

# 300 Blower Door QuickGuide

Download the "Blower Door Operation Manual" and the "Residential Pressure & Air Leakage Testing Manual" from [www.retrotec.com](http://www.retrotec.com) Read warnings.



## Step 1: Prepare the building

Refer to the Gauge QuickGuide and become completely familiar with its operation before performing a test.

- 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.



Remove or cover ashes.



Turn gas valve to Pilot.



Close all windows and outside doors.

## Step 2: Install the system

- Set up the Door Panel.  
*Refer to your "Door Panel QuickGuide"*
- Connect the short red tube to the red port on the gauge.
- 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 Ethernet style Speed Control Cable to the fan and gauge.
- Pass the red tube through the Door Panel and toss the end at least 5 feet away from the fan's airstream.  
Water in the tube will result in erroneous readings.



- Install the fan blowing outdoors. Secure the Quick Connect Collar to the back of the fan before inserting through the door cloth.

Quick Connect Collar



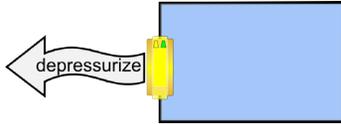
- Cover the fan.
- Refer to "Range Configurations" QuickGuide for assistance on selecting proper fan coverage.
- Connect power cord between fan & a wall outlet.



- Place gauge near fan, or attach gauge to Door Panel.



### Step 3: Conduct depressurization test, (CFM@50)



- Gauge [On], tap [Settings] then [Baseline].
- Tap [Capture Baseline]. After 20 seconds on a calm day or 60 seconds on a windy day, tap [End Capture] then [On] to return to the Home screen.
- Uncover fan. Set on Open Range for 300 fan.
- Ensure gauge shows correct Range on Home screen.

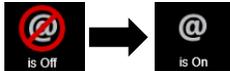


Open

- 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.



### Step 4: Desired results not achieved?

#### Cannot achieve test pressure at full speed?

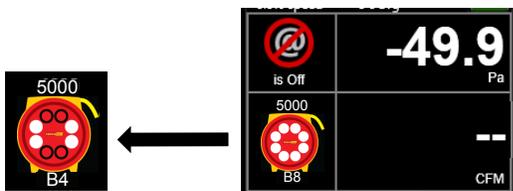
If fan reached 100% speed but could not achieve 50 Pa:

- Ensure that all doors and windows are closed.
- If possible, use Range with larger opening to get more flow and try again.
- Change [Range] on the gauge to match.
- Re-adjust fan speed.

#### Flow reads "--" at test pressure?

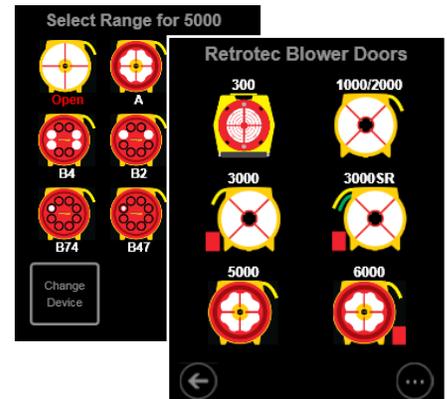
If the test pressure has been reached, but "--" appears, the fan is running too slowly to accurately measure flow.

- Add the next lower Range
- Change [Range] to match



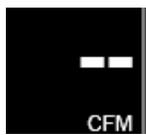
### Gauge set up

Make sure the device shown on the Home screen matches your fan. To change device, tap the fan picture, then the [Change Device] key.



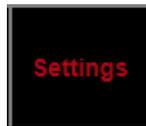
Select your device from the graphics under "Retrotec Blower Door" then select Range.

For 300 fans, start with Open Range.

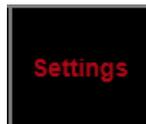


Tap on [Channel B] to change the type of result or units. Refer to gauge and "Residential Pressure & Air Leakage Testing, Appendix A" manuals for guidance.

Time averaging  
5 seconds



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



Make sure the [Default @ Pressure] is set to 50 Pa.

Default @ Pressure  
50 Pa



- Tap to return to the Home screen.

## Different Results

Tap the **[Channel B]** key to view a different Result, or tap **[Result to be displayed]** on the **[Settings]** menu.

<b>Flow: CFM</b>	Required by many states. Also available in metric units.
<b>Flow/Area: CFM/sq ft</b> Flow normalized by area	Normalized leakage area is used in many standards. All common units are available.
<b>ACH: /h</b> Air changes per hour	Air Changes per hour can be shown directly on the gauge. Enter volume as shown below.
<b>EfLA4/area: sq in/sq ft</b> Normalized EfLA at 4 Pa	Specialized units such as Effective Leakage Area are also available.
<b>Area</b> 1,200 sq ft	When a Result is chosen that requires an area or volume, <b>[Area]</b> or <b>[Volume]</b> will be shown on the <b>Home</b> screen.
<b>Volume</b> 22,000 cu ft	Tap <b>[Area]</b> or <b>[Volume]</b> to change. The area and volume can also be changed from the <b>[Settings]</b> menu.

## Show leakage area 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 , and select "EqLA: sq in"

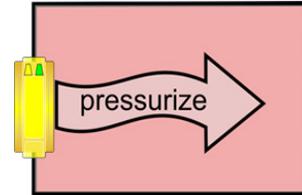
**[Channel A]** shows the building pressure and **[Channel B]** "EqLA" shows the combined size of all holes in the building.



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

## Pressurization test

Turn the fan around to blow air into the house.



Tube configuration is the same as the depressurization test.

## Adjust fan 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.

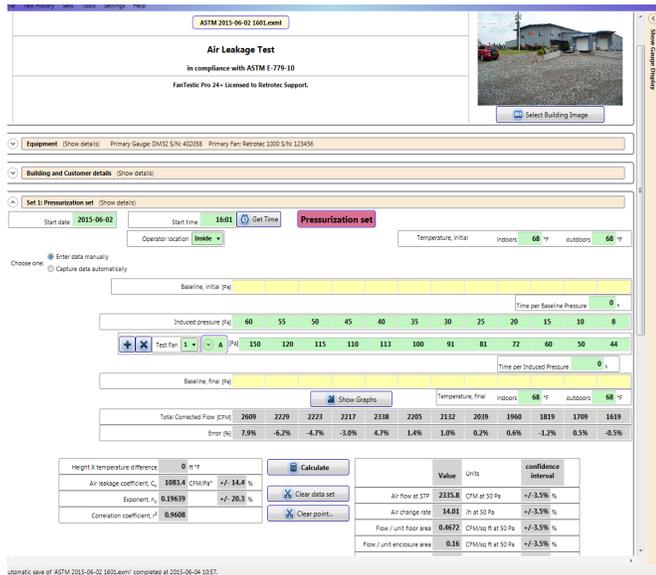
## Adjust fan speed remotely

Use optional WiFi to control the fan remotely. Refer to "GaugeRemote QuickGuide".



## Control fan speed with software

Speed control is handled automatically with FanTestic software, for complete automation.



## 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 20 x 20 inch 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%).



## 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.

Check gauge and tubes regularly to eliminate the most common source of errors.

