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Product Data

Project Name:	Medpace B100 - First Floor Gym Renovation	Submittal Code:	233423.00-PD-00	REV: 00
Document Set:	Bid/Construction			
KLH Project #:	25673.00-Bid	Received Date:	09/12/2024	
Section Name:	HVAC Power Ventilators			
Section Number:	233423.00			
Submitted By:	ARCX Studio			
Authored By:	MSD			
Client Name:	ARCX Studio			

SUBMITTAL REVIEW

No Exceptions

By: Christine E. Shea **Date:** 09/16/2024

ENGINEER'S REVIEW IS FOR GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS. COMMENTS DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR REMAINS RESPONSIBLE FOR ACCURACY OF QUANTITIES, DIMENSIONS, DETAILS AND COORDINATION WITH OTHER TRADES.

General

- 1.1 Unit as scheduled.
- 1.2 No exceptions noted.

End of Submittal Review

Note: Review is for general conformance only. Submittal reviews featuring the "No Exceptions" designation shall not be interpreted as permission to deviate from the contract. Modifications to the contract are based on express written request and approval and submittal reviews do not satisfy this requirement.

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SUBMITTAL COVER SHEET

PROJECT

240534 - Medpace (Gym)

ENGINEER

KLH

ARCHITECT

ARCX Studio

SPECIFICATIONS NO.

ITEM

ERV

Submittal #: 004.1

- Approved
 Disapproved

Date: 8/28/2024

Submitted by: Denny Hickman

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Cincinnati, OH. 45241

SUBMITTAL

Job Name: Medpace B100 L1 Gym Renovation

Engineer: KLH

Contractor: MSD

Elevation: (ft) 499

Date: 8/27/2024

Submitted By: Josh Wolfe

Email: jwolfe@eapnet.com

Phone: (513)489-9494

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CINCINNATI, OH 45227

US

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Email Address: jwolfe@eapnet.com

SUBMITTAL NOTES:

ERV Submittals



P.O. Box 410 Schofield, WI 54476 (715) 359-6171 FAX (715) 355-2399 www.greenheck.com

Minivent-750-VG Unit Performance

Design Conditions					
Elevation (ft)	Summer		Winter DB (F)	Outdoor Air (CFM)	Exhaust Air (CFM)
	DB (F)	WB (F)			
499	93.0	75.0	6.3	700	650

Unit Specifications			
Qty	Weight (lb)	Unit Installation	Unit ETL Listing
1	240 (+/- 5%)	Indoor	UL-1812

Configuration			
Outdoor Air		Exhaust Air	
Intake	Discharge	Intake	Discharge
Side	Side	Side	Side

Energy Recovery Performance									
Design Condition	Temperature (F)								Capacity Reduction (BTU/h)
	Outdoor Air		Supply Air		Return Air		Exhaust Air		
	DB	WB	DB	WB	DB	WB/RH	DB	WB	
Summer	93.0	75.0	79.3	66.3	75.0	62.5/50	89.5	72.5	23,940.0
Winter	6.3	4.3	54.5	44.6	72.0	55.7/35	18.5	18.3	36,743.0

Air Performance							
Type	Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	FRPM	Fan		
					Qty	Type	Drive-Type
Supply	700	0.5	0.5	1107	1	Forward Curve	Direct
Exhaust	650	0.5	0.5	1180	1	Forward Curve	Direct

Motor Specifications						
Motor	Qty	Operating Power (hp)	Size (hp)	Enclosure	Efficiency	RPM
Supply	1	0.28	3/4	ODP	N/A	1725
Exhaust	1	0.33	3/4	ODP	N/A	1725

Electrical Specifications					
Power Supply	Rating (V/C/P)	MCA (A)	MOP (A)	Fan Power (W/CFM)*	SCCR
Unit	115/60/1	20.5	25.0	0.647	5kA

*Fan Power (W/CFM) = (Supply BHP + Exhaust BHP) / Supply CFM

Construction Features And Accessories

Unit	
UL-1812	Std
Unit Installation - Indoor	Std
Energy Recovery Device - Polymer Wheel w/ Silica Gel Desiccant	Std
Unit Construction - Single Wall	Std
Wall Insulation - 1/2 inch R2 Fiberglass	Std
Corrosion Resistant Fasteners	Std
Two Direct Drive Forward Curved Blowers and VariGreen EC Motors	Std
Unit Finish - Galvanized Steel	Std
Four Factory Mounted Hanging Brackets	Std
Gravity Backdraft Dampers	Std
Outdoor Air Filters - 2" MERV 8, 1-16x20	Std
Exhaust Air Filters - 2" MERV 8, 1-16x20	Std
Single Point Power	Std
Factory Wired Non-Fused Disconnect Switch	X
Access - Bolt On	Std
Controls	
Unit Controls - By Others	
Unit On/Off Control - By Others	X
Supply Fan Control - Constant Volume (on/off)	X
Exhaust Fan Control - Constant Volume (on/off)	X

Accessories	
Frost Control - Timed Exhaust	X
Speed Control - Motor Potentiometer / 0-10 VDC Signal	Std
Isolation Kit - Neoprene Hanging	X
Spare Filters	
Duct Flange	Std
Spare Energy Wheel Belt	
Smoke Detector(s)	
Warranty Options	
Unit Warranty - 18 Months (Std.)	Std
Energy Wheel Warranty - 5 Yrs Less Motor	Std

Standard Option	Std
Not Included	
Included	X

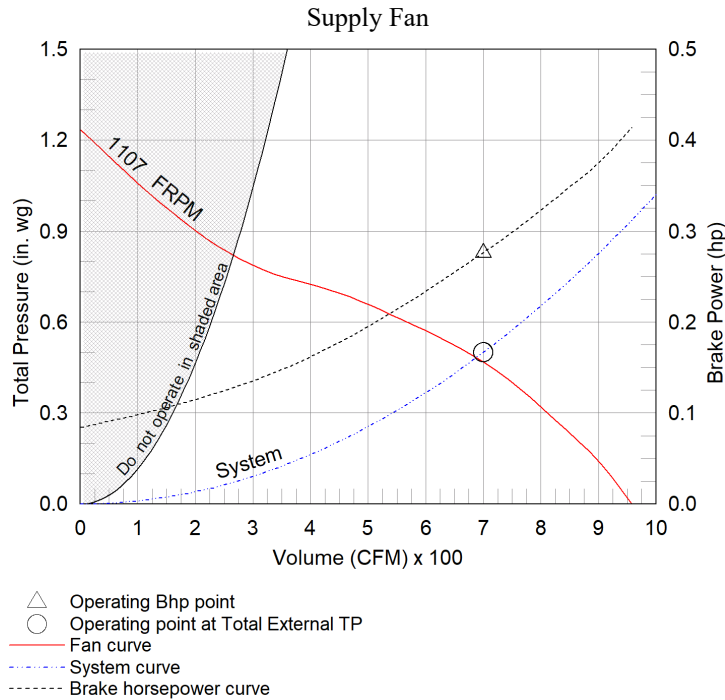
Notes
MINIV includes standard gravity backdraft dampers for discharge air streams.
The intake and discharge positions shown in the drawings are not labeled because they are configurable. The supply and exhaust can be on either side, but the intake/discharge relationship must be maintained.

Supply Fan Charts And Performance

Supply Fan Performance									
Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating Power (hp)	Motor		Fan		
					Qty	Size (hp)	Qty	Type	Drive-Type
700	0.5	0.5	1107	0.28	1	3/4	1	Forward Curve	Direct

Pressure Drop (in. wg)				
Weatherhood	Filter	Damper	External	Total
-	-	-	0.5	0.5

Sound Performance in Accordance with AMCA										
Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
81.9	85	85.1	74.7	75	72.5	71.5	68	81.7	70.2	19.4

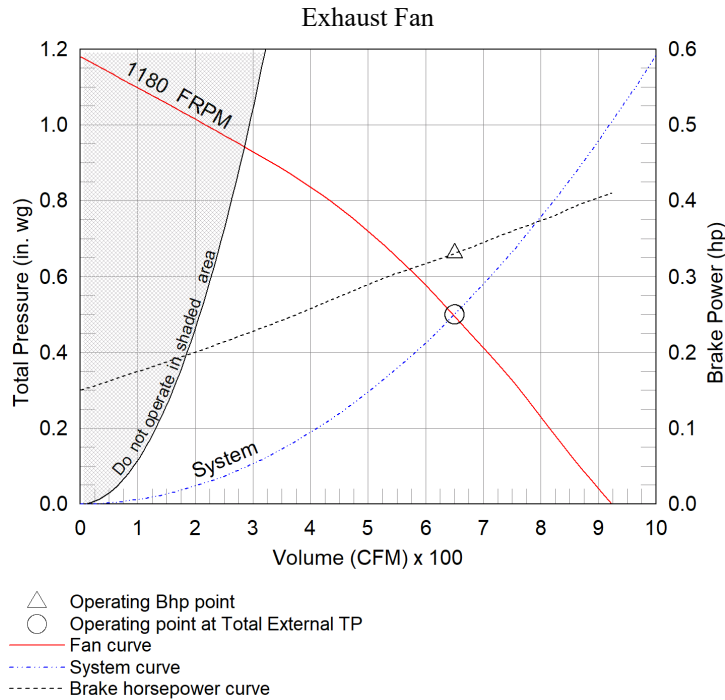


Exhaust Fan Charts And Performance

Exhaust Fan Performance									
Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating Power (hp)	Motor		Fan		
					Qty	Size (hp)	Qty	Type	Drive-Type
650	0.5	0.5	1180	0.33	1	3/4	1	Forward Curve	Direct

Pressure Drop (in. wg)				
Weatherhood	Filter	Damper	External	Total
-	-	-	0.5	0.5

Sound Performance in Accordance with AMCA										
Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
76.2	76.7	66.4	59.1	53.2	47.6	42.3	34.9	64.4	52.9	6.8



Energy Recovery Summer Performance

Outdoor Air		Supply Air	
Dry Bulb (F)	93.0	Dry Bulb (F)	79.3
Wet Bulb (F)	75.0	Wet Bulb (F)	66.3
Specific Humidity (gr/lb)	105	Specific Humidity (gr/lb)	77
Enthalpy (BTU/lb)	38.8	Enthalpy (BTU/lb)	31.2

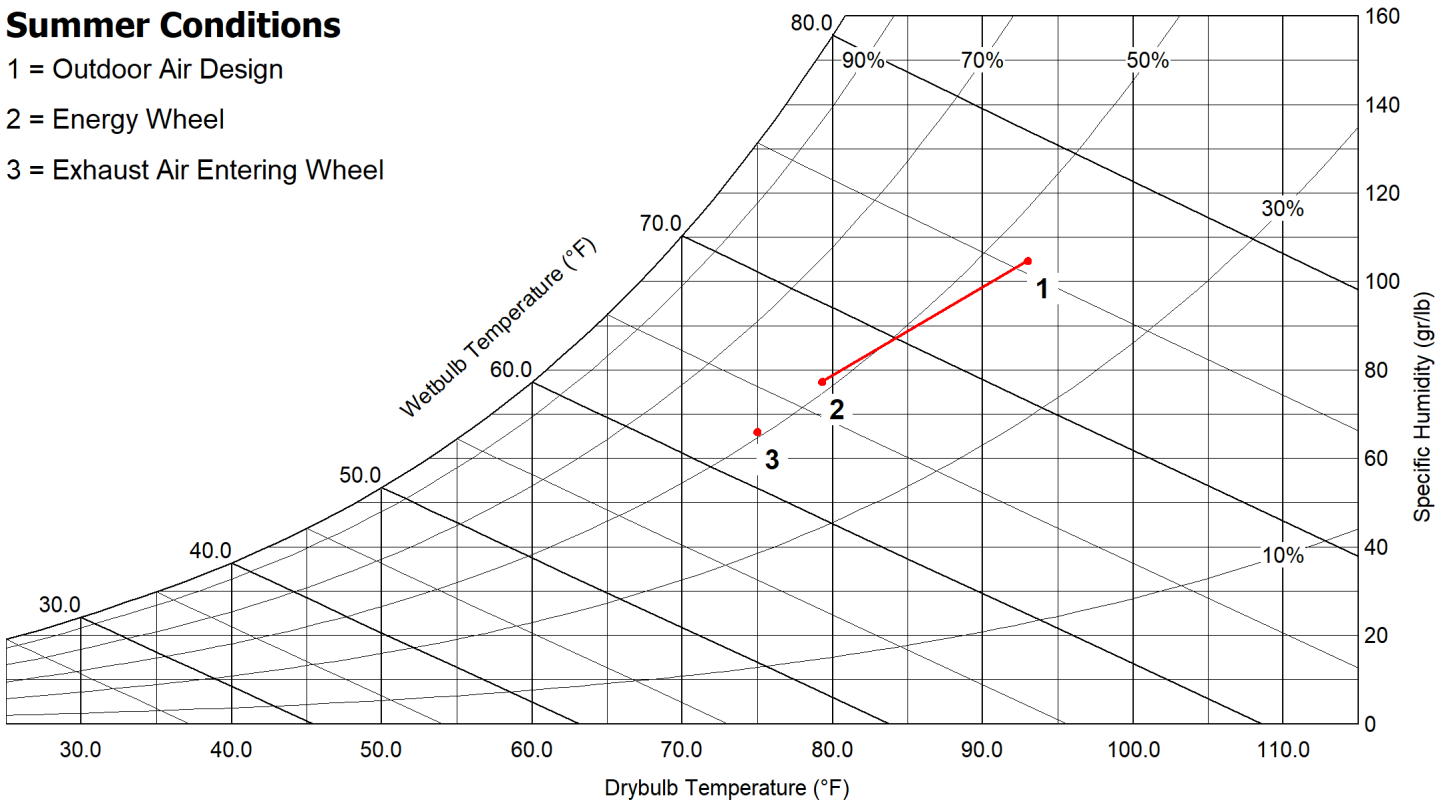
Exhaust Air		Return Air	
Dry Bulb (F)	89.5	Dry Bulb (F)	75.0
Wet Bulb (F)	72.5	Rel. Humidity (%)	50
Specific Humidity (gr/lb)	94	Specific Humidity (gr/lb)	66
Enthalpy (BTU/lb)	36.3	Enthalpy (BTU/lb)	28.3

Design Air Flow Conditions			
OA Volume (CFM)	ASHRAE 90.1 OA Enthalpy Recovery Ratio	EA Volume (CFM)	EA Wheel Effectiveness
700	72.8	650	76.2

Outdoor Air Cooling Reduction				
OA Load w/o Energy Recovery		OA Load with Energy Recovery		Equipment Reduction (tons)
(BTU/h)	(tons)	(BTU/h)	(tons)	
33,075.0	2.76	9,135.0	0.76	2.00

Summer Conditions

- 1 = Outdoor Air Design
- 2 = Energy Wheel
- 3 = Exhaust Air Entering Wheel



Energy Recovery Winter Performance

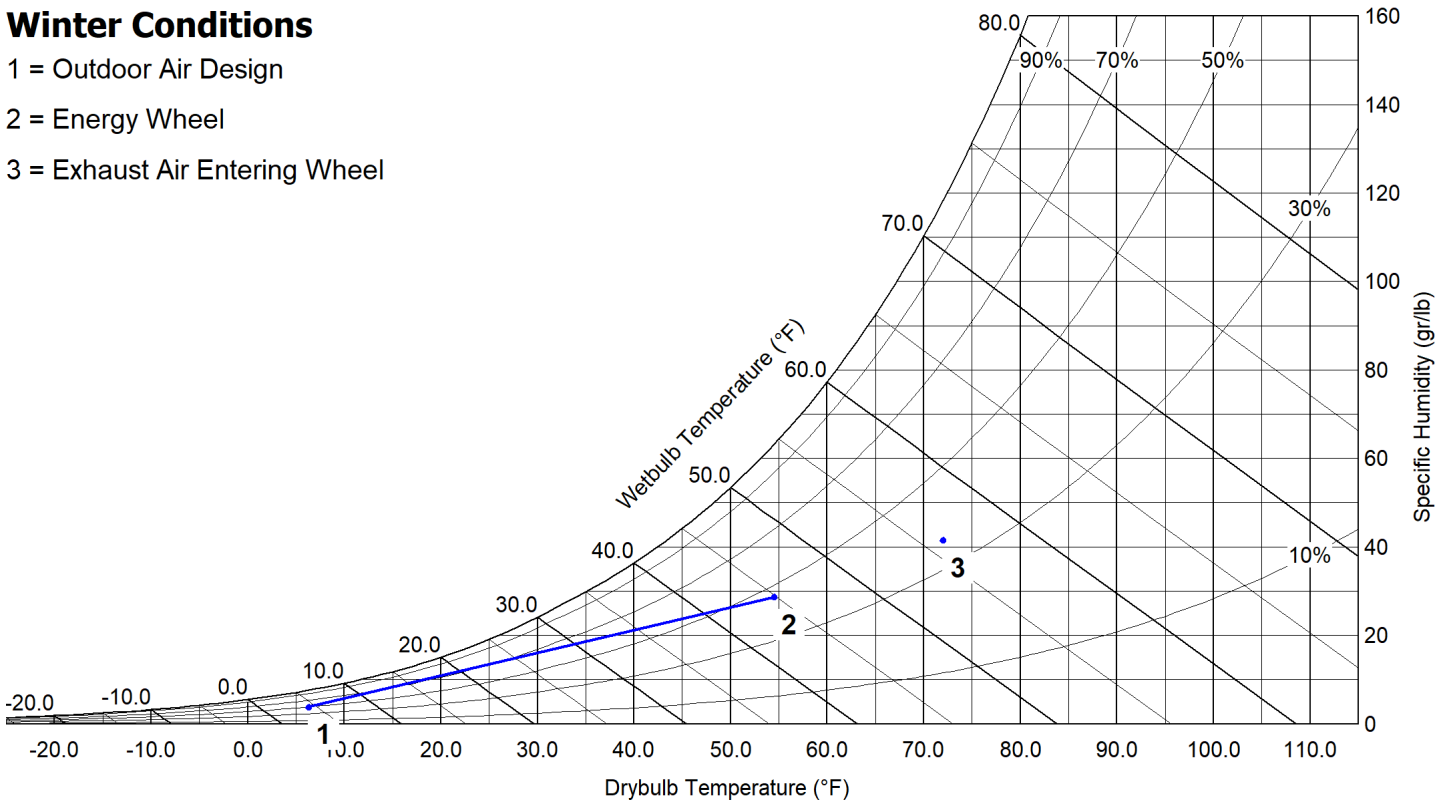
Outdoor Air		Supply Air	
Dry Bulb (F)	6.3	Dry Bulb (F)	54.5
Wet Bulb (F)	4.3	Wet Bulb (F)	44.6
Specific Humidity (gr/lb)	4	Specific Humidity (gr/lb)	29
Enthalpy (BTU/lb)	2.1	Enthalpy (BTU/lb)	17.5
Exhaust Air		Return Air	
Dry Bulb (F)	18.5	Dry Bulb (F)	72.0
Wet Bulb (F)	18.3	Rel. Humidity (%)	35
Specific Humidity (gr/lb)	14	Specific Humidity (gr/lb)	42
Enthalpy (BTU/lb)	6.6	Enthalpy (BTU/lb)	23.8

Design Air Flow Conditions			
OA Volume (CFM)	ASHRAE 90.1 OA Enthalpy Recovery Ratio	EA Volume (CFM)	EA Wheel Effectiveness
700	71.2	650	78.3

Outdoor Air Heating Reduction			
OA Load w/o Energy Recovery (BTU/h)	OA Load with Energy Recovery (BTU/h)	Equipment Reduction (BTU/h)	Sensible Effectiveness (%)
50,083.0	13,340.0	36,743.0	80.7

Winter Conditions

- 1 = Outdoor Air Design
- 2 = Energy Wheel
- 3 = Exhaust Air Entering Wheel




AHRI Performance Ratings

Energy Recovery Performance Rating in accordance with AHRI Standard 1060 (I-P)							
Rated Airflow (SCFM)		Net Supply Airflow (SCFM)	EATR (%)	OACF	Pressure Drop (in. wg)		Purge Angle (degrees)
Leaving Supply	Entering Exhaust				Supply	Exhaust	
734	684	700	4.7	1.11	0.79	0.74	0

Thermal Effectiveness Ratings							
Enthalpy Recovery Ratio (%)		Sensible Effectiveness (%)		Latent Effectiveness (%)		Total Effectiveness (%)	
Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
72.8	71.2	80.1	80.7	73.1	72.5	76.2	78.3

Note(s)

Summer Design Conditions:
 Certified in accordance with the AHRI ERV Certification Program, which is based on AHRI Standard 1060. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

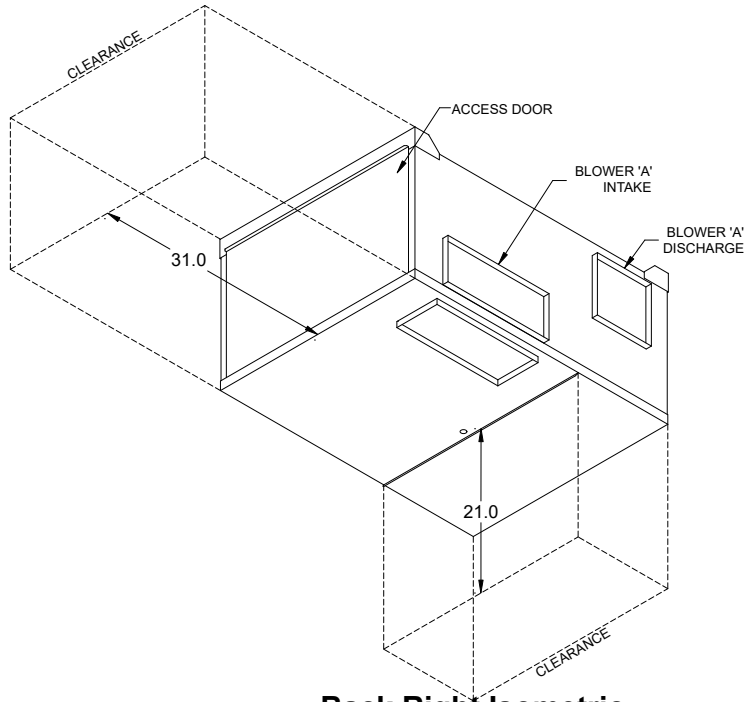


Winter Design Conditions:
 Application Rating is outside the scope of the AHRI ERV certification Program but is rated in accordance with AHRI Standard 1060.

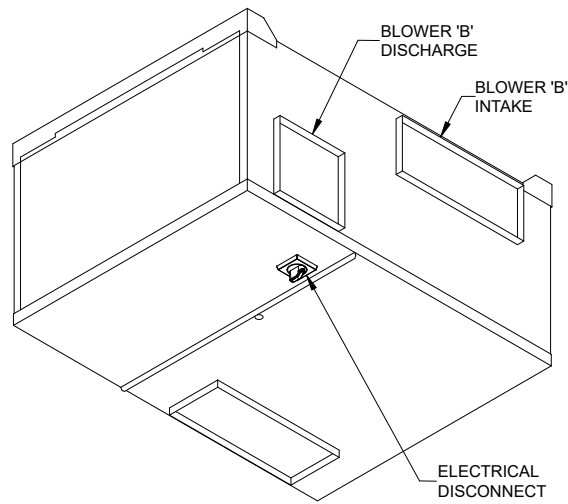
EATR application performance for an indoor mounted unit assumes 85% external static pressure (in. wg.) drop is on the outdoor air discharge.

OACF application performance for an indoor mounted unit assumes 85% external static pressure (in. wg.) drop is on the return air intake.

Isometric Drawings



Back Right Isometric

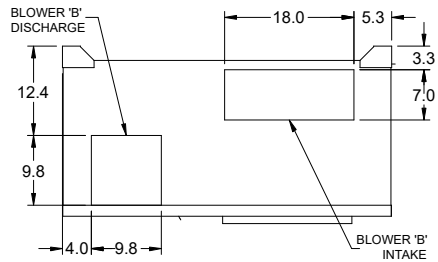
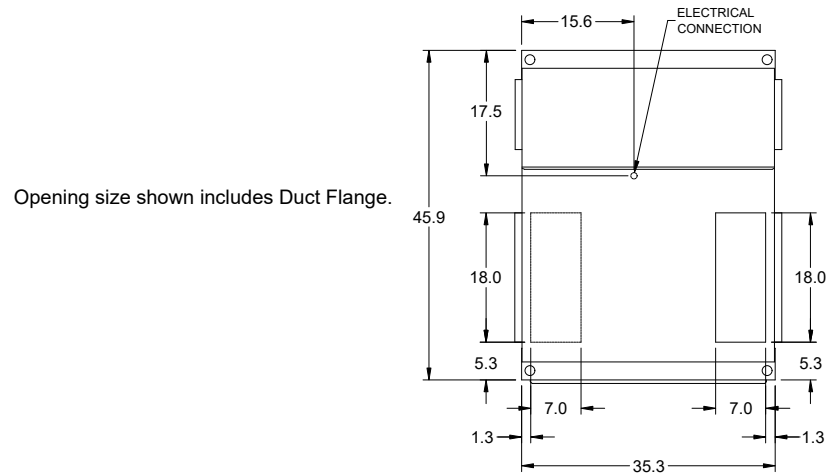


Intake and discharge positions are not labeled because they are configurable by rotation of the unit about the vertical axis. The supply and exhaust can be on either side but the intake/discharge relationship must be maintained. For example, Outdoor Air Intake = Intake Side "B", Outdoor Air Discharge = Discharge Side "B".

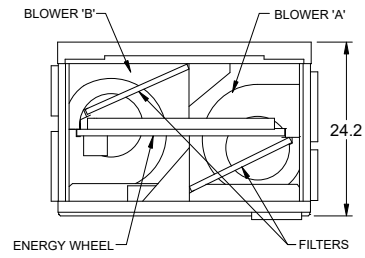
Front Left Isometric

Overview Drawings

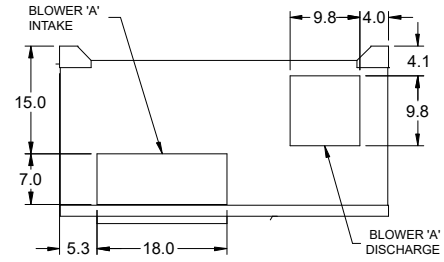
Plan



Left End

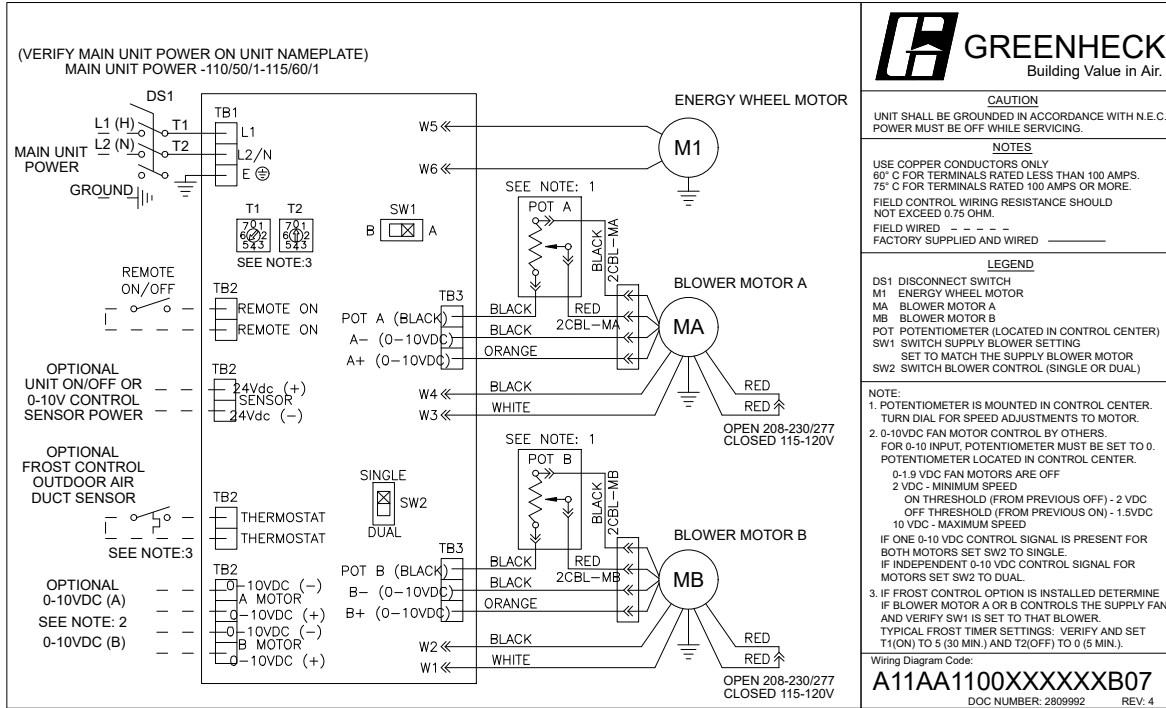


Elevation



Right End

Wiring Diagram



Warranty Statement for ERV Preconditioners

Unit Warranty

Greenheck warrants the equipment to be free from defects in material and workmanship for a period of 18 months from the date of shipment. Initial startup must be completed within six months of the shipment date, and a startup report must be submitted to Greenheck.

Energy Wheel Warranty

The energy recovery wheel is warranted to be free from defects in material and workmanship for a period of 5 years from the shipment date. This warranty applies to all parts and components in the energy recovery cassettes with the exception of the motor.

Warranty Notes

Any component which proves defective during the warranty period will be repaired or replaced at Greenheck's sole option when returned to our factory, transportation prepaid. All warranties do not include labor costs associated with troubleshooting, removal, or installation. Greenheck will not be liable for any consequential, punitive, or incidental damages resulting from use, repair, or operation of any Greenheck product. These warranties are exclusive and are in lieu of all other warranties, whether written, oral, or implied, including the warranty of merchantability and the warranty of fitness for a particular purpose. No person (including any agent or salesperson) has authority to expand Seller's obligation beyond the terms of this warranty, or to state that the performance of the product is other than that published by Seller.

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