

# HOME DIAGNOSTICS COURSE Blower Door and Duct Blaster Technician

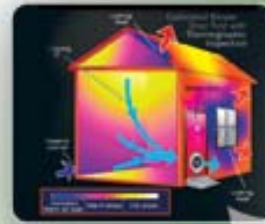


## February 24-26, 2010

3 day course 8AM-5PM

THIS COURSE WILL BE HELD IN:

### Los Angeles Area



### COURSE DELIVERY

This 3-day course is a combination of classroom and in-field training. The course is designed for new raters/technicians, but may also be used as a refresher for other existing Raters and Home Performance Contractors.

### DESCRIPTION

The course will cover the basics of how to conduct an evaluation of a house, including an energy audit and a health and safety assessment.

**Topics included in the training are:** The equipment used in an evaluation, residential construction details, energy principles, and the various steps involved in the evaluation. Participants will learn how to use the blower door, pressure gauges. Participants will also learn how to do refrigeration appliance replacement assessments, and how to conduct duct leakage testing.

### WHO SHOULD ATTEND?

Electricians, Installation Crews, Auditors, Inspectors, Contractors, Builders, Architects, Engineers, Business-Professionals, Sales Representatives, Designers & Consultants.

### WHAT YOU WILL RECEIVE?

1. Textbook
2. Continental Breakfast & Lunch
3. Lab with hands-on training & exercises

### COST

**\$450**

Derrick Chapman | 818-687-1323 | dc@greencactus.org | www.greencactus.org



# **LEARNING OBJECTIVES**

## **INTRODUCTION TO THE BLOWER DOOR & DUCT BLASTER**

### **History of the Blower Door and Duct Blaster**

- Identify air leakage in windows by using blower door
- Know the development of blower door and Duct Blaster
- Understand the importance of the blower door in measuring air leakage, and help diagnose air quality and moisture problems in building.

### **A Blower Door and Duct Blaster Overview**

- Understand the function of a blower door and Duct blaster
- Determine the safety statement of sealing air leaks in the building
- Understand the air flow through the building and combustion safety.
- Understand why air leakage in residential buildings occur
- Learn the use of a blower door Duct Blaster

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## **BLOWER DOOR OPERATIONS**

### **Blower Door System Components**

- Identify the parts and accessories of blower door.
- Identify the function of each part of blower.

### **Operating the Blower Door/Basic Measurements**

- Conduct a blower door depressurization test
- Conduct depressurization testing using one point "CFM50" test
- Determine fan flow and use the low-flow rings.
- Learn how to find leaks in the building envelope using blower door fan running at 20 and 30 pascals of building pressure.

### **Basic Set-up of the Blower Door**

- Learn the installation technique of a blower door frame.
- Install a blower door fan.
- Set-up and mounting of pressure measurement gauges on ABS plastic board, entrance door and horizontal surfaces.
- Operate the fan Speed controller and the connection onto a 110 Volt outlet.
- Prepare the house before performing a test, and for fire hazard purposes.

### **Additional Measurement Options**

- Perform additional measuring option using multi-point test: CFM50
- Calculate the flows for each fan pressure manually.
- Determine and estimate natural infiltration rates.
- Differentiate Effective Leakage Area (ELA) and Equivalent Leakage Area (EqA)

### **Using the Low-Flow Rings**

- Use the Low-Flow Rings in measuring leaky building.
- Identify types of Low-Flow Rings.

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## **CONDUCT AN AIR TIGHTNESS TEST**

### **Describe Test Standards, Methods, and Inputs**

- Name the recognized BPI standard for air tightness tests.
- Describe its main requirements regarding location of pressure taps, preparation of the building, required test pressures and temperature readings.
- Define air tightness, exterior surface area, ELA, NLA, and air changes per hour.
- Describe the context for which the standard was originally developed.

### **Conduct an air tightness Test**

- Complete all steps of an air tightness test checklist.
- Analyze Test Results
- Complete calculations and obtain results within  $\pm$  5% of the instructor's results.

### **Explain air tightness Test Principles and Applications**

- Explain the relationship among door fan flow, inside/outside pressure difference and envelope air tightness.
- Explain what high and low air tightness test results indicate about the potential for further air sealing
- Explain what very low air tightness test results indicate about combustion venting and indoor air quality
- Explain what before and after air tightness test results indicate about the savings achieved by air sealing.