



Built Better To Last Longer

Residential
Central Heat Recovery Ventilator
Product Specifications
and
Installation and Trouble Shooting Guide
Proventor II Series
Model
SHRV150DM

APPLICATION WARNING

It is always important to assess how the operation of any Heat Recovery Ventilator (HRV) may interact with vented combustion equipment (i.e. gas furnaces, oil furnaces, wood stoves, fireplaces. etc.)

Never install an HRV in a situation where it's normal operation, lack of operation, or partial failure may result in the back drafting on vented combustion equipment such as water heaters, furnaces and fireplaces

DO NOT ATTEMPT INSTALLING THIS HRV WITHOUT FIRST
READING THIS ENTIRE MANUAL



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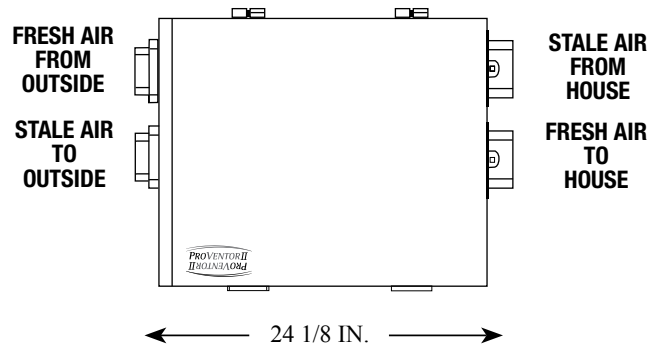
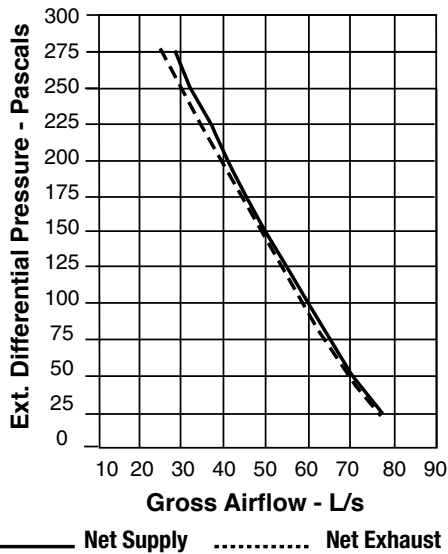
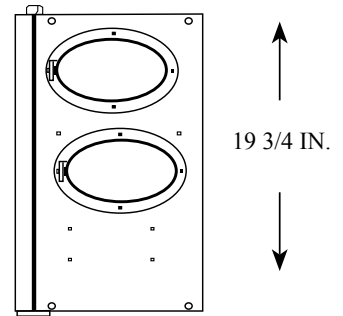
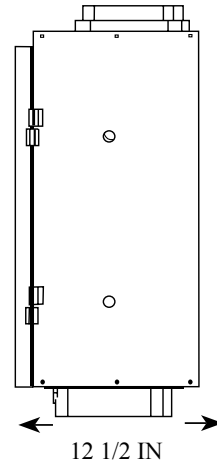
Built Better to Last Longer

SPECIFICATIONS HEAT RECOVERY VENTILATORS PERFORMANCE RATINGS

MODEL: SHR150DM

Options Installed: None
 Electrical: 120 V - 1.5 Amp
 Exhaust Air Transfer Ratio: 0.02
 Low Temp. Reduction Reduction During -25°C Test 20.0%
 maximum Unbalanced Airflow During -25°C Test: 8.5 L/s

| VENTILATION PERFORMANCE | | | | | | | | |
|-------------------------|--------|---------------------|-----|----------------|-----|----------|-----|-------------|
| EXT. STATIC PRESSURE | | NET SUPPLY AIR FLOW | | GROSS AIR FLOW | | | | POWER WATTS |
| Pa | in. wg | L/S | CFM | SUPPLY | | EXHUAUST | | |
| 25 | 0.1 | 75 | 100 | 77 | 163 | 77 | 164 | 138 |
| 50 | 0.2 | 69 | 147 | 70 | 149 | 72 | 155 | 135 |
| 75 | 0.3 | 64 | 137 | 65 | 139 | 67 | 142 | 137 |
| 100 | 0.4 | 60 | 128 | 61 | 130 | 62 | 131 | 137 |
| 125 | 0.5 | 55 | 115 | 57 | 121 | 56 | 119 | 138 |
| 150 | 0.6 | 51 | 108 | 52 | 110 | 51 | 109 | 140 |
| 175 | 0.7 | 46 | 98 | 47 | 99 | 46 | 95 | 141 |
| 200 | 0.8 | 41 | 88 | 42 | 89 | 40 | 86 | 142 |
| 225 | 0.9 | 37 | 79 | 38 | 80 | 34 | 72 | 143 |
| 250 | 1.0 | 32 | 68 | 32 | 69 | 29 | 62 | 144 |
| 275 | 1.1 | 28 | 60 | 29 | 61 | 25 | 54 | 145 |



| ENERGY PERFORMANCE | | | | | | | | | | |
|--------------------|--------------------|-----|--------------|-----|----------------------------|-----------------------|------------------------------|---------------------------------|-----------------------|-------|
| | SUPPLY TEMPERATURE | | NET AIR FLOW | | SUPPLY/ EXHAUST FLOW RATIO | AVERAGE POWER (WATTS) | SENSIBLE RECOVERY EFFICIENCY | APPARENT SENSIBLE EFFECTIVENESS | NET MOISTURE TRANSFER | |
| | | °C | °F | L/S | | | | | | CFM |
| HEATING | i | 0 | 32 | 31 | 65 | 1.01 | 102 | 64 | 78 | 0.01 |
| | ii | 0 | 32 | 45 | 96 | 1.01 | 120 | 61 | 72 | -0.03 |
| | iii | 0 | 32 | 58 | 123 | 1.00 | 134 | 57 | 66 | -0.09 |
| | iv | | | | | | | | | |
| | v | -25 | -13 | | 30 | 63 | 0.96 | 125 | 57 | 77 |



1. OPTIONAL CONTROLS

20 Minute Remote Timer Touch Pad Model ECPBT

This control is polarized. If wired incorrectly a fault will be indicated at the HRV LED by a flashing RED light.

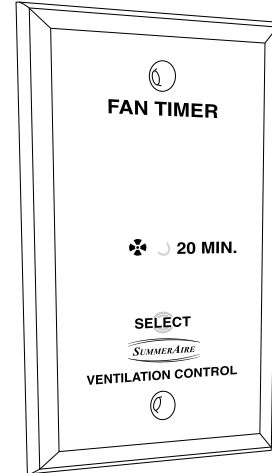
Once activated by a momentary push of the SELECT button on the Touch Pad, the HRV is switched to high speed ventilation and the Touch Pad LED will illuminate. The HRV will reset to the previously selected mode of operation once the 20 minutes have expired. To cancel the selection, depress (and hold for 3-4 seconds) the SELECT button on the 20-minute Touch Pad.

This 20-Minute Touch Pad **MUST** be connected to the “PTE” and “GRD” terminals on the HRV exterior.

NOTE: The connections to this control are polarized. Be sure to connect “B” to BLACK and “W” to WHITE at the control. Connect WHITE to “PTE” and BLACK to “GRD” at the HRV.

INSTALL USING 18/2 THERMOSTAT WIRE.
MAXIMUM NUMBER OF ECPBT CONTROLS
PER HRV IS SIX.
MAXIMUM CUMULATIVE LEAD LENGTH IS
2000 LINEAR FEET.

NOTE: This control will not respond while a crank timer is operational.



Wall Mount Remote Control Model SelectAire

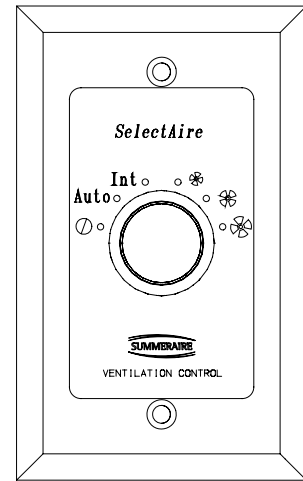
This is a non-polarized control

This is an optional control device that provides the following options; System Off, Auto/Off, Intermittent, Fan Speed Low, Medium or High.

This control is connected to the Main HRV terminal block using 18/2 thermostat wire.

Up to two (2) SelectAire controls can be installed on one HRV.

Refer to wiring diagram for connection method.



Wall Mount Dehumidistat Model SRDEH

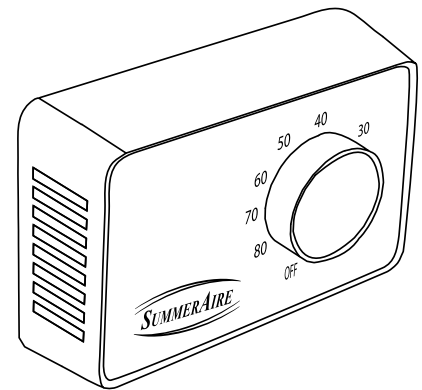
This is a non-polarized control

This is an optional device providing indoor relative humidity control. Activation occurs when the indoor humidity is higher than the selected level. The HRV will function at high-speed fan until the indoor humidity is lower than the set point on the control. The HRV control will then default to the pre-selected mode.

This control is typically installed in an area of the home where humidity may require automatic monitoring. This could be a central location (i.e. near furnace thermostat) or in a specific room (i.e. kitchen, laundry etc.).

Connect to HRV using 18/2 thermostat wire.

Connect one lead to “DEH” and the second to “GRD” at the HRV. Refer to Wiring Diagram.



2. MODEL SELECT SWITCH

Refer to drawing fig. I.

The model select switch must be set to the HRV model it is installed into to ensure proper unit operation.

This switch is factory set.

Failure to ensure the switches are set as required will result in improper operation.

The model select switch is a 3-position dipswitch located on the exposed side of the control board when the electrical cover is removed.

Switch positions are:

| | Fan Model | |
|-----------|-----------|-------|
| | G25A1 | E19C0 |
| Switch #1 | up | down |
| Switch #2 | down | up |
| Switch #3 | down | down |

The above switch positions apply when the orange terminal connection strip is located in the upper left corner of the HRV (when facing the unit from the door side). Reverse the switch positions if the orange terminal strip is in the lower right side on the HRV.

3. FAN CURVE SELECTION

HRV model SHRV150DM supports two (2) field selectable fan curves:

Fan curve switch position “A” and switch position “B” (factory set).

Note that switch position “C” is unused and will provide fan curve “B” if selected.

Fan curves are selected at the HRV control board.

To select an alternate fan curve;

1. Refer to the chart below to determine the desired fan curve.
2. Disconnect supply power to HRV.
3. Remove the HRV front door and electrical control box cover.
4. Locate the fan curve slide switch, which is located on the exposed surface of the PCB control.
5. Select either fan curve A or B by sliding the switch up or down to the desired position.
6. Reassemble and reconnect power.

| Static Pressure In. W.C. | Fan Curve “A” | Fan Curve “B” (Factory Set) |
|-----------------------------|---------------|--------------------------------|
| | CFM | CFM |
| .2” | 100 | 150 |
| .4” | 77 | 127 |

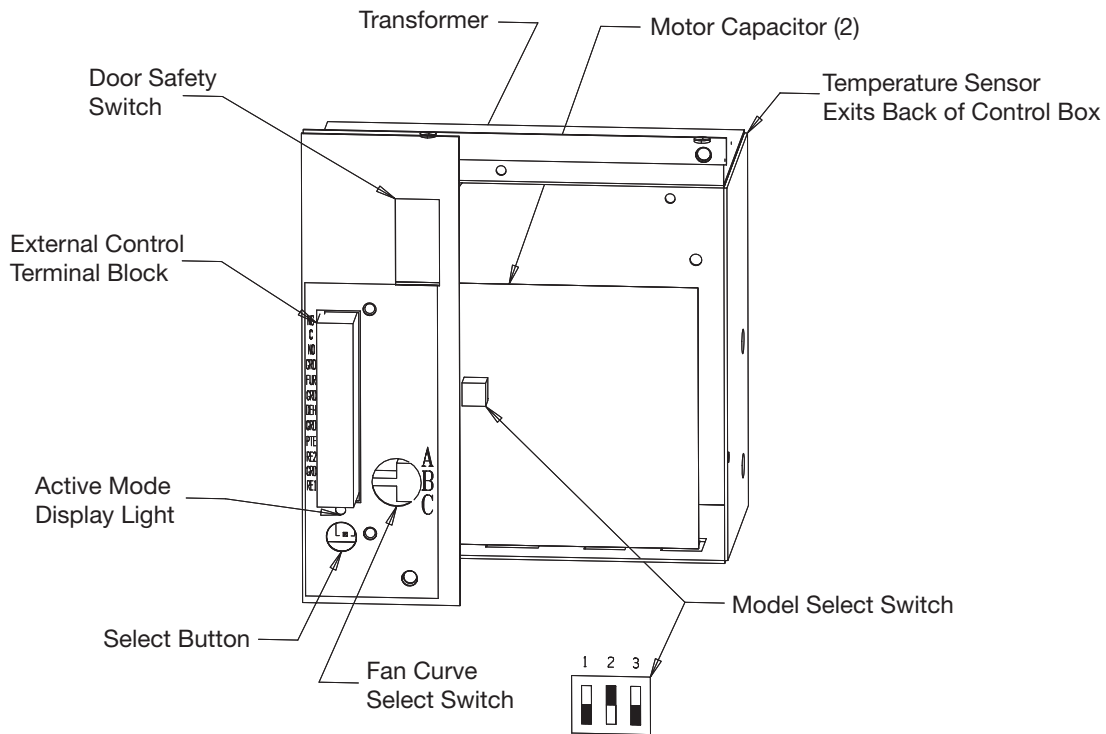
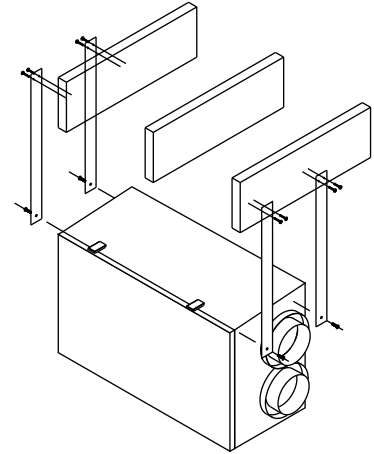


fig. I

4. SELECTING A LOCATION

Typically the HRV is located in the mechanical room with close proximity to an outside wall. Other installation locations are acceptable provided that the ambient air temperature does not fall below freezing. This is to prevent the condensate drain lines from freezing.



5. MOUNTING THE HRV

The ProVentor series of HRVs may be rotated 180 degrees to permit the connection of the outside air streams to either the left or right hand side. They are factory supplied to be installed with the cold air support streams on the left. To install this HRV in the reverse configuration simply remove the plastic drain hole plugs from the top of the cabinet and insert into the drain holes in the bottom.

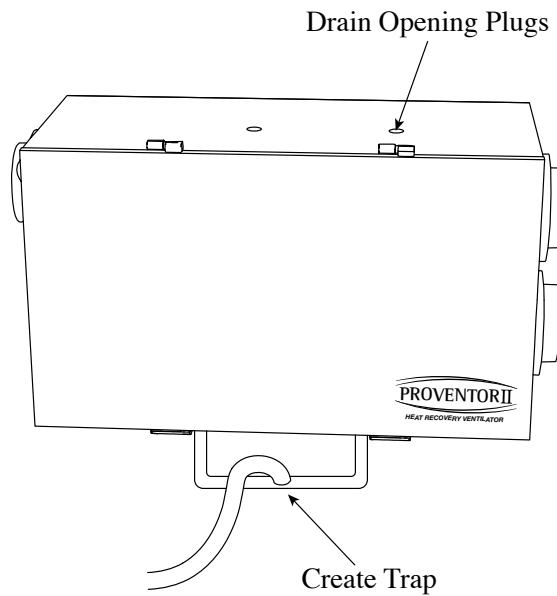
Included with the HRV are four (4) laminated rubber hanging straps. These are to be secured at each of the four corners of the HRV using the screws provided. The other ends of the straps should be secured to the floor joists using large head screws. To ensure proper condensate flow, HRV must be installed level in both directions.

NOTE: The cold supply duct collar is supplied loose. Once the orientation of the HRV is determined, install this collar using the four screws provided. This collar must be installed with its orientation arrows on the side of the collar pointing up.

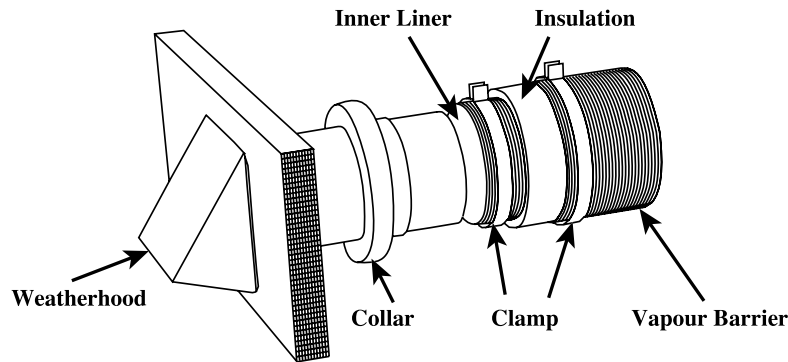
HRV duct connections are 6"

6. CONDENSATE DRAIN HOSE INSTALLATION

Two (2) drain spigot assemblies are provided. These are to be installed through the drain pan holes provided. Install the spigot through the openings and secure in place by installing the nylon washer and nut on the outside of the cabinet. Ensure that the drain holes that are not used are plugged with the drain plugs installed in the cabinet. Once installed, attach 1/2" plastic tubing (not supplied) to the spigots. Create a trap by forming a loop in the tubing. This will prevent the cross contamination of the air streams through the tubing. Ensure that the condensate drain tubing is not exposed to freezing temperatures. Typically the drain line is connected into a floor drain, sink or stand pipe.



7. OUTSIDE WEATHERHOODS AND DUCTING TO THE OUTSIDE.



The outside weather hoods must have built in bird screens to prevent birds and rodents from entering the duct system. Minimum mesh size of 1/4" must be used. Smaller mesh size will result in restricted air flows with increased potential for the development of blockages.

Vent hoods with gravity dampers must not be used.

Weather hoods should be installed:

- a) A minimum of 6 ft. apart from each other.
- b) At least 18" above ground level
- c) Away from sources of contaminants such as automobile exhaust fumes, gas meters, garbage cans.
- d) Locate away from prevailing winds whenever possible.

The size and design of the weather hoods shall be selected to ensure adequate free area to minimize air flow restrictions.

It is recommended that 6" insulated ducting with a integral single piece vapour barrier be provided. Due to the high air flow restrictions in insulated flex duct it is recommended that run lengths be kept to a minimum, stretched tightly and with as few elbows as possible, if length greater 25 ft. use 7" insulated duct. Minimum RSI value of 0.75 (R4) is required.

Weather hood collar should be screwed to inner surface of sill plate and sealed with high quality caulking or aluminum faced tape. Both the inner and outer liners of flexible ducting should be securely attached to the weather hood tubing and collar and to the HRV collar. A good bead of high quality caulking (preferably acoustical sealant) should be used prior to clamping the liners. It is very important to ensure that the fresh air intake line is well sealed and that the vapour barrier is sealed.

8. INSTALLATION METHODS

Dedicated Duct System.

In this arrangement the HRV is installed with a dedicated duct system. All applicable rooms are exhausted and provided with fresh supply air as required. The main advantage of this type of installation is it provides the ability to balance the exhaust and supply air streams from each serviced room.

The HRV system operates independent of the home's heating system.
Please refer to fig II. below.

See fig II. below.

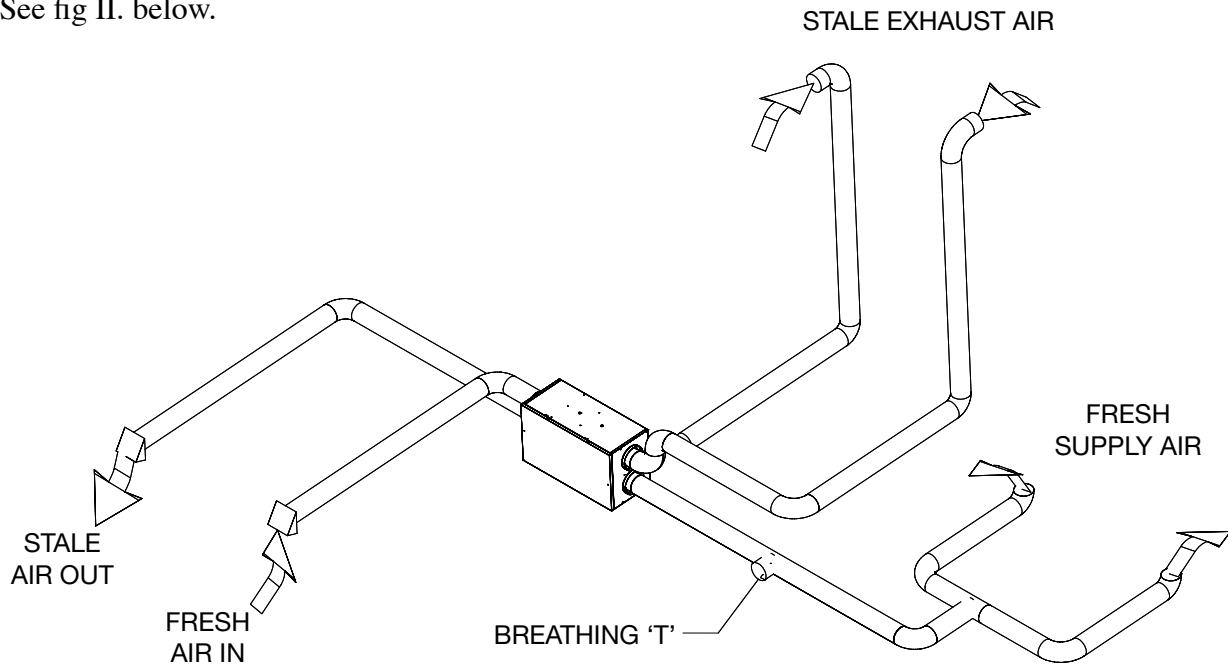


fig. II

Indirect Duct System

Safety Warning

Some Building Code and Combustion Appliance Installation Codes do not allow location of return air grills or any opening such as a breather 'T' in an enclosed room with spillage susceptible combustion appliances. If combustion appliances are used, and not yet enclosed in a room, locate the grill or breathing 'T' outside any future wall locations and a minimum distance of 6 feet from the combustion appliance.

This method of installation permits localized exhaust of indoor air and uses the existing forced air system to distribute fresh air.

Although independent room balancing of exhaust air can be achieved with the indirect duct system, the distribution of fresh supply air cannot be balanced.

Where required by local codes, the HRV/ERV supply duct may be directly connected to the furnace return air duct. The supply duct shall be positioned as shown on the attached drawing. In this application no opening such as a breather 'T' is used.

Also, where permitted by local codes, the HRV/ERV supply duct may be indirectly connected to the furnace return air duct using a breather 'T'. In this application, the breather 'T' is installed into the HRV/ERV supply duct before the connection to the return air duct. Leaving a gap in the ventilation supply duct in place of the breather 'T' is acceptable but not recommended. In this installation, a grill is placed in the furnace return air duct and the HRV/ERV supply duct is pointed at this grill at a minimum distance of 100mm (4") but not greater than 300mm (12").

The free area of the grill shall not be less than the free area of the supply duct. Call backs have occurred because it was thought that something had been accidentally left out of the installation.

This method of installation requires that the forced air circulation fan be operated when the HRV is in use. Furnace circulating fan may be interlocked with HRV. Refer to Wiring Diagram.

See fig. III below.

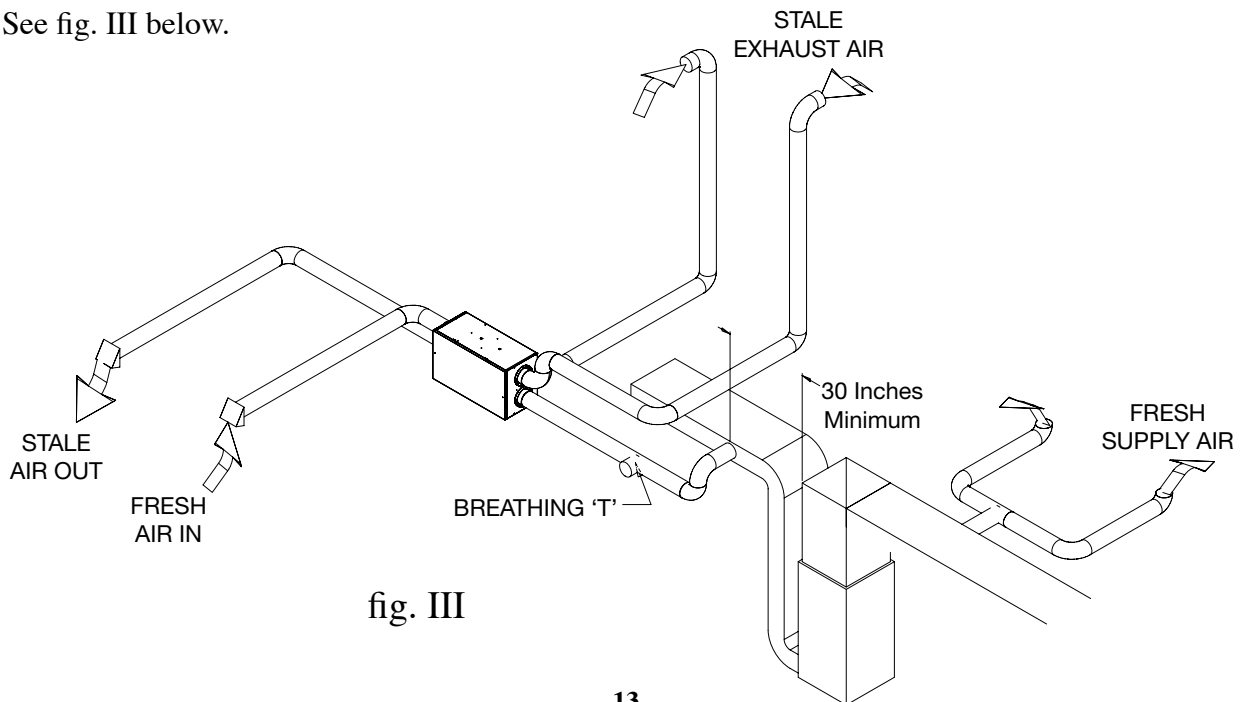


fig. III

Direct Duct System

Safety Warning

Some Building Code and Combustion Appliance Installation Codes do not allow location of return air grills or any opening such as a breather 'T' in an enclosed room with spillage susceptible combustion appliances. If combustion appliances are used, and not yet enclosed in a room, locate the grill or breathing 'T' outside any future wall locations and a minimum distance of 6 feet from the combustion appliance.

This method of installation is used primarily when it is not reasonable to install dedicated duct runs from the HRV to the various rooms of the dwelling. In this installation the warm exhaust and warm supply duct runs from the HRV are connected directly to the forced air heating system ductwork. This method of installation does not permit source capture of the indoor air nor does it permit room balancing.

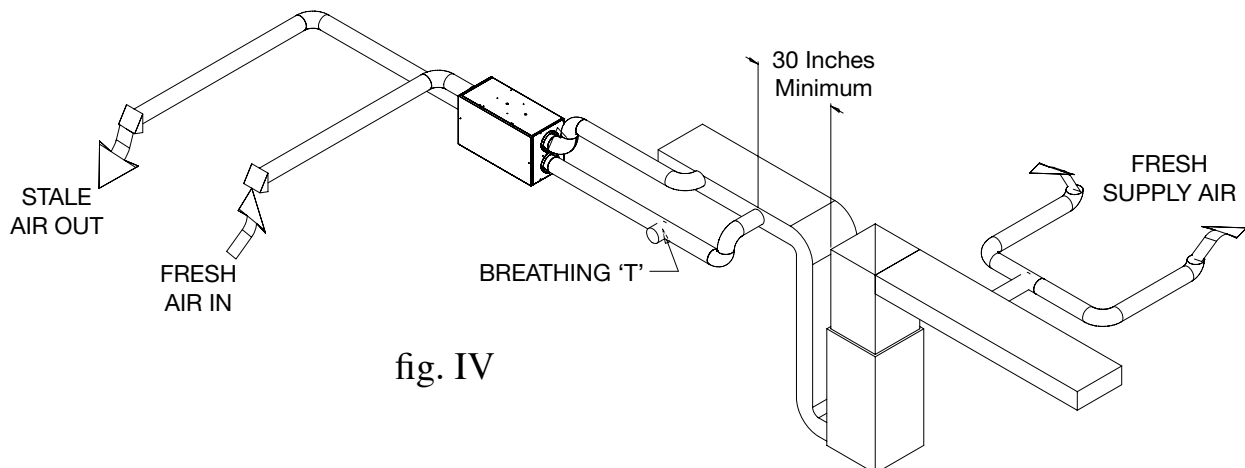
Where required by local codes, the HRV/ERV supply duct may be directly connected to the furnace return air duct. Where both the exhaust and the supply duct are installed into the return air duct the exhaust air duct shall be positioned upstream at a distance of not less than 1 meter (or 3 feet) from the supply duct. The supply duct shall be positioned as shown on the attached drawing. In this application no opening such as a breather 'T' is used.

Also, where permitted by local codes, the HRV/ERV supply duct may be indirectly connected to the furnace return air duct using a breather 'T'. In this application, the breather 'T' is installed into the HRV/ERV supply duct before the connection to the return air duct. Leaving a gap in the ventilation supply duct in place of the breather 'T' is acceptable but not recommended. In this installation, a grill is placed in the furnace return air duct and the HRV/ERV supply duct is pointed at this grill at a minimum distance of 100mm (4") but not greater than 300mm (12").

The free area of the grill shall not be less than the free area of the supply duct. Call backs have occurred because it was thought that something had been accidentally left out of the installation.

The Direct Duct System method of installation requires that the forced air system circulation fan be operated when the HRV is in use. Furnace circulating fan may be interlocked with HRV.

Refer to Wiring Diagram. Please refer to fig. IV.



9. INTERIOR DUCTING

Ducting to the central forced air ductwork system, or if used, a dedicated duct system, should be made of galvanized metal whenever possible.

To minimize airflow losses, runs should be kept as short as possible using 45 degree elbows instead of 90 degree. Whenever possible use “Y” fittings instead of “T” fittings.

All joints must be fastened with screws, rivets or duct sealant and wrapped with a quality duct tape to prevent leakage. If standard grills are used, it is recommended that wall grills of not less than 6” x 12” and floor grills of no less than 4” x 10” be used to minimize air flow restrictions.

10. FRESH AIR SUPPLY DUCTING

Fresh air supply ducting to the living space may be either a dedicated or an indirect duct system. Please refer to figures I and II.

Should the indirect method be used it is suggested that at the point of connection to the HRV that a short length of flex duct be used to electrically isolate the two systems.

Fresh air supply grills may be either wall or ceiling mounted. Avoid locating these grills where room occupants may be exposed to the fresh air supply as this air temperature may be slightly less than the room air temperature.

Also, it is recommended that adjustable grills such as round “Tech Grills” be used to permit balancing of the ventilation by room application.

It is recommended that a breathing “T” be installed in the fresh air duct between the HRV and the central distribution system. This will maximize efficiency, but hard connection is acceptable.

11. STALE AIR RETURN SYSTEM

The stale air return system is used to extract humid, stale air from the areas of the dwelling where the worst air quality conditions might exist. These may include areas such as laundry rooms, bathrooms and kitchens. Note that C.S.A. Standard F326 requires that air be exhausted from each room with a forced air furnace.

Wall stud spaces can be used as ducting for high wall returns provided that they are lined with galvanized metal.

Note: Check local code compliance before implementing.

Adjustable “Tech Grills” are recommended for use in the return air system. They can be wall or ceiling mounted thereby permitting balancing of the air being exhausted. Stale air return grills should be located at opposite ends in the room to the fresh air grills to ensure good air exchange.

Please note that the exhaust air stream from a kitchen area must never be connected to the kitchen range hood. Instead an exhaust grill should be mounted high on the wall as required by local codes so as not to extract cooking by products.

12. AIR FLOW BALANCING

READ THE APPLICATION WARNING AT THE FRONT OF THIS MANUAL.

Upon completion of the installation it is necessary that the Ventilation System be balanced. This is necessary to ensure that the volume of air being exhausted from the dwelling is equal to the volume of air being supplied. Balancing will also ensure that the HRV is operating at it's maximum efficiency.

Equipment Required:

- Magnahelic Gauge or Inclined Manometer with scale to 1" WC
- ¼" diameter rigid tube to provide 1 ¼" insertion
- Flexible ¼" tubing

Procedure:

Turn off all appliances and fans that may vent to the outdoors (i.e. vacuums, furnaces, range hoods, clothes dryers, water heaters etc.).

All dwelling windows and doors are closed, close fireplace dampers.

Dwelling vapour barrier is complete and intact.

Ensure HRV drain connections are in place, drain trap is created in drain hose and that the trap is filled with water.

HRV filters and energy recover cores are in place.

Turn on furnace circulating fan if HRV is connected to furnace ducting.

Ensure all duct connections are sealed.

Open HRV balancing dampers fully.

Power up HRV and set speed to high.

Allow system to stabilize, approximately 2 minutes.

Position magnahelic gauge close to HRV and set to zero.

With flexible line connected to magnahelic and rigid tube connected to flexible tube, insert rigid tube into lower door port and record reading at magnahelic.

Remove tube and insert into upper door port and record reading.

Close balancing damper associated with the higher reading until that reading equals the required value shown in Fig. 5 to provide the same CFM. Secure both dampers by tightening the locking screws once the set points are established.

Recheck both pressures and record.

Install 1/4" white hole plugs provided into balancing ports in door.

While it is necessary to ensure that both air streams are balanced within 10%, a near balanced condition should be possible.

Fig. 5

NOTE: PERFORM AIR FLOW BALANCING USING FAN CURVE “B” AT HIGH SPEED

Refer to the following conversion chart to determine CFM flow.

| Supply Air Stream Magnahelec Reading | CFM Equivalent |
|---|-------------------|
| .37 | 70 |
| .38 | 80 |
| .40 | 93 |
| .42 | 112 |
| .43 | 117 |
| .44 | 127 |
| .45 | 132 |
| .46 | 136 |
| .47 | 141 |
| .48 | 146 |
| .50 | 150 |

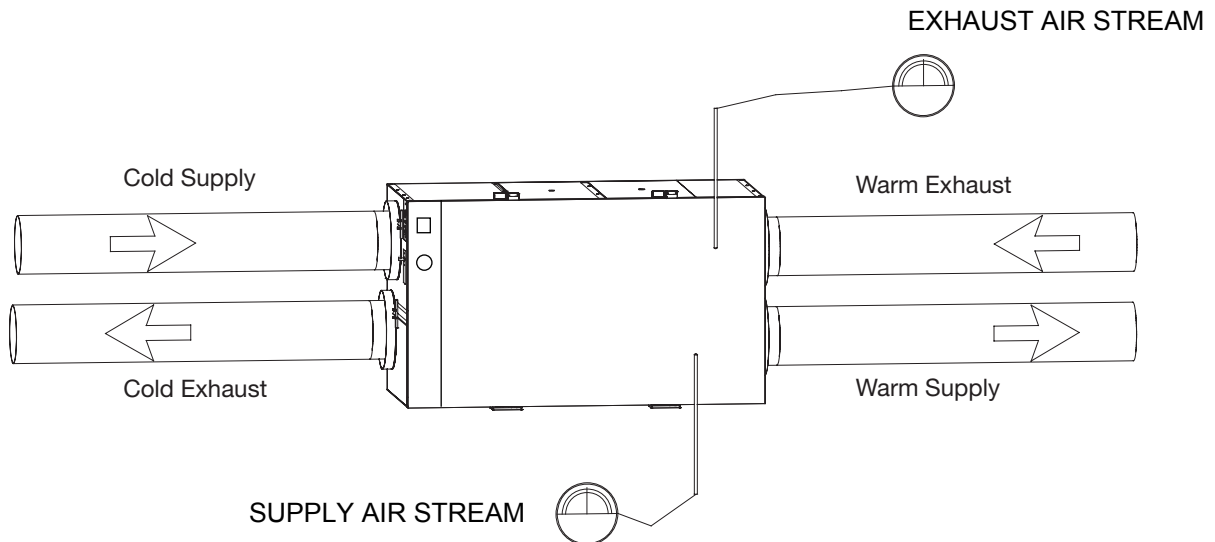
| Exhaust Air Stream Magnahelec Reading | CFM Equivalent |
|--|-------------------|
| .77 | 70 |
| .72 | 80 |
| .57 | 93 |
| .44 | 112 |
| .39 | 117 |
| .32 | 127 |
| .30 | 132 |
| .26 | 136 |
| .22 | 141 |
| .19 | 146 |
| .17 | 150 |

A positive pressure situation within the dwelling may drive moist air into the external walls where, in cold weather it may condense, potentially causing structural damage.

A negative pressure situation within the dwelling may have severe undesirable effects. In some geographic locations, radon gas may be drawn into the living space. A negative condition may also cause back drafting of vented combustion appliances such as fireplaces and furnaces.

When it is possible for excessive pressurization or depressurization of a dwelling to occur it may be necessary to perform a House Depressurization Test. This test is most important where fuel fired devices are installed that are susceptible to spillage.

IT IS YOUR RESPONSIBILITY TO DETERMINE IF THE “HOUSE DEPRESSURIZATION TEST” IS REQUIRED.



13.

LED FLASH CODES

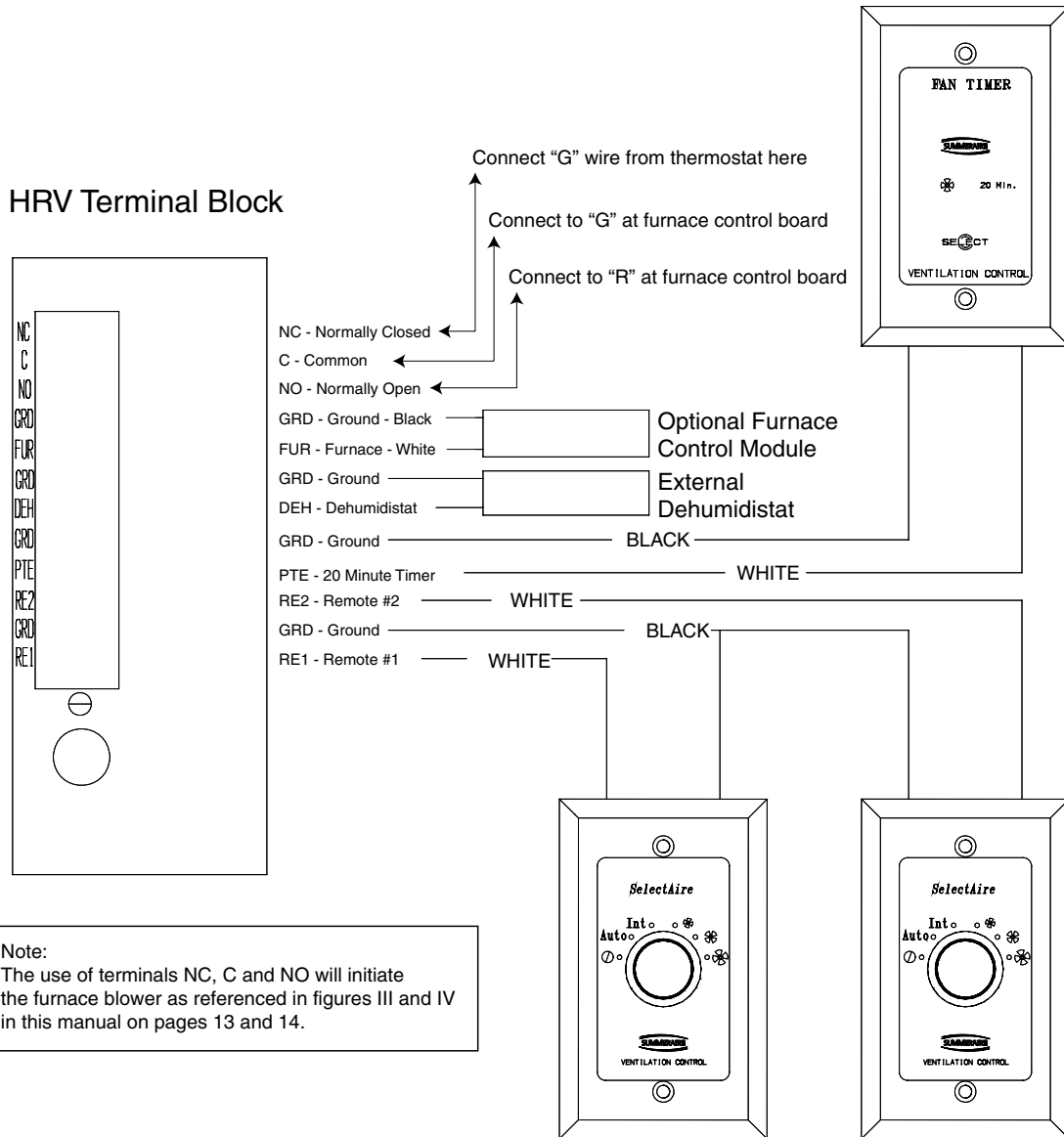
Mode of Operation as displayed at Front Panel LED

The panel LED indicates the system-operating mode. The color and blink rate indicates the current operating mode or condition.

| Mode | Indication | Description |
|------------------------------|---------------------|--|
| System Off | Red | Unit disabled but power still on at controller. |
| Auto Off | Green/Red | Alternate, unit is in standby mode. Power on at controller. |
| Intermittent | Amber/Red | Alternate Amber then Red |
| Fan Low | Amber | Ventilation active. |
| Fan Med | Yellow | Ventilation active. |
| Fan High | Green | Ventilation active. |
| High Humidity | Green Blink | Displays when an external dehumidistat or crank timer is responding to high humidity or a timed cycle. |
| Defrost Cycle | Amber Blink | During the defrost cycle, reverts to selected mode after defrost cycle is completed. |
| PTE Fault | Red Blink | Indication when 20 minute timer is connected backwards, overrides other modes. |
| Defective Temperature Sensor | Red/Amber/ Green | Colors alternate, Defective sensor, replace. |

14.

WIRING DIAGRAM



HRV TROUBLE SHOOTING GUIDE OPERATION GUIDE

| PROBLEM | PROBABLE CAUSE | SOLUTION |
|--|--|--|
| PERSISTENT CONDENSATION ON WINDOWS | IMPROPER ADJUSTMENT OF DEHUMIDISTAT(S). | ADJUST DEHUMIDISTAT(S) TO CORRECT RH READING (see operation manual), ADJUST TO A LOWER SETTING. CHECK OPERATION OF DEHUMIDISTAT, IF DEFECTIVE, REPLACE. INSTALL A DEHUMIDISTAT IN LIVING AREA OF HOME. |
| | IMPROPER VENTILATION RATE. | ENSURE HRV IS ON CONTINUOUSLY. INCREASE FAN SPEED. BALANCE SYSTEM. |
| | BROKEN DAMPER BLADE ASSY. | REPLACE. |
| DEFROST NOT WORKING. FRESH AIR DUCT FROZEN OR VERY COLD (DEFROST LIGHT COMES ON). | FAILED MAIN CONTROL BOARD. | IF DAMPER DOOR DOES NOT OPERATE DURING "START UP SELF DIAGNOSTIC" BUT POWER LIGHTS ARE ON, BOARD MAY REQUIRE REPLACEMENT. |
| | DEFECTIVE DAMPER MOTOR. | REPLACE. INSPECT CONNECTION BETWEEN MOTOR SHAFT AND DAMPER, COUPLING MAY BE LOOSE. |
| HUMIDITY LEVEL TOO LOW | HRV AIR FLOWS IMPROPERLY BALANCED. DEHUMIDISTAT CONTROL SET TO LOW. | BALANCE HRV SET DEHUMIDISTAT TO A HIGHER SET POINT. |
| | LIFE STYLE OF OCCUPANTS. | HUMIDITY MAY HAVE TO BE ARTIFICIALLY ADDED, i.e. HUMIDIFIER. |
| | VENTILATION RATE TOO HIGH | ADJUST TO LOWER FAN SPEED OR INTERMITTENT |

HRV TROUBLE SHOOTING GUIDE OPERATION GUIDE

| PROBLEM | PROBABLE CAUSE | SOLUTION |
|---|---|--|
| HUMIDITY TOO HIGH | HRV AIR FLOWS IMPROPERLY BALANCED | BALANCE HRV |
| | HRV UNDERSIZED | |
| 20 MINUTE TIMERS DO NOT WORK | DEHUMIDISTAT SET TOO HIGH | SET DEHUMIDISTAT TO A LOWER SETTING. |
| | HRV UNDERSIZED TO HANDLE HOT TUB, INDOOR POOLS, ETC. | COVER POOLS, HOT TUBS ETC. WHEN NOT IN USE. |
| | LIFESTYLES OF OCCUPANTS | AVOID HANGING CLOTHES TO DRY INSIDE, AVOID STORING WOOD INSIDE AND VENT DRYERS OUTSIDE. |
| HRV AND/OR DUCTS FROSTING UP | WIRED INCORRECTLY | CHECK LED AT HRV. IF BLINKING RED, WIRING IS INCORRECT, CHECK WIRING. |
| SUPPLY AIR FEELS COOL | HRV AIR FLOWS IMPROPERLY BALANCED | BALANCE HRV NOTE: FROST BUILD UP IS EXPECTED ON CORES PRIOR TO INITIATING A DEFROST CYCLE. |
| | HRV AIR FLOWS IMPROPERLY BALANCED. POOR LOCATION OF SUPPLY GRILLS. | BALANCE HRV. LOCATE GRILLS HIGH ON WALLS OR UNDER BASEBOARDS. |
| WATER IN BOTTOM OF HRV | OUTDOOR TEMPERATURE EXTREMELY COLD. | IF SUPPLY AIR IS INSTALLED INTO RETURN AIR OF FURNACE, FURNACE FAN NEEDS TO RUN CONSTANTLY TO DISTRIBUTE VENTILATION AIR COMFORTABLY. ENSURE THAT A BREATHER "T" IS INSTALLED IN SUPPLY DUCT. PREHEATER MAY BE REQUIRED. |
| | DRAIN PAN (S) PLUGGED | ENSURE "O" RINGS ON DRAIN SPIGOT SEATS PROPERLY LOOK FOR KINKS IN LINE. |
| HRV HEAT EXCHANGE CORE NOT INSTALLED PROPERLY | DRAIN LINES OBSTRUCTED | CHECK WATER DRAIN CONNECTIONS. MAKE SURE WATER DRAINS PROPERLY FROM THE PAN(S) |
| | HRV HEAT EXCHANGE CORE NOT INSTALLED PROPERLY | CHECK ORIENTATION LABEL ON FRONT OF CORE AND POSITION CORE CORRECTLY. HRV MAY NOT BE LEVEL. |

HRV TROUBLE SHOOTING GUIDE OPERATION GUIDE

| PROBLEM | PROBABLE CAUSE | SOLUTION |
|--|---|--|
| AIR FLOWS ARE POOR | HRV AIR FLOW IMPROPERLY BALANCED | BALANCE HRV. |
| | FILTER/CORE PLUGGED UP | CLEAN AND REINSTALL |
| | 1/4" MESH ON OUTSIDE HOODS PLUGGED | REMOVE OBSTRUCTIONS IN DUCT(S), HOODS AND GRILLS. |
| CONDENSATION OR ICE BUILD UP IN INSULATED DUCT | IMPROPERLY SIZED DUCTING | |
| | UNDER SIZED HRV | INSPECT FAN WHEELS TO ENSURE THEY ARE TURNING FREELY |
| | MALFUNCTION WITH HRV | TAPE ALL JOINTS ENSURE THAT VAPOUR BARRIER IS COMPLETELY SEALED |
| | INCOMPLETE VAPOUR BARRIER AROUND INSULATED DUCT | WRONG APPLICATION OF HRV |
| WATER LEAKS | UNUSUALLY HUMID AMBIENT | REPLACE GASKETING |
| | DOOR GASKET DAMAGED | LEVEL HRV |
| | HRV NOT LEVEL | OPERATE HRV ON LOWER SPEED ie. INTERMITTENT |
| FROST ON FRESH AIR INTAKE & STALE AIR EXHAUST FLEX | EXCESSIVE WATER DUE TO NEW WET CONSTRUCTION | INSTALL CORE CORRECTLY "FRONT" OF CORE HAS INSTALLATION INSTRUCTION LABEL |
| | HRV CORE INSTALLED IN REVERSE | INSTALL WITH LABEL FACING HRV DOOR |
| | VAPOUR BARRIER INCOMPLETE | REPAIR SEAL OF ALL CRACKS AND TEARS |

CONTROL FUNCTION

| NOTE: ALL EXTERNAL MAINTENANCE TO BE PERFORMED BY A CERTIFIED ELECTRICIAN ONLY | | |
|---|--|---|
| PROBLEM | PROBABLE CAUSE | SOLUTION |
| NOTHING WORKS | POWER OFF – UNPLUGGED FROM POWER SOURCE | RESTART HRV. THIS WILL RESET THE ELECTRONIC CONTROL BOARD |
| DAMPER MOTOR NOT ACTUATING, NO ACTION WHEN SHORTING DEHUMIDISTAT TERMINALS | CHECK ELECTRICAL PANEL - CIRCUIT BREAKER – FUSE. CHECK HRV | RESET CIRCUIT BREAKER OR REPLACE FUSE, OR YOU MAY BE REQUIRED TO CALL AN CERTIFIED ELECTRICIAN. |
| BLOWER MOTOR NOT OPERATING BUT POWER LIGHT ON. | DOOR INTERLOCK SWITCH INCORRECT MODE SELECTION DEFECTIVE FAN MOTOR | REPLACE DOOR SWITCH. UNPLUG 120V POWER SOURCE, APPLY 120V DIRECTLY TO MOTOR, IF MOTOR DOES NOT RUN, REPLACE CAPACITOR, IF MOTOR DOES NOT RUN, REPLACE MOTOR. |
| DEHUMIDISTAT (S) NOT WORKING (INTERNAL AND/OR REMOTE WALL MOUNTED) | DEHUMIDISTAT FAILURE | DISCONNECT LEADS AT DEHUMIDISTAT AND SHORT TOGETHER. IF HRV RESPONDS TO HIGH SPEED THEN REPLACE DEHUMIDISTAT. |
| HRV MAKES AN ANNOYING NOISE | SUPPLY OR EXHAUST BLOWER WHEEL OUT OF ADJUSTMENT | REMOTE MOTOR ASSEMBLY AND TIGHTEN SCREW ON MOTOR SHAFT. CHECK SUPPLY /EXHAUST WHEELS FOR BALANCE. REPLACE IF NECESSARY. ENSURE THAT FAN WHEELS ARE NOT RUBBING ON FAN HOUSING INLET RING. |
| NOISE LEVEL TOO HIGH AT DISTRIBUTION REGISTERS WHEN HRV ON HIGH SPEED | NOISE LEVEL TOO HIGH AT DISTRIBUTION REGISTERS WHEN HRV ON HIGH SPEED | REDESIGN DUCT SYSTEM OR INSTALL SILENCER. |
| | EXTERNAL LOW VOLTAGE WIRE IS SHORTED OUT BY A STAPLE OR NAIL | DISCONNECT LEADS AT BOTH ENDS AND TEST FOR CONTINUITY BETWEEN LEADS. |

CONTROL FUNCTION

NOTE: ALL EXTERNAL MAINTENANCE TO BE PERFORMED BY A CERTIFIED ELECTRICIAN ONLY

| PROBLEM | PROBABLE CAUSE | SOLUTION |
|---|---|---|
| DAMPER MOTOR STAYS IN DEFROST. DEFROST L.E.D NOT ILLUMINATED. LEAD. | DEFECTIVE DAMPER MOTOR DEFECTIVE CONTROL BOARD | PICK COMMON COLOURED (2) DAMPER MOTOR LEADS. PROBE 1 OF THESE LEADS WITH 1 LEAD FROM METER. WITH THE OTHER METER LEAD PROBE 1 OF THE OTHER SINGLE METER SHOULD READ 30V OR 27V. THE POSITION OF THE DAMPER MOTOR DETERMINES THE VOLTAGE YOU WILL READ (IT WILL BE ONE OR THE OTHER) IF THESE READINGS ARE OBTAINED, CHANGE THE DAMPER MOTOR. IF NO VOLTAGE PRESENT, OR VOLTAGES ARE THE SAME, CHANGE THE CONTROL BOARD. |
| FAN SPEED DOESN'T CHANGE AS SELECTIONS ARE MADE ON SELECT BUTTON. | IMPROPER DUCT SYSTEM INSTALLED. | ENSURE THAT MOTOR AMP DRAW DOES NOT EXCEED NAMEPLATE RATING. INCREASED STATIC (I.E. DAMPERING) MAY BE NECESSARY. |
| | INCORRECT VOLTAGE, MEASURE LINE VOLTAGE & VOLTAGE TO MOTOR. | DETERMINE IF IT'S CORRECT AND CONFIRM THAT VOLT METER IS READING CORRECTLY. ALL VOLTAGES MUST BE MEASURED WITH DUCT SYSTEM INSTALLED. LOW SPEED.....97 VOLTS MEDIUM SPEED.....105 VOLTS HIGH SPEED.....120 VOLTS IF THE VOLTAGES ARE CORRECT THEN THE DUCT SYSTEM STATIC IS TOO LOW. |
| CONTROL BOARD CHANGED UNIT DOES NOT SEEM TO RUN PROPERTY | DIP SWITCHES NOT SET AS INSTRUCTED | RESET DIP SWITCHES TO ORIGINAL SPECIFICATIONS. |

CONTROL FUNCTION

| CONTROL FUNCTION | | |
|--|--|--|
| NOTE: ALL EXTERNAL MAINTENANCE TO BE PERFORMED BY A CERTIFIED ELECTRICIAN ONLY | | |
| PROBLEM | PROBABLE CAUSE | SOLUTION |
| WHEN UNIT IS INITIALLY POWERED ON, UNIT STAYS IN DEFROST MODE LONGER THAN 10 MINUTES | DEFECTIVE MAIN CONTROL BOARD | CHANGE BOARD. WHEN CHANGING BOARD ALWAYS SET DIP SWITCHES TO EXACT POSITION OF DEFECTIVE BOARD BEING REPLACED. |
| DEFROST CYCLE ACTIVE DURING ABOVE FREEZING OUTDOOR TEMPERATURE | DEFECTIVE TEMPERATURE SENSOR | CHANGE SENSOR |
| LATCH OPENS | EXCESSIVE CLOSING FORCE REPEATED FORCING OF LATCH WEARS OFF LOCKING TAB ALLOWING IT TO POP OPEN. FORCING DOOR SHUT, THEN FORCING LATCH WEARS OFF LOCKING TAB ON LATCH. | REPLACE LATCH LATCH MUST BE OPEN PRIOR TO LATCHING DO NOT PULL DOOR SHUT |
| LOCKED ON HIGH SPEED | DEHUMIDISTAT SET TOO LOW | REDUCE SET POINT |
| NOT ALL WALL SWITCH CONTROL ILLUMINATE WHEN ONE IS ACTIVATED | DEHUMIDISTAT DEFECTIVE | REPLACE DEHUMIDISTAT |
| | DEFECTIVE CONTROL. | REPLACE CONTROL |
| | FEED LINE TO WALL SWITCH CONTROL TOO LONG | SHOULD BE LESS THAN 2,000 LINEAL FEET IN TOTAL |

15.**REPLACEMENT PARTS LISTING**

| Part Number | Description |
|--------------------|----------------------------|
| BOARD150 | Main Control Board |
| MTRB12AO | Motorized Impeller |
| CAP475V6MF | Capacitor 475v 6mf |
| CORE150DM | Core Assembly |
| SEAL 150 | Damper |
| FILT93410 | Air Filter ½” x 9 ¾” x 10” |
| DRAINTEE12 | ½” Drain Tee |
| HGDR1 | Door Hinge |
| LATCH300 | Latch Complete With Strike |
| PAN150LG | Large Drain Pan |
| PAN150SM | Small Drain Pan |
| TRANS1 | Transformer |
| MTRDMPR24VR | Damper Motor |
| HARN150 | Impeller Harness |
| PLUG 14 | 1/4” Plug |
| DRAINKITSHRV | Spigot Assembly |
| SWPADDLE | Switch |
| SWROCKER | Switch |



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