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Built Better To Last Longer

Residential
Central Heat Recovery Ventilator
Product Specifications
and
Installation and Trouble Shooting Guide
Superventor Series
Models
SHRV115RD, SHRV130RD, SHRV190RD, SHRV240RD

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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Summeraire Mfg.
Peterborough, Ontario,
Canada, K9J 6X6

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NOTE: Anytime the HRV is powered on allow 20 seconds for the main control to reset prior to making any operational changes.

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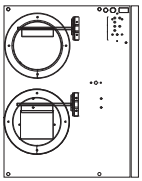
SPECIFICATIONS HEAT RECOVERY VENTILATORS PERFORMANCE RATINGS

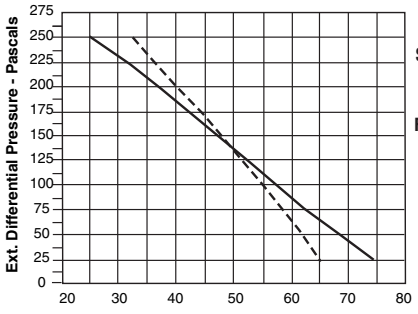
MODEL: SHRV115RD

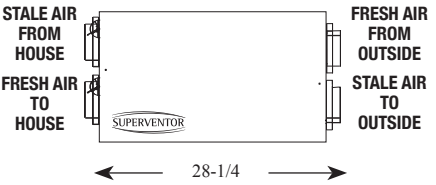
Electrical: 120 V - 1.12 Amp
Exhaust Air Transfer Ratio: 0.04 @ 0.4 in wg. (100 Pa)
Low Temp. Reduction Factor: 17.8% Supply - 13.8% Exhaust
Low Temp. Imbalance Factor: 0.86

VENTILATION PERFORMANCE							
EXT. STATIC PRESSURE		NET SUPPLY AIR FLOW		GROSS AIR FLOW SUPPLY		GROSS AIR FLOW EXHAUST	
Pa	in. wg	L/S	CFM	L/S	CFM	L/S	CFM
25	0.1	71	151	74	157	64	136
50	0.2	65	138	68	144	61	130
75	0.3	60	127	62	133	58	123
100	0.4	55	117	57	122	55	117
125	0.5	50	107	52	111	52	110
150	0.6	45	96	47	100	48	102
175	0.7	41	87	43	90	44	94
200	0.8	36	76	37	79	41	87
225	0.9	32	68	33	70	37	79
250	1.0	24	52	26	54	34	72



ALL DUCT CONNECTIONS
6 IN. (152MM)





ENERGY PERFORMANCE									LATENT RECOVERY/ MOISTURE TRANSFER
SUPPLY TEMPERATURE			NET AIR FLOW		SUPPLY EXHAUST FLOW RATIO	POWER CONSUMED WATTS	SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS	
	C°	F°	L/S	CFM					
HEATING	0	+32	30	63	1.03	80	68	82	0.01
	0	+32	46	98	1.00	118	63	74	0.02
	0	+32	55	118	1.00	136	61	71	0.02
	-25	-13	32	69	.91	102	59	82	.04

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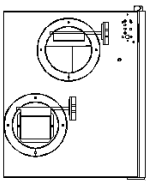
SPECIFICATIONS HEAT RECOVERY VENTILATORS PERFORMANCE RATINGS

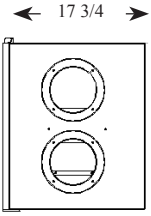
MODEL: SHRV130RD

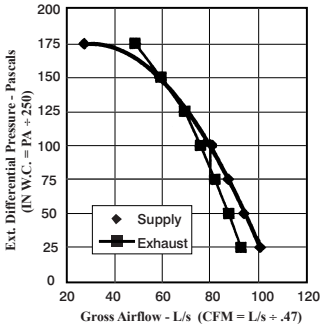
Options Installed: Defrost Internal Dehumidistat
Electrical: 120 V - 1.27 Amp
Exhaust Air Transfer Ratio: .02

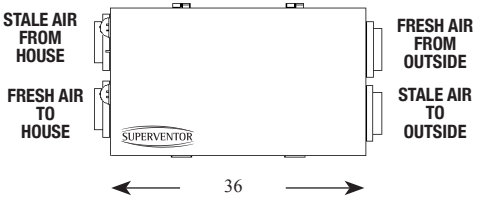
Low Temp. Ventilation Reduction During -25°C Test: 20%
Maximum Unbalanced Airflow During -25°C Test: 7 L/s

VENTILATION PERFORMANCE							
EXT. STATIC PRESSURE		NET SUPPLY AIR FLOW		GROSS AIR FLOW SUPPLY		GROSS AIR FLOW EXHUAST	
Pa	in. w.c.	L/S	CFM	L/S	CFM	L/S	CFM
25	0.1	98	209	100	213	92	196
50	0.2	92	196	94	199	87	186
75	0.3	86	182	87	186	82	174
100	0.4	79	169	81	172	76	162
125	0.5	68	145	70	148	70	148
150	0.6	58	124	59	126	60	127









ENERGY PERFORMANCE								LATENT RECOVERY/ MOISTURE TRANSFER
SUPPLY TEMPERATURE			NET AIR FLOW		POWER CONSUMED WATTS	SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS	
	C°	F°	L/S	CFM				
HEATING	0	32	30	64	83	71	82	0.01
	0	32	46	97	104	67	77	0.00
	0	32	61	129	117	66	73	0.00
	-25	-13	31	66	95	58	79	0.03
						TOTAL RECOVERY EFFICIENCY		
COOLING	35	95	31	65	83	18		

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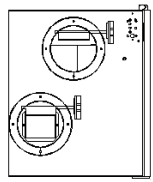
SPECIFICATIONS HEAT RECOVERY VENTILATORS PERFORMANCE RATINGS

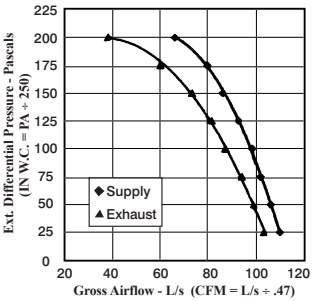
MODEL: SHRV190RD

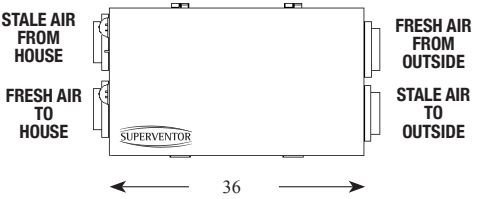
Options Installed: Defrost Internal Dehumidistat
Electrical: 120 V - 1.27 Amp
Exhaust Air Transfer Ratio: 0.014

Low Temp. Ventilation Reduction During -25°C Test: 16%
Maximum Unbalanced Airflow During -25°C Test: 14 L/s



VENTILATION PERFORMANCE							
EXT. STATIC		NET SUPPLY		GROSS AIR FLOW			
PRESSURE		AIR FLOW		SUPPLY		EXHUAST	
Pa	in. w.c.	L/S	CFM	L/S	CFM	L/S	CFM
25	0.1	110	234	112	237	105	223
50	0.2	106	226	108	229	100	214
75	0.3	102	217	103	220	95	203
100	0.4	98	209	100	212	88	187
125	0.5	92	197	94	200	82	175
150	0.6	86	183	87	185	74	157
175	0.7	79	169	81	171	61	129





ENERGY PERFORMANCE								LATENT RECOVERY/ MOISTURE TRANSFER
SUPPLY TEMPERATURE			NET AIR FLOW		POWER CONSUMED WATTS	SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS	
	C°	F°	L/S	CFM				
HEATING	0	32	40	84	103	68	77	0.01
	0	32	66	140	132	62	68	0.00
	0	32	86	182	158	58	64	0.00
	-25	-13	34	72	116	61	79	0.03
						TOTAL RECOVERY EFFICIENCY		
COOLING	35	95	42	89	104	29		

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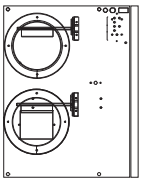
SPECIFICATIONS HEAT RECOVERY VENTILATORS PERFORMANCE RATINGS

MODEL: SHRV240RD

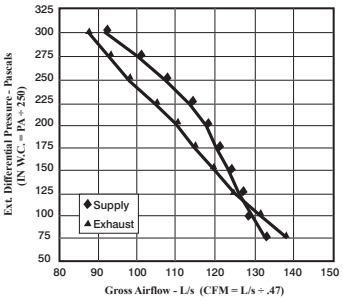
Options Installed: Defrost Internal Dehumidistat
Electrical: 120 V - 3.7 Amp
Exhaust Air Transfer Ratio: 0.05

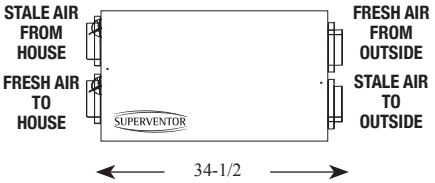
Low Temp. Ventilation Reduction During -25°C Test: 16.9%
Maximum Unbalanced Airflow During -25°C Test: 15.6 L/s

VENTILATION PERFORMANCE							
EXT. STATIC PRESSURE		NET SUPPLY AIR FLOW		GROSS AIR FLOW SUPPLY		GROSS AIR FLOW EXHUAST	
Pa	in. w.c.	L/S	CFM	L/S	CFM	L/S	CFM
75	0.3	125	265	133	283	138	294
100	0.4	121	257	129	274	131	279
125	0.5	118	251	126	268	125	266
150	0.6	116	246	123	262	119	254
175	0.7	113	240	120	256	114	243
200	0.8	110	235	118	251	110	234
225	0.9	106	226	114	241	102	217
250	1.0	100	212	106	226	96	205
275	1.1	94	200	101	214	92	196
300	1.2	86	183	92	195	86	182



ALL DUCT CONNECTIONS 6 IN. (152MM)





ENERGY PERFORMANCE								LATENT RECOVERY/ MOISTURE TRANSFER
SUPPLY TEMPERATURE			NET AIR FLOW		POWER CONSUMED WATTS	SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS	
	C°	F°	L/S	CFM				
HEATING	0	32	46	97	176	69	86	0.00
	0	32	67	141	222	70	84	0.01
	0	32	100	213	400	64	80	0.01
	-25	-13	41	88	213	66	87	0.03

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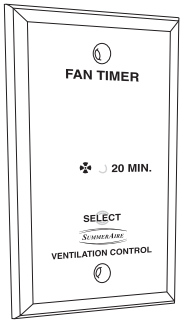
OPTIONAL CONTROLS



20 Minute Remote Timer Touch Pad Model ECPBT

This 20-Minute Touch Pad MUST be connected to the "CT" terminals on the HRV exterior. This control will not function if connected to PBT connection points.

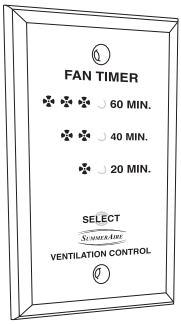
Install using 18/2-thermostat wire. Maximum number of ECPBT controls per HRV is eight.

Maximum cumulative lead length is 2000 lineal feet. Touch pads are typically installed where 20 minutes of high speed ventilation may be desired.

Once activated by a momentary push of the SELECT button on the Touch Pad (approximately 3 seconds), 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 the SELECT button on the 20-minute Touch Pad for a minimum of 3 seconds. The selection can also be cancelled at any other optional control by momentarily depressing the SELECT button.

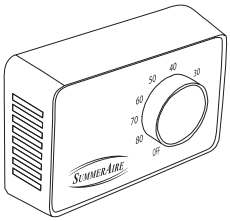
NOTE: This control will not respond while a crank timer is operational.

OPTIONAL CONTROLS



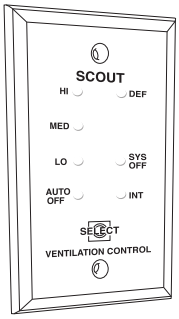
Remote Timer Touch Pad Model -PBT

Touch pads are typically installed in any room where 20/40 or 60 minutes of high-speed ventilation may be desired, i.e. bathrooms and/or kitchens. Once activated by a momentary push, these buttons illuminate to indicate high speed activation. If more than one touch pad is installed in the system then all will illuminate upon activation until the timed sequence has expired. The display LEDS on the touch pad will illuminate to represent the time remaining. To cancel a selection simply continue to push the select button until it turns off. Maximum number of touch pads per HRV is eight (8) and 2000 lineal ft of 18/2 thermostat wire.



Wall Mount Dehumidistat Model - SRDEH

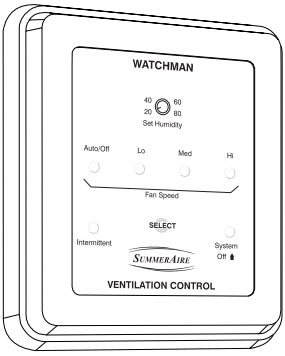
This control is typically installed in an area of the home where humidity may require automatic monitoring. This could be a central location (i.e. near furnace thermostat) or in a specific room (i.e. kitchen, laundry etc.). When wall mount dehumidistats are used, set the HRV internal dehumidistat to OFF. Connect to HRV using 18/2 thermostat wire.



Scout Control

This standard control is detachable from the HRV. Once removed from the HRV, only the power (ON/OFF) remains at the HRV. By positioning the SCOUT remotely to the HRV, you can adjust fans speeds, turn the fan off, select AUTO/OFF, intermittent or turn the main HRV control Off. When the HRV has been turned off using the SCOUT, power still remains on at the HRV ON/OFF switch, however all external controls such as touch pads and dehumidistats will not function. Intermittent- In this mode the ventilation fan will run at low speed for 20 minutes and turn off for 40 minutes. This cycle will continue until cancelled. External devices are active.

The optional Scout installation kit is required for remote mounting. Maximum number of Scout controls per HRV is one (1) with up to 400 lineal ft. of 18/2 thermostat wire.



WATCHMAN CONTROL

The WATCHMAN is an optional intermediate remote control. It permits the following function selections;

SYSTEM OFF- In this position all internal and external controls are disabled.

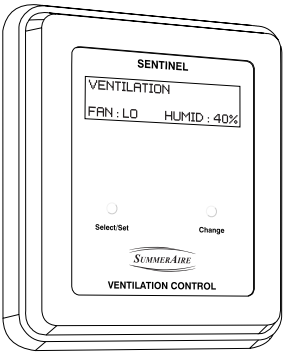
FAN OFF- Ventilation fan is off, cold exhaust port is closed, external devices are active.

FAN SPEED- Low, Medium or HIGH can be selected.

INTERMITTENT- In this mode the ventilation fan will run at low speed for 20 minutes and turn off for 40 minutes. This cycle will continue until cancelled. External devices are active.

AUTO/OFF-In this mode the ventilation fan remains off until activated by either the internal dehumidistat or an external control such as a touch pad or dehumidistat.

RELATIVE HUMIDITY- By rotating the control dial you can select desired levels of indoor humidity. Humidity reduction will only occur during the heating season. Should the set point be below the indoor relative humidity the HRV will automatically switch to high speed. Multiple controls may be connected to the HRV. Typically, connection leads would be distributed from a central location and connected at the HRV with a single 18/2 lead. Maximum number of Watchman or Sentinel controls per HRV is four (4) with a total of 1600 lineal ft. of 18/2 thermostat wire.



SENTINEL CONTROL

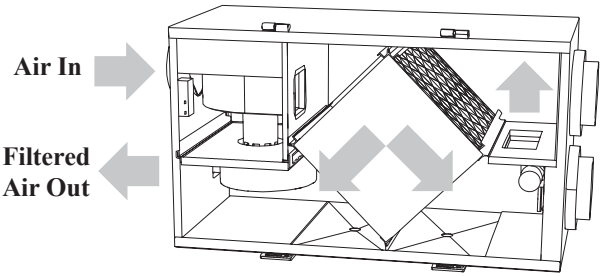
The SENTINEL control is the deluxe control using a digital LCD display to indicate HRV status. The top line of the display indicates the current mode of operation, the lower left side indicates the ventilation fan status and the lower right hand side indicates the current relative humidity. The following option selections are available in addition to those offered by the WATCHMAN; TIMED HIGH SPEED- 20/40 or 60 minutes of high speed ventilation can be selected or cancelled. FILTRATION- In this mode the HRV fan runs continuously recirculating indoor air through the HRV filters. During this cycle the outdoor cold air port is closed and no fresh air is introduced. CLEAN FILTER INDICATOR- Every thirteen weeks this control will display on the LCD the need to clean the filters and core. Refer to the maintenance section of the User manual for the method advised. Maximum number of Watchman or Sentinel controls per HRV is four (4) at a maximum range of 1600 lineal ft. of 18/2 thermostat wire.

SCOUT / WATCHMAN Indications

MODE	SCOUT	WATCHMAN
Intermittent Fan Off	Auto Off, Blink	Intermittent LED ON, Blink Auto Off
Intermittent Fan Low	Low, Blink	Intermittent LED ON. Blink Low
Filtration	Default fan speed, Slow Blink	Default fan speed, Slow Blink
Summer Switch on Temp <5deg˚F	System Off, Blink	System Off, Blink

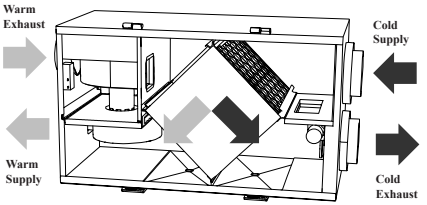
Note: Up to 2000 lineal ft. of 18/2 thermostat wire may be used in any configuration per HRV with up to eight (8) push button timers.Up to 2000 lineal ft. of 18/2 thermostat wire may be used in any configuration per HRV to service up to four (4) Watchman or Sentinel controls.

Model SHRV 130RD
Illustrated

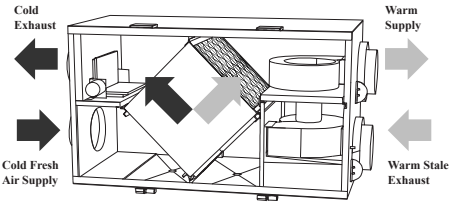


Filtration

Installation Options



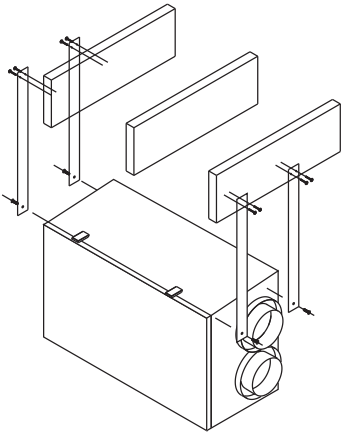
Standard Ventilation



Optional Ventilation

1. 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.

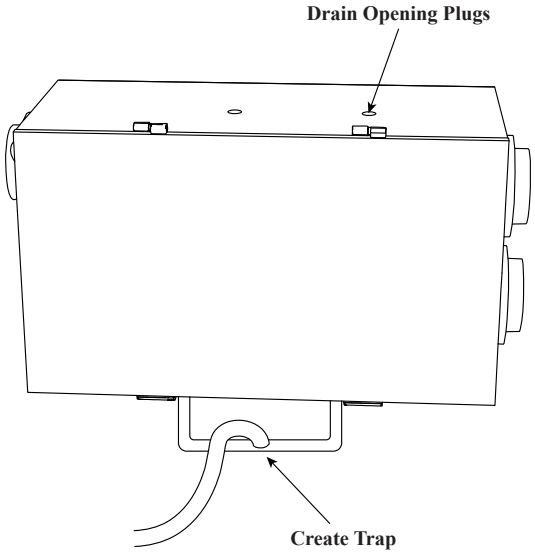


2. Mounting the HRV

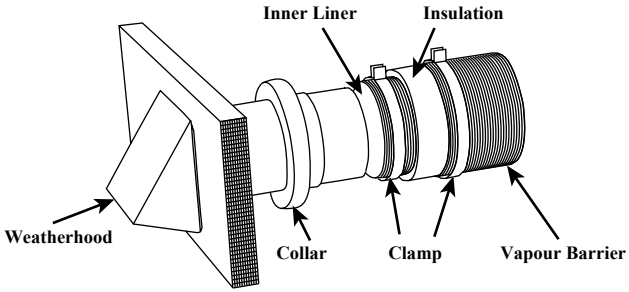
The RD series of HRV's may be rotated 180 degrees to permit the connection of the outside air streams to either the left or right hand side. They are factory supplied to be installed with the cold air streams on the right. To install this HRV in the reverse configuration simply remove the plastic drain 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.

3. Condensate Drain hose installation

Two (2) drain spigot assemblies are provided. These are to be installed through the drain pan holes provided. Simply 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.



4. 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 contaminates 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.

5. 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 I. below.

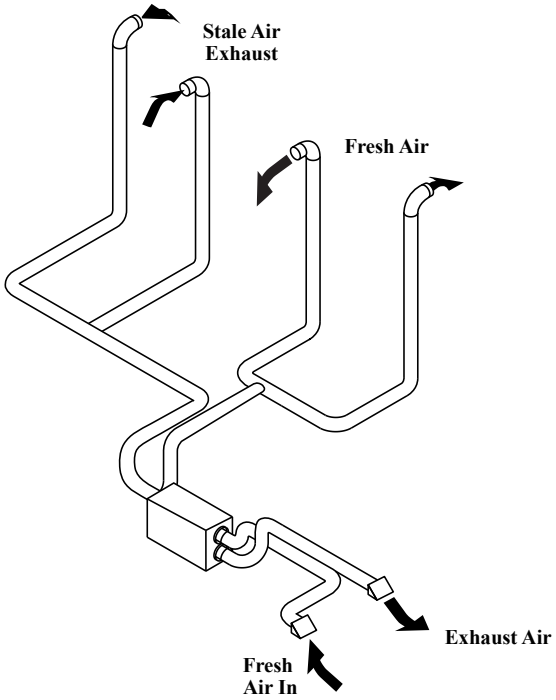


fig. I

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’ in 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 accidently left out of the installation.

This method of installation requires that the forced air circulation fan be operated when the HRV is in use.

Please refer to fig II. below.

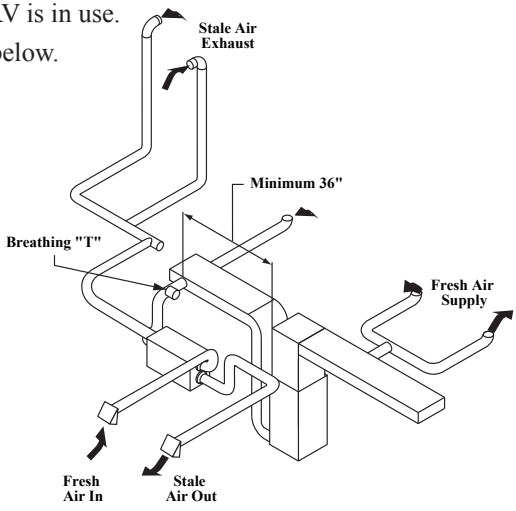


fig. II

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’ in 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 accidently 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.

Please refer to fig. III.

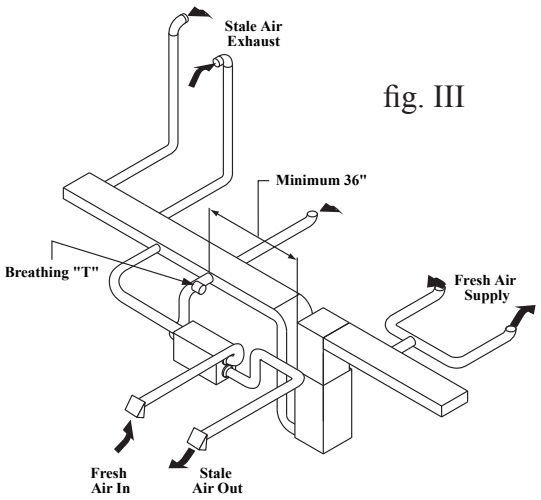


fig. III

6. 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.

7. 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.

8. 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.

9. Air Flow Balancing

READ THE APPLICATION WARNING AT THE FRONT OF THIS MANUAL.

A magnehelic gauge and pilot tube flow measuring system is used for easy and accurate air flow measurement

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.

Detailed check list to be carried out prior to balancing.

a) Install air flow station in each of the warm air streams.
b) Ensure that all ductwork is secured and sealed.
c) Drain connections are in place and drain trap filled with water.
d) Dwelling vapour barrier is complete and intact.
e) Fireplace dampers, windows and doors are closed.

f) Clothes dryer off, (if vented to the outdoors)

g) Furnace, hot water heater, (non direct vent) are turned off.

h) All other exhaust fans are off.

i) Ensure that HRV filters and core are in place and integral balancing dampers are wide open.

j) Power up HRV and set to high speed.

k) Adjust all branch tech grills and registers to desired air flows.

l) After taking readings at both the stale air being exhausted and the fresh air supply air stream, damper down the higher air flow stream with the integral balancing damper to equal the lower volume air stream.

m) Once the air flows are balanced lock the balancing dampers in place.

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

o) Upon completion, return the fan speed selection to the normal speed of low.

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

A negative pressure 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 Pressure 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 PRESSURE TEST" IS REQUIRED.

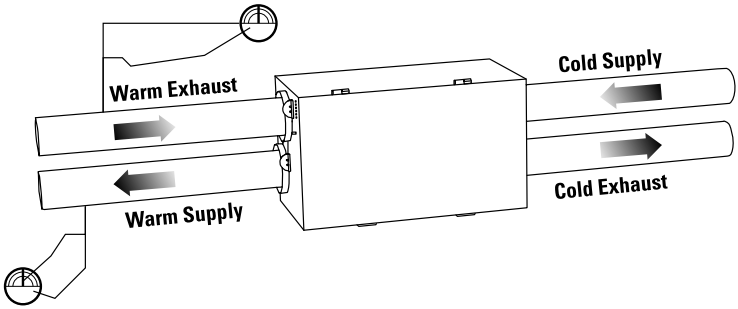
Summeraire HRV Air Flow Balancing

A. Preliminary Procedures:

1. Seal all the unit's ductwork with foil tape.

2. Close all windows and doors and fireplace damper, turn off all exhaust devices (range hoods, clothes dryer, bath fan, etc.), make sure all filters are clean.

3. Set build-in balancing dampers fully open. Tap 1/8" hole in ductwork for pitot tube insertion.



B. Balancing Procedures:

1.Set HRV to high speed. Make sure that the furnace blower is ON if the installation is in any way connected to the ductwork of the furnace. If not, leave the furnace blower OFF. Adjust air flow in branch lines if using source point exhaust and/or supply.

2. If outside temperature is below -3°C (26°F), make sure defrost light is not on while balancing.

3. Place magnahelic gauge on a level surface and adjust it to zero. Insert pitot tube into exhaust air ductwork with tip aligned with ductwork, pointing away from HRV, into air flow. Record the reading on gauge.

4. Move kit to other air stream HRV, insert pilot tube into fresh air ductwork with tip aligned with ductwork, pointing towards HRV , into air flow. Record reading on gauge. Adjust fresh air balancing damper until reading is approximately the same as in exhaust air ductwork. If the reading in the fresh air ductwork is less than in the exhaust air, go back and adjust the exhaust balancing damper to equal the fresh air flow.

5. Secure dampers in place with fastening screw. Duct tape over pitot tube holes.Convert FPM reading on gauge to CFM with conversion chart and record on balancing sticker and affix to HRV near label.

6. Note: Unit is considered balanced if readings are within +/- 10%.

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.
DEFROST NOT WORKING.	BROKEN DAMPER BLADE ASSY.	REPLACE.
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.	BALANCE HRV
	DEHUMIDISTAT CONTROL SET TO LOW.	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
HUMIDITY LEVEL TOO HIGH	HRV AIR FLOWS IMPROPERLY BALANCED	BALANCE HRV
	HRV UNDERSIZED.	

PROBLEM	PROBABLE CAUSE	SOLUTION
	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	HRV AIR FLOWS IMPROPERLY BALANCED	BALANCE HRV NOTE: FROST BUILD UP IS EXPECTED ON CORES PRIOR TO INITIATING A DEFROST CYCLE.
SUPPLY AIR FEELS COOL	HRV AIR FLOWS IMPROPERLY BALANCED.	BALANCE HRV.
	POOR LOCATION OF SUPPLY GRILLS.	LOCATE GRILLS HIGH ON WALLS OR UNDER BASEBOARDS.
	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.
WATER IN BOTTOM OF HRV	DRAIN PAN (S) PLUGGED	ENSURE "O" RINGS ON DRAIN SPIGOT SEATS PROPERLY LOOK FOR KINKS IN LINE.
	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
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.
	IMPROPERLY SIZED DUCTING	

PROBLEM	PROBABLE CAUSE	SOLUTION
	UNDER SIZED HRV MALFUNCTION WITH HRV	INSPECT FAN WHEELS TO ENSURE THEY ARE TURNING FREELY
CONDENSATION OR ICE BUILD UP IN INSULATED DUCT	INCOMPLETE VAPOUR BARRIER AROUND INSULATED DUCT	TAPE ALL JOINTS ENSURE THAT VAPOUR BARRIER IS COMPLETELY SEALED
	UNUSUALLY HUMID AMBIENT	WRONG APPLICATION OF HRV
	DOOR GASKET DAMAGED	REPLACE GASKETING
WATER LEAKS	HRV NOT LEVEL	LEVEL HRV
	EXCESSIVE WATER DUE TO NEW WET CONSTRUCTION	OPERATE HRV ON LOWER SPEED ie. INTERMITTENT
FROST ON FRESH AIR INTAKE & STALE AIR EXHAUST FLEX	HRV CORE INSTALLED IN REVERSE	INSTALL CORE CORRECTLY "FRONT" OF CORE HAS INSTALLATION INSTRUCTION LABEL INSTALL WITH LABEL FACING HRV DOOR
	VAPOUR BARRIER INCOMPLETE	REPAIR SEAL OF ALL CRACKS AND TEARS
HRV STATUS PANEL FLASHING HIGH CONTINUOUSLY	HRV INTERNAL DEHUMIDISTAT SET TO LOW	ADJUST DEHUMIDISTAT TO HIGHER SET POINT

CONTROL FUNCTION

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

PROBLEM	PROBABLE CAUSE	SOLUTION
NO POWER INDICATION AT ON/OFF SWITCH	LACK OF POWER AT SUPPLY	CHECK FOR POWER
	DOOR SAFETY SWITCH NOT ENGAGED	ENSURE THAT DOOR SWITCH IS OPERATING
	DEFECTIVE DOOR SWITCH	REMOVE MAIN ACCESS DOOR AND CONTROL COVER PLATE. APPLY POWER TO HRV AND CLOSE DOOR SWITCH AND TEST THE TWO LEADS ON BACK OF SWITCH, ONE SHOULD HAVE A READING. CLOSE DOOR SWITCH AND CHECK OTHER LEAD WITH METER AND KNOWN NEUTRAL. IF NO READING IS PRESENT THEN REPLACE SWITCH.
	DEFECTIVE POWER SWITCH	POWER UP HRV, CLOSE DOOR SAFETY SWITCH, TURN POWER SWITCH TO ON. PLACE ONE LEAD OF VOLT METER ON KNOWN NEUTRAL AND THE OTHER ON TERMINALS ON BACK OF SWITCH, ONE AT A TIME. VOLTAGE READING SHOULD BE LINE VOLTAGE ON BOTH BLACK LEADS. IF NOT, THEN REPLACE SWITCH. CONFIRM NEUTRAL AT SWITCH LEAD WITH KNOW NEUTRAL DISCONNECT POWER TO HRV. IDENTIFY KNOWN NEUTRAL, POSITION ONE LEAD OF OHM METER ON KNOWN NEUTRAL AND OTHER AT NEUTRAL LEAD AT REAR OF SWITCH. IF NO READING THEN INVESTIGATE CONNECTION OF NEUTRAL LEAD WIRE. AND OUTPUT. IF NO READING THEN REPLACE FILTER.
NOTHING WORKS	POWER OFF – UNPLUGGED FROM POWER SOURCE	RESTART HRV. THIS WILL RESET THE ELECTRONIC CONTROL BOARD

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

PROBLEM	PROBABLE CAUSE	SOLUTION
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.
	DOOR INTERLOCK SWITCH	REPLACE DOOR SWITCH.
BLOWER MOTOR NOT OPERATING BUT POWER LIGHT ON.		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)		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	AIR DUCT SYSTEM TOO SHORT	REDESIGN DUCT SYSTEM OR INSTALL SILENCER.
TOUCH PAD	CHECK FOR CORRECT WIRE GAUGE (18) OR WIRING TO HRV OR SWITCH IMPROPER CONNECTION TO 24V TERMINALS	CONFIRM WIRING TO WIRING DIAGRAM. CHANGE TO CORRECT WIRE GAUGE. CHECK TOUCH PAD FOR PROPER CONNECTIONS. ENSURE THAT CORRECT SWITCHES ARE BEING USED.

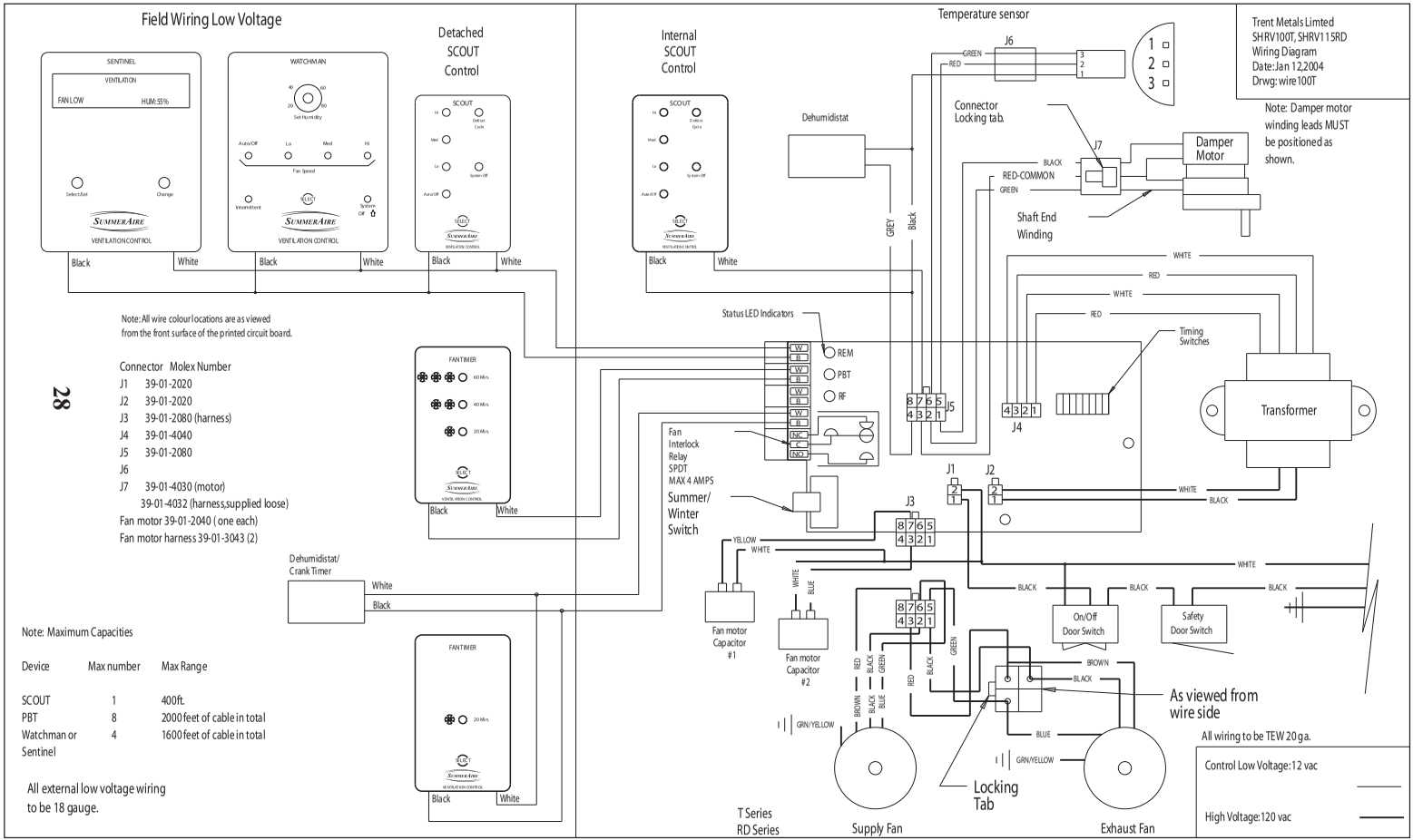
NOTE: ALL EXTERNAL MAINTENANCE TO BE PERFORMED BY A CERTIFIED ELECTRICIAN ONLY

PROBLEM	PROBABLE CAUSE	SOLUTION
	EXTERNAL LOW VOLTAGE WIRE IS SHORTED OUT BY A STAPLE OR NAIL	DISCONNECT LEADS AT BOTH ENDS @ TEST FOR CONTINUITY BETWEEN LEADS.
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 SEEM TO 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.

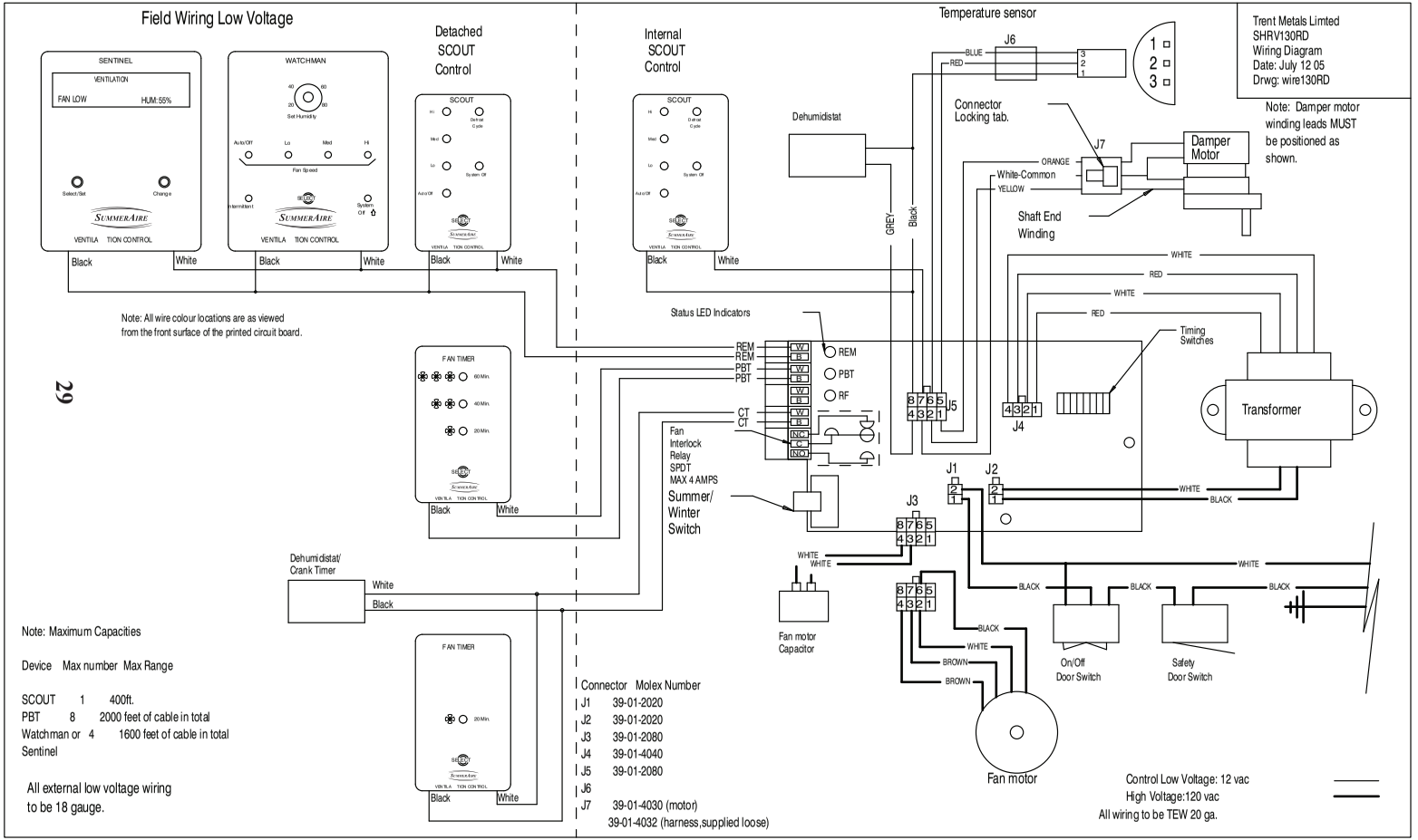
NOTE: ALL EXTERNAL MAINTENANCE TO BE PERFORMED BY A CERTIFIED ELECTRICIAN ONLY

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	REPLACE LATCH
	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.	LATCH MUST BE OPEN PRIOR TO LATCHING DO NOT PULL DOOR SHUT
LOCKED ON HIGH SPEED	DEHUMIDISTAT SET TOO LOW	REDUCE SET POINT
	DEHUMIDISTAT DEFECTIVE	REPLACE
NOT ALL WALL SWITCH CONTROL ILLUMINATE WHEN ONE IS ACTIVATED	DEFECTIVE CONTROL.	REPLACE
	FEED LINE TO WALL SWITCH CONTROL TOO LONG	SHOULD BE LESS THAN 2,000 LINEAL FEET IN TOTAL

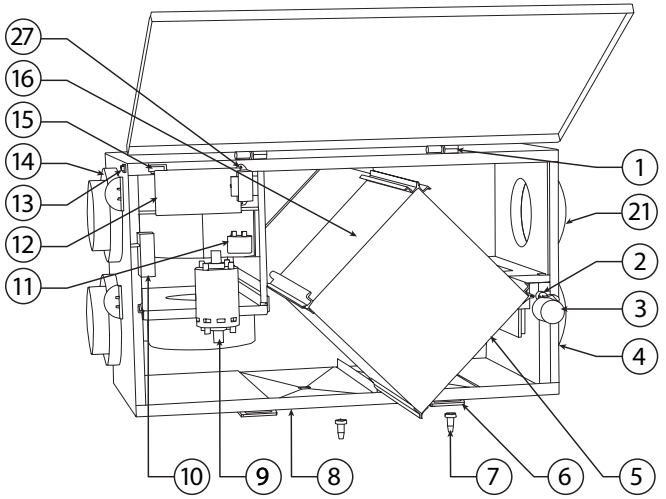
SHRV115RD, SHRV240RD Wiring Diagram



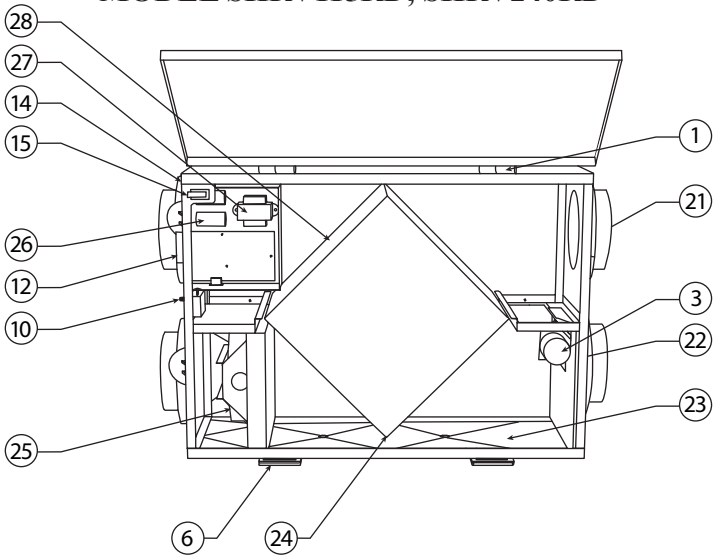
SHRV130RD/SHRV190RD Wiring Diagram



Replacement parts listing
MODELS SHRV130RD, SHRV190RD



Replacement parts listing
MODEL SHRV115RD, SHRV240RD



Item Part	Number	Description
1	RX-HG961031011	Front Door Hinge
2	RX-CPLDMPR	Damper Motor Coupling
3	RX-MTR	Damper Motor
4	RX-DMPR130	Damper Door
5	RX-WCORE130	Heat Recovery Core
6	RX-LATCH300	Front Door Latch
7	RX-SPIGOTASY	Drain Spigot
8	RX-PAN130	Drain Pan
9	RX-MTR1186	Fan Motor
10	RX-DEH	Internal Dehumidistat
11	RX-CAP450/6	Motor Capacitor
12	RX-BOARD130	Main Control Board
13	RX-BOARDSCOUT	Detachable 130/190 Control
14	RX-SWROCKER	On/Off Switch
15	RX-SWDOOR	Door Safety Switch
16	RX-FLTR130	Air Filters
17	RX-WHEEL130T	SHRV130RD Top Wheel
18	RX-WHEEL130B	SHRV130RD Bottom Wheel
19	RX-WHEEL190T	SHRV190RD Top Wheel
20	RX-WHEEL190B	SHRV190RD Bottom Wheel
21	RX-TMPSENSRD	SHRVRD Temperature Sensor
22	RX-DMPR115	Damper Door
	RX-DMPR240	Damper Door
23	RX-PAN115	Drain Pan
	RX-PAN240S	Drain Pan
	PX-PAN240L	Drain Pan
24	RX-CORE115	Heat Recovery Core
25	RX-IMP115/130	Motorized Impellar
	RX-IMP240	Motorized Impellar
26	RX-CAP115	Capacitor
27	RX-TRANSRD	Transformer
28	RX-FLTR115	Air Filter
	RX-FILTR240	Air Filter

SUMMERAIRE

Built Better To Last Longer

Summeraire Mfg.
Peterborough, Ontario
Canada, K9J 6X6

SHRV 115RD-130RD-190RD-240RD
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