



Fantech
Your Ventilation Solutions Company

SH, VH & SE Series Heat & Energy Recovery Ventilators

**IMPORTANT - PLEASE READ THIS MANUAL
BEFORE INSTALLING UNIT**

CAUTION - Before installation, careful consideration must be given to how this system will operate if connected to any other piece of mechanical equipment, i.e. a forced air furnace or air handler, operating at a higher static. After installation, the compatibility of the two pieces of equipment should be confirmed by measuring the airflow's of the Heat Recovery or Energy Recovery Ventilators.

It is always important to assess how the operation of any HRV/ERV may interact with vented combustion equipment (i.e. Gas Furnaces, Oil Furnaces, Wood Stoves, etc.).

NEVER - install a ventilator in a situation where its normal operation, lack of operation or partial failure may result in the backdrafting or improper functioning of vented combustion equipment!!!



Your ventilation system should be installed in conformance with the appropriate provincial or state requirements or in the absence of such requirements with the current edition of the National Building Code, and / or ASHRAE's " Good Engineering Practices".

SH, VH & SE Models

SH704 • VH704 • SE704

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1-800-667-8721

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

The Best Limited Warranty in the Business

- The heat recovery aluminum core has a limited lifetime warranty and the enthalpy energy recovery core has a 5 year limited warranty.
- The motors found in all Fantech HRV/ERVs require no lubrication, and are factory balanced to prevent vibration and promote silent operation.
- The limited warranty covers normal use. It does not apply to any defects, malfunctions or failures as a result of improper installation, abuse, mishandling, misapplication, fortuitous occurrence or any other circumstances outside Fantech's control.
- Inappropriate installation or maintenance may result in the cancellation of the warranty.
- Any unauthorized work will result in the cancellation of the warranty.
- Fantech is not responsible for any incidental or consequential damages incurred in the use of the ventilation system.
- Fantech is not responsible for providing an authorized service centre near the purchaser or in the general area.
- Fantech reserves the right to supply refurbished parts as replacements.
- Transportation, removal and installation fees are the responsibility of the purchaser.
- The purchaser is responsible to adhering to all codes in effect in his area.
- The warranty is limited to 5 years on parts and 7 years on the motor from the date of purchase, including parts replaced during this time period. If there is no proof of purchase available, the date associated with the serial number will be used for the beginning of the warranty period.

* This warranty is the exclusive and only warranty in effect relative to the ventilation system and all other warranties either expressed or implied are invalid.

*****Illustrations & images in this manual may not be exactly like unit purchase, these illustrations & images are for examples only.*****

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Sizing (Example) for minimum airflow normally required.

HRV/ERV units are typically sized to ventilate at 0.35 air changes per hour. To calculate, simply take the square footage of the space and multiply by the height of the ceiling to get cubic volume. Then, divide by 60 and multiply by 0.35.

| | | |
|----------|------------------------|---------------|
| Example: | Total SQFT | 1100 |
| | Height of ceiling | <u>x 8</u> |
| | Cubic volume | 8800 |
| | | <u>/ 60</u> |
| | | 147 |
| | | x <u>0.35</u> |
| | Airflow required (CFM) | 51 cfm total |

* Always consult your local code for sizing requirements in your area.

* If additional exhaust capacity is required, installation of a fantech bath kit in main bath area is recommended.

ASHRAE Standard 62.2 - 2004

Sizing (Example) for minimum airflow normally required.

Ventilation Air Requirements, cfm

| Floor Area (ft ²) | Bedrooms | | | | |
|-------------------------------|----------|-----|-----|-----|-----|
| | 0-1 | 2-3 | 4-5 | 6-7 | >7 |
| <1500 | 30 | 45 | 60 | 75 | 90 |
| 1501-3000 | 45 | 60 | 75 | 90 | 105 |
| 3001-4500 | 60 | 75 | 90 | 105 | 120 |
| 4501-6000 | 75 | 90 | 105 | 120 | 135 |
| 6001-7500 | 90 | 105 | 120 | 135 | 150 |
| >7500 | 105 | 120 | 135 | 150 | 165 |

Ventilation Air requirements, L/s

| Floor Area (m ²) | Bedrooms | | | | |
|------------------------------|----------|-----|-----|-----|----|
| | 0-1 | 2-3 | 4-5 | 6-7 | >7 |
| <139 | 14 | 21 | 28 | 35 | 42 |
| 139.1-279 | 21 | 28 | 35 | 42 | 50 |
| 279.1-418 | 28 | 35 | 42 | 50 | 57 |
| 418.1-557 | 35 | 42 | 50 | 57 | 64 |
| 557.1-697 | 42 | 50 | 57 | 64 | 71 |
| >697 | 50 | 57 | 64 | 71 | 78 |

INSTALLATION

PRACTICAL TIPS

- Install the unit close to the outside wall on which the supply and exhaust hoods will be mounted.
- Have a nearby power supply 120 Volts, 60Hz. (power cord is 3 feet long)
- Mount the unit as level as possible in order to allow proper condensate drainage. (SH704 & VH704 only)
- Have access to a water drain for the condensate of the unit during defrost. (SH704 & VH704 only)
- Have a certain amount of heat around the unit (attic installation is not recommended for SH704 and VH704).
- Installations close to the living space, such as closets, should be designed to minimize noise or vibration transfers.
- Have access for future maintenance. (10" is recommended for removal of core)

ELECTRICAL

3 prong plug-in power card.

LOCATION

The HRV must be located in a heated space where it will be possible to conveniently service the unit. Typically the HRV would be located in the mechanical room or an area close to the outside wall where the weatherhoods will be mounted. If a basement area is not convenient or does not exist, a utility room or laundry, closet, above drop ceiling or attic (SE704) and garage may be used.

Attic installations are not normally recommended due to:

- the complexity of work to install
- freezing conditions in the attic
- difficulty of access for service and cleaning

Connecting the following appliances to the HRV is not recommended, including:

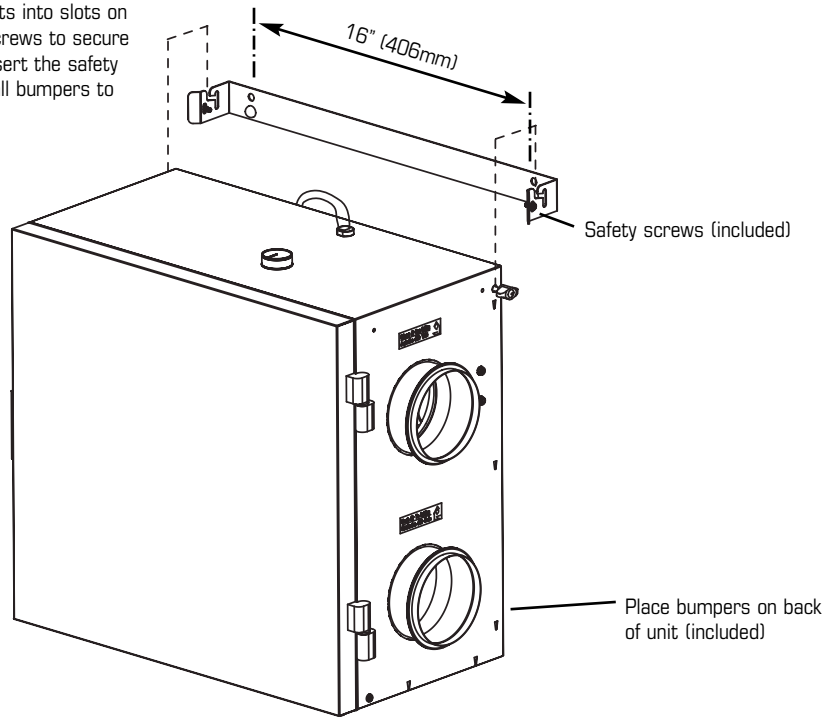
- clothes dryer
- range top
- stovetop fan
- central vacuum system

These appliance may cause lint, dust or grease to collect in the HRV, damaging the unit.

NOTE: Connecting any of these type of appliances to the HRV will invalidate your warranty

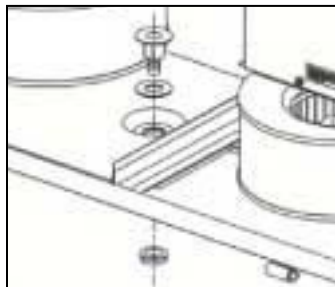
MOUNTING - EASY WALL MOUNT

Attach bracket to wall, lift unit (25 lbs SH704 and SE704 or 26 lbs VH704) & slide nuts into slots on bracket, tighten screws to secure unit to bracket. Insert the safety screws & place wall bumpers to level off the unit.



INSTALLING DRAIN LINE - (SH704 & VH704 ONLY) - Drainline not included in kit

Through normal operation and during its defrost mode, the HRV may produce some condensation. This water should flow into a nearby drain, or be taken away by a condensate pump. The HRV and all condensate lines must be installed in a space where the temperature is maintained above the freezing point. A "P" trap should be made in the drain line. This will prevent odors from being drawn back up into the unit.



1 Install the drain nipple.



2 Install the drain hose, making a "P" trap

INSTALLING DUCTS GOING TO / FROM OUTSIDE

PRACTICAL TIPS

- Decide where your intake and exhaust hoods will be located.

Locating the Intake Weatherhood

- Should be located upstream (if there are prevailing winds) from the exhaust outlet
- At least 6' (2m) away from dryer vents and furnace exhaust (medium or high efficiency furnaces)
- A minimum of at least 6' (2m) from driveways, oil fill pipes, gas meters, or garbage containers
- At least 18" (457mm) above the ground, or above the depth of expected snow accumulation
- At least 3' (1m) from the corner of the building
- Do not locate in a garage, attic or crawl space

Locating the Exhaust Weatherhood

- At least 18" (457mm) above ground or above the depth of expected snow accumulation
- At least 3' (1m) away from the corner of the building
- Not near a gas meter, electric meter or a walkway where fog or ice could create a hazard
- Not into a garage, workshop or other unheated space

When installing the weatherhood, it's outside perimeter must be sealed with exterior caulking.

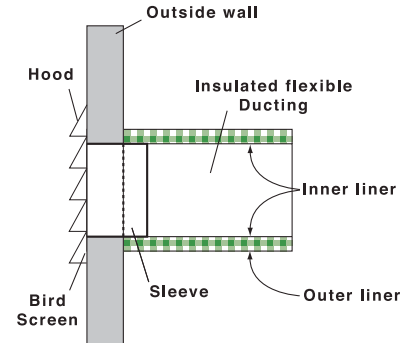
A well designed and installed ducting system will allow the HRV to operate at its maximum efficiency. Always try to keep duct runs as short and straight as possible.

See Installation Diagrams for installation examples.

INSTALLING THE DUCTING TO THE WEATHERHOODS

The inner liner of the flexible insulated duct must be clamped to the sleeve of the weatherhoods (as close to the outside as possible) and to the appropriate port on the HRV. The insulation should remain full and not be compressed. The outer liner, which acts as a vapor barrier must be completely sealed to outer wall and the HRV using tape and or caulking. A good bead of high quality caulking (preferably acoustical sealant) will seal the inner flexible duct to both the HRV port and the weatherhood prior to clamping.

To minimize air flow restriction, the flexible insulated duct that connects the two outside weatherhoods to the HRV should be stretched tightly and be as short as possible. Twisting or folding the duct will severely restrict air flow.



| Model | Description |
|-------|----------------------|
| RC4 | 4" Roof cap |
| UEV4 | 4" Soffit vent |
| HS4W | 4" Louvered shutters |
| | |
| | |



1 Using the collar of the outside hood, outline the intake & exhaust holes to be cut. The holes should be slightly larger than the collar to allow for the thickness of the insulated flexible duct. Cut a hole for both the intake and exhaust hoods.



2 Pull the insulated flexible duct through the opening until it is well extended and straight. Slide the duct's inner vinyl sleeve over the hood collar and secure, pull the insulation over the duct and then the vapor barrier over the sleeve and secure with duct tape.



3 Push the hood into the opening. Attach the hood to the outside wall with mounting screws. Repeat the installation procedure for both the Supply and Exhaust hood.



4 Using a caulking gun, seal around both hoods to prevent any leaks.

INSTALLING DUCTS TO / FROM INSIDE

To maximize airflow in the ductwork system, all ducts should be kept short and have as few bends or elbows as possible. Forty-five degree are preferred to 90° elbows. Use “Y” tees instead of 90° elbows whenever possible.

All duct joints must be fastened with screws or duct sealant and wrapped with a quality tape to prevent leakage. Aluminum foil duct tape is recommended. Galvanized ducting from the HRV/ERV to the living areas in the house is recommended whenever possible, although flexible duct can be used in moderation when necessary.

Warning: The SH704 & VH704 should be installed with a 4” (100mm) duct system that has less than 80 ft (25m) of equivalent duct length on the supply and on the exhaust side. If longer runs are required, increasing the duct diameter or following the instructions below might help. It is the responsibility of the installer to ensure all ductwork is sized and installed as designed to ensure the system will perform as intended. All air movement devices have a performance curve. The amount of air (CFM) that an HRV/ERV will deliver is directly related to the total external static pressure (E.S.P.) of the system. Static pressure is a measure of resistance imposed on the blower by length of duct work/number of fittings used in duct work, duct heater etc.

SUPPLY AIR DUCTING

In homes without a forced air furnace, fresh air should be supplied to all habitable rooms including, bedrooms and living areas. It should be supplied from high wall or ceiling locations. Grilles that diffuse the air comfortably such as Fantech Contour Grilles are recommended. To avoid possible noise transfer through the ductwork system, a short length (approximately 12”, 300 mm) of nonmetallic flexible insulated duct should be connected between the HRV/ERV and the supply/exhaust ductwork system.

If the floor is the only option available, then special care should be taken in locating grilles. Areas such as under baseboard heaters will help to temper the air. Also optional inline duct heaters are available for mounting in the supply duct work to add heat if required. In homes with a forced air furnace, you may want to connect the HRV/ERV to the furnace ductwork (see information below).

PRACTICAL TIPS

- Building Codes and Combustion Appliance Installation Codes do not allow location of return air grilles or any opening such as a “breathing tee” in an enclosed room with spillage susceptible combustion appliances.
- The fresh air inlet from the HRV needs to respect a minimum distance from the furnace return drop to ensure proper air mixing and temperature at the furnace core. See furnace manufacturer for appropriate specifications.

Exhaust Air Ducting

The stale air exhaust system is used to draw air from the points in the house where the worst air quality problems occur. Due to its lower capacity, the SH704, VH704 and SE704 are designed to vent from a single source point only and to the bathroom that is closest to the unit or directly out of the furnace return. Additional source points may be drained from if designed properly or installed on a separate Fantech fan bath kit to ventilate additional areas. Fantech bath kits are listed below and are ideal for both new construction and retro fit.

Fantech bathroom kits for supplemental exhaust:

- REG100 (L/FL) 100cfm per fan
- REG140 190cfm per fan
- DLX110 150cfm per fan
- DLX150 (L/FL) 230cfm per fan
- DLX200 360cfm per fan