

Retrotec's Model 350x

rev 2023-07-18

Residential DucTester QuickGuide



Unpack, connect gauge

Check boxes (☐) for each step.

- ☐ Remove everything from the case.
- ☐ Power on the gauge, tap the screen & check the battery state. Charge if necessary.
- ☐ Setup wifi connection to get access to additional video assistance.
- ☐ Connect yellow, green and blue tubes to the gauge.

Gauge remains connected like this for all tests.



Prepare the DM32X

- ☐ Power on the DM32X.



- ☐ Tap [Change Device] and select the 350 DucTester.

- ☐ Tap [Change Range] and select the range you have installed.

- ☐ Tap [Channel B] to change the type of result or units. Select based on "Get The Results You Need" on the QuickGuide instructions below.

- ☐ Tap [Settings] then [Time Averaging] and select 5 Seconds.

- ☐ Tap [Settings] then [Default @ Pressure] and set to 80, 60, or 205 Pa, depending on the test pressure you need. Ensure "n" value is set to 0.60 for Ducts.

- ☐ Return to main screen.



1 Prepare the ducts and house

- ☐ 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.



- ☐ Remove all air filters.

- ☐ Open all interior doors leading to rooms containing a supply or return register.



- ☐ Open an exterior door or window.

- ☐ See "Residential Duct Testing Manual" for additional information.

2 Connect to ducts

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

- ☐ Attach Flex Duct to register.



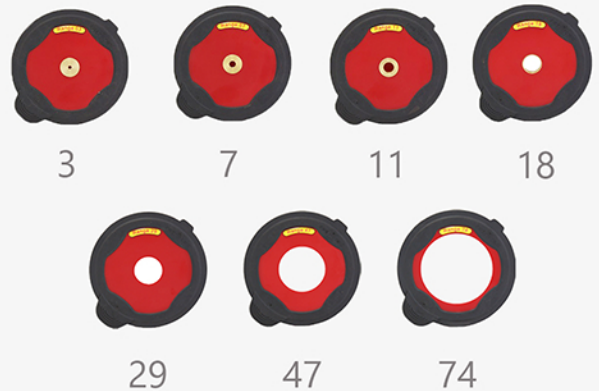
- ☐ Install Range Plug 74 to start, as most systems can be tested on this Range Configuration.



- ☐ 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.

Use smaller Range number for tighter ducts, and larger number for leakier ducts.



- ☐ Tap the image of the DucTester on the gauge and select the range to match your fan whenever a Range Plug is changed.

2

Connect to ducts (cont'd)

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

Depressurize



Pressurize



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 the fan. DO NOT connect the Speed Control Cable yet because it will disable the knob and it is important to experience manual operation first.

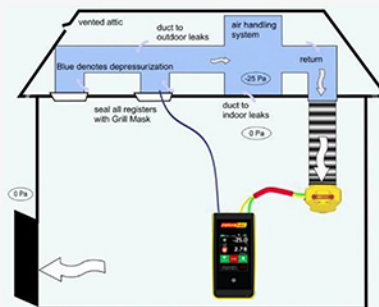


- Insert blue tube into the supply register closest to the air handler.



Total Duct Leakage Test: Depressurize

Ready to conduct the test by depressurizing the ducts:



4

Conduct test

- Adjust fan speed knob clockwise until [Channel A] reaches test pressure.
- 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. A solid green status light indicates gauge is ready to control the speed.



- For a test pressure of 80 Pa, tap [Set Pressure], enter 80, and tap [Set].
- Tap [@] display what the result would be at exactly 25 Pa.

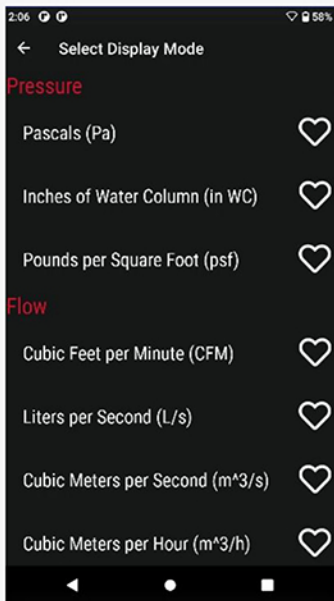


- Read results directly from the gauge.

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.

- ☐ Flow at the induced pressure is the simplest result.
- ☐ Flow in CFM per square foot may be required. (Enter an Area).
- ☐ Flow in CFM per 100 square feet is required by Code or other programs. (Enter an Area).



When a Result is chosen that requires a Area or Volume, Area or Volume will be shown on the Home Screen. Tap to Change.

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 and select "EqLA: sq in."
- ☐ [Channel A] shows the duct pressure
- ☐ [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 Rang Plug
- ☐ [Change Range] on the gauge to match
- ☐ Re-adjust fan 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 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.

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.