MODEL: EV90
- PAINTED CASE
- LOW VOLTAGE CONTROLS
- LINE CORD

MODEL: GR90
- GALVANIZED CASE
- LINE VOLTAGE
- NO LINE CORD

MODEL: EV90P
- HIGH PERFORMANCE UNIT
- PAINTED CASE
- LOW VOLTAGE CONTROLS
- LINE CORD
ABOUT RENEWAIRE
For over 30 years, RenewAire has been a pioneer in improving people’s health, cognitive function, productivity and wellbeing by enhancing indoor air quality (IAQ) in homes and buildings of every type. This is done energy-efficiently, cost-effectively and sustainably via our fifth-generation, static-plate, enthalpy-core Energy Recovery Ventilators (ERVs) and Dedicated Outdoor Air Systems (DOAS) that reuse otherwise-wasted energy to condition incoming outdoor air. This process optimizes energy efficiency, lowers capital costs by reducing HVAC loads and decreases operational expenses by downsizing equipment, resulting in major energy and cost savings. RenewAire technologies also enjoy the industry’s best warranty with the fewest claims due to tremendous reliability, flexibility and ease of use.

RenewAire was the first innovator with static-plate, enthalpy-core technology in the U.S., and is currently one of the largest ERV companies in the country. Committed to sustainability and protecting the environment, our manufacturing facility in Madison, WI is 100% powered by renewable energy and is on track to be one of the few buildings worldwide with LEED Gold, Green Globes and ENERGY STAR certifications. Our technology excels in every geography, every climate, every building and every application, enabling RenewAire to be everywhere. In 2010, RenewAire joined the Soler & Palau Ventilation Group, providing direct access to state-of-the-art, air-moving technology. For more information, visit: www.renewaire.com.

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Installation..................... 7-13
Operation & Start-up......... 13-15
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GR90, EV90, AND EV90P INFO

WARNING
There is no known safe level of cigarette smoke. Any ventilation system may provide noticeable improvement in spaces where cigarettes are smoked, but it cannot be expected to protect against the severe long-term health hazards of exposure to cigarette smoke.

PURPOSE OF AN ENERGY RECOVERY VENTILATION (ERV) SYSTEM
Many modern homes are built air-tight for energy efficiency and comfort. The result is that natural air infiltration rates are often too low to provide acceptable indoor air quality. The solution is to use an ERV to remove gaseous pollutants such as odors, winter-time excess humidity, formaldehyde, smoke, radon, vapors from cleaning products, and other chemicals. The removal of dust and other small particles from your home is not the function of an ERV.

WHEN SHOULD YOU USE YOUR ERV?
Use your ERV when windows are closed and you need to ventilate. When the outdoor air is warmer or cooler than comfortable, the ERV will allow a quieter, more secure home with the windows closed and will also save energy.

USING AN ERV WITH AIR-CONDITIONING
An ERV works very well with air-conditioning, because its “enthalpy-transfer” energy-exchange core will reduce the amount of moisture in the outside air that is brought in. ERVs are the preferred way to ventilate while air-conditioning because it brings in less moisture than any other ventilation method.

CONTROLLING EXCESS HUMIDITY DURING COLD WEATHER
When the ERV is first turned on at the beginning of the heating season (or when first installed), it will have to run full-time for several days to reduce indoor humidity levels. A properly set dehumidistat will do this automatically. If your control is the proportional timer type (PTL or FM), it should be set to “100%” for several days whenever you have a problem with excess humidity during cold weather.
ENERGY EXCHANGE SYSTEM
Cross flow fixed-plate enthalpic energy exchange core: engineered, proprietary resin-media composite. Provides both sensible and latent heat transfer.

CERTIFIED PERFORMANCE
See HVI Certified Ratings.

ACCESS DOOR
Front panel opens to provide access to filters, blowers, and energy exchanger. Snap latches and hinges provided for easy service.

INSULATION
One inch foil-faced EPS foam throughout.

MOUNTING OPTIONS
Unit may be mounted to wall or floor joists using integral mounting flange with hanging bracket kit provided. (EV90 and EV90P only, not GR90)

AIRFLOW BALANCING
Pressure ports located on door for flow measurement. Balancing damper provided for airflow correction.

BLOWER/MOTOR
Two high efficiency motorized impeller blowers provide quiet operation.

FILTERS
Cleanable polyester air filters for both exhaust and fresh air streams.

DEFROST
Passive frost-free design under most residential conditions.

WARRANTY
Ten year limited warranty on energy exchange core; five year limited warranty against defects in material and workmanship on all other components.
**SPECIFICATIONS & DIMENSIONS**

## Energy Recovery Ventilator

**Standard**

### Specifications

- **Ventilation Type:** Static plate, heat and humidity transfer
- **Typical Airflow Range:** 40-110 CFM
- **Standard Features:**
  - Galvanized cabinet
  - Terminal strip hard wiring in ebox (no line cord)
  - Unit may be mounted in any orientation
- **Control:**
  - Can use any switched line-voltage power supply (no low-voltage controls)
- **Filters:**
  - Total qty. 2, MERV 8, spun-polyester media: 9 5/8" x 10 1/2" x 1"

### Unit Dimensions & Weight

- **Unit Dimensions:** 22 1/2" L x 11 3/4" W x 23 3/4" H
- **Weight:** 36 lbs.
- **Max. Shipping Dimensions & Weight (in carton):** 29" L x 22" W x 15" H 40 lbs.
- **Motor(s):** Qty. 2, Standard motorized impeller blowers
- **Accessories:**
  - Backdraft damper 6" Wall cap 6" - white, brown
  - 120V line voltage Honeywell control

### Note:

Electric Duct Heater and Indirect Gas-Fired Duct Furnace are not available on the GR90.

### Download specification at:

renewaire.com/specifications

#### ELECTRICAL DATA

<table>
<thead>
<tr>
<th>HP</th>
<th>Volts</th>
<th>HZ</th>
<th>Phase</th>
<th>Input Watts</th>
<th>FLA</th>
</tr>
</thead>
<tbody>
<tr>
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<td>60</td>
<td>Single</td>
<td>46 @ 90 CFM</td>
<td>0.35</td>
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#### UNIT PERFORMANCE

- **Core Performance**

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<tr>
<th>Airflow CFM</th>
<th>ESP in H₂O</th>
<th>Temp EFF%</th>
<th>Total EFF% Winter/Summer*</th>
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<td>40</td>
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<tr>
<td>58</td>
<td>0.50</td>
<td>80</td>
<td>69/50</td>
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<tr>
<td>73</td>
<td>0.40</td>
<td>77</td>
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<tr>
<td>85</td>
<td>0.30</td>
<td>74</td>
<td>62/43</td>
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<td>98</td>
<td>0.20</td>
<td>71</td>
<td>59/39</td>
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<tr>
<td>113</td>
<td>0.10</td>
<td>68</td>
<td>56/34</td>
</tr>
</tbody>
</table>

* See HVI certification ratings on page 164 of RenewAire’s Full Line Volume XVIII Catalog.

### UNIT DIMENSIONS

#### AIRFLOW CONFIGURATION

Available as shown in dimension drawing.

#### UNIT MOUNTING & APPLICATION

Can be mounted in any orientation. RA/EA airstream can be switched with OA/FA airstream.

#### ABBREVIATIONS

- EA: Exhaust Air to outside
- OA: Outside Air intake
- RA: Room Air to be exhausted
- FA: Fresh Air to inside

#### INSTALLATION ORIENTATION

Unit may be installed in any orientation.

#### NOTE

1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE ROUNDED TO THE NEAREST EIGHTH OF AN INCH.
2. SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE.

### Download specification at:

renewaire.com/specifications

Specifications may be subject to change without notice.
**EV 90**

**INDOOR UNIT**

Download specification at: renewaire.com/specifications

**SPECIFICATIONS**

**Ventilation Type:**  Static plate, heat and humidity transfer  
**Typical Airflow Range:**  40-110 CFM  
**Standard Features:**  Painted cabinet  
Line-cord power supply  
Low-voltage circuit for controls  
Unit may be mounted in any orientation  
**Control:**  Onboard 24 VAC transformer/relay package  
with switched dry contacts  
**Filters:**  Total qty. 2, MERV 8, spun-polyester media:  
9 5/8" x 10 1/2" x 1"  
**Unit Dimensions & Weight:**  
22 1/2" L x 11 3/4" W x 23 3/4" H  
36 lbs.  
**Max. Shipping Dimensions & Weight (in carton):**  
29" L x 22" W x 15" H  
40 lbs.  
**Motor(s):**  Qty. 2, Standard motorized impeller blowers  
**Accessories:**  
Backdraft damper 6"  
Wall cap 6" - white, brown  
Percentage timer control (PTL)  
Push-button point-of-use controls (PBL), PTL req’d.  
Percentage timer control with furnace interlock (FM)

**Note:** Electric Duct Heater and Indirect Gas-Fired Duct Furnace are not available on the EV90.

**ELECTRICAL DATA**

<table>
<thead>
<tr>
<th>HP</th>
<th>Volts</th>
<th>HZ</th>
<th>Phase</th>
<th>Input Watts</th>
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**UNIT PERFORMANCE**

<table>
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<th>Airflow CFM</th>
<th>ESP in H₂O</th>
<th>Temp EFF%</th>
<th>Total EFF%</th>
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<td>68</td>
<td>56/34</td>
</tr>
</tbody>
</table>

**UNIT DIMENSIONS**

**AIRFLOW CONFIGURATION**

Available as shown in dimension drawing.

**UNIT MOUNTING & APPLICATION**

Can be mounted in any orientation. RA/EA airstream can be switched with OA/FA airstream.

**ABBREVIATIONS**

EA: Exhaust Air to outside  
OA: Outside Air intake  
RA: Room Air to be exhausted  
FA: Fresh Air to inside

**INSTALLATION ORIENTATION**

Unit may be installed in any orientation.

**NOTE**

1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE ROUNDED TO THE NEAREST EIGHTH OF AN INCH.  
2. SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE.

**Download specification at:** renewaire.com/specifications
**Specifications & Dimensions**

**Energy Recovery Ventilator**

**Standard**

**Indoor Unit**

**Specifications**

- **Ventilation Type:** Static plate, heat and humidity transfer
- **Typical Airflow Range:** 40-110 CFM
- **Standard Features:**
  - Painted cabinet
  - Line-cord power supply
  - Low-voltage circuit for controls
  - Unit may be mounted in any orientation
- **Controls:**
  - Onboard 24 VAC transformer/relay package with switched dry contacts
- **Filters:**
  - Total qty. 2, MERV 8, spun-polyester media: 21 3/4" x 10 1/2" x 1"

**Unit Dimensions & Weight:**

- **Unit Dimensions:** 22 1/2" L x 24" W x 23 3/4" H
- **Weight:** 51 lbs.
- **Max. Shipping Dimensions & Weight (in carton):** 33" L x 22" W x 29" H
- **Weight:** 65 lbs.

**Motor(s):** Qty. 2, Standard motorized impeller blowers

**Accessories:**

- Backdraft damper 6" Wall cap 6" - white, brown
- Percentage timer control (PTL)
- Push-button point-of-use controls (PBL), PTL req’d.
- Percentage timer control with furnace interlock (FM)

**Notes:** Electric Duct Heater and Indirect Gas-Fired Duct Furnace are not available on the EV90P.

**Download specification at:** renewaire.com/specifications

**Electrical Data**

<table>
<thead>
<tr>
<th>HP</th>
<th>Volts</th>
<th>HZ</th>
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**Unit Performance**

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<td>78/66</td>
</tr>
</tbody>
</table>

* See HVI certification ratings on page 164 of RenewAire’s Full Line Volume XVII Catalog.

**Unit Dimensions**

**Airflow Configuration**

Available as shown in dimension drawing.

**Unit Mounting & Application**

Can be mounted in any orientation. RA/EA airstream can be switched with OA/FA airstream.

**Abbreviations**

- **EA:** Exhaust Air to outside
- **OA:** Outside Air intake
- **RA:** Room Air to be exhausted
- **FA:** Fresh Air to inside

**Installation Orientation**

Unit may be installed in any orientation.

**Notes**

- Unless otherwise specified, dimensions are rounded to the nearest eighth of an inch.
- Specifications may be subject to change without notice.

**Download specification at:** renewaire.com/specifications
BEFORE YOU BEGIN
Read all instructions before installing the unit. Also review supplemental instructions included with any controls that will be installed. Carefully unpack and inspect the unit for shipping damage. Open the access door and inspect inside the unit. Attach the four duct collars to the unit with the screws provided in the plastic small-parts bag.

LOCATION OF THE UNIT
Select a location so that:
- The fresh air intake vent from the outside is placed a minimum of ten feet from any other contaminated exhaust vent, and is at least 30" long.
- The two ducts to the outside are as short and straight as possible, for the best performance from the system. Shorter duct runs help assure that the system is balanced: the amount of air brought in is equal to the amount of air exhausted.
- The door can be opened to allow cleaning the core and filters. Provide clearance at front of unit for service access to the blowers, filters and energy exchange core. (24" minimum.)
- The exhaust outlet and fresh air inlet on the outside of the building should be at least ten feet apart to avoid cross-contamination. The exhaust duct should be about the same length as the fresh air duct.
- The exhaust outlet should not dump air into an enclosed space or into any other structure.
- Do not install the exhaust outlet and fresh air inlet through the roof. If these are the only available options call RenewAire technical support for help.

The preferred mounting location for the unit is on a concrete foundation wall because the foundation wall will isolate any blower vibration.

If a basement area is not available or practical, use other mechanical room space such as a closet, garage, storage, or accessible attic or crawl space.

NOTE: If you wish to install the unit in an attic or other unconditioned space, you must insulate all of the unit’s ductwork that is located in the attic. Use at least R-6 insulation.

Provide Adequate Service Access for Maintenance. The unit will require regular filter and core inspections. Install the unit where you can access the core for cleaning and replacing the filters, and where you can get at the wiring for installation and service.
**ERV**

**GR90, EV90, AND EV90P**

**INSTALLATION**

**PLANNING YOUR INSTALLATION**

**DUCTS TO THE OUTSIDE**

The Exhaust Air Duct and the Outside Air Duct connect the unit to the outside. Flexible insulated duct is typically used. See Duct Sizes below.

**DUCT SIZES**

| Exhaust Air & Outside Air (EA & OA) | 6" round insulated duct  
|                                      | 8" round insulated duct may be used to maintain maximum airflow  |
| Fresh Air & Stale Air (FA & RA)     | 6" round or 8" oval un-insulated  |

All ducts from unit to house in unconditioned spaces like attics and crawl spaces MUST BE INSULATED.

**INSIDE DUCTWORK SYSTEM**

**For houses without ducted heating or cooling systems – see Figure 3 (F3):**

In most houses one or two fresh air grilles in a central part of the house provide effective distribution of the fresh air into the home, particularly when the stale exhaust air is picked up at several points. Because the fresh air is usually somewhat cooler than the household air, the fresh air supply grilles should be located in a traffic area like a hallway or stairway rather than in a sitting area. If you want to get fresh air into specific rooms with high occupancy, you can split up the fresh air supply.

**For houses with forced-air heating and cooling systems – see Figure (F2), (F4) and (F5):**

Most units are installed with the fresh air duct connected directly to a return duct for the main heating and cooling system. Be careful to connect the fresh air duct at least three feet from the return plenum to minimize suction from the furnace blower. A connection closer to the furnace may result in unbalanced flow and associated problems.

**For installations that collect stale air from specific rooms in the home – see Figures (F2) and (F3):**

Locate stale air return grilles (RA) in rooms where moisture and odors are generated: bathrooms, the kitchen, and perhaps other areas where contaminants are generated such as in the home workshop. Return grilles in these other areas may be dampered so that they can be shut off when not in use. A central location such as a hallway is also acceptable but won’t clear humidity and odors from baths and kitchens as rapidly. Locate stale air return grilles (RA) near the ceiling on inside walls. Stale air returns are usually easiest to install in interior partitions.

**Stale Air Return Grille Sizes**

- **Bathroom**: 4" X 10" or 6" X 10" - 40 to 60 sq. in.  
- **Kitchen**: 6" X 10" or 60 sq. in.

**Can an ERV be used to ventilate bathrooms?**

A RenewAire ERV can be used as a central exhaust system in place of bathroom exhaust fans. Tie a grille in each bathroom directly back to the ERV – see Figure F2. A successful installation should provide at least 50 CFM of exhaust per moisture producing bathroom. When used for bathroom exhaust, the EV90/P should be used for only one bathroom. Install a control in the bathroom ventilated by the ERV (see Controls, page 12-13).

**For houses where radon is a concern:**

The first line of defense against radon should always be techniques that prevent the entry of radon into the home, such as under-slab suction, vented perimeter drainage, and crack sealing. However, if moderate levels of radon continue to be present, it is important that the unit slightly pressurize the basement, not de-pressurize the basement.

Installation of this unit for radon mitigation is beyond the scope of this manual. Consult a radon mitigation professional.

---

**WARNING**

DO NOT PLACE ANY STALE AIR RETURNS IN GARAGES.
APPLICATIONS
See figures F2-F5 for examples of some common installation approaches.

**F2**
Separate Room Air Pick-up - Fresh Air to Furnace Return Air Trunkline

**Note:** ERV blower may be operated separate from furnace blower.

**F3**
Separate Return Air and Fresh Air Supply

**Note:** ERV blower may be operated separate from furnace blower. 
*Use caution to introduce FA at low velocity and where good mixing will occur to minimize discomfort from drafts.

**F4**
Furnace Return Air Back into Return Air

**Note:** The furnace blower must be operated any time the ERV is operated. Use furnace fan “on” continuous low speed or optional FM control to cycle furnace fan on ERV.

**F5**
Furnace Return Air Back into Supply Air

**Note:** ERV blower may be operated separate from furnace blower.

---

EA Exhaust Air  
OA Outside Air  
RA Room Air  
SA Supply Air  
FA Fresh Air
PLANNING YOUR INSTALLATION

**WARNING**

RISK OF FIRE, ELECTRIC SHOCK, OR INJURY. OBSERVE ALL CODES AND THE FOLLOWING:

1. Before servicing or cleaning the unit, unplug the unit line cord or shut off power at service switch or circuit breaker. Make sure unit is not running before opening its door.

2. This installation manual shows the suggested installation method. Additional measures may be required by local codes and standards.

3. Installation work and electrical wiring must be done by qualified professional(s) in accordance with all applicable codes, standards and licensing requirements.

4. Any structural alterations necessary for installation must comply with all applicable building, health, and safety code requirements.

5. Connect this unit only to a 120VAC grounded circuit protected by a 15 amp circuit breaker.

6. Do not install unit or controls where they can be reached from a tub or shower.

7. This unit must be properly ducted to the outdoors.

8. Outside air inlet for this unit must be located away from sources of hazardous air such as auto exhausts.

9. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment that might be installed in the area affected by this equipment. If this unit is exhausting air from a space in which chimney-vented fuel burning equipment is located, take steps to assure that combustion air supply is not affected. Follow the heating equipment manufacturer’s requirements and the combustion air supply requirements of applicable codes and standards.

10. This unit is intended for general ventilating only. Do not use to exhaust hazardous or explosive materials and vapors. Do not connect this unit to range hoods, fume hoods or collection systems for toxics.

11. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

12. Use the unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

**CAUTION**

1. To avoid motor bearing damage and noisy and/ or unbalanced impellers, keep drywall spray, construction dust, etc., out of the unit.

2. Do not connect power to the units external control terminals: this will damage the unit. The external terminals are for use only with un-powered controls designed for low-voltage operation.
**Mounting the Unit**

Unit may be installed in any orientation
Orient the unit for the simplest duct layout and connections. Note however that the door is equipped with slide-off hinges. For the homeowner’s convenience it is helpful to orient the unit so that the door does not drop off when it is unlatched.

Mounting the EV90/P on a concrete foundation wall
Mount hanging bracket to the wall with appropriate concrete anchors. Use pre-cut foam tape from small parts bag. Remove backing and apply two pieces of foam tape equally spaced along the unit’s mounting flange to be held by the hanging bracket. Apply the other two pieces of foam over two holes that will be used for fastening, on the other flange. The tape should be applied in a “U” shape to cushion both the front and back of the integral flanges. Lift unit and slide unit flange into the hanging bracket. Using metal flat washers, fasten flange opposite hanging bracket to structure. Safety screws should similarly be installed passing through the hanging bracket and flange. Make sure the screws, which you must supply, are properly selected for the loads and substrate involved.

Mounting the EV90/P to a stud wall
Mount unit using supplied hanging bracket kit as described for mounting to concrete foundation wall. Note that the hole layout on the integral mounting flanges and the hanging bracket are spaced for 16” on-center framing patterns.

Suspending the EV90/P from floor joists or trusses
The unit may be screwed directly to joists or trusses using the hanging bracket and integral flange. Mount as described for mounting to concrete foundation wall. Note that the hole layout on the hanging bracket is spaced for 16” on-center layouts.

Mounting the GR90
The GR90 can be mounted similar to the EV90 however, the GR90 does not come with a hanging bracket. Using flat washers provided, install screws through the holes in the flanges of the unit. Make sure the screws, which you must supply, are properly selected for the loads and substrate involved.

**Electrical Connections**

**NOTE: DISCONNECTION MEANS**
Most electrical codes require that the unit be disconnected for service. Depending on local codes, an electrical outlet (for EV90/P) or an on/off switch available for the unit (GR90) may satisfy this requirement.

Power supply connection to GR90 is made in its electrical box through the hole in the end pan. Pull out the unit electrical box and connect the power wire conductors to the terminal block inside the electrical box. The terminal block inside the electrical box is conveniently marked for connection of field power wiring. After connecting the power wire conductors to the terminal block re-install the electrical box in the unit.

RenewAire offers the EV90/P with a line cord for connection to an electrical outlet. If an EV90/P with a line cord is installed and the installer desires to convert to field power wiring, should local codes permit, simply remove the line cord from the terminal block and connect field wiring as described above.
Do not place any stale air returns in garages.

Do not connect Dryers to unit. Do not connect Range Hoods to the unit.

Do not use more flex duct than necessary!
Flex duct is much more resistant to airflow than rigid duct; longer runs of flex duct will reduce the ventilation performance of your system. Stretch flex duct and avoid sharp bends.

NOTE: Seal all duct collars at unit to minimize air leakage.

CONTROLS
For an installation in which the ERV should run continuously in order to provide the required ventilation rate for the home, no controls are needed. However, in most installations, control over the unit operation is desired and this is best provided by a Proportional Timer.

Proportional timers (PTL or FM controls for EV90/P or line voltage controls for GR90) may be located anywhere that is convenient. A typical location for either control is next to the home’s thermostat. Proportional timers operate the ERV to provide regular background ventilation of the home.

EV90/P installations that pull stale air from specific rooms, such as bathrooms, should have Push-Button Lighted (PBL) Controls in those rooms. The secondary operating controls allow the system to be turned on from various locations in the house.
## INSTALLATION INSTRUCTION

**WARNING**

DANGER OF ELECTRICAL SHOCK WHEN SERVICING AN INSTALLED UNIT.

ALWAYS UNPLUG UNIT BEFORE CONNECTING OR SERVICING CONTROLS.

### INSTALLING CONTROLS

The EV90/P is offered with a control board for connection to external controls. The GR90 runs continuously whenever power is supplied to it.

**Optional controls:**

RenewAire offers a variety of controls specifically designed to work with the EV90/P. These include:

- PTL (a two wire proportional timer),
- FM (a six wire proportional timer that interconnects to the furnace blower),
- PBL (point of use push button control).

Other controls that throw an unpowered switch may also be used.

The GR90 is a line voltage unit that may be controlled with any line voltage control switch.

**Typical control schematic:**

Various wiring designs can be used to properly control the unit and meet safety and code concerns. Consult your electrician for an electrical design to meet your needs. The schematic below shows a typical control system: a PTL proportional timer plus two PBL push-button controls.

![Typical Control Schematic](image)

See installation manuals for the control(s) you select for wiring diagrams and specific instructions.

**If NOT connecting controls to the EV90/P:**

Make a jumper out of a short piece of wire. Connect the jumper wire to the screw connections of the terminal strip on the outside of the unit. ERV runs full-time once its power cord is plugged in.

### STARTING UP THE UNIT

- Inspect your installation to be sure all duct work is correctly installed and sealed, that filters are in place, and controls (if any) are connected.
- Shut and latch the door to the unit.
- Provide 120 VAC power to the unit. It may start immediately.

- Use control, if any, to turn on the unit. Check operation of the control(s).
- Check that the unit’s safety interlock switch turns off the unit when the door is opened.

**OPERATION & START-UP**
START-UP & OPERATION

OPERATION

VERIFYING UNIT PERFORMANCE

Airflow
Airflow should be occurring in both airstreams. Sometimes the easiest place to confirm that air is moving is at the external wall caps.

If exact airflow is critical, it may be desirable to permanently install flow measuring stations and manometers. These can also be used to determine when filters should be cleaned or changed.

Use Static Taps to Measure Airflow Rates
See "Cross Core Static Drop" in MEASURING AIRFLOW table on page 15.

Use Damper to Balance Air Flow to Desired Rates, if necessary
The ERV’s blower motor are well suited for volume control by dampers on the inlet of the unit. One balancing damper is provided in the unit parts tray. NOTE: The unit is considered balanced if the difference between the two airflows is not more than 10 CFM.

After measuring the airflow of the unit, the balancing damper may be used to balance airflow if desired. Place the damper between the duct collar and the unit for the outlet of the airstream recording higher flow. NOTE: Install the damper so that it slides in the space between the duct collars for the EV90 and the GR90. Install the damper so that it slides from the door of the unit down to the duct collar for the EV90P.

Slowly move the damper further into the duct until the desired airflow is recorded. Secure the damper in place using 1/8” tek screws (provided). NOTE: Drilling through the case while the unit is running may cause metal shards to be drawn into the unit.
EQUIPMENT REQUIRED

• A magnehelic gauge or other device capable of measuring 0 to 1.0 in. water of differential pressure.
• 2 pieces of natural rubber latex tubing, 1/8” ID, 1/16” Wall works the best.

CROSS CORE STATIC PRESSURE MEASUREMENT INSTRUCTIONS

The individual differential static pressures (DP) are measured using the installed pressure ports located in the front of the units core access doors.

NOTE: These ports are carefully located on the unit to give the most accurate airflow measurement.

Do not relocate pressure ports.

• To read SCFM of Fresh Air (FA) install the “high” pressure side (+) of your measuring device to the Outside Air (OA) port and the “low” pressure side (-) to the Fresh Air (FA) port.
• To read SCFM of Room Air (RA) install the “high” pressure side (+) of your measuring device to the Room Air (RA) port and the “low” pressure side (-) to the Exhaust Air (EA) port.

NOTE: Be sure to remove cap from pressure port before inserting tubing. Insure tubing is well seated in pressure ports.

NOTE: The tubing should extend in the pressure port approx. 1 inch.

• If gauge drops below zero, reverse tubing connections.
• Use the reading displayed on your measurement device to cross reference the CFM output using the conversion chart.

NOTE: Be sure to replace cap into pressure port when airflow measuring is completed.

NOTE: For best performance the airflow rate for both the Fresh Air and the Exhaust Air should be roughly equal (“balanced”). In some facilities a slight positive or negative pressure in the building is desired. RenewAire energy recovery ventilators can generally operate with a flow imbalance of up to 20% without significant loss in energy recovery efficiency.

MEASURING AIR FLOW

CAUTION

Make sure clean filters are installed before balancing airflow. Dirty or clogged filters reduce airflow through the unit.

CAUTION

The proper airflow range for the models are 40-110 CFM
Keep your ERV performing at its best by cleaning it as described below:

**TO CLEAN THE ENERGY EXCHANGE ELEMENT**
1. Remove the filters (see below).
2. Vacuum the exposed faces of the energy exchange core with a soft brush attachment.
3. After servicing the filters, re-install them (see below).
4. Vacuum out dust from the rest of the unit case. Dust collects only on the entering faces of the energy exchange core. The interior of the energy exchange core stays clean even if the core faces are dust covered. The RenewAire core airflow paths are designed to transport the air in a laminar motion. The core flutes move the air in a laminar airflow such that particulate deposition is maintained at virtually nil.

**INSPECT AND CHANGE THE FILTERS REGULARLY**
Service filters every three months when the unit is in regular use or as needed to keep them reasonably clean.
1. Release cam latches and carefully swing access door open. Remove the door by sliding to one side.
2. Remove filter clips.
3. Pull the filters out.
4. Vacuum with a hose attachment.
5. Re-install filters and filter clips, (see Service Parts, page 14). Orange side of filter should face the core.
6. Re-install door, and fasten cam latches.

**NOTE:** The filters should be replaced after they have been cleaned several times. The primary contact for replacement filters for your RenewAire unit is the installing contractor. As an alternative, you may wish to produce your own filters. Please follow these instructions:

Filters may be cut from a sheet or roll of ¾" - 1" firm, spun polyester filter “hog hair” media or material, similar to the existing filter in the residential unit.

The size of each filter (2 required per unit) is as follows:
- **EV90/GR90** 9 ½" x 10 ½"
- **EV90P** 21 ¾" x 10 ½"

*Call your HVAC contractor or RenewAire for further information.*

**NOTE:** Filters must be used or the face of the energy exchange core will become blocked by dust and reduce unit efficacy. The filters supplied in the unit are usually able to keep the energy exchange core clean for many months. Finer filters can be used but must be cleaned more often.

**MOTOR MAINTENANCE**
The blower/motor package needs no lubrication:
Vacuum clean the blower wheels at the same time you clean the face of the energy exchange core. Confirm blower wheel is not rubbing against the blower inlet or housing by rotating wheel manually.

**GENERAL CLEANING AND INSPECTION**
Perform general cleaning and visual inspection when changing filters.
1. Remove paper, leaves, etc. from inlet and outlet screens.
2. Inspect for insect nests.
UNMATCHED VENTILATION SUPPORT

As much as our unsurpassed quality and performance, our customers can also depend on our professional support staff for swift, professional assistance with all their technical, application, and service needs. **Every time. Anywhere.**

At RenewAire — unlike other ventilation suppliers — advanced ventilation solutions are all we do. Our sole passion. Which is why for all commercial projects, we are the “V” in HVAC... and the only name you need to know.