



Hearth & Home Technologies Inc., Division HON Industries, 1915 W. Saunders Street, Mt. Pleasant, Iowa 52645, phone 1-877-427-8368

# INSTALLATION & OPERATING INSTRUCTIONS

## HRV200PLUS

### HEAT RECOVERY VENTILATOR

**DESIGNED TO OPERATE WITH THE FOLLOWING FRESH AIR FIREPLACES:**

- ➔ HEATILATOR CNXT70IPLUS SERIES & NB4236IPLUS SERIES
- ➔ HEAT-N-GLO 6000PLUS SERIES & 6100PLUS SERIES



**CAUTION:**

Do not expose the appliance to the elements (such as rain, etc.).

**Note:** An arrow (➔) found in the text signifies change in content.

### PLEASE RETAIN THIS MANUAL FOR FUTURE REFERENCE

This appliance is certified to **CSA22.2** and **UL1812** standards and also is performance tested to **CSA439-00**.

For assistance during installation contact your local dealer or contact the Heatilator Technical Services Department, Hearth & Home Technologies Inc., 1915 W. Saunders Street, Mt. Pleasant, Iowa 52641, 1-877-IAQ-VENT (1-877-427-8368).

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02/04

➔ **Note:** The Caliber NXT Plus gas appliance (CNXT70IPLUS Series) and the 6100 PLUS (6100PLUS Series) CANNOT be installed at an elevation above 6,200 ft. (1,890m).

**IMPORTANT!**

Before installation, the installer must give careful consideration to how this HRV200PLUS system will operate if connected to any other piece of mechanical air movement equipment, i.e. a forced air furnace or air handler, operating at a higher or lower static pressure.

Before the installation, the installer must assess any interaction between the HRV200PLUS and vented combustion equipment, i.e. gas furnaces, oil furnaces, wood stoves, etc., and ensure the ability of the vented appliances to properly vent is not compromised by the operation of the HRV200PLUS system.

After installation, the installer must confirm the compatibility of the installed system by measuring both air flows of the HRV200PLUS by using the balancing procedure found in this manual and evaluating the effects on any interconnected equipment.

**NEVER** install a ventilator in a situation where its normal operation, lack of operation or partial failure may result in the back drafting or improper functioning of vented combustion equipment!!!



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### ➔ A. INTRODUCTION

The Heatilator Home Products Heat Recovery Ventilator 200 Plus (HRV200PLUS) works as a power ventilator for the Fresh Air Fireplaces (FAF) from Heatilator and Heat-N-Glo, and is designed to provide fresh air into a building while exhausting an equal amount of stale air. This balanced operation ensures optimum performance with no effect on the relative pressurization of the structure. During winter months when the indoor space is heated, the heat recovered from the fireplace exhaust heats the incoming fresh air as both air streams pass through the heat recovery core. During summer months when the indoor space is air conditioned, the stale indoor air removes heat from the heat recovery core to cool the incoming fresh air.

The Heatilator Home Products Heat Recovery Ventilator Plus allows your home to “breathe”, expelling fireplace exhaust, stale air and airborne pollutants and providing a constant supply of healthy, fresh air.

The HRV200PLUS is certified by HVI as a stand alone ventilator and is certified by UL as part of the Fresh Air Fireplace heat recovery system.

#### WARNING!

**The HRV200PLUS is designed specifically to work with the Fresh Air Fireplaces from Heatilator. DO NOT attempt to hook up the HRV200PLUS to other gas fireplaces or to wood burning fireplaces. The Fresh Air Fireplace MUST be installed in conjunction with the HRV200PLUS in order for it to vent properly. DO NOT ATTEMPT TO ACHIEVE THIS CONFIGURATION WITH ANY OTHER FIREPLACE.**

**Fresh Air Fireplaces are identified by the “PLUS” suffix in the model number/nomenclature (i.e. CNXT70IPLUS).**

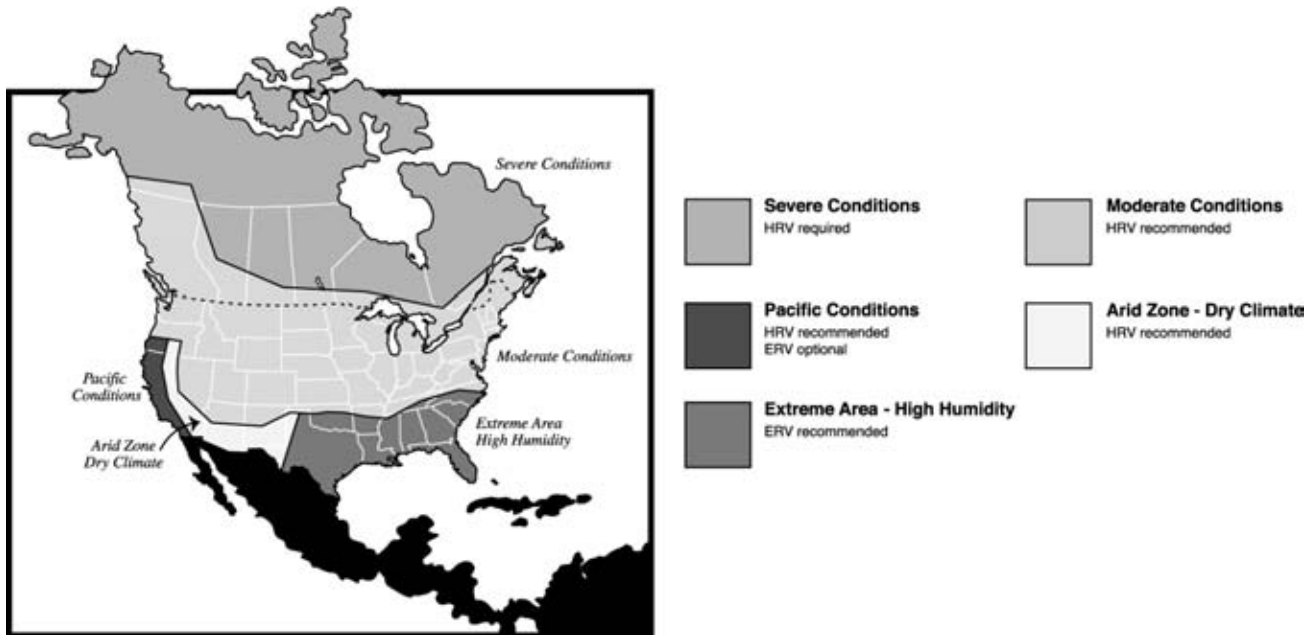
### B. HRV200PLUS APPLICATION

Selecting the proper equipment for the climate is essential for maintaining comfort levels and maximizing efficient operating conditions. In general, the following guidelines apply:

1. The HRV200PLUS is designed for climates where the heating season is typically longer than the cooling season. The HRV is equipped with an aluminum core not allowing the transfer of moisture between the air streams
2. The HRV200PLUS is suitable for use in climates where the outdoor temperature drops below 25°F (-4°C) for more than five days.

The reference map on the following page highlights geographic areas for HRV/ERV applications. ERV (Energy Recovery Ventilator) appliances allow moisture to transfer across the core and are appropriate for very high humidity geographies. An ERV application for the Fresh Air Fireplace is NOT available.

Ensure that the HRV200PLUS works in your climate.



## C. ENGINEERING DATA

### Efficient, Patented Aluminum Core

The cross-flow heat recovery core transfers heat between the intake and exhaust airstreams. The core removes easily for cleaning or service.

### Diagnostic LED

A diagnostic LED mounted on the side of the HRV200PLUS cabinet indicates normal and abnormal operating modes for efficient system evaluation without having to open the door.

### Supply and Exhaust Air Blowers

The supply and exhaust air flows are supplied by two forward curved blower wheels driven by a common, double shaft PSC blower motor. Four field selectable blower speeds – one high speed and three low speeds – are available to meet specific installation needs. The blower motor is rated at 120VAC, 1.4 Amps.

### Air Filters

Air filters are supplied in both the exhaust and supply air streams. The filters are washable and easily removed for cleaning.

### Automatic Defrost System

The HRV200PLUS is equipped with an automatic defrost feature utilizing heat from the Fresh Air Fireplace to defrost the HRV core. As a warning feature, the electric ember bed will light for 15 seconds prior to ignition. Alternatively, a field installed defrost system using recirculated indoor air to remove frost is available as an option.

### Cabinet

Painted twenty gauge galvanized steel outer shell and aluminized inner liner sandwich ¾" (19mm) insulation to provide strength, reduce heat loss and insure a corrosion free life.

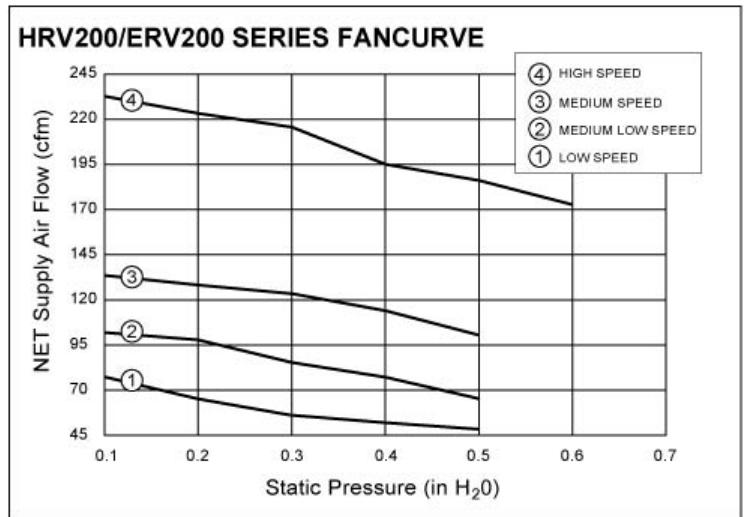
### Mounting

The HRV200PLUS comes supplied with four reinforced polyester straps which attach to the threaded inserts at each corner of the case for easy installation and quiet operation.

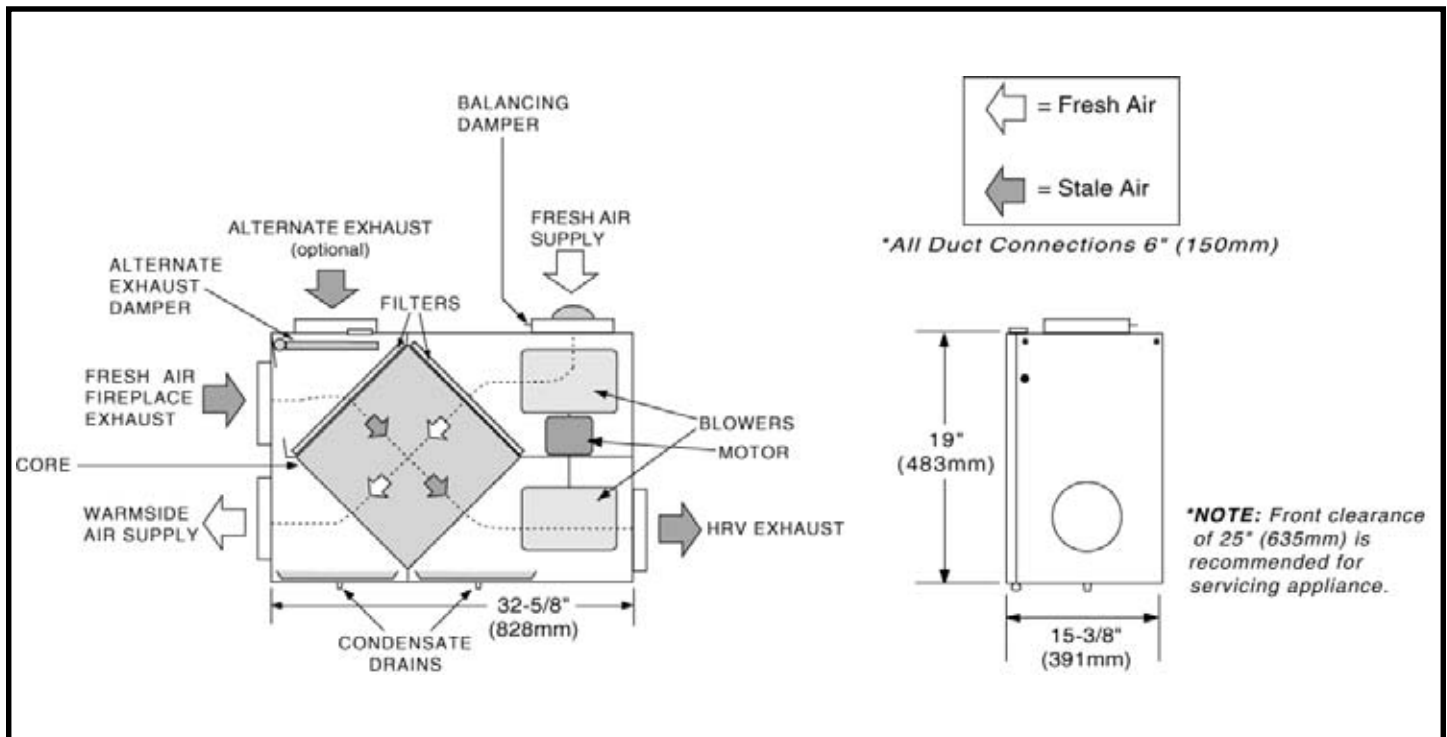
**Installed Weight** - 78 lbs. (35.4 kg)

**Shipping Weight** - 84 lbs. (38 kg)

| <b>HRV200PLUS Performance</b>                           |     |
|---|-----|
| HVI CERTIFIED   |     |
| Maximum Temperature Recovery                            | 70% |
| Sensible Effectiveness<br>@149 cfm (70 L/s) (CSA C439M) | 60% |
| Sensible Efficiency<br>@149 cfm (70 L/s) 32°F (0°C)     | 55% |
| Sensible Efficiency<br>@131 cfm (62 L/s) -13°F (-25°C)  | 53% |
| VAC @ 60 Hz   | 120 |
| WATTS (Low Speed)                                       | 87  |
| WATTS (High Speed)                                      | 164 |
| Amp Rating  | 1.4 |



| <b>HRV200PLUS Clearance to Combustibles</b> |     |       |       |        |      |
|---|-----|-------|-------|--------|------|
| Surface                                     | Top | Sides | Front | Bottom | Back |
| Clearance                                   | 1"  | 1"    | 1"    | 1"     | 0"   |



**Appliance Dimensions**

## D. DEFROST OPTIONS

The HRV200PLUS performs as a whole house heat recovery ventilator during Fresh Air Fireplace operation and continuous ventilation operation. When the Fresh Air Fireplace is in use, the HRV core temperature is elevated with no chance of frost or ice build-up at any time. However, when the HRV200PLUS is operating in continuous ventilation mode, outdoor temperatures below 25°F can cause frost to form on the core. This frost can reduce airflow through the HRV resulting in unbalanced operation and could inhibit Fresh Air Fireplace operation.

- ➡ The Caliber NXT Plus and 6100 PLUS Fresh Air Fireplace is an “open hearth” design using the draft created by the HRV200PLUS to form an air curtain containing flue products in the hearth, as opposed to the typical glass front. The fronts for the Caliber NXT Plus and 6100 PLUS are shipped with fixed mesh screens to provide a barrier between the occupants and the fire.

**WARNING!**

Removing the DEFC1 jumper allows the HRV200PLUS to independently ignite the Fresh Air Fireplace.

**WARNING!**

➡ Do not remove the fixed mesh screen or screen door retainers on the Caliber NXT Plus and the 6100 PLUS fronts unless:

1. Fresh Air Fireplace Defrost is disabled (DEFC1 jumper installed), and
2. Fresh Air Fireplace operation is supervised by an adult. Removing the fixed screen mesh or mesh door retainers could result in injury, property damage or death.

**Choose the defrost method best for your application:**

- **No Defrost**

*Mild climates where defrost is not needed. Allows fixed mesh screens/screen door retainers to be removed on the Caliber NXT Plus and the 6100 PLUS. ←*

- **Room Air Defrost**

*Defrosts with indoor air using the Optional Defrost Kit. Does not cause unexpected Fresh Air Fireplace ignitions. Allows fixed mesh screens/screen door retainers to be removed on the Caliber NXT Plus and the 6100 PLUS. ←*

- **Fresh Air Fireplace Defrost**

*Defrosts with the heat from the Fresh Air Fireplace. Causes unexpected Fresh Air Fireplace ignitions. Fixed mesh screens/screen door retainers must be used on the Caliber NXT Plus and the 6100 PLUS. ←*

**Note:** When “No Defrost” or “Room Air Defrost” is selected for the defrost method, the fireplace will not be used for defrost cycles. Some homeowners may elect to remove the fixed mesh screen or screen door retainers from the Caliber NXT Plus and the 6100 PLUS fronts for true “open hearth” operation.

**1. No Defrost**

This option is not generally recommended but may be used under the following conditions:

- a. The system is installed in an area with fewer than five days a year with an outside temperature below 25°F. These areas are typically in the southern and coastal regions of the country.
- b. The system will not be used for continuous ventilation. This application is for the installation where the HRV200PLUS is not the primary ventilation means for the building and will only be used as a power vent/heat recovery device for the Fresh Air Fireplace.
- c. **Setup for No Defrost Option**
  - 1) Install the HRV200PLUS and the Fresh Air Fireplace per the instructions in this manual.
  - 2) Ensure the DEFC1 jumper is installed on the HRV control board. This jumper will disable the defrost logic in the HRV200PLUS.

## 2. Room Air Defrost

- a. When the HRV200PLUS system is installed in climates that normally have more than five days a year with an outside temperature below 25°F, Room Air Defrost is the recommended defrost method for two reasons:
  - 1) Unanticipated fireplace ignition due to the HRV200PLUS entering the defrost cycle is eliminated, and
  - ➡ 2) This presents the opportunity for some homeowners to remove the fixed mesh screen or screen door retainers on the front of the Caliber NXT Plus or the 6100 PLUS allowing true “open hearth” operation.
- b. **Setup for Room Air Defrost Option**
  - 1) Install the HRV200PLUS and the Fresh Air Fireplace per the instructions in this manual.
  - 2) Install the Optional Defrost Kit (part # HRV99DEFKIT). The Optional Defrost Assembly is microprocessor controlled to efficiently perform all defrost functions independently of the HRV200PLUS.
  - 3) Ensure the DEFC1 jumper is installed on the HRV control board. This jumper will disable the defrost logic in the HRV200PLUS.

## 3. Fresh Air Fireplace Defrost

When the HRV200PLUS system is installed in climates that normally have more than five days a year with outside temperatures below 25°F, Fresh Air Fireplace Defrost is a desirable defrost method because it utilizes the heat from the Fresh Air Fireplace to clear any frost build-up on the heat recovery core. However, the following precautions should be noted:

- a. **This method does allow the HRV200PLUS to independently ignite the Fresh Air Fireplace which may result in unexpected fireplace operation.**
- ➡ b. The fixed mesh screen or screen door retainers on the Caliber NXT Plus and the 6100 PLUS fronts must not be removed when using the Fresh Air Fireplace Defrost option.
- c. **Setup for Fresh Air Fireplace Defrost Option**
  - 1) Install the HRV200PLUS and the Fresh Air Fireplace per the instructions in this manual.
  - 2) Remove the DEFC12 jumper on the HRV control board. Removing this jumper will allow the HRV200PLUS to control the Fresh Air Fireplace for defrost cycles.

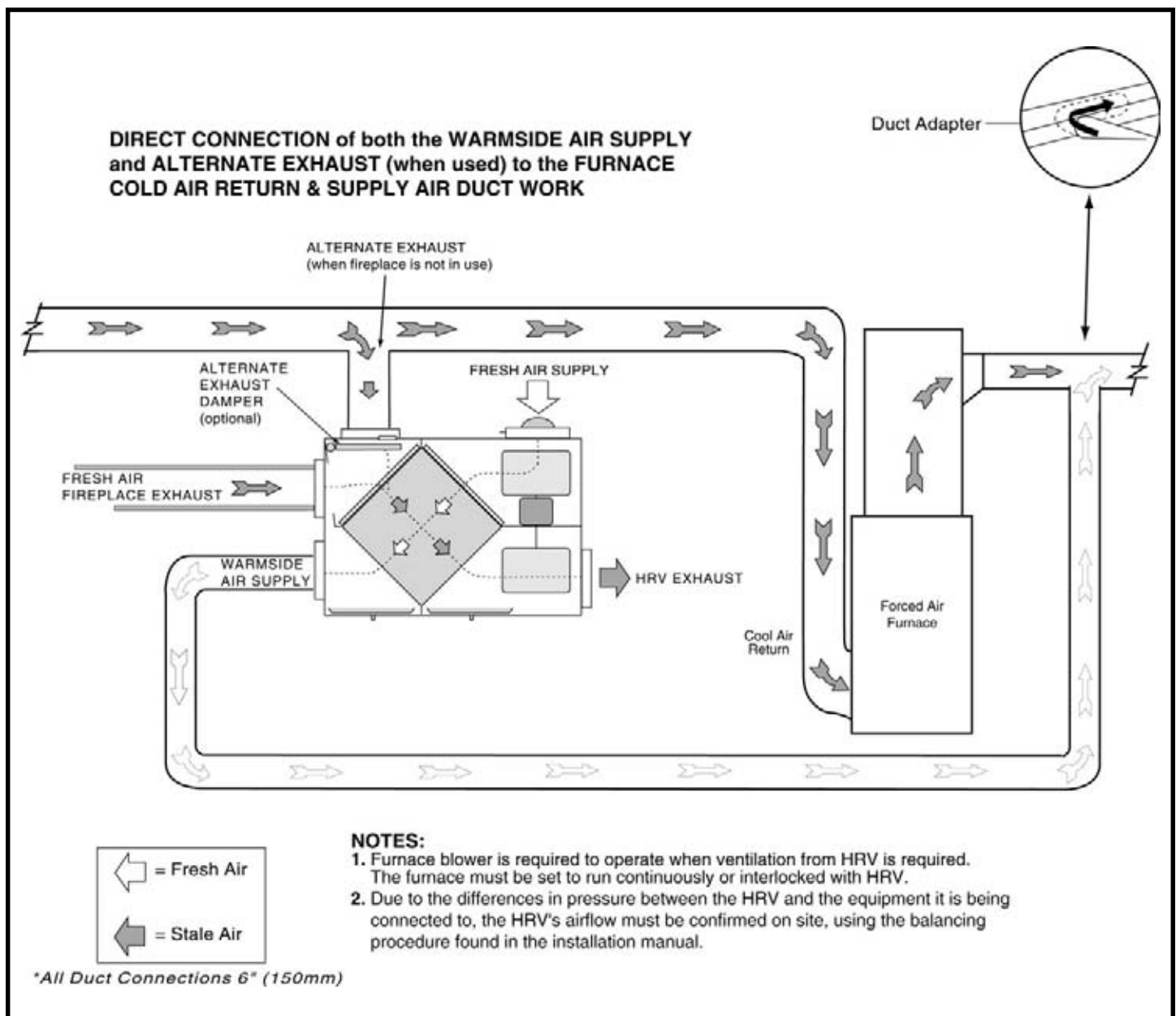
## E. INSTALLATION DIAGRAMS

**Note:** Minimum and maximum clearances must be maintained at all times. Illustrations throughout these instructions reflect typical installations and are for design purposes only. Actual installation may vary slightly due to individual design preferences.

The illustrations and diagrams used throughout these installation instructions are not drawn to scale.

### 1. Simplified Installation (Supply/Return Method)

- HRV must be balanced.
- It is recommended that the furnace blower run continuously or HRV operation be interlocked with the furnace blower (refer to Section "L. Wiring").
- Check local codes/authority having jurisdiction for acceptance.

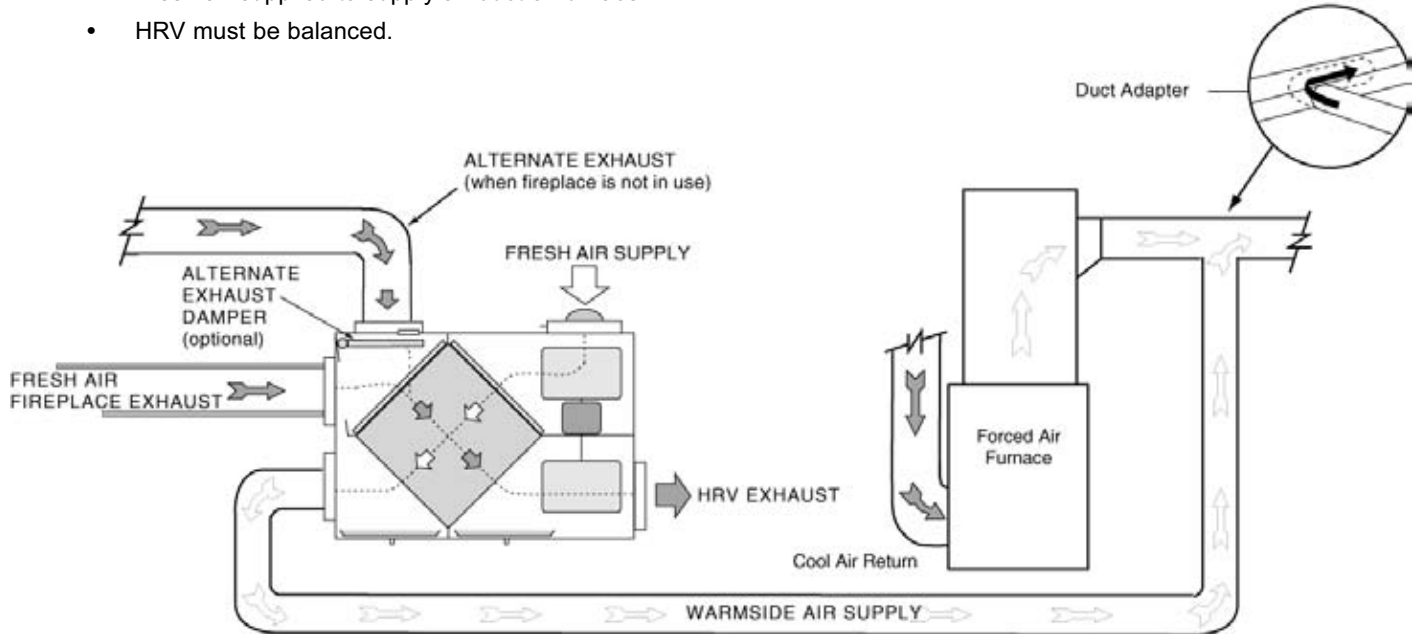


**2. Partially Dedicated Installation**

**a. Exhaust Air**

- Stale air drawn from key areas of the home (bathroom, kitchen, laundry).
- Fresh air supplied to supply air duct of furnace.
- HRV must be balanced.

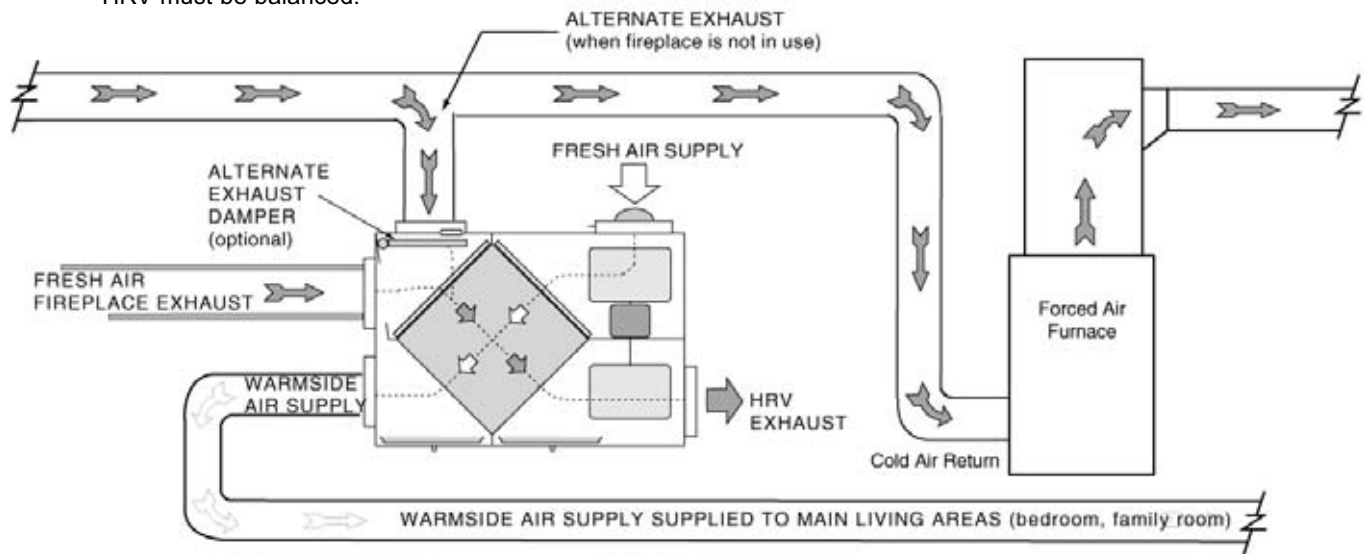
**DIRECT CONNECTION of the WARMSIDE AIR SUPPLY to the FURNACE SUPPLY AIR DUCT WORK (Stale air drawn from key areas of home.)**



**b. Fresh Air**

- Fresh air supplied to main living areas of the home (bedroom, family room).
- Stale air drawn from furnace return.
- HRV must be balanced.

**DIRECT CONNECTION of the ALTERNATE EXHAUST (when used) to the FURNACE COLD AIR RETURN DUCT WORK (Warm side air supply supplied through dedicated duct work.)**



**NOTES:**

1. Furnace blower may be required to operate when HRV is on to provide good air distribution.
2. Due to the differences in pressure between the HRV and the equipment it is being connected to, the HRV's airflow must be confirmed on site, using the balancing procedure found in the installation manual.

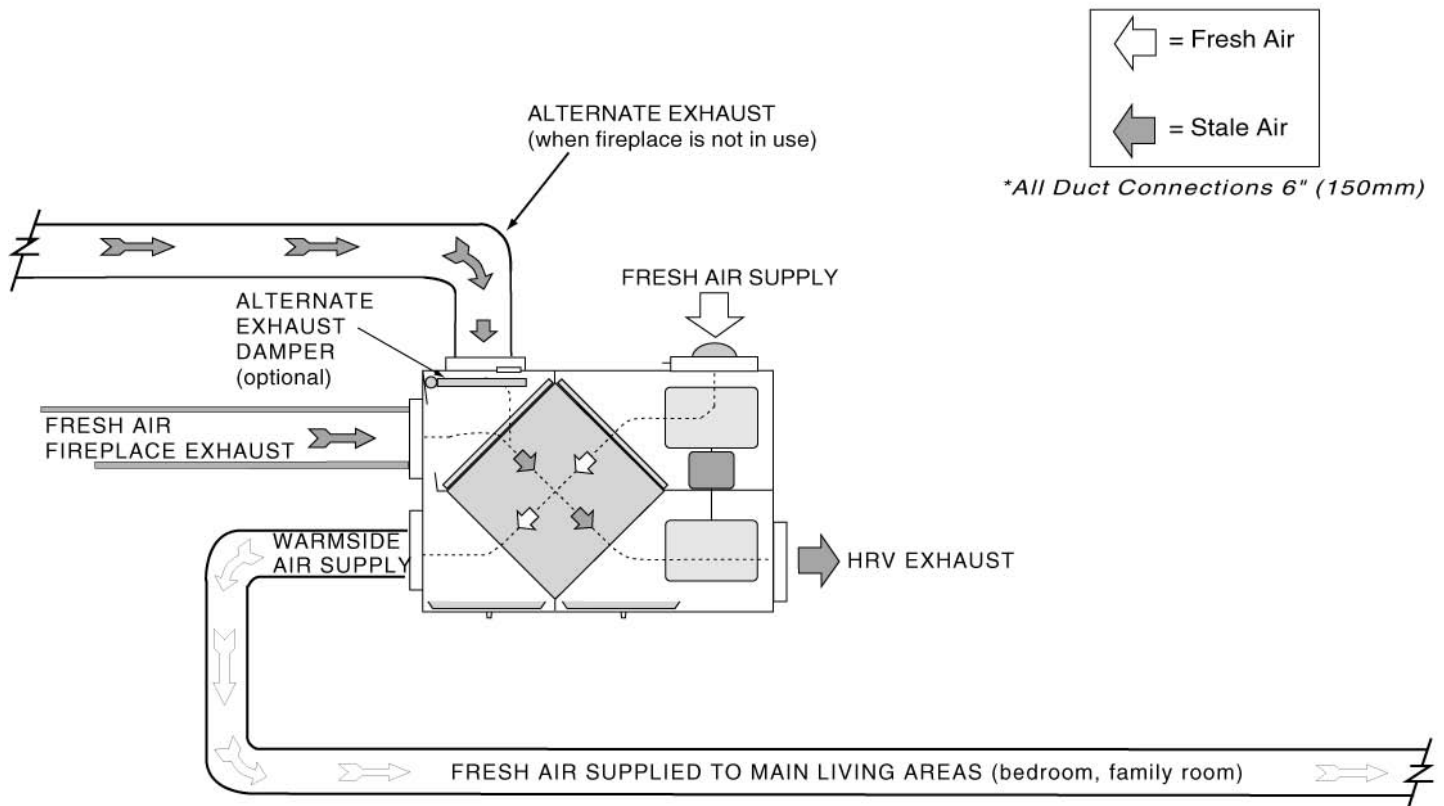
*\*All Duct Connections 6" (150mm)*



### 3. Fully Dedicated Installation

- Stale air drawn from key areas of the home (bathroom, kitchen, laundry).
- Fresh air supplied to main living areas.
- HRV must be balanced.

**HRV Plus is not connected to the CENTRAL FURNACE DUCT WORK**



**Please Note:** It is the responsibility of the installer to ensure all ductwork is sized and installed as designed to ensure the system will perform as intended. All air movement devices have a performance curve. The amount of air (CFM) that an HRV will deliver is directly related to the total external static pressure (E.S.P.) of the system. Static pressure is a measure of resistance imposed on the blower by length of duct work/number of fittings used in duct work, duct heater etc.

## F. INSTALLING THE VENTILATOR

### 1. Location

The HRV200PLUS must be located in a heated space where it will be possible to conveniently service the ventilator. Typically the HRV200PLUS would be located in the mechanical room or an area close to the outside wall where the weather hoods will be mounted. If a basement area is not convenient, a utility or laundry room may be used.

Attic installations are not normally recommended due to:

- a. The complexity of work to install.
- b. Freezing conditions in the attic.
- c. Difficulty of access for service and cleaning.

Sufficient clearance at the front of the access door is required for servicing the air filters and core. A minimum of 25" (635mm) clearance is recommended so the door can be opened. Four PVC reinforced polyester hanging straps are provided for hanging the HRV200PLUS from the basement floor joists.

### 2. Mounting

The hanging straps should be attached to the ventilator at the top end corners (mounting screws are already located on the ventilator case). Securely fasten the other end of the straps to the floor joists with wide head nails (not supplied), making sure the ventilator is level. The straps are designed to reduce the chance of noise, resonance or harmonics; therefore using the full length of the strap between the HRV200PLUS and the floor joists is recommended.

### 3. Electrical

The HRV200PLUS should be plugged into a standard designated (120VAC) electrical outlet with ground. The HRV200PLUS is equipped with a 3 foot electrical cord so it should be located within 3 feet from electrical service. It is not recommended that an extension cord be used for this appliance. If further wiring is required, then a licensed electrician should make all electrical connections. It is recommended that a separate 15 amp/120 volt circuit be used.

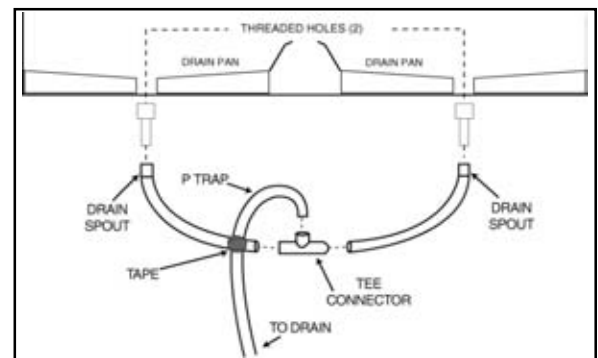
#### **WARNING!**

**In order to prevent electric shock when cleaning or servicing the HRV200PLUS, it is extremely important to confirm the polarity of the power line that is switched by the safety (disconnect) switch. The hot line (black) is the proper line to be switched. To confirm the proper polarity, use a voltmeter or test lamp to ensure there is no power after the switch when the door is open. Check between that point and ground (on the cabinet). This must be done as dwellings are occasionally wired improperly. Always make sure that the HRV200PLUS is properly grounded.**

### 4. Installing the Drain Line and P-Trap

When defrosting, the HRV200PLUS may produce some condensation. This water should flow into a nearby drain or be taken away by a condensate pump. The ventilator and all condensate lines must be installed in a space where the temperature is maintained above the freezing point.

Construct a P-Trap using the plastic tee connector. Cut two lengths of hose and connect each piece to an end of the "T" fitting, then connect the other ends to the two drain spouts. Allow the "T" fitting to point upwards. Connect to the drain line. Tape or fasten the base to avoid any kinks. This creates a trap which will hold some condensate and prevent odors from being drawn up the hose and into the fresh air supply of the HRV200PLUS. See Figure 1.



**Figure 1**

#### **WARNING!**

**Improperly installed water drain lines could result in property damage.**

## G. VENT AND DUCT INSTALLATION

### WARNING! - CONNECTING APPLIANCES TO THE HRV200PLUS

Do not connect any of the following appliances to the HRV200PLUS because lint, dust and/or grease will collect in the HRV, damaging the ventilator:

- clothes dryer
- range top
- stove top fan
- gas furnace
- B-vented gas fireplace
- solid fuel fireplace or heater
- gas water heater
- direct vent gas fireplace
- central vacuum system

Connecting any of these appliances to the HRV200PLUS will void the warranty.

The HRV200PLUS (HRV) not only serves as the fresh air ventilator for the home, but is also the power venting device for the Fresh Air Fireplace (FAF). The conduits from the FAF to the HRV and from the HRV to the exhaust termination remove both stale air from the home and the products of combustion from the FAF. Thus the exhaust air conduit acts as the chimney for your fireplace!

The HRV200PLUS requires four standard and one optional vent/duct connections:

#### Standard

1. **Fresh Air Supply** - Fresh air from the Fresh Air Inlet to the HRV.
2. **Warmside Air Supply** - Heated fresh air from the HRV into the living area.
3. **Fresh Air Fireplace Exhaust** - Stale air/combustion products from the FAF to the HRV.
4. **HRV Exhaust** - Stale air/combustion products from the HRV to the Flue Exhaust.

#### Optional - Alternate Exhaust Damper Assembly

**Alternate Exhaust** - Stale air from the living area to the HRV.

**Note:** Each of these connections has specific requirements for safe system operation, comfort and optimum efficiency. Always try to minimize duct run length and follow the manufacturer's installation instructions. Always follow specific code requirements.

### 1. Fresh Air From the Outdoor Intake to the HRV (Fresh Air Supply)

**Duct Materials:** Fresh Air Inlet - 6" Outside Weatherhood (Part #HRV99189)  
 Insulated Air Duct - rigid or flexible  
 CoolVent™ Flexible Pipe may be used.

#### a. Locate the Fresh Air Inlet

See Figure 7 for more detailed instructions.

- Must take air directly from outdoors.
- Should be located upstream (if there are prevailing winds) from the exhaust outlet.
- At least 3' (.9m) below when within 10' (3m) of the exhaust weatherhood, dryer vents or furnace exhaust (medium or high efficiency furnaces).
- A minimum of at least 10' (3m) from driveways, oil fill pipes, gas meters, garbage containers or any other know sources of contamination.
- At least 18" (457mm) above the ground or above the depth of expected snow accumulation.
- At least 3' (1m) from the corner of the building.
- Do not locate in a garage, attic or crawl space, adjacent dwelling units or other indoor spaces.
- Cap with the included plastic weatherhood.
- Must be clear of future obstructions such as plants, snow, etc.
- Must be readily accessible for clearing of debris and obstructions.

**b. Install Fresh Air Supply Ducting**

The inner and outer liners of the insulated duct must be clamped to the sleeve of the weatherhood as close to the outside as possible and to the plastic inlet port on the HRV200PLUS. It is very important that the fresh air intake line be given special attention to make sure it is well sealed. A good bead (1/2") of high quality caulking (preferably acoustical sealant) will seal the inner duct to both the HRV port and the weatherhood prior to clamping.

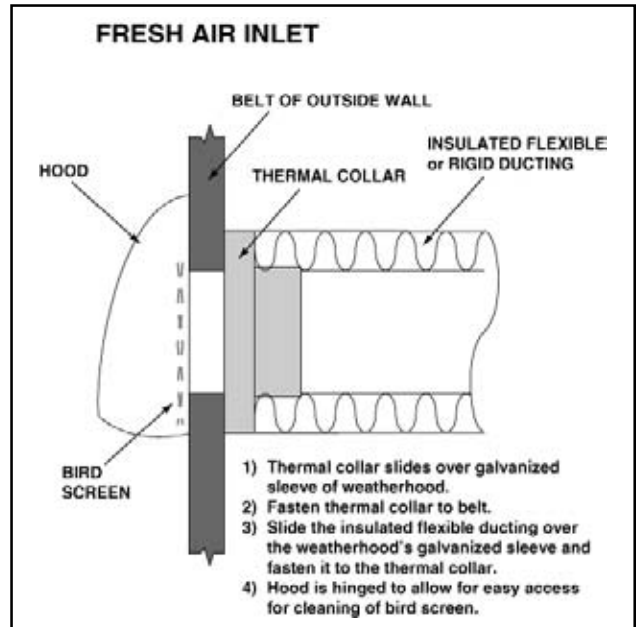
To minimize air flow restriction, the flexible insulated duct (if used) that connects the outside weatherhood to the HRV200PLUS should be stretched tightly and be as short as possible.

Twisting or folding the duct will severely restrict air flow. See Figure 2 for the recommended connection of insulated ducts to the outside weatherhood and the HRV200PLUS.

Ducting must be installed in accordance with local codes.

**2. Warmside Air Supply - Heated fresh air from the HRV into the living area**

- Duct Materials:**
- Insulated Metal Air Duct - rigid or flexible, 200°F rated
  - CoolVent™ Flexible Pipe may be used.
  - Duct Adapter - (Simplified Installation)
  - Diffusers or Grilles - 200°F rated (Dedicated Installation)



**Figure 2**

**Note:** Due to elevated temperatures in the fresh air supply duct:

- Use only ducting materials rated for use at or above 200°F
- Do not use plastic duct or terminations rated below 200°F.
- Do not connect fresh air supply duct into the return duct work of the furnace. Hot air stream could damage exposed components in the furnace return cabinet.
- WHEN USING THE EXISTING DUCT WORK FOR AIR DISTRIBUTION, ALWAYS CONNECT TO THE SUPPLY DUCT WORK DOWNSTREAM OF THE CENTRAL FURNACE OR AIR HANDLER.

**a. Duct the Warmside Air Supply**

The HRV200PLUS recovers heat from the fireplace normally wasted in the flue. This means that the temperatures achieved in the fresh air stream to the home will typically be 100°F hotter than the outdoor ambient temperature. Under some operating conditions, the temperature inside the fresh air supply duct could be as high as 200°F.

**The fresh air should be supplied to all living areas and bedrooms, excluding bathrooms, kitchens and utility areas. The fresh air supply may be delivered to the home through a dedicated duct system when:**

- 1) No central forced air system exists,
- 2) The HRV200PLUS is not in close proximity to the central supply air ducts or
- 3) Heating load design factors favor dedicated supply registers.

When dedicated supply grilles are used, grilles that diffuse the air comfortably from high wall or ceiling locations are recommended.

In homes with a forced air distribution system, direct connection to the furnace supply duct work is the preferred method for supplying fresh air from the HRV200PLUS. This will ensure fresh air is delivered evenly throughout the house and utilizes the existing duct work infrastructure.

When connected to the furnace supply air duct work, the duct adapter should be installed to insure reliable air flow and stable operation of the HRV200PLUS. The duct adapter is designed to minimize the effects of static pressure in the duct regardless of the furnace blower speed selection and allows for fast, easy and airtight connections.

Remember to check the air flow balance of the HRV200PLUS with the furnace fan both on and off to determine that it does not imbalance the ventilator more than 10%.

**Note:** When using the existing furnace duct work for air distribution, the furnace blower must be set to run continuously or interlocked with the HRV200PLUS. The interlock may be easily achieved using the Furnace Interface Relay terminals on the HRV200PLUS control board. These terminals interface directly with the furnace control board using low voltage wiring. See wiring diagram in Section "L. WIRING" for details.

**b. Warmside Ducting Guidelines**

To maximize air flow in the duct work system, all ducts should be kept short and have as few bends or elbows as possible. 45° elbows are preferred to 90° elbows. Use "Y" tees instead of 90° tees whenever possible.

All duct joints must be fastened with screws, rivets or duct sealant and wrapped with a quality duct tape to prevent leakage. We recommend aluminum foil duct tape or tape and mastic.

Galvanized ducting from the HRV200PLUS to the living areas in the house is recommended whenever possible, although flexible duct can be used in moderation if necessary.

The main supply and return lines to and from the HRV200PLUS must be 6" (150mm) minimum. Branch lines to the individual rooms may be as small as 4" (100mm), but 5" (125mm) lines are preferred.

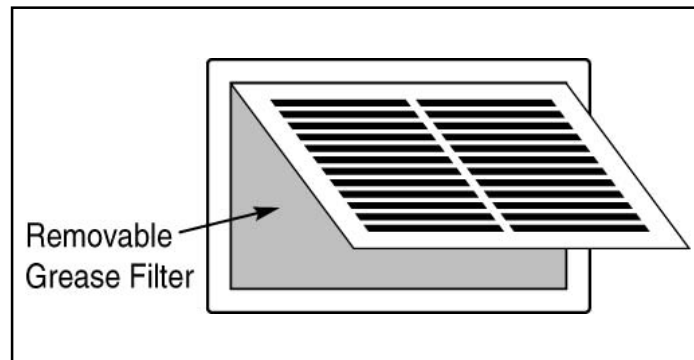
All ducts running through attics, crawl spaces or other unconditioned spaces must be sealed and insulated to code.

**c. Dampers and Grilles**

The use of balancing dampers and/or adjustable grilles to balance the flow rates into various rooms is recommended.

We recommend the use of high mounted wall returns with grilles. The exhaust air duct from the kitchen should never be connected to a range hood. Instead, the exhaust grille should be mounted high on the wall at least 4' (1.2m) horizontally away from the stove. A "flip-up", 6" x 10" (150 x 250mm) rectangular kitchen grille with removable grease filter is recommended. See Figure 3.

Dampers should be located just prior to the HRV200PLUS to balance the stale air exhausted out of the house with a fresh air supply entering the house.



**Figure 3**  
**Recommended Exhaust Grille for Kitchen**

**CAUTION:**  
Check temperature specifications of hoods and grilles before installation to avoid possible damage to them by the flow of warm/hot air. Hoods and grilles should be rated for use at or above 200°F.

**3. Fresh Air Fireplace Exhaust** - Stale air/combustion products from the FAF to the HRV

**Duct Materials:** CoolVent™ Flexible Pipe (1" air clearance to combustibles)  
Firestops, Hangers and Accessories as Required

**a. Fresh Air Fireplace Exhaust Guidelines**

- 1) FAF must be vented with CoolVent™ flexible insulated vent pipe, maintaining 1" (25.4mm) clearance to combustible surfaces.

**Note:** 1" (25.4mm) air clearance to combustibles must be maintained when using CoolVent™ in this portion of the venting system.

- 2) The total combined length of the CoolVent™ run for the Fireplace Exhaust **and** the HRV Exhaust must not exceed the maximum lengths shown in the following table:
- 3) Direction of flow may include any combination horizontal, vertical up or vertical down.

| <b>MAXIMUM VENTING LENGTHS</b> |                            |                             |                                 |
|--------------------------------|----------------------------|-----------------------------|---------------------------------|
|                                | <b>Fresh Air Fireplace</b> | <b>Maximum Total Length</b> | <b>Maximum Total 90° Elbows</b> |
| ➔                              | Caliber NXT Plus/6100PLUS  | 54 Feet                     | 8 Elbows                        |
| ➔                              | Novus Plus/6000PLUS        | 90 Feet                     | 12 Elbows                       |

- 4) The entire vent run must be contained within an area which will not experience temperatures below 40°F.

**WARNING!**

The maximum **TOTAL EXHAUST** vent run is measured from the flue collar of the Fresh Air Fireplace, through the HRV, to the outside termination. **DO NOT EXCEED MAXIMUM VENTING LENGTHS!**

**b. Attaching the CoolVent™ to the Fresh Air Fireplace Flue Collar**

- 1) Secure a CoolVent™ appliance connector to the CoolVent™ insulated flexible pipe per the manufacturer's instructions.
- 2) Apply a generous bead (1/2 inch) of RTV high temperature silicone to the flue collar and attach the appliance adaptor.

**c. Assembling the Vent Pipe Sections**

- 1) When it is necessary to connect two or more lengths of CoolVent™ insulated flexible pipe in a vent run, use a universal connector at each joint.
- 2) Always support CoolVent™ insulated flexible pipe every three feet.

**WARNING!**

When vent sections exceed three feet (.9m) in length ensure minimum clearances are maintained. Structural support must be provided to reduce off-center loading. Follow manufacturer installation instructions..

## HRV200PLUS INSTALLATION INSTRUCTIONS

### 4. HRV Exhaust - Stale air/combustion products from the HRV to the Flue Exhaust

- Duct Materials:** CoolVent™ Flexible Pipe - Zero Clearance to Combustible Materials
- Horizontal Terminations: CoolVent™ Termination Cap
- Vertical Terminations: CoolVent™ Universal Adapter  
B-Vent Roof Support  
B-Vent Pipe Sections  
B-Vent Termination Cap

#### a. HRV Plus Exhaust Guidelines

- 1) HRV must be vented with CoolVent™ flexible insulated vent pipe. The CoolVent™ flexible pipe can be installed with zero clearance to combustible materials when used as the HRV Exhaust.
- 2) The total combined length of the CoolVent™ vent run for the Fresh Air Fireplace Exhaust the HRV Exhaust must not exceed the maximum lengths in the following table:

| MAXIMUM VENTING LENGTHS   |                      |
|---------------------------|----------------------|
| Fresh Air Fireplace       | Maximum Total Length |
| Caliber NXT Plus/6100PLUS | 54 Feet              |
| Novus Plus/6000PLUS       | 90 Feet              |

#### WARNING!

The maximum **TOTAL EXHAUST** vent run is measured from the flue collar of the Fresh Air Fireplace, through the HRV, to the outside termination. **DO NOT EXCEED MAXIMUM VENTING LENGTHS!**

- 3) Direction of flow may include any combination horizontal, vertical up or vertical down, but must not form a trap for condensation to collect.
- 4) Refer to Figures 7-9 for horizontal termination locations.

#### b. Assembling the Vent Pipe Sections

- 1) When it is necessary to connect two or more lengths of CoolVent™ insulated flexible pipe in a vent run, use a universal connector at each joint.
- 2) Always support CoolVent™ insulated flexible pipe every three feet.

#### WARNING!

When vent pipe sections exceed three feet (.9m) in length, structural support must be provided to reduce off-center loading and insure minimum clearances are maintained. Follow manufacturer's installation instructions.

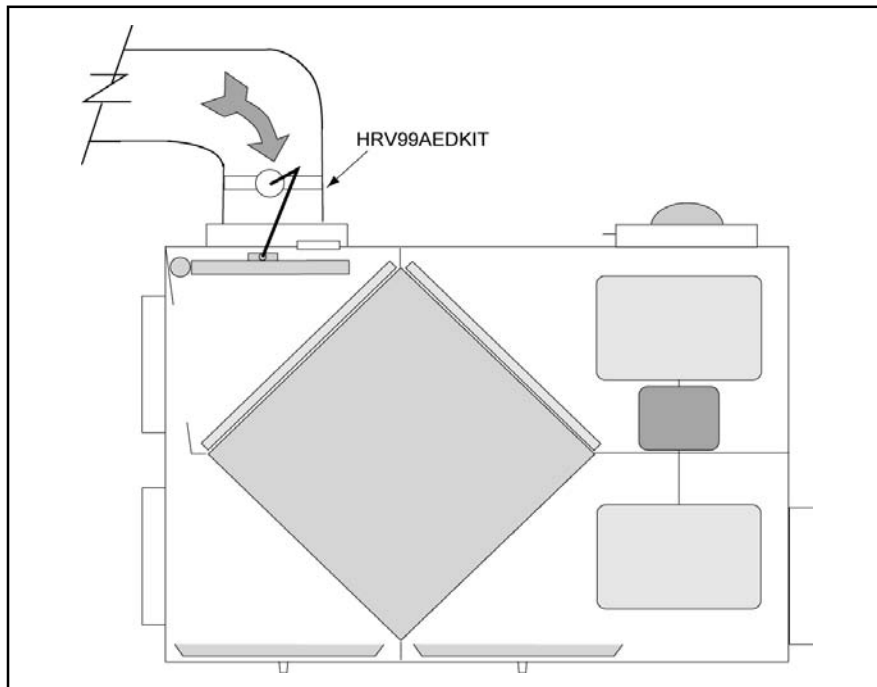
**5. Stale Air from the Living Area to the HRV (Alternate Exhaust)**

**Duct Materials:** Alternate Exhaust Damper Assembly  
Air Duct - flexible or rigid, insulation optional

**Alternate Exhaust Port**

The alternate exhaust port is used to draw air from the points in the house where the worst air quality problems occur, when the fireplace is not in operation. It is recommended that return air ducts are installed in the bathroom, kitchen and laundry room. Additional return air ducts from strategic locations (i.e. greenhouse, atrium, swimming pool, sauna, etc.) may be installed. Also, the furnace return duct may be used for exhaust. In this method, the exhaust air is not ducted back to the HRV200PLUS with dedicated lines from bathrooms, kitchens, etc. Instead, the exhaust air is drawn out of the cold air return of the forced air furnace. This method has become popular and provides good ventilation when installed in accordance with the instructions. The furnace blower must be running when the ventilator is operating for this system to be effective.

The HRV200PLUS comes factory wired ready to allow installation and operation of the Alternate Exhaust Damper Assembly (Figure 4). The Alternate Exhaust Damper Assembly should be professionally installed by a trained service technician. The installation instructions are supplied with the assembly.



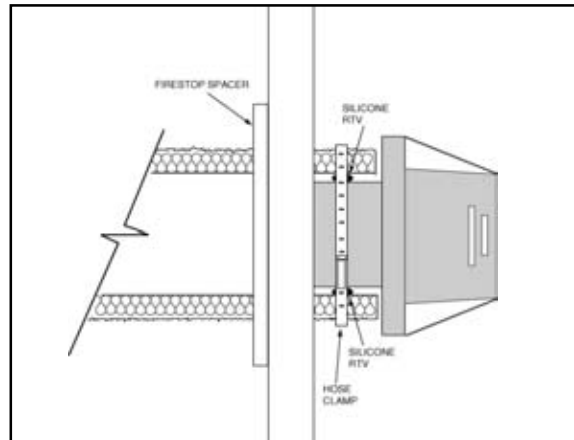
**Figure 4 - Alternate Exhaust Damper**

**H. EXHAUST TERMINATION**

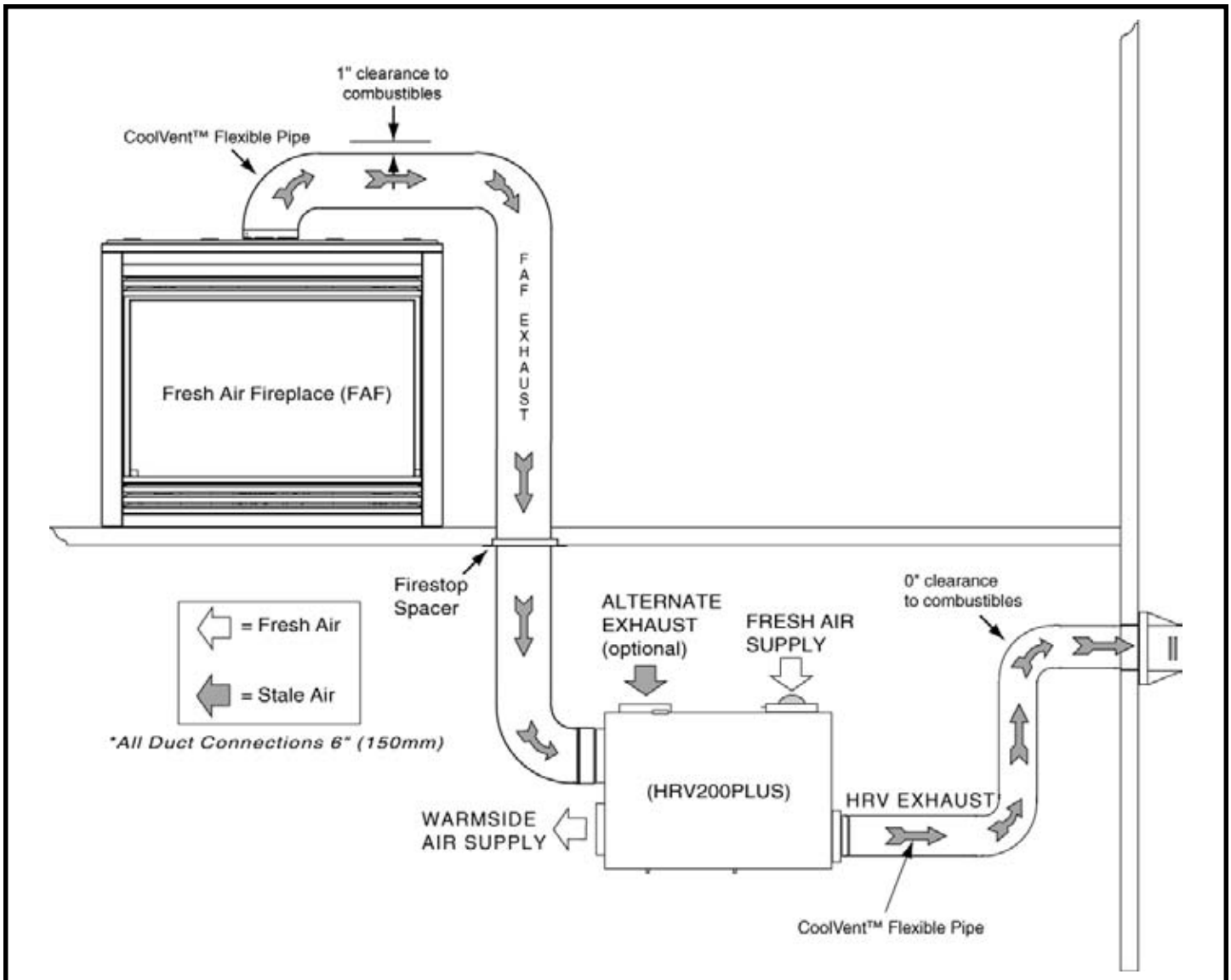
**1. Horizontal Exhaust Terminations** (see Figures 5-9)

- a. Cut a 9" (229mm) diameter hole in the outside wall of the structure to allow the CoolVent™ Flexible Pipe to protrude.
- b. Apply a generous bead (½") of RTV around the perimeter of the collar/adapter 2" - 3" (51mm - 76mm) from the open end.
- c. Slide the CoolVent™ Flexible Pipe over the termination collar about 1" (25.4mm) beyond the RTV bead.
- d. Tighten the hose clamp around the flexible pipe approximately 1" (25.4mm) from the end of the pipe.
- e. Carefully apply pressure to the termination cap, compressing the flexible pipe until the cap is flush with the siding.
- f. Secure the termination cap in place with four screws, one in each corner of the termination cap base. Caulk the perimeter of the base to form an air and moisture proof seal.



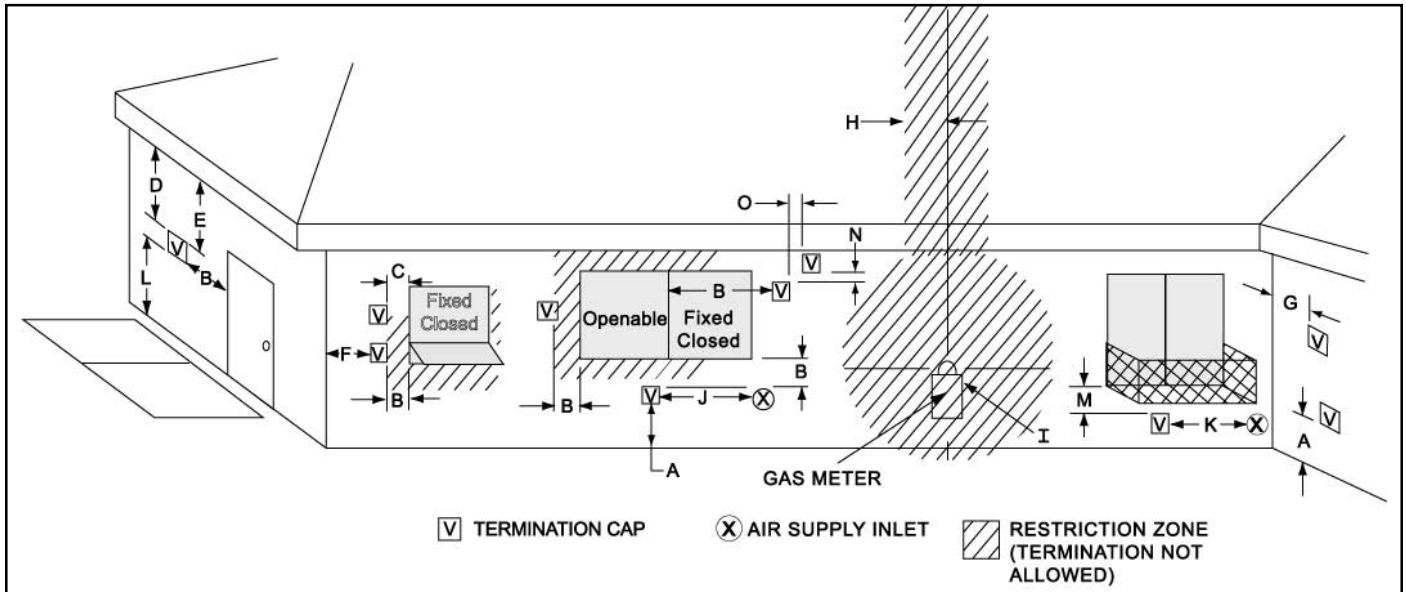


**Figure 5**  
**Horizontal Termination**

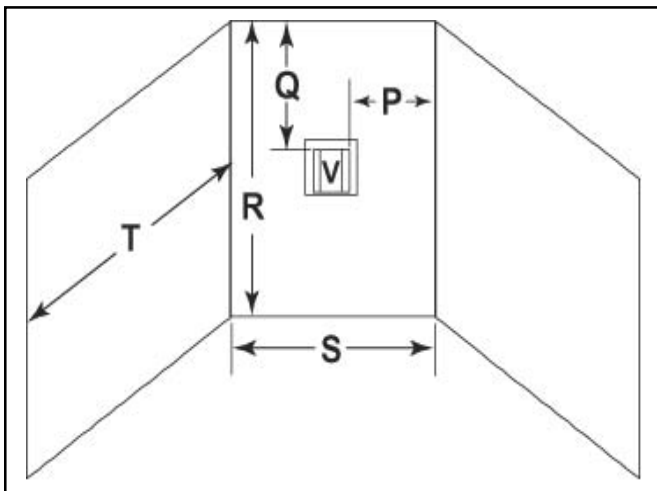


**Figure 6 - Typical Horizontal Termination**

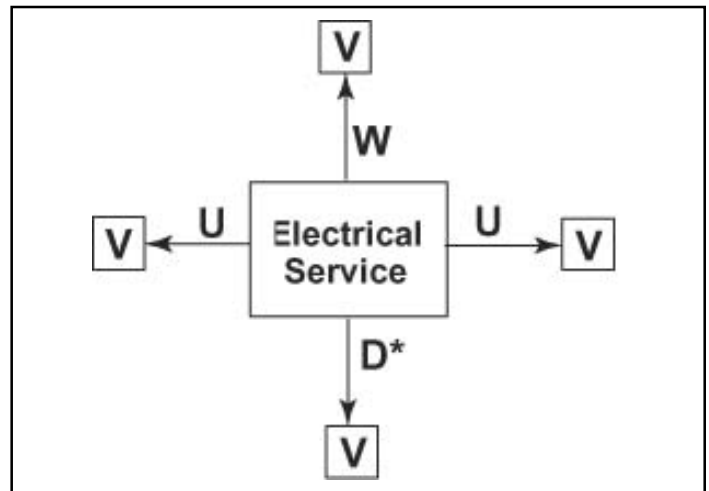
**2. Horizontal Termination Locations (flue exhaust and fresh air inlets)**



**Figure 7 - Termination Cap Locations**



**Figure 8 - Alcove Clearances**



**9 - Electrical Service Clearances**

# HRV200PLUS INSTALLATION INSTRUCTIONS

## Dimension Descriptions

- A** Clearance above the ground, a veranda, porch, deck or balcony - 12 inches (30 cm) minimum. \*
- B** Clearance to window or door that may be opened – 10,000 BTUs or less, 6 inches (15 cm) minimum; 10,000-50,000 BTUs, 9 inches (23 cm) minimum; over 50,000 BTUs, 12 inches (30 cm) minimum. \*
- C** Clearance to permanently closed window – 12 inches (30 cm) minimum - recommended to prevent condensation on window.
- D** Vertical clearance to ventilated soffit located above the termination within a horizontal distance of 2 feet (60 cm) from the centerline of the termination – 18 inches (46 cm) minimum. \*\*
- E** Vertical clearance to unventilated soffit - 12 inches (30 cm) minimum. \*\*
- F** Clearance to outside corner - 6 inches (15 cm) minimum.
- G** Clearance to inside corner - 6 inches (15 cm) minimum.
- H** Not to be installed above a meter/regulator assembly within 3 feet (90 cm) horizontally\* from the center line of the regulator (Canada only)
- I** Clearance to service regulator vent outlet – 3 feet (.91 m) U.S. minimum and 6 feet (1.8 m) Canada minimum. \*
- J** Clearance to non-mechanical air supply inlet into building or the combustion air inlet to any other appliance – 9" (23 cm) U.S. minimum and 12 inches (30 cm) Canada minimum. \*
- K** Clearance to mechanical air supply inlet - 3 feet (.91 m) U.S. minimum and 6 feet (1.8 m) Canada minimum. \*
- L** Clearance above a paved sidewalk or paved driveway located on public property - 7 feet (2.1 m) minimum.  
A vent may not terminate directly above a sidewalk or paved driveway which is located between two single family dwellings and serves both dwellings.
- M** Clearance under veranda, porch, deck or balcony - 12 inches (30 cm) minimum. \* Recommended 30 inches (76 cm) for vinyl or plastic.  
Only permitted if veranda, porch, deck or balcony is fully open on a minimum of 2 sides beneath the floor. \*
- N** Vertical clearance between two horizontal termination caps – 12 inches (30 cm) minimum.
- O** Horizontal clearance between two horizontal termination caps – 12 inches (30 cm) minimum.
- P** 6" - Non-vinyl sidewalls  
12" – Vinyl sidewalls
- Q** 18" – Non-vinyl soffit and overhang  
42" – Vinyl soffit and overhang
- R** 8 ft.

|  | $S_{MIN}$ | $T_{MAX}$  |
|--|-----------|--|
| 1 cap  | 3 feet    | 2 x S actual   |
| 2 caps   | 6 feet    | 1 x S actual   |
| 3 caps   | 9 feet    | 2/3 x S actual   |
| 4 caps   | 12 feet   | 1/2 x S actual   |
| $S_{MIN} = \# \text{ termination caps} \times 3$ |           | $T_{MAX} = (2/\# \text{ termination caps}) \times S (\text{actual})$ |

- U** 6" min. – Clearance from sides of electrical service.
- W** 12" min. – Clearance above electrical service.

\* As specified in **CGA B149 Installation Codes**

**Note:** Local codes or regulations may require different clearances.

\*\* Clearance required to vinyl soffit material – 30 inches (76 cm) minimum.

**Note:** Location of the vent termination must not interfere with access to the electrical service.

### WARNING!

**In the U.S.:** Vent system termination is NOT permitted in screened porches. You must follow side wall, overhang and ground clearances as stated in the instructions.

**In Canada:** Vent system termination is NOT permitted in screened porches. Vent system termination is permitted in porch areas with two or more sides open. You must follow all side wall, overhang and ground clearances as stated in the instructions.

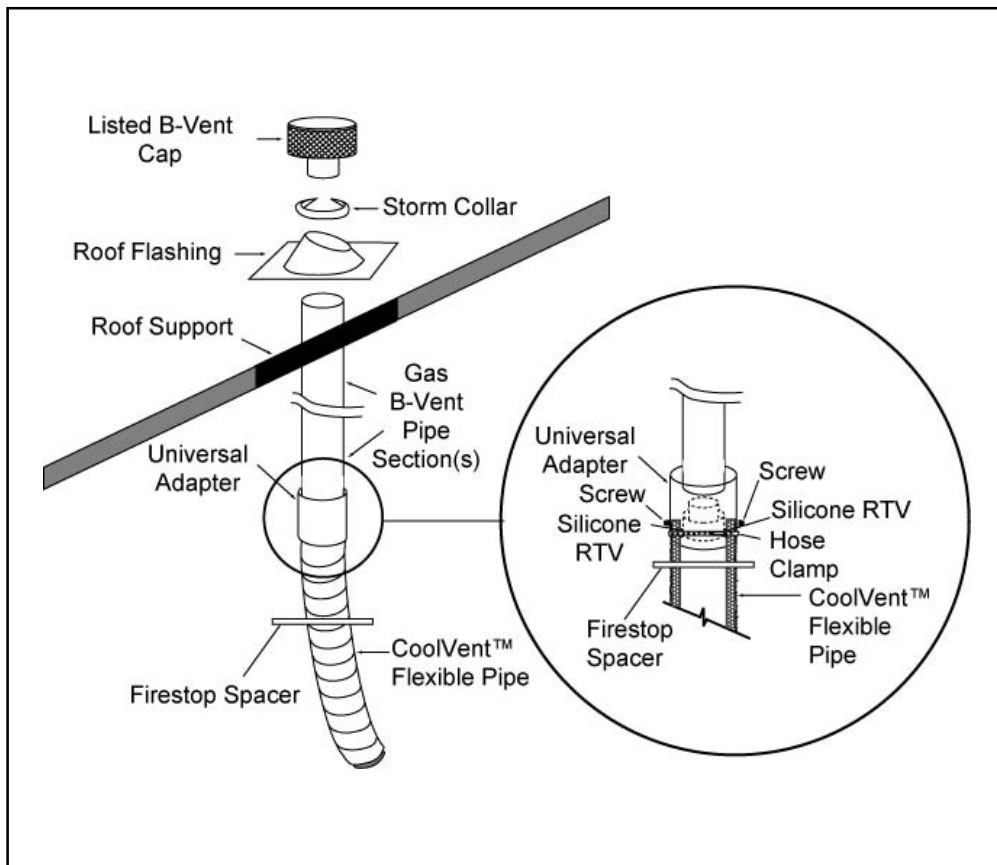
Hearth & Home Technologies assumes no responsibility for the improper performance of the appliance when the venting system does not meet these requirements.

**3. Vertical Termination** (see Figure 11)

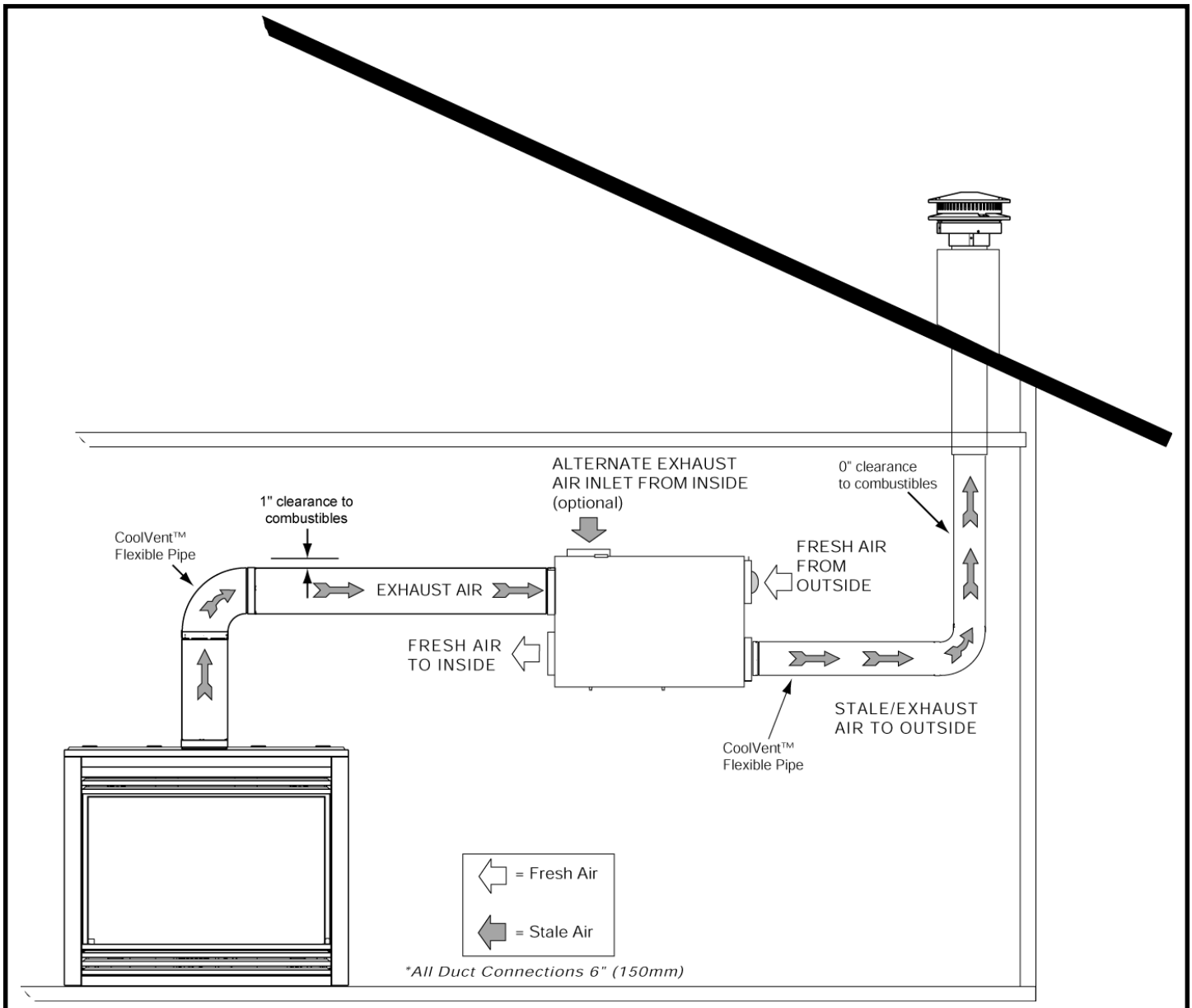
- a. Install the B-Vent roof support per the manufacturer’s installation instructions. Insure proper use of necessary flashing and firestop spacers as required by the vent manufacturer.
- b. Install a CoolVent™ Universal Adapter to the end of the flexible pipe as described in Step 4b, page 15.
- c. Install an adequate length of rigid B-Vent pipe into the roof support to provide the minimum height from the roof to the bottom of the cap as shown in Figure 12 and Table 1. Secure the rigid pipe in the roof support.
- d. Place a ½” bead of RTV in the receiving end of the appliance adapter and insert the end of the rigid B-Vent pipe. Secure the hose clamp to the pipe. Reference Figure 5 and inset in Figure 10 for RTV and hose clamp placement.
- e. Use aluminum duct tape to seal all seams of the rigid B-Vent exposed below the roof line.

**f. Typical Vertical Termination** (see Figure 10)

- At least 10’ (3m) from the ventilation air intake.
- At least 18” (457mm) above the roof line or above the depth of expected snow accumulation.
- At least 3’ (1m) away from the corner of the building.
- Not near a gas meter, electric meter or a walkway where fog or ice could create a hazard.
- Not into a garage, workshop or other enclosed space.
- When installing the termination cap, its outside perimeter must be sealed with exterior caulking.



**Figure 10**

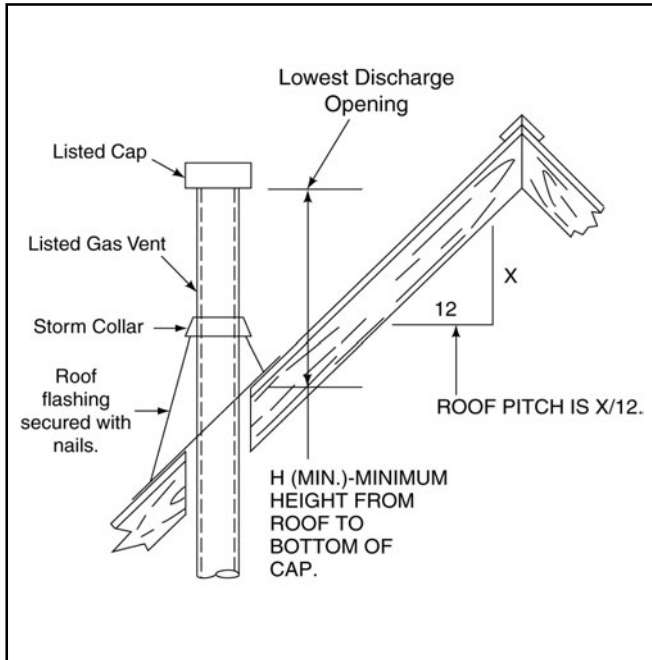


**Figure 11**  
**Typical Vertical Termination**

**4. Chase/Termination Installation**

Figure 12 and Table 1 specify minimum vent heights for various pitched roofs.

These vent heights are necessary for safety and do not ensure draft-free operation. Trees, buildings, adjoining roof lines, adverse conditions, etc. may create a need for a taller vent should down drafting occur.



**Figure 12 - Vent Height for Vertical Termination**

**Table 1**

| <b>Roof Pitch</b>         | <b>H (Min.) Ft.</b> |
|---------------------------|---------------------|
| Flat to 6/12 .....        | 1.0                 |
| 6/12 to 7/12 .....        | 1.25                |
| Over 7/12 to 8/12 .....   | 1.5                 |
| Over 8/12 to 9/12 .....   | 2.0                 |
| Over 9/12 to 10/12 .....  | 2.5                 |
| Over 10/12 to 11/12 ..... | 3.25                |
| Over 11/12 to 12/12 ..... | 4.0                 |
| Over 12/12 to 14/12 ..... | 5.0                 |
| Over 14/12 to 16/12 ..... | 6.0                 |
| Over 16/12 to 18/12 ..... | 7.0                 |
| Over 18/12 to 20/12 ..... | 7.5                 |
| Over 20/12 to 21/12 ..... | 8.0                 |

**Vent Height**

**WARNING - RISK OF FIRE!**

Always maintain minimum clearances or greater around the vent system. Do not pack air spaces with insulation or other material. The flow of combustion and ventilation air must not be obstructed.

**5. Firestop Spacer/Vent Installation**

Following code requirements, frame an opening and install a firestop spacer whenever the vent penetrates a ceiling, wall or floor area, as shown in Figure 13. Frame the opening with the same sized lumber as used in the ceiling/floor joist. DO NOT pack insulation around the vent. Assemble vent sections with three screws per joint.

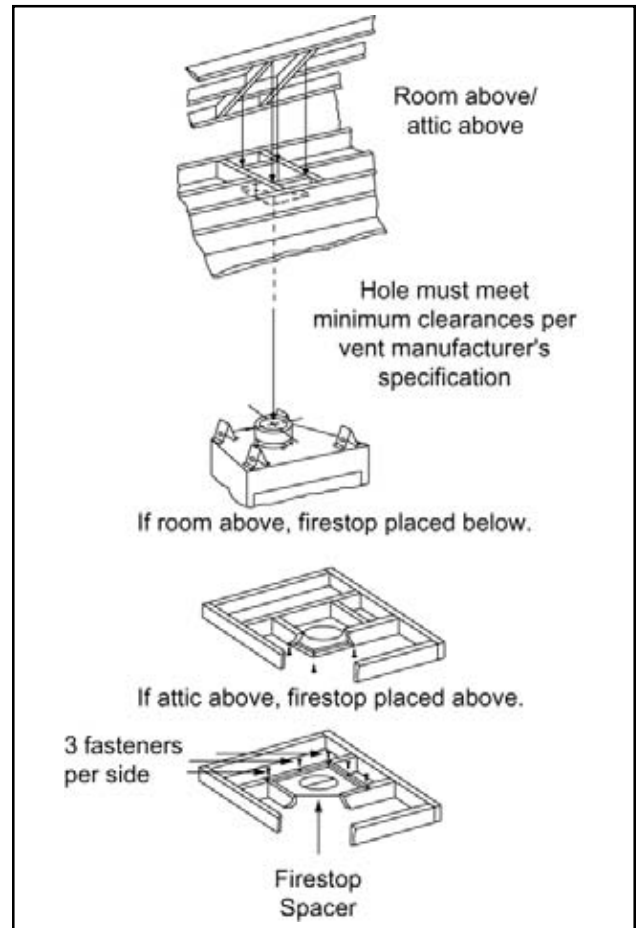


Figure 13 - Installing the Firestop Spacer

## I. SELECTING BLOWER SPEEDS

The HRV200PLUS' versatile design allows flexibility for a variety of installations by providing one high blower speed option and three low blower speed options:

**Table 2**

|                                       |                          | Net Air Flow (sCFM) |      |      |      |      |
|---------------------------------------|--------------------------|---------------------|------|------|------|------|
| External Static<br><i>Inches w.c.</i> |                          | 0.10                | 0.20 | 0.30 | 0.40 | 0.50 |
| High<br>Speeds                        | High<br><i>(Black)</i>   | 224                 | 219  | 209  | 194  | 174  |
|                                       | Med<br><i>(Yellow)</i>   | 155                 | 155  | 145  | 120  | 89   |
| Low<br>Speeds                         | Med Low<br><i>(Blue)</i> | 127                 | 119  | 105  | 91   | 64   |
|                                       | Low<br><i>(Red)</i>      | 98                  | 85   | 70   | 54   | 37   |



## J. BALANCING

### 1. Balancing Collar Instructions

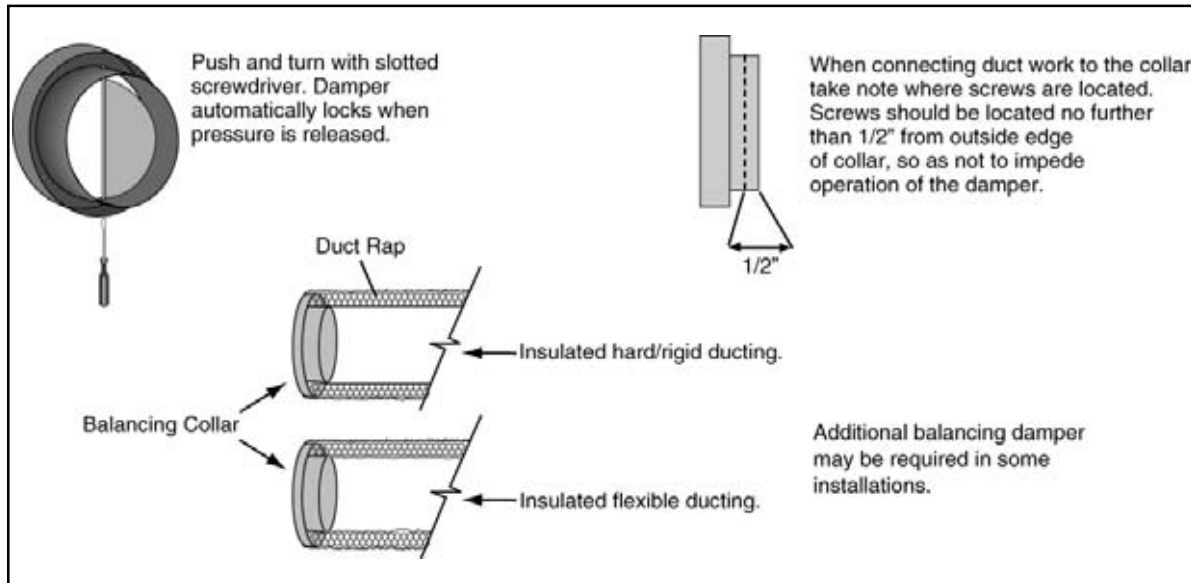


Figure 14

**WARNING!**  
Risk of carbon monoxide! Negative air pressure may cause back drafting of gas appliances. Proper balancing of the HRV is required.

### 2. Air Flow Balancing

➔ **Note:** When installing the Caliber NXT Plus or 6100 PLUS with the HRV200PLUS, a minimum of 130 CFM must be maintained for fireplace operation. The Caliber NXT Plus or 6100 PLUS will fail to operate when the Fresh Air Fireplace exhaust air flow is less than 130 CFM! Always perform balancing procedures with the fireplace off!

**It is necessary to have balanced air flows in an HRV200PLUS. The volume of air brought in from the outside must equal the volume of air exhausted by the ventilator. If the air flows are not properly balanced, then:**

- The HRV200PLUS may not operate at its maximum efficiency.
- A negative or positive air pressure may occur in the house.
- The ventilator may not defrost properly.
- Failure to balance HRV200PLUS properly may void warranty.

**Excessive positive pressure** may drive moist indoor air into the external walls of the building where it may condense (in cold weather) and degrade structural components. It may also cause key holes to freeze up.

**Excessive negative pressure** may have several undesirable effects. In some geographic locations, soil gases such as methane and radon gas may be drawn into the home through basement/ground contact areas. Excessive negative pressure may also cause the back drafting of vented combustion equipment.

**Read the Application Warning on the front of this manual!**

**Prior to balancing, ensure that:**

- All sealing of the duct work system has been completed.
- All of the HRV200PLUS' components are in place and functioning properly.
- Balancing dampers are fully open.
- Ventilator is on HIGH speed.
- Air flows in branch lines to specific areas of the house should be adjusted first prior to balancing the ventilator. A smoke pencil used at the grilles is a good indicator of each branch line's relative air flow.
- After taking readings of both the stale air to the HRV200PLUS duct and fresh air to the house duct, the duct with the lower CFM ([L/s] velocity) reading should be left alone, while the duct with the higher reading should be dampered back to match the lower reading.
- Return the ventilator to the appropriate fan speed for normal operation.

**3. Pitot Tube Balancing Procedure** (see Figure 16)

The following is a method of field balancing an HRV200PLUS using a pitot tube, advantageous in situations when flow stations are not installed in the duct work. The procedure should be performed with the HRV200PLUS on high speed.

The first step is to operate all mechanical systems that have an influence on the ventilation system (i.e. the HRV itself and the forced air furnace or air handler if applicable) on high speed. This will provide the maximum pressure that the HRV200PLUS will need to overcome and allow for a more accurate balance of the ventilator.

Drill a small hole in the duct (about 3/16"), 3 feet downstream of any elbows or bends, and one foot upstream of any elbows or bends. These are recommended distances but the actual installation may limit the amount of straight duct.

The pitot tube should be connected to a magnehelic gauge or other manometer capable of reading from 0 to 0.25 in. (0 - 62 PA) of water, preferably to three digits of resolution. The tube coming out of the top of the pitot is connected to the high pressure side of the gauge. The tube coming out of the side of the pitot is connected to the low pressure or reference side of the gauge.

Insert the pitot tube into the duct; pointing the tip into the air flow. See Figure 15.

For general balancing it is sufficient to move the pitot tube around in the duct and take an average or typical reading. Repeat this procedure in the other (supply or return) duct. Determine which duct has the highest air flow (highest reading on the gauge). Then damper that air flow back to match the lower reading from the other duct. The flows should now be balanced. Actual air flow can be determined from the gauge reading. The value read on the gauge is called the velocity pressure. The pitot tube comes with a chart that will give the air flow velocity based on the velocity pressure indicated by the gauge. This velocity will be in either feet per minute or meters per second. To determine the actual air flow, the velocity is multiplied by the cross sectional area of the duct being measured.

This is an example of determining the air flow in a 6" duct. The pitot tube reading was 0.025 inches of water. From the chart, this is 640 feet per minute.

The 6" duct has a cross sectional area of  $= [3.14 \times (6" \div 12)^2 \div 4 = 0.2$  square feet

The air flow is then: 640 ft./min. x 0.2 square feet = 128 cfm

For your convenience, the cross sectional area of some common round duct is listed below:

| Duct. Dia.<br>(inches) | Cross Section Area<br>(sq. ft.) |
|------------------------|---------------------------------|
| 5                      | 0.14                            |
| 6                      | 0.2                             |
| 7                      | 0.27                            |

The accuracy of the air flow reading will be affected by how close to any elbows or bends the readings are taken. Accuracy can be increased by taking an average of multiple readings as outlined in the literature supplied with the pitot tube. See Figure 16.

If the ALTERNATE 5TH PORT is used for alternative exhaust, both the fireplace and exhaust air streams must be balanced individually with the incoming fresh air stream. Individually, each exhaust stream needs to be within 10% of the incoming air stream.

**WARNING!**

**DO NOT** penetrate the HRV exhaust duct for pitot tube balancing. This duct is under positive pressure during normal operation and cannot be properly patched once penetrated!

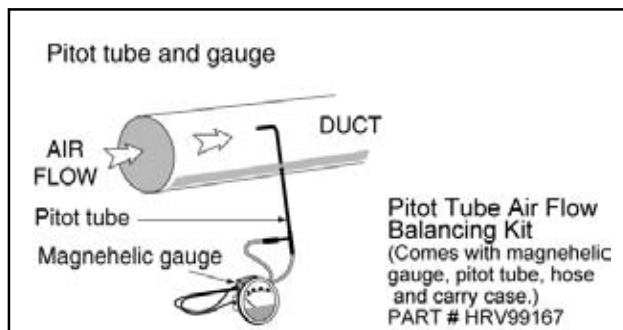


Figure 15

**Note:** Always seal the pitot tube access hole in the Fresh Air Fireplace duct with aluminum tape or the equivalent.

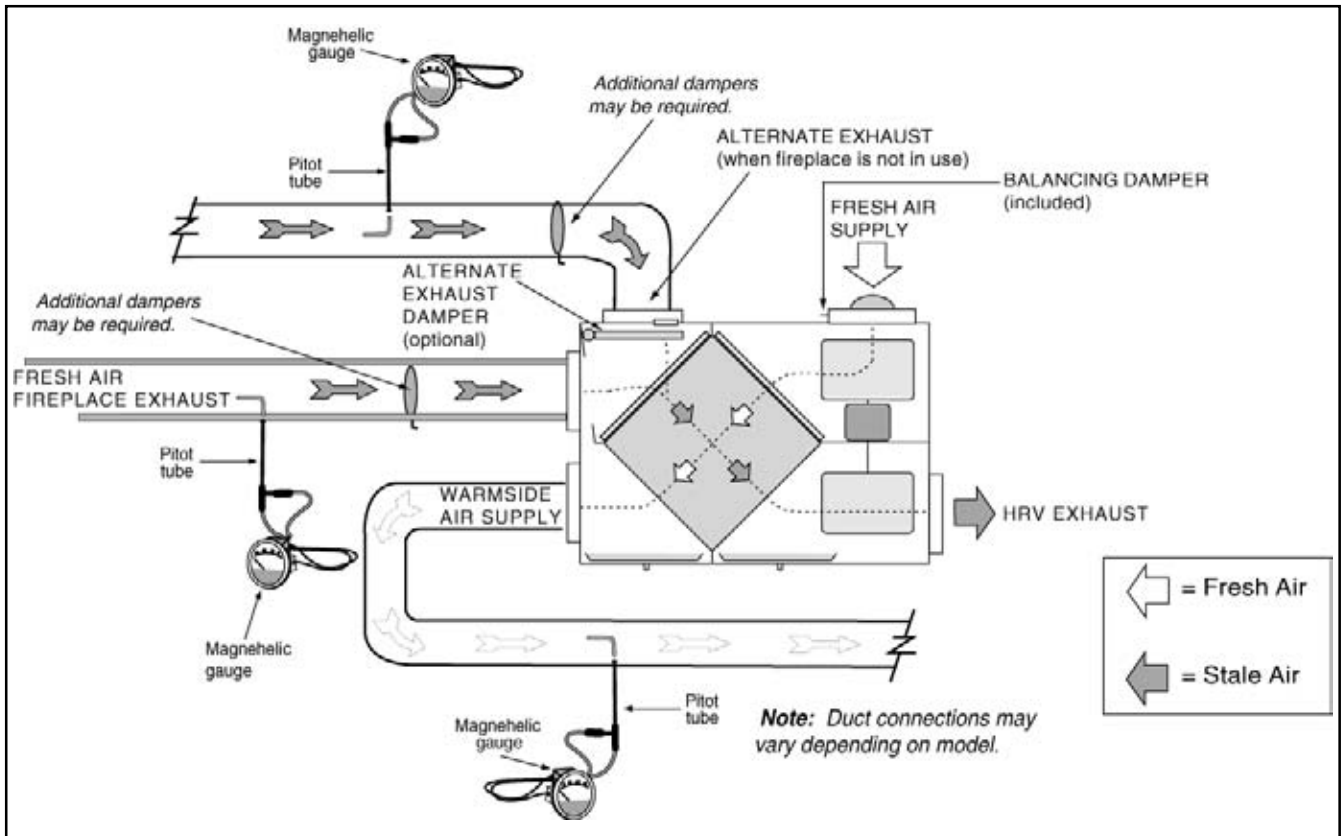


Figure 16 - Pitot Tube Balancing

**4. Flow Station Balancing Procedure** (see Figure 17)

The following is a method of field balancing an HRV using a flow station. The procedure should be performed with the HRV200PLUS on high speed.

The first step is to operate all mechanical systems on high speed, which have an influence on the ventilation system, i.e. the HRV itself and the forced air furnace or air handler if applicable. This will provide the maximum pressure that the HRV200PLUS will need to overcome, and allow for a more accurate balance of the ventilator.

**Note:** Always balance the system using the FRESH AIR FIREPLACE EXHAUST duct and the WARMSIDE AIR SUPPLY duct.

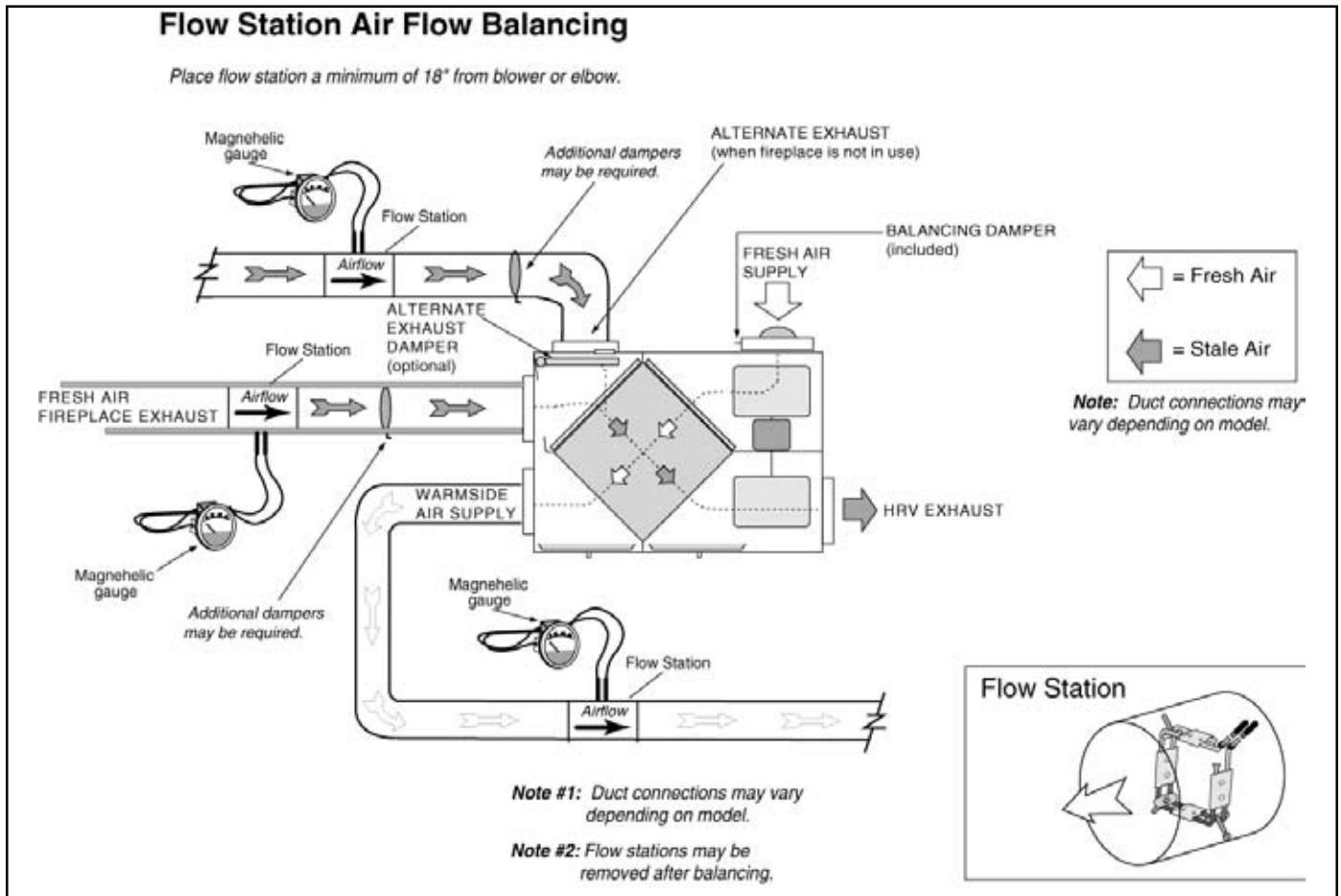
Install the flow station 18" downstream of any elbows or bends, and one foot upstream of any elbows or bends. These are recommended distances but the actual installation may limit the amount of straight duct.

The flow station should be connected to a magnehelic gauge or other manometer capable of reading from 0 to 0.25 in. (0 - 62 PA) of water, preferably to three digits of resolution.

Take readings from both exhaust ducts and the warmside air supply. Determine which duct has the highest air flow (highest reading on the gauge). Then damper that air flow back to match the lower reading from the other duct. The flows should now be balanced. See Figure 17. Actual air flow can be determined from the gauge reading. The value read on the gauge is called the velocity pressure. The flow station comes with a chart that will give the air flow velocity based on the velocity pressure indicated by the gauge. This velocity will be in either feet per minute or meters per second.

The accuracy of the air flow reading will be affected by how close to any elbows or bends the readings are taken. See Figure 17.

If the ALTERNATE 5TH PORT is used for alternative exhaust, both the fireplace and exhaust air streams must be balanced individually with the incoming fresh air stream. Individually, each exhaust stream needs to be within 10% of the incoming air stream.



**Figure 17 - Flow Station Balancing**

## K. OPERATING MODES

The operating mode of the HRV200PLUS is determined by the status of the control inputs:

- |   |              |
|---|--------------|
| 1. Fireplace Control Input Group<br><i>LO, HI, 12V, COM, C1, C2, R2, R1</i> | Connector P9 |
| 2. Thermostat Control Inputs<br><i>TCOM, TSTAT</i>                          | Connector P6 |
| 3. Ventilation Control Input Group<br><i>R, B, O, W, G</i>                  | Connector P1 |
| 4. Furnace Interface Control Group<br><i>FNC, FCOM, FNO</i>                 | Connector P3 |

The Fireplace Control Input Group represents the home owner's desire for fireplace operation and are considered first priority by the HRV200PLUS controller. These inputs include signals from the fireplace dashboard controls, fireplace remote controls and dedicated hearth room thermostats. Inputs to activate the fireplace from this control group are processed with no regard to the other two input groups.

The Thermostat Control Inputs are used to couple the HRV200PLUS to the primary heating system to provide comfort heating when the temperature at the main thermostat falls below the set point. The Thermostat Control will not shut off the Fresh Air Fireplace if there is an input from the Fireplace Control Input Group.

The Ventilation Control Input Group receives signals from the ventilation controls installed with the system to maintain desired fresh air ventilation rates in the building envelope. Since the Fresh Air Fireplace operation requires continuous high speed ventilation, the Ventilation Control Inputs are ignored unless the Fresh Air Fireplace is not in use.

The Furnace Interface Control Group consists of a single pole, double throw set of contacts to provide an interface with the furnace control board and the main thermostat to enable furnace blower operation to distribute fresh air through the existing duct work.

### 1. Fireplace Operating Modes – Connector “P9”

#### a. OFF Mode

The HRV is idle until an input is sensed. This is the normal standby state when the HRV Plus is powered but not receiving any command inputs.

#### b. Fireplace High Fire Mode

All fireplace demands for fireplace operation from the hearth room result in a 12VDC signal sent to the HRV controller “HI” input terminal on the P9 connector strip. This includes the ON/OFF switch on the fireplace, demands from the fireplace remote control and heating calls from a dedicated fireplace thermostat.

Fireplace High Fire Mode is activated when 12VDC is sensed at the “HI” input terminal. The HRV/Fresh Air Fireplace system executes pre-purge and ignition processes as follow:

#### c. Caliber NXT Plus/6100 PLUS

##### 1) Initiation

- a) Blower motor on HIGH for system pre-purge.
- b) C2 terminal is energized 12VDC activating the electric ember lights on the Fresh Air Fireplace.
- c) Fifteen-second pre-purge timer activates while the HRV closes the alternate exhaust damper.
- d) C1 terminal is energized 12VDC to override the pressure switch in the Fresh Air Fireplace.
- e) R1 is energized 12VDC activating the IPI ignition circuit to initiate the fireplace ignition process. **In the HRV, the R2 terminal must be jumpered to 12V to supply power to R1 at the Fresh Air Fireplace.**
- f) The thirty-second draft-proving delay timer activates.
- g) The Fresh Air Fireplace lights.
- h) The thirty-second draft-proving delay timer expires, C1 terminal is de-energized and the Fresh Air Fireplace pressure switch is monitored for sufficient flow at the flue collar for proper operation. **IF SUFFICIENT FLOW IS NOT SENSED AT THE FLUE COLLAR OF THE FRESH AIR FIREPLACE AFTER THIRTY SECONDS OF OPERATION, THE FRESH AIR FIREPLACE FLAMES WILL EXTINGUISH LEAVING THE ELECTRIC EMBERS ILLUMINATED ONLY. THE FRESH AIR FIREPLACE WILL NOT SUSTAIN NORMAL OPERATION UNTIL THE LACK OF FLOW IS CORRECTED!**

**2) Termination**

- a) When the 12VDC signal is removed from the "HI" input terminal, R1 terminals is immediately de-energized shutting down fireplace operation.
- b) The blower motor remains on high speed for 20 seconds.
- c) The C2 terminal is de-energized extinguishing the electric ember lights.
- d) The blower motor remains on low speed for an additional five minutes.
- e) The HRV returns to its previous state.

➔ **d. Novus Plus/6000 Plus**

**1) Initiation**

- a) Blower motor on high for system pre-purge.
- b) Fifteen second delay timer activates while the HRV energizes the alternate exhaust damper to move closing off the alternate exhaust port.
- c) The K7 relay energizes making connection between the R1 and R2 terminals activating the IPI ignition circuit to initiate the fireplace ignition process.

Once fireplace operation is no longer required, the system terminates the operation of the fireplace by deactivating the ignition process and executing a post-purge as follows:

**2) Termination**

- a) When the 12VDC signal is removed from the "HI" input terminal, the K7 relay is de-energized opening the connection between R1 and R2 shutting down fireplace operation.
- b) The blower motor remains on high for system post-purge - 20 seconds.
- c) The HRV returns to its previous state.

**2. HRV Defrost Mode**

When the fireplace is not in use, the HRV200PLUS provides continuous ventilation for the whole house. During this normal ventilation operation, the aluminum core of the HRV can develop frost when outdoor temperatures fall below 25°F. The Fresh Air Fireplace is used as a source of heat to defrost the HRV200PLUS during cold weather ventilation operation. During HRV Defrost Mode, the HRV will independently demand fireplace operation.

The HRV Defrost Mode sequence of operation is identical to Fireplace High Fire operation. This will include a pre-purge, ignition process, burn time and post-purge.

HRV Defrost Mode is activated according to the following Table based on the Supply Air Temperature (SAT) sensor and terminates based on the Exhaust Air Temperature (EAT) sensor.

**WARNING!**

The Fresh Air Fireplace is used by the HRV200PLUS for normal defrosting of the aluminum core during cold weather ventilation operation. This results in fireplace operation independently initiated by the HRV200PLUS.

The ON/OFF switch on the fireplace will not prevent fireplace operation during HRV Defrost Mode. Non-fireplace defrost may be achieved by installing the optional defrost assembly HRV99DEFKIT.

| Defrost Table  |                |                    |   |
|----------------|----------------|--------------------|---|
| SAT Range      | EAT            | Defrost Delay Time | Defrost Termination                       |
| Above 25°F     | NA             | Continuous         | EAT>60°F<br>for 1 min<br>Maximum - 15 min |
| Below 25°F     | Above 60°F     | Continuous         |   |
| Below 25°F     | Below 60°F     | 30 minutes         |   |
| "Out of Range" | Above 60°F     | Continuous         |   |
| "Out of Range" | Below 60°F     | 30 minutes         |   |
| Below 25°F     | "Out of Range" | 30 minutes         |   |

3. Fireplace Control Terminals

**Fireplace Control Terminals – Connector P9**

| Input | Function  |
|-------|---|
| R1    | Dry Contact Output to initiate the fireplace ignition process.<br><b>Note:</b> Caliber NXT Plus/6100 Plus Applications: R1 sends a 12 VDC signal to the fireplace board to initiate the ignition process. R2 has a jumper to 12V. |
| R2    | Dry Contact Output to initiate the fireplace ignition process.<br><b>Note:</b> Caliber NXT Plus/6100 Plus Applications: R2 has a jumper to 12V. R1 sends a 12 VDC signal to the fireplace board to initiate the ignition process. |
| C2**  | 12 VDC Output to energize the electric ember light relay on the fireplace board.  |
| C1**  | 12 VDC Output to override pressure switch operation during the first thirty seconds of the ignition process.  |
| Com** | 12 VDC common output to the fireplace board.  |
| 12V   | 12 VDC output to the fireplace ON/OFF switch for Novus Plus/6000 Plus applications or to the fireplace board for Caliber NXT Plus/6100 Plus applications.   |
| HI    | Fireplace High Fire input to control - 12 VDC.  |
| LO    | INPUT NOT USED  |

**\*\* These terminals used for Caliber NXT Plus/6100 Plus applications only.**

See Figures 18-19 for wiring diagram.

4. Thermostat Operating Modes – Connector “P6”

a. **OFF Mode**

The HRV is idle until an input is sensed. This is the normal standby state when the HRV Plus is powered but not receiving any command inputs.

b. **Thermostat ON Mode**

When 24VAC is sensed across the thermostat input terminals (“TSTAT” & “TCOM”), the HRV control executes Fireplace High Fire Mode, as described above. When the 24VAC signal is removed from the Thermostat input terminals, the HRV returns to its previous state.

## 5. Ventilation Operating Modes – Connector “P1”

### a. OFF Mode

The HRV is idle until an input is sensed. This is the normal standby state when the HRV Plus is powered but not receiving any command inputs.

### b. Low Speed Ventilation Mode

Low Speed Ventilation Mode is activated when 12VDC is sensed at the “O” terminal. The HRV operates with blowers on low speed and defrost control is active. High Speed Mode inputs override Low Speed inputs and place the unit in High Speed Mode.

### c. High Speed Ventilation Mode

The HRV is operating with blowers on high speed and defrost control is active. When 12VDC is sensed continuously at the “B” terminal for more than 4½ seconds, the HRV will enter High Speed Ventilation Mode for as long as the override signal is present, then return to its previous mode when the input is removed.

The dehumidistat on wall-mounted controls place the HRV into High Speed Ventilation Mode for moisture control. The dehumidistat senses the humidity in the living area and activates high speed blower operation when the humidity level exceeds the set point selected by the home owner. The HRV returns to its normal operating mode when the humidity level in the indoor air stream falls below the set point.

### d. High Speed Ventilation Mode – 20 Minute Timer

The HRV is operating with blowers on high speed and defrost control is active. When the override signal is sensed at the “B” terminal for more than ½ second but less than 4 ½ seconds, the HRV will enter High Speed Mode for 20 minutes then return to its normal mode.

### e. Intermittent Ventilation Mode

Intermittent Ventilation Mode is activated when 12VDC is sensed at both the “W” and the “O” terminals. The HRV operates on Low Speed Ventilation Mode for 20 minutes then is off for 40 minutes. High Speed Mode inputs override Intermittent Ventilation Mode inputs and place the unit in High Speed Mode.

| Ventilation Jumper Table   |                       |           |
|--|-----------------------|-----------|
| To Achieve this Operating Mode:  | Place Jumper Between: |           |
| 1. Continuous Low Speed Ventilation  | "R"                   | "O"       |
| 2. Continuous High Speed Ventilation   | "R"                   | "B"       |
| 3. Intermittent Ventilation<br><i>20 min. on, 40 min. off</i><br><i>Low Speed Ventilation only</i> | "R"                   | "W"       |
| 4. Continuous Low Speed Intermittent Ventilation   | "R"                   | "O" & "W" |

## 6. Ventilation Control Terminals - Connector P1

| Input | Function   |
|-------|--|
| B     | High Speed Ventilation Mode input control - 12VDC input.<br><br>Dual Operating Modes:<br>1. 20 minute override if 12VDC signal duration is sensed between ½ second 4½ seconds.<br>2. ON/OFF override if 12VDC signal duration is sensed more than 4½ seconds.<br><br>High Speed Input overrides Low Speed Input. |
| R     | Power supply out from control board - 12VDC output.  |
| O     | Low Speed Mode input to control - 12VDC input  |
| W     | Intermittent Ventilation Mode Input - 12VDC input  |
| G     | LED Output. This output is on anytime the HRV is operating in high speed.  |



## 7. Furnace Interface Operating Modes – Connector “P3”

See Section “L. WIRING” for wiring diagram, Figure 23.

### a. OFF Mode

The furnace blower operates normally based on thermostat and furnace control board functionality.

### b. Interlock Mode

The furnace interface relay provides connection between “R” and “G” on the furnace control board, creating demand for continuous furnace blower operation.

## 8. Furnace Interface Terminals

| Input | Function                                |
|-------|---|
| FNC   | Normally Closed Terminal - Dry Contacts |
| FCOM  | Common Terminal – Dry Contacts          |
| FNO   | Normally Open Terminal – Dry Contacts   |

## L. WIRING

### 1. Fireplace Control Wiring

➔ (Caliber NXT Plus/6100 Plus)

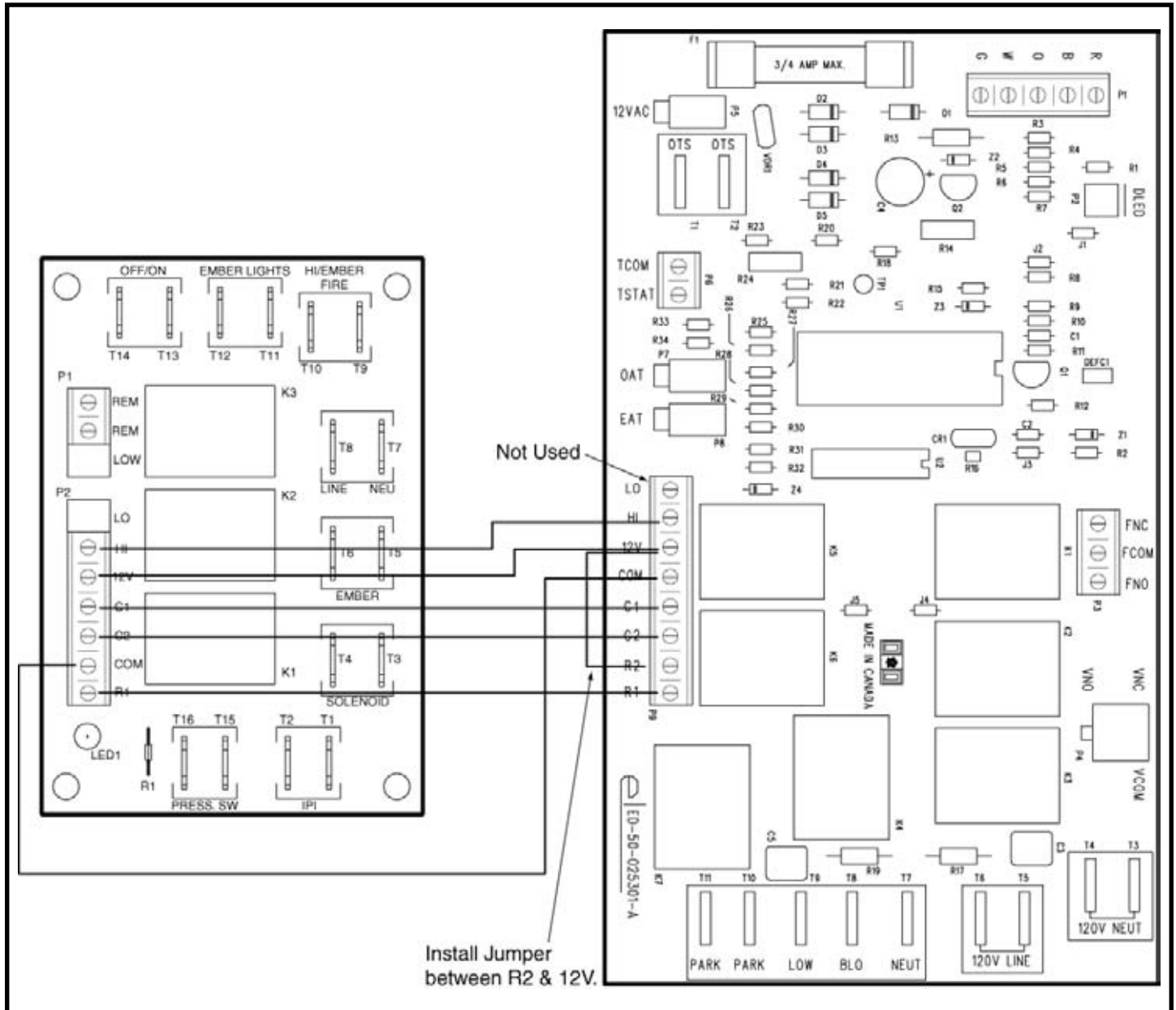
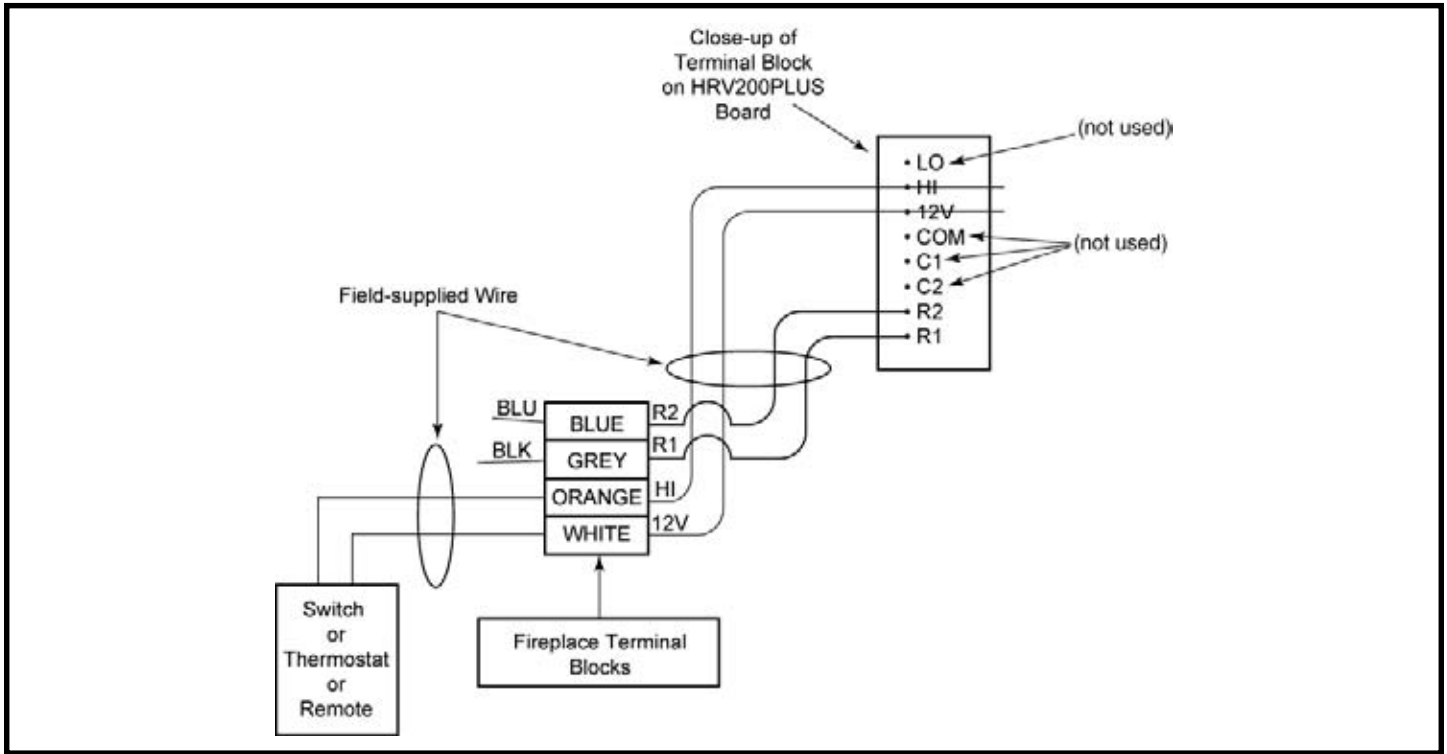


Figure 18

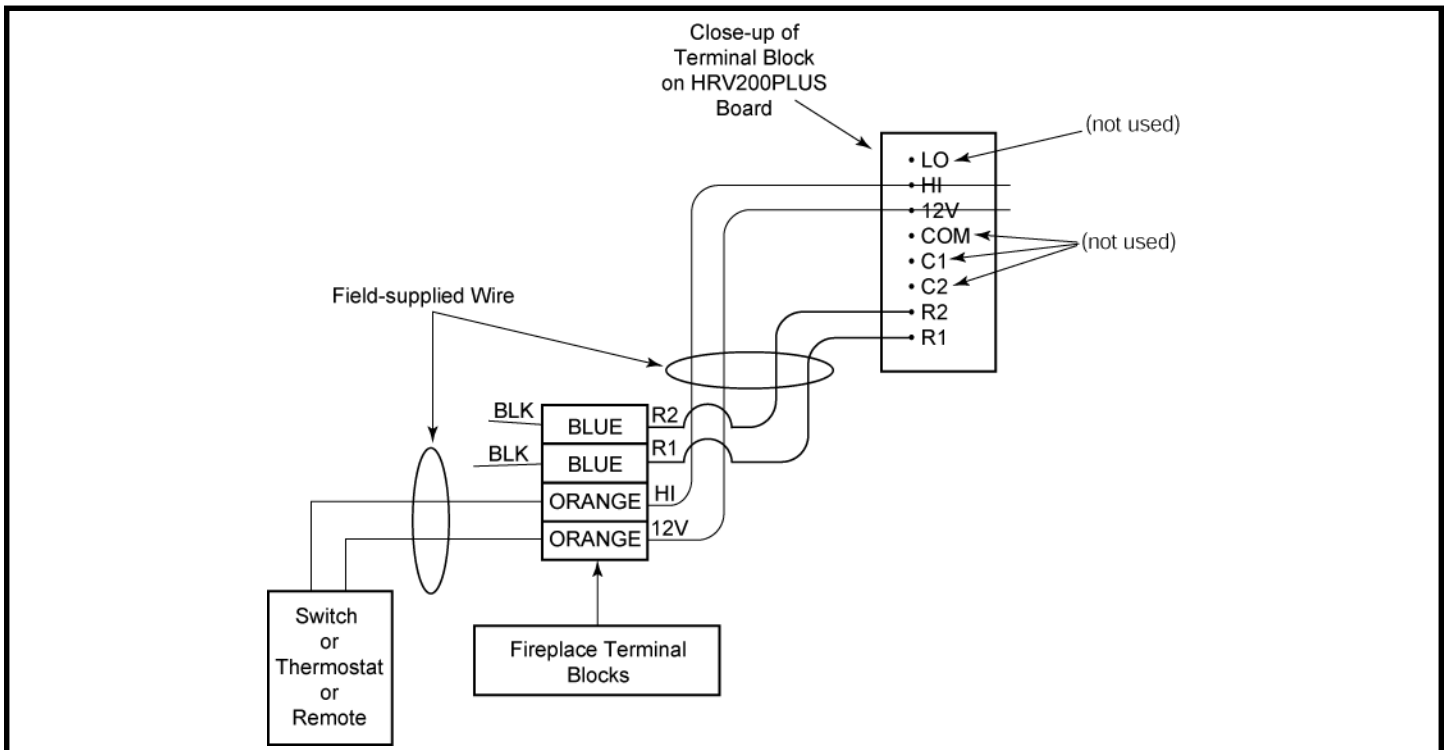
➔ Caliber NXT Plus or 6100 Plus & HRV Wired Together

2. Fireplace Control Wiring

➔ (Novus Plus/6000 Plus)



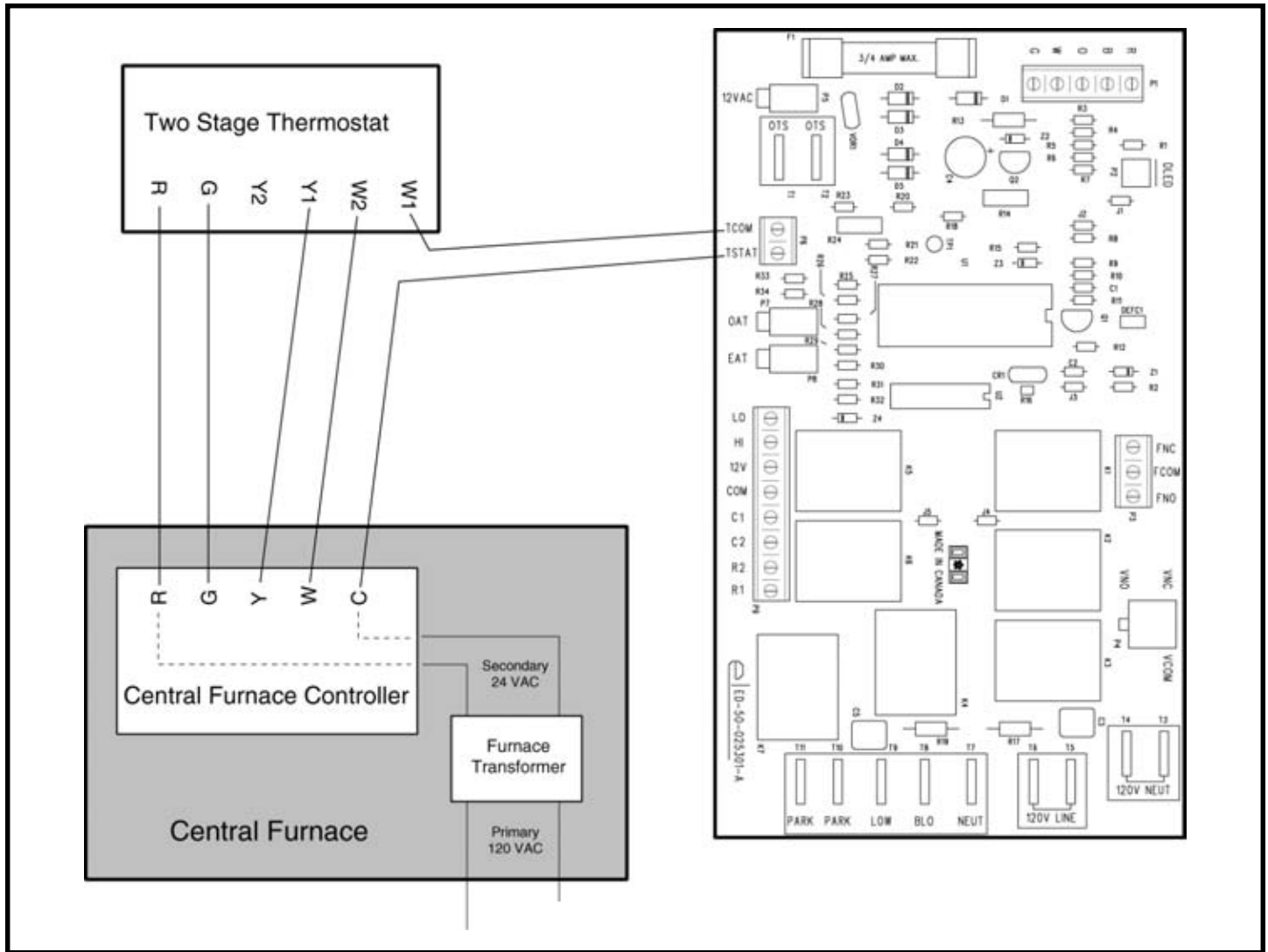
➔ Figure 19 - Novus Plus Control Wiring



➔ Figure 20 - 6000 Plus Control Wiring

**3. HVAC System Thermostat Control Wiring**

(use to interface HRV200PLUS with the central HVAC system)



**Figure 21**  
**Thermostat Control Wiring**  
(For integrated use with the central furnace and thermostat.)

4. Ventilation Control Wiring

(Controls may vary.)

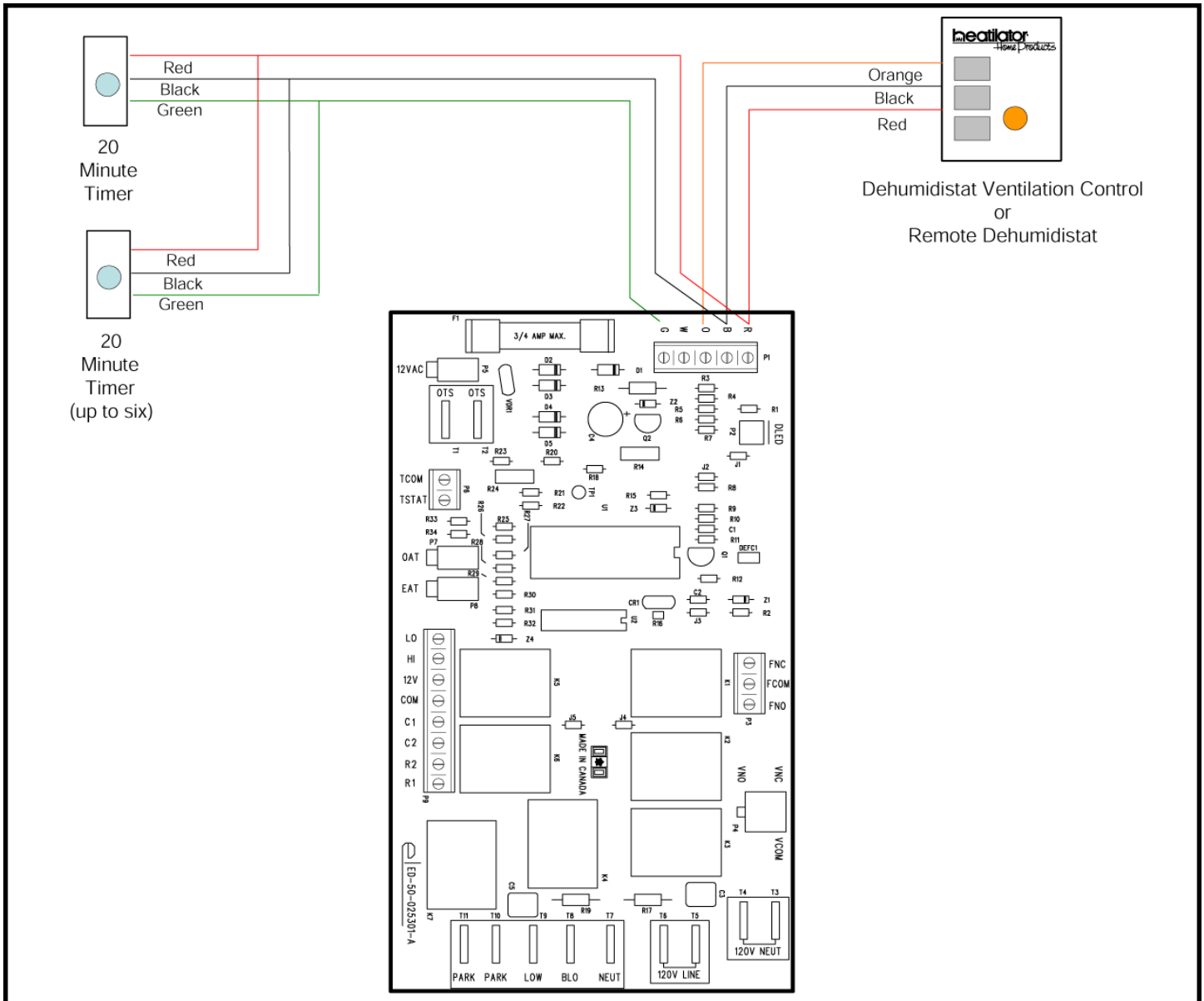


Figure 22  
Ventilation Control Wiring

5. Furnace Interface Wiring

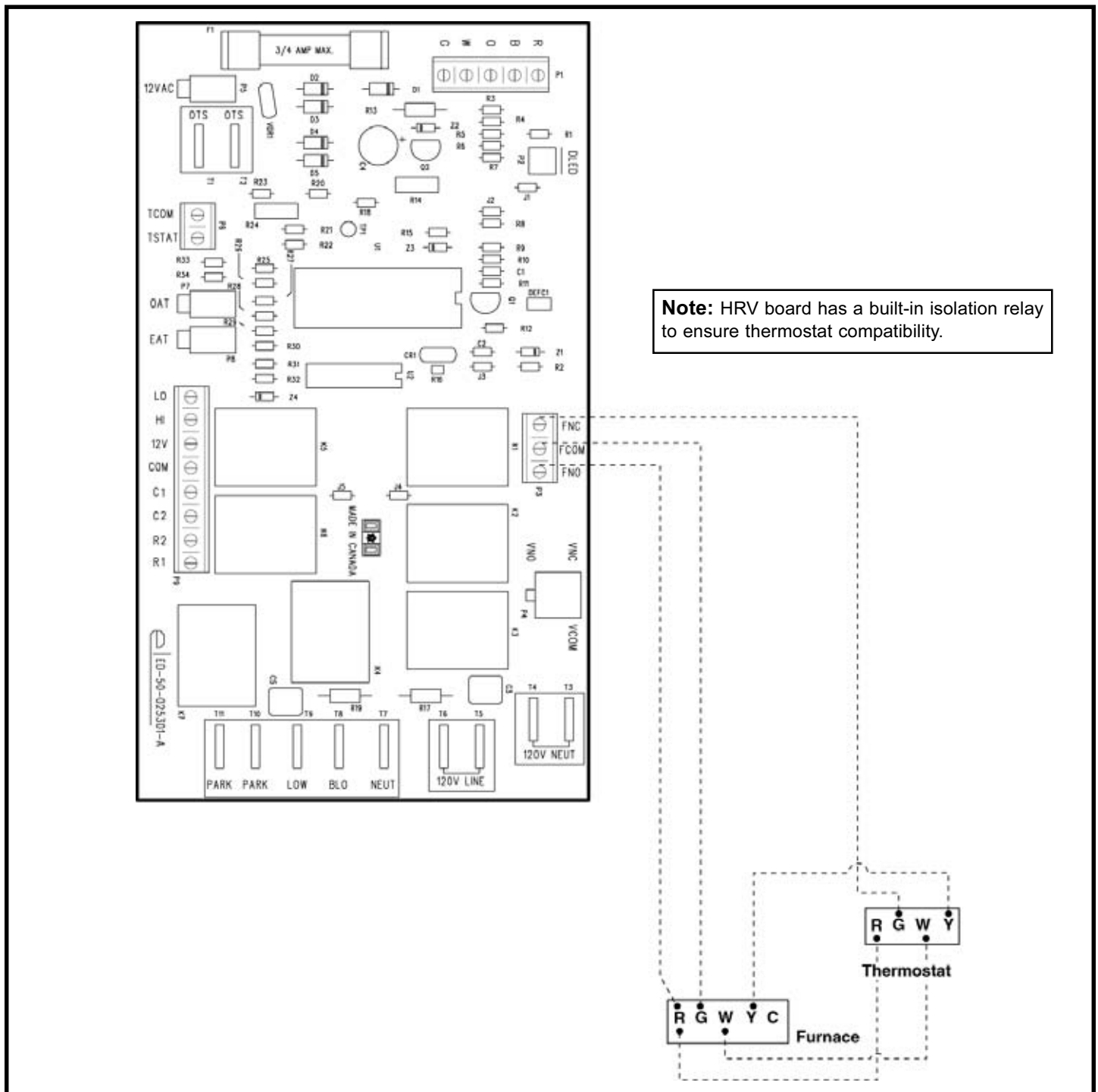


Figure 23 - Furnace Interface Wiring

## M. MAINTENANCE INSTRUCTIONS

Proper maintenance is critical to the proper operation of the HRV200PLUS. The following schedule should be followed:

### 1. Monthly Maintenance - Inspect Exterior Hoods

Make sure exhaust and fresh air supply hoods are not blocked or restricted by leaves, grass, or snow. In winter, it is especially important to make sure snow is not blocking the hoods or that frost has not built up on the wire mesh (bird screen).

#### WARNING!

**Blockage of weather hoods may cause a pressure imbalance within the house. Severe blockage will cause intermittent operation of the Fresh Air Fireplace!**

### 2. Quarterly Maintenance

#### a. Clean Air Filters

The standard filters equipped with your HRV200PLUS are removable and washable.

- 1) Open the access door.
- 2) Carefully grip the end of the core and pull evenly outward until the core slides out one or two inches.
- 3) Remove the filter clips.
- 4) Once clips are removed, filters can be taken off the core and rinsed with water or a combination of mild soap and water. Do not clean in the dishwasher.
- 5) To reassemble, place the clean filters (wet or dry) back into their positions against the core and return the clips to their original position.
- 6) Slide the core back into its original position.

#### b. Check and Clean Drain Lines

### 3. Semi Annual Maintenance - Clean Core

- a. Open the access door.
- b. Carefully grip the ends of the core and pull evenly outward until core slides out. Core may be snug, but will slide out of the channel.
- c. Remove the filter clips and filters. Rinse filters with warm soapy water.
- d. Wash the core in warm soapy water (do not use the dishwasher).

**Note:** Core installation label is on the outer end of the core.

#### e. Install the clean core as follows:

- 1) Locate the filters on the core to cover the open surface and replace the filter clips.
- 2) Mount the bottom flange of the core guide into the H channel approximately 1/4" (6mm).
- 3) Mount the left or right flange of the core guide into the H channel approximately 1/4" (6mm) followed by the other side.
- 4) Mount the top flange of the core guide into the H channel approximately 1/4" (6mm).
- 5) With all four corners in place and the core straight and even, push firmly in the center of the core until the core stops on the back of the cabinet.

**Note:** Core will appear to stick out from the cabinet approximately 1/8" (3mm). This is designed this way so the access door will fit tight against the core.

#### 4. Annual Maintenance

**a. Inspect and Clean Drain (condensate) Lines (if required)**

Inspect the drain line, drain spout and P-trap for blockage, mold or kinks. Flush with warm soapy water. Replace if worn, bent or if you are unable to clean.

**b. Inspect and Clean Duct Work (if required)**

The duct work running to and from the HRV200PLUS may accumulate dirt. Wipe and vacuum the duct once every year. You may wish to contact a heating/ventilation company to do this.

**c. Inspect and Clean the Fans (if required)**

**Note:** Before attempting the following task, thought should be given to having a qualified service technician complete the service work.

**Fans may accumulate dirt causing an imbalance and/or excessive vibration of the HRV200PLUS. A reduction in the air flow may also occur. In new construction this may result within the first year due to heavy dust and may occur periodically over time depending on the outdoor conditions.**

- 1) Unplug the HRV200PLUS and open the service door.
- 2) Remove the core.
- 3) Remove the ducting (metal and/or flexible insulated type) from the black ports which are connected immediately inline with the fan assembly.
- 4) Use a small brush, such as an old toothbrush or pipe cleaner and insert it:
  - a) Through the large opening of the fan assembly, and then
  - b) Through the smaller opening in the end of the fan assembly.
- 5) Scrub the individual fan blades until clean. Avoid moving or damaging balancing flat weight. The clip is usually found on one or more of the fan blades.
- 6) Vacuum and wipe.
- 7) Reassemble making sure the ducting is reattached firmly and the insulation and moisture barrier are sealed and taped.

#### 5. General Maintenance

Wipe down the inside of the cabinet with a damp cloth to remove dirt, bugs and debris that may be present.



## N. LED DIAGNOSTICS

The HRV200PLUS comes equipped with a diagnostic LED mounted in the right side of the cabinet just below the power cord. This LED indicates the state of the HRV - both normal operating modes as well as abnormal fault conditions. The LED response codes are summarized in the following table:

| LED CODES   |                           |  |  |
|-------------|---------------------------|--|--|
| LED Flashes | Condition                 | Description  | Corrective Action  |
| Continuous  | Normal Operation          | The HRV200PLUS has power and is operating normally in response to the current user inputs.   | This is a normal operating mode.   |
| 1           | Defrost Mode              | The HRV200PLUS has detected outdoor air temperature below 25°F and exhaust air temperature below 60°F for thirty minutes and is executing a defrost cycle. This occurs only when the unit is in continuous ventilation mode and the fireplace is not in use.   | This is a normal operating mode.   |
| 2           | Over Temperature          | The HRV200PLUS has detected exhaust air temperatures in excess of 220°F. This temperature is detected by the Over-Temperature Switch mounted in the exhaust air blower housing. The unit will terminate fireplace operation and run the blowers on high speed until the temperature falls below 160°F, then resume normal operation. | Troubleshoot the system for "Poor Air Flow" per the Troubleshooting Guide. Ensure the wiring to the Over-Temperature Switch is undamaged and properly connected.   |
| 3           | Fireplace High Fire Fault | The HRV200PLUS has detected exhaust air temperature below 100°F after five minutes of fireplace operation. This is an indication that the fireplace did not ignite properly. This fault is for information only and the HRV200PLUS will continue to operate normally.  | Troubleshoot the system for "Fireplace does not ignite" per the Troubleshooting Guide. This code may occur during low ambient temperature conditions when the fireplace is lighted but the main burner is turned off in Ember Fire mode. |
| 4           | Fireplace Low Fire Fault  | This fault is generated only when the system is in Low Fire Mode.  | The "LOW" terminal on the HRV200PLUS control board should not be connected. Ensure the wiring is connected per these installation instructions.  |
| 5           | OAT "Out of Range"        | The HRV200PLUS has detected the outdoor air temperature thermistor out of normal operating range. This thermistor is mounted in the fresh air supply collar and connected to the blue OAT connector on the HRV200PLUS control board. The unit will continue to operate.  | Ensure thermistor wiring is undamaged and properly connected.  |
| 6           | EAT "Out of Range"        | THE HRV200PLUS has detected the exhaust air temperature thermistor out of normal operating range. This thermistor is mounted in the HRV exhaust collar and connected to the red EAT connector on the HRV200PLUS control board. The unit will continue to operate.  | Ensure thermistor wiring is undamaged and properly connected.  |

## O. TROUBLESHOOTING GUIDE

| Symptom   | Cause   | Solution   |
|---|---|--|
| Poor air flow.<br><br>(Fireplace will not operate with inadequate/improper air flow.) | <ul style="list-style-type: none"> <li>• 1/4" (6 mm) mesh on the outside hoods is plugged.</li> <li>• Filters are plugged.</li> <li>• Core is obstructed.</li> <li>• House grilles closed or blocked.</li> <li>• Dampers are closed (if installed).</li> <li>• Poor power supply at site.</li> <li>• Duct is restricting HRV.</li> <li>• Improper speed control setting.</li> <li>• HRV air flow is improperly balanced.</li> </ul> | <ul style="list-style-type: none"> <li>• Clean the exterior hoods or vents.</li> <li>• Remove and clean filter.</li> <li>• Remove and clean core.</li> <li>• Check and open grilles.</li> <li>• Open and adjust dampers.</li> <li>• Have electrician check supply voltage at house.</li> <li>• Check duct installation.</li> <li>• Increase the speed of the HRV.</li> <li>• Have a contractor balance HRV.</li> </ul>   |
| Supply air feels cold.  | <ul style="list-style-type: none"> <li>• Poor location of supply grilles, the air flow may irritate the occupant.</li> <li>• Fireplace is not on.</li> </ul>  | <ul style="list-style-type: none"> <li>• Locate the grilles high on the walls or under the baseboards, install ceiling mounted diffuser or grilles so as not to directly spill the supply air on the occupant (e.g. over a sofa).</li> <li>• Placement of furniture or closed doors is restricting the movement of air in the home.</li> <li>• Turn on fireplace.</li> </ul>   |
| Humidity levels are too high in winter. Condensation is appearing on the windows.     | <ul style="list-style-type: none"> <li>• Lifestyle of the occupants.</li> <li>• Moisture coming into the home from an unvented or unheated crawl space.</li> <li>• Moisture is remaining in the washroom/bathroom and kitchen areas.</li> <li>• Condensation seems to form in the spring and fall.</li> <li>• HRV is set at too low a speed.</li> </ul>   | <ul style="list-style-type: none"> <li>• Avoid hanging clothes to dry, storing wood and venting clothes dryer inside. Heating wood may have to be moved outside.</li> <li>• Vent the crawl space and place a vapor barrier on the floor of the crawl space.</li> <li>• Ducts from the washroom/bathroom should be sized to remove moist air as effectively as possible. Use of a washroom/bathroom fan for short periods will remove additional moisture.</li> <li>• Timer or fan can be added to washroom/bathroom exhaust.</li> <li>• On humid days, as the seasons change, some condensation may appear but the home's air quality will remain high with some HRV use.</li> <li>• Increase the speed of the HRV.</li> </ul> |
| Humidity levels are too low.  | <ul style="list-style-type: none"> <li>• Blower speed of the HRV is too high.</li> <li>• Lifestyle of occupants.</li> <li>• HRV air flow may be improperly</li> </ul>   | <ul style="list-style-type: none"> <li>• Decrease the HRV blower speed.</li> <li>• Humidity may have to be added through the use of humidifiers.</li> <li>• Have a contractor balance the HRV air flow.</li> </ul>   |
| HRV and/or ducts are frosting up.   | <ul style="list-style-type: none"> <li>• HRV air flow is improperly balanced.</li> <li>• Malfunction of the HRV defrost system.</li> <li>• HRV control defrost option is set improperly</li> </ul>  | <ul style="list-style-type: none"> <li>• <b>Note:</b> Minimal frost build-up is expected on cores before the unit initiates defrost cycle functions.</li> <li>• Have an HVAC contractor balance the HRV.</li> <li>• Call a qualified service technician.</li> <li>• Check the "DEFC1" jumper. If the jumper is installed on the control board, the defrost logic is disabled and the HRV99DEFKIT optional defrost kit must be installed.</li> <li>• If the "DEFC1" jumper is not installed on the HRV control board, the HRV200PLUS uses the fireplace to defrost the core. Ensure the fireplace is properly installed and powered to achieve defrost.</li> </ul>  |

# HRV200PLUS INSTALLATION INSTRUCTIONS

| Symptom   | Cause   | Solution  |
|---|---|---|
| Water in the bottom of the HRV.   | <ul style="list-style-type: none"> <li>• Drain pans are plugged.</li> <li>• Improper connection of HRV drain lines.</li> <li>• HRV is not level.</li> <li>• Drain lines are obstructed.</li> <li>• HRV heat exchange core is not properly installed.</li> </ul> | <ul style="list-style-type: none"> <li>• Ensure the "O" ring on the the drain nozzle s its properly.</li> <li>• Look for kinks in the line.</li> <li>• Check the water drain connections .</li> <li>• Make sure water drains properly from the pan.</li> <li>• Make sure twater drains properly from the pan.</li> </ul>  |
| Fireplace doesn't operate.  | <ul style="list-style-type: none"> <li>• Improperly wired.</li> </ul>   | <ul style="list-style-type: none"> <li>• Check HRV/call a qualified service technician</li> <li>• Ensure the control wiring to the fireplace conforms with the fireplace installation instructions.</li> <li>• <b>Note:</b> <i>The Caliber NXT Plus/6100 Plus Fresh Air Fireplace requires a jumper between "R1" and "12V" to operate.</i></li> </ul>   |
| ➔ Fireplace operates for thirty seconds, then goes out (Caliber NXT Plus/6100 Plus only). | <ul style="list-style-type: none"> <li>• Inadequte air flow.</li> </ul>   | <ul style="list-style-type: none"> <li>• Ensure venting is properly installed - no kinks or collapsed sections.</li> <li>• Ensure maximum vent length has not been exceeded.</li> <li>• Ensure all connections are tight and properly sealed.</li> <li>• Clear any obstructions from terminations.</li> <li>• Ensure HRVPlus is properly maintained - see Maintenance section.</li> <li>• Ensure Caliber NXT Plus/6100 Plus pressure switch is properly connected and wired.</li> <li>• <b>Note:</b> <i>The Caliber NXT Plus/6100 Plus will operate for thirty seconds while proving proper draft. If sufficient air flow is not sensed at the flue collar after thirty seconds, the flames will extinguish.</i></li> </ul> |
| Fireplace operates unexpectedly   | <ul style="list-style-type: none"> <li>• HRV requires defrost</li> <li>• Automatic controls calling for heat</li> </ul>   | <ul style="list-style-type: none"> <li>• The HRV200PLUS uses the heat from the fireplace to defrost the core during low temperature conditions. If this operation is undesirable, the HRV99DEFKIT optional defrost assembly can be installed to use an air bypass defrost method.</li> <li>• The HRV200PLUS may be connected to numerous control devices including remote controls and thermostats. Ensure the controls installed are operating properly and the home owner understands their operation.</li> </ul>   |
| HRV does not run.   | <ul style="list-style-type: none"> <li>• No line voltage</li> </ul>   | <ul style="list-style-type: none"> <li>• Check circuit breaker and ensure HRV is plugged into a live outlet.</li> <li>• Open the HRV access door and remove the control box cover. Hold the door interlock switch in and check for 120 VAC between "120VLINE" and 120VNEUT" on the HRV control board.</li> <li>• If 120 VAC is not present, check wiring the replace the door interlock switch.</li> </ul>  |

| Symptom                           | Cause   | Solution  |
|-----------------------------------|---|---|
| (HRV does not run.)               | <ul style="list-style-type: none"> <li>No control voltage</li> <li>No control inputs</li> </ul>   | <ul style="list-style-type: none"> <li>Ensure the black and white wires from the transformer are connected to the "120VLINE" and "120VNEUT" terminals respectively, and the transformer has 120 VAC.</li> <li>Remove the 12VAC connector from the control board and check for 12VAC across the two green wires from the transformer.</li> <li>If 12VAC is not present, replace the transformer.</li> <li>Plug the 12VAC connector into the board and check the ¼ Amp fuse on the control board. Replace the fuse if blown.</li> <li>Check for 12VDC between the "12V" and "COM" terminals on the fireplace group terminal strip.</li> <li>If 12VDC is not present but the 12 VAC is, replace the control board.</li> <li>Check control wiring on the fireplace terminal strip and the ventilation terminal strip and ensure controls and appliances are wired per the appropriate installation instructions.</li> </ul> |
| HRV runs continuously             | <ul style="list-style-type: none"> <li>Controls are set for continuous operation</li> <li>Over-temperature switch is open</li> <li>HRV runs for short time after fireplace operation</li> </ul> | <ul style="list-style-type: none"> <li>Check wall mounted controls.</li> <li>Check for field installed jumpers on the ventilation terminal strip.</li> <li>Open HRV access door. If HRV exhaust blower section is hot, troubleshoot for poor air flow. The over-temperature switch opens at 220°F and closes at 160°F. The switch is "normally closed" during normal operation.</li> <li>If the over-temperature switch is below 160°F, the switch should close and the HRV resume normal operation. Test the over-temperature switch by removing the switch from the unit and allow to cool to ambient temperature. Check continuity across the terminals with the wires removed. If the switch is open, replace.</li> <li>There is a five-minute post-purge after fireplace operation to remove excess heat from the fireplace. This is normal operation.</li> </ul>  |
| HRV and/or ducts are frosting up. | <ul style="list-style-type: none"> <li>HRV control defrost option is set improperly</li> </ul>  | <ul style="list-style-type: none"> <li>Check the "DEFC1" jumper. If the jumper is installed on the control board, the defrost logic is disabled and the HRV99DEFKIT optional defrost kit must be installed.</li> <li>If the "DEFC1" jumper is not installed on the HRV control board, the HRV200PLUS uses the fireplace to defrost the core. Ensure the fireplace is properly installed and powered to achieve defrost.</li> </ul>  |

## P. ACCESSORIES

| Ventilation Controls |  |
|----------------------|--|
| Part #               | Description                            |
| HRV 99101            | Crank Timer                            |
| HRV 99116            | Dehumidistat Ventilation Control (DVC) |
| HRV 99130            | Remote Dehumidistat                    |
| HRV 99132            | 20 minute Fan Timer                    |
| HRV 99225            | Ventilation Fan Control                |

| Venting Accessories |   |
|---------------------|---|
| Part #              | Description                                     |
| CV-FP               | B-Vent - Flexible - 6" x 18'                    |
| CV-AC               | B-Vent - Appliance Connector - 6" dia. - 2 pack |
| CV-UC               | B-Vent - Universal Connector - 2 pack           |
| CV-TH               | Horizontal Termination                          |
| CV-DA               | Duct Adapter                                    |

| Pitot Tube |  |
|------------|--|
| Part #     | Description  |
| HRV 99167  | Air flow balancing kit (Pitot Tube Type) includes magnahelic pressure gauge, pitot tube, hose and carrying case. |
| HRV 99168  | Pitot Tube Only  |

| Flow Station |   |
|--------------|---|
| Part #       | Description   |
| HRV 99150    | 5" Flow measuring station   |
| HRV 99152    | 6" Flow measuring station   |
| HRV 99153    | 7" Flow measuring station   |
| HRV 99155    | 8" Flow measuring station   |
| HRV 991665   | 5" Air flow balancing kit – includes magnahelic pressure gauge, hose and two 5" flow measuring stations with carrying case. |
| HRV 991666   | 6" Air flow balancing kit – includes magnahelic pressure gauge, hose and two 6" flow measuring stations with carrying case. |

| HRV200 Plus Accessory Kits |  |
|----------------------------|--|
| Part #                     | Description                            |
| HRV99AEDKIT                | Damper Assembly, Alternate Exhaust Air |
| HRV99DEFKIT                | Defrost Assembly, Fifth Port Option    |

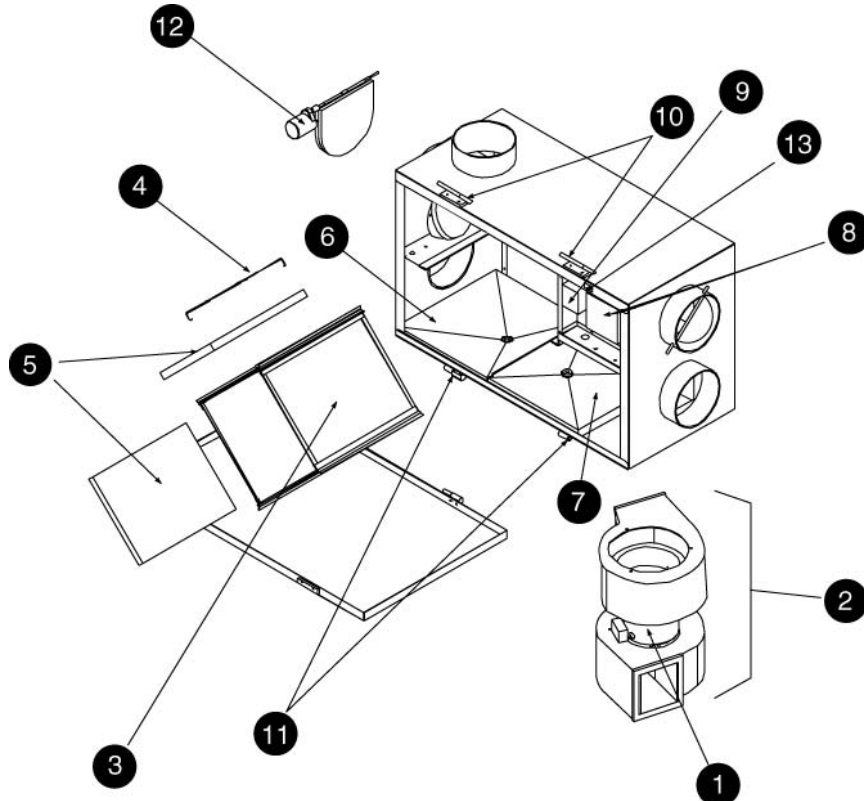
| Grilles, Grease Filters & Weatherhoods |   |
|--|---|
| Part #                                 | Description   |
| HRV 10002                              | 6" x 10 Kitchen Grille – flip front with removable grease filter.                                       |
| HRV 100022                             | Replacement Grease Filters  |
| HRV99189                               | 6" Outside Weatherhoods c/w 12" sleeve and insulating duct collar. White plastic-1 "intake" per carton. |

### Installing Remote Controls

Optional wall-mounted remote controls can be connected to the ventilator for greater control of operation. Although the necessary connections are low voltage, we recommend that a certified contractor make all connections.

## Q. REPLACEMENT PARTS

| Item | Part #      | Description                      | Qty. |
|------|-------------|----------------------------------|------|
| 1    | HRV23200R   | Motor with Capacitor             | 1    |
| 2    | HRV99242    | Blower Housing Set               | 1    |
| 3    | HRV40211    | Lower Blower Wheel (CW)          | 1    |
| 4    | HRV40121    | Upper Blower Wheel (CCW)         | 1    |
| 5    | HRV68200    | Core Assembly - Aluminum HT      | 1    |
| 6    | HRV81007    | Filter Clip                      | 2    |
| 7    | HRV65204    | Aluminum Mesh Filter             | 2    |
| 8    | HRV35201    | Left Drain Pan                   | 2    |
| 9    | HRV26241R   | Circuit Board                    | 1    |
| 10   | HRV19142    | Auto Transformer                 | 1    |
| 11   | HRV93101    | Door Latch Set                   | 2    |
| 12   | HRV91106B   | Door Hinge Set                   | 2    |
| 13   | HRV14107R   | Door Switch                      | 1    |
| 14   | HRV15205    | Over Temperature Switch          | 1    |
|      | HRV26223H   | Circuit Board - Defrost Assy Rep | 1    |
|      | HRV99AEDKIT | Alternate Exhaust Port Kit       | 1    |
|      | HRV99DEFKIT | Optional Defrost Assembly Kit    |      |
|      | HRV23007    | Damper Motor                     | 1    |



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## HRV200PLUS GAS APPLIANCE LIMITED WARRANTY

**Hearth & Home Technologies Inc.** ("HHT") extends the following warranty for Heatilator Home Products® Heat Recovery Ventilator Plus (HRV200PLUS) products installed in homes in the United States of America and Canada. Dealers and employees of HHT have no authority to make any warranty or authorize any remedies in addition to or inconsistent with the terms of this warranty. This warranty gives you specific legal rights. You may also have other rights, which vary from state to state, regarding limitations on how long an implied warranty lasts, or that do not allow exclusion or limitation of incidental or consequential damages.

### Limited 5-Year Warranty

HHT warrants that all components of your HRV200PLUS, except for the heat recover core, will be free from defects in material and workmanship for five years from the date of installation. The Limited 5-Year Warranty specified above is subject to the conditions, exclusions and limitations listed below, is for the original user only, and is nontransferable.

### Limited 20-Year Warranty

HHT warrants that the heat recovery core of your HRV200PLUS will be free from defects in material and workmanship for twenty years from the date of installation. The Limited 20-Year Warranty specified above is subject to the conditions, exclusions and limitations listed below, is for the original owner only, and is nontransferable.

### Conditions, Exclusions, & Limitations of Liability

- A. The Limited Warranties supplied by HHT apply only while the HRV200PLUS is in its location of original installation. These Limited Warranties do not extend to defects caused by: (1) installation, operation or maintenance of the HRV200PLUS not in accordance with the Installation Instructions, Operating Instructions, and the Listing Agent Identification Label furnished with the HRV200PLUS; (2) installation which does not comply with local building codes; (3) shipping, improper handling, improper operation, abuse, accident or unworkmanlike repairs; (4) environmental conditions, additional air handling devices such as exhaust fans or forced air furnaces, or other causes; (5) interconnection with other appliances such as central vacuums or clothes dryers; (6) installation or use of components not supplied with the HRV200PLUS or any other components not expressly authorized and approved by HHT; and/or (7) modification of the HRV200PLUS not expressly authorized and approved by HHT in writing. This warranty does not extend to products not manufactured or supplied by HHT.
- B. This warranty is limited to the replacement or repair of defective components or workmanship. Your sole remedy, and HHT's sole obligation under this warranty shall be HHT repairing or, at its discretion, replacing the defective components. **In no event shall HHT be liable for any incidental or consequential damages caused by your HRV200PLUS.**
- C. **EXCEPT TO THE EXTENT PROVIDED BY LAW, HHT MAKES NO EXPRESS WARRANTIES OTHER THAN THE WARRANTIES SPECIFIED HEREIN. THE DURATION OF ANY IMPLIED WARRANTY IS LIMITED TO DURATION OF THE WARRANTY OF THE APPLICABLE COMPONENTS SPECIFIED ABOVE. TO THE EXTENT PERMITTED BY LAW, HHT DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING SPECIFICALLY THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

### How to Obtain Service

To obtain service under this warranty you must:

1. Send written notice of the claimed condition to Heatilator Technical Service Department, Hearth & Home Technologies Inc., 1915 W. Saunders Street, Mt. Pleasant, Iowa 52641-1563. You may also register your claim online at [www.heatilator.com/contact.asp](http://www.heatilator.com/contact.asp).
2. Provide proof of purchase, proof of date of installation, model number and serial number to HHT.
3. Provide HHT reasonable opportunity to investigate the claim, including reasonable opportunity to inspect the HRV200PLUS prior to any repair or replacement work and before the HRV200PLUS or any component of the HRV200PLUS has been removed from the place of original installation.
4. Obtain HHT's consent to any warranty work before the work is done.

### Additional Information

If you would like information on current Heatilator products or want to locate a dealer in your area, call: 1-877-IAQ-VENT (1-877-427-8368).



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