

## Backdraft Damper Vertical Mount - Horizontal Airflow

### Application and Design

The WD-300 series dampers are designed to prevent reverse airflow in horizontal exhaust applications. Featuring a pressure sensitive blade design, the WD-300 series open and remain open under low velocity conditions. The dampers are opened by air pressure differential and closed by gravity. Optional motor pack converts the dampers to motorized operation.

### 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.

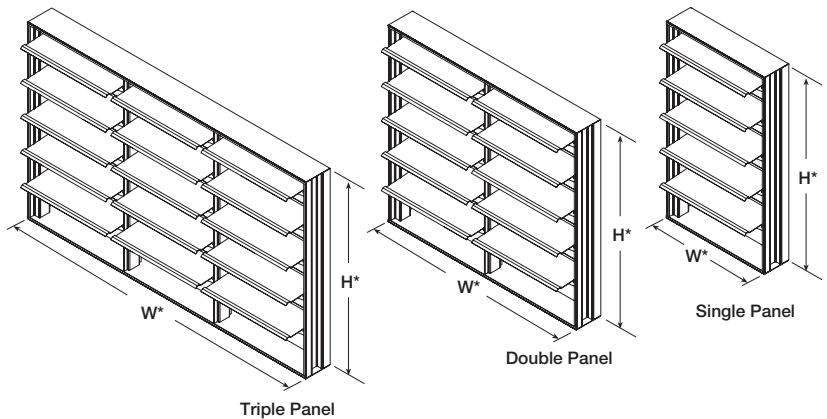
**Blades:** 0.025 in. (0.64mm) roll-formed aluminum (0.032 in. [.8mm] roll-formed aluminum for Triple Panel WD-300)

**Axles:** 3/16 in. (4.8mm) dia. zinc plated steel pin, on blade ends

**Bearings:** Synthetic (acetal) sleeve

**Linkage:** 20 ga. (1mm) galvanized steel

**Blade Seals:** Vinyl



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

### Size Limitations (see page 4 & 6 for specific limitations)

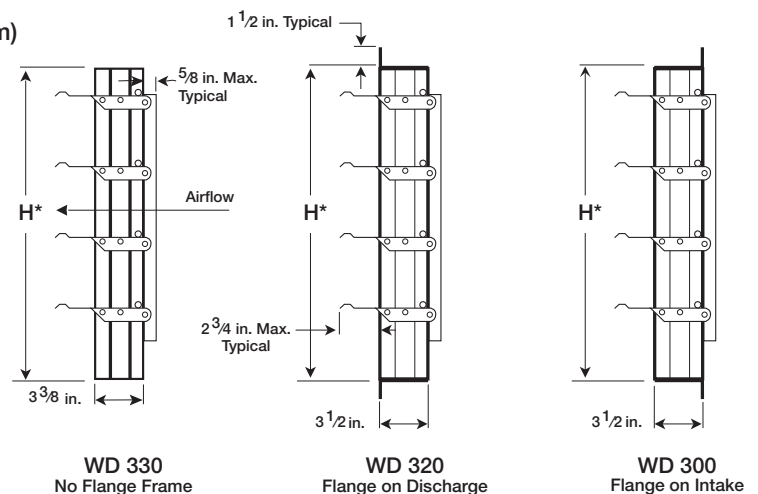
**Minimum Panel Size** 6 in. W x 6 in. H  
(152mm x 152mm)

**Maximum Panel Size**

Single Panel (WD-300/320/330):	31 in. W x 74 in. H (787mm x 1880mm)
Double Panel (WD-300/320):	49 in. W x 74 in. H (1245mm x 1880mm)
Double Panel (WD-330):	50 in. W x 74 in. H (1270mm x 1880mm)
Triple Panel (WD-300/320):	74 in. W x 74 in. H (1880mm x 1880mm)

### Options and Accessories (at additional cost)

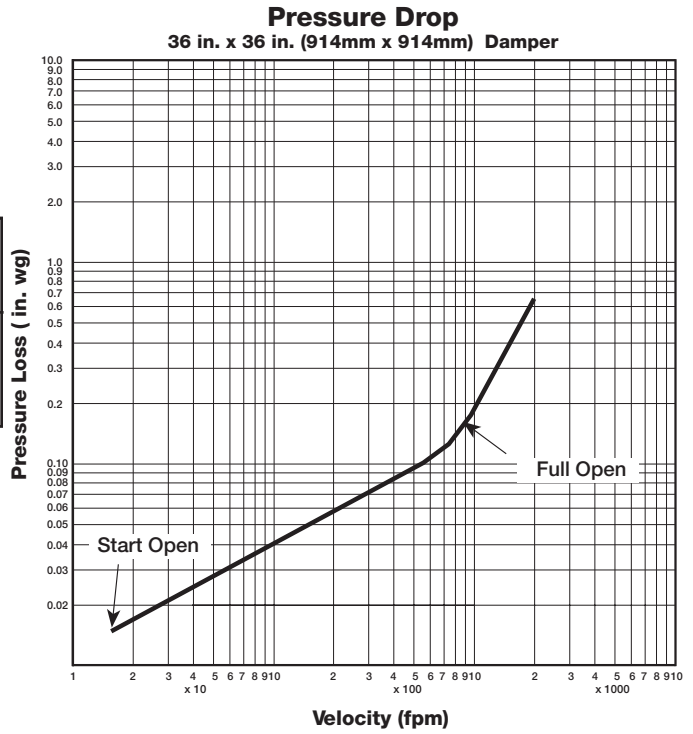
- 1 1/2 in. (38mm) flange on intake: WD-300
- 1 1/2 in. (38mm) flange on discharge: WD-320
- End Switch Kit (See page 8): Model #851038
- Stainless Steel bearings
- Stainless Steel Axles



## Pressure Drop

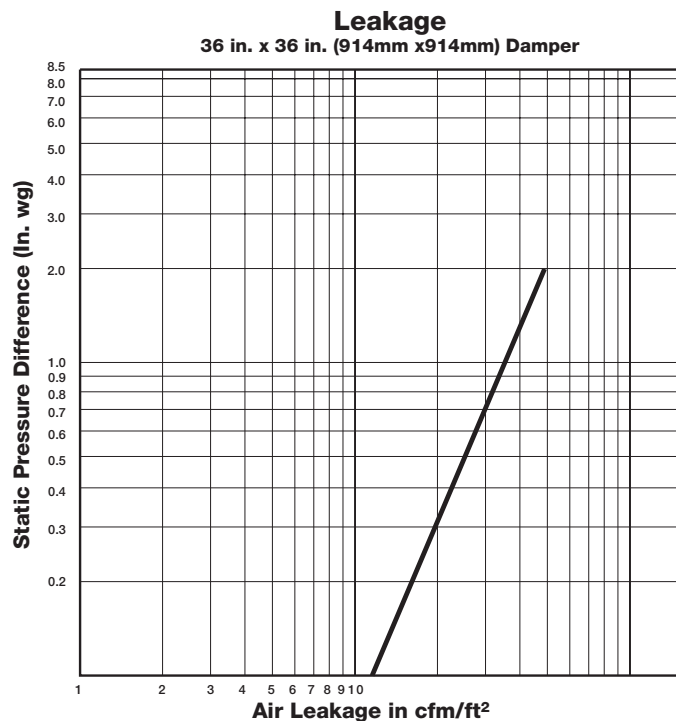
Performance data results from testing a 36 in. x 36 in. (914mm x 914mm) damper in accordance with AMCA Standard 500-D using Figure 5.5. All data has been corrected to represent standard air at 0.075 lb/ft<sup>3</sup> (1.201 kg/m<sup>3</sup>).

Operational Data		$\Delta P$ in. wg (Pa)	Velocity fpm (.07 m/s)
Blades Start Open	non-ducted	0.015 (3.7)	15 (.07)
Blades Fully Open	non-ducted	0.15 (37)	900 (4.5)



## 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>).



# MOTOR PACKS

## MP-310 Motor Pack (Optional)

Series MP-310 motor pack may be field installed to convert the WD-300 series backdraft damper to motorized operation. Airflow direction should remain horizontal exhaust when this motorized version is applied. These versatile motor packs feature power opening with spring return. The springs also provide damper closure in the event of electrical failure.

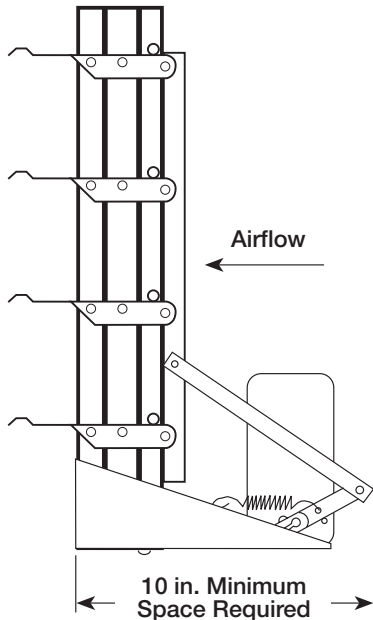
The MP-310 motor packs are available in voltages of 24, 120, 208, 220, 380, and 440. 575/600 volts may be used with any of the motor packs by way of a transformer (Greenheck Part #380711) and the appropriate 115 volt motor pack (MP-310). MP-310 series motor packs are U.L. Listed. **Please specify voltage when ordering.**

There is one motor pack available on the WD-300 series damper to accommodate for larger torque requirements. To determine the number of motor packs required per WD-300 or WD-320 damper, refer to the table on page 5. To determine the number of motor packs required per WD-330 damper, refer to the table on page 7. Oversized applications may require several dampers connected together for one opening.

MP-300 series motor packs are supplied with mounting hardware, assembly instructions and actuator arms for either single, double or triple panel installation.

Motor packs	24V (60 Hz)	440V (60 Hz)	120V (50/60 Hz)	208V (50/60 Hz)	220V (50/60 Hz)	24V (50 Hz)	380V (50 Hz)
Stall Amps	.740	.047	.110	.050	.062	.100	.098
Spec ID#	3753	3752	3751	3751	3751	2651-A	2663-C

## Motor Pack Dimensional Data








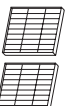

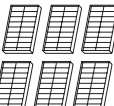


WD-300 series dampers are available with an optional motor pack (MP-310). The diagram to the left illustrates the required clearance needed for proper operation of a mounted motor pack.

WD-300 series backdraft damper with optional motorpack

# WD-300/320 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.
- **Note:** The type and number of motor packs required can be found on page 5.

		Width					
		6	32	50	74	100	148
		6 Up To 32	32 Up To 50	50 Up Thru 74	Above 74 Up To 100	100 Up Thru 148	
Height	6	6 Up Thru 74 Single Panel One Section 	Double Panel One Section 	Triple Panel One Section 	Double Panel Two Section 	Double Panel Three Section 	
	74	Above 74 Thru 148 Single Panel Two Section 	Double Panel Two Section 	Triple Panel Two Section 	Double Panel Four Section 	Double Panel Six Section 	
		148					

\* Width and Height given in inches.

# MOTOR PACK SELECTION FOR WD-300/320







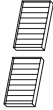

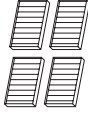

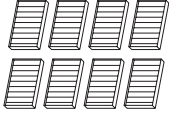

- The table below will allow you to determine the type and number of motor packs needed for a given size WD-300 or WD-320 backdraft damper.
- For further information on a particular motor pack, refer to page 3.

		Width			
		8	50	74	100
Height	8	8 Up To 50 (1) MP-310 Motor Pack	50 Up Thru 74 (2) MP-310 Motor Packs	Above 74 Up To 100	100 Up Thru 148 (3) MP-310 Motor Packs
	62	8 Up To 62 (1) MP-310 Motor Pack		(2) MP-310 Motor Packs	(3) MP-310 Motor Packs
	74	62 Up Thru 74 (2) MP-310 Motor Packs			(6) MP-310 Motor Packs
	124	Above 74 Up To 124 (2) MP-310 Motor Packs	(4) MP-310 Motor Packs		(6) MP-310 Motor Packs
148	124 Up Thru 148 (2) MP-310 Motor Packs		(4) MP-310 Motor Packs	(6) MP-310 Motor Packs	

\* Width and Height given in inches.

# WD-330 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.
- Note:** The type and number of motor packs required can be found on page 7.

		Width						
		6	32	50	64	100	128	150
		6 Up To 32	32 Up Thru 50	Above 50 Up To 64	64 Up Thru 100	Above 100 Up To 128	128 Up Thru 150	
Height	6	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							

\* Width and Height given in inches.

# MOTOR PACK SELECTION FOR WD-330

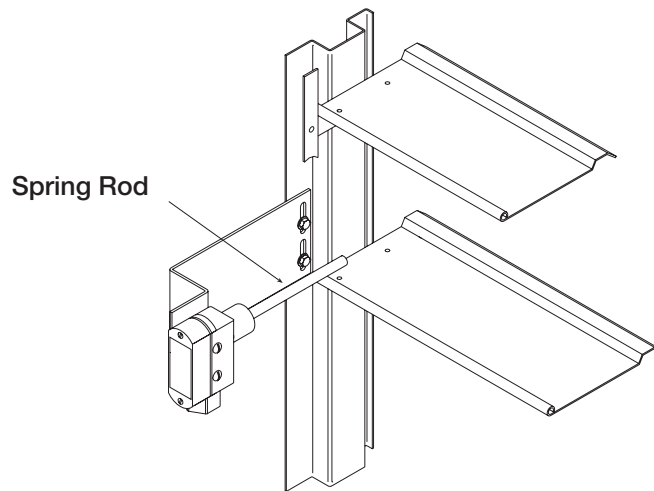
- The table below will allow you to determine the type and number of motor packs needed for a given size WD-330 backdraft damper.
- For further information on a particular motor pack, refer to page 3.

		Width				
		8	50	74	100	128
Height	8	8 Up Thru 50	Above 50 Thru 74	Above 74 Thru 100	Above 100 Up To 128	128 Up Thru 150
	62	(1) MP-310 Motor Pack	(2) MP-310 Motor Packs	(2) MP-310 Motor Packs	(4) MP-310 Motor Packs	(3) MP-310 Motor Packs
	74	(1) MP-310 Motor Pack	(2) MP-310 Motor Packs	(2) MP-310 Motor Packs	(4) MP-310 Motor Packs	(3) MP-310 Motor Packs
	124	(2) MP-310 Motor Packs	(4) MP-310 Motor Packs	(4) MP-310 Motor Packs	(8) MP-310 Motor Packs	(6) MP-310 Motor Packs
	148	(2) MP-310 Motor Packs	(4) MP-310 Motor Packs	(4) MP-310 Motor Packs	(8) MP-310 Motor Packs	(6) MP-310 Motor Packs

\* Width and Height given in inches.

## End Switch Kit (Optional)

An end switch is a control device used in conjunction with a motor pack (the end switch is usually wired to a fan and/or to a light serving as an open/not open indicator). When the damper is powered open, the blades of the damper hit the spring rod of the end switch which in turn makes a connection allowing power to flow to the fan and/or light. This set up would be used when it is desirable to ensure that the damper is fully open before the fan starts. Otherwise, with the damper blades not fully open, the pressure and air velocity produced by the fan may damage the blades, making the damper inoperable.



Vertically Mounted Damper

## 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.-0.032 in. (.6mm - .8mm) roll-formed aluminum; 3/16 in. (4.8mm) dia. plated steel stub axles turning in acetal bearings; damper shall be equipped with extruded vinyl blade seals; and internal 20 ga. (1mm) galvanized steel tie bar (on-blade).

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 in. wg (498 Pa), velocities to 2500 fpm (13 m/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-300.



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