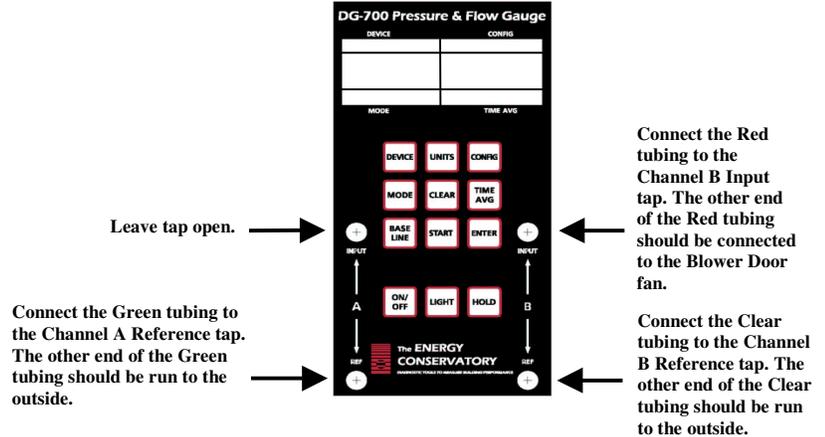


Quick Guide BD-PR700

One-Point 50 Pascal Pressurization Test (blowing air into the building) Using the Minneapolis Blower Door™ and DG-700 Digital Gauge

1. Install the Blower Door system.

- a) Install the aluminum frame and nylon panel in an exterior doorway of a large open room.
- b) Attach the gauge mounting board and fan speed controller to a door, or to the aluminum frame gauge hanger bar, using the C-clamp on the back of the mounting board.
- c) Secure the DG-700 gauge onto the mounting board (using the Velcro strips) and connect tubing to the DG-700 as shown in the illustration to the right.
- d) Run approximately 3 - 5 feet of the remaining ends of both the **Green** and **Clear** tubing outside through the patches in the bottom corners of the nylon panel. Be sure the outside end of the tubing is well away from the exhaust flow of the Blower Door fan and is protected from the wind.
- e) Install the Blower Door fan, with the Flow Rings and No-Flow Plate attached, into the large hole in the nylon panel. The exhaust side of the fan should be inside the building, and the inlet side of the fan (the side with the Flow Rings) should be outside the building.
- f) Insert the female plug from the fan speed controller into the receptacle located on the fan electrical box. The remaining cord (power cord) should be plugged into a power outlet that is compatible with the voltage/frequency of the fan and controller.
- g) Check that the fan direction switch is set to blow air into the building.
- h) The remaining end of the **Red** tubing should now be connected to the pressure tap on the Blower Door fan electrical box.



2. Prepare the building for the Test.

- a) Close all exterior doors and windows, and open all interior doors. Because few house basements can be completely sealed from the house and usually some conditioning of the basement is desirable, they are typically included as conditioned space.
- b) Adjust all combustion appliances so that they do not turn on during the test.
- c) Be sure all fires are out in fireplaces and woodstoves. Close all fireplace and wood stove doors to prevent scattering of ashes.
- d) Turn off any exhaust fans, vented dryers, and room air conditioners.

3. Conducting the Test.

- a) Turn on the gauge by pressing the **ON/OFF** button.
- b) Press the **MODE** button twice to put the gauge into the **PR/ FL @ 50** Mode. In this Mode, **Channel A** is used to measure building pressure while **Channel B** is used to display the estimated building leakage at a test pressure of 50 Pascals. (The leakage estimate shown on **Channel B** is determined by mathematically adjusting the actual air flow from the Blower Door fan using the **Channel A** building pressure reading and a Can't Reach Fifty (CRF) factor).
- c) With the fan inlet still covered, press the **BASELINE** button to initiate the building baseline measurement procedure on **Channel A**. Press **START** to begin the baseline measurement. During a baseline measurement, **Channel A** will display a long-term average baseline pressure reading while **Channel B** is used as a timer in seconds to show the elapsed measurement time. When you are satisfied with the baseline measurement, press the **ENTER** key to accept and enter the baseline reading into the gauge. The **Channel A** display will now show an **ADJ** icon to indicate that it is displaying a baseline adjusted building pressure value.
- d) Remove the No-Flow Plate from the Blower Door fan and install the Flow Ring which you think best matches the needed fan flow (see Table to the right).
- e) Check (and adjust if necessary) the selected test Device (i.e. fan) and Configuration (i.e. Flow Ring) shown in the upper part of the gauge display to match the fan and Flow Ring being used in the test. For example, the Device icon for the Model 3 (110V) Blower Door is **BD 3**, and the Configuration icon for Ring A is **A1**. Press the **DEVICE** button to change the selected fan. Press the **CONFIG** button to change the selected Flow Ring.
- f) Turn on the Blower Door fan by slowly turning the fan controller clockwise. As the fan speed increases, the building pressurization displayed on **Channel A** should also increase. Continue to increase the fan speed until the building pressurization shown on **Channel A** is between 45 and 55 Pascals. Do not waste time adjusting and re-adjusting the fan speed control to achieve a test pressure of exactly 50 Pa.
- g) **Channel B** will now display the One-Point 50 Pascal leakage estimate. Record this number. If the leakage estimate is fluctuating more than desired, try changing the Time Averaging setting on the gauge by pressing the **TIME AVG** button and choosing the **5** or **10** second or **Long-term** averaging period. (If "-----" or "LO" appear on **Channel B**, see #4 on other side).

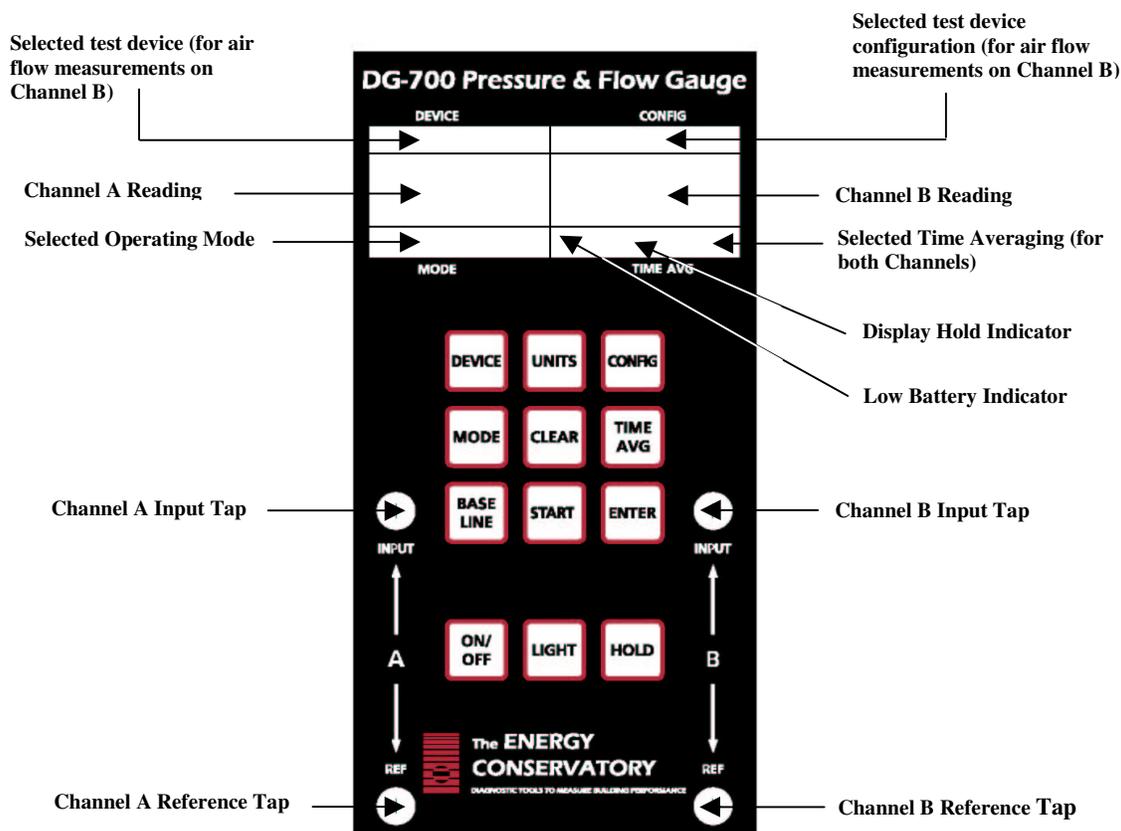
Fan Configuration	Flow Range (cfm) for Model 3 Fan
Open (no Flow Ring)	6,300 - 2,430
Ring A	2,800 - 915
Ring B	1,100 - 300
Ring C	330 - 85

4. “-----” or “LO” appearing on Channel B

Whenever “-----” or “LO” appears on **Channel B** in the **PR/ FL @ 50** Mode, the DG700 can not calculate a reliable leakage estimate. The messages “-----” and “LO” appear on **Channel B** under the following three conditions:

- “-----” is continuously displayed when the building test pressure from **Channel A** is below a minimum value of 10 Pascals. Estimating building leakage results when the test pressure is below this value may result in large errors. If possible, install a larger Flow Ring or remove the Flow Rings to generate more fan flow.
- “LO” is continuously displayed when there is negligible air flow through the test device.
- “LO” alternates with a flow reading when the air flow reading through the device is unreliable (i.e. you are trying to measure a flow outside of the calibrated range of the test device in its current configuration). If possible, you should change the test device configuration to match the flow rate being measured (e.g. install a Flow Ring or a smaller Flow Ring).

Note: If you change the Flow Rings on the fan, be sure to change the Configuration setting on the gauge to match the installed Ring.



<u>Button</u>	<u>Purpose</u>	<u>Button</u>	<u>Purpose</u>
DEVICE	Used to select the Energy Conservatory test device connected to Channel B (not active in PR/PR and PR/ V modes).	BASELINE	Initiates Baseline pressure measurement procedure on Channel A (not active in PR/AH and PR/ V modes).
UNITS	Selects the pressure and air flow units for Channels A and B .	START	Used to start measurement procedure for Baseline and NSOP measurements. Also used to reset time averaging buffers and manually initiate auto-zero procedure.
CONFIG	Used to select the configuration for the currently chosen test device (not active in PR/PR and PR/ V modes).	ENTER	Used to accept and enter Baseline and NSOP pressure readings. After entering Baseline reading, Channel A will display baseline adjusted pressure.
MODE	Selects the current operating mode.	ON/OFF	Turns gauge On and Off.
CLEAR	Used to exit out of a Baseline pressure measurement procedure. When in PR/AH mode, resets gauge back to beginning of AH flow measurement procedure (i.e. NSOP measurement).	LIGHT	Turns display backlight On and Off.
TIME AVG	Used to select the time averaging mode (not active during Baseline and NSOP measurements).	HOLD	Turns display Hold feature On and Off.