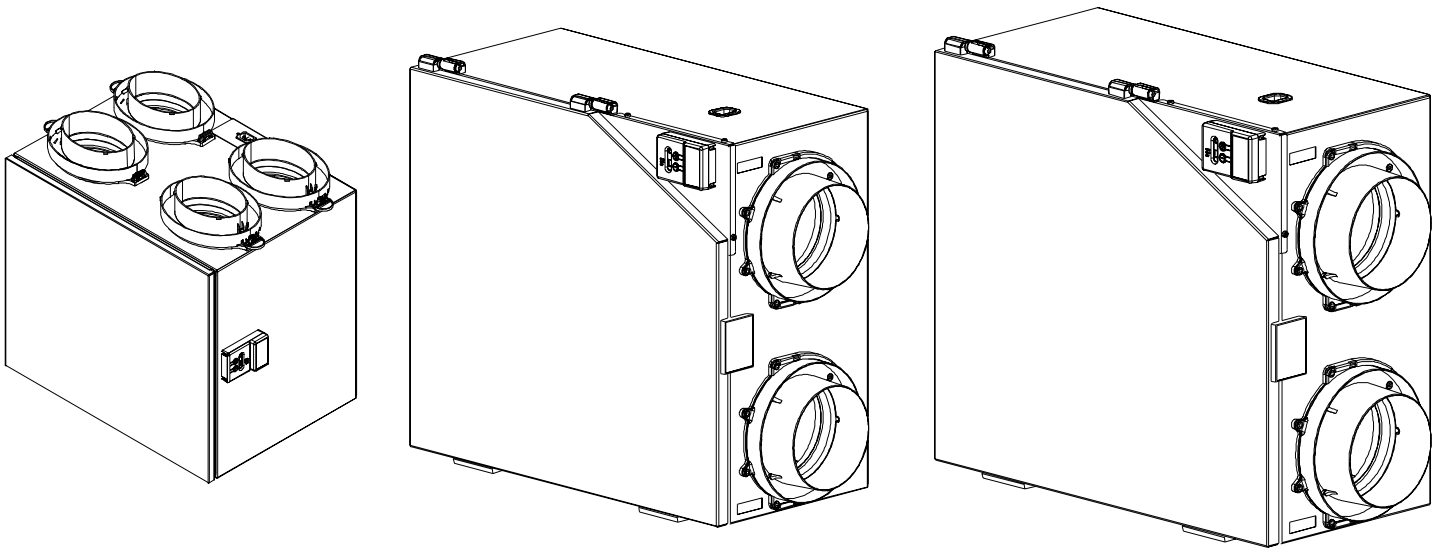
HR SERIES
HEAT RECOVERY VENTILATOR (HRV)

Models HR100V, HR160H, HR220H
RESIDENTIAL USE ONLY



INSTALLATION AND WIRING INSTRUCTIONS
READ AND SAVE THESE INSTRUCTIONS

PP0923
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Soler&Palau Ventilation Group

IMPORTANT - PLEASE READ MANUAL BEFORE INSTALLATION

CAUTION: Do not install in a cooking area or connect directly to any appliance. Turn off all integral disconnects before servicing.

NOTICE: Prior to installing, serious consideration must be taken to insure this ventilation system will operate properly if integrated to any other type of mechanical system, i.e. a forced air system, or an air handling unit. To insure proper operation & compatibilities of both system, it is required that the airflow's of the Heat Recovery Ventilator (HRV) be balanced, by following the procedures found in this manual.

LIMITATIONS: The product is for residential applications only. Must be installed in accordance with all national and local regulations, building and safety codes.

TO REDUCE OR AVOID THE HAZARDS OF ELECTRIC SHOCK AND FIRE:
CAUTIONS CONCERNING THE OPERATION AND FULL EFFICIENCY OF THIS PRODUCT:

- Before servicing or cleaning the HRV system, always remove the power cord from the AC wall outlet.
- To reduce the hazards of electric shock or fire, do not perform any service to the HRV system other than those stated in the operating manual instructions.
- To reduce the risk of electric shock, this ventilation system (HRV) comes equipped with a 3-prong plug-in. This plug will fit in a polarized outlet only one way.
- Do not use ventilation system for outdoor application.
- Do not pull or twist power cord when disconnecting it from the ventilation system. Grasp the plug firmly, not the cord.
- Do not modify the power plug in any way; if modified, risk of electric shock fire or even damage to the unit may occur.
- Do not use the ventilation system for removal of flammable fumes, gases or connect directly to any appliances.
- Use a dedicated AC 120V outlet only.
- Do not obstruct or cover the air intake or air outlet of the ventilation system.
- Do not modify, repair or disassemble this system. These tasks are to be performed by authorized serviced personnel only. Fire, electrical shock and/or bodily injury may occur if these warnings are not followed.
- To prevent injuries, do not operate the ventilation system, while servicing or maintaining. There are impeller wheels turning at a very high speed that must fully stop rotating prior to accessing the inside of the unit.
- Always assess the operation of the ventilation system on how it may interact with vented combustion equipment (ie. Gas Furnace, Oil Furnace, Combustion, Appliances, etc.)
- Do not use for swimming pool/spa applications.

CONTENTS

1. VENTILATION REQUIREMENTS

DETERMINE YOUR VENTILATION NEEDS INSTALLATION

How much fresh air do I need? Good air quality is based in part on the capacity of the home's ventilation system.

Usually, the HRV's capacity is measured in CFM (Cubic Feet per Minutes) or L/s (Liters per Seconds) of fresh air being distributed in the living space. The Room Count Calculation or the Air Change per Hour Method shows you how to determine your ventilation needs.(see chart on right)

A. Room Count Calculation

LIVING SPACE	NUMBER OF ROOMS	CFM (L/S)		CFM REQUIRED
Master Bedroom	_____	x 20 cfm (10 L/s)	=	_____
With Basement	_____	x 20 cfm (10 L/s)	=	_____
Single Bedroom	_____	x 10 cfm (5 L/s)	=	_____
Living Room	_____	x 10 cfm (5 L/s)	=	_____
Dinning Room	_____	x 10 cfm (5 L/s)	=	_____
Family Room	_____	x 10 cfm (5 L/s)	=	_____
Recreation Room	_____	x 10 cfm (5 L/s)	=	_____
Other	_____	x 10 cfm (5 L/s)	=	_____
Kitchen	_____	x 10 cfm (5 L/s)	=	_____
Bathroom	_____	x 10 cfm (5 L/s)	=	_____
Laundry Room	_____	x 10 cfm (5 L/s)	=	_____
Utility Room	_____	x 10 cfm (5 L/s)	=	_____
TOTAL ventilation requirement (add last column) =				

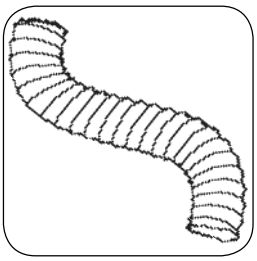
1 CFM = 0.47189 L/s
1 L/s = 3.6 m3/hr

B. Air Change per Hour Method

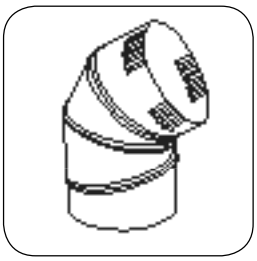
TOTAL cu ft X 0.35 per hr = total
Take total and divide by 60 to get CFM

Example: A 25'x 40' house with basement
1,000 Sq. ft. x 8' high x 2(1st floor + basement) = 16,000 cu. ft.
16,000 cu. ft. x 0.35 ACH = 5,600 cu. ft.
5,600 cu. ft. / 60 Minutes = 93.3 CFM
93.3 CFM IS YOUR VENTILATION NEED

2. FITTING EQUIVALENT LENGTHS

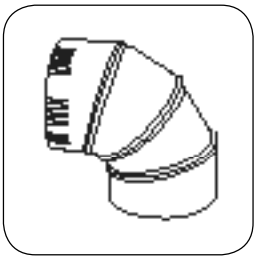


- Flex pipe equivalent length is smooth pipe x2
- Flex fitting equivalent length is smooth fitting x2



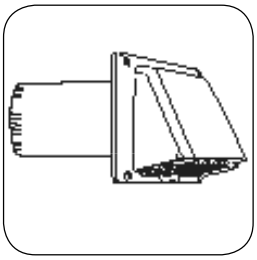
- 45º perimeter pipe elbow equivalent length = 5 ft. (1.52 m)

  NOTE: Where flex duct is used to make 45º elbow equivalent length = 10 ft. (3.0 m)



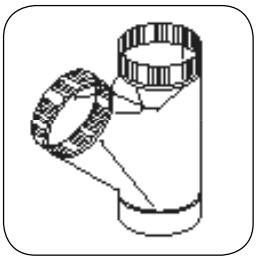
- 90º perimeter pipe elbow equivalent length = 10 ft. (3.0 m)

  NOTE: Where flex duct is used to make 90º elbow equivalent length = 20 ft. (6.1 m)

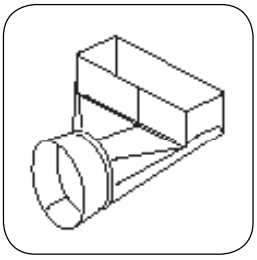


- Round wall cap spring damper or screen equivalent lengths = 60 ft. (18.29 m)

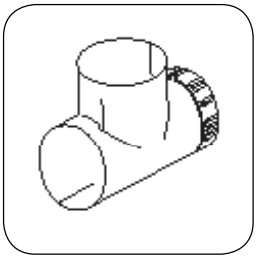
- Y-equal sides equivalent length = 10 ft. (3.0 m)



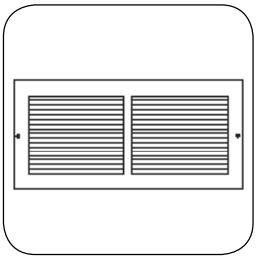
- Y-Side branch equivalent length = 35 ft. (10.7 m)



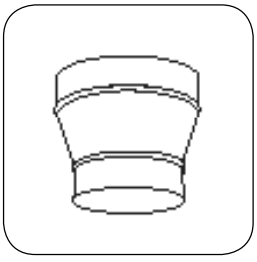
- Angle boot equivalent length = 30 ft. (9.14 m)



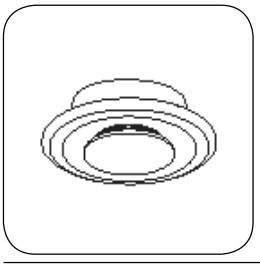
- Tee take-off equivalent length = 50 ft. (15.24 m)



- Wall grill 50% free area equivalent length = 15 ft. (4.6 m)



- Increaser/Reducer equivalent length = 8 ft. (2.43 m)



- Round plastic diffuser equivalent length = 100 ft. (30.5 m)

  NOTE: Maximum airflow assumes diffuser is in full open position.

3. TYPES OF INSTALLATIONS

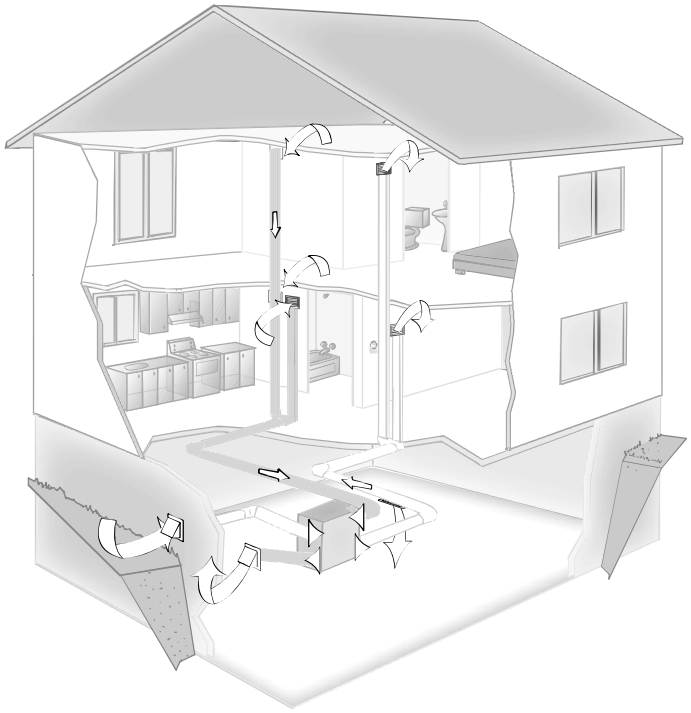
INDEPENDENT SYSTEM INSTALLATION

This application uses a devoted duct system for the supply and the exhausting of stale air accumulated in the home.

It is recommended to install fresh air grilles in all bedrooms and living areas. Exhaust the stale air from the bathroom, kitchen and laundry room. (see figure 3.1)

IMPORTANT: *For optimal performance of your HRV, the installation of an optional 6" round galvanized backdraft damper is required on the fresh air to home duct work.*

figure 3.1



EXHAUST AT THE SOURCE AND SUPPLY IN THE RETURN

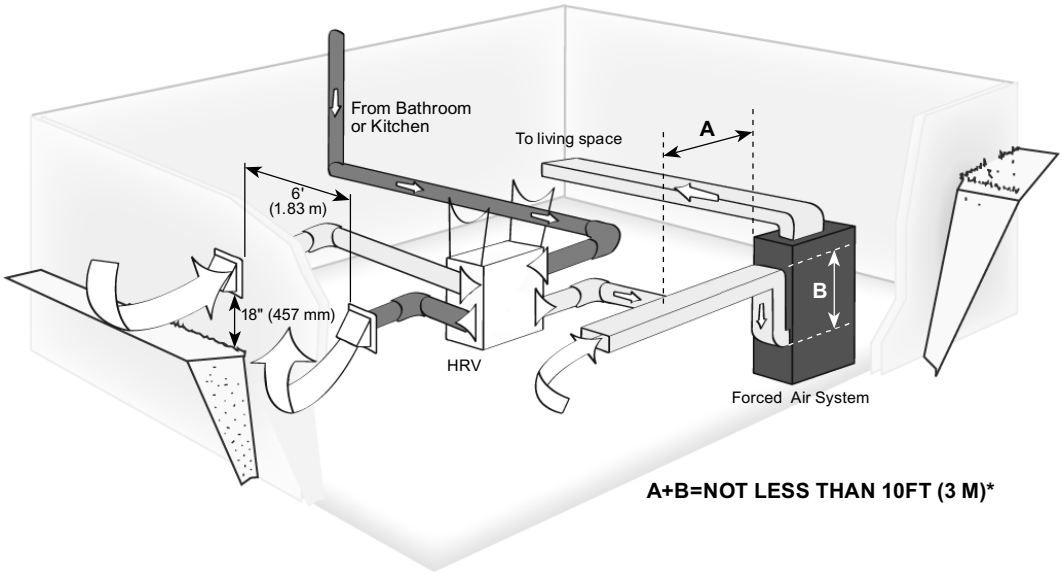
This application uses a devoted duct system for the exhausting of stale air accumulated in the home. The fresh air is dumped into the return air duct and is distributed thru the home by the existing supply air ductwork of the forced air system. (see figure 3.2)

Make sure when using this application that your fresh air duct connection to the forced air system return air duct is not less than 10ft (3 m) upstream of the return plenum connection to the forced air system. Check with your local code or the forced air system's manufacturer. The HRV and forced air system must be in continuous mode, to achieve maximum comfort and to avoid cross-contamination.

NOTE TO INSTALLER:
Dwellings with multiple forced air systems requires one HRV per system.

Insure the unit runs in conjunction with forced air system (Ref. wiring diagram for furnace interlock)

figure 3.2



IMPORTANT: *The duct bringing outdoor air to the return air plenum must be equipped with a manual dumper to balance the outdoor airflow.*

* For minimum distance between return and forced air system, check with your local building codes and forced air system manufacturer.

IMPORTANT: For optimal performance of your HRV, the installation of an optional 6" round galvanized backdraft damper is required on the fresh air to home duct work. When performing duct connections, always use approved tools and material. Also use steel duct connections for these type of installs.

3. TYPES OF INSTALLATIONS (CONTINUED)

EXHAUST AND SUPPLY IN THE RETURN

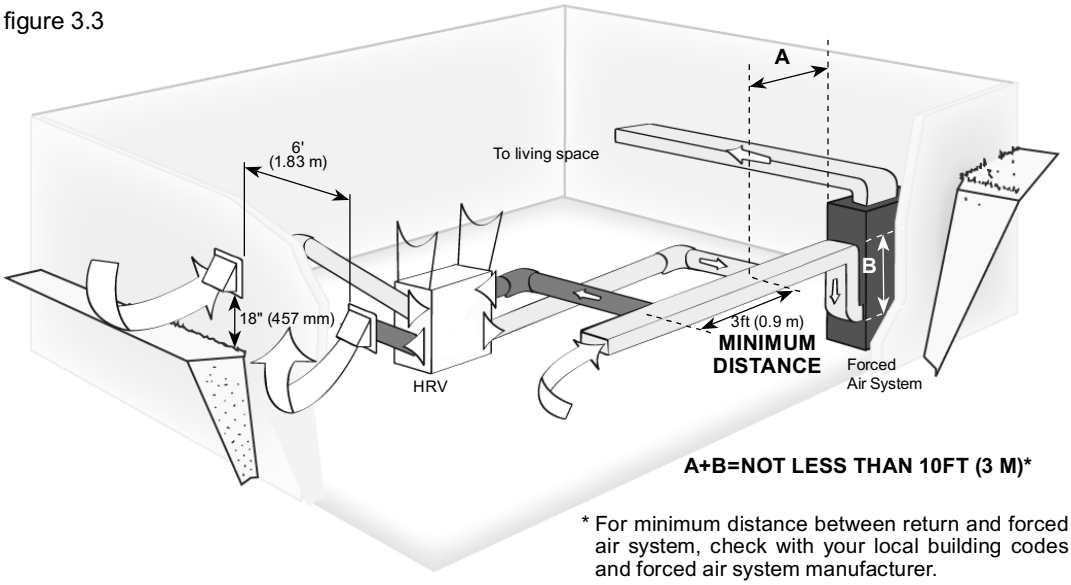
When using this application make sure that there is minimum 3 feet (0.9 m)between the fresh air and exhaust air connections of the HRV in the return air duct. (see figure 3.3)

Make sure when using this application that your fresh air duct connection to the forced air system return air duct is not less than 10ft (3 m) upstream of the return plenum connection to the forced air system. Check with your local code or the forced air system's manufacturer. The HRV and forced air system must be in continuous mode, to achieve maximum comfort and to avoid cross-contamination.

NOTE TO INSTALLER:
Dwellings with multiple forced air systems requires one HRV per system.

Insure the unit runs in conjunction with forced air system (Ref. wiring diagram for furnace interlock)

figure 3.3

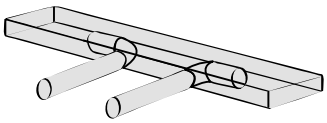


* For minimum distance between return and forced air system, check with your local building codes and forced air system manufacturer.

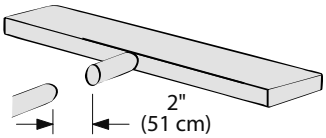
IMPORTANT: *The duct bringing outdoor air to the return air plenum must be equipped with a manual dumper to balance the outdoor airflow.*

IMPORTANT: *Building and combustion appliance installation codes do not allow return air grilles or openings such as "breather tee" or indirect connections in an enclosed room that is susceptible to spillage of combustion appliances.*

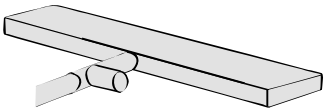
Simplified Connection



Indirect Connection



Breather Tee



IMPORTANT: For optimal performance of your HRV, the installation of an optional 6" round galvanized backdraft damper is required on the fresh air to home duct work. When performing duct connections, always use approved tools and material. Also use steel duct connections for these type of installs.

4. INSTALLATION KIT

INSTALLATION KIT FOR HR100V INCLUDES:

- 4 Collars
- 4 Caps, Pressure Taps
- 1 Condensation Drain Line
- 1 Drain Adapter with Nut
- 12 screws (#10 x 1 1/4")
- 2 screws (#8 x 3/8")
- AC 120V power cord
- Wall Mounting Bracket

figure 4.1

INSTALLATION KIT FOR HR160H AND HR220H INCLUDES:

- 4 Collars
- 1 Condensation Drain Line
- 1 Drain Adapter with Nut
- 16 screws (#10 x 5/8")
- 4 screws (#10 x 1")
- 4 Washers
- AC 120V power cord

TIP TO INSTALLER:
Removing the core unit will facilitate your job.

figure 4.2

5. FINDING A SUITABLE INSTALLATION AREA FOR HRV

The HRV unit should be installed in a mechanical room or as close to an outside wall as possible. This would assure a short run of insulated flexible duct.

The HRV unit must always be installed in an area where the air is tempered to avoid freezing of the condensate line. The contractor should install the unit in an area that is very accessible to allow the homeowner easy access for maintenance.

It is very important to install an electric receptacle (115v) near the HRV, a separate circuit breaker is also recommended. You should have access to a condensate drain near the HRV to avoid the use of condensate pump.

6. INSTALLATION OF THE HRV

Installation of the **HR100V**

IMPORTANT Minimum installation requirements

A) Minimum two 2"x 4" (50.8 mm x 101.6 mm) wood wall studs and minimum ⅜" (9.5 mm) thick drywall is required to secure the HRV wall bracket.

B) Support for weight of 80 lbs, which includes HRV, duct connections and accessories.

Proper installation requires that the unit be secure to the wall. If there is no wall studs available, please secure a 3⁄4" plywood to wall studs then fasten wall mounting bracket to plywood.

figure 6.1 Installation of the wall bracket. Secure with two #10 x 1¼" screws.

TIP TO INSTALLER: If the unit is not level, improper drainage will occur and could lead to moisture and leakage problems.

It is recommended to use approximately 16 inches of flexible duct between the HRV and your rigid duct. The flex duct is mounted the same way to the HRV as the insulated flex.

figure 6.2 Hang HRV to wall mounting bracket.

figure 6.3 When completing the procedure make sure that the HRV is leveled.

figure 6.4 Proceed to secure HRV to bracket with the two #8 x ⅜" screws.

Installation of the **HR160H and HR220H**

TIP TO INSTALLER: Place HRV on a stepladder to ease the hanging process. If the unit is not level, improper drainage will occur and could lead to moisture and leakage problems.

It is recommended to use approximately 16 inches of flexible duct (supplied in kit) between the HRV and your rigid duct. The flex duct is mounted the same way to the HRV as the insulated flex.

figure 6.5 Attach your four straps to the floor joist making sure that you attach thru the washers and the grommets.

figure 6.6 Pull on the middle strap and gently push upward on the unit. Then repeat procedure on other side.

figure 6.7 When completing the procedure make sure that the HRV is leveled.