WHAT IS AN HRV AND WHY WOULD YOU WANT ONE?

An HRV is a great vehicle! No wait, that's a CR-V. So, then what is an HRV?

HRV stands for "Heat Recovery Ventilator." Perhaps a better name would be a FAM (Fresh Air Machine). In short, an HRV provides fresh air for your home. The magic is in how the HRV does this.

An HRV has a supply fan and an exhaust fan. The supply fan blows fresh air from outside through ductwork into the rooms of the house. The exhaust fan draws stale air through ductwork from the rooms where we generate humidity and smells (aka the kitchen and bathrooms) and exhausts it outside. At the heart of the HRV is a heat exchanger core. The fresh air and stale air flow through this core, where they exchange heat, but don't touch. In the winter, this means you need to use less energy warming up the fresh air, and in the summer you use less energy cooling it off. A basic HRV can recover 50-65% of the energy from the exhaust air, while a high-efficiency HRV can recover 80-90%+. HRVs come with built-in filters, so it can filter the fresh air entering the house to capture allergens and other particles. This improves air quality overall and supports respiratory health.

Let's rewind a bit and talk about how homes used to be ventilated. In the really olden days, homes were ventilated with windows, leaky walls and floors, and fireplaces. Making a fire draws an enormous amount of air up the chimney, which pulls in fresh air through the leaky walls and floors. Once we started using furnaces and building homes that didn't leak as much air, homes were ventilated with bathroom and kitchen exhaust fans using the same principle: exhausting stale air would pull fresh air in through gaps and cracks in the house. One problem with this is that the fresh air gets "filtered" through the shell of your home, picking up any dust or mold in its path. Another problem is that homes that leak air also leak energy—up to 30% of a home's heating energy can be due to air leakage. In a modern airtight home, an HRV is a natural choice to ventilate because it can provide both supply and exhaust air, recover heat, and filter the air coming in. Another benefit is that an HRV provides continuous ventilation, not just when you take a shower and turn on the bathroom fan.

Not to confuse the issue, but what is an ERV? An "Energy Recovery Ventilator" does the exact same thing as an HRV, only it can recover moisture as well as heat from the exhaust air leaving the house. In cold, dry climates like Saskatchewan, an ERV is almost always a better choice to make sure the house doesn't get too dry in the winter.

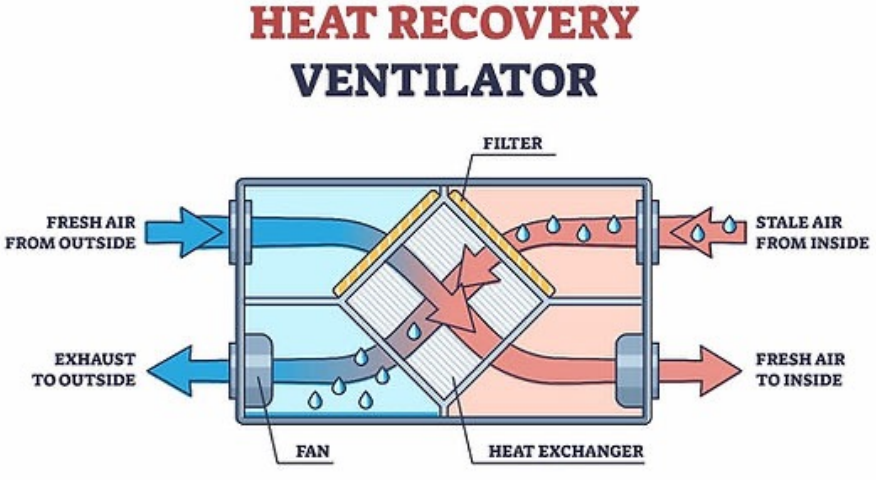

Figure 1.
Source: https://natural-resources.canada.ca/energy-efficiency/spotlight-energy-efficiency/2020/10/06/whats-heatenergy-recovery-ventilator-and-why-do-i-need-one/23072.

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Let's take a minute sort some fact from fiction:

1. **FACT:** Some of the earliest residential HRVs were invented in Saskatchewan

- Mr. Dick VanEe built an early prototype for the Saskatchewan Conservation House project, located in Regina, Saskatchewan.

2. **FICTION:** An ERV won't work in Saskatchewan—it's too cold!

- There are many HRVs and ERVs designed for cold climates, with built-in frost protection. There is even a Canadian standard to test and certify HRVs/ERVs for use in cold climates.

3. **FACT:** An HRV needs regular maintenance.

- Just like your furnace, you should check/clean the filters on your HRV every three months or so. It's a good idea to check the air intakes for any blockages too.

4. **FICTION:** HRVs use too much power.

- The main moving parts of an HRV are two fans, which use much less power than many of your home appliances. The benefits of continuous fresh air and all the heat recovered are well worth it.

There you have it. An HRV is a straightforward device for providing excellent quality ventilation while saving energy. HRVs pair well with airtight homes and have deep roots here in Saskatchewan.

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