

## Quick Guide DB-PR700 (Outside)

### One-Point 25 Pascal Leakage to Outside Pressurization Test (blowing air into the duct system)

#### Using the Minneapolis Duct Blaster®, DG-700 Digital Gauge and Minneapolis Blower Door™

#### 1. Connect the Duct Blaster fan to the duct system.

- Choose a location to install the Duct Blaster fan. In single, double or triple returned systems, the largest and closest return to the air handler is usually the best choice. **Note:** In multi-return systems (a return in every room), installing at the air handler cabinet is often best.
- Remove any remote filters from the chosen return and then connect the black square transition piece to the return using temporary tape. Completely seal the remaining open area of the return with tape.
- Pull the Duct Blaster fan and flex duct out of the carrying case. Connect the flex duct to the exhaust side of the fan (i.e. the side with the metal guard) using the round transition piece and connect trim. Connect the open end of the flex duct to the square transition piece using the velcro strap on the flex duct.
- Connect the fan speed controller to the fan and plug it into a grounded power outlet.
- Install the Flow Ring which you think best matches the needed fan flow.
- If your DG-700 gauge and Duct Blaster fan speed controller are compatible with Cruise Control, install the fan control cable into the 3.5 mm communication jacks located on top of the DG-700 and on the side of the speed controller (otherwise skip this step). \*\*

Fan Configuration	Flow Range (cfm) For Series B Duct Blaster
Open (no Flow Ring)	1,500 - 600
Ring 1	800 - 225
Ring 2	300 - 90
Ring 3	125 - 10

#### 2. Prepare the duct system and house for the Test.

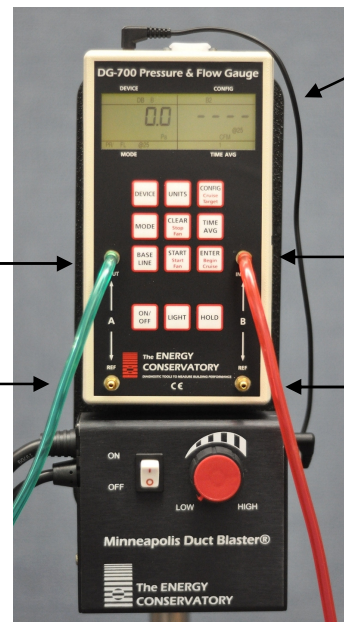
- Adjust the HVAC system controls so that the air handler does not turn on during the test.
- Temporarily seal off all remaining supply and return registers, and combustion or ventilation air inlets which are connected to the duct system. Use *Duct Mask™* temporary register sealing material provided with your Duct Blaster, or use painters tape and paper.
- Turn off any exhaust fans, vented dryers, and room air conditioners.
- Remove all central filters (i.e. in air handler or return plenum).
- If the Duct Blaster is installed in an attic, garage or crawlspace - open vents or access panels or doors from these spaces to the outside.
- Install the Blower Door system (including a gauge to measure building pressure with reference to outside) in a centrally located exterior door. Set up the Blower Door fan to pressurize the building (blowing air into the building). If the Blower Door DG-700 gauge and fan speed controller are compatible for Cruise Control, install the fan control cable. We will not be measuring Blower Door fan flow during this test.
- Prepare the building for a Blower Door test as described in the Blower Door manual.

#### 3. Connect tubing to the Duct Blaster Gauge.

- Select a location to measure duct pressure. The best location for measuring duct pressure is often in the supply trunkline or plenum. Drill a small hole (1/4" to 3/8" OD) into the duct to allow a static pressure probe to be installed. Install the static pressure probe with the end of the probe pointing into the air flow from the Duct Blaster fan. If the duct system is reasonably airtight (e.g. less than 200 cfm25 of leakage), duct pressures can be measured at any supply register by inserting a piece of tubing through the temporary register seal.
- Connect tubing to the Duct Blaster DG-700 as shown in the illustration to the right.

Connect the Green (or Clear) tubing to the Chan A Input tap. The other end of the Green tubing should be connected to the duct system (by either inserting into a sealed register, or connecting to the end of the installed static pressure probe).

Connect Chan A Ref tap to inside of building (if gauge is located in the building, leave this tap open).



Optional fan control cable (for Cruise Control).

Connect the Red tubing to the Chan B Input tap. The other end of the Red tubing should be connected to the brass tap in the middle of the DB fan housing.

Connect Chan B Ref tap to space where the fan is installed (if fan and gauge are in the same space, leave this tap open).

\*\* Your DG-700 gauge is compatible with Cruise Control if the CONFIG, CLEAR, START and ENTER keys have additional red lettering below the main black script. Cruise Control also requires a Duct Blaster speed controller with a 3.5 mm communication jack installed on the side of the controller box, and a fan control cable.

#### 4. Conducting the Test.

- a) Turn on the Blower Door fan and pressurize the house to 25 Pascals. If the Blower Door DG-700 and fan speed controller are compatible with Cruise Control, use the Cruise Control function to maintain the 25 Pa house pressurization.
  - b) Turn on the Duct Blaster DG-700 gauge by pressing the **ON/OFF** button.
  - c) Press the **MODE** button once to put the gauge into the **PR/ FL** Mode. In this Mode, **Channel A** is used to measure duct system pressure while **Channel B** is used to display air flow through the Duct Blaster fan.
  - d) 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 Series B Duct Blaster fan is **DB B**, and the Configuration icon for Ring 2 is **B2**. Press the **DEVICE** button to change the selected fan. Press the **CONFIG** button to change the selected Flow Ring.
- e) With the Blower Door fan continuing to run, turn on the Duct Blaster fan.

##### *If Using Cruise Control for the Duct Blaster Fan:*

Turn the Duct Blaster speed controller to the “just on” position (i.e. turn the controller knob all the way down counter-clockwise and flip the on/off switch to “ON” – the fan will not be turning). Now press the **Begin Cruise (Enter)** button. The **Channel A** display will now show the number 50 (the default target Cruise pressure). Press the **Cruise Target (Config)** button twice to change the target Cruise pressure to +0. Press the **Start Fan (Start)** button. The Duct Blaster fan will now slowly increase speed until the pressure between the duct system and the house (displayed on **Channel A**) reads zero.

##### *If Manually Controlling the Duct Blaster Fan:*

Turn on the Duct Blaster fan controller and slowly turn the fan controller knob clockwise. Increase the fan speed until the pressure between the duct system and the house (displayed on **Channel A**) reads zero.

- f) If the Blower Door fan is being controlled by Cruise control, go to section **g**) below. If the Blower Door fan is being manually controlled, you will need to re-check the Blower Door building pressure gauge and if necessary, re-adjust the Blower Door fan speed to maintain a building pressure of 25 Pascals. If you are manually controlling the Duct Blaster fan, also re-check the Duct Blaster DG-700 and if necessary, re-adjust the Duct Blaster fan until **Channel A** reads zero.
- g) **Channel B** on the Duct Blaster DG-700 will now display the CFM25 leakage to the outside 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. (If “**LO**” appears on **Channel B**, see #5 below).
- h) Turn off both the Duct Blaster and Blower Door fans. If you are using Cruise Control, this is done by pressing the **Stop Fan (Clear)** button(s).

#### 5. “LO” appearing on Channel B

Whenever “**LO**” appears on **Channel B** in the **PR/ FL** Mode, the DG-700 can not display a reliable fan flow reading. The message “**LO**” appears on **Channel B** under the following two conditions:

- a) “**LO**” is continuously displayed when there is negligible air flow through the test device.
- b) “**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 Ring on the fan, be sure to change the Configuration setting on the gauge to match the installed Ring.