

**RETROTEC
3 or 6 FAN PANEL
SYSTEM INSTALLATION MANUAL**



Table of Contents

Installation in a Single Door

Unpacking System	3
Unfolding Panel	4
Determining Panel Orientation	5
Positioning Panel Against Doorframe	6
Attaching First Retention Strap	7
Cross Brace Installation	9
Top Corner Brace Installation	13
Control Console Set-up	14
Blower Installation	15
Power and Instrumentation Connections	16
Multi-Blower Coordination	17
Taking Gauge Readings	18

Installation in a Double Door

Determining Panel Orientation	19
Connecting the Two Panels	20
Securing Panels Against Doorframe	21
Control Console Set-up	14
Blower Installation	15
Power and instrumentation Connections	16
Multi-Blower Coordination	17
Taking Gauge Readings	18

Installation in a Single Door

Unpacking System

Have all equipment cases on the side of the test doorway from which the test will be conducted. The test will be done from the side of doorway in which the door swings. All equipment will need to be on this side of the doorway. After unpacking the system the blower cases can be re-closed and positioned side by side to create a platform for the laptop console and analog control panel.



Unfolding Panel

Lean the panel case against a wall or other vertical surface and open the Velcro closure on the case. Remove the hinged panel and stand it on edge to unfold the sections and lock the butterfly catches opposite the hinges.



Determining Panel Orientation

The side of the panel marked with dimples must be facing the testing equipment and control consol (the test side of the doorway). Spin the panel so these dimples face the blowers and instrumentation. The blower holes are offset to one side of the panel. The panel side with the holes closest to the edge must be oriented on the hinge side of the doorway. You may need to spin or flip the panel to achieve this.

Positioning Panel Against Door Frame

Once properly oriented, slide the panel against the doorframe. This is best achieved with one person holding the panel in place while another attaches the first retention strap. Again, installation must be performed from the side of the doorway into which the door swings. Take the crossbars and retention straps and proceed to the installation side of the doorway. The bag carrying the retention straps can be hung from a belt or belt loop for convenience. The panel will cover the entire doorway and frame.



1). The first strap to attach is the top hinge-side strap. With a helper still holding the panel up, connect the retention strap to the top corner of the panel with one of the small knobs in the bag.



2). Pull the white circular anchor over the top of the door and into the gap between the door and the frame.



3). Position the white anchor behind the door as illustrated so that it is trapped in place.



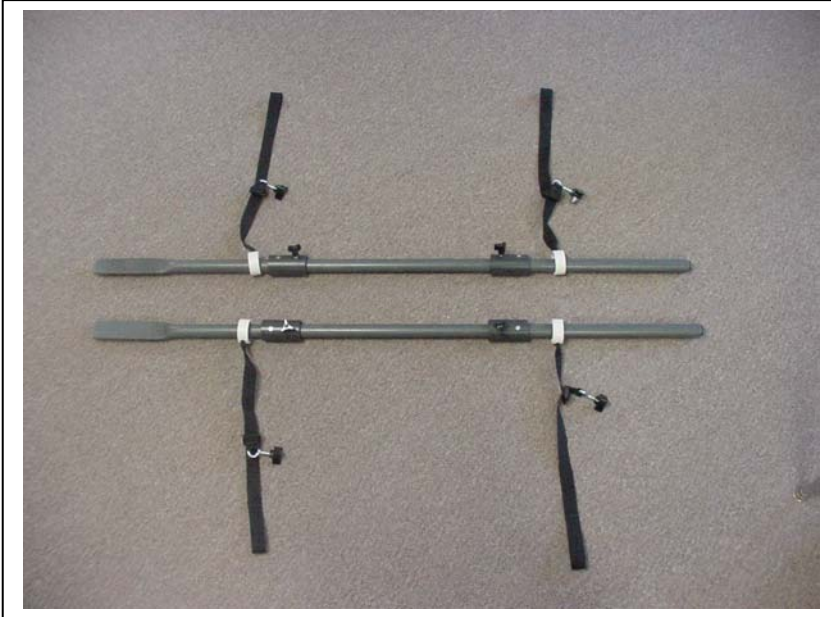
4). Now carefully cinch the retention strap up tight and block the door open with one of the wooden doorstops provided.



Note: To release or reposition the strap simply squeeze the release cam.

Cross Brace Installation:

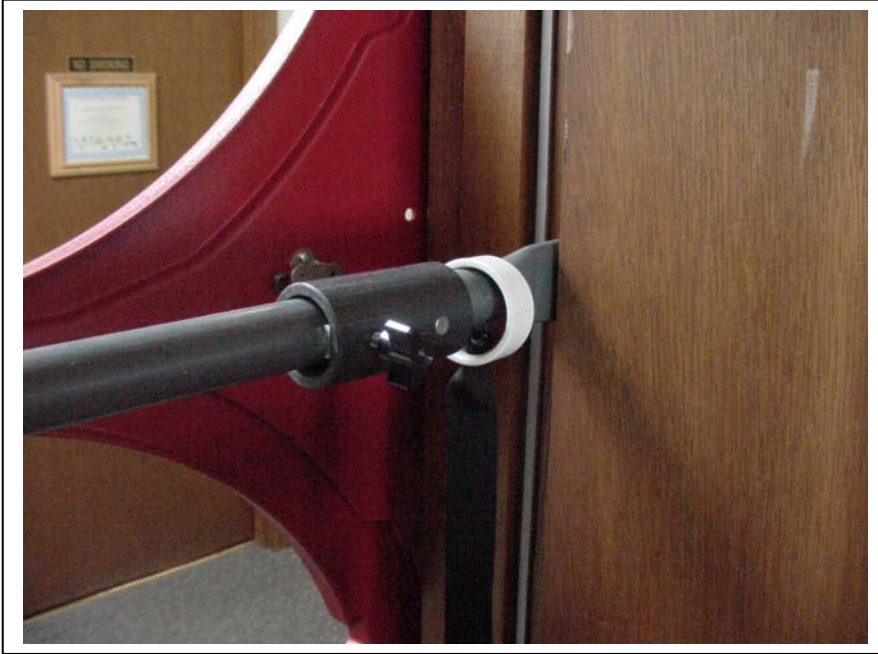
1). Use the Cross braces provided to secure the remainder of the retention straps. Slide the retention straps and locking collars onto the crossbars as shown – one on each end.



2). Take the first cross brace with the retention straps in place and insert the flattened end into the gap between the door and the frame.



3). Slide the cross brace into the hinge gap until snug.



4). Insert the eyebolt on the strap assembly through the panel and attach it using the small knob from the other side of the panel. Pull strap snug.



5). Attach the other strap assembly on the cross brace to the other side of the panel and pull snug. Use plastic tri-lobe nut to screw panel snug to doorframe.



6). Reposition the cross brace to align it with the attachment holes in the panel. Retighten both straps. Next slide the white locking collar on the hinge-side so that it pins the retention strap against the door jam.



7). Tighten the knob on the locking collar finger tight.



Repeat this installation procedure for the lower cross brace.

Top Corner Brace Installation

1). Use the short cross to anchor the final top corner of the panel. Connect the final retention strap to the top corner of the panel and slide the white, plastic strap-anchor onto the short brace.



2). Position the short brace diagonally across the upper corner of the doorway as shown Pull the retention strap tight.



Control Console Set-up

1). Remove the fans from their cases and re-closed the top. The empty cases can be closed, arranged side by side and used as a platform for the consol and control unit.



2). Rout the room pressure pick-up through the access hole in the center panel. Pull it through so just the tip of the thermometer is exposed to the other side of the panel.



Blower Installation

1). The fans twist lock into the panels. The fan handle can be oriented to the right or left to compliment the position of the console.
Begin by holding the fan sideways and tipping it so that the foot protrusion extends through the panel.



2). Align the locking block on the top of the fan with the cutout slot in the panel. Slide the locking block through to the backside of the panel and twist lock the fan to secure it to the panel.

(Insert)

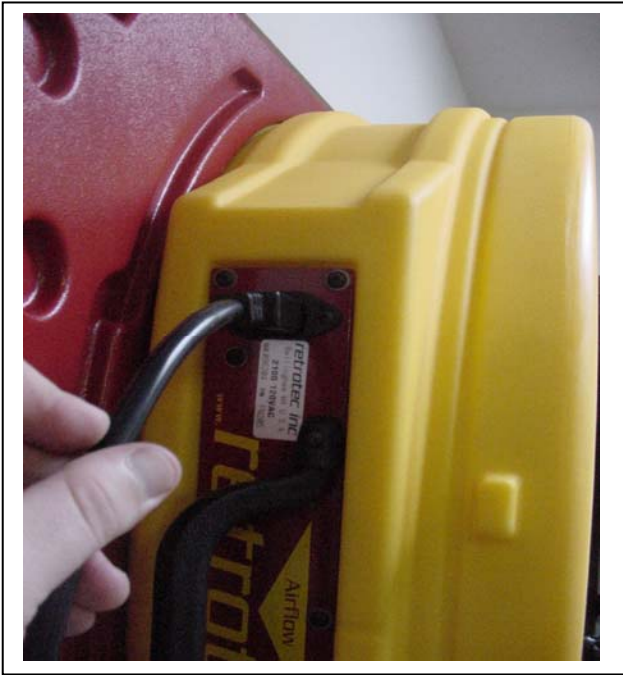


(Twist counter clockwise)



Power and Instrumentation Connections:

1). Once the fans are installed, connect the power cords to each one.



2). The flow pressure pick-up and remote speed control cables can be connected to each of the fans. The system is now ready to begin testing.



Multi-Fan Coordination

Conduct an initial test to determine the number of running blowers needed to reach the required test pressure. One by one bring each blower up to full speed until the desired room pressure is achieved. Now shut down the system and install blower covers over the unused blowers. During a *depressurization* test, the covers should be mounted from outside the test enclosure – on the side of the test equipment. During *pressurization* testing, the covers are mounted from inside the test enclosure. This insures that the covers will be pinned up against the blower housing instead of being sucked away during testing.



Pressurization Test

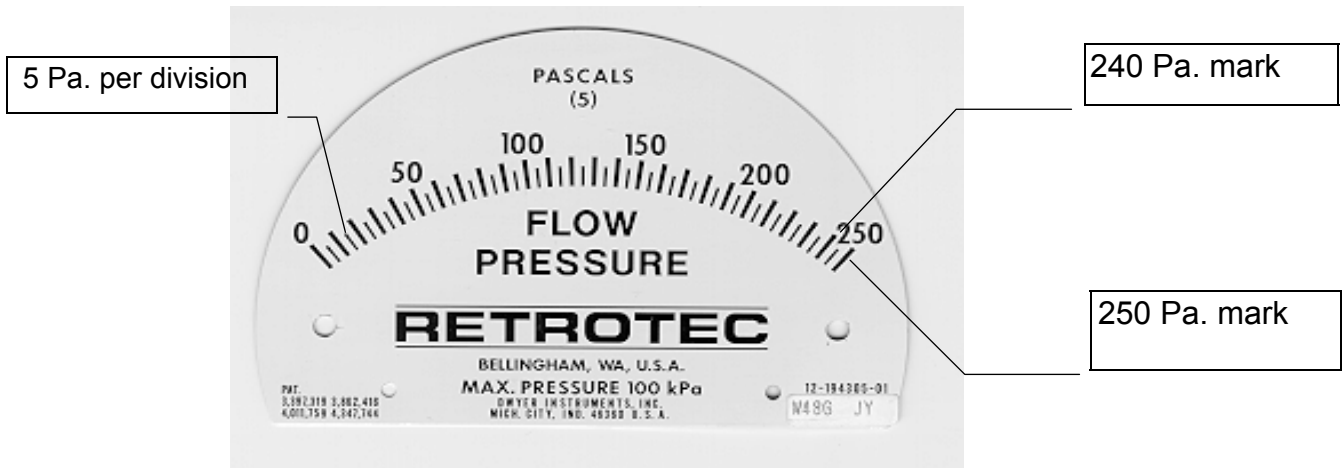


Depressurization Test

Taking Gauge readings:

The Flow Pressure must always be higher than the Room Pressure.

- Read the gauges very carefully. The **240 Pa** mark is easy to misread. Please refer to the diagram below for clarification.



You must look at the gauge from directly in front to avoid misreading which number is being indicated

- Wait 15 to 20 seconds after the last speed control adjustment to let the readings stabilize before writing down the test data or entering it directly into the computer. Tap the gauges lightly to settle the needle and get the most accurate readings possible. Take results from both *Room Pressure* and *Flow Pressure* gauges simultaneously since they will sometimes move up and down together.

Installation in a double Door

Determining Panel Orientation:

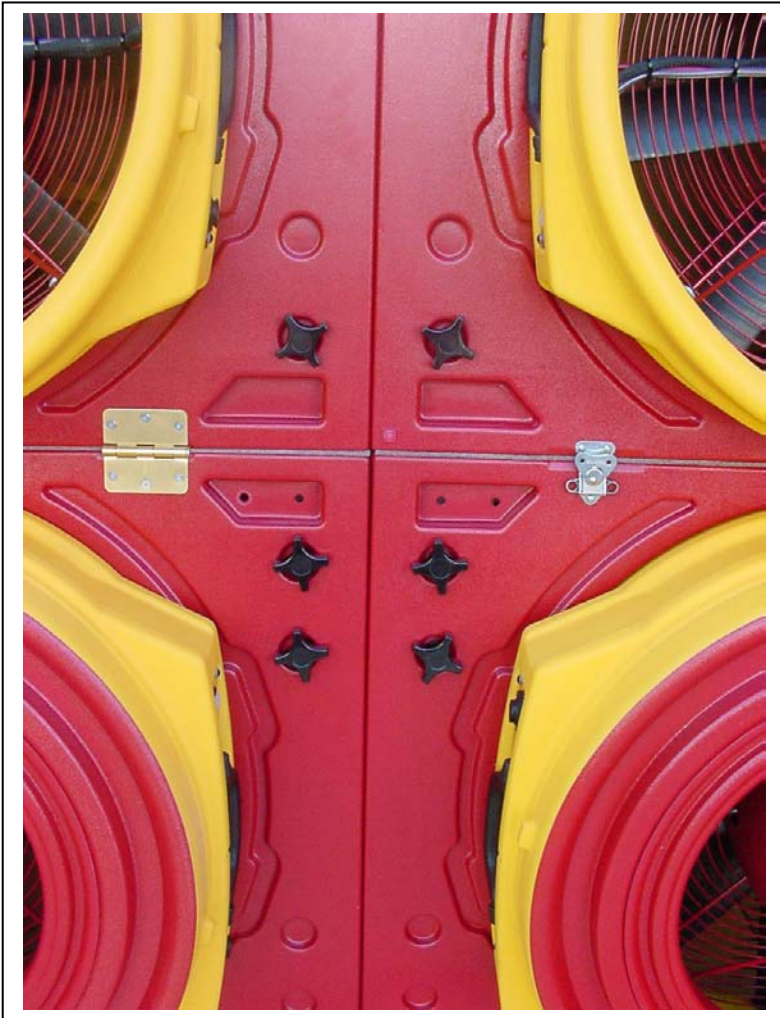
Move the panels to the side of the doorway in which the doors do not open. If the doors open into a room, the panels will go against the outside of the doorframe on the outside of the room. If the doors pull open from the outside then the panels will need to be placed against the inside of the doorframe, inside the room.

Next determine whether the instrumentation will be located inside or outside the room to be tested. The panels are labeled, "Insert Blowers from this side of panel". This label must be facing in the direction of the test equipment. The panels must also be arranged so that the six blower holes are offset towards the center.



Connecting the Two Panels

The connector plate is positioned behind the panels with the twelve connecting knobs being inserted from the front. (Side with labels)



Connector plate 

Securing Panels against Doorframe:

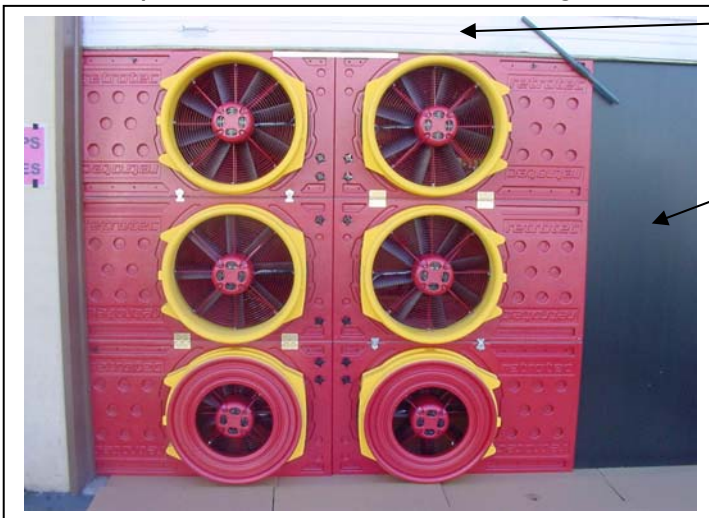
One person should hold the panels in place while another anchors the retention straps. Begin by slipping one of the plastic anchors through the hinge gap and rotate it 90 degrees to set it. If the hinge gap is too narrow to insert the plastic anchor through, reverse feed the eyebolt through the hinge gap from behind the door.



Repeat this procedure for the five remaining straps and block the doors open so they don't get pulled shut when the straps are tensioned.

Starting with the center retention straps, insert the eyebolt on the free end of the strap through the nearest bolthole in the panel and spin on a three lobed knob. The panels may have to be shifted to get each side equally close to the door jam. Once in place, double check that the plastic anchor is still set properly and cinch the strap snug. The strap must extend horizontally from the anchor to the panel. Slide the anchor up or down to correct any misalignment. Repeat this procedure for the remaining five straps and retighten all six straps one final time to verify set-up integrity.

Note: If there is an unfilled gap between the top of the panels and the top of the doorway, it must be taped off with a combination of grill masking film and 2" black polyethylene tape.



For console connections and blower installation, refer to pages 14-16.

For multi-blower coordination, refer to page 17.

For taking gauge readings, refer to page 18.