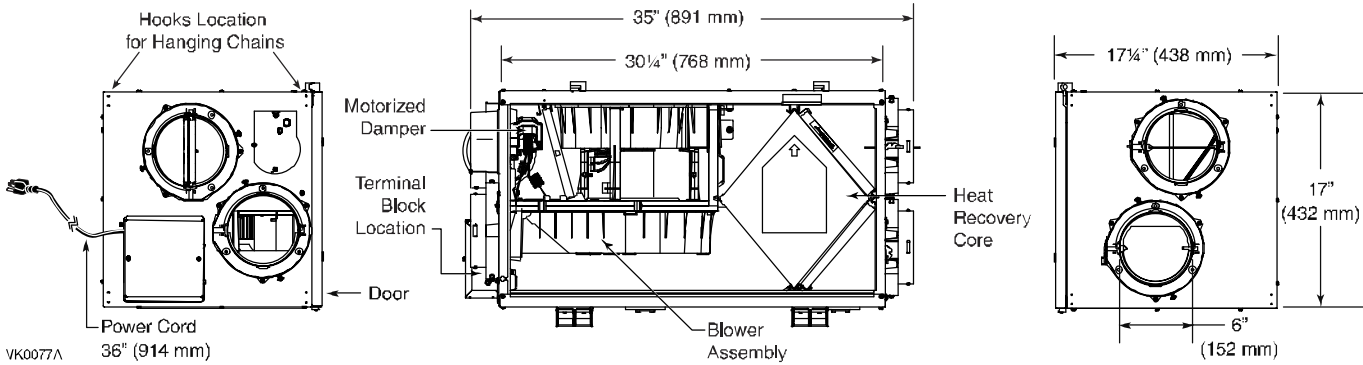


1. TECHNICAL DATA (CONT'D)

1.4 DIMENSIONS



1.5 SPECIFICATIONS

MODEL	HRV150FLS	HRV190FLS
WEIGHT	65 LB. (29.5 kg)	65 LB. (29.5 kg)
PORT DIAMETER	6" (152 mm)	6" (152 mm)
DRAIN DIAMETER	1/2" (12 mm)	1/2" (12 mm)
INSTALLATION	CHAINS AND SPRINGS (PROVIDED WITH THE UNIT)	
MOTOR SPEED	HIGH AND LOW SPEED FACTORY SET (OPTIONAL INCREASED LOW SPEED)	
ELECTRICAL SUPPLY	120 V, 60 Hz	120 V, 60 Hz
POWER CONSUMPTION	160 WATTS	195 WATTS

2. TYPICAL INSTALLATIONS

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

There are three common installation methods.

2.1 FULLY DUCTED SYSTEM

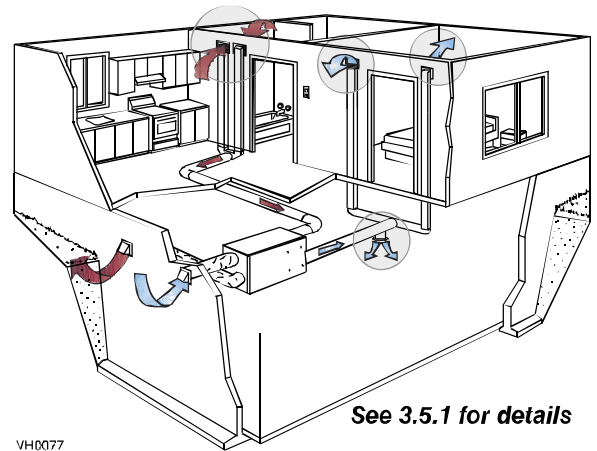
(Primarily for homes with radiant hot water or electric baseboard heating. See illustration at right.)

Moist, stale air is exhausted from the high humidity areas in the home, such as bathrooms, kitchen and laundry room.

Fresh air is supplied to bedrooms and principal living areas.

If required, bathroom fans and a range hood may be used to better exhaust stale air.

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



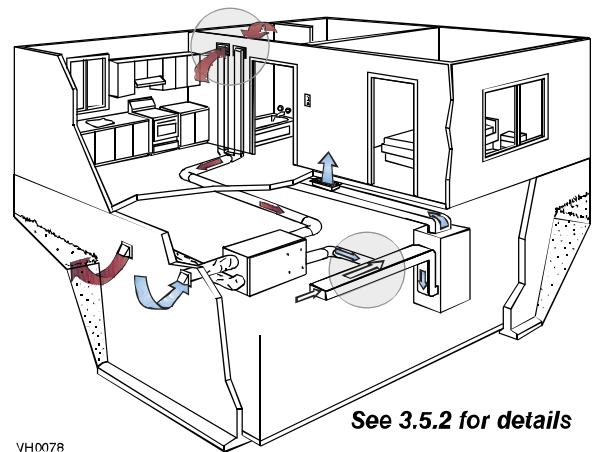
2.2 EXHAUST DUCTED SYSTEM (SOURCE POINT VENTILATION)

(For homes with forced air heating. See illustration at right.)

Moist, stale air is exhausted from the high humidity areas in the home, such as bathrooms, kitchen and laundry room. Fresh air is supplied to the cold air return or the supply duct of the furnace. If required, bathroom fans and a range hood may be used to better exhaust stale air.

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

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



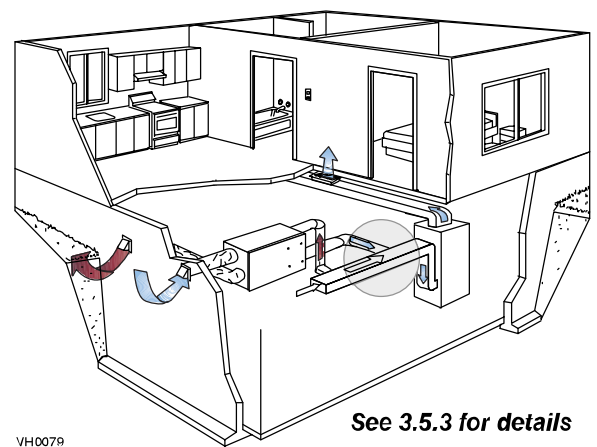
2.3 SIMPLIFIED (VOLUME VENTILATION)

(For homes with forced air heating. See illustration at right.)

Fresh air and exhaust air flow through the furnace ducts, which simplifies the installation.

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

NOTE: For this type of installation, the furnace blower must be running when the unit is in operation.



3. INSTALLATION

⚠ WARNING

When applicable local regulation comprises more restrictive installation and/or certification requirements, the aforementioned requirements prevail on those of this document and the installer agrees to conform to these at his own expenses.

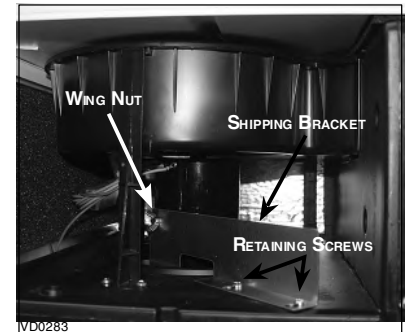
⚠ WARNING

When performing installation, servicing or cleaning the unit, it is recommended to wear safety glasses and gloves.

3.1 INSPECT THE CONTENT OF THE BOX

- Inspect the exterior of the unit for shipping damage. Make sure that there is no damage to the door, door latches, door hinges, dampers, duct collars, cabinet, etc.
- Inspect the interior of the unit for damage. Make sure that the fan motor assembly, recovery module, insulation, dampers, condensation tray are all intact.
- If the unit was damaged during shipping, contact your local distributor. (Claim must be made within 24 hours after delivery.)

NOTE: Before installing the unit, remove its shipping bracket by removing its wing nut and loosening both its retaining screws.



3.2 LOCATING AND MOUNTING THE UNIT

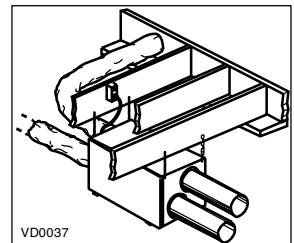
NOTE: Please note that these units can be installed in either the normal or reverse (upside down) position.

CAUTION

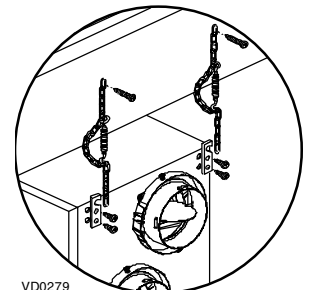
When installed in reverse position (upside down) in a cold region where outside temperature could drop below -20°C (-4°F) for more than 5 days in a row, the unit must always be set in extended defrost. See Section 4.1.2 Setting Extended Defrost.

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

- Within an area of the house where the **ambient temperature is kept between 10°C (50°F) and 40°C (104°F)**
- Away from living areas (dining room, living room, bedroom), if possible
- So as to provide easy access to the interior cabinet for every three months and annual maintenance, and to the control panel on the side of the unit;
- Close to an exterior wall, so as to limit the length of the insulated flexible duct to and from the unit
- Close to a drain. If no drain is close by, use a pail to collect run-off
- Away from hot chimneys, electrical panel and other fire hazards
- Allow for a power source (standard outlet)



Hang the unit with the 4 chains and springs provided (see illustrations at right).



3.3 PLANNING OF THE DUCTWORK

- Follow the instructions in Section 3.4 (next page) to determine the appropriate duct diameters for your system.
- Keep it simple. Plan for a minimum number of bends and joints. Keep the length of insulated duct to a minimum.
- Do not use wall cavities as ducts. Do not use branch lines smaller than 4" Ø (102 mm Ø).
- Do not ventilate crawl spaces or cold rooms. Do not attempt to recover the exhaust air from a dryer or a range hood. This would cause clogging of the recovery module. Use sheet metal for the kitchen exhaust duct.
- Be sure to plan for at least one exhaust register on the highest lived-in level of the house if it has 2 floors or more.

3. INSTALLATION (CONT'D)

3.4 CALCULATING THE DUCT SIZE

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

DUCT DIAMETER	RECOMMENDED AIR FLOW			MAXIMUM AIR FLOW		
	CFM	L/S	M ³ /H	CFM	L/S	M ³ /H
4" (102 MM)	40 CFM	19 L/s	68 M ³ /H	60 CFM	28 L/s	102 M ³ /H
5" (127 MM)	75 CFM	35 L/s	127 M ³ /H	110 CFM	52 L/s	187 M ³ /H
6" (152 MM)	120 CFM	57 L/s	204 M ³ /H	180 CFM	85 L/s	306 M ³ /H
7" (178 MM)	185 CFM	87 L/s	314 M ³ /H	270 CFM	127 L/s	459 M ³ /H
8" (203 MM)	260 CFM	123 L/s	442 M ³ /H	380 CFM	179 L/s	645 M ³ /H

NOTE: Examples 3.4.1 and 3.4.2 use imperial measures. The same calculation applies to metric measures.

3.4.1 EXAMPLE OF CALCULATION

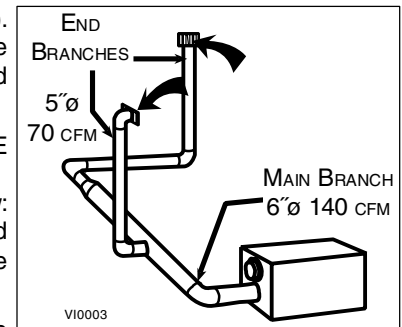
PROBLEM: My installation requires two exhaust registers (one for the kitchen, one for the bathroom). I will connect these registers to a main duct which will connect to the unit (high speed performance value of 140 cfm). What size of duct should I use for the main exhaust duct and for the two end branches leading to the registers? (See illustration at right.)

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

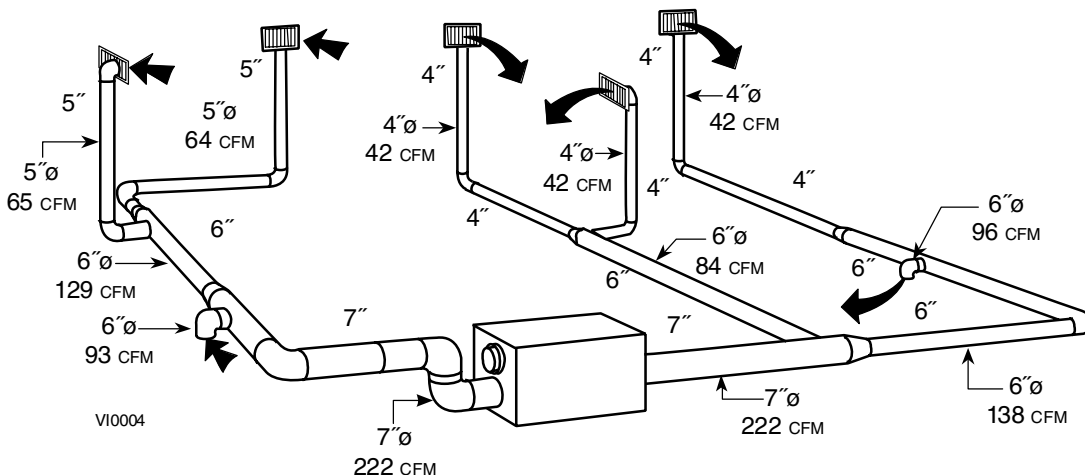
Main duct: Table above indicates a 6" Ø duct: Recommended air flow: 120 cfm; maximum air flow: 180 cfm. The high speed air flow of 140 cfm is close enough to the recommended value (120) and far away enough from the maximum value (180). Therefore a 6" Ø duct or larger is an appropriate choice for the main exhaust duct.

End branches: Each end branch will have to transport an air flow of 70 cfm (140 divided by 2). Table above indicates a 5" Ø duct: Recommended air flow: 75 cfm; maximum air flow: 110 cfm. The high speed air flow of 70 cfm is close enough to the recommended value (75) and far enough away from the maximum value (110). Therefore a 5" Ø duct or larger is an appropriate choice for the 2 end branches.

NOTE: A 4" Ø duct would have been too small because the maximum acceptable value for a 4" Ø duct is 60 cfm.



3.4.2 EXAMPLE OF A DESIGN FOR A FULLY DUCTED SYSTEM FOR A UNIT HAVING A HIGH SPEED PERFORMANCE OF 222 CFM



3. INSTALLATION

3.5 INSTALLING THE DUCTWORK AND THE REGISTERS

⚠ WARNING

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

CAUTION

The ductwork is intended to be installed in compliance with all local and national codes that are applicable.

3.5.1 FULLY DUCTED SYSTEM (AS ILLUSTRATED IN SECTION 2.1)

STALE AIR EXHAUST DUCTWORK:

- Install registers in areas where contaminants are produced: kitchen, bathrooms, laundry room, etc.
- Install registers on an interior wall, 6 to 12 inches (152 to 305 mm) away from the ceiling OR in the ceiling.
- Install the kitchen register at least 4 feet (1.2 m) away from the range.
- If possible, measure the velocity of the air flowing through the registers. If the velocity is higher than 400 ft/min. (122 m/min), then the register type is too small. Replace with a larger one.

FRESH AIR DISTRIBUTION DUCTWORK:

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

3.5.2 EXHAUST DUCTED SYSTEM (AS ILLUSTRATED IN SECTION 2.2)

STALE AIR EXHAUST DUCTWORK:

Same as for Fully Ducted System, described on point 3.5.1 above)

FRESH AIR DISTRIBUTION:

⚠ WARNING

When performing duct connection to the furnace, installation must be done in accordance with all applicable codes and standards. Please refer to your local building code.

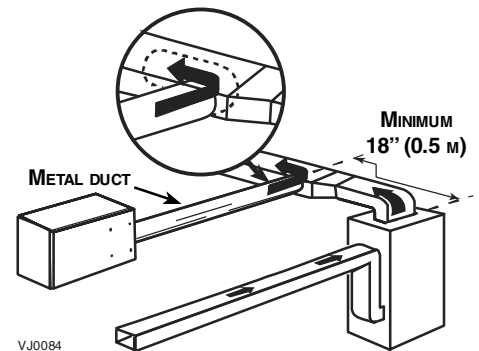
CAUTION

When performing duct connection to the furnace supply duct, use a metal duct appropriately sized to support the additional airflow produced by the HRV. It is recommended that the HRV is running when the furnace is in operation in order to prevent backdrafting inside HRV.

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

METHOD 1: SUPPLY SIDE CONNECTION

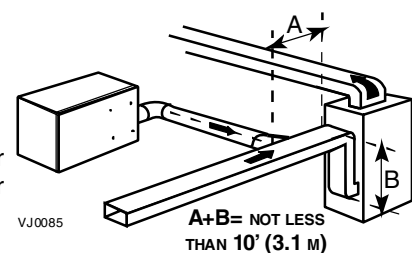
- Cut an opening into the furnace supply duct at least 18 inches (0.5 m) away from the furnace.
- Connect this opening to the fresh air distribution port of the HRV (use metal duct, see illustration at right).
- Make sure that the HRV duct forms an elbow inside the furnace ductwork.
- If desired, interlock (synchronize) the furnace blower operation with the HRV. (See Section 5).



METHOD 2: RETURN SIDE CONNECTION

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

NOTE: For Method 2, It is recommended, but not essential that the furnace blower runs when the unit is in operation. If desired, synchronize the furnace blower operation with the HRV. (See Section 5).



3. INSTALLATION (CONT'D)

3.5 INSTALLING THE DUCTWORK AND THE REGISTERS (CONT'D)

3.5.3 SIMPLIFIED INSTALLATION (AS ILLUSTRATED IN SECTION 2.3)

⚠ WARNING

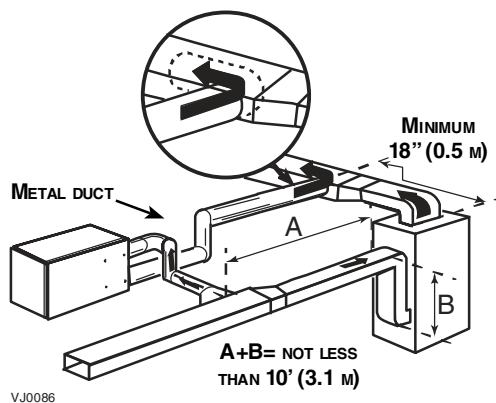
When performing duct connection to the furnace, installation must be done in accordance with all applicable codes and standards. Please refer to your local building code.

CAUTION

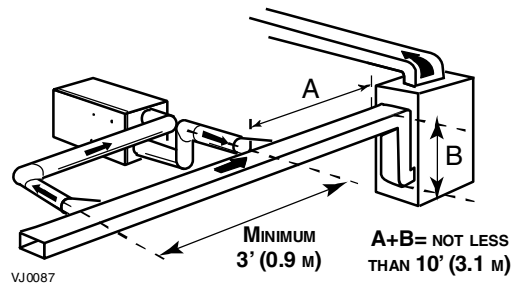
When performing duct connection to the furnace ducts (Method 1), use metal ducts appropriately sized to support the additional airflow produced by the HRV. It is recommended that the HRV is running when the furnace is in operation in order to prevent backdrafting inside HRV.

There are two ways (illustrated below) of connecting the unit to the furnace ducts:

METHOD 1: RETURN-SUPPLY



METHOD 2: RETURN-RETURN



STALE AIR INTAKE:

- Cut an opening into the furnace return duct not less than 10 feet (3.1 m) from the furnace.
- Connect this opening to the stale air intake port of the HRV (as shown above).

FRESH AIR DISTRIBUTION:

Same instructions as for Method 1 or Method 2, section 3.5.2 in previous page.

CAUTION

If using Method 2, make sure the furnace blower is synchronized with the unit operation! See Section 5.

For Method 2 (Return-Return), make sure there is a distance of at least 3 feet (0.9 m) between the 2 connections to the furnace duct.

NOTE: For Method 1, it is recommended, but not essential to synchronize the furnace blower operation with the HRV operation.

3. INSTALLATION (CONT'D)

3.6 CONNECTING THE DUCTS TO THE UNIT

CAUTION

If ducts have to go through an unconditioned space (e.g.: attic), always use insulated ducts.

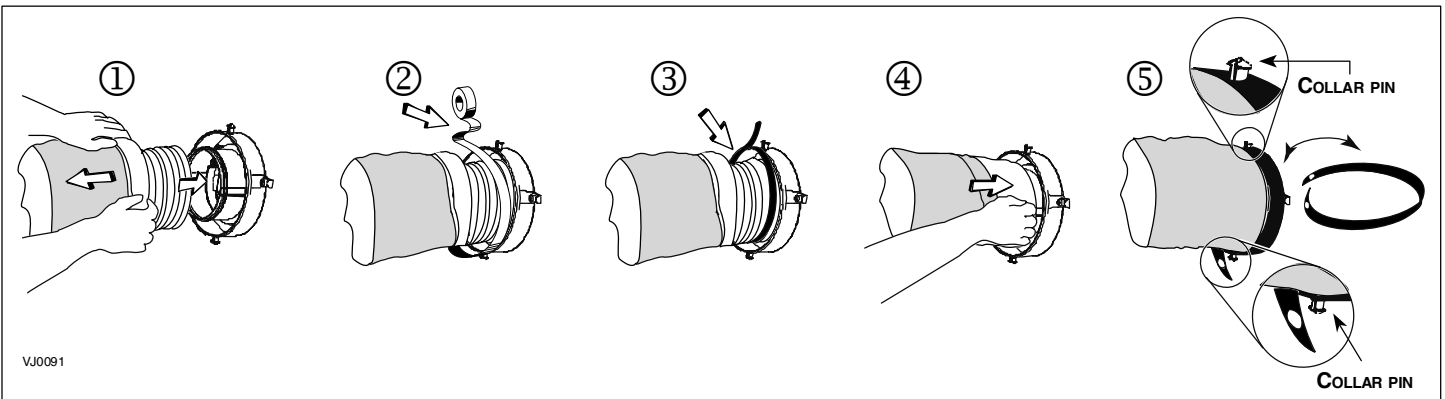
INSULATED FLEXIBLE DUCTS

Use the following procedure to connect the insulated flexible duct to the ports (exhaust to outside and fresh air from outside).

- ① Pull back the insulation to expose the flexible duct and place it **over inner port ring**.
- ② Install good quality **aluminum duct tape** on flexible duct to prevent potential water leakage from duct.
- ③ Attach the flexible duct to the port using tie wrap.
- ④ Pull the insulation over the joint and tuck it **between the inner and outer rings** of the double collar.
- ⑤ Pull down the vapor barrier (shaded part in illustrations below) **over the outer ring** to cover it completely. Fasten the vapor barrier in place using the port strap (included in parts bag). To do so, insert one collar pin through vapor barrier and first strap hole, then insert the other collar pin through vapor barrier and center strap hole and close the loop by inserting the first collar pin in the last strap hole.

CAUTION

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



RIGID DUCTS

To prevent potential water leakage from ducts, use good quality aluminum duct tape to connect the rigid ducts to the ports.

CAUTION

Do not use screws to connect rigid ducts to the ports.

Make sure that both balancing dampers are left in a fully open position before connecting the **Fresh air to building port** and **Exhaust air from building port** (as shown in illustration at right).

