

ENERGY RECOVERY VENTILATORS

# Reliable efficiency



600–12,000 CFM  
SUPPLEMENTAL HEATING & COOLING

 **YORK**<sup>®</sup>  
BY JOHNSON CONTROLS

Regardless of building type or rating system, today's building must be as energy efficient as possible. The design of the HVAC system is critical to the success of the building's energy performance. Proper ventilation for occupant health and productivity must also be addressed. The quality of the indoor environment cannot be sacrificed for the sake of energy efficiency.

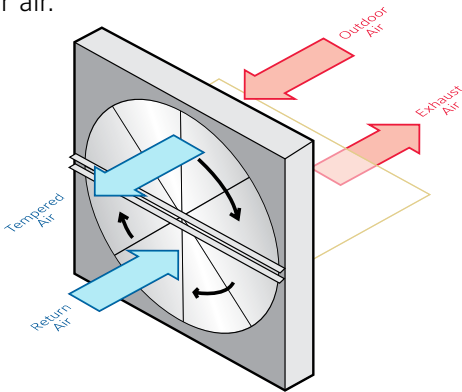
A YORK® energy recovery ventilator (ERV) is your solution. Increased ventilation rates in combination with energy recovery products not only improve the indoor air quality but also reduce the cost associated with conditioning these larger amounts of outdoor air.

## Benefits of Energy Recovery

### Energy savings provide exceptional payback

Investing in energy recovery wheels in HVAC systems can provide quick payback in two areas:

- Initial cost savings can be achieved on main air handling units by reducing cooling load. Application software is available to calculate the load reductions and provide the energy and dollar savings in most areas of the United States and Canada.
- Annual savings are achieved by preconditioning the outdoor air.



### LEED-EB and LEED-NC Credits

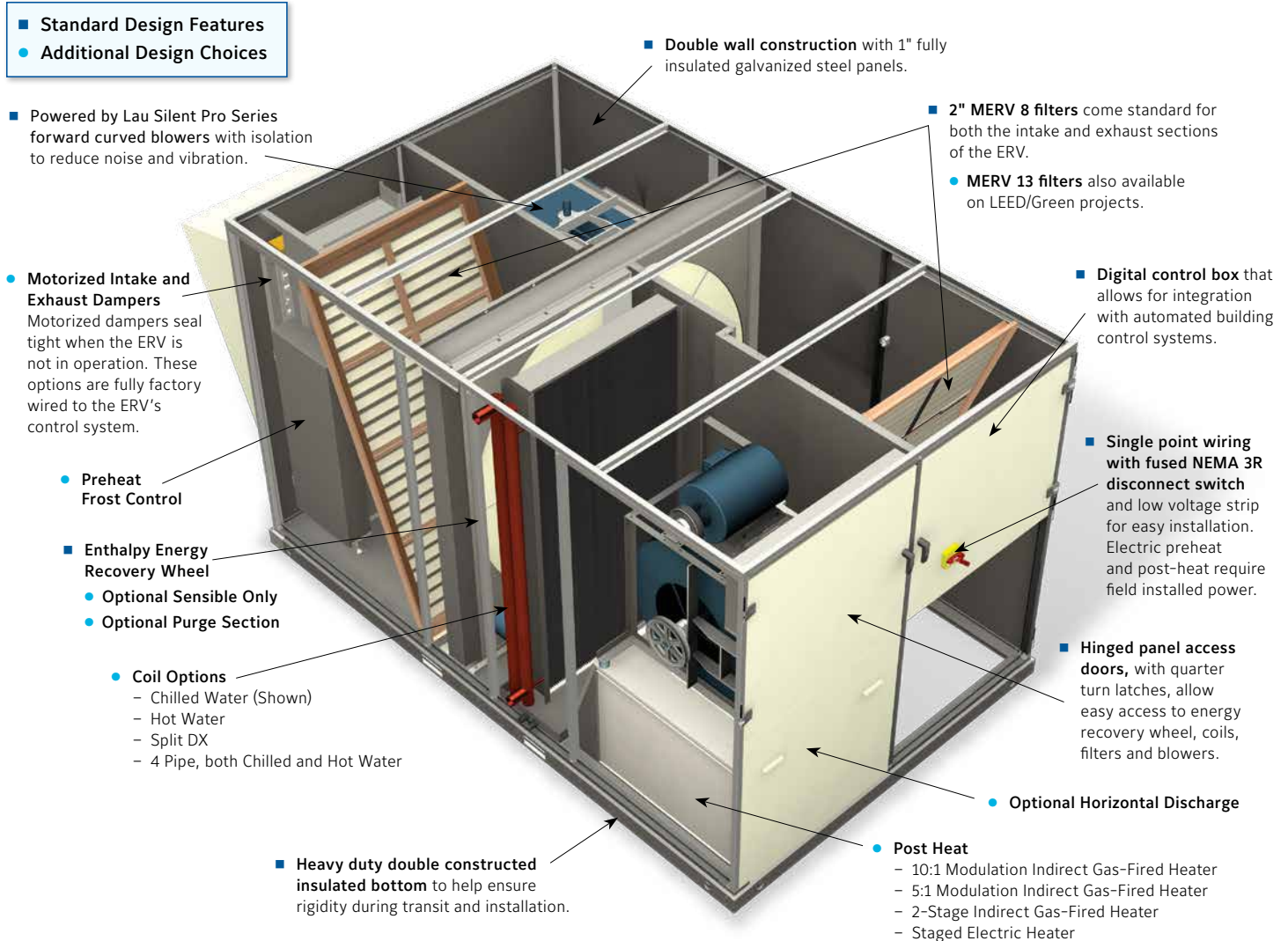
For Green Building designs, the ERVs can assist the designer in acquiring credits for Energy and Atmosphere (EA) by optimizing energy performance and for Indoor Environmental Quality (IEQ) by providing the ability to increase ventilation leading to thermal comfort.

### ASHRAE Compliance and IAQ

ERVs are an excellent choice to comply with outdoor ventilation requirements of ASHRAE 62. Introducing fresh, outdoor air to a building is a key component in sustaining excellent IAQ and occupant productivity. ERVs meet the minimum requirements for energy savings per ASHRAE 90.1 and will be a preferred method for saving energy in ASHRAE/USGBC/IESNA's new Standard 189.1 – Standard for the Design of High Performance, Green Buildings Except Low-Rise Residential Buildings.

## Standard Design Features

- **Double wall construction** with 1" fully insulated galvanized steel panels.
- **Heavy duty double constructed insulated bottom** to help ensure rigidity during transit and installation.
- **Powered by Lau Silent Pro Series forward curved blowers** with isolation to reduce noise and vibration.
- **Single point wiring with fused NEMA 3R disconnect switch and low voltage strip** for easy installation. Electric preheat and post-heat require field installed power.
- **Hinged panel access doors**, with quarter turn latches, allow easy access to energy recovery wheel, coils, filters, and blowers.
- **2" MERV 8 filters** come standard for both the intake and exhaust sections of the ERV.
- **Digital control box** that allows for integration with automated building control systems.
- **ERVs incorporate a new electronic technology** for rotation sensing that sends a signal when the energy recovery wheel stops turning.



## Additional Design Choices

### ● Frost Control

#### **Blower Cycle Frost Control (Low Ambient Kit)**

This option cycles the intake blower on and off based on an exhaust air temperature set point. The lower volume of incoming air allows for the recovery wheel to defrost.

#### **Variable Frequency Drive (VFD) Frost Prevention**

A VFD is used to slow down the energy recovery wheel RPM when the exhaust temperature decreases to a set point. This reduces moisture on the energy recovery wheel being exposed to outside air and therefore controls the frost. VFD frost control is available for EVT-62, EVT-88, and EVT-120.

#### **Preheat Frost Control**

This ensures continuous operation in cold environments by tempering the incoming air with up to 32.4 kilowatts as frost inducing temperatures are reached. ERVs incorporate closed element preheat coils with a high

temperature baked on aluminum or Incoloy coating to allow for extended life in a 100% fresh air stream.

### ● EFAMS Electronic Fan Inlet Air Measuring Station

EFAMS is a highly accurate electronic thermal dispersion air measuring device that averages multiple velocity and temperature points at the fan inlet bell. The surface mount design ensures the lowest pressure drop in the industry. The control transmitter comes standard with an LCD display to indicate the airflow and temperature. The transmitter communicates temperature and velocity with any building automation system through analog outputs.

### ● EME Intake Louvers

EME louvers incorporate the latest technology in wind driven rain louvers that have proven to be 100% effective in preventing water penetration during 50 MPH winds and 8" per hour rainfall rates.



## Additional Design Choices *(continued)*

- **VFD Blower Control**

VFDs control the speed of ERV's blowers. VFDs can be integrated with your building's automation system to maximize efficiencies and deliver precisely the amount of air needed.

- **Free Cooling Mode (Stop, Start and Jog)**

Optional economizer controls allow free cooling when the outside air reaches a designated set point.

- **Electronic Temperature Control System**

This works in conjunction with optional heating and cooling coils to temper air entering the occupied space back to ambient. Tempering the air entering the occupied space allows the ERV to bring in 100% outside air without putting an additional load on the rooftop unit. The Electronic Temperature Control System can be integrated with a building automation system.

- **Energy Recovery Cassette (ERC) – Sensible Only**

This incorporates our standard ERC (wheel) without the desiccant coating. Typical applications for sensible only wheels include areas with high internal humidity such as pools, locker rooms, and saunas.

- **MERV 13 filters also available on LEED/Green projects**

- **Unit available with either down discharge or horizontal discharge**

- **Smoke Detectors**

Duct mounted smoke detectors can be installed in both return and/or supply air streams. Signals from these smoke detectors can be set to start up or shut down the ERV unit if smoke is detected.

- **CO<sub>2</sub> Sensor**

A CO<sub>2</sub> sensor option helps control indoor air quality based on CO<sub>2</sub> levels in the occupied space. High CO<sub>2</sub> levels can either trigger a response from the ERV unit by turning on the blowers to bring in fresh air or by modulating the blowers if a VFD option has also been selected.

- **Dirty Filter Sensor**

The dirty filter sensor sends a signal to field wired alarm when filters need to be cleaned or changed.

- **Roof Curbs**

Optional 14", 18", or 24" high roof curbs are available.

- **Remote Panels**

The ERV's control system is capable of outputting signals to a variety of optional remote display panels.

- **Replacement Wheel Segments**

Pie-shaped wheel segments are available for replacement so the entire wheel does not have to be replaced if a segment gets damaged.

- **Custom Paint**

Send us your color requirements for an optional custom paint match.

- **GFCI Service Outlet**

Optional field wired service outlet provides power for service equipment.

## ERV Heating & Cooling Choices

- **Indirect Gas-Fired Post Heat**

10:1 Modulation, 5:1 Modulation, and 2-Stage Indirect Gas Heat with up to 500 MBTUH to provide supplemental heat for supply air exiting the ERV unit.

- **Electric Post Heat**

Staged electric heat is available with up to 120 kilowatts to provide supplemental heat for supply air exiting the ERV unit.

- **Chilled Water**

Chilled water coils work in conjunction with chillers to cool the supply air exiting the ERV unit.

- **Hot Water**

Hot water coil work in conjunction with hot water to heat the supply air exiting the ERV unit.

- **4 Pipe Water Coil**

Combination of chilled water coil and hot water coil each with their own independent connections.

- **DX Coils**

DX coils work with split system condensing unit using R410a refrigerant to cool the supply air exiting the ERV unit. All DX coils will have rifled tubing to increase efficiency.