

## Application

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

### Velocity

2500 fpm (13 m/s)

### Pressure

2.0 in. wg (0.5 kPa) - differential pressure

### Temperature

180°F (82°C)

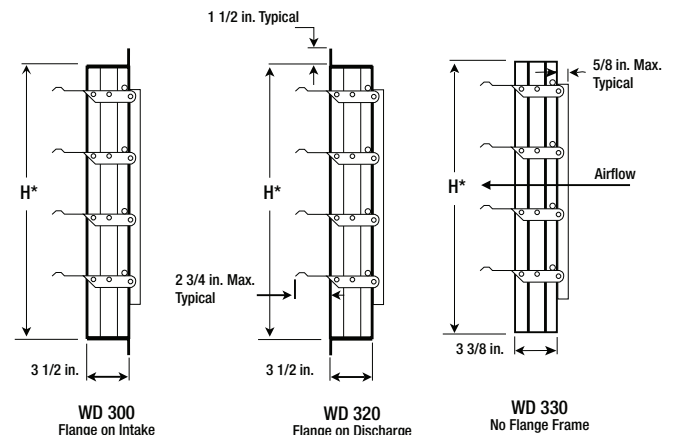


\* W & H dimensions of each section are furnished approximately 1/8 in. (3mm) undersize.

## Construction

|                  | Standard  |
|------------------|---|
| 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 |
| Axle Bearings    | Synthetic   |
| Linkage Material | Galvanized Steel  |

## Frame Styles



## Size Limitations

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

## Options

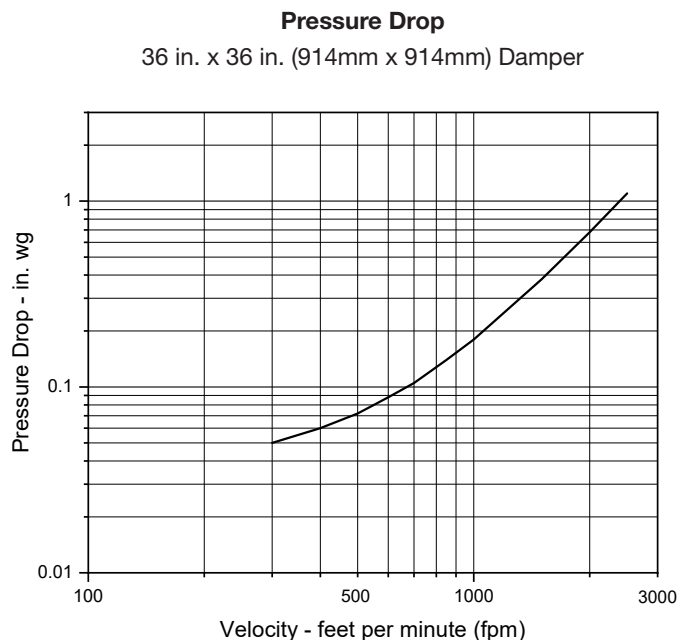
- End switch kit (part no. 851038)
- Motor packs (24V, 120V, 208-240V, 440V)

## Performance Data

### Pressure Drop

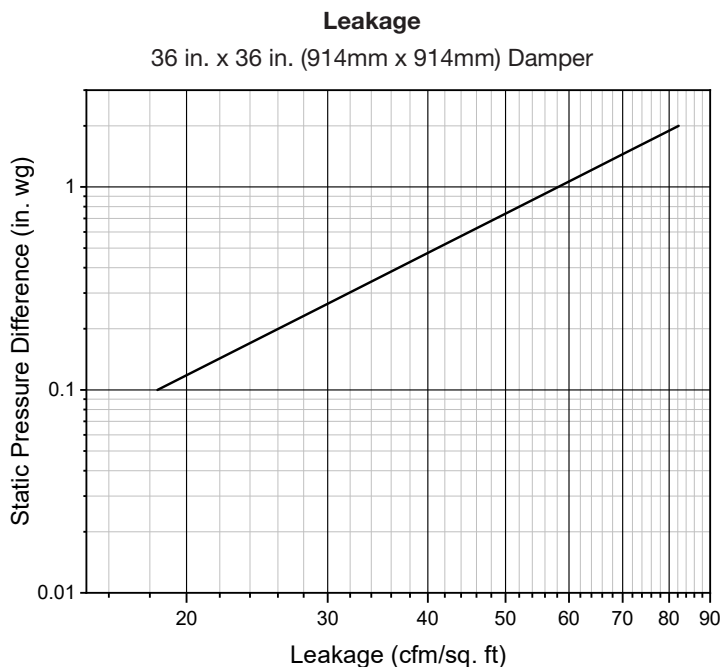
Performance data results from testing a 36 in. x 36 in. (914mm x 914mm) damper in accordance with AMCA Standard 500-D using Figure 5.5 (unducted). All data has been corrected to represent standard air at 0.075 lb/ft<sup>3</sup> (1.201 kg/m<sup>3</sup>).

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



# Motor Packs

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.

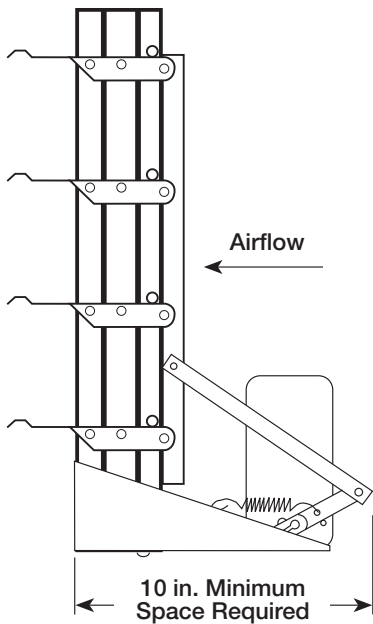
| MP-210/220A<br>Motor packs | 24V (50/60 Hz) | 110V-120V<br>(50/60Hz) | 208V - 240V<br>(50/60Hz) | 440V<br>(60Hz) |
|----------------------------|----------------|------------------------|--------------------------|----------------|
| Stall Amps                 | .66            | .15                    | .07                      | .041           |
| Spec ID#                   | G24            | G110-240               | G110-240                 | G460           |



[MP-310 INSTALLATION](#)

## 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.



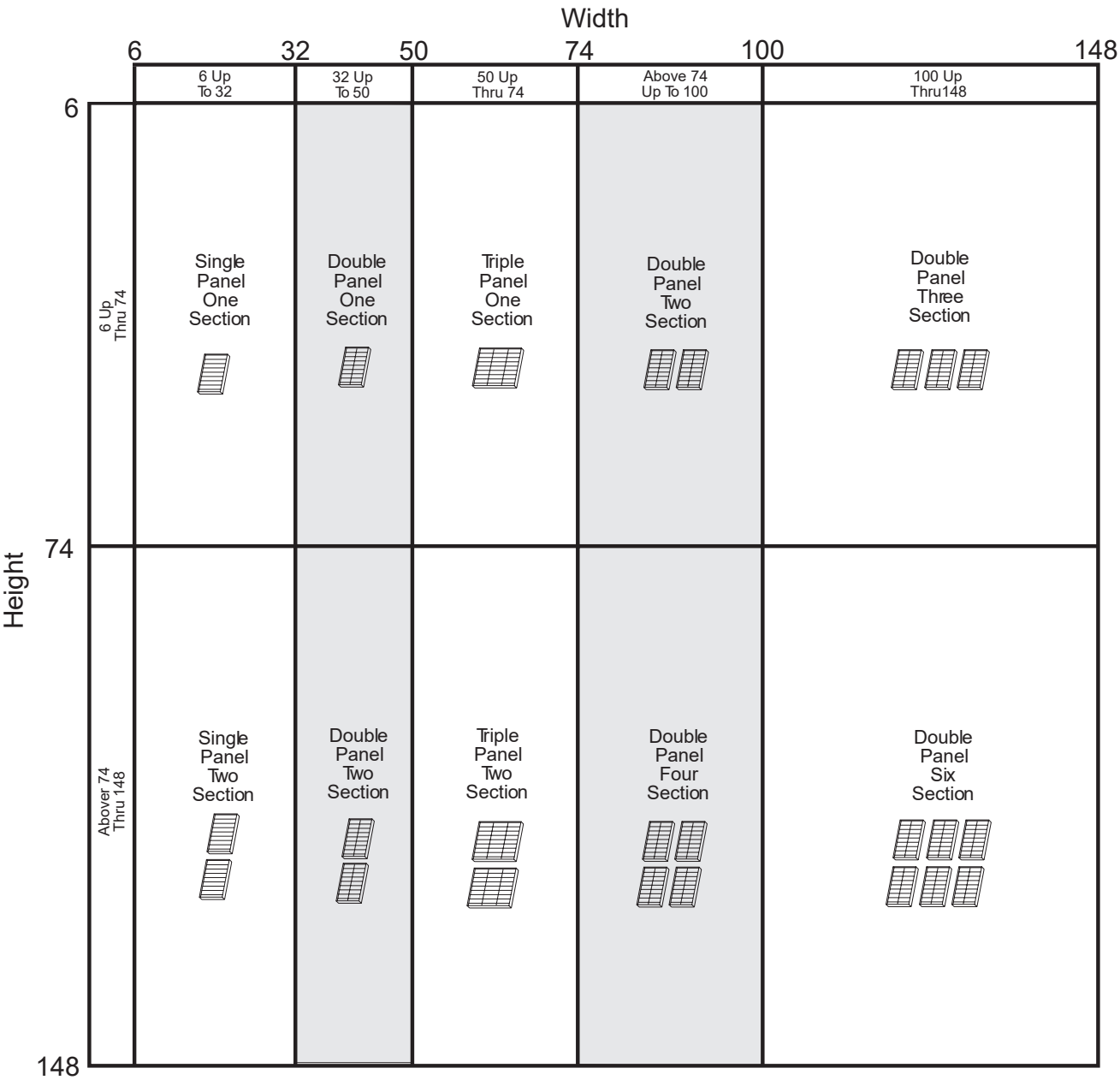
WD-300 series backdraft damper with optional motorpack

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.

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











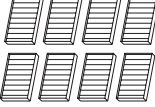

\*Width and height given in inches.

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 Greenheck) 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<br>To 32<br><br>Single Panel<br>One<br>Section<br><br>          | 32 Up<br>Thru 50<br><br>Double Panel<br>One<br>Section<br><br> | Above 50<br>Up To 64<br><br>Single Panel<br>Two<br>Section<br><br> | 64 Up<br>Thru 100<br><br>Double Panel<br>Two<br>Section<br><br> | Above 100<br>Up To 128<br><br>Single Panel<br>Four<br>Section<br><br> | 128 Up<br>Thru 150<br><br>Double Panel<br>Three<br>Section<br><br> |     |
|        | 74  | 6 Up<br>Thru 74   |   |   |  |  |   |     |
|        | 148 | Above 74<br>Thru 148<br><br>Single Panel<br>Two<br>Section<br><br> | Double Panel<br>Two<br>Section<br><br>                       | Single Panel<br>Four<br>Section<br><br>                          | Double Panel<br>Four<br>Section<br><br>                       | Single Panel<br>Eight<br>Section<br><br>                            | Double Panel<br>Six<br>Section<br><br>                           |     |

\*Width and height given in inches.

# Motor Pack Selection for WD-330

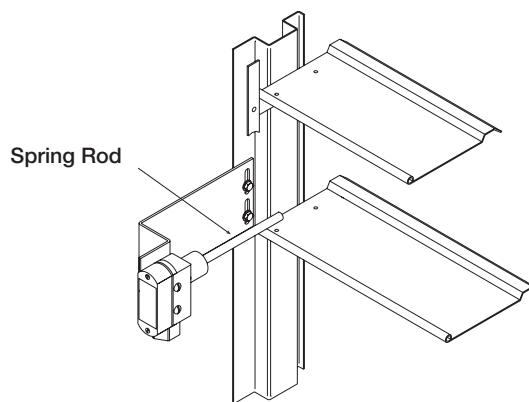
The table below will allow you to determine the type and number of motor packs needed for a given size WD-330 backdraft damper. For further information on a particular motor pack, refer to page 3.

|        |              | Width                    |                           |                           |                           |                           |
|--------|--------------|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|        |              | 6                        | 50                        | 100                       | 128                       | 150                       |
| Height | 6            | >=6 and <=50             | >50 and <=100             | >100 and <128             | >=128 and<=150            |                           |
|        | >=6 and <=74 | (1) MP-310<br>Motor Pack | (2) MP-310<br>Motor Packs | (4) MP-310<br>Motor Packs | (3) MP-310<br>Motor Packs |                           |
|        | 74           | >74 and <=148            | (2) MP-310<br>Motor Packs | (4) MP-310<br>Motor Packs | (8) MP-310<br>Motor Packs | (6) MP-310<br>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.



Vertically Mounted Damper



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