

AeroV Vertical Blade

HEAVY-DUTY BACKDRAFT DAMPER FOR FAN ARRAYS

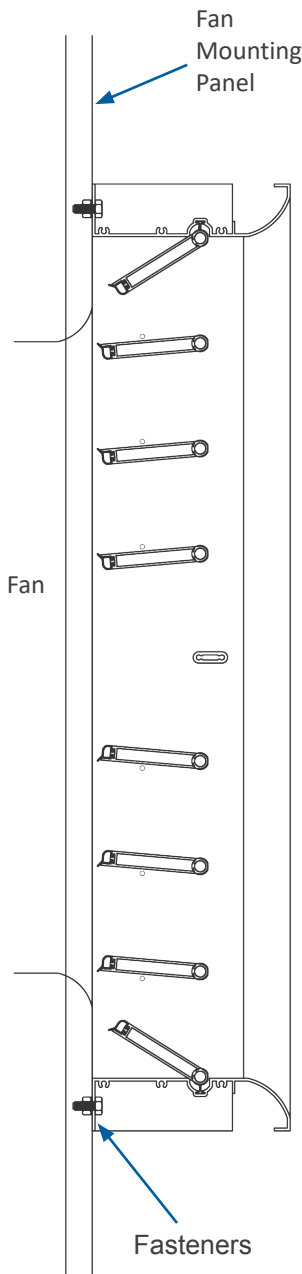
engineering data
and specifications



SUBMITTAL DATA | AeroV (Series 7400V)

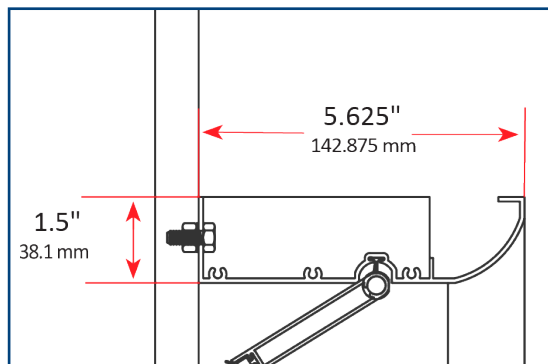
Vertical Blade Heavy-Duty No Linkage Backdraft Damper

Top Down Section View of Mounted AeroV Damper



1. Extruded aluminum (6063-T5) vertical blade backdraft damper frame is not less than 0.080" (2.03 mm) in thickness. Frame sides are a one-piece extrusion 5.625" (143 mm) deep x 1½" (38.1mm) wide. The Intake side of the frame has a 1½" (38.1mm) continuous radius for smooth airflow. The exiting side of the frame consist of a 1½" (38.1mm) mounting flange all the way around the perimeter. The frame is secured together with zinc plated screws.
2. Blades are extruded aluminum (6063-T5) air-foil shaped profiles not less than 0.060" (1.52 mm) in wall thickness. Blades do not protrude outside the outer perimeter of the frame. Blades are not connected together with linkage, thus they work independently for a near zero pressure drop and maintenance-free operation. Blades are designed to assist in directing air towards the fan's cone.
3. The blade design promotes self-closure from negative pressure or recirculating air. They will not automatically close under still airflow.
4. Blade and frame seals are extruded silicone, secured in an integral slot within the aluminum extrusions. Seals are mechanically fastened to prevent shrinkage and movement over the life of the damper.
5. Axles are composed of 0.33" (8.4 mm) extruded aluminum pivot points, rotating in a Celcon bearing for a quiet and maintenance-free operation.
6. Backdraft dampers are designed for operation in temperatures ranging from -40°F (-40°C) to 212°F (100°C).
7. Air leakage for a vertical backdraft damper, 24" x 24" (610 mm x 610mm) does not exceed 4.45 cfm/ft² (22.6 l/s/m²) against 1 in. w.g. (0.25 kPa) differential static pressure.
8. Backdraft dampers are custom manufactured to required size with 2" (50.8mm) increments beginning with 12" (305mm) and going to 48" (1219mm), without blanking off free area.
9. Backdraft dampers are only available in single section units.
10. Neoprene gasket, 1½" w x 1/8" thick (12.7 mm x 3.1 mm) is attached to the rear flange to aid in sealing the damper to the fan inlet pan.
11. Complete 7400V damper unit is 5.625" (143 mm) deep and does not require any additional stand-off brackets for mounting directly to the Fan Mounting Panel. One piece construction, no sections to assemble.
12. Most damper sizes capable of 12" w.g. (3 KPa) static pressure.
13. Optional Factory Mounting holes available.

OPTIONS: For each option listed, replace the lines above with their corresponding lines to the right (page 3).



SW - SALT WATER RESISTANCE OPTION:

1. Extruded aluminum (6063-T5) vertical blade backdraft damper frame is not less than 0.080" (2.03 mm) in thickness. Frame sides are a one-piece extrusion 5.625" (143 mm) deep x 1½" (38.1mm) wide. The Intake side of the frame has a 1½" (38.1mm) continuous radius for smooth airflow. The exiting side of the frame consist of a 1½" (38.1mm) mounting flange all the way around the perimeter. Aluminum frame is clear anodized to a minimum depth of 0.7 mill (18 microns). The frame is assembled with stainless steel screws.
2. Blades are extruded aluminum (6063-T5) air-foil shaped profiles not less than 0.060" (1.52 mm) in wall thickness. Blades do not protrude outside the outer perimeter of the frame. Blades are not connected together with linkage, thus they work independently for a near zero pressure drop and maintenance-free operation. Aluminum blades are clear anodized to a minimum depth of 0.7 mill (18 microns).
5. Axles are composed of 0.33" (8.4 mm) extruded aluminum pivot points, rotating in a Celcon bearing. Aluminum axles are clear anodized to a minimum depth of 0.7 mill (18 microns).

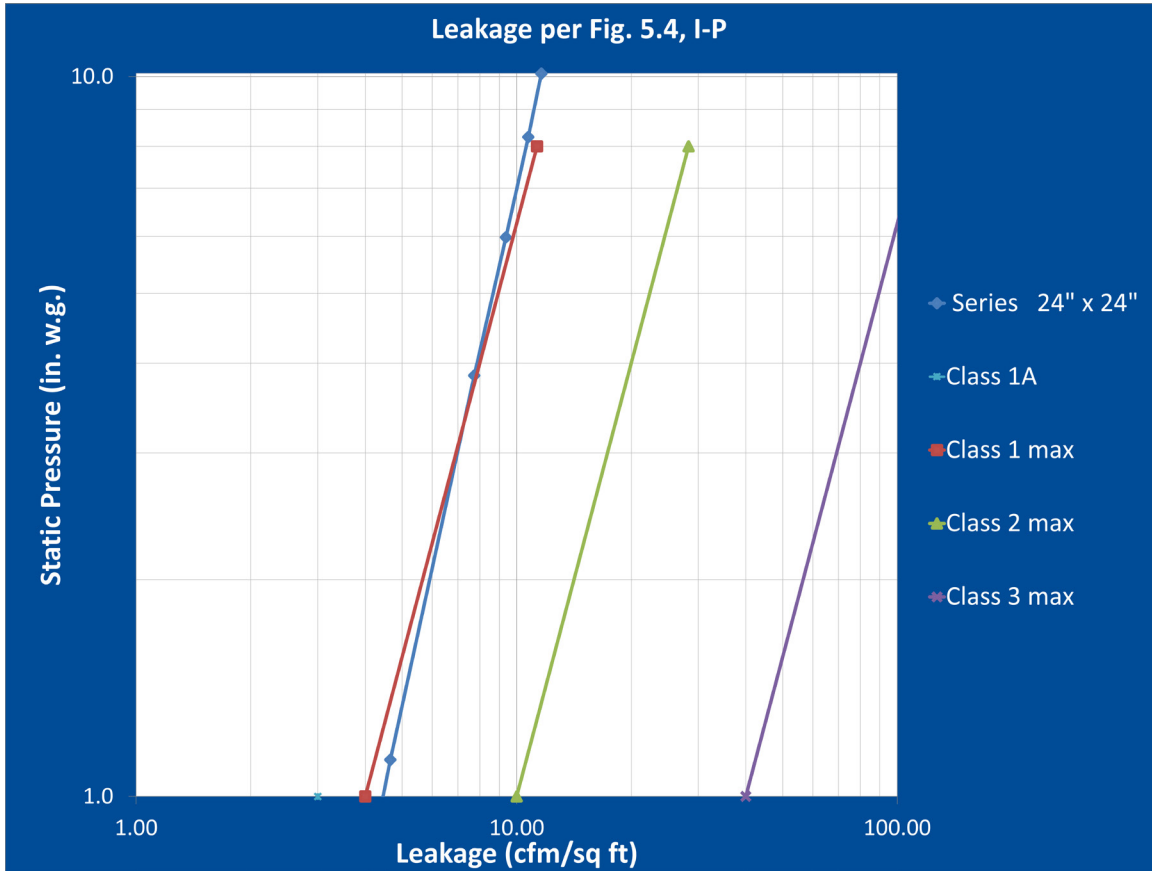
SF - SILICONE-FREE OPTION:

4. Blade and frame seals are extruded TPV, secured in an integral slot within the aluminum extrusions. Seals are mechanically fastened to prevent shrinkage and movement over the life of the damper.

SW SF- SALT WATER RESISTANCE AND SILICONE-FREE OPTION:

1. Extruded aluminum (6063-T5) vertical blade backdraft damper frame is not less than 0.080" (2.03 mm) in thickness. Frame sides are a one-piece extrusion 5.625" (143 mm) deep x 1½" (38.1mm) wide. The Intake side of the frame has a 1½" (38.1mm) continuous radius for smooth airflow. The exiting side of the frame consist of a 1½" (38.1mm) mounting flange all the way around the perimeter. Aluminum frame is clear anodized to a minimum depth of 0.7 mill (18 microns). The frame is assembled with stainless steel screws.
2. Blades are extruded aluminum (6063-T5) air-foil shaped profiles not less than 0.060" (1.52 mm) in wall thickness. Blades do not protrude outside the outer perimeter of the frame. Blades are not connected together with linkage, thus they work independently for a near zero pressure drop and maintenance-free operation. Aluminum blades are clear anodized to a minimum depth of 0.7 mill (18 microns).
4. Blade and frame seals are extruded TPV, secured in an integral slot within the aluminum extrusions. Seals are mechanically fastened to prevent shrinkage and movement over the life of the damper.
5. Axles are composed of 0.33" (8.4 mm) extruded aluminum pivot points, rotating in a Celcon bearing. Aluminum axles are clear anodized to a minimum depth of 0.7 mill (18 microns).

PRESSURE VS. FLOW



Leakage testing was conducted in accordance with ANSI/AMCA Standard 500-D, Figure 5.4. Data are based on a vertically mounted damper. Air leakage is based on operation between 32°F (0°C) and 120°F (49°C) and converted to standard air density.

TAMCO LEAKAGE RATES

Static Pressure in w.g. (kPa)	24" x 24" (610 mm x 610 mm) cfm/ft² (l/s/m²)
0.5 (0.100)	3.53 (17.90)
1.0 (0.250)	4.65 (23.60)
4.0 (1.000)	7.73 (39.30)
6.0 (1.500)	9.37 (47.60)
8.0 (2.000)	10.72 (54.50)
10.0 (11.61)	11.61 (59.00)

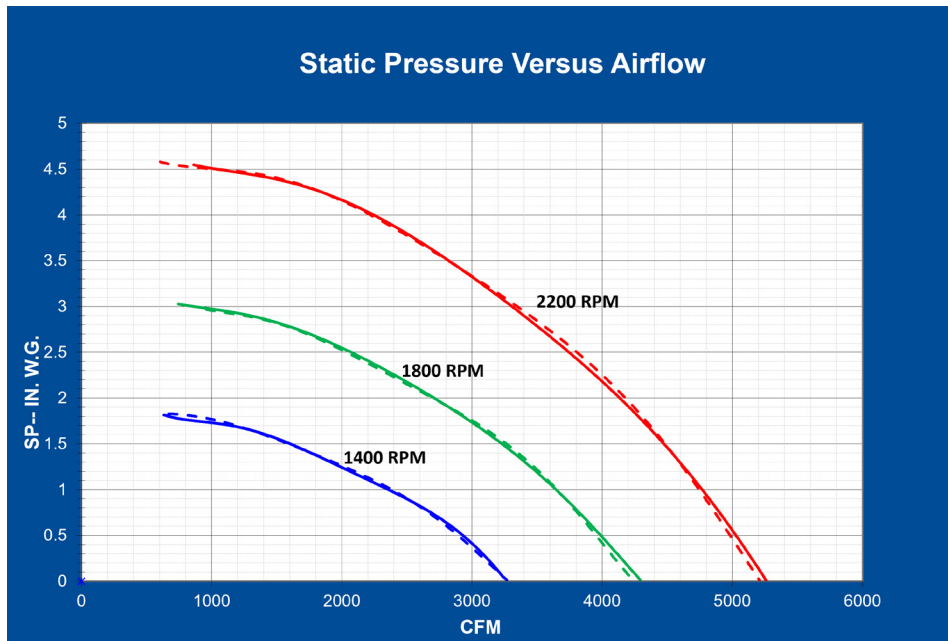
Leakage testing was conducted in accordance with ANSI/AMCA Standard 500-D, Figure 5.4. Data are based on a vertically mounted damper. Air leakage is based on operation between 32°F (0°C) and 120°F (49°C) and converted to standard air density.

A 24" x 24" (610 mm x 610 mm) Tamco AeroV (Series 7400) Vertical Blade Heavy-Duty Backdraft Damper with no linkage was tested.

NOTE:

- Suitable for operation in breathable air environments within stated temperature range.

PRESSURE VS. FLOW



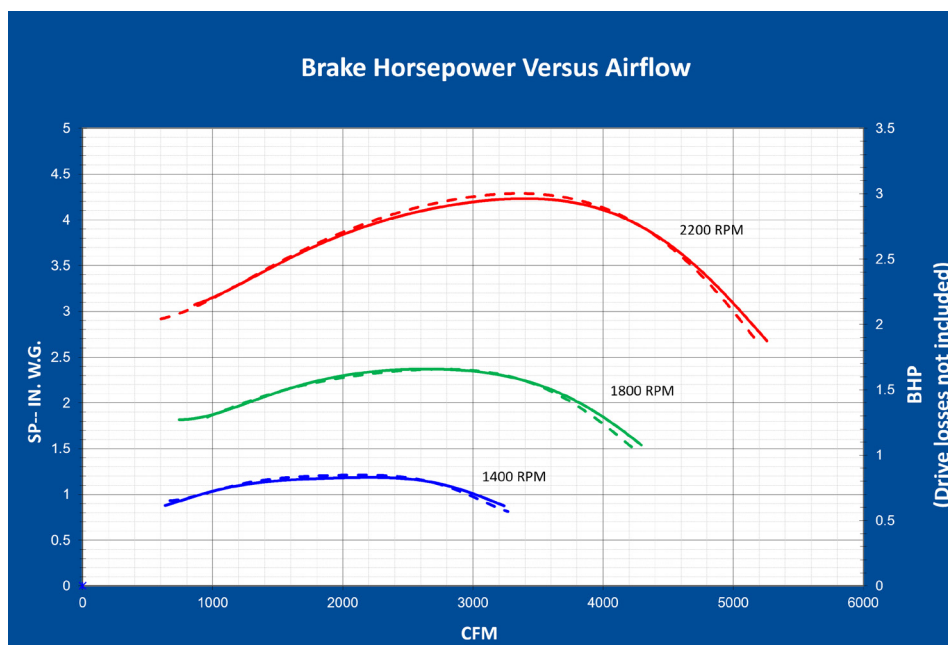
The graph to the left shows the static pressure versus airflow performance of an 18" diameter plenum fan with and without a damper attached to it at different fan speeds. The solid line is the fan curve with a 7400V damper attached to the inlet of the fan. The dashed line shows the fan curve without anything attached to the fan. As you can see the 7400V damper did not change the airflow characteristic of the fan at the same static pressures.

Static Pressure vs Airflow Legend

Solid Line: With Damper

Dashed Line: Without Damper

BREAK HORSEPOWER VS. FLOW



The graph to the left shows the brake horsepower versus airflow performance of an 18" diameter plenum fan with and without a damper attached to it at different fan speeds. The solid line is the fan curve with a 7400V damper attached to the inlet of the fan. The dashed line shows the fan curve without anything attached to the fan. As you can see the 7400V damper did not change or have any effect on the required horse power needed to achieve the same airflows.

BHP vs Airflow Legend

Solid Line: With Damper

Dashed Line: Without Damper

INSTALL TYPES | AeroV (Series 7400V)
Vertical Blade Heavy-Duty No Linkage Backdraft Damper

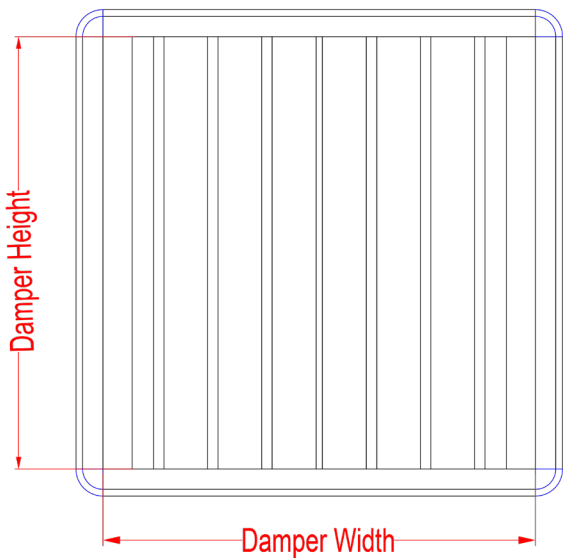
- Bullet point notes on required details when ordering required:
- Always provide opening width and height dimensions, when ordering.
 - Width dimension is always perpendicular to blades.
 - Height dimension is always parallel to blades.

INSTALLED IN REAR FLANGE TYPE

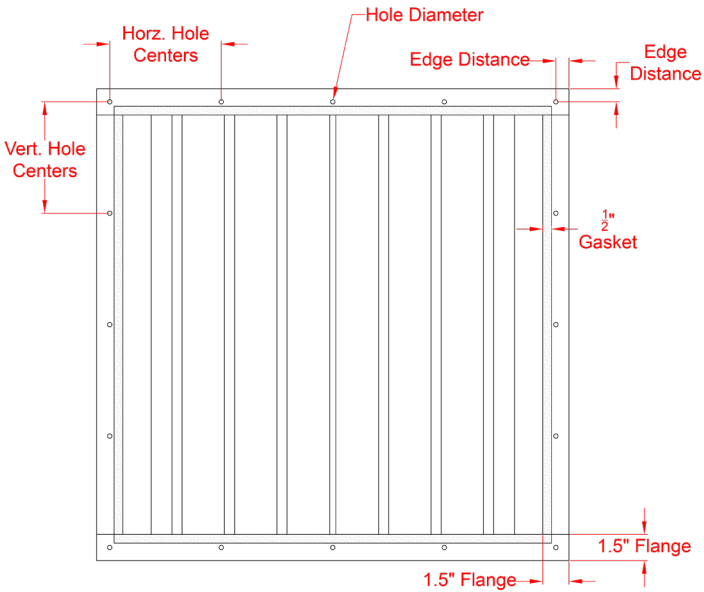
- Finished damper O.D. is 3" (76 mm) greater than opening width and height dimensions.
- AeroV dampers are available for sizing in 2" increments.
- Only single sections are available.

MINIMUM SECTION SIZE:	
12"w x 12"h	(305 mm x 305 mm)
MAXIMUM SECTION SIZE:	
48"w x 48"h	(1219 mm x 1219 mm)

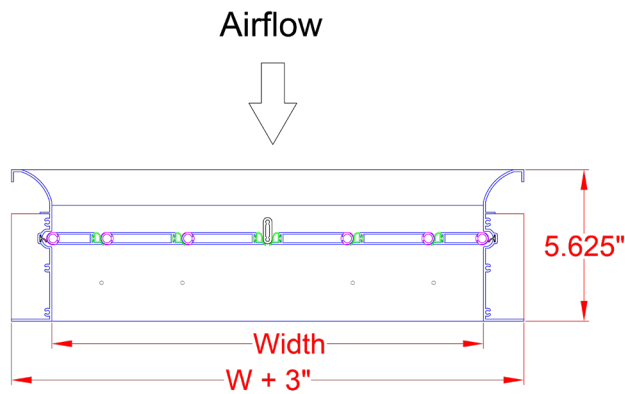
FACE VIEW, FROM UPSTREAM



OPTIONAL HOLE PATTERNS
REAR VIEW, FROM DOWNSTREAM

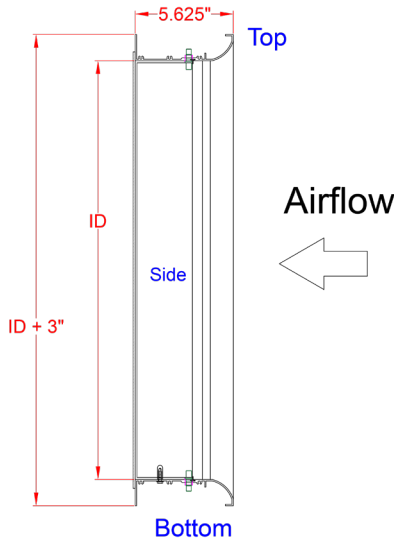


TOP VIEW, BLADES ARE VERTICAL



Blades are shown as closed in the above drawing.

SIDE VIEW, BLADES ARE VERTICAL



AEROV BACKDRAFT DAMPER

ENGINEERING DATA AND SPECIFICATIONS

SPX ENGINEERED AIR MOVEMENT

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