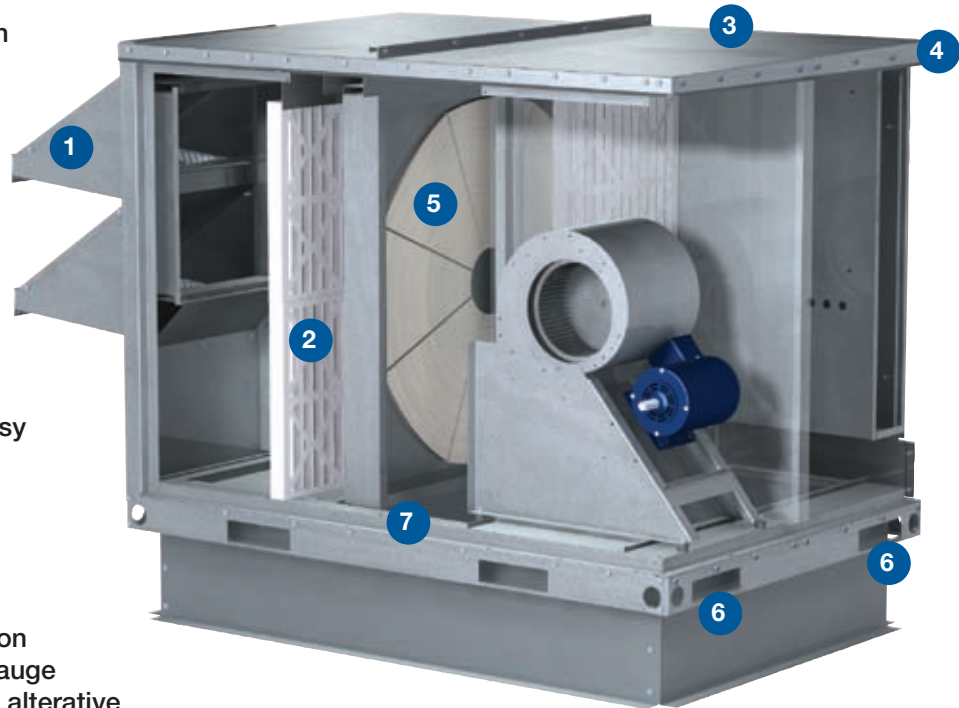


Greenheck's model ERV^e provides fresh outdoor air to your building and is designed specifically for outdoor conditions seen on roof decks or slab mounted in all types of climates. This unit incorporates innovative design features with options in energy wheel performance to provide a quality constructed unit with performance flexibility. The flexibility and reliability of these units means the ERV^e will fit seamlessly into your building to improve your indoor air quality while saving energy and costs.

Design Features:

- 1 Dual downturned hood design lowers supply air intake velocities to prevent rain and snow from being pulled in to the unit. Each hood has washable aluminum mesh prefilters blocking debris or leaves.
- 2 2-inch outdoor and return air filters are standard with a MERV 8 (30% efficiency) rating and are set into filter racks that permit easy change out and rigid support.
- 3 Pitched roof and interlocked standing seams eliminates standing water and provides rigid construction.
- 4 1-inch double-wall construction with 18 gauge outer and 24 gauge inner galvanized steel panels, alternative coatings available as an option. Double-wall construction protects insulation from moisture and prevents insulation fibers from entering the airstream. Insulation is 3 lb/ft³ density.
- 5 Multiple energy wheel options allow selection of a unit by what is critical in the design or application:
 - Efficiency
 - Recovery Efficiency Ratio (RER)
 - Low blower horsepower



- 6 Fork-able base and lifting locations cut into the base for quick and easy jobsite off-loading and unit setting.
- 7 Solid integral base with ½-inch upturned lips around bottom inlets and perimeter drains to prevent and quickly remove any water in the housing.

Additional Features

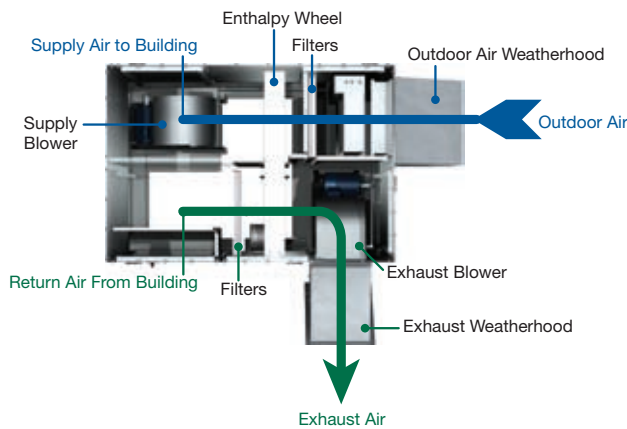
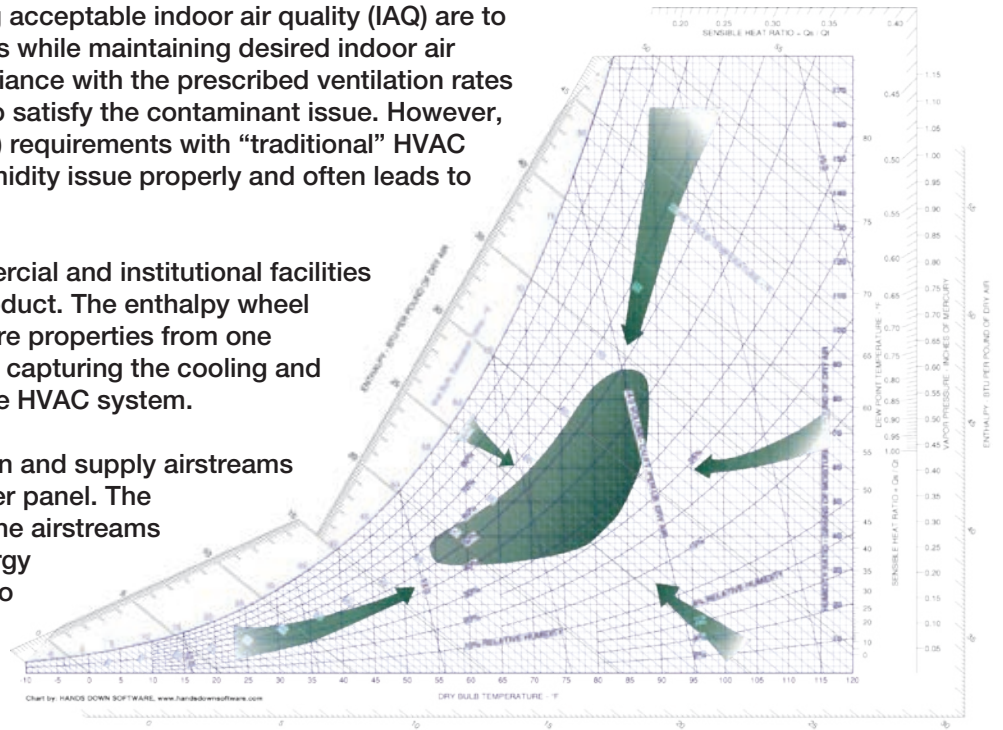
- Quiet running, forward-curved blowers
- Adjustable motor pulleys for final system balancing
- Factory provided motor starters and disconnection switch in a sealed control center
- Neoprene isolation on blower assembly to minimize sound and vibration transmission
- Door seals utilizing a superior bulb design and four blades to provide a tight seal against water penetration with durability and flexibility for years of service
- Liftoff door design with hinges for easier inspection and dual door handles to provide a secure and tight seal for gasketing

How does an energy recovery wheel work?

The basic objectives for providing acceptable indoor air quality (IAQ) are to control indoor contaminates levels while maintaining desired indoor air temperature and humidity. Compliance with the prescribed ventilation rates in ASHRAE Standard 62 appear to satisfy the contaminant issue. However, simply increasing outdoor air (OA) requirements with “traditional” HVAC systems may not address the humidity issue properly and often leads to significant energy cost increases.

The best solution for most commercial and institutional facilities will include an enthalpy wheel product. The enthalpy wheel transfers temperature and moisture properties from one airstream to another. The result is capturing the cooling and heating energy before it leaves the HVAC system.

Moving through the unit, the return and supply airstreams pass on opposite sides of a divider panel. The enthalpy wheel rotates between the airstreams transferring up to 75% of the energy present in the exhaust airstream to the supply.



Utilizing an enthalpy wheel to precondition the outdoor air, narrows the operational range of outdoor air conditions which the building’s HVAC equipment is designed to temper. It is this reduction in the outdoor air range that allows for size reduction in heating and cooling equipment and reduced energy costs.

Certifications

ERVe’s construction is matched with extensive in-house testing and third-party verification of performance and safety.

Licensed to bear the AMCA seal for Air Performance



Greenheck certifies that the ERVe models shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

Unit is ETL Listed — all internal electrical components are factory wired to a single-point power connection



Every unit is tested at the factory before it is shipped to the jobsite.

ARI Standard 1060 certified energy wheel performance assures the ERVe model will function as required in demanding environments



Energy recovery wheels are certified by the ARI Air-to-Air Energy Recovery Ventilation Equipment Certification Program in accordance with ARI Standard 1060. Actual performance in packaged equipment may vary. Certified ratings are available in the Certified Product Directory at <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>

What is the Benefit with Greenheck Energy Recovery?

For the Building Owner

- Improved Indoor Air Quality (IAQ)**

Introducing fresh, outdoor air to a building is a key component to sustaining excellent indoor air quality. Outdoor air can be very expensive to heat and cool, but the ERV^e unit can provide an economical approach to delivering outdoor air into a building.

- Energy Savings = Quick Payback**

The energy recovery unit provides energy savings throughout the year. In the summer, the energy recovery unit removes heat and moisture out of the outdoor air, but in the winter, heat and moisture are added back into the fresh airstream. When you combine the energy savings from summer and winter operation, they lead to a very fast payback period. In most parts of the United States, the payback is less than 2 years!

	Equipment Reduction						Approximate Payback (Years)***
	Gas Price*	Electric Cost**	Cooling Equipment Reduction (tons)	Annual Summer Cooling Savings	Heating Equipment Reduction (MBH)	Annual Winter Heating Savings	
Boston, MA	1.68	0.1495	8.72	226	161	4544	0.78
Minneapolis, MN	1.14	0.0712	9.55	161	217	3261	0.88
St. Louis, MO	1.34	0.0558	12.1	356	173	3088	0.35
Raleigh, NC	1.48	0.073	11.3	424	138	2790	0.57
Houston, TX	1.10	0.1011	13.0	1701	111	1089	0.22
Tampa, FL	1.59	0.0974	13.1	1779	89	988	0.21
Portland, OR	1.21	0.071	4.17	2	123	2930	2.34
Phoenix AZ	1.13	0.0766	9.40	271	161	1478	1.95

* Average gas price (dollars per therm) per region in the first six months of 2007 (source: Energy Information Administration)

** Average electricity cost (dollars per kWh) in March of 2007 (source: Energy Information Administration)

*** Assumptions: \$3/cfm energy recovery cost; \$650/ton avoided cooling equipment cost; 75.6% effective energy wheel; 12 hrs/day 5 days/week operation

For the Maintenance Personnel

- Low Maintenance Equipment**

Energy Wheel: The most important component in the ERV^e is the energy wheel. This device should be inspected and cleaned as necessary, which will vary by application and environment. Any cleaning that is required is simplified by the easy accessible wheel with removable segments. Cleaning requires no special equipment (light detergent and water) and can be performed in a location that is convenient to you.

Fans: The blowers that are used in the ERV^e are centrifugal, forward-curved-type fans. These fans come with easily adjustable pulleys, belt tension bolts and permanently sealed bearings.

Filters: The 2-inch, 30% efficient MERV 8 filters that are included with the unit are designed for easy access and removal.



- Quality Construction**

Greenheck has focused on the manufacturing and unit designs to create well-constructed equipment. Investments in automated manufacturing processes provide accurate and repeatable results, giving excellent part fit and unit strength. Incorporation of innovative designs add to the quality, while keeping maintenance work simple to perform.



- Long-Lasting Equipment**

Because of our high-quality construction, the equipment that goes to the field is made to last. As reassurance to the customer, each ERV^e unit carries a 1-year warranty from the ship date and the wheel components (segments, cassette, belt, and pulleys) carry a 5-year warranty.

What is the Benefit with Greenheck Energy Recovery?

For the Design Engineer

- **Adhering to ASHRAE Guidelines**

ASHRAE Standard 90.1 provides design guidelines regarding when it is most beneficial to use energy recovery. Depending upon your geographic location and the percentage of outdoor air in the application, ASHRAE recommends when to use energy recovery. An important part of this guideline is that when energy recovery is recommended, the device should be a minimum of 50% total (sensible and latent) effectiveness according to ARI 1060 testing procedure.

- **LEED Certification Credits**

For Green Building designs, the ERV^e offers an excellent way to acquire credits in both Energy and Atmosphere (EA) and Indoor Environmental Quality (EQ) categories towards a LEED certification.



- **CAPS Program**

CAPS is Greenheck's comprehensive product selection program. The CAPS program was developed with ease of use and fast selections in mind. There is also useful information available for making selections and educating people who are new to energy recovery technology. CAPS also provides submittals which includes unit overview, electrical information, fan charts, arrangements, engineering drawings, payback information, and psychrometric processes.



- **CSI Specifications**

After a unit has been selected in CAPS, an accurate unit specification is available for use in the job specification. These specifications have been recently updated to the CSI format.

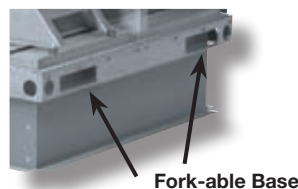
- **Industry Certification**

To ensure performance on the jobsite, Greenheck emphasizes the need for the 3 major industry certifications for energy recovery units: AMCA Licensed for Air Performance, ETL Listed for safety, and ARI Certification on the energy recovery wheel.

For the Contractor

- **Easy Installation**

- Fork-able base
- Integrated Lifting Holes
- Single-Point Power
- Hinged doors with lift off design



These are just a few of the built-in features to make the installation process quick and easy. Our comprehensive Installation, Operation, and Maintenance Manuals are also available online, so the information you need is quick and easy to obtain.

- **Product Approval**

Form, fit and function, the ERV^e was designed to operate in commercial and institutional applications. With over a decade of installations specific to the energy recovery market, Greenheck's energy recovery product line is well known and accepted throughout the industry.

- **1 – 5-Year Warranty**

Our 1-year unit warranty and 5-year energy recovery wheel warranty lets you to rest easy knowing that we stand behind our product.

Low-Leakage Dampers – Internally mounted for both supply and exhaust

Where code requires low-leakage dampers they can be provided to keep the cold weather out in the winter, or hot and humid weather out during the summer. Since the dampers are wired to a single-point power source, a simple run command sent to the unit powers the dampers open. When your unit is off during unoccupied hours, the dampers close to keep the outdoor air out.



Air Filtration – High-Efficiency Filters

Unit is standard with 2-inch, MERV 8, 30% efficient filters. Optional MERV 13, 85% efficient filters are available to help meet additional LEED requirements or simply improve indoor air quality.



Painted Exterior

For added aesthetics and a long-lasting finish, Greenheck offers many different paint options. Prepainted coatings in either Gray or Desert Sand offer economical options in customizing your unit. If a more specific color is desired, we also offer a wide variety of colors to meet your specific needs.



Roof Curbs

For a cohesive fit between the ERV^e and your building, Greenheck offers a pre-engineered curb design. They are available with duct adaptors to simplify field duct installation and get the unit up and running more quickly.



Remote Panel

With the optional remote panel you have control and the information you want. Monitoring lights, on/off time-clock control, or on/off/auto switch are a few of the available options. So whether you want to control the unit operation via a 7-day time clock or simply want to monitor unit performance, the remote panel is the option that you'll need.

Dirty Filter Sensors

Filters require scheduled maintenance to improve air quality and system efficiency. A dirty filter sensor allows you to minimize maintenance frequency to only when it is needed. The dirty filter kit senses when the filters are dirty and sends a signal to our built-in control center. Greenheck offers an optional remote control panel and a "clogged filter" light to tie the signal into.

Rotation Sensor

Adding a wheel rotation sensor to the unit assures you that the energy wheel is operating properly. The sensor sends a signal to the control center of the unit in the rare event that the wheel stops rotating. Greenheck offers an optional remote control panel and a "wheel rotation" light to tie the signal into.

Factory Mounted Sensors

Amp Draw, Pressure, Temperature: Greenheck offers factory mounted sensors that are wired back to the control center, so you can get the information you need to know, exactly where you need to measure it. These sensors can be used to simply monitor unit operation or to actively control the unit with controls by others.

Amp Monitor

Blower amp draw can be monitored through the use of an amperage sensor. These sensors allow for either an analog or digital output based on your system needs.



Wheel Pressure Sensors

In each airstream, a pressure sensor is available to monitor wheel operation. Wheel pressure can be used to indicate a buildup of frost during the cold winter months or can be used as a CFM gauge as the energy wheel is a laminar flow device (i.e. a specific pressure equals a specific CFM).



Temperature Sensors

Wheel performance can be determined with factory mounted temperature sensors. Every compartment can be monitored to know how your unit is operating.



CO₂ Sensor

A good indicator for building health is carbon dioxide (CO₂). Greenheck offers a CO₂ sensor, that can be used to engage the unit based on CO₂ levels, or it can increase or decrease airflows through the use of a variable frequency drive (VFD) on the blowers. The CO₂ sensor can be unit mounted or space mounted depending on your application.



Service Outlet

While performing minimal maintenance on your ERV^e, a service outlet can provide power when and where it's needed. Shipped loose, the outlet can be mounted in the correct location for your building.

Vapor-Tight Lights

Access doors provide natural lighting during the day, but there may be times when more light is needed to see properly inside the unit. To increase bulb life and to also protect the bulb, Greenheck offers a vapor-tight light.

Blower VFD's

Variable frequency drives are a great tool to control airflow to the space or to maintain duct pressures. With this optional feature, two VFD's are utilized, one per fan for independent and flexible control.



Economizer Control (Free Cooling)

Take advantage of cool outdoor air to handle space loads. A call for cool air is sent to the unit's control center which triggers one of a few different options to bring in fresh cool air:

Energy Wheel On/Off

The wheel cycles off when it's in the free cooling range (temperature or enthalpy), and cycles on when outdoor air is too warm or too cold. This option is recommended when the air is being supplied to an air handling unit or duct heater, and not directly to the space.

Energy Wheel Modulation

The wheel speed modulates to maintain a 55°F discharge temperature. Above 55°F, the wheel is off up to a high-limit temperature setting (typically 70°F). This option is recommended when the air is supplied directly to the space from the ERV^e or when more precise temperature control is needed.



Frost Protection

Cold climates, in combination with higher indoor humidity levels, may cause frost to form on the energy wheel during normal operation. To protect against frost, we measure the outdoor temperature and the energy wheel pressure drop. When it's cold enough and the wheel pressure is increasing, the wheel is frosting. Only then will the frost methods described below engage. See the "Frost Control Strategy Recommendations" chart on this page for which of the three Greenheck frost methods we recommend for your building.

Time Exhaust Frost Control

The supply blower cycles on and off based on a factory provided timer. With the supply blower off, the warm exhaust air melts the frost. Once the wheel pressure decreases, the supply blower turns back on.

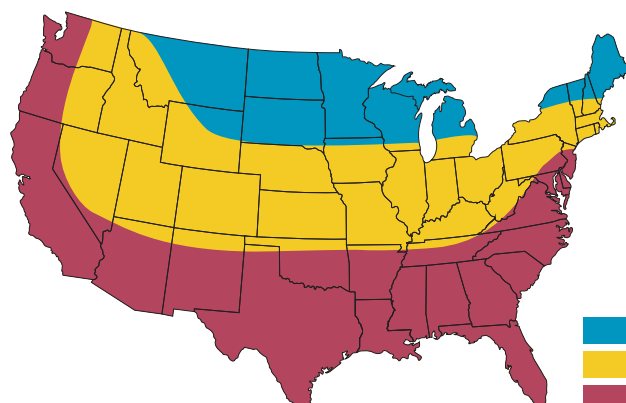
Modulating Wheel Frost Control

A factory installed variable frequency drive (VFD) slows the wheel down making it less effective. In other words, the slow rotating wheel spends enough time in the warm exhaust airstream to melt the frost. Once the wheel pressure decreases, it returns to full speed. Both blowers operate continuously during this frost mode.

Preheat Frost Control

An electric preheater is built into the ERV^e outdoor air intake. When frost occurs, the heater engages, and increases the outdoor air temperature above the frost threshold to melt the wheel. Once the pressure decreases, the heater shuts off.

Frost Control Strategy Recommendations		
Winter Outside Air Design	Winter Indoor Air Design	Recommended Frost Control Strategy
$\geq 10^{\circ}\text{F}$ (-12.2°C)	$\leq 50\%$ RH	None
$\geq -5^{\circ}\text{F}$ (-20.6°C) < 10°F (-12.2°C)	$\leq 35\%$ RH	Timed Exhaust
$\geq 10^{\circ}\text{F}$ (-12.2°C)	$\leq 50\%$ RH	Electric Preheat
$\geq -5^{\circ}\text{F}$ (-20.6°C) < 10°F (-12.2°C)	$\leq 35\%$ RH	
$\geq -5^{\circ}\text{F}$ (-20.6°C)	Any RH	



The map at left indicates the frost control options, if any, that are appropriate based on climactic conditions during typical 16 hour per day operation.

- Preheat Frost Control Recommended
- Timed Exhaust Frost Control Recommended*
- No Frost Control Needed

* Modulating Wheel Frost Control can also be used in these areas.

Quick Select Chart

Model		ERVe-20	ERVe-35	ERVe-45	ERVe-55
Unit CFM Range	Min	1000	2200	3400	4500
	Max	2200	3400	4500	6000
Motor HP	Min	0.25	0.50	1.00	1.50
	Max	2.00	3.00	5.00	5.00
External Static Pressures (in. wg)	Min	0.00	0.00	0.00	0.00
	Max	1.00	1.00	1.00	1.00
**Weight (lbs)		825	1100	1275	1550

NOTE:

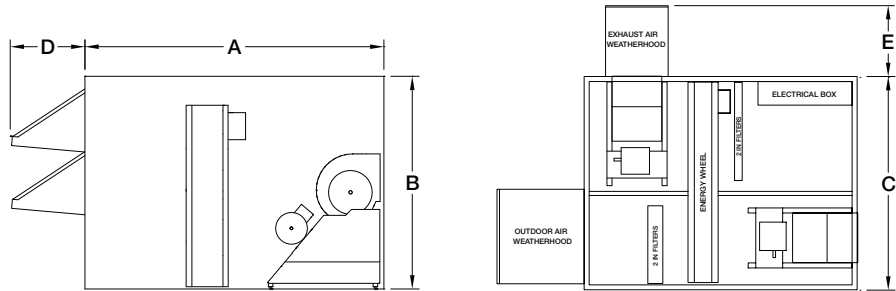
1. Max. external static pressures are based on CFM. Higher than 1 inch is available at certain CFM's.

** The weights shown are a worst case scenario based on the sheet metal and component weights for the unit. These weights include sheet metal weights added together with the largest motors, blowers and accessories for the units.

Overall Unit Dimensions

Unit Size	A	B	C	D	E
ERVe-20	67.0	50.8	46.3	17.8	20.8
ERVe-35	69.2	60.8	54.4	21.8	17.8
ERVe-45	72.2	67.1	60.2	21.8	19.2
ERVe-55	84.1	75.3	71.4	21.8	23.9

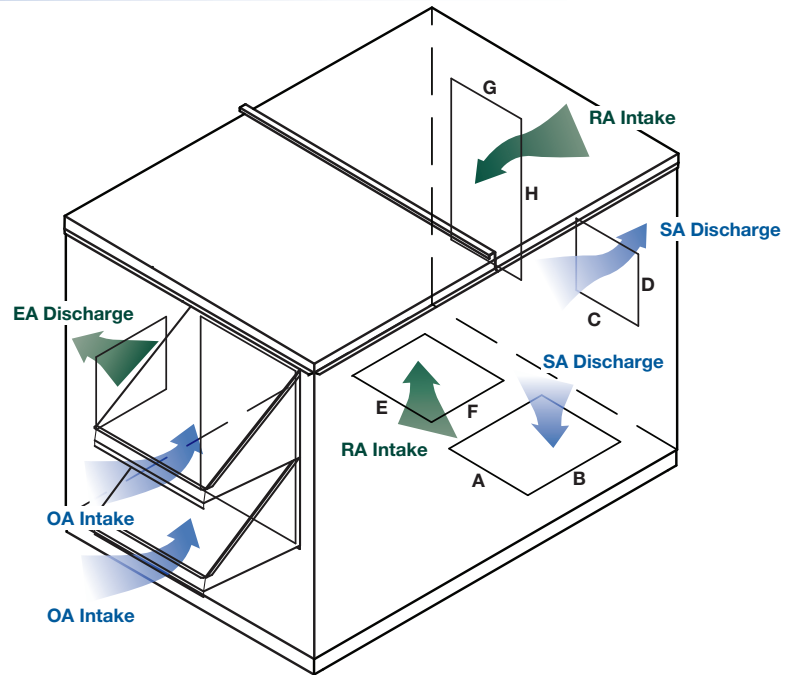
All dimensions are shown in inches. Door handles, hinges and other protrusions are not included in the dimensions above. Dimensions are rounded up to the nearest .1 inch.



Intake and Discharge Options

Option	Bottom	Top	Side	End
OA Intake				X
SA Discharge	X			X
RA Intake	X			X
EA Discharge			X	

OA - Outdoor Air
SA - Supply Air (to the space)
RA - Return Air (from the space)
EA - Exhaust Air



Duct Dimensions

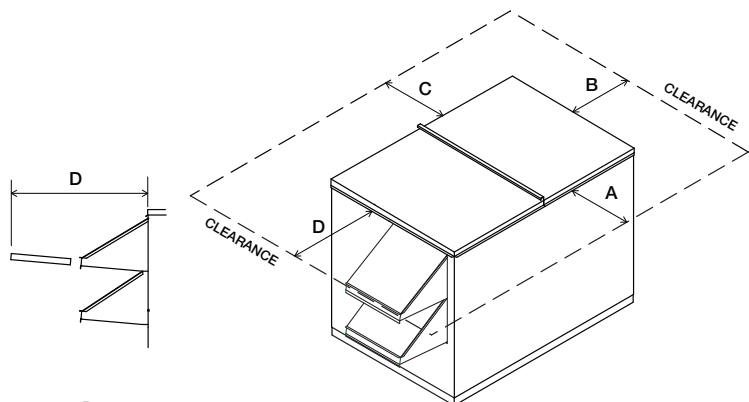
Model	A	B	C	D	E	F	G	H
ERVe-20	11.8	18.0	12.2	10.7	15.8	18.0	10.8	25.8
ERVe-35	13.1	20.5	13.7	11.9	21.5	20.5	15.8	27.8
ERVe-45	15.8	22.5	16.1	14.0	24.5	22.5	18.8	29.1
ERVe-55	18.6	26.0	19.2	16.4	28.0	26.0	23.8	34.8

All dimensions are shown in inches.

Clearances

Unit Size	A	B	C	D
ERVe-20	24	24	42	35
ERVe-35	32	24	48	43
ERVe-45	32	24	54	43
ERVe-55	32	24	60	44

All dimensions are shown in inches. The weatherhoods include 2-inch aluminum mesh filters that are removed out of the end of the hood as shown in this drawing and require extra clearance for removal.

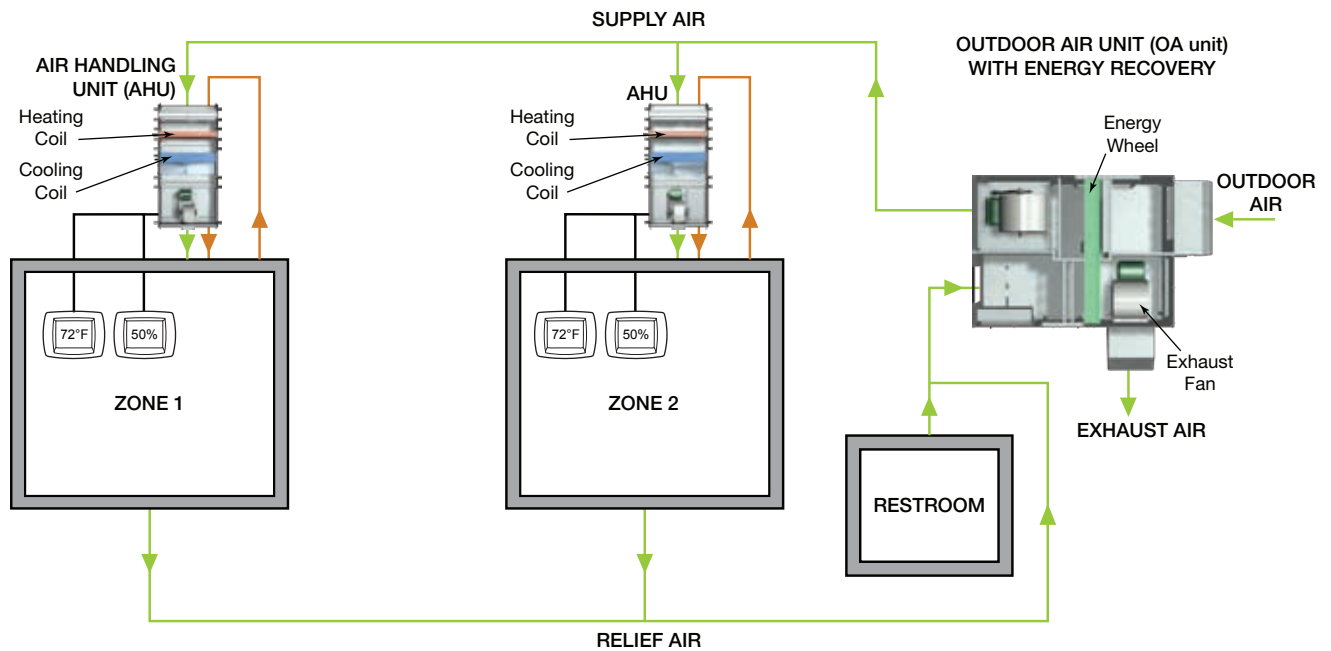


The ERVe unit can add to the benefit of a building design anywhere that outdoor air is required and the exhaust air is considered “clean” (ASHRAE class 1 or class 2 air ratings). Some examples of commercial and institutional applications where energy recovery units have been utilized are given below.

- | | | | |
|----------------------|----------------|------------------|----------------|
| Animal Shelters | Bars and Clubs | Churches | Dormitories |
| Locker Rooms | Nursing Homes | Office Buildings | Printing Shops |
| Restaurants | Schools | Function Halls | Casinos |
| Veterinary Hospitals | | | |

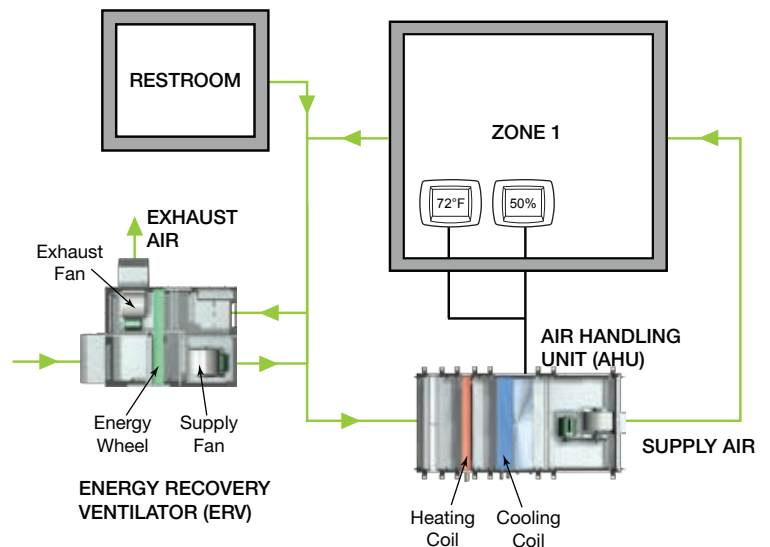
With Ducted Air Handlers

The ERVe unit may be combined with ducted air handling units or fan coil boxes. A single energy recovery ventilator may provide fresh outdoor air for multiple air handling units or in a one-to-one ratio where a single energy recovery ventilator and air handler serves only one space.




With Packaged Rooftop Equipment

This diagram illustrates how energy recovery ventilators may be used in conjunction with packaged rooftop equipment. Fresh, outdoor air enters the energy recovery ventilator and is pretreated before entering the heating/cooling equipment. This pretreating occurs because the energy recovery wheel is transferring latent and sensible energy between the outdoor air and the building exhaust air.



The AMCA seal for Air Performance is vitally important for ensuring the proper amount of fresh, outdoor air is being delivered to the building. Performance as cataloged is assured. All ERV^e sizes are tested in our AMCA Accredited Laboratory and all models are licensed to bear the AMCA Air Performance seal.



Greenheck Fan Corporation certifies that the ERV^e models shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

NOTE:

1. Performance tables show **EXTERNAL** static pressure capabilities.
2. BHP values are shown for one blower motor only.

Model ERV^e-20

ERV^e-20-15L

CFM	OV		EXTERNAL STATIC PRESSURE (in. wg)							
			0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
1000	1205	FRPM	692	805	906	1000	1093	1177		
		BHP	0.12	0.16	0.19	0.23	0.28	0.32		
1600	1928	FRPM	977	1062	1140	1212	1281	1345	1406	1469
		BHP	0.41	0.48	0.53	0.58	0.64	0.69	0.74	0.81
2200	2651	FRPM	1287	1350	1411	1473	1531	1584	1636	1689
		BHP	1.00	1.08	1.17	1.26	1.33	1.40	1.46	1.54

ERV^e-20-15H; ERV^e-20-30L

CFM	OV		EXTERNAL STATIC PRESSURE (in. wg)							
			0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
1000	1205	FRPM	639	751	853	951	1037	1127		
		BHP	0.11	0.14	0.17	0.21	0.25	0.29		
1600	1928	FRPM	894	977	1057	1128	1193	1260	1322	1386
		BHP	0.36	0.41	0.47	0.52	0.56	0.62	0.67	0.73
2200	2651	FRPM	1172	1235	1297	1356	1416	1471	1523	1572
		BHP	0.87	0.94	1.02	1.09	1.17	1.25	1.32	1.38

ERV^e-20-30H

CFM	OV		EXTERNAL STATIC PRESSURE (in. wg)							
			0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
1000	1205	FRPM	605	721	816	910	994	1081		
		BHP	0.10	0.14	0.16	0.20	0.24	0.28		
1600	1928	FRPM	841	925	1000	1075	1146	1208	1266	1326
		BHP	0.33	0.38	0.43	0.49	0.55	0.60	0.64	0.69
2200	2651	FRPM	1100	1163	1226	1284	1340	1391	1448	1502
		BHP	0.79	0.87	0.94	1.01	1.08	1.15	1.23	1.32

Model ERV^e-35

ERV^e-35-15H; ERV^e-35-30L

CFM	OV		EXTERNAL STATIC PRESSURE (in. wg)							
			0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
2200	2157	FRPM	796	861	926	988	1048	1104	1157	1207
		BHP	0.51	0.57	0.64	0.70	0.78	0.85	0.92	0.99
2800	2745	FRPM	980	1033	1084	1133	1185	1234	1283	1329
		BHP	1.00	1.08	1.16	1.24	1.33	1.41	1.50	1.59
3400	3333	FRPM	1171	1213	1256	1298	1340	1381	1424	1465
		BHP	1.74	1.84	1.94	2.04	2.14	2.23	2.34	2.44

ERV^e-35-30H

CFM	OV		EXTERNAL STATIC PRESSURE (in. wg)							
			0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
2200	2157	FRPM	759	821	885	947	1006	1061	1114	1164
		BHP	0.48	0.54	0.61	0.68	0.75	0.82	0.89	0.96
2800	2745	FRPM	937	984	1033	1082	1134	1182	1230	1275
		BHP	0.96	1.02	1.10	1.19	1.28	1.37	1.46	1.54
3400	3333	FRPM	1119	1158	1197	1237	1278	1318	1361	1402
		BHP	1.67	1.75	1.83	1.93	2.03	2.14	2.25	2.36

Gross supply air performance ratings (airflow, pressure and power) are at port 2 with port 1, port 3 and port 4 at 0.0 in. wg. Gross exhaust performance ratings (airflow, pressure and power) are to port 3 with port 1, port 2 and port 4 at 0.0 in. wg. Performance certified is for installation type D - Ducted inlet, Ducted outlet. Power rating (Bhp) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories).

Model ERVe-45

ERVe-45-15H; ERVe-45-30L

CFM	OV		EXTERNAL STATIC PRESSURE (in. wg)							
			0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
3400	2361	FRPM	823	871	919	966	1010	1052	1092	1131
		BHP	1.11	1.21	1.32	1.43	1.54	1.65	1.76	1.87
3950	2743	FRPM	941	984	1025	1066	1106	1145	1182	1219
		BHP	1.70	1.82	1.94	2.06	2.19	2.32	2.45	2.58
4500	3125	FRPM	1060	1099	1135	1172	1208	1242	1278	1312
		BHP	2.47	2.62	2.75	2.88	3.03	3.16	3.32	3.46

ERVe-45-30H

CFM	OV		EXTERNAL STATIC PRESSURE (in. wg)							
			0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
3400	2361	FRPM	779	830	877	922	964	1007	1048	1086
		BHP	1.03	1.14	1.25	1.35	1.45	1.56	1.66	1.76
3950	2743	FRPM	890	934	977	1017	1055	1093	1129	1166
		BHP	1.58	1.70	1.82	1.95	2.07	2.19	2.31	2.43
4500	3125	FRPM	1004	1041	1080	1117	1152	1186	1220	1252
		BHP	2.30	2.43	2.57	2.71	2.85	2.99	3.13	3.27

Model ERVe-55

ERVe-55-15H; ERVe-55-30L

CFM	OV		EXTERNAL STATIC PRESSURE (in. wg)							
			0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
4500	2239	FRPM	622	671	714	757	796	832	866	904
		BHP	1.22	1.36	1.50	1.64	1.77	1.90	2.03	2.19
5250	2612	FRPM	709	754	793	830	867	902	935	965
		BHP	1.87	2.05	2.21	2.36	2.53	2.69	2.84	3.00
6000	2985	FRPM	801	838	876	909	940	974	1006	1036
		BHP	2.74	2.93	3.13	3.31	3.48	3.68	3.86	4.04

ERVe-55-30H

CFM	OV		EXTERNAL STATIC PRESSURE (in. wg)							
			0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
4500	2239	FRPM	589	631	676	718	759	796	834	872
		BHP	1.13	1.25	1.39	1.53	1.67	1.80	1.94	2.09
5250	2612	FRPM	674	709	747	785	822	857	892	924
		BHP	1.74	1.88	2.03	2.19	2.35	2.52	2.68	2.83
6000	2985	FRPM	761	792	822	857	890	923	954	985
		BHP	2.55	2.71	2.87	3.05	3.22	3.41	3.60	3.79

Gross supply air performance ratings (airflow, pressure and power) are at port 2 with port 1, port 3 and port 4 at 0.0 in. wg. Gross exhaust performance ratings (airflow, pressure and power) are to port 3 with port 1, port 2 and port 4 at 0.0 in. wg. Performance certified is for installation type D - Ducted inlet, Ducted outlet. Power rating (Bhp) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories).

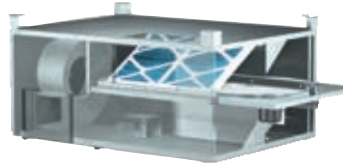
The air performance data accounts for the pressure drop across the energy recovery wheel and the internal housing losses, but does not include pressure drop for filters or weatherhoods. Add filter and/or weatherhood pressure drop to the external static pressure to determine correct RPM and horsepower.

Model	CFM	30% Efficient Filter Pressure Drop (in. wg)	Supply Weatherhood Pressure Drop (in. wg)	Exhaust Weatherhood Pressure Drop (in. wg)
ERVe-20	1000	0.05	0.07	0.02
	2200	0.23	0.34	0.10
ERVe-35	2200	0.17	0.15	0.07
	3400	0.40	0.35	0.17
ERVe-45	3400	0.15	0.19	0.08
	4500	0.26	0.33	0.14
ERVe-55	4500	0.18	0.14	0.07
	6000	0.31	0.26	0.13

Greenheck's Energy Recovery Models

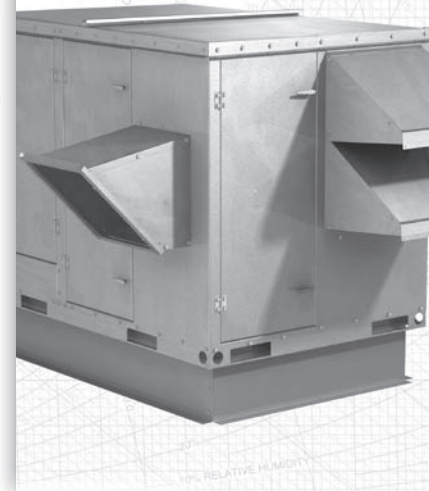
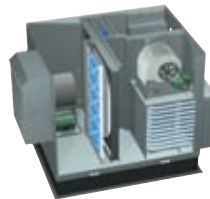
Model MiniVent - Energy Recovery Ventilator

The MiniVent-450 & 750 are energy recovery ventilators used for commercial and institutional applications that require 300 cfm to 800 cfm of ventilation air. The compact design provides an economical solution for individual spaces, such as school classrooms and small offices.



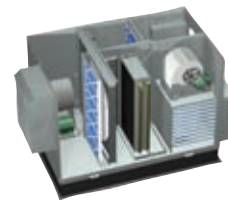
Model ERH - Energy Recovery with Heating

With the ERH, you save money with the total energy wheel and get the convenience of supplemental heating. The ERH provides preconditioned air in the summer and space neutral air in the winter, which is ideal if your climate has prominent summer and winter seasons. The heating section further tempers cold outdoor air to desired conditions. Four housing sizes available with airflow capacities up to 10,000 cfm and external static pressures up to 1.5 in. wg.



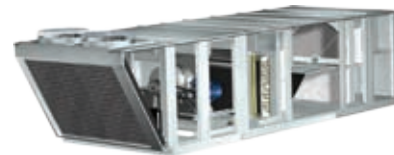
Model ERCH - Energy Recovery with Cooling and Heating

The model ERCH combines the benefits of the total energy wheel with supplemental cooling and heating. The result is a product that is specifically designed to process 100% outdoor air to desired supply conditions. Four housing sizes provide airflow capacities from 1,000 to 10,000 cfm with external static pressures up to 1.5 in. wg. A variety of tempering options are available. The coil section of the ERCH accommodates a cooling coil, a heating coil, or both.



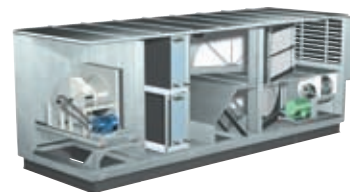
Model VER - Versatile Energy Recovery

The Model VER is a fully featured, versatile energy recovery unit with a wide range heating and cooling options available. The unit includes an energy wheel to pretemper the outdoor air which reduces the heating and cooling equipment needed, while also lowering operational costs. In addition to the standard heating and cooling options, the VersiVent has options such as environmentally friendly R410 refrigerant, a wraparound heat pipe for additional dehumidification and reheat capacity, and a quiet, efficient, plenum supply fan. CFMs range from 2,000 to 10,000 with external static pressure capabilities up to 3 inches.



Model APEX - Affordable, Practical, Energy Exchanger

The APEX combines high airflow capacities with cost saving energy recovery ventilation by providing centralized outdoor air distribution and reducing the need for multiple unit installations. Fresh outdoor air is preconditioned by the total enthalpy wheel, which recovers a majority of the energy from the exhaust air. It saves 3-4 tons of cooling per 1,000 cfm and saves 50-60 MBH of heating per 1,000 cfm. Easy to install and operate with airflow capacities from 10,000 to 20,000 cfm and external static pressures up to 2.5 in. wg.



Our Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. The energy recovery wheel is warranted to be free from defects in material and workmanship for a period of five years from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at our option when returned to our factory, transportation prepaid. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station. Greenheck will not be responsible for any removal or installation costs.

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

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Prepared to Support
Green Building Efforts

