2.2 Installing the Ductwork and the Registers

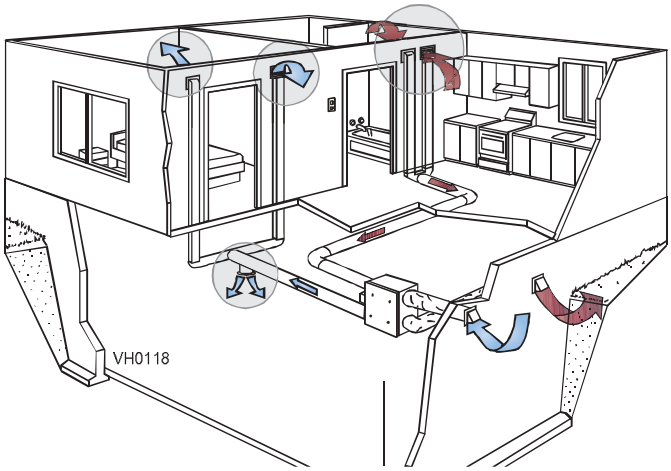
⚠ WARNING

Never install a stale air exhaust register in a room where there is a combustion device, such as a gas furnace, a gas water heater or a fireplace.

2.2.1 Fully Ducted System

Stale air exhaust ductwork:

- Install registers in areas where contaminants and humidity are produced: Kitchen, bathrooms, laundry room, etc.
- Install registers on an interior wall, 6 to 12 inches (152 to 305 mm) away from the ceiling OR in the ceiling.
- Install the kitchen register at least 4 feet (1.2 m) away from the range.
- Bathroom fans and range hoods can be used to better exhaust stale air.
- Homes with more than one level require at least one exhaust register at the highest level.



Fresh air distribution ductwork:

- Install registers in bedrooms, dining room, living room and basement.
- Install registers in the ceiling OR high on the walls with the airflow directed towards the ceiling.
- If a register must be installed in the floor, direct the air flow up the wall.

2.2.2 Exhaust Ducted System

⚠ WARNING

When performing duct connection to the furnace, installation must be done in accordance with all applicable codes and standards. Please refer to your local building code.

Stale air exhaust ductwork:

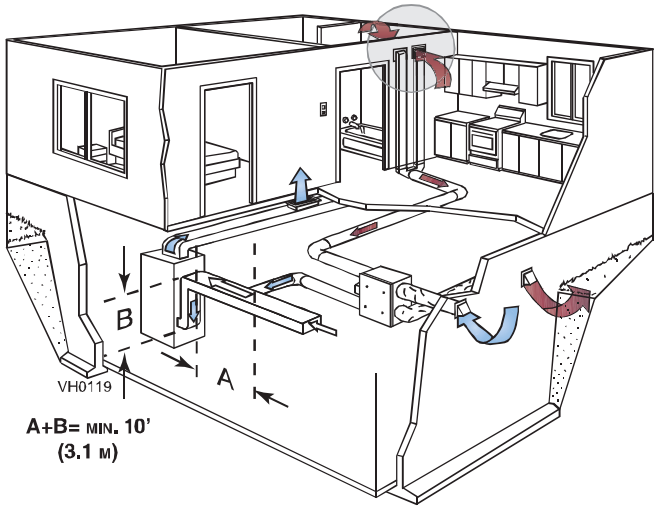
Same as for Fully Ducted System, described on point 2.2.1.

Fresh air distribution:

- Connect the fresh air distribution duct of the unit to the furnace return duct at least 10 feet (3.1 m) away from the furnace (**A+B**).

CAUTION

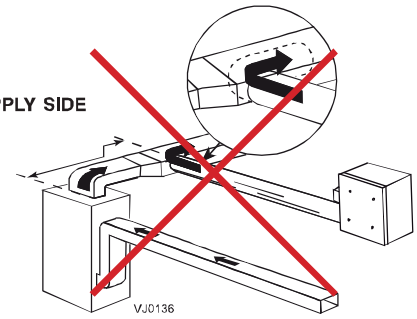
For this type of installation, you must perform steps in section 2.2.4 to make sure that the pressure in the return duct of the furnace allows the unit to operate properly.



A+B= min. 10'
(3.1 m)

NOTE : The furnace blower operation can be synchronized with the unit (see Section 3.3). It is recommended, but not essential that the furnace blower run when the unit is in operation.

Do not connect to the supply side of the furnace



2.2.3 Simplified Installation

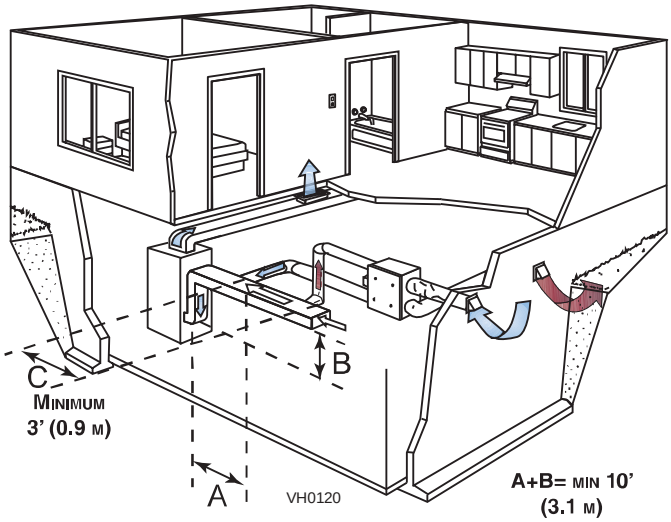
CAUTION

For this type of installation, the furnace must always be synchronized with the unit. See Section 3.3.

⚠ WARNING

When performing duct connection to the furnace, installation must be done in accordance with all applicable codes and standards. Please refer to your local building code.

Fresh air and exhaust air flow through the furnace ducts, which simplifies the installation.
The use of bathroom fans and a range hood is suggested to exhaust stale air.



Fresh air distribution:

Connect the fresh air distribution duct of the unit to the furnace return duct at least 10 feet (3.1 m) away from the furnace (**A**+**B**).

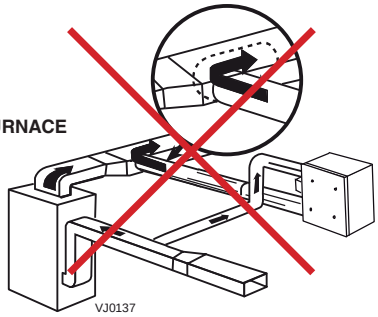
CAUTION

For this type of installation, you must perform steps in section 2.2.4 to make sure that the pressure in the return duct of the furnace allows the unit to operate properly.

Stale air exhaust ductwork:

Connect the stale air intake port of the unit to the furnace return duct at least **3 feet (0.9 m) ahead** of the fresh air distribution from the unit.

Do not connect to the supply side of the furnace

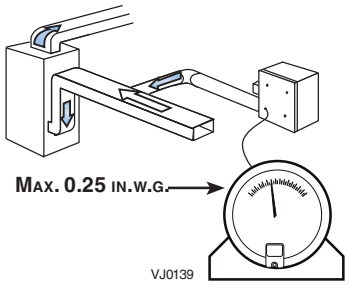


2.2.4 Measuring the pressure inside the ductwork

CAUTION

This procedure applies to installations where the ductwork of the unit is connected to the return duct of the furnace (sections 2.2.2 and 2.2.3). Failure to perform this step may severely decrease the performance of the ventilation system and damage the unit and the furnace.

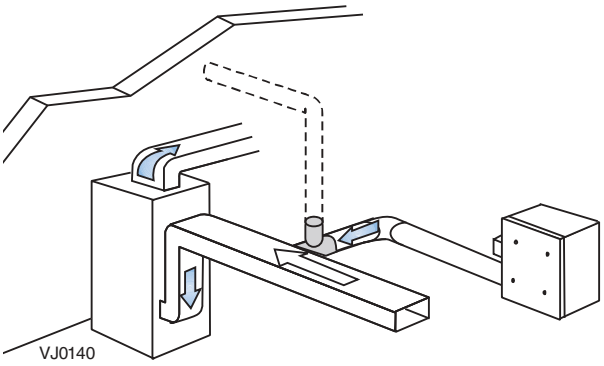
After connecting the ductwork as instructed in sections 2.2.2 and 2.2.3, you must make sure that the pressure in the return duct of the furnace allows the unit to operate properly.



1. Turn the unit OFF.
2. Turn the furnace ON at the highest speed.
3. Prepare to measure the pressure:
   - Seal all the ductwork with tape. Close all windows and doors.
   - Turn off all exhaust devices such as a range hood, dryer and bathroom fan.
   - Make sure the unit's integrated balancing dampers are fully open.
   - Make sure all the filters are clean.
4. Place a magnehelic gauge on a level surface and adjust it to zero.
5. Connect tubing from the gauge to the fresh air to the house pressure tap. If the pressure is below 0.25 in. w.g., and the fresh air distribution duct connection is least 10 feet away from the furnace, no action has to be taken. **If the pressure exceeds 0.25 in. w.g., or if the fresh air distribution duct cannot be connected at least 10 feet away from the furnace, perform the following step.**

CAUTION

If you have to perform the following step, the furnace blower must be synchronized with the unit for all types of installations. See Section 3.3.



6. Install a metal T coupling at the junction of the fresh air to the house duct and the furnace return duct (shaded part in illustration).

⚠WARNING

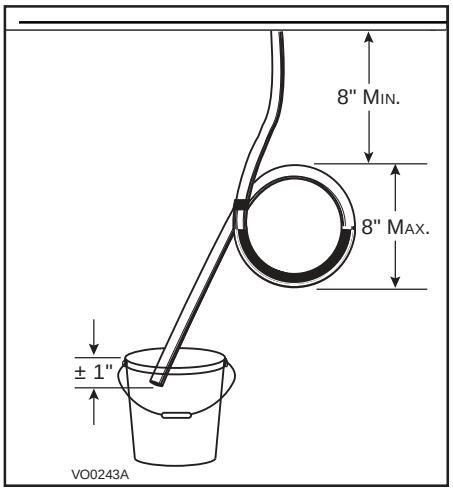
In presence of a combustion furnace in a closed room, an additional duct must be connected to the T metal coupling to allow air intake from outside this room (dotted line).

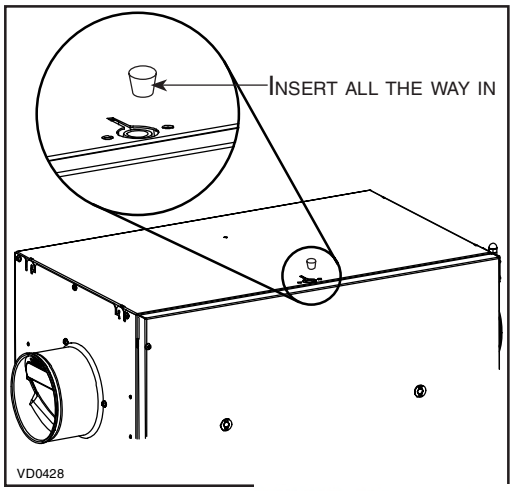
2.3 Connecting the Drain (HRV130FL only)

CAUTION

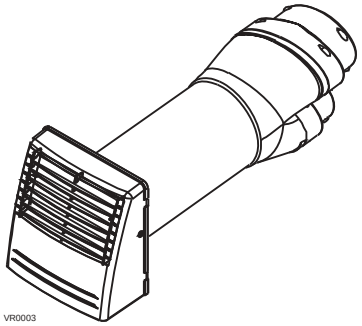
A drain tubing (included) must be installed on these units.

- Make a water trap loop in the tube to prevent the unit from drawing unpleasant odors from the drain source. Run the tube to the floor drain or to an alternate drain pipe or pail.
- **IMPORTANT:** If using a pail to collect water, place the tube end approximately 1" inside the pail in order to prevent water from being drawn back up into the unit.
- Fully insert a drain plug (included in parts bag) in alternate drain fitting located on top of the unit.





2.4 Installing Dual Exterior Hood Using Tandem® Transition Kit (optional)



If desired, a Tandem transition kit can be used instead of 2 exterior hoods; but take into account this device will generate approximately an additional 0.2 in w.g. static pressure depending on the installation. If using the Tandem hood, we recommend to use 6-in. ducts to minimize the reduction caused by the tandem hood restriction.

The minimum joist opening needed to install the Tandem® transition is 9¾". The maximum height of the Tandem transition is 8¾".

To connect the insulated flexible ducts to the Tandem transition (*Exhaust air to outdoors* and *Fresh air from outdoors*), follow the instructions included with the Tandem transition kit (part no.VTYIK1).

2.5 Installing the Exterior Hoods

Choose an appropriate location for the exterior hoods:

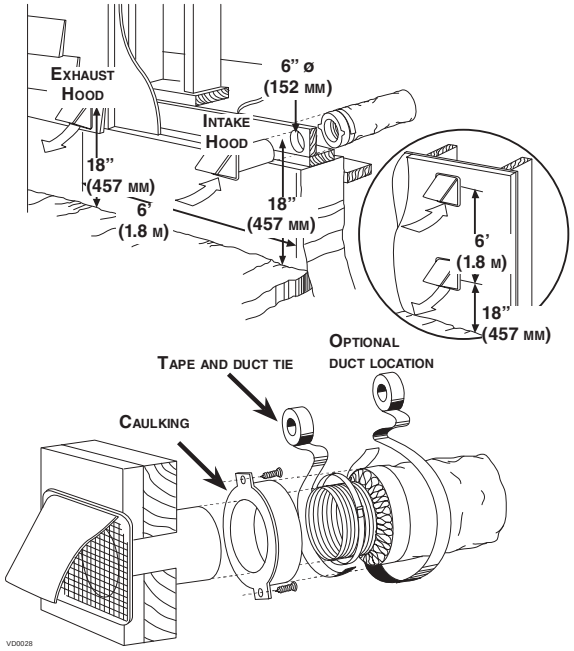
- At least 6 feet between both hoods to avoid cross-contamination
- At least 18 inches away from the ground

⚠ WARNING

Make sure the intake hood is at least 6 feet (1.8 m) away from any of the following:

- **Dryer exhaust, high efficiency furnace vent, central vacuum vent**
- **Gas meter exhaust, gas barbecue-grill**
- **Any exhaust from a combustion source**
- **Garbage bin and any other source of contamination.**

Refer to illustration at right for proper connection method of the insulated ducts to the hoods. An "Anti-Gust Intake Hood" should be installed in regions where a lot of snow is expected to fall.



2.6 Connecting the ducts to the Unit

CAUTION

- **If ducts have to go through an unconditioned space (e.g.: attic), always use insulated ducts.**
- **Do not use screws to connect the ducts or transitions to the ports.**

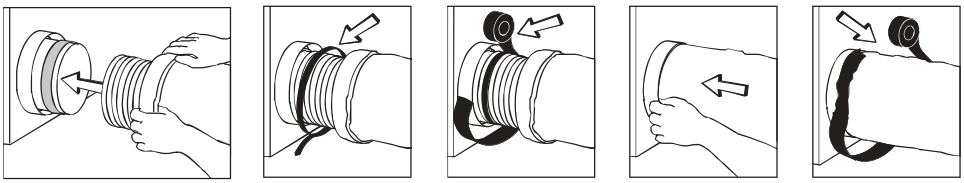
Insulated flexible ducts

Use the following procedure to connect the insulated flexible ducts to the ports of the unit (exhaust to outside and fresh air from outside).

1. Expose the flexible duct by pulling back the insulation, and place it **over** the inner port ring.
2. Attach the flexible duct to the port using a tie wrap, making sure that the tie wrap is positioned over the foam band on the port.
3. Seal the joint using duct tape.
4. Pull the insulation and vapor barrier over the joint, tuck them **between the inner and outer rings** of the double collar and fasten them in place using duct tape.

CAUTION

Avoid tearing the vapor barrier on the insulated ducts during installation to avoid condensation within the ducts.



Transitioning to 6-in. ducts

If using 6-in. ducts, install 5-in. to 6-in. transitions on the ports, and secure using duct tape only (do NOT use screws). If rigid ducting is used, install a 12-in. section of flexible duct between the transition and the rigid ducting (see below).

Rigid ducts

To prevent potential water leakage in cold side rigid ducting insulation, seal all rigid ducting joints with duct tape.
To avoid transmission of vibrations, always use a 12-inch section of flexible duct to connect rigid ducts to the unit. To connect insulated rigid ducts to the unit (cold side) using insulated flexible ducts, follow instructions in section 2.5. To connect regular rigid ducts (warm side) to the unit using non-insulated flexible ducts, use a tie wrap.

3. CONNECTIONS

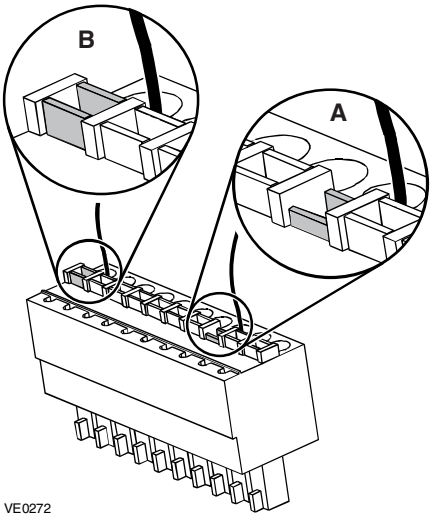
3.1 Electrical Connection to Optional Main Wall Control

⚠ WARNING

Always disconnect the unit before making any connections. Failure to cut power could result in electrical shock or damage to the wall control or electronic module inside the unit.

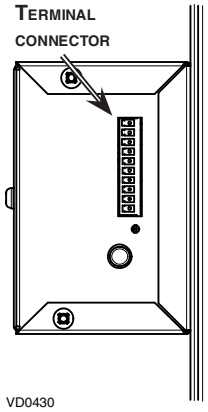
CAUTION

Never install more than one optional main wall control per unit. Make sure that the wires do not short-circuit between themselves or by touching any other components on the wall control. Avoid poor wiring connections. To reduce the risk of electrical interference (noise), do not run wall control wiring next to control contactors or near light dimming circuits, electrical motors, dwelling/building power or lighting wiring, or power distribution panel.



VE0272

Use the terminal connector included in the installation kit to perform the electrical connection for main and optional wall controls. Check if all wires are correctly inserted in their corresponding holes in the terminal block. A wire is correctly inserted when its orange receptacle is lower than another one without a wire. On illustration at right, wire **A** is correctly inserted, but not wire **B**.



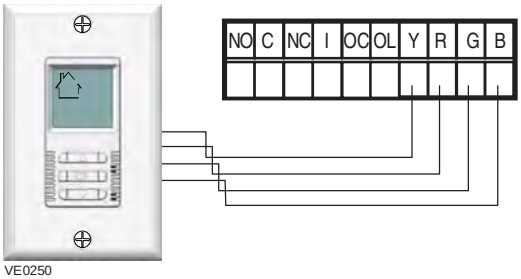
VD0430

Once the wall control connections have been made, insert the terminal connector in the electrical compartment.

NOTES : For information about the operation of the wall control, refer to the *Main and auxiliary wall controls user guide,* available at www.broan.com.

The integrated control **must be turned OFF (no LED lighted on)** to use an optional main control.

3.1.1 Electrical Connection to VT7W Main Wall Control (recirculation mode not available for these units)

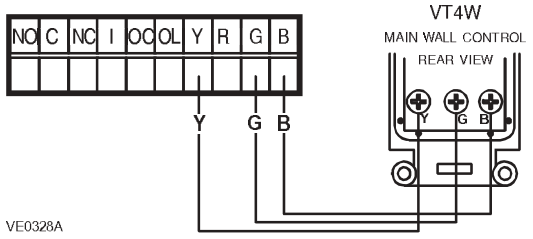


VE0250

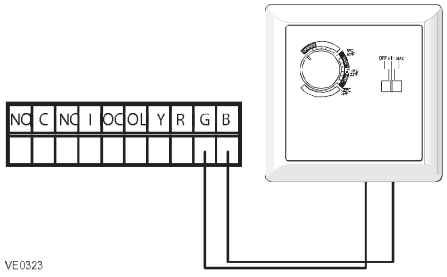
3. CONNECTIONS (CONT'D)

3.1 ELECTRICAL CONNECTION TO OPTIONAL MAIN WALL CONTROL (CONT'D)

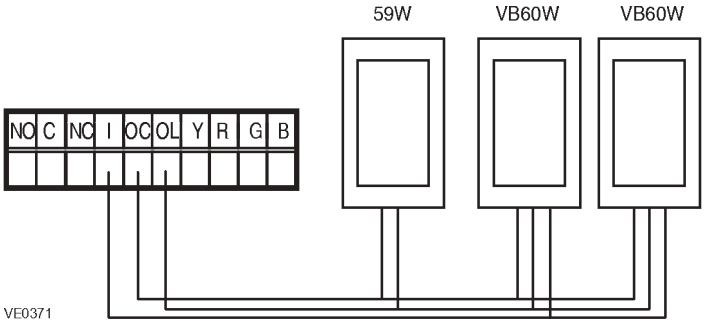
3.1.2 ELECTRICAL CONNECTION TO VT4W MAIN WALL CONTROL



3.1.3 ELECTRICAL CONNECTION TO VT6W MAIN WALL CONTROL



3.2 ELECTRICAL CONNECTION TO OPTIONAL AUXILIARY WALL CONTROLS



3.3 CONNECTION TO THE FURNACE

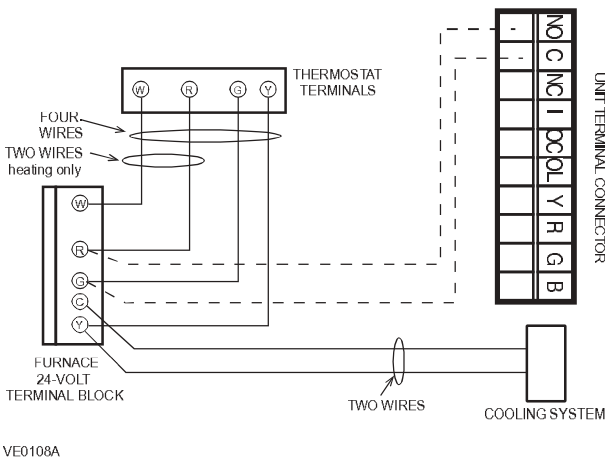
⚠ WARNING

Never connect a 120-volt AC circuit to the terminals of the furnace interlock (standard wiring). Only use the low voltage class 2 circuit of the furnace blower control.

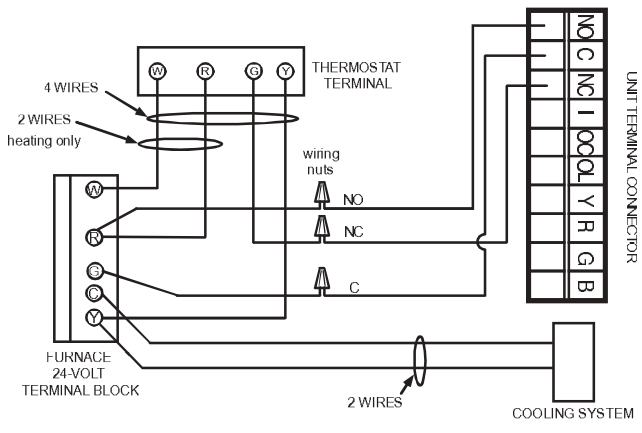
FOR A FURNACE CONNECTED TO A COOLING SYSTEM:

On some older thermostats, energizing the "R" and "G" terminals at the furnace has the effect of energizing "Y" at the thermostat and thereby turning on the cooling system. If you identify this type of thermostat, you must use the ALTERNATE FURNACE INTERLOCK WIRING.

STANDARD FURNACE INTERLOCK WIRING



ALTERNATE FURNACE INTERLOCK WIRING

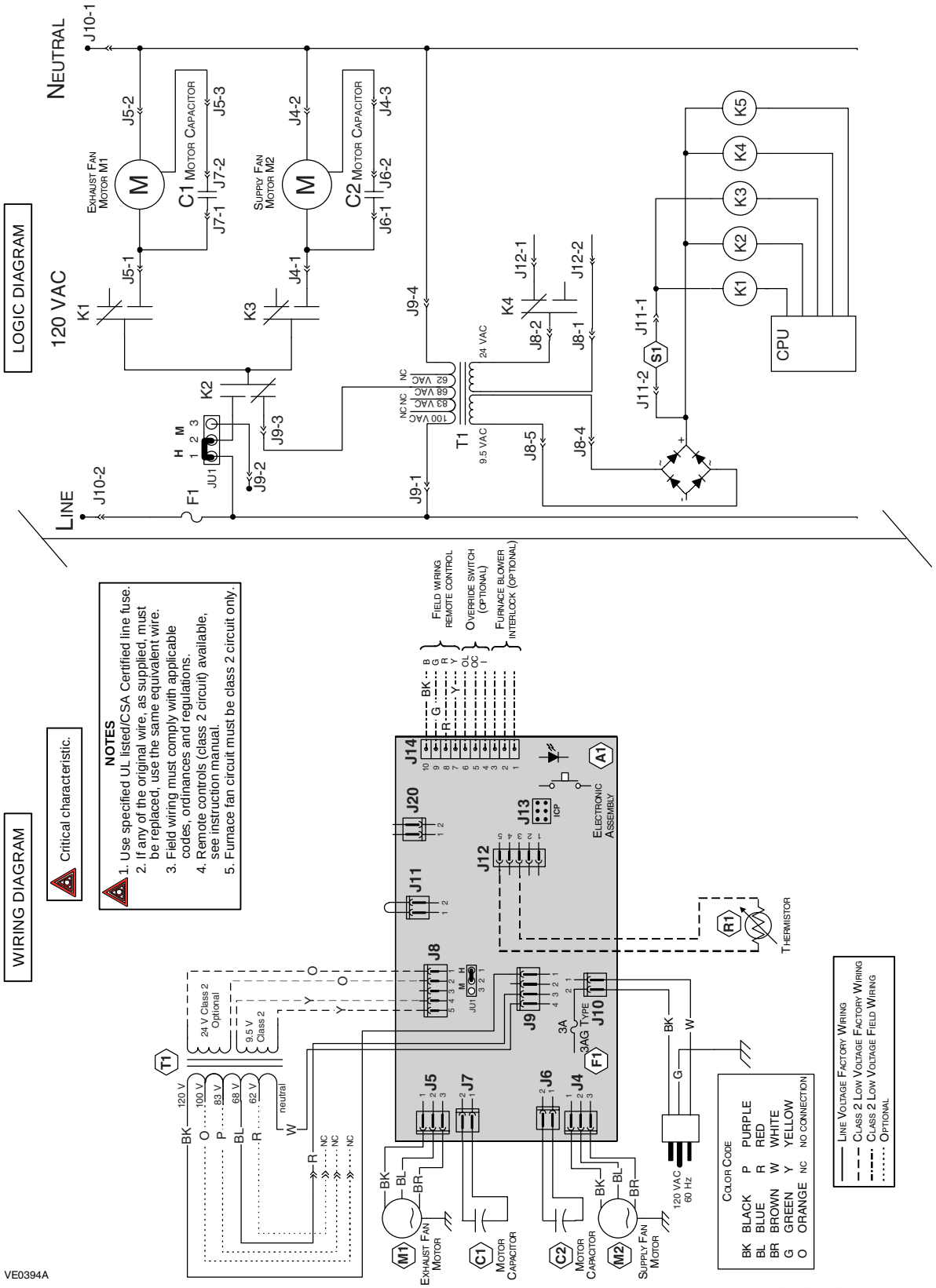


VE0108A

4. WIRING DIAGRAM

⚠ WARNING

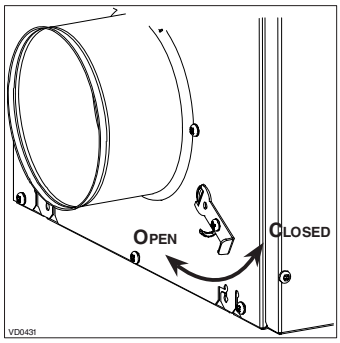
- **Risk of electric shocks. Before performing any maintenance or servicing, always disconnect the unit from its power source.**
- **This product is equipped with an overload protection (fuse). A blown fuse indicates an overload or a short-circuit situation. If the fuse blows, unplug the product and check the polarity and voltage output from the outlet. Replace the fuse as per the servicing instructions (refer to wiring diagram for proper fuse rating) and verify the product. If the replaced fuse blows, it may be a short-circuit and the product must be discarded or returned to an authorized service center for examination and/or repair.**



5. BALANCING THE UNIT

Preparation

Follow these steps to ensure accurate measurements:



- Seal all the ductwork with tape. Close all windows and doors.
- Turn off all exhaust devices such as range hood, dryer and bathroom fans.
- Make sure the balancing dampers are fully open.
- If the installation is in any way connected to the ductwork of the cold air return of a furnace/air handler, make sure that the furnace/air handler blower is ON. If not, leave furnace/air handler blower OFF.
- If the outside temperature is below 32°F/0°C, make sure the unit is not running in defrost while balancing by waiting 10 minutes after plugging the unit in.
- Set the unit to high speed.

Balancing Procedure

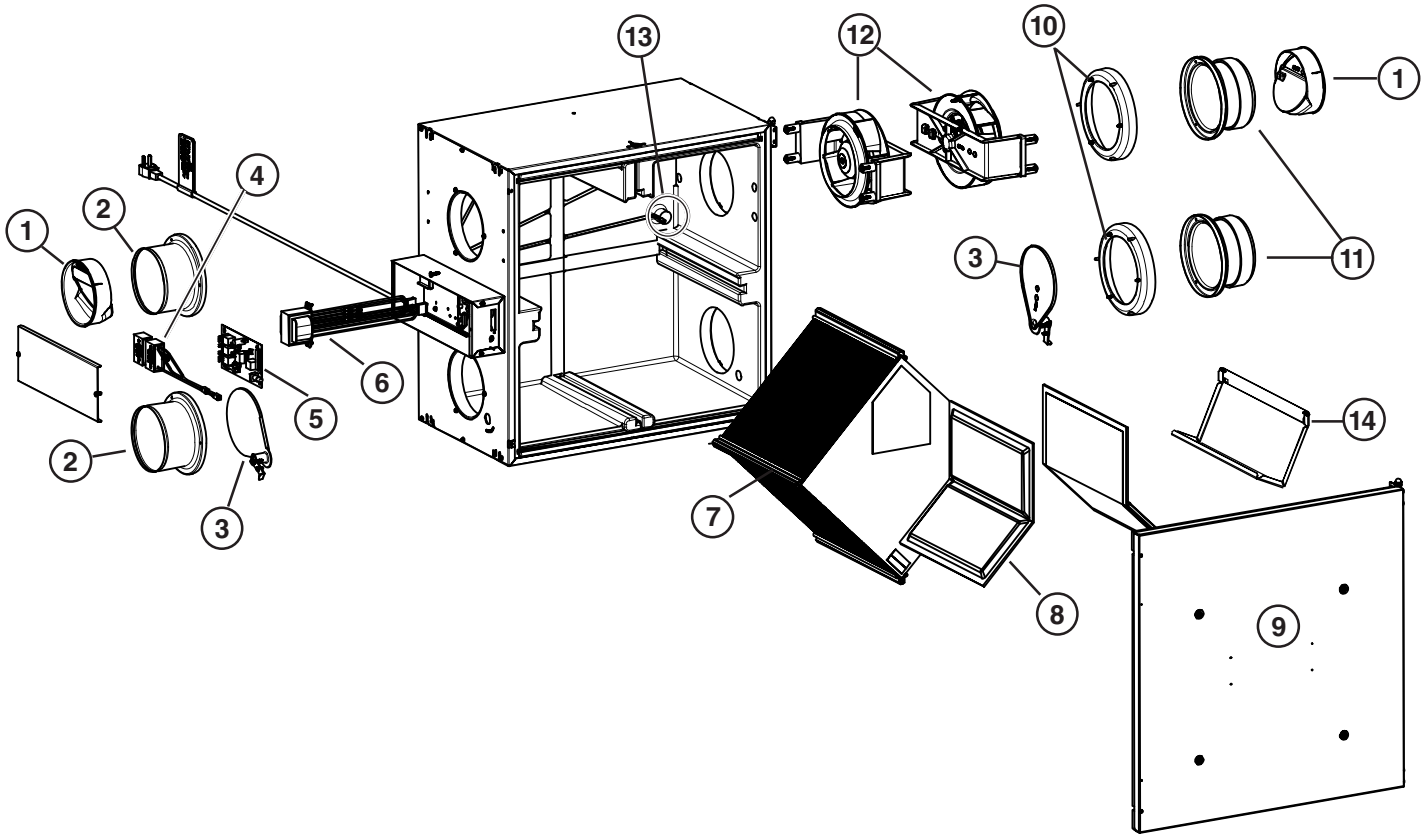
1. Place the magnehelic gauge on a level surface and adjust it to zero.
2. Connect tubing from gauge to EXHAUST airflow pressure taps (see diagram on unit door).
3. Be sure to connect the tubes to their appropriate high/low fittings. If the gauge drops below zero, reverse the tubing connections.
4. Note the CFM value from balancing chart on the unit.
5. Repeat steps 3 and 4, but to FRESH airflow pressure taps.
6. Using the appropriate adjustable balancing damper, lower the highest value so it matches the lowest value. A difference up to ±10 cfm is acceptable.

CAUTION

The fresh air flow must not be higher than the exhaust air flow.

7. Secure both dampers in place with a fastening screw (included in the hardware kit).
8. Write the required airflow information on a label and stick it near the unit for future reference (date, maximum speed air flows, your name, phone number and business address).

6. SERVICE PARTS



Item	Description	Part number	Quantity	
			HRV130FL	ERV130FL
1	Backdraft damper assembly	SV63818	2	2
2	Metal port 5”	SV63828	2	2
3	Balancing damper	SV63823	2	2
4	Capacitor 5 µF	SV63822	2	2
5	Electronic board	SV63821	1	
		SV63838		1
6	Transformer	SV63831	1	1
7	Heat recovery core	SV63825	1	
	Energy recovery core	SV63837		1
8	Filter (2)	SV63827	1	1
9	Door with screws for HRV130FL	SV64802	1	
	Door with screws for ERV130FL	SV64802		1
10	5” Port collar	SV63820	2	2
11	5” Insulated metal port	SV63819	2	2
12	Motor assembly (including item 4)	SV63824	2	2
13	Thermistor	SV63833	1	1
14	Condensing plate	SV63834	1	
*	Hardware bag	SV63832	1	1

* Not shown.

Replacement parts and repairs

In order to ensure your ventilation unit remains in good working condition, you must use Broan-NuTone LLC genuine replacement parts only. The Broan-NuTone LLC genuine replacement parts are specially designed for each unit and are manufactured to comply with all the applicable certification standards and maintain a high standard of safety. Any third party replacement part used may cause serious damage and drastically reduce the performance level of your unit, which will result in premature failing. Broan-NuTone LLC recommends to contact a certified service depot for all replacement parts and repairs.