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FläktGroup
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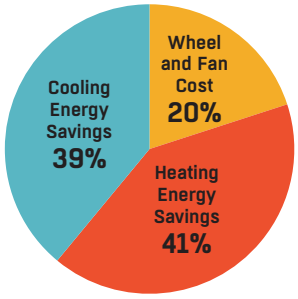
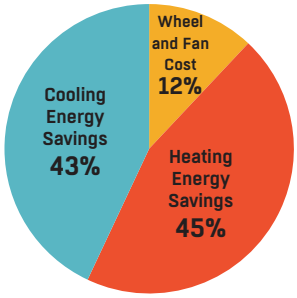
RECOVERY EFFICIENCY RATIO

AHRI Guideline V was developed to calculate the efficiency of energy recovery ventilation. A metric was put in place to report recovered energy divided by the power used to recover that energy. **SEMCO developed a wheel providing end users the industry best RER.**

COMPETITOR
Energy Analysis

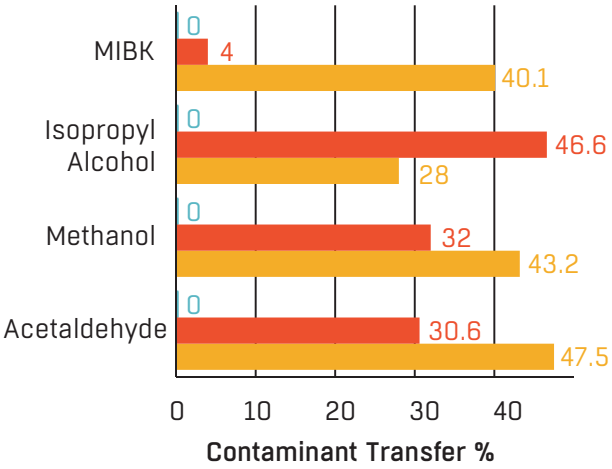




SEMCO
Energy Analysis

CROSS CONTAMINATION

SEMCO pioneered an application of a 3 angstrom desiccant on wheels to improve indoor air quality in buildings by not transferring exhausted VOCs back into the fresh outdoor air.



Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. (www.epa.gov)

- SEMCO 3 Angstrom Wheel
- 4A Molecular Sieve Wheel
- Silica Gel Wheel

Source: Georgia Tech Research Institute Independent Investigation. Bayer, Charlene W and Hendry, Robert. "The Importance of the Desiccant in Total Energy Wheel Cross-contamination."

CONDENSATION CONTROL (Preventing Frost)

It was a concerted effort by SEMCO to understand the real world application of energy wheels. The focus of SEMCO wheel technology is to have nearly equal latent and temperature transfer. Having an enthalpy wheel results in a significant cooling season energy savings, but, equally important, the ability to operate at much lower winter ambient conditions without condensation or frost formation.

CONDENSATION AVOIDANCE CONDITIONS					
Space Relative Humidity	Indoor Air Dry Bulb Temperature				
	68°F (20°C)	70°F (21°C)	72°F (22°C)	75°F (24°C)	80°F (26°C)
20%	-23°F (-31°C)	-22°F (-30°C)	-20°F (-29°C)	-19°F (-28°C)	-17°F (-27°C)
30%	-13°F (-25°C)	-12°F (-24°C)	-11°F (-24°C)	-9°F (-23°C)	-6°F (-21°C)
40%	-6°F (-21°C)	-4°F (-20°C)	-3°F (-19°C)	-1F (-18°C)	2°F (-17°C)
50%	0°F (-18°C)	2°F (-17°C)	3°F (-16°C)	5°F (-15°C)	8°F (-13°C)
60%	5°F (-15°C)	7°F (-14°C)	9°F (-13°C)	10°F (-12°C)	13°F (-11°C)
	Outdoor Air Temperature (50% rh)				

SEMCO's variable Speed Enthalpy Wheel operation prevents condensation before frosting occurs. Temperatures listed are the coldest a wheel will operate at full speed without condensing. (Performance based on exhaust being 90% of outdoor air)