

# Retrotec's Model 340x

rev 2019-04-27

## Residential DucTester QuickGuide



Quick Connect  
Collar

DM32 gauge

DucTester

Clear Flange



Flex Duct

Grill Mask

Tubing, Cords,  
Power Cable

Included  
Range Plugs



47



74

### 1 Prepare the ducts and house

Refer to your "Gauge Quick Guide" and become familiar with its operation before performing a test.

Check boxes (☐) for each step.

- ☐ Turn off air-handlers or adjust temperature so the unit will not turn on.
- ☐ Seal all supply and return grills/registers, including any exterior air inlets, with Grill Mask, plugs, covers, or tape.

See: "Residential Duct Testing Manual" for additional information. Download it from: [www.retrotec.com](http://www.retrotec.com)

### 1 Prepare the ducts and house (cont'd)

- ☐ Remove all air filters
- ☐ Open all interior doors leading to rooms containing a supply or return register.
- ☐ Open an exterior door or window.



2

## Connect to ducts

- Attach the Flange to main return or air handler cabinet. Ensure filter has been removed.



- Attach Flex Duct to the collar on the Flange.



- Install Range Plug 74 to start, as most systems can be tested on this Range Configuration.



Use smaller Range Plug numbers for tighter ducts, and large numbers for leakier ducts.



47



74

- Whenever a Range Plug is changed, make sure the gauge shows the correct Range Plug in Step 4.



Range Plugs must be installed on the intake side of the DucTester for Depressurization and Pressurization tests

2

## Connect to ducts (cont'd)

- Connect Flex Duct to fan inlet. The negative pressure will improve the seals at the registers.



If Codes require you to pressurize, pass the test in the depressurize direction first then connect the Flex Duct to fan exhaust in order to pressurize. All other connections remain the same.





3

## Connect gauge & fan

- Plug in the power adapter. Blue light indicates that the power is connected.
- Connect yellow and green tubes to matching color ports on fan. DO NOT connect the Speed Control Cable yet because it will disable the knob and it is important to experience manual operation first.
- Insert blue tube into the supply register closest to the air handler.



### 3 Connect gauge & fan (cont'd)

- Press  on the gauge, tap the screen & check the battery state indicator and the top right: 
- If the battery display is not green, connect USB to power outlet to charge the gauge.
- Connect yellow, green and blue tubes to the gauge.

Channel A  
Channel B



Connect the gauge like this for all tests.

### 4 Prepare the gauge

Make sure DucTester 340 is showing on the **Home** screen.



If not, tap the fan picture, then



Tap , tap DucTester 340, then select the range that you have installed.



CFM

Tap on **[Channel B]** to change the type of result or units. Select based on "Get the results you need" on page 4.

Settings

**Time Averaging**  
5 second(s)

Tap **[Settings]** then **[Time averaging]** and select 5 seconds.

Settings

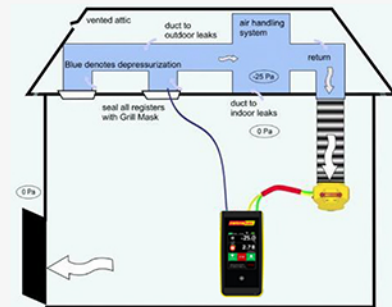
Tap **[Settings]** then . Ensure **[Default @ Pressure]** is 25 Pa.



Tap to return to the **Home** screen.

## Total Duct Leakage Test: Depressurize

### Tubing Connections



### 5

### Conduct test

- Adjust fan speed knob clockwise until **[Channel A]** reaches test pressure. Usually -25 Pa.
- If you cannot achieve the test pressure, refer to page 4.
- Now connect the Speed Control Cable to allow the gauge to control the speed. Solid green Status light indicates gauge is ready to control the speed.

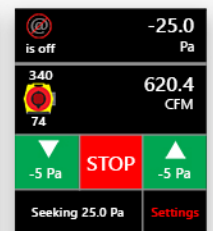


### Speed Control Cable




- For a test pressure of 25 Pa, tap

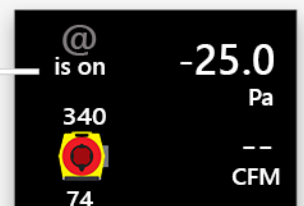
**Set Pressure**



- Enter 25, tap **[Set]**

- Tap  **is off** to display what the result would be at exactly 25 Pa.

- Read results directly from the gauge.





## Get the results you need

- ☐ Tap [Channel B] on the screen to select a different Result, or tap the [Result to be displayed] button in the [Settings] menu.

If the battery display is not green, connect USB to power outlet to charge the gauge.

### Flow: CFM

Flow at the induced pressure is the simplest result.

### Flow/Area: CFM/sq ft

Flow normalized by area

Flow in CFM per square foot may be required. (Enter an area) see below.

### Flow/Area: CFM/100sq ft

Flow normalized by area

Flow in CFM per 100 square feet is required by Code or other programs. (Enter an area) see below

When a Result is chosen that requires an area or volume,

#### Area

1,200 sq ft

or

#### Volume

22,000 sq ft

will be shown on the Home screen. Tap to change.


The area and volume can also be changed from the

#### Settings

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



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

## Desired results not achieved?

Flow reads "--" at test pressure?

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

- ☐ Switch to a lower Range Plug
- ☐ Change [Range] to match

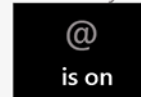
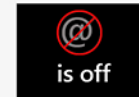


- ☐ Re-adjust fan speed.

Cannot achieve test pressure at full speed?

If fan reaches 100% speed before reaching 25 Pa:

- ☐ Change to a larger Range Plug and try again.
- ☐ Change [Range] on the gauge to match.
- ☐ Check seals on all registers. Look for disconnected ducts or ducts open to outdoors.
- ☐ Tap [@ Pressure] to get the gauge to calculate what the flow would be at exactly 25 Pa.

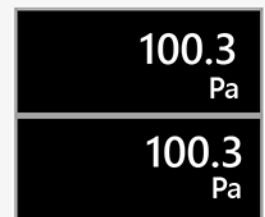


## Field check gauge weekly

Check gauge operation & check for blocked, leaking or pinched tubes weekly & anytime results are in question.

- ☐ Set [Time Average] to 5 seconds in [Settings].
- ☐ Tap [Channel B] and select "Pressure: Pa".
- ☐ Connect yellow tube between red & yellow ports. If readings on Channel A and Channel B are within 2% and don't drop rapidly, the tube is not blocked or leaking and the gauge is correct.
- ☐ Repeat between different ports with each color of the tube.

Checking your gauge and tubes regularly will eliminate the most common source of errors.



## Theatrical Smoke

Theatrical smoke can help detect suspected leaks while the DucTester 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.