

Heat Recovery Ventilator

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Heat recovery ventilator (HRV) or Energy Recovery ventilator (ERVS), are the interior dehumidifier and ventilation devices which also have the exhaust heat recovered via heat exchanger. They are working with fresh air supply & exhaust ducts, supply registers, vent outlet and inlet to form HRV system.

Everybody knows ventilation is an effective method to keep the interior air fresh and crispy, and to reduce the mildew growing. Other than open windows or the exhaust fans in bath or kitchen, HEV is balanced ventilation which maintains a neutral pressure inside the house. These generally create fewer drafts and provide better comfort. At the same time the heat could be recovered 55%-75% from the exhaust, which reduced the energy waste & home bill cost. HRVs have not been emerging very long. Many people are not familiar with this facility and do not really know how to run it. We are going to simply introduce the operation.



The

principle of this system is easy to understand. The interior hot and moisture air was drawn by fan through duct to HRV main device. Simultaneously the outside dry and cool air was directed through inlet duct & another fan to HRV. The 2 drafts went through the different sides of the heat exchange core, which the heat recovery has been finished. The energy was saved & the warm fresh air was delivered to living space. HRV is the core of the system, which is normally installed in the living space. I have ever seen the setup was in garage or attic. Due to the local mild climate although this could cause the reduced efficiency, it is not a big deal especially insulation added. We often see 4 ducts connected to HRV. 2 of them are leading to living space supply registers and air return which could be in hall way or kitchen. The other 2 are exhaust duct to outside and fresh air inlet, straight and short insulated with vapour barrier. There is condensate drain on the bottom of device. The drain has to go to the proper location and a trap has to set up to avoid nasty smell back up to interior. When we open the HRV cover, we can see the heat exchange core and air filter, which should be removed and cleaned or replaced regularly. First this is the health consideration, second to protect fans. Most devices are assembled with heating element to avoid icing or frost accumulated on the core of heat exchanger. The above is our main inspecting items. The home owners should regularly check and maintain regularly as well.

In addition, the outside inlet and outlet should be cleaned every 6 months. The outside inlet cannot be too low and not close to dryer vent, any other exhaust vents.