

Application

The PRAD (Positive) and the VRAD (Negative) pressure relief doors are designed to open automatically at 2 in. wg (0.50 kPa) above normal operating system pressure. The function of these doors is to prevent ductwork from imploding or exploding in the event the dampers close while the fan is still operating.

By opening outward or inward at a specified pressure setting, the doors permit rapid neutralization of the pressure differential between the inside and outside of the HVAC system. The pressure relief setting is factory set and tested prior to shipment.

Construction

Standard	
Frame	.062 in. (1.6 mm) thick aluminium extrusion, Z & T-shape
Door	.050 in. (1.3 mm) thick aluminium extruded perimeter with 24 to 16 ga. (.7 mm to 1.5 mm) skin and polyurethane filled seal core (NFPA 90A compliant)
Insulation Rating	Up to R 6.5
Trim Flange	1 in. (25 mm) around perimeter
Seal	Co-extruded PVC leaf gasket
Range of Settings	Factory adjusted pressure settings range from 2 in. to 12 in. wg (0.50 kPa to 3 kPa). Door is specifically set 1 in. (0.25 kPa) above normal operating system pressure, unless otherwise specified
Cable Assembly With Spring	Cable assembly limits door opening to 80°, preventing door and duct damage
Latch	Adjustable magnet assembly is factory set at desired relief pressure. Pressure must be given at time of order to properly place latch. Latch is field adjustable.
Service Temperature	-40°F to 120°F (-40° C to 49° C)

Door Sizes and Pressure Ranges

Size (W x H)	Pressure Setting Range
10 in x 10 in (254 mm x 254 mm)	2 - 12 in. wg (0.5 - 3 kPa)
12 in x 12 in (305 mm x 305 mm)	2 - 12 in. wg (0.5 - 3 kPa)
18 in x 18 in (457 mm x 457 mm)	2 - 10 in. wg (0.5 - 2.5 kPa)
24 in x 24 in (610 mm x 610 mm)	2 - 10 in. wg (0.5 - 2.5 kPa)

Width and height dimensions are undersize $\frac{3}{16}$ in. (4.7 mm).



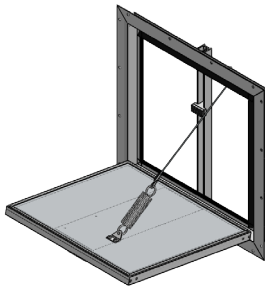
PRAD
(Positive)



VRAD
(Negative)

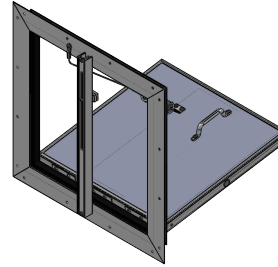
Dimensions

PRAD shown in open state



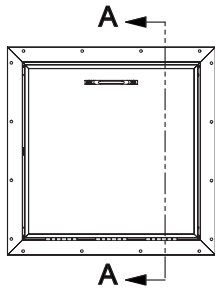
PRAD

VRAD Shown in an open state

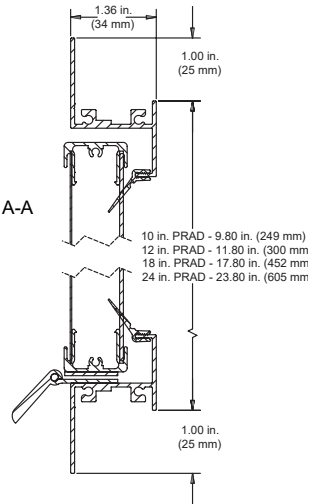


VRAD

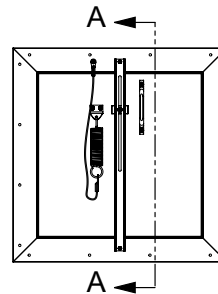
PRAD FRONT VIEW



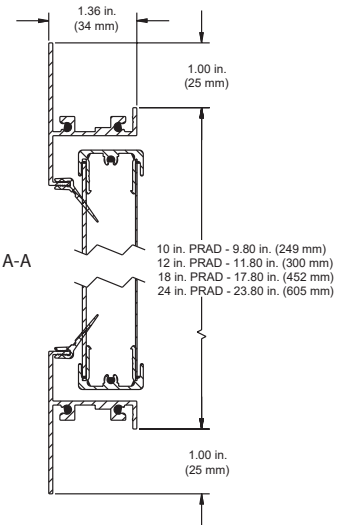
Section A-A



VRAD FRONT VIEW



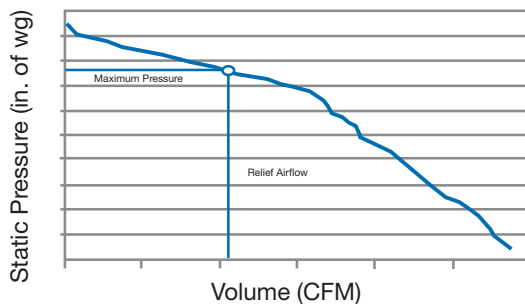
Section A-A



Selection & Performance Data

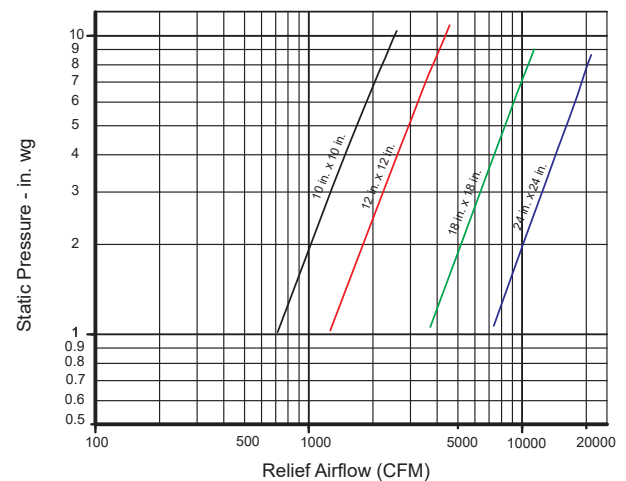
1. Locate the fan curve for the system (see figure A).
2. Determine the maximum pressure the ductwork is designed to handle. Locate where the maximum pressure of the ductwork intersects the fan curve (see Figure A).
3. The figure from step 2 gives the volume of air that should be relieved.
4. Refer to the Relief Airflow vs. Static Pressure chart (see Figure B).
5. Select an appropriate door size (standard 18 in. x 18 in. [457 mm x 457 mm]). Determine the volume of air the door will relieve at the maximum design pressure.
6. Divide step 2 by step 5 to determine the number of doors required.
7. Select the set point ranging from 2 in. wg to 12 in. wg (.5 kPa to 3 kPa). The set point is usually 1 in. (25 mm) above normal operating pressure.

Figure A Fan Curve

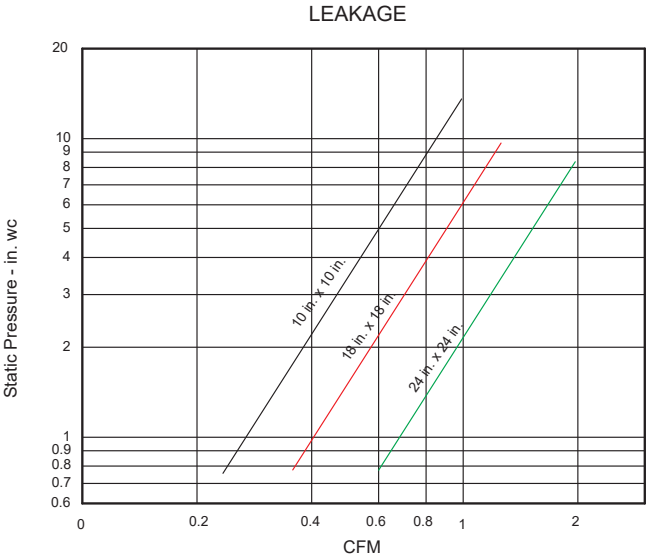


** Note: Fan curve should be supplied with Manufacturer's documentation.

Figure B



This table shows the amount of door leakage versus duct static pressure.



Note

- 1) Door must be installed vertically and level, with hinges down, for proper operation.
- 2) Desired static pressure settings should be given at time of order.
- 3) The pressure relief doors must be manually closed after opening due to excess pressure or vacuum.

Installation

Cut door opening to size of door selected. Doors are 3/16 in. (4.7 mm) undersize. Attach door using #10 self drilling screws.

Document Links



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