Retrotec Model 300 / 5000 / 6000

Blower Door QuickGuide

Refer to the "Blower Door Operation Manual" and the "Residential Pressure and Air Leakage Testing Manual" & read warnings.

1 Prepare the building

- ☐ Fireplaces and stoves must be cold with doors closed (cover ashes).

- ☐ Close and lock outside doors and windows so they don't open during the test.

- ☐ Open all interior doors leading to conditioned spaces.

- ☐ Shut off HVAC, combustion appliances, exhaust fans, dryers, A/C and furnaces. Ensure they will not come on.

- ☐ Turn gas hot water to Pilot.

2 Install the System

- ☐ Set up the Door Panel. Refer to your "Door Panel QuickGuide."

DM32X Gauge
SmartCloth™
Umbilical
Fan

- ☐ Connect the Ethernet style Speed Control Cable to the fan and plug in the USB-C cable end to the DM32X USB-C gauge port.

2 Install the System Cont'd

- ☐ Connect the yellow tube between yellow ports marked "Ref B" on fan and gauge. If the fan has a green port ("Input B"), connect the green tube.

- ☐ Connect the short red tube to the red gauge port.

Connect Applicable Tubing

6000 Fan & Drive

For 6000 Model Only:

- ☐ Connect Speed Control Cable from the DM32X umbilical to the red Drive.

- ☐ Connect the pressure tubes from the DM32X umbilical to the matching-color ports on the Drive.

- ☐ Connect the power cord from the Drive to a 20A compatible wall outlet.

- ☐ Connect a pressure tube from the "Ref B" (yellow) port on the variable speed drive to the "Ref B (-)" (yellow) port on the DM32X/DM32.

- ☐ If available, connect a second pressure tube from the "Input B" port (green) on the variable speed drive to the "Input B (+)" (green) port of the DM32X.

- ☐ Connect the Speed Control Cable from the umbilical to the "Speed Control" port on the DM32X.

2   Install the System cont'd

☐   If using the SmartCloth :

    Connect the red tube to the tube insert found near the front, mid-right of the cloth.
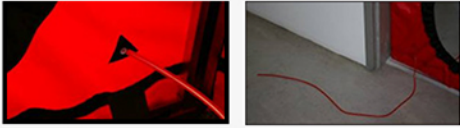
    SmartCloth can still be used like the traditional method if desired.

☐   If using the Traditional Cloth:

    Pass the red tube through the Door Panel and toss the end at least 5 feet away from the fan's airstream.
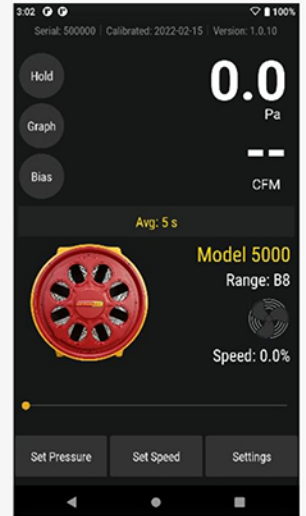
    Water in tube will result in erroneous readings.

☐   Install the fan blowing outdoors. Cover the fan. Refer to "Range Configurations" QuickGuide for assistance on selecting proper fan coverage.

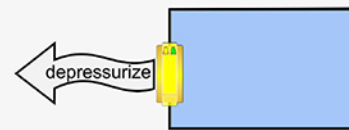☐   Connect power cord between fan & a wall outlet.

3   Gauge Setup

☐   Open up the gauge app on your DM32X. Make sure the device shown on the Home screen matches your fan. To change device, tap the fan picture.

☐   Select your device then select Range. Use Range Plate B8 for most houses, try Range B4 for tighter new houses, and Range Ring A for leakier older houses. For 300 fans, start with Open Range.

☐   Tap on [Channel B] to change the type of result or units. Refer to DM32X Manual and "Residential Pressure & Air Leakage Testing, Appendix A" manual for guidance.

☐   Tap [Settings] then [Time averaging] to adjust the time averaging. 5 seconds is OK for a calm day. 10 or 30 seconds can be used on windy days.

☐   Tap [Settings] then & ensure the [Default @ Pressure] is set to 50 Pa.

☐   Return to the Home screen.

4   Conduct depressurization test, (CFM@50)

☐   Open the DM32X Gauge App, Tap on the [Bias] button

☐   Tap the red record button. After 20 seconds on a calm day or 60 seconds on a windy day, tap the same button to end the capture. Save the log when prompted. Tap "Enable," then return to the Home screen.

☐   Uncover fan. Install Range Plate B8 (Open for 300 fan).

☐   Ensure gauge shows correct Range on Home screen.

☐   Disconnect Speed Control Cable, turn knob to zero then adjust until pressure is about 50 Pa.

☐   Tap [Set Pressure] [50] [Set] to calculate what the flow would be at exactly 50 Pa.

@ Pressure is On

Desired Results Not Achieved?

Cannot achieve test pressure at full speed?
If fan reached 100% speed but could not achieve 50 Pa:

    If possible, use Range with larger opening to get more flow and try again.

    Change [Range] on the gauge to match.

    Readjust Fan Speed.

Flow reads "--" at test pressure?
If the test pressure has been reached, but "--" appears, the fan is running too slowly to accurately measure flow.

    Add the next Lower Range

    Change [Range] to match

Show Leakage as a Result

Equivalent Leakage Area (EqLA) describes the leakage area in terms of one large hole in a flat surface.

Tap the [Channel B] Key, then select "EqLA: sq in"

[Channel A] shows the building pressure and [Channel B] "EqLA" shows the combined size of all holes in the building.

Leakage area is not a required result, but is a nice way to visualize the size of the hole in the ducts.

Different Results

Tap the [Channel B] key to view a different Result, or tap [Channel B Mode] in the [Settings] menu.
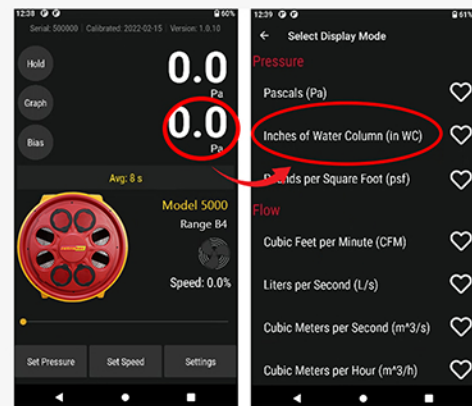
    Flow: CFM Required by many states. Also available in metric units.

    Flow/Area: CFM/sq ft Normalized leakage area is used in many standards. All common units are available.

    ACH: /h Air Changes per hour can be shown directly on the gauge. Enter volume as shown below.
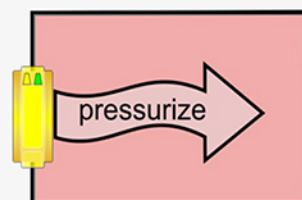
    EfLA4/area: sq in/sq ft   Specialized units such as Effective Leakage Area are also available. Area When a Result is chosen that requires an area or volume, [Area] or [Volume] will be shown on the Home screen.

    Volume Tap [Area] or [Volume] to change . The area and volume can also be changed from the [Settings] menu.

Pressurization Test

Turn the fan around to blow air into the house. Tube configuration is the same as the depressurization test.
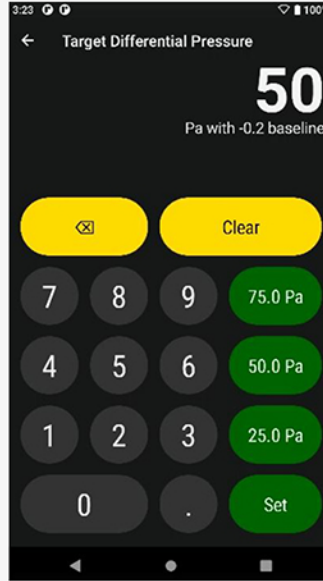
Adjust Fan Speed with Gauge

- ☐ Connect Speed Control Cable to the fan. Solid green Status light indicates gauge is connected. Tap [Set Pressure] [50] [Set] to get gauge to control to a pressure of 50 Pa.
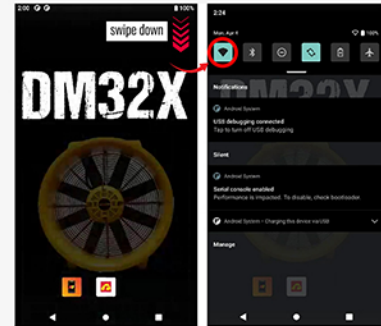
  CAUTION: Doors opening during the test will cause fan speed to increase which will create a pressure pulse when that door is re-closed, disturbing dust, soot, and particulates, causing damage. STOP the Fan if a door opens.

- ☐ Tap [Set Speed] [50] [Set] to set speed to 50%.

- ☐ When [Set Speed] or [Set Pressure] is used, the Jog keys become active on the Home screen. Use the [JogUp] [JogDown] arrow keys to increase or decrease the target by 5 Pa or 1%.

- ☐ Tap [Stop] to turn the fan off.

Adjust Fan Speed Remotely

- ☐ Use WiFi or BlueTooth® to control the fan remotely. Swipe Down from the top right of the gauge. Press the Wifi or BlueTooth® symbol to turn on.

Field Check Gauge Weekly

Check for gauge accuracy, blocked, leaking, or pinched tubes weekly, and anytime results are in question.

- ☐ Check the gauge with the tubes in the Umbilical.

- ☐ Set [Time Average] to 5 seconds in [Settings]

- ☐ Tap [Channel B] and select "Pressure: Pa"

- ☐ Connect the red tube between the red and yellow ports. If readings on Channel A and Channel B are within 2% and don't drop noticeably in 5 seconds, the gauge is functioning correctly.

- ☐ Remove red tubes and repeat with the yellow tube between the blue and green ports.

Field Check System Monthly

- ☐ Perform a Blower Door test on a room and record the EqLA at 50 Pa.

- ☐ Install cardboard in upper part of doorway with a 20x20 hole cut in it.

- ☐ Perform a second Blower Door test on the building, record the EqLA at 50 Pa.

- ☐ Subtract the first result from the second result and the value should be 400 sq. in. (+/-10%).

Theatrical Smoke

Theatrical smoke can help detect suspected leaks while the Blower Door is running. See manual for details. Caution: Do not inject the smoke directly into the fan motor, but instead inject it into the flex duct just after the fan. Injecting the smoke directly into the fan motor will void warranty.