

— VENTILATION SOLUTIONS FOR EVERY HOME —

RESIDENTIAL ERV PRODUCT GUIDE



DEFICIENT INDOOR AIR QUALITY THREATENS HOME OCCUPANTS

As construction methodologies have improved, buildings are becoming increasingly airtight in order to reduce air leakage, improve energy efficiency, reduce heating and cooling costs, further occupant comfort and strengthen structural durability. However, an unintended consequence is deficient indoor air quality (IAQ). This is a serious threat to occupant health, cognitive function, productivity and general well-being. Industry standards are changing to **COMBAT DEFICIENT IAQ**, and codes that adopt these new standards are driving the application of **ENERGY RECOVERY VENTILATOR (ERV)** technologies. The World Health Organization (WHO) estimates that 30% of all new or renovated buildings, including homes, suffer from deficient IAQ.¹



Deficient IAQ needs to be addressed since people spend about **90% of their time indoors** according to the National Safety Council (NSC).²



Standardized **test scores can increase by 10%** when ventilation rates are doubled.³



Doubling the ventilation rate from 20 CFM to 40 CFM per person costs only \$32 per person and improves productivity \$6,500 per person per year.⁴

ADVERSE EFFECTS OF DEFICIENT IAQ

Deficient IAQ has numerous adverse effects on health, cognitive function, productivity and general well-being.



Health Problems: Acute allergies, headaches, coughs, asthma, skin irritations and breathing difficulties, as well as chronic illnesses such as cancer, liver disease, kidney damage and nervous-system failure.



Cognitive Impairment: Studies by the Harvard School of Public Health and the Lawrence Berkeley National Laboratory found that carbon dioxide (CO₂)—a constituent of exhaled breath—negatively impacted thinking and decision-making at levels commonly found inside homes and buildings.



Reduced productivity: Enhanced Indoor Air Quality (IAQ) could save up to \$200 billion in worker performance and \$58 billion in lost sick time.

¹ "Indoor Air Pollution: Introduction for Health Professionals," U.S. Consumer Product Safety Commission, <https://www.cpsc.gov/safety-education/safety-guides/home/indoor-air-pollution-introduction-health-professionals>.

² "Indoor Air Quality," National Safety Council, http://www.nsc.org/NSCDocuments_Advocacy/Fact%20Sheets/Indoor-Air-Quality.pdf.

³ "Frequently Asked Questions about Improved Academic Performance," U.S. Environmental Protection Agency (EPA), <https://www.epa.gov/iaq-schools/frequently-asked-questions-about-improved-academic-performance>.

⁴ Source of data and statements: Int. J. Environ. Res. Public Health 2015, 12 (11), 14709-14722.

WHO'S AT RISK?

Everyone. However, **children are the most vulnerable**. Due to their physiology, children inhale more pollutants per pound of body weight than adults, and because children's airways are narrower, irritation means greater obstruction, according to the WHO. What's more, children's immune systems are less developed than adults.

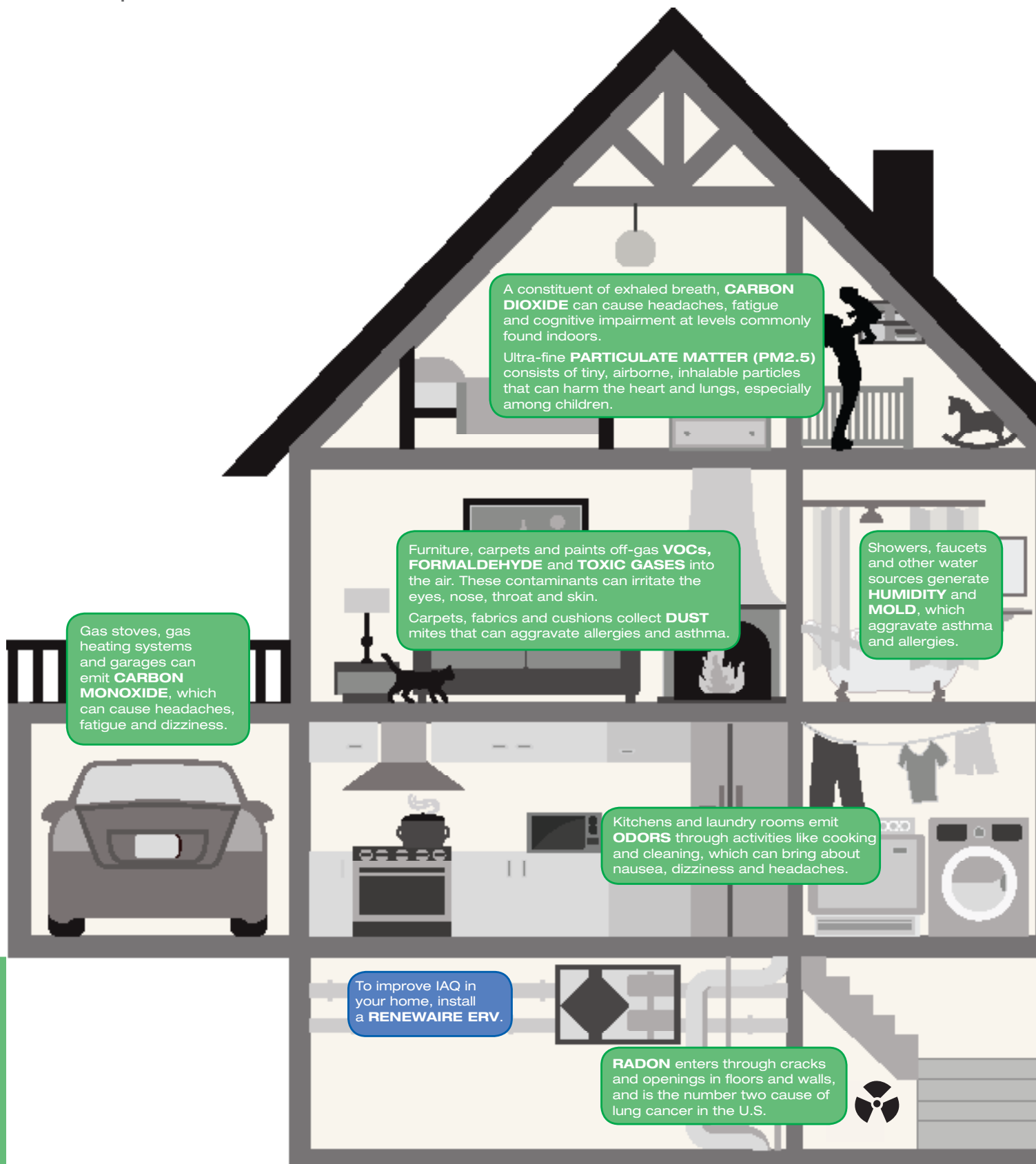
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DID YOU KNOW?

During sleep, people breathe more deeply, allowing more contaminants to enter their body. The results are aggravated asthma and allergies, stuffy noses, headaches, scratchy throats, coughs, sleep interruptions and general sickness. Additionally, contaminants are off-gassed from foams, plastics and flame-retardants found in most new beds and mattresses.

HIDDEN INDOOR AIR CONTAMINANTS IN YOUR HOME

Indoor spaces are full of air contaminants. The EPA



A constituent of exhaled breath, **CARBON DIOXIDE** can cause headaches, fatigue and cognitive impairment at levels commonly found indoors.

Ultra-fine **PARTICULATE MATTER (PM2.5)** consists of tiny, airborne, inhalable particles that can harm the heart and lungs, especially among children.

Furniture, carpets and paints off-gas **VOCs, FORMALDEHYDE** and **TOXIC GASES** into the air. These contaminants can irritate the eyes, nose, throat and skin.

Carpets, fabrics and cushions collect **DUST** mites that can aggravate allergies and asthma.

Showers, faucets and other water sources generate **HUMIDITY** and **MOLD**, which aggravate asthma and allergies.

Gas stoves, gas heating systems and garages can emit **CARBON MONOXIDE**, which can cause headaches, fatigue and dizziness.

Kitchens and laundry rooms emit **ODORS** through activities like cooking and cleaning, which can bring about nausea, dizziness and headaches.

To improve IAQ in your home, install a **RENEWAIRE ERV**.

RADON enters through cracks and openings in floors and walls, and is the number two cause of lung cancer in the U.S.

RENEWAIRE ERVs

ACHIEVE SUSTAINABLE IAQ

RenewAire is **A PIONEER IN ENHANCING IAQ** while maximizing sustainability through enthalpic-core, static-plate ERVs that **OPTIMIZE ENERGY EFFICIENCY**, lower costs by **REDUCING HVAC LOADS** and therefore reduce environmental footprints. Our ERV technology preconditions incoming air with the otherwise-wasted sensible and latent energy (heat and humidity) of the exhaust air going out—all while the airstreams are kept physically separate as certified by the Air Conditioning, Heating and Refrigeration Institute (AHRI) for zero exhaust air transfer at normal balanced operating conditions. As the pioneer of static-plate core technology in North America, RenewAire is the largest ERV producer in the USA.

HIGHEST-QUALITY INDOOR AIR

Stale indoor air is replaced with fresh, conditioned and filtered outdoor air, resulting in enhanced IAQ by removing harmful contaminants from the indoor air. Airstreams do not mix and pollutants are not transferred across partition plates.

OPTIMIZING ENERGY EFFICIENCY

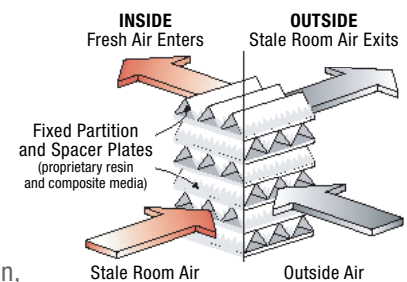
Energy efficiency is optimized by preconditioning the outside air coming in with the **otherwise-wasted sensible and latent energy** of the exhaust air going out. This exchange of energy moderates temperatures and moisture, decreases HVAC equipment needs, drives operational efficiencies and conserves energy.

REDUCING HVAC LOADS

RenewAire technology **reduces HVAC loads** during both winter and summer. The size of the HVAC equipment (furnace and air conditioner) can be decreased. This ensures efficient operation and keeps both energy use and operating costs low while maintaining high-level IAQ.

SUSTAINABILITY IN ACTION

Committed to sustainability, RenewAire moved into an 111,000-square-foot facility in Madison, WI that's fully powered by renewable energy and is seeking LEED Gold, Green Globes and ENERGY STAR certifications to meet rigorous environmental standards. The state-of-the-art building has adopted many ventilation strategies, including 100% outdoor air, to provide healthy IAQ and training opportunities to show real-time energy and cost benefits.



WHY RENEWAIRE IS PREFERRED



BEST VALUE

- ◆ Priced competitively against other ERV models
- ◆ Due to competitive pricing and decreased costs, payback is short and ROI is maximized
- ◆ Contractors can pass these significant savings along to their customers



RELIABLE OPERATION

- ◆ Built-to-last ERVs have lifespans of 25+ years and operate consistently year-round in every extreme, including frost-free performance in all but the most severe winter climates
- ◆ High-efficiency core operates dry in all conditions, meaning no condensate pans or drains are needed
- ◆ Fewer moving parts means fewer problems: no dampers or damper motors to stick or break
- ◆ An industry-leading 10-year warranty for the static-plate core and a five-year warranty for all other product components ensure peace of mind
- ◆ Superior product quality results in paramount reliability and longevity



HIGHEST-QUALITY INDOOR AIR

- ◆ Stale indoor air is replaced with fresh, conditioned and filtered air from the outside, resulting in enhanced IAQ by removing harmful contaminants
- ◆ Airstreams do not mix and pollutants are not transferred across partition plates
- ◆ No biocide used; material does not promote biological growth
- ◆ Moderated temperatures and humidity maintain a comfortable indoor environment



OPTIMIZED ENERGY EFFICIENCY

- ◆ Efficient heat and humidity transfer recaptures 70-80% of the energy exhausted in the airstream
- ◆ Energy that's otherwise wasted by conventional ventilation systems (such as bath fans) is reused, thus dramatically reducing monthly operation costs
- ◆ Energy-efficient operation decreases HVAC loads, which cuts down on energy use and costs
- ◆ The hotter or colder the climate, the more energy is recovered



HIGHLY CERTIFIED*



*BR70 UL-listed only

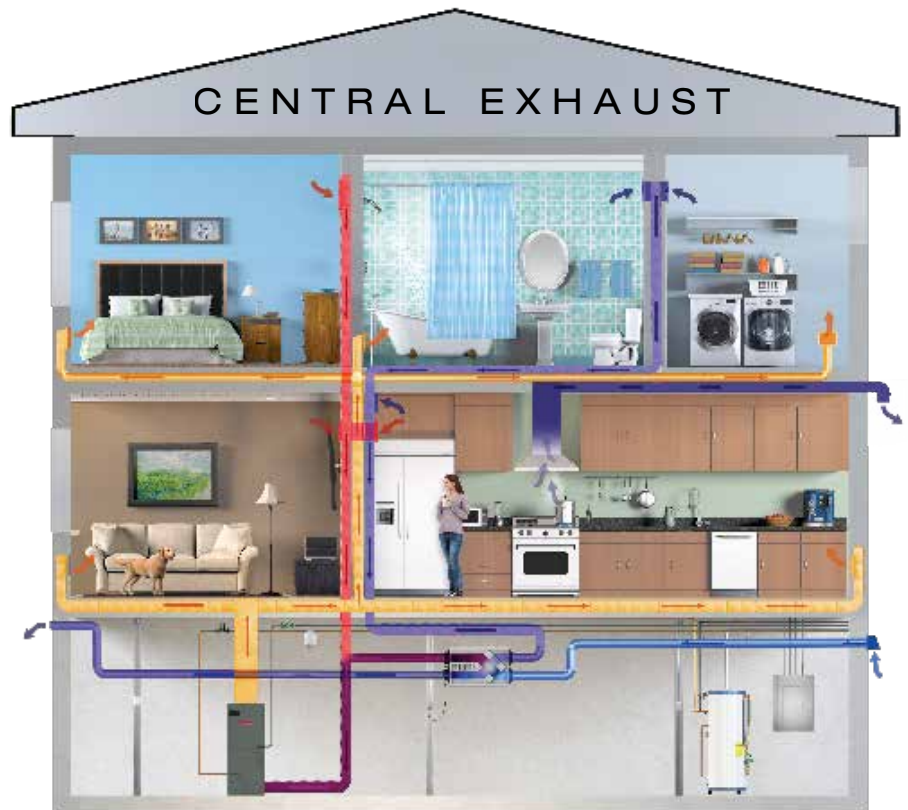
SIMPLE

SIMPLE TO INSTALL

CENTRAL EXHAUST

The **superior choice** for the most energy-efficient ventilation.

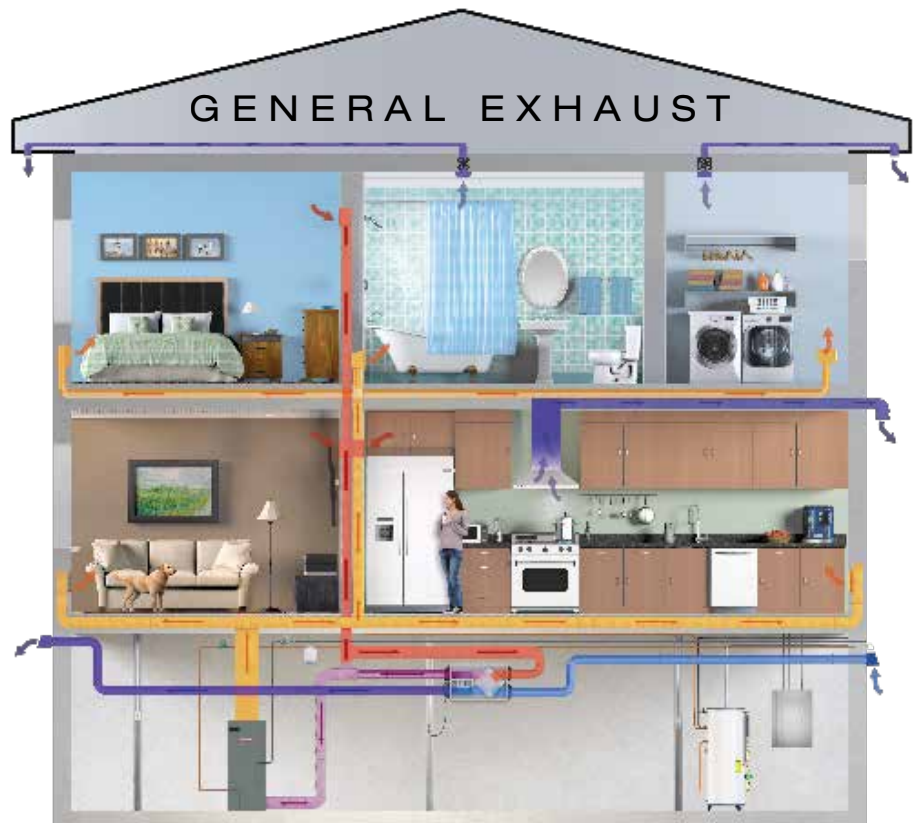
Central Exhaust provides an ample supply of filtered outdoor air and replaces bathroom exhaust fans, capturing energy from bathrooms and kitchens that would otherwise be wasted. Air is collected from a small ductwork system at each exhaust location, and the unit delivers fresh air to the furnace/AC return air duct. According to the Department of Energy (DOE), balanced ventilation using ERVs results in the lowest level of steady-state indoor air contaminants.



GENERAL EXHAUST

Installation option for putting an ERV into an **established system**.

General Exhaust provides an ample supply of filtered outdoor air and is often a preferred option for use in a home that already has an HVAC system in place. This installation method utilizes exhaust fans and ductwork that already exist. Fresh air may be supplied to the furnace/AC return air duct.



QUALITY YOU CAN SEE

INSULATION

Case walls and doors are fully insulated with 1" expanded polystyrene foam insulation with a cleanable foil face on all exposed surfaces.



CONSTRUCTION

24-gauge steel with lapped corners and zinc-plated screw fasteners.



EASY TO CONTROL AND ADJUST



PERCENTAGE TIMER

Primary control for EV90, EV90P, EV130, EV200, EV240 and EV300

- ◆ Units can run an adjustable amount of time each hour
- ◆ Two-wire, low-voltage connection



PERCENTAGE TIME WITH FURNACE INTERLOCK

Alternate primary control for EV90, EV90P, EV130, EV200, EV240 and EV300

- ◆ Low-voltage wire connects to EV unit and either thermostat or furnace control to turn on furnace blower
- ◆ Six-wire, low-voltage connection



PUSH-BUTTON POINT OF USER TIMER

Secondary control used in combination with PTL control

- ◆ Push-button control turns on unit from bathrooms or other intermittent exhaust locations
- ◆ One-touch, 20-minute run-time
- ◆ Push 2 times for 40 minutes or 3 times for 60 minutes
- ◆ Two-wire, low-voltage connection to PTL control

SIMPLE TO USE AND MAINTAIN

- ◆ Homeowners like the ERVs because the **controls are simple** and intuitive, and provide the ability for both timer and manual control
- ◆ Maintenance **doesn't require a technician**—simply vacuum the faces of the core and change the filters about once a year
- ◆ **No condensate pans and drains** makes running the ERV simple and easy, and cuts down on maintenance time and costs
- ◆ For any technical, application or service questions, our **experienced and knowledgeable customer-service team** is available

AND EASY

FINDING YOU THE RIGHT ERV

RenewAire ERVs can be installed in homes of **EVERY TYPE, SIZE AND LOCATION** to enhance IAQ reliably, energy-efficiently and cost-effectively, thus improving occupants' health, well-being and bottom line. If you have any questions about ERV selection, installation or maintenance, contact our expert customer service team at 800.627.4499 (M-F, 8am-5pm CST) or renewairesupport@renewaire.com. We're always here to help you find the right ERV.

BR70



- CONSUMER-GRADE APPLIANCE
- TWO-DUCT CONNECTION FOR SIMPLE INSTALLATION

Typical Airflow Range: 40-70 CFM

Standard Features:

Painted cabinet
Line-cord power supply
Built-in control
Unit may be mounted in any orientation

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"

- PLUG-IN POWER

Unit Dimensions & Weight:

29 3/4" L x 19 1/4" W x 10 3/4" H
38 lbs.

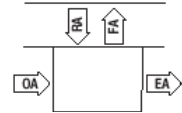
Motor(s):

Qty. 1, Double-shaft standard motor

Accessories:

Backdraft damper 6"
Wall cap 6" - white, brown
Exterior thru-the-wall installation kit
Duct collar kit

Airflow Configuration
Available as shown:



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.

BR130



- CONSUMER-GRADE APPLIANCE
- TWO-DUCT CONNECTION FOR SIMPLE INSTALLATION

Typical Airflow Range: 50-140 CFM

Standard Features:

Painted cabinet
Line-cord power supply
Built-in control
Unit may be mounted in any orientation

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"

- PLUG-IN POWER

Unit Dimensions & Weight:

33 1/2" L x 19 1/4" W x 13 1/2" H
48 lbs.

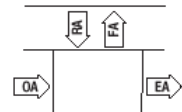
Motor(s):

Qty. 1, Double-shaft standard motor

Accessories:

Backdraft damper 6"
Wall cap 6" - white, brown
Exterior thru-the-wall installation kit
Duct collar kit

Airflow Configuration
Available as shown:



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.

GR 90



- LOW-COST AND UNPAINTED
- CONTRACTOR-GRADE APPLIANCE, OFTEN USED FOR MULTI-FAMILY UNITS
- FOUR-DUCT CONNECTION
- HARD-WIRED POWER FOR CONTRACTOR INSTALLATION

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:

22 1/2" L x 11 3/4" W x 23 3/4" H
36 lbs.

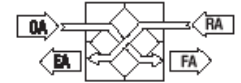
Motor(s):

Qty. 2, Standard motorized impeller blowers

Accessories:

Backdraft damper 6"
Wall cap 6" - white, brown
120V line voltage Honeywell control

Airflow Configuration
Available as shown:



Unit Mounting & Application

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



EV 90



- CONSUMER-GRADE APPLIANCE
- FOUR-DUCT CONNECTION

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"

- PLUG-IN POWER

Unit Dimensions & Weight:

22 1/2" L x 11 3/4" W x 23 3/4" H
36 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)

Airflow Configuration
Available as shown:



Unit Mounting & Application

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



EV 90P



- HIGH-PERFORMANCE ERV
- CONSUMER-GRADE APPLIANCE
- FOUR-DUCT CONNECTION
- PLUG-IN POWER

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:
21 3/4" x 10 1/2" x 1"

Unit Dimensions & Weight:

22 1/2" L x 24" W x 23 3/4" H
51 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)

Airflow Configuration
Available as shown:



Unit Mounting & Application

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



DESIGNED FOR SUPERIOR PERFORMANCE IN EVERY HOME AND CLIMATE

EV 130



- CONSUMER-GRADE APPLIANCE
- FOUR-DUCT CONNECTION

Typical Airflow Range: 50-140 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:
10 1/2" x 10 1/2" x 1"

- PLUG-IN POWER

Unit Dimensions & Weight:

33 1/2" L x 13 1/4" W x 20" H
48 lbs.

Motor(s):

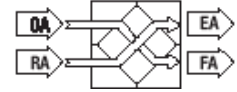
Qty. 1, Double-shaft standard motor

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)



Airflow Configuration
Available as shown:



Unit Mounting & Application

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



EV 200



- CONSUMER-GRADE APPLIANCE
- FOUR-DUCT CONNECTION

Typical Airflow Range: 100-200 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:
10 1/2" x 21 3/4" x 1"

- PLUG-IN POWER

Unit Dimensions & Weight:

33 1/2" L x 24" W x 20" H
68 lbs.

Motor(s):

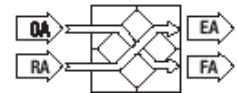
Qty. 1, Double-shaft standard motor

Accessories:

Backdraft damper 8"
Wall cap 8" - taupe plastic, galvanized, paintable galvalneal
Louver with 8" round duct connection - 12" (W) x 8" (H)
Percentage timer control (PTL)
Push-button point-of-use controls (PBL), PTL req'd.
Percentage timer control with furnace interlock (FM)
Electric duct heater - EK series (1-60 kW), for commercial use only



Airflow Configuration
Available as shown:



Unit Mounting & Application

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



EV 240



- CONSUMER-GRADE APPLIANCE
- FOUR-DUCT CONNECTION

Typical Airflow Range: 100-240 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:
10 1/2" x 21 3/4" x 1"



- PLUG-IN POWER

Unit Dimensions & Weight:

33 1/2" L x 24" W x 20" H
70 lbs.

Motor(s):

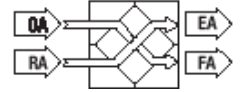
Qty. 1, Double-shaft standard motor

Accessories:

Backdraft damper 8"
Wall cap 8" - taupe plastic, galvanized, paintable galvaneal
Louver with 8" round duct connection - 12" (W) x 8" (H)
Percentage timer control (PTL)
Push-button point-of-use controls (PBL), PTL req'd.
Percentage timer control with furnace interlock (FM)
Electric duct heater - EK series (1-60 kW), for commercial use only



Airflow Configuration
Available as shown:



Unit Mounting & Application

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

EV 300



- CONSUMER-GRADE APPLIANCE
- FOUR-DUCT CONNECTION

Typical Airflow Range: 150-300 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:
10 1/2" x 21 3/4" x 1"



- PLUG-IN POWER

Unit Dimensions & Weight:

33 3/4" L x 24" W x 20" H
72 lbs.

Motor(s):

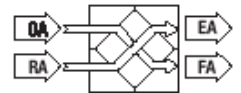
Qty. 1, Double-shaft standard motor

Accessories:

Backdraft damper 8"
Wall cap 8" - taupe plastic, galvanized, paintable galvaneal
Louver with 8" round duct connection - 12" (W) x 8" (H)
Percentage timer control (PTL)
Push-button point-of-use controls (PBL), PTL req'd.
Percentage timer control with furnace interlock (FM)
Electric duct heater - EK series (1-60 kW), for commercial use only



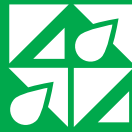
Airflow Configuration
Available as shown:



Unit Mounting & Application

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

FOR DESIGN ASSISTANCE, PLEASE CONTACT TECHNICAL SUPPORT AT 800.627.4499



RENEWAIRE EVERYWHERE

RenewAire ERVs can be applied everywhere across all residential and commercial buildings, and everything in between.

Our technology excels in every geographic region, every climate and every size project.



RenewAire.com
800.627.4499



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