



## OVERVIEW

System Components

A standard Model 3 Minneapolis Blower Door Kit includes

- Blower Door Accessory Case
  - » Single fan nylon panel
  - » Fan speed controller
  - » DG-1000 digital pressure and flow gauge kit
  - » 30’ clear tubing
  - » Gauge board with clamp
  - » Wind Tee
  - » Overview booklet
- Model 3 Fan
  - » Ring A
  - » Ring B
  - » No flow plate
- Aluminum frame with carrying case
  - » Two 96” vertical pieces
  - » Two 45” horizontal pieces
  - » One 45” crossbar with Velcro strap
  - » One gauge hanger bar



Blower Door Fan

The blower door fan consists of a molded fan housing with a 3/4 horsepower permanent split capacitor AC motor. Air flow through the fan is determined by measuring the pressure at the flow sensor which is attached to the end of the motor. When the fan is operating, air is pulled into the inlet side of the fan and exits through the exhaust side (a metal fan guard is bolted to the exhaust side of the fan). The blower door fan can accurately measure airflow over a wide range of flow rates using a series of calibrated flow rings which are attached to the inlet of the fan.

Fan Flow Ranges

Ring	Flow Range in CFM
Open (no flow ring)	6,100 - 2,435
Ring A	2,800 - 915
Ring B	1,100 - 300
Ring C (optional)	330 - 85
Ring D (optional)	115 - 30
Ring E (optional)	45 - 11



**DG-1000 Digital Pressure and Flow Gauge with Bluetooth, WIFI, Ethernet and USB**

The Minneapolis Blower Door System comes with a DG-1000 Pressure and Flow Gauge. It is a differential pressure gauge which measures the pressure difference between either of the input pressure taps and its corresponding reference pressure tap. It has two separate measurement channels which allow you to monitor the building pressure and fan pressure during a blower door test.



DG-1000 Pressure and Flow Gauge

**Fan Speed Controller**



Each system comes with one fan speed controller, which will work with the DG-1000. Fan speed is adjusted, after it has been turned on, by using the adjustment knob on the face of the fan speed controller.

**Wind Tee**

The Wind Tee is designed to be connected to your outdoor reference tubing to provide a more stable reading and keep the hose away from moisture. Studies suggest best practice for measurements on windy days is to place the outdoor reference tubing on the leeward side of the building and to extend data collection time periods. Using the Wind Tee along with TEC AutoTest with built-in Wind Assistant™ is a straight-forward method for getting the best results in windy conditions.



**Adjustable Aluminum Door Frame and Fabric Panel**

A single fan aluminum door frame and nylon panel is included with each system. The frame comes packed in a heavyweight nylon frame case.



Each frame consists of six separate pieces and a carrying case. For assembly instructions refer to the Minneapolis Blower Door User Manual at [energyconservatory.com/support](http://energyconservatory.com/support)



One 45" crossbar with Velcro strap



Two 45" horizontal frame pieces



Two 96" vertical frame pieces



Carrying case for the frame



One gauge hanger bar

# Model 3 Blower Door Specifications

COMPONENT	SPECIFICATIONS
<b>Blower Door Fan</b>	
Maximum Flow	6,300 CFM at free air (2,973 l/s, 10,700 m3/h) 5,350 CFM at 50 Pa (2,524 l/s, 9,090 m3/h) 4,900 CFM at 75 Pa (2,360 l/s, 8.495 m3/h)
Minimum Flow	300 CFM with Ring B (141 l/s, 510 m3/h) 85 CFM with Ring C (40 l/s, 144m3/h) 30 CFM with Ring D (14 l/s, 51 m3/h) 11 CFM with Ring E (5 l/s, 18 m3/h)
Dimensions	20 in. (50 cm) inlet diameter, 10.25 in (26 cm) length
Weight	33 lbs. (15 kg) with Flow Rings A & B
Flow Accuracy	+/- 3% with DG-1000, Rings D & E +/- 4% or 1 CFM
Calibration	Meets ASTM Standard E779, E1554, CGSB-149.10-M86, EN 13829, ISO 9972, ATTMA Technical Standard 1, NFPA 2001, RESNET and USACE
Power	3/4 hp motor available in 110V or 220V

## Adjustable Frame and Frame Material

Frame Material	Extruded aluminum
Width	28 in. to 40 in. (71 cm to 101 cm)
Height	52 in. to 96 in. (132 cm to 244 cm)
Seal	EPDM flexible gasket
Panel Material	Coated nylon with built-in vinyl window

Specifications subject to change without notice.

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## **ENERGY CONSERVATORY WARRANTY**

### **EXPRESS LIMITED WARRANTY**

Seller warrants that this product, under normal use and service as described in the operator's manual, shall be free from defects in workmanship and material for a period of 24 months, or such shorter length of time as may be specified in the operator's manual, from the date of shipment to the Customer.

### **LIMITATION OF WARRANTY AND LIABILITY**

This limited warranty set forth above is subject to the following exclusions:

- With respect to any repair services rendered, Seller warrants that the parts repaired or replaced will be free from defects in workmanship and material, under normal use, for a period of 90 days from the date of shipment to the Purchaser.
- Seller does not provide any warranty on finished goods manufactured by others. Only the original manufacturer's warranty applies.
- Unless specifically authorized in a separate writing, Seller makes no warranty with respect to, and shall have no liability in connection with, any goods which are incorporated into other products or equipment by the Purchaser.
- All products returned under warranty shall be at the Purchaser's risk of loss. The Purchaser is responsible for all shipping charges to return the product to The Energy Conservatory. The Energy Conservatory will be responsible for return standard ground shipping charges. The Customer may request and pay for the added cost of expedited return shipping.

The foregoing warranty is in lieu of all other warranties and is subject to the conditions and limitations stated herein. No other express or implied warranty IS PROVIDED, AND THE SELLER DISCLAIMS ANY IMPLIED WARRANTY OF FITNESS for particular purpose or merchantability.

The exclusive remedy of the purchaser FOR ANY BREACH OF WARRANTY shall be the return of the product to the factory or designated location for repair or replacement, or, at the option of The Energy Conservatory, refund of the purchase price.

The Energy Conservatory's maximum liability for any and all losses, injuries or damages (regardless of whether such claims are based on contract, negligence, strict liability or other tort) shall be the purchase price paid for the products. In no event shall the Seller be liable for any special, incidental or consequential damages. The Energy Conservatory shall not be responsible for installation, dismantling, reassembly or reinstallation costs or charges. No action, regardless of form, may be brought against the Seller more than one year after the cause of action has accrued.

The Customer is deemed to have accepted the terms of this Limitation of Warranty and Liability, which contains the complete and exclusive limited warranty of the Seller. This Limitation of Warranty and Liability may not be amended or modified, nor may any of its terms be waived except by a writing signed by an authorized representative of the Seller.

### **TO ARRANGE A REPAIR**

Please call The Energy Conservatory at 612-827-1117 before sending any product back for repair or to inquire about warranty coverage. All products returned for repair should include a return shipping address, name and phone number of a contact person concerning this repair, and the purchase date of the equipment.

## Safety Information

- The blower door fan should only be connected to a properly installed and tested power supply. In case of emergencies, disconnect the power cord from the AC power mains outlet. During installation, use the nearest readily accessible power outlet and keep all objects away from interfering with access to the outlet.
- Disconnect the power plug from the blower door fan receptacle before examining or making any adjustments to the fan motor, blades or electrical components.
- The blower door fan is a very powerful and potentially dangerous piece of equipment if not used and maintained properly. Carefully examine the fan before each use. If the fan housing, fan guards, blade, controller or cords become damaged, do not operate the fan until repairs have been made. Repairs should only be made by The Energy Conservatory.
- If you notice any unusual noises or vibrations, stop and unplug the fan. If you can't find the source of the problem, contact the manufacturer/distributor.
- Keep people, animals and objects away from the blower door fan when it is operating.
- Press the power plug firmly into the power receptacle on the blower door fan, and the AC power mains outlet. Failure to do so can cause overheating of the power cord and possible damage.
- Do not use ungrounded outlets or adapter plugs. Never remove or modify the grounding prong. Use only approved and inspected electrical wiring and connections.
- Do not operate the blower door fan if the motor, controller or any of the electrical connections are wet.
- For long-term operation, such as maintaining building pressure while air-sealing, use a flow ring whenever possible to ensure proper cooling of the blower door fan motor. This will minimize the heating of the fan and is important in warmer weather.
- Do not reverse the blower door fan (if the fan has a flow direction switch) while the blades are turning.
- The motor is thermally protected and if you experience a motor shut down, be sure to turn off the fan speed controller so that the fan does not restart unexpectedly after the motor cools down.
- The operator should wear hearing protection when in close proximity to the fan operating at high speed.
- Adjust all combustion appliances so they do not turn on during the test. If combustion appliances turn on during a depressurization test, it is possible for flames to be sucked out of the combustion air inlet (flame rollout). This is a fire hazard and can possibly result in high CO levels.
- If there are attached spaces (e.g. townhouses) that could contain a vented combustion appliance, either adjust those appliances to prevent them from turning on during the test, or be sure that the attached spaces are not depressurized or pressurized when the blower door is operating.
- Be sure that fires in fireplaces and woodstoves are completely out before conducting a test. Take precautions to prevent ashes from being sucked into the building during the test. In most cases it will be necessary to either tape doors shut, clean out the ashes, and/or cover the ashes with newspaper.
- Be sure you have returned the building to its original condition before leaving. This includes turning the thermostat and water heater temperature controls to their original setting. Always check to see that furnace, water heater and gas fireplace pilot lights have not been blown out during the blower door test - re-light them if necessary. Remove any temporary seals from fireplaces or other openings sealed during the test.
- If combustion safety problems are found, tenants and building owners should be notified immediately and steps taken to correct the problem including notifying a professional heating contractor if basic remedial actions are not available. Remember, the presence of elevated levels of carbon monoxide in ambient building air or in combustion products is a potentially life threatening situation. Air sealing work should not be undertaken until existing combustion safety problems are resolved, or unless air sealing is itself being used as a remedial action.



## Software Information

The Energy Conservatory (TEC) offers a variety of Windows-based programs. These programs can be found and downloaded for free at [software.energyconservatory.com](http://software.energyconservatory.com).

TEC also offers driver support for the DG-500, DG-700 and DG-1000. The drivers are designed to work with Windows-based computers with the following operating systems:

- Windows 7
- Windows 8
- Windows 8.1
- Windows 10

The drivers are available as a Windows Update, and the DG-500 and DG-700 drivers can be downloaded from TEC at [software.energyconservatory.com](http://software.energyconservatory.com).

## Instructional Videos and Training

The Energy Conservatory (TEC) offers a variety of online instructional videos, including

- Minneapolis Blower Door Quick Guide
- Minneapolis Duct Blaster Quick Guide
- Field Calibration Checks for Gauges
- Pressure and Airflow Basics
- Exhaust Fan Flow Meter
- TECLOG
- TECTITE
- And many more

Visit [www.EnergyConservatory.com/training](http://www.EnergyConservatory.com/training) to learn more.

## More Minneapolis Blower Door System Guides

All Minneapolis Blower Door guides are available online at [energyconservatory.com/support](http://energyconservatory.com/support)

Please refer to the guides listed below for further instructions.

- Minneapolis Blower Door User Manual
- Using the DG-700 with the Minneapolis Blower Door
- Using the DG-1000 with the Minneapolis Blower Door
- Test Results and Sample Test Forms



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