

### 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 (498 Pa) - differential pressure

**Velocity:** 2500 fpm (13 m/s)

**Temperature:** 180°F (82°C)

### Standard Construction

**Frame:** 18 ga. (1.3mm) galvanized steel

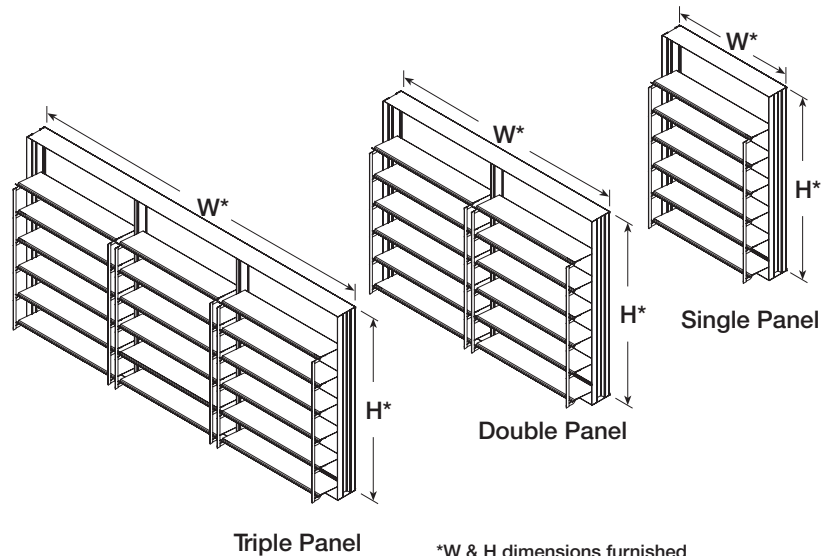
**Blades:** 0.025 in. (0.64mm) aluminum

**Axles:** 3/16 in. (4.8mm) dia. zinc plated steel rod, full length

**Bearings:** Synthetic (acetal)

**Linkage:** 0.064 in. (1.6mm) 6061T6 aluminum tie bar

**Blade Seals:** Vinyl



\*W & H dimensions furnished approximately 1/8 in. (3mm) under size.

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

#### Minimum Panel Size

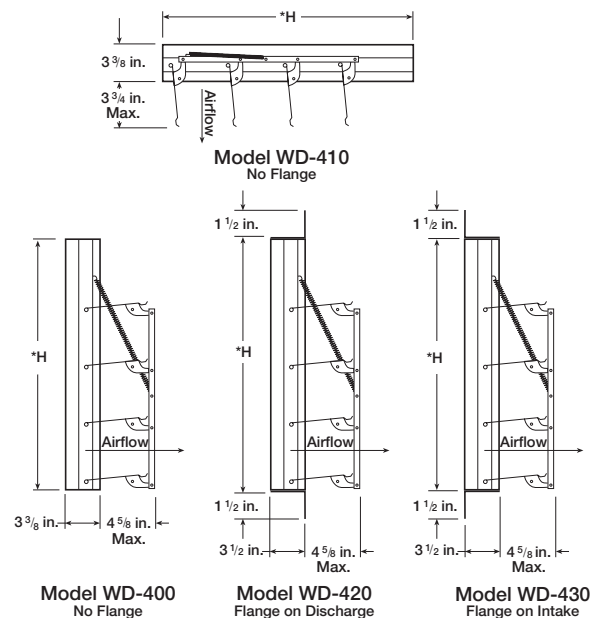
8 in. W x 8 in. H  
(203mm x 203mm)

#### Maximum Panel Size

Single Panel:	31 in. W x 74 in. H (787mm x 1880mm)
Double Panel (WD-400/410):	50 in. W x 74 in. H (1270mm x 1880mm)
Double Panel (WD-420/430):	63 in. W x 74 in. H (1600mm x 1880mm)
Triple Panel (WD-420/430):	74 in. W x 74 in. H (1880mm x 1880mm)

### Options and Accessories (at additional cost)

- 1 1/2 in. (38mm) flange on discharge: WD-420
- 1 1/2 in. (38mm) flange on intake: WD-430
- Stainless Steel Axles



## Pressure Drop

Performance data results from testing a 36 in. x 36 in. (914mm x 914mm) damper in accordance with AMCA Standard 500-D 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> (1.201 kg/m<sup>3</sup>).

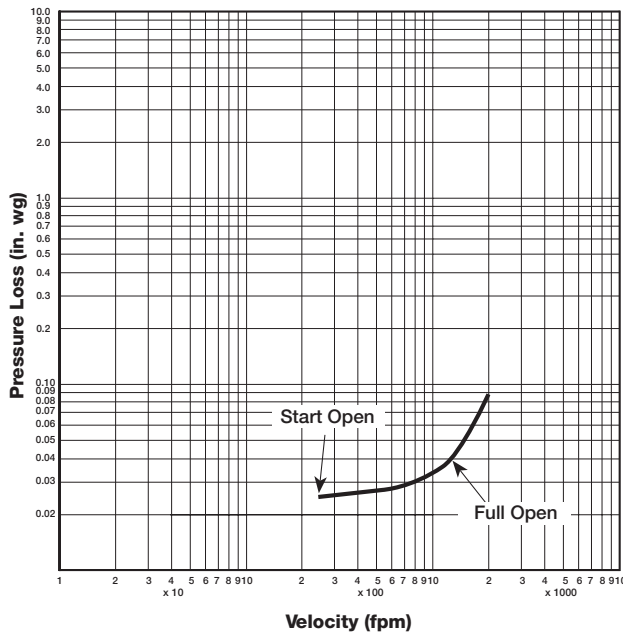
### WD-400

Operational Data	$\Delta P$ in. wg (Pa)	Velocity fpm (m/s)
Blades Start to Open	0.026 (6.5)	250 (1.3)
Blades Fully Open	0.04 (10)	1200 (6.1)

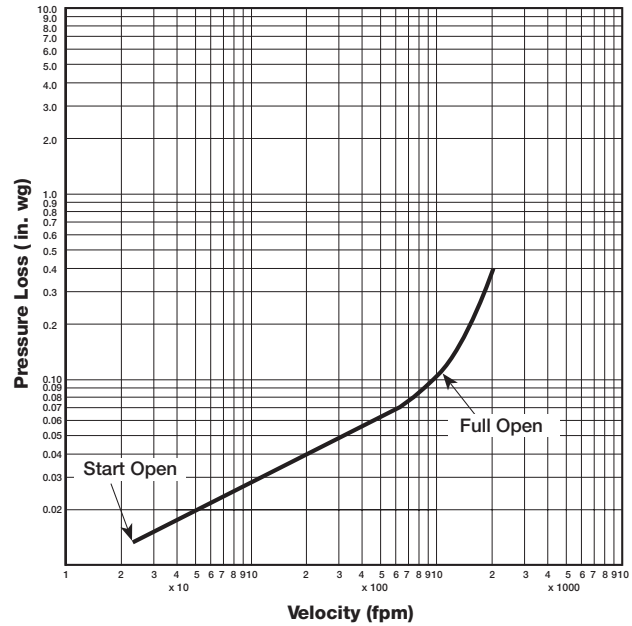
### WD-410

Operational Data	$\Delta P$ in. wg (Pa)	Velocity fpm (m/s)
Blades Start to Open	0.014 (3.5)	22 (0.1)
Blades Fully Open	0.12 (30 Pa)	1000 (5.1)

**Pressure Drop**  
36 in. x 36 in. (914mm x 914mm) Damper



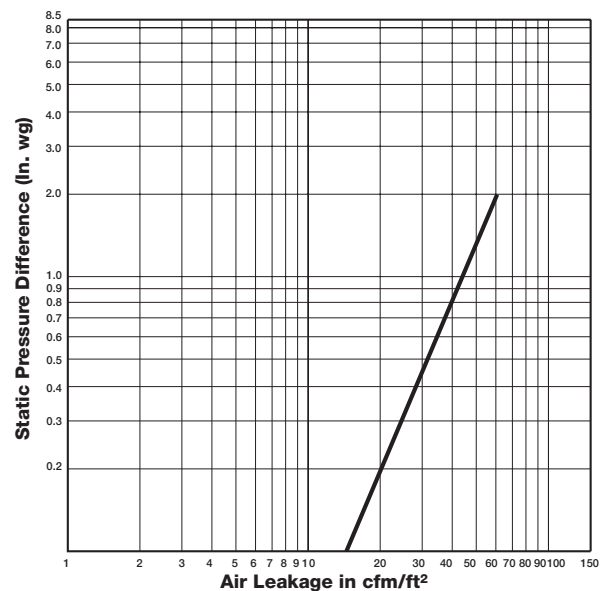
**Pressure Drop**  
36 in. x 36 in. (914mm x 914mm) Damper



## Leakage








































Leakage testing was conducted in accordance with AMCA Standard 500-D 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> (1.201 kg/m<sup>3</sup>).

**Leakage**  
36 in. x 36 in. (914mm x 914mm) Damper



# WD-400/410 SELECTION








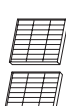

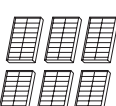
- Multiple section dampers shown below are supplied as equal size sections. Any damper that has multiple sections, both vertically and horizontally, will require field assembly and will require additional reinforcement (not supplied by Greenheck) to support the assembly. These larger dampers must have 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
		8 Up To 32	32 Up Thru 50	Above 50 Up To 64	64 Up Thru 100	Above 100 Up To 128	128 Up To 150	
Height	8	Single Panel One Section 	Double Panel One Section 	Single Panel Two Section  	Double Panel Two Section  	Single Panel Four Section    	Double Panel Three Section   	
	74	Single Panel Two Section  	Double Panel Two Section  	Single Panel Four Section    	Double Panel Four Section    	Single Panel Eight Section        	Double Panel Six Section      	
	148							

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.

\*Width and height given in inches.

- 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 	

\*Width and height given in inches.

## 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. (1.3mm) galvanized steel frame with 3 1/2 in. (89mm) depth; blades from 0.025 in. (.64mm) roll-formed aluminum; 3/16 in. (4.8mm) dia. plated steel, full length axles turning in acetal bearings; damper shall be equipped with extruded vinyl blade seals; and internal 0.064 in. (1.6mm) 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 (498 Pa), velocities to 2500 fpm (13m/s) and temperatures to 180°F (82°C). Testing and ratings to be in accordance with AMCA Standard 500-D. Basis of design is Greenheck model WD-400.



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