

Retrotec's Model 350x

rev 2020-04-27

Residential DucTester QuickGuide



Quick Connect
Collar

DM32 gauge

DucTester

Clear Flange

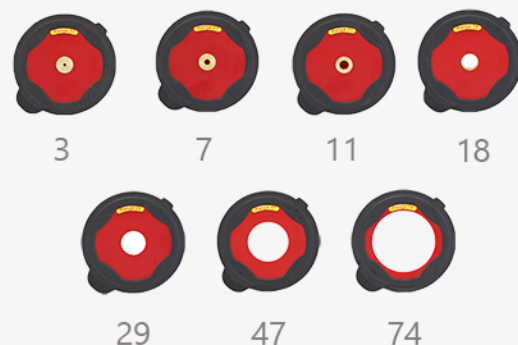


Flex Duct

Grill Mask

Tubing, Cords,
Power Cable

Range Plugs



Unpack, connect gauge

Check boxes (☐) for each step.

- ☐ Remove everything from the case.
- ☐ 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.

*Gauge remains connected
like this for all tests.*



Prepare the gauge

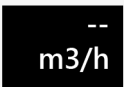
Make sure DucTester 350 is showing on the **Home** screen.



If not, tap the fan picture, then



Tap , tap DucTester 350, then select the range that you have installed.



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



Time Averaging
5 second(s)

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



Tap **[Settings]** then . Make sure the **[Default @ Pressure]** is 80, 160, or 250 Pa, depending on the test pressure you need. Make sure "n" value is set to 0.60 for Ducts.



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

1 Prepare the ducts and house

- ☐ Seal all supply and return grills/registers, including any exterior air inlets, with Grill Mask or tape. Open all interior doors leading to rooms containing a supply or return register, and open an exterior door or window.
- ☐ Shut off all HVAC (A/C, furnaces).



2 Prepare the ducts and house (cont'd)

- ☐ Turn off air-handlers & remove all air filters



- ☐ Attach Flex Duct to register.



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



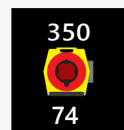
Use smaller Range number for tighter ducts, and larger number for leakier ducts.



3 7 11 18



29 47 74



- ☐ Tap  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

- Connect power cord.



- Connect yellow and green tubes to matching color ports on fan. Plugging in the Speed Control Cable will disable the knob. It is connected later in Step 4.



Speed Control Cable

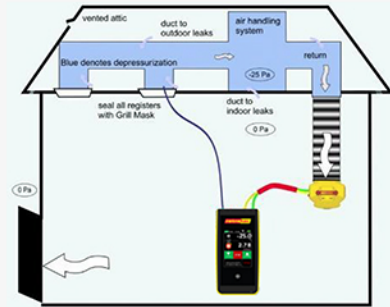


- Insert blue tube into the duct



Total Duct Leakage Test: Depressurize

Ready to conduct the test by depressurizing the ducts:



4

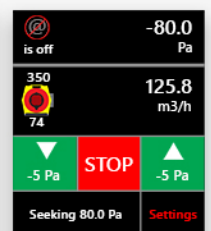
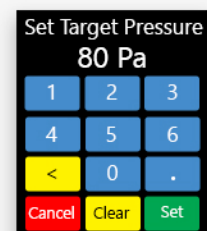
Conduct test

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



For a test pressure of 80 Pa, tap

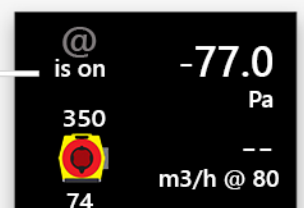
- Set Pressure



- Enter 80, tap **[Set]**

- Tap **@ is off** to display what the result would be at exactly 80 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: m3/h

Flow at the induced pressure is the simplest result.

Flow/Area: m3/(h · m2)
Flow normalized by area

Flow in cubic meters per second per square meter (m3/(h·m2)) may be required.
(Enter an area)

Flow/Area: m3/(s · m2)
Flow normalized by area

Flow in cubic meters per second per square meter (m3/(s·m2)) may also be required.
(Enter an area)

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

Area

100 m2

or

Volume

800 m3

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?

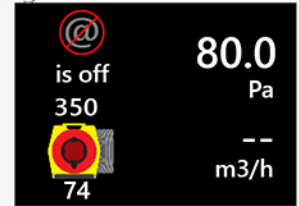
Flow reads "--" at test pressure?

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



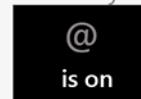
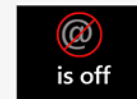
- ☐ Re-adjust fan speed.



Cannot achieve test pressure at full speed?

If fan reaches 100% speed before reaching 80 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 80 Pa.

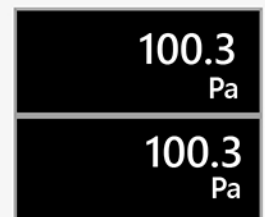


Field check gauge weekly

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.