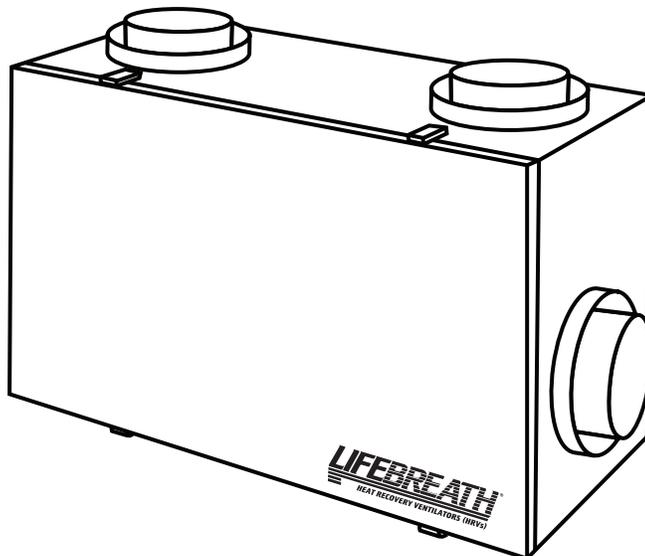


# **LIFEBREATH**<sup>®</sup>

Indoor Air Systems

## **RNC200**



Setting a new standard for  
energy efficient, clean air homes



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**69-RNC 072717**

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**IMPORTANT -  
PLEASE READ THIS MANUAL  
BEFORE INSTALLING UNIT.**

## NOTE

- Due to ongoing research and product development, specifications, ratings and dimensions are subject to change without notice.

## CAUTION

Before installation, careful consideration must be given to how this system will operate if connected to any other piece of mechanical equipment, i.e. a forced air furnace or air handler, operating at a higher static. After installation, the compatibility of the two pieces of equipment must be confirmed, by measuring the air flows of the HRV, by using the balancing procedure found in this manual. NEVER install a ventilator in a situation where its normal operation, lack of operation or partial failure may result in the backdrafting or improper functioning of vented combustion equipment.

## WARNING

- Disconnect the power from the unit before cleaning or servicing.
- To prevent electrical shock, 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 for switching. Use either a voltmeter or test lamp to confirm the absence of a voltage between the disconnect switch and ground (on the cabinet) while the door is open. This procedure must be followed, as dwellings are occasionally wired improperly. Always ensure the proper grounding of the unit.

## ATTENTION

- Do not apply electrical power to the unit until after the completion of the installation (including the installation of low voltage control wiring).
- Ensure the Installation and wiring is in accordance with CEC, NEC, and local electrical codes.
- Due to ongoing research and product development, specifications, ratings and dimensions are subject to change without notice.
- Plug the unit into a standard designated (120 VAC) electrical outlet with ground.
- The use of an extension cord with this unit is not recommended. If the installation requires further wiring, have a licensed electrician make all of the electrical connections. The recommended circuit is a separate 15 amp/120 volt circuit.

## Selecting the Ventilation Rate That is Right for You

The modes of operation and speeds are used to adjust your indoor ventilation rate. Experiment with the ventilation levels in your home to evaluate the ideal amount of ventilation to suit your home and personal preferences. Operational modes available to you will depend on the main control that is installed. Some features and modes may be unavailable to you.

### I. **Continuous Ventilation**

This mode of operation provides continuous ventilation within the home. You may, for example, select Continuous Ventilation at low speed for normal operation and increase to high speed during increased activity levels, such as cooking and showering, etc.

### II. **20 Minutes On, 40 Minutes Recirculation**

This mode ventilates for 20 minutes and recirculates the household air every 40 minutes each hour. This mode is not applicable if your HRV is connected to a forced air system.

### III. **20 Minutes On, 40 Minutes Standby**

This mode of operation provides 20 minutes of ventilation each hour. You can use this ventilation mode at low speed for low household activity levels or when the home is unoccupied.

### IV. **10 Minutes On, 50 Minutes Standby**

This mode of operation provides 10 minutes of ventilation each hour. You can use this ventilation mode at low speed for low household activity levels or when the home is unoccupied. This mode is useful when 20/40 mode is providing too much ventilation.

### V. **Continuous Recirculation** or

This mode continuously recirculates your household air (no ventilation). This mode is not applicable if your HRV is connected to a forced air system.

### VI. **Continuous Low Fan Speed LO**

This mode will operate the fan in low speed continuously at the selected operating mode (Ventilation or Recirculation).

### VII. **Continuous High Fan Speed HI**

This mode will operate the fan in high speed continuously at the selected operating mode (Ventilation or Recirculation). This mode is useful when occupancy in the home or activity is high for an extended period of time.

## Recirculation

Recirculates existing household air without introducing fresh air. Recirculation modes (II and V) are not applicable if your HRV is connected to a forced air system, since your forced air system already circulates the household air. Recirculation modes are unavailable on some models.

## Note

- Due to ongoing research and product development, specifications, ratings, and dimensions are subject to change without notice. Refer to [www.LIFEBREATH.com](http://www.LIFEBREATH.com) for the latest product information.

## Warning

- Disconnect the power from the unit before cleaning or servicing.
- To prevent electrical shock, 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 for switching. Use either a voltmeter or test lamp to confirm the absence of a voltage between the disconnect switch and ground (on the cabinet) while the door is open. This procedure must be followed, as dwellings are occasionally wired improperly. Always ensure the proper grounding of the unit.

## How the Dehumidistat Works

*Only the DXPL02, BC02 and BC03 controls are equipped with an adjustable Dehumidistat.*

High indoor humidity levels, during the heating season, have become a problem in many well insulated, tight homes, excessive condensation on the window is a visual sign of high indoor humidity levels. High indoor humidity levels can result in mold and mildew and the eventual degradation of the building structure itself.

Your HRV reduces indoor humidity levels when the outdoor air is drier than the indoor air. These conditions usually occur during the heating season when outdoor temperatures are less than 15°C (59°F). During the heating season, the operation of the HRV may reduce indoor humidity levels sufficiently to eliminate the need for further dehumidification. If your home requires further dehumidification, use the Dehumidistat feature if available located on the main control. This feature aggressively addresses high indoor humidity levels by initiating high speed ventilation when the indoor humidity levels rise above the adjustable set point on the control. Refer to the "Setting the Dehumidistat" section of either the DXPL02, BC02 or BC03 control instructions on how to set the Dehumidistat, depending on which control you have installed. The Dehumidistat function should be set to off for all seasons except the heating season because a dehumidifying effect occurs only when the outdoor air is dryer than the indoor air.

The DXPL02, BC02 and BC03 controls have an adjustable Dehumidistat which can be set to achieve a further dehumidification effect from your HRV. High speed ventilation will be initiated upon exceeding the Dehumidistat set point regardless of the mode and speed of operation. Once the humidity in the house is reduced, the HRV will revert back to its previous setting.

We suggest operating the HRV for the first few days without use of the Dehumidistat function to observe if a further dehumidification effect will be required. The Dehumidistat operates in % of RH (relative humidity) with 60 being high and 20 being low. If after a few days, further dehumidification is required (the house is still too humid), set the humidity level to a lower amount.

The average person is comfortable between 30% and 50% RH. The Dehumidistat should be set to off for all seasons except the heating season.

## Dehumidistat Notes

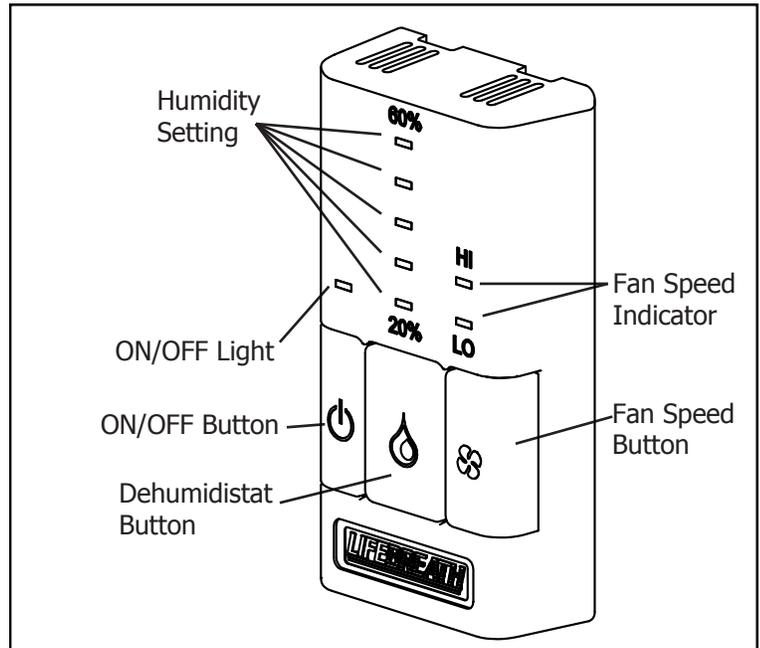
- **Dehumidistat Disable** automatically disables the dehumidistat function on the main control when outdoor temperatures exceed 15°C (59°F) for a full 24 hour period. All other HRV features and functions operate normally while the dehumidistat function is disabled.
- **Dehumidistat Re-Enable** automatically re-enables the dehumidistat function if either the outdoor temperature drops below 15°C (59°F) for a full 24 hour period or if the HRV is reset (unplugged for 30 seconds).

# The Lifebreath Ventilation Control 99-BC02

The **Lifebreath Ventilation Control** offers advanced features to control your home's ventilation.

## Key Features:

- 2 speed fan setting (LOW / HIGH)
- Standby setting (fan OFF)
- Electronic Dehumidistat
- Compatible with 99-DET02 Wireless Timers
- Slim-line design
- Connect to 3 wire 20 gauge low voltage wire



## BC02 Operating Instructions:

### Turning on the Control

Press and release the ON/OFF button . The light above will illuminate.

### Setting the Ventilation Speed

Press and release the Fan button  to select LOW or HIGH fan speed. The corresponding "Indicator Light" will illuminate. If both LO and HI indicator lights are off, the fan is OFF but will turn ON if required by the Dehumidistat or remote Timer (if installed).

### Humidity Control

Your unit will reduce indoor humidity when outdoor humidity levels are lower than indoor humidity levels. This feature is only effective when the outdoor temperature is below 59°F (15°C).

### Setting the Dehumidistat

Press and release the Dehumidistat button  until the Dehumidistat Light is at the desired setting. After a few seconds the Dehumidistat light will either flash or be on continuous.

A flashing light indicates the humidity level is higher than the setting and the unit is operating on high speed ventilation. A continuous light indicates the humidity level is lower than the setting. Refer to the unit's Home Owner's manual for instructions on how the Dehumidistat works.

The Dehumidistat will override the current speed setting to HIGH speed.

The Dehumidistat function can be turned OFF by pressing the  button until no Dehumidistat light is on.

**Note** - Only 1 Dehumidistat should be installed in a system.

## ATTENTION

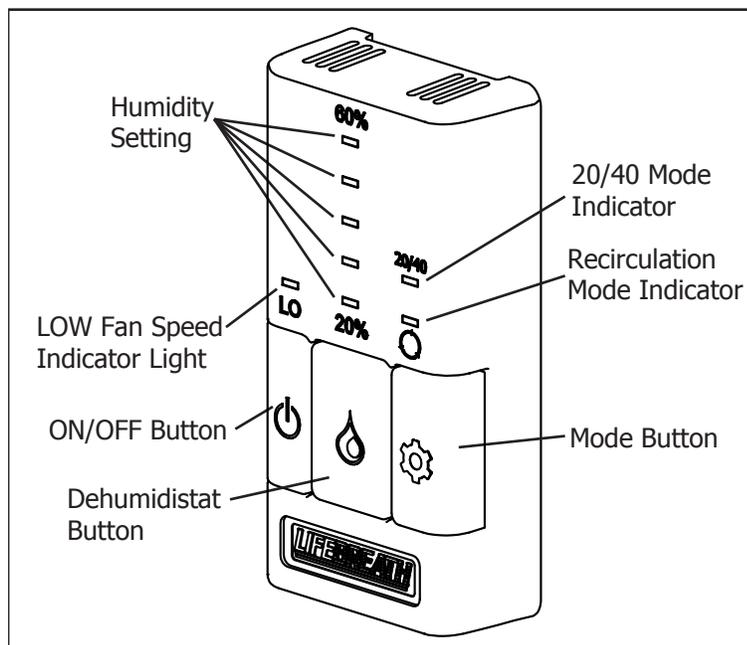
- Only one main control can be installed on your system.
- Timers will not function when mode of operation is set to "OFF", unless specifically installed for that function.

# The Lifebreath Ventilation Control 99-BC03

The **Lifebreath Ventilation Control** offers advanced features to control your home's ventilation.

## Key Features:

- Continuous LOW fan speed operation
- Electronic Dehumidistat
- 3 modes of operation:
  - Ventilation
  - Recirculation
  - 20/40 mode
- Compatible with 99-DET02 Wireless Timers
- Slim-line design
- Connect to 3 wire 20 gauge low voltage wire



## BC03 Operating Instructions:

### Turning on the Control

Press and release the ON/OFF button . The light above will illuminate and the fan will turn on to LOW speed.

### Humidity Control

Your unit will reduce indoor humidity when outdoor humidity levels are lower than indoor humidity levels. This feature is only effective when the outdoor temperature is below 59°F (15°C).

### Setting the Dehumidistat

Press and release the Dehumidistat button until the Dehumidistat Light is at the desired setting. After a few seconds the Dehumidistat light will either flash or be on continuous.

A flashing light indicates the humidity level is higher than the setting and the unit is operating on high speed ventilation. A continuous light indicates the humidity level is lower than the setting. Refer to the unit's Home Owner's manual for instructions on how the Dehumidistat works.

The Dehumidistat will override the current fan speed setting to high fan speed.

The Dehumidistat function can be turned OFF by pressing the button until no Dehumidistat light is on.

**Note** - Only 1 Dehumidistat should be installed in a system.

### Setting 20/40 Mode

To activate 20/40 mode, press and release the Mode button until the "Indicator Light" below 20/40 is illuminated.

20/40 mode is a repeating cycle. The fan will run at LOW speed for 20 minutes, then turn OFF for 40 minutes.

Some units are equipped to Recirculate air in your home during the 40 minute cycle with no Ventilation. The control will automatically detect this feature and Recirculate air during the 40 minute cycle at LOW fan speed.

### Recirculation Mode

Some units are equipped to Recirculate the air in your home without Ventilating.

To activate Recirculation mode, press and release the Mode button until the Recirculation "Indicator Light" is ON. Recirculation is in LOW fan speed.

## ATTENTION

- Only one main control can be installed on your system.
- Recirculation is not available on all models.
- Timers will not function when mode of operation is set to "OFF", unless specifically installed for that function. (See Installation Guide for other options.)

## The Lifebreath Ventilation Control 99-BC04

The **Lifebreath Ventilation Control** offers advanced features to control your home's ventilation.

### Key Features:

- 2 speed fan setting (LOW / HIGH)
- Standby setting (fan OFF)
- 20/40 mode
- Compatible with 99-DET02 Wireless Timers
- Slim-line design
- Connect to 3 wire 20 gauge low voltage wire

### BC04 Operating Instructions:

#### Turning on the Control

Press and release the ON/OFF button . The light above will illuminate.

#### Setting the Ventilation Speed

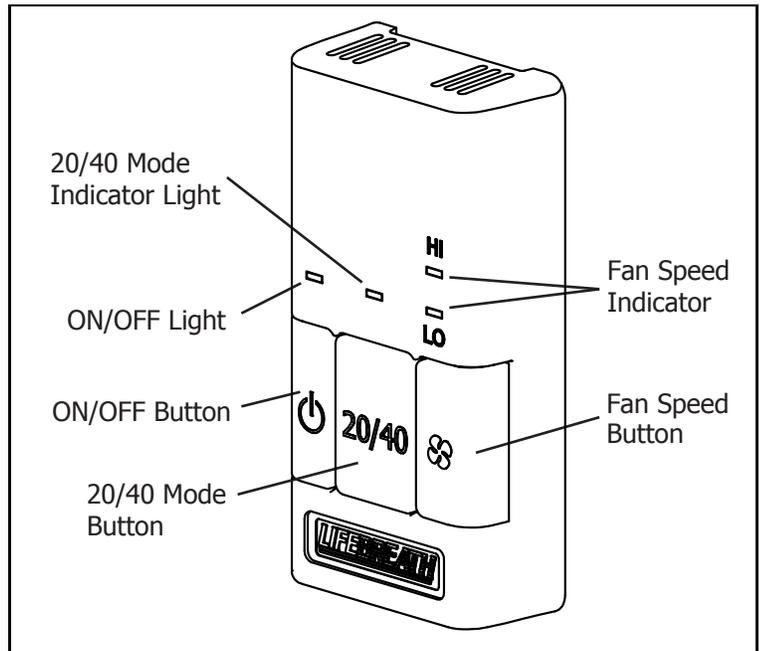
Press and release the Fan button  to select LOW or HIGH fan speed. The corresponding "Indicator Light" will illuminate. If both LO and HI indicator lights are off, the fan is OFF but will turn ON if required by a remote Timer (if installed).

#### Setting 20/40 Mode

After a fan speed has been selected, press and release the 20/40 button. The "Indicator Light" will turn ON and the control will be in 20/40 mode.

20/40 mode is a repeating cycle. The fan will run at the set speed, LO or HI, for 20 minutes then turn OFF for 40 minutes.

Some units are equipped to Recirculate air in your home during the 40 minute cycle with no Ventilation. The control will automatically detect this feature and Recirculate air during the 40 minute cycle at the selected fan speed.



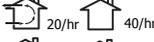
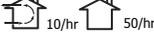
## Attention

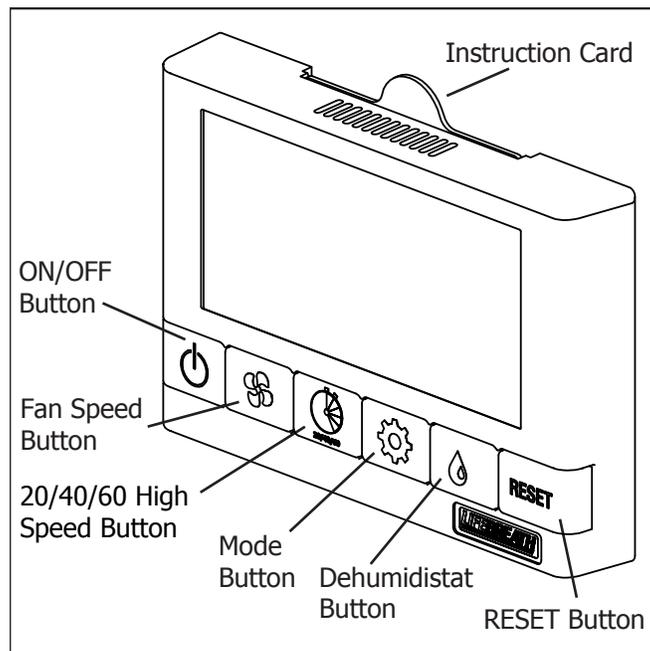
- Only one main control can be installed on your system.
- Recirculation is not available on all models.
- Timers will not function when mode of operation is set to "OFF", unless specifically installed for that function. (See Installation Guide for other options.)

# The Lifebreath Digital Control 99-DXPL02

The **Lifebreath Digital Control** offers the most advanced features to control your home's ventilation.

## Key Features :

- 5 speed fan setting
- Standby setting (fan speed 0)
- Electronic Dehumidistat
- 20/40/60 HIGH speed override button
- Compatible with 99-DET02 Wireless Timers
- Easy to read backlit LCD screen
- Slim-line design
- Connect to 3 wire 20 gauge low voltage wire
- Five selectable modes of operation
  - Continuous Ventilation 
  - 20 min. Ventilation / 40 min. Recirculation 
  - 20 min. Ventilation / 40 min. OFF 
  - 10 min. Ventilation / 50 min. OFF 
  - Continuous Recirculation 
- Service indicator 



## Digital Control Operating Instructions (DXPL02):

### Turning on the Control

Press and release the ON/OFF button . The light above will illuminate.

### Setting the Ventilation Speed

Press and release the Fan button  to select one of the 5 fan speeds. The fan speed will be displayed on the screen beside the Fan symbol . Standby mode (Fan OFF) is indicated as speed 0. The fan will turn ON if required by a remote Timer (if installed).

### 20/40/60 High Speed Button

Press and release the 20/40/60 High Speed button  to temporarily initiate HIGH Fan speed for 20, 40 or 60 minutes. Press once for 20 minutes, twice for 40 minutes, 3 times for 60 minutes and 4 times to disable. The  will appear on the screen and the corresponding section of the clock will flash to indicate the time interval selected. When the timer runs out, the unit will return to its previous operating speed.

### Setting the Mode of Operation

There are 5 modes of operation available with the DXPL02 control. Pressing the Mode button  will cycle through the different modes of operation and they will be displayed on the screen.

## Attention

- Only one main control can be installed on your system.
- Recirculation is not available on all models.
- Timers will not function when mode of operation is set to "OFF", unless specifically installed for that function. (See Installation Guide for other options.)

## Digital Control *(continued)*

### Setting the Dehumidistat

For a full description of the Dehumidistat function, refer to page 4 "How the Dehumidistat Works".

The DXPL02 control displays the current indoor humidity in LARGE numbers and the Dehumidistat setting in SMALL numbers on the screen. If the indoor humidity is above the set point, the DXPL02 control will initiate HIGH Fan speed operation in Ventilation mode until the indoor humidity has been reduced below the set point.

Press and release the Dehumidistat button  to adjust the Dehumidistat setting. The numbers on the screen will cycle. The Dehumidistat can be set between 25% RH and 60% RH. To disable the Dehumidistat function on the control, cycle through the setting until OFF is displayed.

### Reset Button

The RESET button will clear the current Fan, Timer, Mode and Dehumidistat settings and set the unit into LOW fan speed, Ventilation mode and a Dehumidistat setting of 40%.

### Service Indicator

A service indicator  appears when the unit requires routine maintenance. Refer to "Maintenance Routine" in this guide.

To reset the service indicator once routine maintenance has been performed, press and hold the ON/OFF button  for 5 seconds.

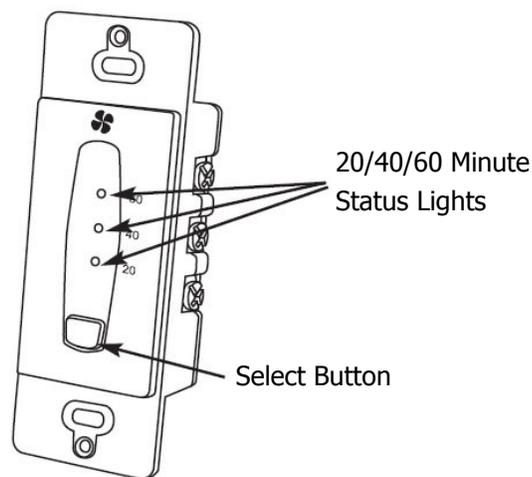
## Timers

Depending on the type of HRV installation, you may have timers in areas such as restrooms. The Timer will override the operational mode (regardless of the setting) and initiate HIGH fan speed Ventilation. Upon completion of the timer cycle, the HRV will return to your selected operational mode and fan speed setting.

### Lifebreath 20/40/60 Minute Timer

#### 99-DET01

Initiates high speed ventilation for 20, 40 or 60 minutes. The 20/40/60 minute status lights indicate high speed operation. Lockout mode is useful if you wish to disable the timer. Set lockout by holding the select button for 5 seconds. Unlock by holding for 5 seconds.



## Timers (continued)

### Lifebreath Wireless 20/40/60 Minute Timer

#### 99-DET02

Initiates high speed ventilation for 20, 40 or 60 minutes. The 20/40/60 minute status lights indicate high speed operation.

Wireless Timers have an estimated range of 40' with no obstructions. To increase the range of a Wireless Timer a 99-RX02 Repeater may be used.

#### Using the Wireless 99-DET02 Timer

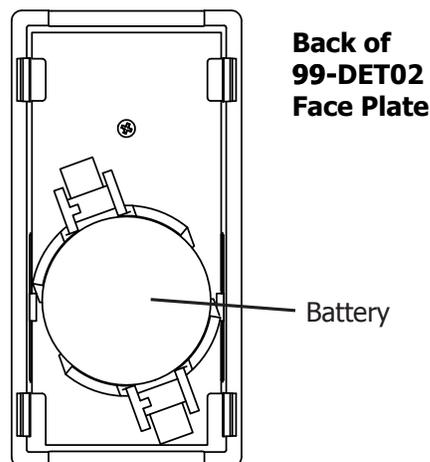
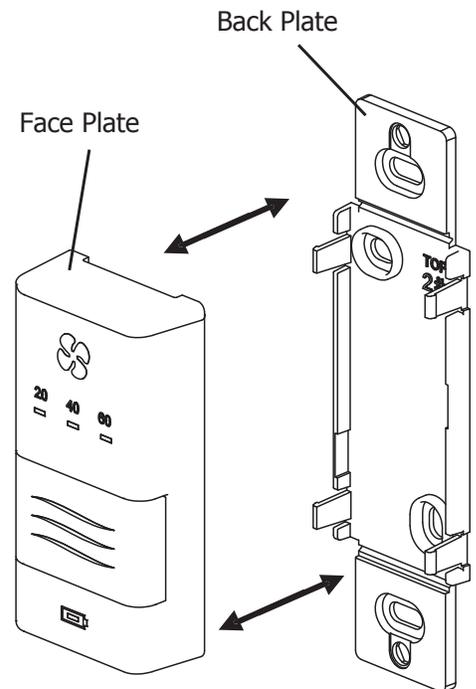
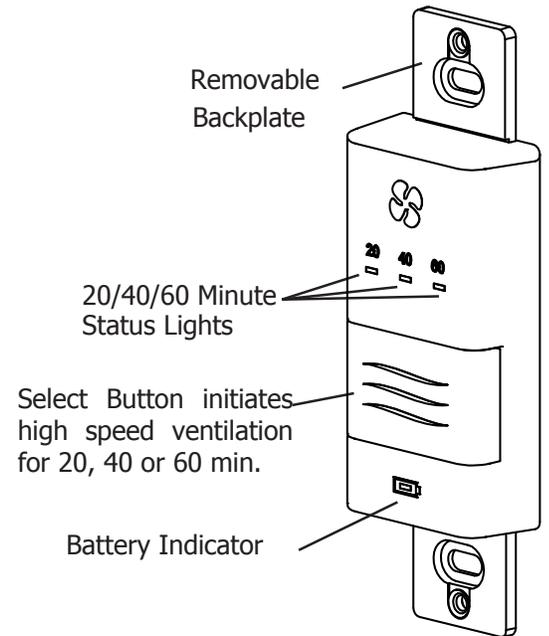
When paired to the main wall control, the Wireless Timer may be moved to a remote location in the home such as a bathroom.

Pressing the Select Button on the Timer will initiate high speed fan operation. The corresponding Status Light will illuminate under the number on the Timer to indicate either 20, 40 or 60 minutes of high speed fan operation. To cancel the call for high speed fan operation, press the Select Button until the Status Lights are no longer illuminated.

#### Replacing the Battery

When the battery on the timer needs to be replaced in the Wireless Timer, the red LED Battery Indicator will illuminate.

To replace the battery, first remove the Face Plate by pulling it off the wall. On the back of the Timer Face Plate the battery will be exposed. Replace the battery and re-attach the Face Plate to the Back Plate. Be careful not to damage the tabs on the Back Plate when re-attaching the Face Plate.



## Timers *(continued)*

### Lifebreath Wireless Repeater

#### 99-RX02

The Wireless Repeater is used to extend range of the 99-DET02 Wireless Timers. The Repeater plugs directly into a 120V power outlet. The 99-RX02 wirelessly connects to the main control as well as the 99-DET02 Timers.

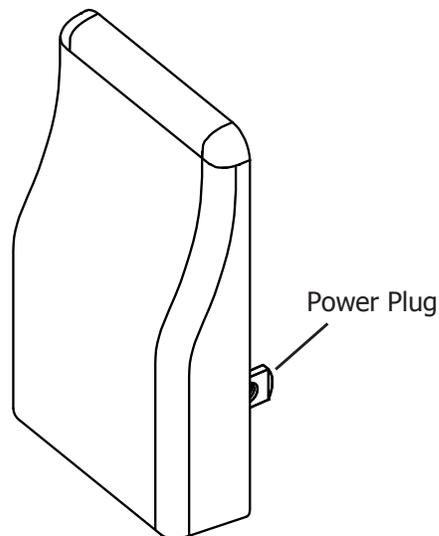
The 99-RX02 Repeater should be installed at the halfway point between the 99-DET02 Wireless Timer and the main wall control if timer is out of range.

#### Indicator LED's

When the Repeater is positioned correctly, a solid green LED will illuminate indicating the Repeater has a strong connection to the main wall control and may be moved farther away if necessary.

A flashing green LED means that the Repeater has a moderate connection to the main wall control. The Repeater will function properly at this position but should not be moved farther from the main wall control to ensure the connection is maintained.

A red LED indicates the Repeater is not connected to the main wall control and should be repositioned closer to the main wall control to re-establish the connection and function.

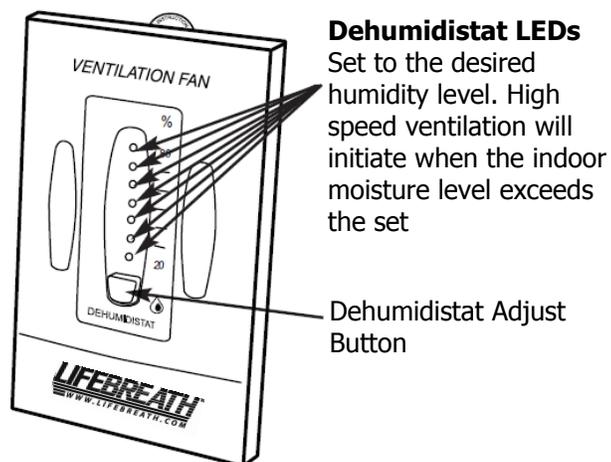


### Dehumidistat

#### Lifebreath Dehumidistat 99-DH01

Initiates high speed ventilation when the moisture level in the home exceeds the set point on the control. Once the humidity in the house is reduced, the HRV will revert back to its previous setting.

The Dehumidistat should be set to OFF for all seasons except the heating season. Refer to "How the Dehumidistat Works" in this manual before setting the Dehumidistat.



# Main Control Installation

The **Lifebreath Digital Control 99-DXPL02** is to be surface mounted onto a wall and the **Lifebreath Ventilation Controls 99-BC02, 99-BC03 and 99-BC04** may either be installed onto a flush mounted electrical switch box or surface mounted onto a wall. Only one master control should be installed to a ventilation system (the face plate on this illustration may not be exactly the same as yours).

## ! Attention

- Pay special attention not to damage the contact pins when removing and detaching the face plate (Figures B and C).

- For DXPL02 control**, remove the operating instructions card from the top of the control (Figure A).
- Separate the face plate from the back plate by firmly pulling apart (Figures B or C). Be careful not to damage face plate contact pins.
- For DXPL02 control**, place the back plate of the control in the desired location on the wall and pencil mark the wall with the right and left screw holes (Figure D).
- For BC02, BC03 or BC04 controls**, place the back plate of the control in the desired location on the wall and pencil mark the top and bottom screw holes (Figure E or F). For mounting the control without a Decora plate, break off top and bottom tabs and refer to Figure F for mounting.
- Remove the back plate from the wall and mark the center hole for the wires in the middle of the screw holes. Refer to Figure D, E or F for dimensions.
- Drill (two) 1/8 in holes for the screws and wall anchors (Figure D, E or F). For DX control, drill a 1 in hole in the center (Figure D). For BC controls, cut in a 3/4 in by 1 in oval hole in the wall (Figure E or F).
- Pull 3 wire 20 gauge (min.) 100 ft length (max.), through the opening in the wall.
- Connect red, green, and yellow to the wiring terminals located on the back plate (Figure D, E or F).
- Attach the back plate to the wall using two supplied screws and anchors.
- Attach the face plate to the back plate (Figure B or C). Note: Be careful to correctly align the face plate to avoid damaging the face plate contact pins.
- For DXPL02 control**, insert the operating instructions card into the control (Figure A).
- Connect the 3 wire 20 gauge (min.) 100 ft length (max.) to the terminal block located on ventilator (Red #3, Yellow #4 and Green #5).

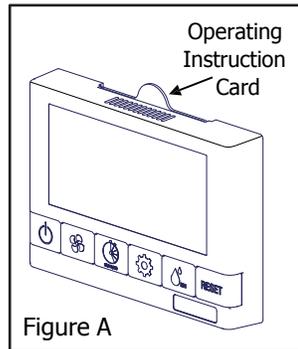


Figure A

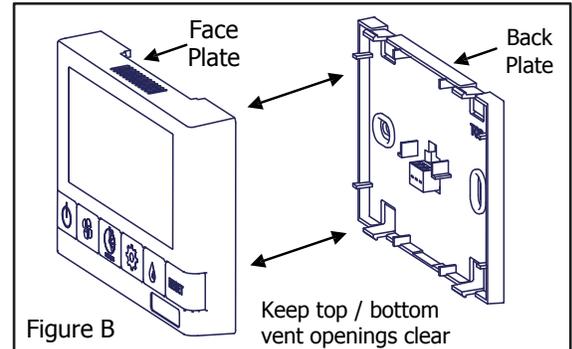


Figure B

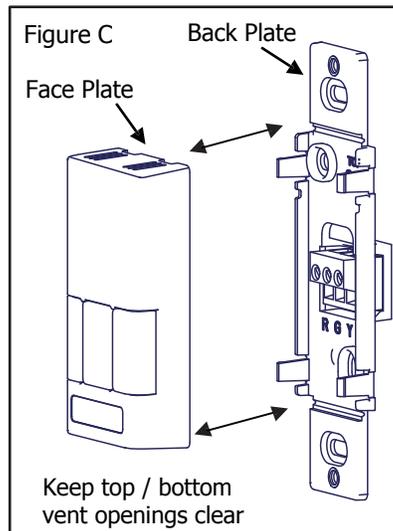


Figure C

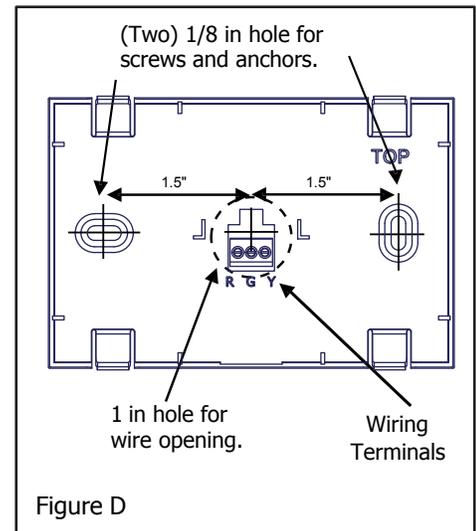


Figure D

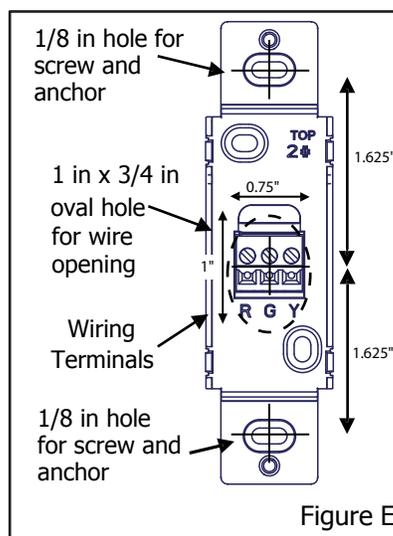


Figure E

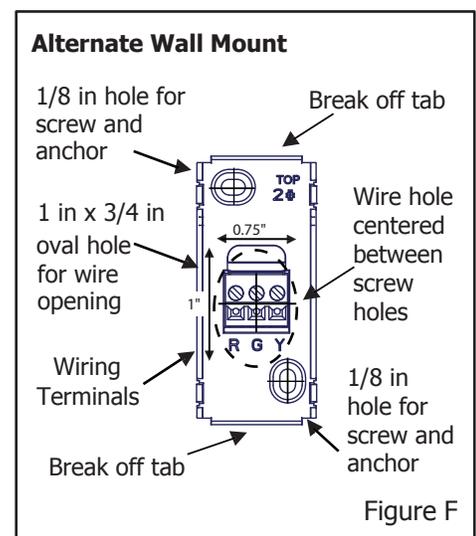


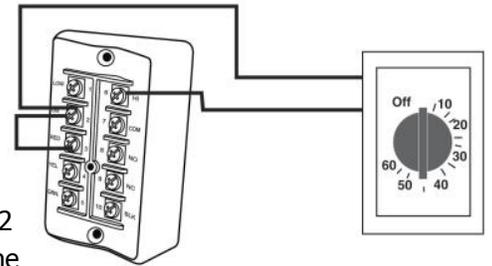
Figure F

## Mechanical Timers Installation 99-101

The Mechanical Timer is a 2 wire “dry contact” timer. A jumper wire must be connected between 2 (ON) and 3 (RED). Connect the 2 timer wires to ON and HI.

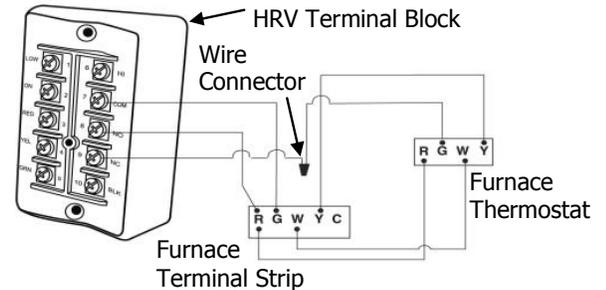
2 wire timers require a jumper wire between ON and RED on the terminal block

Connect the 2 wires from the timer to ON and HI on the terminal block.



## Interlocking the HRV to an Air Handler or Furnace Blower

Connecting the HRV as illustrated will ensure the air handler/furnace blower motor is operating whenever the HRV is venting. The HRV must be interlocked to the furnace/air handler with a simplified installation (return/return installation) and should be interlocked with a partially dedicated installation.



## Setting “Standby” When Using a Main Control

The HRV will be “fully-off” when the off position is selected on the

Main Control. Timers and/or other controls will not function when the HRV is in the off position.

The “fully-off” feature can be modified to “standby-off” by adding a jumper on the terminal block between 2 (ON) and 3 (RED). “Standby” can also be achieved by setting the main control to the ON position and selecting speed 0\*. Timers and/or additional controls will initiate high speed ventilation when activated.

\*Speed 0 is not available on all controls.

## Operating the HRV With Dry Contact Controls

A jumper must be in place between 2 (ON) and 3 (RED) on the terminal block to activate the HRV for timers and/or dry contact controls.

## Adding Dry Contact Controls

Low Speed: A jumper between 2 (ON) and 1 (LOW) initiates low speed ventilation.

High Speed: A jumper between 2 (ON) and 6 (HI) initiates high speed ventilation.

Dehumidistat: A dry contact for a Dehumidistat is connected between 2 (ON) and 10 (BLK)

## ⚠ Attention/ Caution

- Timers mount in standard electrical boxes
- Use 3 wire 20 gauge (min.) 100 ft length (max.) low voltage wire and multiple timers individually wired back to the unit.

### Caution:

- Consideration should be given to competing airflows when connecting the HRV in conjunction with an air handler/furnace blower system.
- Building codes in some areas require “fully-off” functionality. Check with your local building authority before modifying the unit to “standby-off”. Unintentional operation of the HRV by the end user may occur if the unit is modified from “fully-off” to “standby-off”.

# Installation and Operation of Wireless 20/40/60 Minute Timer: 99-DET02

The Timers may be installed onto a flush mounted electrical switch box or it may be surface mounted onto a wall. Multiple Timers may be installed in a ventilation system. To increase the range of a wireless Timer, a RX02 Repeater should be used.

## Pairing:

1. Turn on the main wall control by pressing the ON/OFF button  and remove the battery from Timer.
2. **DET02 with DXPL Series Controls:** Press the left and right buttons simultaneously on the main wall control ( and  RESET buttons). The screen will go blank and the wireless symbol  will appear flashing on the bottom right of the display. This indicates that the main control is now in pairing mode. (Figure D)
3. **DET02 with BC Series Controls:** Press the left and right buttons simultaneously on the main wall control ( and either  or  buttons, depending on the main control). The bottom row of 3 LED's will begin flashing. This indicates that the main control is now in pairing mode. (Figure E)
4. Keep the Timer within 16" of the main wall control when pairing.
5. Install the battery in the DET02 Timer. All four lights on the Timer will immediately flash 5 times, then only the red battery light will remain on for approximately 12 seconds after which the "40" light flashes the rev code. 20, 40, 60 lights will flash until paired or will stop if not paired within 12 seconds. If pairing was not successful you now must return to step 1 to restart the pairing process.
6. Press the  button on the main wall control to exit pairing mode when Timers have been successfully paired.

To pair additional DET02 Timers with the same wall control, or if pairing was not successful, repeat steps 1-6.

When paired, the DET02 Timers can be moved and installed elsewhere. Estimated range of the Timer is 40' with no obstructions. A RX02 Repeater may be installed to increase the range of the Timers.

Test if pairing was successful by pressing the Select Button and listen for the HRV / ERV to initiate HIGH fan speed Ventilation.

## Un-pairing:

1. Remove the battery from the back of the DET02 Timer
2. Press and hold the Select Button on the front of the Timer
3. While holding the Select Button, reinsert the battery in the Timer. Continue holding the select button until the LED under "40" begins flashing. The DET02 Timer will now be unpaired with the main wall control.

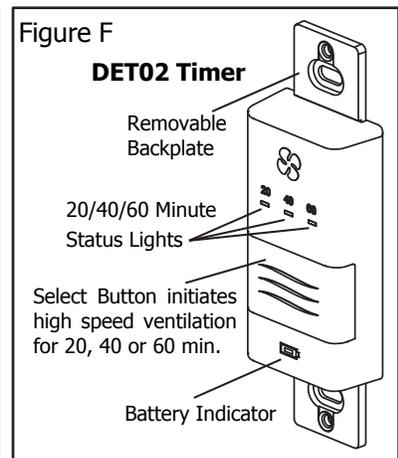
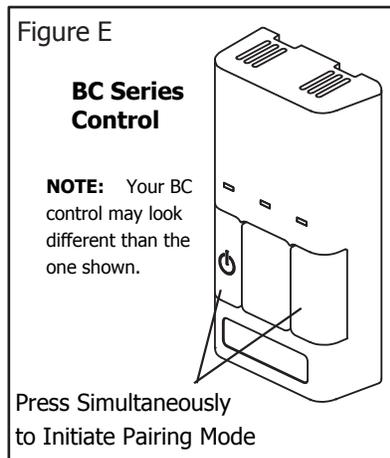
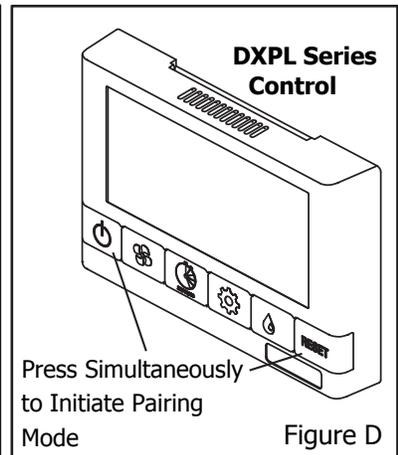
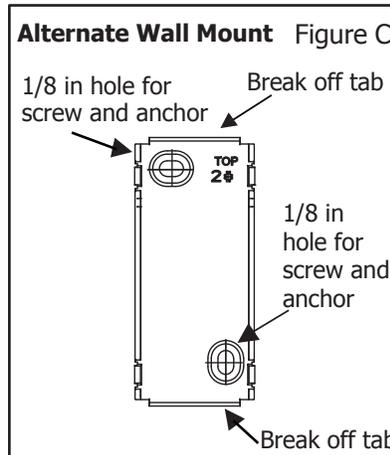
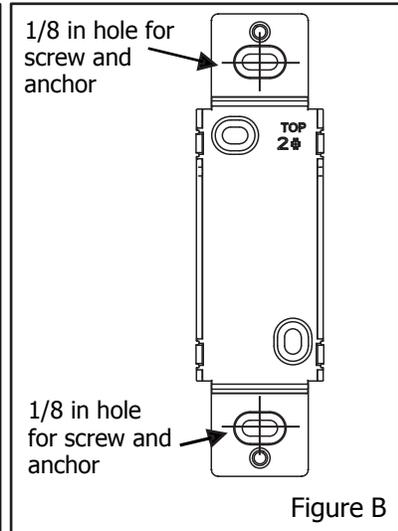
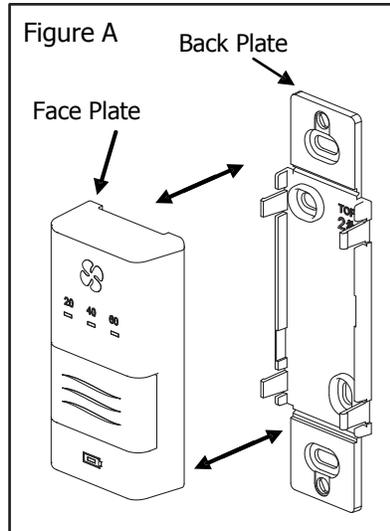
## Installation:

1. Separate the face plate from the back plate by firmly pulling apart (Figure A).
2. For mounting the control without a Decora plate, break off top and bottom tabs and refer to Figure C for mounting.
3. Place the back plate of the control in the desired location on the wall and pencil mark the top and bottom screw holes (Figure B or C). Drill two 1/8" holes.
4. Attach the back plate to the wall using the 2 supplied screws and anchors.
5. Attach the face plate to the back plate (Figure A).



## NOTE

The wireless Timers and Repeaters must be matched to the main wall control of the HRV / ERV. This process is called "Pairing". Multiple Timers and Repeaters can be paired to a single wall control.



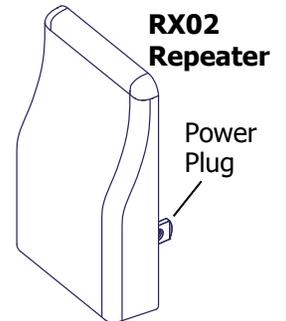
## Installation and Pairing of Repeaters: 99-RX02

The RX02 Repeaters are to be plugged directly into a 120V power outlet

1. Turn on the main wall control by pressing the ON/OFF button .
2. **RX02 with DXPL Series Controls:** Press the left and right buttons simultaneously on the main wall control ( and RESET buttons). The screen will go blank and the wireless symbol  will appear flashing on the bottom right of the display. This indicates that the main control is now in pairing mode. **RX02 with BC Series Controls:** Press the left and right buttons simultaneously on the main wall control ( and either  or  buttons, depending on the main control). The bottom row of 3 LED's will begin flashing. This indicates that the main control is now in pairing mode.
3. The RX02 Repeater must be powered within 16" of the main wall control for pairing. If an outlet is not available an extension cord should be used to power the repeater initially for pairing.
4. Plug the RX02 Repeater into the power outlet. The green light will flash after approximately 12 seconds indicating that the repeater is paired with the main wall control.
5. Press the ON/OFF button on the main wall control to exit pairing mode and the Repeater may now be unplugged and moved to its permanent location.

To pair additional RX02 Repeaters with the same wall control, repeat steps 1-5 until all Repeaters have been paired.

When installed in its permanent location, the green LED will remain solid to indicate the best location and the Repeater can be moved farther if required. The green LED will flash to indicate it is in a good location. A red light indicates the Repeater is out of range and needs to be moved closer to the main wall control.

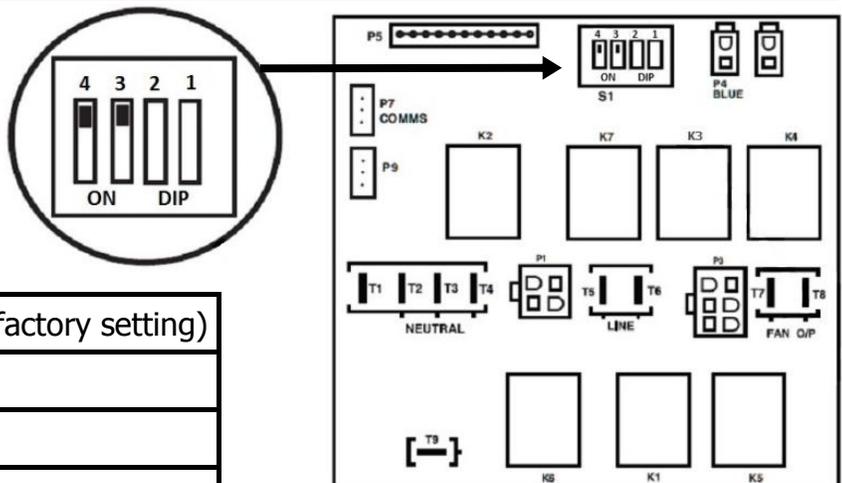


## Installer Selectable High Speed Settings

The circuit board on this unit has adjustable DIP switches for the selection of speeds Hi1, Hi2 or Hi3. The factory setting is Hi3. Refer to the specification page found online at; [www.lifebreath.com](http://www.lifebreath.com) for the airflow rates on Hi1, Hi2 and Hi3. **Note:** Low speed is not adjustable.

Description	Switch 1	Switch 2	Switch 3	Switch 4
Hi 3 (factory default)	Factory Setting "ON"	Leave on factory setting	ON	ON
Hi 2	Factory Setting "ON"	Leave on factory setting	OFF	ON
Hi1	Factory Setting "ON"	Leave on factory setting	ON	OFF

Illustration of DIP switches 3 and 4 in the ON position (factory setting).



### Functionality of DIP Switches 1 and 2

DIP 1 ON	R2000 defrost cycle disabled (factory setting)
DIP 1 OFF	R2000 defrost cycle enabled
DIP 2 ON	recirculate defrost models
DIP 2 OFF	damper defrost and fan defrost models

## Maintenance Routine

### 1. Inspect Exterior Hoods at Least Once a Month

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).

### 2. Clean Air Filters (Clean Four times a Year)

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

- a) Open access door and slide core out.
- b) Remove filter clips if present.
- c) Once clips are removed, filters can be taken off the core to be rinsed with water or a combination of mild soap and water. Do not clean in the dishwasher.
- d) To re-assemble, place clean filter(s) (wet or dry) back into their positions against the core and return clips to their original positions.
- e) Slide core back into its original position.

### 3. Clean Core Twice a Year

- a) Open access door.
- b) Carefully grip ends of core and pull evenly outward. Core may be snug, but will slide out of the cabinet.
- c) Once removed from the cabinet remove filters.
- d) Install the clean filters.
- e) Install clean core in the cabinet.

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

#### To Install the Clean Core:

- a) To reinstall the core first position the bottom of the core on the bottom support in the cabinet.
- b) Carefully align the core with the other 3 supports and fully insert the core.
- c) Push on sides of core, do not push on the center.

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



## Attention/Warning

- Do not use cleaning solutions for the HRV core
- Soak and rinse the HRV core in warm soapy water
- Do not use bleach or chlorine
- Do not use a pressure washer on the HRV core
- Do not place the HRV core in a dishwasher

#### Warning:

- Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power unit off at disconnect switch(es). Unit may have multiple power supplies.
- Blockage of hoods may cause an imbalance

## **Maintenance Routine Continued**

### **4. Motors — Maintenance Free**

### **5. Drain (condensate) Line - Clean Once a Year**

Inspect drain line, drain spout and "P" trap for blockage, mold or kinks. Flush with warm soapy water and replace if worn, bent or unable to clean.

### **6. Clean Duct Work if Required**

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

### **7. General Maintenance - Twice a Year**

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

## ENGINEERING DATA

### THERMALLY CONDUCTIVE, PATENTED ALUMINUM CORE

The cross-flow heat recovery core transfers heat between the two airstreams. It is easily removed for cleaning or service.

### MOTORS AND BLOWERS

Each air stream has one centrifugal blower driven by a common PSC motor. 5 speed fan operation.

### FILTERS

Washable air filters in exhaust and supply air streams.

### MOUNTING THE HRV

Four threaded inserts at corners of the cabinet designed to accept the "S" hooks and hanging straps supplied with the unit.

### DEFROST

Recirculating damper defrost system.

### CASE

Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Drain connections 2 - 1/2" (12 mm) OD. Balancing ports are located in the door.

### ELECTRONICS

The optional controls can be wall mounted in a central location of the home. 3 wire 20 gauge (min.) 100 ft length (max.).

### CONTROL OPTIONS

#### 99-DXPL02 Lifebreath Digital Control

- 5 speed operation on each mode
- Humidity control through adjustable Dehumidistat
- 5 user selectable operational modes: Continuous Ventilation, Continuous Recirculation, 20 ON/40 OFF, 10 ON/50 OFF, 20 ON/40 Recirculation
- 20/40/60 min. High speed override button
- Compatible with 99-DET02 Wireless Timers
- 3 wire connection

#### 99-BC02 Lifebreath Ventilation Control

- 2 speed fan setting (Low/High)
- Humidity control through adjustable Dehumidistat
- Compatible with 99-DET02 Wireless Timers
- 3 wire connection

#### 99-BC03 Lifebreath Ventilation Control

- Continuous Low fan speed
- Humidity control through adjustable Dehumidistat
- 3 modes of operation: Ventilation, Recirculation, 20/40
- Compatible with 99-DET02 Wireless Timers
- 3 wire connection

#### 99-BC04 Lifebreath Ventilation Control

- 2 speed fan setting (Low/High)
- 2 modes of operation: Ventilation, 20/40
- Compatible with 99-DET02 Wireless Timers
- 3 wire connection

#### 99-DH01 Lifebreath Dehumidistat

- Humidity control through adjustable Dehumidistat
- 3 wire connection

### TIMER OPTIONS

**99-DET01 Lifebreath 20/40/60 Minute Timer** - Initiates High speed Ventilation for 20, 40 or 60 minutes. 3 wire connection.

**99-DET02 Lifebreath WIRELESS 20/40/60 Minute Timer** - Initiates High speed Ventilation for 20, 40 or 60 minutes. Wirelessly connects to main control for ease of installation. 40' approximate range.

**99-RX02 Lifebreath WIRELESS Repeater** - Used to extend range of 99-DET02 Wireless Timers. Plugs into 120V power outlet. Wirelessly connects to main control and 99-DET02. Install at halfway point between timer and main wall control if timer is out of range.

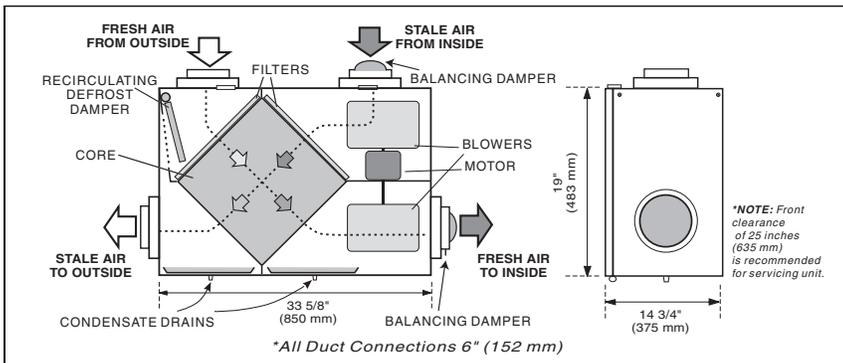
### ACCESSORY OPTIONS

**99-163 Duct Heater w/Electronic SCR Thermostat** - 1 kW, 6 in (152 mm)

**99-186 Weatherhoods** - Two 6 in (152 mm)

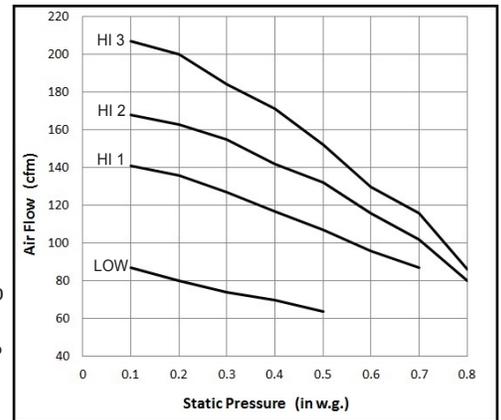
### DIMENSIONS RNC200

**WEIGHT** 71 lbs (32.5 kg) **SHIPPING WEIGHT** 73 lbs (33.2 kg)



<b>Performance</b> (HVI certified)		
Net supply air flow in cfm (L/s) against external static pressure		
<b>E.S.P</b>		
(external static pressure)		[cfm (L/s)]
@ 0.1" (25 Pa)		207 (97)
@ 0.2" (50 Pa)		200 (94)
@ 0.3" (75 Pa)		184 (87)
@ 0.4" (100 Pa)		171 (80)
@ 0.5" (125 Pa)		152 (71)
@ 0.6" (150 Pa)		130 (61)
@ 0.7" (175 Pa)		116 (55)
@ 0.8" (200 Pa)		86 (40)
Max. Temperature Recovery		74%
Sensible Effectiveness		
@ 66 cfm (31 L/s)	32°F (0°C)	74%
*Sensible Efficiency		
@ 66 cfm (31 L/s)	32°F (0°C)	64%
*Sensible Efficiency		
@ 109 cfm (51 L/s)	-13°F (-25°C)	62%
VAC @ 60HZ		120
WATTS / Low speed.		87
WATTS / High speed		164
Amp rating		1.4

\*Sensible Efficiency - thermal \*\*Latent Efficiency - moisture  
 Note: Effectiveness - based on temp. differential between the 2 airstreams  
 Efficiency - takes into account all power inputs



**WARRANTY**

Units carry a lifetime warranty on the HRV core and a 5 year replacement parts warranty.

NOTE: All specifications are subject to change without notice.

All units conform to CSA and UL standards

Date: \_\_\_\_\_

Contractor: \_\_\_\_\_

Tag: \_\_\_\_\_ Qty: \_\_\_\_\_

Supplier: \_\_\_\_\_

Project: \_\_\_\_\_

Quote #: \_\_\_\_\_

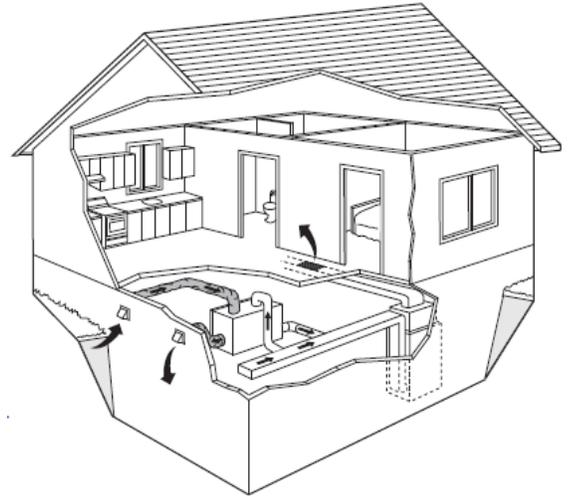
Engineer: \_\_\_\_\_

Submitted By: \_\_\_\_\_

## Simplified Installation (Return/Return Method)

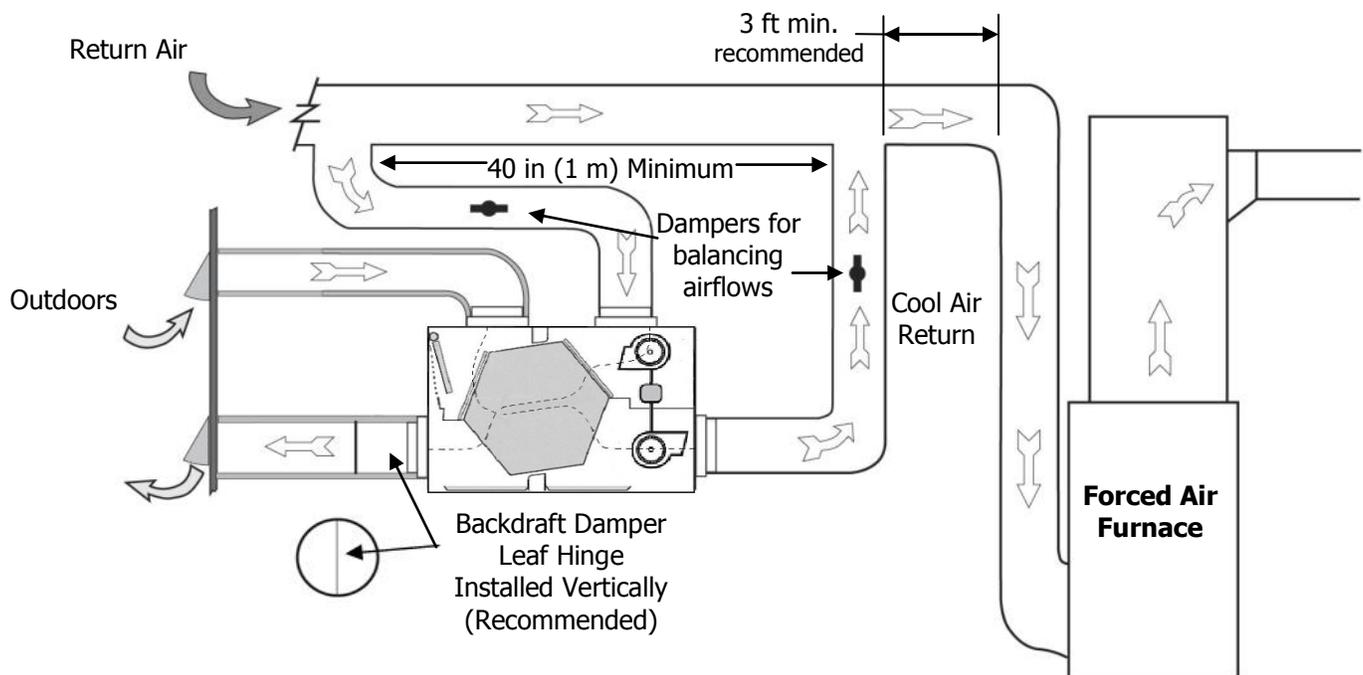
### Installation Notes

- The HRV must be balanced.
- Unit should be balanced on high speed with the furnace blower on.
- It is mandatory that the furnace blower run continuously or HRV operation be interlocked with the furnace blower.
- The duct configuration may change depending on the HRV model.
- A backdraft damper is recommended in the exhaust air duct to prevent outdoor air from entering the unit.
- The airflow must be confirmed on site using the balancing procedures found in this guide.



### Spring-Loaded Backdraft Damper (Recommended)

Install the backdraft damper with the leaf hinge vertical. The damper is installed on the "Stale Air to Outside Collar"



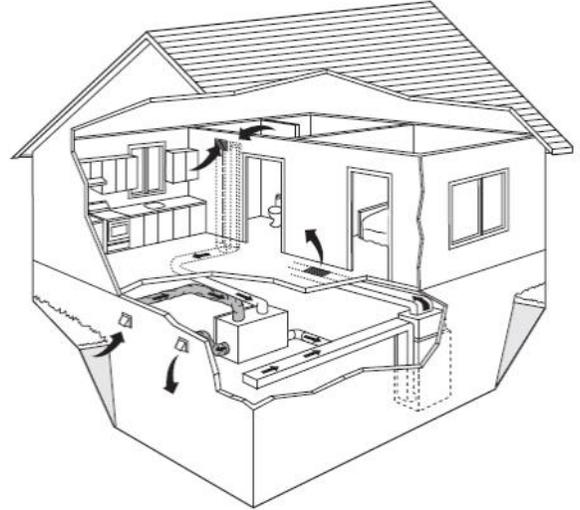
## ! Attention/Warning

- Applications such as greenhouses, atriums, swimming pools, saunas, etc. have unique ventilation requirements which should be addressed with an isolated ventilation system.
- Weatherhood arrangement is for drawing purposes only. 6 ft (2 m) minimum separation is recommended with 18 in (460 mm) above ground.
- Check local codes/authority having jurisdiction for acceptance.
- Backdraft dampers are recommended for the stale air to outside air duct. This damper prevents outdoor air from entering the HRV during the operation of the furnace/air handler while the HRV is in standby, off, or recirculating.

## Partially Dedicated System

### Installation Notes

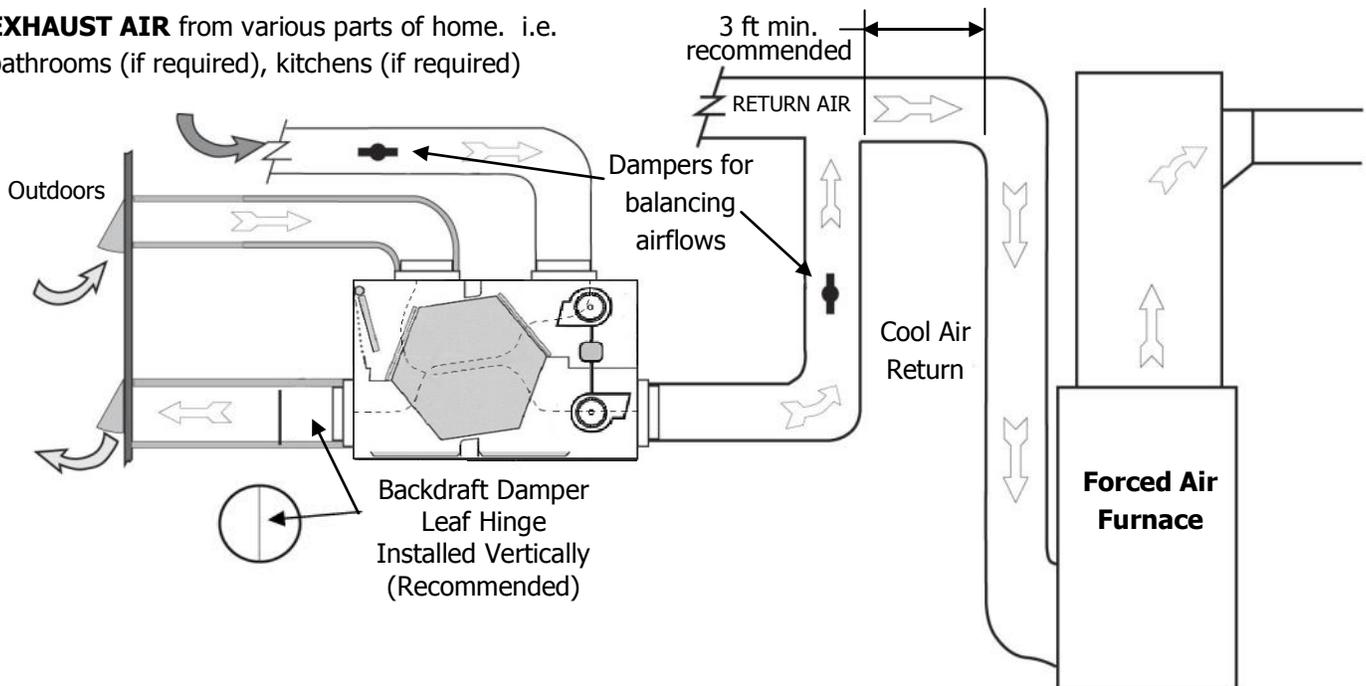
- The HRV must be balanced.
- Unit should be balanced on high speed with the furnace blower on.
- It is recommended that the furnace blower run continuously or HRV operation be interlocked with the furnace blower. Refer to building code.
- The duct configuration may change depending on the HRV model.
- A backdraft damper is recommended in the exhaust air duct to prevent outdoor air from entering the unit.
- The airflow must be confirmed on site using the balancing procedures found in this guide.



### Spring-Loaded Backdraft Damper (Recommended)

Install the Backdraft Damper with the leaf hinge vertical. The damper is installed on the "Stale Air to Outside Collar"

**EXHAUST AIR** from various parts of home. i.e. bathrooms (if required), kitchens (if required)



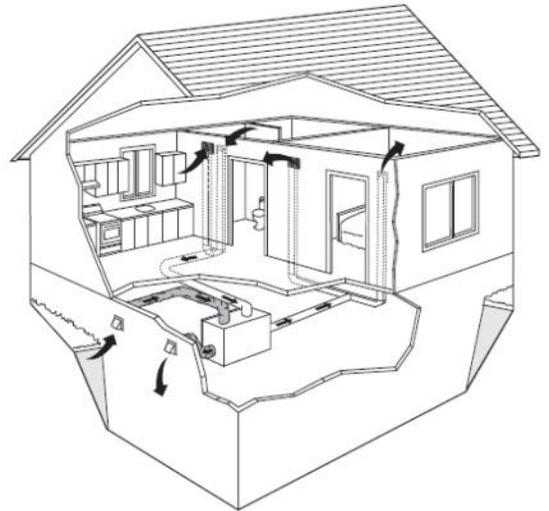
## ⚠ Attention/Warning

- Applications such as greenhouses, atriums, swimming pools, saunas, etc. have unique ventilation requirements which should be addressed with an isolated ventilation system.
- Weatherhood arrangement is for drawing purposes only. 6 ft (2 m) minimum separation is recommended with 18 in (460 mm) above ground.
- Check local codes/authority having jurisdiction for acceptance.
- Backdraft dampers are recommended for the stale air to outside air duct. This damper prevents outdoor air from entering the HRV during the operation of the furnace/air handler while the HRV is in standby, off, or recirculating.

## Fully Dedicated System

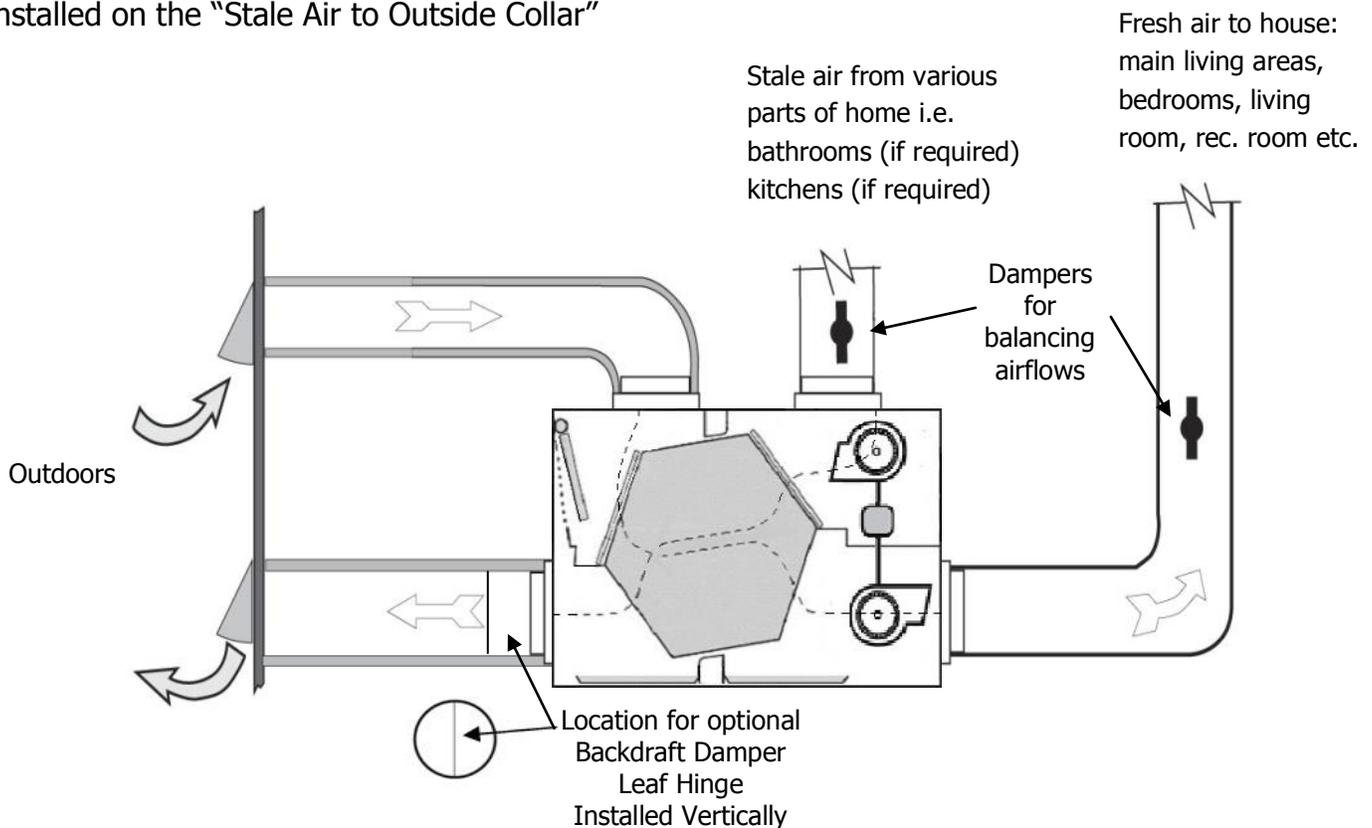
### Installation Notes

- The HRV must be balanced.
- When balancing, all external exhaust systems should be turned off (i.e. range hood, dryer exhaust, bathroom vents).
- All exhausting appliances should have their own make-up air, as this is not an intended use of the HRV system.
- The duct configuration may change depending on the HRV model.
- The airflow must be confirmed on site using the balancing procedures found in this guide.



### Spring-Loaded Backdraft Damper (Recommended)

There is a location for an optional Backdraft Damper with the leaf hinge vertical. The damper is installed on the "Stale Air to Outside Collar"



## Attention

- Applications such as greenhouses, atriums, swimming pools, saunas, etc. have unique ventilation requirements which should be addressed with an isolated ventilation system.
- Weatherhood arrangement is for drawing purposes only. 6 ft (2 m) minimum separation is recommended with 18 in (460 mm) above ground.
- Check local codes/authority having jurisdiction for acceptance.

## Installation

### Location

Install the unit in a heated space that provides convenient space for service access. A typical location is in either a mechanical room or an area close to the outside wall within close proximity to where the weatherhoods are mounted. If a basement area is inconvenient or non-existent, install the unit in a utility or laundry room.

Attic installations are not recommended due to:

- A) the complexity of work to install
- B) freezing conditions in the attic
- C) difficulty of access for servicing and cleaning

Leave sufficient clearance at the front of the access door for servicing the air filters and core. The recommended clearance is a minimum of 25" (635 mm) for opening and closing the door. Airira provides four straps for hanging the unit from the basement floor joists.



## WARNING

**Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer or service agency.**



## CAUTION

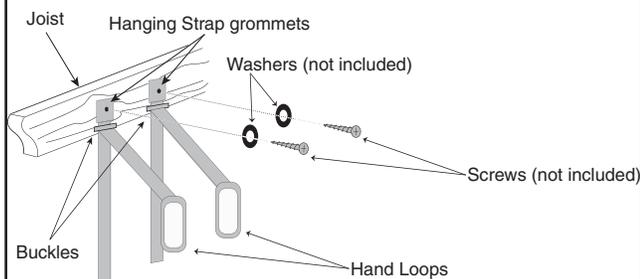
**Unit must be installed level to ensure proper condensate drainage. Due to the broad range of installation and operational conditions, consider the possibility of condensation forming on either the unit or connecting ducting. Objects below the installation may be exposed to condensate.**

### Suspend the Unit with the Adjustable Hanging Straps

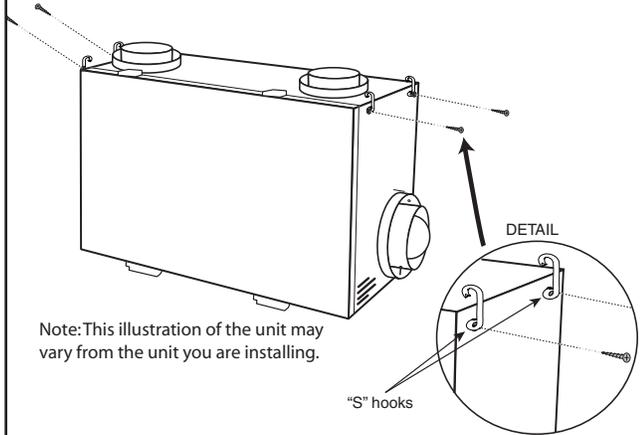
Use 4 screws and 4 washers (not included) to attach the hanging straps to the floor joists. The washer must be wider than the eyelet of the grommet on the hanging strap.

By design, the adjustable hanging straps reduce the possibility of noise, resonance and harmonics.

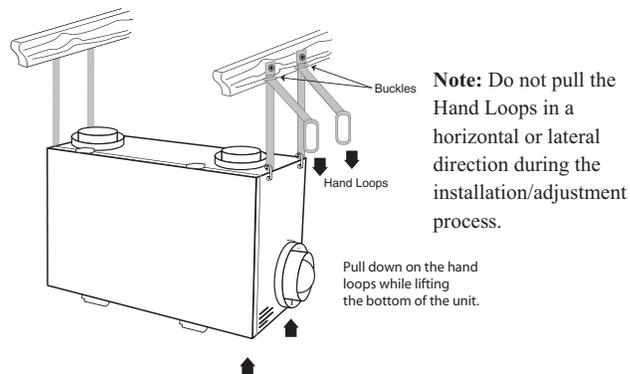
**STEP 1.** Insert the screws and washers (not included) through the Hanging Strap grommets and fasten to the joists.



**STEP 2.** Unscrew the 4 machine screws located on the upper side of the unit. Attach the "S" hooks and reinsert the machine screws.

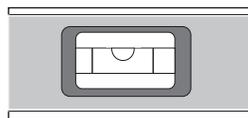


**STEP 3.** Hook the bottom grommets of the straps through the "S" hooks. Pull down vertically on the hand loops while lifting up the bottom of the cabinet. Repeat at opposite end of the unit.

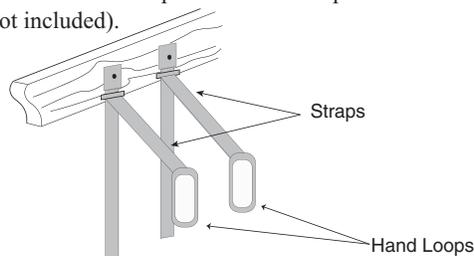


**STEP 4.** Level the unit from left to right and front to back.

- Adjust the unit down by lifting up on the buckle.
- Adjust the unit up by pulling down vertically on the Hand Loops while lifting up the bottom of the cabinet.



**STEP 5.** Fold the hand loops and excess strap and secure with a nylon tie (not included).



## Drain Connection

### Drain Connection

The HRV may produce some condensation during a defrost cycle. This water should flow into a nearby drain, or be taken away by a condensate pump.

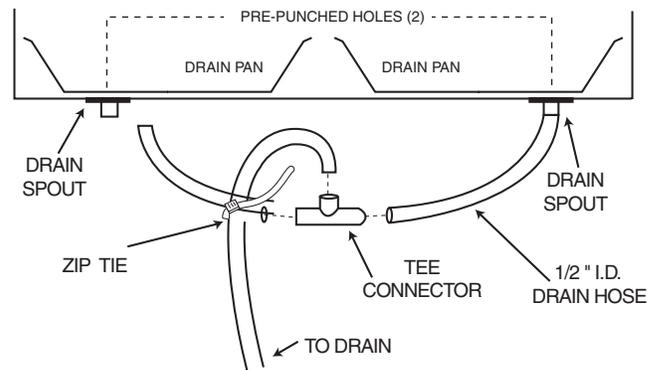
## ⚠ CAUTION

The HRV and all condensate lines must be installed in a space where the temperature is maintained above the freezing point or freeze protection must be provided.

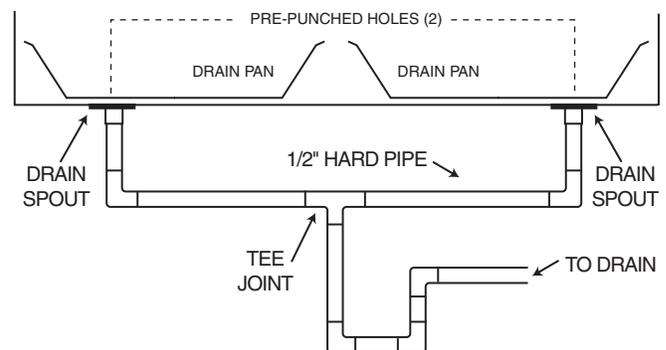
The HRV cabinet has prepunched holes for the drain (see below). Insert the drain spout through the hole in the drain pan. Be sure to install the "O ring" which seals each spout to the pan. **HAND TIGHTEN** the washer and lock nut which hold the drain spout in place.

Construct a P-Trap using the plastic tee connector. Cut two lengths of 1/2" drain hose (not included) and connect the other ends to the two drain spouts. Position the "T" fitting to point upward and connect the drain line. Tape or fasten base to avoid any kinks. Pour a cup of water into the drain pan of the HRV after the drain connection is complete. This creates a water seal which will prevent odors from being drawn up the hose and into the fresh air supply of the HRV.

### DRAIN HOSE PLUMBING



### HARD PIPE PLUMBING



*Note: Secondary drain pan may be required to protect from condensate leakage.*

## ⚠ CAUTION

Drain trap and tubing **MUST** be below bottom of door with 1/4" per foot downwards slope away from unit.

## Grilles

Adjustable grilles should be used to balance the flow rates into and out of various rooms. The grilles should not be adjusted after balancing the unit.

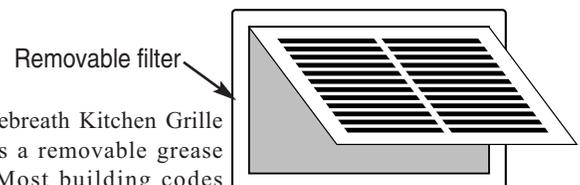
Grilles or diffusers should be positioned high on the wall or in the ceiling. Kitchen Exhaust grilles must never be connected to the range hood. They should be installed at least 4 feet (1.2 m) horizontally away from the stove.

Field supplied balancing dampers should be installed external to the unit to balance the amount of stale air being exhausted with the amount of fresh air being brought into the house. Refer to Air flow Balancing section.

## ⚠ CAUTION

Do not mount exhaust grille within 4' (1.2m) (horizontally) of a stove to prevent grease from entering the unit.

### The Lifebreath Kitchen Grille

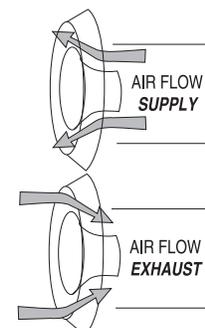


The Lifebreath Kitchen Grille includes a removable grease filter. Most building codes require that kitchen grilles be equipped with washable filters.

### The Lifebreath Techgrille

The TECHGRILLE is a round, fully adjustable grille, which provides superior, quiet air distribution.

- 4" (100 mm) Part No. 99-EAG4
- 5" (125 mm) Part No. 99-EAG5
- 6" (150 mm) Part No. 99-EAG6
- 8" (200 mm) Part No. 99-EAG8



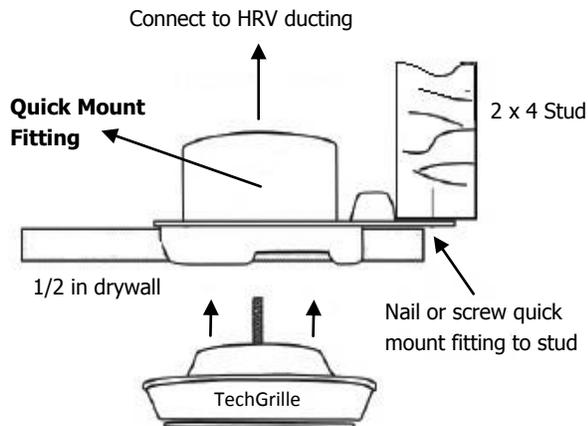
## Grille Fittings

### Quick Mount Fitting

(part # 99-QM6)

Use this rough-in fitting before the drywall is installed.

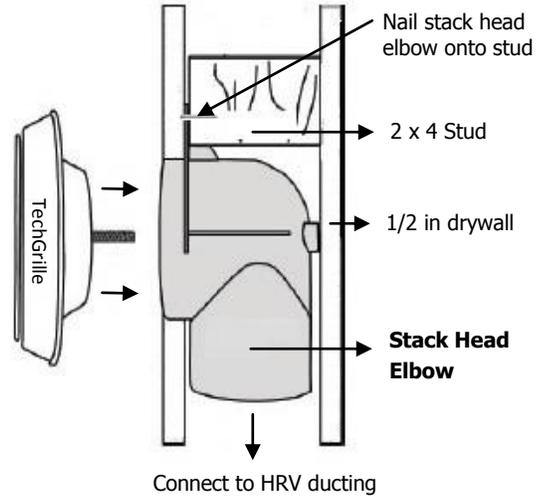
- Nail fitting onto the stud.
- Available size: 6 in.



### Stack Head Elbow (part # 99-WF4 / 99WF6)

Use this rough-in fitting before the drywall is installed. This fitting is ideal for running ducting through 2 x 4 (min.) studded walls.

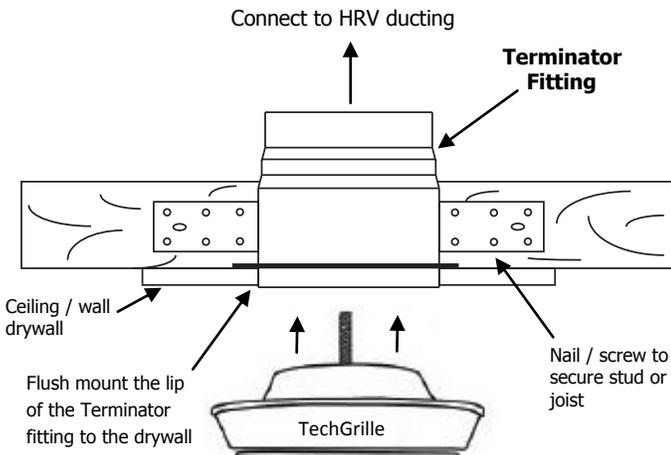
- Nail to stud.
- Available sizes are 4 in and 6 in.



### Terminator Fitting (part # 99-TM 4/5/6)

Use this rough-in fitting before the drywall is installed.

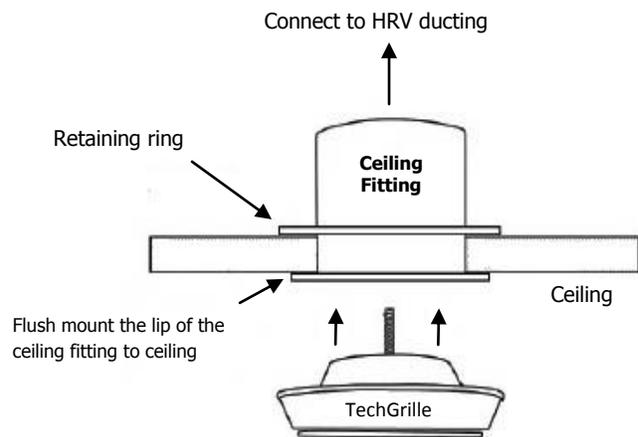
- Nail or screw fitting onto the stud or joist.
- Available sizes: 4 in, 5 in and 6 in.
- Use this rough-in fitting before the drywall is installed.
- Adapts to ridged and flex ducting
- Strong attachment for grilles, either vertically or horizontally



### Suspended Ceiling Fitting (part # 99-CF6)

Use this fitting for ceiling tiles or finished/installed drywall.

- Cut a hole through the ceiling tile, insert the fitting and use the retaining ring to hold the fitting in place.
- For finished/installed drywall, use caulking around the lip if you do not have access to attach the retaining ring.
- Available size: 6 in.



## ⚠ Caution

- Do not mount exhaust grille within 4 ft (1.2 m) (horizontally) of a stove to prevent grease from entering the unit.

## Weatherhood Installation

### Installing the Ducting from the Weatherhoods to the HRV

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

To minimize air flow restriction, the flexible insulated duct that connects the two outside weatherhoods to the HRV should be stretched tightly and be as short as possible.

Twisting or folding the duct will severely restrict air flow.

Hard (rigid) ducting which has been sealed and insulated should be used for runs over 10' (3.3 m). Refer to your building code.

### Intake Weatherhood Requirements

- Should be located upstream (if there are prevailing winds) from the exhaust outlet
- At least 6' (2 m) from the exhaust weatherhood
- At least 6' (2 m) away from dryer vents and furnace exhaust (medium or high efficiency furnaces)
- A minimum of at least 6' (2 m) from driveways, oil fill pipes, gas meters, or garbage containers
- At least 18" (460 mm) above the ground, or above the depth of expected snow accumulation
- At least 3' (1 m) from the corner of the building
- Do not locate in a garage, attic or crawl space

### Exhaust Weatherhood Requirements

- At least 6' (2 m) from the ventilation air intake
- At least 18" (460 mm) above ground or above the depth of expected snow accumulation
- At least 3' (1 m) 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 unheated space

When installing the weatherhood, its outside perimeter **must** be sealed with exterior caulking.

### Lifebreath Weatherhoods

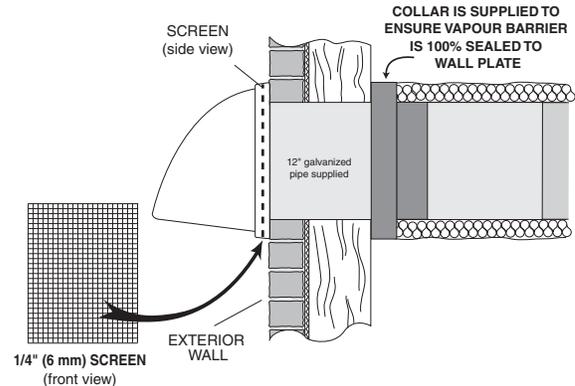
Fixed covered weatherhoods have a built-in bird screen with a 1/4" (6mm) mesh to prevent foreign objects from entering the ductwork.

5" (125 mm) Part No. 99-185

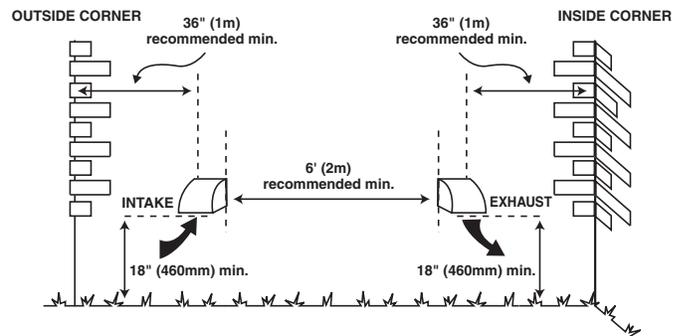
6" (150 mm) Part No. 99-186

7" (200 mm) Part No. 99-187

### Weatherhood Installation



1. Thermal Collar slides over galvanized sleeve of Weatherhood.
2. Fasten Thermal Collar to Belt.
3. Slide the Insulated Flexible Ducting over the Weatherhood's galvanized sleeve and fasten it to the Thermal Collar.
4. Hood is hinged to allow for easy access for cleaning of bird screen.



## ⚠ ATTENTION

Local codes may require greater distances for exhaust and intake.

## ⚠ CAUTION

Weatherhood arrangement - requires a minimum of 6' (2m) separation and a minimum of 18" (460mm) above the ground, or above the depth of expected snow accumulation.

## Balancing the Airflows

Balancing the airflows is critical to ensuring that the amount of air introduced from the outside of the building equals the amount of air exhausted to the outside of the building. If these two airflows are not properly balanced, the following issues may occur:

- A positive or negative pressure in the house
- HRV not operate at its maximum efficiency
- The unit not defrost properly

### Airflow Measuring Gauge

A digital manometer is a suitable instrument for the balancing of airflows.

#### **99-BAL-KIT Airflow Balancing Kit**

Kit includes a digital manometer, pitot tube, hose and tool bag.

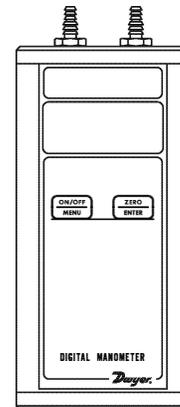


Figure A  
Digital Manometer

### Gauge Attachments

When sampling an airflow, various attachments are available for use on a digital manometer. Consult with your Lifebreath distributor for available options such as a pitot tube, flow measuring station, and an airflow measuring probe.

Figure B illustrates a digital manometer with a pitot tube attachment. This combination will measure the system air velocity pressure accurately, regardless of the duct size or shape (either round or rectangular).

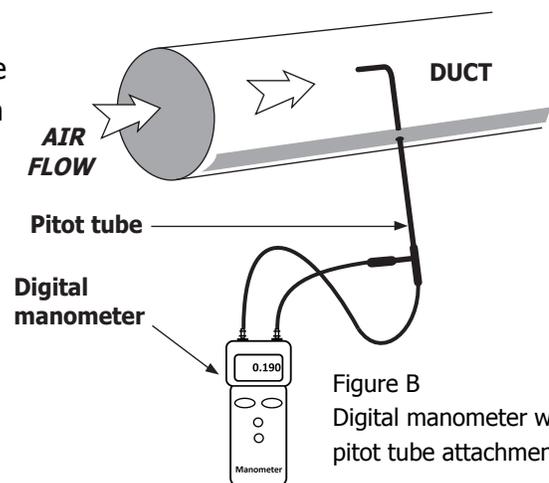


Figure B  
Digital manometer with a pitot tube attachment

## Attention

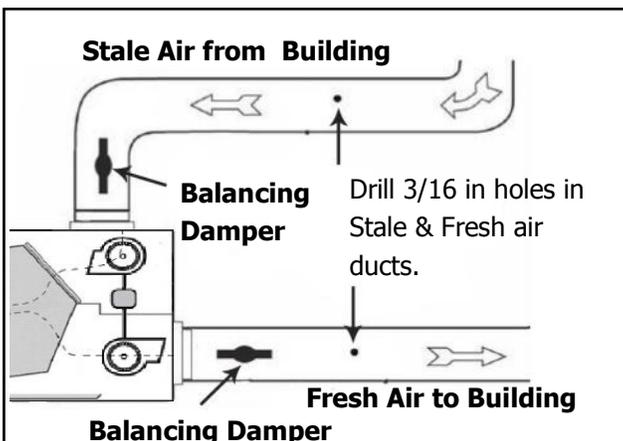
- Continuous, excessive, positive pressure may drive moist indoor air into the external walls of the building. Once inside the external walls, moist air may condense (in cold weather) and degrade structural components or cause locks to freeze.
- Continuous, excessive, negative pressure may have several undesirable effects. In some geographic locations, soil gases such as methane and radon gas may be drawn into the home through basement or ground contact areas, and may also cause the backdrafting of vented combustion equipment.

## Balancing Preparation

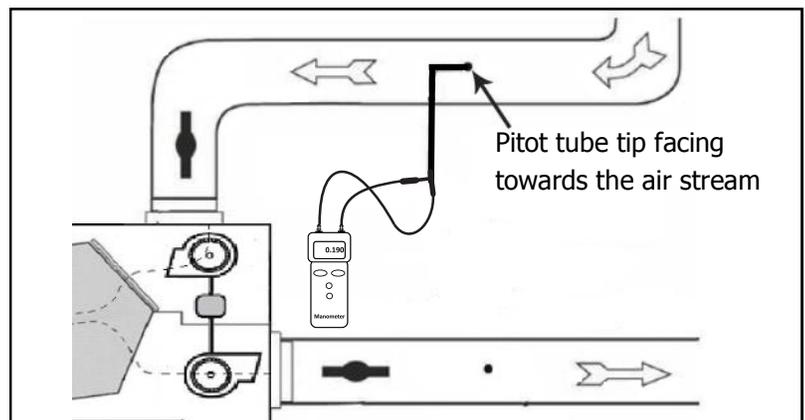
Prior to performing the air balancing procedure, perform the following steps:

- Seal the ductwork.
- Confirm the installation and proper operation of all the components of the HRV.
- Fully open the balancing dampers.
- Turn off all household exhaust devices (range hood, clothes dryer, bathroom fans).
- Set the HRV at high speed.
- Prior to balancing the unit, first adjust airflows in the branch lines to specific areas of the house.
- If the outdoor temperature is below 0°C (32°F), ensure the unit is not running in defrost.
- If the system is a simplified or partially dedicated installation, operate the furnace/air handler at high speed.

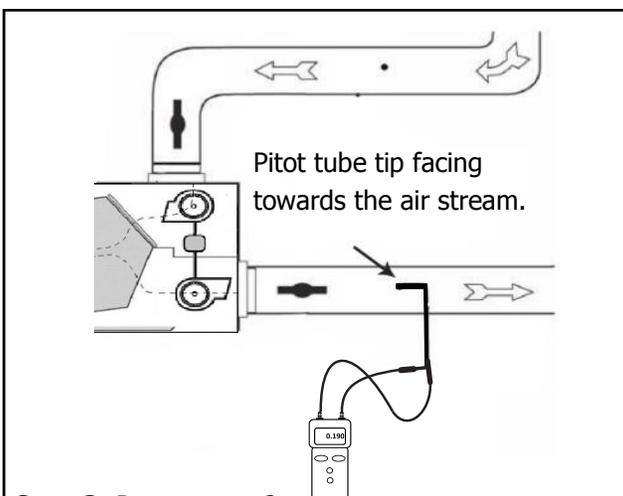
## Balancing the Airflow With a Pitot Tube



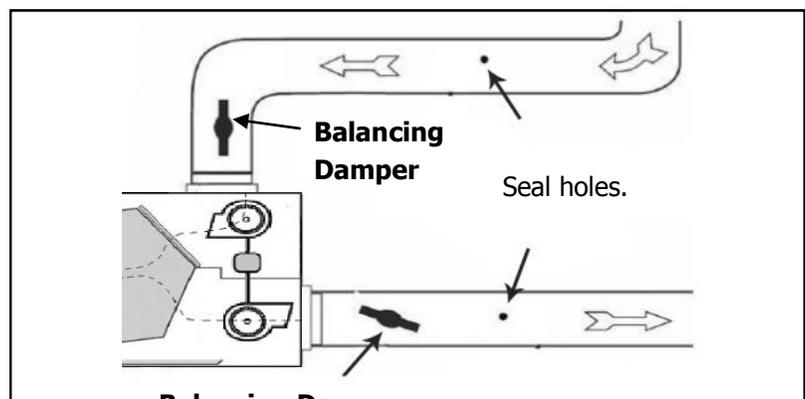
**Step 1:** Drill a 3/16 in hole in the duct, ideally 3 ft downstream and 1 ft upstream of any elbows or bends in the fresh air and stale air streams.



**Step 2:** Insert the pitot tube with the tip facing towards the air stream in the stale air from Building air stream. Move the pitot tube around in the duct (facing toward the airflow) and take an average reading. Record the reading.



**Step 3:** Repeat step 2 to measure the fresh air to building duct.



**Step 4(a):** Review the readings and damper down the duct with the highest duct velocity pressure. Repeat step 2 and step 3 until both ducts show identical readings.

**Step 4(b):** Upon completion of balancing, seal the holes (foil tape recommended).

## Determining the CFM

After balancing the airflows, calculate the CFM flow rate.

### Example

This example shows how to determine the airflow for a 6 in diameter duct. If the duct velocity pressure reads 0.025 in w.g. on the digital manometer, use the chart that came with the pitot tube to determine a duct velocity of 640 ft/min. for a duct velocity pressure of 0.025 in w.g.

### CFM Calculation

CFM = feet per minute x cross section area of duct

$$= 640 \times 0.196$$

$$= 125$$

Cross section area of some common duct sizes:

0.087 for 4 in duct      0.139 for 5 in duct

0.196 for 6 in duct      0.267 for 7 in duct

## Balancing the Airflow Using the Door Ports

Door balancing ports (not on all models) are designed to be used in the conjunction with a digital manometer to measure the stale and fresh airflows for balancing.

**Step 1:** Prepare the airflow measuring device (i.e. digital manometer) by connecting the hoses to the low and high pressure side of the gauge.

**Step 2:** Insert the hoses into the rubber fittings from the optional door port adapter kit (part 99-182). Use light pressure and rotate until fitting is snug. Do not extend the hose past the rubber fitting.

**Step 3:** Open the HRV door. Remove the 4 door port covers by carefully pushing them out from the back side of the door.

**Step 4:** Close the HRV door. Initiate power and operate the HRV on high speed. Operate the forced air system on high speed (if the HRV is connected to the forced air system).

**Step 5:** Insert the 2 rubber fittings from the gauge to the stale air balancing ports (see illustration for port locations). Seal the fresh air balancing ports with tape (see illustration for port locations). Record your reading.

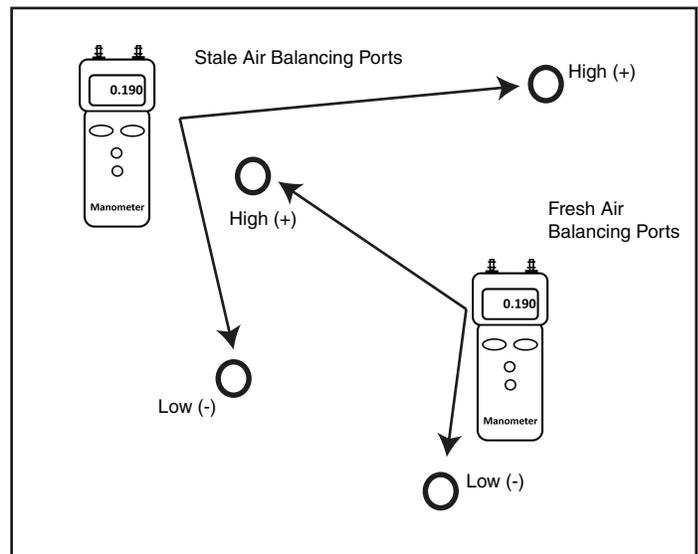
**Step 6:** Insert the 2 rubber fittings from the gauge to the fresh air balancing ports (see illustration for port locations). Seal the stale air balancing ports with tape (see illustration for port locations). Record your reading.

**Step 7:** Refer to the "Airflow Reference Chart" for your model and determine the fresh air and stale airflow rates (page 22).

**Step 8:** Damper down the higher airflow and repeat steps 5 to 7 as required until both airflows are identical (balanced).

**Step 9:** Remove the tape and rubber fittings and reinstall the 4 door port covers.

### Balancing Ports for the RNC200 model



## ! Attention

- **Reverse Flow Models:** Step 5 and Step 6 fresh air and stale air ports will be reversed.

# RNC200 Models Airflow Reference Charts

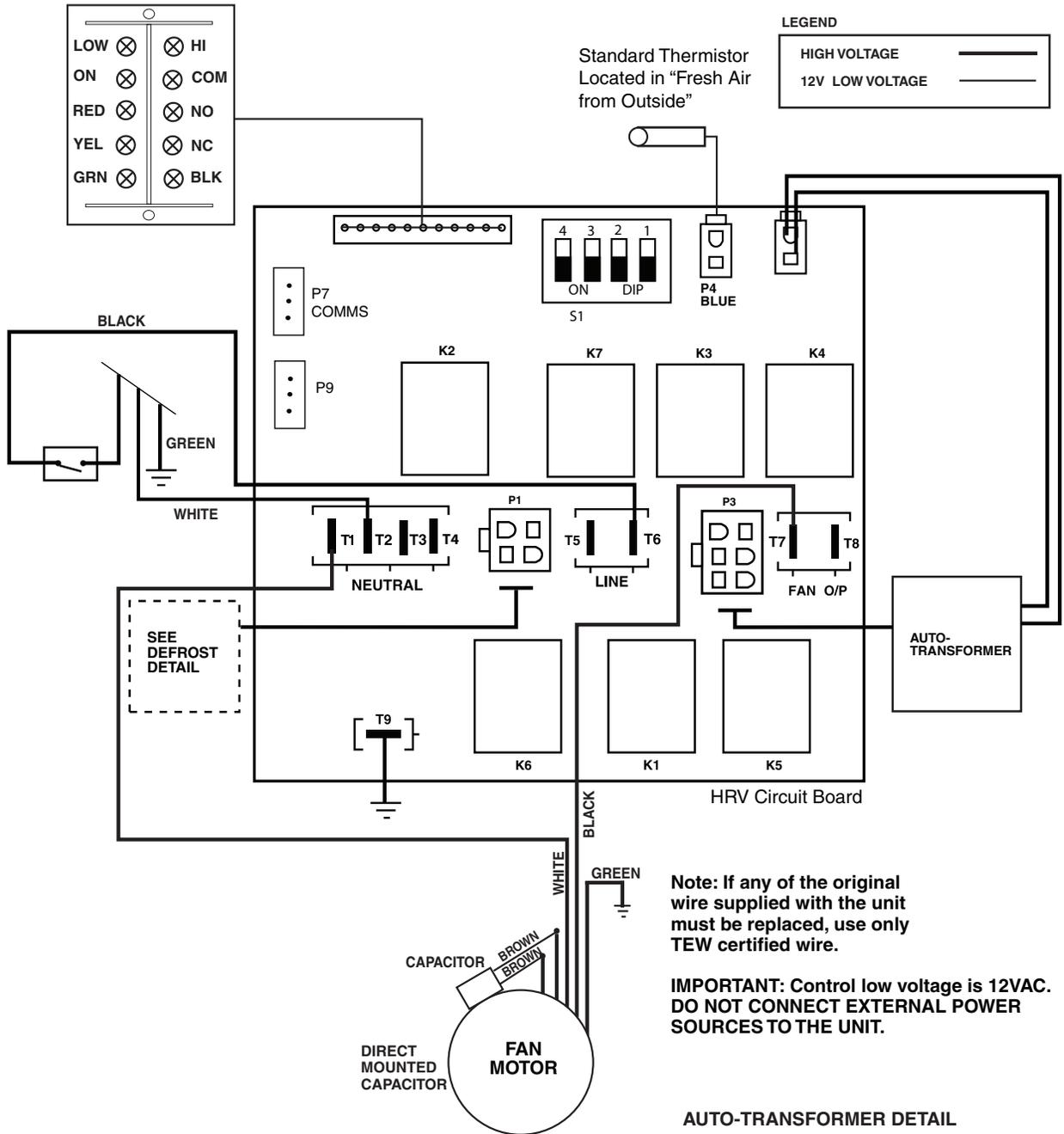
Door port balancing can be achieved by using these charts.  
 Balance these Models on their factory circuit board DIP settings (Hi 3).

MODEL 200			
Reading from Manometer		Airflow Numbers	
Water Column (inches)	Pressure (Pa)	Supply (CFM)	Exhaust (CFM)
0.100	24.9	98	91
0.110	27.4	102	96
0.120	29.9	107	101
0.130	32.4	111	107
0.140	34.9	115	112
0.150	37.4	120	117
0.160	39.9	124	122
0.170	42.4	128	127
0.180	44.9	133	132
0.190	47.3	137	137
0.200	49.8	141	142
0.210	52.3	145	147
0.220	54.8	149	152
0.230	57.3	153	156
0.240	59.8	157	161
0.250	62.3	161	166
0.260	64.8	165	171
0.270	67.3	169	175
0.280	69.8	173	180
0.290	72.3	177	184
0.300	74.8	181	189
0.310	77.2	185	193
0.320	79.7	189	198
0.330	82.2	192	202
0.340	84.7	196	207
0.350	87.2	200	211
0.360	89.7	203	215

## Troubleshooting your HRV System

SYMPTOM	CAUSE	SOLUTION
Poor Air Flows	<ul style="list-style-type: none"> <li>• 1/4" (6 mm) mesh on the outside hoods is plugged</li> <li>• filters plugged</li> <li>• core obstructed</li> <li>• house grilles closed or blocked</li> <li>• dampers are closed if installed</li> <li>• poor power supply at site</li> <li>• ductwork is restricting HRV</li> <li>• improper speed control setting</li> <li>• HRV airflow improperly balanced</li> </ul>	<ul style="list-style-type: none"> <li>• clean 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 contractor balance HRV</li> </ul>
Supply air feels cold	<ul style="list-style-type: none"> <li>• poor location of supply grilles, the airflow may irritate the occupant</li> <li>• outdoor temperature extremely cold</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 (eg. over a sofa)</li> <li>• turn down the HRV supply speed. A small duct heater (1kw) could be used to temper the supply air</li> <li>• placement of furniture or closed doors is restricting the movement of air in the home</li> <li>• if supply air is ducted into furnace return, the furnace fan may need to run continuously to distribute ventilation air comfortably</li> </ul>
Dehumidistat is not Operating	<ul style="list-style-type: none"> <li>• outdoor temperature is above 15°C (59°F)</li> <li>• improper low voltage connection</li> <li>• external low voltage is shortened out by a staple or nail</li> <li>• check dehumidistat setting it may be ON OFF</li> </ul>	<ul style="list-style-type: none"> <li>• dehumidistat is functioning normally (see "How the Dehumidistat Works" in this manual)</li> <li>• check that the correct terminals have been used</li> <li>• check external wiring for a short</li> <li>• set the dehumidistat at the desired setting</li> </ul>
Humidity Levels are too High Condensation is appearing on the windows	<ul style="list-style-type: none"> <li>• dehumidistat is set too high</li> <li>• HRV is undersized to handle a hot tub, indoor pool, etc.</li> <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 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>• set dehumidistat lower</li> <li>• cover pools, hot tubs when they are not in use</li> <li>• avoid hanging clothes to dry, storing wood and venting clothes dryer inside. Heating wood may have to be moved outside</li> <li>• vent crawl space and place a vapour barrier on the floor of the crawl space</li> <li>• ducts from the washroom should be sized to remove moist air as effectively as possible, use of a bathroom fan for short periods will remove additional moisture</li> <li>• on humid days, as the seasons change, some condensation may appear but the homes air quality will remain high with some HRV use</li> <li>• increase speed of the HRV</li> </ul>
Humidity Levels are too Low	<ul style="list-style-type: none"> <li>• dehumidistat control set too low</li> <li>• blower speed of HRV is too high</li> <li>• lifestyle of occupants</li> <li>• HRV air flows may be improperly balanced</li> </ul>	<ul style="list-style-type: none"> <li>• set dehumidistat higher</li> <li>• decrease HRV blower speed</li> <li>• humidity may have to be added through the use of humidifiers</li> <li>• have a contractor balance HRV airflows</li> </ul>
HRV and / or Ducts Frosting up	<ul style="list-style-type: none"> <li>• HRV air flows are improperly balanced</li> <li>• malfunction of the HRV defrost system</li> </ul>	<ul style="list-style-type: none"> <li>• Note: minimal frost build-up is expected on cores before unit initiates defrost cycle functions</li> <li>• have HVAC contractor balance the HRV</li> <li>• ensure damper defrost is operating during self-test</li> </ul>
Condensation or Ice Build Up in Insulated Duct to the Outside	<ul style="list-style-type: none"> <li>• incomplete vapour barrier around insulated duct</li> <li>• a hole or tear in outer duct covering</li> </ul>	<ul style="list-style-type: none"> <li>• tape and seal all joints</li> <li>• tape any holes or tears made in the outer duct covering</li> <li>• ensure that the vapour barrier is completely sealed</li> </ul>
Water in the bottom of the HRV	<ul style="list-style-type: none"> <li>• drain pans plugged</li> <li>• improper connection of HRV's 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 O-Ring on drain nozzle sits properly</li> <li>• look for kinks in line</li> <li>• check water drain connections</li> <li>• make sure water drains properly from pan</li> </ul>

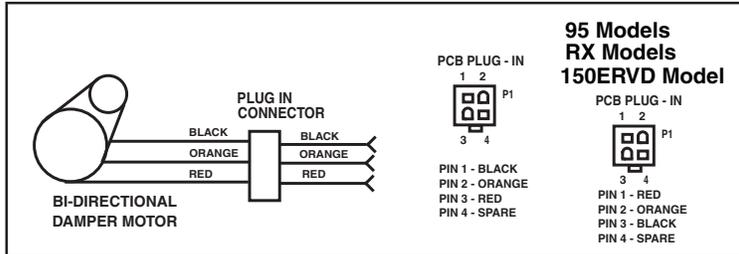
**CAUTION: ELECTRICAL CONTROL PANEL, SERVICE BY ELECTRICIAN ONLY**



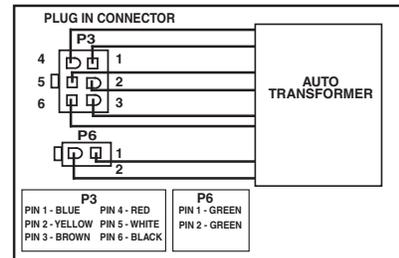
**Note:** If any of the original wire supplied with the unit must be replaced, use only TEW certified wire.

**IMPORTANT:** Control low voltage is 12VAC. DO NOT CONNECT EXTERNAL POWER SOURCES TO THE UNIT.

**DEFROST DETAILS**



**AUTO-TRANSFORMER DETAIL**  
PINS 1, 2, AND 3 ARE OPTIONAL



59-TI-89

## **Additional Information**

**Defrost Mode** - During cold weather, the HRV automatically cycles through its defrost mode when temperatures drop below freezing to avoid frost build up in the core.

**HRV** - a Heat Recovery Ventilator (HRV) is designed to provide fresh air into a building while exhausting an equal amount of stale air. During the winter months, heat recovered from the stale air, before it is exhausted to the outdoors, warms the incoming cold fresh air. During the summer months, when the indoor space is air conditioned, the HRV helps to cool the incoming fresh air with the cool exhausted stale air.

**Self-Test** - Each time the HRV is powered/energized, the self-test function automatically initiates. The HRV cycles through the available speeds and tests the damper motor operation. The HRV resumes operation at the selected mode and speed. (Approximately 60 seconds in duration.)

**Standby (Speed 0)** - The HRV is on but fans are not running waiting for Ventilation to be initiated by either an external control (i.e. Timer) or the Dehumidistat. Set the main control to speed 0 to set the HRV in standby.

**Timers** - These optional controls may be installed at specific exhaust locations (bathrooms etc.) to initiate high speed Ventilation.

**Additional information can be found at [www.lifebreath.com](http://www.lifebreath.com).**

## **Warranty**

Lifebreath RNC Series Heat Recovery Ventilators carry a Lifetime Warranty on the heat recovery core and a 5 year replacement parts warranty.

Register for your warranty:

[www.lifebreath.com](http://www.lifebreath.com) or phone 1-855-247-4200 (toll free)

**Note:** Airia will require the HRV Model and serial number(s) for the registration of your HRV.







## LEAVE FOR HOMEOWNER

TO BE COMPLETED BY CONTRACTOR AFTER INSTALLATION

Installing Contractor \_\_\_\_\_ Telephone / Contact \_\_\_\_\_

Serial Number \_\_\_\_\_ Installation Date \_\_\_\_\_

Model \_\_\_\_\_

Register for your warranty at [www.lifebreath.com](http://www.lifebreath.com)

Airia will require the Model and Serial Number to register the unit.



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