

ERCH Specifications

GENERAL

Energy Recovery Ventilator shall be as manufactured by "Greenheck" or approved equal provided all specifications are met. Greenheck Model ERCH is used as the basis of design. Units shall be listed per ANSI/UL 1995, Heating and Cooling Equipment. Energy transfer ratings of the energy recovery wheel shall be ARI Certified. Ventilators shall bear the AMCA Certified Rating Seals for Air Performance. Performance shall be as scheduled on plans. Exhaust discharge and outside air intake shall not be located on the same side on roof top units.

UNIT CASING AND FRAMES

Unit shall be of internal frame type construction of galvanized steel. Frame and panels shall be G90 galvanized steel. All panels exposed to the weather shall be a minimum of 18 gauge galvanized steel. Unit shall be internally lined with galvanized sheet metal creating a double wall. Where top panels are joined there shall be an overlapping, standing seam to insure positive weather protection. All metal-to-metal seams shall be factory sealed, requiring no caulking at job site. Permatecor exterior finish is available for outdoor units.

Unit base to be designed for curb mounting. Unit base shall overhang the curb for a positive seal against water run-off.

WEATHERHOODS

Weatherhoods shall be the same finish as the unit. Outdoor air weatherhood shall incorporate a louvered design and moisture eliminator. Weatherhoods shall be tested in accordance with AMCA Standard 500-L and achieve an 'A' water penetration classification rating up to 8 in/hr rainfall at 50 mph.

INSULATION

Unit casing to be insulated with 1 inch fiberglass. Insulation shall meet requirements of NFPA 90A and tested to meet UL 181 erosion requirements. Insulation to be enclosed in double wall construction.

ENERGY RECOVERY WHEEL

Wheel shall be of the enthalpy type for both sensible and latent heat recovery and be designed to insure laminar flow. Energy transfer ratings must be ARI Certified to Standard 1060 and bear the ARI certification symbol for ARI Air-to-Air Energy Recovery Ventilation Equipment Certification Program based on ARI 1060. Ratings "in accordance with 1060" without certification are not acceptable. Desiccant shall be silica gel for maximum latent energy transfer. Wheel shall be constructed of lightweight polymer media to minimize shaft and bearing loads. Polymer media shall be mounted in a stainless steel rotor for corrosion resistance.

Wheel design shall consist of removable segments for ease of service and/or cleaning. Silica gel desiccant shall be permanently bonded to wheel media to retain latent heat capability after cleaning. Wheels with sprayed on desiccant coatings are not acceptable. Wheels with desiccant applied after wheel formation are not acceptable. Energy recovery device shall transfer moisture entirely in the vapor phase.

Energy recovery drive belt material shall be high strength urethane and shall be factory installed in a pre-stretched state, eliminating the need for field belt tension adjustment. Link style belts are not acceptable.

ACCESS DOORS

All components shall be easily accessible through removable doors for exhaust, supply, filter, and damper compartments. Energy recovery wheels (smaller than 54 inches) shall be mounted in a slide-out track for ease of inspection, removal, and cleaning.

ROOF CURBS

Roof curb to be supplied by unit manufacturer for field assembly. Curb shall consist of die formed galvanized steel sections. Curb shall be full perimeter type with gasketing provided for field installation between curb and unit base.

FAN SECTIONS

Centrifugal fans to be double width, double inlet, forward curved type. All blower wheels shall be statically and dynamically balanced. Ground and polished steel fan shafts shall be mounted in permanently lubricated, sealed ball bearing pillow blocks. Bearings shall be selected for a minimum (L10) life in excess of 100,000 hours at maximum cataloged operating speeds. Separate motors for exhaust and supply blowers shall be provided. Adjustable sheaves on belt-driven fans with motors less than 10 hp shall allow independent balancing of exhaust and supply airflows. Fan and motor assemblies are mounted to unit base with neoprene isolators as standard. Fans shall be located in draw-through position in reference to the energy recovery wheel.

MOTORS AND DRIVES

Motors shall be energy efficient, complying with EPACT standards, for single speed ODP and TE enclosures. Motors shall be permanently lubricated, heavy-duty type, matched to the fan load and furnished at the specified voltage, phase, and enclosure. Drives shall be sized for a minimum of 150% of driven horsepower. Pulleys shall be of the fully machined cast type, keyed and securely attached to the fan wheel and motor shafts; 10 horsepower and less shall be supplied with an adjustable drive pulley. Energy wheel motors shall have integral overload protection.

FILTERS

Supply and exhaust air filters shall be 2-inch thick pleated fiberglass, 30% efficient and tested to meet UL Class 2. Filter racks shall be die-formed galvanized steel.

ELECTRICAL

All internal electrical components shall be factory wired for single point power connection. Units with electric reheat will be wired with independent power supply. All electrical components shall be UL Listed, Approved, or Classified where applicable and wired in compliance with the National Electrical Code.

Weatherproof, integral door interlocking disconnect switch, motor starters, control circuit fusing, control transformer for 24 VAC circuit, and terminal strip shall be supplied as standard components in the control center. Motor starters consist of a contactor and Class 20 electronic adjustable overload protection and shall be provided for all motors in the unit.

COOLING COIL

Direct expansion (DX) and chilled water coils shall be factory tested and rated in accordance with ARI 410. Coils shall have copper tubes with permanently expanded aluminum fins, 12 fpi or less. DX coils shall be equipped with distributors to receive expansion valves at the liquid connections.

INDIRECT GAS

Indirect fired gas furnace shall be 80% efficient, ETL Listed for Indoor and Outdoor installation to ANSI Standard Z83.8 - 2002, CGA approved per 2.6 - 2002 and have a blow through fan design. Furnace shall be capable of operation with natural gas or LP gas and have a power venting system. The burner and heat exchanger shall be constructed of aluminized steel. Standard furnace features shall include main gas pressure regulator, main gas valve, electronic staged or electronic modulating controls, direct spark ignition system, high limit and a 24-volt control transformer.

HOT WATER COIL

Hot water coil shall be factory tested and rated in accordance with ARI 410. Coils shall have copper tubes with permanently expanded aluminum fins, 12 fpi or less.

ELECTRIC HEAT

Electric heat shall be UL listed and circuit fused per NEC over 48 amps. Heater shall be SCR control, factory wired and installed. Control will be 24 volt with class 2 transformer. Standard air flow switch to shut down heater if air ceases to flow across heater.

WARRANTY

The energy recovery ventilator shall be warranted to be free from defects in material and workmanship for a period of one year from the purchase date. The energy recovery wheel shall be warranted to be free from defects in material and workmanship for a period of five years from the purchase date. Motors shall be warranted by the motor manufacturer for a period of one year from the purchase date.