

Energy Recovery with Cooling and Heating VersiVent - Model VER

- Commercial
- Institutional



- 2,000 - 10,000 cfm
- 3.0 in. wg external static pressure
- Configurable



The VersiVent Model VER Advantage

One Unit for Your Ventilation Needs

The need for energy recovery in the HVAC market is being highlighted by increased outdoor air requirements, along with the attention to energy costs through LEED initiatives and ASHRAE guidelines. Increased ventilation rates in combination with energy recovery products will improve your indoor air quality (IAQ) without the associated costs of conditioning outdoor air. Greenheck's VersiVent air-to-air energy recovery model continues our leadership in the industry by supplying equipment that promotes productive and healthy environments.

The semi-custom configuration of the VersiVent offers the quality construction, flexibility and performance found in a custom unit, without the cost or lead-time. With a variety of standard and optional accessories, the VersiVent has been designed to meet your application needs.

VersiVent (model VER) ADVANTAGE

- Up to 10,000 cfm and 3 in. wg external static pressure
- Multiple wheel choices for:
 - Most economical
 - Best effectiveness
 - Best RER (Recovered Energy Ratio)
- Multiple heating and cooling options
 - Cooling: Chilled Water, Split System DX and Packaged DX with R410a refrigerant
 - Reheat: Modulating Hot Gas Reheat (DX), Wrap-Around Heatpipe
 - Heating: Hot Water, Electric and Indirect Gas Furnace
- Standard 2 in. double-wall construction
- Centrifugal airfoil wheel supply fan, model QEP

Why Use Energy Recovery?

• Energy Savings = Quick Payback

When a total energy recovery wheel is implemented in an HVAC system, it provides both initial cost savings by cutting cooling tonnage and also annual savings by preconditioning the outdoor air. Combining these two cost saving features leads to an attractive payback on these units. Energy recovery units should be viewed as an investment and not just another piece of HVAC equipment.

• Improved Indoor Air Quality (IAQ)

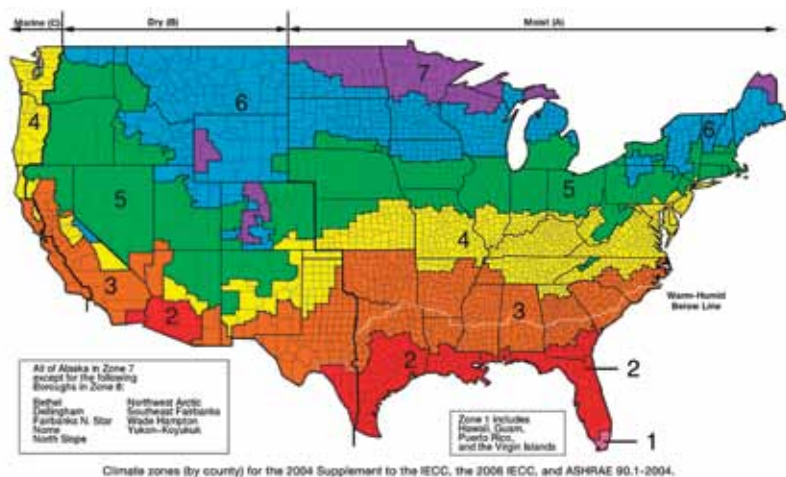
Introducing fresh, outdoor air to a building is a key component to sustaining excellent IAQ. Preconditioning outdoor air with the VersiVent (model VER) energy recovery unit offers an economical approach for providing high rates of outdoor air.

• LEED Credits

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

• 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 AHRI 1060 testing procedure.



The Greenheck Advantage

Greenheck takes pride in offering a high quality, reliable product. We invest much of our resources into designing, testing and manufacturing products to ensure customer satisfaction.

VersiVent Product Features

High Performance Polymer Wheel

- Polymer base with silica gel desiccant bonded into the material for over 75% total effectiveness
- Moisture transfer capabilities are maintained and will not lessen with repeated cleaning
- Lightweight and segmented for easy maintenance

Extensive Testing and Industry Certification

- ETL listing for electrical and overall unit safety
- AHRI Certified Energy Wheels
- AMCA Licensed Fans and Dampers



Quality and Consistency in Manufacturing

Greenheck utilizes an efficient, automated manufacturing process that maintains Greenheck's consistent high standard of quality.



Wheel Performance Options	Standard Wheel Depth	High Performance Wheel Depth
Loose Wrap Density	Good RER	Excellent Effectiveness
	Economical Choice	Best RER
Tight Wrap Density	Good Effectiveness	Best Effectiveness
	Economical Choice	Excellent RER Value

RER (Recovered Energy Ratio): The ratio of energy recovered by the energy recovery wheel to the energy expended in the recovery process



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



Energy recovery wheels are certified by the AHRI Air-to-Air Energy Recovery Ventilation Equipment Certification Program in accordance with AHRI Standard 1060. Actual performance in packaged equipment may vary.

Certified ratings are available in the Certified Products Directory. Visit www.ahrinet.org and click the [Find Certified Products](#) link.

Leading Edge Service and Support



Our products are supported by the industry's best product literature, electronic media, and Computer Aided Product Selection (CAPS) program. You'll also find this information on our Web site at www.greenheck.com

Our national and international representative organization provides personal service and expertise. To locate your nearest Greenheck representative, call 715-359-6171 or visit our Web site at www.greenheck.com

VersiVent—Designed to Meet Your Application Needs

The VersiVent model VER comes with a multitude of options and accessories to meet your application requirements.

2

Plenum Supply Fan

- Backward inclined airfoil centrifugal wheel
- L10 80,000 hour bearings
- Third-party certified blower for sound & air performance
- 1-inch spring isolation
- 12 bladed design for quiet operation

3

Double-Wall Construction

- 2-inch insulation secured in place between solid inner and outer panels
- Insulation density of 1.5 lbs/cu. ft.

4

Pre- and Post-Filters

- MERV 8 pre-filters in outdoor airstream and return airstream
- MERV 8 or MERV 11 post-filters

Hinged Access Doors

- Provides access for maintenance
- Easy lift-off removable doors
(Not shown)

Control Center

- Blower motor starters
- Wheel motor contactor
- Disconnect switch with single point wiring
- Low voltage terminal strip are provided
(Not shown)



Control Center

5

Weatherhood

- Louvered intake hood that meets AMCA 500L for wind driven rain penetration
- 2-inch aluminum mesh filters (mist eliminating)
- Exhaust hood with integral backdraft damper



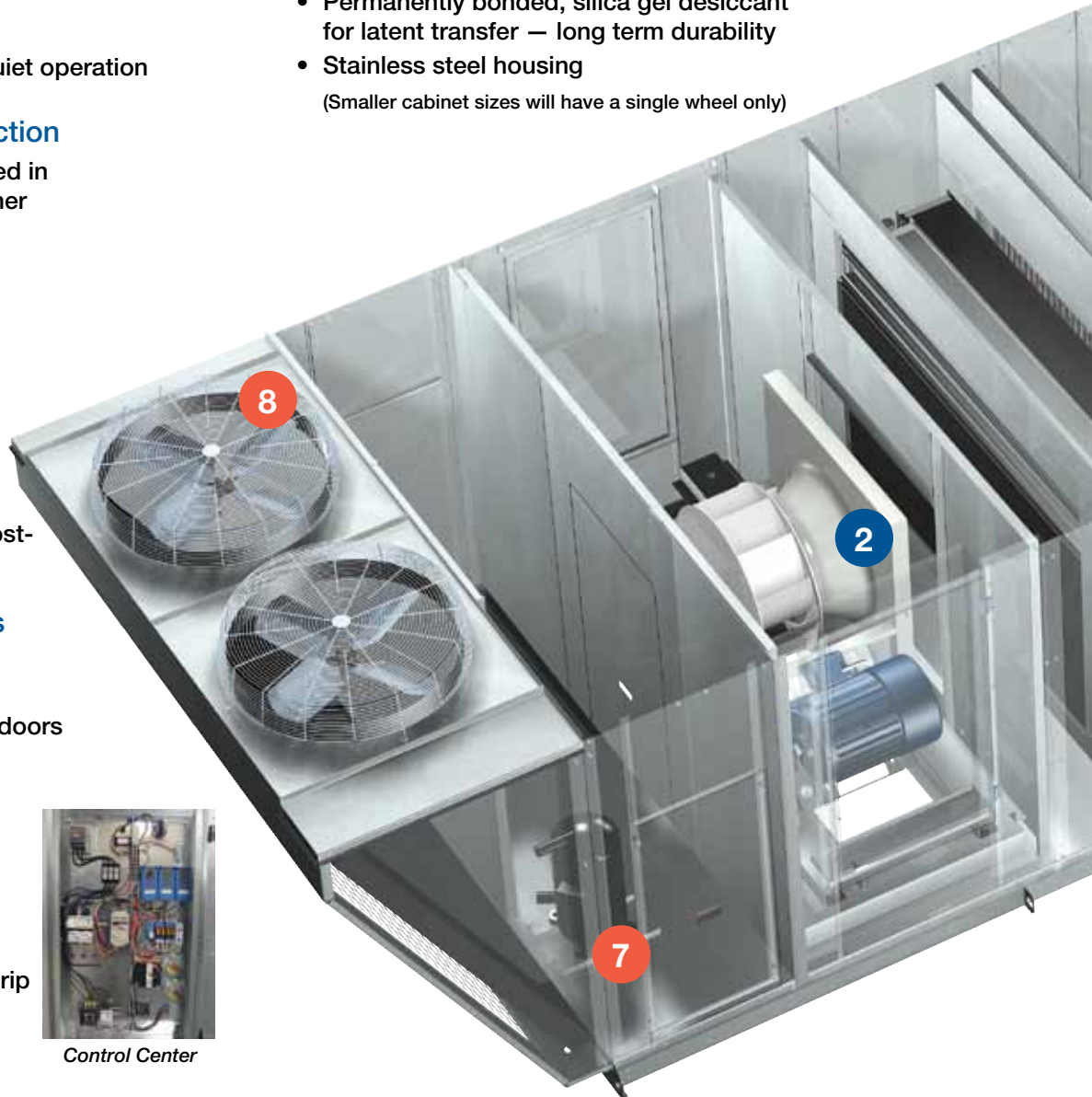
Weatherhood

1

Total Energy Wheel

- Sensible & latent energy recovery
- Lightweight, segmented wheel for easy cleaning with rated L10 bearing life in excess of 400,000 hours
- Permanently bonded, silica gel desiccant for latent transfer — long term durability
- Stainless steel housing

(Smaller cabinet sizes will have a single wheel only)

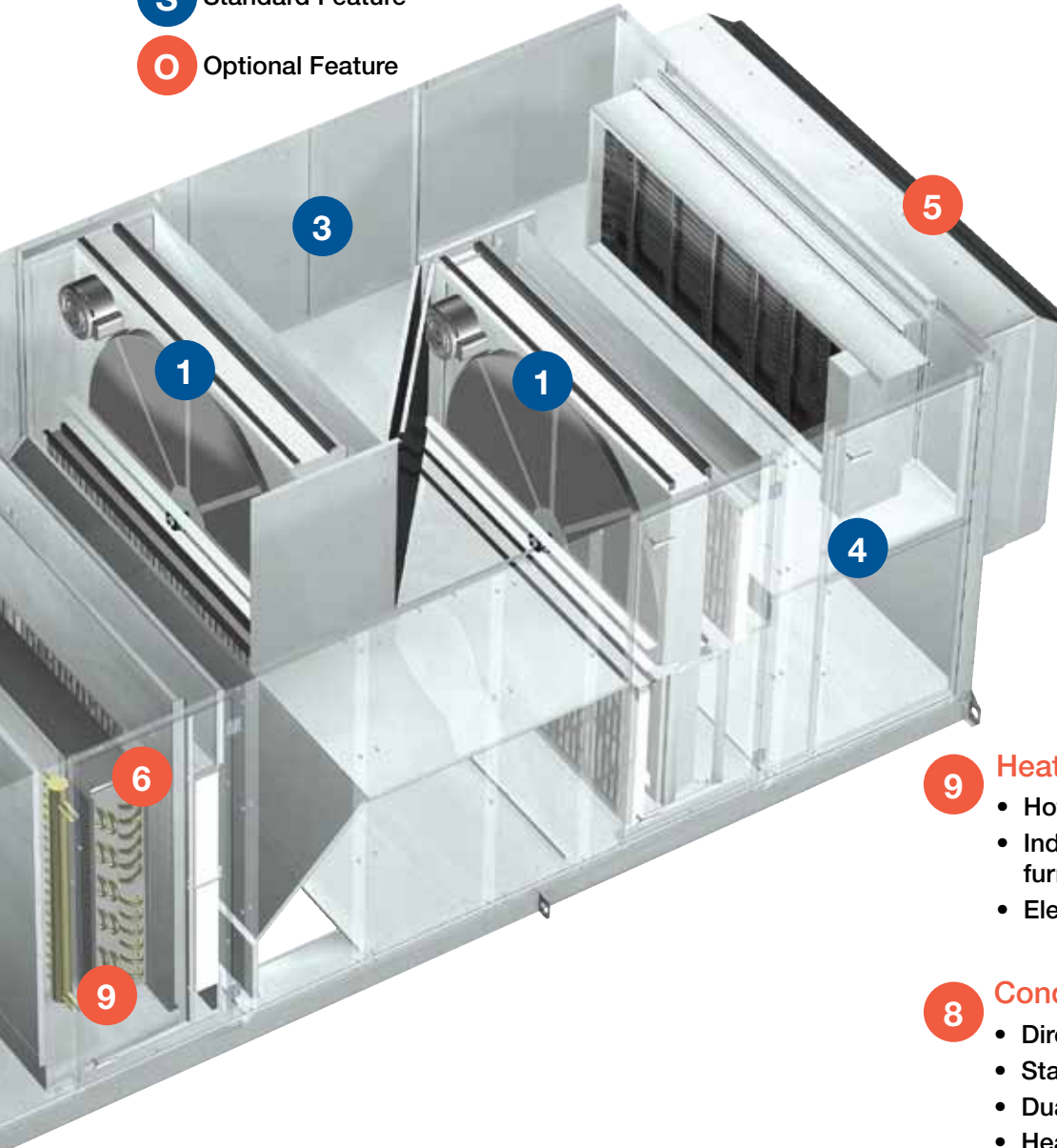


Variable Frequency Drives

- Fully programmed, variable frequency drive (VFD) for the supply and exhaust blower motors that vary airflow
- Fully programmed VFD for energy wheel control
(Not shown)

Product Features

- S** Standard Feature
- O** Optional Feature



Additional Accessories

- Factory mounted sensors (temperature, pressure, amp)
- Dampers - internally mounted
- Frost control
- Economizer control (stop wheel or modulating wheel)
- Roof curbs
- Painted exteriors
- Rotation sensor
- CO₂ sensor
- Dirty filter sensors (Not shown)

9 Heating Options

- Hot water coils
- Indirect gas (IG) furnace
- Electric heater



IG Heater

8 Condensing Fans (PDX only)

- Direct drive
- Statically and dynamically balanced
- Dual condensing fans
- Head pressure control -- improves efficiency

6 Cooling Options

- Packaged direct expansion [PDX] (shown)
- Chilled water coils
- Split DX coil (coil only, R-22 or R-410a refrigerant)
- All coils with copper tubes with permanently expanded aluminum fins
- Mounted on a stainless steel drain pan



Drain Pan



PDX & Hot Gas Reheat Coils

7 Compressors (PDX only)

- Quiet running hermetic, scroll-type
- 7-31 Tons of mechanical cooling
- 2 circuits -- better temperature control



Compressors

Reheat Options

- Wrap-around heatpipe
- On/off hot gas reheat
- Modulating hot gas reheat
 - ON/OFF hot gas reheat coil coupled with a modulating bypass damper
 - Uses recycled energy to reheat the air (Not shown)

Applications

Typical Applications for Energy Recovery

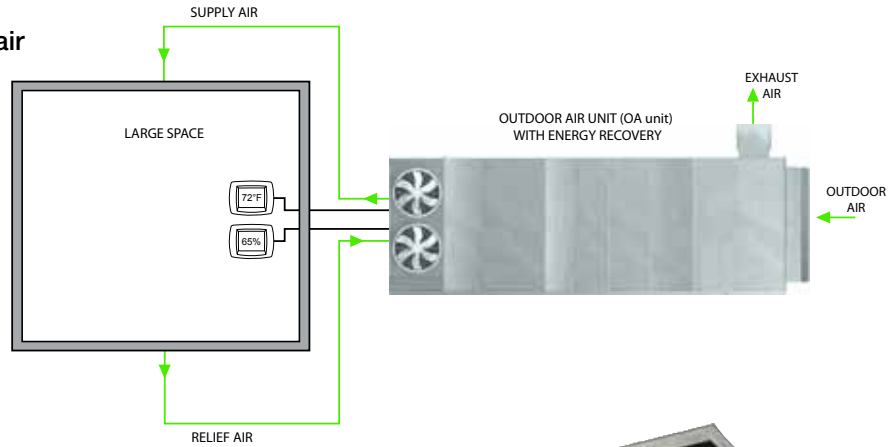
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|----------------------|----------------|------------------|----------------|
| Animal Shelters | Bars and Clubs | Churches | Dormitories |
| Locker Rooms | Nursing Homes | Office Buildings | Printing Shops |
| Restaurants | Schools | Function Halls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

100% Outdoor Air System

The VersiVent unit can be utilized as a 100% outdoor air unit. By combining the benefit of the total energy wheel, with supplemental heating and cooling, the model VER is an energy-efficient method of delivering conditioned outdoor air to a space. In this application the model VER is tasked with all of the air tempering for the space.

Benefits

- 75% energy recovered from exhaust air
- Good humidity control

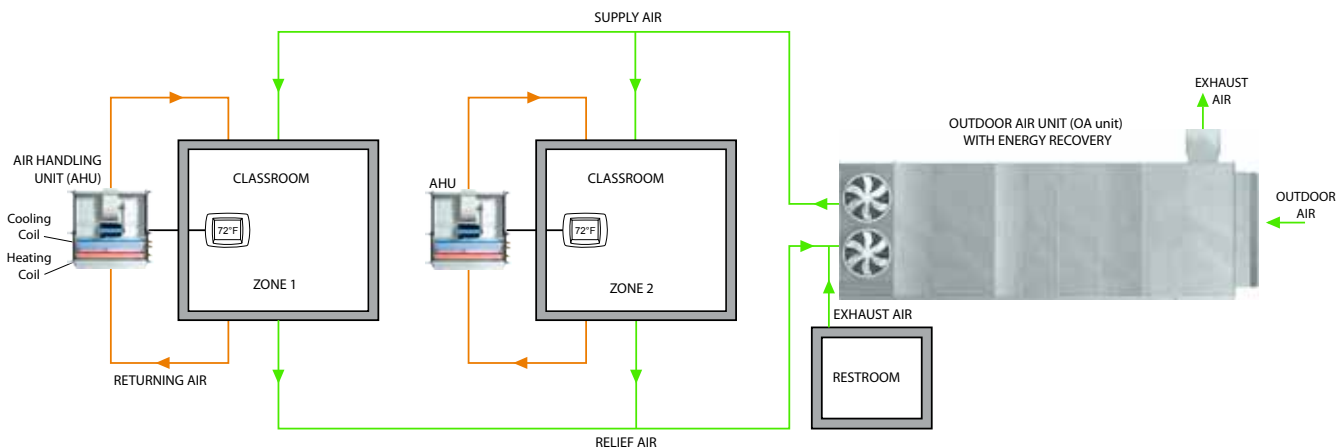


Dedicated Outdoor Air System

A Dedicated Outdoor Air Unit, the VersiVent (model VER) supplies conditioned, outdoor air to several zones in a building. The supplemental cooling on the model VER should be sized to handle the outdoor air ventilation load, along with the space latent load. In each zone, a separate air handling unit performs sensible-only comfort heating and cooling.

Benefits

- Minimum total supply airflow while maintaining good IAQ
- Lowered Energy Costs
- Good humidity control



Dimensions & Weights

Unit Size	A	B	C	D*				E	F	G	H	I	W	L*
				D ¹	D ²	D ³	D ⁴							
VER-45	15.7	28.1	44.6	30.2	36.2	44.2	50.3	36.3	47.6	64.0	66.5	19.0	70.0	
VER-65	15.7	30.9	46.6	30.2	36.2	44.2	50.3	38.1	47.6	66.0	72.8	23.8	76.2	
VER-90	15.7	34.9	85.6	30.2	36.2	44.2	50.3	41.3	47.6	66.0	66.6	25.3	91.0	

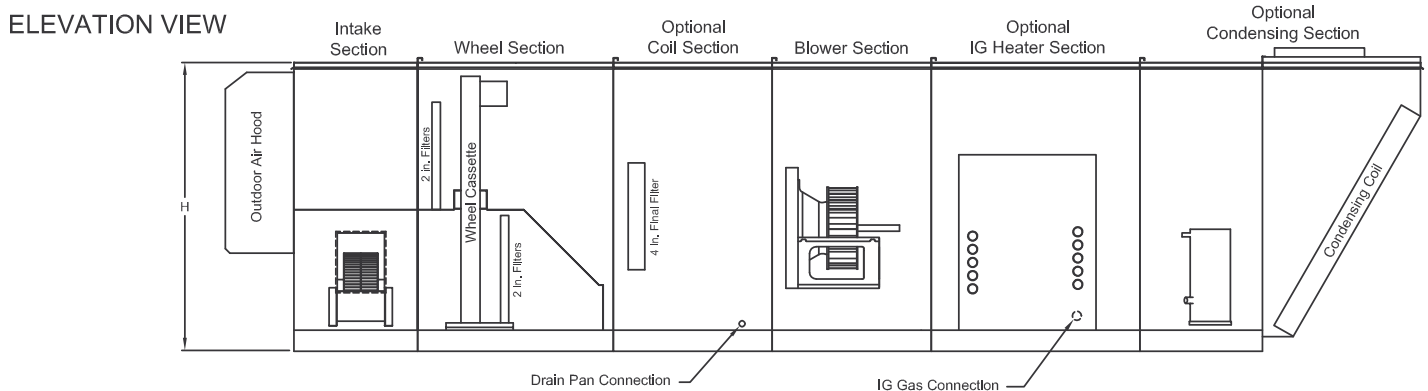
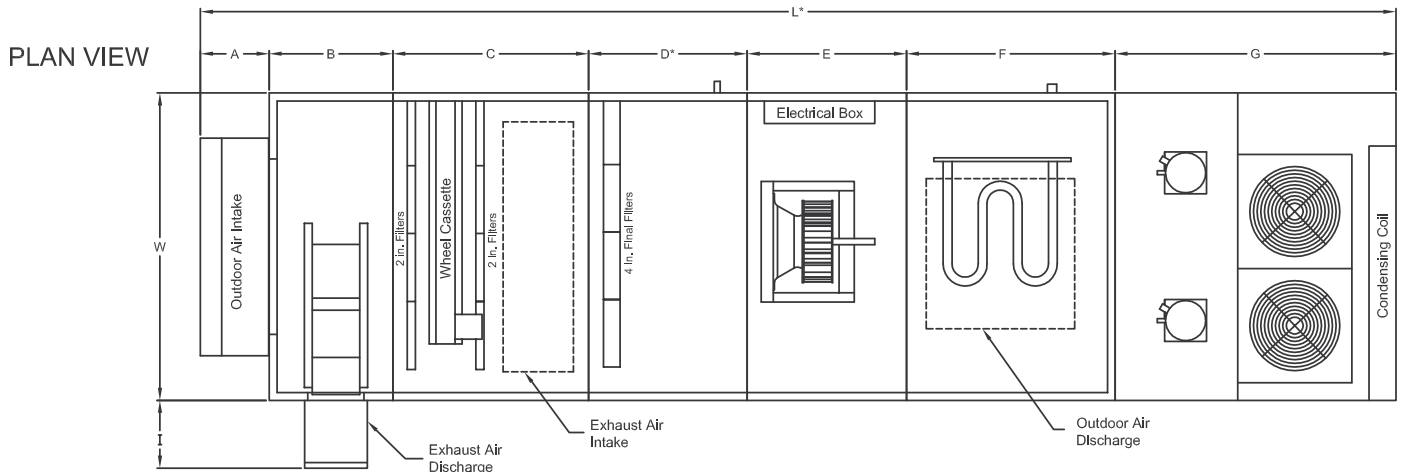
All dimensions are shown in inches.

L*: Please sum the lengths of the appropriate modules to get the total length of the unit.

Model		VER-45	VER-65	VER-90	D*: Coil Module Options			
Unit CFM Range	Min	2000	4000	6000	D ¹	D ²	D ³	D ⁴
	Max	5000	7000	10000	HW	HW + DX	CW + HP	HW + CW + HP
Motor HP	Min	1.5	3	5	CW	HW + CW	DX + HP	HW + DX + HP
	Max	7.5	15	20	DX	EH + CW	DX + HGRH	EH + DX + HP
External Static Pressures (in. wg)	Min	0	0	0	EH	EH + DX	DX + HW + HGRH	EH + CW + HP
	Max	3	3	3			DX + EH + HGRH	
**Weights (lbs)		4900	6300	7250				

HW=Hot Water
 CW=Chilled Water
 DX=Direct Expansion
 EH=Electric Heat
 HGRH=Hot Gas Reheat
 HP=Wrap-around Heat Pipe

**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 fans, coils and heaters for the unit.



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 to 800 cfm of ventilation air. The compact design provides an economical solution for individual spaces, such as school classrooms and small offices.



Model ERV/ERV^e - Energy Recovery Ventilator

Low first-cost and maximum energy savings combine to yield an extremely attractive payback on Greenheck Energy Recovery Ventilators. By incorporating ERV's into the HVAC system, air conditioning and heating equipment can be downsized. Energy recovery ventilators are perfectly suited to help control humidity. In the summer, when outdoor humidity is high, the energy wheel dehumidifies the outdoor air. This greatly reduces the latent load on the air conditioning equipment and also eliminates rising indoor humidity levels that can occur in hot, humid climates. In the winter, when outdoor air is dry, the energy wheel humidifies the air. This increases comfort and reduces the amount of humidification required. Capacities for model ERV range from 400 to 12,000 cfm with external static pressure capabilities to 1.5 in. wg. Capacities for model ERV^e range from 1,000 to 6,000 cfm with external static pressure capabilities to 1.0 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 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 of 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 R410a refrigerant, a wrap-around heat pipe for additional dehumidification and reheat capacity, and a quiet, efficient, plenum supply fan. Capacities range from 2,000 to 10,000 cfm with external static pressure capabilities to 3 in. wg.



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 that range from 10,000 to 20,000 cfm and external static pressures 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 shipment date. The energy recovery wheel is warranted to be free from defects in material and workmanship for a period of five years from the shipment 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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Green Building Efforts

