

Craig Bryant, Mayor  
Chris Witt, Vice Mayor  
Jamie Manspile  
Marlon Rickman  
Chris Petty



**Buchanan Town Council**  
**Thursday May 5, 2022 7:00pm**  
**Work Session**  
**Council Chambers**  
**19753 Main Street**  
**Buchanan, VA 24066**

## **AGENDA**

- A. ROLL CALL AND ESTABLISHMENT OF QUORUM**
- B. PAVILION/PARK USAGE DISCUSSION**
- C. SOUTHVIEW MAINTENANCE AGREEMENT (if available)**
- D. VBAF GRANT PERFORMANCE AGREEMENT FOR THE TOWN TO  
COVER STUDIES/PLANS FOR SYCAMORE DEVELOPMENT WITH  
THE GROENDYK**
- E: FLAG SOLUTIONS**
- F: VETERAN'S BANNERS**
- G: REVIEW OF REAL ESTATE INVESTMENT GRANTS**
- H: OTHER BUSINESS**
- I. ARPA HVAC QUOTES AND CONVERSATION**
- J: ADJOURNMENT**

## Town Council Work Session

### Town Park Usage Discussion

May 5, 2022 at 7PM

#### 1. 9-11 Event

- a. Proposed for one day – Saturday, September 10
  - b. No need for Town volunteers to serve/sell food
  - c. Walking around the flag-lined path
  - d. Self-sufficient; no staff needed
- I. Movies in the Park – proposed by Botetourt County Parks & Recreation, proposed for September, but we have events on the days that they were hoping to use. This will probably be asked in 2023
  - I. Library Events in the Park – low-key, evening and under the pavilion, usual areas rented (large pavilion) and they handle start to finish. Consists of a Children's Petting Zoo in the lawn near the playground, and new this year, a Smores Event near the picnic pavilion.
  - II. James River High School Graduation – parking in the Town's lots, on the streets and in the Carnival parking section in the Town Park on Tuesday, May 24. Shuttling to the graduation ceremony from 4P to start at 7P and then shuttling back to the Park/Town afterwards
  - III. BOCO Wild (formerly the Fishing Carnival) – First Saturday in June – June 4. The Town manned the Fry Stand for free fries in the past. This year, we can sell fries. They use the Food Stand to hand out hotdogs. This year, they want to hand out pizza.
  - IV. Botetourt County Fair – They use the site the first Friday and Saturday of August. They man the Food Concession Stand to sell Pork Chop Sandwiches, we sell Fries. They are self-sufficient. They set up tents, scheduled events and competitions.
    - a. We are not sure if Council will be approached again by the Chamber of Commerce for permission to offer a beer garden
  - V. Buchanan Tri - September 10 - Muddy Squirrel has used the lawn as a starting and finish point for the race. They have stored bikes on the lawn area for the racers to pick up following the run portion of the race, they end near the boat ramp after kayaking, to race across the finish line near the Gazebo.

## Community Events in/around Buchanan

- James River High School Senior Parade
- Law Enforcement Unit (LEU) Tough Ride bicycle ride – May 10 start in Roanoke. They stop in Buchanan from 8:30 am – 8:50 am for a pit stop and photo op on the park as they make their way from Roanoke to D.C. (arrive on May 12)
- Ironman Ride – June 3-5, Race day is June 5

**VIRGINIA BROWNFIELDS RESTORATION AND ECONOMIC REDEVELOPMENT  
ASSISTANCE FUND PROGRAM**

**SITE ASSESSMENT AND PLANNING GRANT**

**PERFORMANCE AGREEMENT**

<u>Executive Summary</u>	
<b>Effective Date:</b>	January 28, 2022
<b>Grantee:</b>	The Town of Buchanan, Virginia, a political subdivision of the Commonwealth of Virginia
<b>Project:</b>	Phase I Environmental Site Assessment (ESA); Asbestos Containing Materials Inspection (ACMM); Lead Based Paint Inspection (LBP); & Planning and Reporting
<b>Site:</b>	Property known as the former Buchanan Button Factory property located at 19318 Main Street, Buchanan, VA 24066 (Tax Parcel ID # 65A-66 and Parcel ID: 65A-68)
<b>Grant:</b>	\$50,000
<b>Local Match:</b>	\$295,000 as detailed in Exhibit A
<b>Performance Date:</b>	December 31, 2022
<b>Variations:</b>	N/A
<b>Notices:</b>	if to the Grantee:  Ms. Susan McCulloch Town Manager P.O. Box 205 19753 Main Street Buchanan, VA 24066 (540) 254-1212, Ext. 3 <a href="mailto:smcculloch@buchanan-va.gov">smcculloch@buchanan-va.gov</a> , <a href="mailto:townmanager@buchanan-va.gov">townmanager@buchanan-va.gov</a>

[SIGNATURES APPEAR ON FOLLOWING PAGE,  
FOLLOWED BY BODY OF AGREEMENT]

WITNESS the following signatures as of the effective date, each having the same force and effect as if set forth at the end of this agreement.

**VIRGINIA ECONOMIC DEVELOPMENT  
PARTNERSHIP AUTHORITY**

By: \_\_\_\_\_  
Name: Katherine Goodwin  
Title: Interim Vice President,  
Incentives  
Date: \_\_\_\_\_

**TOWN OF BUCHANAN, VIRGINIA**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

SEEN AND ACKNOWLEDGED:

**VIRGINIA DEPARTMENT OF  
ENVIRONMENTAL QUALITY**

By: \_\_\_\_\_  
Name: Kathryn Perszyk  
Title: Director, Division of Land Protection and Revitalization  
Date: \_\_\_\_\_

**VIRGINIA RESOURCES AUTHORITY**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

This **PERFORMANCE AGREEMENT** (this “Agreement”), dated as of the Effective Date, by and between the **VIRGINIA ECONOMIC DEVELOPMENT PARTNERSHIP AUTHORITY** (“VEDP”), a political subdivision of the Commonwealth of Virginia (the “Commonwealth”), and the **GRANTEE** identified in the Executive Summary above, recites and provides as follows:

Recitals:

1. The Virginia Brownfields Restoration and Economic Redevelopment Assistance Fund (the “VBAF”) was established pursuant to § 10.1-1237 of the Code of Virginia of 1950, as amended (the “Virginia Code”), to promote the restoration and redevelopment of brownfield sites in the Commonwealth and to address environmental problems or obstacles to reuse so that such sites can be effectively marketed to new economic development prospects;
2. The VBAF is administered by the Virginia Resources Authority (“VRA”), and VEDP directs the distribution of grants from the VBAF;
3. VEDP, in consultation with the Virginia Department of Environmental Quality (“DEQ”), has established guidelines for the awarding of Site Assessment and Planning Grants from the VBAF;
4. The Grantee submitted an application for a Site Assessment and Planning Grant (the “Grant”) to assist with the Investment (set forth in Exhibit A attached hereto) being made by or on behalf of the Grantee for the Project at the Site;
5. VEDP, in consultation with DEQ and based upon the VBAF priorities, has awarded the Grant to the Grantee for the Project;
6. VEDP and the Grantee desire to set forth their mutual understanding and agreement as to the payout of the Grant, the use of the Grant proceeds, the obligations of the Grantee, and the repayment by the Grantee of all or part of the Grant proceeds under certain circumstances, all of which shall be governed by this Agreement; and
7. The restoration and redevelopment of brownfield sites and addressing environmental problems or obstacles to reuse of such sites constitutes a valid public purpose for the expenditure of public funds and is the animating purpose in making the Grant:

NOW, THEREFORE, in consideration of the foregoing, the mutual benefits, promises and undertakings of the parties to this Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties covenant and agree as follows.

## **Section 1.     Construction and Definitions.**

(a)     *Incorporated Terms:* The Executive Summary, signature page and recitals above, and exhibits attached hereto, all constitute integral parts of this Agreement and are hereby incorporated by reference.

(b)     *Variations:* To the extent any terms and conditions set forth in the Variations section of the Executive Summary, if applicable, conflict with the terms and conditions set forth below, the terms and conditions set forth in the Variations section of the Executive Summary shall prevail.

(c)     *Definitions:* As used in this Agreement, terms set forth in the first column of the Executive Summary shall have the meanings ascribed thereto in the second column, and the following terms shall have the following meanings:

“Asbestos Abatement Report” means a report in the form of Exhibit C attached hereto, to be delivered by the Grantee in accordance with Section 4(c) (if applicable).

“Grant Report” means a report in the form of Exhibit B attached hereto, to be delivered by the Grantee in accordance with Section 4(b).

“Investment” means expenditures by or on behalf of the Grantee associated with the Project, including the Grant proceeds and the Local Match, to be made in accordance with Exhibit A attached hereto.

“Local Match” means the required one-to-one match by the Grantee of the amount of the Grant from public and/or private sources in either cash or documented reasonable and necessary costs associated with the Project, to be included in the Investment, as identified in the Executive Summary and Exhibit A attached hereto.

“Performance Date” means the date designated as such in the Executive Summary, which is the date by which the Grantee expects to have completed the Project. If VEDP, in consultation with DEQ, deems that good faith and reasonable efforts have been made and are being made by the Grantee to complete the Project, the Performance Date may be extended by up to 15 months and the date to which the Performance Date has been extended shall be the “Performance Date” for the purposes of this Agreement.

## **Section 2.     The Grant.**

(a)     *The Grant:* VEDP, in consultation with DEQ and based upon the VBAF priorities, has awarded the Grant to the Grantee for the Project.

(b)     *Disbursement:* Promptly after the full execution and delivery of this Agreement, VEDP will forward a fully-executed copy of this Agreement to VRA, together with a direction to disburse

the full amount of the Grant in one lump sum to the Grantee, by wire transfer in accordance with the ACH instructions previously provided by the Grantee.

(c) *Use of Grant Proceeds:* The Grantee will expend the proceeds of the Grant only as permitted by § 10.1-1237 of the Virginia Code and as part of the Investment in accordance with Exhibit A attached hereto.

### **Section 3. Investment.**

(a) *Investment:* The Grantee expects to make the Investment and complete the Project on or before the Performance Date. As the Project is undertaken, adjustments to the Investment may be needed. Except for *de minimis* adjustments (impacting, in the aggregate, less than 10% of the Grant proceeds), adjustments to the Investment require the prior written approval of VEDP and must be reflected on a revised Exhibit A provided to VEDP.

(b) *Local Match:* The Grantee will contribute the required Local Match toward the Investment on or before the Performance Date.

### **Section 4. Reporting.**

(a) *Interim Reports:* The Grantee shall provide an interim report on the progress of the Project at such times as VEDP and DEQ may request.

(b) *Grant Report:* Promptly after completion of the Project, the Grantee will deliver the Grant Report to VEDP. Such report must be completed, signed by an authorized representative of the Grantee, and have copies of invoices and all other required supporting documentation attached.

(c) *Asbestos Abatement Report (if Applicable):* If the Project involves the removal of asbestos-containing material, the Grantee will, promptly after completion of the Project, deliver the Asbestos Abatement Report to VEDP. Such report must be completed, signed by an authorized representative of the Grantee, and have all required supporting documentation attached.

(d) *Status Reports:* After the Performance Date, at such times as VEDP and DEQ may request, the Grantee shall provide a written detailed report satisfactory to VEDP and DEQ providing an update on the Site, including whether (i) the Site was successfully marketed to a new economic development prospect, and (ii) the Project generated any additional private investment and job creation.

(e) *Costs of Reporting:* The costs of reporting shall be borne by the Grantee.



## **Section 5.     Repayment Obligations.**

(a)     *If Investment is Less than Expected:* If the Grant Report indicates that the Grantee was able to complete the Project for less than the expected Investment, such that the amount of the Grant proceeds exceeds the Local Match or the Grantee will not need all of the Grant proceeds previously disbursed to the Grantee, the Grantee must repay to VEDP an amount equal to the excess amount or the amount of the Grant proceeds no longer required.

(b)     *If Grant Proceeds are Misspent:* If the Grant Report indicates, or any evidence gathered by VEDP reveals, that any Grant proceeds have been expended on anything other than the Investment, the Grantee must repay to VEDP the amount so misspent.

(c)     *Failure to Complete by Performance Date:* If it is determined that the Grantee is unable to complete the Project and expend the Grant proceeds by the Performance Date and the Performance Date is not extended, the Grantee must repay to VEDP the unspent proceeds of the Grant as of the Performance Date.

(d)     *Repayments to Fund:* VEDP will provide written notification to the Grantee if any repayment is due from the Grantee to VEDP under this Agreement. Within 60 days of receiving such notification, the Grantee will make the repayment to VEDP, subject to appropriation. Any repayment received by VEDP will be promptly transferred by VEDP to the VRA for redeposit to the VBAF.

## **Section 6.     Notices.**

Formal notices and communications among the parties shall be given either by (i) personal service, (ii) delivery by a reputable document delivery service that provides a receipt showing date and time of delivery, (iii) mailing utilizing a certified or first class mail postage prepaid service of the United States Postal Service that provides a receipt showing date and time of delivery, or (iv) delivery by email with transmittal confirmation and confirmation of delivery, addressed as noted below. Notices and communications personally delivered or delivered by document delivery service shall be deemed effective upon receipt. Notices and communications mailed shall be deemed effective on the second business day following deposit in the United States mail. Notices and communications delivered by email shall be deemed effective the next business day, not less than 24 hours, following the date of transmittal and confirmation of delivery to the intended recipient. Such written notices and communications shall be addressed to:

if to the Grantee: [see Executive Summary]

if to VEDP, to:

Virginia Economic Development Partnership  
One James Center, Suite 900  
901 East Cary Street  
Richmond, Virginia 23219

with a copy to:

Virginia Economic Development Partnership  
One James Center, Suite 900  
901 East Cary Street  
Richmond, Virginia 23219

Email: [kellett@vedp.org](mailto:kellett@vedp.org)  
Attention: Director of Compliance

Email: [jcanup@vedp.org](mailto:jcanup@vedp.org)  
Attention: Assistant General Counsel

**Section 7. Miscellaneous.**

- (a) *Compliance with Laws:* The Grantee hereby agrees that all proceeds of the Grant shall be used for the Investment, and all work and activities associated with the Project will be performed and conducted in full compliance with all applicable laws, rules, and regulations.
- (b) *Entire Agreement; Amendments:* This Agreement constitutes the entire agreement between the parties hereto as to the Grant, and may not be amended or modified, except in writing, signed by each of the parties hereto. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns. The Grantee may not assign its rights and obligations under this Agreement without the prior written consent of VEDP.
- (c) *Governing Law; Venue:* This Agreement is made, and is intended to be performed, in the Commonwealth and shall be construed and enforced in accordance with the laws of the Commonwealth. Jurisdiction and venue for any litigation arising out of or involving this Agreement shall lie in the Circuit Court of the City of Richmond, and such litigation shall be brought only in such court. In the event this Agreement is subject to litigation, each party shall be responsible for its own attorneys' fees.
- (d) *Counterparts:* This Agreement may be executed in one or more counterparts, each of which shall be an original, and all of which together shall be one and the same instrument.
- (e) *Severability:* If any provision of this Agreement is determined to be unenforceable, invalid, or illegal, then the enforceability, validity and legality of the remaining provisions will not in any way be affected or impaired, and such provision will be deemed to be restated to reflect the original intentions of the parties as nearly as possible in accordance with applicable law.

[SIGNATURES APPEAR ON PAGE 2]

Exhibit A: Investment  
Exhibit B: Form of Grant Report  
Exhibit C: Form of Asbestos Abatement Report

## **EXHIBIT A**

### **INVESTMENT**

#### **Scope of Work:**

Phase I Environmental Site Assessment (ESA); Asbestos Containing Materials Inspection (ACMM);  
Lead Based Paint Inspection (LBP); & Planning and Reporting

#### **Project Budget:**

[ATTACHED]

**Exhibit B**  
**Town of Buchanan (Former Buchanan Button Factory)**  
**Scope of Work**  
**Budget /Sources of Funding**

Scope of Work	Budget	Source		
		Local Match	EPA Grant Share	VBAF Grant Share
CDAC Conceptual Redevelopment Plan and Site Master Plan	\$30,000.00			\$30,000.00
Phase I Environmental Site Assessment	\$4,000.00			\$4,000.00
Asbestos and Lead Based Paint Inspections	\$12,000.00			\$12,000.00
Support Redevelopment Planning Efforts	\$2,000.00			\$2,000.00
Final Report Preparation	\$2,000.00			\$2,000.00
Purchase by Developer to Redevelop the Site		\$295,000.00		
<b>TOTALS</b>	<b>\$50,000.00</b>	<b>\$295,000.00</b>		<b>\$50,000.00</b>

**EXHIBIT B**

**FORM OF GRANT REPORT**

[ATTACHED]

**VIRGINIA BROWNFIELDS RESTORATION AND ECONOMIC  
REDEVELOPMENT ASSISTANCE FUND PROGRAM**

**SITE ASSESSMENT AND PLANNING GRANT**

**GRANT REPORT**

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<u>Project Summary</u>	
<b>Grantee:</b>	The Town of Buchanan, Virginia, a political subdivision of the Commonwealth of Virginia
<b>Site:</b>	Property known as the former Buchanan Button Factory property located at 19318 Main Street, Buchanan, VA 24066 (Tax Parcel ID # 65A-66 and Parcel ID: 65A-68)
<b>Grant Amount:</b>	\$50,000
<b>Effective Date of Performance Agreement:</b>	January 28, 2022
<b>Performance Date:</b>	December 31, 2022

**Project Report**

1. Project Summary. Provide a brief summary of the outcome of the Project:

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2. Adjustments to Scope of Work. In the table below, report any adjustments to the scope of work for the Project (as set forth in Exhibit A to the Performance Agreement) and associated costs (or check the box if no adjustments were made).

☐ There were no adjustments to the Scope of Work for the Project.

ADJUSTMENTS TO SCOPE OF WORK FOR PROJECT				
Scope of Work Adjustment	Budget	Source		
		Local Match	EPA Grant Share	VBAF Grant Share
<b>TOTAL</b>	\$ _____	\$ _____	\$ _____	\$ _____

3. Enhanced Value. Provide assessment values for the Site before the Grant and after completion of the Project:

	Before Grant	After Project Completion
<b>Assessed Property Value:</b>	\$ _____	\$ _____

4. Reports. Attach complete copies of all studies and reports performed and obtained in connection with the Project. Such studies and reports will be subject to review and requests for supporting documentation and additional materials.

5. VRP Enrollment. The Site is enrolled in the Virginia Voluntary Remediation Program (the "VRP") (check appropriate box):

Yes ☐ No ☐

6. Invoices. Attach complete copies of all invoices for the Project.

7. Site Photographs. Attach before and after photographs of the Site.

**CERTIFICATION BY A REPRESENTATIVE OF THE GRANTEE:**

By my signature below, I hereby certify that: (i) I have examined this Grant Report and the information provided is true, correct, and complete in all respects, and all required documentation is attached; (ii) data collected with respect to the Site reflects certification by the Virginia Division of Consolidated Laboratory Services (DCLS) Virginia Environmental Laboratory Accreditation Program (VELAP); (iii) if the Site is not enrolled in the VRP, the Project has met appropriate standards of care for reuse of the Site in accordance with the VRP, and the Grantee will maintain all records for facilitating potential future brownfields revitalization of the Site, to demonstrate appropriate care, and to facilitate potential future enrollment in the VRP if necessary; (iv) the Grant proceeds have been used exclusively for the Project in accordance with the Performance Agreement, and any unused Grant proceeds will be promptly repaid to VEDP; (v) the Grantee is delivering a signed and complete Asbestos Abatement Report simultaneously with this Grant Report (if applicable); and (vi) all work and activities associated with the Project were performed and conducted in full compliance with all applicable laws, rules, and regulations.

WITNESS the following signature.

Grantee: **TOWN OF BUCHANAN, VIRGINIA**

Submitted by: \_\_\_\_\_  
Signature of Official Title

Name: \_\_\_\_\_  
Print Name

Date: \_\_\_\_\_



**EXHIBIT C**

**FORM OF ASBESTOS ABATEMENT REPORT**

[ATTACHED]

[MAY OR MAY NOT APPLY CHECK APPLICATION AND LEAVE IN REGARDLESS]

### **Asbestos Abatement Report**

1. **Introduction and Project Description.** Provide a brief summary of the asbestos abatement portion of the Project and its outcome (based on the Asbestos Survey Report):

2. **Notifications.** In the space below, describe any notifications received from the Environmental Protection Agency (EPA) and/or the Virginia Occupational Health and Safety Compliance Program (VOSH) (or check the box if no such notifications were received).

☐ No such notifications were received in connection with the Project.

3. General Observations. In the space below, provide any general observations of which the VBAF Review Committee should be aware regarding the asbestos and any lead paint abatement processes for this Project.

4. Air Monitoring Reports. In the space below, generally summarize the findings set forth in the Asbestos Air Monitoring Report(s) obtained in connection with this Project, including any abatement and clearance.

5. Special Waste Shipments. In the space below, summarize any special waste shipments associated with the Project, including the identity of any hauling contractors involved.

- |  |
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- | <u>Attachment</u> | <u>Description</u>                                     |
|-------------------|--|
| A                 | Accreditation Documentation (DPOR Licenses)            |
| B                 | Site Map (Abatement Locations)                         |
| C                 | Daily Field Reports (Abatement Activities)             |
| D                 | Asbestos Air Monitoring Reports (PCM)                  |
| E                 | Asbestos Clearance Reports (TEM)                       |
| F                 | Photograph Log (Abatement Process)                     |
| G                 | CDL Licenses (Special Waste Endorsement)               |
| H                 | Shipping Documentation (DOT)                           |
| I                 | Disposal Records (Landfill)                            |
| J                 | Building Permit Application (City Code Compliance)     |
| K                 | Asbestos Survey Report (Type and Location of Asbestos) |

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Removal of ACMs and lead paint abatement must be conducted pursuant to applicable federal and state laws and regulations, including but not limited to, the National Emission Standards for Hazardous Pollutants (NESHAP), Occupational Safety and Health Administration (OSHA), Residential Lead-Based Paint Hazard Reduction Act of 1992, Toxic Substances Control Act of 1976, VOSH, and Virginia Regulations for Asbestos Emissions Standards for Demolition and Renovation.

**CERTIFICATION BY A REPRESENTATIVE OF THE GRANTEE:**

By my signature below, I hereby certify that: (i) I have examined this Asbestos Abatement Report and the information provided is true, correct, and complete in all respects, and all required documentation is attached, and (ii) all work and activities associated with the removal of ACMs and/or lead paint abatement and related to the Project were performed and conducted in all respects in full compliance with all applicable laws, rules, and regulations.

WITNESS the following signature.

Grantee: **TOWN OF BUCHANAN, VIRGINIA**

Submitted by: \_\_\_\_\_  
Signature of Official Title

Name: \_\_\_\_\_  
Print Name

Date: \_\_\_\_\_

## Town Council of Buchanan Work Session

5/5/2022

Something to discuss before Memorial Day weekend (the first flag holiday).

- I had received a complaint about the safety of the installation of the flags last year and asked VRSA to weigh in. Her recommendation was to place the ladder on the pole from the ground versus the back of the truck. I copied her response below.
- There are several safety issues with the ladder while installing the flag from the ground. The sidewalk is often uneven, reaching, and sometimes twisting is required if cars are parked in front of the bracket, and the 200 lb trash cans need to be moved so you can move the ladder to a good spot. It took us 6 hours to do almost all of Main Street. 7AM to 1PM. We still hadn't finished and Billy and Andy had to jump in.
- I've received complaints from staff about not being able to enjoy their actual holiday nor be able to go on vacation during that time. I recruited Council Members to assist, but we normally need 1 staff person to help, and then although I said it's recommended to install flags from the ground instead of the back of the pick-up truck, they opt for the pickup truck because it's so much faster and they want to complete it. I'm worried about liability and safety at that point. I asked a few times to allow for weekends – Memorial Day, 4<sup>th</sup> of July, and Labor Day weekends, which enable the employees to take holidays, but that is only done at the last minute.
- I worry about someone getting hurt from installing the flags from the truck. I also am concerned about liability. I would appreciate any thoughts you may have. At the minimum, I will enforce installation from the ground, but again, that's 6 hours per shift. We could rent a bucket truck, but it's expensive.

### Cost of installation from the Ground:

- Two public works staff at \$35/hour each (double time on holidays), getting to Town Hall to put up the flags at 2AM so they will be up by 8AM per our Flag Policy. Then, they will have to be taken down starting 1PM/2PM so they will be down by 7PM or 8PM depending on the holiday instructions. This means they will all be up for a total of 5 or 6 hours.

- Employees will work 12 hours at double time each flag holiday if both public works employees take down and put up.
- Total: 2 employees, \$35/hour at 12 hours = \$840 in payroll
- They will work longer days on flag holidays than a regular workday if flags are placed up, taken down.
- Total: \$5,880/season in staff time

#### Potential Solutions:

- Solution: Install flags the day before the holiday and take them down the working day after the holiday so staff will still have a holiday.
  - Leave up the Holiday Week or Holiday Weekend
- Purchase a patriotic flag that's not an American flag and leave it up from May to November.
  - We could order a custom flag (more expensive)
  - There are a few patriotic flags out there, mostly featuring eagles at \$49 each.

From VRSA:

**From:** Lisa Schenk [lschenk@vrsa.us](mailto:lschenk@vrsa.us)

**Sent:** Tuesday, May 25, 2021 3:06 PM

**To:** Tina Kingery [tkingery@buchanan-va.gov](mailto:tkingery@buchanan-va.gov); Susan McCulloch  
[SMcCulloch@buchanan-va.gov](mailto:SMcCulloch@buchanan-va.gov)

**Subject:** VRSA

Hello Tina and Susan.

Seasonal banners and decorative flags are common sights we see on our members sidewalks in towns and cities across Virginia. Putting up and changing these flags is commonly done by our members public works employees. While some of these banners are in easy to reach areas, others are not due to traffic obstructions, sloping of sidewalks, height limitations of equipment supplied to employees, as well as other factors and hazards employees encounter with this task.

Simply put, no single tool or method can universally be used to place up these banners safely and each location should be looked at separately to ensure the employees fall protection risk is mitigated. Below are some recommendations and common practices I have seen:

- Some designs allow for flag change outs to be done from street level with a hook and pole. This should be looked at for future improvements because this is a task that takes up a lot of time numerous times a year.
- An A-frame ladder of sufficient height can be used in the majority of situations and is my personal favorite for this task when used as designed. Ensure employee can comfortably reach height location and is not above do not stand level, a 2nd employee should be holding the ladder at all times, and ladders shall not be used on any slope where the ladder could overturn.
- Bucket trucks may be needed in other areas if a ladder cannot safely be used. A list of those areas should be created to quickly complete those hard-to-reach areas at once rather than employees stretching the limits and trying until failure. We naturally push limits of equipment rather than go back to the shop to get other equipment, it is a human fallacy.
- Do not stand on any part of a vehicle or piece of equipment that is not designed to be stood upon. Example being the bed of a dump truck or truck bed is designed to be stood in and the employee can safely work from inside the bed, but the roof or top ledge of the equipment is not designed to be stood on. Virginia OSHA would cite the manufacturers specifications and recommendations in the case of an incident and has done in various scenarios.
- Do not allow employees to ride in the bed of the vehicle in between flag poles. It is a common unsafe practice seen by employees when driving in downtown areas with numerous stops. The only time this may be authorized is if the employees are riding in a closed work zone.
- Create a no overhead work policy when wind exceed 35 mph. We had the policy previously apply only to bucket truck and line climbing activities but expanded it to include this specific task because it is equally as dangerous on a windy day.

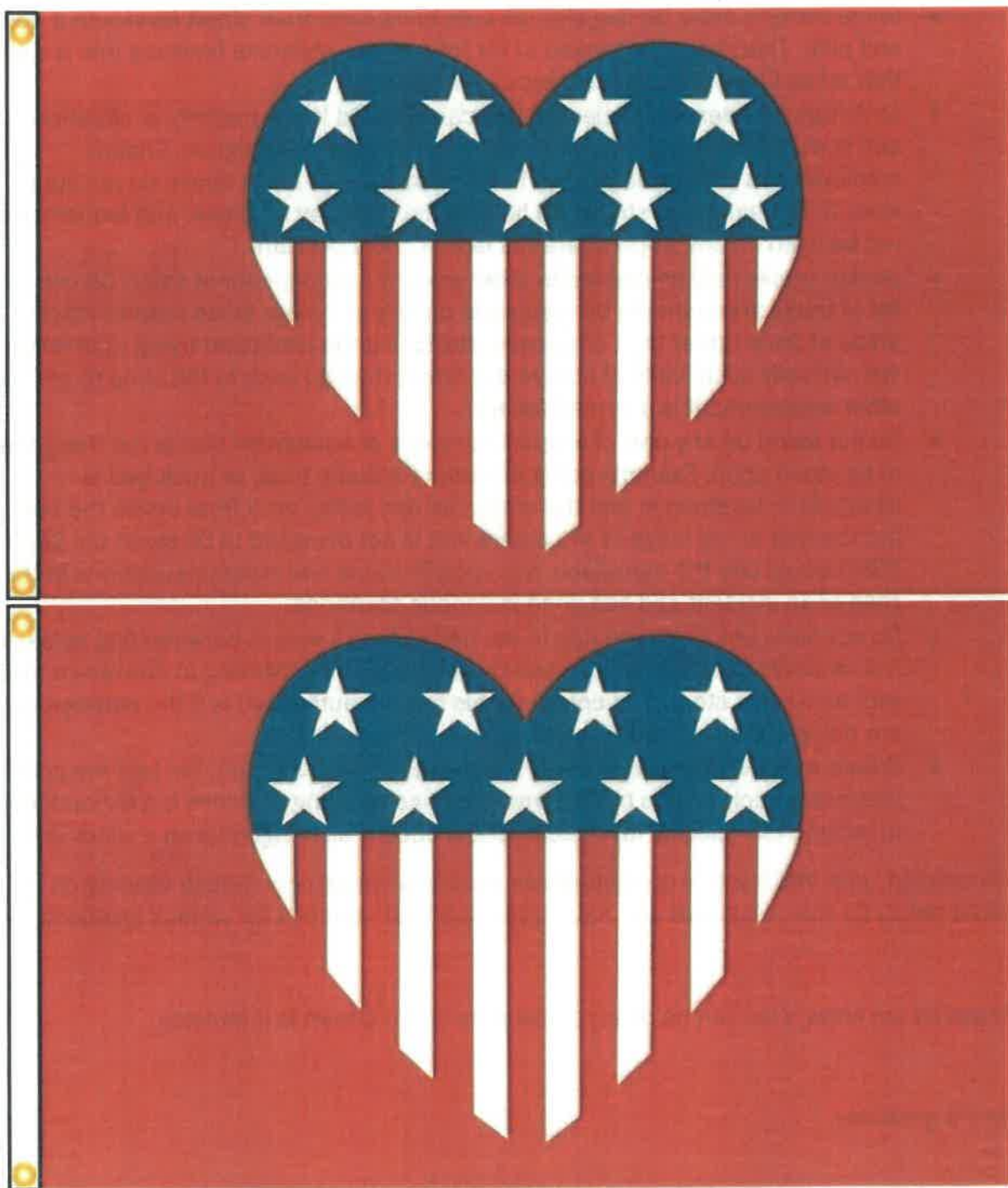
If interested, your VRSA safety consultant can provide a virtual or in-person training on ladder safety for the employees and help determine best methods for various locations.

Please let me know if we can be of any assistance or if the town is interested.

Have a great day.

Lisa





# Patriotic Heart 3x5ft Digital

*SKU: NFDEP-35-129*

**Price: \$55.00**

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Quantity

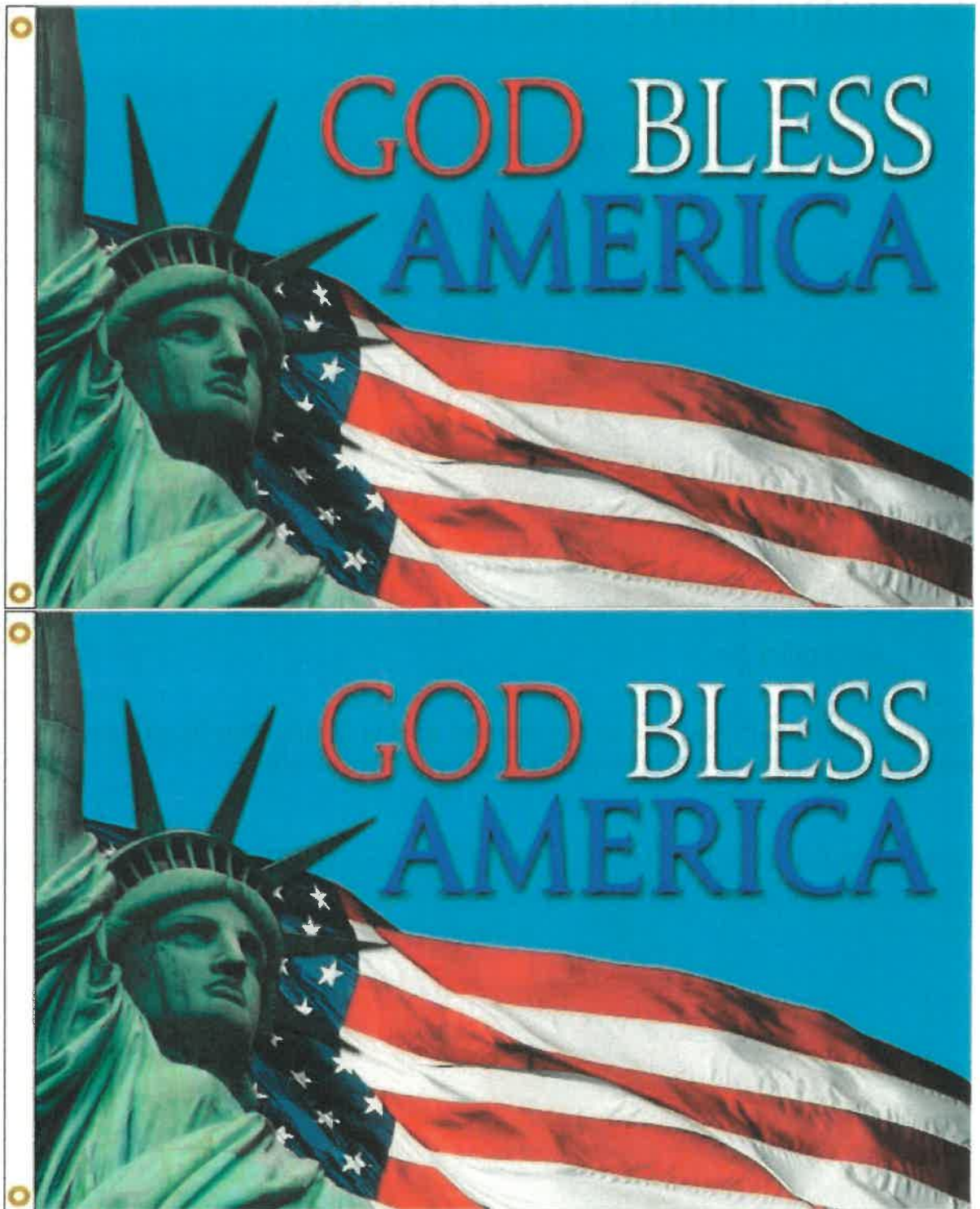
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Add To Cart

- Description
- [Reviews](#)

This Patriotic Heart flag is digitally printed and is 3x5ft. The flag is also finished with a snow white heading and brass grommets.

<https://www.flagcenter.net/Product-Details/ProductName/patriotic-heart-3x5ft-digital>



God Bless America 3x5ft Flag

***Sku: NFDEP-35-009A***

**Price: \$52.50**

---

Quantity

---

Sold Out

- [Description](#)
- [Reviews](#)

**Made in the U.S.A.**

This God Bless America 3x5ft flag is made of nylon and is finished with a white canvas heading and brass grommets.

Can't find what you are looking for? Need something in a different size, shape, or color?

Give us a call and we will be pleased to assist you.

**(800) 795-4295**

## Veteran's Banners Discussion

- I. Verizon stated that the Town's permission would be needed prior to any installations
  - a. Mr. Bobblett indicated that he would like to utilize the Dominion poles as well, and when the utilities are moved underground, he will give the donors back their banners
  - b. A visual assessment is recommended to measure whether the 2 banners, a flag, and a flower basket will be too visually distracting or impede each other
- II. Locally, they will provide a verbal go-ahead if the Town approves
- III. The Town can apply to move these utilities underground as well as electrical utilities
- IV. A Master Plan could determine a banner plan for seasons and branding beyond the Veteran's banners (These could be placed May-November?)
  - a. Mr. Bobblett would like the Veteran's banners to be permanent and year round
- V. An MOU could address
  - a. Approval of this program
  - b. Implementation and timeline
  - c. Maintenance
  - d. Replacement
  - e. Responsibility
- VI. It was suggested that a public input process be held to gauge the interest of more community members

	Stable Hill Studio	Buchanan Theatre	Hair Affair	Twin River Checkin	Twin River Canoe Barn	120 Parkway Drive	Austin Electric
Jenny	21	21	21	21	21	21	21
Molly	26	26	25	26	25	16	26
Sissy	23	23	23	23	23	23	23
TOB	21	19	20	19	18	17	19
Mead	21	21	22	21	21	19	21
Chris							
	<b>22.40</b>	<b>22.00</b>	<b>22.20</b>	<b>22.00</b>	<b>21.60</b>	<b>19.20</b>	<b>22.00</b>

|

## 2022 Buchanan Realestate

### Investment Grant Applications

Property	Property Owner	Date Received	Amount Requested	Owner Matc %	Match	Other Notes
Stable Hill Studio	AEC Properties	10-Feb-22	\$997.00	\$997.00	50%	Awning
Buchanan Theatre	SRO	10-Feb-22	\$991.73	991.73	50%	Exterior Painting
Stylin' Shed	SRO	10-Feb-22	\$1,377.50	\$1,377.50	50%	Awning
TRO Check In Bld.	John & Dan Mays	7-Mar-22	\$618.00	\$618.00	50%	Exterior Paint Bld. & Fence
TRO Canoe Barn	John & Dan Mays	7-Mar-22	\$2,763.00	\$2,763.00	50%	Ext. Pnt. Landscape, Signage
120 Parkway Drive	120 Parkway Drive LLC	7-Mar-22	\$3,491.21	\$3,491.21	50%	Gutters, Patio Pltrs & Chairs
Austin Electric	Terry Austin	7-Mar-22	\$2,213.00	\$2,213.00	50%	2 Windows Awnings
<b>TOTAL</b>			<b>\$12,451.44</b>	<b>\$12,451.44</b>		<b>Public &amp; Private Inv. \$24,902.88</b>



Brogan's Maintenance, LLC

Chuckie Brogan  
2638 Narrow Passage Road  
Buchanan, Va 24066

## Estimate

Date	Estimate #
05/26/2022	133REVISION



<b>Name / Address</b> Town of Buchanan 33 Bedford St Buchanan, Va 24066	<b>broganshvac@gmail.com</b>
--	------------------------------

Description	Qty	Rate	Total
<b>REVISION Quote for 2 Offices upstairs-Service Main Floor, back office and basement-Front Office &amp; Lobby-Meeting Room</b>  All equipment Mitsubishi HyperHeat, Fresh Air Ventilation Requirements IWave-C Commercial IAQ-ION Generator and UV light for meeting room. All equipment with safety switch sensors.  Wall mounted or mounted on roof, all units outside  Parts 12 Year Warranty, 1 year labor		63,776.41	63,776.41
Respectfully Submitted By:  _____ Owner  _____ Customer  DATE			
ANY ALTERATIONS OR DEVIATION FROM ABOVE SPECIFICATIONS INVOLVING EXTRA COST WILL BE EXECUTED ONLY UPON A WRITTEN ORDER, AND WILL BECOME AN EXTRA CHARGE, OVER AND ABOVE THE ESTIMATE. ALL AGREEMENTS CONTINGENT UPON STRIKES, ACCIDENTS, AND OR DELAYS BEYOND OUR CONTROL.			
THE ABOVE PRICES SPECIFICATIONS AND CONDITIONS ARE SATISFACTORY AND ARE HEREBY EXPECTED. YOU ARE AUTHORIZED TO DO THE WORK			



Start With Trust®

bbb.org

Check us out with your BBB®

**Total**

US\$63,776.41



How it works +

Markets +

iWave



Products +

Performance data

WHERE TO BUY

Resources +

Many common air cleaning technologies require ongoing maintenance, such as bulb/cell replacement every year or two. The constant bulb replacements and ongoing maintenance makes the cost and ownership of the product undesirable. The best option economically, and quality wise, is an Air Ionization System from Nu-Calgon.

iWave and NuShield systems use needlepoint bipolar ionization to create positive and negative ions. Most models require no ongoing maintenance or replacement parts.



**View in detail - Actual coverage depends on installation and air flow.**

How it works +

Markets +

iWave

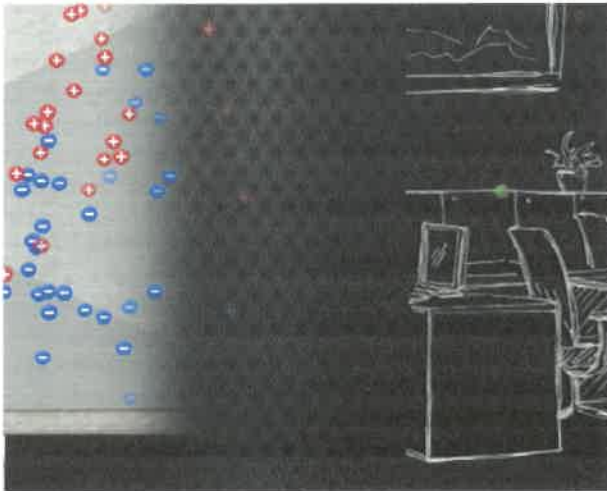


Products +

Performance data

WHERE TO BUY

Resources +



iWave and NuShield help reduce odors, smoke and dust particles throughout the building. The device is installed in the building's air conditioning system and helps clean the air and reduce [certain viruses and bacteria](#) in the HVAC system and throughout the breathing spaces.

Less  
maintenan  
ce than



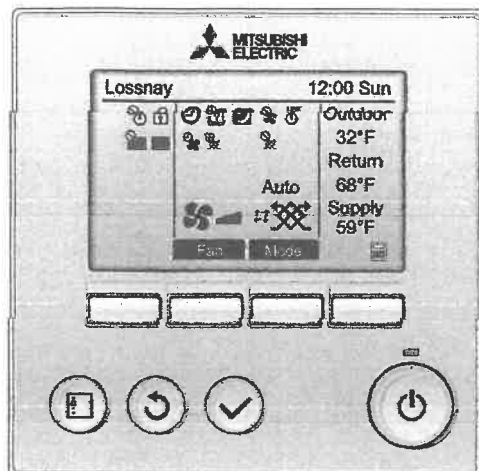
## Model: PZ-61DR-E Lossnay® ERV Remote Controller



Job Name:

System Reference:

Date:



### SPECIFICATIONS

Power supply requirement	12V DC (Supplied from Lossnay unit)
Power consumption	0.3W
Transmission cable	Non polarized 2-wire (2 (AWG22) sheathed cable)
Total wiring length	200m maximum
Number of controllable Lossnay units	15 Lossnay units maximum (Max 2 remote controllers installable)
Environmental condition	Temperature:0 to 104°C Humidity:30% to 90% relative humidity (no condensation)
Size	4.75 x 4.75 x 3/4 inches
Weight	0.55 lbs
Color	Munsell 1.0Y9.2/0.2

- Compatible with Lossnay RVX series ERV
- Controls group operation for up to 15 ERV units and 2 RC's in a single group
- Not for use with Lossnay RX5 series ERV

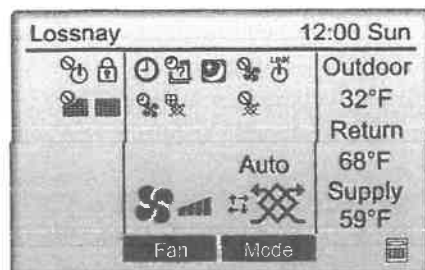
### FUNCTIONS

Function (Communicating mode)	PZ-61DR-E
Fan speed selection	4 fan speeds
Ventilation mode selection	Energy recovery/Bypass/Auto
Night-purge (time)	Any time selectable
Night-purge (fan speed)	Selectable from 4 fan speeds
Dip-switch setting and function setting from RC	Yes
Bypass temp. free setting	Yes
Heater-On temp. free setting	Yes
Fan power up after installation	Yes
0 - 10VDC external input	Yes
ON/OFF timer	Yes
Auto-Off timer	Yes
Weekly timer	Yes
Operation restrictions (ON/OFF, Ventilation mode, fan speed)	Yes
Operation restrictions (Fan speed skip setting)	Yes
Screen contrast adjustment	Yes
Language selection	Yes (8 languages)
Initializing remote controller	Yes
Filter cleaning sign	Yes
Lossnay core cleaning sign	Yes
Error indication	Yes
Error history	Yes
OA/RA/SA temp. display	Yes

# Model: PZ-61DR-E Lossnay® ERV Remote Controller

## DISPLAY

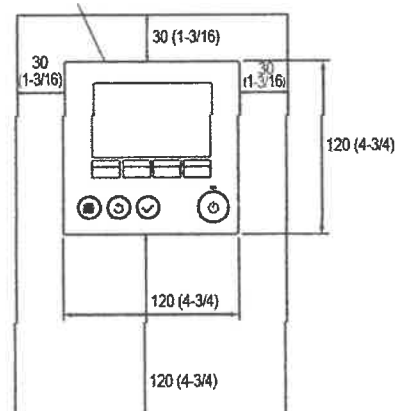
\*All icons are displayed for reference



## INSTALL POSITION

External dimensions of remote controller

Minimum required space around the remote controller



unit: mm(in)

## OPERATION



No.	Item	Content
1	ON/OFF	Press to turn ON/OFF the Lossnay unit.
2	Fan speed	Select the fan speed from 1, 2, 3 and 4. (Selectable fan speeds depend on the type of Lossnay unit)
3	Ventilation Mode	Select the Ventilation mode from Heat-Recovery, By-pass and Automatic. (Selectable ventilation modes depend on the type of Lossnay unit)
4	Backlit LCD	Pressing any button turns the backlight on and it stays lit for a certain period of time.

## DISPLAY

No.	Item	Icon	Content
1	Remote controller name	-	"Lossnay" is always displayed at the top-left in the screen.
2	Clock	-	The current time is displayed. It is also available not to display the time.
3	Clock display selection	-	Select clock display format 24-hour or 12-hour. When the time display format is 12-hour, select AM/PM display position before or after the time.
4	Night-purge setting		This icon appears when the night-purge function is set to be available by function setting. Night-purge function can be scheduled at the weekly timer.
5	Filter sign		This icon appears when it is time to clean the filter and/or Lossnay core.
6	Filter sign (Centrally controlled)		This icon appears when the filter reset function is centrally controlled.
7	Protect operation		This icon appears when performing operation to protect the equipment.
8	Control when operation start		This icon appears when performing the power supply/exhaust function or the delay operation at the start of operation.
9	External fan speed operation		This icon appears when fan speed is controlled externally.
10	Operation interlocked with external unit		This icon appears when operation interlocked with external unit.
11	External ventilation mode operation		This icon appears when ventilation mode is controlled externally.
12	Error information	-	When an error occurs, error code, error unit, M-NET address, unit model name and serial number appear. The model name and serial number appear only if they have been registered.
13	Temperature display	-	Outdoor air temperature, return air temperature and supply air temperature (calculated setting is OFF)



## Model: PZ-61DR-E Lossnay® ERV Remote Controller

### TIMER/WEEKLY TIMER

No.	Item	Icon	Content
1	Timer		On/Off timer: Timer to work the power On/Off each once a day. Settable in 5-minute increments. Setting either the time to On or Off is possible. Auto-Off timer Timer to stop after a certain period of operating time. Settable from 30 to 240 minutes in 10-minute increments.
2	Weekly timer		Set On/Off/Night-purge schedule and fan speed in each day of the week. Settable up to 8 patterns in 5-minute increments each day. The weekly timer does not work when On/Off timer is enabled.

\*Administrator password or service password is required.

### RESTRICTION SETTING

No.	Item	Icon	Content
1	Centrally controlled		This icon appears when On/Off operation is centrally controlled
2	Operation lock Fan speed skip		This icon appears when On/Off, fan speed changing or ventilation mode changing is locked or more than one of all fan speeds is skipped.
3	Password	-	Setting administrator password and service password is possible.

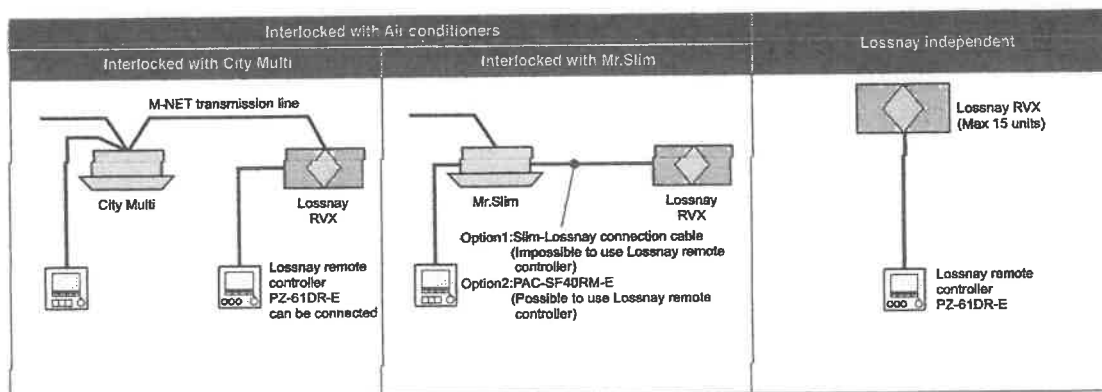
\*Administrator password or service password is required.

### OTHER SETTINGS

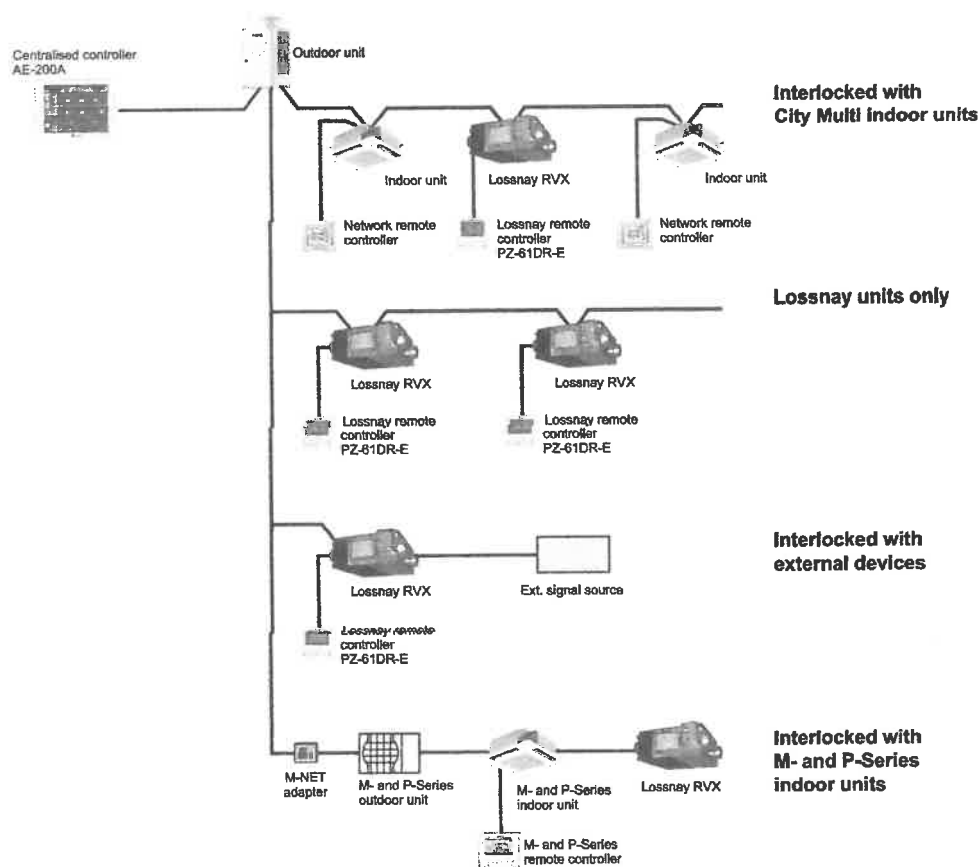
No.	Item	Content
1	Contrast control	Adjusting the LCD contrast is possible.
2	Unit information registering	Registering model names and serial numbers of Lossnay unit is possible.
3	Dealer information registering	Registering dealer's telephone number is possible.
4	Function setting	Settable appropriate function of the selection switch, night purge and so on.
5	Language selection	Selecting the language is enabled from English, German, French, Spanish, Italian, Portuguese, Russian and Swedish.
6	Initializing	Initializing the remote controller. The following are initialized. Timer, Weekly timer, Operation locked, Main/Sub. Clock, Contrast, Display details, Model name input, Serial No. input, Dealer information input, Error history, Administrator password, Maintenance password, Language selection

# Model: PZ-61DR-E Lossnay® ERV Remote Controller

## The New Remote Controller PZ-61DR-E enables simple control setting



## Centralized Controller System

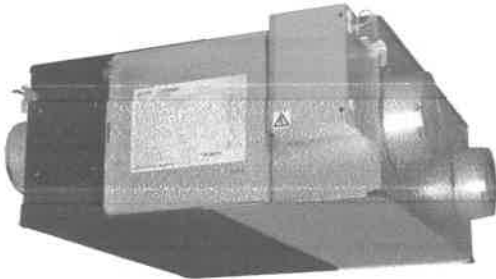


1340 Satellite Boulevard, Suwanee, GA 30024  
 Toll Free: 800-433-4822 [www.mehvac.com](http://www.mehvac.com)

Job Name:

System Reference:

Date:



### GENERAL FEATURES

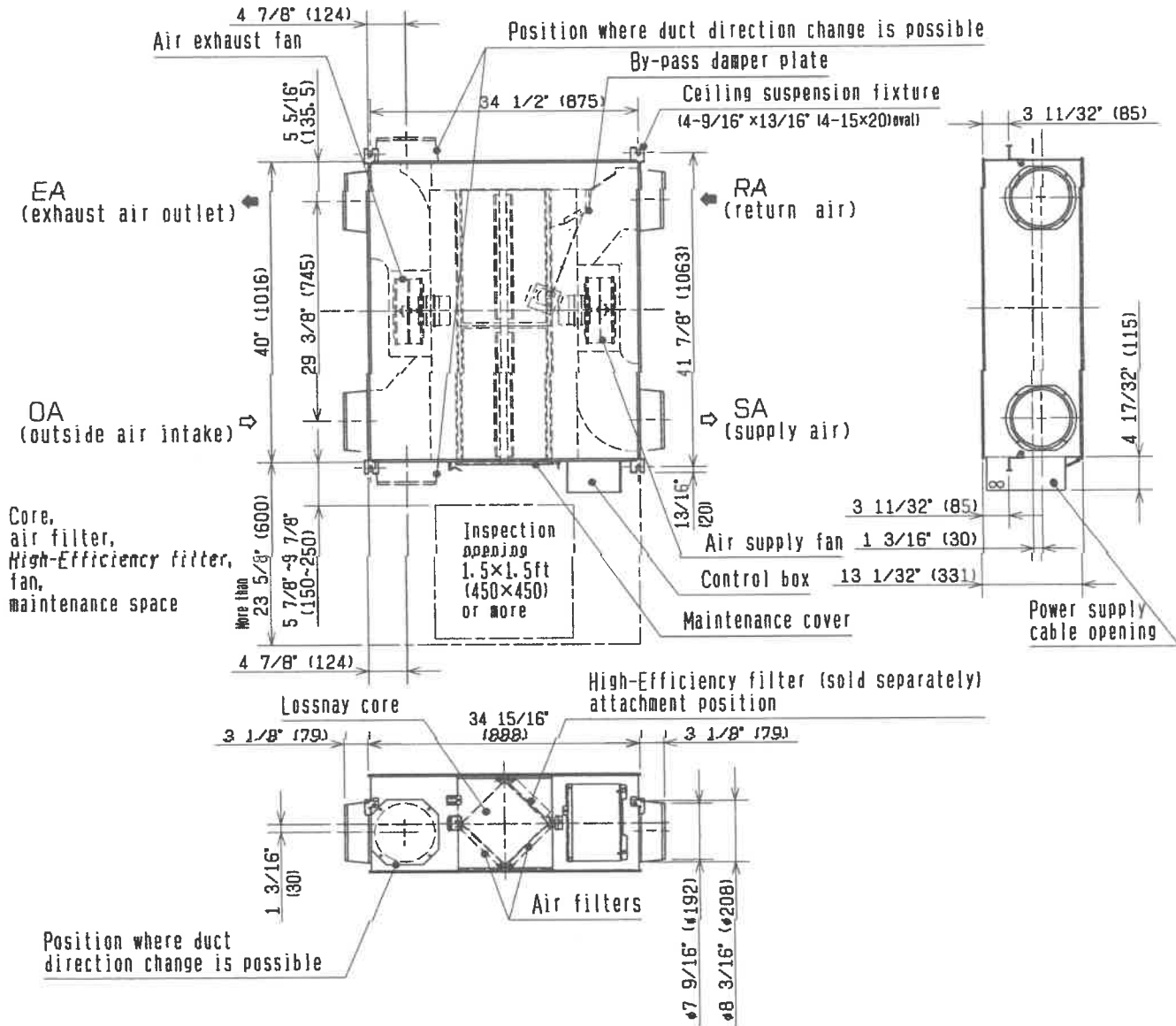
- Lossnay® cross-flow energy recovery core
- Minimal cross contamination (<1% overall) between entering and leaving air streams
- Stand-alone remote controller (PZ-61DR-E)
- M-NET Connectivity
- External input bypass damper control
- Stand alone or interlocks connects with all Mitsubishi Electric products
- Four fan speeds
- High-efficiency DC Motor
- Standard non-woven fabric filter, washable fiber
- Optional high-efficiency MERV 16 filter

### SPECIFICATIONS

Capacity		CFM (m³/h)	300 (510)
Power Source			1-phase 208/230V 60Hz
Power Consumption		kW	0.012 - 0.155
Current		A	0.22 - 1.17
Starting Current		A	6.1
Minimum Circuit Ampacity (MCA)		A	2.05
Maximum Overcurrent Protection (MOCP)		A	15
Fan	Air Volume	CFM (m³/h)	75-150-225-300 (127-255-382-510)
	External Static Pressure	In. W.G.	0.03-0.12-0.26-0.46
Exchange Efficiency	Temperature	%	83-76-70-65.5
	Enthalpy Cooling	%	65-58-53.5-50
	Enthalpy Heating	%	81.5-74-66.5-63
External Finish			Galvanized steel sheet
External Dimensions (H x W x D)		In.	13-1/32 x 41-7/8 x 41-3/16
		mm	331 x 1,063 x 1,046
Net Weight		lbs	75
		kg	34
Energy Transfer Mechanism			Lossnay® Core
Heat Exchange Material			Partition, spacing plate-cellulose fiber membrane
Heat Exchange System			Air-to-air total heat (sensible heat + latent heat) exchange, no moving parts
Blower Type			8-3/4 In. diameter centrifugal fan
Motor Type			EC Motor
Included: Standard Filter (PZ-50RF8-E) <sup>1</sup>		Dimensions (H x W x L) In.	19/32 x 7-13/64 x 18-1/2
Optional: High-Efficiency MERV 16 Filter (PZ-50RFP2-E) <sup>1</sup>			1 x 6-7/8 x 18-1/4
Entering Air Temperature Operation Range			14° F to 104° F (-10° C to 40° C), RH 80% or less
Sound Pressure Level		dB(A)	18.0-22.0-28.0-34.0

<sup>1</sup> Requires one filter set (two filters included per set)

# DIMENSIONS: LGH-F300RVX-E



	UNIT	SCALE
	inch(mm)	N.T.S

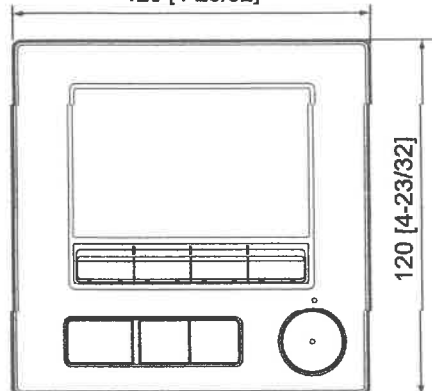


# Model: PAR-40MAAU

## DIMENSIONS

(Front view)

120 [4-23/32]



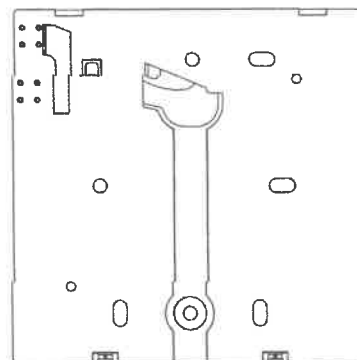
(Side view)

14.5 [37/64]



(Rear view)

Unit: mm [in.]



## COMPATIBILITY CHART

CITY MULTI		M-Series		P-Series	
PMFY-NBMU	Yes	MFZ-KA	MAC-334	PCA	Yes
PEFY-NMU	Yes	MFZ-KJ	MAC-334	PEA	Yes
PEFY-NMAU	Yes	MSZ/Y-A	No	PEAD	Yes
PEFY-NMHSU	Yes	MSZ/Y-D	NA: No NA-8: MAC-334	PKA	Yes
PEFY-NMLU	Yes	MS-WA	No	PLA	Yes
PEFY-NMSU	Yes	MSZ-FD	No	PVA	Yes
PLFY-NAMU	Yes	MSZ-FE	09(12)NA: No 09(12)NA-8: MAC-334 16NA: Yes <sup>1</sup>		
PLFY-NBMU	Yes	MSZ/Y-GE	06(-18)NA: No NA-8: MAC-334 NA-9: MAC-334 GE24NA: MAC-334		
PLFY-NCMU	Yes	MSZ/Y-GL	MAC-334		
PLFY-NEMU	Yes	MSZ/Y-GS	MAC-334		
PLFY-NFMU	Yes	MSZ-FH	MAC-334		
PLFY-NLMU	Yes	MSZ-FS	MAC-334		
PCFY-VKM	Yes	MSZ-HE	No		
PCFY-NGMU	Yes	MSZ-HM	MAC-334		
PCFY-NKMU	Yes	MVZ-AA4	Yes		
PFFY-NEMU	Yes	MVZ-AA7	Yes		
PFFY-NRMU	Yes	SVZ-KP	Yes		
PVIFY-E00	Yes	SEZ-KD	No		
PVIFY-NAMU	Yes	SEZ-KD4	Yes		
PKFY-NAMU	Yes	SLZ-KA	Yes		
PKFY-NFMU	Yes	SLZ-KF	Yes		
PKFY-NGMU	Yes	MLZ-KP	MAC-334		
PKFY-NBMU	Yes	Note: MAC-334 indicates that the unit requires a MAC-334IF-E Adapter in order to use the PAR-40MAAU.			
PKFY-NHMU	Yes				
PKFY-NKMU	Yes				

## SPECIFICATIONS

Product size (W x H x D)	In. (mm)	4 3/4 x 4 3/4 x 0.57 (120 x 120 x 14.5)
Net Weight	Lbs. (kg)	9/16 (0.25)
Rated Power Supply Voltage		12 VDC (supplied from indoor units)
Power Consumption	W	0.3
Usage Environment		Temperature: 0 to 40° C (32 to 104° F) Humidity: 30 to 90%RH (with no condensation)
Material	Panel	PMMA
	Main body	PC + ABS
Sound Pressure Level	dB(A)	<70 [A-weighted sound pressure level]

<sup>1</sup> Per Machinery Directive 2006/42/EC

1340 Satellite Boulevard, Suwanee, GA 30024  
Toll Free: 800-433-4822 [www.mehvac.com](http://www.mehvac.com)

# Model: PAR-40MAAU

## SCHEDULE AND TIMER SETTING

- Timer
  - ON/OFF timer
    - Turns ON and OFF daily at a set time.
    - Time can be set in 5-minute increments.
    - It is also possible to set the ON time only or the OFF time only.
  - Auto-OFF timer
    - Turns off the unit after a certain period of operation.
    - Operation time can be set to a value from 30 to 240 minutes in 10-minute increments.
- Weekly timer
  - Weekly ON/OFF times and set temperatures can be set.
  - Time can be set in 5-minute increments. Up to 8 schedule patterns can be set per day of the week.
  - Not valid when the ON/OFF timer is set.

## RESTRICTION SETTINGS

- Allows/disallows local operation
  - The following operation can be prohibited by applying certain settings on the centralized controller: ON/OFF, operation mode, set temperature, filter sign reset, air direction, fan speed and timer.
  - While an operation is prohibited, the operation icon lights up (only on the Main display in the "Full" mode).
- Operation lock
  - The following operations can be prohibited: Sensing Location, ON/OFF, Mode, Set temp., Menu, Fan, Louver, Vane, or Hold
- Temperature range restriction
  - The room temperature range for each operation mode can be restricted.
- Auto return
  - The units operate at the preset temperature after a designated period.
    - Time can be set to a value from 30 to 120 minutes in 10-minute increments.
  - Not valid when the temperature setting range is restricted.
- Password
  - Administrator password (required for schedule setting etc.) and Maintenance password (required for test run and function setting etc.) can be set.

## MISCELLANEOUS ITEMS

- Language Selection
  - Select the display language from the following 3 languages.
    - English, French, Spanish
- Brightness Contrast
  - The brightness of the LCD can be adjusted. The contrast of the LCD can be adjusted.
- Manual Vane Angle <sup>\*1</sup>
  - Fixes the vane position for each air outlet.
- Service <sup>\*1</sup>
  - Contains Test run, Function setting, Request code, and Error history.
- 3D i-see Sensor<sup>®</sup>
  - Settings for 3D i-see Sensor<sup>®</sup> can be made.

## ENERGY SAVING OPTION

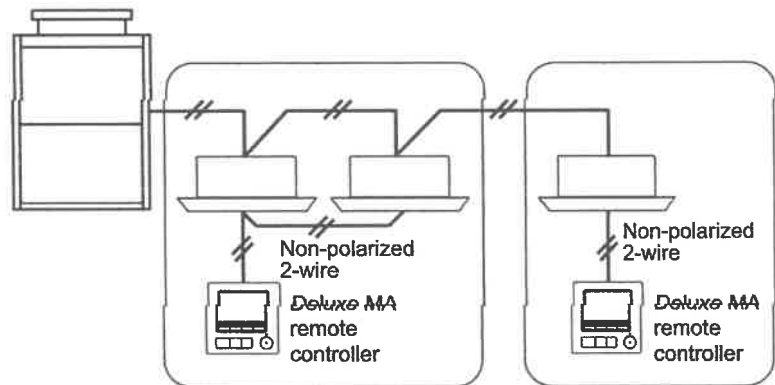
- No occupancy energy save
  - Requires 3D i-see Sensor<sup>®</sup> on applicable indoor units
- Room Occupancy energy save
  - Requires 3D i-see Sensor<sup>®</sup> on applicable indoor units
- No occupancy Auto-OFF
  - Requires 3D i-see Sensor<sup>®</sup> on applicable indoor units
- Setback Mode

<sup>\*1</sup> This function is active only for the units that support the function.

<sup>\*2</sup> The clock is accurate within 45 seconds per month (at the temperature of 77°F [25°C]). The clock is backed up for 3 days.

## SYSTEM EXAMPLE

\*When a PAR-40MAAU is connected to a group, no other MA remote controllers can be connected to the same group.



# Model: PAR-40MAAU Deluxe MA Remote Controller



Job Name:

System Reference:

Date:



FULL VIEW



BASIC VIEW

## OPERATION/DISPLAY

- ON/OFF
  - Switches between ON and OFF.
- Operation mode switching
  - Switches between Cool/Dry/Fan/Auto/Setback/Heat.
- Hold
  - Switches between enable and disable the Hold function.
  - If the Hold function is enable, the following functions will be prohibited.
  - ON/OFF timer/Schedule (Weekly timer) /Auto return/Auto-OFF timer
- Temperature setting
  - Changes the set temperature.
  - Set temperature range varies depending on the indoor unit model.
- Fan speed setting
  - Changes fan speed.
  - Available fan speeds vary depending on the model.
- Air flow direction setting
  - Changes airflow direction.
  - Available airflow directions vary depending on the model.
- Louver setting
  - Switches between louver ON/OFF.
- Ventilation equipment control
  - Interlocked setting and interlocked operation setting with City Multi Lossnay units can be performed.
  - The Stop/Low/High settings of the ventilation equipment can be controlled.
- Main display mode setting
  - The Main display can be displayed in two different modes: "Full" and "Basic."
- B&W inversion
  - The colors of the display can be inverted, turning white background to black and black characters to white.

- Clock \*2
  - Date (year/month/day) and time (hour/minute) can be set.
  - The set time as well as the day of the week will be displayed on the Main display.
  - It is also possible for the time to not display on the main display.
  - The clock can be displayed in 12-hour format (AM/PM before or after the time) and 24-hour format.
- Daylight saving time
  - The start/end time for daylight saving time can be set.
  - The daylight saving time function will be activated based on the setting contents.
- Room temp. display
  - The room temperature display can be enabled or disabled.
- Error information
  - When an error occurs, an error code and the unit address appear.
  - The air-conditioning unit model, serial number, and contact number can be set to appear when an error occurs. (The above information needs to be entered in advance.)
- Filter information
  - A filter sign will appear when it is time to clean the filter.
- Remote controller information
  - The version of the remote controller can be checked.

\*1 This function is active only for the units that support the function.

\*2 The clock is accurate within 45 seconds per month (at the temperature of 77°F [25°C]).  
The clock is backed up for 3 days.

# M-SERIES

## SUBMITTAL DATA: MSZ-GL09NA

9,000 BTU/H WALL-MOUNTED INDOOR UNIT FOR MXZ-C MULTI-ZONE HEAT PUMP SYSTEMS



Job Name:

System Reference:

Date:

Indoor Unit:  
MSZ-GL09NA



Wireless Remote Controller



### GENERAL FEATURES

- Slim wall-mounted indoor units provide zone comfort control
- The outdoor unit powers the indoor unit, and should a power outage occur, the system is automatically restarted when power returns
- Multiple fan speed options: Quiet, Low, Medium, High, Super-high, Auto
- Multiple control options available:
  - Hand-held Remote Controller (provided with unit)
  - kumo cloud<sup>®</sup> smart device app for remote access
  - Third-party interface options
  - Wired or wireless controllers
- Hot-Start Technology: no cold air rush at equipment startup or when restarting after Defrost Cycle
- Quiet operation
- Smart Set: recalls a preferred preset temperature setting at the touch of a button

## SPECIFICATIONS: MSZ-GL09NA

Cooling Capacity <sup>1, 3</sup>		BTU/H	9,000
Heating Capacity <sup>2, 3</sup>		BTU/H	10,900
Electrical	Voltage, Phase, Frequency	208/230V, 1 phase, 60Hz	
	Guaranteed Voltage Range	V AC	187 - 253
	Voltage: Indoor - Outdoor, S1-S2	V AC	208 / 230
	Voltage: Indoor - Outdoor, S2-S3	V DC	24
	Short-circuit Current Rating (SCCR)	5	
MCA		A	1
Blower Motor Full Load Amperage		A	0.76
Blower Motor Output		W	30
Airflow Rate at Cooling, Dry		CFM	399-321-237-170-145
Airflow Rate at Cooling, Wet		CFM	364-286-201-134-109
Airflow Rate at Heating, Dry		CFM	406-321-237-170-145
Sound Pressure Level (Cooling)		dB(A)	43-37-30-22-19
Sound Pressure Level (Heating)		dB(A)	43-37-30-22-19
Drain Pipe Size		In. (mm)	5/8 (15.88)
Heat Exchanger Type		Plate fin coil	
External Finish Color		Munsell 1.0Y 9.2/0.2	
Unit Dimensions	W: In. (mm)	31-7/16 (798)	
	D: In. (mm)	9-1/8 (232)	
	H: In. (mm)	11-5/8 (295)	
Package Dimensions	W: In. (mm)	33-1/2 (850)	
	D: In. (mm)	12 (300)	
	H: In. (mm)	14 (350)	
Unit Weight		Lbs. (kg)	22 (10)
Package Weight		Lbs. (kg)	26 (11.5)
Refrigerant	Type	R410A	
Piping	Gas Pipe Size O.D. (Flared)	In. (mm)	3/8 (9.52)
	Liquid Pipe Size O.D. (Flared)	In. (mm)	1/4 (6.35)

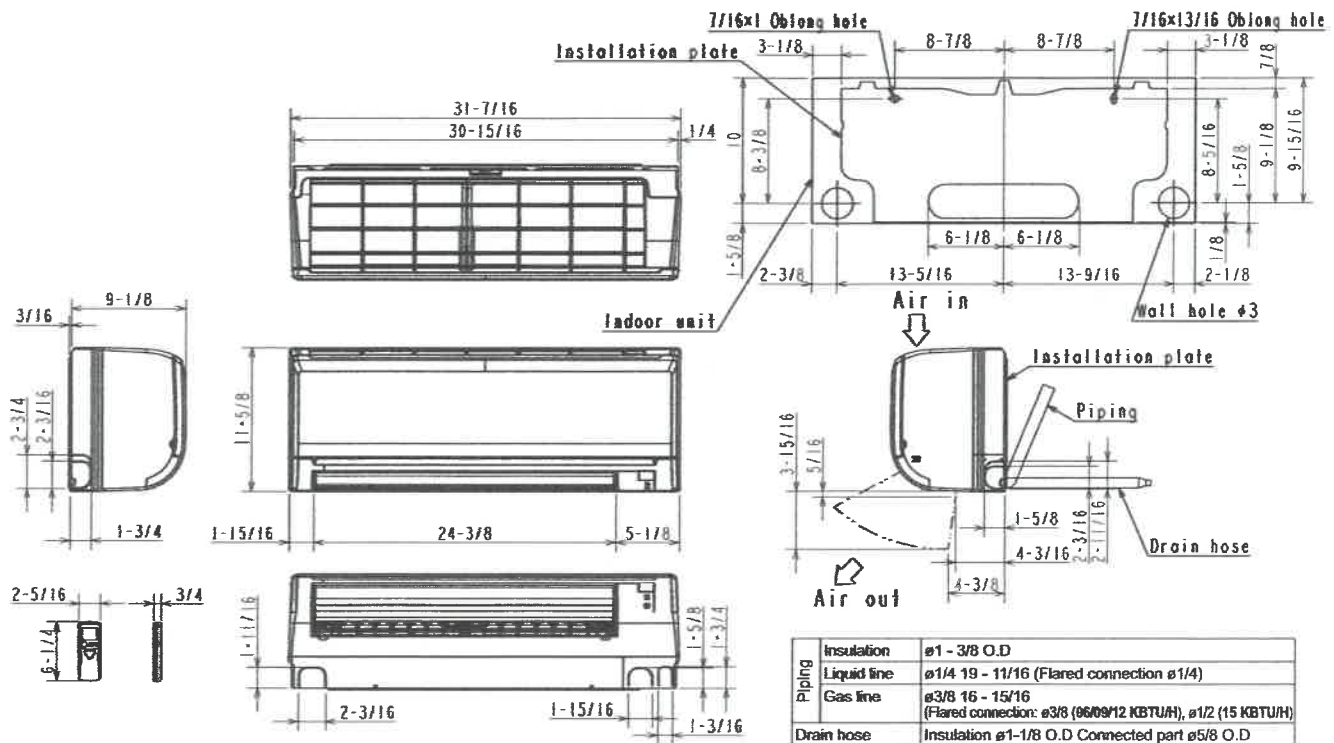
### Notes:

Nominal Conditions	<sup>1</sup> Cooling (Indoor // Outdoor)	°F	80 DB, 67 WB // 95 DB, 75 WB
	<sup>2</sup> Heating at 47°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 47 DB, 43 WB

<sup>3</sup>Capacity varies based on the number of indoor units operating and the model of the Multi-zone Outdoor Unit. For reference to connected capacity charts, please refer Multi-zone Outdoor Unit Operational Performance.

# DIMENSIONS: MSZ-GL09NA

Unit: inch



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## ACCESSORIES: MSZ-GL09NA

Anti-allergy Enzyme Filter	□ MAC-408FT-E
kumo touch™ RedLINK™ Wireless Controller	□ MHK2
Deluxe MA Remote Controller <sup>1</sup>	□ PAR-40MAAU
Simple MA Controller <sup>1</sup>	□ PAC-YT53CRAU-J
Touch MA Controller <sup>1</sup>	□ PAR-CT01MAU-SB
Wired Remote Sensor	□ M21-EAA-307
Wireless Temperature and Humidity Sensor	□ PAC-USWHS003-TH-1
System Control Interface <sup>2</sup>	□ MAC-334IF-E
Wireless Interface 2	□ PAC-USWHS002-WF-2
Thermostat Interface	□ PAC-US444CN-1
kumo station®	□ PAC-WHS01HC-E
USNAP Interface	□ PAC-WHS01UP-E
IT Extender	□ PAC-WHS01IE-E
BACnet® and MODBUS® Interface	□ PAC-UKPRC001-CN-1
Lockdown Bracket for Hand-held Remote Controllers	□ RCMKP1CB
Blue Diamond Sensor Extension Cable — 15 Ft.	□ C13-103
Blue Diamond Alarm Extension Cable — 6.5 Ft.	□ C13-192
Blue Diamond MultiTank — collection tank for use with multiple pumps	□ C21-014
Blue Diamond Rubber Foot Pads	□ F10-010
Mini Condensate Pump — 230 volt application	□ SI30-230
MegaBlue Advanced Blue Diamond Condensate Pump w/ Reservoir & Sensor	□ X87-835 - 110 to 250V
MaxiBlue Advanced Blue Diamond Mini Condensate Pump w/ Reservoir & Sensor (110V) up to 48,000 BTU/H [recommended]	□ X87-711 - 110V
Advanced Blue Diamond Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	□ X87-721 - 208/230V
MicroBlue Blue Diamond Mini Condensate Pump (110/208/230V) up to 18,000 BTU/H	□ X85-003
Fascia Kit for MicroBlue Pump — mounts the MicroBlue and sensor directly beneath the indoor unit	□ T18-016
Drain Pan Level Sensor	□ SS610E
(30A/600V/UL) [fits 2" X 4" utility box] - Black	□ TAZ-MS303
(30A/600V/UL) [fits 2" X 4" utility box] - White	□ TAZ-MS303W

<sup>1</sup> Requires MAC-334IF-E

<sup>2</sup> Allows indoor units to connect to an MA Controller

# M-SERIES

## SUBMITTAL DATA: MSZ-GL18NA

18,000 BTU/H WALL-MOUNTED INDOOR UNIT FOR MXZ-C MULTI-ZONE HEAT PUMP SYSTEMS



Job Name:

System Reference:

Date:

Indoor Unit:  
MSZ-GL18NA



Wireless Remote Controller



### GENERAL FEATURES

- Slim wall-mounted indoor units provide zone comfort control
- The outdoor unit powers the indoor unit, and should a power outage occur, the system is automatically restarted when power returns
- Multiple fan speed options: Quiet, Low, Medium, High, Super-high, Auto
- Multiple control options available:
  - Hand-held Remote Controller (provided with unit)
  - iumo cloud® smart device app for remote access
  - Third-party interface options
  - Wired or wireless controllers
- Hot-Start Technology: no cold air rush at equipment startup or when restarting after Defrost Cycle
- Quiet operation
- Smart Set: recalls a preferred preset temperature setting at the touch of a button



# SPECIFICATIONS: MSZ-GL18NA

Cooling Capacity <sup>1, 3</sup>		BTU/H	18,000
Heating Capacity <sup>2, 3</sup>		BTU/H	21,600
Electrical	Voltage, Phase, Frequency		208/230V, 1 phase, 60Hz
	Guaranteed Voltage Range	V AC	187 - 253
	Voltage: Indoor - Outdoor, S1-S2	V AC	208 / 230
	Voltage: Indoor - Outdoor, S2-S3	V DC	24
	Short-circuit Current Rating (SCCR)		5
MCA		A	1
Blower Motor Full Load Amperage		A	0.67
Blower Motor Output		W	30
Airflow Rate at Cooling, Dry		CFM	646-522-417-332-258
Airflow Rate at Cooling, Wet		CFM	581-470-375-299-232
Airflow Rate at Heating, Dry		CFM	646-565-469-385-297
Sound Pressure Level (Cooling)		dB(A)	49-44-38-33-28
Sound Pressure Level (Heating)		dB(A)	48-43-38-33-28
Drain Pipe Size		In. (mm)	5/8 (15.88)
Heat Exchanger Type			Plate fin coil
External Finish Color			Munsell 1.0Y 9.2/0.2
Unit Dimensions	W: In. (mm)		36-5/16 (923)
	D: In. (mm)		9-13/16 (250)
	H: In. (mm)		12 (305)
Package Dimensions	W: In. (mm)		39 (990)
	D: In. (mm)		13 (330)
	H: In. (mm)		15 (380)
Unit Weight		Lbs. (kg)	28 (13)
Package Weight		Lbs. (kg)	33 (15)
Refrigerant	Type		R410A
Piping	Gas Pipe Size O.D. (Flared)	In. (mm)	1/2 (12.7)
	Liquid Pipe Size O.D. (Flared)	In. (mm)	1/4 (6.35)

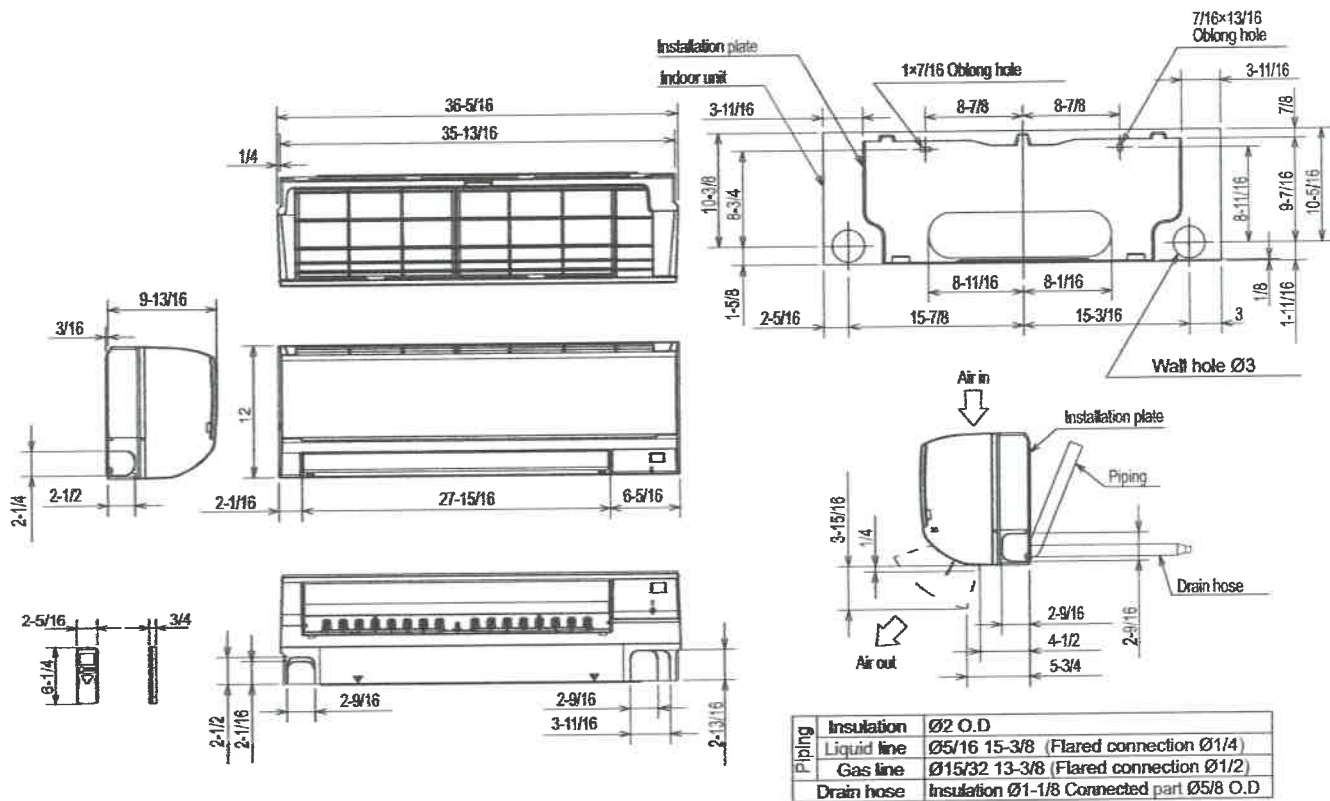
## Notes:

Nominal Conditions	<sup>1</sup> Cooling (Indoor // Outdoor)	°F	80 DB, 67 WB // 95 DB, 75 WB
	<sup>2</sup> Heating at 47°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 47 DB, 43 WB

<sup>3</sup>Capacity varies based on the number of indoor units operating and the model of the Multi-zone Outdoor Unit. For reference to connected capacity charts, please refer Multi-zone Outdoor Unit Operational Performance.

# DIMENSIONS: MSZ-GL18NA

Unit: inch



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## ACCESSORIES: MSZ-GL18NA

Anti-allergy Enzyme Filter	□ MAC-408FT-E
kumo touch™ RedLINK™ Wireless Controller	□ MH-K2
Deluxe MA Remote Controller <sup>1</sup>	□ PAR-40MAAU
Simple MA Controller <sup>1</sup>	□ PAC-YT53CRAU-J
Touch MA Controller <sup>1</sup>	□ PAR-CT01MAU-SB
Wireless Temperature and Humidity Sensor	□ PAC-USWHS003-TH-1
System Control Interface <sup>2</sup>	□ MAC-334IF-E
Wireless Interface 2	□ PAC-USWHS002-WF-2
Thermostat Interface	□ PAC-US444CN-1
kumo station®	□ PAC-WHS01HC-E
USNAP Interface	□ PAC-WHS01UP-E
IT Extender	□ PAC-WHS01IE-E
BACnet® and MODBUS® Interface	□ PAC-UKPRC001-CN-1
Lockdown Bracket for Hand-held Remote Controllers	□ RCMKP1CB
Blue Diamond Sensor Extension Cable — 15 Ft.	□ C13-103
Blue Diamond Alarm Extension Cable — 6.5 Ft.	□ C13-192
Blue Diamond MultiTank — collection tank for use with multiple pumps	□ C21-014
Blue Diamond Rubber Foot Pads	□ F10-010
Mini Condensate Pump — 230 volt application	□ SI30-230
MegaBlue Advanced Blue Diamond Condensate Pump w/ Reservoir & Sensor	□ X87-835 - 110 to 250V
MaxiBlue Advanced Blue Diamond Mini Condensate Pump w/ Reservoir & Sensor (110V) up to 48,000 BTU/h (recommended)	□ X87-711 - 110V
Advanced Blue Diamond Mini Condensate Pump w/ Reservoir & Sensor (208/230V) (recommended)	□ X87-721 - 208/230V
MicroBlue Blue Diamond Mini Condensate Pump (110/208/230V) up to 18,000 BTU/h	□ X85-003
Fascia Kit for MicroBlue Pump -- mounts the MicroBlue and sensor directly beneath the indoor unit	□ T18-016
Drain Pan Level Sensor	□ SS610E
(30A/600V/UL) (fits 2" X 4" utility box) - Black	□ TAZ-MS303
(30A/600V/UL) (fits 2" X 4" utility box) - White	□ TAZ-MS303W

<sup>1</sup> Requires MAC-334IF-E

<sup>2</sup> Allows indoor units to connect to an MA Controller

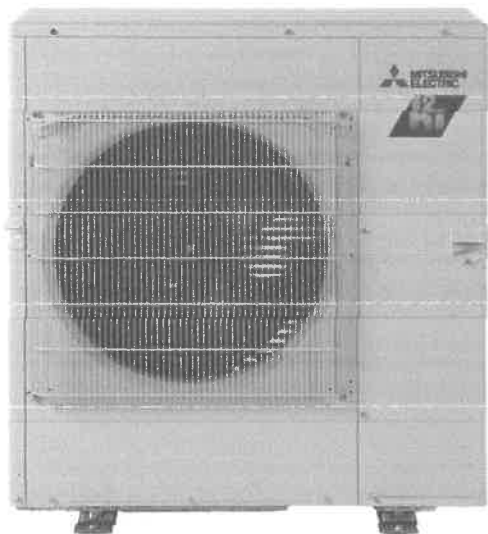
**MXZ-2C20NAHZ2**  
**1.5-TON MULTI-ZONE INVERTER HEAT-PUMP SYSTEM**



Job Name:

System Reference:

Date:



**FEATURES**

- Variable speed INVERTER-driven compressor
- Built-in base pan heater
- Quiet outdoor unit operation as low as 58 dB(A)
- High pressure protection
- Compressor thermal protection
- Compressor overcurrent detection
- Fan motor overheating/voltage protection
- H2i<sup>®</sup>hyper heat performance offers 100% heating capacity at 5°F and 74% heating capacity at -13°F
- ENERGY STAR<sup>®</sup>certified (non-ducted)

# SPECIFICATIONS: MXZ-2C20NAHZ2

(For data on specific indoor units, see the MXZ-C Technical and Service Manual.)

Cooling* (Non-ducted / Ducted)	Rated Capacity	Btu/h	18,000 / 20,000
	Capacity Range	Btu/h	12,600 - 20,000
	Rated Total Input	W	1,334 / 1,819
Heating at 47°F* (Non-ducted / Ducted)	Rated Capacity	Btu/h	22,000 / 22,000
	Capacity Range	Btu/h	11,400 - 25,500
	Rated Total Input	W	1,612 / 1,748
Heating at 17°F* (Non-ducted/Ducted)	Rated Capacity	Btu/h	13,700 / 13,700
	Maximum Capacity	Btu/h	22,000 / 22,000
	Rated Total Input	W	1,450 / 1,588
Heating at 5°F*	Maximum Capacity	Btu/h	22,000
Connectable Capacity		Btu/h	12,000 - 24,000
Energy Star® (ENERGY STAR products are third-party certified by an EPA-recognized Certification Body.)			Yes
Electrical Requirements	Power Supply	Voltage, Phase, Hertz	208 / 230V, 1-Phase, 60 Hz
	Recommended Fuse/Breaker Size	A	40
	MCA	A	29.5
Voltage	Indoor - Outdoor S1-S2	V	AC 208 / 230
	Indoor - Outdoor S2-S3	V	DC ±24
Compressor		DC INVERTER-driven Twin Rotary	
Fan Motor (ECM)		F.L.A.	2.43
Sound Pressure Level	Cooling	dB(A)	54
	Heating	dB(A)	58
External Dimensions (H x W x D)		In / mm	41-9/32 x 37-13/32 x 13 1048 x 950 x 330
Net Weight		Lbs / kg	187 / 85
External Finish		Munsell No. 3Y 7.8/11	
Refrigerant Pipe Size O.D.	Liquid (High Pressure)	In / mm	1/4 / 6.35
	Gas (Low Pressure)	In / mm	A,B: 3/8 / 9.52
Max. Refrigerant Line Length		Ft / m	164 / 50
Max. Piping Length for Each Indoor Unit		Ft / m	82 / 25
Max. Refrigerant Pipe Height Difference	If IDU is Above ODU	Ft / m	49 / 15
	If IDU is Below ODU	Ft / m	49 / 15
Connection Method		Flared/Flared	
Refrigerant		R410A	

## OPERATING RANGE:

	Outdoor
Cooling	D.B. 14 to 115° F [ D.B. -10 to 46° C ] *1
Heating	W.B. -13 to 65° F [ W.B. -25 to 18° C ]

## ENERGY EFFICIENCIES:

Indoor Unit Type	SEER	EER	HSPF	COP @ 47°F	COP @ 17°F
Non-ducted (09 + 09)	17.0	13.5	9.8	4.00	2.77
Ducted and Non-ducted	16.00	12.25	9.65	3.85	2.65
Ducted (09 + 12)	15.0	11.0	9.5	3.69	2.53
Specific combination (FH09+FH09)	17.15	14.3	10.0	4.37	2.88

## NOTES:

For actual capacity performance based on Indoor unit type and number of Indoor units connected, please refer to MXZ Operational Performance.

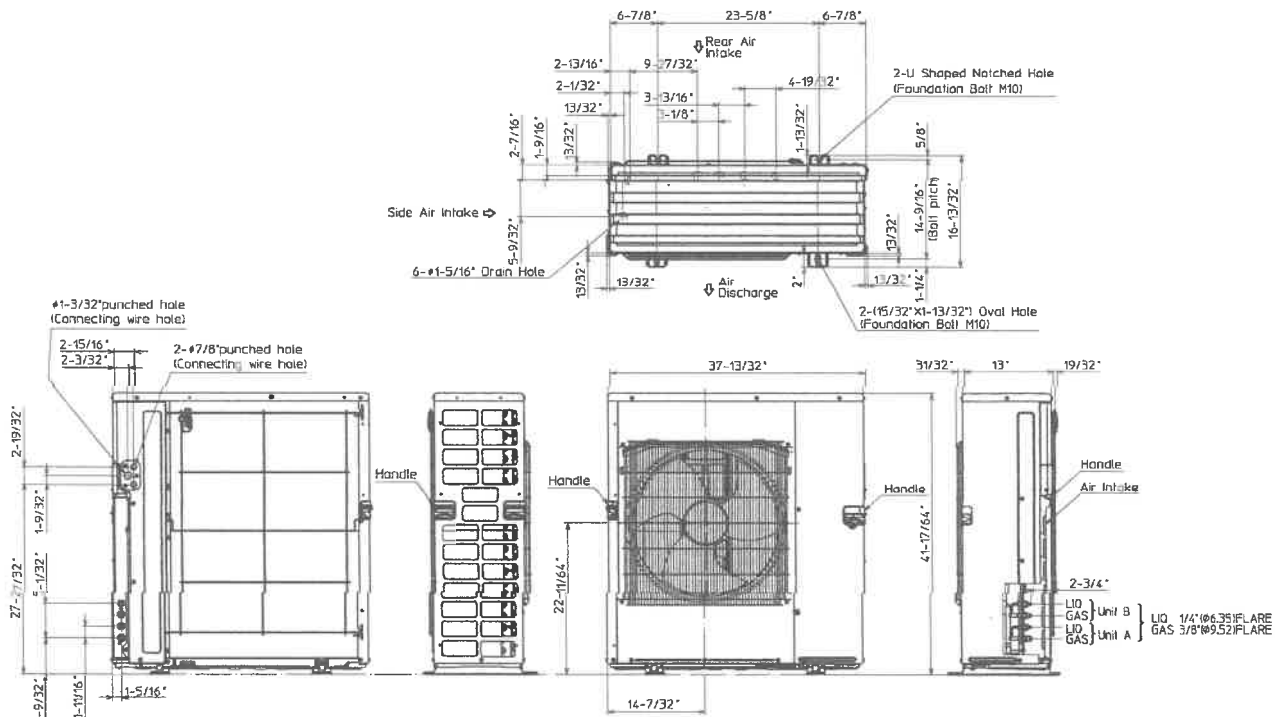
Although the maximum connectable capacity can exceed rated, the outdoor unit cannot provide more than 100% of the rated capacity. Please utilize this over capacity capability for load shedding or applications where it is known that all connected units will NOT be operating at the same time.

## OUTDOOR UNIT ACCESSORIES: MXZ-2C20NAHZ2

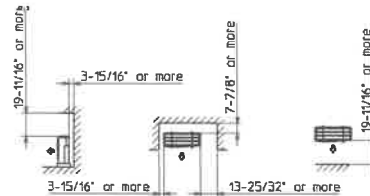
Air Outlet Guide	Air Outlet Guide (1 Piece)	<input type="checkbox"/> PAC-SH96SG-E
Ball Valve	Refrigeration Ball Valve - 1/2"	<input type="checkbox"/> BV12FFSI2
	Refrigeration Ball Valve - 1/4"	<input type="checkbox"/> BV14FFSI2
	Refrigeration Ball Valve - 3/8"	<input type="checkbox"/> BV38FFSI2
	Refrigeration Ball Valve - 5/8"	<input type="checkbox"/> BV58FFSI2
Distribution pipe for Branch Box	M-NET Converter	<input type="checkbox"/> PAC-IF01MNT-E
Hall Guards	Hall Guard	<input type="checkbox"/> HG-A1
Mounting Pad	Condensing Unit Mounting Pad: 16" x 36" x 3"	<input type="checkbox"/> ULTRILITE1
	Outdoor Unit 3-1/4 inch Mounting Base (Pair) - Plastic	<input type="checkbox"/> DSD-400P
Port Adapter	Adaptor: 1/2" x 3/8"	<input type="checkbox"/> MAC-A455JP-E
	Adaptor: 1/2" x 5/8"	<input type="checkbox"/> MAC-A466JP-E
	Adaptor: 3/8" x 1/2"	<input type="checkbox"/> MAC-A454JP-E
	Adaptor: 3/8" x 5/8"	<input type="checkbox"/> PAC-SG76RJ-E
Power Supplies and Auxiliary Components	M-Net Control Wire, 1,000' Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	<input type="checkbox"/> CW162S-1000
Power Supplies And Auxiliary Components	M-Net Control Wire, 250' Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	<input type="checkbox"/> CW162S-250
Stand	18" Single Fan Stand	<input type="checkbox"/> QSMS1801M
	24" Single Fan Stand	<input type="checkbox"/> QSMS2401M
	Condenser Wall Bracket	<input type="checkbox"/> QSWB2000M-1
	Condenser Wall Bracket -Stainless Steel Finish	<input type="checkbox"/> QSWBSS
	Outdoor Unit Stand — 12" High	<input type="checkbox"/> QSMS1201M

# OUTDOOR UNIT DIMENSIONS: MXZ-2C20NAHZ2

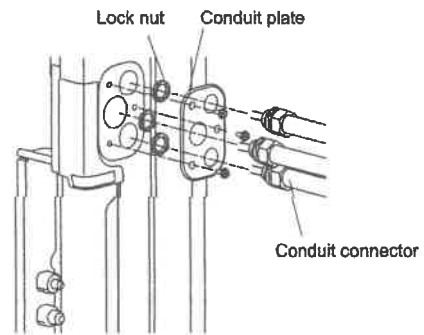
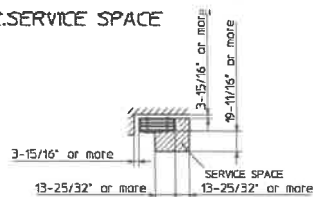
Unit: inch



## 1.FREE SPACE



## 2.SERVICE SPACE



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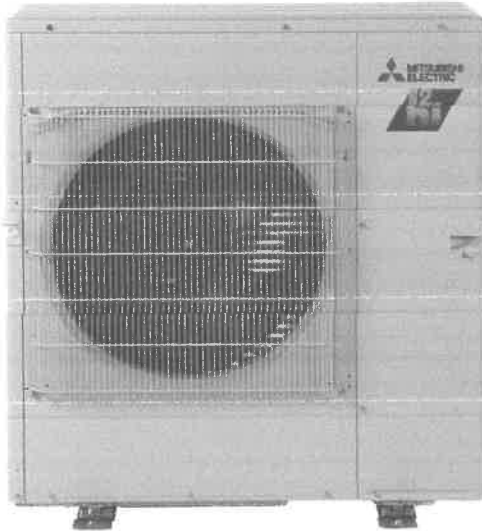
**MXZ-3C24NAHZ2**  
**MULTI-ZONE INVERTER HEAT-PUMP SYSTEM**



Job Name:

System Reference:

Date:



**FEATURES**

- Variable speed INVERTER-driven compressor
- Built-in base pan heater
- Quiet outdoor unit operation as low as 58 dB(A)
- High pressure protection
- Compressor thermal protection
- Compressor overcurrent detection
- Fan motor overheating/voltage protection
- H2i<sup>®</sup>hyper heat performance offers 100% heating capacity at 5°F and 74% heating capacity at -13°F
- ENERGY STAR<sup>®</sup>certified (non-ducted)



# SPECIFICATIONS: MXZ-3C24NAHZ2

(For data on specific indoor units, see the MXZ-C Technical and Service Manual.)

Cooling* (Non-ducted / Ducted)	Rated Capacity	Btu/h	22,000 / 23,600
	Capacity Range	Btu/h	12,600 - 23,600
	Rated Total Input	W	1,630 / 2,360
Heating at 47°F* (Non-ducted / Ducted)	Rated Capacity	Btu/h	25,000 / 24,600
	Capacity Range	Btu/h	11,400 - 30,600
	Rated Total Input	W	1,725 / 1,871
Heating at 17°F* (Non-ducted/Ducted)	Rated Capacity	Btu/h	14,000 / 14,000
	Maximum Capacity	Btu/h	25,000 / 24,600
	Rated Total Input	W	1,622 / 1,635
Heating at 5°F*	Maximum Capacity	Btu/h	25,000
Connectable Capacity		Btu/h	12,000 - 27,000
Energy Star® (ENERGY STAR products are third-party certified by an EPA-recognized Certification Body.)			Yes
Electrical Requirements	Power Supply	Voltage, Phase, Hertz	208 / 230V, 1-Phase, 60 Hz
	Recommended Fuse/Breaker Size	A	40
	MCA	A	30.5
Voltage	Indoor - Outdoor S1-S2	V	AC 208 / 230
	Indoor - Outdoor S2-S3	V	DC ±24
Compressor		DC INVERTER-driven Twin Rotary	
Fan Motor (ECM)		F.L.A.	2.43
Sound Pressure Level	Cooling	dB(A)	54
	Heating	dB(A)	58
External Dimensions (H x W x D)		In mm	41-9/32 x 37-13/32 x 13 1048 x 950 x 330
Net Weight		Lbs / kg	189 / 86
External Finish		Munsell No. 3Y 7.8/11	
Refrigerant Pipe Size O.D.	Liquid (High Pressure)	In / mm	1/4 / 6.35
	Gas (Low Pressure)	In / mm	A: 1/2 / 12.7 ; B,C: 3/8 / 9.52
Max. Refrigerant Line Length		Ft / m	230 / 70
Max. Piping Length for Each Indoor Unit		Ft / m	82 / 25
Max. Refrigerant Pipe Height Difference	If IDU is Above ODU	Ft / m	49 / 15
	If IDU is Below ODU	Ft / m	49 / 15
Connection Method		Flared/Flared	
Refrigerant		R410A	

\* Rating Conditions per AHRI Standard:

Cooling | Indoor: 80° F (27° C) DB / 67° F (19° C) WB

Cooling | Outdoor: 95° F (35° C) DB / W.B. 23.9° C (75° F)

Heating at 47°F | Indoor: 70° F (21° C) DB / 60° F (16° C) WB

Heating at 47°F | Outdoor: 47° F (8° C) DB / 43° F (6° C) WB

Heating at 17° F | Indoor: 70° F (21° C) DB

Heating at 17° F | Outdoor: 17° F (-8° C) DB / 15° F (-9° C) WB

## OPERATING RANGE:

	Outdoor
Cooling	D.B. 14 to 115° F [ D.B. -10 to 45° C ]
Heating	W.B. -13 to 65° F [ W.B. -25 to 18° C ]

## ENERGY EFFICIENCIES:

Indoor Unit Type	SEER	EER	HSPF	COP @ 47°F	COP @ 17°F
Non-ducted (06 + 06 + 09)	19.0	13.5	10.0	4.25	2.53
Ducted and Non-ducted	17.3	11.75	9.5	4.03	2.52
Ducted (09 + 09 + 09)	15.5	10.0	9.0	3.80	2.51

## NOTES:

For actual capacity performance based on indoor unit type and number of indoor units connected, please refer to MXZ Operational Performance.

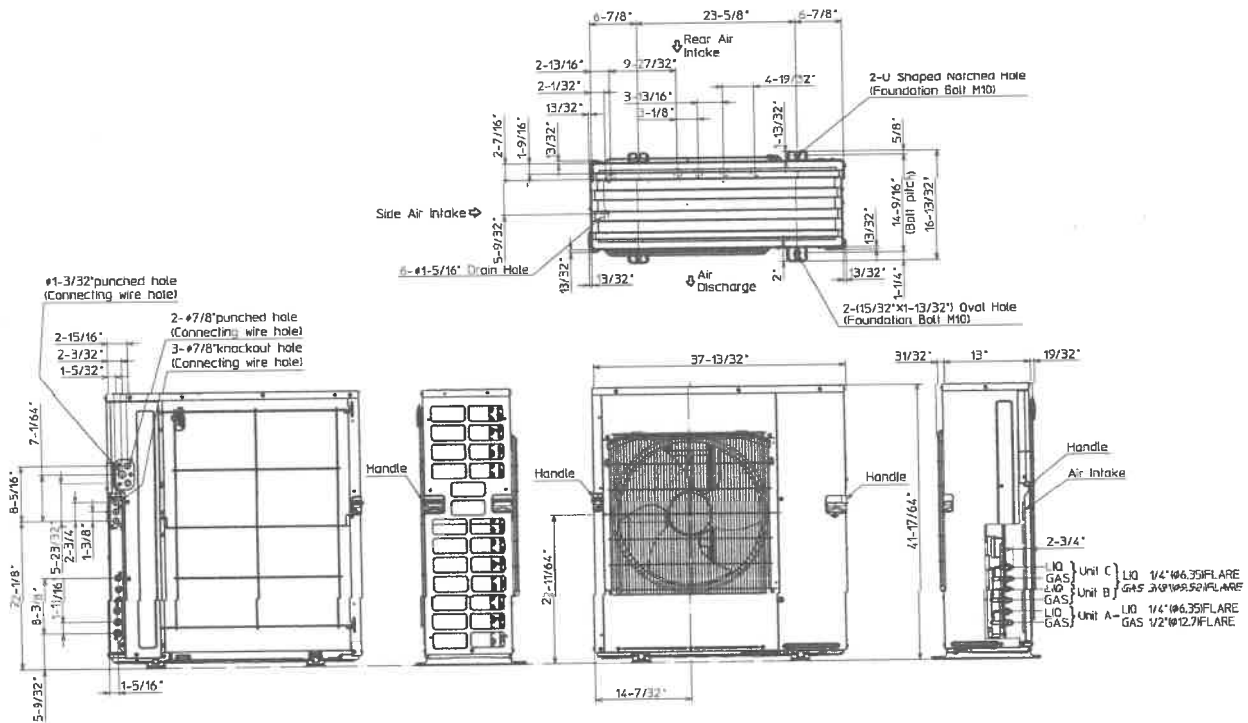
Although the maximum connectable capacity can exceed rated, the outdoor unit cannot provide more than 100% of the rated capacity. Please utilize this over capacity capability for load shedding or applications where it is known that all connected units will NOT be operating at the same time.

## OUTDOOR UNIT ACCESSORIES: MXZ-3C24NAHZ2

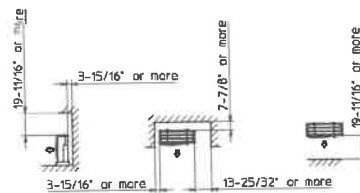
Air Outlet Guide	Air Outlet Guide (1 Piece)	<input type="checkbox"/> PAC-SH96SG-E
Ball Valve	Refrigeration Ball Valve - 1/2"	<input type="checkbox"/> BV12FFSI2
	Refrigeration Ball Valve - 1/4"	<input type="checkbox"/> BV14FFSI2
	Refrigeration Ball Valve - 3/8"	<input type="checkbox"/> BV38FFSI2
	Refrigeration Ball Valve - 5/8"	<input type="checkbox"/> BV58FFSI2
Distribution pipe for Branch Box	M-NET Converter	<input type="checkbox"/> PAC-IF01MNT-E
Hall Guards	Hall Guard	<input type="checkbox"/> HG-A1
Mounting Pad	Condensing Unit Mounting Pad: 16" x 36" x 3"	<input type="checkbox"/> ULTRILITE1
	Outdoor Unit 3-1/4 inch Mounting Base (Pair) - Plastic	<input type="checkbox"/> DSD-400P
Port Adapter	Adaptor: 1/2" x 3/8"	<input type="checkbox"/> MAC-A455JP-E
	Adaptor: 1/2" x 5/8"	<input type="checkbox"/> MAC-A456JP-E
	Adaptor: 3/8" x 1/2"	<input type="checkbox"/> MAC-A454JP-E
	Adaptor: 3/8" x 5/8"	<input type="checkbox"/> PAC-SG76RJ-E
Power Supplies and Auxiliary Components	M-Net Control Wire, 1,000' Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	<input type="checkbox"/> CW162S-1000
Power Supplies And Auxiliary Components	M-Net Control Wire, 250' Roll (16-AWG, Standard, Twisted Pair, Shielded, Jacketed- Plenum rated)	<input type="checkbox"/> CW162S-250
Stand	18" Single Fan Stand	<input type="checkbox"/> QSMS1801M
	24" Single Fan Stand	<input type="checkbox"/> QSMS2401M
	Condenser Wall Bracket	<input type="checkbox"/> QSWB2000M-1
	Condenser Wall Bracket -Stainless Steel Finish	<input type="checkbox"/> QSWBSS
	Outdoor Unit Stand — 12" High	<input type="checkbox"/> QSMS1201M

# OUTDOOR UNIT DIMENSIONS: MXZ-3C24NAHZ2

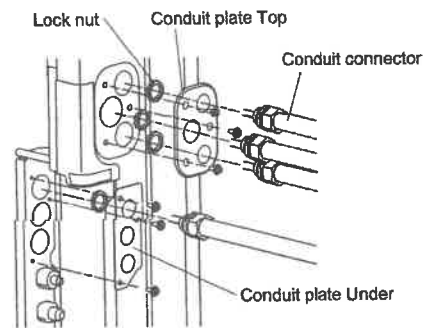
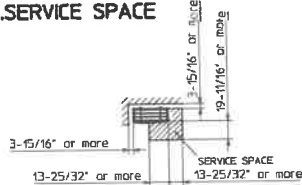
Unit: inch



## 1.FREE SPACE



## 2.SERVICE SPACE



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# P-SERIES

## SUBMITTAL DATA: PVA-A24AA7 & PUZ-HA24NHA 24,000 BTU/H AIR HANDLER HEAT PUMP SYSTEM



Job Name:

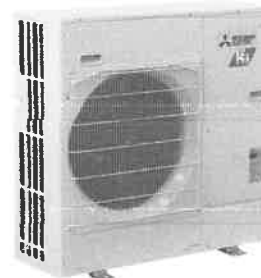
System Reference:

Date:

Indoor Unit:  
PVA-A24AA7



Outdoor Unit:  
PUZ-HA24NHA



### INDOOR UNIT FEATURES

- Ducted air handler provides a solution to cool and heat large zones
- Highly efficient totally enclosed ECM motor
- Selectable external static pressure: 0.30, 0.50 and 0.80 in.WG with 3 fan speeds at each static setting
- 1 inch R4.2 fiberglass free insulation reduces condensation and boosts efficiency
- Positive pressure cabinet with air leakage of less than 1.0% at 1.0 in.WG
- Unique blow through design allows simple coil cleaning when the blower is removed
- Multi-position installation: horizontal (left or right), vertical (up or down). For downflow configurations, the CMA-1 is recommended for proper management of condensate to prevent water blow-off in certain conditions
- Optional electric heat kit for additional heat capacity
- Optional humidifier control and ERV control

### OUTDOOR UNIT FEATURES

- Variable speed INVERTER-driven compressor
- Wide heating range: heating performance down to -13°F (average of 80% heating capacity)
- High speed heating at start up: Hyper-Heating INVERTER® reduces the time for heating at start up by about half compared to standard models
- Power receiver pre-charged with refrigerant volume for piping length up to 70 ft.
- High pressure/temperature protection

# SPECIFICATIONS: PVA-A24AA7 & PUZ-HA24NHA

Cooling <sup>1</sup>	Maximum Capacity	BTU/H	24,000
	Rated Capacity	BTU/H	24,000
	Minimum Capacity	BTU/H	10,000
	Maximum Power Input	W	2,100
	Rated Power Input	W	2,100
	Moisture Removal	Pints/h	3.7
	Sensible Heat Factor		0.83
	Power Factor	%	90
Heating at 47°F <sup>2</sup>	Maximum Capacity	BTU/H	28,000
	Rated Capacity	BTU/H	26,000
	Minimum Capacity	BTU/H	10,000
	Maximum Power Input	W	2,200
	Rated Power Input	W	1,980
	Power Factor	%	89
Heating at 17°F <sup>3</sup>	Maximum Capacity	BTU/H	26,000
	Rated Capacity	BTU/H	17,500
	Maximum Power Input	W	3,550
	Rated Power Input	W	1,950
Heating at 5°F <sup>4</sup>	Maximum Capacity	BTU/H	26,000
	Maximum Power Input	W	3,810
Efficiency	SEER		19.0
	EER <sup>1</sup>		11.4
	HSPF (IV)		11.0
	COP at 47°F <sup>2</sup>		3.84
	COP at 17°F <sup>3</sup>		2.14
	ENERGY STAR® Certified (ENERGY STAR products are third-party certified by an EPA-recognized Certification Body)		No
Electrical	Voltage, Phase, Frequency		208 / 230V, 1-phase, 60 Hz
	Guaranteed Voltage Range	V AC	198 – 253
	Voltage: Indoor - Outdoor, S1-S2	V AC	208 / 230
	Voltage: Indoor - Outdoor, S2-S3	V DC	24
	Voltage: Indoor - Remote controller		Optional
	Recommended Fuse/Breaker Size (Outdoor)	A	25
	Recommended Wire Size (Indoor - Outdoor)	AWG	14
	MCA	A	4.13
Indoor Unit	Fan Motor Full Load Amperage	A	3.30
	Fan Motor Output	W	244
	Airflow Rate, Dry	CFM	613-744-875
	Airflow Rate, Wet	CFM	-
	External Static Pressure	in.WG	0.30-0.50-0.80
	Sound Pressure Level	dB(A)	32-36-40

# SPECIFICATIONS: PVA-A24AA7 & PUZ-HA24NHA

	Drain Pipe Size	In. (mm)	3/4 (19.05)
	Heat Exchanger Type		Plate fin coil
	External Finish Color		Galvanized steel cabinet - Powder coated Slate Gray
	Unit Dimensions	W: In. (mm)	21 (534)
		D: In. (mm)	21-5/8 (548)
		H: In. (mm)	54-1/4 (1,378)
	Package Dimensions	W: In.	64 (141)
		D: In.	-
		H: In.	-
	Unit Weight	Lbs. (kg)	-
	Package Weight	Lbs.	-
Indoor Unit Operating Temperature Range	Cooling Intake Air Temp (Maximum / Minimum)	°F	90 DB, 73 WB / 67 DB, 59 WB
	Heating Intake Air Temp (Maximum / Minimum)	°F	83 DB / 50 DB
Outdoor Unit	MCA	A	19
	MOCP	A	26
	Fan Motor Full Load Amperage	A	0.40
	Fan Motor Output	W	86
	Airflow Rate	CFM	1,940
	Refrigerant Control		Linear expansive valve
	Defrost Method		Reverse Cycle
	Heat Exchanger Type		Plate Fin Coil
	Sound Pressure Level, Cooling <sup>1</sup>	dB(A)	52
	Sound Pressure Level, Heating <sup>2</sup>	dB(A)	53
	Compressor Type		Scroll
	Compressor Model		DNB28FBAMT
	Compressor Rated Load Amps	A	9
	Compressor Locked Rotor Amps	A	18
	Compressor Oil Type // Charge	Lbs, oz	FVC68D // 7,11
	External Finish Color		Ivory Munsell 3Y 7.8/1.1
	Base Pan Heater		n/a
	Unit Dimensions	W: In. (mm)	37-13/32 (950)
		D: In. (mm)	13 + 1-3/16 // (330 + 30)
		H: In. (mm)	37-1/8 // (943)
	Package Dimensions	W: In.	41-15/16 (1,040)
		D: In.	18 (450)
		H: In.	41-11/16 (1,033)
	Unit Weight	Lbs. (kg)	188 (85)
	Package Weight	Lbs.	206 (93)
Outdoor Unit Operating Temperature Range	Cooling Intake Air Temp (Maximum / Minimum)	°F	115 DB / 23° DB
	Heating Intake Air Temp (Maximum / Minimum)	°F	70 DB / -13 DB
	Thermal Lock-out / Re-start Temperatures**	°F	-17 / -13

## SPECIFICATIONS: PVA-A24AA7 & PUZ-HA24NHA

Refrigerant	Type		R410A
	Charge	Lbs, oz	7 lbs, 11 oz
Piping	Gas Pipe Size O.D. (Flared)	In.(mm)	5/8 (15.88)
	Liquid Pipe Size O.D. (Flared)	In.(mm)	3/8 (9.52)
	Maximum Piping Length	Ft. (m)	165 (50)
	Maximum Height Difference	Ft. (m)	100 (30)
	Maximum Number of Bends		15

### Notes

AHRI Rated Conditions (Rated data is determined at a fixed compressor speed)	<sup>1</sup> Cooling (Indoor // Outdoor)	°F	80 DB, 67 WB // 95 DB, 75 WB
	<sup>2</sup> Heating at 47°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 47 DB, 43 WB
	<sup>3</sup> Heating at 17°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 17 DB, 15 WB
Conditions	<sup>4</sup> Heating at 5°F (Indoor // Outdoor)	°F	70 DB, 60 WB // -4 DB, -5 WB

### Notes

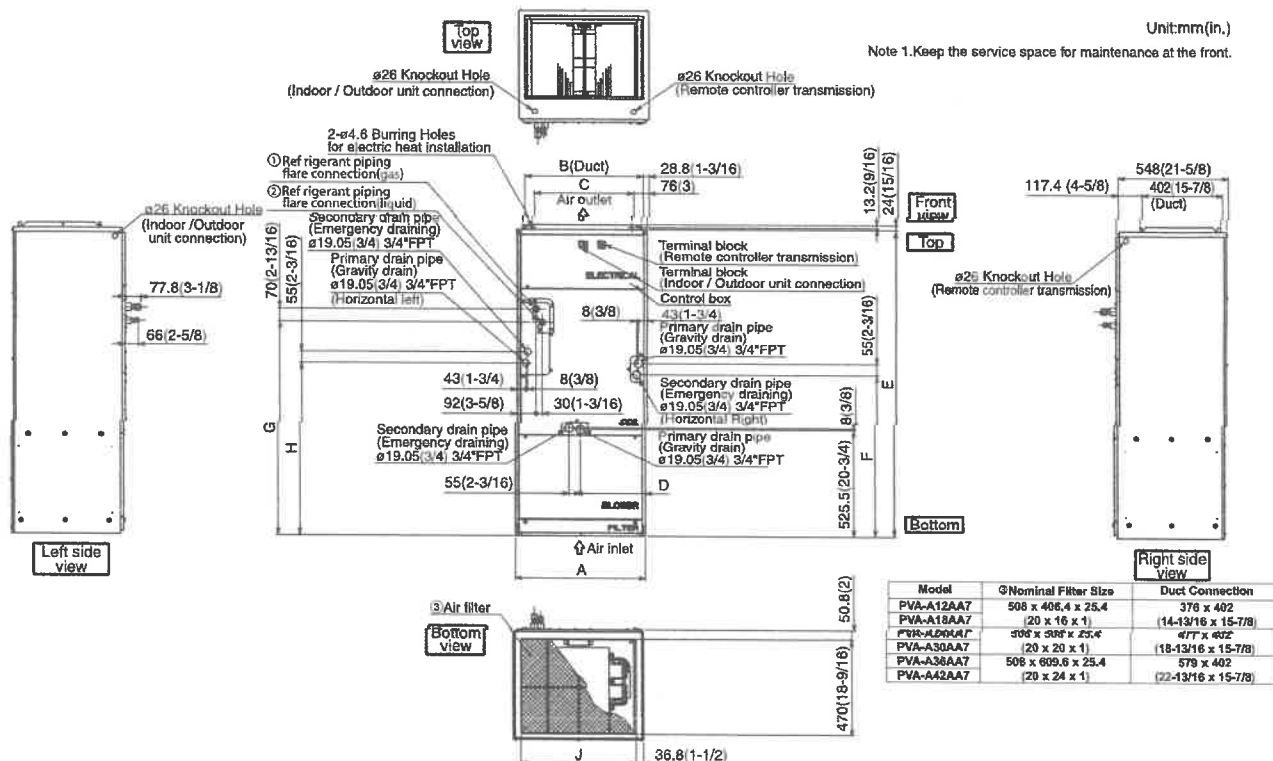
\*Wind baffles required to operate below 23°F DB in cooling mode. PUZ with wind baffle: 0°F - 115°F.

\*\*System cuts out in heating mode to avoid thermistor error and automatically restarts at these temperatures.

# DIMENSIONS: PVA-A24AA7

Unit:mm(in.)

Note 1.Keep the service space for maintenance at the front.



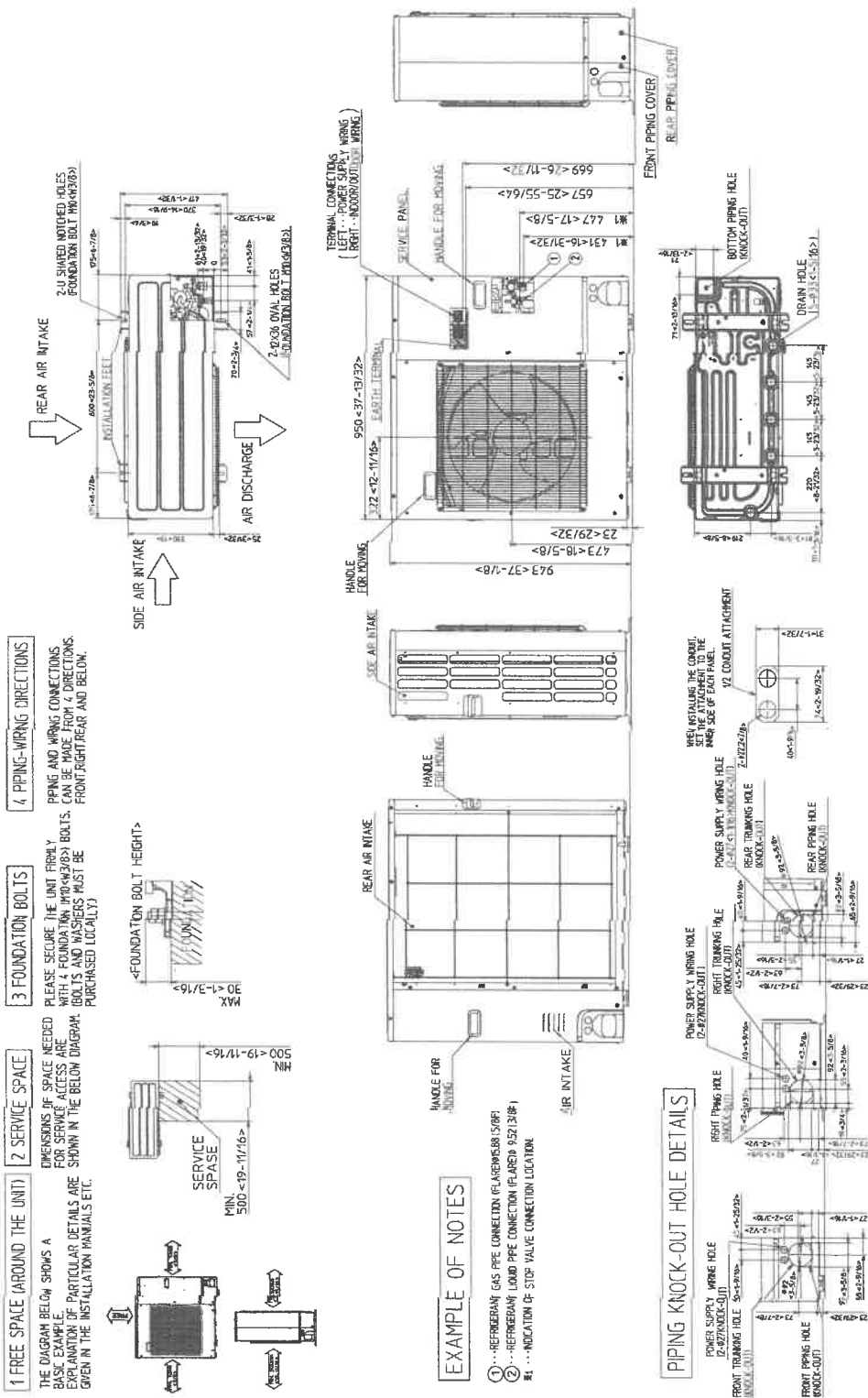
Model	ΦNominal Filter Size	Duct Connection
PVA-A12AA7	508 x 406.4 x 25.4	378 x 402
PVA-A18AA7	(20 x 16 x 1)	(14-13/16 x 15-7/8)
PVA-A24AA7	508 x 508 x 25.4	477 x 402
PVA-A30AA7	(20 x 20 x 1)	(18-13/16 x 15-7/8)
PVA-A36AA7	508 x 609.6 x 25.4	579 x 402
PVA-A42AA7	(20 x 24 x 1)	(22-13/16 x 15-7/8)

Model	A	B	C	D	E	F	G	H	J	①Gas Pipe	②Liquid Pipe
PVA-A12AA7	432 (17)	376 (14-13/16)	281 (11-1/8)	224 (8-7/8)	1275 (50-1/4)	680 (26-13/16)	823 (32-7/16)	735.5 (29)	360 (14-3/16)	Φ 12.7 (1/2)	Φ 6.35 (1/4)
PVA-A18AA7	534 (21)	477 (18-13/16)	382.6 (15-1/8)	266.5 (10-1/2)	1378 (54-1/4)	737 (29-1/16)	953.5 (37-9/16)	792 (31-3/16)	461 (18-3/16)	Φ 15.88 (5/8)	Φ 9.52 (3/8)
PVA-A24AA7	635 (25)	579 (22-13/16)	484.6 (19-1/8)	317.5 (12-1/2)	1511 (59-1/2)	798.5 (31-7/16)	1053 (41-1/2)	853.5 (33-5/8)	563 (22-3/16)		



# DIMENSIONS: PUZ-HA24NHA

Unit: mm<inch>



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# M-SERIES

## SUBMITTAL DATA: SVZ-KP18NA & SUZ-KA18NAR1 18,000 BTU/H AIR HANDLER HEAT-PUMP SYSTEMS



Job Name:

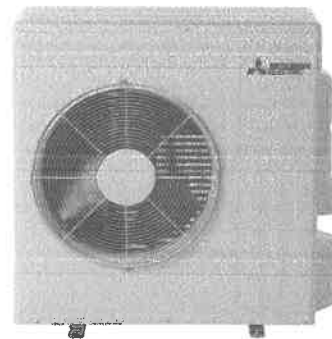
System Reference:

Date:

Indoor Unit:  
SVZ-KP18NA



Outdoor Unit:  
SUZ-KA18NAR1



### GENERAL FEATURES

- Ducted air handler provides a solution to cool and heat larger zones
- Highly efficient completely enclosed EC motor
- Selectable external static pressure: 0.30, 0.50 and 0.80 in.WG with 3 fan speeds at each static setting
- 1 inch R4.2 fiberglass free insulation reduces condensation and increases efficiency
- Positive pressure cabinet with air leakage of less than 2.0% at 1.0 in. w.g. (Tested per ASHRAE Standard 193)
- Unique blow through design allows simple coil cleaning when the blower is removed
- Multi-position installation: horizontal (left or right), vertical (up flow)
- Optional electric heat kit for additional heating capacity
- Optional humidifier control, ERV control and auxiliary heat control

### OUTDOOR UNIT FEATURES

- Variable speed INVERTER-driven compressor
- Innovative Joint Lap DC Motor leads to high efficiency and reliability
- Pulse Amplitude Modulation technology
- High-performance grooved piping for increased heat exchange efficiency

# SPECIFICATIONS: SVZ-KP18NA & SUZ-KA18NAR1

Cooling <sup>1</sup>	Maximum Capacity	Btu/h	18,000
	Rated Capacity	Btu/h	18,000
	Minimum Capacity	Btu/h	4,300
	Maximum Power Input	W	1,440
	Rated Power Input	W	1,440
	Moisture Removal	Pints/h	2.30
	Sensible Heat Factor		0.86
	Power factor	%	89.0
Heating at 47°F <sup>2</sup>	Maximum Capacity	Btu/h	22,800
	Rated Capacity	Btu/h	22,800
	Minimum Capacity	Btu/h	7,700
	Maximum Power Input	W	1,870
	Rated Power Input	W	1,870
	Power factor	%	90.0
Heating at 17°F <sup>3</sup>	Maximum Capacity	Btu/h	11,600
	Rated Capacity	Btu/h	11,600
	Maximum Power Input	W	1,470
	Rated Power Input	W	1,470
Efficiency	SEER		17.6
	EER *1		12.5
	HSPF (IV)		10.4
	COP at 47° F <sup>2</sup>		3.70
	COP at 17° F <sup>3</sup>		2.30
	ENERGY STAR® Certified (ENERGY STAR products are third-party certified by an EPA-recognized Certification Body.)		Yes
Electrical	Voltage, Phase, Frequency		208/230V, 1-phase, 60Hz
	Guaranteed Voltage Range	V AC	187 - 253
	Voltage: Indoor - Outdoor, S1-S2	V AC	208 / 230
	Voltage: Indoor - Outdoor, S2-S3	V DC	24
	Voltage: Indoor - Remote controller	V DC	12
	Recommended Fuse/Breaker Size	A	15
	Recommended Wire Size (Indoor - Outdoor)	AWG	14
	MCA	A	3
Indoor unit	Fan Motor Full Load Amperage	A	2.4
	Fan Motor Output	W	121
	Airflow Rate, Dry	CFM	471-573-675
	Airflow Rate, Wet	CFM	471-573-675
	External Static Pressure	in.WG	0.3 - 0.5 - 0.8
	Sound Pressure Level at 0.14 in. WG	dB(A)	33-36-41
	Drain Pipe Size	In. (mm)	3/4 (19.05) FPT
	Condensate Lift Mechanism, Max. Distance	In. (mm)	N/A

# SPECIFICATIONS: SVZ-KP18NA & SUZ-KA18NAR1

	Heat Exchanger Type		Plate fin coil
	External finish color		Hot-dip coated steel (ZAM)
	Unit Dimensions	W: In. (mm)	17 (432)
		D: In. (mm)	21-5/8 (548)
		H: In. (mm)	39-13/16 (1,011)
	Package Dimensions	W: In. (mm)	18 (460)
		D: In. (mm)	28-3/4 (730)
		H: In. (mm)	44-3/8 (1,130)
Indoor unit operating temperature range	Unit Weight	Lbs. (kg)	93 (42)
	Package Weight	Lbs.	106
	Cooling Intake Air Temp (Maximum / Minimum)	°F	95 DB, 71 WB / 67 DB, 57 WB
Outdoor Unit	Heating Intake Air Temp (Maximum / Minimum)	°F	80 DB, 67 WB / 70 DB, 60 WB
	MCA	A	14
	MOCP	A	15
	Fan Motor Full Load Amperage	A	0.93
	Fan Motor Output	W	77
	Airflow Rate	CFM	1,730 / 1,659
	Refrigerant Control		LEV
	Defrost Method		Reverse cycle
	Heat Exchanger Type		Plate fin coil
	Sound Pressure Level, Cooling <sup>1</sup>	dB(A)	54
	Sound Pressure Level, Heating <sup>2</sup>	dB(A)	56
	Compressor Type		DC INVERTER-driven Twin Rotary
	Compressor Model		SNB130FQBH
	Compressor Rated Load Amps	A	10.0
	Compressor Locked Rotor Amps	A	12.5
	Compressor Oil Type // Charge	oz.	NEO22 // 15.2
	External Finish Color		Munsell 3Y 7.8/1.1
	Base Pan Heater		Optional (MAC-642BH-U1)
	Unit Dimensions	W: In. (mm)	33-1/16 (840)
		D: In. (mm)	13 (330)
		H: In. (mm)	33-7/16 (850)
	Package Dimensions	W: In. (mm)	40 (1,020)
		D: In. (mm)	18-1/2 (470)
		H: In. (mm)	39 (990)
	Unit Weight	Lbs. (kg)	119 (54)
	Package Weight	Lbs. (kg)	146 (66)
Outdoor Unit Operating Temperature Range	Cooling Air Temp (Maximum / Minimum)	°F	115 / 14
	Cooling Thermal Lock-out / Re-start Temperatures**	°F	-7 / -4
	Heating Air Temp (Maximum / Minimum)	°F	75 / 12
	Heating Thermal Lock-out / Re-start Temperatures**	°F	-7 / -4

## SPECIFICATIONS: SVZ-KP18NA & SUZ-KA18NAR1

Refrigerant	Type		R410A
	Charge	Lbs, oz	3, 16
Piping	Gas Pipe Size O.D. (Flared)	In.(mm)	1/2 (12.7)
	Liquid Pipe Size O.D. (Flared)	In.(mm)	1/4 (6.35)
	Maximum Piping Length	Ft. (m)	100 (30)
	Maximum Height Difference	Ft. (m)	50 (15)
	Maximum Number of Bends		10

### Notes

AHRI Rated Conditions (Rated data is determined at a fixed compressor speed)	<sup>1</sup> Cooling (Indoor // Outdoor)	°F	80 DB, 67 WB // 95 DB, 75 WB
	<sup>2</sup> Heating at 47°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 47 DB, 43 WB
	<sup>3</sup> Heating at 17°F (Indoor // Outdoor)	°F	70 DB, 60 WB // 17 DB, 15 WB

\*Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.  
 \*\*System cuts out at -7°F (-21.7°C) to avoid thermistor error and automatically restarts at -4°F (-20°C).