

# BR SERIES ERV

## Installation, Operation and Maintenance Manual

BR70

BR130



BR70 shown



BR130 shown

**⚠ WARNING**

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

1. Before servicing or cleaning the unit, unplug the line cord. 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 120 VAC grounded receptacle protected by a 15 or 20 amp circuit breaker. Do not remove the unit's line cord.
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 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.

**⚠ 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.

**⚠ CAUTION**

1. To avoid motor bearing damage and noise and/or unbalanced impellers, keep drywall spray, construction dust, etc., out of 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 unpowered controls designed for low-voltage operation.

**⚠ CAUTION**

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.

**⚠ CAUTION**

Do not remove or disable the wiring interconnection between the Overload Relays and the Contactors. Without this inter-connection the motor(s) will not be protected against overload.

**⚠ CAUTION**

DO NOT WASH THE ENERGY EXCHANGE CORE.

Keep it away from water or fire to avoid damaging it. Always handle the core carefully.

**SAVE THIS MANUAL**

**NOTICE**

Information that is recorded is specific to just one ERV. If additional ERVs are being documented, please make copies of these pages and identify each copy by its unit tag.

**UNIT INFORMATION**


Record information as shown below. In the unlikely event that factory assistance is ever required, this information will be needed.

Locate the RenewAire unit label, to be found outside of the appliance. Record the model and serial numbers below.

NOTE: This information is for purposes of identifying the specific air handling appliance. Unit-specific option data can then be obtained, as needed, from the Model Number.

ERV Model:  BR70  
 BR130

Serial Number:

 NOTE: This page is to be completed by the installing contractor. The completed document is to be turned over to the owner after start-up.

			
MODEL <b>BR70</b> MODELE		LISTED DUCTED HEAT RECOVERY VENTILATOR 89S5	
<b>⚠ WARNING ⚠ AVERTISSEMENT</b>			
⚡ Danger of electrical shock. Always disconnect from power source before servicing.		⚡ Danger de choc électrique. Toujours déconnecter la source d'alimentation avant les réparations.	
120V, 60HZ, 1 Phase		120V, 60HZ, 1 Phasée	
Unit MCA: 10	MFS: 15	Unit MCA: 10	MFS: 15
Qty 1: 0.08 HP & 0.9 F.L.A.			
Qty 1: de chaque 0.08 CV & 0.9 A.P.C.			
Motors Thermally Protected		Moteurs protégés thermiquement	
Do not install in a cooking area or make line-voltage electrical power connections directly between this unit and any appliance.		N'installez pas de zone de cuisine ou de ligne de tension les connexions d'alimentation électrique directement entre cette unité et tout	
	CERTIFIED RATINGS Model BR70		Complete ratings at: <a href="http://www.hvi.org">www.hvi.org</a>
	Rated Air Flow @ 0.2 in wg (50Pa) 73 cfm (34 L/s) 0.4 in wg (100Pa) 46 cfm (21 L/s)		
Energy Performance	Apparent Sensible Effectiveness	Sensible Recovery Efficiency	Moisture Transfer
Net Supply Air Flow			
69 cfm (32 L/s) at 32°F (0°C)	77%	66%	53%
64 cfm (30 L/s) at 95°F (35°C)	42% Total Recovery Efficiency		
Part No.: 150040_000		RenewAire, LLC	
Serial Number: <b>D156029R</b>		4510 Helgesen Drive Madison, WI 53718	
		Label No.: 140000_007_D02	

UNIT INFORMATION

UNIT LABEL (TYPICAL)

# BR 70

**INDOOR UNIT**  
Duct Mounted or Thru-the-Wall



Download specification at:  
[renewaire.com/specifications](http://renewaire.com/specifications)

## Energy Recovery Ventilator Standard



### SPECIFICATIONS

**Ventilation Type:**  
Static plate, heat and humidity transfer

**Typical Airflow Range:** 40-70 CFM

**Unit is Tested to CSA C439 Protocol:**  
Using one L-30-G5 Core

**Standard Features:**  
White painted cabinet  
Line-cord power supply  
Built-in control  
Unit may be mounted in any orientation  
Cross-core differential pressure ports

**Control:**  
Built-in proportional runtime control and switched terminals for furnace/AC interconnect

**Filters:**  
Total qty. 2, MERV 8, spun-polyester media:  
7 1/2" x 10 1/2" x 1"

**Unit Dimensions & Weight:**  
29 3/4" L x 19 1/4" W x 10 3/4" H  
38 lbs.

**Max. Shipping Dimensions & Weight (in carton):**  
30" L x 22" W x 15" H  
50 lbs.

**Motor(s):**  
Qty. 1, Double-shaft standard motor

**Accessories:**  
Backdraft damper 6", 8"  
Automatic balancing damper 4", 5", 6"  
Louvered wall vent 6" - white, brown  
Exterior thru-the-wall installation kit  
Duct collar kit (two collars)  
MERV 13 filter - OA airstream (shipped loose)  
Electric duct heater - RH series (1-3 kW);  
designed for indoor ductwork installation only

**Note:** Indirect Gas-Fired Duct Furnace is not available on the BR70.

### ELECTRICAL DATA

HP	Volts	HZ	Phase	Input Watts	FLA
0.08	120	60	Single	94 @ 69 CFM	1.0

### UNIT PERFORMANCE

Airflow CFM	ESP in H <sub>2</sub> O
46	0.40
59	0.30
73	0.20
86	0.10

### CORE PERFORMANCE

Airflow CFM	Temp EFF%	Total EFF% Winter/Summer*
46	80	75/62
59	77	72/58
73	75	69/54
86	72	66/51

**Note:** These are core-only ratings and are not HVI certified.  
See performance ratings per CSA C439 on pg. 31 of Single/Multi-Family Catalog.

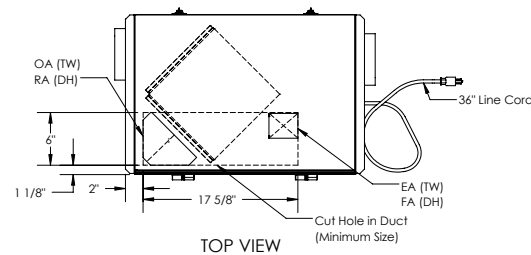
### UNIT DIMENSIONS



**AIRFLOW ORIENTATION**  
Available as shown in dimension drawing.



**UNIT MOUNTING & APPLICATION**  
Can be mounted in any orientation. If duct-mounted, airstreams cannot be switched. If mounted with exterior Thru-the-wall installation kit, the RA/EA airstreams are switched with the OA/FA airstreams. If four ducts are connected using duct collar kit, airstreams may be switched.

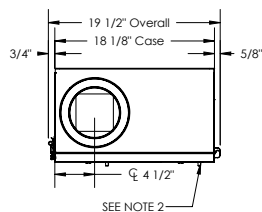


#### ABBREVIATIONS

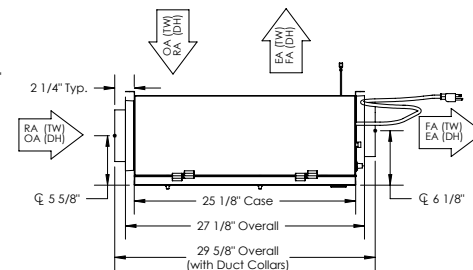
EA: Exhaust Air to outside  
OA: Outside Air intake  
RA: Room Air to be exhausted  
FA: Fresh Air to inside  
TW: Thru Wall  
DH: Duct Hung

**INSTALLATION ORIENTATION**  
Unit may be installed in any orientation.

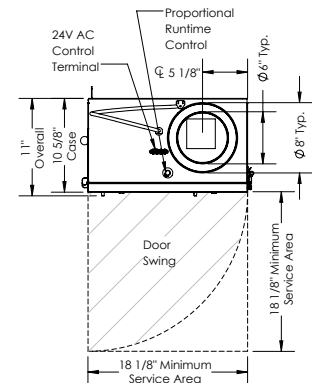
**NOTE**  
1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE ROUNDED TO THE NEAREST EIGHTH OF AN INCH.  
2. PRESSURE PORTS FOR EACH AIR STREAM ARE LOCATED ON DOOR OF UNIT.  
3. SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE.



LEFT VIEW



FRONT VIEW

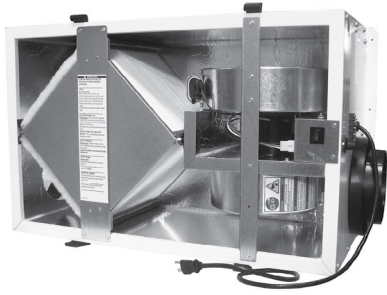


RIGHT VIEW

Specifications may be subject to change without notice.

# BR 130

**INDOOR UNIT**  
Duct Mounted or Thru-the-Wall



Download specification at:  
[renewaire.com/specifications](http://renewaire.com/specifications)

## Energy Recovery Ventilator Standard



### SPECIFICATIONS

**Ventilation Type:**  
Static plate, heat and humidity transfer

**Typical Airflow Range:** 50-140 CFM

**Unit is HVI Tested/Certified per CSA C439 Protocol:** Using one L-50-G5 Core

**Standard Features:**  
White painted cabinet  
Line-cord power supply  
Built-in control  
Unit may be mounted in any orientation  
Cross-core differential pressure ports

**Control:**  
Built-in proportional runtime control and switched terminals for furnace/AC interconnect

**Filters:**  
Total qty. 2, MERV 8, spun-polyester media:  
10 1/2" x 10 1/2" x 1"

**Unit Dimensions & Weight:**  
33 1/2" L x 19 1/4" W x 13 1/2" H  
48 lbs.

**Max. Shipping Dimensions & Weight (in carton):**  
32" L x 22" W x 18" H  
60 lbs.

**Motor(s):**  
Qty. 1, Double-shaft standard motor

**Accessories:**  
Backdraft damper 6", 8"  
Automatic balancing damper 4", 5", 6"  
Louvered wall vent 6" - white, brown  
Exterior thru-the-wall installation kit  
Duct collar kit (two collars)  
MERV 13 filter - OA airstream (shipped loose)  
Electric duct heater - RH series (1-5 kW);  
designed for indoor ductwork installation only

**Note:** Indirect Gas-Fired Duct Furnace is not available on the BR130.

### ELECTRICAL DATA

HP	Volts	HZ	Phase	Input Watts	FLA
0.1	120	60	Single	121 @ 124 CFM	1.3

### UNIT PERFORMANCE

Airflow CFM	ESP in H <sub>2</sub> O
51	0.70
68	0.60
93	0.50
112	0.40
131	0.30
140	0.20
148	0.10

### CORE PERFORMANCE

Airflow CFM	Temp EFF%	Total EFF% Winter/Summer*
51	82	78/65
68	80	75/61
93	76	71/56
112	74	68/53
131	71	65/49
140	70	63/47
148	69	62/46

**Note:** These are core-only ratings and are not HVI certified.  
HVI ratings apply to complete units only.  
See HVI certification ratings on pg. 30 of Single/Multi-Family Catalog.

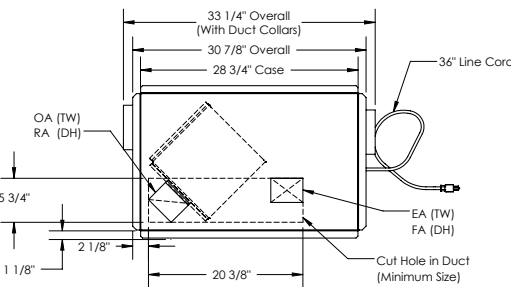
### UNIT DIMENSIONS



**AIRFLOW ORIENTATION**  
Available as shown in dimension drawing.



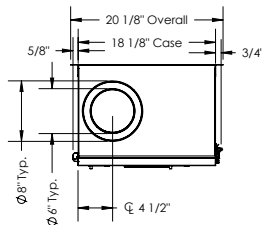
**UNIT MOUNTING & APPLICATION**  
Can be mounted in any orientation. If duct-mounted, airstreams cannot be switched. If mounted with exterior Thru-the-wall installation kit, the RA/EA airstreams are switched with the OA/FA airstreams. If four ducts are connected using duct collar kit, airstreams may be switched.



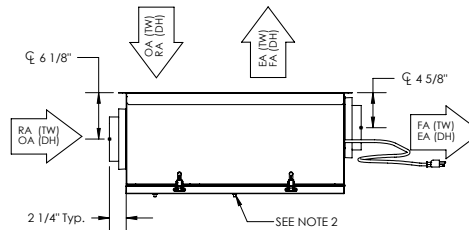
**ABBREVIATIONS**  
EA: Exhaust Air to outside  
OA: Outside Air intake  
RA: Room Air to be exhausted  
FA: Fresh Air to inside  
TW: Thru Wall  
DH: Duct Hung

**INSTALLATION ORIENTATION**  
Unit may be installed in any orientation.

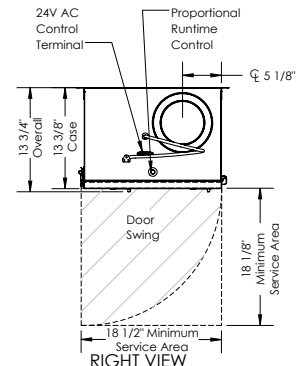
**NOTE**  
1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE ROUNDED TO THE NEAREST EIGHTH OF AN INCH.  
2. PRESSURE PORTS FOR EACH AIR STREAM ARE LOCATED ON DOOR OF UNIT.  
3. SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE.



LEFT VIEW



FRONT VIEW



RIGHT VIEW

Specifications may be subject to change without notice.

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## 1.0 OVERVIEW

### 1.1 DEFINITIONS

#### Energy Exchange System:

Cross flow fixed-plate enthalpic energy exchange core: engineered, proprietary resin-media composite. Moderates both temperature and humidity extremes.

#### Access Door:

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

#### Insulation:

1" foil-faced EPS foam throughout.

#### Blower/Motor:

A single high efficiency PSC motor directly drives two centrifugal blowers for quiet operation.

#### Warranty:

Ten-year limited warranty on energy exchange core; five-year limited warranty against defects in material and workmanship on all other components.



**NOTE:** This unit is an Energy Recovery Ventilator, or ERV.

It is commonly referred to throughout this manual as an ERV.

### 1.2 DESCRIPTION

#### 1.2.1 Purpose of an ERV System

Many modern homes are built airtight 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.

#### 1.2.2 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.

#### 1.2.3 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.

#### 1.2.4 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.

## 2.0 UNIT PLACEMENT

### 2.1 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.



## 2.2 LOCATION OF THE UNIT

Select a location so that:

- The unit is hung on the furnace or air conditioner return trunk line.
- The two ducts to the outside are kept as short as possible with few gentle bends. Keeping all ducts as short and simple as possible provides 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. Unbalanced flow can cause poor performance from the unit and may even result in frosting of the core during extremely cold weather.
- The fresh air intake vent from the outside is placed a minimum of ten feet from any other exhaust vent.
- The power cord reaches an electrical outlet.
- The front cover can be opened to allow cleaning the core and filters. Provide at least 24" of clearance at front of unit for service access to the blowers, filters and exchanger core.

It is recommended that the BR units be used with standard furnace air handling equipment with velocities not exceeding 750 fpm at the point in the return air duct where the BR unit is attached. An alternate field measurement would be to locate the BR unit where the static pressure measurement does not exceed  $-0.2"$ . If the air handling system is high velocity or high pressure then the EV Series of products by RenewAire is recommended.

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 may need to use special installation techniques such as insulating all connecting ductwork. Attic installations are allowed for residential applications only.

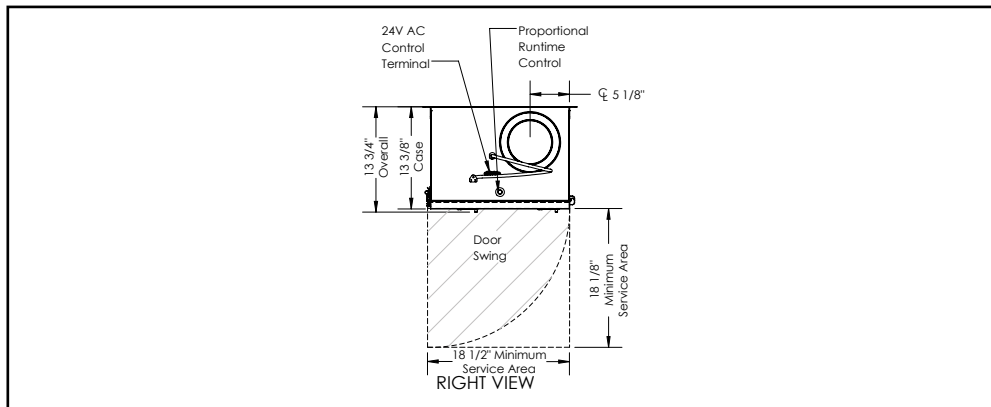


FIGURE 2.2.0 SERVICE CLEARANCES

### ⚠ CAUTION

#### 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.

## 2.3 DUCT SIZES AND INSULATION

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

### 2.3.1 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 & Return Air (FA & RA):


- 6" round or 8" oval rigid un-insulated (wall mounted units only).

Ducts from unit to house in unconditioned spaces:

- All ducts from unit to house in unconditioned spaces like attics and crawl spaces must be insulated.

**2.4 DUCTWORK APPLICATIONS**

See Figures 2.4.0 through 2.4.3 for examples of some common installation approaches.

 NOTE: For all units:  
 RA = Room Air into unit  
 OA = Outside Air into unit  
 SA = Supply Air to inside  
 EA = Exhaust Air to outside  
 FA = Fresh Air to inside

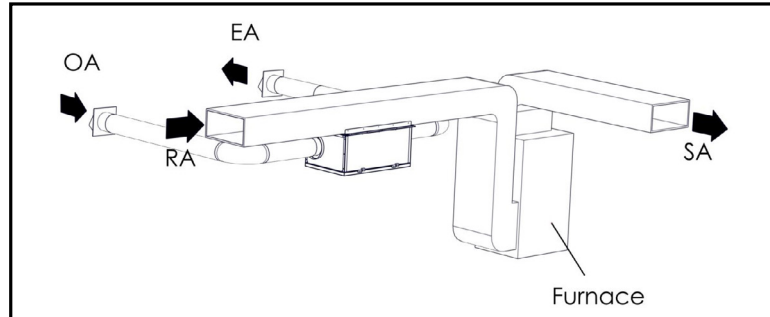


FIGURE 2.4.0 BOTTOM-HUNG LENGTHWISE

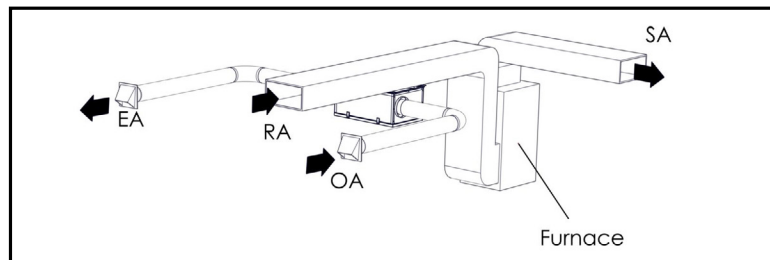


FIGURE 2.4.1 BOTTOM-HUNG CROSSWISE

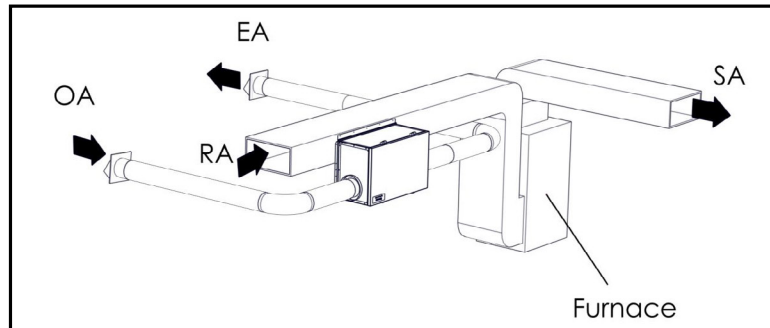


FIGURE 2.4.2 SIDE-HUNG

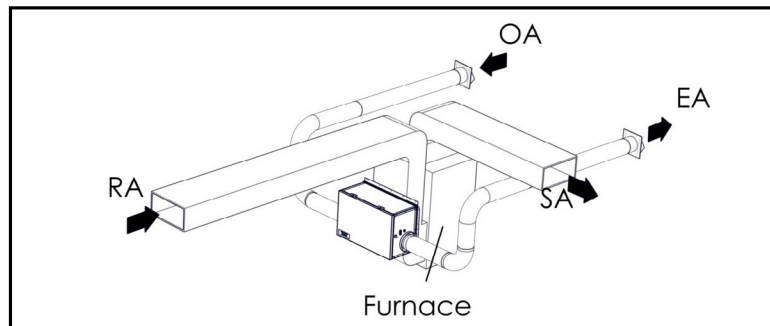


FIGURE 2.4.3 RETURN DROP HUNG

## 3.0 INSTALLATION

### 3.1 MOUNTING THE UNIT

#### 3.1.1 Mounting the Unit on Ducting

The unit can be mounted on a return duct in various orientations. It can be attached to the bottom of the return duct in lengthwise or crosswise orientation. It can be attached to the side of the return duct. The different orientations are shown in Figures 2.4.0 through 2.4.3.

Mount the unit hanging bracket to the unit. Attach the hanging bracket to the duct work. Make sure the unit orientation provides for proper airflow direction in the return duct. Refer to the air flow direction label on the unit. Using the template provided cut a rectangular hole in the duct work. To add rigidity to the duct, bend the edges of the hole into the duct as flanges. Check the gasket on the back of the unit to ensure it is free of tears and rips. Add the long piece of gasket provided in the hardware kit to the back of the unit to form a rectangle with the other three pieces of gasket already applied. Lift the unit and connect the hanging bracket on the unit into the hanging bracket on the duct work. **USE CAUTION AND AN ASSISTANT WHEN INSTALLING THE UNIT OVERHEAD.** Swing the unit into position and verify its fit. Attach the unit end flanges to the duct work. Now fasten the crosswise bracket to the duct work and then to the unit. The smaller crosswise bracket may need to be installed after the lengthwise bracket if one of the unit flanges cannot be attached to the return duct. Make sure the screws used are properly selected for the loads and substrate involve.

#### 3.1.2 Mounting the Thru-Wall Kit

As another installation option the Breeze unit may be mounted directly to the inside of an exterior wall. The Thru-Wall kit must be used for this application. Refer to Thru-Wall instructions packed with the Thru-Wall kit.

### 3.2 INSTALLING OUTSIDE AIR AND EXHAUST AIR DUCTS

For duct hung applications, the exhaust outlet and fresh air inlet on the outside of the building should be at least ten feet apart to avoid cross-contamination. Keep the length of the two flexible ducts roughly equal and as short and straight as possible. Normally, 6" insulated flexible duct is used. Band or tape inner duct liner to inner flange of appropriate collar. Drive a sheet metal screw through liner to secure duct spiral wire to collar. Straighten insulation, and slide outer duct jacket onto the outer flange of the duct collar. Secure with band or tape.

If duct runs are exceedingly long (over 10' of flex duct for 130 CFM) or have excessive bends or elbows or if maximum air flow rates are required, 8" insulated flexible duct should be used. The outer flange of the duct collar can be used for both the inner and outer jacket of the flexible duct. Care must be taken to ensure that the duct is securely fastened and sealed to the duct collar. Ducts connecting the unit to the outside must be insulated with sealed vapor barrier on both inside and outside of the insulation.

The inlets and outlets should be screened against insects and vermin and shielded from the weather to prevent the entry of rain or snow. The exhaust outlet should not dump air into an enclosed space or into any other structure.



**NOTE:** All the provided brackets should be installed surrounding the opening between the unit and return duct.

#### **CAUTION**

Risk of injury when lifting unit and installing it overhead. Get a helper and wear eye protection.

### 3.3 INSIDE DUCTWORK SYSTEM (FOR WALL MOUNTED UNITS ONLY)

- ♦ **COLLECT STALE AIR FROM THE HOUSE**

Locate stale air return grilles (RA) in rooms where moisture and odors are generated: stale air returns (which pick up stale household air to be exhausted) should be located in bathrooms and the kitchen. A central location such as a hallway is also acceptable but won't clear humidity and odors from baths and kitchens as rapidly.

- ♦ **CONNECT FRESH AIR FROM THE UNIT TO THE HOUSE**

Use a five foot section of flexible insulated duct to connect the unit to the return air duct at the port labeled Fresh Air (FA). Note that the flex duct is not required for the room air connection (RA). This will cut noise transmitted from the unit. Stretch the flex duct tightly in order to maintain good airflow.

- ♦ **FOR HOUSES WITH FORCED-AIR HEATING AND COOLING SYSTEMS**

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.

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- ♦ **FOR HOUSES WITH FORCED-AIR HEATING AND COOLING SYSTEMS**

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 HOUSES WITHOUT DUCTED HEATING OR COOLING SYSTEMS**

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.

#### **⚠ CAUTION**

**INSTALL FRESH AIR INLET AWAY FROM SOURCES OF CONTAMINANTS.**

- ♦ Do not locate the fresh air inlet where vehicles may be serviced or left idling.
- ♦ The fresh air inlet should be at least 10' away from any exhaust such as dryer vents, chimneys, furnace and water heater exhausts, or other sources of contamination or carbon monoxide.
- ♦ Install 12" above ground level.
- ♦ Never locate the fresh air inlet inside a structure.

### 3.4 ELECTRICAL CONTROLS

♦ **AUTOMATIC PROPORTIONAL RUNTIME CONTROL**

All installations include a Primary Operating Control on the unit to ensure appropriate operation of the system. The control terminal on the unit must be connected to the furnace/air conditioner and/or thermostat only for proper operation. The thermostat and furnace/air conditioner control circuit must be Class II circuits. See Figure 3.5.0 for a wiring diagram.

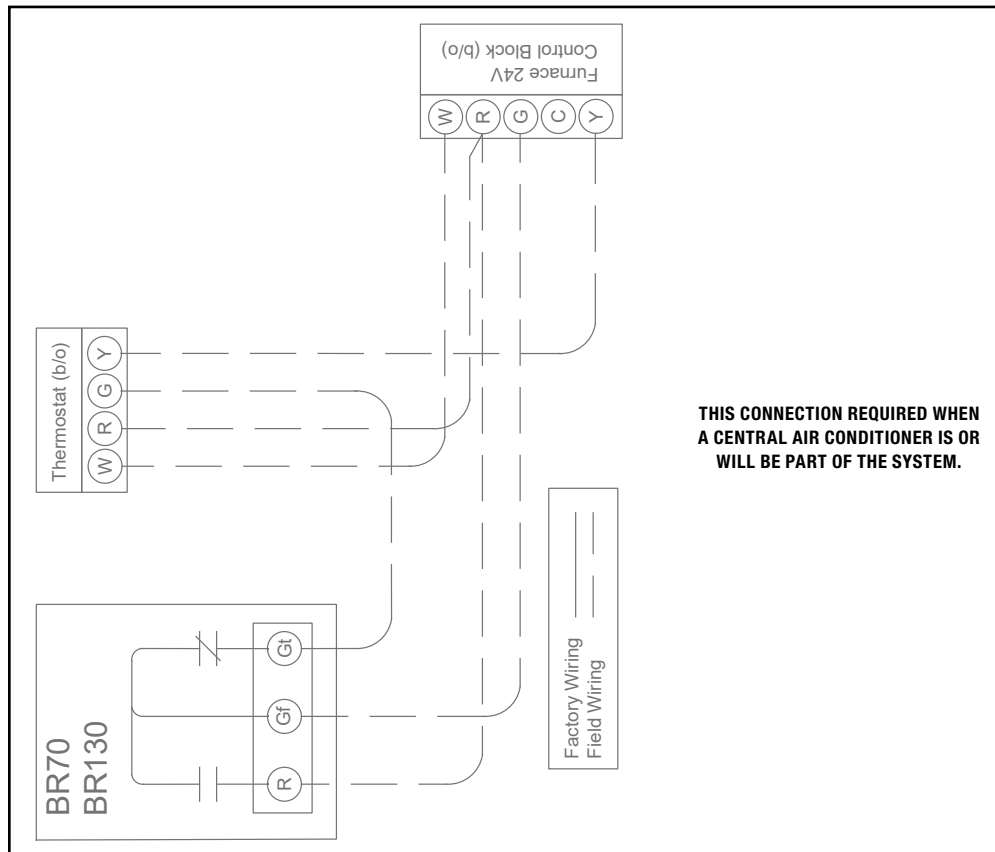


FIGURE 3.4.0 WIRING DIAGRAM

**⚠ WARNING**

DANGER OF ELECTRICAL SHOCK WHEN SERVICING AN INSTALLED UNIT.  
ALWAYS DISCONNECT POWER SOURCE BEFORE WIRING OR SERVICING.



NOTE: Proper Wiring Size Selection and Wiring Installation is the Responsibility of the Electrical Contractor.



NOTE: Electrostatic discharge (static electricity) may have an adverse effect on the control board. Use proper grounding techniques when handling the control board.

## 4.0 OPERATION

### 4.1 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.
- Plug unit into 115 VAC outlet. It may start immediately.
- Use control 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.

### 4.2 VERIFYING UNIT PERFORMANCE

#### 4.2.1 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.

#### 4.2.2 Use Static Taps to Measure Airflow Rates


See Differential Static Across Core tables in Section 4.4 on page 15.


#### 4.2.3 Use Damper to Balance Airflow 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.

After measuring the airflow of the unit, the balanced damper may be used to balance airflow if desired. Place the damper between the duct collar and the unit for the RA (Through Wall)/OA (Duct Hung) airstream.

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: The unit is considered balanced if the difference between the two airflows is not more than 10 CFM.

 NOTE: Install the damper as shown in Figure 4.2.0 below.

 NOTE: Drilling through the case while the unit is running may cause metal shards to be drawn into the unit.

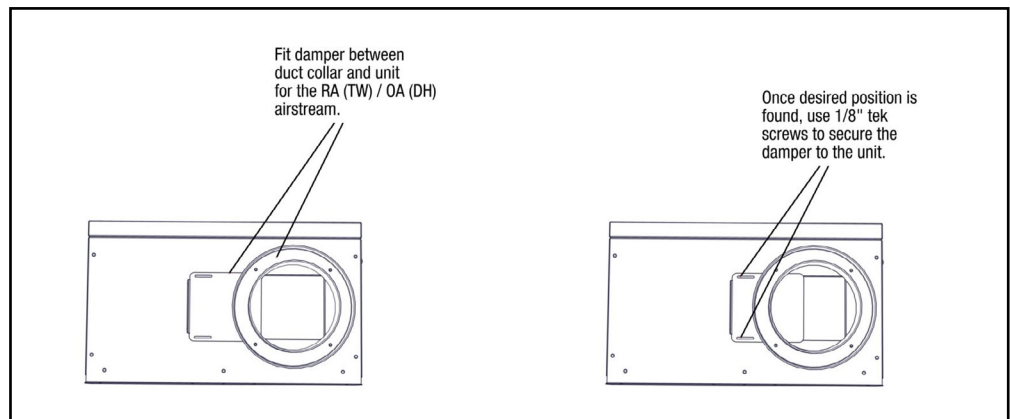


FIGURE 4.2.0 DAMPER INSTALLATION

### 4.3 MEASURING AIRFLOW

#### 4.3.1 Equipment Required


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


### 4.4 MEASURING CROSS CORE STATIC PRESSURE


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


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.
- 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 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".

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

 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 ERVs can generally operate with a flow imbalance of up to 20% without significant loss in energy recovery efficiency.

**⚠ CAUTION**

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

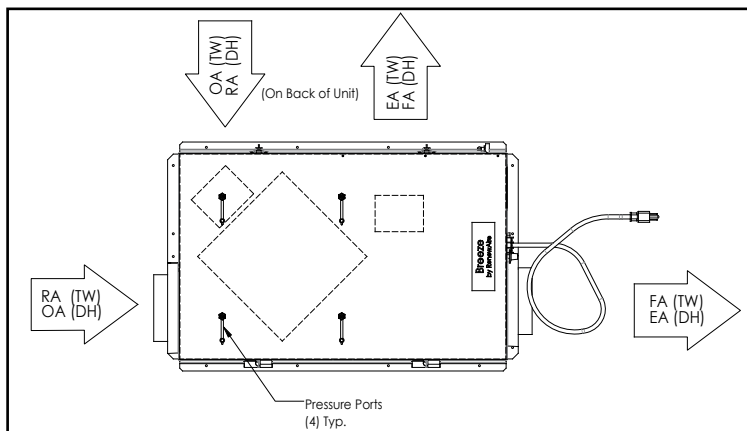


FIGURE 4.4.0 AIRFLOW DIAGRAM BR-SERIES

DIFFERENTIAL STATIC ACROSS CORE DSP VS. CFM							
BR70		DSP	0.10	0.20	0.30	0.40	0.50
	Fresh Air (FA)	CFM	16	31	47	62	78
	Room Air (RA)	CFM	16	31	47	62	78

DIFFERENTIAL STATIC ACROSS CORE DSP VS. CFM								
BR130		DSP	0.10	0.20	0.30	0.40	0.50	.60
	Fresh Air (FA)	CFM	28	56	83	111	139	167
	Room Air (RA)	CFM	28	56	83	111	139	167

**⚠ CAUTION**

The proper airflow range for the models are:  
 BR70: 40–70 CFM  
 BR130: 50–140CFM



**⚠ WARNING**

RISK OF FIRE, ELECTRIC SHOCK, OR INJURY.

- ♦ Before servicing or cleaning the unit, unplug the line cord.
- ♦ Make sure unit is not running before opening its door. Blower wheels are sharp and can cut.
- ♦ Do not disable the interlock switch: it is there for your safety.

**⚠ CAUTION**

DO NOT WASH THE ENERGY EXCHANGE CORE.

Keep it away from water or fire to avoid damaging it. Always handle the core carefully.



NOTE: The filters should be replaced after they have been cleaned several times.



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.

## 5.0 MAINTENANCE

Keep your ERV performing at its best by cleaning it as described below.

### 5.1 TO CLEAN THE ENERGY EXCHANGE ELEMENT

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 core flutes move the air in a laminar airflow such that particulate deposition is maintained at virtually nil.

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.

### 5.2 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 Section 5.5 Service Parts. Orange side of filter should face the core.
6. Re-install door, and fasten cam latches.

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:

BR70	7" x 10 ½"
BR130	10 ½" x 10 ½"

Call your HVAC contractor or RenewAire for further information.

### 5.3 MOTOR MAINTENANCE

The blower/motor package needs no lubrication:

If necessary, vacuum clean the blower wheels at the same time you clean the face of the energy exchange element (yearly). Confirm blower wheel is not rubbing against the blower inlet or housing by rotating wheel manually.

### 5.4 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.

5.5 SERVICE PARTS

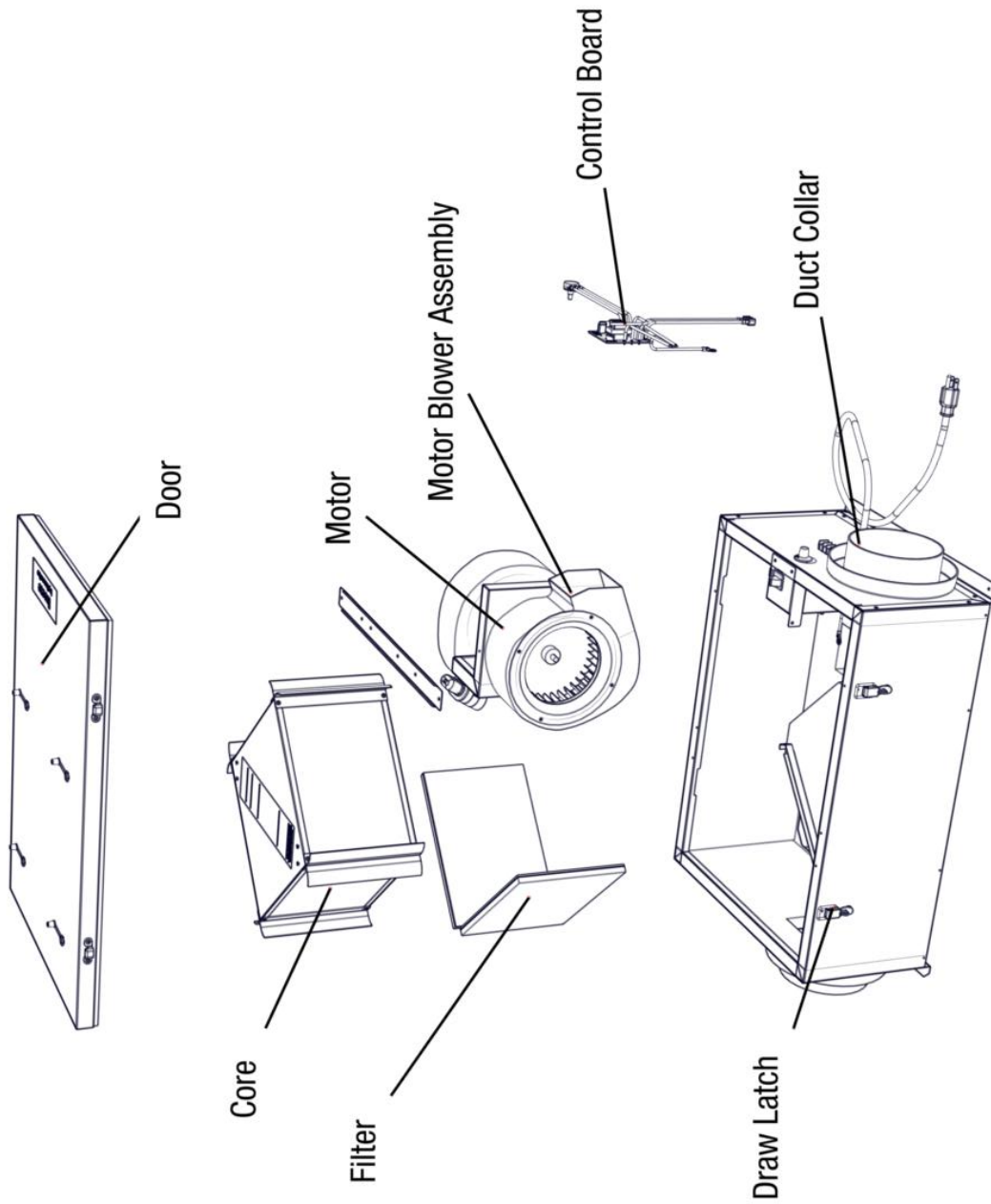


FIGURE 5.5.0 SERVICE PARTS, BR70 SHOWN

## 6.0 FACTORY ASSISTANCE

In the unlikely event that you need assistance from the factory for a specific issue, make sure that you have the information called for in the Unit Information page in the front of this manual. The person you speak with at the factory will need that information to properly identify the unit.

**To contact RenewAire Customer Service:**

**Call 800-627-4499**

**Email: [RenewAireSupport@RenewAire.com](mailto:RenewAireSupport@RenewAire.com)**

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## About RenewAire

For over 30 years, **RenewAire** has been a pioneer in enhancing indoor air quality (IAQ) in commercial and residential buildings of every size. This is achieved while maximizing sustainability through our fifth-generation, static-plate, enthalpic-core **Energy Recovery Ventilators (ERVs)** that optimize energy efficiency, lower capital costs via load reduction and decrease operational expenses by minimizing equipment needs, resulting in significant energy savings. Our ERVs are competitively priced, simple to install, easy to use and maintain and have a quick payback. They also enjoy the industry's best warranty with the lowest claims due to long-term reliability derived from innovative design practices, expert workmanship and **Quick Response Manufacturing (QRM)**.

As the pioneer of static-plate core technology in North America, RenewAire is the largest ERV producer in the USA. We're **committed to sustainable manufacturing** and lessening our environmental footprint, and to that end our Waunakee, WI plant is 100% powered by wind turbines. The facility is also one of the few buildings worldwide to be LEED and Green Globes certified, as well as having achieved ENERGY STAR Building status. In 2010, RenewAire joined the Soler & Palau (S&P) Ventilation Group in order to provide direct access to the latest in energy-efficient air-moving technologies. For more information, visit: [renewaire.com](http://renewaire.com)

201 Raemisch Road | Waunakee, WI | 53597 | 800.627.4499 | [RenewAire.com](http://RenewAire.com)