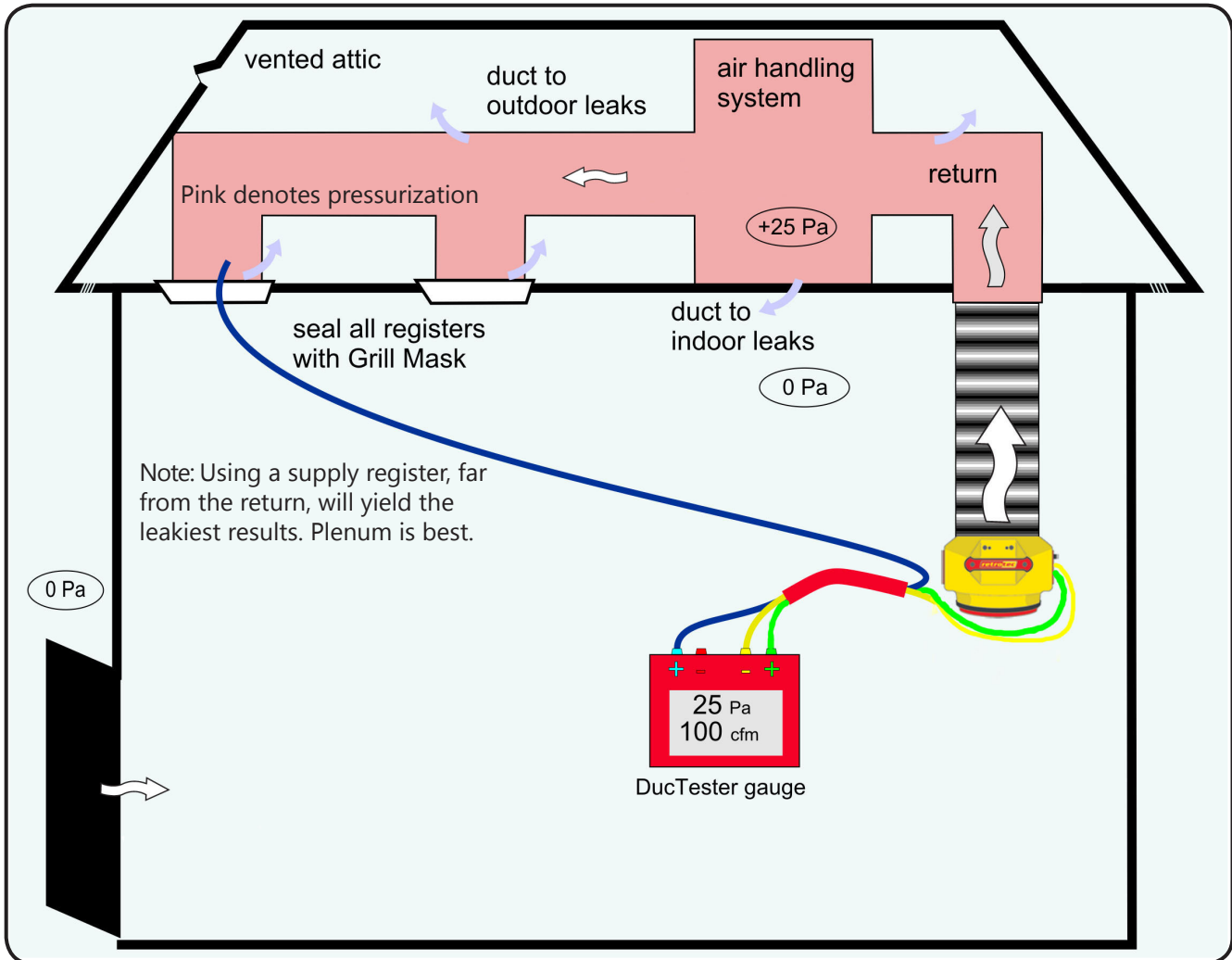
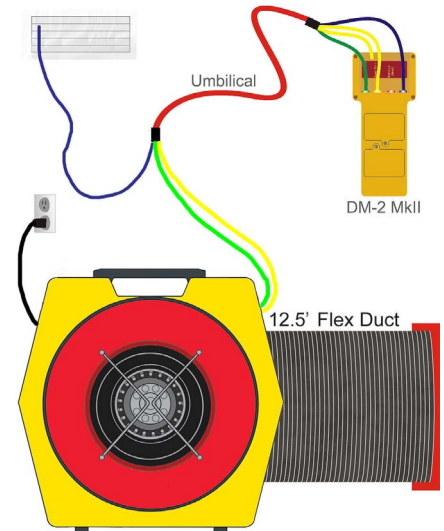



Model 200 DucTester

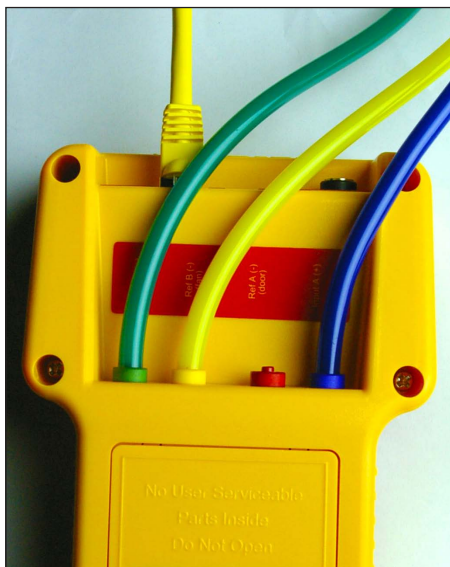


QuickGuide 200 DucTester

Unpack, connect gauge



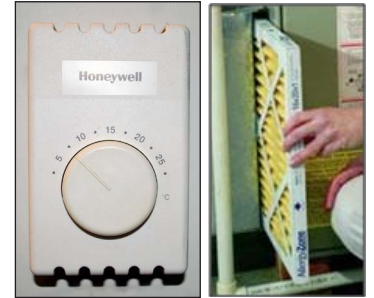
- Remove everything from the case.
- Plug in the battery charger.
- Install 4 NiMH AA batteries.
- Press **[On]**, then **[Exit]**, to display the battery indicator.
- Charge for 18 hrs. 
- Connect yellow, green and shorter blue tube to gauge.
- Slide gauge into the clear sleeve and Velcro down umbilical cable to case.



Gauge remains connected like this for all tests.

Step 1: Connect to ducts

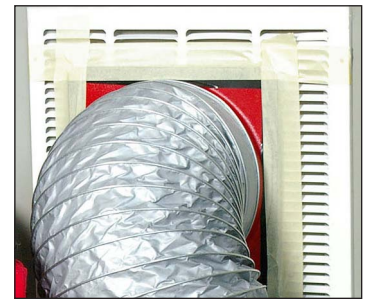
- Turn off Air-handler and remove all filters.



- Tape flange to main return or air handler cabinet using masking tape.



- Attach Flex Duct.



- Install Mid-Range Ring.



Step 2: Prepare ducts and house

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



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Step 3: Connect gauge & fan for pressurization

- Flex Duct is connected to fan exhaust.



- Connect power cord. Switch to on (I). Green light indicates a good connection.



- Connect yellow and green tubes to fan. Ethernet style Speed Control Cable is connected in Step 6.



- Insert blue tube into a supply register.



Step 4: Conduct test

- Press **[On]** twice. Gauge displays "Mid".

Note: See "Set up gauge" when first used. Afterwards, gauge returns to same setting each time.

- Adjust knob until pressure is about 25 Pa.
- Record results.



Step 5: No results displayed?

If the target pressure has been reached, but "TOO LOW" appears, the fan is running too slowly to measure flow.



- Add the next smaller Range Ring.
- Change **[Range Config]** on the DM-2 to match.
- Re-adjust speed.

Cannot achieve test pressure?

If fan reaches 100% speed on Mid Range before reaching the target pressure:

- Remove Mid Range and try again.
- Check seals on all registers. Look for disconnected ducts or ducts open to outdoors.
- Press **[@ Pressure]** to get the gauge to display what the flow would be at (@) 25 Pa.



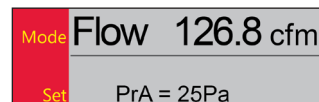
620 cfm is the flow rate that would occur at 25 Pa, even though only 22 Pa was achieved.

Step 6: Adjust fan speed with gauge

Connect Speed Control Cable to fan. Solid green Status light indicates DM-2 connected.



- Press **[Set Pressure] [25] [Enter]** to test at 25 Pa.



- Press **[Set Speed] [25] [Enter]** to set speed to 25%.



- When speed or pressure is set, press **[Jog/Hold]** until "Jog" appears, then **[▲]** **[▼]** to adjust up or down.



Tip: Click to change by 1%, hold to increase 5%. Press **[Exit]** to turn the fan off.

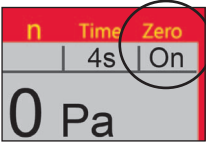



QuickGuide 200 DucTester

Choose correct Range Ring

- Start with the Mid-Range Rings.
- Remove Range Rings for leakier ducts, add Rings for tighter ducts.
- Press **[Range Config]** to select range on gauge to match fan.



Set up gauge

Auto Zero 6	Leave Auto Zero "On" to continuously zero gauge. 
Device 0	Set Device to "Retrotec DU200" for DU200 DucTester system.  <p>Remove other devices using [Setup Menu].</p>
Range Config 2	Set "Range Config" to "Mid" for new house. Set to "Open" for leakier ducts. 
Mode 1	Press [Mode] to cycle through results; add or remove results using [Setup Menu]
@ Pressure	Press [@ Pressure] to display results exactly at (@) a test pressure. Use [Set Pressure] or [Setup Menu] to change the value displayed. 
Time Avg 5	Set Time Avg to "4s". Click to increase if the test pressure fluctuates over 1 Pa.

Results in cfm

- Press **[Mode]** to access results in cfm, cfm/ft², cfm/100ft² or cfm/1000ft². Press **[Setup]** to add and/or remove different results.

25.0 Pa 100 cfm	Flow at the induced pressure is the simplest result.
Enter Volume Area	Press [Area] to input the floor area. Using keypad, press [Enter] if CFM per floor area is required. <p>Floor area of 2000 square feet is entered.</p>
25.0 Pa 0.050 cfm/ft ² area=2000ft ² @25 Pa	Flow per ft ² (sq ft) is required in some states.
25.0 Pa 5.0 cfm/100ft ² area=2000ft ² @25 Pa	Flow per 100ft ² is required in some states.
25.0 Pa 50 cfm/1000ft ² area=2000ft ² @25 Pa	Flow per 1000ft ² is required in some states.

Results in leakage area

- Press **[Mode]** until "EqLA" appears.

The DM-2 displays the duct pressure and the selected leakage area.



Equivalent Leakage Area (EqLA) describes the leakage area in terms of one large hole in a flat surface. Unlike flow, EqLA is fairly consistent at different test pressures, but is usually referenced to 10 Pa.

Effective Leakage Area (EfLA) is a different measure of leakage area, and is never used for ducts. It is usually calculated at 4 Pa.

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Duct Leakage to Outdoors

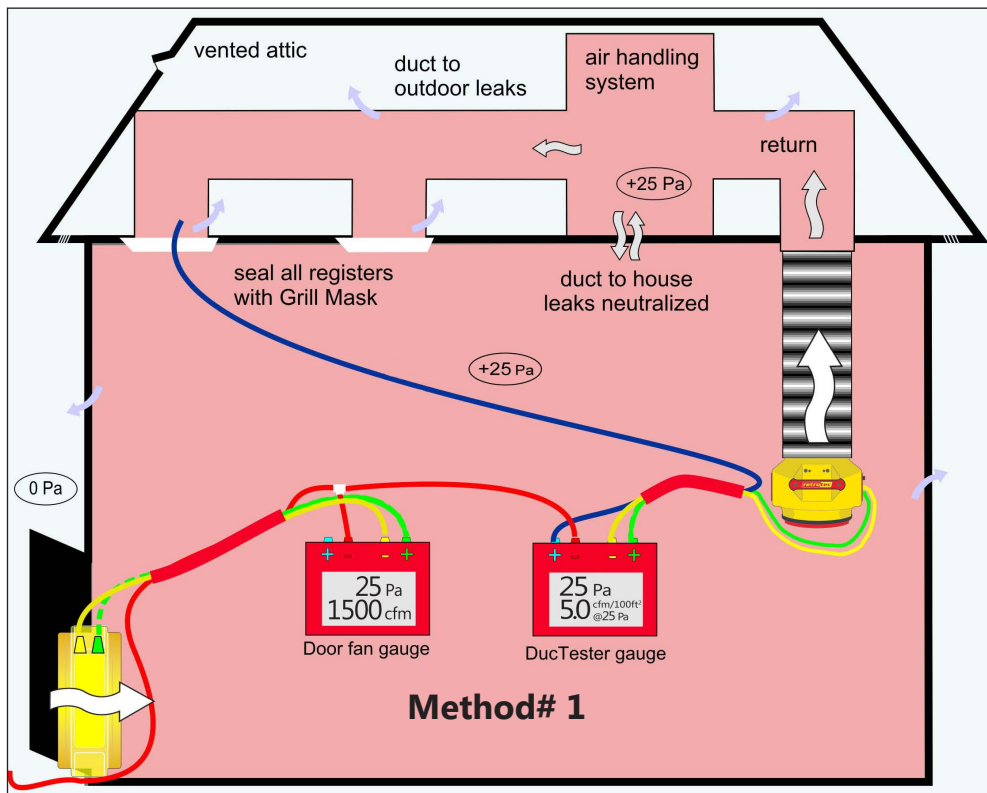
Pressurize with 2 Gauges

Duct-to-outdoor leaks are measured by eliminating the pressure between the ducts and the house which allows duct-to-outdoor leaks to be measured separately.

Method 1 allows the @ extrapolation function to work, increasing accuracy and no changes need to be made on the gauge.

It is easier to visualize since both the duct and house pressure can be seen.

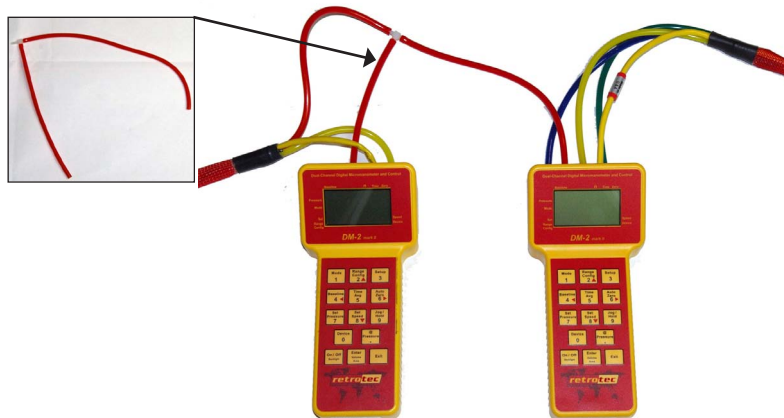
Method 2 does not require connecting a red tube to outdoors but can result in errors if @ is turned on.



Method #1:

Set both to 25 Pa

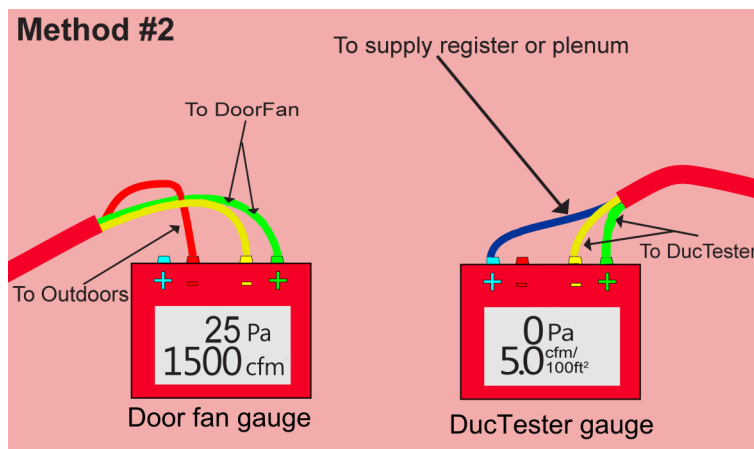
- Connect the red ports together.
- Press **[Set Pressure] [25] [Enter]** on DucTester then Blower Door.
- Press **[@]** to display the results "@25Pa".
- When 25 Pa +/- 1 is achieved on both, record duct leakage to outdoors from the DucTester gauge.



Method #2:

Set duct to house to 0 Pa

- Connect the Blower Door per diagram.
- With DucTester off, set the Blower Door to 25 Pa by pressing **[Set Pressure] [25] [Enter]**.
- Press **[@]** to remove "@" from the display.
- Set the DucTester to 0 Pa by pressing **[Set Pressure] [0] [Enter]**. When 0 Pa +/- 1 is achieved, record duct leakage to outdoors from the DucTester gauge.



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Duct Leakage to Outdoors Pressurize with 1 Gauge

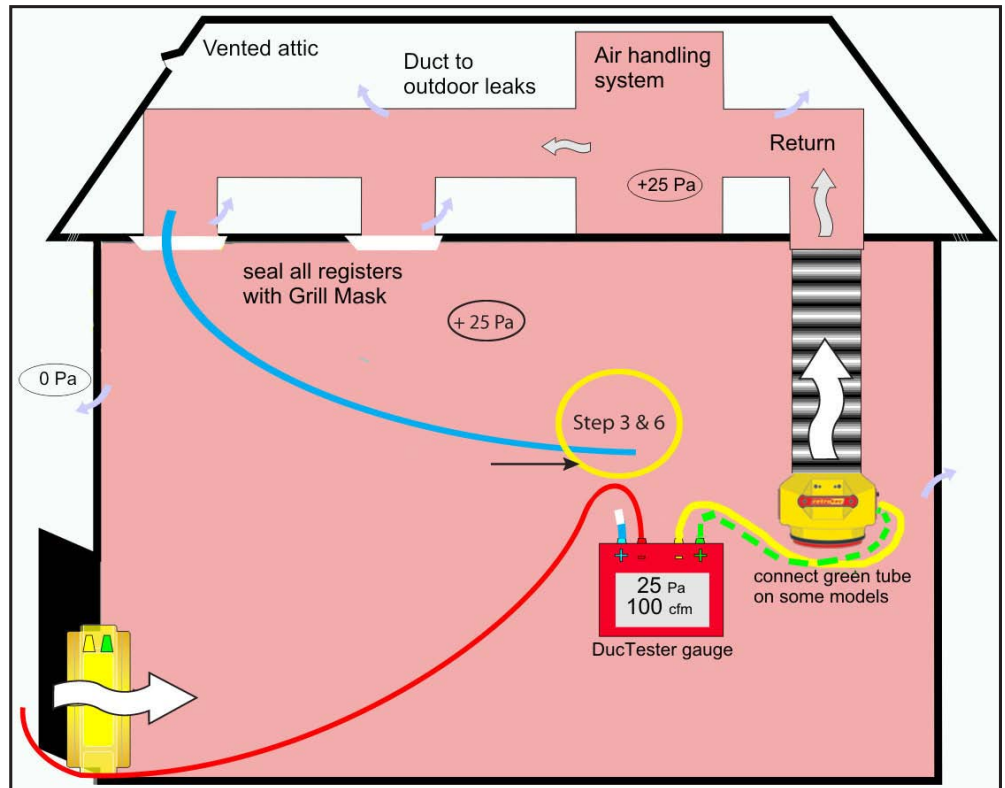
Duct leakage to outdoors may be measured using only one gauge to alternatively measure the house to outdoor pressure then the duct to outdoor pressure.

When the house and ducts are at the same pressure, Channel B displays "Duct Leakage to Outdoors".

Adjust fan speed remotely

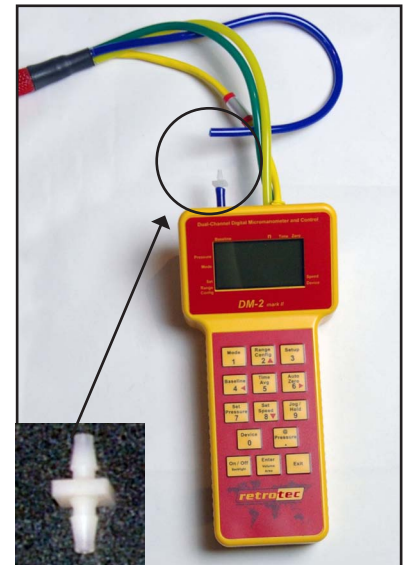
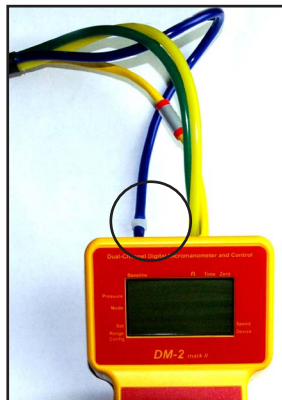
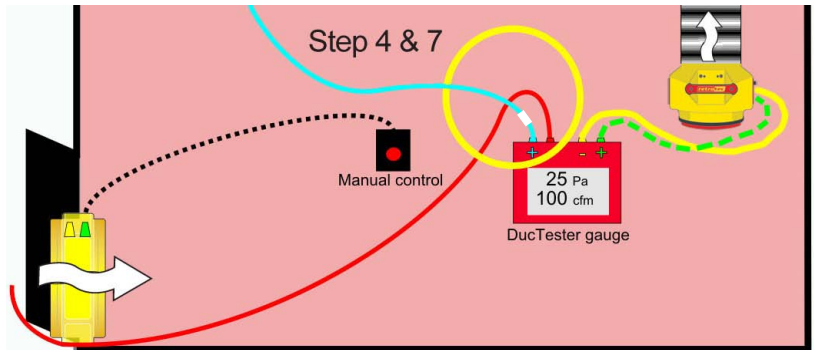
Use optional remote up to 300 feet from fan.

Add any length of Ethernet style cable to the optional remote speed control to allow the door fan speed control to be located next to the gauge.



Note: Pink represents a pressurized area.

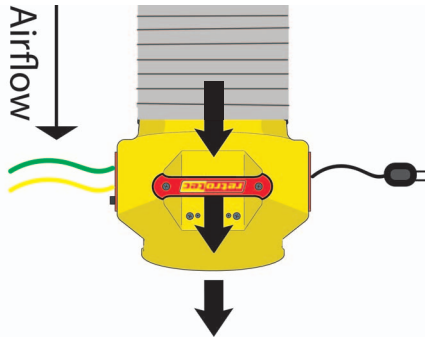
1. Set up the Blower Door to blow into the building and the DucTester to blow into the duct system.
2. Close all doors and windows and shut off any exhaust fans in the building.
3. Keep the blue port on gauge open to house. Manually adjust the Blower Door speed to pressurize the building to +25 Pa on Channel A (PrA) of the gauge.
4. Connect the blue tube to the gauge.
5. Manually adjust the DucTester to reach +25 Pa in the ducts. Wait 60 seconds.
6. Disconnect the blue tube from the gauge and readjust the Blower Door speed to set the building pressure to +25 Pa.
7. Connect the blue tube to the gauge; readjust the DucTester fan speed to achieve +25 Pa.
8. Record duct leakage when you're confident the building and duct pressures have both been stabilized at +25Pa.



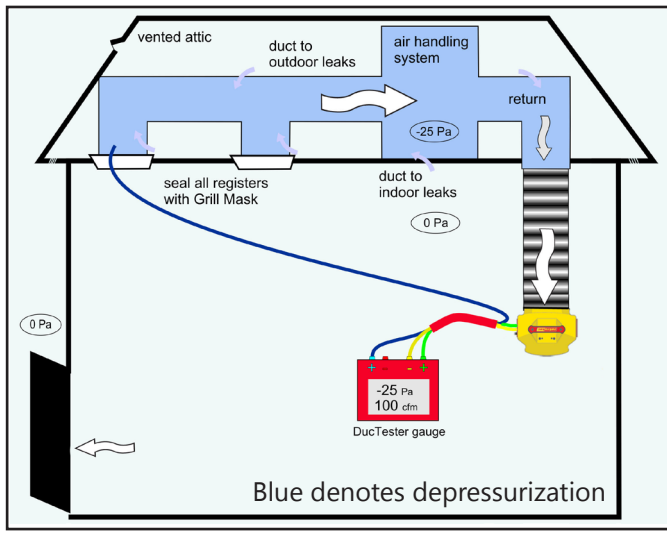
QuickGuide 200 DucTester

Depressurization test

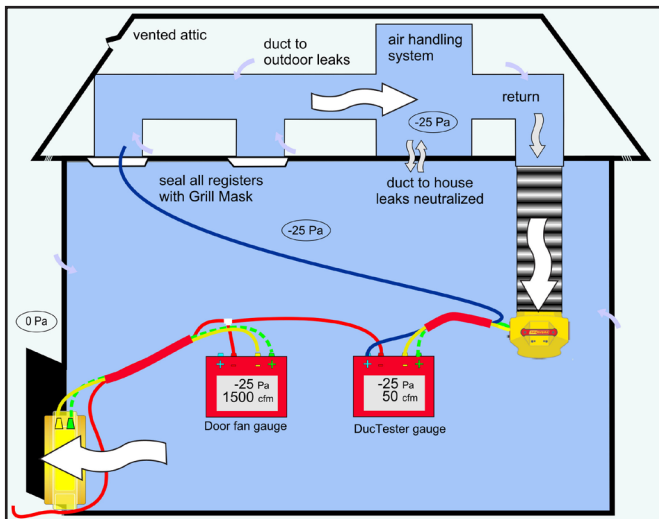
- Connect Flex Duct to fan inlet.



Tubing configuration same for both directions. This test direction works better because the seal over register is improved by the negative test pressure.



Duct leakage to outdoors: Depressurization with 2 gauges



Same method as pressurization except fan direction is reversed.

Field check gauge weekly

- Connect end of blue to yellow with male-male connectors, or,
- Push tube onto red and yellow ports which will produce the same pressure on each channel.
- Press **[Mode]** until "Pa" is displayed on both channels.



Both channels should have same reading within 1%.

AutoZero will cause pressures to drop and will allow comparisons at lower pressures.

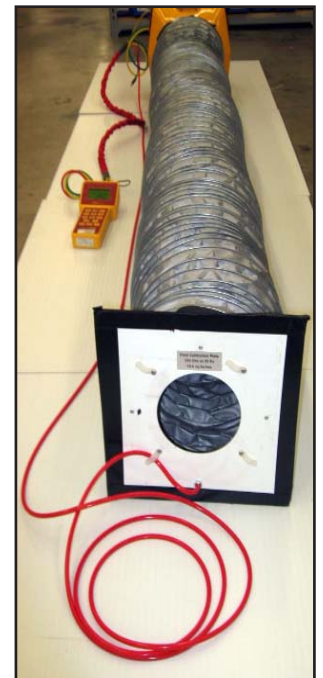


Perform field check weekly or whenever readings seem questionable.



Field check system

- Tape the Field Calibration Plate to the Flex Duct Flange and attach the red tube.
- Attach the Flex Duct to the outlet side of the fan to pressurize the Flex Duct.
- Stretch the Flex Duct to it's full length.
- Set the DM-2 to measure flow @25 Pa.
- Adjust the speed until the PrA reads close to 25 Pa.
- Check the Calibration Plate to determine the acceptable range for flow. Typically, 100 to 110 CFM is a pass.



Optional DU159 Field Calibration Plate shown.

QuickGuide 200 DucTester

Pressure Pan Hood

Faster connection to ceiling level returns for duct leakage measurement, or use it as a Powered Flow Hood for the most accurate measurement of HVAC flow rates.

- Pass the flange through the 10 inch hole in the Pressure Pan and tape it inside using Red Tuck tape. Attach the Flex Duct.

Duct leakage test:

- Connect the Flex Duct to the fan and test.

Powered Flow Hood:

- For measuring supply flows, attach the Flex Duct to the inlet (suction) side of the fan. For return flows, attach the Flex Duct to the outlet (discharge) side of the Model 200 fan.
- Connect the umbilical to the DucTester.
- Attach the Blue Tube to the Pressure Pan Hood.

When a definite pressure appears on Channel A:

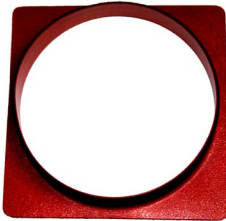
- Adjust the speed until PrA reads a pressure of 0 Pa.
- Or, press **[Set Pressure] [0]** to have the DucTester automatically acquire and maintain a 0 pressure, but make sure the "@" feature is turned off.

Flow through the register will be continuously displayed.



System components

Flange for Duct Testing System



Part #: DU157

Grill Mask 12in x 160ft, 12in perfs, Hi-stick White, Single Roll



Part #: GR113
Part # GR109 (for case of 3)

Deluxe Cordura Toolbag with Shoulder Strap



Part #: TL118

12.5ft (3.8m) Flex Duct for DucTester



Part #: DU156

Low-Range Ring & Mid-Range Ring



(Low) Part #: DU155
(Mid) Part #: DU154

Tubing Accessory Kit



Part #: TU119

Umbilical for Model 200 fans, 20ft (7m)



Part #: DM227

Power Cord with Plug Style B (for USA)



Part #: PT103

9v Country Specific Power Supply with Plug Style A (for USA)



Part #: DM203