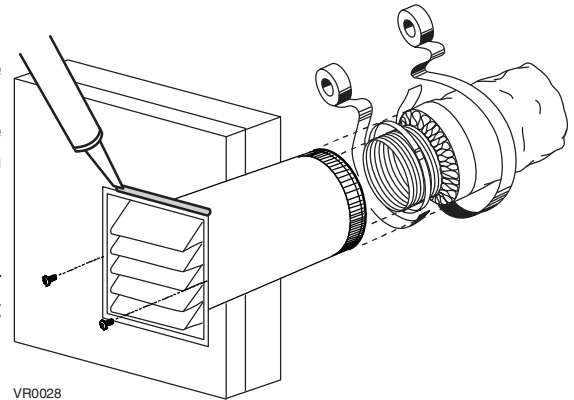


3. INSTALLATION (CONT'D)

3.7 CONNECTING INSULATED DUCTS TO EXTERIOR PORTS

- For each exterior port, using a jig saw, cut a 5" diameter hole in the exterior wall.
- From the outdoor, slide the exterior port in place and attach it to the exterior wall, using 2 no. 8 x 1½" provided screws. Seal the outline with silicone.
- From the inside, pull back the insulation to expose the flexible duct and, using a tie wrap, attach it to the exterior port rigid duct. Carefully seal with duct tape. Pull the insulation over the joint. Pull the vapor barrier over the insulation and over the joint. Apply gently duct tape to the joint making an airtight seal. See illustration at right.

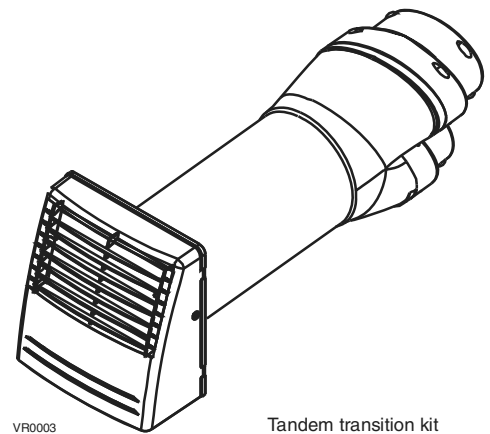


VR0028

3.8 INSTALLING TANDEM® TRANSITION* KIT

If desired, it is possible to perform insulated ducts connection with the outdoor using the Tandem transition kit (purchase separately, part number VTYIK1). The joist opening needed to install the Tandem transition must be 9¾" minimum. The maximum height of the Tandem transition is 8¾". To connect the insulated flexible ducts to the Tandem transition (Exhaust air to outdoor and Fresh air from outdoor), follow the instructions included with the kit.

*Patented.



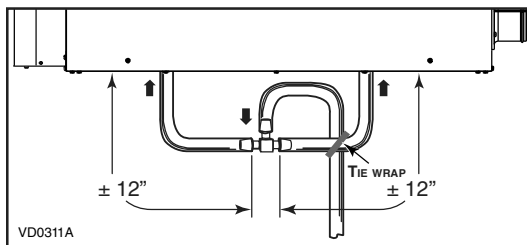
VR0003

Tandem transition kit

3.9 CONNECTING THE DRAIN

CAUTION

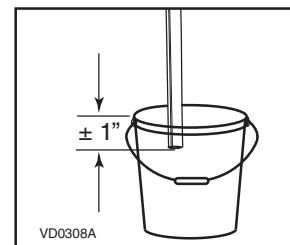
A drain tubing (included) must be installed for all HRV units. For ERV units, it is not required, however, it is recommended for climates where the outdoor temperature typically remains below -13°F, (over a 24-hour period) for several days in a row, combined with an indoor humidity of 40% or higher.



VD0311A

Cut two sections of plastic tubing, approximately 12" long, and connect each one to both inner drain fittings located under the unit as shown.

Join these both sections to the "T" junction and main tube as shown, to prevent the unit from drawing unpleasant odors from the drain source.

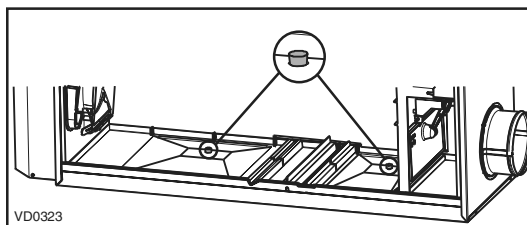


VD0308A

Run the tube to the floor drain or to an alternative drain pipe or pail.

IMPORTANT

If using a pail to collect water, locate the tube end approximately 1" from the top of the pail in order to prevent water from being drawn back up into the unit.



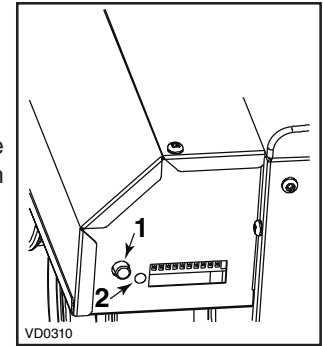
VD0323

- NOTES: 1. For ERV unit, remove both drain plugs inside the unit prior to install tubing.
2. ERV core and blower assembly removed from illustration to ease understanding.

4. CONTROLS

4.1 INTEGRATED CONTROL

These units are equipped with an integrated control located under the electrical compartment of the unit. Use the push button (1) to control the unit; the LED (2) will then show which mode the unit is in (see illustration at right).



Refer to table below to see how to operate the unit using its integrated control.

PRESS ON PUSH BUTTON	LED COLOR	RESULTS
ONCE	AMBER	UNIT IS ON LOW SPEED
TWICE	GREEN	UNIT IS ON HIGH SPEED
THREE TIMES	NO LIGHT	UNIT IS OFF

If a problem occurs during the unit operation, its integrated control LED (2) will blink. The color of the blinking light depends on the type of error detected. Refer to Section 9 Troubleshooting on last pages for further details.

NOTE: The integrated control **must be turned OFF** to use an optional main control.

4.2 BOOTING SEQUENCE

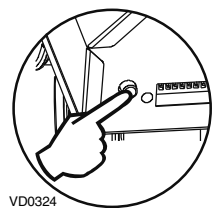
The unit booting sequence is similar to a personal computer boot sequence. Each time the unit is plugged after being unplugged, or after a power failure, the unit will perform a 30-second booting sequence before starting to operate.

During the booting sequence, the integrated defrost control LED will light AMBER for 5 seconds, and then will shut off for 2 seconds. After that, the LED will light RED for the rest of the booting sequence. During this RED light phase, the unit is checking and resetting the motorized damper position. Once the motorized damper position completely set, the RED light turns off and the booting sequence is done.

4.3 SETTING EXTENDED DEFROST

The unit is factory set to normal defrost. In cold region (outdoor temperature -17°F and lower), it may be necessary to setup extended defrost. During **the first 3 seconds of booting sequence**, while the integrated control LED is AMBER, press on push button for about 3 seconds. The LED will blink GREEN the number of times corresponding to the actual defrost mode of the unit.

NOTE: During setting extended defrost, while the push button is pressed, the LED will light RED to indicate the signal has been received.



Refer to table below to modify the defrost cycle of the unit. It is possible to change the selection as many times needed.

DEFROST CYCLE	PRESS ON PUSH BUTTON	LED BLINKS GREEN
1 NORMAL (HRV UNIT)	ONCE	1 TIME
2 EXTENDED (HRV UNIT)	TWICE	2 TIMES
3 NORMAL (ERV UNIT)	THREE TIMES	3 TIMES
4 EXTENDED (ERV UNIT)	FOUR TIMES	4 TIMES

To exit setting extended defrost, press 3 seconds on push button OR wait 60 seconds; the LED will blink and shut off, then light RED (the unit returns in its booting sequence).

4. CONTROLS (CONT'D)

4.4 ELECTRICAL CONNECTION TO WALL CONTROLS

For more convenience, this unit can also be controlled using an optional main wall control.

NOTES: 1. The integrated control must be turned OFF to use an optional main control.

2. If an optional auxiliary control is used, if activated, this auxiliary control will override the optional main control.

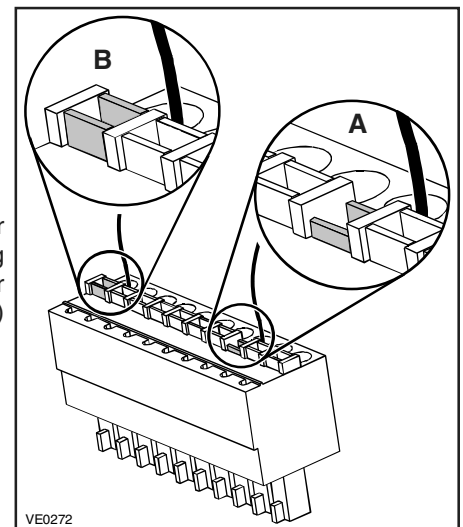
⚠ WARNING

Always disconnect the unit before making any connections. Failure in disconnecting power could result in electric shock or damage of the wall control or electronic module inside the unit.

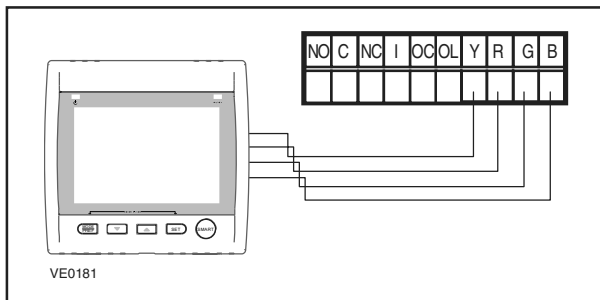
CAUTION

Never install more than one 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 electrical interference (noise) potential, 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.

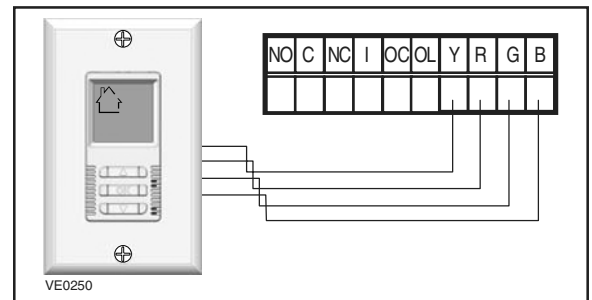
Use the terminal connector included in the installation kit to perform the electrical connection for main and optional wall controls. Check if all wires are correctly inserted in their corresponding holes in the terminal block. (A wire is correctly inserted when its orange receptacle is lower than another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



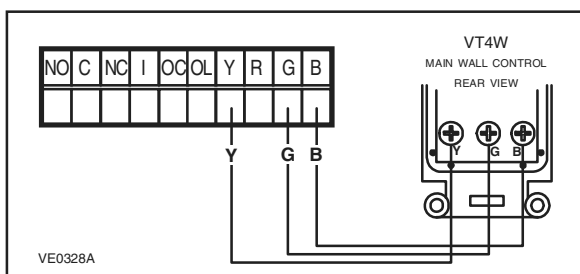
4.4.1 ELECTRICAL CONNECTION TO VT8W MAIN WALL CONTROL



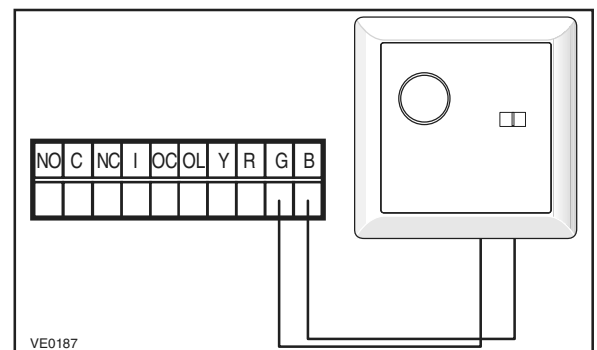
4.4.2 ELECTRICAL CONNECTION TO VT7W MAIN WALL CONTROL



4.4.3 ELECTRICAL CONNECTION TO VT4W MAIN WALL CONTROL



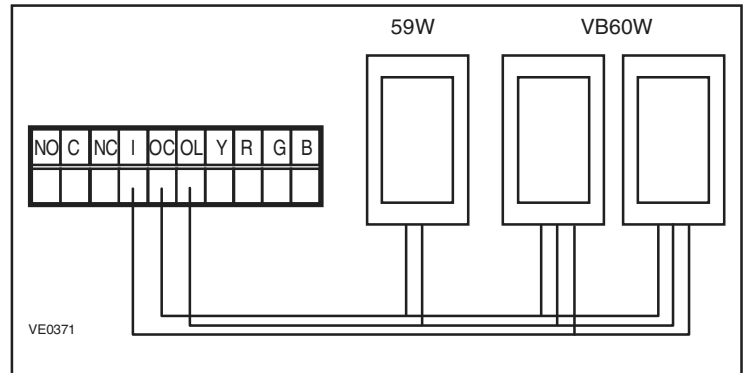
4.4.4 ELECTRICAL CONNECTION TO VT6W MAIN WALL CONTROL



4. CONTROLS (CONT'D)

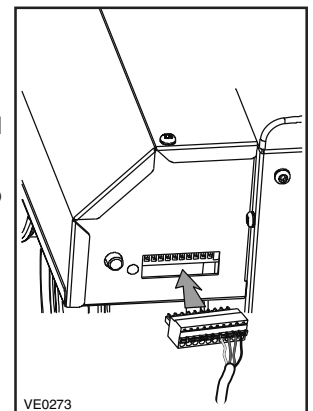
4.4 ELECTRICAL CONNECTION TO WALL CONTROLS (CONT'D)

4.4.5 ELECTRICAL CONNECTION TO OPTIONAL AUXILIARY WALL CONTROLS



Once the control(s) connections have been made, insert the terminal connector in the electrical compartment interface. Plug the unit.

NOTE: Refer to *Main and auxiliary wall control User Guide* (included with the ventilation unit and also available at www.broan.com) for information about the use of optional main and auxiliary wall controls.



5. ELECTRICAL CONNECTION TO THE FURNACE

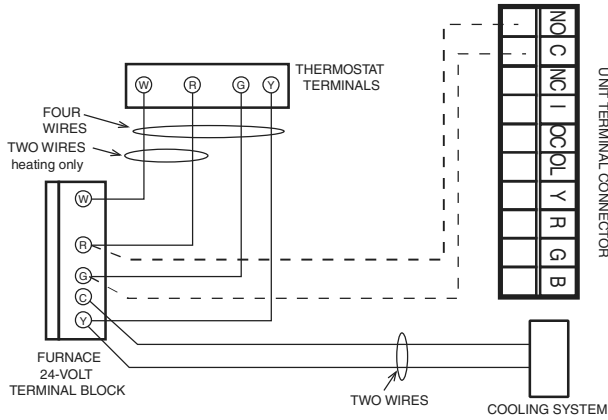
⚠ WARNING

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

For a furnace connected to a cooling system:

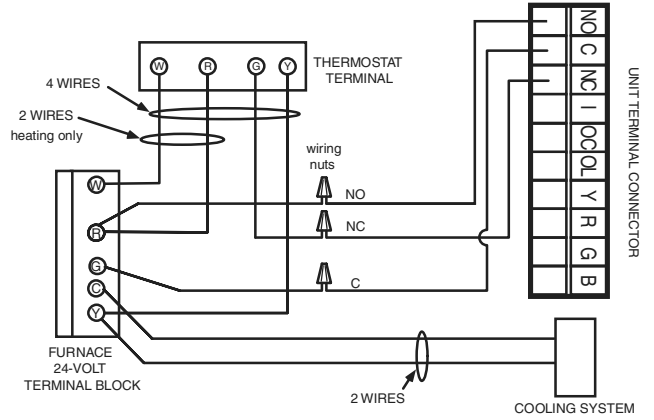
On some older thermostat, energizing the “R” and “G” terminals at the furnace has the effect of energizing “Y” terminal at the thermostat and thereby turning on the cooling system. If you identify this type of thermostat, you must use the ALTERNATE FURNACE INTERLOCK WIRING.

STANDARD FURNACE INTERLOCK WIRING



VE0108A

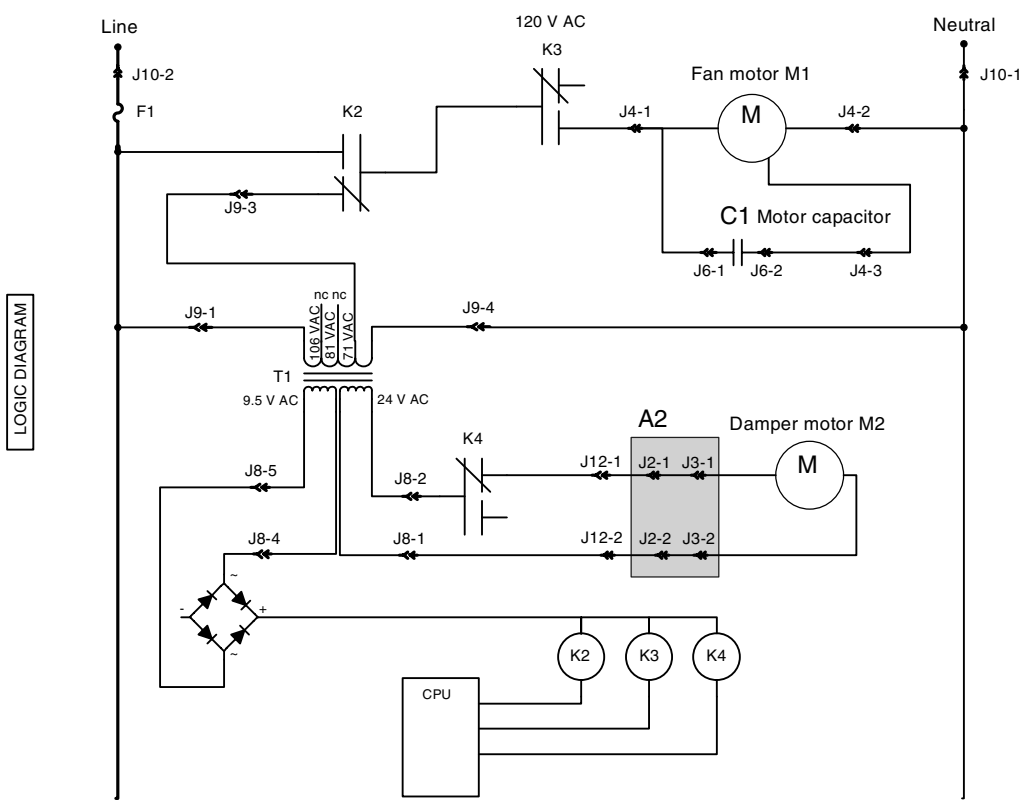
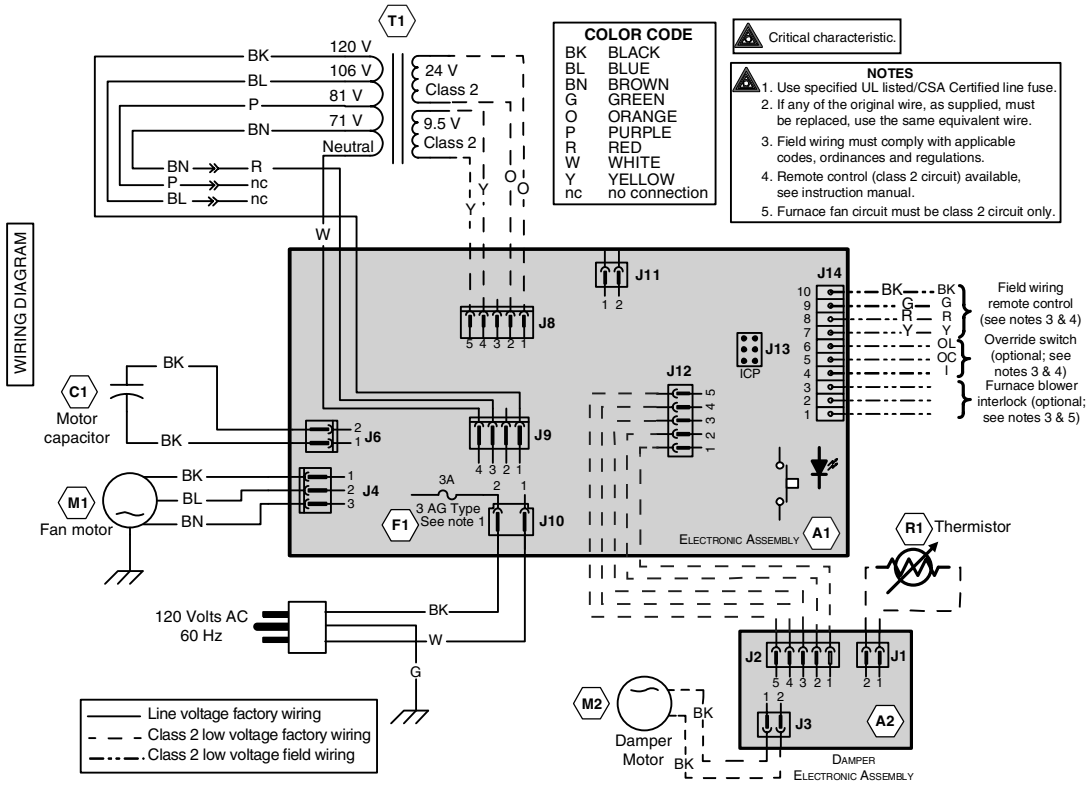
ALTERNATE FURNACE INTERLOCK WIRING



6. WIRING DIAGRAM

⚠ WARNING

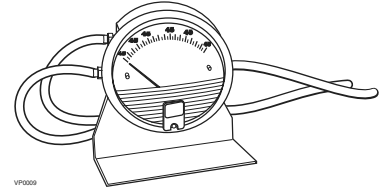
- Risk of electric shocks. Before performing any maintenance or servicing, always disconnect the unit from its power source.
- This product is equipped with an overload protection (fuse). A blown fuse indicates an overload or a short-circuit situation. If the fuse blows, unplug the product and check 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.



7. BALANCING THE UNIT

7.1 WHAT YOU NEED TO BALANCE THE UNIT

- A magnehelic gauge capable of measuring 0 to 0.5 inch of water (0 to 125 Pa) and 2 plastic tubes.
- The balancing chart located on the unit door.



7.2 PRELIMINARY STAGES TO BALANCE THE UNIT

- Seal all the unit 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.

NOTE: The **balancing dampers are NOT INCLUDED**; to be supplied by others. Install the balancing dampers in Fresh air to building duct and exhaust air from building duct (**A** and **B** on illustration below), at the more convenient place.

- Make sure all filters are clean (if it is not the first time you balance the unit).

7.3 BALANCING PROCEDURE

1. Set the unit to high speed.

Make sure that the furnace/air handler blower is ON if the installation is in any way connected to the ductwork of the cold air return. If not, leave furnace/air handler blower OFF. If the outdoor temperature is below 32°F, make sure the unit is not running in defrost while balancing. (By waiting 10 minutes after plugging the unit in, you are assured that the unit is not in a defrost cycle.)

2. Place the magnehelic gauge on a level surface and adjust it to zero.

3. Connect tubing from gauge to exhaust air flow pressure taps (see illustration at right).

Be sure to connect the tubes to their appropriate high/low fittings. If the gauge drops below zero, reverse the tubing connections.

NOTE: It is suggested to start with the exhaust air flow reading because the exhaust has typically more restriction than the fresh air, especially in cases of fully ducted installations or source point ventilation. Place the magnehelic gauge upright and level. Record equivalent air flow of the reading according to the balancing chart.

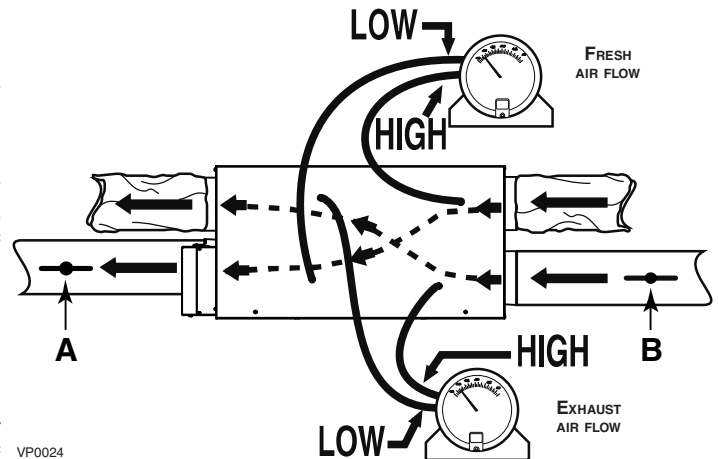
4. Move tubing to fresh air flow pressure taps (see diagram).

Adjust the fresh air balancing damper (**A**) until the fresh air flow is approximately the same as the exhaust air flow. If fresh air flow is less than exhaust air flow, then go back and adjust the exhaust balancing damper (B) to equal the fresh air flow.

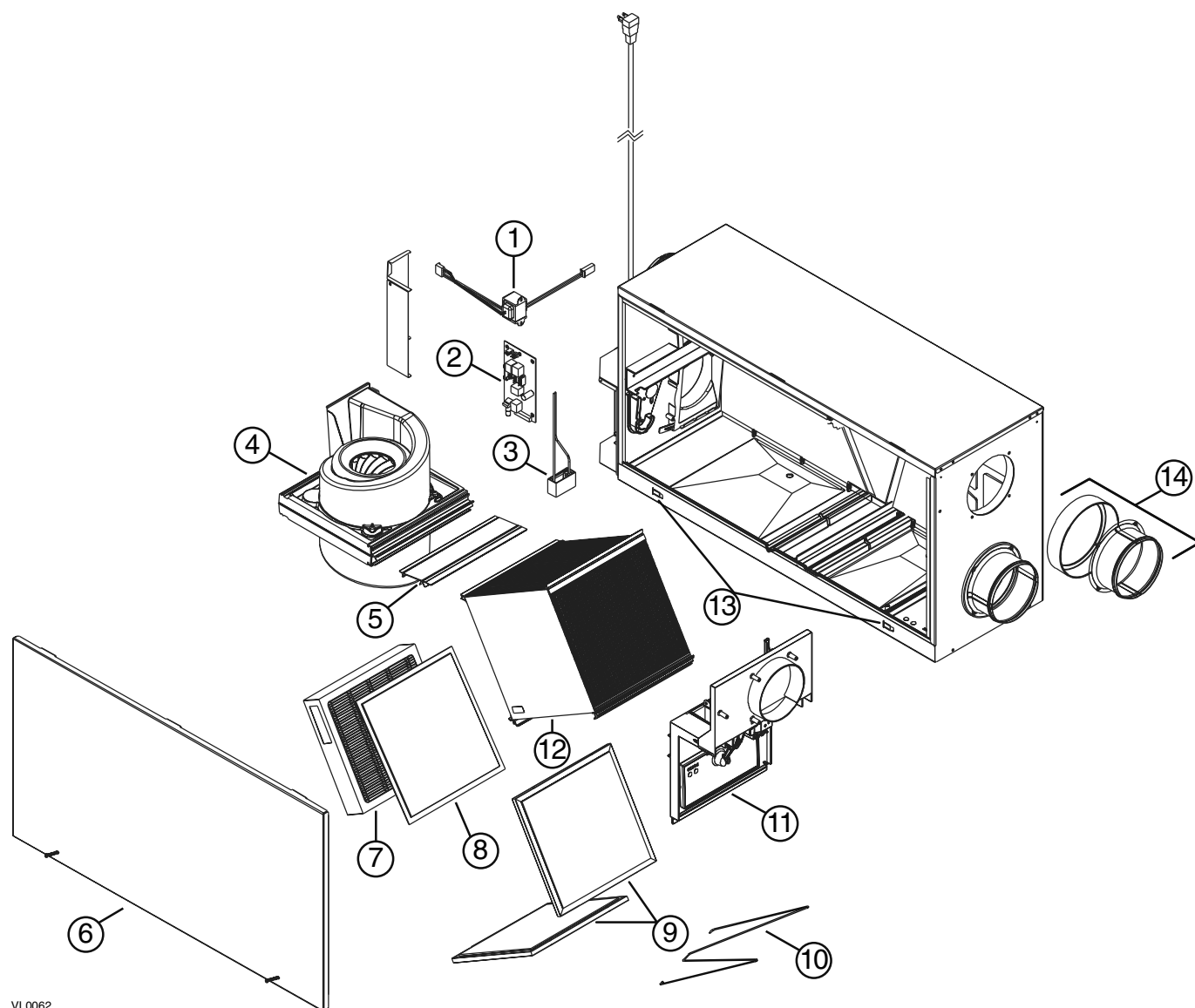
5. Secure both dampers in place with a fastening screw.

6. Write the required air flow information on a label and affix it near the unit for future reference (date, maximum speed air flows, your name, phone number and business address).

NOTE: The unit is considered balanced even if there is a difference of ± 10 cfm (or ± 5 l/s) between the two air flows.



8. SERVICE PARTS



VL0062

ITEM	DESCRIPTION	QTY.	HRVH100S	ERVH100S
1	TRANSFORMER	1	SV61545	SV61545
2	ELECTRONIC BOARD	1	SV61415	SV61184
3	CAPACITOR 6 μ F	1	SV61550	SV61550
4	BLOWER ASSEMBLY	1	SV61552	SV61552
5	CORE BRACKET	1	SV61553	SV61553
6	DOOR ASSEMBLY	1	SV63625	SV63625
7	HEPA FILTER KIT ¹	1	SV21293	SV21293
8	PREFILTER KIT FOR HEPA FILTER ²	1	SV61561	SV61561
9	CORE FILTER	2	SV61563	SV61562
10	BOTTOM FILTER RETAINING WIRE	1		SV61564
11	DAMPER SYSTEM ASSEMBLY	1	SV61565	SV61565
12	HEAT RECOVERY CORE	1	SV61567	
	ENERGY RECOVERY CORE	1		SV61410
13	BRACKET WITH RETAINING NUT	2	SV61411	SV61411
14	DOUBLE COLLAR PORT	2	SV61569	SV61569

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. 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.

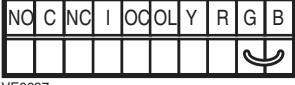
¹ HEPA FILTER KIT INCLUDES 2 PREFILTERS.

² PREFILTER KIT INCLUDES 2 PREFILTERS.


9. TROUBLESHOOTING

If the unit does not work properly, reset the unit by unplugging it for one minute and then replug it. If it is still not working properly, refer to table below.

If the integrated control LED of the unit is flashing, this means the unit sensors detected a problem. See the table below to know where the problem occurs on the unit.			
LED COLOR	ERROR TYPE	ACTION	UNIT STATUS
LED flashes GREEN	Thermistor error	Replace thermistor	Unit works but will defrost frequently
LED flashes AMBER	Damper error	Go to point 5	Unit does not work

	PROBLEMS	POSSIBLE CAUSES	YOU SHOULD TRY THIS
1	The error code E1 is displayed on VT8W or VT7W wall control screen.	<ul style="list-style-type: none"> The wires may be in reverse position. The wires may be broken. The wires may have a bad connection. 	<ul style="list-style-type: none"> Ensure that the color coded wires have been connected to their appropriate places. Inspect every wire and replace any that is damaged. Ensure the wires are correctly connected.
2	There is no outdoor temperature displayed on VT8W wall control screen — —	<ul style="list-style-type: none"> The unit thermistor is defective (the integrated control LED of the unit must flash GREEN). 	<p>NOTE: At its very start-up or after a power failure, it takes some minutes before the outdoor temperature appears on screen. The delay duration depends on which operation mode the wall control is set. The shortest delay is obtained when the wall control is set on MIN or MAX in VENT Mode.</p> <ul style="list-style-type: none"> Replace the unit thermistor.
3	VT8W or VT7W wall control screen alternates between normal display and E3.	<ul style="list-style-type: none"> The VT8W or VT7W wall control may be defective. 	<ul style="list-style-type: none"> Replace the VT8W or VT7W wall control.
4	Unit does not work.	<ul style="list-style-type: none"> The circuit board may be defective. The fuse may be defective. 	<ul style="list-style-type: none"> Unplug the unit. Disconnect the main control and the optional auxiliary control(s) (if need be). Jump G and B terminals. Plug the unit back and wait about 10 seconds. If the motors run on high speed and the damper opens, the circuit board is not defective. Check if fuse F1 is blown. In that case, replace fuse F1 as per product nameplate.  <p>VE0097</p>
5	The damper actuator does not work.	<ul style="list-style-type: none"> The damper actuator or the integrated damper mechanism may be defective. The circuit board or the transformer may be defective. 	<ul style="list-style-type: none"> Unplug the unit. Disconnect the main control and the optional controls(s) (if need be). Wait 10 seconds and plug the unit back. Check if the damper opens. If not, use a multimeter and check for 24 VAC on J12-1 and J12-2 (in electrical compartment). If there is 24 VAC, replace the entire damper assembly. NOTE: It is normal to experience a small delay (7-8 seconds) before detecting the 24 VAC signal at starting-up. This signal will stay during 17-18 seconds before disappearing. If there is no 24 VAC, check for 24 VAC between J8-1 and J8-2. If there is 24 VAC, replace the circuit board, and if there is no 24 VAC, change the transformer.
6	The wall control does not work.	<ul style="list-style-type: none"> The wires may be in reverse position. The wires may be broken. The wire in the wall OR the wall control may be defective. 	<ul style="list-style-type: none"> Ensure that the color coded wires have been connected to their appropriate places. Inspect every wire and replace any that are damaged. Remove the wall control and test it right beside the unit using another shorter wire. If the wall control works there, change the wire. If it does not, change the wall control.

9. TROUBLESHOOTING (CONT'D)

	PROBLEMS	POSSIBLE CAUSES	YOU SHOULD TRY THIS
7	The VB60W push button timer does not work OR its indicator light does not stay on.	<ul style="list-style-type: none"> The wires may be in reverse position. The VB60W button may be defective. 	<ul style="list-style-type: none"> Ensure that the color coded wires have been connected to their appropriate places. Jump the OL and OC terminals. If the unit switch to high speed, remove the VB60W push button and test it right beside the unit using another shorter wire. If it works here, change the wire. If it doesn't, change the VB60W push button.  <p style="text-align: right; font-size: small;">VE0098</p>
8	The motor does not work.	<ul style="list-style-type: none"> The fuse may be defective. The motor may be defective. The motor or capacitor may be defective. 	<ul style="list-style-type: none"> Check if fuse F1 is blown. In that case, replace fuse F1 as per product nameplate. NOTE: Refer to Section 6 <i>Wiring diagram</i>. If the voltage reading is 120 VAC on J4, change the defective motor. Using a multimeter, check the ohms value on motor connector. For BLUE and BLACK motor wires, the right value is ± 43 ohms. For BLUE and BROWN motor wires, the right value is ± 48 ohms. For BROWN and BLACK motor wires, the right value is ± 91 ohms. If the ohms values are the same, the motor is not defective. Replace the motor capacitor.
9	The defrost cycle does not work (the fresh air duct is frozen) OR the fresh air distributed is very cold.	<ul style="list-style-type: none"> Ice deposits may be hindering the damper operation. The damper rod or the port damper itself may be broken. The damper actuator or circuit board may be defective. 	<ul style="list-style-type: none"> Remove the ice. Inspect these parts and replace if necessary. See point 5.
10	The integrated defrost control push button does not work.	<ul style="list-style-type: none"> The 30-second boot sequence is not completed. 	<ul style="list-style-type: none"> See Section 4.1 <i>Booting Sequence</i>.