

# Energy Recovery Ventilator Model APEX

- Heating and Cooling Options
- 10,000 to 20,000 cfm
- Up to 2.5 in. wg external static pressure



## Model APEX

### High Airflow Capacity Energy Recovery Ventilator with Optional Cooling & Heating

The APEX combines high airflow capacities with cost saving energy recovery ventilation. It provides centralized outdoor air distribution and reduces the need for multiple unit installations. With supplemental cooling and heating options, the APEX can process 100% outdoor air to the desired supply condition.

You get a product that **SAVES ENERGY**:

- Fresh outdoor air is pre-conditioned by the total enthalpy wheel, which recovers a majority of the energy from the exhaust air.
  - Saves 3-4 tons of cooling per 1,000 cfm
  - Saves 50-60 MBH of heating per 1,000 cfm

You Get a Product that is **FLEXIBLE**:

- Easy to install and operate
- Airflow capacities range from 10,000 to 20,000 cfm
- External static pressures up to 2.5 in. wg
- Tempering sections may be added to further process outdoor air to the desired condition
- Many accessories are available

### Total Energy Wheel

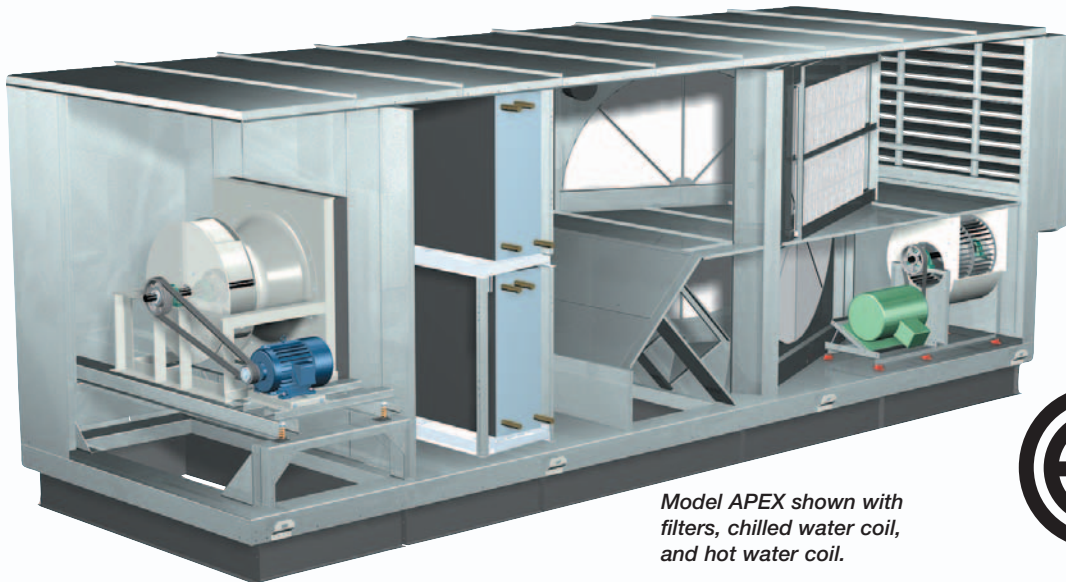
- ✓ **Certified to ARI Standard 1060**
- ✓ **High Energy Transfer Efficiency**
- ✓ **Permanently Bonded Silica Gel Desiccant**
- ✓ **Removable Wheel Segments**
- ✓ **Proven Reliability**



Energy recovery wheels certified by the ARI Air-to-Air Energy Recovery Ventilation Equipment Certification Program in accordance with ARI Standard 1060. Actual performance in packaged equipment may vary. Certified Ratings are available in the Certified Product Directory at <http://www.ari.org/directories/erv>

### Optional Tempering Section

The APEX provides supplemental cooling and/or heating of the outdoor air after pre-conditioning by the energy wheel. External and internal coil piping connections are available.



Model APEX shown with filters, chilled water coil, and hot water coil.



### Standard Construction

With every APEX, you automatically receive:

- ✓ **Blowers & Motor Assemblies** mounted on bases with vibration isolators for smooth, quiet operation.
- ✓ **A Control Box** furnished with motor starters for the supply blower, exhaust blowers, and energy wheel motors.
- ✓ **Single Point Wiring** with a disconnect switch and low voltage terminal strip.
- ✓ **2-Inch, Double Wall Housing** which provides a galvanized steel-lined interior to prevent exposure of the insulation to the airstream.
- ✓ **Removable, Hinged Access Doors** to blowers, filters, energy wheel, and tempering section to simplify inspection and routine service.
- ✓ **Supply & Exhaust Air Filters** of standard size 2-inch, pleated, medium efficiency.

## Weather Hoods

A louvered intake hood with 2-inch aluminum mesh filters, and an exhaust hood with an integral backdraft damper are available.



## Dampers - Internally Mounted

A variety of motorized control dampers are available. Intake and exhaust dampers are internally mounted at the outdoor and exhaust air inlets. Dampers are factory wired to a single point power disconnect.



## Frost Control

In cold climates, the recovery wheel may develop frost, which will decrease airflow. Three factory mounted options are available to address frosting:

- Timed Exhaust Frost Control**  
 The timed exhaust frost control turns the supply blower off and on intermittently. Control is triggered by an outdoor air temperature set point or in conjunction with an increased pressure drop across the energy wheel.
- Modulating Wheel Frost Control**  
 The modulating wheel frost control enables continuous unit operation. A variable frequency drive (VFD) reduces wheel speed when the outdoor air temperature falls below the frost threshold set point *and* upon an increase in the differential pressure across the energy wheel. The temperature and pressure differential set points are set at the factory, but are field-adjustable. The VFD will be fully programmed and wired at the factory.
- Preheat Frost Control**  
 The preheat frost control enables continuous unit operation. An electric heater warms the outdoor air above the frost threshold before it enters the energy recovery wheel. Control is triggered by the outdoor air temperature set point or in conjunction with increased pressure drop across the energy wheel.

## Rotation Sensor

The rotation sensor senses when a wheel rotation failure occurs and sends a signal to an indicator light. The light is available on a remote control panel from the factory.

## Dirty Filter Gauge

The dirty filter gauge senses when filters become dirty and sends a signal to an indicator light. The light is available on a remote control panel from the factory.



## Temperature Control Package

The temperature control package is specifically designed and



programmed to optimize the performance of an APEX unit with supplemental cooling and heating. This option ensures that the outdoor air is conditioned to the desired discharge temperature and relative humidity. The controller and accompanying sensors are factory-mounted, wired, and programmed. Default settings are pre-programmed, but are easily field-adjustable.

## Economizer Control (Free Cooling)

When cool outdoor air is available, the energy wheel may be controlled to provide free cooling. Economizer operation can be initiated by the unit sensors alone or in conjunction with a call for cooling (field wired). Two factory installed options are available.

- Wheel Off:** De-energizes the wheel when the outdoor temperature is below the field adjustable set point (enthalpy sensor also available). An automatic economizer override is included to engage the wheel for winter heating operation.
- Wheel Modulation:** Modulates the energy recovery wheel to maintain a 55°F discharge temperature during economizer operation.

**Note:** Control centers in Greenheck energy recovery ventilators enable the control of the energy wheel and fans via 24-volt control signals (by others). Controls by others may be preferred when air handling units are equipped with an economizer section.

## Variable Air Volume

The APEX unit utilizes belt driven blowers that are available with variable frequency drives to meet specific occupancy requirements.

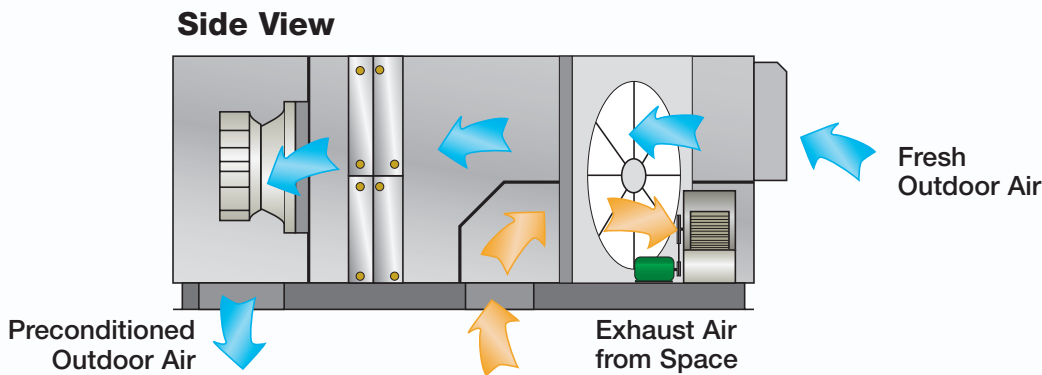
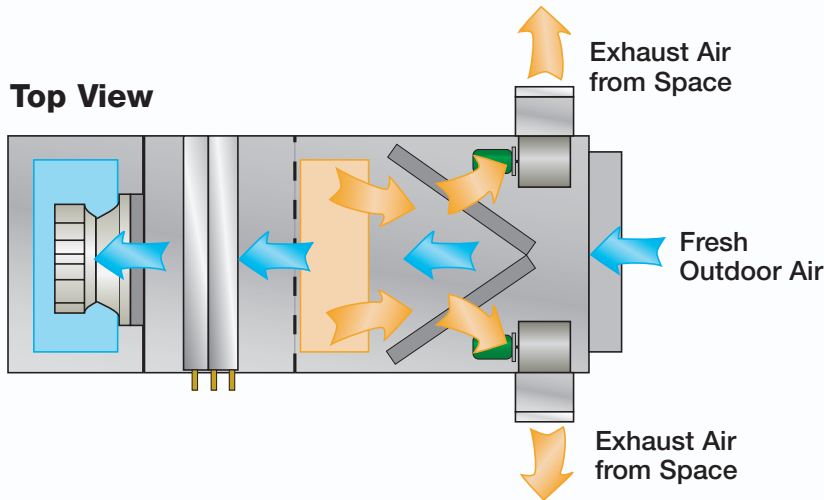


## Additional accessories:

- GFCI Service Outlet (wiring by others)
- Service Lights
- Sensible Wheel Only
- Remote Panels
- Roof Curbs
- Painted Exteriors



The APEX preconditions outdoor air for summer and winter operation. Optional cooling and heating coils are available to expand the tempering capabilities of the energy recovery wheel. Refer to the diagrams below for the standard configuration of the APEX. Consult your Greenheck representative for additional configurations.



## Our Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. The energy recovery wheel is warranted to be free from defects in material and workmanship for a period of five years from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at our option when returned to our factory, transportation prepaid. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station. Greenheck will not be responsible for any removal or installation costs.

*As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.*

**Greenheck P.O. Box 410 • Schofield, WI 54476-0410 • Phone (715) 359-6171 • [greenheck.com](http://greenheck.com)**