

REQUEST FOR QUOTATION
Building 86 Air Makeup Units Replacement
CRFQ GSD240000012

DATE: 2/13/24

EXHIBIT A – Pricing Page

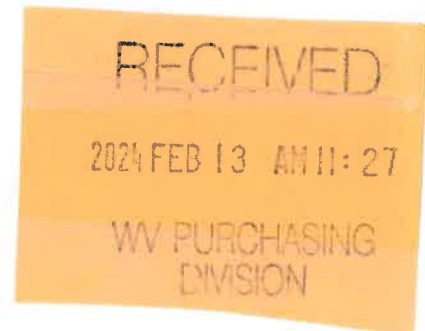
NAME OF VENDOR: Casto Technical Services

The Vendor, being familiar with and understanding the Bidding Documents and having examined the site and being familiar with all local conditions affecting the project hereby proposes to furnish all labor, material, equipment, supplies and transportation and to perform all Work in accordance with the Bidding Documents within the time set forth for the sum of:

BASE BID: Building 84 Air Makeup Unit Replacement Project with all associated work as specified herein:

For the sum of: One Hundred Forty-Three Thousand Dollars & Zero Cents
(\$ 143,000.00)

(Show amount in both words and numbers)



BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, Casto Technical Services, Inc.
of Charleston, WV, as Principal, and Western Surety Company
of Chicago, IL, a corporation organized and existing under the laws of the State of
SD with its principal office in the City of Chicago, as Surety, are held and firmly bound unto the State
of West Virginia, as Obligee, in the penal sum of Five Percent of Amount Bid (\$ 5%) for the payment of which,
well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the
Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for
Building 86 Air Makeup Units Replacement - CRFQ-0211-GSD240000012 - According to Plans & Specifications

NOW THEREFORE,

- (a) If said bid shall be rejected, or
- (b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal
attached hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform
the agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in
full force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no
event, exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no
way impaired or affected by any extension of the time within which the Obligee may accept such bid, and said Surety does hereby
waive notice of any such extension.

WITNESS, the following signatures and seals of Principal and Surety, executed and sealed by a proper officer of Principal and
Surety, or by Principal individually if Principal is an individual, this 13th day of February, 2024.

Principal Seal

Casto Technical Services, Inc.
(Name of Principal)
By: Christina Smith
(Must be President, Vice President, or
Duly Authorized Agent)
CFO
(Title)

Surety Seal

Western Surety Company
(Name of Surety)
By: Patricia A. Moye
Patricia A. Moye, WV Resident Agent Attorney-in-Fact

**IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance, must affix its seal, and
must attach a power of attorney with its seal affixed.**

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Kimberly J Wilkinson, Gregory T Gordon, Patricia A Moye, Jeremy B Stanley, Terri L Dodrill, Individually

of Charleston, WV, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 17th day of October, 2022.



WESTERN SURETY COMPANY

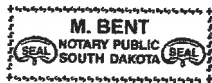
Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 17th day of October, 2022, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires

March 2, 2026



M. Bent, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 13th day of February, 2024.



WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Casto Technical Services

Authorized Signature:  Date: 2/13/24

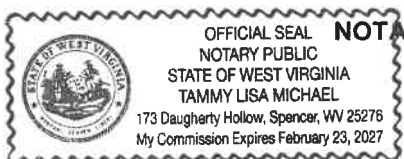
State of West Virginia


County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 13th day of February, 2024

My Commission expires February 23, 2027

AFFIX SEAL HERE





REQUEST FOR QUOTATION
Building 86 Air Makeup Units Replacement
CRFQ GSD240000012

11. FACILITIES ACCESS: Performance of Contract Services may require access cards and/or keys to gain entrance to the Agency's facilities. In the event that access cards and/or keys are required:

11.1. Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.

11.2. Vendor will be responsible for controlling cards and keys and will pay a replacement fee if the cards or keys become lost or stolen.

11.3. Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.

11.4. Anyone performing under this Contract will be subject to Agency's security protocol and procedures.

11.5. Vendor shall inform all staff of Agency's security protocol and procedures.

12. MISCELLANEOUS:

12.1. Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: Nate Lancaster

Telephone Number: (304) 344-0549

Fax Number: _____

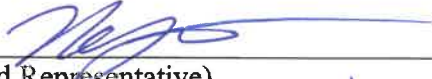
Email Address: NLancaster@castotech.com

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) Nate Lancaster PM/Estimator
(Address) 540 Leon Sullivan Way Charleston WV 25302
(Phone Number) / (Fax Number) (304) 346-0549
(email address) N.Lancaster@castotech.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Casto Tech.
(Company)

(Signature of Authorized Representative)
Nate Lancaster PM/Estimator
(Printed Name and Title of Authorized Representative) (Date)
(304) 346-0549
(Phone Number) (Fax Number)
N.Lancaster@castotech.com
(Email Address)

Subcontractor List Submission (Construction Contracts Only)

Bidder's Name: _____ *Costs Tech.*

Check this box if no subcontractors will perform more than \$25,000.00 of work to complete the project.

Subcontractor Name	License Number if Required by W. Va. Code § 21-11-1 et. seq.

Attach additional pages if necessary

State of West Virginia
Purchasing Division

CERTIFIED DRUG-FREE WORKPLACE REPORT COVERSHEET

In accordance with **West Virginia Code** § 21-1D-7b, no less than once per year, or upon completion of the project, every contractor shall provide a certified report to the public authority which let the contract. That report must include each of the items identified below in the Required Report Content section.

Instructions: Vendor should complete this coversheet, attach it to the required report, and submit it to the appropriate location as follows: For contracts more than \$25,000, the report should be mailed to the West Virginia Purchasing Division at 2019 Washington Street East, Charleston, WV 25305. For contracts of \$25,000 or less, the vendor should mail the report to the public authority issuing the contract.

Contract Identification:

Contract Number: CRFQ GSD 240000012

Contract Purpose: Buildy B6 Makeup Kit Van's Replent

Agency Requesting Work: Purchasing

Required Report Content: The attached report must include each of the items listed below. The vendor should check each box as an indication that the required information has been included in the attached report.

- Information indicating the education and training service to the requirements of **West Virginia Code** § 21-1D-5 was provided;
- Name of the laboratory certified by the United States Department of Health and Human Services or its successor that performs the drug tests;
- Average number of employees in connection with the construction on the public improvement;
- Drug test results for the following categories including the number of positive tests and the number of negative tests: (A) Pre-employment and new hires; (B) Reasonable suspicion; (C) Post-accident; and (D) Random.

Vendor Contact Information:

Vendor Name: Castro Tech Vendor Telephone: (304) 346-0544

Vendor Address: 540 Leon Sullivan Way Vendor Fax: _____

Charleston WV 25327 Vendor E-Mail: NLorenzetti@castrotech.com



**State of West Virginia
DRUG FREE WORKPLACE CONFORMANCE AFFIDAVIT
West Virginia Code §21-1D-5**

I, Nate Lancaster, after being first duly sworn, depose and state as follows:

1. I am an employee of Casto Technical Services; and,
(Company Name)
2. I do hereby attest that Casto Technical Services
(Company Name)

maintains a written plan for a drug-free workplace policy and that such plan and policy are in compliance with **West Virginia Code §21-1D**.

The above statements are sworn to under the penalty of perjury.

Printed Name: Nate Lancaster

Signature: _____

Title: Estimator/Project Mgr.

Company Name: Casto Technical Services

Date: 2/13/24

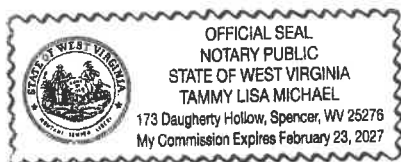
STATE OF WEST VIRGINIA,

COUNTY OF Kanawha, TO-WIT:

Taken, subscribed and sworn to before me this 13th day of February, 2024.

By Commission expires February 23, 2024

(Seal)



Tammy L. Michael
(Notary Public)

Contractor Acknowledgement:

I, the undersigned, have read and reviewed and I acknowledge my understanding of the General Services Division safety requirements, as set forth in this handbook. I am also aware that all applicable rules and regulations are to be followed, regardless of whether they are specifically mentioned in this handbook.

Contractor Representative (Print Name): Nate Lovich

Contractor Representative Signature:  Date: 2/13/24

This signed acknowledgement must be signed and returned to the GSD Safety Section prior to the start of project work.

Exhibit D

Jobsite Safety Handbook

For Contractors

Department of Administration (DOA)

General Services Division (GSD)

218 California Avenue
Charleston, WV

THIS HANDBOOK IS TO BE POSTED IN A VISIBLE AREA AT ALL CONSTRUCTION
PROJECTS AND/OR CONTRACTOR WORKSITES

Contractor Contact: Mate Lonergan Phone #: 304-610-7502

EMERGENCY CONTACTS:

Project Manager:

Name: Mate Lonergan Phone #: 304-610-7502

Emergency Services #: (304) 340-0549

GSD Safety Section:

1900 Kanawha Boulevard East, Bldg. 1 Room MB12 Charleston, WV 25305

Jonathan Trout: Work# 304 352-5522 Cell# 304-205-2721

Aaron Rollins Work# 304-352-5523 Cell# 304-380-1969

Revision 11/16/23

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFQ GSD240000012

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Casto Tech.
Company


Authorized Signature

2/13/24
Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Request for Quote
 Construction

Proc Folder: 1318952		Reason for Modification:	
Doc Description: Building 86 Air Makeup Units Replacement		Addendum No. 2	
Proc Type: Central Purchase Order			
Date Issued	Solicitation Closes	Solicitation No	Version
2024-02-01	2024-02-13 13:30	CRFQ 0211 GSD2400000012	3

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Customer Code:

Vendor Name :

Address :

Street : C Casto Technical Service
 540 Leon Sullivan Way
 Charleston, WV 25301


City : 304-346-0549
 plancaster@castotech.com

State : **Country :** **Zip :**

Principal Contact :

Vendor Contact Phone: **Extension:**

FOR INFORMATION CONTACT THE BUYER
 Melissa Pettrey
 (304) 558-0094
 melissa.k.pettrey@wv.gov

Vendor Signature X  **FEIN#** 550539186 **DATE** 2/13/24

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

Addendum No. 2 is issued to publish and distribute the attached information to the vendor community

Request for Quotation
 CONSTRUCTION

The West Virginia Purchasing Division is soliciting bids on behalf of the Department of Administration, General Services Division to establish a contract for the removal and replacement of two Air Makeup Units located on the roof of Building 86, located at 1124 Smith Street, Charleston, WV., per the bid requirements, specifications and terms and conditions as attached hereto.

INVOICE TO	SHIP TO
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DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION 103 MICHIGAN AVENUE CHARLESTON WV US	DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION BLDG 86 1124 SMITH ST CHARLESTON WV US
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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Building 86 Air Makeup Units Replacement	—	—	—	\$143,000. ⁰⁰

Comm Code	Manufacturer	Specification	Model #
72151207	<i>See attached</i>	<i>Submittals</i>	

Extended Description:
 Building 86 Air Makeup Units Replacement

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Mandatory Pre-bid meeting @ 10 AM	2024-01-31
2	Vendor question deadline @ 3PM	2024-02-05



CONTRACTOR LICENSE

AUTHORIZED BY THE
West Virginia Contractor
Licensing Board

NUMBER: WV001241

CLASSIFICATION:

ELECTRICAL
HEATING, VENTILATING & COOLING
PIPING

CASTO TECHNICAL SERVICES INC
DBA CASTO TECHNICAL SERVICES INC
PO BOX 627
CHARLESTON, WV 25322-0627

DATE ISSUED

EXPIRATION DATE

AUGUST 13, 2023

AUGUST 13, 2024

Authorized Signature

Chair, West Virginia Contractor
Licensing Board



A copy of this license must be readily available for inspection by the Board on every job site where contracting work is being performed. This license number must appear in all advertisements, on all bid submissions, and on all fully executed and binding contracts. This license is non-transferable. This license is being issued under the provisions of West Virginia Code, Chapter 30, Article 42.



COOK



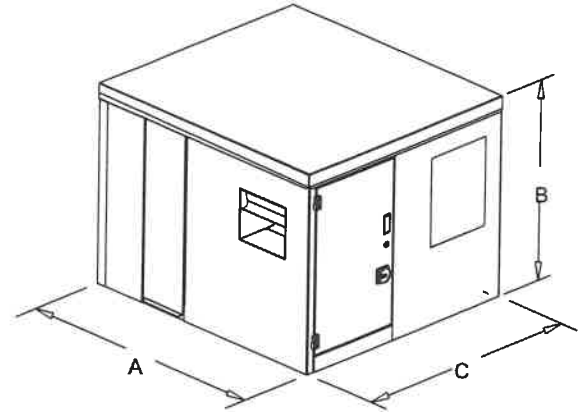
MARK: MAU-1, -2 (5500)
PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

ERV

Energy Recovery Ventilator Belt Drive Arrangement V

STANDARD CONSTRUCTION FEATURES:

Energy recovery wheel constructed of fluted synthetic media containing water selective molecular sieve desiccant - Cassette assembly slides out for easy access and consists of energy recovery wheel, drive motor, and drive components - Removable access doors provide access to all internal components - Ventilator cabinet consisting of a minimum 18 gauge galvanized steel housing mounted to a minimum 16 gauge galvanized steel base - Cabinet internally lined with 1" thick, 3 lb. density, FSK insulation - Two DWDI forward curved steel blowers mounted on vibration isolators - Blower wheel bearings rated at 200,000 hours average life - Blower wheels are factory adjusted to specified RPM - Standard size 2" thick, MERV 8 filters in supply and exhaust air streams - All electrical components pre-wired for single point power connection - Interlock disconnect on hinged control panel door.



Dimensions (inches)

A	69-1/2
B	71
C	66-1/2

NOTE: Accessories may affect dimensions shown.

Weight(lbs)***	Shipping	2243	Unit	1827
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***Includes fan, motor & accessories.

Performance

Qty	Catalog Number	Airstream	Flow (CFM)	Ext. SP** (inwc)	Fan RPM	Power* (HP)	FEG	FEI
2	ERV-5500	Supply	5500	1.00	926	3.52	<50	0.76
		Exhaust	5500	1.00	1017	4.28	<50	0.62

Altitude (ft): 951 **Static Pressure external to unit.

Motor Information

Airstream	HP	RPM	Volts/Ph/Hz	Enclosure	Mounted
Supply	5	1725	460/3/60	ODP	YES
Exhaust	5				

NEMA Premium® efficiency motor per MG-1 (2014) Table 12-12

Electrical

ERV Full Load Amps	Minimum Circuit Amps	MOCP*
47.9	59.88	60

* Maximum Overload Circuit Protection

Design Conditions

	Outdoor		Indoor	
	Dry Bulb (°F)	Wet Bulb (°F)	Dry Bulb (°F)	Relative Humidity
Summer	95.0	76.0	75.0	50.0%
Winter	0.0	-1.5	70.0	35.0%

Supply Conditions

	Flow (CFM)	Dry Bulb (°F)	Wet Bulb (°F)	Relative Humidity	Humidity Ratio (gr/lb)	Humidity Ratio (lb/lb)	Dew Point (°F)	Enthalpy (Btu/lb)
Summer	5500	80.9	67.2	49.7%	81.1	0.01159	60.4	32.14
Winter		49.4	41.5	50.8%	27.3	0.00390	31.3	16.10

Accessories:

- Premium Efficiency Motor (Min. 89.5%) - Supply
- Premium Efficiency Motor (Min. 89.5%) - Exhaust
- DRIVES (1.5 SF) @ 926 RPM (SUPL.)
- DRIVES (1.5 SF) @ 1017 RPM (EXH.)
- ODP -1/3HP - 460V/3 PH/ 60 1140/0000 (WHEEL DRIVE)
- ELECTRICAL PANEL 5HP/5HP - 460V/3 PH
- PREHEAT FRSTCTL 2 STAGE 460V-25KW
- BDMI-24V (OUT. AIR INTAKE)
- BDMI-VC-24V (RET. AIR INTAKE)
- BDM-24V (EXH. AIR DISCH)
- INTAKE HOOD
- EXHAUST HOOD
- HINGE ACC DOOR W/QTL
- PURGE SECTION
- DOUBLE WALL CONSTRTN
- DAMPER EXTENSION

*Allow 22-24 weeks
Lead Time*



COOK

ERV

Energy Recovery Ventilator Belt Drive Arrangement V



MARK: MAU-1, -2 (5500)
PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

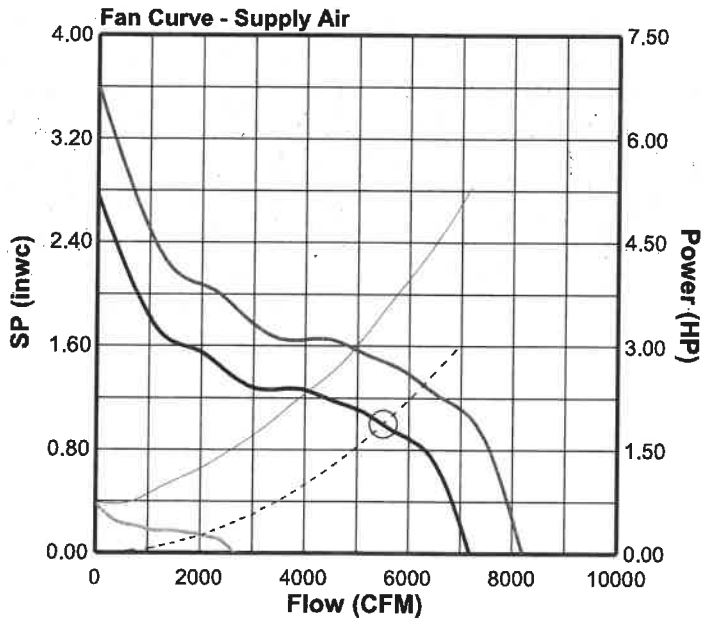
Performance

Qty	Catalog Number	Airstream	Flow (CFM)	Ext. SP** (inwc)	Fan RPM	Power* (HP)	FEG	FEI
2	ERV-5500	Supply	5500	1.00	926	3.52	<50	0.76
		Exhaust	5500	1.00	1017	4.28	<50	0.62

Altitude (ft): 951 **Static Pressure external to unit.

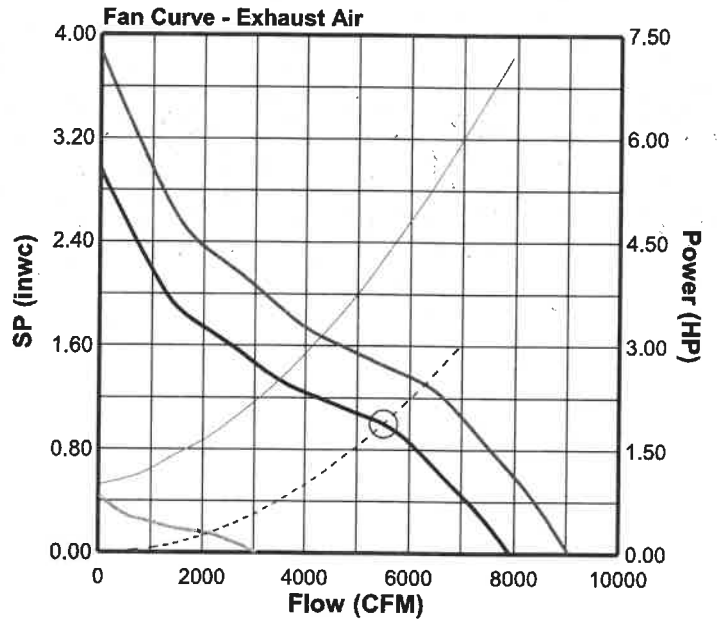
Sound Data 8 Octave Bands dB (10⁻¹² Watts)

Airstream	1	2	3	4	5	6	7	8	LwA
Supply	104	98	88	85	84	81	79	75	90
Exhaust	105	102	92	88	88	85	84	80	94



Fan Curve Legend

CFM vs SP (926)	—
MaxRPM(1057)	—
MinRPM(344)	—
CFM vs HP	—
Point of Operation	○
System Curve	- - -



Fan Curve Legend

CFM vs SP (1017)	—
MaxRPM(1163)	—
MinRPM(392)	—
CFM vs HP	—
Point of Operation	○
System Curve	- - -



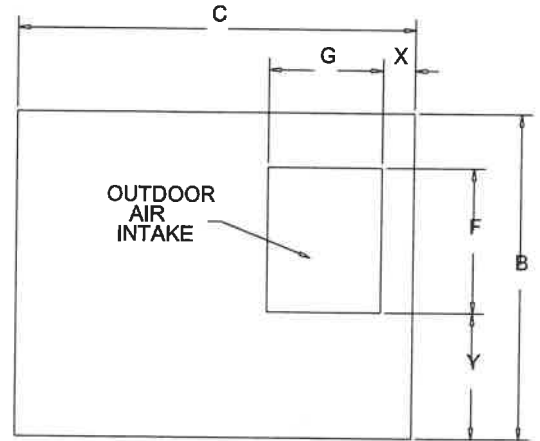
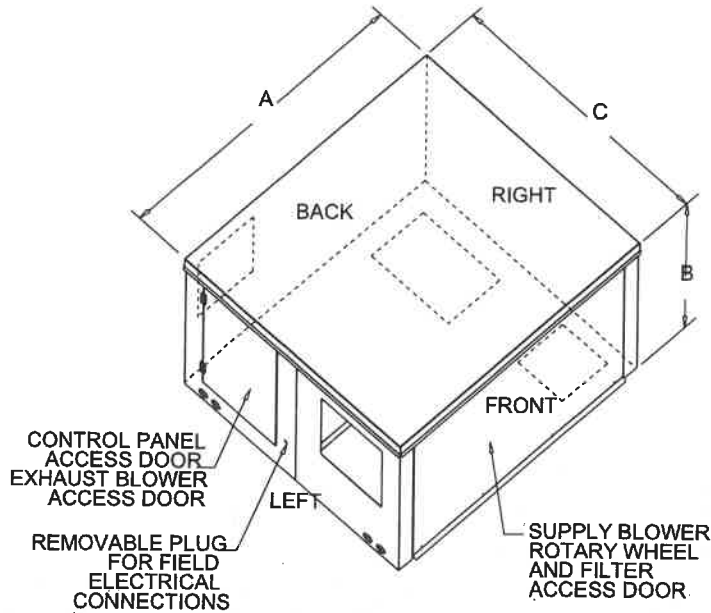
COOK



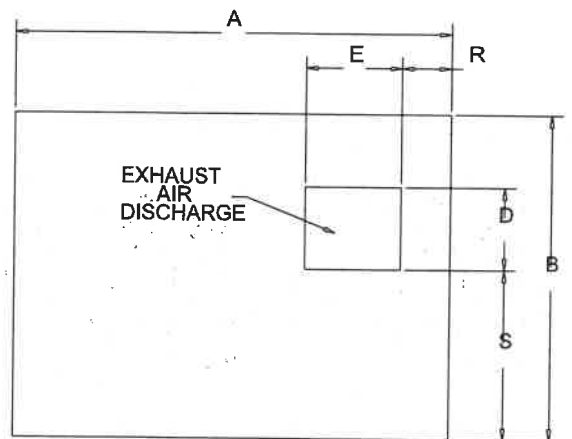
MARK: MAU-1, -2 (5500)
PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

ERV

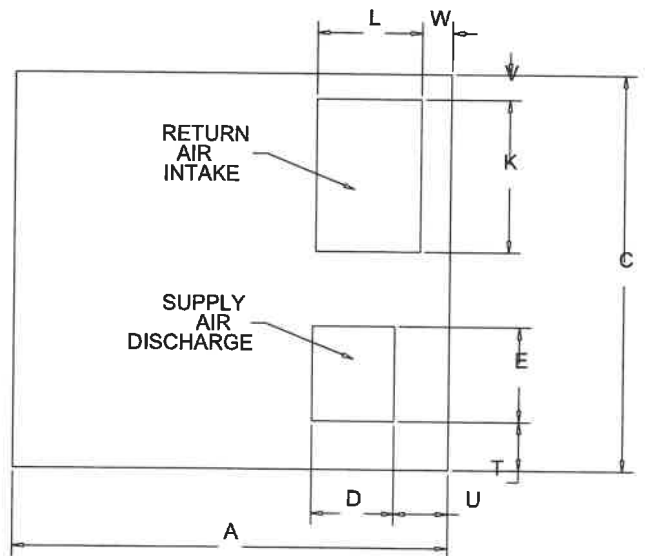
**Energy Recovery Ventilator
Belt Drive
Arrangement V**



LEFT VIEW



BACK VIEW



TOP VIEW

Dimensions (inches)

Size	5500
A	69-1/2
B	71
C	66-1/2
D	15-7/8
E	18-5/8
F	44
G	24
K	26
L	18-3/4
R	5-7/16
S	41
T	8-13/16
U	9-3/8
V	4-3/4
W	4-1/8
X	5-1/4
Y	20-1/8



COOK



MARK: MAU-1, -2 (5500)
PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

ERV

ERV Wheel Performance Report

Performance

Catalog Number	Flow (CFM)		Wheel Effectiveness	
	Supply	Exhaust	Sensible	Latent
ERV-5500	5500	5500	70.6%	66.7%

Summer

Outdoor Intake		Room Supply	
Dry Bulb(°F):	95.0	Dry Bulb(°F):	80.9
Wet Bulb(°F):	76.0	Wet Bulb(°F):	67.2
Humidity Ratio (lb/lb):	0.01564	Humidity Ratio (lb/lb):	0.01159
Humidity Ratio (gr/lb):	109.5	Humidity Ratio (gr/lb):	81.1
Relative Humidity:	42.7%	Relative Humidity:	49.7%
Enthalpy (Btu/lb):	40.08	Enthalpy (Btu/lb):	32.14
Mass Flow Rate (lb/min):	412.5	Mass Flow Rate (lb/min):	412.5

Outdoor Exhaust		Room Exhaust	
Dry Bulb(°F):	89.1	Dry Bulb(°F):	75.0
Wet Bulb(°F):	72.1	Wet Bulb(°F):	62.4
Humidity Ratio (lb/lb):	0.01362	Humidity Ratio (lb/lb):	0.00957
Humidity Ratio (gr/lb):	95.3	Humidity Ratio (gr/lb):	67.0
Relative Humidity:	44.7%	Relative Humidity:	50.0%
Enthalpy (Btu/lb):	36.40	Enthalpy (Btu/lb):	28.49
Mass Flow Rate (lb/min):	412.5	Mass Flow Rate (lb/min):	412.5

Outdoor Air Cooling Load Reduction

Cooling Load w/o ERV (tons)	23.91
Cooling Load w/ERV (tons)	7.54
Energy Savings (tons)	16.37

Winter

Outdoor Intake		Room Supply	
Dry Bulb(°F):	0.0	Dry Bulb(°F):	49.4
Wet Bulb(°F):	-1.5	Wet Bulb(°F):	41.5
Humidity Ratio (lb/lb):	0.00045	Humidity Ratio (lb/lb):	0.00390
Humidity Ratio (gr/lb):	3.2	Humidity Ratio (gr/lb):	27.3
Relative Humidity:	56.0%	Relative Humidity:	50.8%
Enthalpy (Btu/lb):	0.48	Enthalpy (Btu/lb):	16.10
Mass Flow Rate (lb/min):	412.5	Mass Flow Rate (lb/min):	412.5

Outdoor Exhaust		Room Exhaust	
Dry Bulb(°F):	20.6	Dry Bulb(°F):	70.0
Wet Bulb(°F):	20.2	Wet Bulb(°F):	54.2
Humidity Ratio (lb/lb):	0.00217	Humidity Ratio (lb/lb):	0.00562
Humidity Ratio (gr/lb):	15.2	Humidity Ratio (gr/lb):	39.3
Relative Humidity:	95.2%	Relative Humidity:	35.0%
Enthalpy (Btu/lb):	7.27	Enthalpy (Btu/lb):	22.96
Mass Flow Rate (lb/min):	412.5	Mass Flow Rate (lb/min):	412.5

Outdoor Air Heating Load Reduction

Heating Load w/o ERV (Btu/hr)	415,800
Heating Load w/ERV (Btu/hr)	122,279
Energy Savings (Btu/hr)	293,521



COOK

ERV - Supply Air



MARK: MAU-1, -2 (5500)
PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

Performance

Catalog Number	Flow (CFM)	SP (inwc)	Fan RPM	Power* (HP)	FEG	FEI	OVEL (fpm)	TSPD (fpm)	Temp (°F)	ALT (ft)
ERV-5500	5500	1.00	926	3.52	<50	0.76	2566	3757	70	951

Sound Data Outlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
104	98	88	85	84	81	79	75	90	78	38

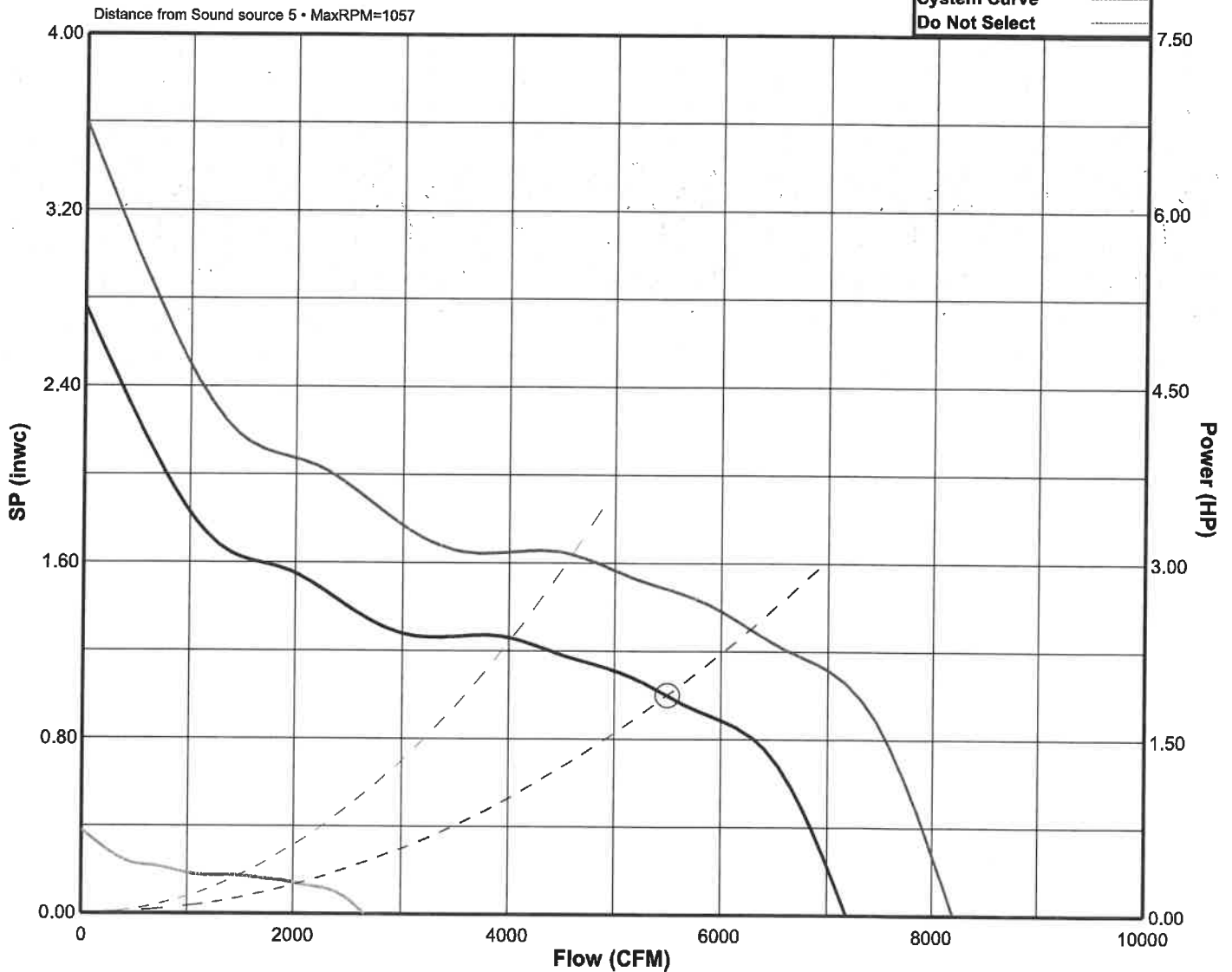
Motor Information

HP	RPM	Volts/Ph/Hz	Enclosure	FLA
5	1725	460/3/60	ODP -PE	7.6

FLA based on NEC (2017) Table 430.250

Fan Curve Legend

CFM vs SP (926)	—
MaxRPM(1057)	—
MinRPM(344)	—
CFM vs HP	—
Point of Operation	○
System Curve	—
Do Not Select	—





COOK



MARK: MAU-1, -2 (5500)
PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

ERV - Exhaust Air

Performance

Catalog Number	Flow (CFM)	SP (inwc)	Fan RPM	Power* (HP)	FEG	FEI	OVEL (fpm)	TSPD (fpm)	Temp (°F)	ALT (ft)
ERV-5500	5500	1.00	1017	4.28	<50	0.62	2566	4126	70	951

Sound Data Outlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
105	102	92	88	88	85	84	80	94	82	47

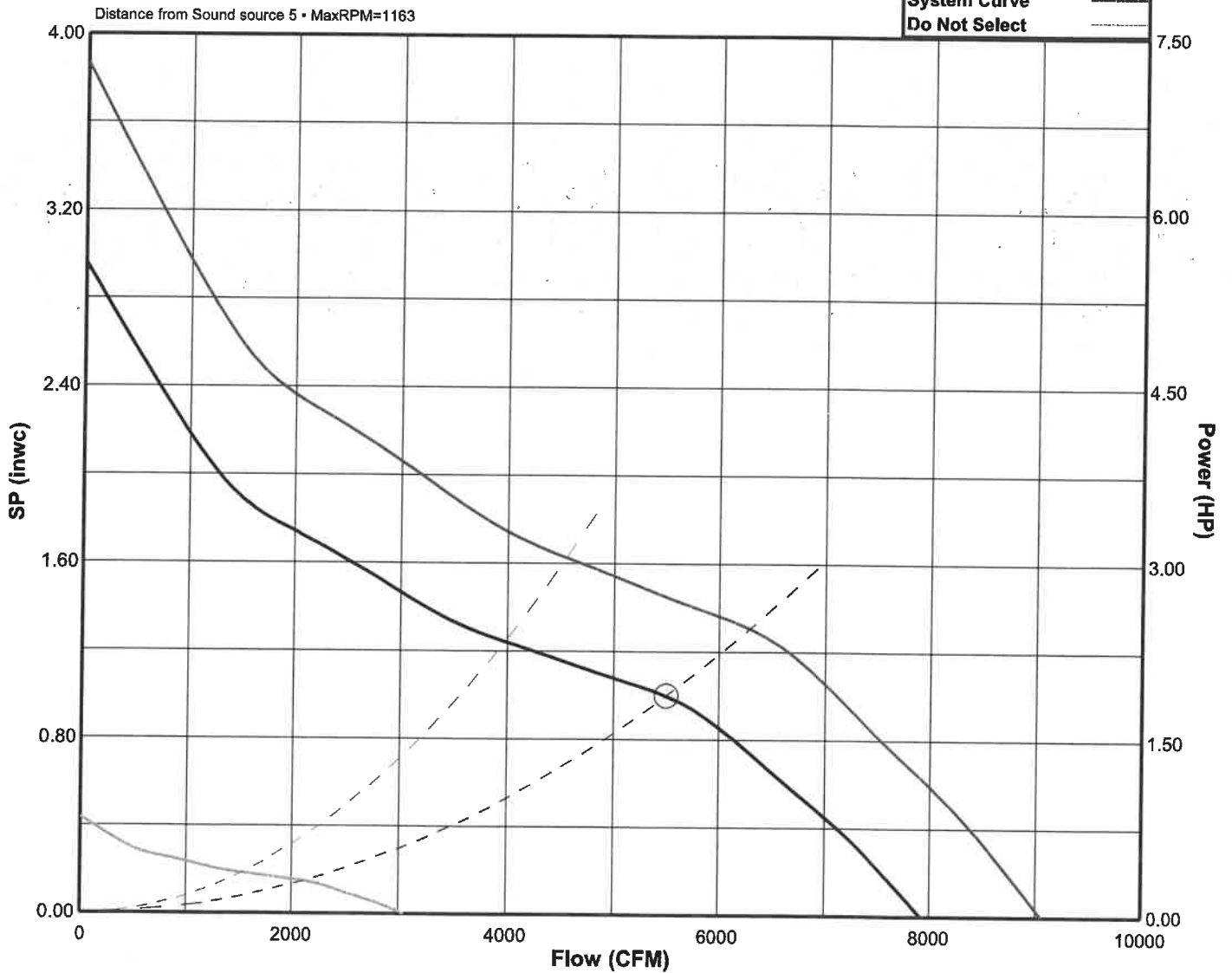
Motor Information

HP	RPM	Volts/Ph/Hz	Enclosure	FLA
5	1725	460/3/60	ODP -PE	7.6

FLA based on NEC (2017) Table 430.250

Fan Curve Legend

CFM vs SP (1017)	—
MaxRPM(1163)	—
MinRPM(392)	—
CFM vs HP	—
Point of Operation	○
System Curve	—
Do Not Select	---





COOK

ERV

MARK: MAU-1, -2 (5500)

PROJECT: WV BLDG 86 (5500)

DATE: 2/9/2024

AMCA License Information



Loren Cook Company certifies that the ERV-5500 shown herein is 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.

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. W.G.. Gross Exhaust air performance ratings (airflow, pressure and power) are to Port 3 with Port 1, Port 2 and Port 4 at 0.0 In. W.G.. Power rating (BHP) does not include drive losses. Performance ratings include the effects of filters in the airstream. The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.



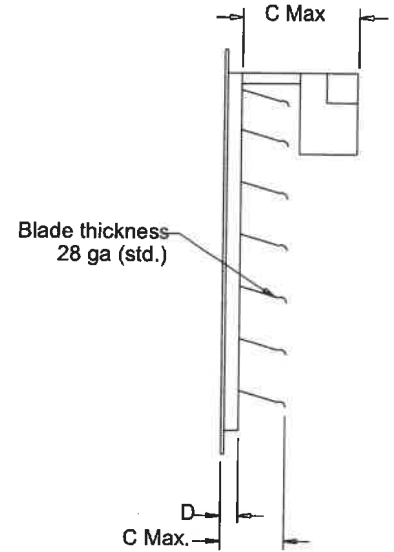
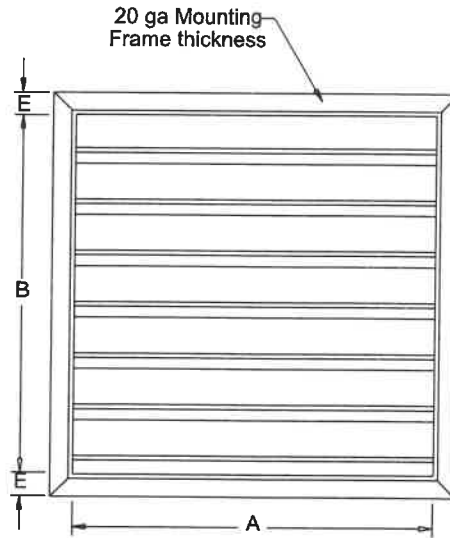
COOK

PROJECT: WV BLDG 86 (5500)

DATE: 2/9/2024

BDMI

Motorized Backdraft Damper Outdoor Air Intake



Dimensions (inches)

Mark	Qty	Description	A	B	C	D	E
MAU-1, -2 (5500)	2	BDMI-24V (OUT. AIR IN)	23-1/2	43-1/2	6-3/4	1-3/4	1-1/2

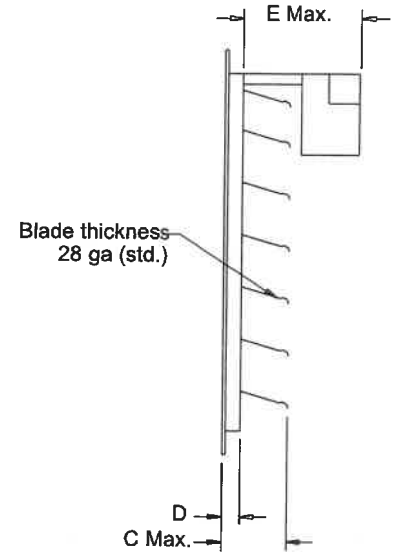
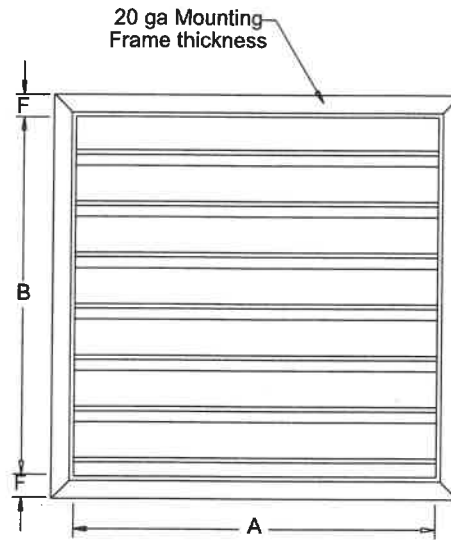


COOK

PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

BDMI-VC

**Motorized Backdraft Damper
Return Air Intake
Arrangement V & C**



Dimensions (inches)

Mark	Qty	Description	A	B	C	D	E	F
MAU-1, -2 (5500)	2	BDMI-VC-24V (RET. AIR)	25-1/2	18-1/4	6-3/4	1-3/4	6-3/8	1-1/2

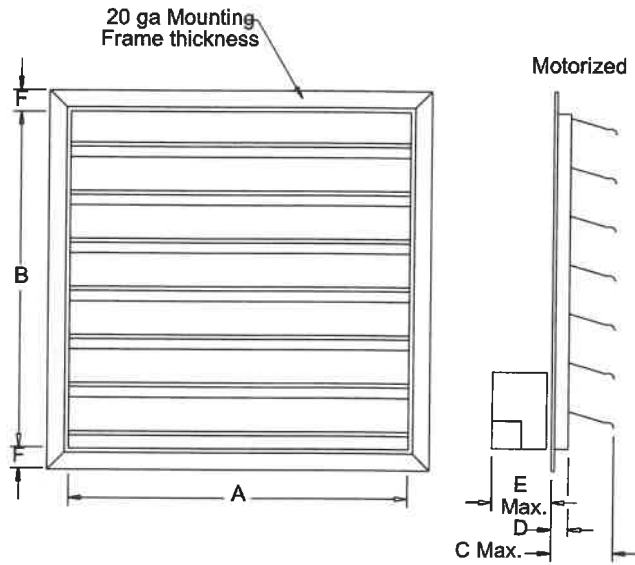


COOK

PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

BDM

Motorized Backdraft Damper



Dimensions (inches)

Mark	Qty	Description	A	B	C	D	E
MAU-1, -2 (5500)	2	BDM-24V (EXH, AIR DIS)	18-1/8	15-3/8	6-3/4	1-3/4	6-3/8



COOK

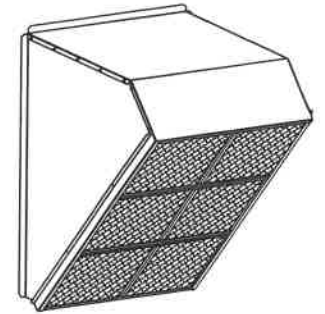
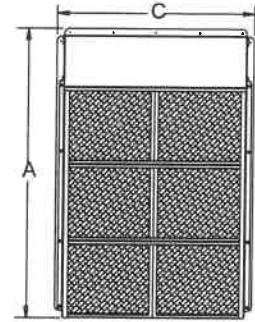
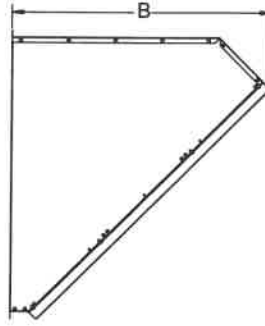
PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

INTAKE HOOD

Galvanized Steel

STANDARD CONSTRUCTION FEATURES:

Minimum 18 Ga galv steel panels - 2"
thick washable, removable aluminum
filters



Dimensions (inches)

Mark	Qty	Description	A	B	C
MAU-1, -2 (5500)	2	INTAKE HOOD	53-3/16	47-7/16	33



COOK

PROJECT: WV BLDG 86 (5500)

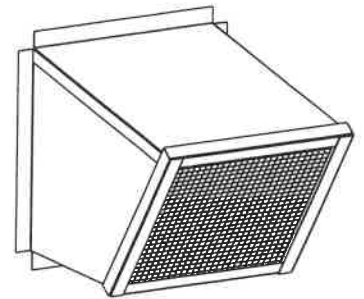
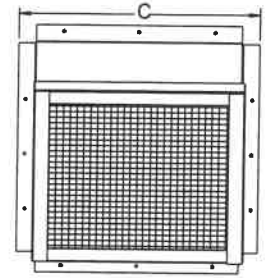
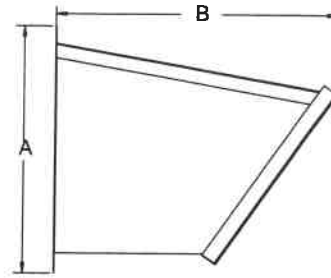
DATE: 2/9/2024

EXHAUST HOOD

Galvanized Steel

STANDARD CONSTRUCTION FEATURES:

Minimum 18 Ga Galv Steel - Birdscreen covering exhaust - integral damper mounting flange



Dimensions (inches)

Mark	Qty	Description	A	B	C
MAU-1, -2 (5500)	2	EXHAUST HOOD	24-1/2	24-9/16	24-9/16



COOK

MARK: MAU-1, -2 (5500)
PROJECT: WV BLDG 86 (5500)
DATE: 2/9/2024

ERV Limited Warranty

Loren Cook Company warrants that your Loren Cook Energy Recovery Ventilator (ERV) was manufactured free of defects in materials and workmanship, to the extent stated herein. For a period of one (1) year after date of shipment, we will replace any parts found to be defective and for a period of seven (7) years after date of shipment, we will replace the energy recovery wheel if found to be defective. These parts will be replaced without charge, except for shipping costs, which will be paid by you.

This warranty is granted only to the original purchaser placing the fan in service.

This warranty is void if the ERV or any part thereof has been altered or modified from its original design or has been abused, misused, damaged or is in worn condition or if the ERV has been used other than for the uses described in the company manual. This warranty does not cover defects resulting from normal wear and tear.

To make a warranty claim, notify Loren Cook Company, General Offices, 2015 East Dale Street, Springfield, Missouri 65803-4637, explaining in writing, in detail, your complaint and referring to the specific model and serial numbers of your ERV. Upon receipt by Loren Cook Company of your written complaint, you will be notified, within thirty (30) days of our receipt of your complaint, in writing, as to the manner in which your claim will be handled. If you are entitled to warranty relief, a warranty adjustment will be completed within sixty (60) business days of the receipt of your written complaint by Loren Cook Company.

This warranty gives only the original purchaser placing the ERV in service specifically the right. You may have other legal rights which vary from state to state.

For fans provided with motors, the motor manufacturer warrants motors for a designated period stated in the manufacturer's warranty. Warranty periods vary from manufacturer to manufacturer. Should motors furnished by Loren Cook Company prove defective during the designated period, they should be returned to the nearest authorized motor service station. Loren Cook Company will not be responsible for any removal or installation costs.

Typical Specifications

Model: ERV 1500 - 10000

Description: Unit shall be belt driven energy recovery ventilator.

Certifications: Unit shall be manufactured at an ISO 9001 certified facility. Unit shall be listed by Underwriters Laboratories (UL 1812) and UL listed for Canada (cUL 1812). Unit shall bear the AMCA certified ratings seal for air performance.

Construction: The unit shall be of bolted construction utilizing corrosion resistant fasteners. Housing shall be minimum 18 gauge galvanized steel, bolted to a minimum 16 gauge galvanized steel base with integral lifting lugs. Unit shall be provided with insulated top, side and interior panels utilizing one inch thick, three-pound density foil faced insulation, manufactured and tested to meet NFPA 90A and UL 181 requirements. Insulation shall be fastened to the panels with weatherproof adhesive and weld pins. Energy recovery wheel shall be mounted in a slide track for easy inspection and cleaning. Separate blower and motor shall be provided for supply and exhaust airstream for independent system balancing. Blower and motor assemblies shall be mounted on rubber vibration isolators. Two inch thick, MERV 8 filters shall be provided for supply and exhaust airstreams. Removable side panels shall be provided for easy access to motors, blowers, filters, and energy recovery wheel. Unit shall bear an engraved aluminum nameplate. Nameplate shall indicate design CFM, static pressure, and maximum fan RPM. Unit shall be shipped in ISTA certified transit tested packaging.

Energy Wheel: Wheel shall be a total energy recovery wheel constructed of fluted synthetic fiber-based media impregnated with a non-migrating water selective 4 angstrom molecular sieve desiccant. Wheels with the desiccant applied in a secondary operation will not be accepted.

Fan Wheel: Wheel shall be DWDI centrifugal forward curved type, constructed of coated steel. Wheel shall be balanced in accordance with AMCA Standard 204-05, *Balance Quality and Vibration Levels for Fans*.

Motors: Motor shall be Nema design B with class B insulation rated for continuous duty and furnished at the specified voltage, phase, and enclosure.

Coils: All heat and cooling coils shall be tested and rated in accordance with ARI Standard 410 and certified in accordance with the ARI Certification Program. DX coils shall be equipped with distributors to receive expansion valves at the liquid connections.

Controls and Electrical: All internal electrical components shall be pre-wired for single point power connection. Internal control panel shall be UL listed with hinged access door and interlocking NEMA 3R disconnect switch. Each motor shall have a motor starter combination providing fuseless disconnect, over-current, overload and motor starting functions. A 24 volt circuit shall be provided to allow remote on/off control of ERV by building control system. Short circuit protection shall be provided on primary and secondary of control power transformer.

Bearings (Size 1500-8500): Bearings shall be permanently lubricated, sealed ball type selected for a minimum L50 life in excess of 200,000 hours at maximum cataloged operating speed.

Bearings (Size 10000): Bearings shall be designed and individually tested specifically for use in air handling applications. Construction shall be heavy duty regreasable ball type in a pillow block cast iron housing selected for a minimum L50 life in excess of 200,000 hours at maximum cataloged operating speed.

Belts and Drives: Belts shall be oil and heat resistant, static conducting. Drives shall be precision machined cast iron type, keyed and securely attached to the wheel and motor shafts. Drives shall be sized for 150 percent of the installed motor horsepower. The variable pitch motor drive must be factory set to the specified fan RPM.

Product: Ventilator shall be model ERV as manufactured by Loren Cook Company of Springfield, Missouri.