The ENERGY CONSERVATORY

Keeping Things Tight
The Latest in Blower Door and Duct Testing Technology

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DG-700 Replaces the DG-3

➢ Since July 2003, DG-3 discontinued.

➢ DG-700 is the standard Blower Door and Duct Blaster® instrument.

➢ DG-700 is designed to operate with all TEC testing equipment.

DG-700   **DG-3**

DG-700's Added Features

➢ 2 pressure sensors with simultaneous display of both building (or duct) pressure and fan flow.

➢ No need to switch between channels - more intuitive for airtightness testing.

➢ Display always shows which air flow device (fan) and configuration (flow ring) are chosen.

Building or Duct Pressure (Pa)

Fan Flow (CFM)

DG-700 Pressure & Flow Gauge
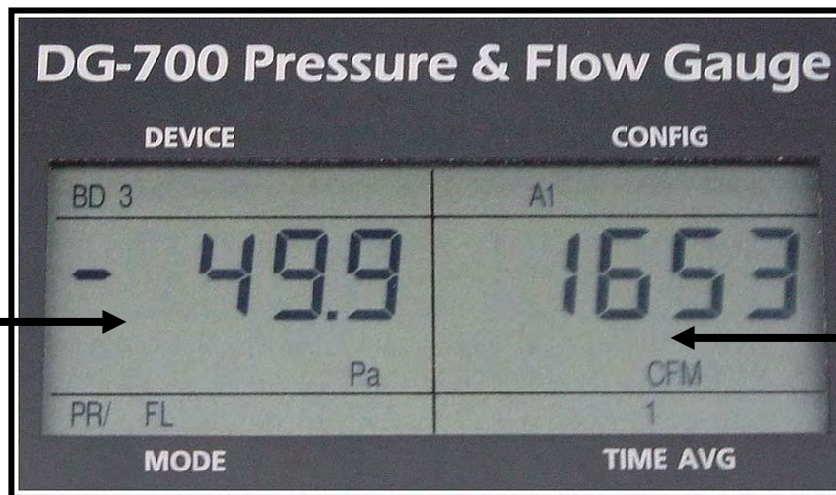
DG-700 Blower Door Features

➢ Specialized **PR/ FLOW @50** Mode for <u>One-Point</u> Blower Door tests.

❑ *Gauge displays CFM50 on Channel B. (Can't Reach 50 Factor is built-in to the flow reading)*

❑ *Saves time - no need to adjust test pressure to exactly 50 Pa - just get close (45 - 55).*

❑ *Very stable readings*

❑ *In very leaky buildings, displays leakage estimate if building pressure is at least 10 Pa.*

DG-700 Blower Door Features

➢ Why conduct <u>One-Point</u> Blower Door tests using **PR/ FLOW @50**?

❑ *Fast and easy.*
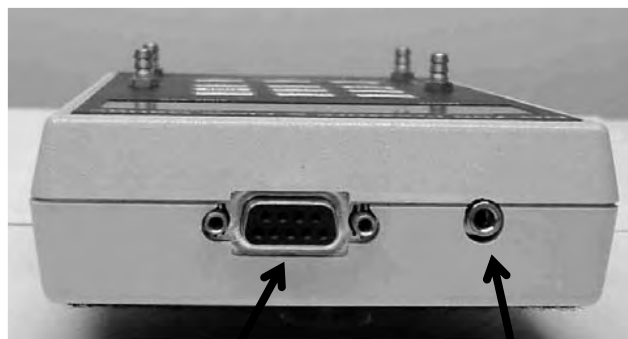
❑ *No software required.*

❑ *Reasonable airtightness results.*

DG-700 Blower Door Features

➢ Computer interface for automated Blower Door testing (<u>Multi-Point </u>test).

- ❑ *Laptop computer.*
- ❑ *TECTITE software (3.0 +).*
- ❑ *Modified fan speed controller with comm. jack.*
- ❑ *Cabling (serial cable and fan control cable).*

Serial Communication Port

Fan Control Jack

DG-700 Blower Door Features

➢ Why conduct <u>Multi-Point</u> automated Blower Door tests?

❑ *Reduces operator errors, improves consistency between tests.*

❑ *Improved accuracy in windy weather, and provides overall estimate of test accuracy.*

❑ *Better method for estimating leakage areas.*

DG-700 Blower Door Features

➢ BASELINE Feature:

❑ *Baseline feature makes it simple to always take a baseline pressure measurement during the Blower Door test. (Baseline is the building pressure before turning on the Blower Door fan and fan sealed).*

❑ *Baseline reading is stored in the gauge.*

❑ *Gauge displays the baseline adjusted house pressure (i.e. baseline reading is automatically subtracted from the building pressure).*

❑ *Eliminates need to calculate adjusted target pressure.*
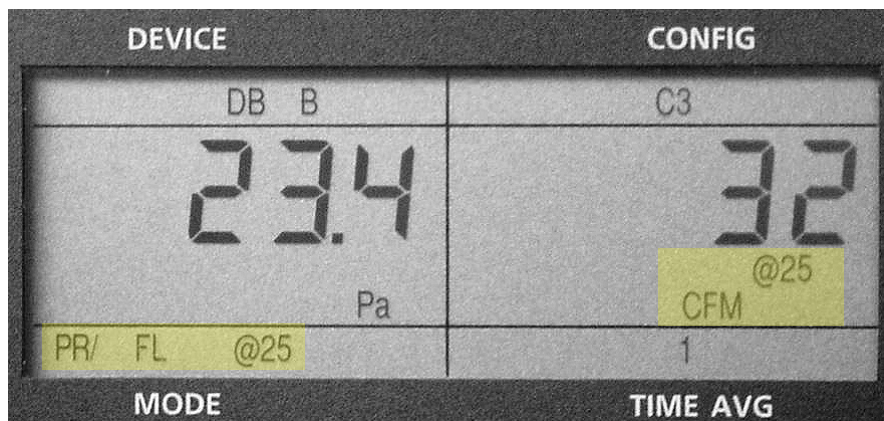
DG-700 Duct Testing Features

➢ Specialized **PR/ FLOW @25** Mode for <u>Total Duct Leakage</u> tests.

- ❑ *Gauge displays CFM25 on Channel B. (Can't Reach 25 Factor is built-in to the flow reading)*
- ❑ *Saves time - no need to adjust test pressure to exactly 25 Pa - just get close (20 - 30).*
- ❑ *Very stable readings*
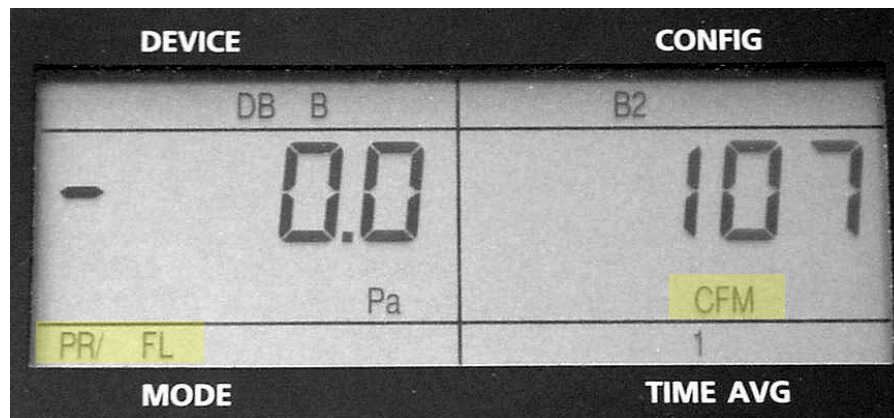- ❑ *In very leaky duct systems, displays leakage estimate if Duct Pressure is at least 5 Pa.*

DG-700 Duct Testing Features

➢ For <u>Leakage to Outside</u> tests (simultaneous use of Duct Blaster and Blower Door), use general purpose **PR/ FLOW** Mode.

❑ *With Blower Door pressurizing building to 25 Pa, Duct Blaster adjusted to create zero pressure between ducts and building.*

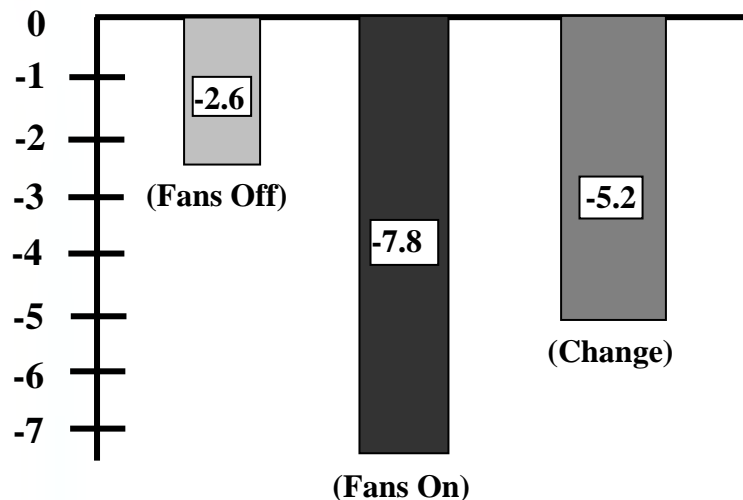❑ *Only advantage of DG-700 with this test is simultaneous display of duct pressure and fan flow, and device and configuration indicators.*
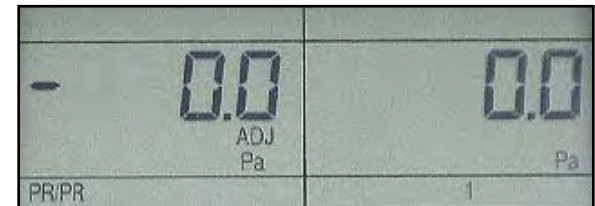
Combustion Safety Testing Features

➢ Use the Baseline feature to measure worst-case fan depressurization.
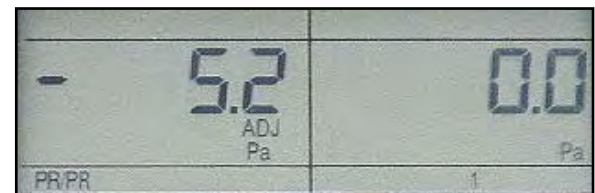
 ❑ *When exhaust fans are turned on, gauge will display change in pressure caused by fans.*

(Fan Off) - Measuring Baseline Pressure

(Fan Off) - Baseline Adjusted Pressure

(Fan On) - Change in Pressure
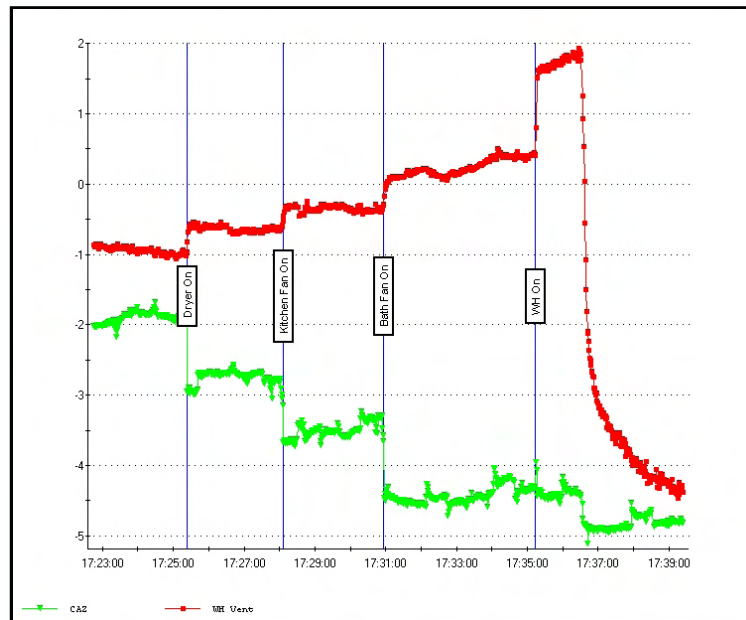
Combustion Safety Testing Features

➤ Connect DG-700 to laptop and simultaneously record fan depressurization and vent performance.

➤ TECLOG software is available at no-charge.

DG-700 Demonstrations

New Developments

➤ TECTITE Mechanical Ventilation Guideline.

  ❑ *The latest version of TECTITE incorporates a mechanical ventilation guideline based on ASHRAE Standard 62.2.*

  ❑ *Estimates the required mechanical ventilation rate for the building based on occupancy and Blower Door test results.*

Mechanical Ventilation Guideline
Recommended Whole Building Mechanical
Ventilation Rate: 28.1 CFM

New Developments
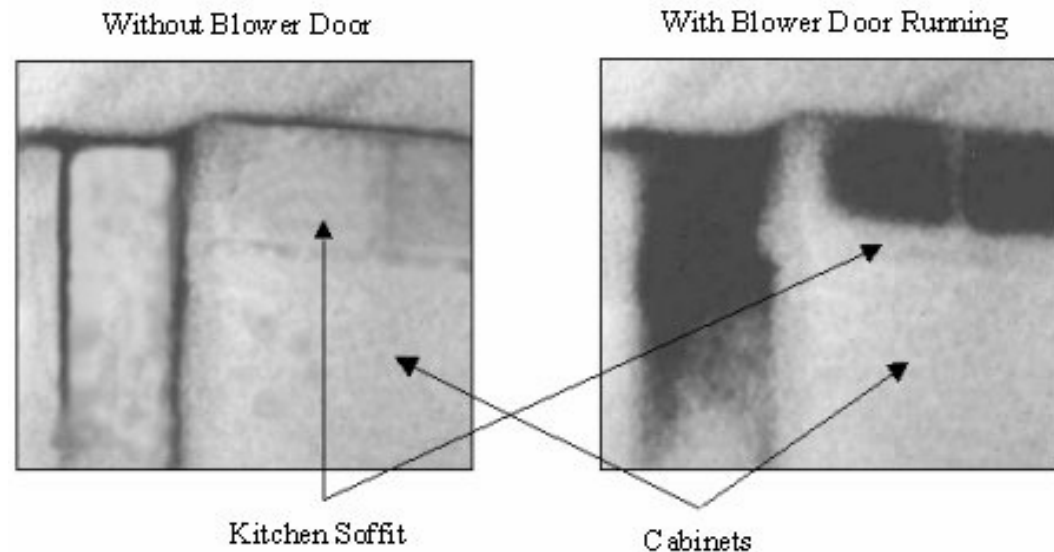

The Energy Conservatory

➢ Infrared Thermography with a Blower Door.

❑ *View building components before Blower Door fan is turned on (detect missing or poorly installed insulation).*

❑ *View components with Blower Door fan running (differences indicate air leakage paths).*

Without Blower Door   With Blower Door Running

Kitchen Soffit   Cabinets

New Developments

➢ Zone Pressure Testing Software.

 ❑ *Software estimates air leakage of attached building zones (e.g. garage, attic).*

 ❑ *Manually input Blower Door test data and zone pressure measurements into software.*

 ❑ *Zone leakage test results include estimate of test uncertainties.*

 ❑ *Available for free from TEC website.*

ZPD Step 6 - Zone Leakage Results
Test ID: 1243 Elm

Zone Tested = attic

* Zone Shifted by -17.8 Pa, From -17.4 to -35.2

	Leakage Range	
	min	max
house to attic leakage (sq. in.)	81	177
attic to outside leakage (sq. in.)	137	251
leakage through zone (CFM50)	610	1254

< Previous   * Adjusted to a house pressure of 50   Next >

New Developments

➢ Alternative Duct Testing Procedures.

❑ *Delta-Q (attempts to measure actual leakage using a series of 4 Blower Door tests). Requires automated tests and software.*

❑ *Blower Door Subtraction (airtightness estimated by comparing automated Blower Door test results with registers sealed and unsealed). Requires automated tests and software.*

❑ *TEC is working on proto-type software for both methods.*

TEC Website

➢ www.energyconservatory.com

➢ Available to download:

- ❑ *Product Manuals*
- ❑ *TECLOG Software.*
- ❑ *Zone Pressure Diagnostics Software.*
- ❑ *30-day Demo of TECTITE & TECBLAST Software.*
- ❑ *Check What's New.*