

Installer Manual - International Models

Ventilation Systems for residential use only



Solo 1.5 (part no. 43729)

Solo 2.0 (part no. 45729)



Duo 1.2 (part no. 43719)

Duo 1.4 (part no. 43709)

Duo 1.9 (part no. 45709)

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About this Manual

This manual uses the following symbols to emphasize particular information:

WARNING

Identifies an instruction which, if not followed, might cause serious personal injuries including possibility of death.

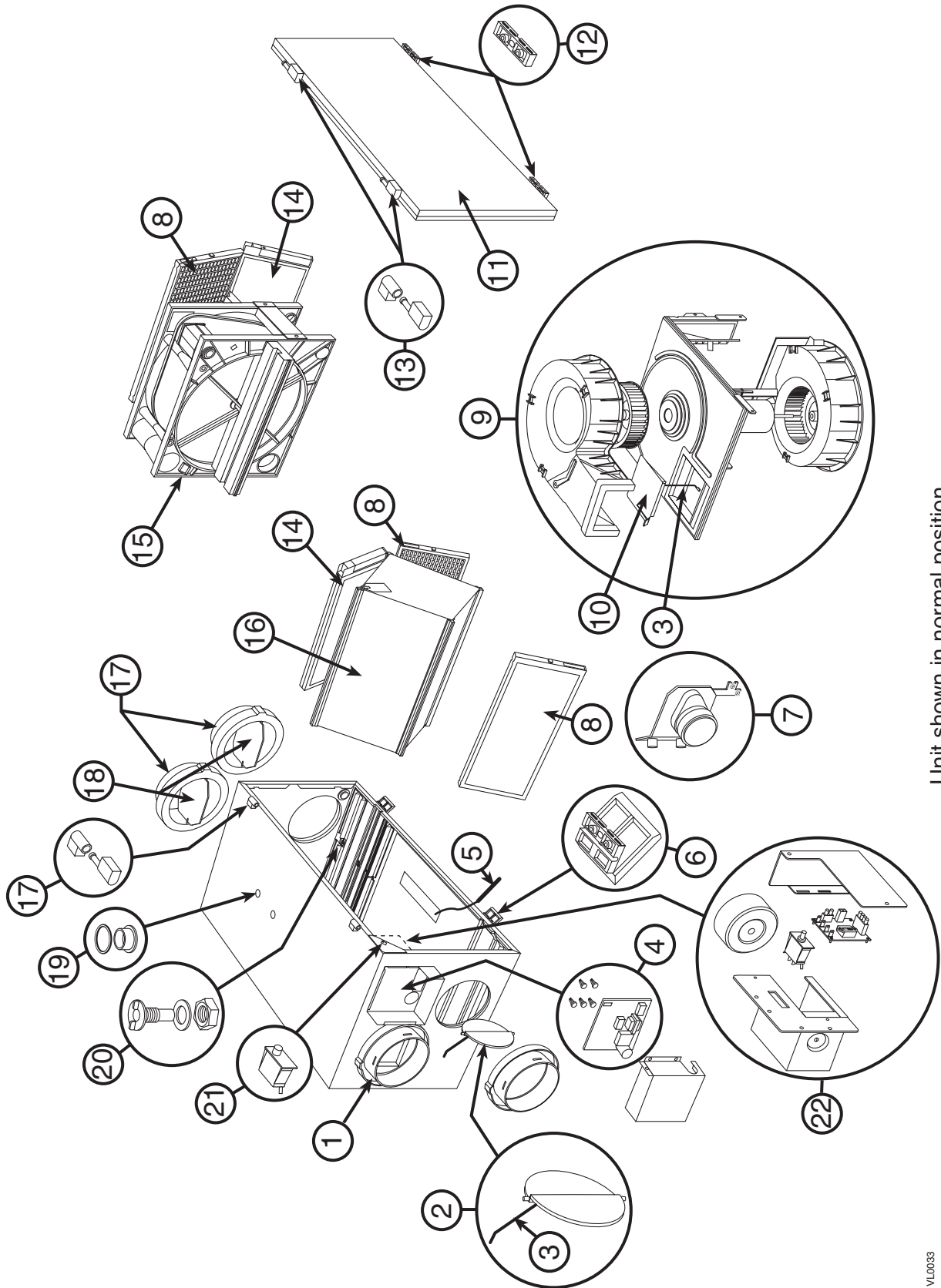
CAUTION

Denotes an instruction which, if not followed, may severely damage the unit and/or its components.

NOTE: Indicates supplementary information needed to fully complete an instruction.

1. Service

1.1 3-D DRAWING



Unit shown in normal position.

1. Service (cont'd)

1.2 PARTS ORDERING CHART

No.	Description	SOLO 1.5	SOLO 2.0	DUO 1.2	DUO 1.4	DUO 1.9
		43729	45729	43719	43709	45709
1	Double Collar Port no. 2	02257	02257	02257	02257	02257
2	Damper no.1 (kit)	12454	12454	12454	12454	12454
3	Damper Rod (kit)	13037	13037	13037	13037	13037
4	Electronic Board & spacers (kit)	13035	13035	13035	13035	13035
5	Thermistor (kit)	12895	12895	12895	12895	12895
6	Door Latches & screws	00886 (2)	00886 (2)	00886 (2)	00886 (2)	00886 (2)
		00601 (4)	00601 (4)	00601 (4)	00601 (4)	00601 (4)
7	Damper Actuator Assembly	13734	13734	13734	13734	13734
8	Basic Filter	03308	03308	03308	03308	03308
9	Blower Assembly	12908	14081	12909	12909	14081
10	Square Damper (kit)	13033	13033	13033	13033	13033
11	Door Ass'y (including 12 to 13)	13346	13346	13346	13346	13346
12	Door Latches (keeper) & Screws	00887 (2)	00887 (2)	00887 (2)	00887 (2)	00887 (2)
		00601 (4)	00601 (4)	00601 (4)	00601 (4)	00601 (4)
13	Hinge Ass'y (kit)	13036	13036	13036	13036	13036
14	Pleated Optional Filter	03316	03316	03316	03316	03316
	Charcoal Optional Filter	03315	03315	03315	03315	03315
	Electronic Optional Filter	03314	03314	03314	03314	03314
15	Thermal Wheel	N/A	N/A	13045	13044	13045
16	Recovery Core	03311	03311	N/A	N/A	N/A
17	Balancing Double Collar Port	02256	02256	02256	02256	02256
18	Balancing Damper	02253	02253	02253	02253	02253
19	Snap Bushing DP-750 & O-Ring	03324 (2)	03324 (2)	03324 (2)	03324 (2)	03324 (2)
		03310 (4)	03310 (4)	03310 (4)	03310 (4)	03310 (4)
20	Drain Connector (kit)	03203	03203	N/A	N/A	N/A
21	Door Switch (SPST)	03058	03058	03058	03058	03058
22	Transformer (kit)	13361	13361	13361	13361	13361

Please take note that parts not listed are not available; those parts require assembly knowledge that only manufacturer can guarantee.

TO ORDER PARTS: Contact your local distributor.

1.3 TECHNICAL SUPPORT (FOR ASSISTANCE)

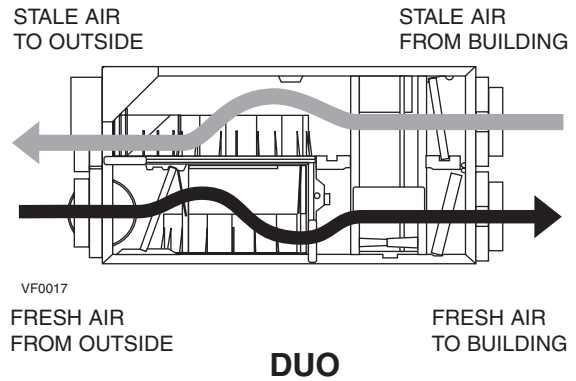
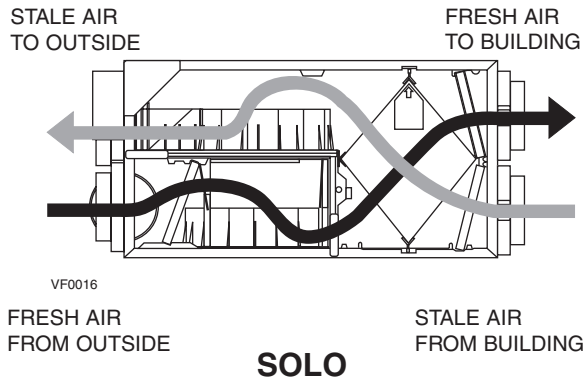
For assistance, call on weekdays, 8:30 to 17:00 (Canada Eastern Standard Time).

NOTE: Do not call this number for ordering parts.

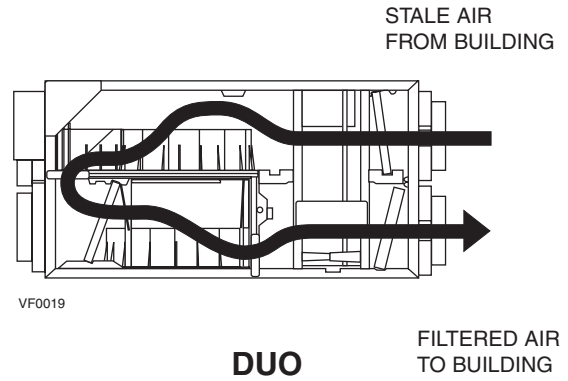
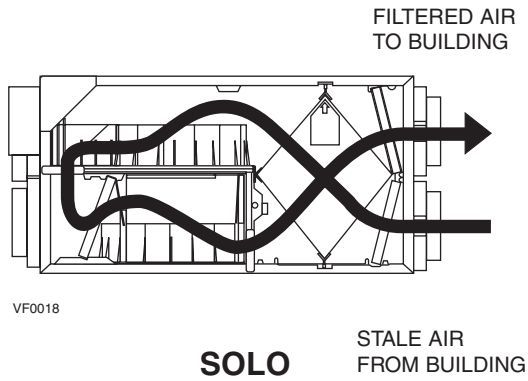
International: **819-477-6226**

2. Technical Data

2.1 AIR DISTRIBUTION (NORMAL OPERATION)



2.2 AIR DISTRIBUTION (DEFROST AND/OR FILTRATION MODE)



SOLO units

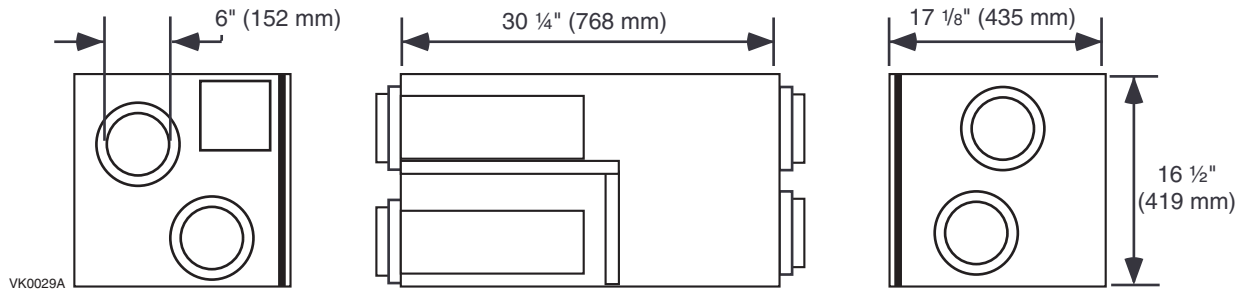
Outside Temperature		Defrost Cycles		Extended Defrost Cycles	
Celcius (°C)	Fahrenheit (°F)	Defrosting (min.)	Operation time (min.) between each defrost cycle	Defrosting (min.)	Operation time (min.) between each defrost cycle
-5	23	6	60	10	30
-15	5	6	32	10	20
-27	-17	6	20	10	15

DUO units

Outside Temperature		Defrost Cycles		Extended Defrost Cycles	
Celcius (°C)	Fahrenheit (°F)	Defrosting (min.)	Operation time (min.) between each defrost cycle	Defrosting (min.)	Operation time (min.) between each defrost cycle
-5	23	9	60	10	30
-15	5	9	32	10	20
-27	-17	9	20	10	15

2. Technical Data (cont'd)

2.3 DIMENSIONS



2.4 CONTROLS AND LINK OPTIONS

Main controls:

- Venta
- Supra
- Ultima

Optional controls:

- 20/40/60-minute push-button timer
- 60-minute crank timer
- Dehumidistat

Link options:

- Furnace interlock (used with forced air systems)

2.5 SPECIFICATIONS

Model	Solo 1.5	Solo 2.0
Weight	71 lbs (32 kg)	73 lbs (33 kg)
Port Diameter	6" (152 mm)	6" (152 mm)
Drain Diameter	1/2" (12 mm)	1/2" (12 mm)
Installation	Chains, springs and hooks (provided with the unit).	
Motor Speed	High and low speed factory set (optional increased or decreased low speed).	
Electrical supply	100 V, 50/60 Hz	100 V, 50/60 Hz only
Power Consumption OR	115 watts	240 watts
Electrical supply	230-240 V, 50Hz	230-240 V, 50Hz
Power Consumption	144 watts	193 watts

Model	Duo 1.2	Duo 1.4	Duo 1.9
Weight	79 lbs (36 kg)	75 lbs (34 kg)	77 lbs (35 kg)
Port Diameter	6" (152 mm)	6" (152 mm)	6" (152 mm)
Drain Diameter	N/A	N/A	N/A
Installation	Chains, springs and hooks (provided with the unit).		
Motor Speed	High and low speed factory set (optional increased or decreased low speed).		
Electrical supply (Japan only)	100 V, 50/60 Hz	100 V, 50/60 Hz	100 V, 50 Hz only
Power Consumption OR	110 watts	110 watts	215 watts
Electrical supply	230-240 V, 50Hz	230-240 V, 50Hz	230-240 V, 50Hz
Power Consumption	163 watts	163 watts	210 watts

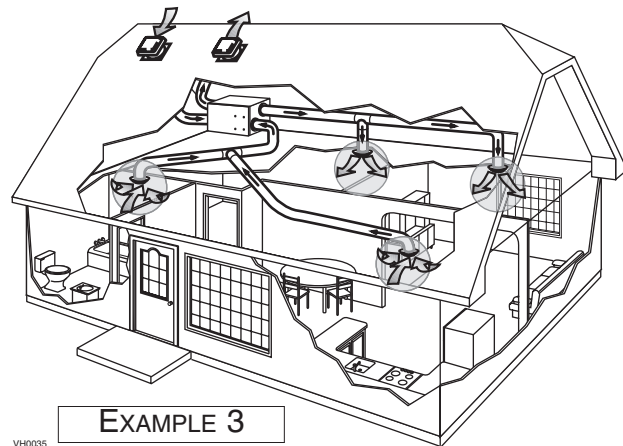
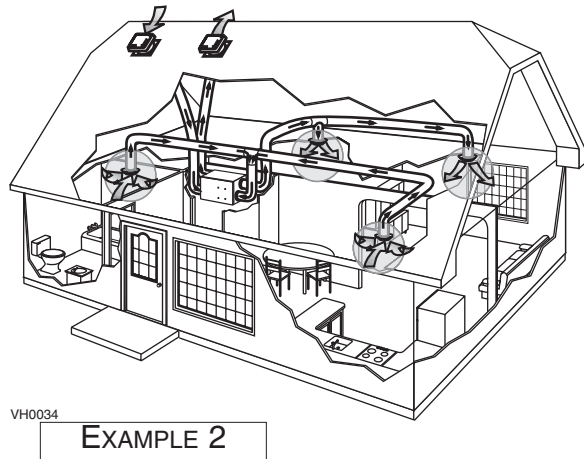
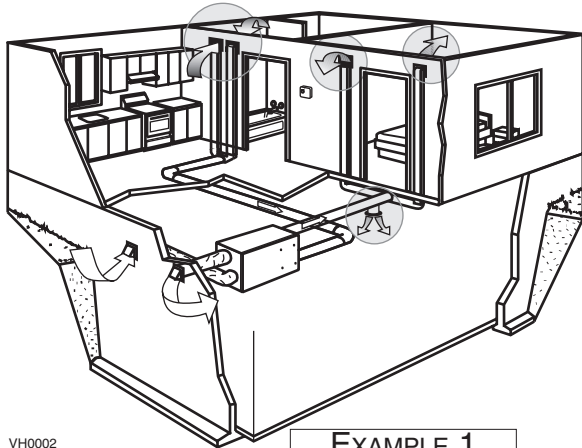
3. Typical Installations

**Installations may vary according to the model number and the position (normal or reverse) in which the unit is installed.*

3.1 FULLY DUCTED SYSTEM

(Primarily for homes with radiant hot water or electric baseboard heating)

Moist, stale air is exhausted from the high humidity areas in the home, such as bathrooms, kitchen and laundry room. Fresh air is supplied to bedrooms and principal living areas. The use of bathroom fans and a range hood is suggested to exhaust stale air. Homes with more than one level require at least one exhaust register at the highest level.



NOTE: Can be installed in the attic only if the temperature is above 10°C/50°F.

3.2 EXHAUST DUCTED SYSTEM (SOURCE POINT VENTILATION)

(For homes with forced air heating.)

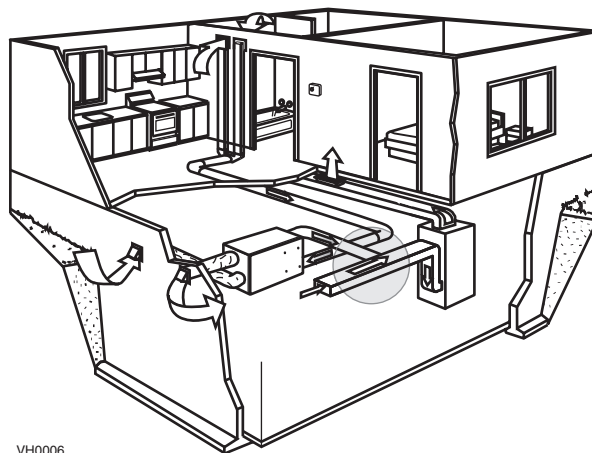
Moist, stale air is exhausted from the high humidity areas in the home, such as bathrooms, kitchen and laundry room. Fresh air is supplied to the cold air return or the supply duct of the furnace.

The use of bathroom fans and a range hood is suggested to exhaust stale air.

Homes with more than one level require at least one exhaust register at the highest level.

NOTES: 1. For this type of installation, it is not essential that the furnace blower runs when the unit is in operation, but we recommend it.

2. Stale air exhaust duct may also be connected to the return duct of the furnace.



4. Installation

INSPECT THE CONTENTS OF THE BOX

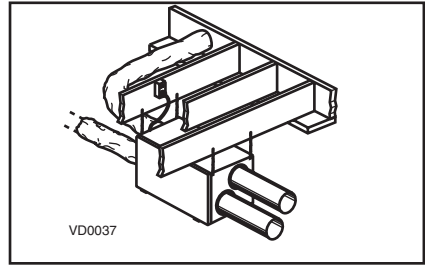
- Inspect the exterior of the unit for shipping damage. Ensure that there is no damage to the door, door latches, door hinges, dampers, duct collars, cabinet, etc.
- Inspect the interior of the unit for damage. Ensure that the fan motor assembly, recovery module, insulation, dampers, damper actuator, and condensation tray (Solo) are all intact.
- If the unit was damaged during shipping, contact your local distributor. (Claim must be made within 24 hours after delivery.)
- Use checklist included with this manual to ensure that no parts are missing.

4.1 LOCATING AND MOUNTING THE UNIT

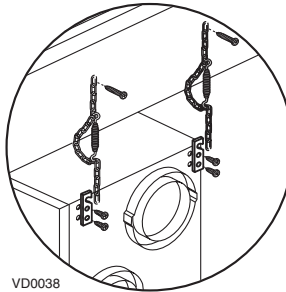
NOTE: *Please note that the unit can be installed in either the “normal” or “reverse” (upside down) position.*

Choose an **appropriate location** for the unit:

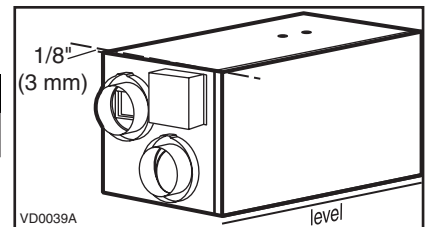
- Within an area of the house where the temperature is above 10°C / 50°F (basement, attic, furnace room, laundry room, etc.).
- Away from living areas (dining room, living room, bedroom), if possible.
- So as to provide easy access to the interior cabinet and to the control panel on the side of the unit.
- Close to an exterior wall, so as to limit the length of the insulated flexible duct to and from the unit.
- Close to a drain. If no drain is close by, use a pail to collect run-off. (Solo models only.)
- Away from hot chimneys, electrical panel and other fire hazards.
- Allow for a power source (standard outlet).



Hang the unit with the 4 chains and springs provided (see illustration beside).



CAUTION
Make sure the unit is level, with a 1/8" (3 mm) tilt backwards.



4.2 PLANNING OF THE DUCTWORK

- Follow the instructions in section 4.3 below to determine the appropriate duct diameters for your system.
- Keep it simple. Plan for a minimum number of bends and joints. Keep the length of insulated duct to a minimum.
- Do not use wall cavities as ducts. Do not use branch lines smaller than 100 mm Ø.
- Do not ventilate crawl spaces or cold rooms. Do not attempt to recover the exhaust air from a dryer or a range hood. This would cause clogging of the recovery module. Use sheet metal for the kitchen exhaust duct.
- Be sure to plan for at least one exhaust register on the highest lived-in level of the house if it has 2 floors or more.

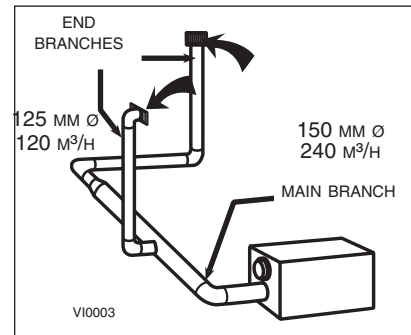
4. Installation (cont'd)

4.3 CALCULATING THE DUCT SIZE

Use the table below to ensure that the ducts you intend to install will be carrying air flows at or under the recommended values. Avoid installing ducts that will have to carry air flows near the maximum values and never install a duct if its air flow exceeds the maximum value.

Duct Diameter	Recommended Air Flow	Maximum Air Flow
100 mm	68 m ³ /h	102 m ³ /h
125 mm	127 m ³ /h	187 m ³ /h
150 mm	204 m ³ /h	306 m ³ /h
160 mm	255 m ³ /h	357 m ³ /h
180 mm	314 m ³ /h	459 m ³ /h
200 mm	442 m ³ /h	645 m ³ /h

VM0001



4.3.1 Example of Calculation:

Problem: My installation requires two exhaust registers (one for the kitchen, one for the bathroom). I will connect these registers to a main duct which will connect to the unit (high speed performance value of 240 m³/h). What size of duct should I use for the main exhaust duct and for the two end branches leading to the registers? (See illustration.)

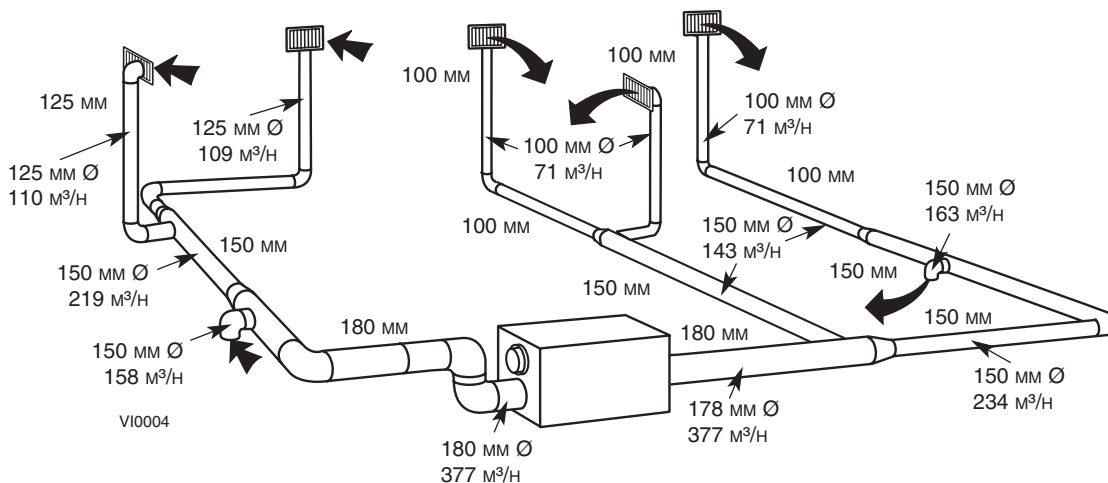
Solution: Simplified method. (For a more detailed method of calculating duct size refer to the ASHRAE or HRAI HANDBOOK).

Main duct: Table above indicates a 150 mm Ø duct: recommended air flow: 204 m³/h; maximum air flow: 306 m³/h. The high speed air flow of 240 m³/h is close enough to the recommended value (204) and far enough away from the maximum value (306). Therefore a 150 mm Ø duct or larger is an appropriate choice for the main exhaust duct.

End branches: Each end branch will have to transport an air flow of 120 m³/h (240 divided by 2). Table above indicates a 125 mm Ø duct: recommended air flow: 127 m³/h; maximum air flow: 187 m³/h. The high speed air flow of 120 m³/h is close enough to the recommended value (127) and far enough away from the maximum value (187). Therefore a 125 mm Ø duct or larger is an appropriate choice for the 2 end branches.

NOTE: A 100 mm Ø duct would have been too small because the maximum acceptable value for a 100 mm Ø duct is 102 m³/h.

4.3.2 Example of a Design for a Fully Ducted System for a Unit Having a High Speed Performance of 377 m³/h



4. Installation (cont'd)

4.4 INSTALLING THE DUCTWORK AND REGISTERS

⚠ WARNING

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

4.4.1 Fully Ducted System (as illustrated in Section 3.1)

STALE AIR EXHAUST DUCTWORK:

- Install registers in areas where contaminants are produced: kitchen, bathrooms, laundry room, etc.
- Install registers 6 to 12 inches (152 to 305 mm) from the ceiling on an interior wall OR install them in the ceiling.
- Install the kitchen register at least 4 feet (1.2 m) from the range.
- If possible, measure the velocity of the air flowing through the registers. If the velocity is higher than 122 m/min., then the register type is too small. Replace with a larger one.

FRESH AIR DISTRIBUTION DUCTWORK:

- Install registers in bedrooms, dining room, living room and basement.
- Install registers either in the ceiling or high on the walls with air flow directed towards the ceiling. (The cooler air will then cross the upper part of the room, and mix with room air before descending to occupant level.)
- If a register must be floor installed, direct the air flow up the wall.

4.4.2 Exhaust Ducted System (Source Point Ventilation) (as illustrated in Section 3.2)

STALE AIR EXHAUST DUCTWORK: (same as for Fully Ducted System, described on point 4.4.1)

FRESH AIR DISTRIBUTION DUCTWORK:

⚠ 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.

CAUTION

When performing duct connection to the furnace supply duct, this duct must be sized to support the additional airflow produced by the HRV or the ERV. Also, use a steel duct with a backdraft damper. If there is no backdraft damper, it is mandatory that the HRV or the ERV must always be running when the furnace is in operation to prevent the risk of overheating HRV or ERV.

There are two methods for connecting the unit to the furnace:

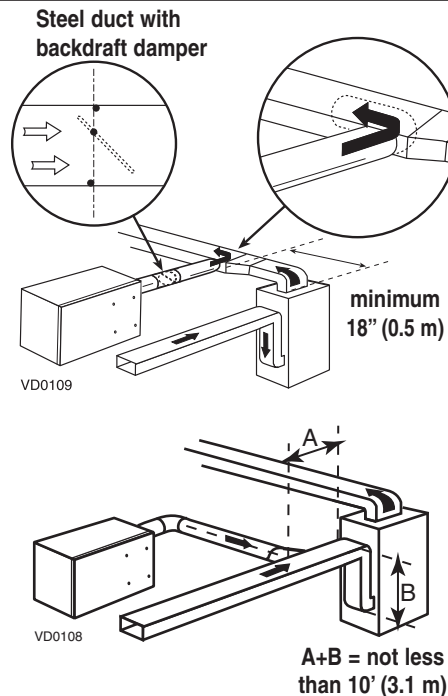
Method 1: supply side connection

- Cut an opening into the furnace supply duct at least 18 inches (0.5 m) from the furnace.
- Connect this opening to the fresh air distribution port of the HRV/ERV (use steel duct, see figure beside).
- Make sure that the HRV/ERV duct forms an elbow inside the furnace ductwork.
- If desired, interlock (synchronize) the furnace blower operation with the HRV/ERV operation (see Section 6.4).

Method 2: return side connection

- Cut an opening into the furnace return duct at not less than 10 feet (3.1 m) from the furnace (A + B).
- Connect this opening to the fresh air distribution port of the HRV/ERV (see figure beside).

NOTE: For Method 2, it is not essential that the furnace blower runs when the unit is in operation, but we recommend it. If desired, synchronize the furnace blower operation with the HRV/ERV operation (see Section 6.4).



4. Installation (cont'd)

4.5 CONNECTING THE DUCT TO THE UNIT

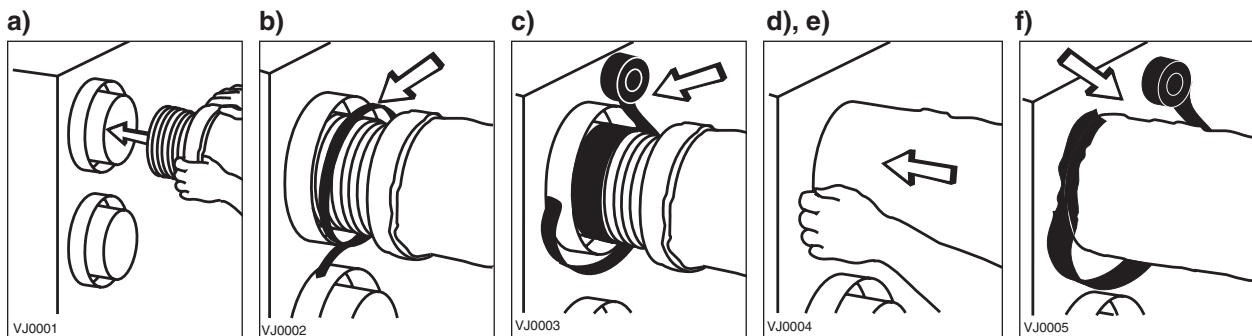
Insulated flexible duct

Use the following procedure for connecting the insulated flexible duct to the ports on the unit (exhaust to outside and fresh air from outside).

- a) Pull back the insulation to expose the flexible duct.
- b) Connect the interior flexible duct to the port using a duct tie.
- c) Carefully seal the connection with duct tape.
- d) Pull the insulation over the joint and tuck it between the inner and outer rings of the double collar.
- e) Pull the vapor barrier over the insulation and over the outer ring of the double collar.
- f) Apply duct tape to the joint making an airtight seal. Avoid compressing the insulation when you pull the tape tightly around the joint. Compressed insulation loses its R value and causes water dripping due to condensation on the exterior surface of the duct.

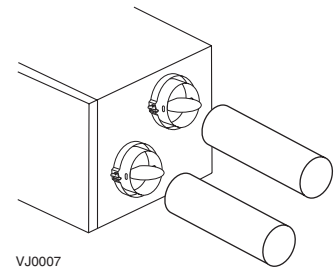
CAUTION

Make sure that the vapor barrier on the insulated ducts does not tear during installation to avoid condensation within the ducts.



Rigid ducts:

Use duct tape to connect the rigid ducts to the ports. Do not use screws! Make sure that the 2 balancing dampers are left in a fully open position before connecting the ducts to these ports (fresh air distribution port and stale air exhaust port as shown).



4. Installation (cont'd)

4.6 INSTALLING THE EXTERIOR HOODS

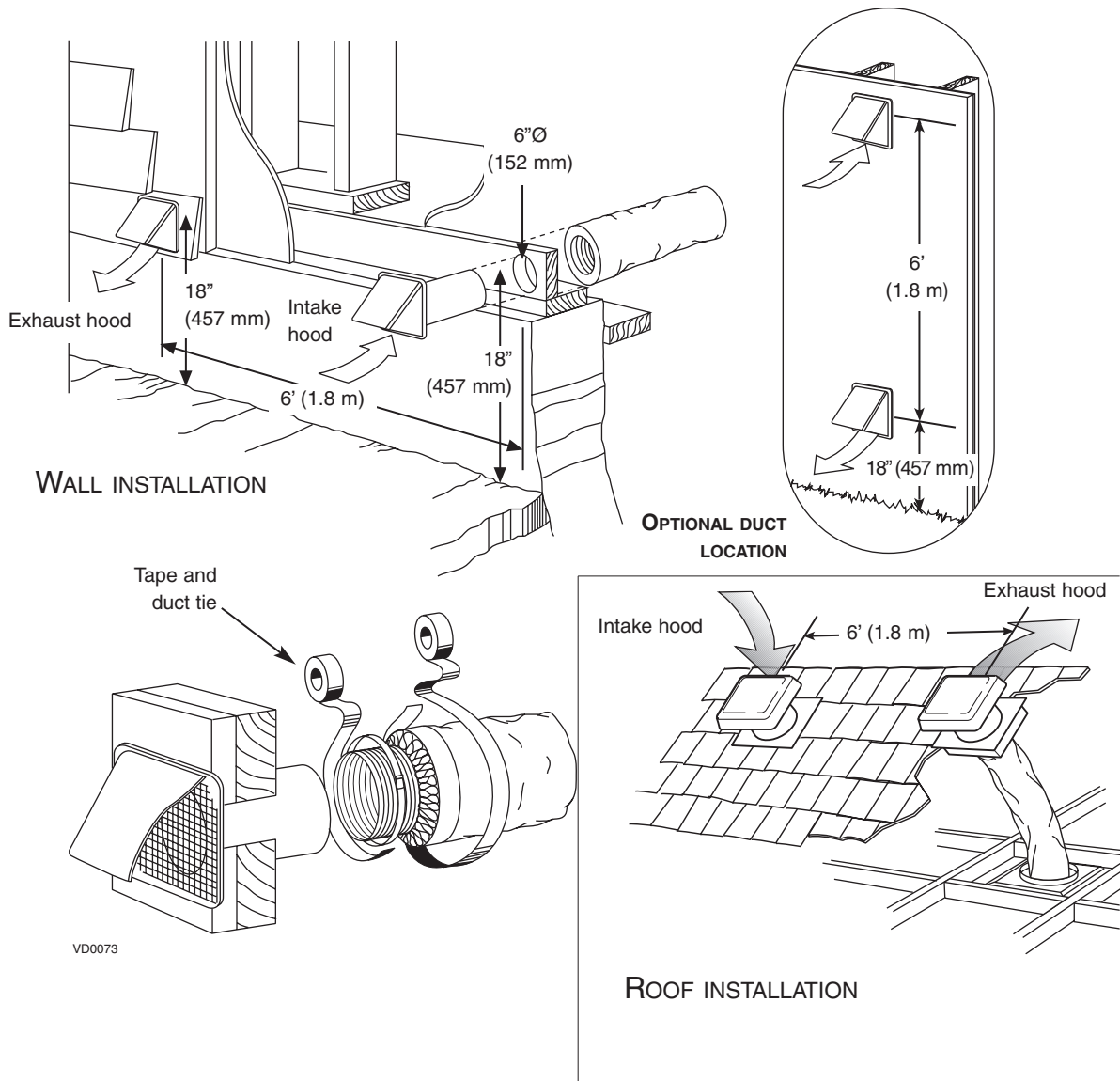
Choose an appropriate location for installing the exterior hoods:

- a minimum distance of 6 feet (1.8 m) between the hoods to avoid cross-contamination
- a minimum distance of 18 inches (457 mm) from the ground

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

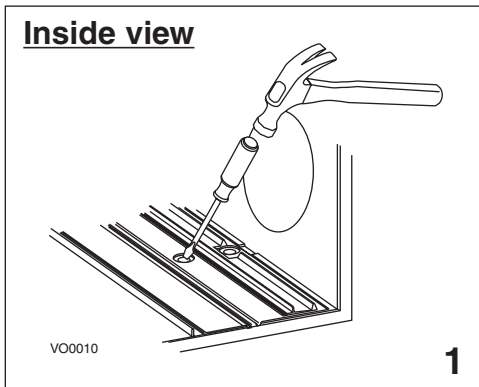
- dryer exhaust, high efficiency furnace vent, central vacuum vent
- gas meter exhaust, gas barbecue-grill
- any exhaust from a combustion source
- garbage bin and any other source of contamination

Follow the illustration for connecting the insulated duct to the hoods. Place the “FRESH AIR INTAKE” sticker, provided in the installation kit, on corresponding hood. An “Anti-Gust Intake Hood” should be installed in regions where a lot of snow is expected to fall. (Not applicable for roof hoods.)

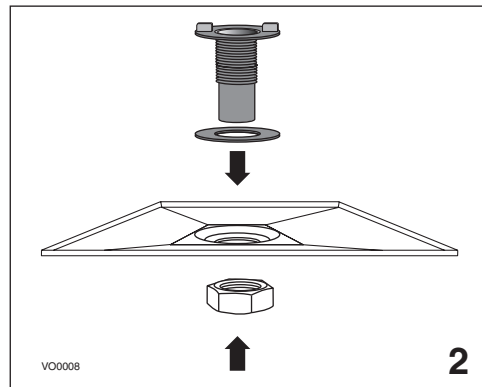


4. Installation (cont'd)

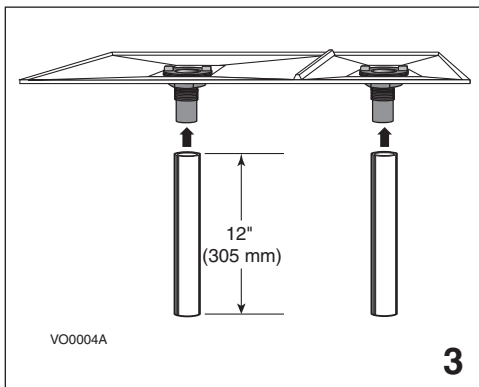
4.7 CONNECTING THE DRAIN (Solo only)



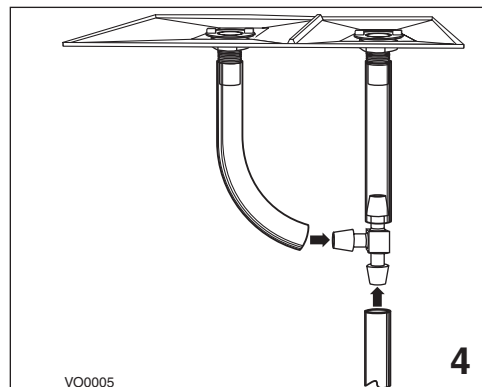
To install the drain fittings, punch the 2 knock-out sections located at the bottom of the unit.



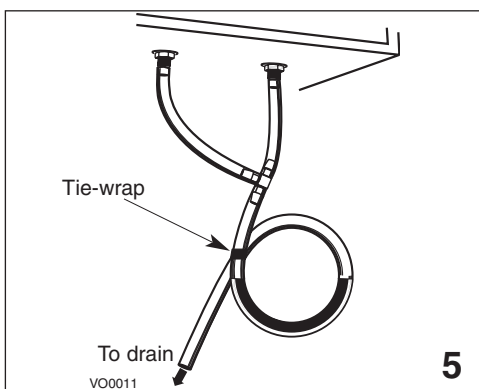
In order to keep the drain pan intact, hand tighten the 2 plastic drain fittings to the unit using the gasket and nut as shown.



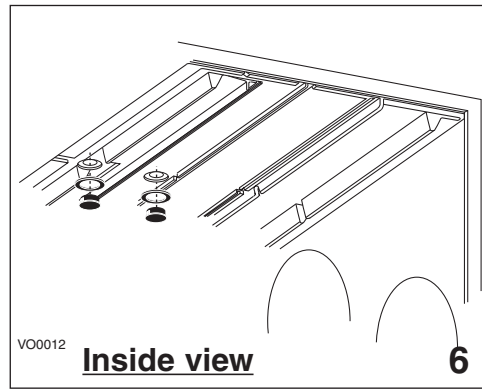
Cut 2 sections of the plastic tube, about 12" (30 cm) long and attach them to each drain fitting.



Join the 2 short sections to the "T" junction and main tube as shown.



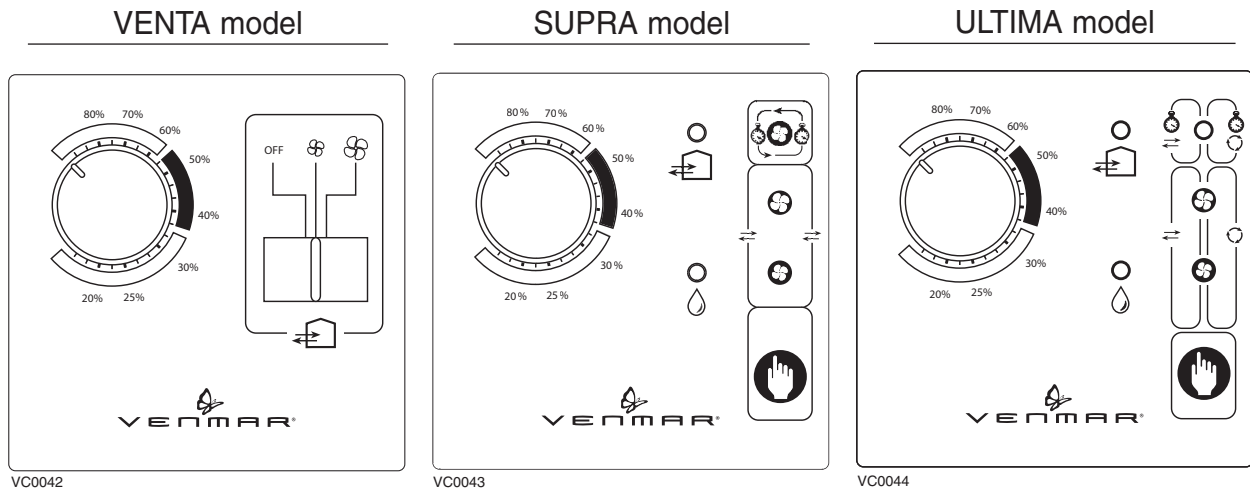
Make a water trap loop in the tube to prevent the unit from drawing unpleasant odors from the drain source. Make sure this loop is situated **BELOW** the "T" as shown. This will prevent water from being drawn back up into the unit in case of negative pressure. Run the tube to the floor drain or to an alternative drain pipe or pail. Be sure there is a slight slope for the run-off.



From the inside, install 2 snap bushings on top of the unit. **Do not punch the 2 knock-out sections.**

5. Control Devices

5.1 MAIN CONTROLS



MODELS		VENTA	SUPRA	ULTIMA
MODES	Off Position	X	X	X
	Intermittent Exchange (40 min./OFF -20 min./ON)		X	X
	Low Speed Continuous Exchange	X	X	X
	High Speed Continuous Exchange	X	X	X
	Intermittent Filtration (40 min./filtration -20 min./exchange)			X
	Low Speed Continuous Filtration			X
High Speed Continuous Filtration			X	
INDICATORS	Mode Indicator		X	X
	Air Exchange Indicator		X	X
	Max. Speed Humidity Control Indicator		X	X
	Flashing Maintenance Indicator		X	X
SWITCHES	Sliding Button	X		
	Push Button		X	X

NOTE: For DUO units only, please note the **thermal wheel stops turning** when the unit is in defrost cycle, extended defrost cycle or in recirculation mode (Continuous Filtration).

5.2 OPTIONAL CONTROLS

20/40/60-MINUTE PUSH-BUTTON TIMER:

This remote illuminated switch is typically installed in bathrooms, kitchen and laundry room to provide 20, 40 or 60 minutes of high speed ventilation at the push of a button.

60-MINUTE CRANK TIMER:

This timer allows up to 60 minutes of high speed operation to be selected from a remote location.

DEHUMIDISTAT:

This optional control helps control maximum humidity level during fall, winter and spring. You will find a relative humidity % scale meant to reduce the window condensation problems.

5. Control Devices (cont'd)

5.3 OTHER FEATURES

FURNACE INTERLOCK (for forced air heating system)

The furnace fan can be interlocked so that it will run simultaneously with the ventilation system to ensure proper distribution of fresh air throughout the house.

PERMANENT MEMORY

Our electronic controls have a default memory feature in the event of a power outage. Even the date of the last service reminder is maintained as a convenience to the homeowner.

CONTROL UPGRADES

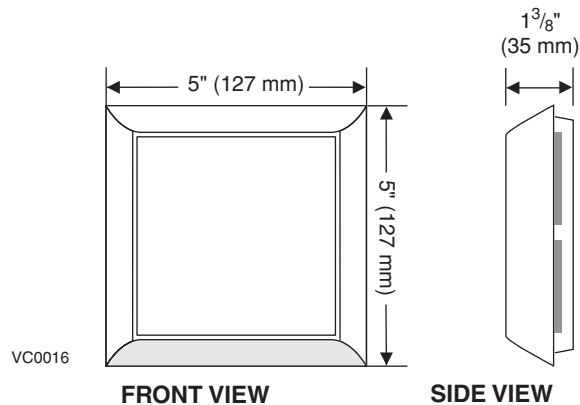
All controls can be used on any unit, so a Venta control can be upgraded to a Supra or an Ultima in the future.

6. Installation of the Controls

6.1 DIMENSIONS AND SPECIFICATIONS (MAIN CONTROLS)

Voltage: 12 volts DC

Dimensions: 5" x 5" x 1 3/8"
(127 mm x 127 mm x 35 mm)



6.2 INSTALLATION OF THE MAIN CONTROL (VENTA, SUPRA, & ULTIMA)

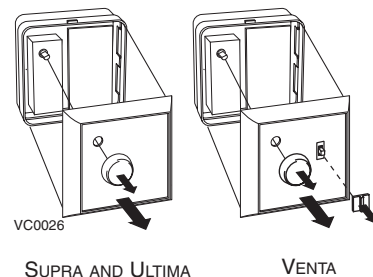
CAUTION

Never install more than one main control per unit.

INSTRUCTIONS:

- 1- Determine the location of the control: *The wall control must be installed in a central location on the main floor. Typical locations for these controls are kitchen, main hallways and family room.*

- 2- Remove the button(s) and the cover plate of the control.

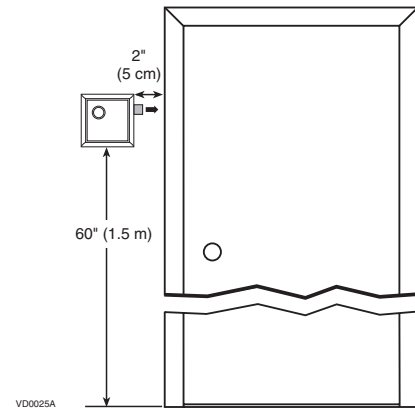


6. Installation of the Controls (cont'd)

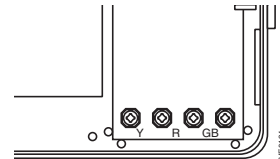
6.2 INSTALLATION OF THE MAIN CONTROL (cont'd)

- 3- Install the wall control 60 inches (1.5 m) from the floor and leave a free space of at least 2 inches (5 cm) to the right of the control to allow user to slide out the control instructions.

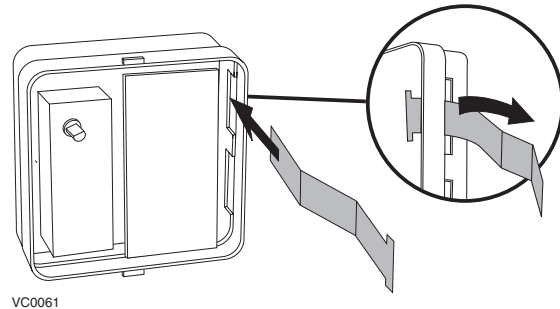
Use the template provided in the control box to position the wire hole and the screw holes. Use the screws and the plastic anchors provided in the installation kit to secure the control.



- 4- Connect the wires to the main control.

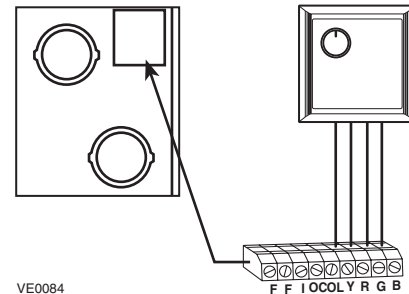


- 5- One side of the instruction pull-out is written in french and the other side is in english. Install it at the occupant's choice.



- 6- Re-install the cover plate and the buttons.

- 7- Connect the wires to their corresponding position inside the electrical compartment. Make sure the connections of the unit and of the wall control correspond exactly.



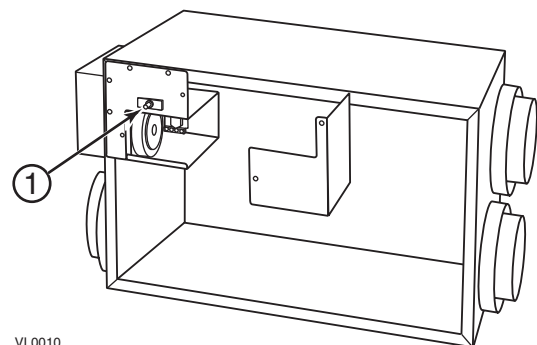
- 8- Connect the optional controls (if applicable) by referring to Section 6.3.

- 9- Do the appropriate connection to the furnace (if applicable) by referring to Section 6.5.

- 10- Plug in the unit and do the "overall verification" of the system as described in Section 9.0.

⚠ WARNING

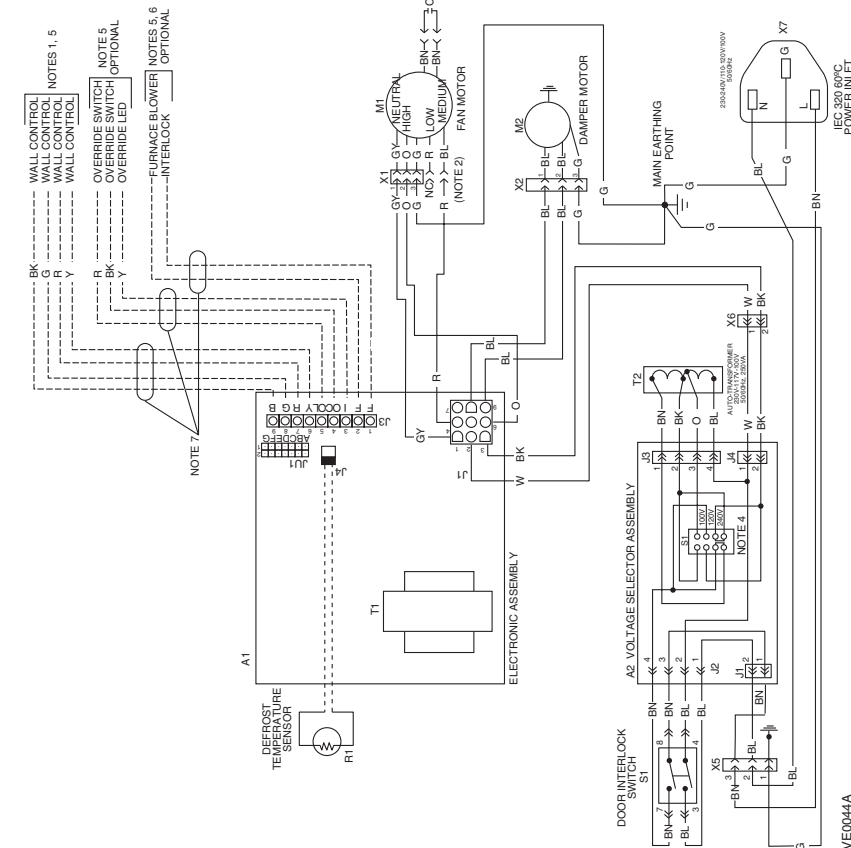
Main voltage selector switch is factory preset to 240 V. For 100 V or 120 V operation, set main voltage selector switch to desired voltage.



1. Main voltage selector switch

Models: SOLO 1.5 and 2.0.

Connection



- NOTES**
- 1- Controls available. See the installation manual. (Low voltage only, 12VDC)
 - 2- The factory set wiring for blower speed selection is high and low. Medium speed can be selected instead of low speed. Disconnect the RED wire from the motor RED tap, and connect to the motor BLUE tap.
 - 3- If any of the original wire, as supplied, must be replaced, use the same or equivalent wire.
 - 4- Voltage selector switch is factory set at 240 V.
 - 5- The field wiring must comply with applicable codes, ordinances, and regulations.
 - 6- The furnace fan circuit must be SELV circuit only.
 - 7- Use the factory supplied protective tubing.

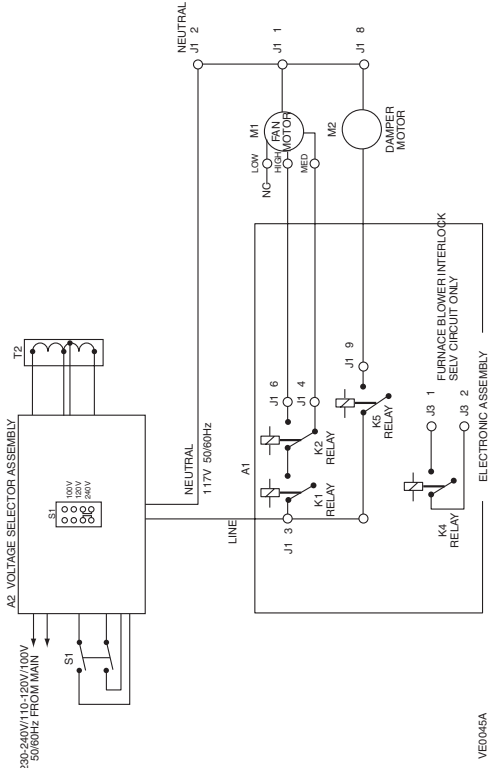


COLOR CODE	
BK	BLACK
BL	BLUE
BN	BROWN
G	GREEN-YELLOW
GY	GREY
NC	NO CONNECTION
O	ORANGE
R	RED
W	WHITE
Y	YELLOW

7. Wiring Diagrams

⚠ WARNING

Risk of electrical shocks. Before performing any maintenance or servicing, always disconnect the unit from its power source.



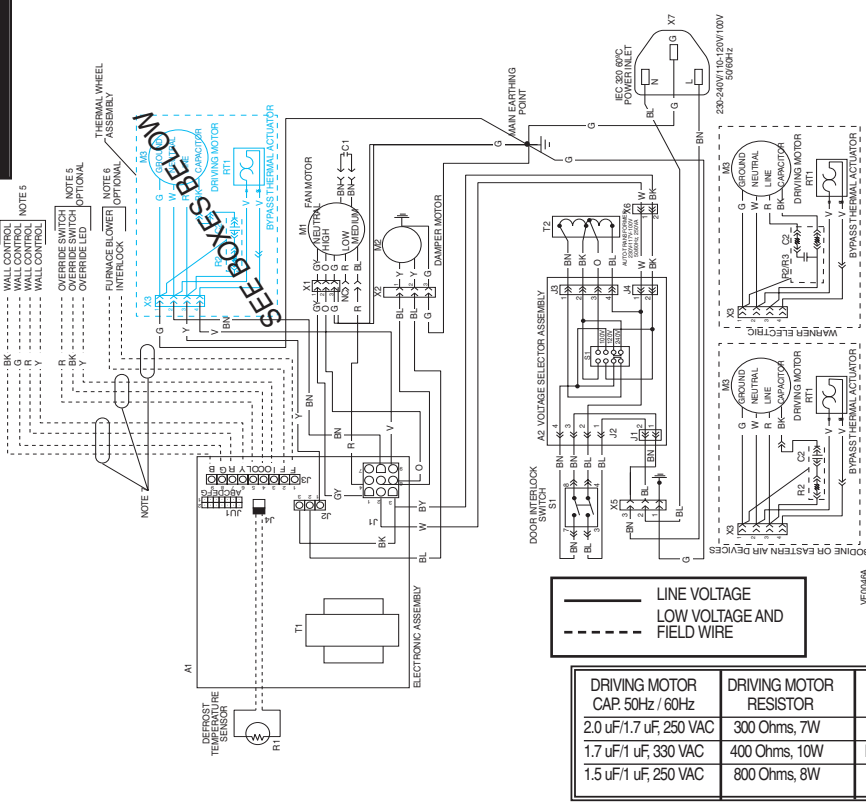
JUMPERS TABLE		TYPE		DEFROST TIME DEFROST/VENTILATION MINUTES	
JU 1	A B C D E F G	43729	45729	23°F -5°F	5°F -22°F -15°C -30°C
JU1A	OUT	OUT	OUT	6/60	6/20
JU1B	OUT	OUT	OUT	10/30	10/15
JU1C	OUT	OUT	OUT		
JU1D	OUT	OUT	OUT		
JU1E	IN	IN	OUT		
JU1F	IN	IN	OUT		
JU1G	OUT	OUT	OUT		
EXTENDED DEFROST ALL TYPES					

FUNCTION TABLE	RELAY				
	K1	K2	K4	K5	
MODE	0	0	0	0	1
Intermittent	1	0	1	0	0
Exchange Low	1	1	1	1	0
Exchange High	1	0	1	1	1
Circulation Low	1	1	1	1	1
Circulation High	1	1	1	1	1
Defrost Cycle	1	1	1	1	1
Off	0	0	0	0	1

0 = Relay coil is de-energized
1 = Relay coil is energized
NS = Not supported

Models: DUO 1.2, 1.4 and 1.9.

Connection



DRIVING MOTOR CAP. 50Hz / 60Hz	DRIVING MOTOR RESISTOR	DRIVING MOTOR
2.0 uF/1.7 uF, 250 VAC	300 Ohms, 7W	Bodine
1.7 uF/1 uF, 330 VAC	400 Ohms, 10W	Eastern Air Devices
1.5 uF/1 uF, 250 VAC	800 Ohms, 8W	Warner Electric

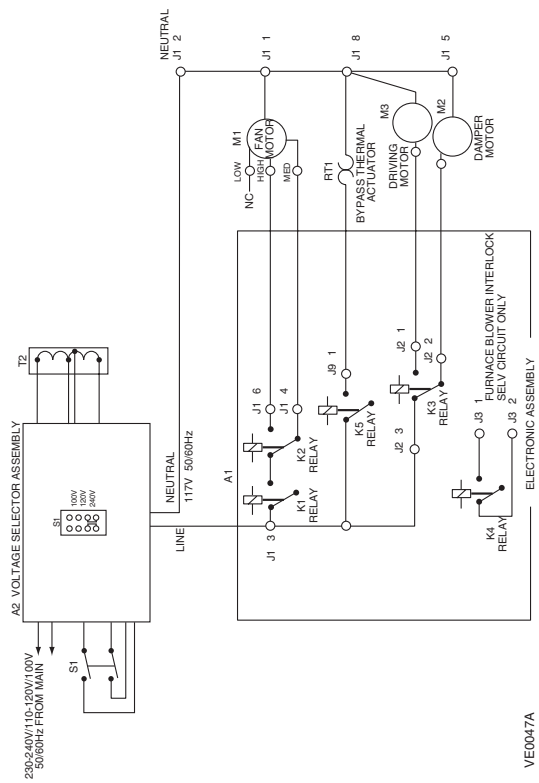
COLOR CODE	
BK	BLAV/K
BL	BLUE
BN	BROWN
G	GREEN-YELLOW
GY	GREY
NC	NO CONNECTION
OR	ORANGE
R	RED
V	VIOLET
W	WHITE
Y	YELLOW

- NOTES**
- 1- Controls available. See installation manual. (Low voltage only 12VDC)
 - 2- Factory set wiring for blower speed selection is high and medium. Low speed can be selected instead of medium speed. Disconnect the RED wire from the motor BLUE tap and connect the motor RED tap.
 - 3- If any of the original wire, as supplied, must be replaced, use the same or equivalent wire.
 - 4- Voltage selector switch is factory set at 240 V.
 - 5- Field wiring must comply with applicable codes, ordinances, and regulations.
 - 6- Furnace fan circuit must be SELV circuit only.
 - 7 Use factory supplied protective tubing.

7. Wiring Diagrams (cont'd)

⚠ WARNING

Risk of electrical shocks. Before performing any maintenance or servicing, always disconnect the unit from its power source.



JUMPERS TABLE		MODEL						
		43719, 43709, 45709						
		EXTENDED DEFROST						
JU1A	JU1B	JU1C	JU1D	JU1E	JU1F	JU1G		
IN	IN	OUT	OUT	IN	IN	OUT	OUT	
IN	IN	OUT	OUT	IN	IN	OUT	OUT	

FUNCTION TABLE	RELAY					DEFROST		
	K1&K4	K2	K3	K5		STANDARD	EXTENDED	
Intermittent	0	0	0	1				
Continuous Low	1	0	1	0				
Continuous High	1	1	1	0				
Circulation Low	1	0	0	1				
Circulation High	1	1	0	1				
Defrost Cycle	1	1	0	1				
Off	0	0	0	1				

0 = Relay coil is de-energized
1 = Relay coil is energized

Logic

8. Air Flow Balancing

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 provided with the unit.

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

BALANCING PROCEDURE

1. Set the unit to high speed:

Make sure that the furnace blower is ON if the installation is in any way connected to the ductwork of the cold air return. If not, leave furnace blower OFF. If the outside temperature is below 0°C / 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.)

Disconnect the wire of the bypass damper (Duo only).

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

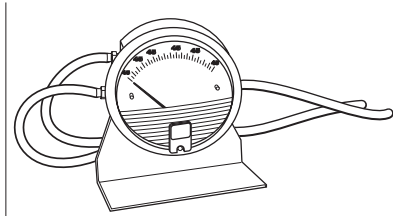
NOTE: It is suggested to start with the exhaust air flow reading because the exhaust has typically more restriction than the fresh air, especially in cases of fully ducted installations or source point ventilation. Place the magnehelic gauge upright and level. Record equivalent AIR FLOW of the reading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

4. Move tubing to FRESH air flow pressure taps (see diagram). Adjust the fresh air balancing damper 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 to equal the fresh air flow.

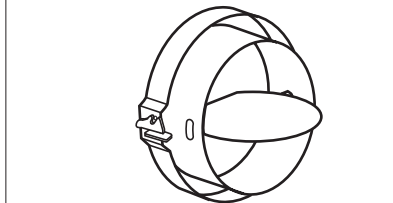
5. Secure both dampers in place with tape or with a fastening screw.

6. Write the required air flow information on a label and stick it near the unit for future reference (date, maximum speed air flows, your name and phone number and business address). **Connect the wire of the bypass damper (Duo only).**

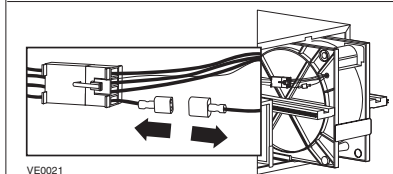
NOTE: The unit is considered balanced even if there is a difference of $\pm 17 \text{ m}^3/\text{h}$ or $\pm 10 \text{ cfm}$ between the two air flows.



VP0009

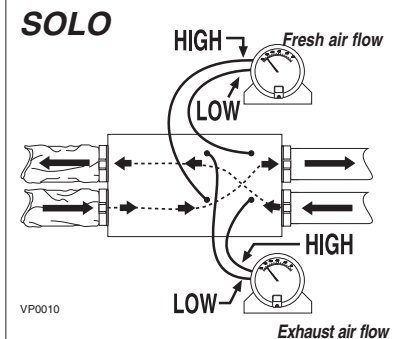


VD0051

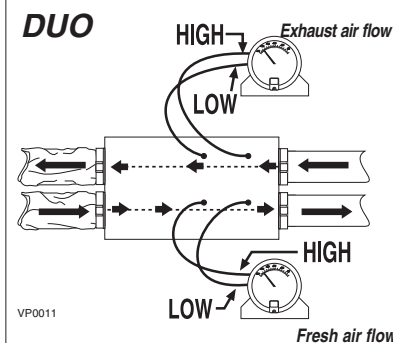


VE0021

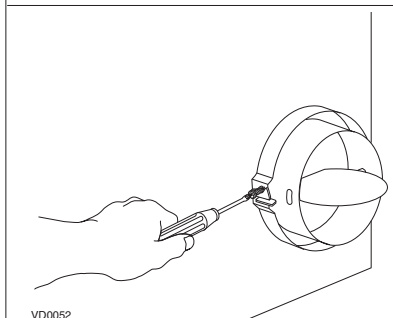
NOTE: Always unplug bypass wire while balancing a Duo.



VP0010



VP0011



VD0052

9. Overall Verification

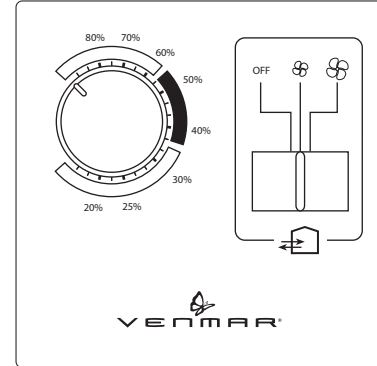
9.1 MAIN CONTROLS

This procedure allows the installer to verify that all modes of operation are fully functional.

During the verification of a main control, make sure that all optional remote controls are inactive.

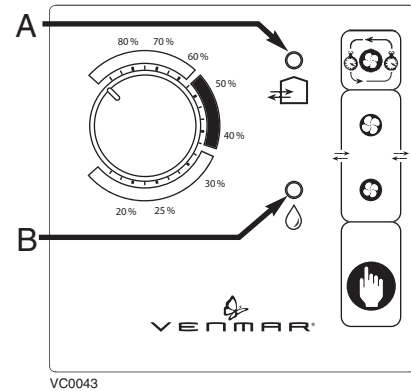
VENTA (6 different control scenarios to be tested)

	Set the slider switch to	Set dehumidistat dial to	Results expected fan speed / damper
1	off	maximum counterclockwise	motor off / closed
2	off	maximum clockwise	motor off / closed
3	min.	maximum counterclockwise	low speed / open
4	min.	maximum clockwise	high speed / open
5	max.	maximum counterclockwise	high speed / open
6	max.	maximum clockwise	high speed / open



SUPRA (8 different control scenarios to be tested)

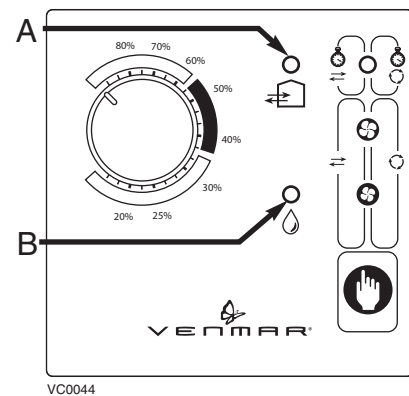
	Set air supply control to	Set dehumidistat dial to	Results expected		
			Fan speed	Exchange indicator (A)	Max speed indicator (B)
1	off	maximum counterclockwise	off	*off	off
2	off	maximum clockwise	off	*off	off
3	min.	maximum counterclockwise	low	on	off
4	min.	maximum clockwise	high	on	on
5	max.	maximum counterclockwise	high	on	off
6	max.	maximum clockwise	high	on	on
7	intermittent	maximum counterclockwise	off 40 min low 20 min	*off 40 min on 20 min	off
8	intermittent	maximum clockwise	high	on	on



*The dampers are closed when the exchange indicator is off.

ULTIMA (14 different control scenarios to be tested)

	Set air supply control to	Set dehumidistat dial to	Results expected		
			Fan speed	Exchange indicator (A)	Max speed indicator (B)
1	off	maximum counterclockwise	off	*off	off
2	off	maximum clockwise	off	*off	off
3	min. (green light)	maximum counterclockwise	low	on	off
4	min. (green light)	maximum clockwise	high	on	on
5	min. (red light)	maximum counterclockwise	low	*off	off
6	min. (red light)	maximum clockwise	high	on	on
7	max. (green light)	maximum counterclockwise	high	on	off
8	max. (green light)	maximum clockwise	high	on	on
9	max. (red light)	maximum counterclockwise	high	*off	off
10	max. (red light)	maximum clockwise	high	on	on
11	intermittent (green light)	maximum counterclockwise	off / 40 min. low / 20 min.	*off / 40 min. on / 20 min.	off
12	intermittent (green light)	maximum counterclockwise	high	on	on
13	intermittent (red light)	maximum counterclockwise	low / 20 min. high / 40 min.	on / 20 min. *off / 40 min.	off
14	intermittent (red light)	maximum counterclockwise	high	on	on



*The dampers are closed when the exchange indicator is off.

9. Overall Verification (cont'd)

9.2 OPTIONAL CONTROLS

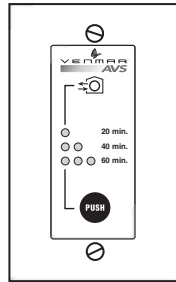
First, turn OFF the main control device before checking the remote optional controls.

20/40/60-MINUTE PUSH-BUTTON TIMER:

Activate the push-button. Within 2 seconds, push one time for 20 minutes, two times for 40 minutes or three times for a 60-minute activation.

Results expected:

1. Motor speed: high for 20, 40 or 60 minutes.
2. Indicator light goes "ON" and flashes every 5 seconds (one time to indicate a 20-minute operation, two times for a 40-minute, and three times for a 60-minute operation).
3. Supra or Ultima wall controls: Air exchange indicator light goes "ON".

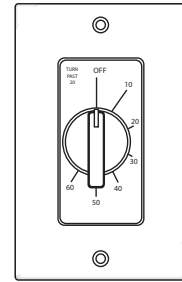


60-MINUTE CRANK TIMER:

Activate the timer.

Results expected:

1. Motor speed: high for up to 60 minutes.
2. Supra or Ultima wall controls: Air exchange indicator light goes "ON".



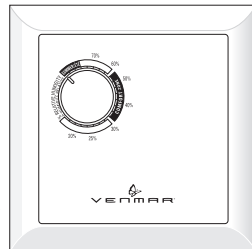
NOTE: To stop activation, push one more time.

DEHUMIDISTAT:

Turn dial to the maximum clockwise position (20%).

Results expected:

1. Motor speed changes to high.



10. Maintenance / Instructions for User

⚠ WARNING

Risk of electrical shocks. Before performing any maintenance or servicing, always disconnect the unit from its power source.

- Review with the user the steps required for the regular maintenance of her/his ventilation system. These steps are described in details in the user manual:

FOUR TIMES A YEAR:

- Inspect the intake hood, and clean if needed.
- Clean the filters.
- Clean the interior of the cabinet, and clean the door.
- Clean the condensation tray, and inspect the drain tubing (SOLO only).

ONCE A YEAR:

- Clean the recovery module (core or thermal wheel).
- Clean the blades of the blower wheels if needed.

- Warn the user of the necessity to rebalance the system following a major house renovation or following the installation of any extra registers.
- Make sure the user understands how to use the main control as described in the user manual.

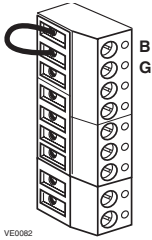
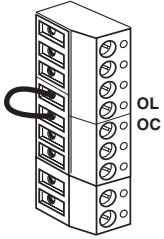
CAUTION

Do not oil the motor. It is already permanently lubricated.

11. Troubleshooting

NOTE: Be sure to unplug and inspect the unit before proceeding with these steps.

Start-up troubleshooting:

Problems	Possible causes	You should try this
1. Unit does not work.	<ul style="list-style-type: none"> The circuit board may be defective. 	<ul style="list-style-type: none"> Unplug the unit. Disconnect the main control and the optional(s) control(s) (if need be). Jump B and G terminals. Plug the unit. If the motor runs on high speed and the damper opens, the circuit board is not defective.
		 <p>VE0082</p>
2. The damper actuator doesn't work.	<ul style="list-style-type: none"> The 9-pin connector may have a loose connection. The circuit board may be defective. The damper actuator may be defective. 	<ul style="list-style-type: none"> Unplug the unit and check to make sure all the crimp connections are secured. Check the damper actuator connections as well. Using a multimeter, check for 12 Volts DC between the YELLOW and BLACK terminals of the circuit board. (The door switch must be pushed during this test.) Replace the board if no voltage is detected. Replace the damper actuator.
3. The wall control does not work OR the indicators flash.	<ul style="list-style-type: none"> Erratic operation of the control every 8 seconds. The wires may be in reverse position. The wires may be broken. There may be a short-circuit The wire in the wall OR the wall control may be defective. The circuit board may be defective. 	<ul style="list-style-type: none"> Unplug the unit. Wait 30 seconds. Plug it back in. Ensure that the color coded wires have been connected to their appropriate places. Inspect every wire and replace any that are damaged. With the help of a multimeter, check for continuity. Jump "B" and "G" (black and green). If unit switches to high speed, 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 doesn't, change the wall control. If the unit does not switch to high speed, replace the circuit board.
4. The dehumidistat does not work OR the 20/40/60-min. push-button timer does not work OR its indicator light does not stay on.	<ul style="list-style-type: none"> The dehumidistat or push button may be defective. 	<ul style="list-style-type: none"> Jump the OL and OC terminals. If the unit switches to high speed, remove the dehumidistat or push-button timer and test it right beside the unit using another shorter wire. If it works there, change the wire. If it does not, change the dehumidistat or the push-button timer.
		 <p>VE0086</p>

11. Troubleshooting (cont'd)

Short term troubleshooting (cont'd):

Problems	Possible causes	You should try this
5. The defrost cycle does not work (the fresh air duct is frozen OR the fresh air distributed is very cold OR the "AIR EXCHANGE" light flashes).	<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 may be defective.• The circuit board may be defective.• The thermistor may be defective.	<ul style="list-style-type: none">• Remove the ice.• Inspect these parts and replace if necessary.• Plug in the unit and select "MIN" or "MAX". Press the door switch and see if the port damper opens. If it does not open, replace the damper actuator.• Unplug the unit. Unplug the defrost sensor wire (see J4 on electrical diagram Section 7.0). Plug the unit back in. Select "MIN" and make sure the unit is adjusted for low speed operation (turn all dehumidistats maximum counterclockwise). Wait 3 minutes. The unit should switch to high speed and the damper at the fresh air intake port should close (defrost mode). If this does not happen, then replace the circuit board.• If the defrost mode works well after having disconnected the thermistor wire (above test), this means the thermistor is probably defective. You should replace it.

12. References

- HVI, "Installation Manual for Heat Recovery Ventilators", 1987 edition.
- ASHRAE 1984 Systems Handbook, chapter 11, "Air Distribution Design for Small Heating and Cooling Systems".

