TEC Trainer™

Assembly Instructions and User's Guide

Performance Testing Tools
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THE ENERGY CONSERVATORY

Safety Information

Equipment Safety Instructions

1. The Minneapolis Blower Door™ and Duct Blaster® fans are very powerful and potentially dangerous pieces 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 qualified repair personnel.
2. Keep people and pets away from the Duct Blaster fan when it is operating.
3. Do not operate the Blower Door or Duct Blaster fan unattended.
4. Do not use ungrounded outlets or adapter plugs. Never remove or modify the grounding prong.
5. Do not operate the Blower Door or Duct Blaster fan if the motor, controller or any of the electrical connections are wet.
6. Disconnect the power plug from the Blower Door or Duct Blaster fan receptacle before making any adjustments to the fan motor, blades or electrical components.

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Assembly Instructions and User's Guide

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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:

a) 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.
b) Seller does not provide any warranty on finished goods manufactured by others. Only the original manufacturer's warranty applies.
c) 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.
d) 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 the reason for repair, a return shipping address, name and phone number of a contact person concerning this repair, and the purchase date of the equipment.

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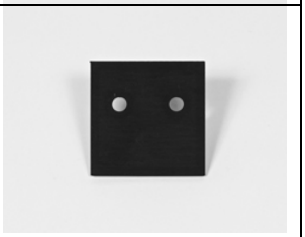
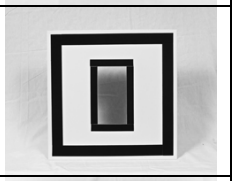
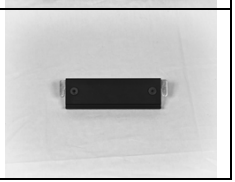
Chapter 1 Parts List and Assembly Instructions

1.1 Tools Needed

- An adjustable wrench or a 7/16” socket or opened end wrench.
- A Philips screwdriver
- A framing square

1.2 Parts List

Hard-Shell Carrying Case with Frame Sections and Hardware – 12 frame sections (shown in Assembly below) and hardware are included in the hard-shell carrying case.	
Shoulder Bolts and Nuts (14) – this hardware is already installed in the frame to create hinges at the corners of assembled sections. These bolts should not be removed because removal will make reassembly more difficult.	
7/16” long - ¼ 20 Bolts and Nylon Insert Nuts (30) – for connecting frame sections together.	
1” long - ¼ 20 Bolts, Nuts and Wing Nuts (4) – for attaching the frame feet after the red nylon cover has been installed.	
Frame Connection Plates for Multi-fan Blower Door Setup – when setting up the Trainer frame for a two or three fan Blower Door system, the center piece of the **B** frame section will be in the way of the middle fan. The center piece of the **B** frame section will need to be removed, and the two connection plates installed to hold the frame sections together. A 3/8” socket or open end wrench and allen wrench will be needed to remove and re-installed the shoulder bolts and nuts from the **B** frame section. ** The frame connection plates are not used for a standard single fan setup.	

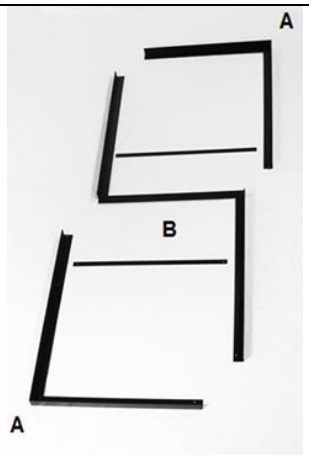
<u>Soft-Shell Accessory Case</u> – contains red nylon cover, leak adjustment windows and plates, flex ductwork assembly, white attachment plate, tubing kit, extra gauge bar and Blower Door Ring C.	
Red Nylon Cover – fits over assembled frame to create the enclosure (installed before stabilizing feet are installed).	
Leak Adjustment Windows and Adjustable Plates (3) – the three windows attach over the openings in the red nylon cover using Velcro. The plates can be adjusted within the window to create different sized air leaks in the enclosure.	
White Attachment Plate – this attaches to the side of the red nylon cover using Velcro and provides a flat surface for attaching the Duct Blaster's square transition piece.	
Flex Ductwork with Transition Pieces – The flex ductwork assembly is used for duct leakage testing and is installed on the inside of the enclosure using Velcro. The flex ductwork contains a small hole (approximately 1" x 3") located in the middle of the ductwork.	
Tubing Kit contains: • **Red - 48"** • **Red – 120"** • **Clear - 72"** • **Green - 30" (2)** • **Yellow - 120"** • **Blue - 24"** • **Blue - 48"**	
Blower Door Ring C - used for Blower Door test with one hole open, and for Duct Leakage to Outside tests.	
Extra Gauge Hanger Bar – used to mount gauge board with DG-1000 gauge and fan speed controller. You should have an additional gauge bar with your Blower Door aluminum frame.	

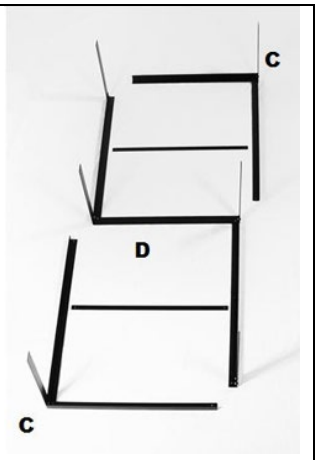
1.3 Assembly

Lay Out Frame Pieces

Remove the 12 TEC Trainer frame sections from frame case and lay them out on the floor. Sections are labeled as follows:

- **A -** lower left and upper right front sections with Velcro attached.
- **B –** middle front section with Velcro attached.
- **C** - lower left and upper right rear sections.
- **D** – middle rear section
- **E** – left foot
- **F** – right foot
- **Not Labeled** – 4 horizontal supports (31.5" long).





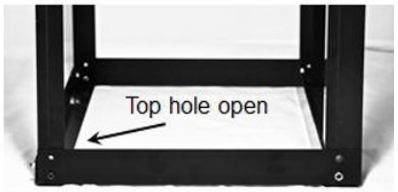
Assemble Front and Rear Sections

Use the 7/16" long ¼ 20 black bolts and nylon insert nuts to assemble the **front sections** (2 A + 1 B + 2 horizontal supports) and **back sections** (2 C + 1 D + 2 horizontal supports). Only tighten nuts finger tight. **See Note below for bolt orientation.**

Note: All bolts that are installed through the **front section** should be inserted so that the flat heads of the bolts are on the surface that forms the door jamb of the enclosure (otherwise the nuts may interfere with installation of the Blower Door frame into the jamb). All other bolts should be installed so that the nuts will be inside the enclosure.

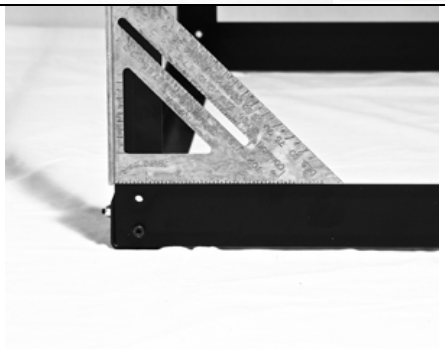
Connect Front and Rear Sections Together

Lay both assembled sections on their sides and use the 7/16" long ¼ 20 black bolts and nylon insert nuts to connect the **assembled front section** to the **assembled rear section**. Only tighten the nuts finger tight. Stand the frame up on either end. Leave the upper bolt hole on the bottom A and C frame sections open so longer bolts can be installed later to connect the feet to the frame. **See Note above for bolt orientation.**



Tighten Nuts

Tighten nuts while using a square as needed to assure square corners.

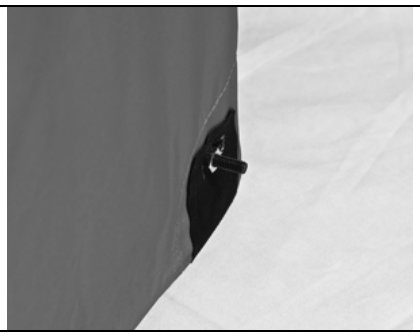


Install Red Nylon Cover to Create Enclosure

Pull the red nylon cover over the assembled black frame. The cover is first installed over the rear frame pieces (C and D) and then pulled over the front frame pieces (A and B). The Velcro around to the open end of the cover will eventually be attached to the Velcro on the inside lip of the A and B frame pieces.
Note: Do not attach the Velcro from the cover to the frame until the stabilizing feet are installed.

Install Bolts and Nuts for Stabilizing Feet

Install the four 1" long ¼ 20 black bolts for the stabilizing feet through the bottom sides of the frame and though the nylon cover (bolt head should be on this inside of the frame). Install the standard nuts on to the bolts and tighten up against the nylon panel. **Note:** The wing nuts will be installed after the stabilizing feet are attached.



Connect Stabilizing Feet

Slip the stabilizing feet over the 1" long bolts and down tight to the installed nuts. Make sure the feet are facing the correct direction (see photo at right). Attach wing nut to bolt and tighten wing nuts.

Feet are label as follows:

E – Left side foot (when facing the front open end)
F – Right side foot.

Attach Red Nylon Cover to Frame

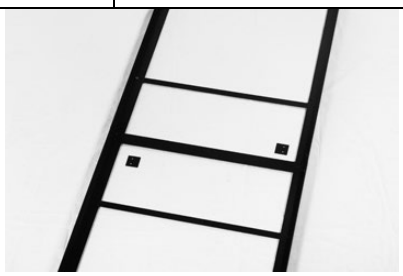
Pull the red nylon cover tight over the frame and carefully attach the Velcro from the panel to the Velcro on the front of the assembled frame.

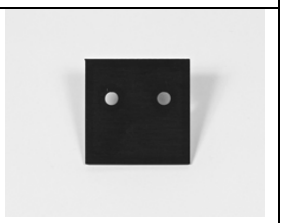
Install the 3 Leak Adjustment Windows and Plates

Attach the 3 windows and black adjustment plates to the outside of the 3 holes in the red nylon cover. Line up the hole from the window with the hole in the cover. Firmly press the Velcro from the window to the Velcro on the cover.

Optional Set Up for 2 and 3 Fan Blower Door Systems

If you will be installing a 2 or 3 fan Blower Door system into the enclosure frame, you will need use the two (2" square) frame connection plates. The center piece of the **B** frame section will need to be removed, and the two connection plates installed to hold the frame sections together. A 3/8" socket or open end wrench and allen wrench will be needed to remove and re-installed the shoulder bolts and nuts from the **B** frame section. ** The frame connection plates are not used for a standard single fan setup.





Chapter 2 Blower Door Tests

The TEC Trainer is an excellent way of displaying the setup and operation of the Blower Door system in a classroom setting. It can also be used to give students some hands on practice setting up and running a Blower Door test. You may want to use the DG-1000 Simulator software (available from the TEC website www.energyconservatory.com) to project the DG-1000 on a screen during your demonstration.

Tests can be performed by using the Blower Door to either pressurize or depressurize the Trainer enclosure. Blower Door tests should typically be done without the flex ductwork installed inside the enclosure.

2.1 Recommended Testing Configurations

a. For a One-Point CFM50 test (pressurization and depressurization) choose between:

- All 3 Holes Open
- 2 Holes Open (back hole sealed)
- 1 Hole Open (leave any one of the holes open)

b. For a Multi-Point CFM50 test (pressurization) choose between:

- All 3 Holes Open
- 1 Hole Open (leave any one of the holes fully open)

c. For a Multi-Point CFM50 test (depressurization):

- 1 Hole Open (leave any one of the holes fully open)

d. Range of Typical Expected Blower Door Test Results

Results will vary due to variations in actual hole sizes in the enclosure, choice of pressure tap on the enclosure, installation of frame and fan, and pressurization vs. depressurization testing:

- All 3 Holes Fully Open: (700 to 800 CFM50) Use Ring B on Blower Door fan.
- 2 Holes Fully Open (back hole sealed): (500 to 575 CFM50) Use Ring B on Blower Door fan.
- 1 Hole Fully Open (leave any one of the holes open): (250 to 325 CFM50) Use Ring C on Blower Door fan

2.2 Pressurization Test of the Enclosure

Install Blower Door Frame and Panel in the TEC Trainer Enclosure

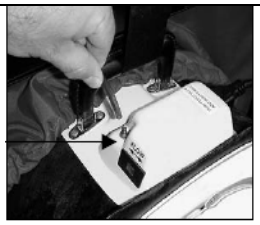
Install the Blower Door frame and nylon panel into the enclosure opening. Be sure the Blower Door frame is installed all the way into the enclosure opening and up against the Trainer frame. Install the Blower Door fan so that the Flow Rings are on the outside of the enclosure, and that the air from the fan will be blowing into the enclosure. Refer to the Blower Door Operation Manual for frame and fan installation instructions.

Install Gauge Mounting Board

1. Insert the gauge hanger bar into the side of the Blower Door aluminum frame.
2. Attach the gauge board with a DG-1000 gauge and Blower Door fan speed controller to the gauge hanger bar.

Connect Tubing and Cabling

1. Connect one end of a 30” piece of **Green** tubing to the **Channel A Input** tap.
2. Connect other end of the **Green** tubing to one of the **Green** pressure taps on the outside upper side of the Trainer enclosure.
   ** **Channel A** on the Blower Door gauge is now set up to measure enclosure pressure with reference to the room you are standing in.
3. Connect one end of the 48” **Red** tubing to the **Channel B Input** tap.
4. Connect the other end of the **Red** tubing to the Blower Door fan pressure tap on the electrical box.
5. Connect the speed controller to a wall outlet and to the Blower Door fan.
6. If you will be using Cruise Control, connect the fan control cable between the DG-1000 gauge and the fan speed controller.
7. If you will be performing an automated multi-point test, make the necessary connections between the gauge and your laptop computer running the TECTITE software.



Set Leak Adjustment Windows

1. You can choose to open one, two or three openings. Adjustments are made by sliding the black adjustment plate up and down. If you are leaving two holes open, you should leave the two side holes open.
2. Close zippered opening on the rear of TEC Trainer. **Note:** The zippered opening is used to gain access to the inside of the enclosure, and is also used in some duct leakage tests. Blower Door tests should normally be performed without the flex ductwork system installed.

Conduct the Pressurization Test of the Enclosure

1. Conduct your one-point or multi-point pressurization test using standard test procedures.
2. **Channel A** on the Blower Door DG-1000 gauge is measuring enclosure pressure and **Channel B** on the Blower DG-1000 is measuring airflow through the Blower Door fan.
3. You will be pressurizing the enclosure to 50 Pa and measuring the airflow through the Blower Door fan that it took to generate the 50 Pa enclosure pressure.
4. You can conduct a manual control test, a cruise control test, or a fully automated test using TECTITE software and a laptop computer. Consult the Blower Door Operation Manual or TECTITE software for testing instructions.
5. If you are conducting a test with either 2 or 3 holes in the enclosure fully open, use Ring B on the Blower Door fan.
6. If you are conducting a test with just one hole fully open, use Ring C on the Blower Door fan.

2.3 Depressurization Test of the Enclosure

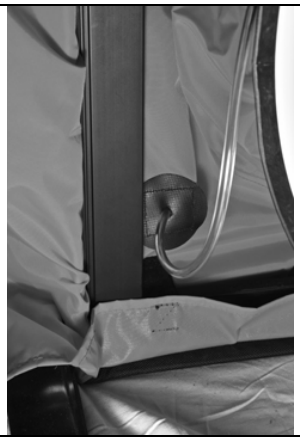
A depressurization test of the enclosure is very similar to a pressurization test. Follow the pressurization test instructions above (2.2) with the following changes/additions:

Install the Blower Door Fan to Depressurize Enclosure

Install the Blower Door fan so that the Flow Rings are on the inside of the enclosure, and that the air from the Blower Door fan will be blowing out of the enclosure.

Additional Tubing Connections

1. Connect one end of the 72" **Clear** tubing to the **Channel B Reference** tap.
2. Run the other end of the **Clear** tubing through the patch in the lower left corner of the Blower Door panel so the tubing extends into the enclosure about a 1/2".



Chapter 3 Duct Leakage Testing

The TEC Trainer can be used to demonstrate both Total Duct Leakage tests, and Duct Leakage to Outside tests. Duct Leakage testing requires installation of the flex ductwork assembly that came with the TEC Trainer. The flex ductwork assembly consists of a 32" section of flex ductwork with a black square transition piece attached to either end. The ductwork assembly contains a small non-adjustable hole (approximately 1" x 3") located in the middle of ductwork.

Tests can be performed to either pressurize or depressurize the ductwork.

3.1 Recommended Testing Configurations

a. For a One-Point CFM25 Total Leakage test, or a One-Point CFM25 Leakage to Outside Test choose between:

- Adjustable Outside Leakage Hole open 1".
- Adjustable Outside Leakage Hole open 4"
- Adjustable Outside Leakage Hole fully open (8")

b. Range of Typical Expected Duct Leakage Test Results

Total Leakage:

- Adjustable Outside Leakage Hole open 1" (60 to 70 CFM25) Use Ring 3 on Duct Blaster fan.
- Adjustable Outside Leakage Hole open 4" (120 to 135 CFM25) Use Ring 2 on Duct Blaster fan,
- Adjustable Outside Leakage Hole fully open (200 to 235 CFM25) Use Ring 2 on Duct Blaster fan.

Leakage to Outside:

- Adjustable Outside Leakage Hole open 1" (30 to 40 CFM25) Use Ring 3 on Duct Blaster fan.
- Adjustable Outside Leakage Hole open 4" (90 to 100 CFM25) Use Ring 2 on Duct Blaster fan,
- Adjustable Outside Leakage Hole fully open (160 to 195 CFM25) Use Ring 2 on Duct Blaster fan.

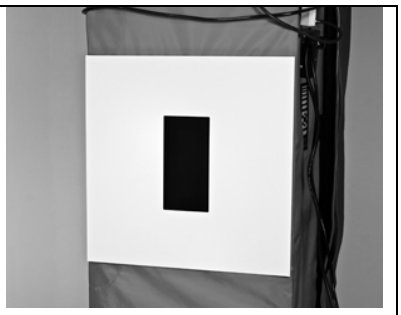
3.2 Setting Up for a Duct Leakage Test

Attach the Flex Ductwork Assembly to the Inside of the TEC Trainer

1. The flex ductwork can be installed through the main enclosure opening (no Blower Door installed), or through the zippered opening in the back of the enclosure if the Blower Door is already installed.
2. Attach the two square transition pieces from the ductwork assembly to the sides of the enclosure using the Velcro attachments. Firmly press the Velcro on the panel to the Velcro on the square transition pieces. **Note:** Be sure the non-adjustable hole in the ductwork is facing up.
3. Attach one end of the 24" **Blue** tubing to the plastic pressure tap on the ductwork assembly (located on one of the square transition pieces). Connect the other end of the **Blue** tubing to the **Blue** pressure tap on the inside back side of the enclosure.

Install the White Attachment Plate to the Outside of the Enclosure

Remove the Leak Adjustment Window from one of the side enclosure openings. Now install the White Attachment Plate directly over the outside of the enclosure opening. Line up the hole from the attachment plate with the hole in the enclosure and firmly press the Velcro from the attachment plate against the Velcro on the outside of the enclosure. **Note:** The attachment plate should be installed on the opposite side of the flex ductwork assembly that contains the pressure tap connected to the blue tubing.



Install Blower Door Frame and Panel in the TEC Trainer Enclosure

Install the Blower Door frame and nylon panel into the enclosure opening. Be sure the Blower Door frame is installed all the way into the enclosure opening and up against the Trainer frame.

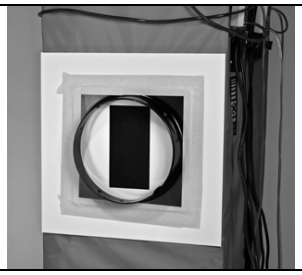
Install Gauge Mounting Boards

1. Connect two gauge hanger bars to the Blower Door aluminum frame, one on either side.
2. Attach the gauge board with the Blower Door DG-1000 gauge and fan speed controller to one hanger bar, and the gauge board with the Duct Blaster DG-1000 gauge and fan speed controller to the other hanger bar. **Note:** The Duct Blaster gauge board should be installed on the same side of the enclosure as the White Attachment Plate.

*DG-700 gauges pictured

Connect the Duct Blaster Flex Duct to the Enclosure

1. Tape the square transition piece from the Duct Blaster system to the White Attachment Plate.
2. Connect the Duct Blaster flex duct to the square transition piece using the Velcro strap on the flex duct.



Set Outside Duct Leakage Adjustment Window

1. A Leak Adjustment Window should be installed on the opposite side of the enclosure from the White Adjustment Plate. Adjust the hole in this window by moving the adjustable plate up or down. We recommend one of the following settings:
   - Up 1”
   - Up 4”
   - Up 8″ (fully open).

Note: The flex ductwork assembly installed inside the enclosure contains a fixed inside duct leak (approx 3” x 1” hole). The Total Leakage test will measure both the inside and outside duct leakage. The Duct Leakage to Outside test will measure only outside duct leakage.

Chapter 4 Total Duct Leakage Test

The Total Duct Leakage test will measure all leaks in the duct system, including leaks inside the enclosure and leaks to outside of the enclosure. This test can be performed both by pressurizing or depressurizing the ductwork. The Blower Door will not be running during the Total Duct Leakage test.

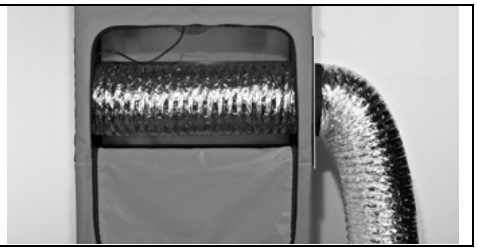
4.1 Total Duct Leakage Pressurization Test

Set Up Duct Blaster Fan for Pressurization Test

Attach the Duct Blaster fan to the flex duct for a pressurization test. The Duct Blaster will be blowing air into the flex ductwork assembly. Refer to the Duct Blaster Operation manual for fan setup instructions.

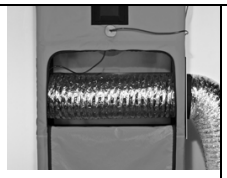
Open Zippered Opening

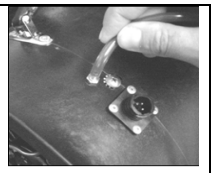
Open the zippered opening on the back of the enclosure to prevent changes in enclosure pressure when the Duct Blaster is running.
Note: You may either remove the Blower Door fan or keep it in place for the Total Leakage test.



Connect Tubing and Cabling

1. Connect one end of the 48" **Blue** tubing to **Channel A Input** tap on the Duct Blaster DG-1000 gauge.
2. Connect the other end of the 48" **Blue** tubing to the **Blue** pressure tap on the outside back side of the Trainer enclosure.
3. Connect one end of a 30" piece of **Green** tubing to **Channel A Reference** tap on the Duct Blaster DG-1000 gauge.
4. Connect other end of the **Green** tubing to the **Green** pressure tap on the outside upper side of the Trainer enclosure.
   ** **Channel A** on the Duct Blaster gauge is now set up to measure duct pressure with reference to the enclosure.
5. Connect one end of the 120" **Red** tubing to the **Channel B Input** tap on the Duct Blaster DG-1000 gauge.
6. Connect the other end of the **Red** tubing to the brass pressure tap on the Duct Blaster fan.
7. Connect the fan speed controller to a wall outlet and to the Duct Blaster fan.
8. If you will be using Cruise control, connect the fan control cable between the DG-1000 gauge and the Duct Blaster fan speed controller.





Conduct the Total Duct Leakage Pressurization Test

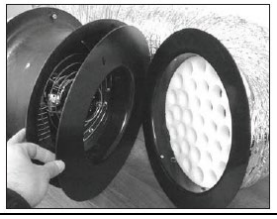
1. Conduct your One-Point CFM25 Total Leakage test using standard test procedures.
2. **Channel A** on the Duct Blaster DG-1000 gauge is measuring duct system pressure and **Channel B** on the Duct Blaster DG-1000 is measuring airflow through the Duct Blaster fan.
3. You will be pressurizing the duct system to 25 Pa and measuring the airflow through the Duct Blaster fan that it took to generate the 25 Pa duct system pressure.
4. You can conduct a manual control test, or a cruise control test. Consult the Duct Blaster Operation Manual for testing instructions.
5. If you conduct the test with the outside leakage hole open 1" use Ring 3 on the Duct Blaster fan.
6. If you conduct the test with the outside leakage hole open 4" or 8" use Ring 2 on the Duct Blaster fan.

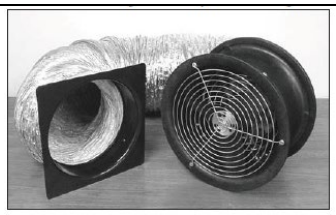
4.2 Total Duct Leakage Depressurization Test

A Total Duct Leakage depressurization test is very similar to a pressurization test. Follow the Total Duct Leakage Pressurization Test instructions above (4.1) with the following changes/additions:

Install the Duct Blaster Fan to Depressurize the Ductwork

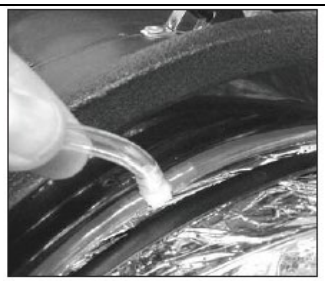
Install the Duct Blaster fan to pull air out of the ductwork (depressurize) – see Duct Blaster Operation manual for instructions.



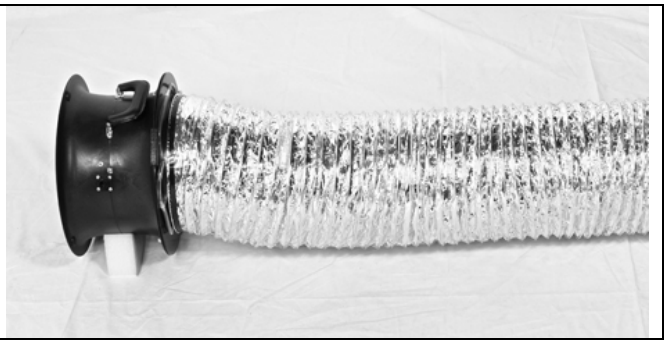


Additional Tubing Connections

1. Connect one end of the 120" **Yellow** tubing to the **Channel B Reference** tap on the Duct Blaster DG-1000 gauge.
2. Connect the other end of the **Yellow** tubing to the pressure tap on the round transition piece on the Duct Blaster flex duct.



When conducting a depressurization test, the Duct Blaster flex duct should be stretched relatively straight for about 4 feet from the front of the Duct Blaster fan.



Chapter 5 Duct Leakage to Outside Test

The Duct Leakage to Outside test will measure only leaks in the duct system that are to outside of the enclosure. This test requires simultaneous use of both the Duct Blaster and Blower Door systems. During the test, a Blower Door fan is used to pressurize (or depressurize) the enclosure while the Duct Blaster fan is used to pressurize (or depressurize) the duct system to the same pressure as the enclosure. Because the duct system and the enclosure will be at the same pressure, there will be little or no leakage between the duct system and the enclosure during the test.

5.1 Duct Leakage to Outside Pressurization Test

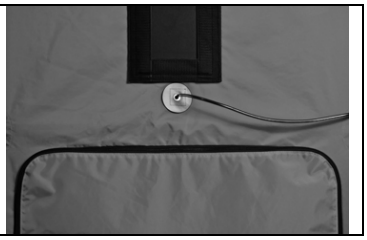
Set Up Duct Blaster Fan for a Pressurization Test

Attach the Duct Blaster fan to the flex duct for a pressurization test. The Duct Blaster will be blowing air into the flex ductwork assembly. Refer to the Duct Blaster Operation manual for fan setup instructions.

Install Blower Door Fan to Pressurize the Enclosure

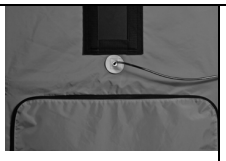
Install the Blower Door fan so that the Flow Rings are on the outside of the enclosure, and that the air from the Blower Door fan will be blowing into the enclosure. Refer to the Blower Door Operation Manual for installation instructions. Install Ring C on the Blower Door fan.

Completely close the zippered opening on the back of the enclosure. **Note:** You can either close the Leak Adjustment Window on the back of the enclosure, or leave it open – the test results will be the same. If the rear leak adjustment window is left open, the Blower Door fan simply needs to run at a higher fan speed during the test.



Connect Tubing and Cabling to the Duct Blaster System

1. Connect one end of the 48” **Blue** tubing to **Channel A Input** tap on the Duct Blaster DG-1000 gauge.
2. Connect the other end of the 48” **Blue** tubing to the **Blue** pressure tap on the outside rear of the Trainer enclosure.
3. Connect one end of a 30” piece of **Green** tubing to **Channel A Reference** tap on the Duct Blaster DG-1000 gauge.
4. Connect other end of the **Green** tubing to the **Green** pressure tap on the outside upper side of the Trainer enclosure.
   ** **Channel A** on the Duct Blaster gauge is now set up to measure duct pressure with reference to the enclosure.



5. Connect one end of the 120" **Red** tubing to the **Channel B Input** tap on the Duct Blaster DG-1000 gauge. 6. Connect the other end of the **Red** tubing to brass pressure tap on the Duct Blaster fan. 7. Connect the Duct Blaster speed controller to a wall outlet and to the Duct Blaster fan. 8. If you will be using Cruise Control for the Duct Blaster fan, connect the fan control cable between the DG-1000 gauge and the Duct Blaster fan speed controller.			

Connect Tubing and Cabling to the Blower Door System

1. Connect one end of a 30" piece of **Green** tubing to **Channel A Reference** tap on the Blower Door DG-1000 gauge.
2. Connect the other end of the **Green** tubing to the remaining **Green** pressure tap on the outside upper side of the Trainer enclosure.
   ** **Channel A** on the Blower Door gauge is now set up to measure enclosure pressure with reference to the room you are standing in.
3. Connect the Blower Door fan speed controller to a wall outlet and to the Blower Door fan.
4. If you will be using Cruise Control for the Blower Door fan, connect the fan control cable between the DG-1000 gauge and the Blower Door fan speed controller.
   Note: You will <u>not</u> be measuring airflow through the Blower Door fan for this test procedure, therefore you do not need to make any tubing connections to **Channel B**.

Conduct the Duct Leakage to Outside Pressurization Test

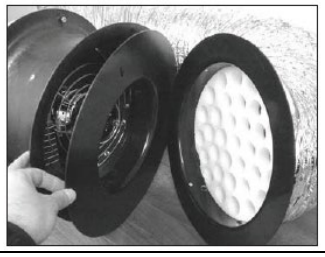
1. Conduct your One-Point Duct Leakage to Outside pressurization test.
2. **Channel A** on the Duct Blaster DG-1000 gauge is measuring duct system pressure with reference to the enclosure, and **Channel B** on the Duct Blaster DG-1000 is measuring airflow through the Duct Blaster fan.
3. **Channel A** on the Blower Door DG-1000 gauge is measuring the enclosure pressure with reference to the room.
4. You will be simultaneously pressurizing the enclosure to 25 Pa with the Blower Door fan, and pressurizing the duct system so that the duct system and the enclosure are at the same pressure.
5. You can manually control the Blower Door and Duct Blaster fans, or you can use Cruise Control on both fans. Consult the Duct Blaster Operation Manual for testing instructions.
6. If you are conducting the test with the outside leakage hole open 1" use Ring 3 on the Duct Blaster fan.
7. If you are conducting the test with the outside leakage hole open 4" or 8" use Ring 2 on the Duct Blaster fan.
8. Use Ring C on the Blower Door fan.

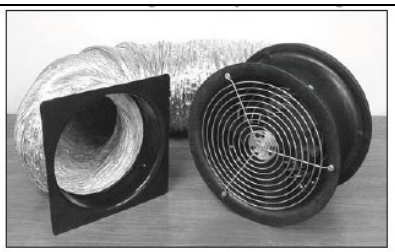
5.2 Duct Leakage to Outside Depressurization Test

A Duct Leakage to Outside depressurization test is very similar to a pressurization test. Follow the Duct Leakage to Outside Pressurization test instructions above (5.1) with the following changes/additions:

Install the Duct Blaster Fan to Depressurize the Ductwork

Install the Duct Blaster fan to pull air out of the ductwork (depressurize) – see Duct Blaster Operation manual for instructions.



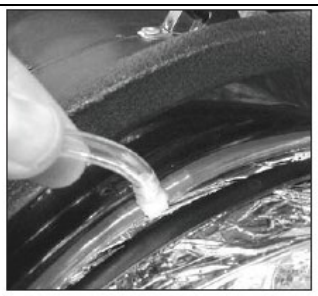
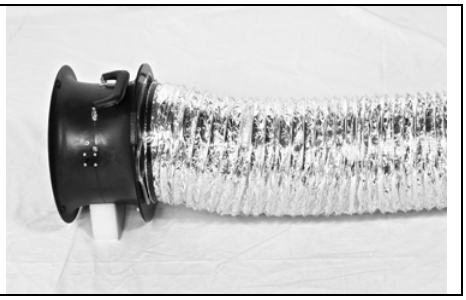


Install the Blower Door Fan to Depressurize Enclosure

Install the Blower Door fan so that the Flow Rings are on the inside of the enclosure, and that the air from the Blower Door fan will be blowing out of the enclosure.

Additional Tubing Connections for Duct Blaster Gauge

1. Connect one end of the 120" **Yellow** tubing to the **Channel B Reference** tap on the Duct Blaster DG-1000 gauge.
2. Connect the other end of the **Yellow** tubing to the pressure tap on the round transition piece on the Duct Blaster flex duct.



When conducting a depressurization test, the Duct Blaster flex duct should be stretched relatively straight for about 4 feet from the front of the Duct Blaster fan.