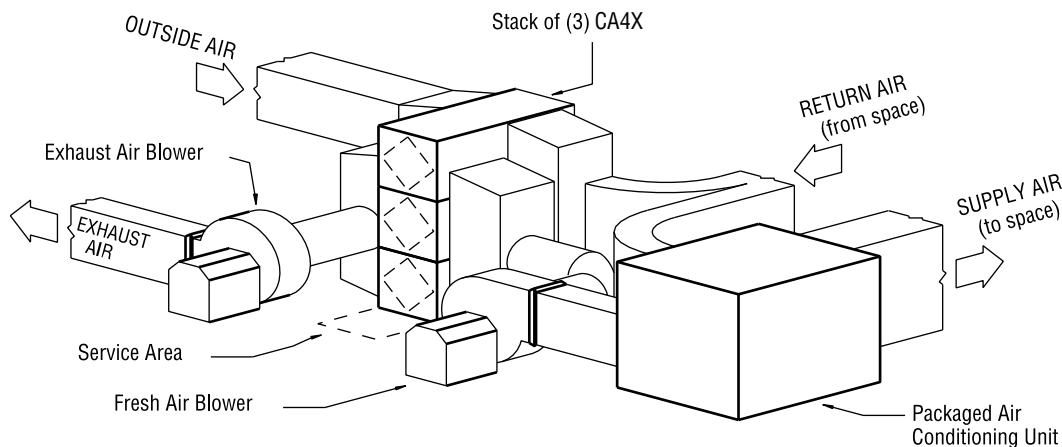


- Cost effective energy recovery for virtually any air handling system.
- Field assembled into air handling systems or integrated in custom packaged air handlers.
- Unlimited airflow capacity.
- Flexible installation and easy servicing.
- AHRI certified performance data for efficiency and cross leakage.
- UL tested flammability and smoke generation that meets NFPA 90A and 90B test standards for commercial applications.
- Ten year core warranty.

## RenewAire means *Trouble-Free* ERV.

### Installation Example

Central Air Handler using CA4X and exhaust and make-up air blowers.  
 (CA-Series provide side service access and a "side-by-side" airflow arrangement.)



Similar designs can use PA-Series arrays.  
 (PA-Series provide top service access and an "over-under" airflow arrangement.)

# CA & PA Series Applied Energy Recovery Ventilators: CA2X, CA3X, CA4X, PA6X, PA9X, PA8X & PA12X

## Part I - General

### A. Product Specification

1. Energy Recovery Ventilator (ERV) shall be a packaged unit as manufactured by RenewAire and shall transfer both heat and humidity using static plate core technology.

### B. Quality Assurance

1. The energy recovery cores used in these products shall be third party Certified by AHRI under its Standard 1060 for Energy Recovery Ventilators. AHRI published certifications shall confirm manufacturer's published performance for airflow, static pressure, temperature and total effectiveness, purge air (OACF) and exhaust air leakage (EATR). Products that are not currently AHRI Certified will not be accepted.

2. The energy recovery core shall be a UL Listed Component complying to UL Standard 723. Manufacturer shall be able to provide evidence of independent testing of the core by Underwriters Laboratory (UL), verifying a maximum flame spread index (FSI) of 25 and a maximum smoke developed index (SDI) of 50 thereby meeting NFPA 90A and NFPA 90B requirements for materials in a compartment handling air intended for circulation through a duct system.

3. The ERV core shall be warranted to be free of manufacturing defects and to retain its functional characteristics, under circumstances of normal use, for a period of ten years from the date of purchase. The balance-of-unit shall be warranted to be free of manufacturing defects and to retain its functional characteristics, under circumstances of normal use, for a period of two years from the date of purchase.

## Part II - Performance

### A. Energy Transfer

The ERV shall be capable of transferring both sensible and latent energy between airstreams. Latent energy transfer shall be accomplished by direct water vapor transfer from one airstream to the other, without exposing transfer media in succeeding cycles directly to the exhaust air and then to the fresh air.

### B. Passive Frost Control

The ERV core shall perform without condensing or frosting under normal operating conditions (defined as outside temperatures above -10°F and inside relative humidity below 40%). Occasional more extreme conditions shall not affect the usual function, performance or durability of the core. No condensate drains will be allowed.

### C. Continuous Ventilation

Unit shall have the capacity to operate continuously without the need for bypass, recirculation, pre-heaters or defrost cycles under normal operating conditions.

### D. Positive Airstream Separation

Water vapor transfer shall be through molecular transport by hydroscopic resin and shall not be accomplished by "porous plate" mechanisms. Exhaust and fresh airstreams shall travel at all times in separate passages, and airstreams shall not mix.

### E. Laminar Flow

Airflow through the ERV core shall be laminar over the products entire operating airflow range, avoiding deposition of particulates on the interior of the energy exchange plate material.

## Part III - Product

### A. Construction

1. The energy recovery component shall be of fixed-plate cross-flow construction, with no moving parts.

2. No condensate drain pans or drains shall be allowed and unit shall be capable of operating in both winter and summer conditions without generating condensate.

3. The unit case shall be constructed of G90 galvanized, 20-gauge steel, with lapped corners and zinc plated screw fasteners.

4. Access doors shall provide easy access to ERV cores and filters. Doors shall have an airtight compression seal using closed cell foam gaskets.

5. Case walls and doors shall be insulated with 1 inch, 4 pound density, foil/scrim faced, high-density fiberglass board insulation, providing a cleanable surface and eliminating the possibility of exposing the fresh air to glass fibers. PA-Series bottom panels shall be insulated with ¼ inch sheet rubber insulation.

6. The ERV cores shall be protected by a MERV-8 rated, 2" nominal, pleated, disposable filter in both airstreams.

7. CA-Series cabinet construction shall allow stacking of units up to three cabinets high for larger airflow applications. Hinged and latched access doors will be provided on each end of the unit.

8. PA-Series shall use RenewAire patented modular vertical stack of cores (US Patent 5,660,228) allowing assembly of unlimited sizes of ERV systems. Latched access doors are provided on the top of each unit.

### B. Options *(Select options based on application requirements)*

1. Provide unit and duct connection orientation per project schedule.

2. Provide double wall construction with 24-gauge galvanized steel liner (CA-Series only).

3. CA and PA-Series units are available pre-assembled on a structural steel base.

## Part IV - Installation

### A. Unit Location

1. Locate and orient unit to provide the shortest and most straight duct connections. Provide service clearances as indicated on the plans. Locate system blowers (provided by others) distant from sound critical occupancies.

2. Provide a poured concrete equipment pad for all floor mounted units. The pad thickness, and floor plan dimensions to be determined based on the unit selected, and site structural considerations.

3. Provide a structurally suitable support for the base of any wall mounted or hung units.

### B. Vibration Isolation

1. No moving parts are allowed in the ERV modular assemblies.

### C. Duct Design

1. All ductwork shall be designed, constructed, supported and sealed in accordance with SMACNA HVAC Duct Construction Standards and pressure classifications.

2. At a minimum all duct runs to the outdoors shall be thermally insulated at levels appropriate to the local climate. A continuous vapor barrier shall also be provided on warm surface of the insulation.

### D. Sound Control

1. The ERV cores shall act as flow straighteners and sound attenuators. This attribute can be used to isolate mechanical noise from blowers and other mechanical equipment from sound critical occupancies.

### E. Test and Balancing

1. Test and Balancing may not begin until 100% of the installation is complete and fully functional.

2. Follow National Comfort Institute (NCI) air test and balance procedures specific to Heat Recovery Ventilator Balancing Procedure including standard reports to the owner's representative.