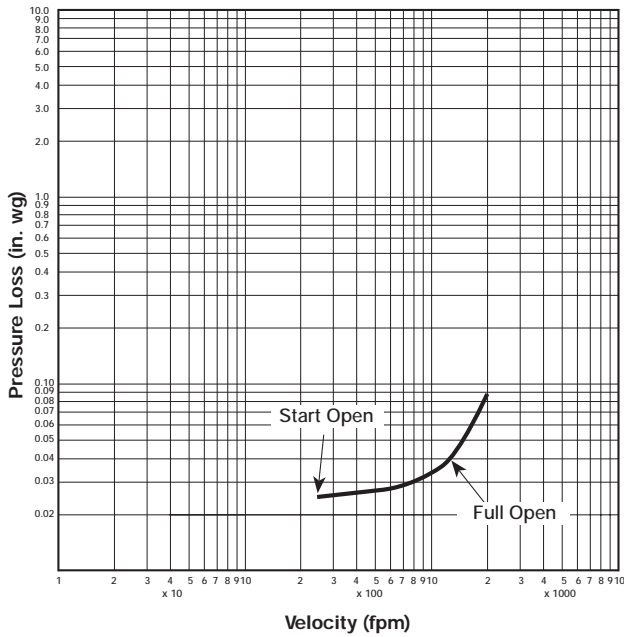
### WD-400

Operational Data	$\Delta P$ in. wg	Velocity fpm
Blades Start to Open	0.026	250
Blades Fully Open	0.04	1200

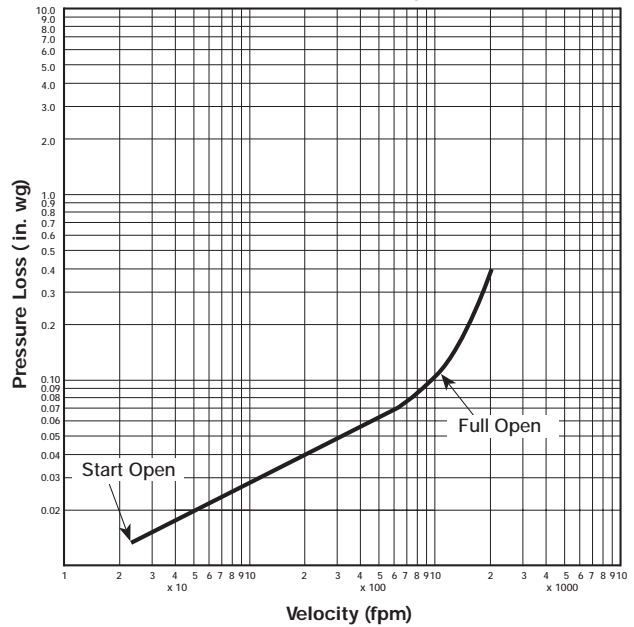
### WD-410

Operational Data	$\Delta P$ in. wg	Velocity fpm
Blades Start to Open	0.014	22
Blades Fully Open	0.12	1000

**Pressure Drop**  
36 in. x 36 in. Damper



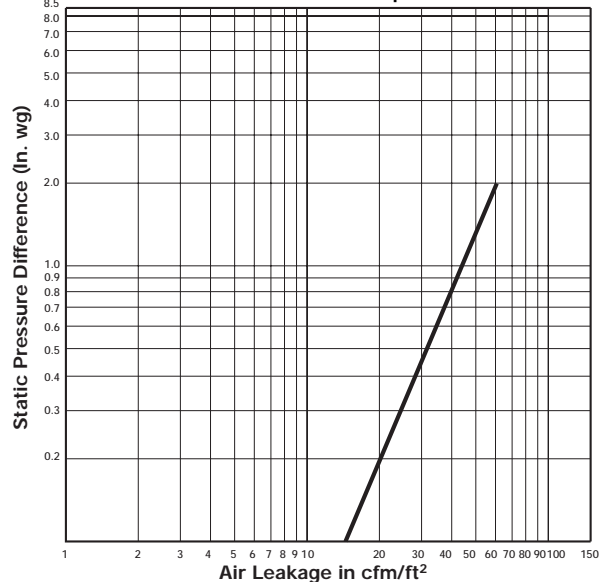
**Pressure Drop**  
36 in. x 36 in. Damper



## Leakage







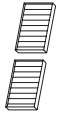



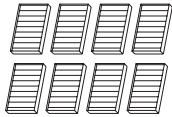

Leakage testing was conducted in accordance with AMCA Standard 500 and is expressed as cfm/ft<sup>2</sup> of damper face area. All data has been corrected to represent standard air at 0.075 lb/ft<sup>3</sup>.

**Leakage**  
36 in. x 36 in. Damper










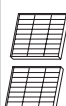

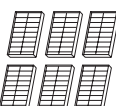
# WD-400/410 SELECTION

- Multiple section dampers shown below are supplied as equal size sections. Any damper that has multiple sections, **both** vertically and horizontally, will require field assembly and will require additional reinforcement (not supplied by Greenheck) to support the assembly. These larger dampers must have the additional reinforcement to give them structural stability.
- Please note that the width dimension is **always** taken as being parallel to the length of the blades.

		Width						
		8	32	50	64	100	128	150
Height	8 Up To 74	8 Up To 32 Single Panel One Section 	32 Up Thru 50 Double Panel One Section 	Above 50 Up To 64 Single Panel Two Section 	64 Up Thru 100 Double Panel Two Section 	Above 100 Up To 128 Single Panel Four Section 	128 Up To 150 Double Panel Three Section 	
	74 Up To 148	Single Panel Two Section 	Double Panel Two Section 	Single Panel Four Section 	Double Panel Four Section 	Single Panel Eight Section 	Double Panel Six Section 	

Note: A 26 in. x 26 in. and a 30 in. x 30 in. WD-410 will be supplied as a Double Panel, One Section damper.

- Multiple section dampers shown below are supplied as equal size sections. Any damper that has multiple sections, **both** vertically and horizontally, will require field assembly and will require additional reinforcement (not supplied by Greenheck) to support the assembly. These larger dampers must have the additional reinforcement to give them structural stability.
- Please note that the width dimension is **always** taken as being parallel to the length of the blades.

		Width					
		8	32	64	74	128	148
Height	8 Up Thru 74	8 Up To 32 Single Panel One Section 	32 Up To 64 Double Panel One Section 	64 Up Thru 74 Triple Panel One Section 	Above 74 Up To 128 Double Panel Two Section 	128 Up To 148 Double Panel Three Section 	
	Above 74 Thru 148	Single Panel Two Section 	Double Panel Two Section 	Triple Panel Two Section 	Double Panel Four Section 	Double Panel Six Section 	

## 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: 18 ga. galvanized steel frame with 3 1/2 in. depth; blades from 0.025 in. roll-formed aluminum; 3/16 in. dia. plated steel, full length axles turning in acetal bearings; damper shall be equipped with extruded vinyl blade seals; and internal 0.064 in. aluminum tie bar (on-blade) with spring closure. 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 2.0 in. wg, velocities to 2500 fpm and temperatures to 180°F. Testing and ratings to be in accordance with AMCA Standard 500. Basis of design is Greenheck model WD-400.