

# INSTALLATION INSTRUCTION

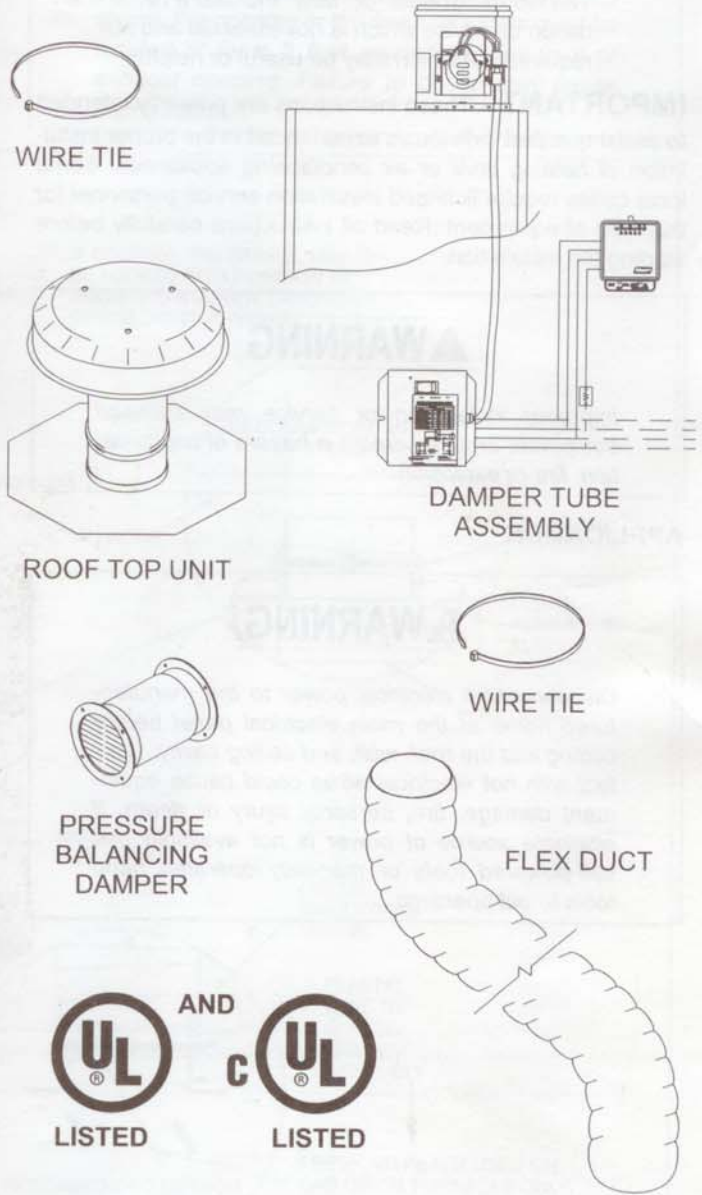
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**CAUTION: READ ALL SAFETY GUIDES BEFORE  
YOU START TO INSTALL YOUR UNIT.  
SAVE THIS MANUAL**

## STANDARD BLEND AIR II

MODELS: 7681-8191/A





## GENERAL INFORMATION

**NOTE:** The words "Shall" or "Must" indicate a requirement which is essential to satisfactory and safe product performance.

The words "Should" or "May" indicate a recommendation or advice which is not essential and not required but which may be useful or helpful.

**IMPORTANT** - These instructions are primarily intended to assist qualified individuals experienced in the proper installation of heating and/ or air conditioning appliances. Some local codes require licensed installation service personnel for this type of equipment. Read all instructions carefully before starting the installation.

### **WARNING**

*Improper installation or service may damage equipment and can create a hazard of asphyxiation, fire or explosion.*

## APPLICATION

### **WARNING**

*Disconnect all electrical power to the manufactured home at the main electrical panel before cutting into the roof, wall, and ceiling cavity. Contact with hot electrical wires could cause equipment damage, fire, personal injury or death. If alternate source of power is not available use self-powered tools or manually operated hand tools to cut openings.*

This Standard Blend Air II accessory is U.L. & C.U.L. listed for use with Evcon Manufactured Housing furnaces.

The furnaces (Gas, Oil, or Electric) are to be equipped with air conditioning ready or with appropriate air conditioning accessories installed. The control is tied to thermostat and when the thermostat calls for either heating or cooling the damper blade opens, letting in fresh air. The damper opens only from the command of the thermostat, preventing loss of conditioned air migration.

**IMPORTANT** - When cutting into roof and ceiling area extreme care should be taken not to damage any electrical wiring that may be hidden underneath the roof or behind the ceiling.

## CONTENTS OF PACKAGE

This product is packaged for three systems per carton.

Inspect the parts for any shipping damage. If damage is found, notify freight carrier and file claim.

- 3 - Packet containing:  
Installation Instructions and  
Warranty Certificate.
- 3 - Fresh Air Intake Assemblies
- 6 - Plastic Wire Ties
- 25' of 5" Dia. Insulated Duct
- 3 - Damper Tubes
- 3 - Small parts envelopes, each containing:  
6 screws,  
1 tube clamp and  
1 strain relief.
- 3 - Control Boxes

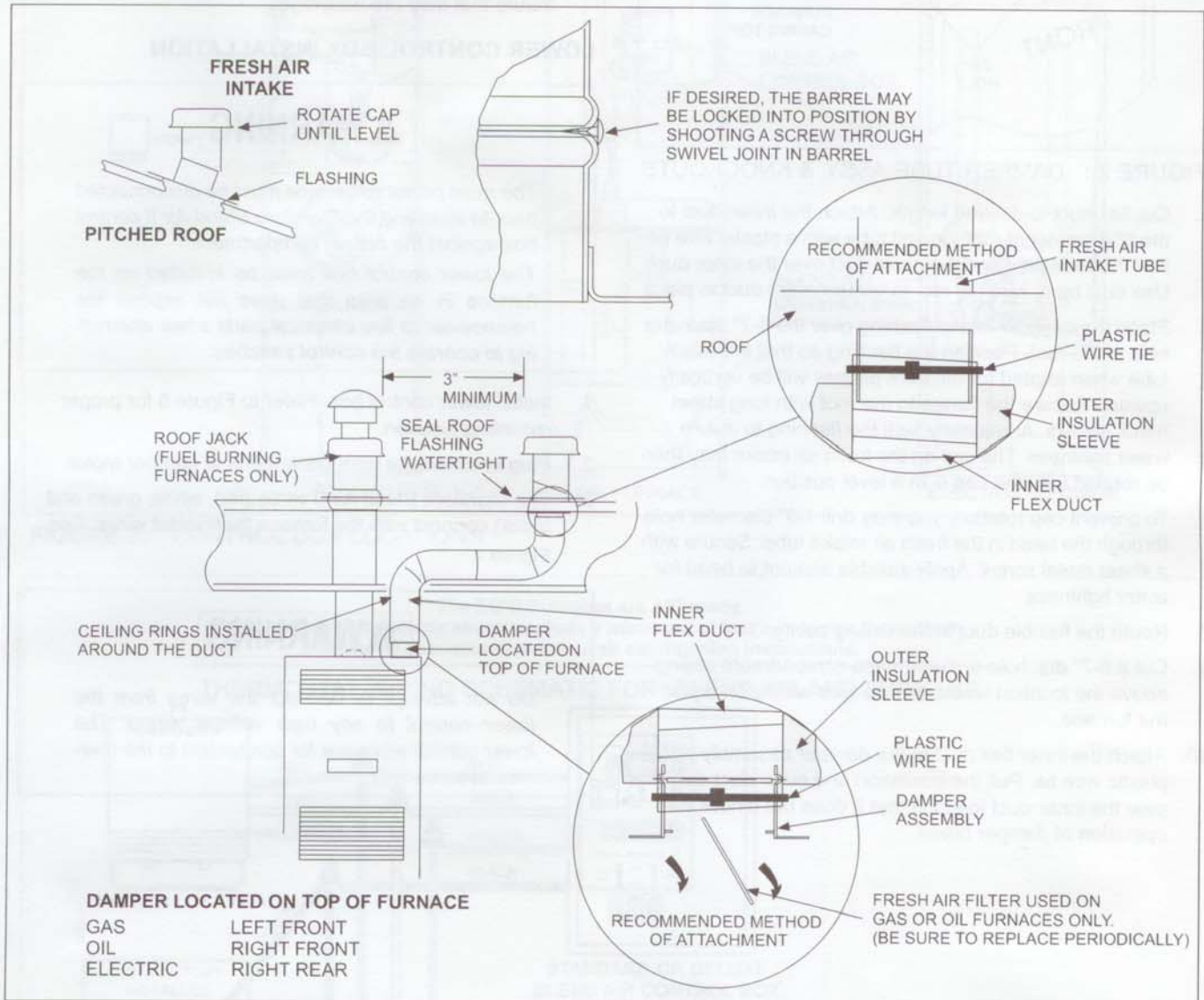
## ROOF TOP INSTALLATION

Refer to Figure 1 illustrations.

1. H.U.D. regulations require that fresh air intake on the roof must be located at least three feet away from any roof opening, i.e., roof jack, sewer vent, bathroom exhaust, etc.
2. Cut a 6-7" diameter opening in the roof.
3. Follow fresh air damper installation.

### WARNING

To prevent undesirable odors or products of combustion from being circulated into the living space, the opening in the fresh air intake must be located at least 3 feet away from any vent or exhaust opening. Failure to do so may cause asphyxiation.

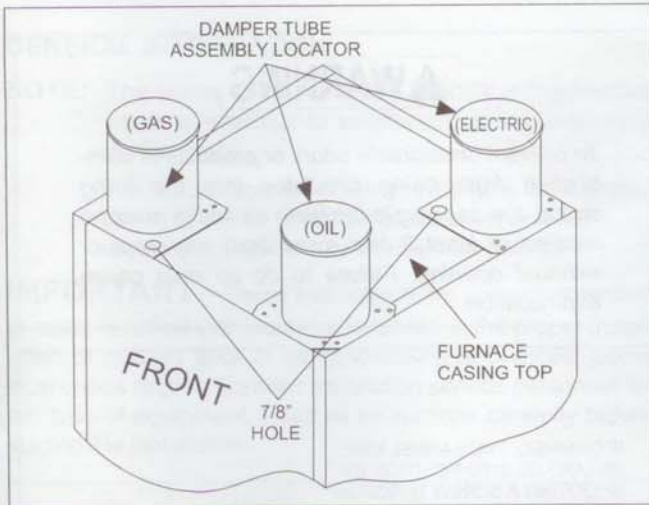


**FIGURE 1 : ROOF TOP INSTALLATION**

## FRESH AIR DAMPER INSTALLATION

1. Locate and remove knock-out opening in top of furnace for damper tube assembly connection. See Figure 2 for location appropriate to type of furnace.
2. Locate and remove the 7/8" diameter knock-out in the top of the gas or oil furnace for damper control cable.
3. Mount the damper tube assembly (using screws provided). A minimum of three screws should be used to provide a secure connection. See Figure 2
4. A plastic snap bushing is supplied in the small parts package and is to be used to route the 2 damper motor cables through the raw 7/8" hole.





**FIGURE 2 : DAMPER TUBE ASSY. & KNOCKOUTS**

5. Cut flex duct to desired length. Attach the inner duct to the 5" diameter of roof top unit tube with a plastic wire tie. Pull the insulation and the outer duct over the inner duct. Use duct tape, wire tie, etc. to secure outer duct in place.
6. Place the fresh air intake flashing over the 6-7" diameter hole in the roof. Position the flashing so that the stack tube when rotated for different pitches will be vertically upward. Secure the flange to the roof with long sheet metal screws. Adequately seal the flashing to insure water tightness. The cap on the fresh air intake may then be rotated until the cap is in a level position.
7. To prevent cap rotation, you may drill 1/8" diameter hole through the bead in the fresh air intake tube. Secure with a sheet metal screw. Apply suitable sealant to bead for water tightness.
8. Route the flexible duct in the ceiling cavity.
9. Cut a 6-7" dia. hole in the furnace compartment ceiling above the location where the damper will be on top of the furnace.
10. Attach the inner flex duct to the damper assembly with a plastic wire tie. Pull the insulation and outer duct down over the inner duct insuring that it does not hinder with operation of damper blade.

**NOTE:** It may be necessary to trim off excess length of the duct.

11. Fire stop requirements must be met by use of approved methods or use accessory ceiling rings (P/N 7660-2841). If the ceiling rings are used, attach to ceiling tightly around the duct.
12. On gas or oil furnaces, a charcoal fresh air filter. P/N 7681-7331/A (packed in bulk of 50), may be used. See illustration on filter assembly.
13. After completing installation go over all the joints and insure that they are watertight.

#### LOWER CONTROL BOX INSTALLATION

##### **▲WARNING**

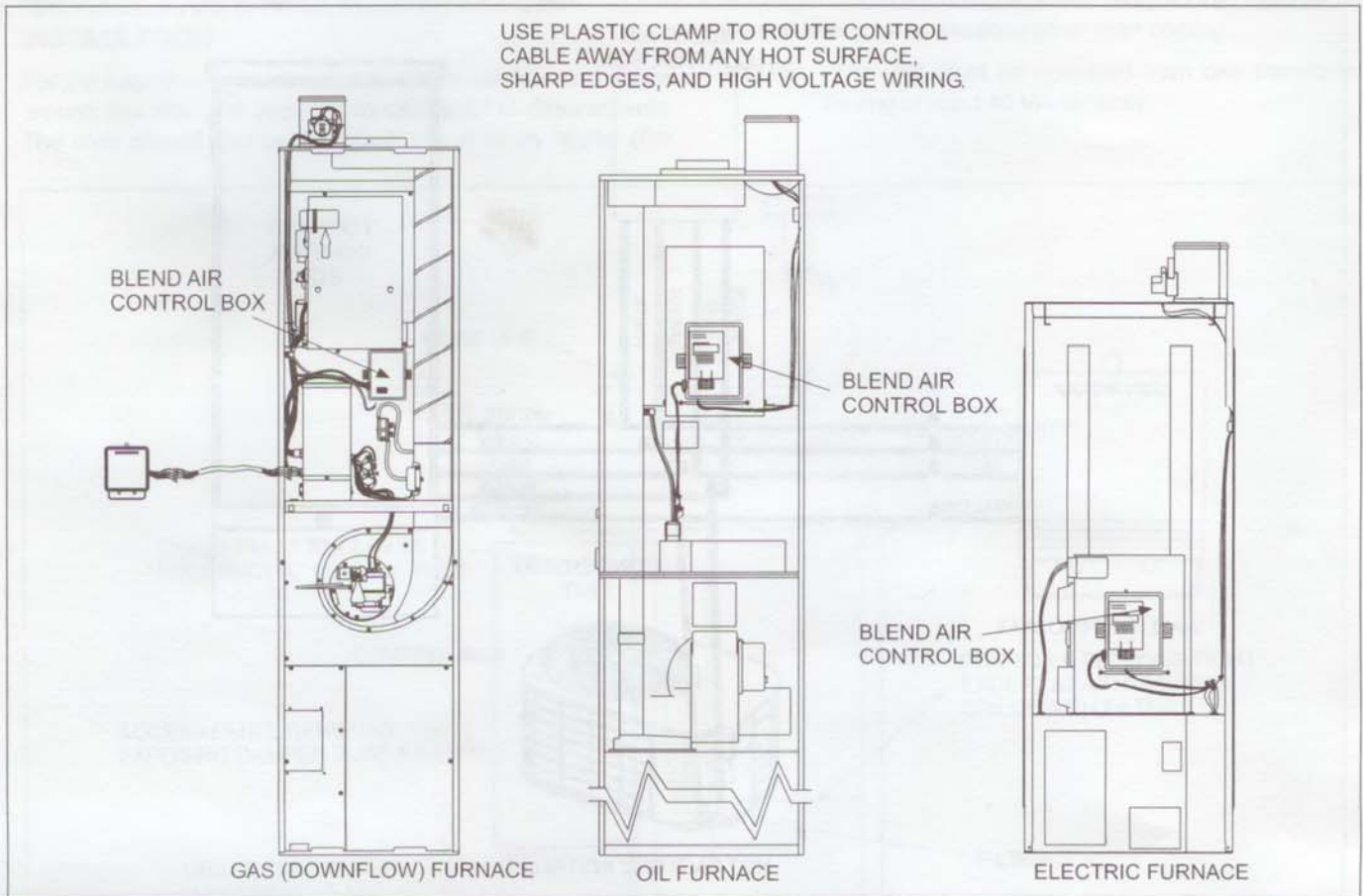
*The main power to furnace must be disconnected prior to installing the Standard Blend Air II control box against the blower compartment.*

*The lower control box must be installed on the furnace in an area that does not expose the homeowner to live electrical parts when attempting to operate the control switches.*

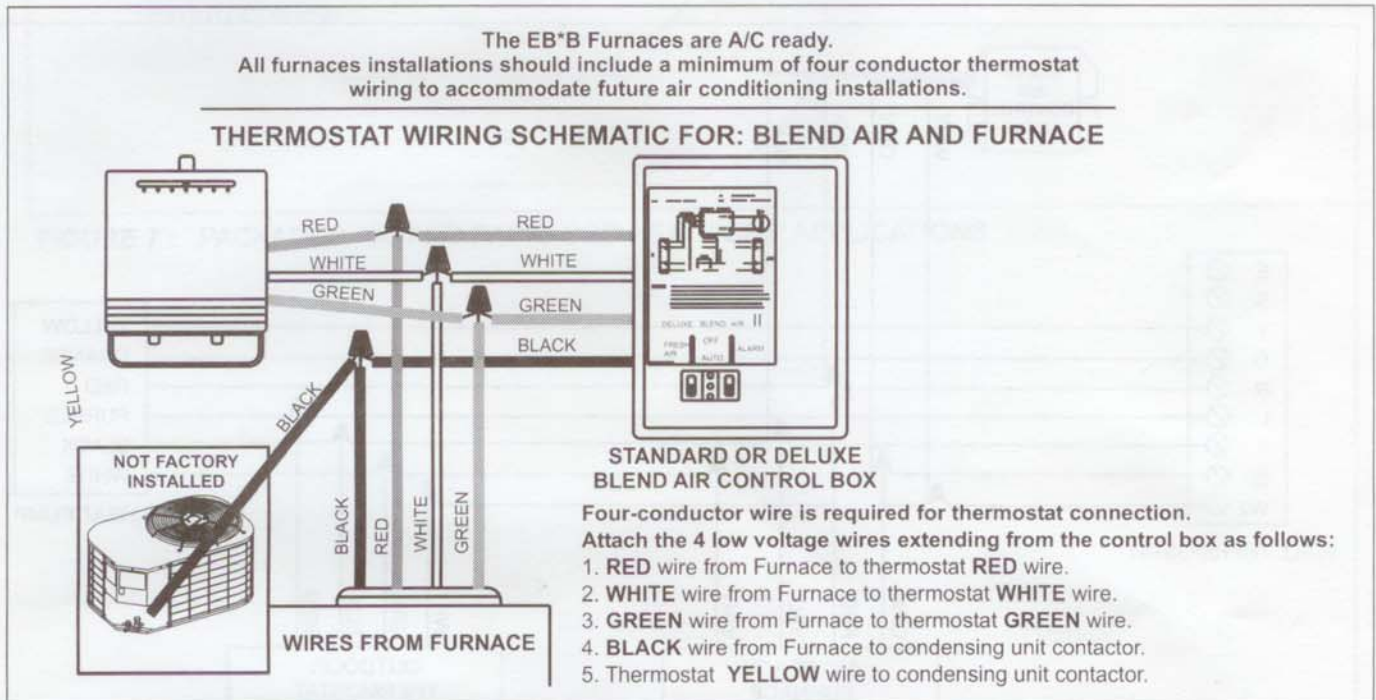
1. Install lower control box. Refer to Figure 5 for proper mounting location.
2. Plug in connector from control box to damper motor.
3. The Standard Blend Air II wires (red, white, green and black) connect with the furnace thermostat wires. See Figure 4.

##### **▲WARNING**

*Do not attempt to connect the wires from the lower control to any high voltage wiring. The lower control wires are for connection to the thermostat wires only.*

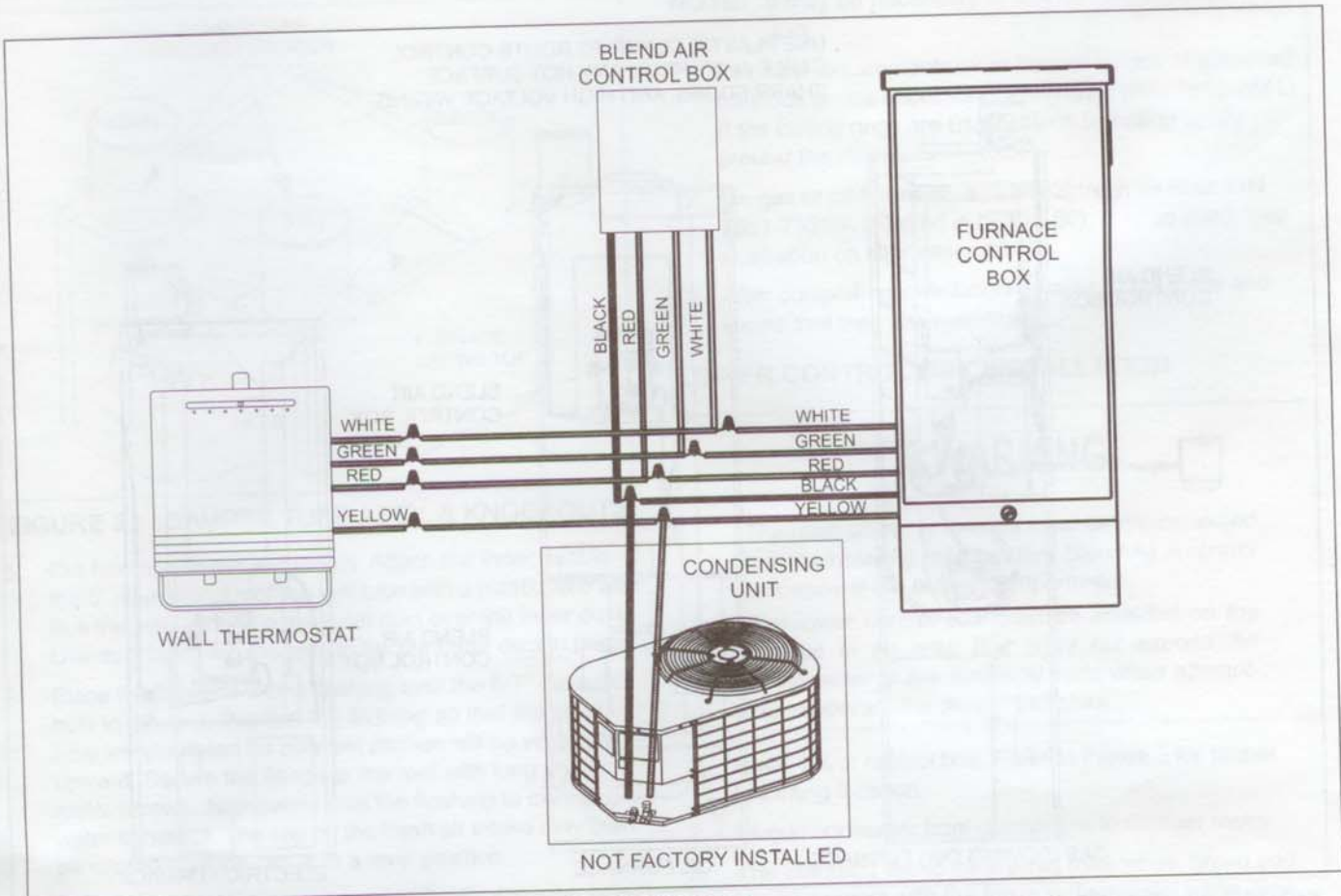


**FIGURE 3 : CONTROL BOX LOCATIONS**

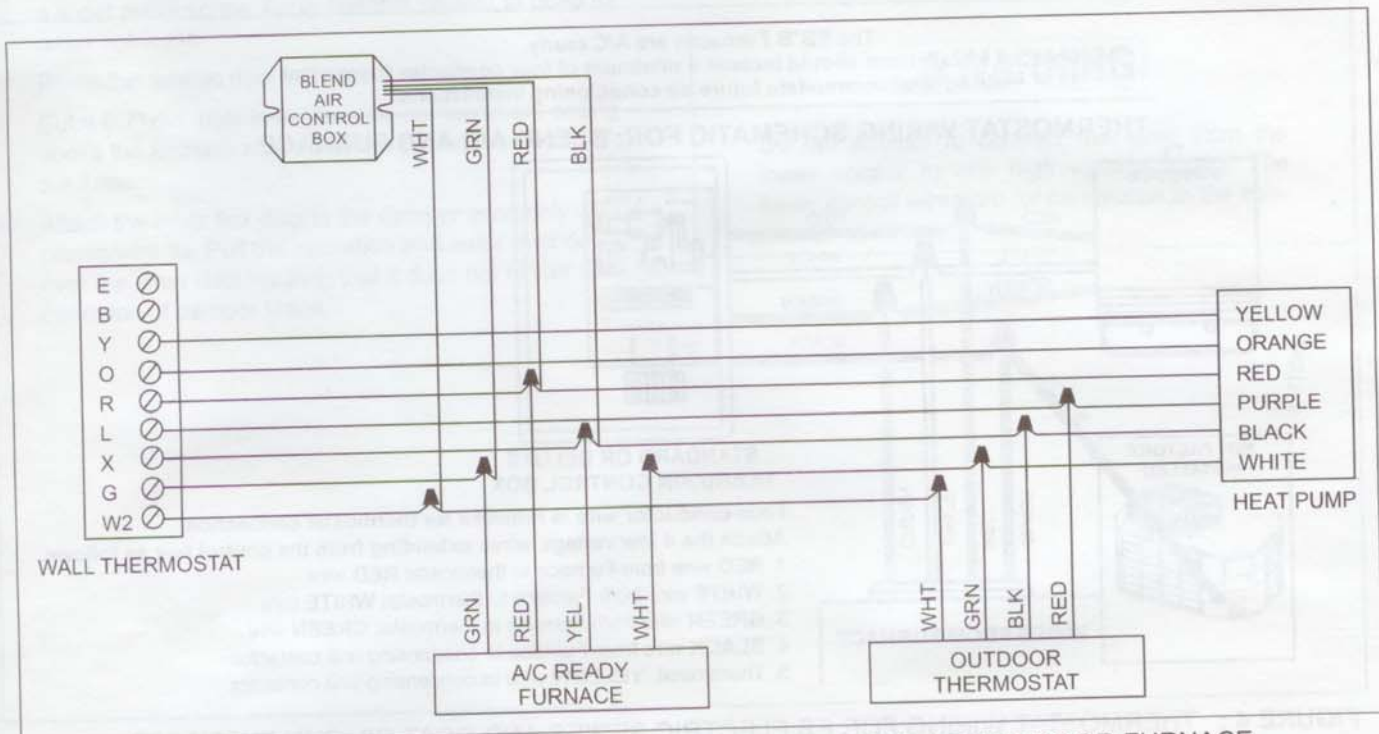


**FIGURE 4 : THERMOSTAT WIRING FOR EB ELECTRIC SERIES AND COAT OIL GUN FURNACES**





**FIGURE 5 : THERMOSTAT WIRING FOR GAS FURNACES**



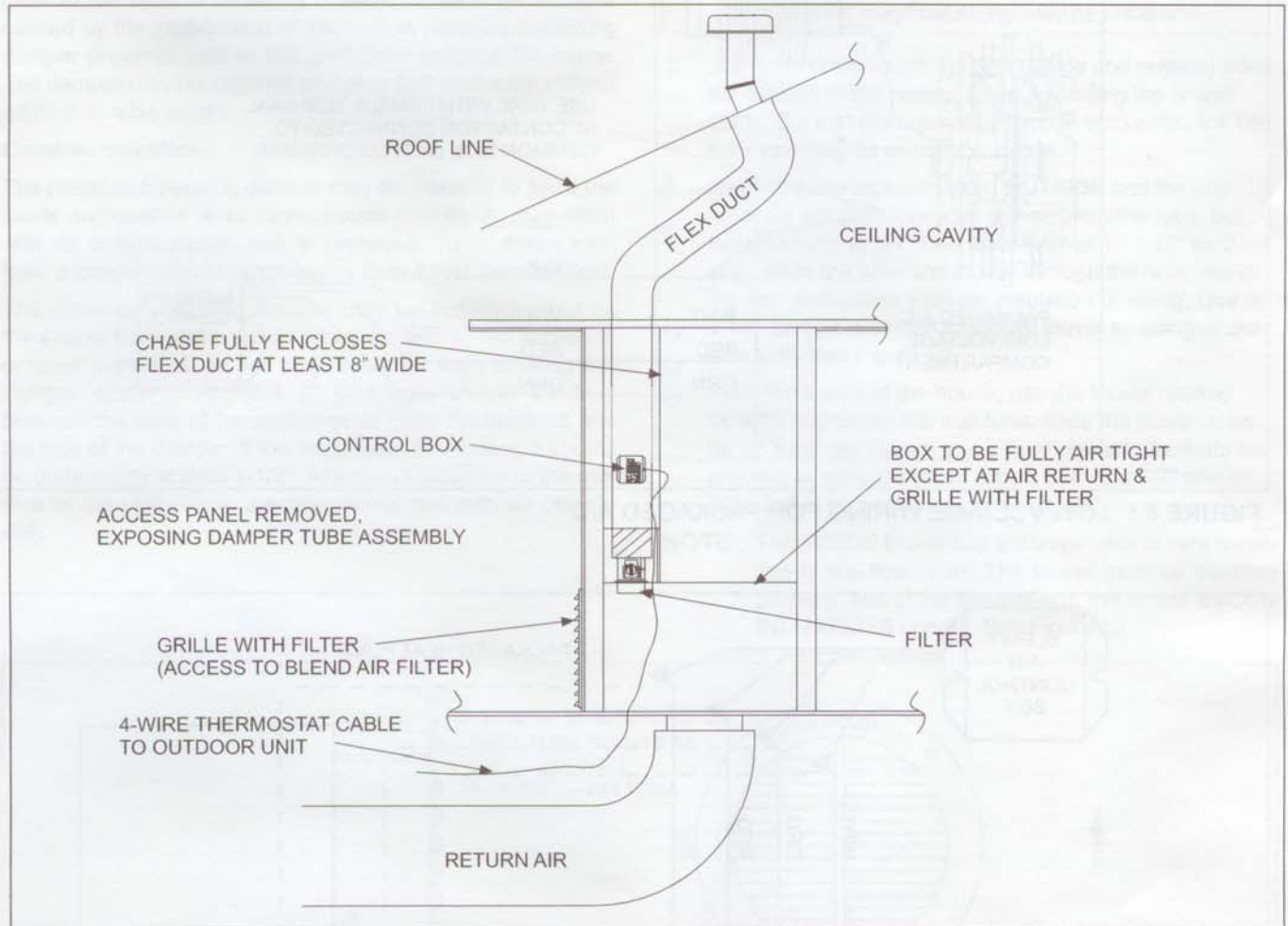
**FIGURE 6 : LOW VOLTAGE WIRING FOR HEAT PUMP APPLICATIONS WITH INDOOR FURNACE**

**PACKAGED A/C & PACKAGED HEAT PUMP INSTALLATION**

For packaged units, a closet with return air box and chase around flex duct are required to satisfy CFM requirements. The units should also be equipped with auxiliary heater (For

Packaged A/C) or at least a blower relay so that fresh air can be delivered during seasons other than cooling.

**NOTE:** The unit must be operated from one transformer having at least 40 VA capacity.



**FIGURE 7 : PACKAGED A/C AND PACKAGED HEAT PUMP APPLICATIONS**

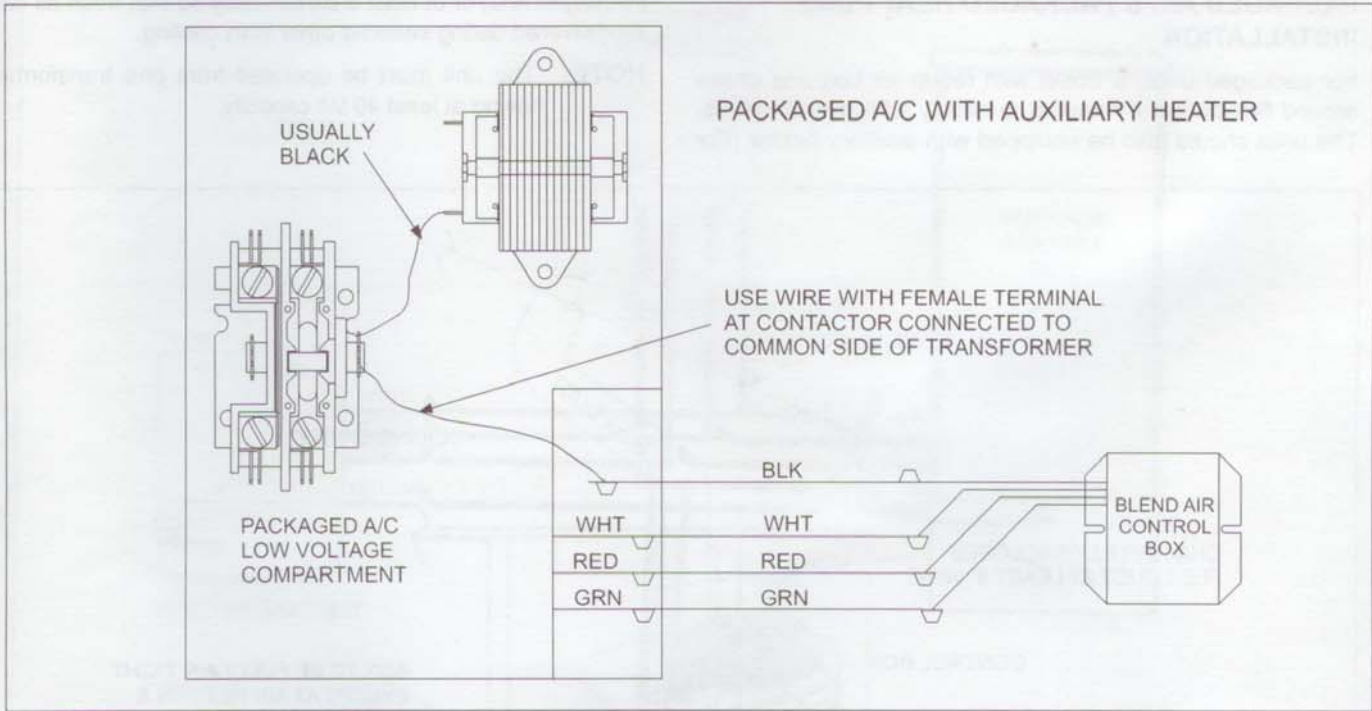


FIGURE 8 : LOW VOLTAGE WIRING FOR PACKAGED A/C

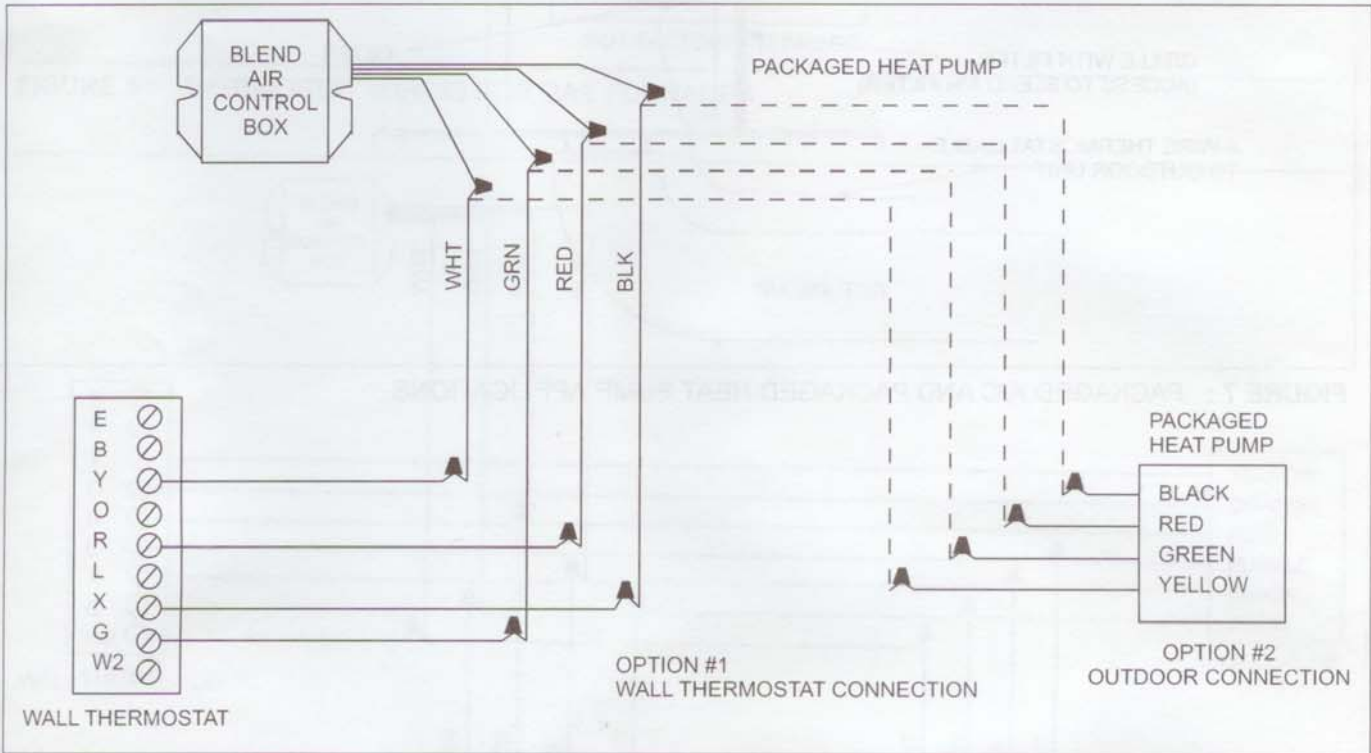


FIGURE 9 : LOW VOLTAGE WIRING FOR PACKAGED HEAT PUMP



## PRESSURE BALANCING DAMPER INSTALLATION (OPTIONAL)

The pressure balancing damper is packed under accessory 7681-8021, a package of 24.

The Pressure Balancing Damper is designed so that air can pass to the outside, relieving a slight increase of pressure caused by the introduction of fresh air. A pressure balancing damper prevents cold or hot draft from entering the home. The damper may be installed on 2x4 or 2x6 stud walls without addition to tube length.

### Location Selection

The pressure balancing damper may be installed to allow the inside and outside air to communicate directly. A utility room with an outside facing wall is preferred. To minimize heat loss, a location should be no higher than 2 feet from the floor.

The pressure balancing damper may be installed either on the side or back of the washer/dryer so long as the appliance or dryer vent hose do not block room air from entering the damper opening. At least 2" clearance should be held between the back of the appliance or other obstructions and the face of the damper. If the utility room has a door, it should be undercut by at least 1-1/2". Alternative locations to the outside of the utility room are any central hall with an outside wall.

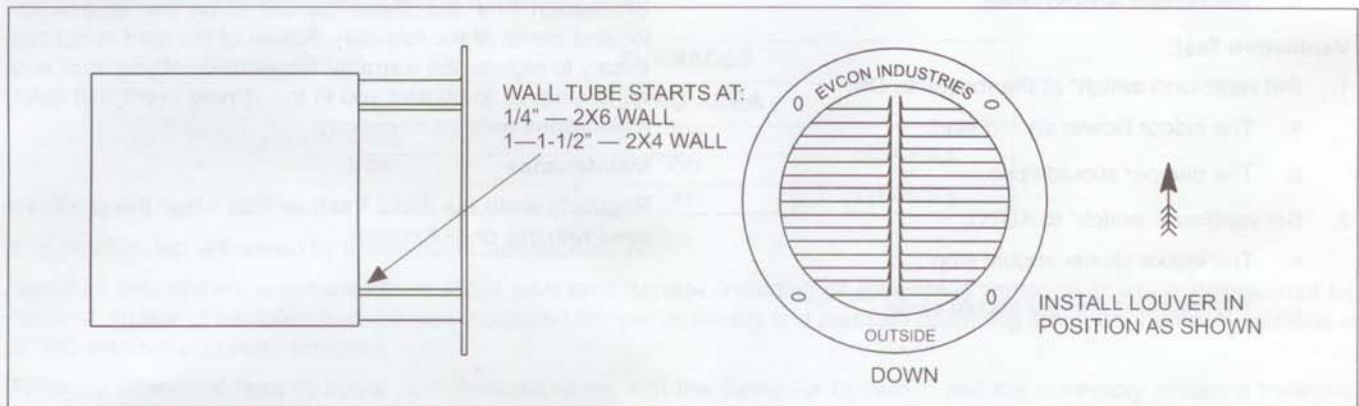
### Installation Procedure

#### **WARNING**

*Disconnect main power supply before drilling through wall, electrical wiring may be present.*

1. Start pilot drill through the wall (inside and outside) from the outside of the house, avoid any siding lap or wall studs. Cut a 4" diameter hole through both walls. A 4 1/8" hole saw may be used for this task.
2. Assemble the louver marked **OUTSIDE** and the wall tube. Do not slide louver all the way into the tube, but start the tube at 1/4" for a 2 x 6 Wall or 1 - 1/12" for 2 x 4 Wall. Slide the tube and louver through the hole, avoiding any obstruction such as, insulation or wiring. Use #8 x 1/2" screws provided to secure louver to siding or outside wall. See Figure 10.
3. From the inside of the house, use the louver marked **INSIDE** to connect the wall tube. Slide the louver in as far as it can go. Do not use a hard object to facilitate the process as damage might occur. Use #8 x 1/2" screws provided to secure louver to inside wall.

**NOTE:** The INSIDE louver has a damper that is very sensitive to the flow of air. The louver must be installed properly. Install the louvers with the words **EVCON INDUSTRIES** upright. See Figure 10.



**FIGURE 10 : PRESSURE BALANCING DAMPER**

## FINAL SYSTEM CHECKOUT

**NOTE:** Power must be provided to the furnace in order to perform the following system checkout.

### Heat Only Testing

1. Set the thermostat system switch to HEAT and set the thermostat all the way up (calling for heat).
  - a. The furnace controller should energize heating components (consult furnace manual for specific components).
  - b. The damper should open.
2. Set the thermostat all the way down (thermostat satisfied).
  - a. The furnace controller should de-energize heating components.
  - b. The damper should close.

### Cooling Test

1. Set the thermostat system to COOL. Set the thermostat all the way down (calling for cooling).
  - a. The air conditioner and indoor blower should start.
  - b. The damper should open.
2. Set the thermostat all the way up (cooling satisfied).
  - a. The air conditioner and indoor blower should stop.
  - b. The damper should close.

### Ventilation Test

1. Set ventilation switch\* at thermostat to ON.
  - a. The indoor blower should start.
  - b. The damper should open.
2. Set ventilation switch\* to AUTO.
  - a. The indoor blower should stop.
  - b. The attic and damper should close.

On Some models of thermostat, the ventilation switch is the fan switch.

**NOTE:** When all the tests are completed, insure all controls are set back to normal operation.

## NOTES TO THE HOMEOWNER

### Fresh Air Switch

The Standard Blend Air II is equipped with a fresh air switch. Use this switch to prevent the introduction of fresh air when outside air conditions are such that its introduction presents a health threat or when recommended by a physician. Such conditions may exist during the high pollen season.

### About your Warranty

A limited warranty certificate has been supplied with your Standard Blend Air II System.

The system is warranted to the retail consumer for two (2) years against defects in material or workmanship.

In addition, since there can be many variable factors which cannot be controlled by the Standard Blend Air II system, the System is not warranted to prevent or cure moisture condensation problems.

Read the warranty for a complete description of the coverage.

### The Registration Card

A registration card has been supplied with the Standard Blend Air II system. Complete the card with the necessary information (the unit serial number is on the control box, located inside of the furnace). Return of the card is not necessary to register the warranty. Registration of your appliance will enable us to contact you in the remote event that safety notifications become necessary.

### Maintenance

Regularly wash the metal fresh air filter when this product is used with gas or oil furnaces.



**APPLICATION & TEST DATA**  
**STANDARD BLEND AIR II**  
**LIVING AREA VENTILATION / AIR QUALITY SYSTEM**

**Living Area Ventilation Code Requirements**

- .035 CFM per square foot of living area floor space.

**Standard Blend Air II Performance**

FURNACES		
LIVING AREA		
Gas	DG	109 CFM ‡
Oil	CO	
Electric	EB	86 CFM ‡

**To Determine the CFM Requirements of a Specific Home**

- Multiply square feet of living area floor space by .035 CFM.

Example: Typical 14 x 66 Single.

Wide:

$$\begin{array}{r}
 924 \text{ Square Feet} \\
 \times .035 \text{ CFM} \\
 \hline
 32.34 \text{ CFM}
 \end{array}$$

\* For living area floor space that has CFM requirements greater than those listed above, use large capacity kit (part #7681-8281) to achieve the CFM listed below.

**Large Capacity Kit with Standard Blend Air II**

FURNACES		
LIVING AREA		
Gas	DG	145 CFM ‡
Oil	CO	
Electric	EB	127 CFM ‡

‡ Application test witnessed by underwriters laboratories, inc.

Blend Air data shown, is compiled from actual tests on a furnace, including all assembled components which include; roof top terminal, 10 feet of insulated duct, furnace motorized damper assembly and pressure balancing assembly. Furnace operating at 3" WC external duct static pressure.

Pressure differential tests in actual manufactured home with the Blend Air System II and the accessory pressure balancing damper in operation, result in neutral pressure balance within commercial tolerance.

# NOTES

Unitary Product

1. The unitary product is designed to provide cooling and heating for a single zone.

2. The unitary product is designed to provide cooling and heating for a single zone.

Parameter	Value
1. Cooling Capacity	100,000 BTU/hr
2. Heating Capacity	100,000 BTU/hr
3. Power Input	10,000 Watts

3. The unitary product is designed to provide cooling and heating for a single zone.

4. The unitary product is designed to provide cooling and heating for a single zone.

5. The unitary product is designed to provide cooling and heating for a single zone.

6. The unitary product is designed to provide cooling and heating for a single zone.

7. The unitary product is designed to provide cooling and heating for a single zone.

8. The unitary product is designed to provide cooling and heating for a single zone.

9. The unitary product is designed to provide cooling and heating for a single zone.

10. The unitary product is designed to provide cooling and heating for a single zone.

Parameter	Value
1. Cooling Capacity	100,000 BTU/hr
2. Heating Capacity	100,000 BTU/hr
3. Power Input	10,000 Watts

11. The unitary product is designed to provide cooling and heating for a single zone.

12. The unitary product is designed to provide cooling and heating for a single zone.

13. The unitary product is designed to provide cooling and heating for a single zone.

14. The unitary product is designed to provide cooling and heating for a single zone.

15. The unitary product is designed to provide cooling and heating for a single zone.

16. The unitary product is designed to provide cooling and heating for a single zone.

17. The unitary product is designed to provide cooling and heating for a single zone.

18. The unitary product is designed to provide cooling and heating for a single zone.



# LIMITED TWO YEAR WARRANTY

MANUFACTURED HOUSING BLEND AIR II™ \*

Effective on Installations on or after October 25, 1994

- 1 These products are warranted to the retail consumer for two (2) year against defects in material and factory workmanship. The warranty is transferable. Return of the Consumer Registration Card enclosed with this warranty is not a requirement to obtain warranty performance. The Consumer Registration Card is included to permit UPG to locate consumers in the unlikely event of a product problem notification.
- 2 Any defective part will be repaired, or at UPG's option, replaced on an exchange basis. UPG will pay its established warranty flat labor rate to service the product to the authorized Service Center or Servicing Dealers who have service agreements with Unitary Products Group, for repairs or replacements made under this warranty.
- 3 The warranty duration shall be calculated as follows:
  - 3.1 The warranty on repaired or replaced parts furnished pursuant to this warranty shall be for the unexpired duration of the original warranty.
  - 3.2 If the product is installed as original equipment in a residence, the warranty period shall begin on the date of the original purchase of the residence.
  - 3.3 If the product is installed in a residence previously purchased by the Consumer, the warranty shall begin on the date of the Product's installation in the residence.
  - 3.4 The Consumer must establish these dates by presenting legible papers at the time the warranty claim is made showing the applicable purchase date.
4. The Consumer should proceed as follows to obtain warranty performance:
  - 4.1 Consult the Authorized Service Center list packed with the product or the Yellow Pages of the telephone book under furnaces or heating equipment for the name, address, and telephone number of the nearest authorized Service Center. Call the nearest area Service Center and report the problem. Supply Service Center with your appliance model number, purchase date, and a brief description of the problem. If local authorized service cannot be obtained, contact the authorized Distributor in your area. If there is no distributor in your area and you cannot obtain proper service under the terms of the warranty, please write: Unitary Products Group, 5005 York Drive, Norman, OK 73069

## EXCEPTIONS AND EXCLUSIONS

- 5 To the extent any or all of the following exclusions or any other provisions of this warranty are prohibited by any Federal, State or Municipal law, and cannot be preempted, they shall not be applicable:
  - 5.1 THERE ARE NO OTHER EXPRESSED WARRANTIES EXCEPT AS SET OUT ABOVE AND ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE NO LONGER THAN THE DURATION OF THE EXPRESSED WARRANTY. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.
  - 5.2 THIS WARRANTY DOES NOT COVER CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGES, OR INCIDENTAL EXPENSES, INCLUDING DAMAGE TO PROPERTY. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.
  - 5.3 This warranty does not cover damages caused by failure to perform normal and routine maintenance as set out in the operation and service instructions.
  - 5.4 This warranty does not cover damage caused by mishandling, neglect, lightning, corrosive atmospheres, improper installation, application, adjustment, or improper energy supply.
  - 5.5 This warranty shall not apply if the nameplate is removed or defaced.
  - 5.6 This warranty applies only to products sold at retail in the United States and Canada.
  - 5.7 If the owner elects to use non-authorized parts or components which are not equivalent in quality to factory parts or components, and which cause equipment failure, the expressed warranty will not be honored.
  - 5.8 This warranty does not cover electricity or other fuel costs or increases in fuel costs from any reason including additional or unusual use of supplemental or emergency cooling or electric heating.
- 6 This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.