

1 Charge batteries for 12 hours

- 1.1 Plug in the battery charger or the power connection from the fan.
- 1.2 Install 4 NiMH AA batteries.
- 1.3 Press **[On]** **[Exit]** to start the DM-2 and to clear the intro screen.
- 1.4 Charge batteries until full (up to 12 hrs.) and disconnect the battery charger.



See: QuickGuide-DM2MkII

2 Prepare the duct

- 2.1 Seal all supply and return grills/registers, including any exterior air inlets, with grill mask.
- 2.2 Open all interior doors leading to rooms containing a supply or return register, and open at least one exterior door or window.
- 2.3 Shut off HVAC (exhaust fans, dryers, A/C, furnaces).
- 2.4 Remove the furnace filter and seal the filter opening.



3 Connect the DM-2

- 3.1 Remove the fan from its case, close the lid.
- 3.2 Place DM-2 on top of the fan case.
- 3.3 Connect the yellow, green and blue tubes to the yellow, green and blue ports. Connect the yellow control cable as shown.

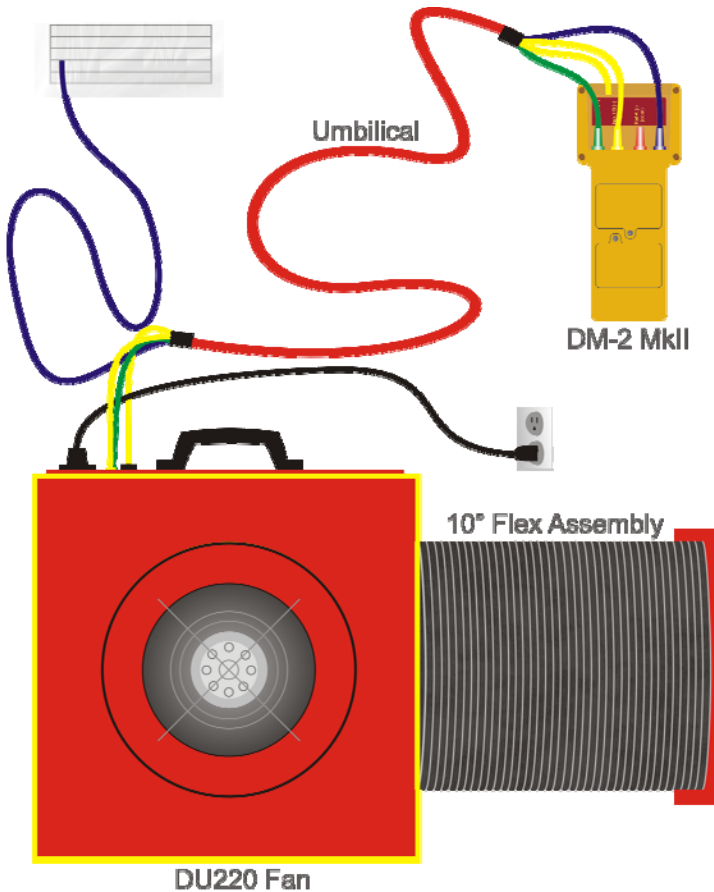


Note Run the DM-2 on batteries until the indicator displays 1/4 charge, and then recharge fully to increase battery life.

See: QuickGuide-DM2MkII

4 Connect the flange

- 4.1 Attach the DucTester flange to the main return-air grill or blower access opening using grill mask.



- Read and experiment with each step
- To perform automatic or multi-point tests*, refer to the Door Fan Software Manual and the DM-2 Operator's Manual

*Tests for CGSB 149, LEED, ASTM E778, ASTM 1827, EN13829, and ATTMA TS-1 may require more elaborate steps and training. This guide is intended for familiarization with the controls.

For the latest Retrotec documentation, visit us at:
<http://www.retrotec.com/info/>

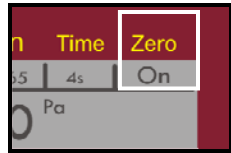
5 Pass blue tube into the grill

- 5.1 Cut a small opening, and insert the long end of the blue pressure tube into the grill.



Note The blue tube should be inserted into a supply register for “worst case” results.

6 Zero gauge



Press **[Auto Zero]**. When “On” is displayed, the gauge will zero itself every 8 seconds.

Tip Normally, **[Auto Zero]** should be left “On”; turn off to save battery power.

7 Set time averaging

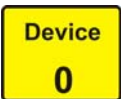


- 7.1 Press **[Time Avg]** as needed, until “PrA” varies by less than 1Pa.
7.2 Wait for twice the time average setting before taking a reading.

Example: Set **[Time Avg]** to “8s” then watch for 16 seconds.

- Tip** 1s, 2s, 4s, 8s updates every 1 second(s),
10s, 20s, 1min, 2min updates every 10 seconds.
Tip Use longer time averaging in windy conditions.

8 Set fan model on DM-2



Press **[Device]** until “Retrotec DU200” is displayed.

Tip Disable the other devices using **[Setup]** to prevent the incorrect flow curves from being accidentally accessed.

See: *QuickGuide-DM2MkII*

9 Set Range Plate and configuration



- 9.1 Remove range plates to get a higher range of flows, add plates for a lower range of flows.
9.2 Start with the Mid range by installing the Mid range plate.
9.3 Press **[Range Config]** until the DM-2 displays Range Config “Mid”.

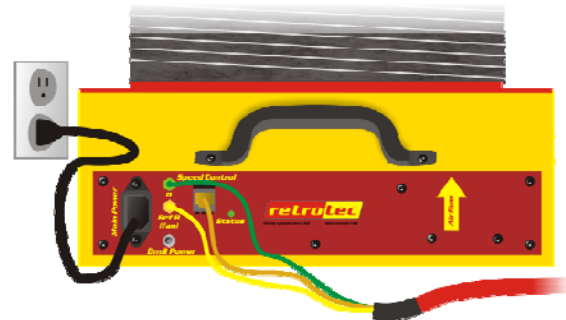


10 Connect the fan

- 10.1 Connect power cord to fan top and to wall outlet. The Power light turns green and the Status light starts flashing green.
10.2 From the umbilical, connect the yellow tube to the yellow (Ref B) port, green tube to the (B) port and the control cable and power cable to the fan. The Status light turns solid green.

11 Connect duct for pressurization

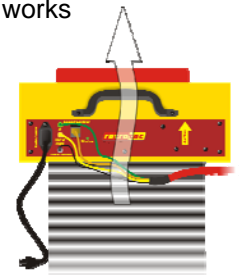
- 11.1 Connect the flex-duct to the air outlet of the fan. Use the strap to secure it.



12 Connect duct for depressurization

Ducts are more easily depressurized, because a negative pressure sucks the grille mask tighter to the registers, instead of blowing it off as pressurization testing tends to do. Pressurization tests are specified because most duct leaks occur under positive pressure, although, readings in both directions are usually identical. Many duct testers only work well in the pressurization direction, but the Q32 works equally well in both directions.

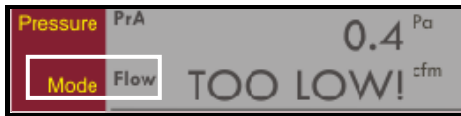
- 12.1 Attach the flex-duct to the inlet of the Duct Tester.
12.2 The DM-2 automatically calculates the correct flow, regardless of the testing direction.



Note The Q32 does not require changing the tubing configuration for either test direction.

13 Choose results

Mode
1



- 13.1 Press **[Mode]** to cycle through the enabled results.
- 13.2 Press **[Mode]** until “Flow” appears.

See: QuickGuide-DM2MkII

14 Set fan speed

Set Speed
8



- 14.1 Press **[Set Speed] [10-100] [Enter]** on the DM-2 to set any speed from 10 to 100%.

Example: Press **[Set Speed] [25] [Enter]** to set the fan speed to 25%.

- Tip** Monitor “PrA” to ensure that the pressure does not exceed 90Pa.
- Tip** Press **[Exit]** to turn the fan off.

- 14.2 Press **[Jog/Hold]** until “Jog” appears. This enables manual fan speed adjustment.

Jog/ Hold
9



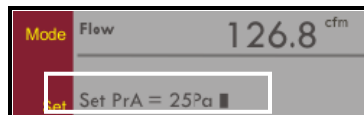
- 14.3 Use **[▲] [▼]** to adjust the fan speed up or down.

Tip Click once to change speed by 1%, hold button to increment by 5%.

15 Set pressure automatically

- 15.1 Press **[Set Pressure] [10-90] [Enter]**. The DM-2 will control the fan to achieve the set pressure.

Set Pressure
7



Example: Press **[Set Pressure] [25] [Enter]** to instruct the DM-2 to attempt to achieve 25Pa duct pressure.

- 15.2 Press **[Jog/Hold]** until “Jog” appears, to enable manual pressure adjustment.

- Tip** Click once to change pressure by 5 Pa, hold to increment by 10 Pa.
- Tip** Press **[Exit]** to turn the fan off.

“Too Low” is displayed

If the pressure (PrA) has been reached, but “Too Low” appears, the fan is running too slowly to measure flow.



1. Press **[Exit]** to stop the fan.
2. Add the next smaller range plate.
3. Change the **[Range Config]** to match.
4. Restart the fan and try again.

Cannot reach “Set” target pressure (25Pa)

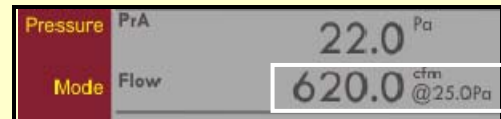
If the fan reaches 100% speed before reaching the target “PrA” pressure:



1. Press **[Exit]** to stop the fan.
2. Remove a range plate, and change the **[Range Config]** to match.
3. Start the fan and try again.

Still cannot achieve target pressure

If the fan reaches 100% speed before reaching the target “PrA” pressure and all of the range plates have been removed:

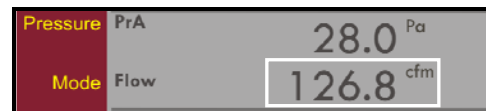


Press **[@ Pressure]** to calculate the flow required to establish the target pressure.

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

16 Flow at the pressure on channel “PrA”

- 16.1 Press **[@ Pressure]** until “@...” disappears. Flow is now displayed at the pressure displayed.



Example: 126.8 cfm is the flow rate that occurred when a test pressure of 28.0 Pa was achieved.

- Tip** CFM25 or cfm at 25 Pa is commonly used in the USA for ducts. Simply establish 25 Pa and read the flow.
- Tip** The default @ Pressure settings can be changed by using **[Setup]**.

17 Viewing flow at another pressure

- 17.1 Press [**@ Pressure**] until “@...” appears. Flow is now calculated at the pressure displayed after the “@”.

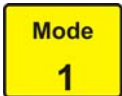


Pressure	PrA	28.0 Pa
Mode	Flow	119.0 cfm @25.0Pa

Example: 119 cfm is the flow rate that would occur if the exact test pressure of 25 Pa was achieved.

- Tip** It is difficult to achieve an exact test pressure, especially under windy conditions. Use “@ Pressure” to improve accuracy; flow at the pressure following the “@” sign is displayed.
- Tip** In [**Set Pressure**] mode, the “@ Pressure” can change according to the target pressure which is very useful when setting several different test pressures.

18 Flow result



Pressure	PrA	25.0 Pa
Mode	Flow	222.5 cfm

- 18.1 Press [**Mode**] until “Flow” is displayed.
18.2 The DM-2 displays the current duct pressure and flow.

19 Leakage area (optional result)

- 19.1 Press [**Mode**] until “EqLA” appears.
19.2 The DM-2 displays the duct pressure and the selected leakage area.

Pressure	PrA	25.0 Pa
Mode	EqLA	44.0 in ² @10Pa

- Note** **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 10Pa.
- Note** **Effective Leakage Area (EfLA)** is a different measure of leakage area, and is never used for ducts. It is usually calculated at 4Pa.

20 Software results (optional)

Some software requires raw duct pressure and fan flow pressures to be entered. Flow is calculated in the software which must know the range configuration to access the proper flow curves.

- 20.1 Press [**Mode**] until “PrB” appears.
20.2 Input “PrA” and “PrB” into the software.

Pressure	PrA	28.0 Pa
Mode	PrB	22.5 Pa

21 Field gauge check recommended weekly

- 21.1 Insert a ‘T’ in the yellow tube.
21.2 Connect the red and yellow ports to the ‘T’.
21.3 Increase the fan speed and compare PrA and PrB.
21.4 Disconnect tubes from yellow and red ports and connect them to green and blue ports.
21.5 Repeat the test.
21.6 Values should be within 1% of each other.



22 Field system check recommended

- 22.1 Tape the Field Calibration Plate to the flex duct flange and attach the red tube.
22.2 Attach the flex-duct to the outlet side of the fan to pressurize the flex-duct.
22.3 Set the DM-2 to “Flow@25Pa”.
22.4 Adjust the speed until the PrA reads close to 25Pa.
22.5 97 to 106 cfm is a pass.

