LIFEBREATH®
Indoor Air Systems

COMMERCIAL HEAVY DUTY HEAT RECOVERY VENTILATOR

HRV

INDOOR MODELS

1500I-ECM-240SP
2000IFD-240SP
2000IFD-2083P
2000IFD-208SP
2000IFD-4603P
2000IFD-5753P
2500IFD-240SP
2500IFD-208SP

OUTDOOR MODELS

1500E-ECM-240SP
2000EFD-250SP
2000EFD-2083P
2000EFD-208SP
2000EFD-4603P
2000EFD-5753P
2500EFD-240SP
2500EFD-208SP

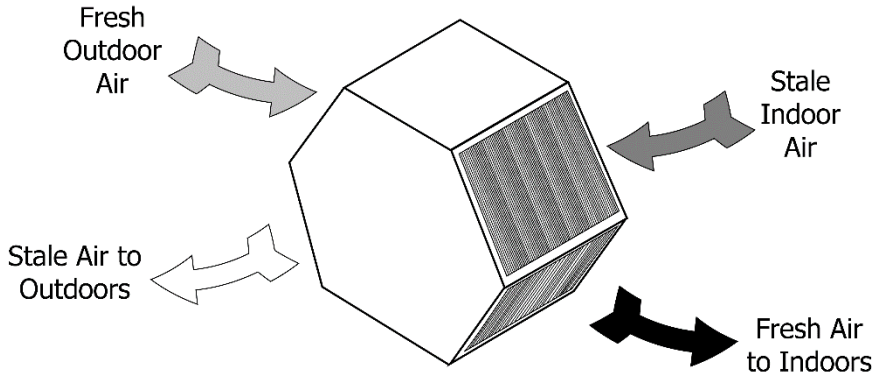
Installation Manual

69-COMM-HRV-HD INSTALL 0407

General

These Heat Recovery Ventilators (HRV) are designed for commercial and industrial applications to provide fresh air to a building while exhausting an equal amount of stale air. During the winter months the incoming cold fresh air is warmed by utilizing the heat recovered from the stale air before it is exhausted to the outdoors. During summer months when the indoor space is air conditioned, the HRV will help in cooling the incoming fresh air with the stale air that is being exhausted.

The HRV is equipped with an aluminum core. The device uses the stale air that is being exhausted to condition the fresh air as it is being brought in. These instructions are intended as a general guide and do not supersede local codes in any way. Consult authorities who have jurisdiction before installation.



Pre-Installation Notes

Note

- **Due to ongoing research and product development, specifications, ratings, and dimensions are subject to change without notice. Refer to www.lifebreath.com for the latest product information.**

Warning

- **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 pressure.**
- **After installation, the compatibility of the two pieces of equipment must be confirmed by measuring the airflows of the HRV by using the balancing procedure found in this manual.**
- **Do not apply electrical power to the unit until installation has been fully completed (including low voltage control wiring).**
- **Assess how the operation of an HRV may interact with already installed vented combustion equipment (i.e., Gas Furnaces, Oil Furnaces, Wood Stoves, etc.).**
- **Never install an HRV 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.**
- **Do not use this appliance to exhaust hazardous or explosive material and vapours.**
- **It is strongly recommended that an electrical disconnect be installed prior to the HRV and that it is turned off and locked out before servicing the unit.**
- **Two (2) knock-outs are provided. One is to be used for line voltage and the other knock-out is for 24V control wires. System is 240V, 1 phase, 60 Hz.**
- **All electrical connections should be made by a qualified electrician.**
- **Disconnect the power from the unit before cleaning or servicing.**

TABLE OF CONTENTS

ISO 9001 REGISTERED

C US Confroms to UL Standards

2100 HVI CERTIFIED

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HRAI YOUR ENVIRONMENT OUR EXPERTISE MEMBER COMPANY

CHBA Member

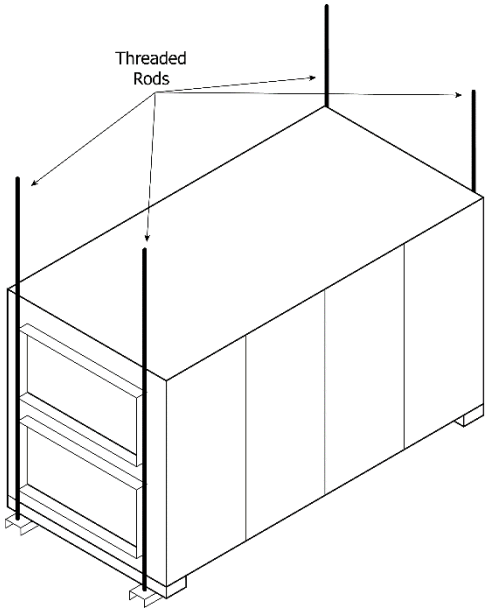
1 MOUNTING THE 1500/2000/2500 INDOOR MODELS

The HRV be in a heated space where the surrounding air temperature does not fall below 60°F (16°C). The HRV must be mounted level (horizontal) to obtain proper drainage of water from the heat exchange element and drip pans. The warranty will be void if these conditions are not met. Typically, the HRV is positioned close to an outside wall or the roof to simplify the connections and keep the length of insulated ducting required for the fresh air intake to a minimum.

A minimum clearance of 40 in. (1m) on one side of the HRV is recommended to service the heat exchanger cores and the filters.

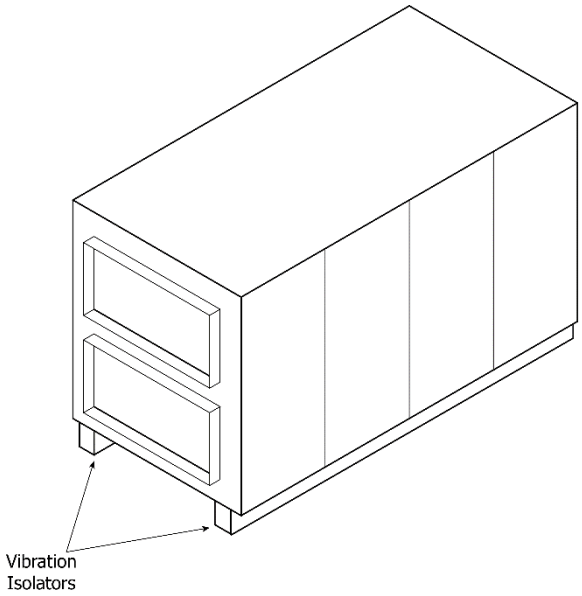
Hanging the HRV

The HRV should be hung by a threaded rod type assembly which provides a cradle for the unit. Note that 4x4s should sit between the metal "U" channels and the unit to avoid damage to the lip of the cabinet. Mounting hardware not provided.



Floor Mounting the HRV

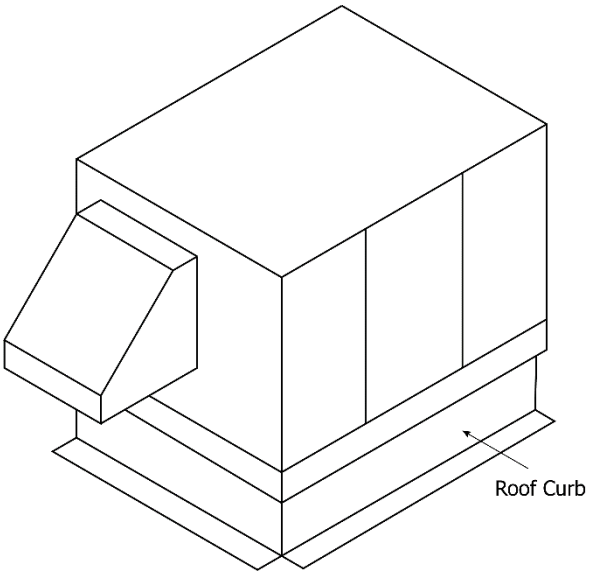
Mount the unit on wooden or metal support assembly. Raise the HRV to an adequate height and slope the drain lines. The unit may be mounted on an equipment platform providing the drain hoses are clear and there is enough space to open the doors for servicing.



2 MOUNTING THE 1500 ROOFTOP MODELS

Roof Mount

The units are designed to be mounted outdoors, usually fastened to a roof curb assembly. A minimum clearance of 40 in. (1m) on one side of the HRV is recommended to service the heat exchanger cores and the filters.

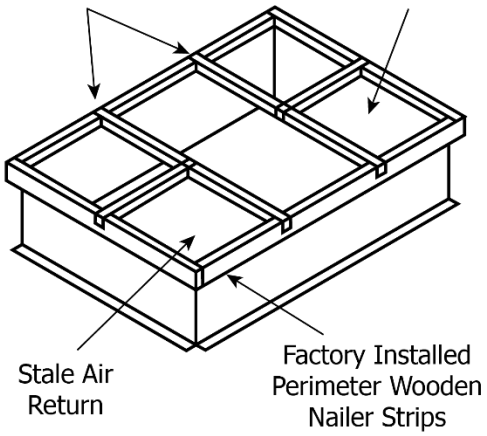


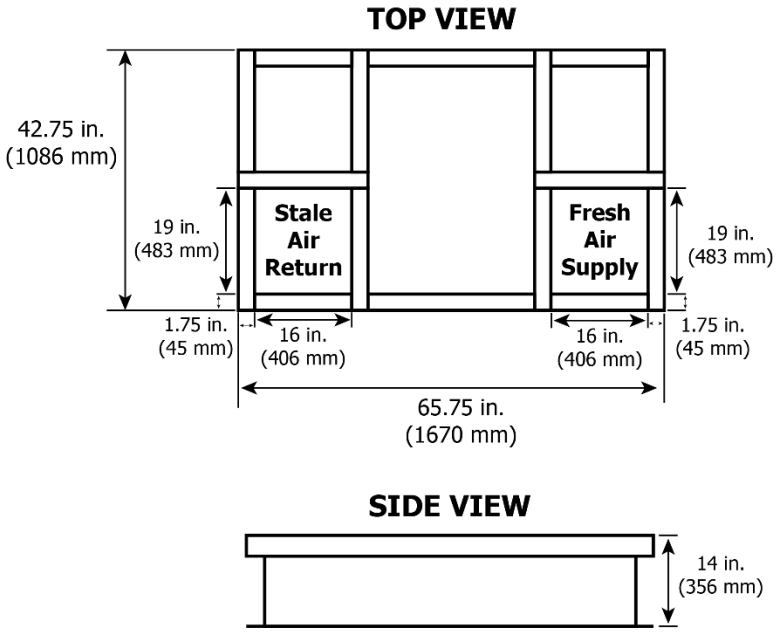
Note: Roof curb is one inch smaller than outside dimension of cabinet

Optional Roof Curb (Part No. 53-1500)

Special care and attention should be given to positioning the cross members of the roof curb, so that the they line up exactly with the duct openings on the HRV.

It is also important to ensure that the perimeter of the curb is insulated, but the interior of the curb is not. This allows heat from the building to prevent freezing of the drain lines and pans.

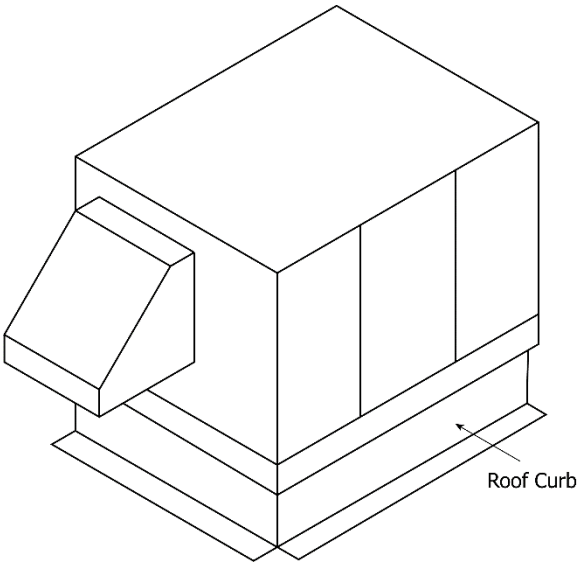




3 MOUNTING THE 2000 ROOFTOP MODELS

Roof Mount

The units are designed to be mounted outdoors, usually fastened to a roof curb assembly. A minimum clearance of 40 in. (1m) on one side of the HRV is recommended to service the heat exchanger cores and the filters.

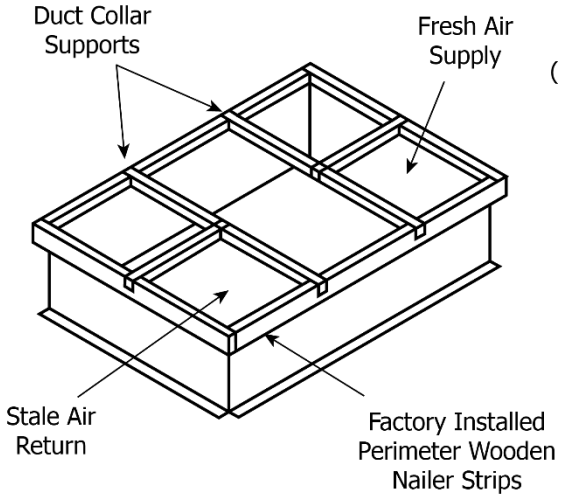


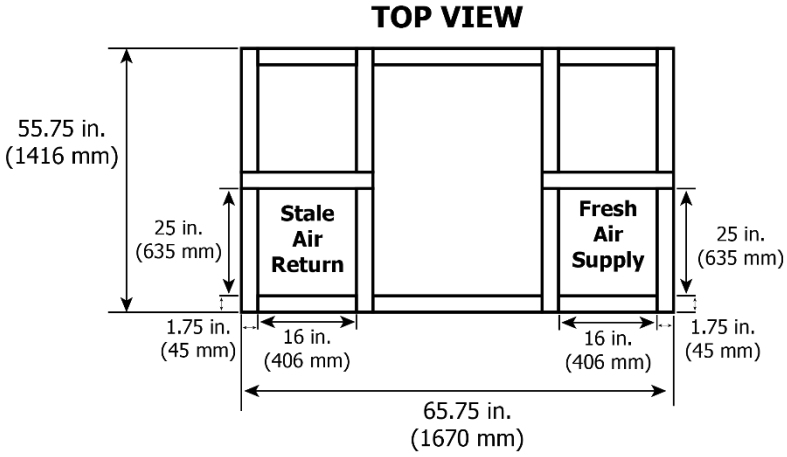
Note: Roof curb is one inch smaller than outside dimension of cabinet

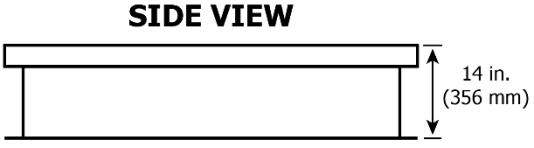
Optional Roof Curb (Part No. 53-2007)

Special care and attention should be given to positioning the cross members of the roof curb, so that the they line up exactly with the duct openings on the HRV.

It is also important to ensure that the perimeter of the curb is insulated, but the interior of the curb is not. This allows heat from the building to prevent freezing of the drain lines and pans.

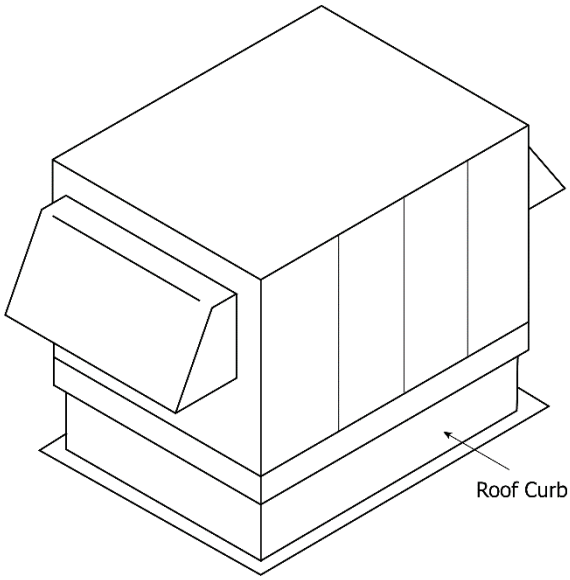






4 MOUNTING THE 2500 ROOFTOP MODELS

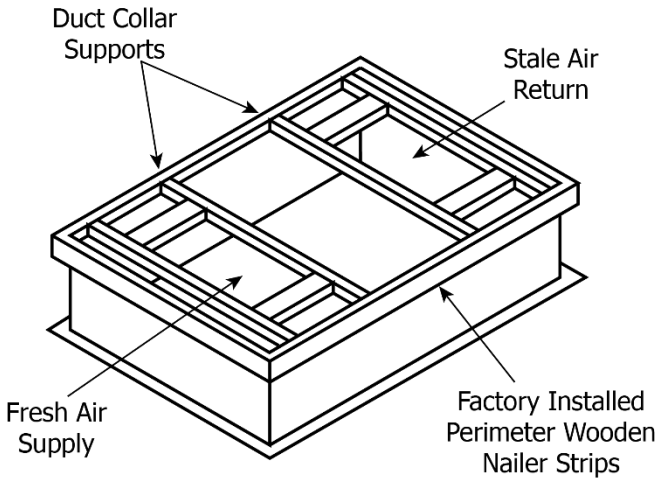
Roof Mount
The units are designed to be mounted outdoors, usually fastened to a roof curb assembly. A minimum clearance of 40 in. (1m) on one side of the HRV is recommended to service the heat exchanger cores and the filters.

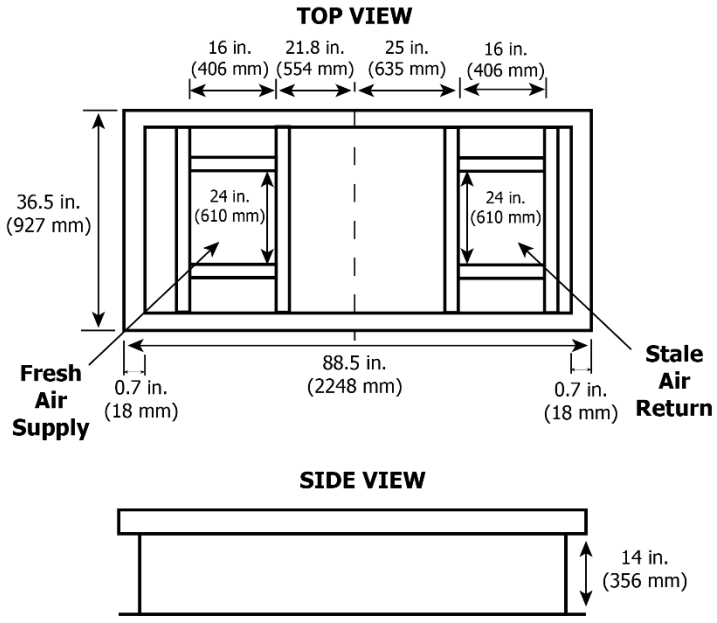


Note: Roof curb is one inch smaller than outside dimension of cabinet

Optional Roof Curb (Part No. 53-2500)
Special care and attention should be given to positioning the cross members of the roof curb, so that the they line up exactly with the duct openings on the HRV.

It is also important to ensure that the perimeter of the curb is insulated, but the interior of the curb is not. This allows heat from the building to prevent freezing of the drain lines and pans.

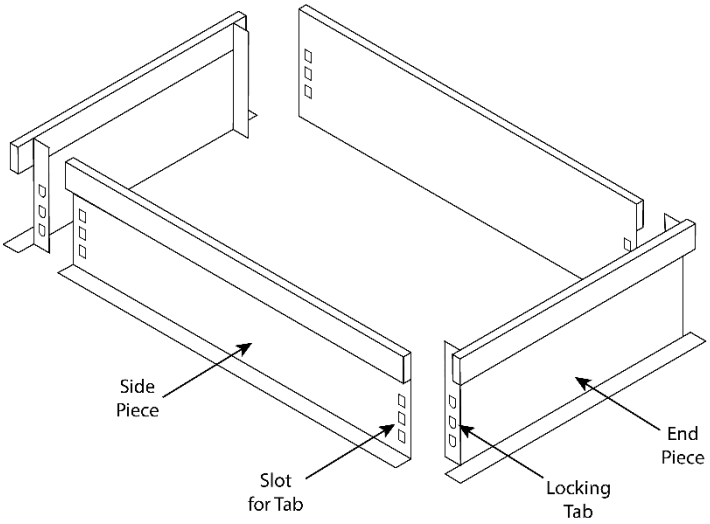




5 ROOF CURB ASSEMBLY INSTRUCTIONS

Frame Assembly

1. Stand one end piece (locking tabs) and one side piece (slots) vertically on the floor or roof.
2. Raise the corner of the end piece (locking tabs) slightly and mate with side piece (slots). Ensure that lower locking tab with leading edge is through slot opening.
3. Push down on top edge of end piece. Ensure that all 3 of the locking tabs are feeding into each corresponding slot opening. Once both pieces are flush, the process is complete.
4. Drive one spike provided into wood nailer strips at each corner.



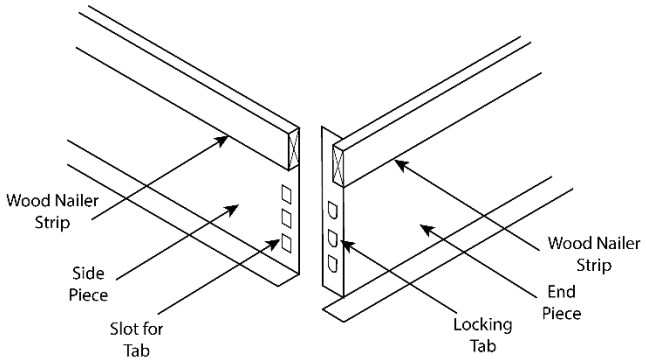
Frame Application and Location

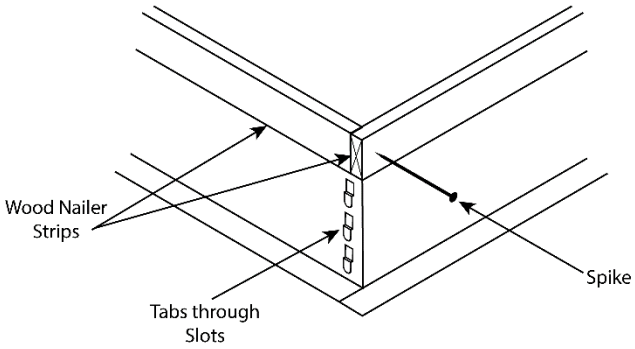
This roof mounting frame provides necessary support when the unit is installed. The frame can be installed directly on deck having adequate structural strength or on roof supports under deck.

Securing the Frame

To ensure proper mating with unit, it is critical that mounting frame be squared to the roof, as follows:

1. With frame situated level in desired location on roof trusses, tack weld one corner of frame.
2. Measure frame diagonally from one corner to the opposite corner. Repeat with the remaining two corners. These dimensions must be equal to the frame to be square.
3. It is extremely important to sight frame from all corners to ensure that the frame is not twisted across top side. Shim frame under any low sides.
4. After frame has been squared, straightened, and shimmed, weld or attach frame securely to the roof.





Attention

- **Max. slope tolerance: 1/16 in. per linear foot in any direction**
- **Note specification of duct location on bottom of HRV when positioning cross members (duct cavity).**

6 DUCTING THE SYSTEM

A well designed ducting system will allow the HRV to operate at its maximum efficiency. Avoid the use of undersized ducting and sharp radius bends and tees which can significantly increase the system pressure drop and reduce the air flows.

To minimize pressure, drop and noise, galvanized metal ducts sized for the given velocities are recommended:

Units	Max Velocity (fpm)	Max Velocity (m/s)
1500I/1500E	725	3.68
2000IFD/2000EFD	725	3.68
2500IFD/2500EFD	1200	6.09

Keep ducting as short as possible and use a minimum of elbows and tees. Connecting sections and shorter runs may be flexible ducting one size larger than the metal duct. Use flexible duct connectors at the HRV to avoid noise transmission.

All duct joints must be secured with screws, rivets or duct sealant and sealed with aluminum duct tape to prevent leakage.

General Exhaust Systems
In installations where it is satisfactory to provide general exhaust from the space, the air to be exhausted may be taken directly from the return air plenum to the HRV as it is drawn back to the air handler. Fresh air supplied by the HRV is then introduced directly into the return air plenum but at a location close to the air handler. The air handler would have a constant running blower to effectively distribute the fresh air and remove the stale air. Balancing dampers would be in both the HRV supply and exhaust ducts between the return air plenum and the HRV.

Warm-Side Ducting – General:
Ducting from the HRV to different areas within the building should be galvanized metal whenever possible.

To minimize airflow losses in the ductwork system, all ducts should be as short as possible and with as few bends or elbows as possible. Use 45 degree elbows instead of 90 degree elbows, whenever possible. Use Y tees instead of 90 degree tees whenever possible.

All duct joints must be fastened securely and wrapped with a quality duct tape to prevent leakage. We recommend aluminum foil tape.

Attention

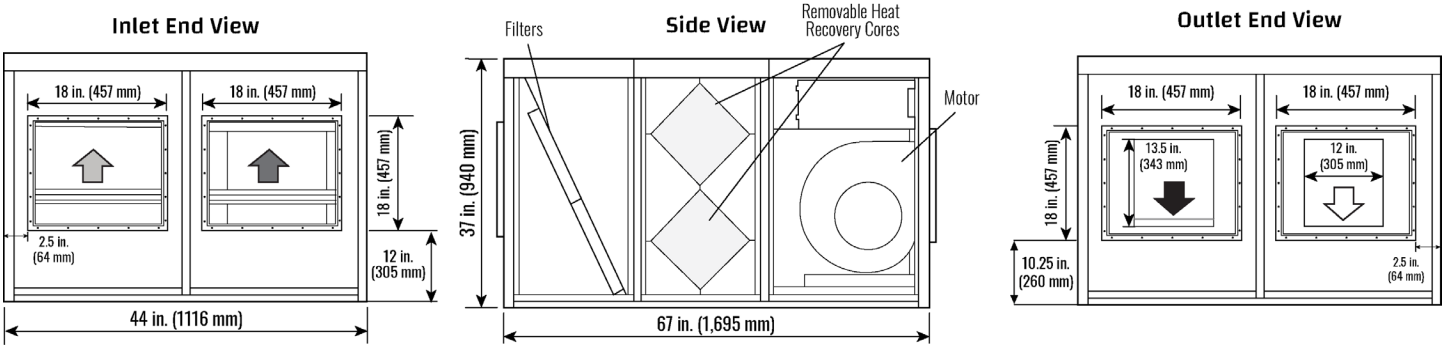
- **Flexible duct connectors should be installed between the HRV and the galvanized ductwork.**
- **Use fully insulated ducting with an integral vapour barrier on all runs that pass through unheated areas to avoid condensation problems and energy losses from the air streams. Consult local codes.**

7 DIMENSIONAL DRAWINGS

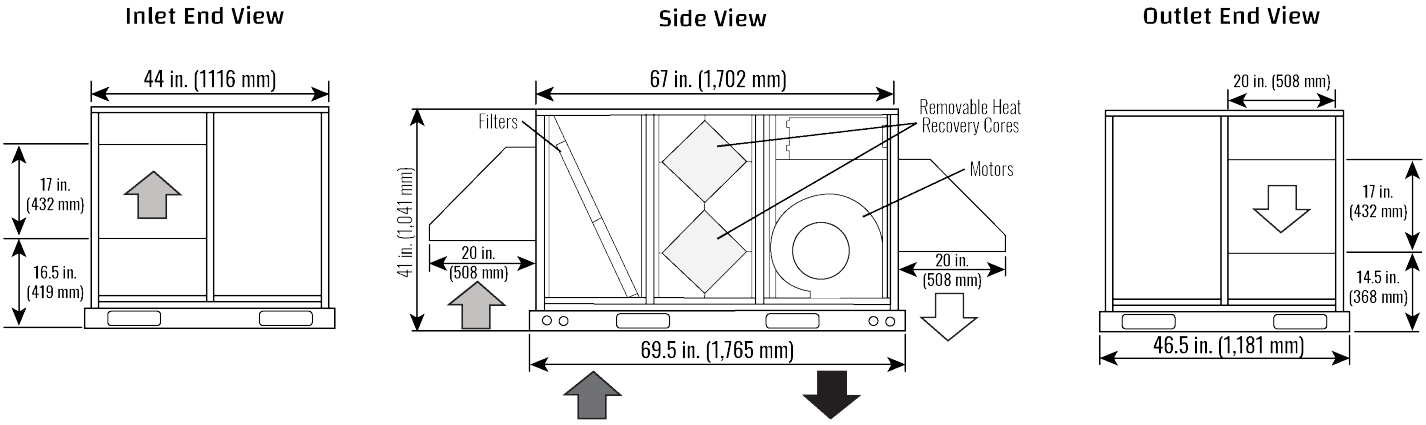
Airflow:

- Stale Air to Outside
- Fresh Air from Outside
- Stale Air from Inside
- Fresh Air to Inside

1500I-ECM Dimensions:



1500E-ECM Dimensions:

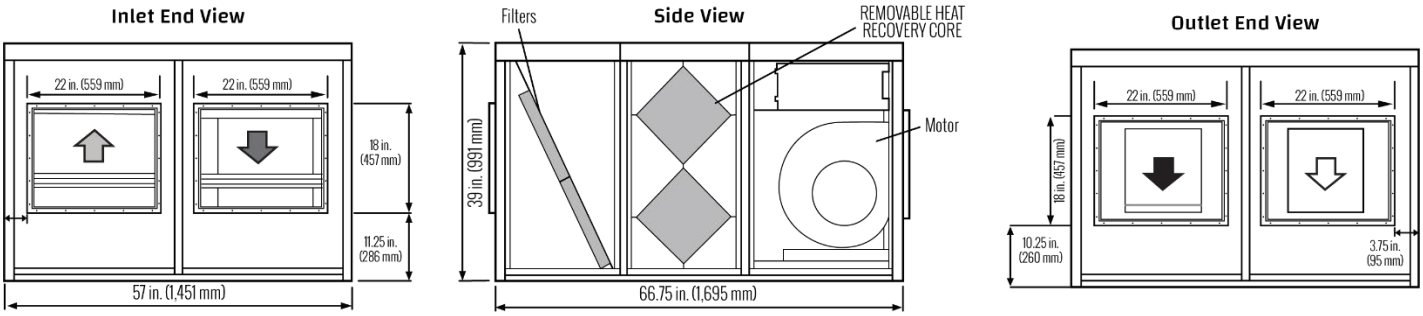


8 DIMENSIONAL DRAWINGS

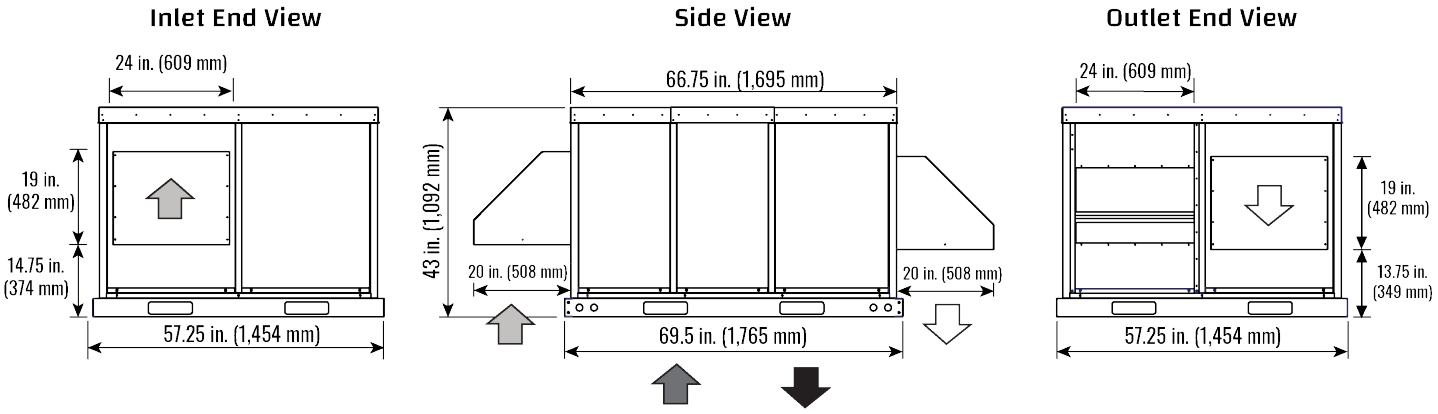
Airflow:

- Stale Air to Outside
- Fresh Air from Outside
- Stale Air from Inside
- Fresh Air to Inside

2000IFD Dimensions:



2000EFD Dimensions:



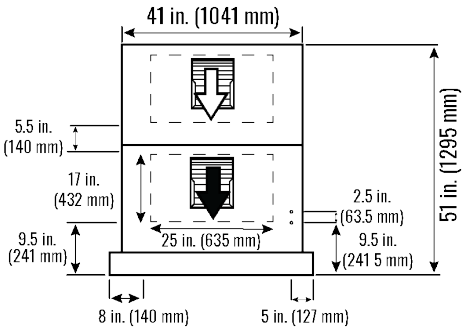
9 DIMENSIONAL DRAWINGS

Airflow:

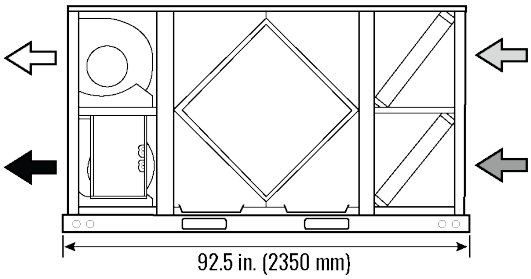
- Stale Air to Outside
- Fresh Air from Outside
- Stale Air from Inside
- Fresh Air to Inside

2500IFD Dimensions:

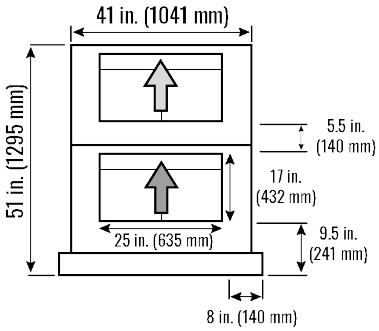
Front View



Side View

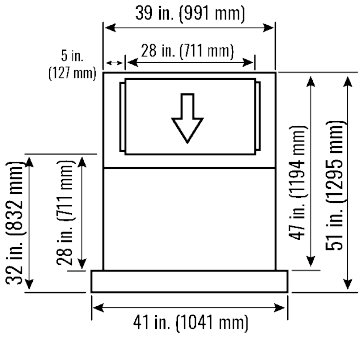


Back View

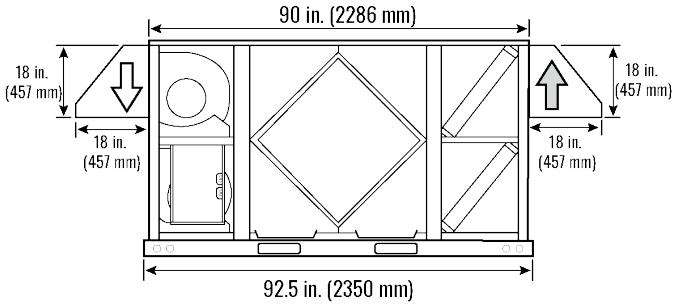


2500EFD Dimensions:

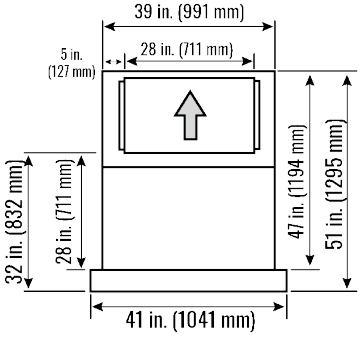
Front View



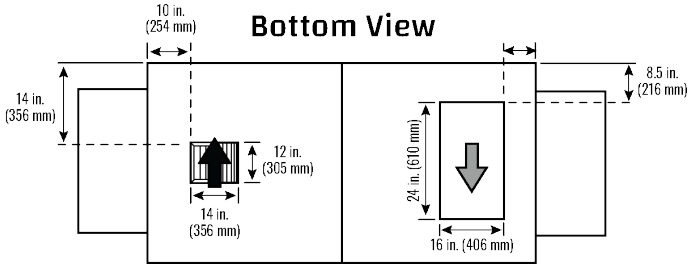
Side View



Back View



Bottom View



10 THE INTEGRATED HVAC SYSTEM

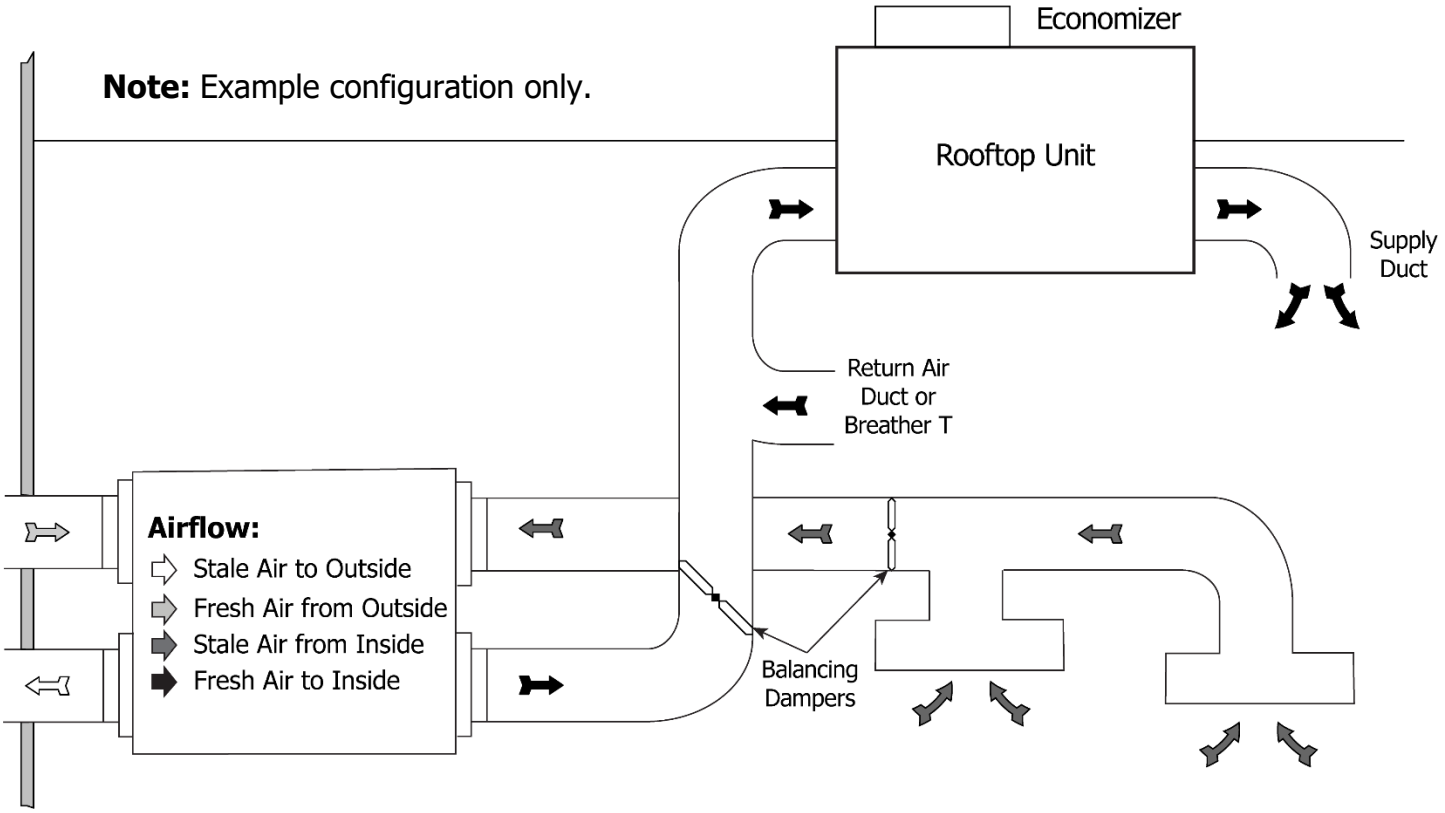


Figure A

The HRV has become an integral component of the HVAC system. Figure A shows an HRV unit providing fresh air directly to the return air plenum of a rooftop heat/cool unit.

In the balanced airflow system, the HRV exhaust removes stale room air (e.g. from lunch from, storage, or copy area) and returns to the space an equal amount of fresh outdoor air, making the use of an economizer obsolete in conjunction with an HRV.

Warning

- **At no time should the air handler Total External Static Pressure (TESP) on the return duct exceed that of the HRV.**
- **When interlocking a rooftop unit with an ERV take care to ensure the fans of both units operate in the correct rotation.**

11 THE INTEGRATED HVAC SYSTEM

Note: Example configuration only.

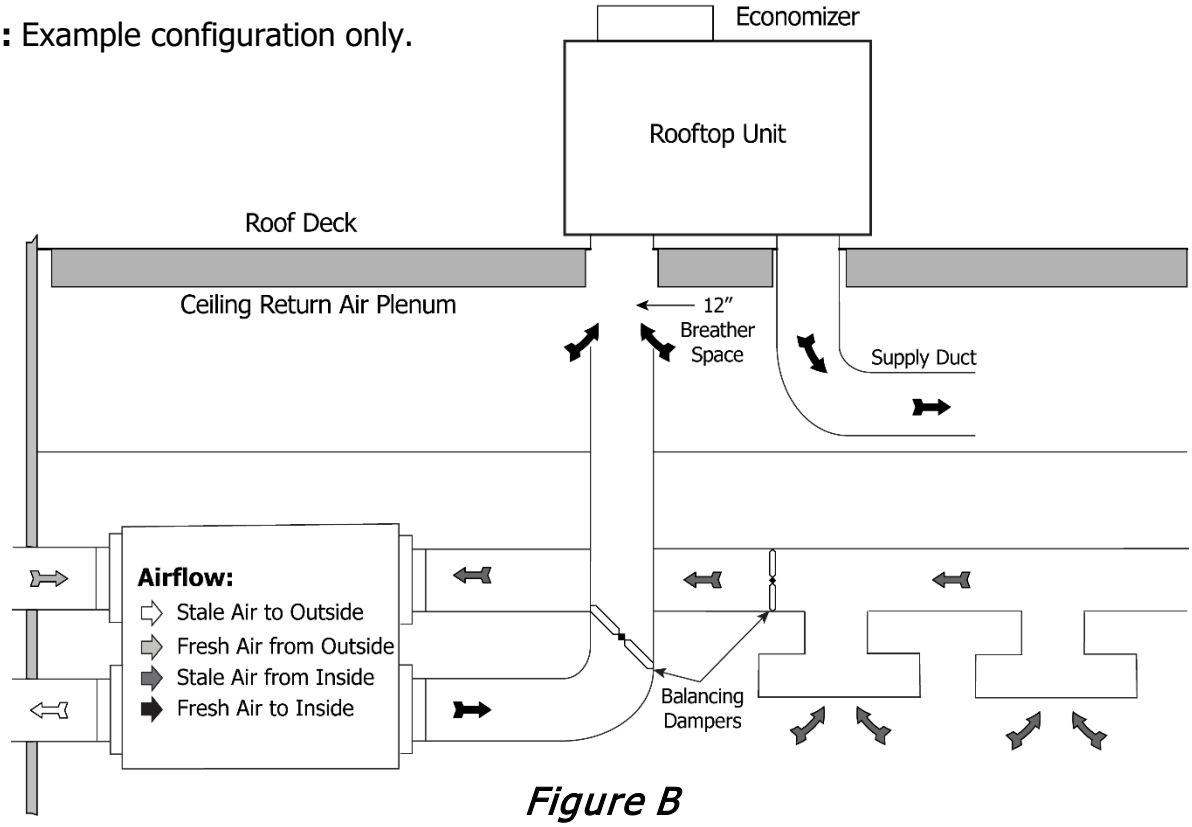


Figure B

Many buildings have ceiling return air plenum as in Figure B. Fresh air from the HRV can be introduced directly into the ceiling space, but this should occur near the air handler's intake.

By operating the HRV on a 24 hour/7 day battery backed timer, the unit can be set to operate only when occupancy or indoor conditions require the air exchange.

In installations where it is satisfactory to provide general exhaust from the space, the air to be exhausted may be taken directly from the return air plenum to the HRV as it is drawn back to the air handler. Fresh air supplied by the HRV is then introduced directly into the return air plenum but at a location closer to the air handler. The air handler would have a constant running blower to effectively distribute the fresh air and remove the stale air. Balancing dampers would be in both the HRV supply and exhaust ducts between the return air plenum and the HRV.

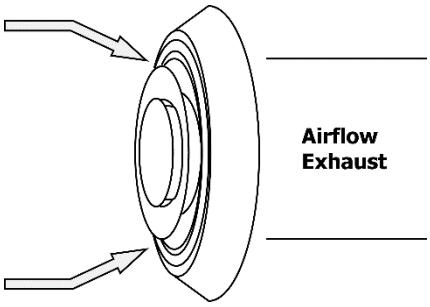
Warning

- **At no time should the air handler Total External Static Pressure (TESP) on the return duct exceed that of the HRV.**
- **When interlocking a rooftop unit with an ERV take care to ensure the fans of both units operate in the correct rotation.**

12 STALE AIR RETURN AND FRESH AIR SUPPLY SYSTEM

Stale Air Return System

Many commercial activities produce air contaminants in the form of dusts, fumes, mists, vapors and gases. Contaminants should be controlled at the source, so that they are not dispersed through the building nor allowed to increase to toxic concentration levels. The heat recovery ventilator allows for economical operation of the HVAC system while effectively removing contaminants from the space. In designing the exhaust portion of the system, the exhaust grilles are placed to remove the contaminants while not allowing them to enter the breathing zone of the occupants.



The stale air return system is used to draw air from the points in the building where the worst air quality problems occur. Balancing dampers and/or adjustable grilles are recommended on all return air lines which are used during installation to help balance the "draw" from different areas of the building. Note that the installation schematics show balancing dampers and/or adjustable grilles on all return air lines coming back to the unit.

For contaminants that are lighter than air, grilles should be located high on the wall. If contaminants are heavier than air, a lower placement of the grilles will be required. Information on a contaminants specific gravity and toxicity should be available from the chemical data sheets.

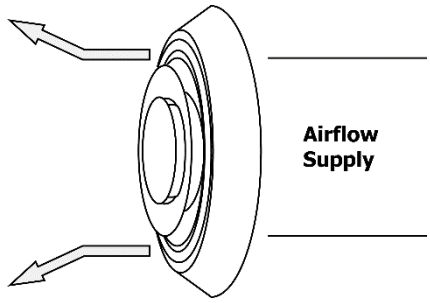
Alternately, the stale air may be drawn directly from the return air duct. When this system is used the air handler's blower will need to operate constantly when ventilation is required. The exhaust takeoff connection must be at least 3 ft (1 m) from a directly connected HRV supply duct if both are connected to the same duct run. Note and compensate for the static pressure of the air handlers return system if the static pressure of the return in the air handler exceeds 0.1 to 0.15 in. w.g.

A damper located just prior to the HRV is required to balance the stale air exhausted with the fresh air supply entering the building.

Return air suction points should be located at the opposite side of the room to the fresh air inlet. The inlets may be in the ceiling or high on the walls and fitted with inlet grilles.

Fresh Air Supply System

The fresh air supply ductwork from the HRV may be directly connected to the return air duct of the forced air system. When directly connected it is recommended that the air handler blower be in constant operation to move the fresh air about the building. Also, it is advisable to include a short length of fabric flex duct or other non-metallic connector in this hard ducted line in order to keep the HRV acoustically isolated and separately grounded (electrically) from the air handler. This will avoid a possible shock hazard to service people if a short to ground develops in one of the devices. It may be necessary to install a separate fresh air supply ductwork system if the heating is other than forced air.



When installing an HRV, the designer and installer should be aware of local codes that may require smoke detectors and/or firestats in the HVAC or HRV ductwork. Because an HRV is designed to bring fresh air into the building, structures may require a supply voltage interrupt when smoke or flame sensors are triggered, or central fire alarm system is activated.

The use of balancing dampers or adjustable grilles as supply air diffusers and air exhaust grilles are recommended. TECHGRILLES™ are round, efficient, sound absorbing devices available in 4", 5", 6" and 8" (100, 125, 150 and 200mm).

Supply air grilles may be ceiling or high wall mounted. Avoid locating incoming fresh air grilles that could cause a direct draft on the occupants as the incoming air may be below room temperature. A reheat duct heater can be installed to improve occupant comfort.

13 WEATHERHOODS

Outside Weatherhoods:

- The 1500E-ECM, 2000EFD, and 2500EFD units are shipped with 2 weatherhoods inside the cabinet which attach to the outer edge of the cabinet using the bolts provided. The weatherhoods have built-in screens to prevent foreign objects from entering in the ductwork through the outside hoods.
- The 1500I-ECM, 2000IFD, and 2500IFD require weatherhoods to be built elsewhere and provided by the contractor.

  Recommended:
  - no less than 10 ft. (3 m) apart from each other
  - at least 18 in. (46 cm) above snow line or ground level
  - away from sources of contaminants, such as automobile exhaust fumes, gas meters, garbage cans, containers, etc.
  - not exposed to prevailing winds
  - mesh screen with 1/4 in. (6.35 mm)
  - the outside perimeter of the weatherhood must be caulked to prevent leakage into the building.
  - the design and size of the weatherhoods or louvers chosen by the installer must allow for adequate free area. Water and debris penetration of the system is minimized when the airflow does not exceed 750 FPM (3.81 m/s) free area velocity.

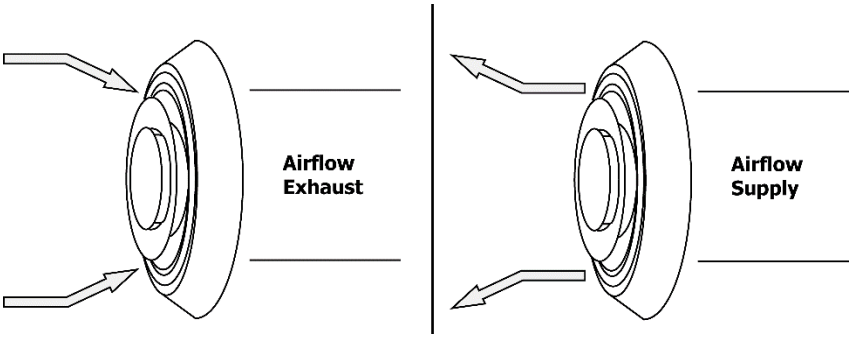
Ducting from the Weatherhoods:

- Galvanized sheet metal ducting with sufficient cross section with an integral single piece vapor barrier should be used to connect the HRV to the weatherhoods.
- A minimum R value of insulation should be equal to 4 (RSI 0.75)
- A good bead of high quality caulking (preferably acoustical sealant) and taping with a high quality aluminum foil tape is recommended to seal the duct to both the HRV and the weatherhood.

Techgrilles:

- The use of balancing dampers or adjustable grilles as supply air diffusers and air exhaust covers are recommended. TECHGRILLES™ are round, efficient, sound absorbing devices available in 4", 5", 6" and 8" (100, 125, 150, and 200 mm) models.

Part# 99-EAG4 4" diameter Techgrille
Part# 99-EAG5 5" diameter Techgrille
Part# 99-EAG6 6" diameter Techgrille
Part# 99-EAG8 8" diameter Techgrille



⚠ Attention

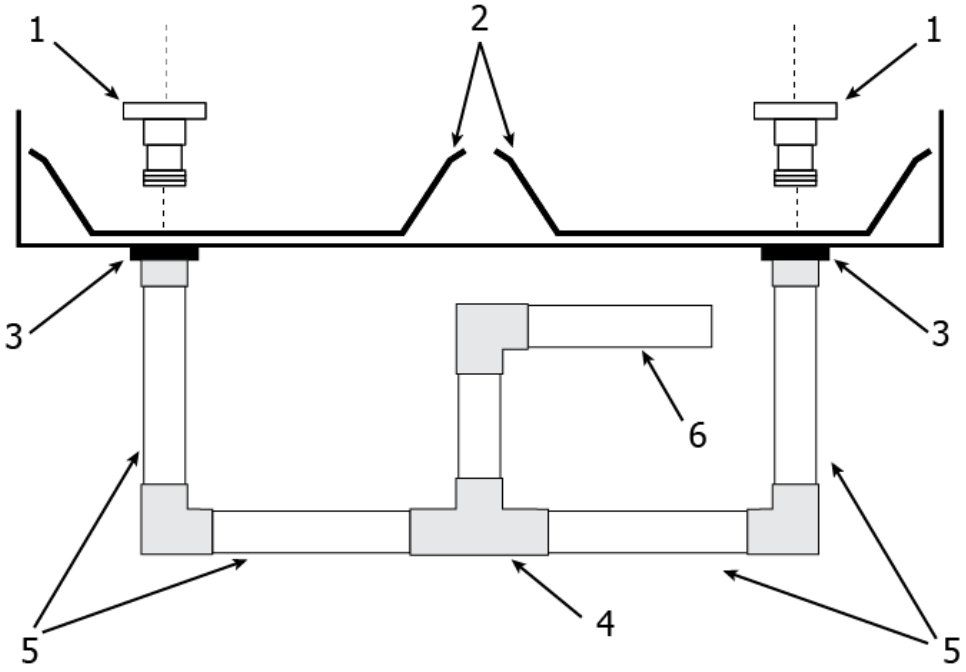
- **All ducting must meet UL Class 1 requirements.**
- **Design and install the fresh air intake in an area where the hoods will gather the freshest air.**
- **Do not use smaller mesh as it will be very susceptible to plugging up. Gravity dampers at the vents must not be used as they will restrict air flow and often "seize up".**

14 DRAIN CONNECTIONS

The HRV cabinet has pre-punched holes for the drain. 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.

Installation:

(1) Drain Spout
(2) Drain Pan
(3) Drain Spout Nut
(4) Tee Connector
(5) 1/2 in. Rigid Tubing
(6) Drain Line



Steps:

1. Insert the drain spout through the hole in the drain pan.
2. Install the nut onto the drain spout. Tighten the nut.
3. Construct a P-trap using the plastic tee connector.
4. Using appropriate fittings (not included), connect 1/2 in. rigid tubing (not included) to the tee connector and connect the other end to the drain spouts.
5. Position the tee connector to point upward and connect the drain line.
6. Tape or fasten base to avoid any kinks.
7. 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 odours from being drawn up the hose and into the fresh air supply of the HRV.

⚠ 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.**
- **Drain trap and tubing must be below bottom of door with 1/4 in. per foot downwards slope away from unit.**
- **A secondary drain pan may be required to protect from condensate leakage.**

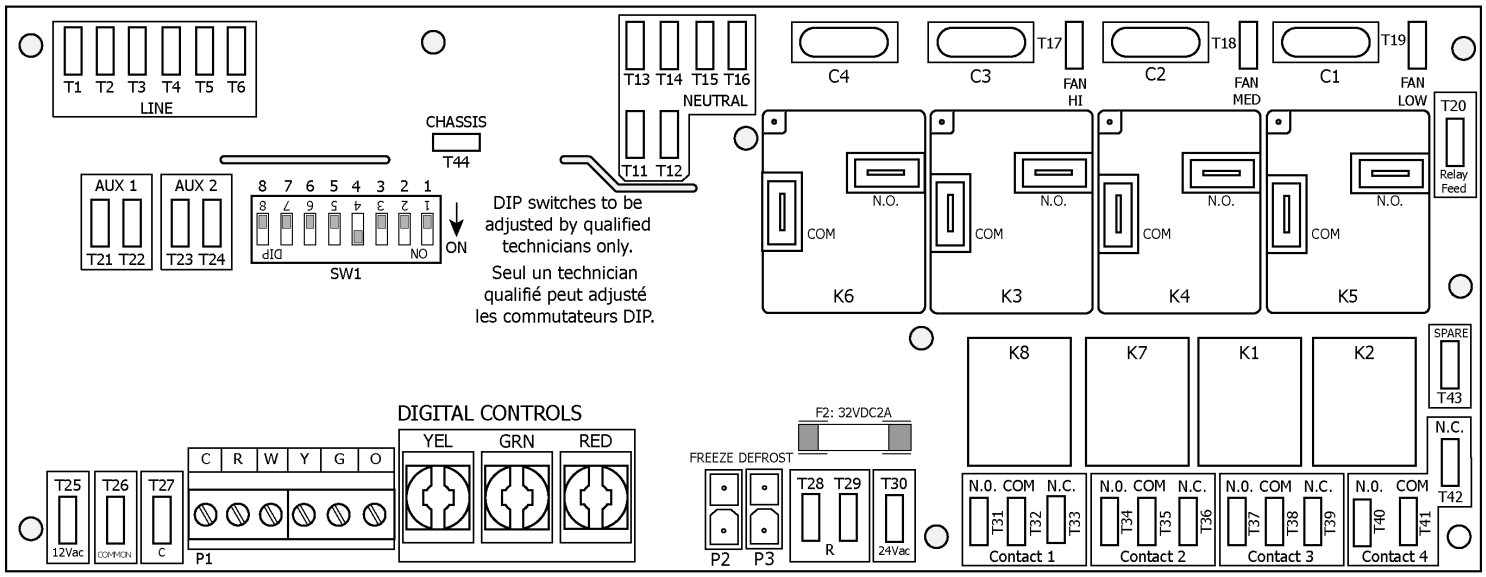
15 FUNCTION AND CONTROLS

Basic Functions

Speed control is obtained by powering 24V to one of the designated speed taps. Select appropriate operational speed by installing the jumper wire between one of the designated speed taps on the Thermostat terminal strip on the microprocessor board. A jumper wire is factory installed in the low speed position.

Speed	Jumper Wire Placement	
High	R	W
Medium	R	Y
Low (factory default)	R	G

Micro Processor Board



Optional Ventilation Control (99-BC02, 99-BC03, or 99-BC04)
See **Page 21** for installation on circuit board.

Optional 3 Speed Control (99-500)
See **Page 22** for installation on circuit board.

Optional Wireless Timer (99-DET02)
See **Page 24** for installation.

Optional Wireless Repeater (99-RX02)
See **Page 25** for installation.

Optional 20/40/60 Minute Timer (99-DET01)
See **Page 26** for installation on circuit board.

Optional Dehumidistat (99-DH01)
See **Page 27** for installation on circuit board.

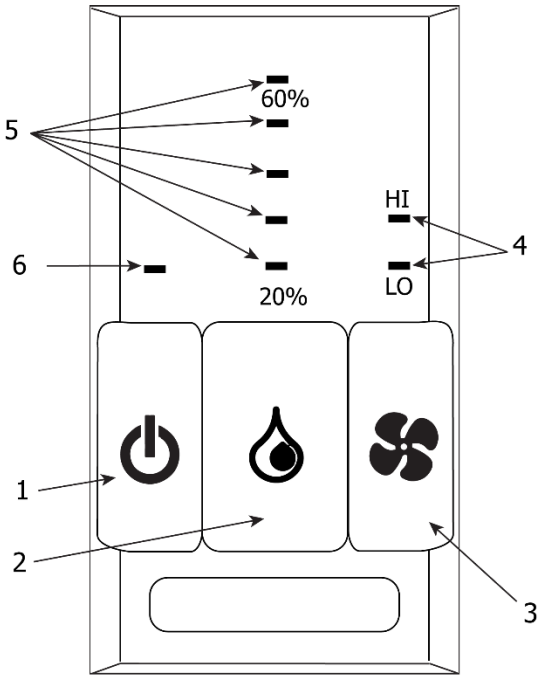
Third Part Dry Contact Controls

Third part dry contact controls can be used with this unit. Connect the control as follows:

Example Controls
- Motion Sensors
- Time Clocks
- Switches

Speed	Terminals on Thermostat Block	
High	R	W
Low	R	G

Ventilation Wall Control (99-BC02) Operating Instructions:



(1) ON/OFF Button
(2) Dehumididstat Button
(3) Fan Button
(4) Fan Speed Indicator
(5) Humidity Setting
(6) ON/OFF light

Turning on the Control:
Press the ON/OFF Button ⏻. The ON/OFF light will illuminate.

Setting the Ventilation Speed:
Press 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 the Dehumidistat button until the dehumidistat indicator light is at the desired humidity setting. After a few seconds the dehumidistat indicator light will either flash or be on continuously. A flashing light indicates the humidity level is higher than the humidity setting, and the unit is operating on high speed ventilation. A continuous light indicates the humidity level is lower than the humidity setting. The Dehumidistat will override the current speed setting to HIGH speed. The Dehumidistat function can be turned off by pressing the button until the dehumidistat indicator light turns off.

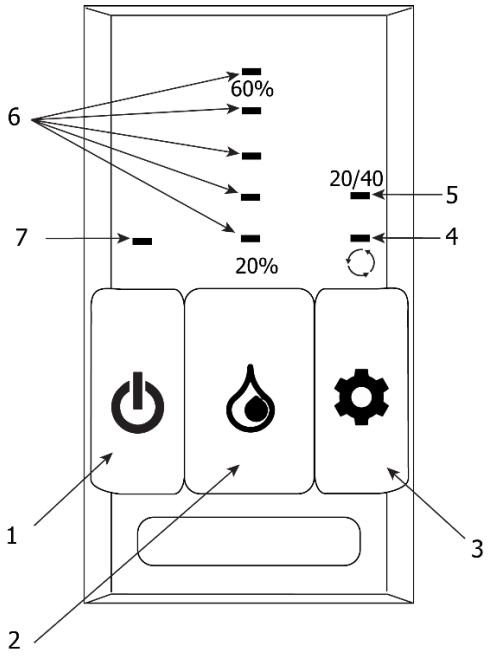
⚠ Attention

- **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 the function. (See Installation Guide for other options.)**

16 MAIN WALL CONTROLS

Ventilation Wall Control (99-BC03)
Operating Instructions:

(1) ON/OFF Button
(2) Dehumididstat Button
(3) Mode Button
(4) Recirculation Mode Indicator
(5) 20/40 Mode Indicator
(6) Humidity Setting
(7) LOW Fan Speed Indicator



Turning on the Control:
Press the ON/OFF Button ⏻. The LOW fan speed indicator will illuminate, and fan will turn 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 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 continuously. A flashing light indicates the humidity level is higher than the set point and that the unit is operating on HIGH speed ventilation. A continuous light indicates the humidity level is lower than the set point. The Dehumidistat will override the current speed setting to HIGH speed. The Dehumidistat function can be turned off by pressing the Dehumidistat Button until the dehumidistat light turns off.

Setting the 20/40 Mode:
Press the Mode Button until the 20/40 mode indicator light is illuminated. The 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 the air in your home during the 40-minute cycle with no ventilation. The control will automatically detect this feature and recirculate the 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. Press the Mode Button until the recirculation mode indicator light illuminates. Recirculation is in LOW speed.

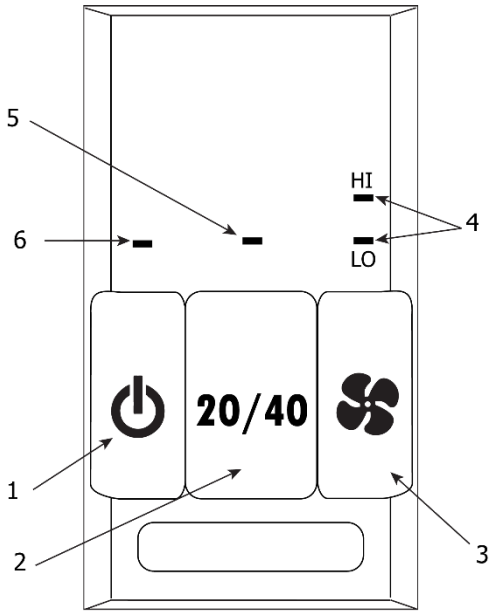
⚠ Attention

- **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 the function. (See Installation Guide for other options.)**

16 MAIN WALL CONTROLS

Ventilation Wall Control (99-BC04)
Operating Instructions:

(1) ON/OFF Button
(2) 20/40 Button
(3) Fan Button
(4) Fan Speed Indicator
(5) 20/40 Mode Indicator
(6) ON/OFF Indicator



Turning on the Control:
Press the ON/OFF Button ⏻. The ON/OFF indicator light will illuminate.

Setting the Ventilation Speed:
Press 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 the 20/40 Mode:
After a fan speed has been selected, press the 20/40 button. The 20/40 mode indicator light will illuminate. The 20/40 mode is a repeating cycle. The fan will run at LOW or HIGH speed for 20 minutes, then turn OFF for 40 minutes. Some units are equipped to recirculate the air in your home during the 40-minute cycle with no ventilation. The control will automatically detect this feature and recirculate the 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 the function. (See Installation Guide for other options.)**

16 MAIN WALL CONTROLS

The 99-BC02, 99-BC03, 99-BC04 ventilation controls may either be installed onto a flush mounted electrical switch box or surface mounted onto a wall. Only one main control should be installed into a ventilation system.

Installation:

1. Carefully separate the face plate and the back plate by firmly pulling it apart. Keep the top/bottom vent openings clear (figure A).
2. Position the back plate in the desired location on the wall and mark the wall for the desired screw holes (figure B).
3. For mounting the main control without a Decora plate, break off the top and bottom tabs than position the back plate in the desired location on the wall and mark the wall for the desired screw holes (figure C)
4. Remove the back plate from the wall and mark the hole for the wires centered between the two screw holes (figure B or C).
5. Drill two 1/8 in. holes for the screws and wall anchors and drill one 1 in. x 0.75 in. hole for the wires.
6. Pull the 3 wire 20 gauge (min.), 100 ft length (max.), through the opening in the wall.
7. Connect the wires to the R, G, and Y terminals on the back plate (figure B or C).
8. Using the two supplied screws and anchors, install the back plate on the wall.
9. Attach the face plate to the back plate (figure A).
10. Connect the 3 wire 20 gauge (min.), 100 ft length (max.), to the RED, GRN, and YEL terminal on the Digital Controls terminal strip on the Aircom circuit board (figure D).

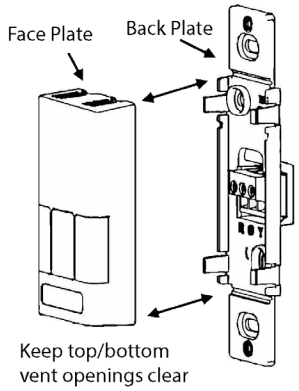


Figure A

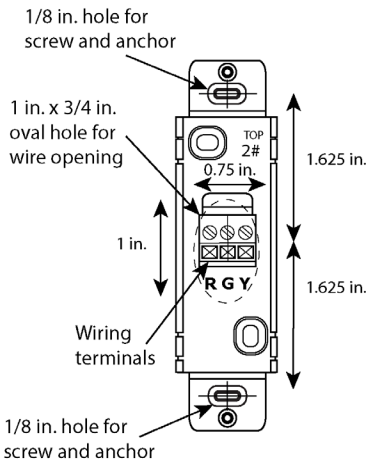


Figure B

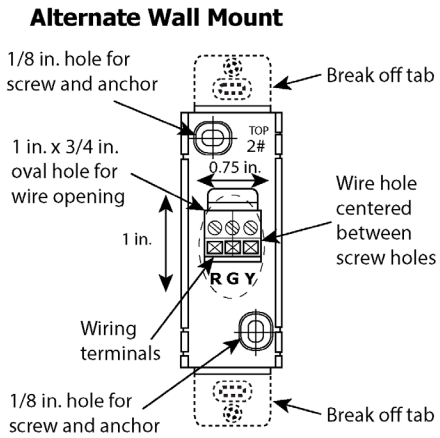


Figure C

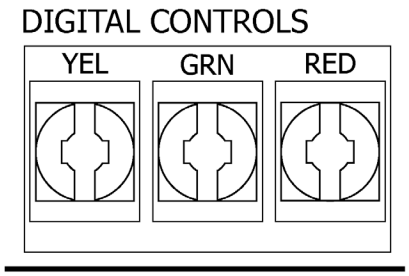


Figure D

Attention

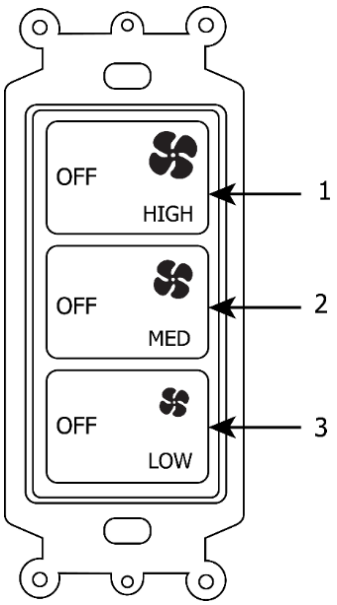
- **Use care when separating or attaching the face plate to avoid damaging the contact pins.**

16 MAIN WALL CONTROLS

3-Speed Control (99-500) Operation:

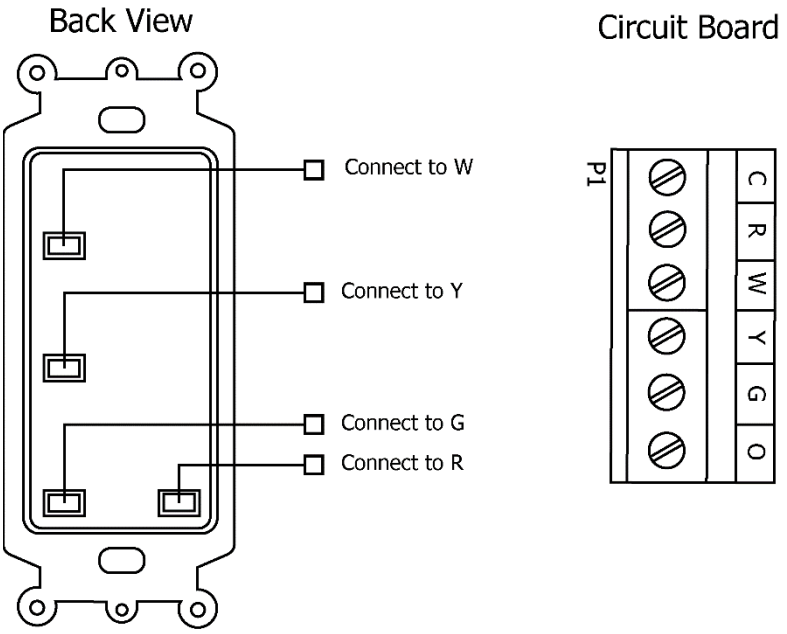
(1) High Speed Fan
(2) Medium Speed Fan
(3) Low Speed Fan

Press the applicable Fan Speed button to set the fan speed. Press the applicable OFF button in order to turn the Fan Speed control off.



3-Speed Control (99-500) Installation:

Connect the wires to the R, W, Y, and G terminals on the Aircom circuit board as shown.

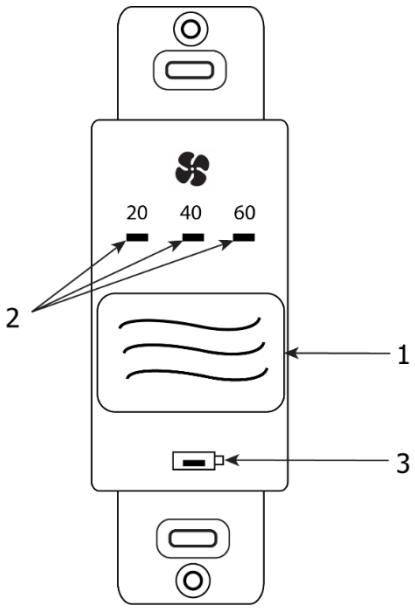


Attention

- **Use 4 wire; 20-gauge wire (minimum)**
- **When used in conjunction with the 99-BC02, the BC02 control must be ON for the 99-500 control to operate. The 99-BC02 will override the 99-500 control when the Dehumidistat is operating or the control is set to HIGH speed**

17 TIMERS AND REPEATERS

20/40/60 Minute Wireless Timer (99-DET02) Operation:



(1) Select Button
(2) 20/40/60 minute status lights
(3) Red LED battery indicator

Press the Select Button on the timer to initiate high speed ventilation for 20, 40, or 60 minutes. The 20/40/60 minute status lights indicate high speed operation. To cancel the high speed fan operation, press the Select Button until the 20/40/60 minute status lights are no longer illuminated.

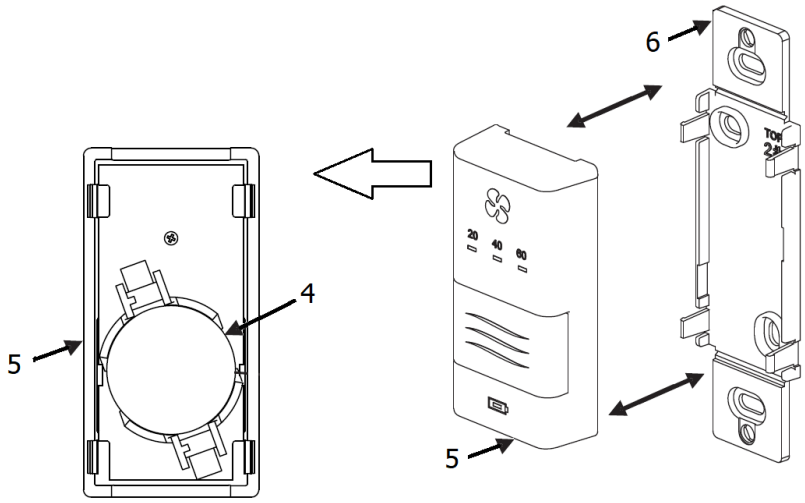
When the battery in the timer needs to be replaced, the red LED Battery Indicator will illuminate.

When paired to the digital wall control, the wireless timer may be moved to a remote location in the home such as a bathroom. Wireless timers have an estimated range of 40 ft with no obstructions

Replacing the Timer Battery (99-DET02):

(4) Battery
(5) Face plate
(6) Back plate

a) Remove the face plate by separating it from the back plate. On the back of the face plate the battery will be exposed.
b) Replace the battery and re-attach the face plate to the back plate.



⚠ Attention

- **Be careful not to damage the tabs on the back plate when re-attaching the face plate.**

17 TIMERS AND REPEATERS

Wireless 20/40/60 Minute Timer (99-DET02)
The timers may be installed onto a flush mounted electrical switch box or it may be surfaced mounted onto a wall.

Pairing:

1. Remove the battery from the back of the timer, if installed.
2. Press the ON/OFF Button on the main control to turn it on.
3. **BC02, BC03, or BC04**: Press the left and right buttons (and or) simultaneously on the main control. The bottom row LEDs will begin flashing. This indicates the main control is now in pairing mode.
4. Keep the timer within 16 in. of the main control when pairing.
5. Install the battery into the remote timer. The four lights will immediately flash five times. The red battery light will remain on for 12 seconds, then the 40 minute status light will flash. The 20, 40, and 60 minute status lights will flash for up to 30 seconds and then stop.
6. Press the Power Button on the main control to exit pairing mode.
7. Press the Select Button on the timer to test that pairing was successful (figure A).
   - If the ERV initiates HIGH fan speed ventilation, pairing was successful.
   - If the ERV does not initiate HIGH fan speed ventilation, pairing was not successful. Un-pair the timer and return to step 1 of the pairing procedure and restart the pairing process.
8. Pair additional timers as necessary by repeating steps 1 through 8.

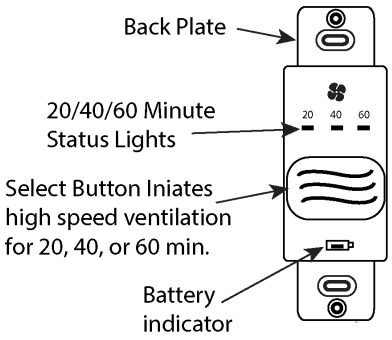


Figure A

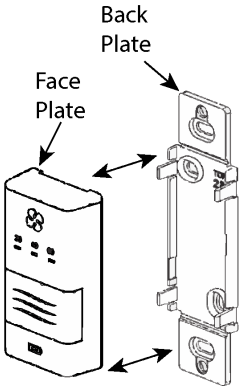


Figure B

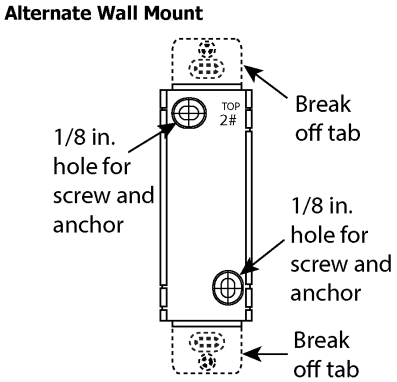


Figure C

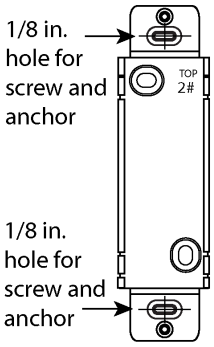


Figure D

Un-pairing:

1. Remove the battery from the back of the timer.
2. Press and hold the Select Button on the front of the timer (figure A).
3. While holding the Select Button, reinstall the battery in the timer. Continue holding the Select Button until the 20, 40, and 60 minute status light begins flashing (this can take up to 30 seconds). The timer will now be unpaired with the main control (figure A).

Installation:

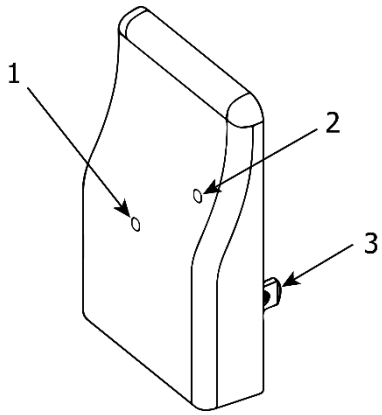
1. Separate the face plate from the back plate by firmly pulling apart (figure B).
2. For mounting the main control without a Decora plate, break off top and bottom tabs (figure C).
3. Place the back plate of the main control in the desired location on the wall and pencil mark the top and bottom screw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

⚠ Attention

- **The wireless timers and repeaters must be paired to the main control of the HRV. This process is called "Pairing". Multiple timers and repeaters can be paired to the main control.**

17 TIMERS AND REPEATERS

99-RX02 Repeater



(1) Green LED
(2) Red LED
(3) Power Plug

The wireless repeater is used to extend the range of the 99-DET02 wireless timers. The repeater plugs directly into a 120V power outlet. The 99-RX02 repeater wirelessly connects to the main wall control as well as the 99-DET02 wireless timers.

The 99-RX02 repeater should be installed at the halfway point between the 99-DET02 wireless timer and the main wall control if the timer is out of range. The LED will indicate the repeater's connection strength to the main wall control per the table below. Re-adjust the repeater's position as necessary.

LED Colour	Connection	Action
Solid Green	Good	No further adjustments are required.
Flashing Green	Moderate	The repeater will function properly but shouldn't be moved further away from the main control.
Red	Bad	The repeater needs to be moved closer to the main control.

Pairing:

1. Turn on the main control by pressing the ON/OFF button ⏻.
2. **BC02, BC03 or BC04 control:** Press the left and right buttons simultaneously on the main control (⏻ and ⚙ or ✣). The bottom row 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 in. of the main 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 repeater into the power outlet. The green light will flash after approximately 12 seconds indicating that the repeater is paired with the main control.
5. Press the ON/OFF button ⏻ on the main control to exit pairing mode and the repeater may now be unplugged and moved to its permanent location.
6. To pair additional repeaters with the same main control, repeat steps 1 through 5 until all repeaters have been paired.

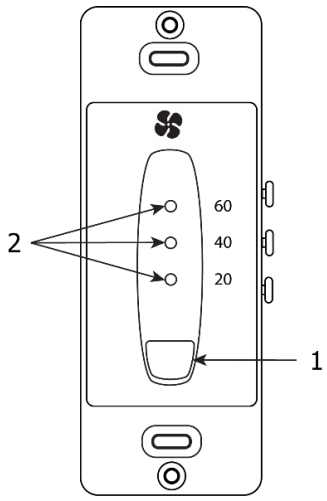
⚠ Attention

- **The repeaters are to be plugged directly into a 120V power outlet.**

17 TIMERS AND REPEATERS

20/40/60 Minute Timer (99-DET01) Operation:

(1) Select Button
(2) 20/40/60 minute status lights



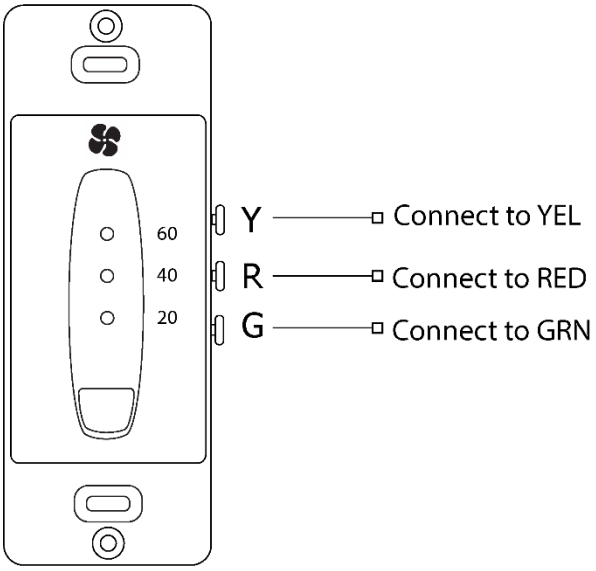
Press the Select Button on the timer to initiate high speed ventilation for 20, 40, or 60 minutes. The 20/40/60 minute status lights indicate high speed operation.

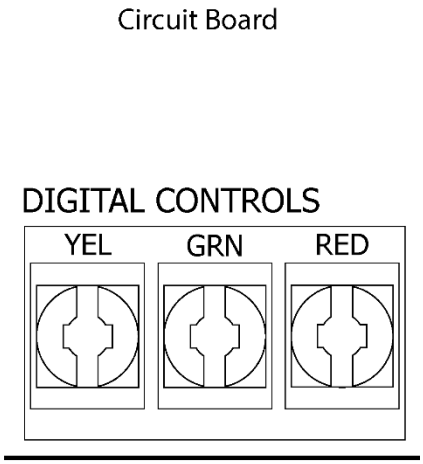
Lockout mode is useful if you wish to disable the timer:

- Enable Lockout Mode by holding the Select Button for 5 seconds.
- Disable Lockout Mode by holding the Select Button for 5 seconds.

20/40/60 Minute Timer (99-DET01) Installation:

Connect the wires from the Y, R, and G terminals on the timer to the YEL, RED, and GRN terminals on the circuit board as shown.





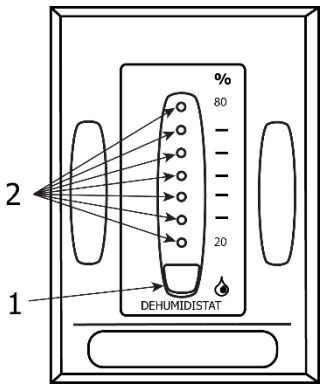
⚠ Note

- **Timers mount in standard 2" x 4" electrical boxes.**
- **Wire multiple timers individually back to the unit.**
- **Use 3 wire; 20-gauge wire (minimum)**

18 DEHUMIDISTAT

Dehumidistat (99-DH01) Operation:

(1) Dehumidistat Adjust Button
(2) Dehumidistat LEDs



Press the Dehumidistat Adjust Button to set the Dehumidistat to the desired humidity level. The Dehumidistat LEDs will indicate the set point. High speed ventilation will initiate when the indoor moisture level 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.

Dehumidistat (99-DH01) Installation:

The dehumidistat may be installed onto a flush mounted 2" x 4" electrical switch box or it may be surface mounted onto a wall. Only one main control should be installed into a ventilation system.

1. Remove the operating instructions card from the top of the control (figure A).
2. Carefully separate the face plate and the back plate by firmly pulling it apart (figure B).
3. Position the back plate of the control in the desired location on the wall and mark the wall for the top and bottom screw holes (figure C)
4. Remove the back plate from the wall and mark the hole for the wires centered between the two screw holes (figure C).
5. Drill two 1/8 in. holes for the screws and wall anchors and drill one 3/8 in. hole for the wires.
6. Pull 3 wire 20 gauge (min.) 100 ft length (max.), through the opening in the wall.
7. Connect the wires to the R, G, and Y terminals on the back plate (figure C).
8. Using the two supplied screws and anchors, install the back plate on the wall.
9. Attach the face plate to the back plate (figure B).
10. Connect the 3 wire 20 gauge (min.), 100 ft length (max.), to the RED, GRN, and YEL terminal on the Digital Controls terminal strip on the Aircom circuit board (figure D).

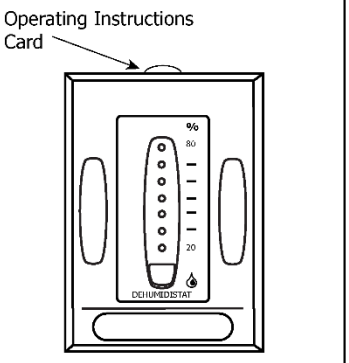


Figure A

Side View

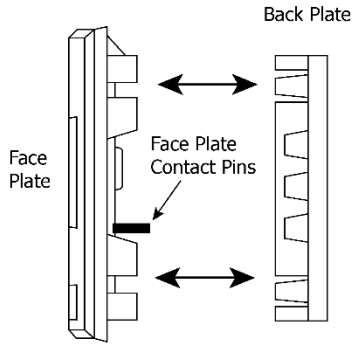


Figure B

Front View of Back Plate

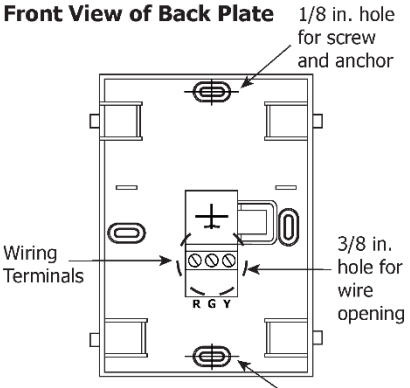


Figure C

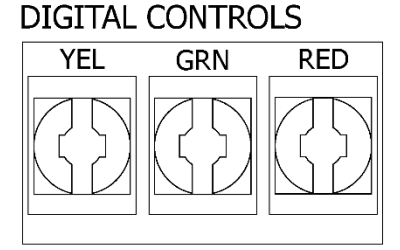


Figure D

⚠ Attention

- **Use care when separating or attaching the face plate to avoid damaging the contact pins.**

19 AIRCOM RELAYS & INTERLOCKING TO A FURNACE/AIR HANDLER

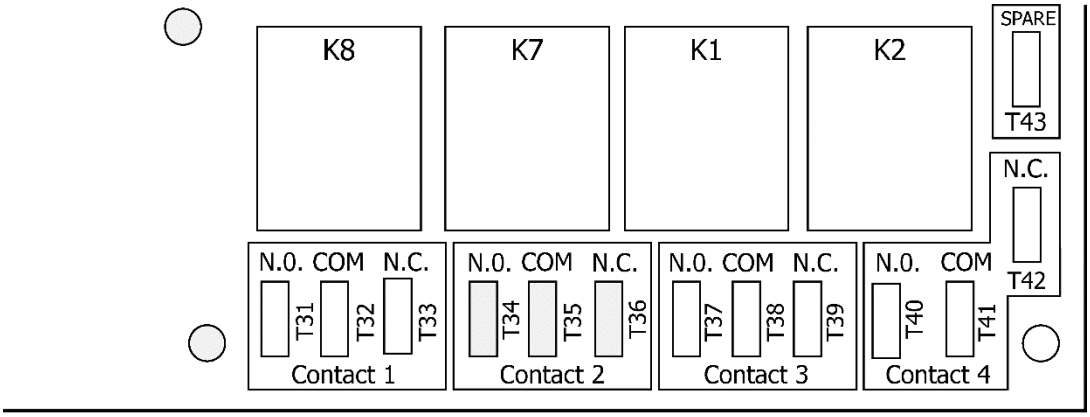
The circuit board has three available "dry contact" relays. Contact 3 is not available.
Maximum 115V, 10 amp resistive load.

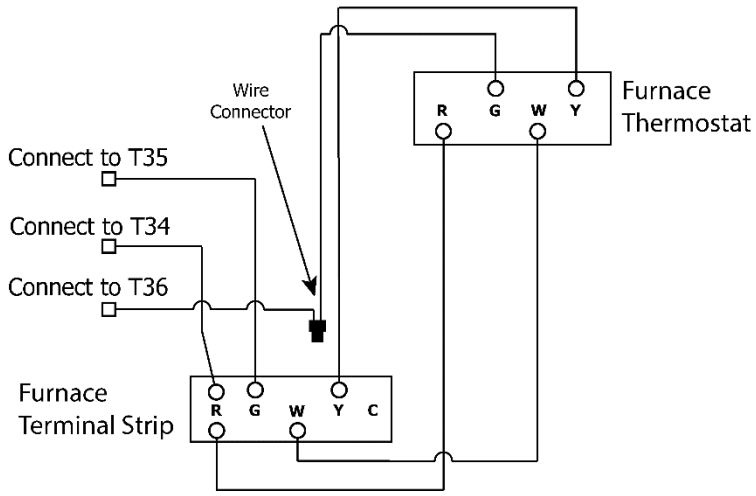
Contact 1
These relays initiate whenever the HRV is in defrost.

Contact 2 and 4
These relays initiate whenever the HRV fans are operating.

- Use contact 2 or 4 to interlock the HRV to an Air Handler or Furnace.

Note: Connecting the HRV as illustrated will ensure the Air Handler Blower Motor is operating whenever the HRV is ventilating.





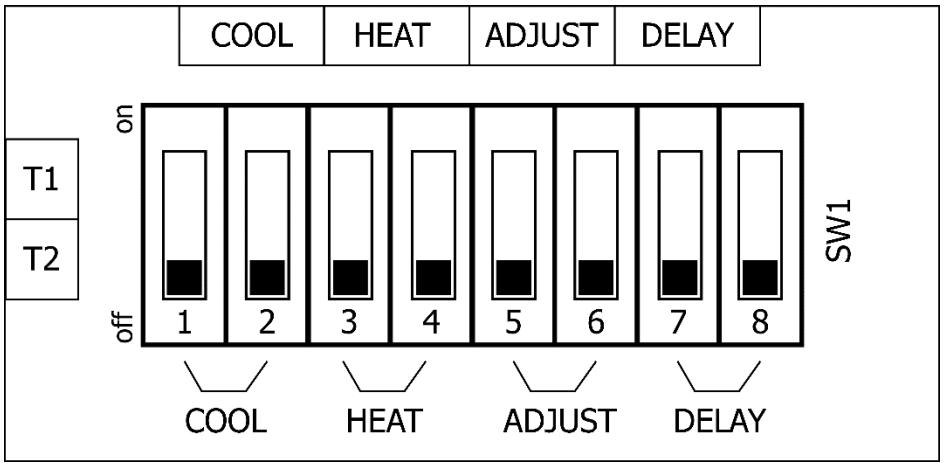
⚠ Caution

- **Consideration must be given to competing air flows when connecting the HRV in conjunction with an Air Handler/Furnace Blower system.**

20 ADJUSTING THE AIR FLOW (1500 UNITS)

The 1500I-ECM and 1500E-ECM are equipped with ECM motors that can be programmed to maintain various different airflows. The 1500I-ECM and 1500E-ECM have three selectable speeds (High, Medium, and Low). Each of these speeds can be further adjusted to obtain the desired airflow. This is done on the ECM circuit board located within the electrical box.

Both motors contain a separate ECM circuit board to allow for independent adjustment of the motors. The "adjust" taps will change the airflows on all three of the speeds. Please note that this unit has been factory set to obtain 1500 cfm at 1" w.g. external static pressure. Adjustment of the high speed settings will produce higher flows only in situations where the external static pressure is below 1" w.g.



Low Speed Adjustment (Cool Tap)

Switch		Nominal Air Flow (cfm)
1	2	
OFF	OFF	700
ON	OFF	900
OFF	ON	500
ON	ON	500

All Speed Adjustment (Adjust Tap)

Switch		Nominal Air Flow (cfm)
5	6	
OFF	OFF	No Change
ON	OFF	15% Up
OFF	ON	15% Down
ON	ON	N/A

High Speed Adjustment (Heat Tap)

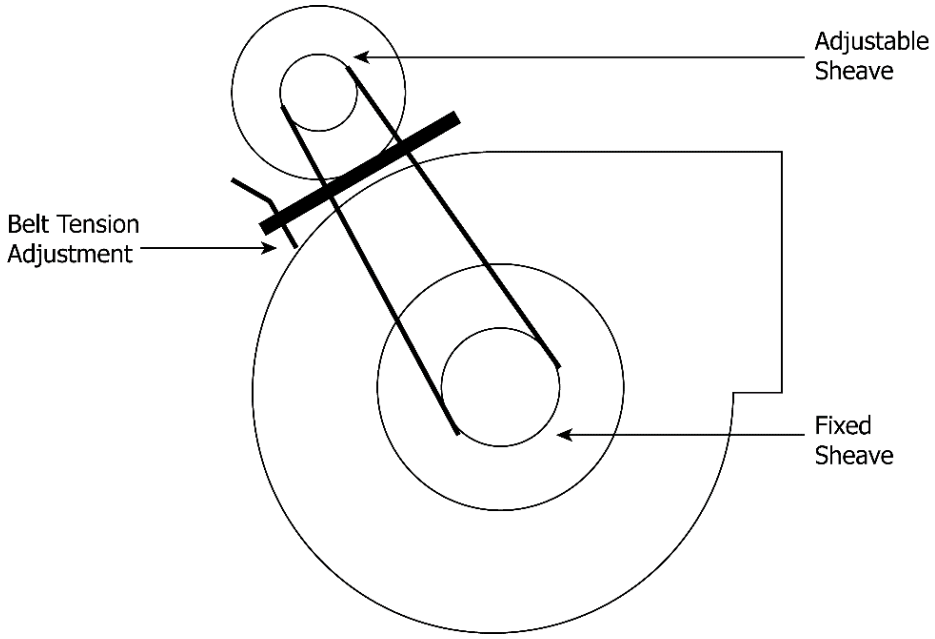
Switch		Nominal Air Flow (cfm)
3	4	
OFF	OFF	1500
ON	OFF	1700
OFF	ON	1300
ON	ON	1000

Medium Speed Adjustment (Delay Tap)

Switch		Nominal Air Flow (cfm)
7	8	
OFF	OFF	1100
ON	OFF	1300
OFF	ON	900
ON	ON	750

21 ADJUSTING THE AIRFLOW (2000 UNITS)

The belt drive system is adjustable to provide a wide range of airflow. Each motor is equipped with a variable pitch sheave that permits an independent airflow adjustment. The sheaves have been factory set to provide the optimum airflow without exceeding the amp draw on the motor for normal applications. The pitch diameter may be decreased to reduce the airflow provided by the blower. To decrease the pitch diameter, remove the setscrew on the sheave furthest from the motor and rotate half the sheave in a counter-clockwise direction. Tighten the setscrew and adjust the tension in the belt. This technique can be used instead of dampers to efficiently balance the HRV system. Each motor should never draw more than the rated amps (see table below) with the doors of the unit closed and attached to the duct system.



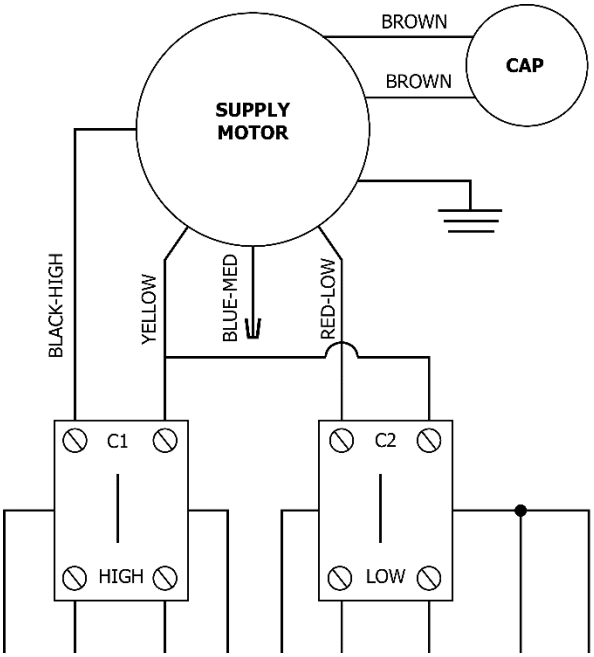
Unit	Voltage (Vac)	Rated Amps for Motors		MCA	MOP
		One	Two		
2000IFD-240SP	240	9.0	18.0	20.25	30
2000IFD-2083P	208	3.0	6.0	14.75	20
2000IFD-208SP	208	10.4	20.8	26	30
2000IFD-4603P	460	2.6	5.2	6.5	15
2000IFD-5753P	575	2.0	4.0	5	15
2000EFD-240SP	240	9.0	18.0	20.25	30
2000EFD-2083P	208	3.0	6.0	14.75	20
2000EFD-208SP	208	10.4	20.8	26	30
2000EFD-4603P	460	2.6	5.2	6.5	15
2000EFD-5753P	575	2.0	4.0	5	15

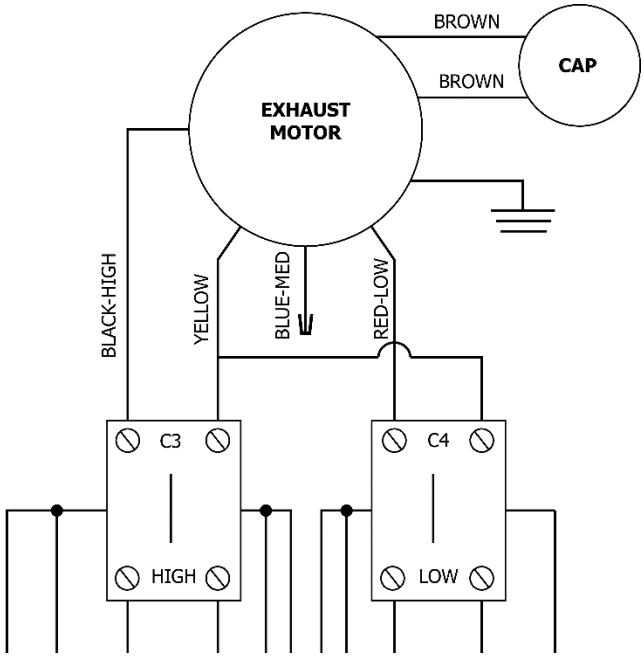
⚠ Warning

- **If adjustments are made to the pitch diameter, AMP readings must be made to ensure the MAX amp load per motor is not exceeded. Refer to the table to obtain the motor amp load for the unit.**

22 ADJUSTING THE AIRFLOW (2500 UNITS)

The factory wired motor speeds are High and Low. You may change the factory setting to High and Medium. The High/Medium Setting can be achieved by switching the RED-LOW and BLUE-MED wires on each motor.





⚠ Warning

- **Low speed will not be available if this change is made.**

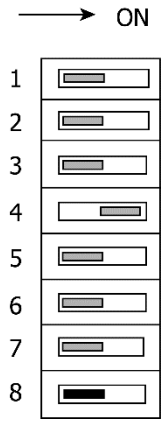
23 FAN DEFROST (ALL UNITS)

The 1500I/E-ECM, 2000IFD/EFD, and 2500IFD/EFD units are equipped with an electronically controlled fan defrost system to remove frost that collects on the warm air side of the aluminum heat transfer surfaces of the heat exchanger core. When the outside temperature drops below 27ºF (-3ºC), a defrost timer is activated which provides for an automatic defrost cycle. During the automatic defrost cycle, the fresh air supply is shut off while the exhaust fan continues to operate. This allows warm inside air to flow over the heat exchanger core, melting any frost accumulation. After the defrost period, the fresh air supply fan automatically returns to the normal speed and fresh outside air continues to be drawn into the building. Water from the melted frost collects in the bottom drip pans and drains out through the bottom drain connections. The defrost cycle repeats automatically until the outdoor air temperature rises above 27ºF (-3ºC).

- If the indoor air temperature is too low, the defrost time may need to be increased.
- The unit must be mounted level (horizontal) to obtain proper drainage of water from the heat exchange cores and drip pans. The warranty will be void if these conditions are not met.

Defrost Time Adjustment

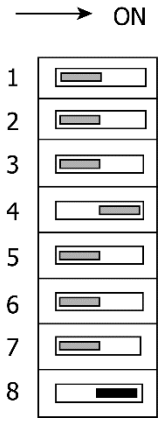
DIP switch #8 (located on the Aircom circuit board) will adjust the defrost time. Do not change to any other DIP switch configuration.



Factory Setting (DIP switch #8 OFF)

The sequence of events for this defrost mode at 27°F (-3°C) is:

1. Both fans will stop for one minute.
2. The HRV exhaust motor will initiate and operate for 4 minutes.
3. Both HRV motors (exhaust and intake) will operate for 30 minutes.
4. The cycle repeats.



Increased Defrost Time (DIP switch #8 ON)

Cooler climates may require a more aggressive defrost cycle:

1. Both fans will stop for one minute.
2. The HRV exhaust motor will initiate and operate for 4 minutes.
3. Both HRV motors (exhaust and intake) will operate for 20 minutes.
4. The cycle repeats.

⚠ Caution

- **Change DIP switch only as illustrated on this page. Do not adjust any other switches.**

24 BALANCING THE AIRFLOWS

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

- The HRV may not operate at its maximum efficiency
- A negative or positive air pressure may occur in the building
- The unit may not defrost properly
- Failure to balance HRV properly may void warranty

Read the Application Warning on the front of this manual!

Prior to balancing, ensure that:

1. All sealing of the ductwork system has been completed.
2. All the HRV's components are in place and functioning properly.
3. Balancing dampers are fully open.
4. Unit is on HIGH speed.
5. Air flows in branch lines to specific areas of the house should be adjusted first prior to balancing the unit. A smoke pencil used at the grilles is a good indicator of each branch line's relative air flow.
6. After taking readings of both the stale air to the HRV 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 adjusted back to match the lower reading.
7. Return unit to appropriate fan speed for normal operation

Balancing Procedure

The following is a method of field balancing an HRV using a Pitot tube, advantageous in situations when flow stations are not installed in the ductwork. Procedure should be performed with the HRV on high speed.

1. 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 HRV will need to overcome and allow for a more accurate balance of the unit.
2. Drill a small hole in the duct (about 3/16"), three 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.
3. The Pitot tube should be connected to a manometer capable of reading 3 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 airflow.
4. For general balancing it is enough 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.
5. Determine which duct has the highest airflow (highest reading on the manometer).
6. Adjust the higher airflow adjusting the field supplied damper. The flows should now be balanced. Actual airflow 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 airflow, the velocity is multiplied by the cross sectional area of the duct being measured.

⚠ 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 backdrafiting of vented combustion equipment.**

Example:
This is an example for determining the airflow in a 6 in. (0.5 ft) duct.

- The Pitot tube reading was 0.025 inches of water. From the chart, this is 640 ft/min.

The 6 in. (0.5 ft) duct has a cross sectional area of:

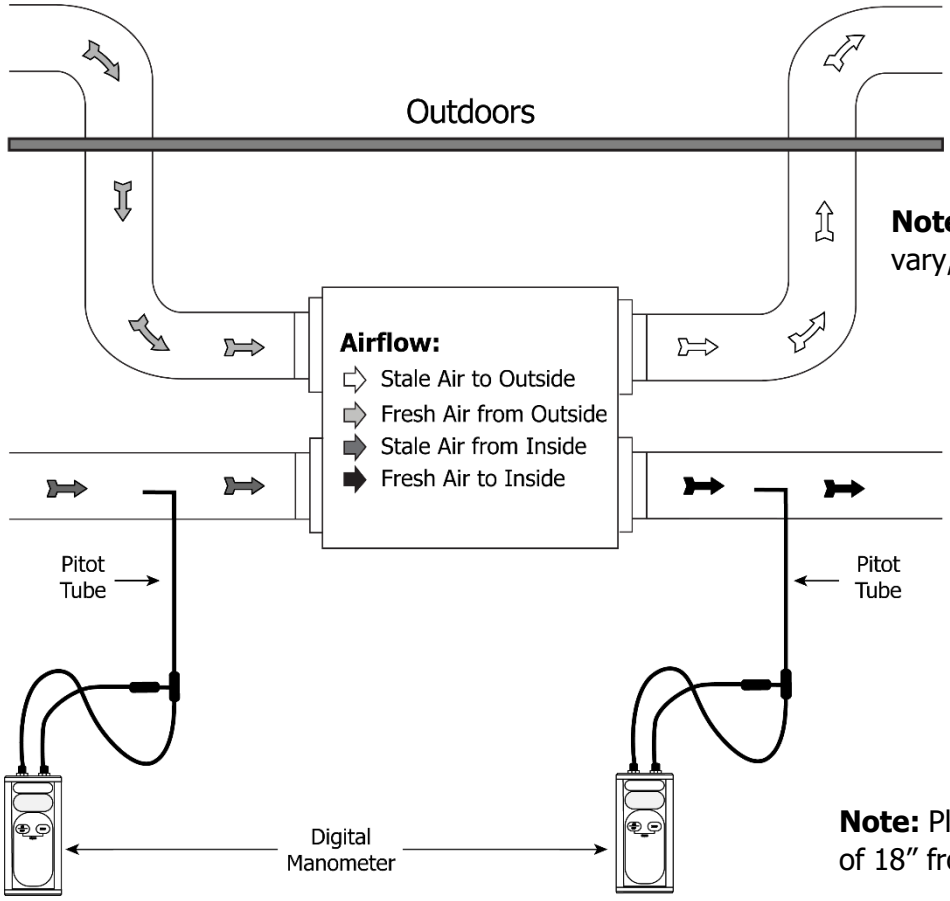
$A = \pi r^2 = [\pi d^2] / 4$
$A = [3.14 \times (0.5 \text{ ft})^2] / 4$
$A = 0.2 \text{ ft}^2$

The airflow is then: (640 ft./min.) x (0.2 ft^2) = 128 cfm

For your convenience, the cross sectional areas of some common duct sizes are listed below:

DUCT. DIAM. (inches)	**CROSS SECTION AREA** (sq. ft.)
5 (127 mm)	0.14
6 (152 mm)	0.20
7 (178 mm)	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.

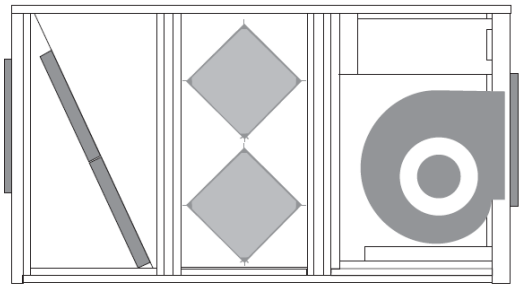


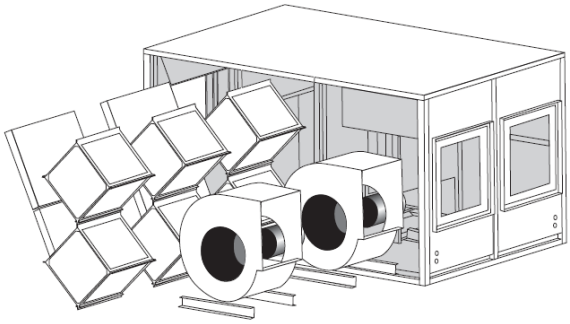
Note: Duct connections may vary, depending on model.

Note: Place pitot tube a minimum of 18" from blower or elbows

25 SERVICE AND MAINTENANCE (1500 UNITS)

The 1500I-ECM and 1500E-ECM are designed to be serviceable from either side. If access to the unit will only be available from one side, the unit must be set up accordingly. The unit is factory shipped to be serviced from the front (Blowers on the right when facing the unit). If servicing is only accessible from the other side, follow the procedure below.





Service Unit from Other Side

1. The electrical box must be removed from the front brackets and mounted on the rear brackets provided on the other side of the unit.
2. The filter divider panels must be removed and placed in the unit so they can be removed from the opposite side.
3. The lower blower divider panel must be removed and mounted in the unit from the other side.

Servicing Filters

1. Remove filter service panel (one or both sides).
2. Remove first set of filters.
3. Remove filter divider panels (if only accessing from one side).
4. Remove filters from behind filter divider panel.
5. Replace all filters. Ensure that filter divider panels are re-inserted into unit.

Servicing Cores

1. Remove core service panel (one or both sides).
2. Slide cores out (regular core maintenance).
3. When placing the cores back into the unit, ensure that there are no gaps between any of the cores. Ensure all H channels are flush with the ends of the cores before the core service panel is re-attached.

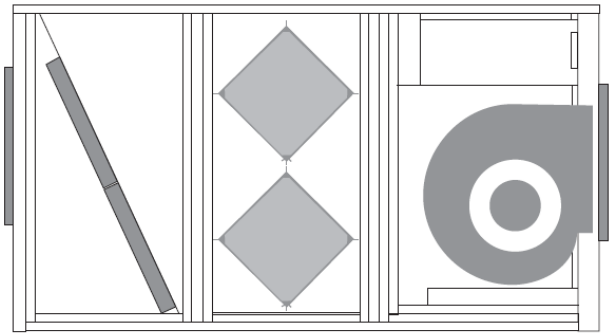
Servicing Blowers

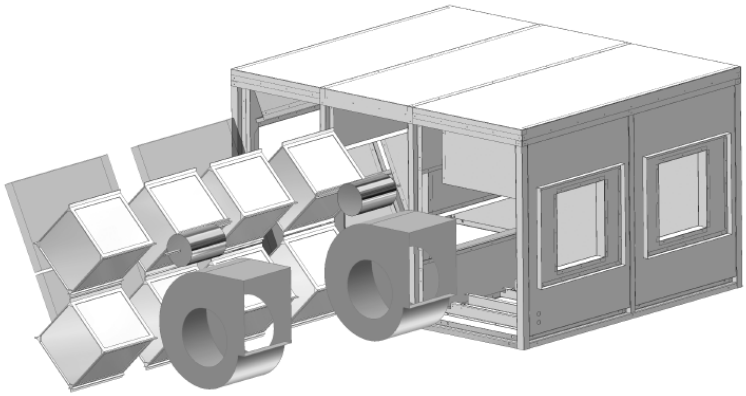
1. Remove blower service panel (one or both sides).
2. Unscrew the 2 bolts that connect the blower to the blower rails of the unit.
3. Remove all wiring to the motors.
4. Slide blower back and lift to remove blower assembly.
5. If access to the unit is not available from both sides, remove the blower divider panel by removing the 8 bolts holding this panel in place.
6. For EFD models, unscrew the 4 bolts that connect the downward facing blower to the blower rails. Lift out blower assembly. (End panel can be removed to facilitate blower removal).
7. Repeat steps 2 through 4 with the other blower.

⚠ Note

- **Each panel on the unit can be removed by removing the two bolts on the bottom. Servicing is easiest by removing the side panels on both sides to gain access to either side of the unit.**

26 SERVICE AND MAINTENANCE (2000 UNITS)





Servicing Filters

1. Remove filter service panel (one or both sides).
2. Remove first set of filters.
3. Remove filter divider panels (if only accessing from one side).
4. Remove filters from behind filter divider panel.
5. Replace all filters. Ensure that filter divider panels are re-inserted into unit.

Servicing Cores

1. Remove core service panel (one or both sides).
2. Slide cores out (regular core maintenance).
3. When placing the cores back into the unit, ensure that there are no gaps between any of the cores. Ensure all H channels are flush with the ends of the cores before the core service panel is re-attached.

Servicing Blowers

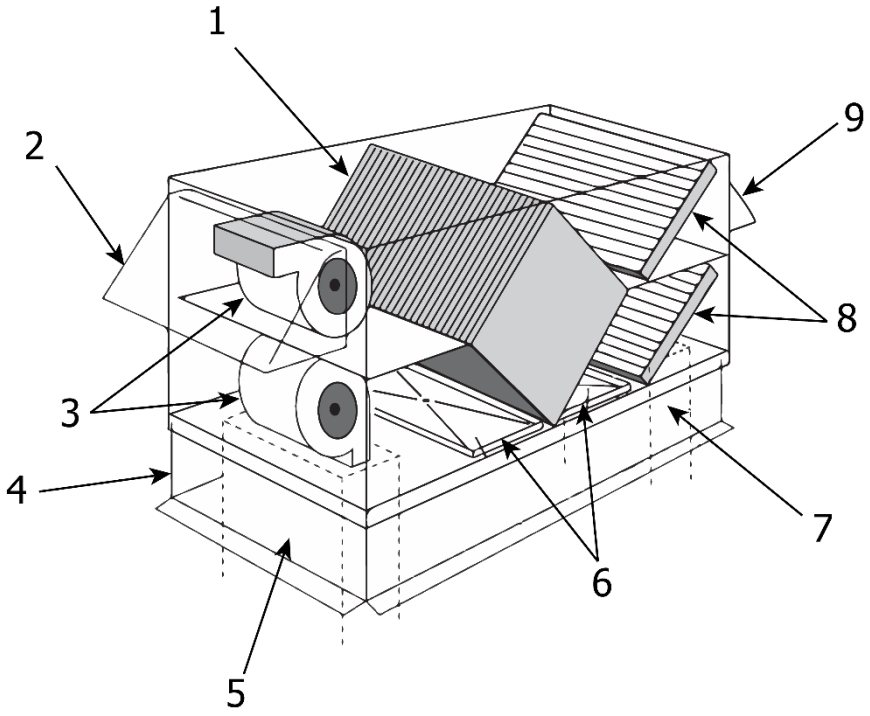
1. Remove blower service panel (one or both sides).
2. Unscrew the 2 bolts that connect the blower to the blower rails of the unit.
3. Remove all wiring to the motors.
4. Slide blower back and lift to remove blower assembly.
5. If access to the unit is not available from both sides, remove the blower divider panel by removing the 8 bolts holding this panel in place.
6. For EFD models, unscrew the 4 bolts that connect the downward facing blower to the blower rails. Lift out blower assembly. (End panel can be removed to facilitate blower removal).
7. Repeat steps 2 through 4 with the other blower.

27 SERVICE AND MAINTENANCE (2500 UNITS)

A dedicated maintenance program will prolong the life of the equipment and maintain its optimum performance.

We recommend at least two (2) full inspections and cleanings per year under normal operating conditions and more if circumstances warrant it (i.e., situations of heavy smoke may require servicing every one to two months).

(1) Heat Exchanger Core
(2) Exhaust Hood c/w Bug Screen
(3) Motors (two)
(4) Roof Curb
(5) Supply Duct 24" x 16"
(6) Drain Pans (two)
(7) Exhaust Duct 24" x 16"
(8) 4" Filters (two)
(9) Supply Hood c/w Bug Screen



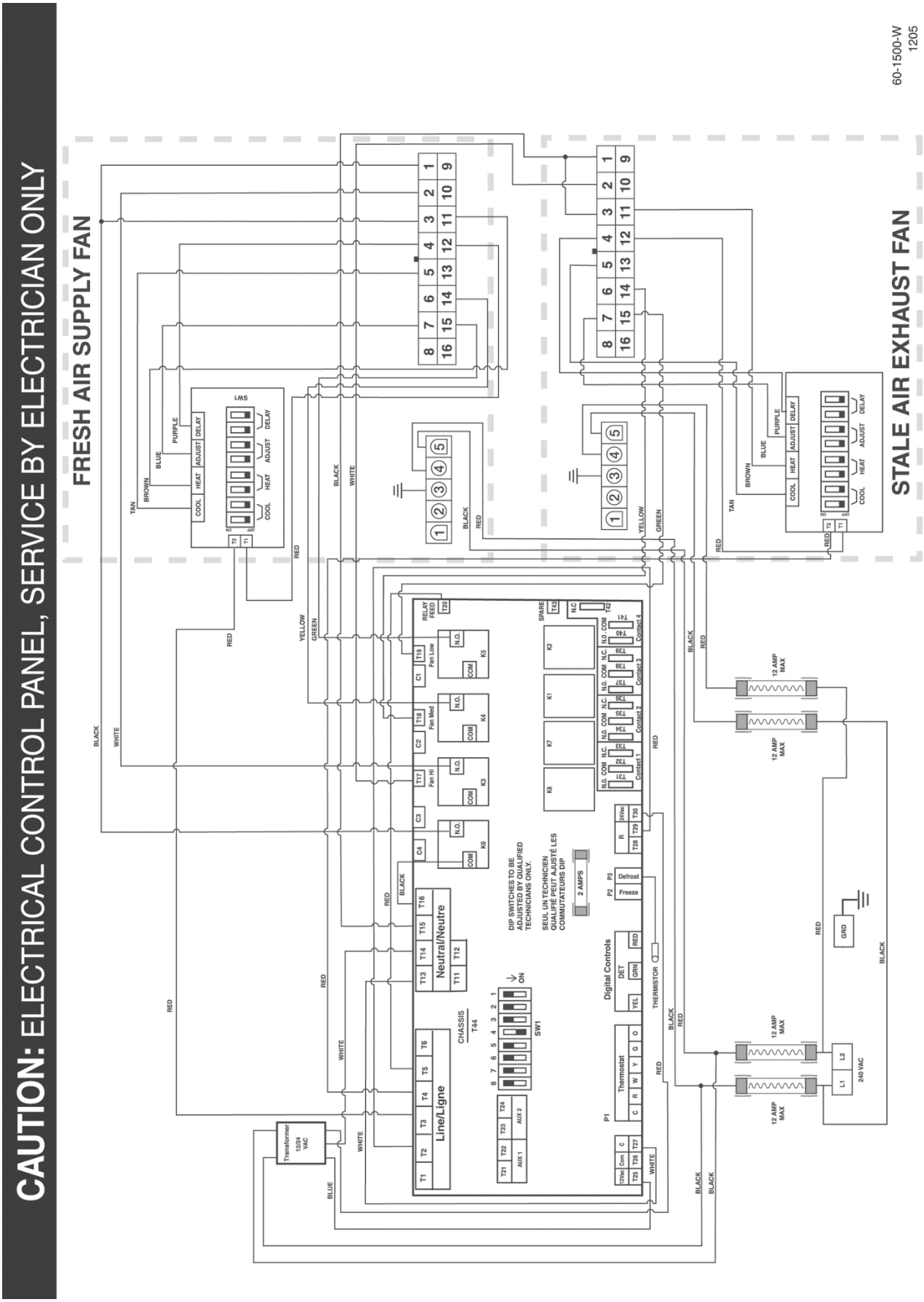
Services should include:

- Cleaning of screens protecting outside hoods.
- Cleaning of core (see below).
- Inspect filters and replace as necessary.
- Wipe down drain pans and inside of cabinet using a mild disinfectant.
- Ensure condensate drain has free flow of moisture.
- Inspect operation of blowers and electric panel.
- Confirm operation.

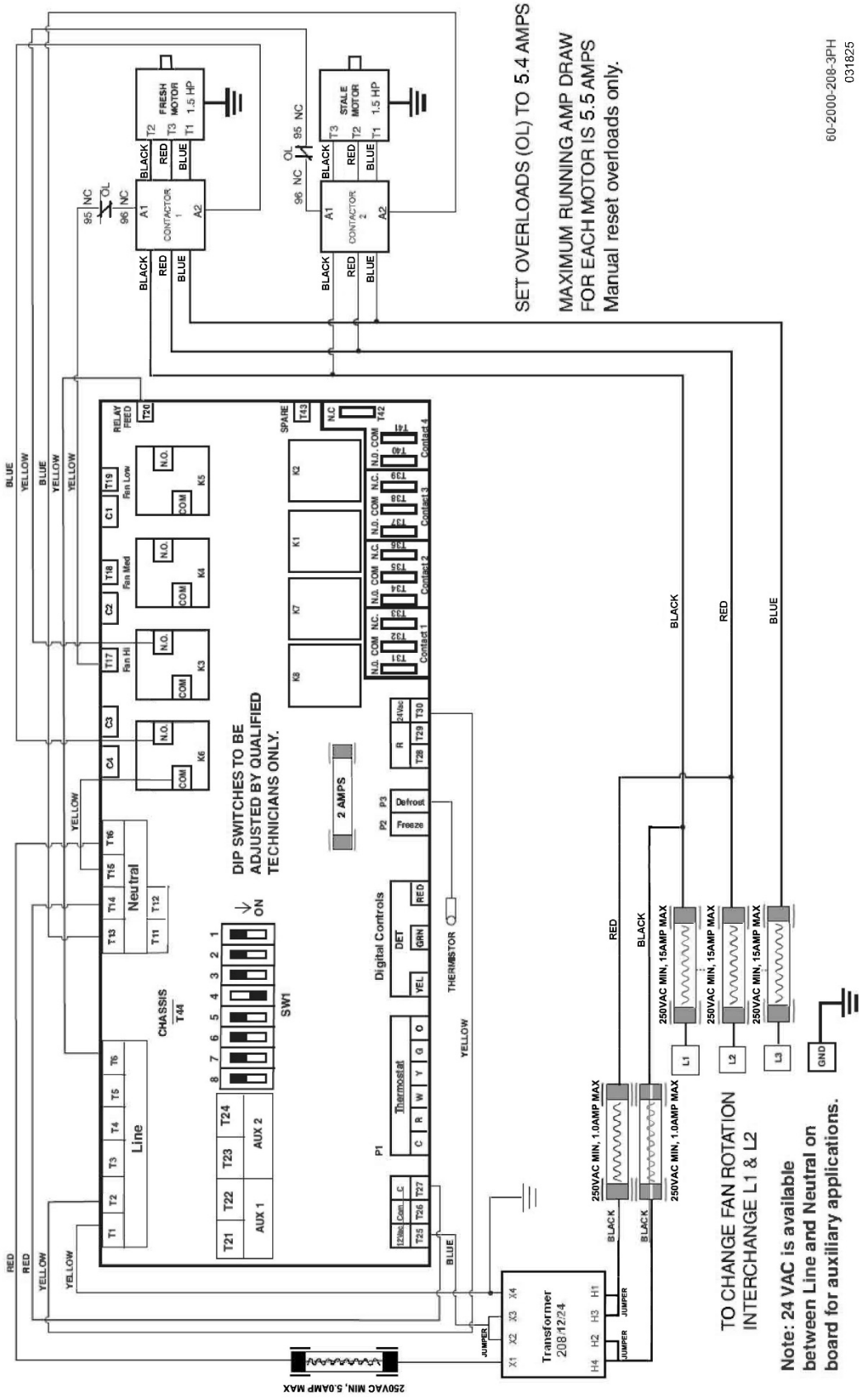
Cleaning of Core:

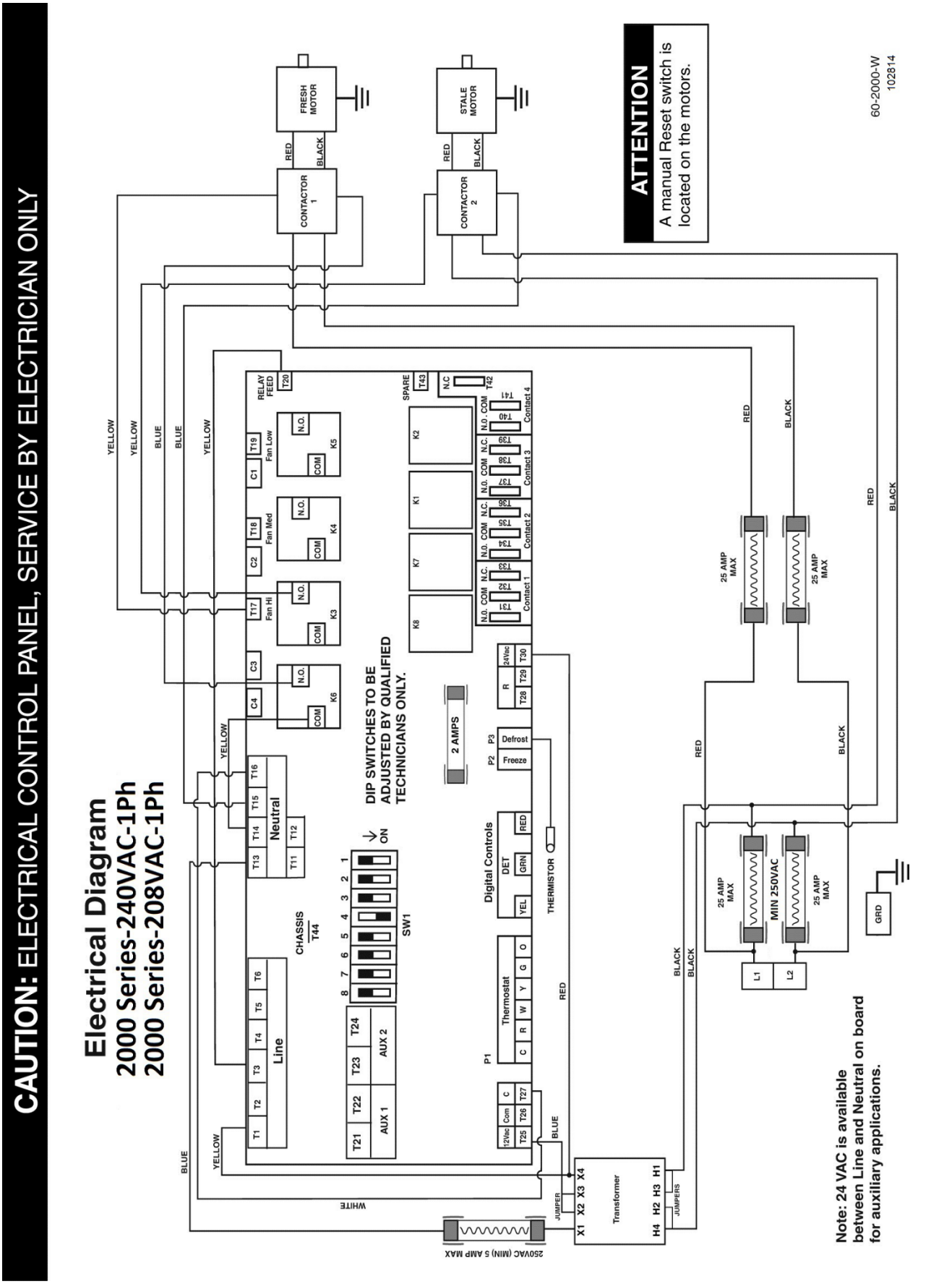
To access core, remove service panels and slide core halfway out. Wash core protruding from cabinet with water and/or a mild cleaning solution. Push core through to the other side of the cabinet and repeat the procedure to the clean the other side of the core. In many cases, only a vacuuming of the core surface is required.

28 WIRING DIAGRAMS (1500I-ECM-240SP/1500E-ECM-240SP)

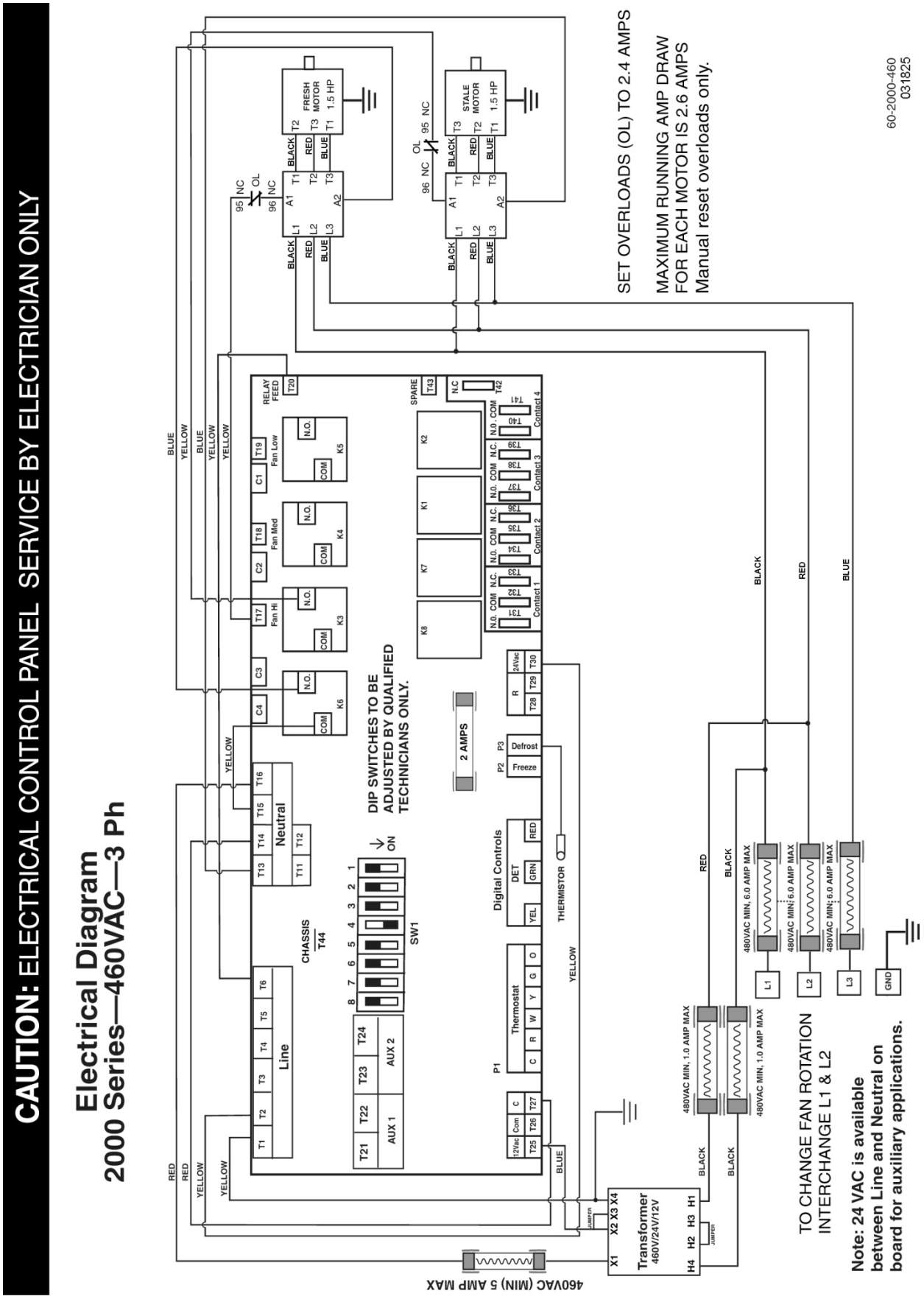


29 WIRING DIAGRAMS (2000IFD-2083P /2000EFD-2083P)

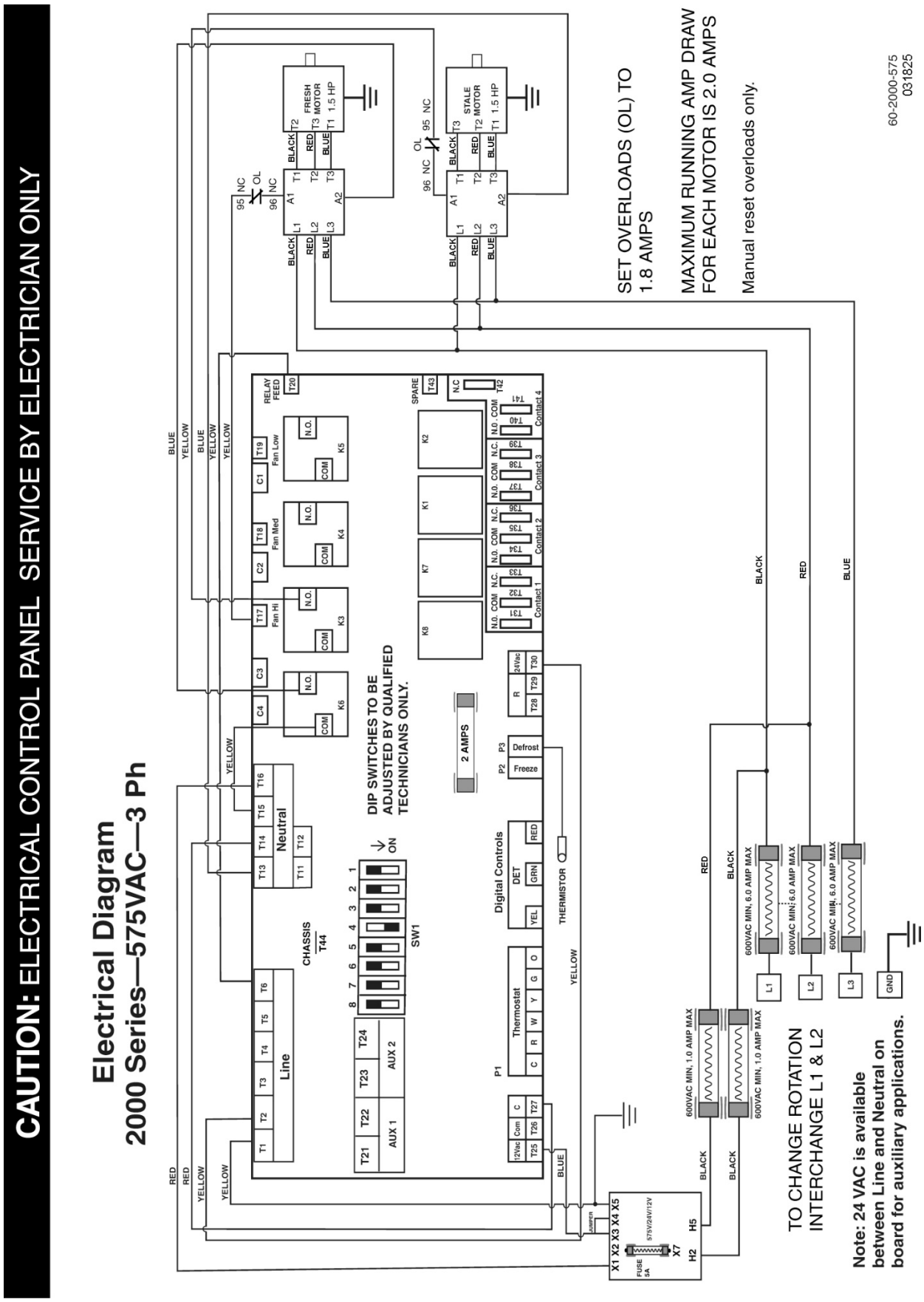



CAUTION: ELECTRICAL CONTROL PANEL, SERVICE BY ELECTRICIAN ONLY
Electrical Diagram
2000 Series-240VAC-1Ph
2000 Series-208VAC-1Ph
ATTENTION
A manual Reset switch is located on the motors.
60-2000-W
102814
FRESH MOTOR
STALE MOTOR
CONTACTOR 1
CONTACTOR 2
RED
BLACK
YELLOW
BLUE
WHITE
RELAY FEED
T20
Fan Low
Fan Med
Fan Hi
SPARE
T43
N.C
T42
Contact 4
Contact 3
Contact 2
Contact 1
K1
K2
K3
K4
K5
K6
K7
K8
DIP SWITCHES TO BE ADJUSTED BY QUALIFIED TECHNICIANS ONLY.
2 AMPS
Neutral
Line
CHASSIS
T44
SW1
ON
AUX 1
AUX 2
Digital Controls
DET
THERMISTOR
Thermostat
Defrost
Freeze
24Vac
12Vac
Com
25 AMP MAX
MIN 250VAC
L1
L2
GRD
JUMPER
JUMPERS
Transformer
250VAC (MIN) 5 AMP MAX
Note: 24 VAC is available between Line and Neutral on board for auxiliary applications.

31 WIRING DIAGRAMS (2000IFD-4603P/2000EFD-4603P)

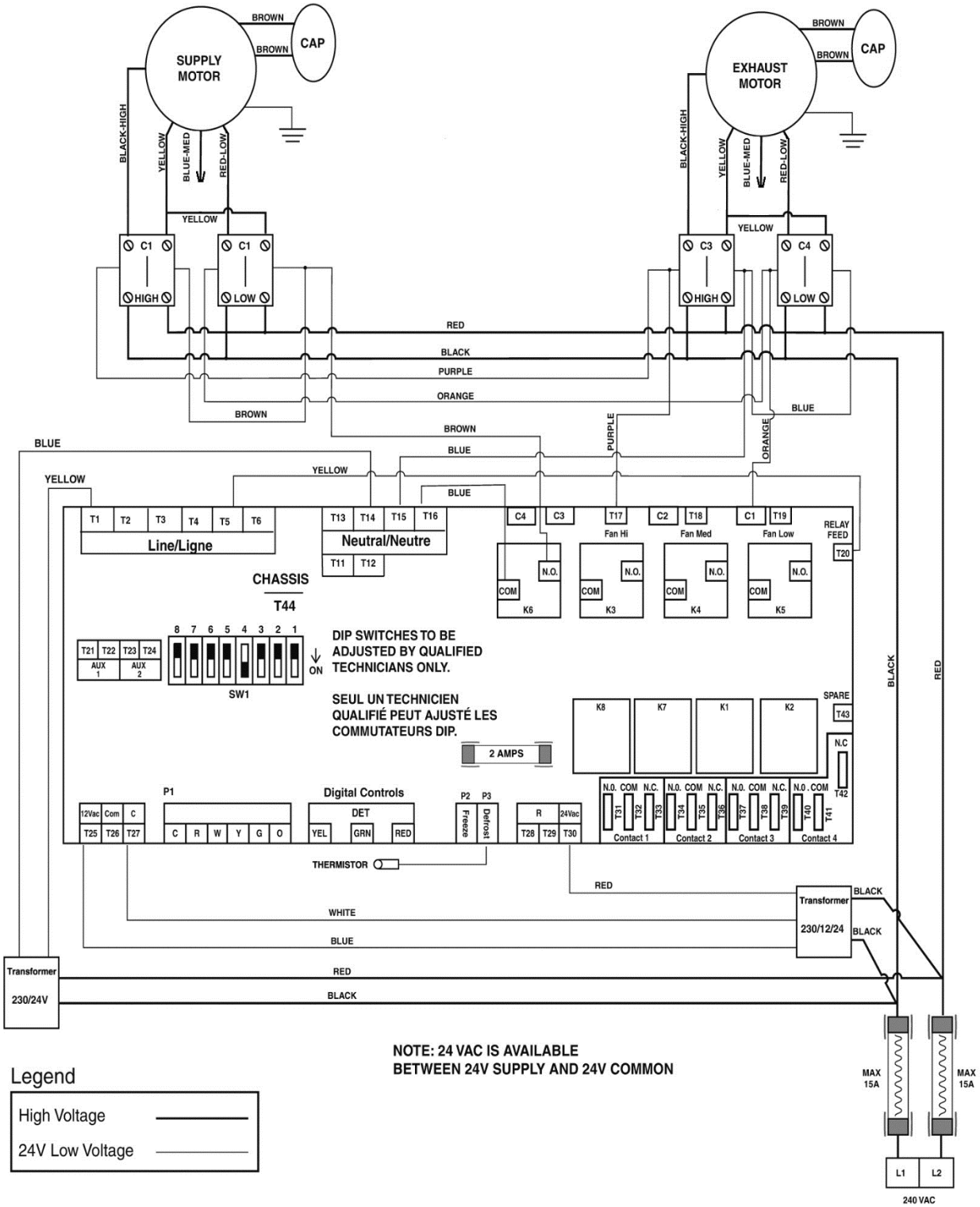


32 WIRING DIAGRAMS (2000IFD-5753P/2000EFD-5753P)



33 WIRING DIAGRAMS (2500IFD-240SP/2500EFD-240SP)

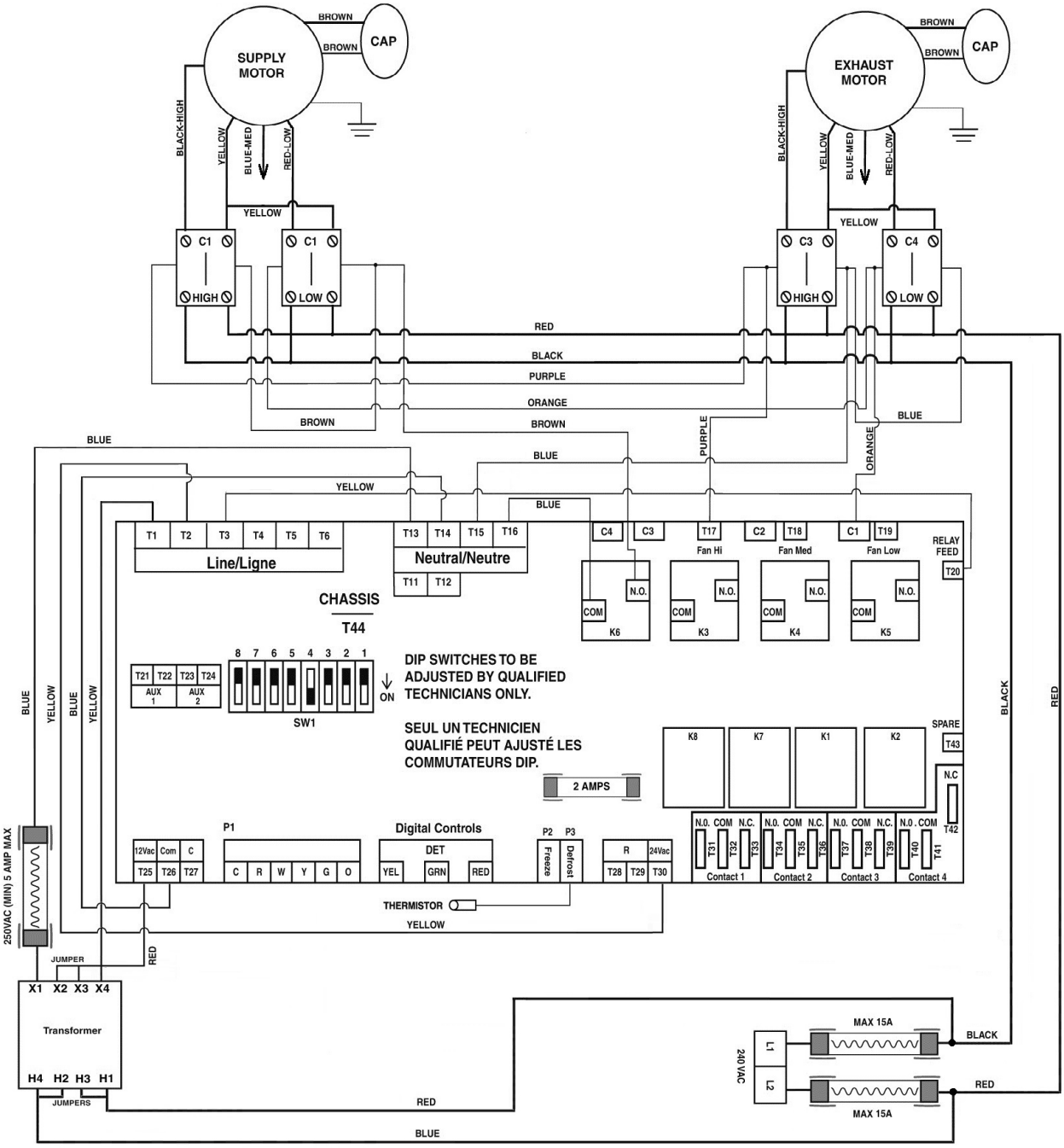
CAUTION: ELECTRICAL CONTROL PANEL, SERVICE BY ELECTRICIAN ONLY



60-2500-W

34 WIRING DIAGRAMS (2500IFD-208SP/2500EFD-208SP)

CAUTION: ELECTRICAL CONTROL PANEL, SERVICE BY ELECTRICIAN ONLY



Legend

High Voltage	———
24V Low Voltage	———

NOTE: 24 VAC IS AVAILABLE BETWEEN 24V SUPPLY AND 24V COMMON

60-2500-W-208
REV. 04072025

35 WARRANTY

AIRIA BRANDS INC.® (AIRIA) warrants to the original purchaser of the LIFEBREATH® model and accessories referred to below, to be free from manufacturing defects.

This Limited Warranty is personal to AIRIA® and is in effect from the installation date, but no later than 12 months after the date the product was manufactured (if the installation date cannot be verified, the warranty period will begin on the date of manufacture). The serial number can be used to determine the date of manufacture: XX XX MMDDYY ###; or MMDDYY ###. The warranty is dependent on the type of unit:

Type of Unit	**Warranty**
HRV Residential	Lifetime on the Core / 5 years on other components
HRV Commercial	15 years on the Core / 2 years on other components
ERV Residential	5 years on the Core / 5 years on other components
ERV Commercial	5 years on the Core / 2 years on other components
Accessories (e.g. controls and timers)	1 year
Replacement Parts (e.g. motor)	1 year
Clean Air Furnace (HRV)	Lifetime on the Core / 2 years on other components
Clean Air Furnace (ERV)	5 years on the Core / 2 years on other components
Air Handler	5 years
TFP	5 years

Damage resulting from all other causes, including but not limited to: lightning, hurricane, tornado, earthquake or any other acts of God; improper installation, modification, alteration or misuse of the LIFEBREATH® unit or its operation in a manner contrary to the instructions accompanying the unit at the time of sale; accidental or intentional damage, neglect, improper care, or other failure by the owner to provide reasonable and necessary maintenance of the product; any attempt at repair by an unauthorized service representative or not in accordance with this warranty; or any other causes beyond the control of AIRIA®, are excluded from this warranty.

If you feel that the LIFEBREATH® unit you purchased is not free from manufacturing defects, please refer to https://www.lifebreath.com/homeowners-2/find-a-contractor/ to find the name of your nearest dealer in order to repair the product. The labour required to install any replacement part(s) is not covered by AIRIA®.

AIRIA® reserves the right to replace the entire unit or to refund the original purchase price in lieu of repair.

AIRIA® MAKES NO EXPRESS WARRANTIES, EXCEPT FOR THOSE THAT SET FORTH HERIN AND SHALL NOT BE LIABLE FOR ANY INDIENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES WITH RESPECT TO LIFEBREATH® COVERED BY THIS WARRANTY. AIRIA'S COMPLETE LIABILITY AND THE OWNER'S EXCLUSIVE REMEDY BEING LIMITED TO REPAIR OR REPLACEMENT ON THE TERMS STATED HEREIN. ANY IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY AND OF FITNESS FOR ANY PARTICULAR PURPOSE, ARE EXPRESSLY EXCLUDED.

NO PERSON IS AUTHORIZED TO CHANGE THE WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGES ARE MADE IN WRITING AND SIGNED BY AN OFFICER OF AIRA®.

MODEL NO.: _____

UNIT SERIAL NO.: _____

INSTALLED BY:_____

DATE: _____