



October 14, 2014

## Did you know the SB and V3 Series are available with Energy Recovery Wheels?

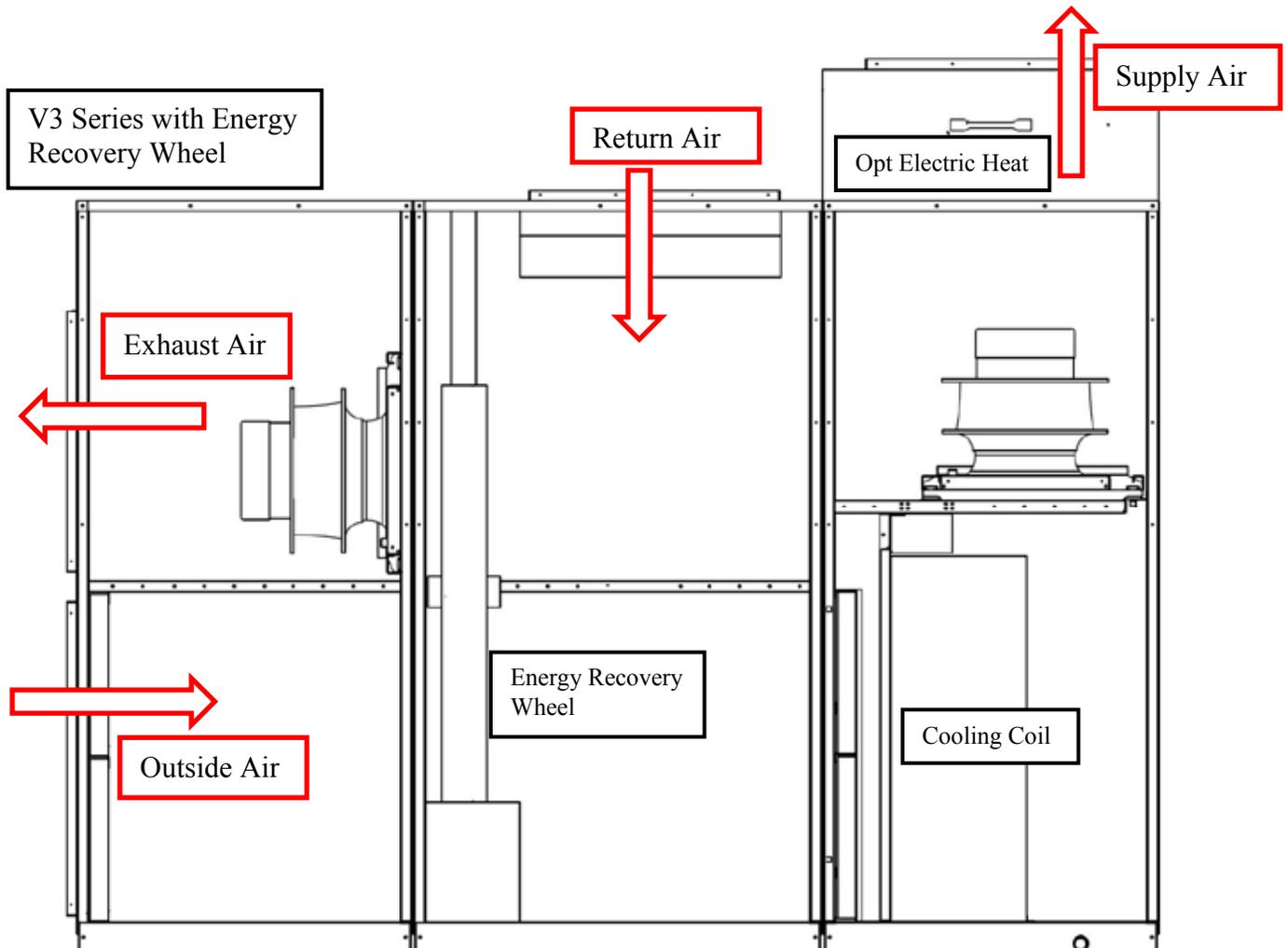


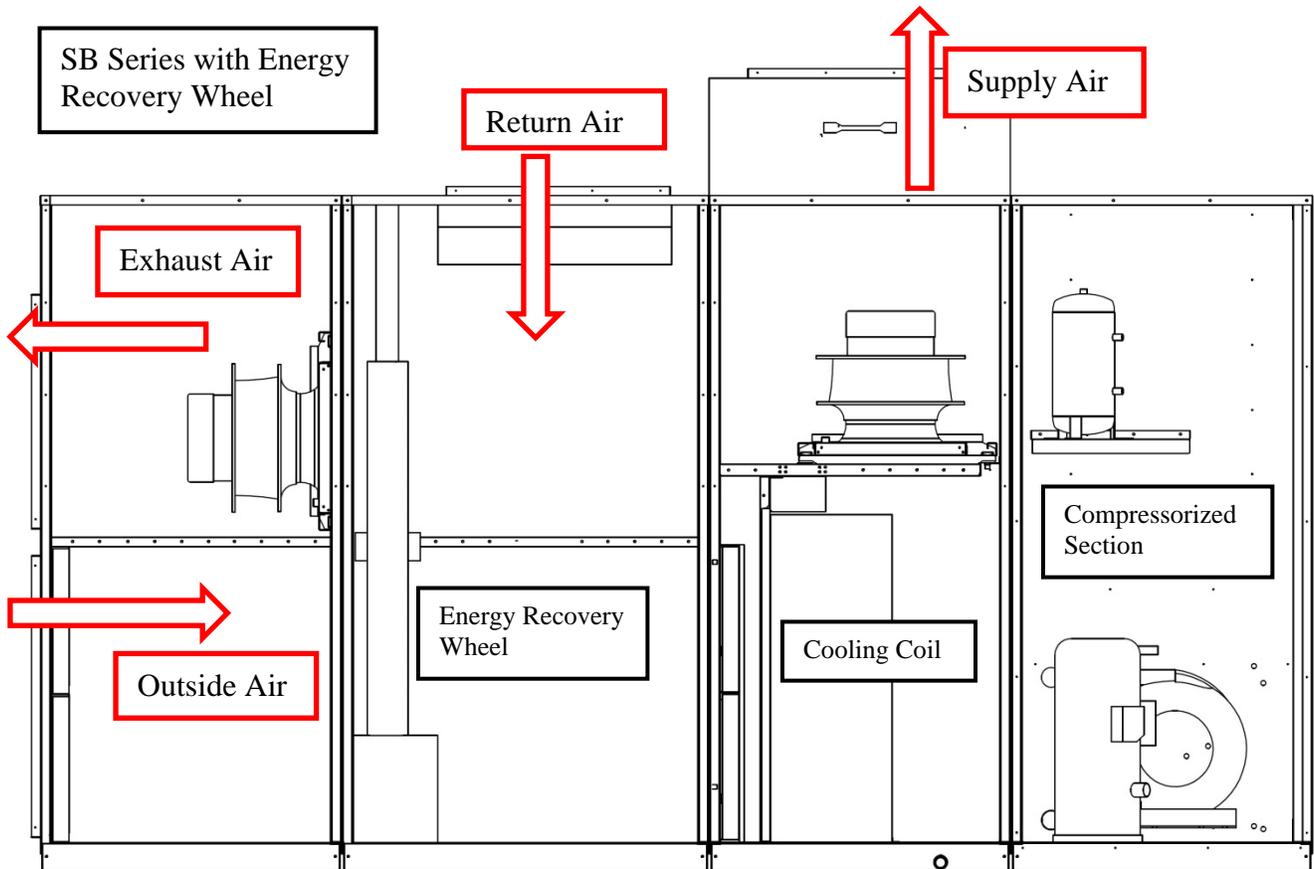
AAON SB Series  
Self-Contained Units  
(3-18 tons)

With yet another example of industry innovation and engineering excellence, AAON provides solutions. The problem? Industry guidelines and standards, such as the IECC and ASHRAE standards, are increasing demands for ventilation air and also requiring energy recovery for many applications. The solution from AAON? Energy Recovery Wheels are now available with SB Series and V3 Series units. The example drawings below show the energy recovery wheel configurations of the AAON vertical air handling unit and AAON self-contained unit.



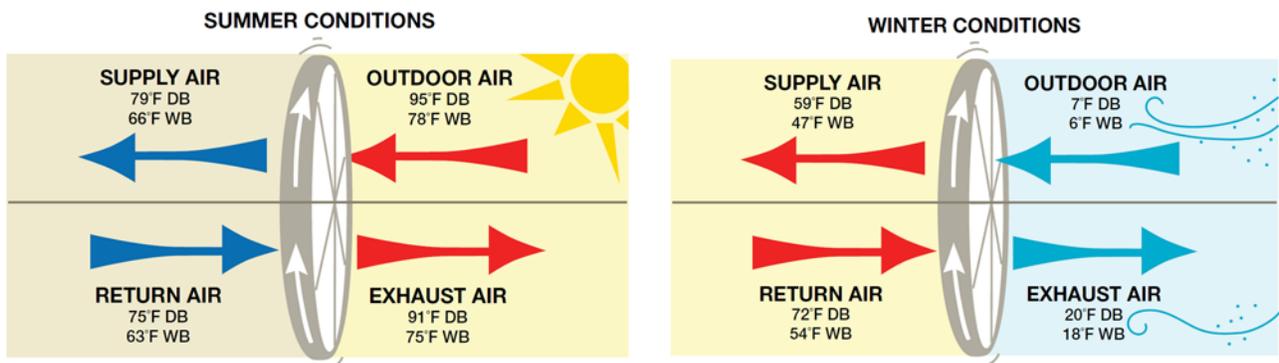
AAON V3 Series  
Air Handling Units  
(450-10,000 cfm)





### Air-to-Air Energy Recovery

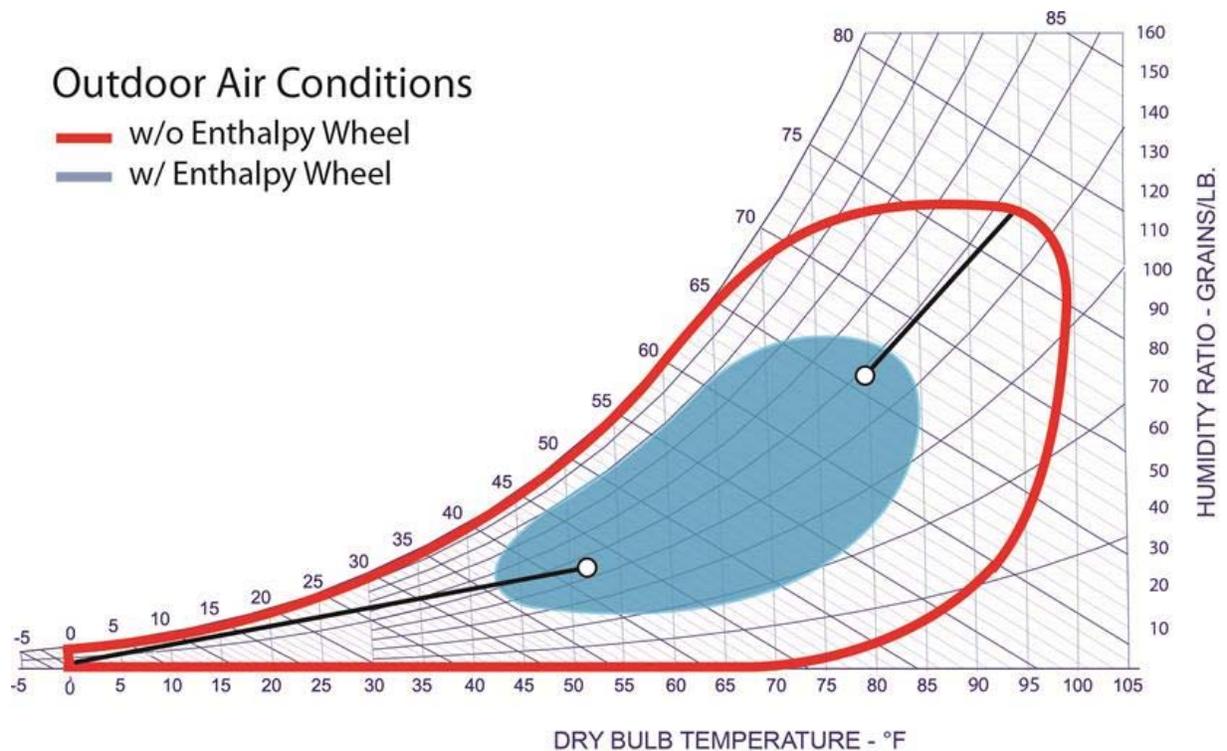
Air-to-air energy recovery is the process of recovering energy from an exhaust airstream to a ventilation airstream. This process is valuable in improving indoor air quality (IAQ) while maintaining low energy costs and reducing overall energy consumption. Energy can be recovered either in its sensible form (temperature only) or a combination of both latent and sensible (temperature and moisture).



Example Energy Recovery Wheel Operating Conditions

## Why does Energy Recovery matter?

AAON systems with energy recovery benefit from shifting the ventilation air load to the energy recovery device rather than the cooling coil or heater. An energy recovery device can handle a load more efficiently than a refrigeration system or heater, improving the overall system efficiency. It can also allow the overall system to be downsized since the energy recovery device reduces the design ventilation load on the unit. Energy recovery significantly reduces the operational load of the system, as shown as the difference in the red area and the blue area below. This difference contributes to the energy savings, both in unit capacity and operational efficiency, and allows for improved temperature and humidity control.



Psychrometric Chart Showing Benefits of Energy Recovery

Not only are there cost saving benefits with energy recovery, building codes are becoming more stringent and in some cases requiring energy recovery when using ventilation air. **IECC 2012, ASHRAE Standard 189.1-2011, and ASHRAE 62.1-2013 among others require energy recovery.** States and municipalities are also adopting these standards into their local building codes with at least two states already adopting **ASHRAE 189.1** as their “stretch code” for new buildings. As such, the need for HVAC systems with energy recovery, like the AAON SB and V3 Series, has become more prominent.

### **Benefits of the V3 Series Vertical Air Handling Units**

- Double wall rigid polyurethane foam injected panel construction increases thermal resistance, reduces cabinet air leakage, attenuates radiated sound, and reinforces structural integrity
- Chilled water or R-410A DX cooling
- Heating options include steam, hot water, electric, or gas. Dual fuel heating with heat pump configuration is also available
- Industry leading serviceability and service access
- Modulating hot gas reheat is available to provide precise humidity control and premium occupant comfort without the temperature swings common with on/off reheat systems
- Constant Volume, VAV, Single Zone VAV, and Makeup Air applications with up to 100% outside air



### **Benefits of the SB Series Water-Source and Geothermal Heat Pump Self-Contained Units**

- Double wall rigid polyurethane foam injected panel construction increases thermal resistance, reduces cabinet air leakage, attenuates radiated sound, and reinforces structural integrity
- 10-100% variable capacity compressors precisely match the cooling or heat pump heating load of the conditioned space and increase the part load efficiency of the system
- Direct drive electronically commutated motor (ECM) with a backward curved plenum supply fan provides precise air flow control and reduced power consumption without the maintenance of belt drive fans
- Standard perforated liner in the compressor compartment attenuates radiated compressor sound
- Constant Volume, VAV, Single Zone VAV, and Makeup Air applications with up to 100% outside air.



## Energy Recovery with AAON

AAON offers multiple systems with optional factory installed energy recovery to meet your application's needs. **Contact us today to specify one of these energy saving AAON solutions!**



AAON RN Series Energy Recovery  
Rooftop Units (6-140 ton)



AAON RQ Series Energy Recovery  
Rooftop Units (2-6 tons)



AAON M3 Series Energy Recovery  
Air Handling Units (6,400 to 52,000 cfm)



AAON M2 Series Energy Recovery  
Air Handling Units (1,200 to 21,000 cfm) &  
Self-Contained Units (3-70 tons)



AAON SB Series Energy Recovery  
Self-Contained Units (3-18 tons)



V3 Series Energy Recovery  
Air Handling Units (450-10,000 cfm)



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