



PENNBARRY™

Moving Your Way

MINI-SERIES

Energy Recovery Ventilator

TABLE OF CONTENTS

Introduction, Features, Benefits, & Options	3
Description & Application	4
Dimensional & Performance Data	5
Engineering Specifications	6

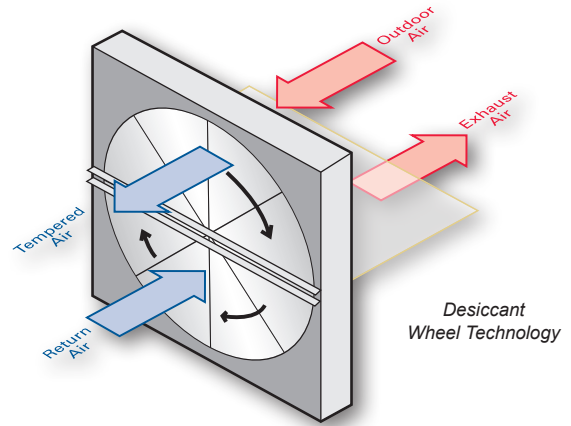


BULLETIN MV14

INTRODUCTION

Mini Ventilator

PennBarry Mini Ventilator ERV's have an effectiveness of 60%+ and are perfect for applications requiring between 200 – 1000 CFM for ventilation. This range of ventilation requirement is typically found in classrooms, meeting rooms, and small retail. The Mini Ventilator is designed for indoor installation and can be floor or ceiling mounted. A removable panel is utilized to allow for easy access to the enthalpy wheel and filters.



FEATURES, BENEFITS, & OPTIONS

Exceptional Payback & Improved Comfort

Investing in energy recovery wheels in HVAC systems can provide payback in savings and comfort.

Initial cost savings can be achieved by pre-conditioning the outdoor air, which can reduce the cooling load and tonnage required to meet that load.

Free software is available at www.pennbarry.com to calculate the load reductions and provide the energy and dollar savings in most areas of the United States and Canada.

Most HVAC systems will use approximately 80% of the load to control space humidity. The PennBarry desiccant wheel technology will allow nearly 75% of the humidity entering through the outside air path to be exhausted to the outside through the exhaust airstream, which not only saves energy, but improves comfort.

Advanced Controls

Certain outdoor air conditions allow HVAC systems to function in economizer mode, or free cooling. When such conditions exist, the preference is to remove the energy recovery from the system. Most ERV's have an economizer mode option, but the control is usually based upon outdoor temperature only. PennBarry's patent-pending ClimateSmart Control System has the ability to control not only the temperature, but can also factor in the humidity utilizing the economizer function.

For example, a unit with a temperature only economizer would allow air to pass through even if there is a high level of humidity in the air. The system then has to work to remove this excess humidity, thus lowering the efficiency of the system.

Using the PennBarry ClimateSmart Control System allows the ERV to continue to work to reduce humidity levels before it enters the system, thus saving energy

Standard Features

- 120 – 1100 CFM.
- Designed for indoor use.
- Painted cabinet.
- Hang or base mounting.
- Provides air filtration with MERV 8 filters on intake and exhaust.
- Access to filters and enthalpy wheel without tools.
- Closed cell insulated cabinet.
- Flanges on all intake / discharge connections.
- Outdoor air intake can alternate between top and adjacent side.
- Return air intake can alternate between bottom and adjacent side.
- 120V single phase.
- Motors thermally protected and suitable for use with speed controller.
- Effectiveness of 60% or higher using AHRI certified enthalpy wheels.

Factory Installed Options

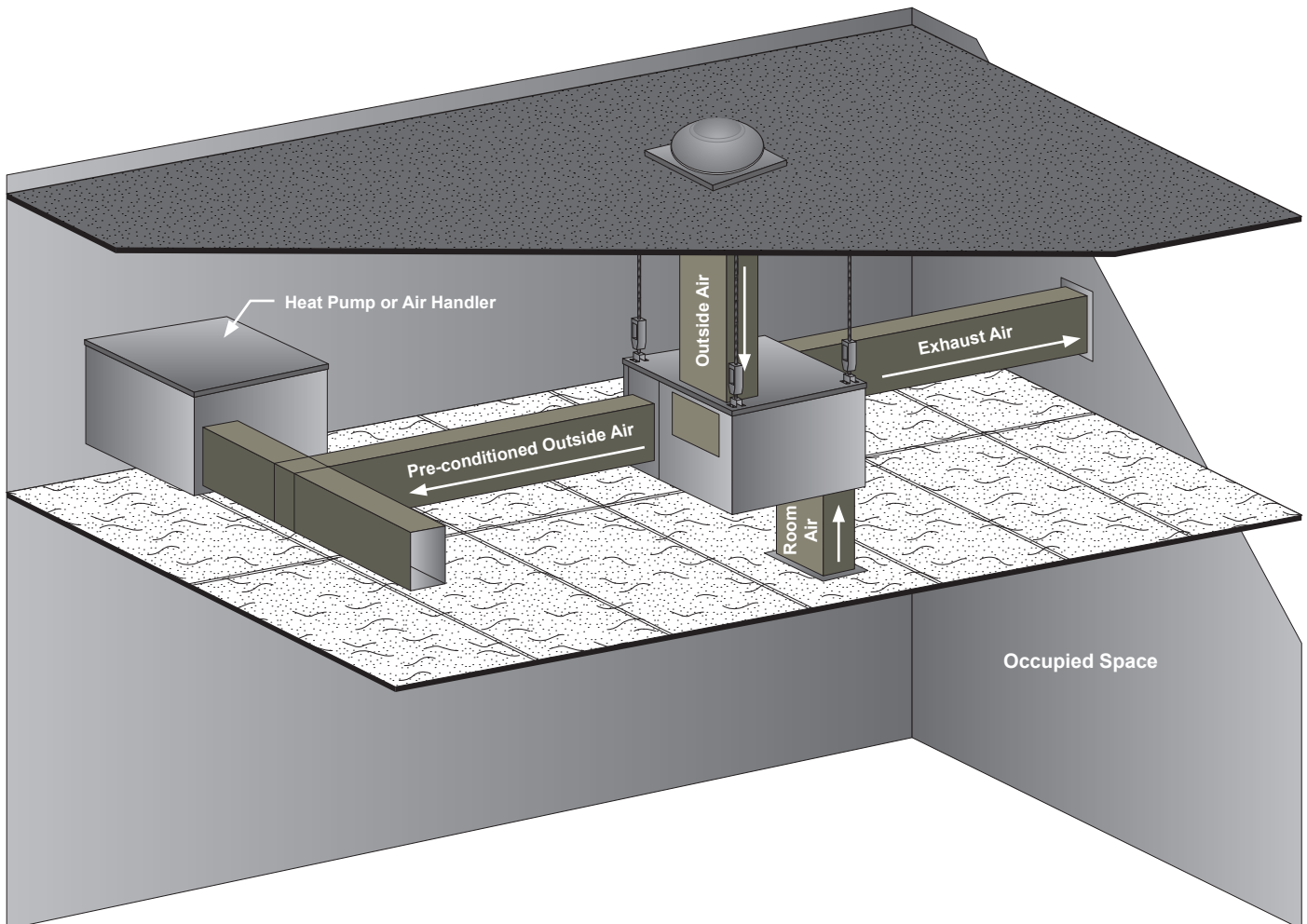
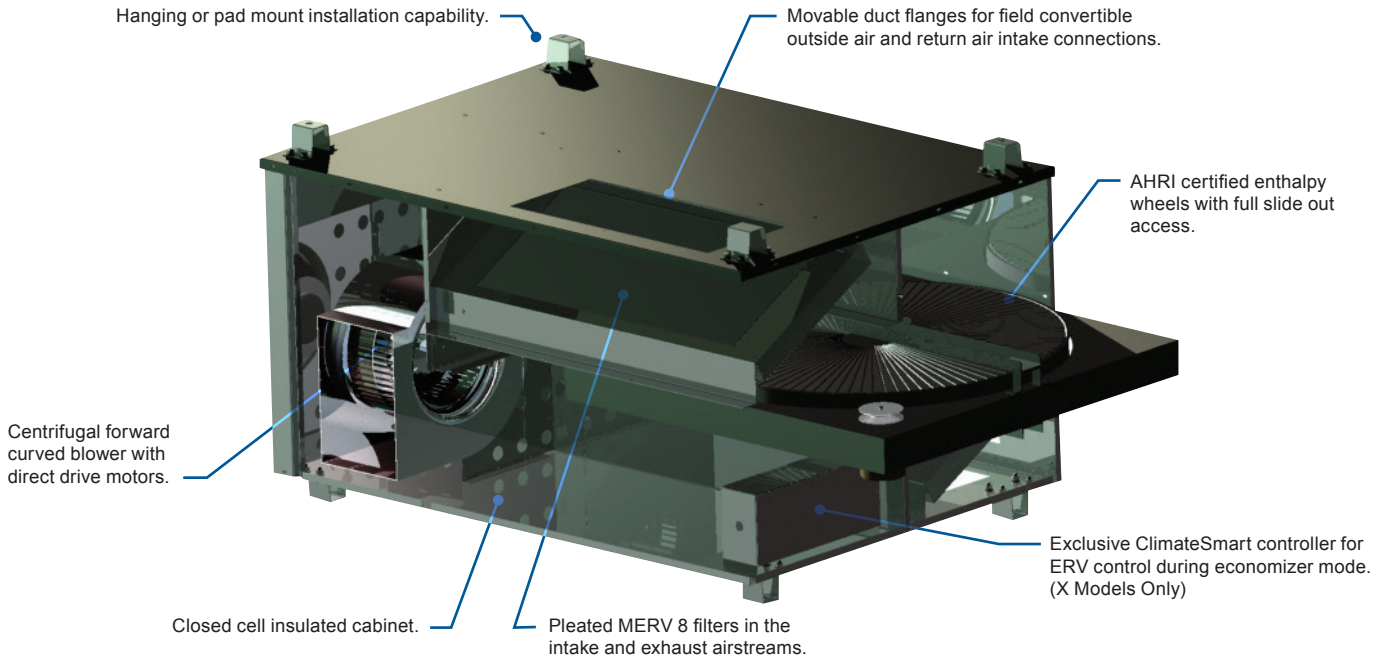
- Frost control.
- Wheel rotation sensor.
- ClimateSmart controller for economizer mode ERV control.

Field Installed Options

- Vibration isolation.
- Remote speed controller.
- Dirty filter sensor.
- NEMA 250 Type 1 enclosure disconnect switch.
- 2" outdoor air and return air filter up to MERV 13.
- Motorized intake damper.

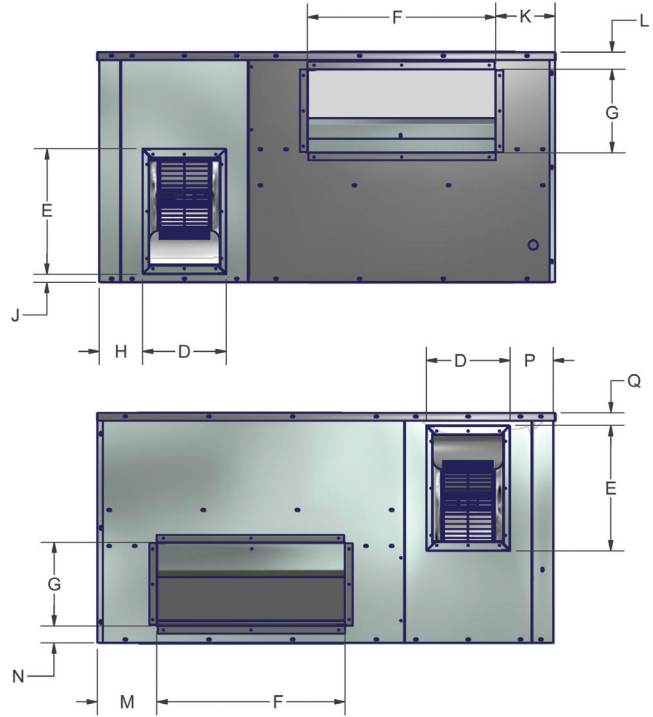
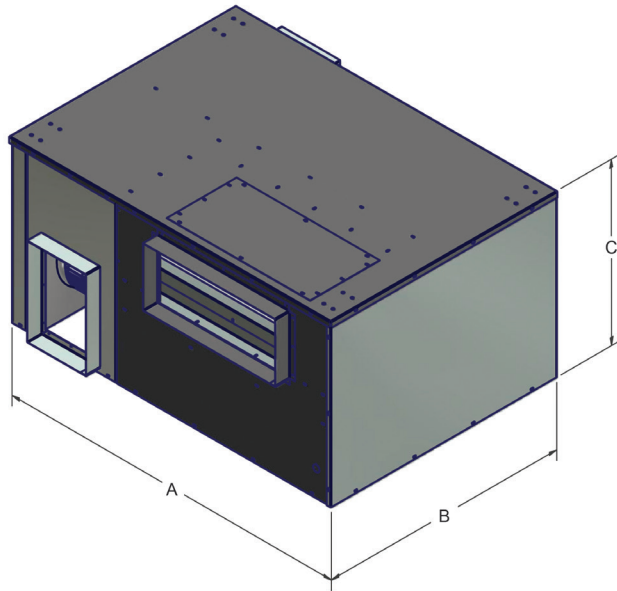


DESCRIPTION & APPLICATION



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DIMENSIONAL & PERFORMANCE DATA



Model	Overall Cabinet			Duct Openings				Other Dimensions							Approx. Weight (lbs)	
	A	B	C	D	E	F	G	H	J	K	L	M	N	P		Q
MV 250	40	29	18	6	10	10	6	5.676	0.772	5.340	1.589	5.340	1.339	5.676	1.202	190
MV 250X*	40	29	18	6	10	10	6	5.676	0.772	5.340	1.589	5.340	1.339	5.676	1.202	195
MV 450	40	29	18	8	12	12	6	5.676	0.772	5.340	1.589	5.340	1.339	5.676	1.202	190
MV 450X*	40	29	18	8	12	12	6	5.676	0.772	5.340	1.589	5.340	1.339	5.676	1.202	195
MV 750	43.6	30.6	22	8	13	18	8	4.130	0.772	5.674	1.625	5.674	1.625	4.130	1.202	220
MV 750X*	43.6	30.6	22	8	13	18	8	4.130	0.772	5.674	1.625	5.674	1.625	4.130	1.202	225

All dimensions in inches. *250X, 450X, and 750X models are built with frost control, rotation sensor and start, stop, jog function factory installed.

MV 250/250X

External Static Pressure		0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CFM	Minimum*	332	319	306	290	274	256	231	205	175	145	117
	Low	498	479	459	435	411	384	347	307	263	218	175
	High	592	565	530	496	463	431	398	356	311	262	218

*Variable speed controller is required to achieve performance between listed CFMs, including the range between the Low and Minimum listings.

MV 450/450X

External Static Pressure		0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CFM	Minimum*	437	427	417	406	393	380	368	359	341	318	293
	Low	656	640	625	609	590	570	552	538	511	477	440
	Medium	729	708	690	671	649	627	605	582	560	530	495
	High	783	765	740	721	700	678	650	622	598	580	560

*Variable speed controller is required to achieve performance between listed CFMs, including the range between the Low and Minimum listings.

MV 750/750X

External Static Pressure		0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CFM	Minimum*	549	548	547	546	539	527	519	508	503	492	479
	Low	823	822	821	819	808	790	778	762	755	738	718
	Medium	997	992	985	975	960	940	928	905	884	872	850
	High	1162	1145	1130	1104	1095	1090	1068	1047	1020	998	967

*Variable speed controller is required to achieve performance between listed CFMs, including the range between the Low and Minimum listings.

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ENGINEERING SPECIFICATIONS

Model

MV = Mini Ventilator

Unit Size

- 250
- 250X
- 450
- 450X
- 750
- 750X

Isolators

- 0 = None
- F = Floor Mounted
- C = Ceiling Hung

Speed Controller

- 0 = None
- L = Loose

Disconnect

- 0 = None
- 1 = NEMA 1 Disconnect Switch

Dirty Filter Switch

- 0 = None
- B = Both Intake and Exhaust

Filters

- 8 = MERV 8 (Standard)
- 13 = MERV 13

Motorized Outside Air Damper

- 0 = None
- MD1 = Motorized Outside Damper

Mini Ventilator

Furnish and install, at locations shown on plans or in accordance with schedules, mechanical cooling system complete with an Energy Recovery Ventilator (ERV). The Energy Recovery Ventilator shall contain an energy recovery component rated in accordance with AHRI Standard 1060-2000 with ratings certified by AHRI. ERV shall have movable duct flanges for OA and RA intake. All other airstreams shall be horizontal as standard. Cabinet shall be galvanized steel construction with a powder coat paint finish electrostatically bonded to the metal. Where conditioned air is handled, cabinet panels shall be fully insulated to prevent sweating and minimize sound. Knockouts shall be provided for power connections. Hanging or pad mount installation capability shall be standard. Test ports shall be provided so airflow can be measured across the energy recovery wheel. Intake and exhaust air blowers of the ERV shall contain a centrifugal forward curved blower. They shall have ball bearings with direct drive motors.

X Models: ERV's shall be complete with low ambient kit for frost control, "Climate Smart" controller for Economizer Mode, and rotation sensor utilizing dry contact switch that closes upon failure.

The energy recovery device shall be a rotary heat exchanger per AHRI Standard 1060 description. The device will be an enthalpy wheel coated with a silica gel desiccant by a patented process without the use of binders or adhesives which may plug the desiccant aperture. The substrate shall be a lightweight polymer. Desiccant shall not dissolve or deliquesce in the presence of water or high humidity. The wheel shall be easily cleanable with standard coil cleaning solution or mild soap and water solution. On ERV's with wheels larger than 25" (635) diameter, it shall have removable segments for cleaning and maintenance. All diameter and perimeter seals shall be provided.

The energy recovery cassette shall be an Underwriters Laboratories Recognized Component for electrical and fire safety.

ERV unit to have minimum 2" (51) pleated MERV 8 filters in intake and exhaust airstreams. Unit shall be provided with a single point power connection.

Energy Recovery Ventilators shall be in all respects equal to PennBarry Model (specifier select) MV250, MV250X, MV450, MV450X, MV750, or MV750X mini ventilators.





PennBarry Product Solutions

COMMERCIAL

Roof & Wall Exhaust Centrifugal Fans
Ceiling, Wall, & Inline Centrifugal Fans
Roof Supply Centrifugal Fans
Square & Round Centrifugal Fans
Wall Mounted Axial Fans
Hooded Roof Axial Fans
Upblast Roof Axial Fans
Gravity Ventilators
Roof Curbs

INDUSTRIAL

Utility Vent Sets
Freestanding Centrifugal Fans
Industrial & Material Handling Fans
Tubular Centrifugal Inline Fans
Mixed Flow Centrifugal Fans
Plug & Plenum Fans
Wall Mounted Propeller Fans
Tube Axial Fans
Vane Axial Fans
Bifurcator Fans
Fume Exhaust

ENERGY RECOVERY

Outdoor Units
Indoor Units

KITCHEN VENTILATION

Kitchen Hoods
Make-Up Air Units
Exhaust Fans



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PennBarry is proud to be your preferred manufacturer of commercial and industrial fans and blowers. Learn how PennBarry products can assist you in your next application by contacting your PennBarry Representative or visiting us on the web at www.pennbarry.com.

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