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The ENERGY  
CONSERVATORY

DIAGNOSTIC TOOLS TO MEASURE BUILDING PERFORMANCE

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## NEW DG-700 Pressure and Flow Gauge is Ready!

We are very pleased to introduce a brand new digital pressure gauge for use with all of The Energy Conservatory's test devices. The DG-700 Pressure and Flow Gauge is a remarkable advancement on the highly successful DG-3 gauge. Our goal was to design a new gauge that could provide the same accurate readings as the DG-3, but be easier to use while having more flexibility and advanced diagnostic features. After more than two years of design and input from users like you, the DG-700 is now ready for prime time.

The first thing you will notice about the DG-700 is that you can simultaneously view readings from both channels of the gauge while doing a test. The DG-700 has two completely independent pressure sensors with a large bright display showing both sets of readings. In addition, when conducting a test, the DG-700 continuously displays the selected fan type and flow ring configuration, saving you time and ensuring that you are always using the correct settings. And the DG-700 will display air flow readings on Channel B for all of our test devices – you even have a choice of air flow units (cfm, m<sup>3</sup>/hr, l/s).

We know that taking baseline pressure readings can be a difficult and confusing procedure. To help our users, the DG-700 contains a built-in baseline measurement feature on Channel A that allows you to quickly take a baseline measurement, record it in the gauge and then display a baseline adjusted pressure reading. This fast and easy to use feature makes it much easier to conduct accurate Blower Door and combustion safety tests.

Have you ever wanted the Can't Reach Pressure factors built right into your gauge? Now you've got it. The specialized @50 and @25 measurement modes makes it simple to conduct one-point airtightness tests of buildings and duct systems. When using these modes, the estimated leakage rate shown on Channel B is continuously adjusted to a test pressure of 50 or 25 Pascals using the real-time Channel A test pressure and the appropriate Can't Reach Pressure factor. This feature is great for testing very leaky houses and ductwork, and it also saves time on tighter systems because you no longer need to adjust and re-adjust your fan to achieve an exact test pressure.

The new DG-700 fully incorporates our latest products including the Exhaust Fan Flow Meter and the TrueFlow® Air Handler Flow Meter. We have designed a step by step Air Handler mode into the DG-700 for measuring total air handler flow using the TrueFlow system. The DG-700 even calculates and applies the TrueFlow flow resistance correction factor.

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The Air Handler mode also works with the Duct Blaster system to measure total system flow.

Of course the DG-700 retains all of the quality features from the DG-3 that you've grown to expect like auto-zeroing of the pressure sensors, a choice of time-averaging periods and 1% accuracy. And we've added some other improvements such as auto-ranging of the pressure sensors and a backlight to help read the display when working in attics, crawl spaces or dimly lit mechanical rooms. The backlight will turn off automatically after 10 minutes to help save battery life. The DG-700 is powered by 6 AA batteries giving it an average run-time of 100 hours before the batteries need to be replaced (this is 5 times longer than the DG-3).

And to ensure that you have power when you need it, the DG-700's auto-off feature will turn the gauge off after 2 hours of inactivity. For those that do longer term testing, the auto-off feature can be deactivated. There is even an optional AC adapter that can be plugged into the DG-700 for long term studies and peace of mind.

And as they say in late night infomercials, "But wait, there's more". A very exciting feature of the new DG-700 will be the ability to use it along with a laptop computer and new TECTITE software (still under development) to

conduct automated Blower Door tests – just like you can with a 2 Channel APT system. In order to conduct automated Blower Door tests with a DG-700 you will need an APT compatible fan speed controller, a special fan control cable to connect the gauge to the controller, a serial cable to connect the gauge to your laptop, and of course the new TECTITE 3.0 software. We hope to have the new TECTITE software available by the end of April 2003, at which time the fan control and serial cables can also be purchased. Most existing Blower Door speed controllers can be made APT compatible for \$50.

Watch our website or the newsletter for more news. You can download a copy of the DG-700 literature by going to [www.energyconservatory.com/products](http://www.energyconservatory.com/products). You can also download a copy of the DG-700 manual by going to [www.energyconservatory.com/support](http://www.energyconservatory.com/support) and clicking on Manuals. We have also updated the Blower Door and Duct Blaster manuals to show how you can perform all of the various tests using the DG-700. These can also be obtained from the website.

The cost of the new DG-700 is \$795. A new DG-3 is \$695. The current version of TECTITE 2.5 costs \$155 and the newer version, when available, will also be \$155. The fan control cable will cost \$25.

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## NEW Affordable Infrared Camera

Over the years we have advocated the use of infrared cameras in conjunction with Blower Doors to aid in the investigation of hidden performance problems inside building assemblies. Whether the problem is missing or improperly installed insulation, or uncontrolled air leakage in walls, ceilings and soffits, a Blower Door test along with an infrared inspection can help to quickly identify problem areas. Until now the cost of infrared cameras, or the limitations of the image, have made them prohibitive to own. We are very pleased to introduce a second new product from The Energy Conservatory, the IR-InSight™ Infrared Camera from Infrared Solutions Incorporated.

The IR-InSight from Infrared Solutions has been developed with the latest infrared sensors and state of the art electronics. The result is a camera that is very affordable at \$9,500, and with image quality comparable to cameras costing nearly twice that amount. The IR-InSight has the sensitivity to be able to "see" screws used

to hold the plasterboard to the wall or the keyway holding the plaster to the lath.

The IR-InSight has been intelligently and ergonomically designed. Point, focus and scan. It's that easy. A single switch turns on the camera and is used to adjust the brightness of the 3 ½ inch greyscale display. A "pistol grip" trigger is used to capture and store up to 150 images into the camera's internal memory. When you are finished, connect the IR-InSight to the serial port on your computer, and with the provided software quickly upload all of the images. The images are stored using a PGM format and can quickly be converted into JPEG or BMP formats with the touch of a button. Each image is 120 x 160 pixels in size and can be easily colorized using a variety of color pallets built into the software program. The IR-InSight also has a video output to record images using a video camera or recorder.

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The lens is a critical component of any camera, especially an infrared camera. The IR-InSight uses a Germanium coated lens with a field of view of approximately 26° horizontal and 19° vertical. With this high quality lens you can view a major portion of the wall from only a few feet away. Viewing the exterior of the house doesn't require you to drive down the block.

The IR-InSight is powered by a robust rechargeable NiCd battery system. The battery is identical to those found in some power tools. Each of the two 12 volt batteries will give two to three hours of scanning on a single charge. Recharging is completed in just 20 minutes using the charger provided with the camera.

If you have an infrared camera, this needs to be your next one. If you do not have an infrared camera, you need to consider how this amazing tool will help you and your crews to work more effectively on any building. The IR-InSight is the best,

easiest to use infrared camera that we have seen in this and higher price ranges.

The IR-InSight camera kit includes the camera, 2 rechargeable batteries and charger, heavy duty carrying case, IR-SightView software, serial connection cable, neck strap and a one year warranty for \$9,500. Included in your case is a \$300 discount coupon for infrared training by Snell & Associates. Compare this to any other infrared camera on the market and you will see how much value you are getting for the price.

To see how easy it is to use this camera, the instruction manual is on our website at [www.energyconservatory.com](http://www.energyconservatory.com). Copies of the IR-InSight literature can also be found on the website. For more information about using infrared cameras, visit the Home Energy magazine website and search for articles on infrared cameras. You will see articles on choosing a camera as well as how to use it productively in the field.

## Meet Bill Tatam

Hello. I am Bill Tatam and have worked for The Energy Conservatory since 1987. If you have called our office over the last fifteen years there is a good chance that we have discussed your equipment needs, equipment specifications, testing procedures, and since we're in Minnesota, you have asked "how cold is it up there".

My duties include purchasing most of the components that are used in the manufacture of our equipment. The other half of my time is spent on sales, including responding to most email received regarding our products and answering technical and equipment questions over the telephone. Occasionally I also attend trade shows and conferences.

I have a Bachelor of Science degree with a concentration in construction management (huh!) and besides a few years in Colorado, I have lived in Minneapolis most of my life. Hobbies include sailing, bike riding, ice skating, and an occasional tennis game.

## Annual Recalibration Recommended for All Gauges

The heart of each air flow measurement system produced by The Energy Conservatory (TEC) is the pressure instrument. Whether you use a DG-3 or DG-700 gauge, an APT system, or even a set of Magnehelic gauges from Dwyer, regular recalibration is recommended to ensure that your readings are accurate. For our DG-3, DG-700 and APT systems, we recommend that you have the units recalibrated once a year in order to maintain their published accuracy specification. The recommended calibration interval for the Magnehelic gauges is once every 5 years.

To have your gauge recalibrated, pack it in a box with protective cushioning, include a letter with your company information, shipping address, telephone number and a description of the service you would like to have performed. The cost to recalibrate a digital gauge or an APT-2 system is \$40. To recalibrate an APT3 – 8 system or a set of 3 Magnehelic gauges costs \$50. These prices include ground UPS shipping back to your location. If you require faster shipment, an additional charge will be added to your invoice.

Once we have your instrument, it usually takes us a few days to perform the recalibration before sending it back on its way. Any needed repairs to the instrument will add a few more days of down time. If you have any questions about recalibration or repair of your instruments, please give us a call. We will be happy to help.

## Tech Note – APT and battery charging

The APT System uses an internal NiCd battery to power the pressure sensors, auto-zeroing valves and any sensors that may be connected to the device (temperature, humidity, etc.). The AC adapter that accompanies the APT is designed to charge the NiCd battery. We recommend that the APT battery be fully recharged on a regular basis. To recharge the battery, turn off the unit, plug in the adaptor and let it charge overnight. The green light located next to the connection terminal will turn on whenever the AC adapter is charging the battery. Once the battery is fully charged, the APT can be run without the adapter connected for approximately 8 - 12 hours. Failure to fully charge the battery on a consistent basis will lead to premature battery failure over the course of a few years. If the battery does completely fail, the APT system will not work even when the AC adapter is plugged in. If you suspect you have a failed NiCd battery in your APT, first try to charging the battery overnight. If the unit still does not work, send it in to us and we can provide a replacement battery (or possibly a replacement adapter). If you have any questions, please give us a call.

## Upcoming Shows

The following is a list of industry tradeshow where TEC will be exhibiting. If you are in the area, stop by the booth and see some of the new products first hand.

Affordable Comfort, Kansas City, MO, March 31 - April 5, 2003 - [www.affordablecomfort.org](http://www.affordablecomfort.org)

National Weatherization Training Conference, Phoenix, AZ, August 18 - 21

HVAC Comfortech Conference, Dallas, TX, September 10 – 13 - [www.hvaccomfortech.com](http://www.hvaccomfortech.com)

Energy & Environmental Building Association, Chicago, IL, October 15 – 18 - [www.eeba.org](http://www.eeba.org)

UPDATE



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