

### Vertical Mount - Horizontal Airflow

### Application and Design

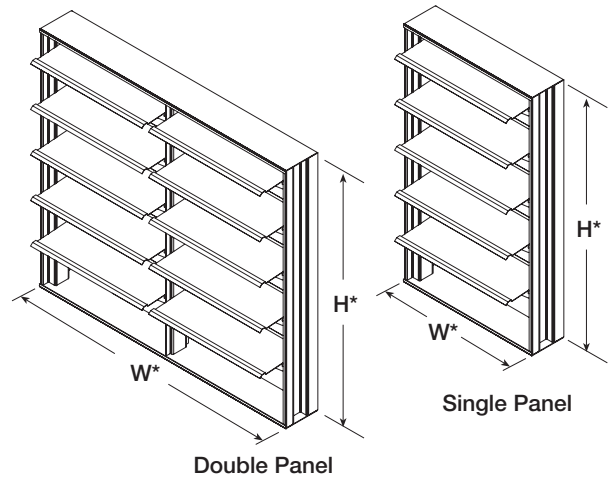
The WD-300 series dampers are designed to prevent reverse airflow in horizontal exhaust applications. The WD-300 features a pressure sensitive blade design that opens and remains open under low velocity conditions. The dampers are opened by air pressure differential and closed by gravity. Optional motor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

### Ratings

Pressure: 2 in. wg (.5 kPa) - differential pressure

Velocity: 2500 fpm (13 m/s)

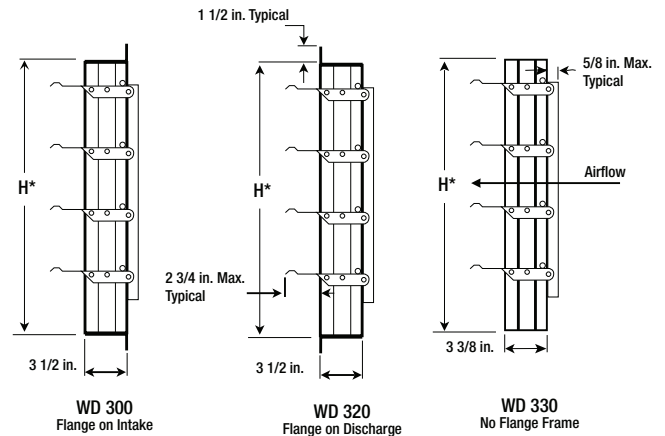
Temperature: 180°F (82°C)



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

Construction	Standard	Optional
Frame Material	Galvanized steel	-
Frame Thickness	18 ga. (1.3mm)	-
Frame Type	No flange (WD-330)	-
	Flange on intake (WD-300)	-
	Flange on discharge (WD-320)	-
Blade Material	Roll formed aluminum	-
Blade Thickness	0.025 in. (0.64mm) - 0.032 in. (0.8mm) for triple panel	-
Blade Seals	Vinyl	-
Axle	3/16 in. (4.8mm) dia. zinc plated steel pin on blade ends	304SS
Axle Bearings	Synthetic	304SS
Linkage Material	Galvanized Steel	-

### Frame Styles



### Size Limitations

W x H	Minimum Size	Maximum Size	
		Single Panel	Multiple Panels
<b>WD-300 &amp; WD-320</b>			
Inches	6 x 6	31 x 74	148 x 148
mm	152 x 152	787 x 1880	3759 x 3759
<b>WD-330</b>			
Inches	6 x 6	31 x 74	150 x 148
mm	152 x 152	787 x 1880	3810 x 3759

### Options

- End switch kit (part no. 851038)
- Motor packs (24V, 120V, 208-240V, 440V)

# Performance Data

# WD-300 Series

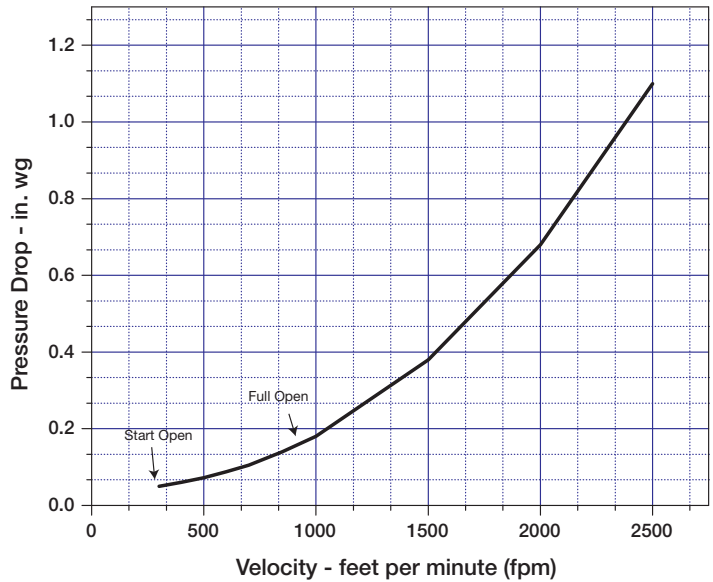
## Pressure Drop

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 (unducted). All data has been corrected to represent standard air at 0.075 lb/ft<sup>3</sup> (1.201 kg/m<sup>3</sup>).

## Pressure Drop

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

Operational Data		$\Delta P$ in. wg (kPa)	Velocity fpm (m/s)
Blades start to open	Non-ducted	0.05 (.012)	300 (1.5)
Blades fully open	Non-ducted	0.15 (.037)	900 (4.5)

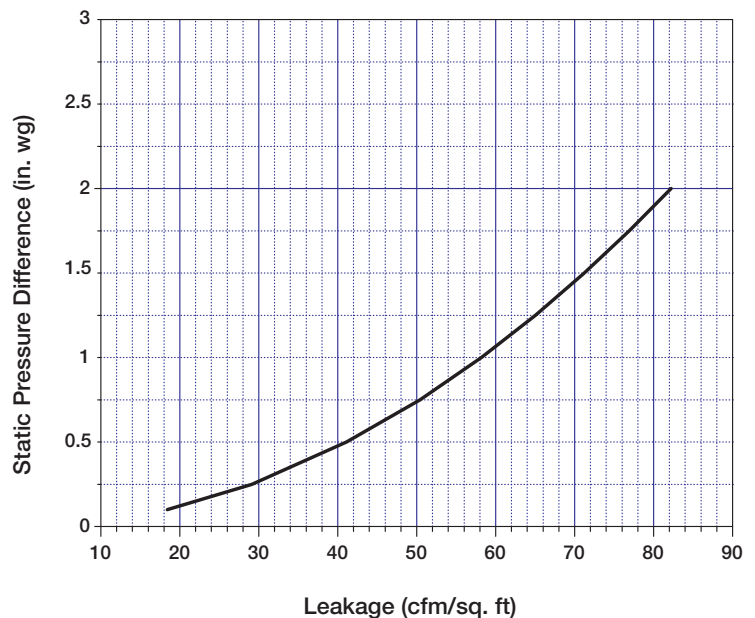


## Leakage

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

## Leakage

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



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.

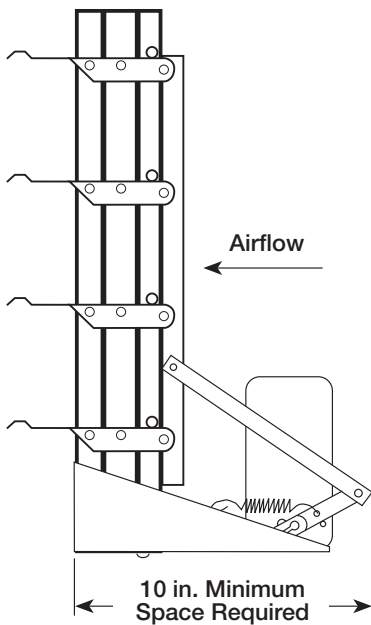
The MP-310 motor packs are available in voltages of 24, 120, 208, and 440. 575/600 volts may be used with any of the motor packs by way of a transformer (part no. 380711) and the appropriate 115 volt motor pack (MP-310). MP-310 series motor packs are UL listed. Please specify voltage when ordering.

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 (50/60 Hz)	440V (60Hz)	110V-120V (50/60Hz)	208V - 240V 50/60Hz
Stall Amps	.66	.041	.15	.07
Spec ID#	G24	G460	G110-240	G110-240

## Motor Pack Dimensional Data



WD-300 series backdraft damper with optional motorpack








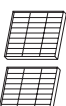

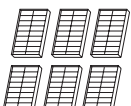
WD-300 series dampers are available with an optional motor pack (MP-310). The diagram to the left illustrates the required clearance needed for proper operation of a mounted motor pack.

# WD-300/320 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 factory) to support the assembly. These larger dampers must have the additional reinforcement to give them structural stability.

The width dimension is always 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
Height	6 6 Up Thru 74	6 Up To 32  Single Panel One Section  	32 Up To 50  Double Panel One Section  	50 Up Thru 74  Triple Panel One Section  	Above 74 Up To 100  Double Panel Two Section  	100 Up Thru 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.

# 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-300/320 backdraft damper. For further information on a particular motor pack, refer to page 3.

		Width		
		8	50	100
Height	8	>=8 and <50  (1) MP-310 Motor Pack	>=50 and <100  (2) MP-310 Motor Packs	>=100 and <=148  (3) MP-310 Motor Packs
	74	> 74 and <=148  (2) MP-310 Motor Packs	(4) MP-310 Motor Packs	(6) MP-310 Motor Packs
	148			








































\*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 factory) to support the assembly. These larger dampers must have the additional reinforcement to give them structural stability.

The width dimension is always 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
Height	6 6 Up Thru 74	6 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 Thru 150  Double Panel Three Section    	
	74 Above 74 Thru 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       	
	148							

\*Width and height given in inches.

# Motor Pack Selection for WD-330

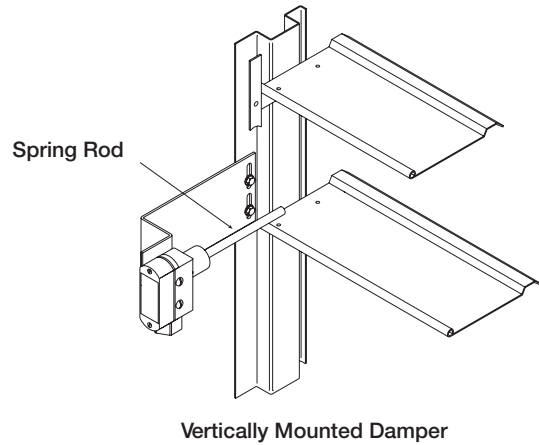
The table below will allow you to determine the type and number of motor packs needed for a given size WD-330 backdraft damper. For further information on a particular motor pack, refer to page 3.

		Width				
		8	50	100	128	150
Height	8	$\geq 8$ and $\leq 50$ (1) MP-310 Motor Pack	$> 50$ and $\leq 100$ (2) MP-310 Motor Packs	$> 100$ and $< 128$ (4) MP-310 Motor Packs	$\geq 128$ and $\leq 150$ (3) MP-310 Motor Packs	
	74	$> 74$ and $\leq 148$ (2) MP-310 Motor Packs	$> 74$ and $\leq 148$ (4) MP-310 Motor Packs	$> 74$ and $\leq 148$ (8) MP-310 Motor Packs	$> 74$ and $\leq 148$ (6) MP-310 Motor Packs	
		148				

\*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 are not fully open, the pressure and air velocity produced by the fan may damage the blades, making the damper inoperable.



## Specifications

Backdraft dampers meeting the following specifications shall be furnished and installed where shown on plans and/or 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 (.5 kPa), 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 model WD-300.