



YMGI, Engineered Comfort Products for A Sustainable and Efficient Green World!

INSTALLATION INSTRUCTIONS & USER MANUAL

Wall Mount Mini Split Systems

SYMPHONY SOLAR DC INVERTER SINGLE ZONE (86) Series

09-24k, 24 & 48v DC Solar Powered Cooling and Heat Pump

**ALL DC
OFF-GRID (86)**

IDU Model Numbers:

WMMS-09ES-V24(86)

WMMS-12ES-V48(86)

WMMS-18ES-V48(86)

WMMS-24ES-V48(86)

ODU Model Numbers:

WMMS-09CS-V24(86)

WMMS-12CS-V48(86)

WMMS-18CS-V48(86)

WMMS-24CS-V48(86)



Thank you for choosing this YMGI product. Please read the owner's manual carefully before installation and operation and retain for your records and future reference. If you need a replacement copy, please contact your local agent or visit www.ymgigroup.com to download a current electronic version.

NOTICE

This product is designed and manufactured to be free from any defects in material and workmanship during normal use and maintenance. Installation, operation, maintenance and repair must follow all standards and professional practices for regular cooling and heating equipment, such as NEC, State, or Local Codes and all related documents/manuals provided by YMGI. Failure to follow and adhere to all codes and documentation can cause damage to equipment, property even personal injury.

Installer: Currently licensed/certified HVAC technicians only. Must Read the manual and all provided documents prior to installation. Complete and fill out all required information on the warranty registration card.

User: Retain this manual and all supplied documents for your records and future reference.

Service: Use this manual for information concerning servicing and maintenance of this product.

SAFETY WARNING

Only qualified technicians should install and service this equipment. The installation, startup, operation and servicing of this equipment can be hazardous and requires a HVAC professional who has been trained, licensed and certified. Installations, adjustments or any equipment alterations done by an unqualified person could result in serious injury and even death. When working on the equipment, observe all precautions in the provided documents, on the tags, stickers, and labels that are attached to or placed on the equipment.



TABLE OF CONTENTS

Introduction 3

Note From YMGI – **Must Read** 5

Installing Technician/Contractor's Responsibilities 7

Limited Product Warranty 8

Limited Product Warranty Registration Card 10

Why Does YMGI Group Require Installation and Service to Be Performed
100% By Currently Licensed or Certified HVAC Technicians/Contractors 11

Suggestions to Aid You in Hiring an HVAC Contractor 11

Safety Precautions 12

Application Notice 14

Breif Introduction to Mini Split Wall Mount Systems 16

System Layout 18

Connection of Wires at Indoor and Outdoor Unit 20

Engineering Submittals Unit Specifications 26

Engineering Submittals Unit Dimensions 27

Air Conditioner Components 29

Installation Clearance Requirements 33

Recommended Tools for Installation 32

Installation of Indoor Unit 34

Installation of Outdoor Unit 37

Specifications for Sample 200W PV Module 38

Installation of PV Module 40

Piping Connections 43

Accessories Installation 46

Vacuum Testing and Charging 47

Check after Installation 50

Remote Control Buttons 51

Remote Control Functions 52

Charge Controller Operation Instructions 54

Charge Controller Technical Data 56

Common Faults and Solutions 57

Trouble Shooting and Error Codes 58

Cleaning and Care 59

Wiring Diagrams 61

RT Conversion Tables 62

User Notes and Installation/Service/Maintenance Notes 64



Introduction

Read this manual carefully, making sure you understand all the instructions, practices and procedures contained in this manual. Be sure you are familiar with all the safety advisories that appear throughout this manual. Your personal safety depends upon your observance of all precautions contained in this manual.

Safety advisories appear throughout this manual and your personal safety and the proper operation of this appliance depend upon the strict observance of these precautions.

The 3 types of advisories are defined in the following table:

⚠ WARNING	Indicates a potentially hazardous situation which if not avoided could result in serious injury or even death.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE	Indicates a situation that could result in equipment or property-damage only. It can also be used to call attention to important details within this manual.

Important Environmental Concerns

Studies have shown that certain man-made chemicals can affect the earth's stratospheric ozone layer when released into the atmosphere. Refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs), may affect the ozone layer. Not all refrigerants have the same potential impact on the environment. YMG Group advocates for the responsible handling of all refrigerants including industry replacements for CFCs such as HCFCs and HFCs.

Responsible Refrigerant Practices

YMG Group believes that responsible refrigerant practices are important to our customers, the HVAC/R industry and the environment. All HVAC/R technicians who handle refrigerants must be certified. The Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants, the equipment and tools necessary to perform these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. HVAC/R technicians must know the applicable laws and follow them.

Disposal Notice

Do not dispose this product or its components as unsorted municipal waste, as they contain items that may require special treatment. Contact your local waste management company for details.

⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow established electrical codes can result in death, serious personal injury and property damage. All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow the requirements for field wiring installation and grounding as described in this manual and by NEC and your state and local electrical codes.

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in serious injury or even death. Technicians must take the necessary precautions to protect themselves from potential electrical, mechanical, and chemical hazards and **MUST** follow all precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- Before installing or servicing this unit, technicians **MUST** put on all PPE recommended for the work being undertaken. **ALWAYS** refer to appropriate Material Safety Data Sheets (MSDS) and Occupational Safety and Health Administration (OSHA) guidelines for proper PPE.
- When working with or around hazardous chemicals, **ALWAYS** refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection, and handling recommendations.

If there is a risk of arc or flash, technicians **MUST** put on all PPE in accordance with NFPA 70E or other country-specific requirements for arc flash protection, **PRIOR** to servicing the unit.



Copyright

This document and the information contained therein are the sole property of YMGI Group and shall not be used or reproduced in whole or in part, without the written permission of YMGI Group. YMGI Group reserves the right to revise this manual at any time and to make changes to its content without obligation to notify anyone about any modifications, revisions or changes.

⚠ WARNING

- Instructions for installation and use of this product are provided by the manufacturer.
- Installation must be performed by authorized and licensed personnel only and in accordance with all the requirements of this manual, the NEC, CEC and any state and local codes.
- For safe operation of this unit, please read and follow all instructions carefully.
- The total operation capacity of the indoor units should not exceed 120% of the total capacity of the outdoor units if all indoor units must operate at their peak capacities all the time. Otherwise, the heating and cooling operation will be diminished and less efficient which could damage the units.
- Any person responsible for system operation or system maintenance should retain this manual for reference.
- If the unit fails to operate normally, please contact your authorized system installer or HVAC professional as soon as possible and provide the following information:
 - Data on the unit (model number, serial number and owner's name).
 - A detailed description of the unit's problem before and after the problem occurred.
- To avoid personal injury or property damage, do not disassemble the unit yourself. If disassembly is required to check the unit, contact your authorized system installer or HVAC professional as they have the experience and training necessary to perform this task.

Note: Each unit has been thoroughly tested to ensure it operates correctly before leaving the factory.

Basic Cautions and Warnings

⚠ CAUTION

All units shall be installed by an experienced HVAC licensed contractor or technician. Read all manuals before installation, startup and operation.

⚠ CAUTION

All NEC, state, local codes and installation instructions must be followed for all units, otherwise, the unit warranty will be void and could result in serious damage to people or property.

⚠ WARNING

YMGI Group is not responsible for any damage or loss due to Do-It-Yourself (DIY), self-installation or any improper installation, improper operation, improper service or natural disasters of any kind.

⚠ WARNING

Do not connect power to the unit until all wiring, tubing and all unit inspections and testing have been completed. Ground the unit according to the instructions and adhering to NEC, state and local codes.

⚠ WARNING

All wiring connections must be correct and secure. Loose wire(s) or improper contacts may cause arcs or overheating which can result in a fire hazard.





Note From YMGI – Must Read

Dear Customers, Purchasers, Installers, and Contractors

Thank you for choosing an YMGI product.

All YMGI's products are fully tested and have passed rigorous safety, performance and manufacturing standards before being packed and shipped. YMGI only uses suppliers that meet our strict standards for high quality and performance for all parts. YMGI also recognizes a quality installation is equally important therefore your system must be installed by a licensed HVAC professional. A quality installation ensures your unit will operate at its highest efficiency and peak performance for many years of worry free comfort; while a poor installation can result in unit failure and cause the unit to operate inefficiently, either immediately or over time, resulting in costly repairs.

Because a quality installation is so critical, YMGI provides detailed information in our manuals which will aid the installing technician and the owner of the unit(s).

At YMGI our goal is to ensure that your YMGI units are installed properly and correctly from the beginning.

The YMGI equipment you purchased is either a split-type or a self-contained cooling/heating system. These types of systems require a certified and licensed HVAC professional technician for proper installation. Only a certified and licensed HVAC professional technician will have the knowledge, experience, and attention for all required details to perform a complete and successful installation. This equipment is different from a window or portable type air conditioners you can purchase from local retail stores such as Home Depot, Lowe's, Sears, etc. which the manufacturer may not require certified and licensed personnel to install.

Reading and following YMGI Group recommendations and requirements contained in the following pages and other documents, is the first step to help ensure a smooth installation and proper operation of your unit for many years.

⚠WARNING

YMGI doesn't recommend nor allow any do-it-yourself (DIY) installation (partially or fully). Due to the complexity of the installation of this product most DIY installations usually have problems, either immediate or near future. These problems can cost more to fix than any upfront savings. **YMGI warranty doesn't cover any DIY units.**

If you have any questions about your unit or if the unit has a problem, you should first check the manual. If you can't find a solution, then contact your local installer or service technician to schedule a service appointment. The technician can physically inspect the unit. If at the time of inspection, the installer or service technician has any questions about the unit, they can contact YMGI technical support division directly at:

Toll Free Number: (866)833-3138 or Email: techsp@ymgigroup.com

IMPORTANT:

YMGI Group is the MEDIA AUTHORITY:

YMGI Group, located in O'Fallon, MO 63366 is the author of all media produced for its products and is the only party able to give any additional explanation for any data, definitions and or descriptions found within any of its media, including but not limited to YMGI product brochures, manuals, pamphlets, catalogs, and videos. YMGI's distributors, installers, dealers, agents, customers or any other third parties will not supersede YMGI in anyway concerning YMGI-published materials and their meaning. Any concerns or questions arising from YMGI distributors, installers, dealers, agents, customers or any other third parties, should be presented directly to YMGI. YMGI will respond to any concerns or questions, if necessary, about any of its media in writing.





NOTICE

- Be sure to only hire a certified and currently licensed HVAC Company to complete 100% of the installation so that all details of the installation are performed correctly and completely.
- Be sure to have ONLY the licensed HVAC professional perform all aspects of the installation. Factory Warranty will be void if any portion of the installation is not performed by a licensed HVAC contractor/technician. DIY or partial DIY will also void ALL factory warranties.
- When hiring an HVAC technician that is offering their services as a "side job" and not hiring a licensed HVAC company may pose possible risk. This may result in an incomplete or unsatisfactory installation, no guarantee for workmanship and lack of maintenance and further service to your unit.
- Have the installation technician read in full the installation manual and all supplied documents for the product model you purchased. Details within the documentation contributes greatly to the success and quality of the installation. Experience with other manufacturers may not be applied fully to another manufacturer, although there will be similarities there will also be differences. Ignoring the provided installation procedures is an act of negligence and may cause unit failure or damage which could be irrevocable and permanent.
- It is possible for a licensed contractor/technician to make a mistake during the installation. YMGI doesn't supervise nor is able to control the contractor/technician's installation. It is critical that the installer take each variable into account during the initial installation. This will ensure a complete and professional installation and that all units work properly.

⚠WARNING

The following will damage the unit and its key components resulting in loss of factory warranty:

1. Any foreign substances introduced into the system because of failure to seal the ends of the refrigeration piping before pulling the piping through any structures at time of installation.
2. Not installing an oil P-trap in the copper suction line where the indoor unit is located 18 feet or more below the outdoor unit.
3. Cross piping and/or cross wiring of any units including more than one single zone or a multi zone system.
4. Not conducting a positive leak check by charging the system with dry-nitrogen and performing soap bubble testing.
5. Not conducting a negative leak check by evacuating the copper lines for 30 minutes. Vacuum must be held at 500 microns or better for at least 5 minutes, starting 5-minute timer after the vacuum pump is turned off.
6. Not conducting a positive leak check prior to the negative leak check.
7. Not selecting the correct size wire or circuit breaker.
8. Not answering ALL questions in the technician's checklist located inside the warranty registration form.

⚠WARNING

The following may be overlooked, ignored, or considered unimportant during your installer's installation, but will cause your unit to underperform and may cause unit failure.

1. Any kinks in or improper bending of the copper piping.
2. Any poorly formed flares or not centering the flare with the flare nut, or not tightening all connections.
3. Not testing each indoor unit individually.
4. Not reading technical data (temp/time/pressure/current) after the system is stabilized (normally the compressor needs to run at least 10 minutes before reading the data). If the data is read too early may lead to inaccurate assessments about the unit.

In an effort to help protect our customers from possible faulty installations that can lead to premature unit failure, YMGI provides the above information for you and the technician. You can observe while your system is being installed, even though your observation is not a guarantee your system is being or has been installed properly and professionally. With the information provided above, you will know some things to look for and questions you can ask. If at any time you feel there may be an issue with the installation, please have your technician contact YMGI at (866)833-3138 x 703 with any questions, issues or concerns you may have.





INSTALLING TECHNICIAN/CONTRACTOR'S RESPONSIBILITIES

1. Discuss with the customer detailed information about the structure to be conditioned, local weather (typical design, extreme temperature/humidity conditions, cooling and heating hours), previous and existing HVAC equipment (if any), usage and dependence on new HVAC equipment or YMGI products.
2. Performing a cooling/heating load calculation by using commercially available professional programs/methods such as Right-J (Manual J) for residential HVAC applications and Right-CommLoad (ASHRAE RTS/CLTD) for light commercial and commercial HVAC applications.
3. Contact your YMGI distributor/sales department or contact the manufacturer directly to obtain additional information to fully understand your YMGI products, including but not limited to product features, cooling/heating performance at standard ratings/conditions and extreme conditions, allowed indoor and outdoor temperature and humidity ranges, installation, operation, maintenance, service, warranty, parts and any other issues pertaining to YMGI products.
4. Select the correct (most suitable) YMGI product unit models and accessories necessary for your HVAC applications and list them in the proposal/quote, in writing, on company's quotation form or letter head, based upon the information you collected from 1), 2) and 3).
5. List your currently valid HVAC license number and EPA number in your proposal/quote.
6. Make sure you are the only party to perform the entire installation and you will not sub-contract any part of the installation to any non-licensed parties or persons. You will be solely responsible for the entire installation that you have been contracted.
7. Make sure you have all the materials you need to properly, completely and correctly finish the installation. The YMGI units and accessories may be just a portion of what you will need for the project. When support issues arise, remember YMGI employees and YMGI distributors/sales, dealers and agents are not installers and may only provide suggestions. You are the only decision maker to determine what other materials you need to complete the installation.
8. When connecting electrical wires, follow all NEC, state and local codes and ensure the installation of all YMGI units and accessories meet these requirements.
9. Connect the unit to a correctly sized electrical power source. If the unit is installed in an area where lightning or storms occur frequently, a correctly sized and type of power surge protector must be installed between the outdoor unit and the power source.
10. Select the correct types and sizes of HVAC circuit breakers, disconnect switch boxes, wires and conduit from circuit breaker to disconnect box and then from disconnect box to outdoor unit.
11. Select the proper location for installing indoor units and outdoor units with all factory requirements being followed (cooling/heating air inlets and outlets are not blocked or restricted, mounting structure is secure, installation for convenience is considered, allow adequate clearance for maintenance/service and all applicable codes are met).
12. Cap/tape the two ends of every copper line before running them through any structure to keep any foreign substances from entering the pipe causing contamination. Label them A-A, B-B, C-C, D-D, or any other identifying marks on each pair of copper lines and wiring cable sets to keep from cross-piping or cross-wiring in multiple zone installations or where pipes for different single zone systems are close to one another.
13. Secure the wiring cables that connect between the indoor unit and outdoor unit, following all applicable NEC, state and local codes for your installation. If there is no special NEC, state or local codes to govern how these wires are to be installed, you can tape/cable tie them along with insulated copper line.
14. Tighten all pipe and wire connections ensuring there is no leakage or false connections.
15. Conduct a positive pressure leakage test, checking each of the inter-connecting copper lines between each indoor unit and outdoor unit by charging with dry-nitrogen at the outdoor unit's service port (note: do not back-seat stopping valve). A liquid soap solution shall be applied at all pipe connections to check for leakage. A 1/4" - 5/16" hose/valve adaptor may be needed if you have a 1/4" traditional manifold hose connection.
16. If there is no positive leaking, then conduct a negative pressure leakage test, checking all inter-connecting copper lines between each indoor unit and outdoor unit by pulling vacuum at the outdoor unit's service port (note: do not back-seat stopping valve) and checking that the vacuum level of 500 Microns can be held for at least 20 minutes.
17. If there is no leakage found at any of the refrigeration pipe connections, flip up the indoor unit's face panel and remove filter, carefully pour some clear water onto the up-right aluminum coil surface to test if the water can drain out of each the indoor unit's freely without finding any leakage.
18. If there is water leakage found, locate the source of the leak and correct it. Only after everything is clear, engage the correct electrical power to the system.
19. Then back-seat stopping valves of the outdoor unit to release refrigerant from the outdoor unit into the inter-connecting pipes and indoor unit.
20. Make sure both the indoor unit and outdoor unit are powered on correctly, operating the indoor unit in fan mode first. Then move on to test cooling, dehumidifying/drying, heating and other modes.
21. Read refrigerant pressures and pipe/valve temperatures only after the system is stabilized (normally 10 minutes after cooling/heating mode is started successfully). Record this data into the technician checklist in the lower half section of the Limited Product Warranty Registration Card/Form.
22. Adjust refrigerant charging level (remove refrigerant if pipe is shorter, the temperature is colder; add refrigerant if pipe is longer the temperature is warmer), following the manufacturer's instructions. If the average pipe length is shorter or longer than 25' and pressure/temperature readings at the outdoor unit service valves are not falling into normal ranges.
23. Explain to the user/owner about proper unit operation and maintenance. Leave your contact information to allow them to reach you. If the customer finds the unit doesn't work properly and cannot resolve the issue themselves, check the customer's units/parts/accessories and correct the issue if there is one. Communicate with YMGI-technical support line at (866)833-3138 x 703, if further help necessary.

Following these requirements will aid in ensuring that the units to be installed meet general HVAC practicing standards and necessary factory requirements. Finding any possible problems early, preventing any further damage to the unit will help to ensure a properly working unit for many years.





LIMITED PRODUCT WARRANTY

Once the installation and successful testing of the system has been completely performed by a qualified licensed/certified HVAC technician/contractor, the registration card/form is filled out completely and correctly, and filed along with a valid installation invoice from the contractor within 7 days of the original installation, the following standard **Limited Product Warranty** is qualified: **7-years** on the **compressor** and **2-year** on **PARTS ONLY**. There is **no labor coverage**.

YMGI products are designed and manufactured free from defects in workmanship, and materials for normal use. However, if for any reason, including occasionally transporting between YMGI factories/warehouses and your delivery location, you discover the unit has issues, YMGI Group will help field a solution by following YMGI's established warranty procedures:

Compressor: YMGI will warrant the compressor of an YMGI-validated and approved warranty filing, for a period of 7 years from the date of successful installation at its original installation location.

Parts: YMGI will warrant parts of an YMGI-validated and approved warranty filing, for 2 years from the date of successful installation at original installation location.

All warranty compressors and parts replaced will become the sole property of YMGI Group and must be returned to YMGI Group upon request. Warranty parts may be new or refurbished. All parts are tested and approved before shipping.

At no time does YMGI Group warrant labor cost of any type. Warranty will start from the date of successful installation at original installation location, or 90 days as of original shipping date from YMGI Group, whichever comes first.

This is a standard limited liability warranty and DOES NOT cover the following:

- Any damage or repairs to properties, or persons as an incident of or consequence of improper faulty transportation, installation, operation, maintenance or service.
- Any damage caused by frozen or broken water hoses or refrigeration pipes in the event of equipment failure.
- Any damage due to floods, fire, wind, lightening, accidents, corrosive atmosphere or any other conditions beyond the control of YMGI Group.
- Any damage due to interruption or inadequate electrical service to equipment.
- Any products that are installed outside the US or Canada.
- Any unit that has been moved from its original installation address.
- Any labor costs associated with the installation or service of the unit.
- Poor unit performance due to improper unit selection (SEER, Unit size).

To validate the above warranties, ALL of the following conditions must all be fulfilled:

1. The unit was fully (100%) and successfully installed by a licensed or certified HVAC technician.
2. The unit was installed following all NEC, state and local codes.
3. The unit was installed following all the information within the Instructions and User Manuals provided by YMGI Group.
4. ALL fields, especially the technician-checklist, of the **Limited Warranty Registration Card/Form** were filled completely by the installing technician and signed by both the installing company technician and the unit owner.
5. The **Limited Warranty Registration Card/Form** and a copy of the original installing company's invoice have been received by YMGI Group-Warranty Dept., POB 1559, O'Fallon, MO 63366, within 7 days of successful installation.

**No warranty filing will be validated or approved, if any one of the above conditions are not met.
Product registration doesn't guarantee the validity of this limited warranty statement.**





Steps to follow for warranty part replacement:

1. The installing or service technician must contact YMGI tech support at 1-866-833-3138 ext. 703 from the installation location to check and confirm with YMGI Technical support the exact part(s) needed to fix the problem(s).
2. YMGI will check the customer's warranty filing. There will be no charge for Parts with a validated and approved warranty. Any Parts that have not been validated and approved or have an invalid warranty filing resulting in an unapproved warranty request, will be charged accordingly.
3. ***YMGI will ground ship out the parts ASAP. Expedited shipping is available at the customer's expense.***
4. Replacement parts that have an approved warranty registration are to be warranted for the remainder of the 2-year on parts and a 7-year compressor warranty. Purchasing of replacement parts without a valid warranty filing or unapproved warranty request, will be sold as is and are not covered by any warranty.

YMGI is continually improving products with various engineering changes and these changes are made without prior notice. Such improvements or changes include but are not limited to product specification, appearance, functionality, size, packaging, etc. These improvements or changes will not void the limited warranty stated herein. YMGI is the final authority concerning this warranty policy.





LIMITED PRODUCT WARRANTY REGISTRATION FORM

Top Portion and Keep Copy A is for YMGI Internal records. Copy B is for Installer to Fill out and Mail back to YMGI. Bottom Copy C for Customer records.

For YMGI Use Only	Date:	Shipping Packing List Number:	Registration Card Serial No.
	Did the Company Pay YMGI:	Unit(s) Work Successfully:	Yes/No
	Installation Invoice Attached to the Registration Card	Hired YMGI Recommended HVAC Contractor/Technician?	Warranty Approved

Outdoor Unit Serial Number :	Indoor Unit Serial Numbers:	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
------------------------------	-----------------------------	--------	--------	--------	--------	--------	--------	--------	--------	--------	---------

Contact at Installation Location:

Name:	Phone:	Fax:
Address:	Email:	
City:	State (Province):	Country:

Contact of the Installing HVAC Contractor/Technician:

Technician Full Name (Print):	Phone:	Fax:
HVAC Technician's Company:	Email:	
Company Address:	City:	State (Province):
Currently Licensed/Certified HVAC Technician License or Certification Number:	License Approved/Certified by:	
Official Phone # to Check the License Validity:		

Checklist for Installing HVAC Technician to Verify Installation Quality, and for Warranty Processing Purpose (If not filled out completely by technician, warranty will be voided)

1) Did you install the whole system? If not, please note below.	15) Where is the outdoor unit located?	Is the outdoor unit anchored to ground or secured onto wall bracket?
Yes No % of installation done by you (HVAC technician).	Ground wall balcony roof other location or pad	Yes No
2) What had been done, prior to your arrival?	16) Have you checked to make sure there is no cross-piping and/or cross-wiring between any two indoor units (zones)? What was your procedure?	
3) Did you read the User Manual and Installation Instructions before starting the installation?	17) Were the refrigerant pipe ends capped or sealed, prior to running them through structures to keep debris from entering the copper lines?	
Yes No	18) Have you checked both cooling and heating on all indoor units individually to ensure proper function?	Yes No
4) Who unpacked the unit and accessory boxes to check for damage?	19) Did you charge the inter-connecting copper pipes and indoor unit with nitrogen to check for positive leakage (pressures 150-200PSI), before conducting a vacuum leak check?	Yes No
5) Supply electrical power V/Ph/Hz measured at wiring terminal block of	20) Did you vacuum correctly to check the connecting pipes and indoor unit for leakage? What was the micron gauge reading, for how many minutes?	
Indoor unit: Outdoor unit:	21) Did you check the compressor's start and stop sequences to determine proper functionality?	Yes No
6) Incoming electrical power V/Ph/Hz measured at terminal blocks of	22) If copper length were not made to the supplied or recommended refrigerant pipe length, how much refrigerant added or deducted?	
Indoor unit: Outdoor unit:	23) Measured refrigerant pressures at outdoor service suction valve, when unit was stabilized.	Heat pump (PSI): Cooling (PSI): Outdoor Ambient Temp. (°F):
7) Wire gauge, length and terminal colors between circuit breaker/disconnect switch to outdoor unit:	24) What were the measured temperatures (probe not touching any metal):	At cooling: indoor return air °F Discharge air °F and outdoor °F
8) Wire gauge, length and terminal colors between each indoor and outdoor unit:	At heating: indoor return air °F Discharge air °F and outdoor °F	
Unit A Unit B Unit C Unit D	25) Have you checked all unit functions with customer present, and all functions are working correctly?	Yes No
9) The size of HVAC circuit breaker/fuse or disconnect switch to the outdoor unit:	26) Did you show the user how to operate the unit? Did he/she understand you?	Yes No Yes No
10) Are the inter-connecting wires and copper lines between indoor and outdoor units installed/covered/protected by line set covers, or anything else?	27) Do you provide regular one-year free technical service for this installation?	Yes No
11) What is the refrigerant pipe length between each indoor unit and the outdoor unit?	28) Do you list the working details in the invoice and leave a copy to the customer?	Yes No
Unit A Unit B Unit C Unit D		
12) Where is/are the indoor unit(s) located? (Bedroom, kitchen, etc.)		
Unit A Unit B Unit C Unit D		
13) What is the elevation difference between each indoor unit and the outdoor unit?		
Unit A Unit B Unit C Unit D		
14) Did you check the indoor unit for condensate leakage and refrigerant leakage, before and after connecting them?		
Yes No		

Installation Finished and Unit Works Successfully. Print Name of Installation HVAC Technician: Signature: Date and time:	Installation Finished and Unit Works Successfully. Print Name of Owner: Signature: Date and time:
---	--

By signing above, I acknowledge the liability and responsibility for any false statement or omission of facts, and I authorize YMGI to verify the details provided above, and make its decision on warranty. I understand our filing or filling out of the warranty card/form DOES NOT imply automatic warranty approval, because warranty is approved only to qualified and successful installations by a qualified HVAC technician. I understand that the warranty (if approved) is a standard 5 year compressor and 1 year parts only, and does not include any labor coverage. I agree to and will follow all the contents contained in the Limited Product Warranty Policy of YMGI, and no other entity, stated in public, including but not limited to manuals, web site, email, etc.

Important Note: A copy of the installing HVAC company's invoice to show all their work details, your payment proof, center copy B of this registration card filled out after a successful installation, all three (3) MUST be mailed together to Warranty Dept., YMGI Group, POB 1569, O'Fallon, MO 63366, for warranty processing. Customer keeps bottom copy C. YMGI will check against copy A that was kept at YMGI.





WHY DOES YMGI GROUP REQUIRE INSTALLATION AND SERVICE TO BE PERFORMED 100% BY CURRENTLY LICENSED OR CERTIFIED HVAC TECHNICIANS/CONTRACTORS?

1. Expertise and Safety:

They have the training and experience to accurately and safely install and service your equipment. The equipment runs with high-pressure refrigerant, oil and electrical current. The copper lines must be installed properly to prevent leakage and foreign substances from contaminating the refrigerant system.

2. You will save money in the long run:

If any problem occurs with the unit that has been fully installed by a currently licensed or certified technician/contractor, contact the original licensed or certified HVAC technician to evaluate the unit as they have the training and experience to correct the problem quickly and efficiently. A technician may be unwilling to repair an issue on a unit that they did not install. If you do find a technician willing to perform this service, there is an increased possibility of higher service fees, increased service visits, or delayed service from that technician.

3. It's the law!

The federal, state and/or local government and authorities have various governing laws or regulations, guidelines, ordinances, etc. These laws may require only licensed or certified professionals can install and service this type of high pressure HVAC equipment.

SUGGESTIONS TO AID YOU IN HIRING AN HVAC CONTRACTOR:

1. Hire a currently practicing, licensed/certified HVAC professional technician/contractor. Technicians, who are no longer practicing (retired, etc.) in this field, may not have current technical knowledge or may lack experience on the equipment you have purchased.
2. Hiring a licensed technician to install your unit as a "side job" and not hiring a licensed HVAC company may pose possible risk. This may result in an incomplete or unsatisfactory installation, no guarantee for workmanship and lack of maintenance and further service to your unit.
3. Hire a technician/contractor who services customers in your local area and one you are familiar with. Local contractors have a faster response time and it will be easier for you to determine if they are reputable.
4. Use only a reputable licensed/certified HVAC installation professional to prevent any unexpected charges because of unethical business practices.
5. Check their references, verify they provide professional service for their customers. N.A.T.E or A.C.C.A certified technicians are strongly recommended.
6. Some contractors/technicians may not feel comfortable about installing equipment that has been purchased by someone other than themselves. They prefer to purchase and install the equipment themselves. You can contact YMGI directly to check and see if there are contractors in your area who have installed our products or any similar products.
7. Ask for a detailed quote for the complete installation project. A flat rate quote is the safest contract for both you and the contractor.
8. Local HVAC technicians may charge you on a project basis or on an hourly basis. It has been our general experience; **a full single head installation normally can cost \$800 to \$1500**. These costs are estimates, and your actual costs may differ due to your specific job requirements and installation location.
9. Number of hours can vary depending upon each individual situation, some factors are, but not limited to:
 - Difficulty or complexity of securely installing the indoor unit.
 - Difficulty or length of the inter-connecting pipes and wires to be installed.
10. A successful installation is dependent on all these suggestions and all the necessary steps are followed.
11. If the contractor(s)/technician(s) are experienced with the systems/brands you purchased. **You might save on the installation cost, but remember to always ask for and verify references.**
12. The contracts should list and detail all work to be performed and the standards they will follow. Some contractors are willing to include a 1-year installation/service warranty at no extra charge. Check to see if this is an available option. If available, make sure it is included in the contract.
13. Verify and confirm the installation is completed and all the unit functions have been tested and working properly. All items on the checklist should be checked and clearly marked in the warranty registration card/form, prior to paying the contractor in full.

The cost of not having your unit professionally installed can be more expensive than the additional cost of hiring a certified contractor. Protect your investment and warranty eligibility by doing it right the first time.



WARNING**Safety Precautions**

1. Follow these instructions to complete the necessary installation process. Carefully read this manual before installation and unit startup or servicing.
2. Wire size of power cord should be properly sized to meet the required electrical loads. Should the power cord get damaged, the power cord should be replaced with a manufacturer approved cable.
3. After connecting the power cord, attach the electric box cover and secure properly.
4. Always meet the nitrogen charge requirements when welding pipes.
5. Never short-circuit or cancel the pressure switch as this will result in damage to the unit.
6. Connect the wired controller before energizing, otherwise the wired controller cannot be used.
7. Before using the unit, verify the piping and wiring are correct. This will avoid water leakage, refrigerant leakage, electric shock, or fire etc.
8. Do not insert fingers or objects into the air outlet or inlet grille.
9. Open a door or window for ventilation for allowing fresh air to enter the room to avoid depleting the oxygen while gas/oil supplied heating equipment is used during the installation.
10. Never start up or shut off the unit by means of directly plugging into or unplugging the power cord from the power outlet.
11. Turn off the unit after it runs at least five minutes, otherwise it will influence the oil return of the compressor.
12. Do not allow children to operate this unit.
13. Do not operate this unit with wet hands.
14. Turn off the unit or disconnect the power supply before cleaning the unit. This will avoid possible electric shock or personnel injury.
15. Never spray or splash water towards the unit. This can cause a malfunction in the unit or can result in electric shock.
16. Do not expose the unit to moist or corrosive environments.
17. While operating in cooling mode, do not set the indoor unit room temperature too low.
18. YMGI Group recommends that only properly trained and authorized personnel be allowed to repair or service the unit. Improper repairs or servicing can result in electric shock or fire hazards. Please contact YMGI Group if you need help locating a qualified repair or service technician.
19. Before installation, check the power supply to ensure it is sufficient to meet and is in accordance with the requirements specified on the nameplate of the unit. Ensure the power overload is functioning correctly and make sure it is properly maintained.
20. Installation must be performed only by an authorized installer or HVAC professional in accordance with the requirements set by the NEC and CEC. Do not attempt to install the unit yourself. Improper handling may result in water leakage, electric shock, fire, and voiding of the warranty.
21. Be sure to use only approved accessories and parts to prevent water leakage, electric shock and fire.
22. Make sure the unit is grounded properly prior to connecting to power source, to avoid electric shock. Do not connect the ground wire to a gas pipe, water pipe, lightning rod or telephone line.
23. Energize the unit for 8 hours before operation. Turn off or disconnect the power within 24 hours to prevent short-cycling (to protect the compressor).
24. If refrigerant leakage happens in a confined space during installation, ventilate immediately. Poisonous gases can occur if the refrigerant gas is exposed to fire.
25. Volatile liquids, such as paint thinners or solvents if exposed to the unit's surface will cause damage to the surface finish. Only use a soft cloth along with a mild non-abrasive detergent to clean the outer casing of the unit.
26. If the unit does not operate normally or if you notice any type of burning odor, power off the unit and turn off the main power supply, then immediately contact your YMGI authorized repair service center or HVAC professional.



NOTICE

YMGI Group will not be responsible for any personal injury or any property damage caused by improper or incorrect installation, improper service or maintenance or by not following the instructions listed in this manual.

DO NOT pull on the power supply cords or refrigeration lines that are connected to the indoor and outdoor units. Install the power supply cords and secure them into position. PVC line set cover is recommended for the outdoor unit to protect against rain, sunlight and accidental damage.

DO NOT allow cold air to blow directly onto people for a prolonged period, as this could make people cold and uncomfortable.

DO NOT undersize any of the power supply wires.

DO NOT connect several units to a single breaker. Don't undersize or oversize the circuit breaker. A poorly sized circuit breaker can cause unit failure and even fire.

DO NOT wire or open a unit while the unit is running. Make sure to disconnect the power supply and switch off all circuits prior to inspecting or servicing the unit. Inspecting and servicing the unit while the power supply is connected, and the circuits are switched on could cause an electrical shock or fire.

DO NOT install the indoor unit near any cooking surfaces, in direct sunlight or any ventilation systems. Poor placement could decrease efficiency and waste energy.

DO NOT install the unit in places where there is exposure to flammable materials or gas.

DO NOT apply chemical solvents, flammable insecticides, or abrasive materials directly on the unit. Clean the unit only with a soft dry cloth.

DO NOT install the unit in a damp laundry room or near flammable gas. All units must be protected by a certified electrical circuit breaker in accordance with all safety and electrical codes.

DO NOT use the system for anything other than what it was designed.

DO NOT store or install the units near food, paint, or other chemicals.

DO NOT use the unit in cool or dry mode for prolonged periods where humidity is higher than 90%.

DO NOT operate the unit for prolonged periods without refreshing ambient air. Open a door or window periodically to allow in fresh air.



Application Notice

Safety Specifications

⚠ WARNING

- Make sure the switch of solar heat pump is out of the reach of children, in order to prevent accidental shock.
- We recommend turning off power to the system during thunderstorms. Lightning can cause damage to the machine.
- Switch off power when the system is not in use, or when leaving the premises for prolonged periods.
- Switch off power to the system before performing any cleaning or maintenance to the system to avoid any potential accidents.
- Never clean the system or components with liquid detergent, caustic or corrosive cleaning agents as they can damage plastic components of the unit. Avoid water or moisture in or around the indoor unit.

⚠ CAUTION

- **DO NOT** put your hands or other objects into the air outlet of the indoor or outdoor unit, or you may damage the high speed fan or cause injury.
- **DO NOT** touch the blades then the fan is running, or it may pinch your fingers or cause damage to the transmission components of the fan.
- **DO NOT** remove the ventilation hood of the machine, as the high-speed fan may cause injury.
- **DO NOT** allow children to play around or near the heat pump to avoid injuries or accidents.
- **DO NOT** expose the indoor unit or remote control to moisture, as it can result in a short circuit or a fire.
- **DO NOT** use place flammable liquids or gases on or near the indoor or outdoor units as this may result in a fire. This includes products that contain alcohol, paint, gasoline etc.
- If the system is running abnormally, or you notice unusual noises, smells, smoke, or components are excessively warm, please turn off power to the system immediately and contact an HVAC technician for service.
- Never attempt to repair or service the machine yourself.

Solar Air Conditioner Application

Pre-check

- Check to make sure the ground wire is connected properly and securely.
- Check to make sure the air filter is installed.
- If the solar heat pump has sat idle for a prolonged period of time, clean the filters before start-up. For information on how to perform cleaning, consult the chapter in this manual on Repair and Maintenance.
- Check to make sure the inlet and outlets of the indoor and outdoor units are not restricted or blocked.

Optimum operation

- Set a proper and comfortable temperature, and avoid setting the temperature exceedingly high or low, especially when elders, or children live.
- When cooling, close curtains, blinds or shutters to reduce the amount of sunlight coming into the room being cooled.
- Make sure all windows and doors are closed to increase the efficiency of heating or cooling.
- If you need to set a predefined run time, please use the remote control.
- Never place objects that can restrict airflow near the indoor or outdoor units, as it will decrease system efficiency, and possibly cause the system to stop running.
- Clean the air filter regularly. If the air filter is dirty, it will decrease the heating and cooling efficiency of the system.

Working Temperature Ranges

	Cooling Mode	Heating Mode
Indoor Temperature	61°F-88°F	61°F-88°F
Outdoor Temperature	23°F ~ 104°F	15°F ~ 75°F

To ensure normal operation of the solar heat pump, please operate the system in its recommended temperature range. Failure to do so may cause the system to trip a fault protection, cause condensate leakage or impact system efficiency.

⚠ CAUTION

All Units Should Be Installed by Licensed Contractors or Technicians.

Read Manuals before Installation.

- The location and structure should also be convenient for both installation and service.
- The location should NOT be where discharge air and noise could annoy a neighbor.
- The location should NOT be where drain may cause any damage to property or annoy a neighbor.
- The location should NOT be where brazing work may cause fire or smoke to the surrounding materials.
- The location should NOT be near flammable gases.
- The location should NOT be in or close to corrosive gases.
- The location should NOT be where children can access.

⚠ CAUTION

CAUTION & SUGGESTIONS TO FOLLOW PRIOR TO INSTALLATION

- Check the unit for damage and missing parts or accessories. If there is damage found or parts are found missing, call the distributor right away.
- Spin fan wheels or blades to check if they can rotate freely. If the fan wheel scratches the housing, call the distributor right away and do not proceed with the installation until it is fixed.
- Check the unit to make sure no foreign materials have been left inside the unit.
- Check to be sure you have all the additional parts and accessories that are required for the installation and those provided with the unit.
- It is strongly recommended to only use YMGI supplied or approved parts and accessories.
- Be sure a properly sized circuit breaker is installed for the electric power supplying the units.
- Pre-build the support platform on the ground or bracket for the wall before or during construction and before installation.
- Read installation instructions for all units thoroughly.
- Ask rep./distributor/YMGI Group anything you are not sure about.
- Get your tools and parts ready and start the installation.

BASIC REQUIREMENTS FOR THE INSTALLATION LOCATION

- Choose a location where there are no strong heat sources, vapors, flammable gas or volatile objects.
- Choose a location where there are no high-frequency waves being generated by radio equipment, welders and medical equipment.
- Choose a location where there are not a lot of salinities, such as coastal areas.
- Choose a location where there is no oil (machine oil) contained in the air.
- Choose a location where there is no Sulfur gas present, such as areas close to hot springs.
- Choose a location where there is no other special circumstance.

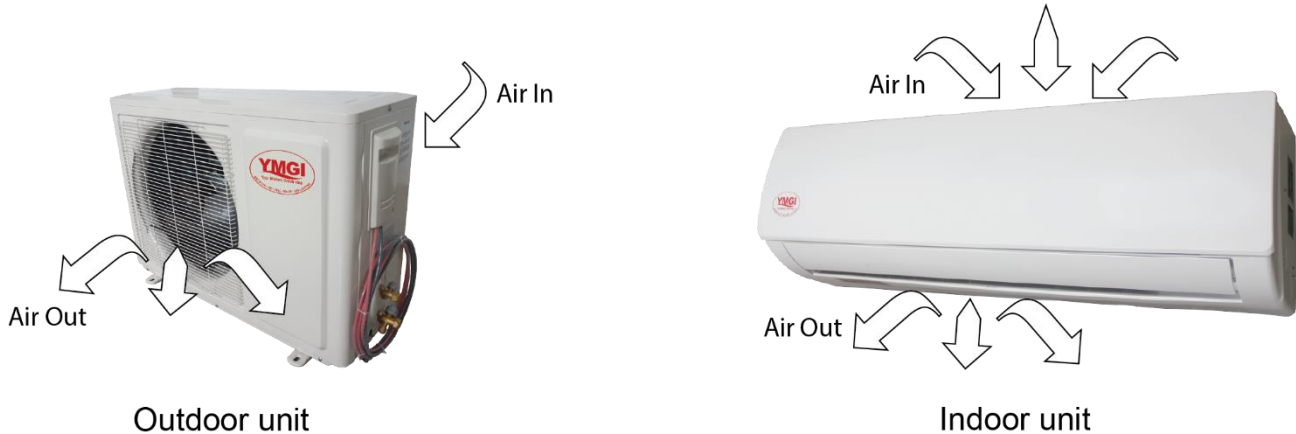
SELECTION OF INDOOR UNIT INSTALLING LOCATION

- The air inlet and outlet vent should be far from any obstructions, making sure that the air can be blown through the entire room.
- Select a location where the condensate water can be easily drained, and can be easily connected to the outdoor unit.
- Select a location where children cannot reach the unit.
- Select a location that is strong enough to support the full weight of the unit and the vibration which will allow the unit to operate more quietly.
- Be sure to leave enough space to allow access for routine maintenance. The height of the installed location should be 78 inches or more from the floor.
- Select a place about 3 feet or more away from television or any other electric appliances.
- Select a place where the filter can be easily maintained.
- Make sure that the indoor unit is installed in accordance with the dimensioned diagram.

BRIEF INTRODUCTION TO MINI SPLIT WALL MOUNT SYSTEM

Mini Split Wall Mount Systems are designed for high performance, easy installation and service. Each system consists of one or several indoor units and one outdoor unit, which are connected by one set or several multiple sets of interconnection refrigerant pipes and electric wires.

As shown in the following sample picture of outdoor unit, air is drawn through the coil from the rear side and then discharged from the front side. In cooling mode, air passing through coil is heated; in heating mode, air passing through coil is cooled.



Outdoor unit(s) provides the electrical and thermal power for the whole system. Electrical and thermal components such as compressors, motors, heat exchange coils and others, are incorporated into the cabinet in an optimized order. They can be either hung on the wall or installed on the ground. Once stacking or bracket kit is used, some outdoor units can be stacked 2 or 3 units high, depending upon unit size and applications. Air is discharged horizontally, quietly and smoothly. These units are a perfect fit in locations where installation and applications of general up-flow condensing units are limited, such as apartments, condos, lofts, multi-families and high-rise buildings and others named or unnamed.

Indoor unit(s) delivers the thermal and acoustical comfort to the rooms. Air is drawn through the coil from the front or topside and then discharged from the bottom. In cooling mode, air passing through coil is cooled; in heating mode, air passing through coil is heated. Air is cleaned or treated by the built in filter (washable, enzyme, or electrostatic filter types vary from model to model), before being delivered into the room, with more than enough comfort and care, at a wide angle (swing or not, varies from model to model).



Apartments

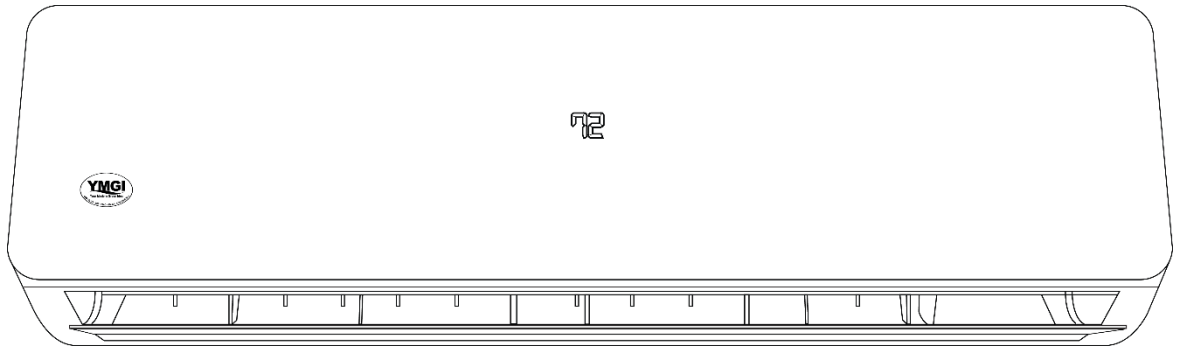


Communication Stations



Homes

NOTE: This ductless system is not designed to be incorporated or used with ducted returns or discharge tunnels. A single-zone unit SHOULD NOT be used for the cooling or heating load of more than one single story room. Several single-zone ductless systems or multiple-zone ductless systems would be proper in this application.



Notes to Users

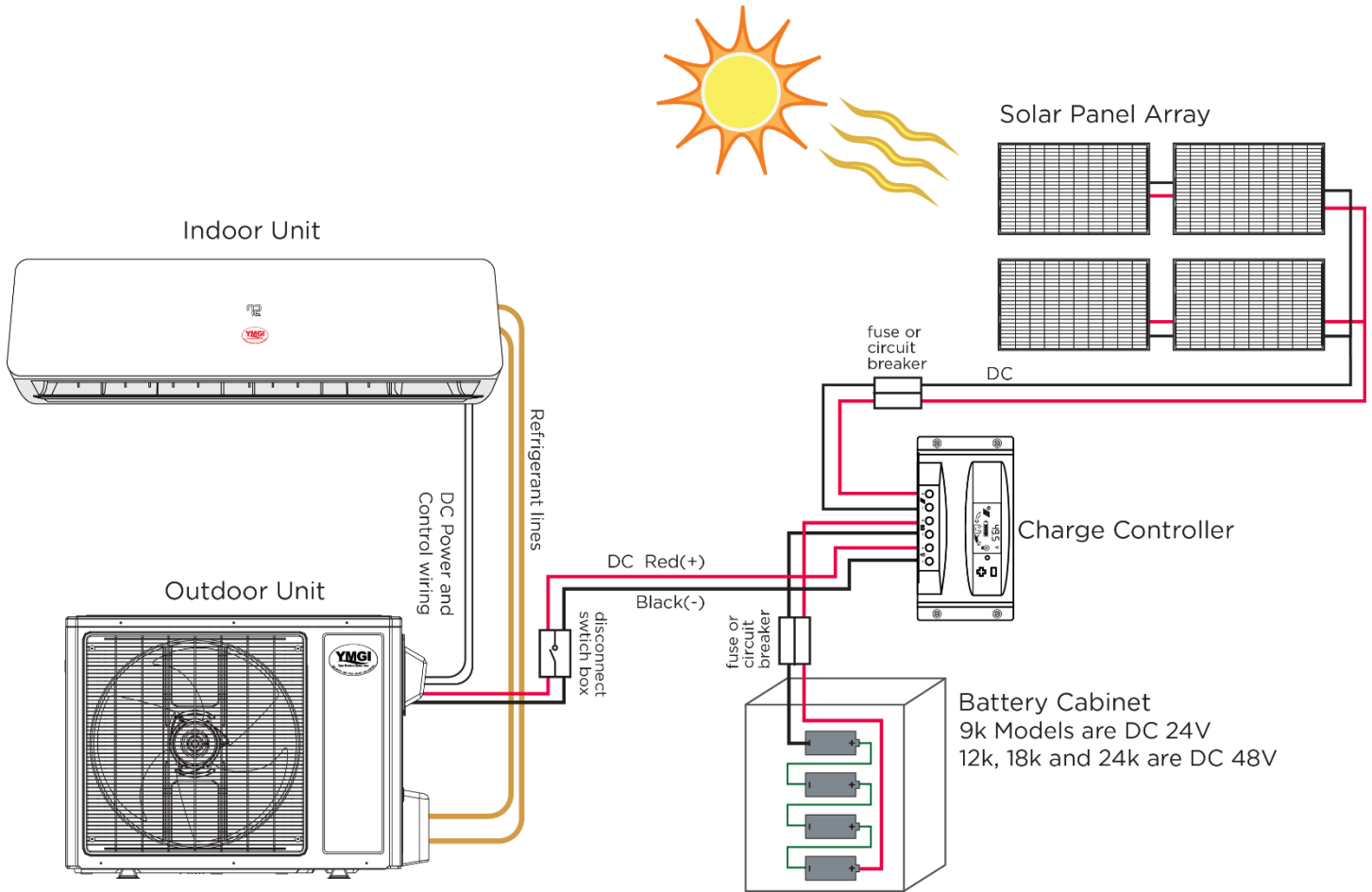
YMGI appreciates your purchasing our solar heat pump system. We are committed to serving our customers, and ensuring that your heat pump will provide years of service. Our solar heat pump is manufactured under the strictest quality controls, to provide excellent performance and reliability. To protect your rights and interests, and guarantee the best performance of our solar heat pump, and to ensure you receiving the best service, we ask you to follow these guidelines:

1. Before using your solar heat pump, please be sure to read all **Notices** to avoid damaging the solar air conditioner, or other accidents that could be caused as a result of faulty operation.
2. Make sure to turn off power to the solar heat pump when the system will not be in use for prolonged periods.
3. The correct installation and application assure the best performance of the solar heat pump. Please read the **Operation Instructions** before installation, adjustment and application.
4. This machine and the **Operation Instruction** are subject to changes without notice.
5. The carried standard of the product is Q/320581FSC001-2006

Please keep your purchase invoice, Warranty Card and Operation Instructions.

Solar System Layout

All DC Solar PV Powered DC Heat Pump (Total Off-Grid)

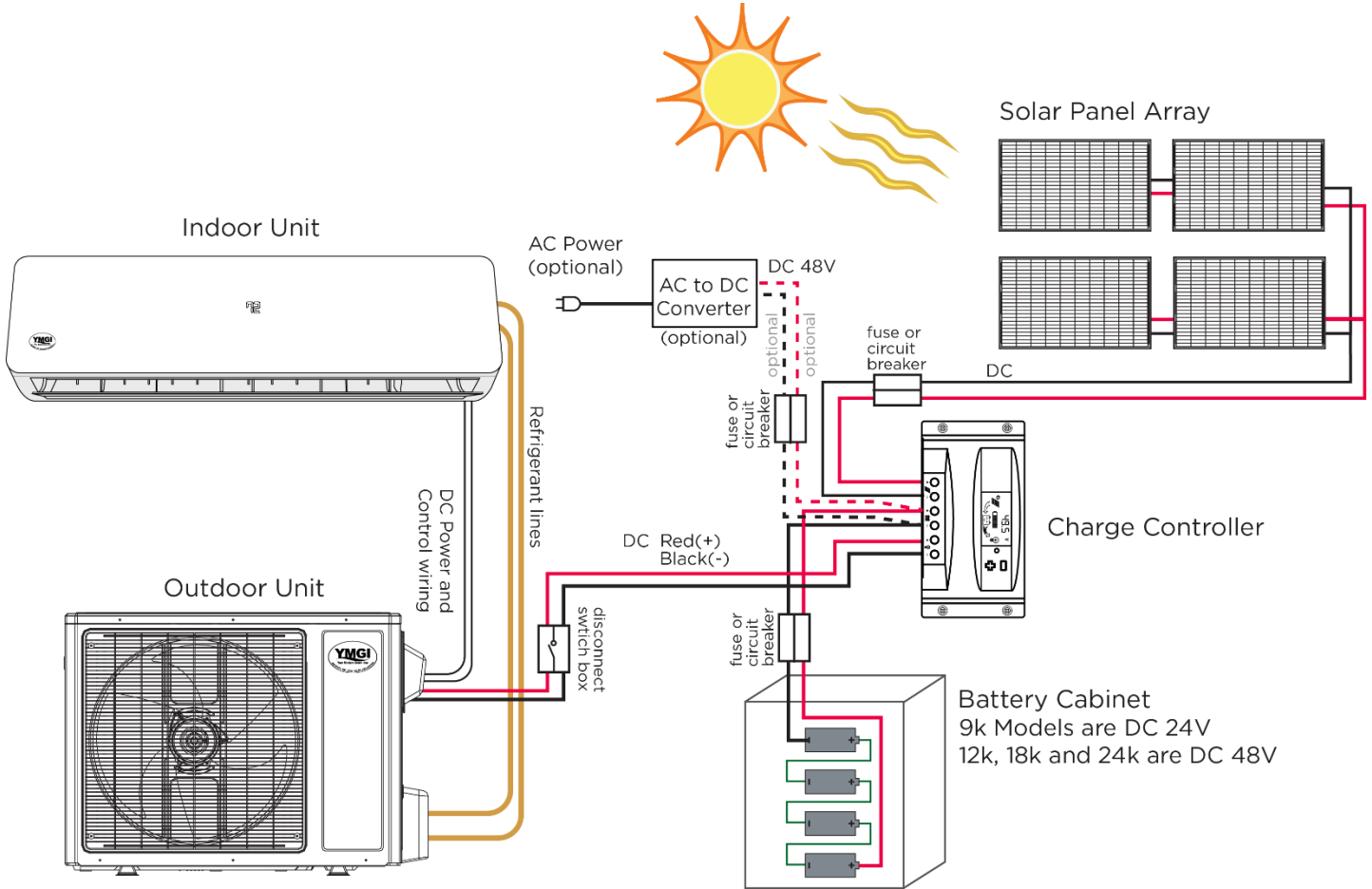


- Single zone 9k, 12k, 18k and 24K Btu/h.
- Connects to 2 to 8 Panels (300W/panel), through charge controller.
- With battery banks 24 or 48VDC with a great enough AH capacity, can run without sunshine or AC input.
- Day & Night saving.

The YMG's (86) series solar heat pump runs totally on DC power. With solar charge controller, solar panels save extra energy into batteries, and batteries release to heat pump system when needed. By using solar DC power instead of converting to DC from AC power provided by utility company, this system can reduce daytime energy costs for cooling or heating by up to 100%, and is great fit for cooling or heating needs on islands, in mountains and other remote areas (communication stations, travel/camps, military bases, etc.).

Solar System Layout

All DC with Optional AC Input (Partial Off-Grid)



- Single zone 9k, 12k, 18k and 24K Btu/h.
- Connects to 2 to 8 Panels (300W/panel), through charge controller.
- With battery banks 24 or 48VDC with a great enough AH capacity, can run without sunshine or AC input.
- Option to connect to AC/Converter.
- Day & Night saving.

The YMG's (86) series solar heat pump runs totally on DC power. With solar charge controller, solar panels save extra energy into batteries, and batteries release to heat pump system when needed. By using solar DC power instead of converting to DC from AC power provided by utility company, this system can reduce daytime energy costs for cooling or heating by up to 100%, and is great fit for cooling or heating needs on islands, in mountains and other remote areas (communication stations, travel/camps, military bases, etc.).

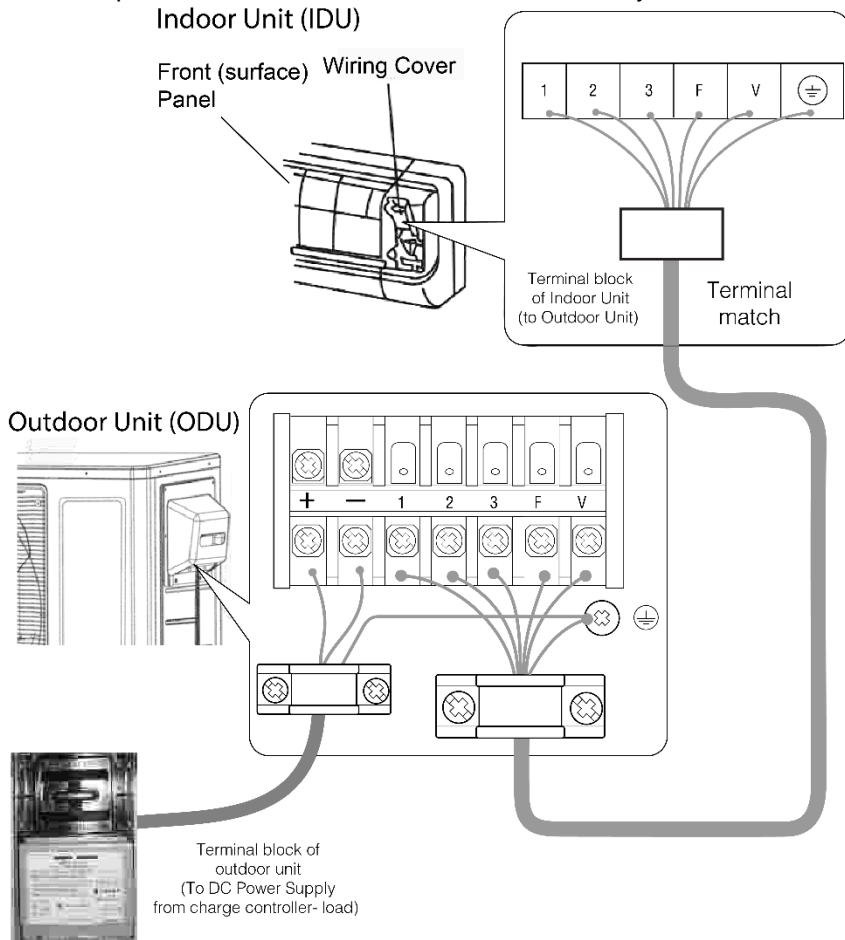
NOTICE

The features and specifications may differ from those found in our advertising literature. Always consult the manual for the most accurate information about your units.

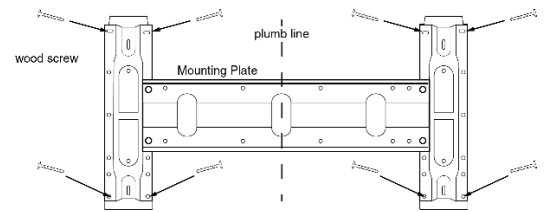
CONNECTION OF WIRES

WIRING AT INDOOR UNIT AND OUTDOOR UNITS

- Open the front cover panel.
- Remove screws from electrical box cover and put screws in secured position.
- Remove screws from fastener and put screws in secured position.
- Prepare wires of right size and grade.
- Recommend to use factory-provided wire/cables.
- Connected to the terminals following wiring diagrams (terminal or color matches).
- Clamp power/control wires to the structure to keep the tension from being transmitted to the wire connection.
- Replace screws or fasteners back to where they were.



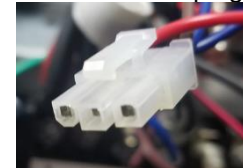
Behind the IDU



Quick Connect Plugs



3 Wire female plug



3 Wire male plug

Note:

Installer can cut and splice the wires if the provided wiring is shorter than needed. Make sure to avoid cross wiring by matching the colors and wires.

Notes:

- The environment conditions must be taken into consideration when the connections of power cable are made (such as the ambient temperature, direct exposure to heat exposure to sunlight).
- The specifications for the power cable refer to the minimum values of the metal core wires, taking into consideration the voltage losses, the core wire of power cable must be one size larger than the specifications.
- The grounding wire must be connected to the indoor units and outdoor units.
- The laying of power cables must be done by qualified electricians and comply with the regulations of the local power supply authorities and with the standards of the electric appliance.

OUTDOOR-INDOOR UNIT WIRING SIZES

Model	Power Wire Min. Charge Controller to Outdoor Unit	Power/ Control Wire Min. Outdoor Unit to Indoor Unit
09K	+/- 24V 12AWG	1/2/3/F/V, 24V, 3 xAWG 18
12K	+/- 48V 10AWG	1/2/3/F/V, 48V, 3 xAWG 18
18K	+/- 48V 10AWG	1/2/3/F/V, 48V, 3 xAWG 18
24K	+/- 48V 8AWG	1/2/3/F/V, 48V, 3 xAWG 18

WIRING OUTDOOR UNIT

CONNECT WIRING BETWEEN OUTDOOR UNIT AND INDOOR UNIT

- Check the nameplate for rated electrical data. Connect unit to the correct electrical power source.
- Select power wire of proper type and size. YMGI suggests using UL approved 105°C / 221°F multi-strand copper wire for outdoor use. Refer to the following tables, for proper selection of wire gauge, size and circuit breaker.

Comparison of the Standards of Electric Conductor Cross Section Area (Diameter of Wire), Power Switch, Fuse and Load Current

Special power distribution equipment and electric wire for the air conditioner			Power distribution equipment and electric wire for the power bus		
Air conditioner's maximum current (A)	Electric conductor's cross-sectional area (mm ²)	Standard spec (A) of the socket or power of the switch /fuse.	Circuit's maximum current × (1.5 to 3 times) (A)	Electric conductor's cross sectional area (mm ²)	Standard spec (A) of the power switch / the fuse
≤ 10	1 or 1.5	16/16	≤ 16	1.5~4	32/25
≤ 16	1.5 or 2.5	32/25	≤ 25	2.5~4	63/50
≤ 25	2.5 or 4	63/50	≤ 32	4~10	63/50
≤ 32	4 or 6	63/50	≤ 40	6~16	100/80
			≤ 63	10~25	125/125

NOTICE

The maximum electric current of the solar air conditioner refers to the maximum input electric current, which is printed on the label of the indoor unit. The maximum electric current of the circuit refers to the total amount of electric current, which comprises the maximum electric current of the solar air-conditioner and all other appliances that are on the same circuit.

WARNING

Securely connecting the electrical lines of solar air conditioner

1. Power cord of indoor and outdoor units should not use polyvinyl chloride (PVC). Wires must use chloroprene rubber wires (including high-tension signal wires). A licensed HVAC technician can lengthen or shorten electrical wiring. Do NOT attempt to lengthen or shorten the wires by yourself.
2. The ground wire must use green with yellow stripe wires that are adequately sized. The ground wire should never be connected to water, coal or gas pipes. Do not use an overhead ground wire.
3. When connecting wires, please refer to the electric circuit diagram in the unit, and make sure each connection is correct.

Solar Air Conditioner Installation

NOTICE

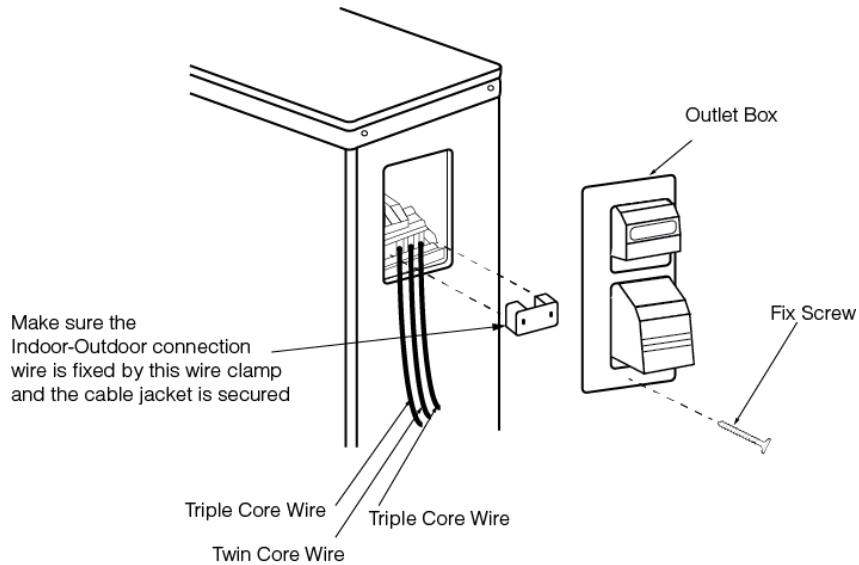
1. Reclaim any refrigerant that is in the refrigeration lines. Pull air from the lines using a vacuum pump.
2. Installation height difference of the Indoor unit and the Outdoor unit should be less than 16 ft.
3. The length of the pipe, which connects the Indoor unit and the Outdoor unit, should be less than 32ft.
4. The refrigerant filling amount of the solar air conditioner should be adjusted according to the length of the pipe (L).
The refrigerant increment G= (L- length of the standard pipe) x 30(0.3225 oz./ft.).

Connection of the Power Supply of the Outdoor Units

Open the outlet box of the outdoor unit; connect the triple core wire and the twin core wire with the five jacks of the connecting terminals in accordance with their colors, as shown in the following table.

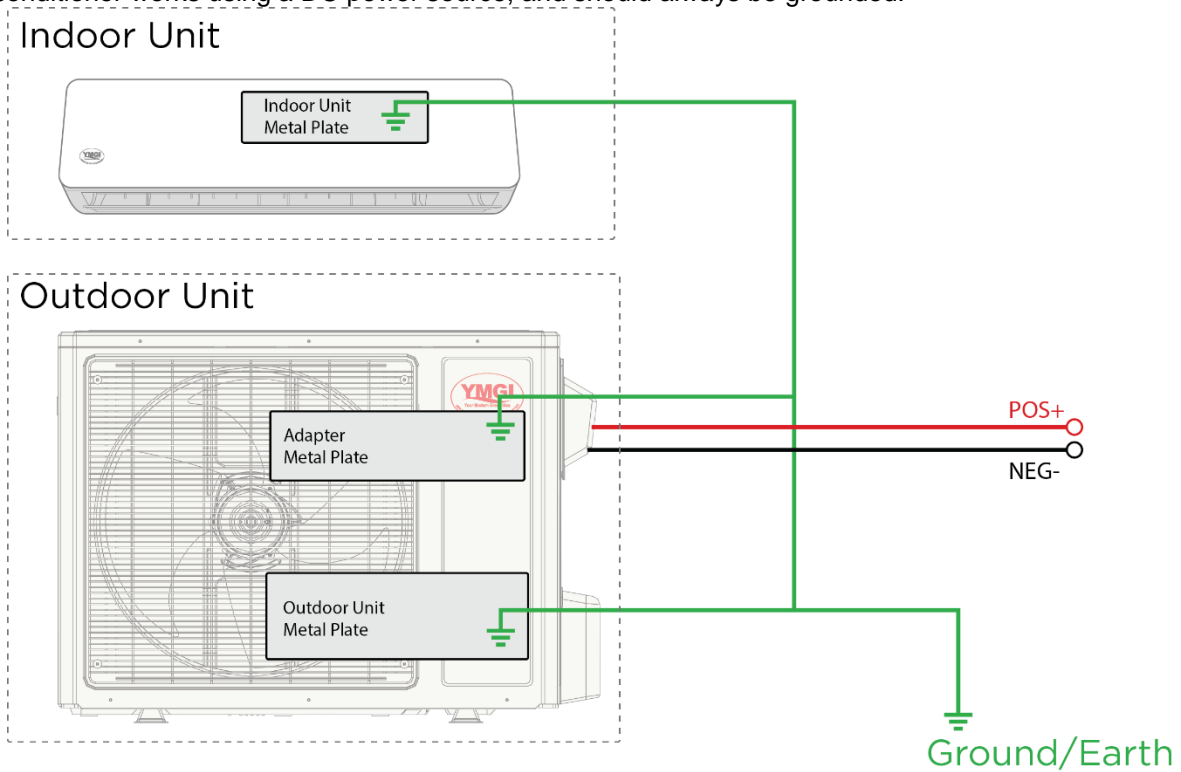
The connection method of the triple core wire of the auxiliary electric heating pipe, located on the insulating barrel, the blue wire is connected to terminal board (N), the brown wire is connected with terminal board slot 3, and the green with yellow stripe wires are connected to the terminal board ground.

The Terminal Board Base on the Outdoor Units	+	-	N	3	2	1	F	V
The Color of Wire Connected With the Indoor Unit	RED	BLACK	Blue	Brown	Blue	Brown	Blue	Blue



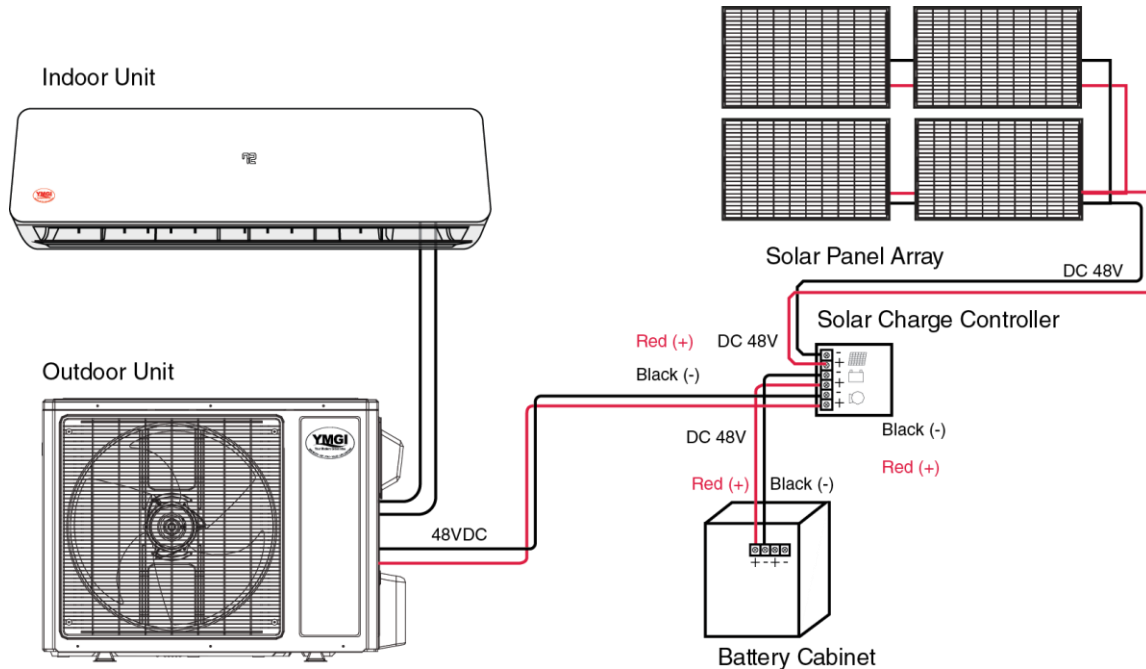
GROUND NOTICES:

This air conditioner already has ground wires. The indoor unit metal plate, outdoor metal plate, adapter metal plate are all connected in series by a ground wire. The air conditioner works using a DC power source, and should always be grounded.



- Please install, repair, and maintain this air conditioner using a trained HVAC professional.
- Reverse connecting the DC+ (POS+) and DC- (NEG-) wires can directly damage the air conditioner, and burn out the DC power source.
- Reversing the connection of the inner wires inside this air conditioner can damage or destroy air conditioner components.

Electric Connection Diagrams



NOTICE

This air conditioner should be connected to DC power sources only!

There are connections marked “DC+” and “DC-” on the drawings included in this manual. It implies the unit can be connected to pure DC power sources, such as a battery or a converted DC power source. The “DC+” indicates the same as “POS+”, and DC- indicates the same as “NEG-“

NOTICE

The power source connection terminals of this air conditioner are marked in RED and BLACK. Red terminals are POS+ pole, and BLACK terminal is NEG- pole.

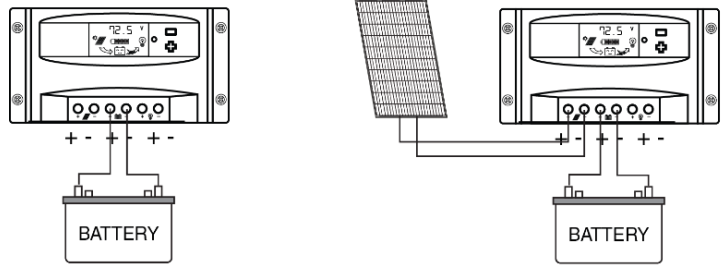
NEVER REVERSE CONNECT THE RED(POS+) TERMINALS AND BLACK(NEG-) TERMINALS WITH POWER SOURCES POS+ AND NEG- POLE, OR YOU COULD BURN OUT COMPONENTS INSIDE THE AIR CONDITIONER OR THE POWER SOURCE.

Charge Controller Connection Installation Instructions

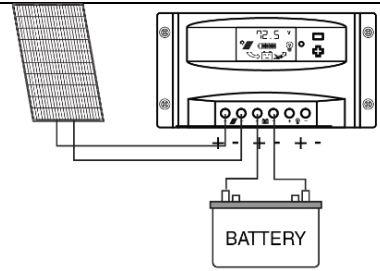
1. Charge Controller should be installed in a well ventilated place, avoiding direct sunlight and high temperatures. It should not be installed where water can penetrate the controller.
2. Select the correct screws for mounting the controller to a wall or other platforms. M4 or M5 sized screw cap. The diameter should be less than 10mm.
3. Keep enough space between the wall and the controller for cooling and easy connection.
4. Mounting hole distances for 20-30A Charge Controller is 179 x 60mm, 40A Charge Controller is 80x185mm, 50-60A Charge Controller is 98x178mm. The diameter of the mounting hole is 5mm.
5. All terminals are shipped tightened and linked together. Make sure all terminals are loosened before installing.
6. The proper connection order is shown in the following diagram.

⚠ WARNING

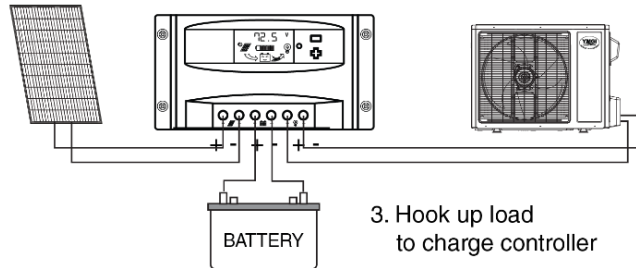
Please Follow the Connection order illustrated here. Failure to follow this connection sequence can result in damage to the battery and the charge controller.



1. Hook up battery to charge controller

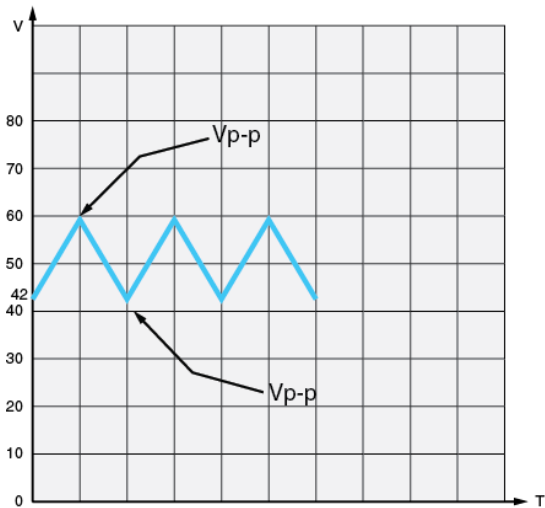


2. Hook up solar panels to charge controller



3. Hook up load to charge controller

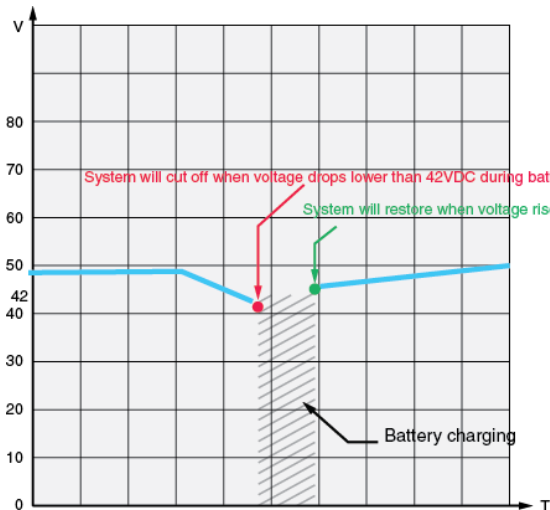
This air conditioner can work only with a DC power source, or an industrial DC power source. Please refer to the graphic below to choose the best power source option for your installation.



Installer can use industrial or municipal dc power source to run this air conditioner, if the DC power source is not stable

Please make sure the Vp-p is not higher than 60 V and no less than 42V. High or low voltages can reduce the lifespan of this air conditioner, or damage components.

Please make sure you have a 48VDC(+/-1%) precision DC power source.



If using stable DC power source or battery to run this air conditioner.

When battery voltage drops lower than 42VDC during battery discharge, the air conditioner will cut off the system automatically to protect the power source. Once voltage rises back above 46 VDC, the system will restore power to the air conditioning system automatically

IMPORTANT NOTES FOR UNIT OPERATION AMBIENT & SIZING

Since the outdoor units can be installed on a wall or balcony (close to the indoor unit) the following are some benefits for contractors and customers:

- Indoor unit operates much quieter than air diffuser of central air conditioning system.
- Connection pipes and refrigerant usage is much lower when compared to installing up-flow condensing units on the ground and long copper/wire lines needed between indoor and outdoor units.
- Installation work is easier and requires less time.
- Increased efficiency and lifetime of system.

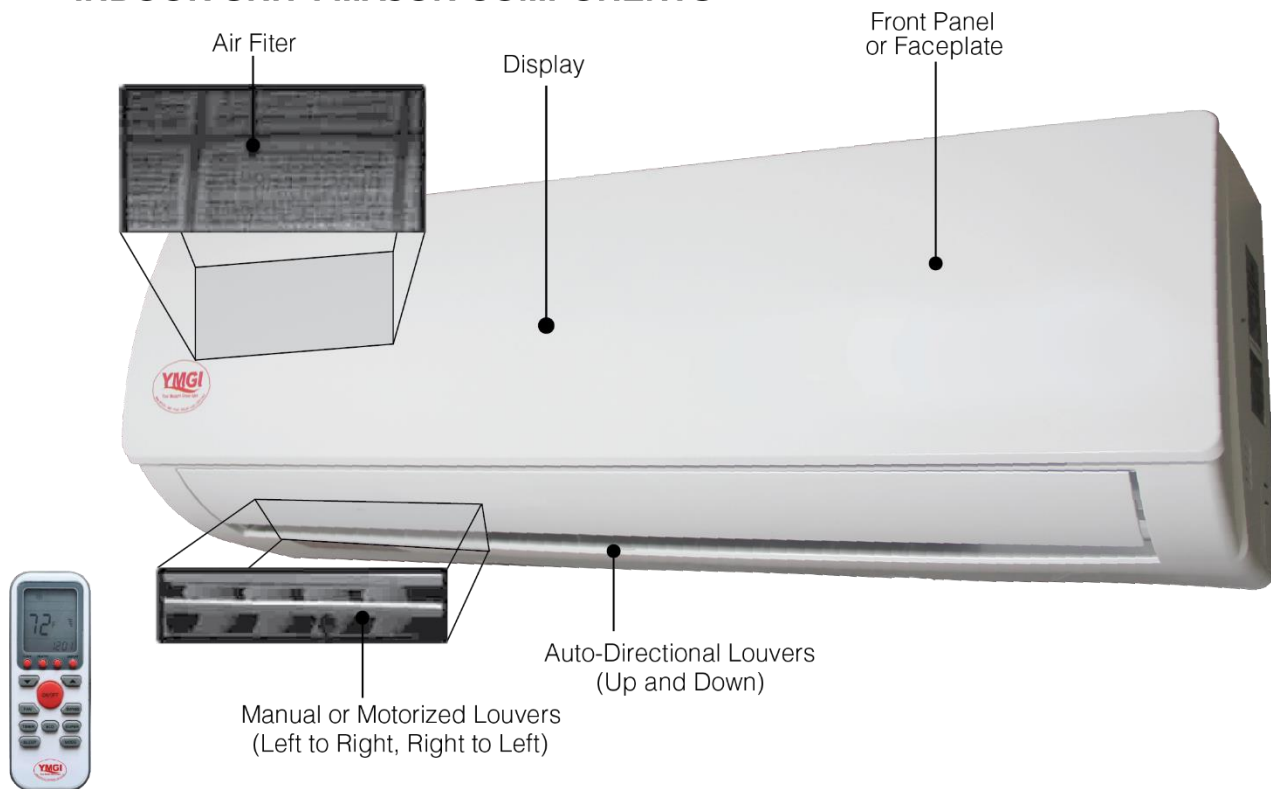
YMG Mini Split Wall Mount Systems are all heat pumps (some manufacturers make cooling only, and heat pumps with auxiliary electric heaters). These units can be easily wired. Either indoor unit or outdoor unit can be used with any matched comparable outdoor unit or indoor unit as long as they have matched size and control. Must refer to electrician before doing so.

Each system is thoroughly tested before leaving the factory. Each unit is acoustically, thermally and systematically designed to give optimum quality and reliability.

Find the cooling/heating load capacity of the space where the unit will be in service. Select matched WMMS units for the space. Under sizing or over sizing equipment is NOT recommended.

UNIT ENGINEERING SUBMITTALS-MECHANICAL

INDOOR UNIT : MAJOR COMPONENTS



Remote Control



SOLAR POWERED MINI WALL MOUNT SYSTEMS

System Specifications

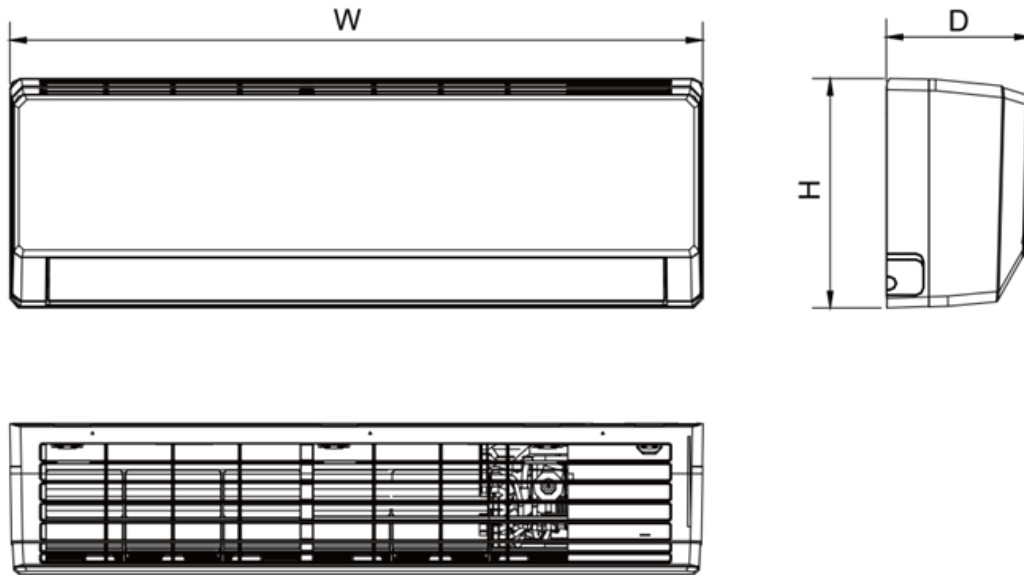
System Model No.		WMMS-09KS-V24(86)	WMMS-12KS-V48(86)	WMMS-18KS-V48 (86)	WMMS-24KS-V48 (86)	
Indoor Unit Model		WMMS-09ES-V24(86)	WMMS-12ES-V48(86)	WMMS-18ES-V48 (86)	WMMS-24ES-V48 (86)	
Outdoor Unit Model		WMMS-09CS-V24(86)	WMMS-12CS-V48(86)	WMMS-18CS-V48 (86)	WMMS-24CS-V48 (86)	
Power Supply to Outdoor Unit + - :		24VDC (21V to 27V)	48VDC (42V to 54V)	48VDC (42V to 58V)	48VDC (42V to 58V)	
Performance						
Rated Capacity	Cooling	Btu/h	9000	12000	18000	24000
		W	2600	3500	5000	7200
	Heating	Btu/h	10000	13000	20000	28000
		W	2850	3700	5500	8000
Noise	Indoor	dB(A)	≤40	≤42	≤42	≤46
	Outdoor	dB(A)	≤52	≤52	≤54	≤58
Air Circulation		CFM	265	325	383	500
EER		W/W	4.56	3.89	3.89	3.89
		Btu/h/w	15.5	13.33	13.33	13.33
Batteries			12 VDC x 2	12 VDC x 4	12 VDC x 4	12 VDC x 4
Suggested Battery AH Minimum		AH	100 x 2	100 x 4	150 x 4	250 x 4
Suggested Solar Panel Specification			<600w	<800w	<1200w	<1400w
Refrigerant			R-134a	R-134a	R-134a	R-134a
Power Consumption						
Power Input		W	500	750	1000	1300
Input Power		V	DC 24	DC 48	DC 48	DC 48
Rated Current		A	20	16	21	27
Minimum Circuit Amperage		A	25	20	27	33.75
Maximum HVAC Circuit Breaker		A	30	25	30	40
Dimensions						
Indoor Unit (W x H x D)	Unit	in.	30 5/8" x 9 3/4" x 7 11/16"	30 5/8" x 9 3/4" x 7 11/16"	35 5/8" x 11 1/2" x 8"	35 11/16" x 11 1/2" x 8"
	Packaging	in.	33" x 12.8" x 10.4"	33" x 12.8" x 10.4"	42.13" x 15.55" x 11.22"	42.13" x 15.6" x 11.22"
Outdoor Unit (W x H x D)	Unit	in.	30" x 21" x 10 1/8"	30" x 21" x 10 1/8"	33 1/2" x 23 3/4" x 11 3/8"	34" x 28 3/4" x 12"
	Packaging	in.	35.83" x 24" x 14.57"	35.83" x 24" x 14.57"	33.46"x 27.95" x 11.81"	36"x 27.95" x 12.81"
Solar Panel 305W (W x H x D)	Unit	in.	39 3/8" x 65 1/2" x 1 1/4"	39 3/8" x 65 1/2" x 1 1/4"	39 3/8" x 65 1/2" x 1 1/4"	39 3/8" x 65 1/2" x 1 1/4"
Battery (W x H x D)	12 VDC		100 Ah	150 Ah	200 Ah	250 Ah
	Unit	in.	16 1/2" x 11 x 7 1/4"	9 1/2" x 11 1/2" x 7 1/4"	21" x 11 1/2" x 10"	
Weight						
Indoor Unit	Net/Gross	lbs.	15lbs 20oz / 20lbs 3oz	15lbs 20oz / 20lbs 3oz	20lbs 6oz / 25lbs 15oz	20lbs 6oz / 25lbs 15oz
Outdoor Unit	Net/Gross	lbs.	88.18 / 99.21	99.21 / 105.82	121.25 / 127.87	127.87 / 143.3
Solar Panel	Net/Gross	lbs.	41.25 / 51.5	41.25 / 51.5	41.25 / 51.5	41.25 / 51.5
Battery	Net/Gross	lbs.				

Notes:

- Parameters in the above table are measured in their rated working state. Changes may appear according to the actual working conditions.
- Parameters may change due to continued product improvement. Please refer to the nameplate on actual unit.

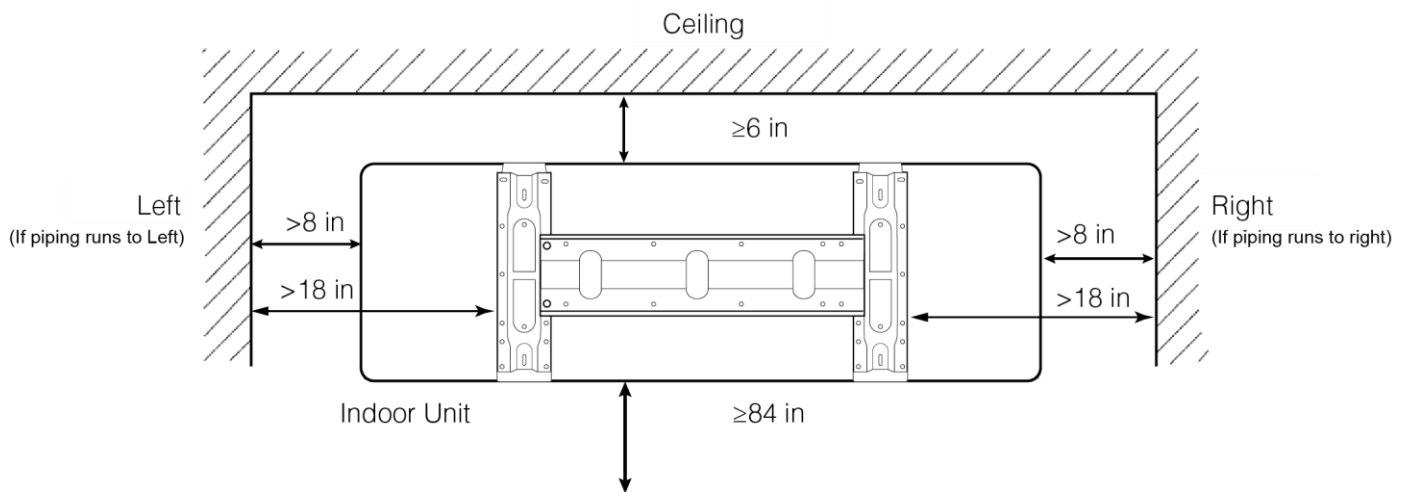


UNIT ENGINEERING SUBMITTALS - DIMENSIONS – INDOOR UNITS



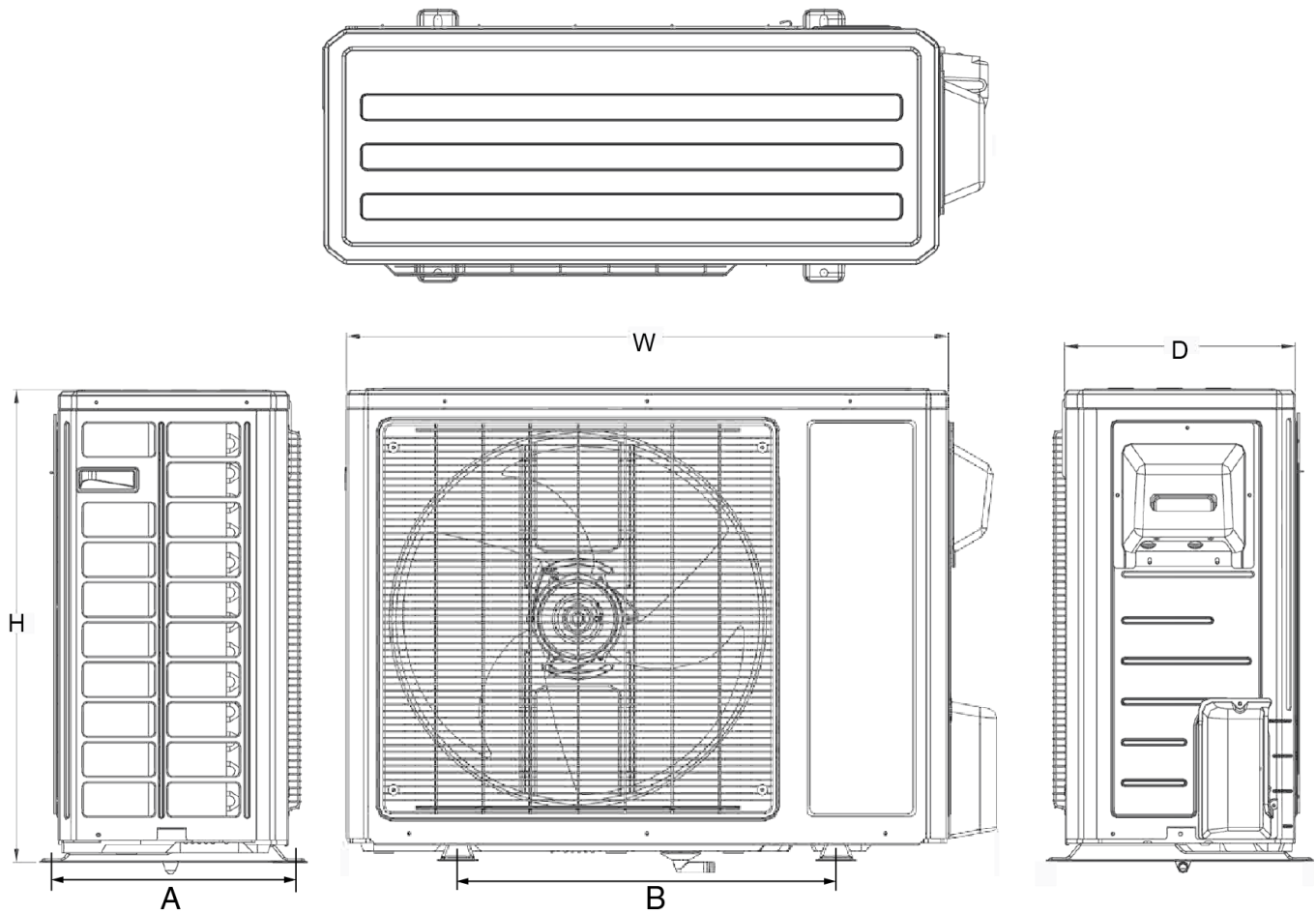
Model	W inches	H inches	D inches	Net Weight	Gross Weight
9k Btu/h	30 5/8"	9 3/4"	7 11/16"	15lbs 20oz	20lbs 3oz
12k Btu/h	30 5/8"	9 3/4"	7 11/16"	15lbs 8oz	20lbs 3oz
18k Btu/h	35 5/8"	11 1/2"	8"	20lbs 6oz	25lbs 15oz
24k Btu/h	35 11/16"	11 1/2"	8"	20lbs 5oz	25lbs 10oz

MOUNTING BRACKET CLEARENCE



Note: Actual unit/part may appear differently than what is the above illustration.

UNIT ENGINEERING SUBMITTALS - DIMENSIONS – OUTDOOR UNITS



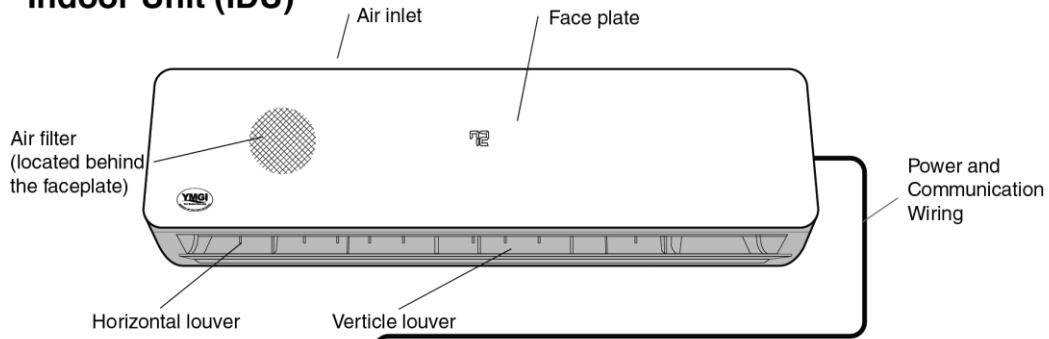
Model	Dimensions (In)					Weight (lbs.)	
	W	H	D	A	B	Net	Gross
09K	30"	21"	10 1/8"	11 3/8"	21 1/4"	88.18	99.21
12K	30"	21"	10 1/8"	11 3/8"	21 1/4"	99.21	105.82
18K	33 1/2"	23 3/4"	11 3/8"	12 3/8"	19 5/8"	121.25	127.87
24K	34"	28 3/4"	12"	13 1/2"	25 1/8"	127.87	143.3

AIR CONDITIONER COMPONENTS

NOTICE

The illustration below are based on a standard model of heat pump. Your unit appearance may differ depending on model and capacity.

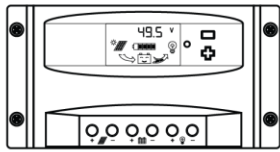
Indoor Unit (IDU)



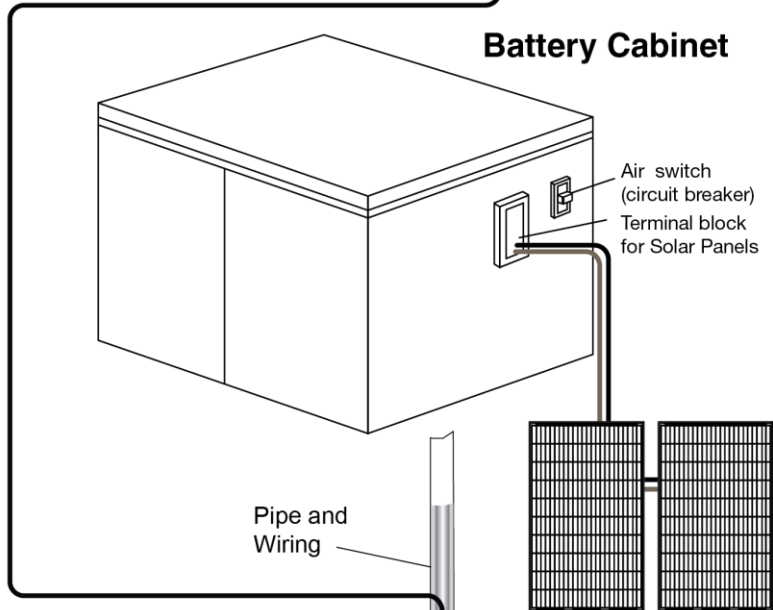
Remote Controller



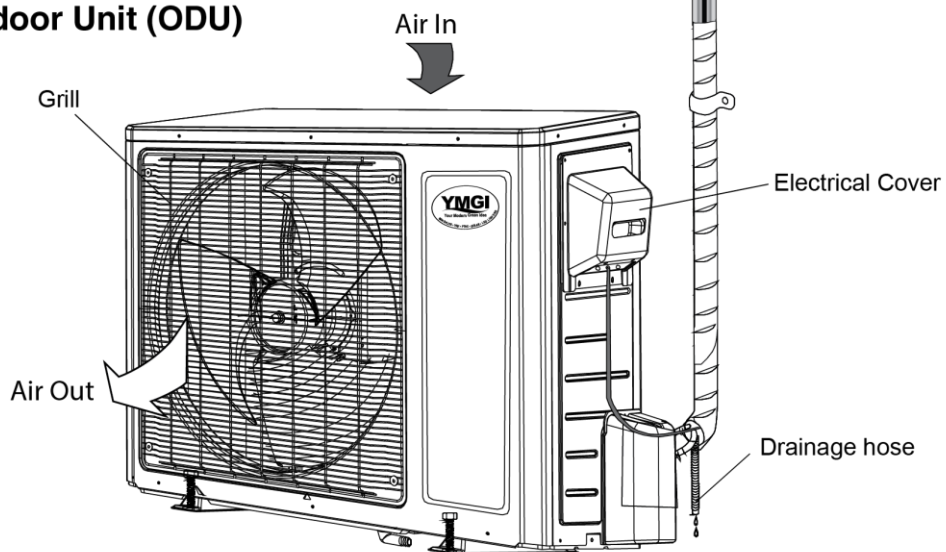
Charge Controller



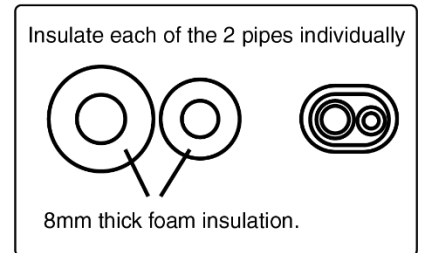
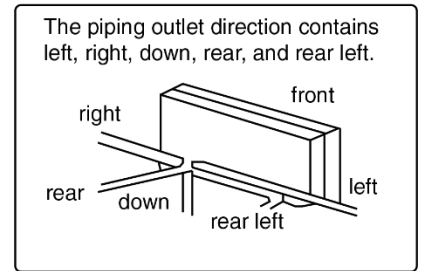
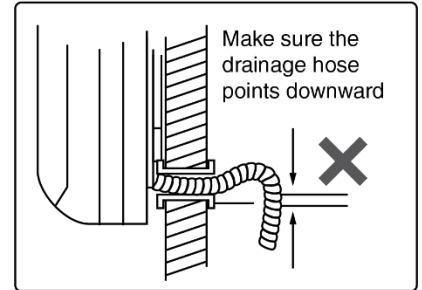
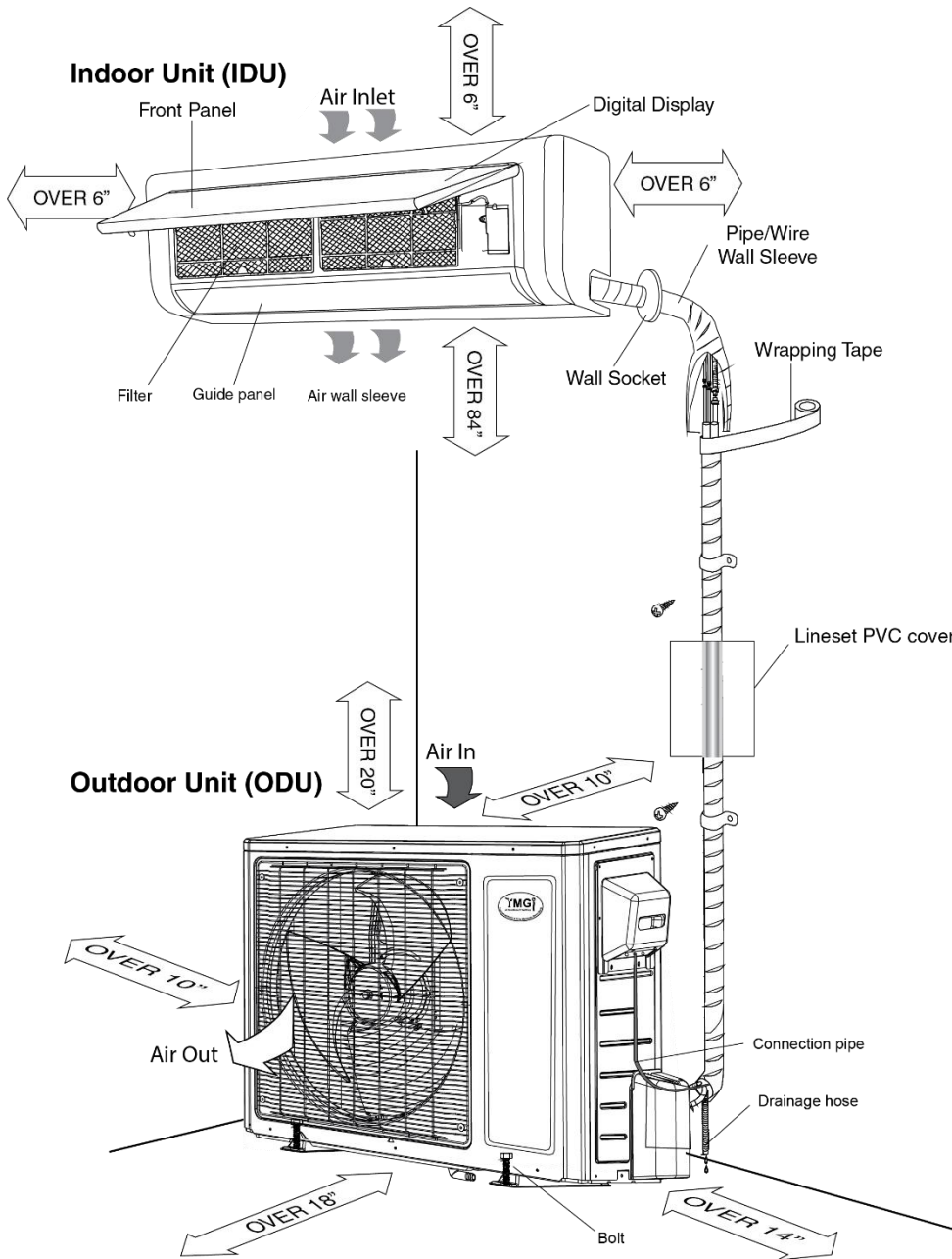
Battery Cabinet



Outdoor Unit (ODU)



INSTALLATION CLEARANCE REQUIREMENTS GENERAL (IDU / ODU)



If connecting piping goes through sheet steel or a metal mesh wall, 3/4" or thicker wooden board should be used between the wall and the piping, or bind it with 7 or 9 layers of wrapping tape.

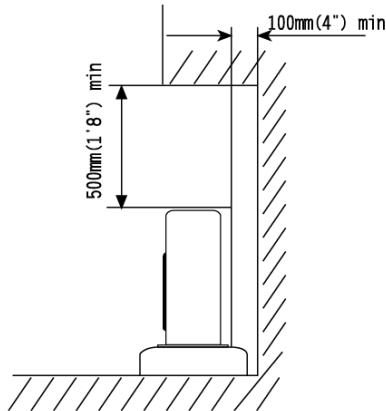
Notes: Actual unit/ part appearance and installation may vary from illustration. Subject to changes or improvements without notice.

INSTALLATION CLEARANCE REQUIREMENTS-OUTDOOR UNIT

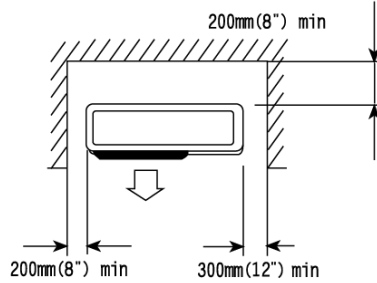
MAKE SURE OF ENOUGH SPACE FOR INSTALLATION AND MAINTENANCE

To take into consideration the operational convenience and safety in installation, it is recommended to ensure enough space between the unit and the walls.

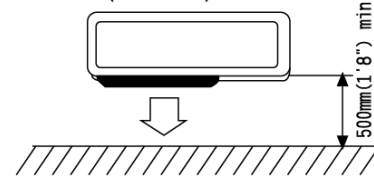
1. When there are obstacles above the unit



2. When the front (air outlet) is open

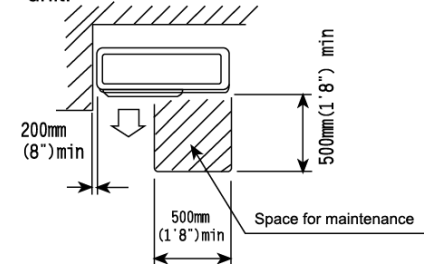


3. When there are obstacles only in the front (air outlet)

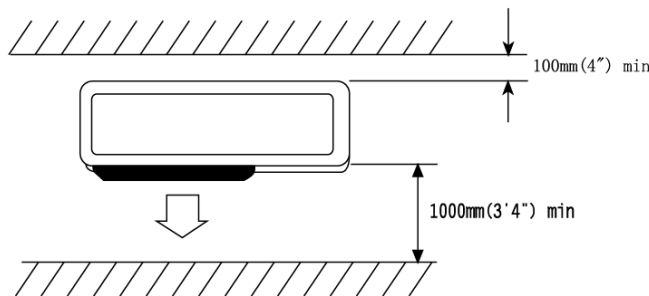


Space for maintenance

Shown as in the following figure. Keep the maintenance space in front of the unit.

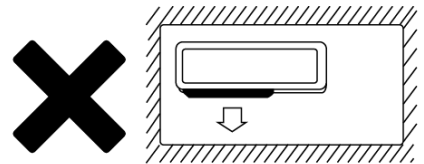


4. When there are obstacles at the front and rear sides.



5. When there are obstacles all around the unit on four sides.

Although the top side is open, the installation is not to be done if there are obstacles all around.



● At least two sides should be kept open.

RECOMMENDED TOOLS FOR INSTALLATION



1) Mounting Indoor & Outdoor Units and Running Piping/Wiring

- Ruler (Not Shown)
- Stud-Finder
- Dry-Wall Saw
- Electric Drill
- 3" Hole Saw
- Drill Extension
- Hammer Drill and Bit (Not Shown)
- Measuring Tape
- Level
- Flash Light
- Screw Driver (Phillip's and Flat)
- Hammer
- Knife
- Scissors
- Safety Glasses
- Dust Mask
- Gloves
- Ladder

2) Refrigeration Related Work

- Individual wrench Set (Use Two at One Time)
- Flare-Nut Tool Set (Not Shown)
- Hex Head Allen Wrench Sets (Metric and Imperial)
- Brazing Rods and Brazing Torch
- Outfit for AC Application (Not Shown)
- Brazing Flux
- Nitrogen Cylinder for Positive Pressure Leakage Check (Not Shown)
- Soap Bubble for Positive Pressure Leakage Check (Not Shown)
- Vacuum Pump for Negative Pressure Leakage Check
- Helium Refrigerant for Minor Leakage Check (Not Shown)
- Manifold

3) Electrical Related Installation

- Wire Cutter
- Wire Stripper
- Sharp Plier
- Cable Ties
- Black Tape for Electrical Use
- Electrical Meter

4) Trial Running Units and Inspection

- Clamp Meter (Not Shown)
- Manifold
- InfraRed Thermometer (Not Shown)



⚠ CAUTION

**All Units Shall Be Installed by Licensed Contractors or Technicians.
Read Manuals before Installation.**

- The location and structure should also be convenient for both installation and service.
- The location should NOT be where discharge air and noise could annoy a neighbor.
- The location should NOT be where drain may cause any damage to property or annoy a neighbor.
- The location should NOT be where brazing work may cause fire or smoke to the surrounding materials.
- The location should NOT be near flammable gases.
- The location should NOT be in or close to corrosive gases.
- The location should NOT be where children can access.

⚠ CAUTION**CAUTION & SUGGESTIONS TO FOLLOW PRIOR TO INSTALLATION**

- Check the unit for damage and missing parts or accessories. If there is damage found or parts are found missing, call the distributor right away.
- Spin fan wheels or blades to check if they can rotate freely. If the fan wheel scratches the housing, call the distributor right away and do not proceed with the installation until it is fixed.
- Check the unit to make sure no foreign materials have been left inside the unit.
- Check to be sure you have all the additional parts and accessories that are required for the installation and those provided with the unit.
- It is strongly recommended to only use YMGI supplied or approved parts and accessories.
- Be sure a properly sized circuit breaker is installed for the electric power supplying the units.
- Pre-build the support platform on the ground or bracket for the wall before or during construction and before installation.
- Read installation instructions for all units thoroughly.
- Ask rep./distributor/YMGI Group anything you are not sure about.
- Get your tools and parts ready and start the installation.

BASIC REQUIREMENTS FOR THE INSTALLATION LOCATION

- Choose a location where there are no strong heat sources, vapors, flammable gas or volatile objects.
- Choose a location where there are no high-frequency waves being generated by radio equipment, welders and medical equipment.
- Choose a location where there are not a lot of salinities, such as coastal areas.
- Choose a location where there is no oil (machine oil) contained in the air.
- Choose a location where there is no Sulfur gas present, such as areas close to hot springs.
- Choose a location where there is no other special circumstance.

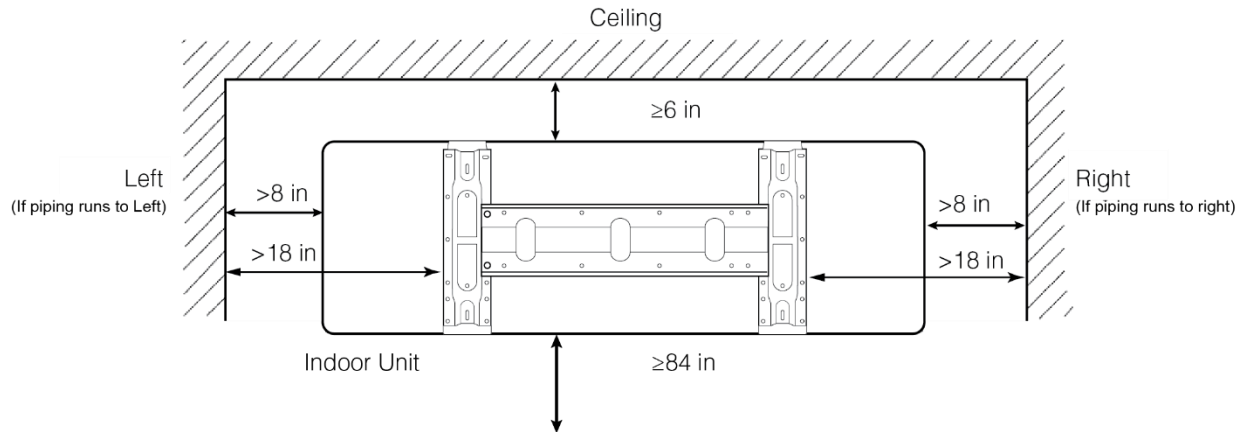
SELECTION OF INDOOR UNIT INSTALLING LOCATION

- The air inlet and outlet vent should be far from any obstructions, making sure that the air can be blown through the entire room.
- Select a location where the condensate water can be easily drained, and can be easily connected to the outdoor unit.
- Select a location where children cannot reach the unit.
- Select a location that is strong enough to support the full weight of the unit and the vibration which will allow the unit to operate more quietly.
- Be sure to leave enough space to allow access for routine maintenance. The height of the installed location should be 78 inches or more from the floor.
- Select a place about 3 feet or more away from television or any other electric appliances.
- Select a place where the filter can be easily maintained.
- Make sure that the indoor unit is installed in accordance with the dimensioned diagram.

INSTALLATION - INDOOR UNIT

MAKE SURE OF ENOUGH SPACE FOR INSTALLATION AND MAINTENANCE

To take into consideration the operational convenience and safety in installation, it is recommended to ensure enough space between the unit and the walls.



Attention: If there are some additional function devices to install on the unit, be sure to add to the installation space for the function devices.

INSTALL THE WALL MOUNTING PLATE

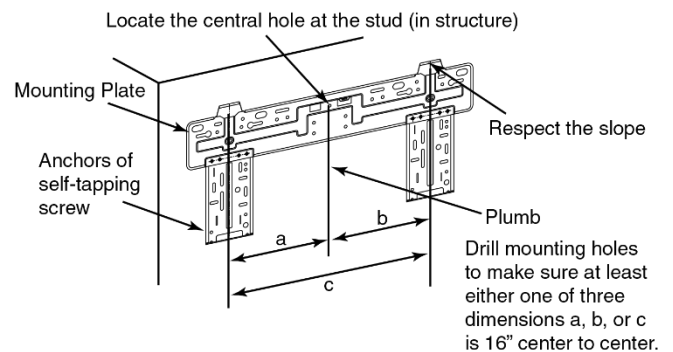
- Prior to installing the mounting plate, check the unit and make sure the unit is in good condition and ready to install.
- Check to make sure the installation location is strong enough to hold the weight of the whole unit and is in a location that is convenient to install, maintain, service and close to the outdoor unit.
- Install the indoor unit. Use enough anchor bolts to secure the mounting plates to the wall for indoor units. The mounting plate should be level and secure and ready to receive the indoor unit.

Install Mounting Plate and Drill Hole for Combination of Copper Line/Wire Cable/Drain Hose

NOTES:

Anchors must be put into the holes, where the solid arrows are pointing, as shown, to secure the mounting plate firmly and to hold the weight of the indoor unit. If more screws/anchors are required, make sure, to keep the two holes close to each other, at least 2 inches apart.

The mounting plate should be attached to the structural part of the wall. Minimum clearance, as shown, is required to ensure proper airflow and allows enough room for easier service.

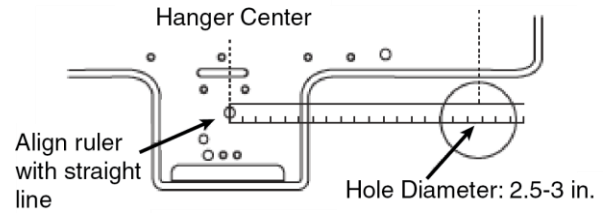


Steps to Mount Plate

- Mark all drill positions. At least 8 anchor holes are required, 2 at each of the 4 perimeter corners of the plate. These are needed to secure the plate, where the bold arrows are pointing, as shown in the picture above. Refer to the specification sheet for unit weight so that enough anchors are installed at the proper locations.
- Pre-drill guiding holes which are marked for anchors or screws on the wall.
- Confirm the position of the holes and finish drilling to the depth required for anchors (NOT for screws).
- Align the mounting plate holes with the holes drilled on the wall and put anchors or screws into the holes to secure the mounting plate.

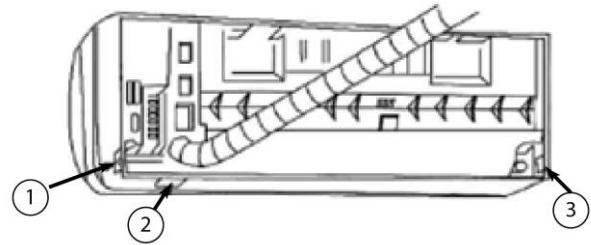
DRILL 3 INCH HOLE FOR PIPING/WIRING/DRAIN

- Locate the center where the hole will need to be drilled.
- Drill the holes of 2.5 – 3 Inches in diameter. A down pitch of about 1/4 inch per foot, as illustrated, is needed for the hole, to drain the condensate properly.



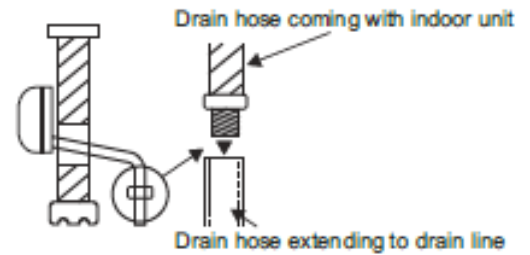
PREPARE INDOOR UNIT- COPPER LINE SET/DRAIN HOSE

- If pipes need to come out of the right side (facing the front of indoor unit) of the indoor unit, snap off portion ① on plastic casing.
- If pipes need to come out of the bottom side (facing the front of indoor unit) of the indoor unit, snap off portion ② on plastic casing.
- If pipes need to come out of the left side (facing the front of indoor unit) of the indoor unit, snap off portion ③ on plastic casing.
- If pipes need to be rerouted to a different direction from the one preset at factory (towards left side, if facing the front cover of indoor unit), lay the indoor unit down on a soft cushion or foam. Don't rub the plastic casing.
- To keep from damaging the pipes, bend the copper tubing set gently and slowly (A 90° bend should take a minimum of 10 seconds), by firmly holding the pipe at the root of the original 90° bend. Don't rub the two copper lines while bending. It is better to cut off the insulation and bend the two pipes individually and not together.
- If the pipes need to come out of the rear side (facing the front of the indoor unit) of the indoor unit, there is no need to snap off anything.



INSTALL THE INDOOR DRAIN PIPE

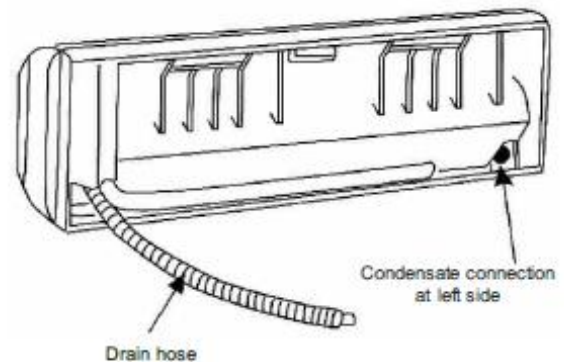
- The drain hose must be placed beneath the copper pipes and MUST NOT be kinked or bent sharply.
- Do not pull the drain hose too hard, as it may break.
- Before passing the drain hose through the hole, wrap it with insulation to keep it from possible damage.
- The copper pipe and the drain hose must be wrapped with piping wrap.
- The insulation pad (underlay) should be used where the pipe contacts the wall.



REFIT DRAIN HOSE FROM THE RIGHT TO THE LEFT SIDE

If the drain hose needs to be refitted from its original position (right side) to left side of the indoor unit, careful handling is necessary as not to damage the unit.

- Refitting method: remove the drain hose from its original position, without breaking the hose. Remove the plug at the left side. Apply water-resistant glue to fit the drain hose and the fitting before securing it.
- Apply water-resistant glue onto the plug and fit it back into the condensate connection at right side.



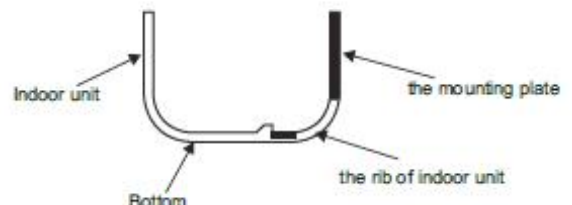
NOTES:

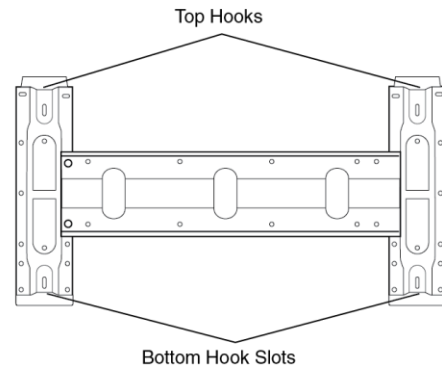
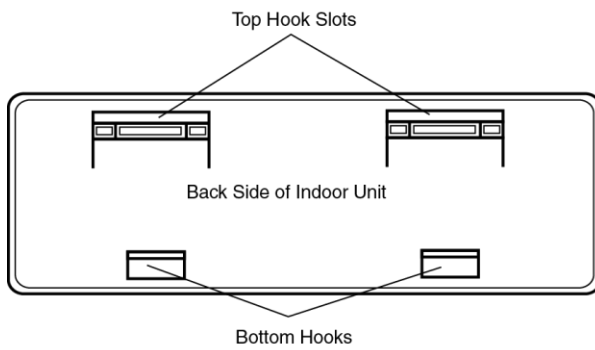
One can use a clamp to further secure the connections.

HANG INDOOR UNIT

Run copper set/wire cables/drain hose through the wall hole and hang the indoor unit onto the mounting plate (place the hook on the mounting plate into the hanging rib at rear side of plastic casing).

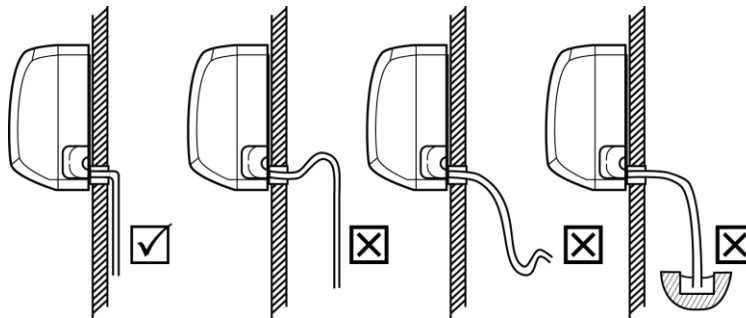
- Snap the plastic casing bottom into the mounting plate, gently.





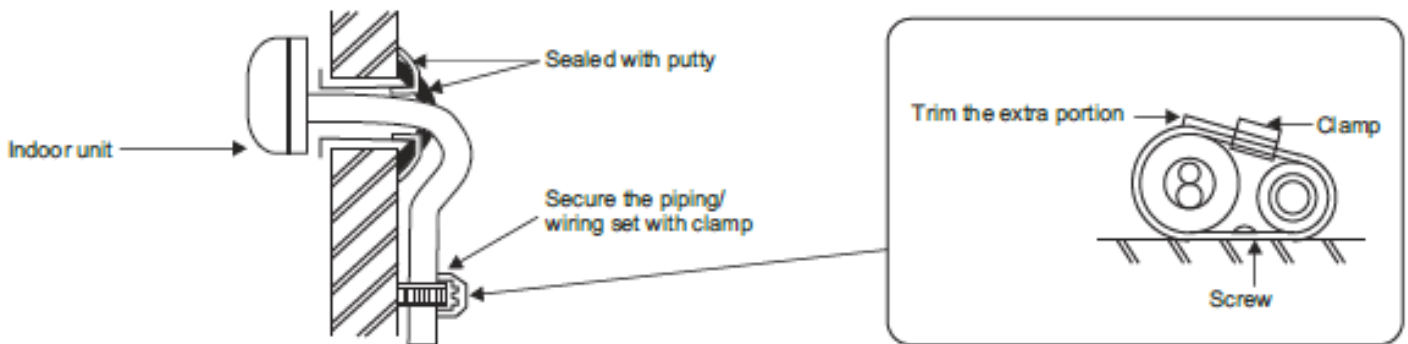
SHAPE THE DRAIN HOSE

- To drain the condensate easily, the drain hose should be angled downward (pitched towards the drain direction at 1/4" per foot).
- Figures below from the 2nd to 5th show some incorrect practices.
- The drain hose may be extended using the hose supplied with the installation list.



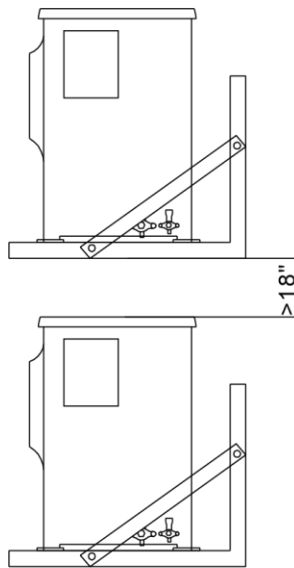
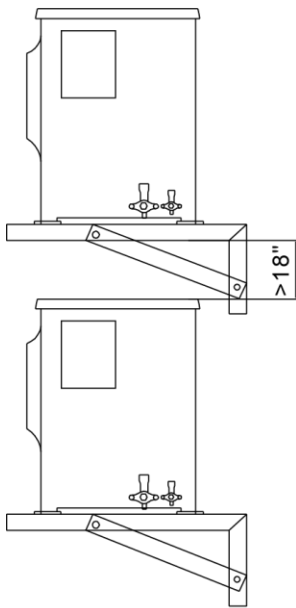
STUFF AND SEAL THE HOLE FOR COPPER LINE SET/WIRE and CABLE/DRAIN HOSE

- Use putty to seal the wall hole.
- Use a clamp (pipe fastener) to secure the pipe at the specified location.



INSTALLATION OF OUTDOOR UNIT

It is strongly suggested to install the outdoor unit above the ground, either on a platform or brackets as shown below. Heat pump unit must be lifted up from ground level, allowing any condensate to drain out of the drain pan in condensing unit. Otherwise, condensate may ice up causing damage to the unit. We suggest using YMG brackets and condensate drainage fitting accessories.



Stainless Steel Brackets with Accessories



Heavy-Duty PVC Riser for Ground Mounting



Coated Brackets with Accessories

***Actual unit/parts look/installation may vary from illustrations**

INSTALLATION & PICTURES-WALL MOUNT BRACKET FOR OUTDOOR UNIT(S) (PART VARIES UPON MODELS/AVAILABILITY)

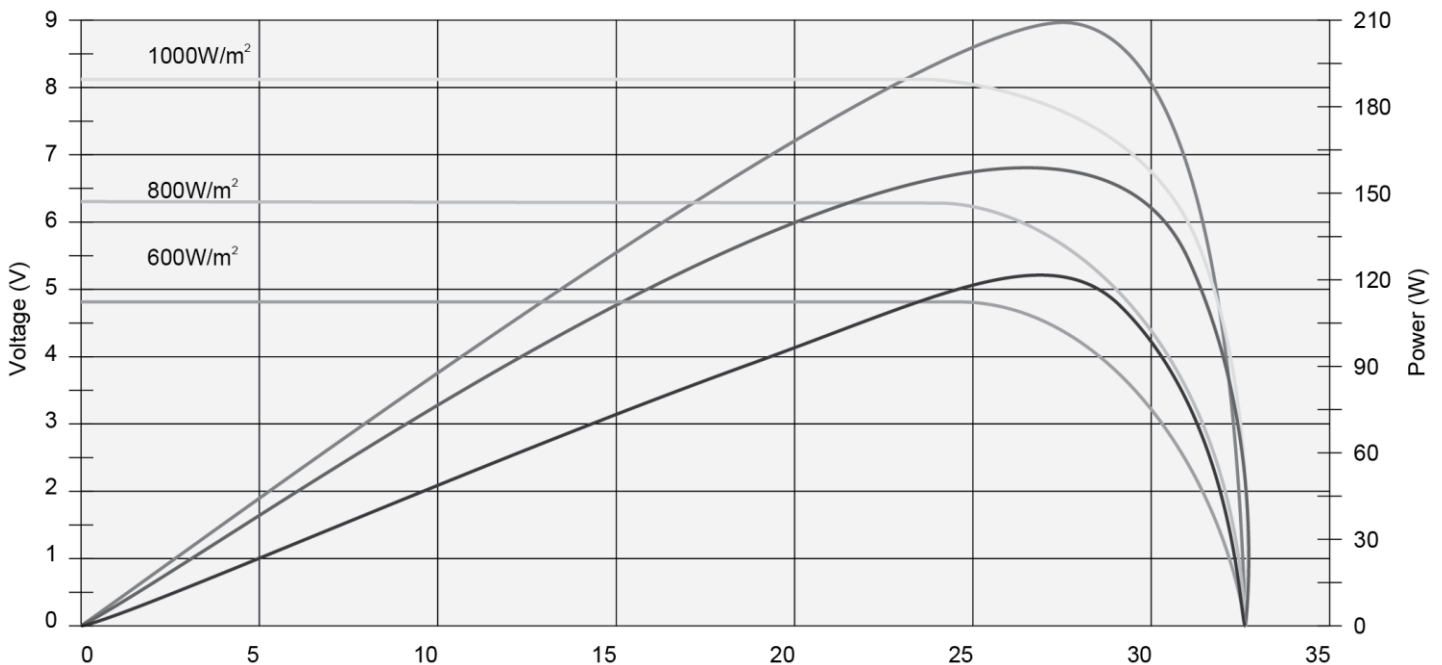
- Select a secured location where the outdoor unit can be installed properly.
- Orient the unit rear side (intake grill) towards wall and front side (discharge grill) away from wall.
- For ground installation, use factory-provided riser and accessories. Do not bolt unit feet directly onto ground.
- Riser or brackets should be levelled at outdoor unit foot surfaces. Secure unit foot by tightening bolts, nuts and anti-vibration pads.
- For ground installation, it is recommended to use YMG optional accessories like risers.

Specifications of Sample 200W PV-MODULE

Electrical Characteristics		Mechanical Characteristics	
Open - Circuit Voltage (Voc)	33.4V	Solar Cell	Poly-crystalline 156 x 156mm (6 inch)
Optimum Operating Voltage (Vmp)	26.2V	No. of Cells	54 (6x9)
Short - Circuit Current (Isc)	8.12A	Dimensions	1482 x 992 x 35mm (58.3 x 39.1 x 1.4 inch)
Optimum Operating Current (Imp)	7.63A	Weight	16.8kg (37.0lbs.)
Maximum Power at STC (Pmax)	200Wp	Front Glass	3.2 mm (0.13inch) tempered glass
Operating Temperature	-40 °C to +85 °C	Frame	Anodized aluminum alloy
Maximum System Voltage	600V DC	Junction Box	IP65 rated
Maximum Series Fuse Rating	20AMPS	Output Cables	LAPP (4.0mm ²), asymmetrical lengths (-) 1200mm(47.2inch) and (+) 800mm (31.5inch), MC Plug Type IV connectors
Power Tolerance	±3 %		

STC: irradiance 1000W/m², Module temperature 25°C, AM=1.5

Current-Voltage & Power-Voltage Curve



MECHANICAL INSTALLATION

1. Mechanical installation of PV-modules should be operated by professional solar photovoltaic installer or reputable solar installer of systems integrator.
2. YMGI does not provide any guide for PV-module installations. Please follow their installation instructions or contact the panel manufacturer.

ELECTRICAL INSTALLATION of PV PANELS

General installation

- Any hardware used must be compatible with the mounting structure material to avoid galvanic corrosion.
- It is not recommended to use modules with different configurations in the same system.
- Several modules should be connected in series to form a string of modules if needed. The maximum number of series connected modules is 5.
- MC-4 connector is the recommended connector and the recommended system wires size is AWG12.

ASSEMBLY OF PV-WIRE

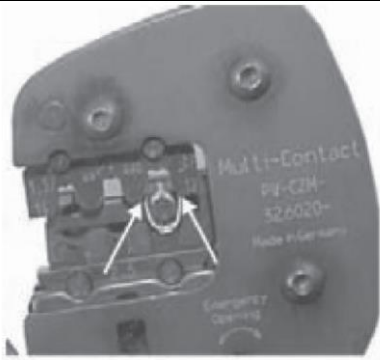

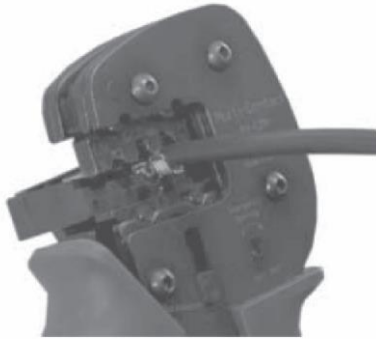
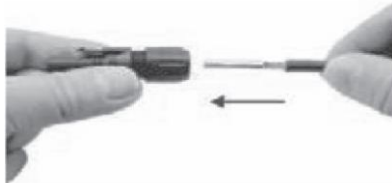
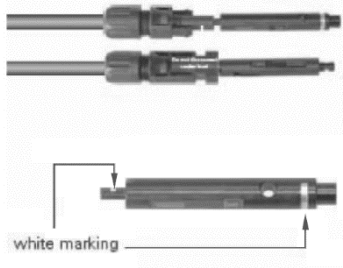



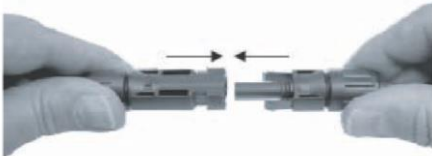
1. The PV-wire should be single-pole, double insulated solar cable, the length of which is due to the distance from PV-modules to outdoor unit of AC, the recommended conductor cross section is AWG 12, and it should accord with UL4703
2. The MC-4 connectors should be assembled to the PV-wires, and the other side of the PV-wires should be assembled with spade terminals.

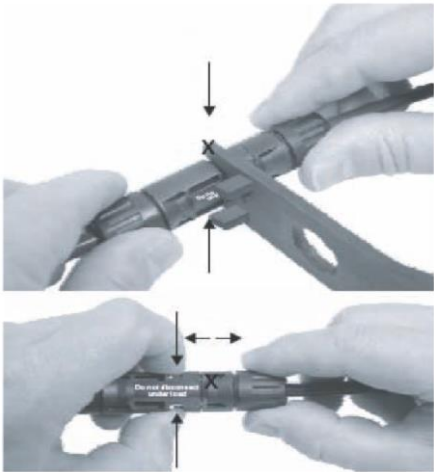


ASSEMBLY OF MC-4 CONNECTOR

Introduction of MC-4 connector

The MC-4 connector contains three parts, male PV cable coupler, female PV cable coupler, and a safety lock.

Step	Instruction	Photo	Recommended Tools
1	<p>Strip cable insulation. For best results, expose roughly 1/4in. – 1/3in. of copper wire. Take care not to cut individual strands.</p>		<p>Stripping Pliers</p> <p>Interchangeable Blade</p>
2	<p>Hold open the clamping clip. Insert contact in the appropriate cross-section range of the crimping tool.</p> <p>Turn contact until the crimping tabs face up.</p> <p>Release the clamping clip. Make sure the contact is secured.</p>		<p>Crimping pliers</p> <p>Insert</p> <p>Locator: PV-LOC</p>

<p>3</p>	<p>Lightly press the pliers together so that the crimping tabs lie securely within the crimping die.</p>		
<p>4</p>	<p>Insert the stripped cable until the insulation comes into contact with the crimping insert. Close the crimping tool completely. When finished, check the crimp and make sure the wires are firmly secured.</p>		
<p>5</p>	<p>Push the crimped contact into the socket of the plug insulator until it engages. Pull lightly on the lead to check that the metal part has engaged.</p>		
<p>6</p>	<p>Insert the test pin with the corresponding side into the socket, or plug to the end position. If the contact is correctly assembled, the white marking on the test pin will be visible.</p>		
<p>7</p>	<p>Screw on the cable nut, hand-tighten. The torque must be adapted to the solar cables used individually. Typical values are between 2.5Nm to 3Nm</p>		
<p>8</p>	<p>Push the couplers together until they lock. Check for correct engagement by tugging on the coupling.</p>		

<p>9</p>	<p>Compress the two snap-in springs (x) by hand or use the PV-MS tool to separate the coupling.</p>		
<p>10</p>	<p>To Plug together: Mount the plug connection until it engages. Check to make sure it is locked in place by tugging on the coupling.</p> <p>To unplug the connection you will need the PV-MS tool</p>	<p>PV-SSH4</p> 	<p>PV-SSH4</p> 

CONNECT REFRIGERANT PIPES BETWEEN THE INDOOR AND OUTDOOR UNITS

First, connect the copper tubes at indoor unit. Bend the pipes accordingly using pipe bending tools. Do NOT hand bend pipe, as this could create a kink in the pipe. Extra length is required for future service.

REFRIGERANT PIPES

For a distance other than 25' between indoor and horizontal venting condensing units, refer to the following table for copper sizes.

Refrigerant Valve and Pipe Size/Length

Btu/h	Valve Size	Line Sizes at Different Lengths		Add Ref. oz./ft. beyond 25'
	Liquid Gas	10 – 30 ft.	31 – 75 ft.	
09K	1/4", 3/8"	1/4", 3/8"	1/4", 1/2"	0.23
12K	1/4", 3/8"	1/4", 3/8"	1/4", 1/2"	0.23
18K	1/4", 1/2"	1/4", 1/2"	1/4", 5/8"	0.23
24K	1/4", 5/8"	3/8", 5/8"	3/8", 3/4"	0.23

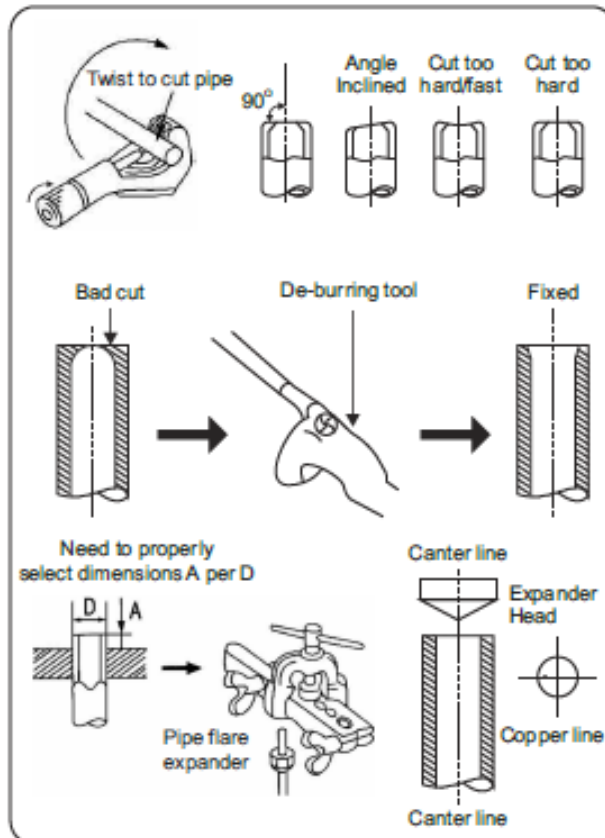
Note: Charge refrigerant (in cooling mode) gradually, starting from 30% calculated amount. Wait for 5 minutes before system pressure is stabilized and add more, to reach the suction pressure in the table above.

Running Interconnecting Refrigerant Lines:

Use clean refrigeration grade copper pipe only. Keep the copper lines from kinking and transmitting any noise to walls, cabinets, etc. Pipe length not to exceed 50 feet, elevation not to exceed 35 feet. Insulate both the liquid and gas copper lines with at least 3/8-inch-thick insulation tubes. Band, tape and secure the refrigerant lines. Support copper lines at a proper distance apart to keep the tubes from sagging.

CUT REFRIGERANT PIPE

Make sure where the pipe is to be cut is straight and smooth. Engage the cutting blade. The cutting blade must be straight and perpendicular to the pipe surface. Don't cut too fast or apply too much pressure. Turn and tighten the tube cutter slowly. Remove residual and de-bur the cut edge. The cut edge should be smooth and clean.

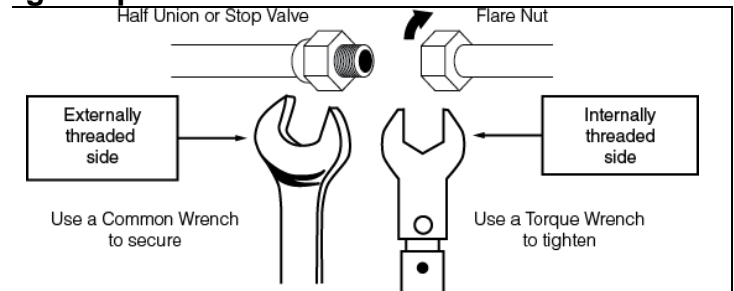


Connect Copper Pipes-Flare/Nut Connection at Indoor and Outdoor Units

Proper torque should be applied to create a good connection at the female nut, flare and male nut, as recommended in the following table. Too much torque may damage and break the flare/nut seal. Too little torque may not ensure a good seal. ALWAYS use a pair of wrenches when tightening.

Refrigerant Pipe Flare/Nut Connection Tightening Torque

	Tightening Torque
1/4" – 3/8"	25 ft. lbs. (350 kg-cm)
1/4" – 1/2"	40 ft. lbs. (560 kg-cm)
1/2" – 3/4"	60 ft. lbs. (840 kg-cm)
7/8" – 1 1/8"	110 ft. lbs. (1540 kg-cm)

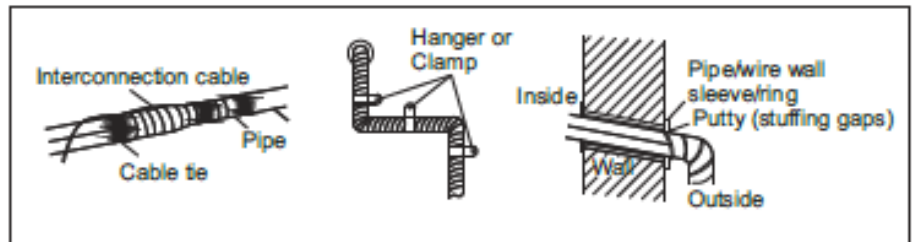
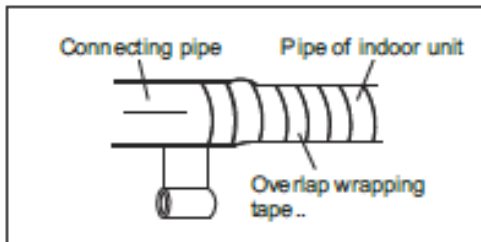
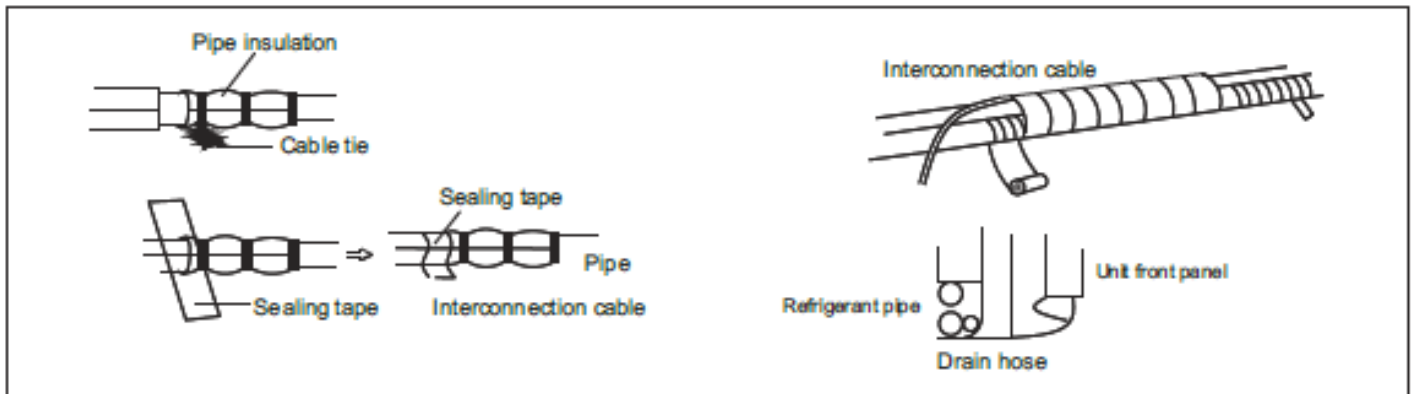


Connect Copper Pipes-Sweat Connection

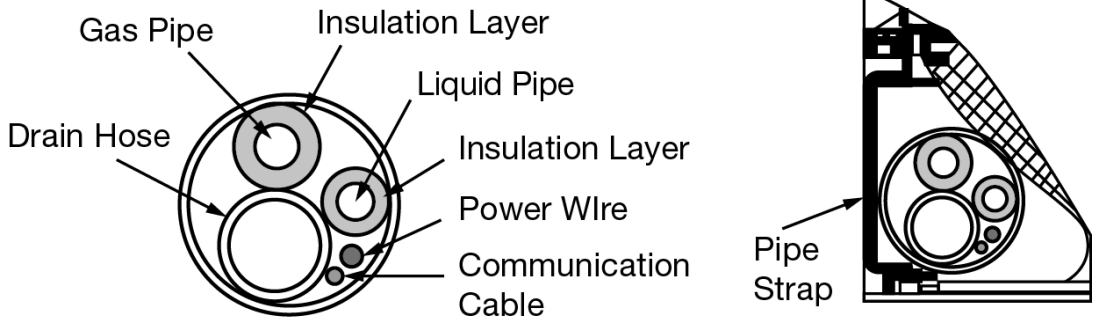
In this case, wrap a wet rag around the pipe to protect the valves or other components from being overheated. When using flux, rub the tube surface using steel wool to remove any oxidation. Then clean and dry to protect the system from any possible contamination.

CONNECT REFRIGERANT PIPES BETWEEN THE INDOOR AND OUTDOOR UNITS

Seal Copper Line Set/Wire and Cable/Drain Hose Line Combination



- Run cables along with the refrigeration copper line sets and secure them with tape, 6 feet apart.
- Wrap tape tight (cover a third of the width of the wrapping tape applied early) to ensure a good seal.
- Tape and seal the end of the wrapping tape.
- Shape the pipe combination gently, without causing kinking, sharp bends, or other damage to it.
- Fix the pipe combination securely on the external wall with proper clamps, 6 feet apart.
- Fill the gap between the wall hole and wall sleeve with putty to keep rain or dust from entering inside.



PIPING GUIDE

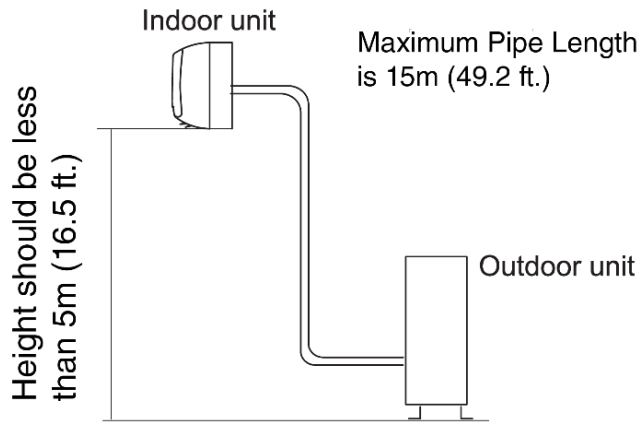
Set the packed pipes in a vertical position and then unwind them slowly.			Do not unwind only one end of the coiled pipes.
Use pulley or a bending tool to ensure a safe bending radius.			Do not make any sharp or small radius bends.
May also use rolling wheel to reduce internal pipe tension and avoid possible deformation.			Do not bend long sections of pipe without using bending tools.
Use an elbow tool for consistent bending radius.			Do not make bends that are less than 90 degrees.
Maintain the minimum bending radius.			Do not bend shot pipes.

PIPING AND WIRING SIZES-UNITS

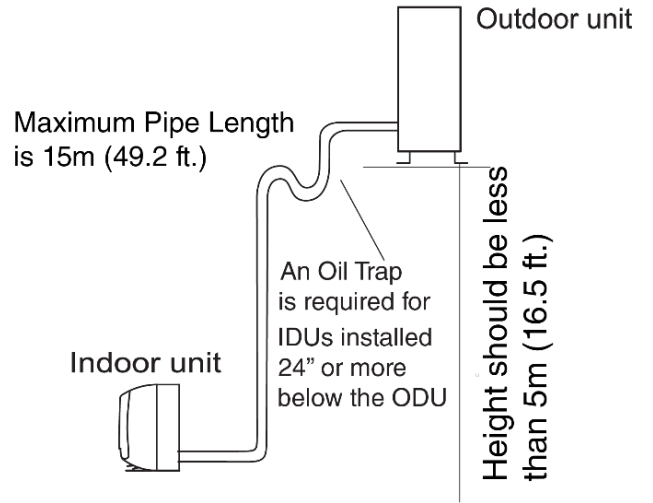
Model	Liquid / Gas Line	Min - Max Length	+/-Elevation	Power Wire Min. Disconnect Switch Box to Outdoor Unit	Power/ Control Wire Min. Outdoor Unit to Indoor Unit
09K	1/4" & 3/8"	10 – 49.2 ft.	16.5 ft. / 16.5 ft.	+/- 24V 12AWG	1/2/3/G/F/V AWG16, 24V, 3 wire plugxAWG18
12K	1/4" & 3/8"	10 – 49.2 ft.	16.5 ft. / 16.5 ft.	+/- 48V 10AWG	1/2/3/G/F/V AWG16, 48V, 3 wire plugxAWG18
18K	1/4" & 1/2"	10 – 49.2 ft.	16.5 ft. / 16.5 ft.	+/- 48V 10AWG	1/2/3/G/F/V AWG16, 48V, 3 wire plugxAWG18
24K	1/4" & 5/8"	10 – 49.2 ft.	16.5 ft. / 16.5 ft.	+/- 48V 8AWG	1/2/3/G/F/V AWG16, 48V, 3 wire plugxAWG18

- The indoor unit and the outdoor unit can be at different heights either above or below each other. The height for the difference must follow the stated requirements shown in the table below.
- Keep bending of the piping line to a minimum to avoid any possible negative impacts on the performance of the units.
- Make a P-trap if the elevation drop difference is more than 24 inches, as illustrated below.

Indoor Unit is higher than Outdoor Unit



Outdoor Unit is higher than Indoor Unit



INSTALLATION OF ACCESSORIES

Layout line set covers before installing copper/wires.

Seal Copper Line Set/Wire Cable/Drain Hose Line Combination:

- Use factory-recommended components, as briefly illustrated below.
- Cover line set in a sequence, either from indoor to outdoor, or the other way.
- Secure line set covers onto the wall using factory-recommended accessories.

LINE SET COVERS

⚠ CAUTION

Do not damage line sets.



OUTDOOR UNIT FOOT RISER OR BRACKETS

BRKT-XXXX-SC1

- Made of steel.
- Coated with weatherproof polyester powder.

Model	Size(Inch)		Capacity	
	A	B	LBs	Btu/h
BRKT-0918-SC1	17.7	15.4	320	09K-18K
BRKT-1860-SC	21.7	18.3	360	18K-60K



BRKT-XXXX-ST1

- Made of stainless steel.

Model	Size(Inch)		Capacity	
	A	B	LBs	Btu/h
BRKT-0918-ST1	17.7	15.4	320	09K-18K
BRKT-1860-ST1	21.7	18.3	360	18K-60K



RIST-XXXX-PVC

- Foot Riser
- Accessories: End Caps (Optional)
- Shock-proof PVC, Weatherproof & UV resistant.
- Supplied with fastening screws and anchor bolts.
- Easy to install.
- Honeycomb structure acts as an anti-vibration & humming absorption for quiet operation.

Model	Size(Inch)				Capacity	
	A	B	C	D	LBs	Btu/h
RIST-0918-PVC	14.2	3.7	3.1	4.1	220	09K-18K
RIST-1860-PVC	17.7	3.7	3.1	4.1	260	18K-60K



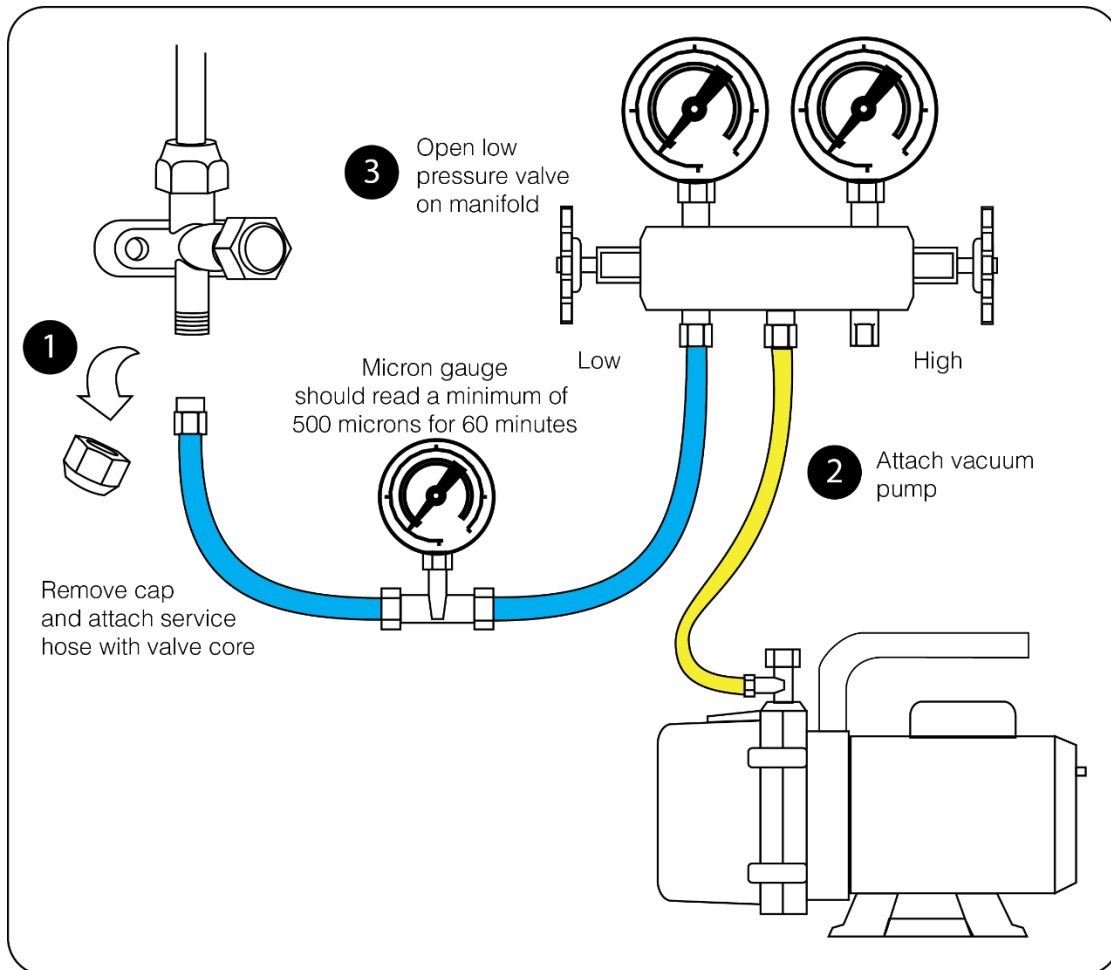
VACUUM TESTING AND CHARGING

CHECK LEAKAGE BEFORE CHARGING IDU

VACUUM REFRIGERANT PIPES

Evacuate the pipes between indoor and outdoor units, using vacuum pump and manifold/gauge set, to a minimum of 500 microns (service valves remain front seated). Turn off manifold valve (low) to check if the vacuum level is maintained for a minimum of 60 minutes. Be certain there is no pressure in the system when repairing a leak.

Vacuum and Check Leakage before Releasing Refrigerant from Outdoor Unit to Indoor Unit

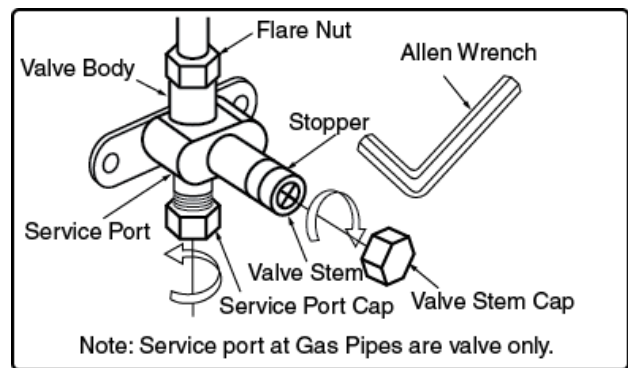
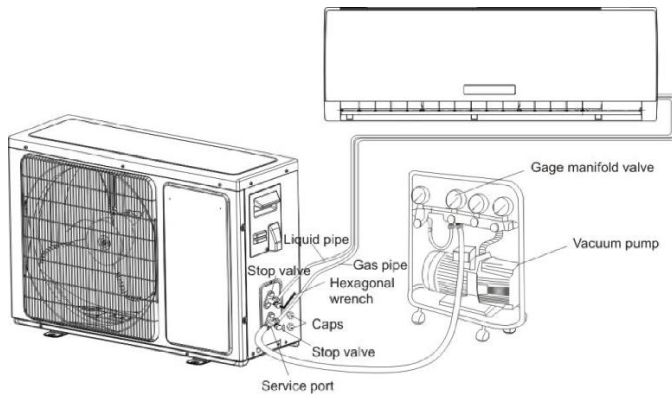


For Multi-Zone systems repeat this process for each zone with indoor units attached to it.

If all zones are not being used, check the flared nuts on the unused valves, and ensure that they are tightened to avoid any potential system leaks.

Air Purging and Leakage Test

1. Connect charging hose of manifold valve to charge end of low pressure valve (both high/low pressure valves must be tightly shut).
2. Connect joint of charging hose to vacuum pump.
3. Fully open the handle of Lo manifold valve.
4. Open the vacuum pump to evacuate. At the beginning, slightly loosen joint nut of low pressure valve to check if there is air coming inside. (If noise of vacuum pump has been changed, the reading of multimeter is 0) Then tighten the nut.
5. Keep evacuating for more than 15mins and make sure the reading of multi-meter is -1.0×10^5 pa (-76cmHg).
6. Check the vacuum with the gage manifold valve, then close the gage manifold valve, and stop the vacuum pump.
7. Leave it for one or two minutes. Make sure the pointer of the gage manifold valve remains in the same position.
8. Remove the gage manifold valve quickly from the service port of the stop valve.
9. After refrigerant pipes are connected and evacuated, fully open all stop valves on gas and liquid pipe sides.
10. Opening without fully opening lowers the performance and cause dangerous.
11. Tighten the cap to the service port to obtain the initial status.
12. Retighten the cap
13. Leak test



Trial Run Procedures

Before trial run, be sure to check and make sure all of the wiring and piping are correct and reliable, the stop valves are open completely, and the air conditioner is grounded reliably.

1. Supply main power, the unit will make a short beep.
2. Turn on the air conditioner using the remote control.
 - In case the indoor unit ambient temperature is around 32-68°F (0-20°C) Select HEAT mode and set the temperature to 77°F (25°C) to test HEAT operation.
 - In case the Indoor ambient temperature is around 68-113°F (20-45°C). Select COOL mode and set the temperature to 61°F (16°C) to test COOL operation.

NOTICE

Check the following items:

- Is there any abnormal noise? Does any abnormal noise or vibration occur during operation?
- Are all of the lights working?
- Is condensation discharged properly?
- Is the noise, airflow or water drainage affecting neighboring areas?
- Are there any gas leaks when connecting pipes?
- Are all the function buttons on the remote working normally?
- When sending a signal using the remote, does the Indoor unit make a beep?

Customer Guidance

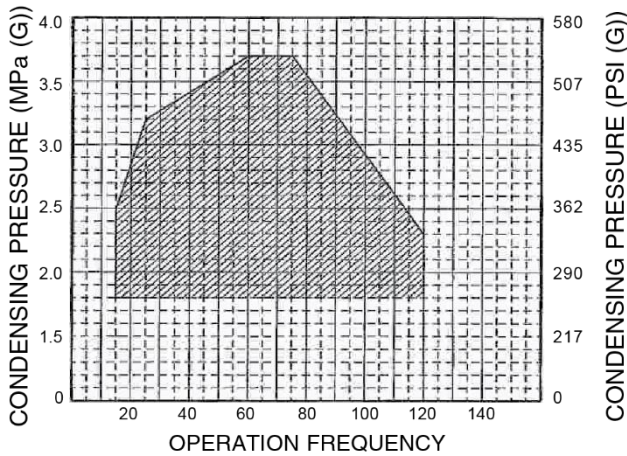
After the installation is completed, please explain operation to the customer:

- Use the Instruction Manual and explain to the customer the operation procedures, and functions of the air conditioner.
- Show the customer how to remove the air filters.
- Show the customer how to use the swing function, and how to control air flow on the Indoor unit.
- Show the customer how to remove and replace batteries in the remote control.
- The customer should read the User Instruction manual to understand the different functions of the air conditioner.

SYSTEM INSPECTION AND TRIAL RUNNING

CHECK SYSTEM THOROUGHLY

Check system thoroughly to make sure the unit is ready for trial running: check wires, pipes, air intake, discharge, power, thermostat, and others necessary components.



ADJUST REFRIGERANT GUIDELINE

Right amount of refrigerant is very important. It is one of the basics to ensure a safe operation over time.

Normally single zone outdoor unit is pre-charged with refrigerant for 25ft inter-connecting copper (liquid) line.

Multiple zone outdoor unit is pre-charged for various lengths of copper (liquid) line for allowed quantity of indoor units, following specs or engineering submittal.

For single zone unit or multiple zone multiple compressor unit, normally the outdoor unit is pre-charged for 25ft line sets. If the copper line is longer or shorter than 25ft, you will need to add or deduct refrigerant, following general rule of thumb for rough adjustment:

- 1/4" liquid line unit: 0.3 Oz/ft.
- 3/8" liquid line unit: 0.4 OZ/ft.
- 1/2" liquid line unit: 1.2 OZ/ft.

For multiple zone one compressor unit, if the copper line is longer or shorter than the length at which pre-charged refrigerant is good for, as listed in the engineering submittal or related labels or tables, need to add or deduct refrigerant, following 0.23 OZ/ft. rule of thumb for rough adjustment.

In all situations, the minimum copper line (liquid or gas) length for each indoor unit is 15ft.

For a better adjustment, combine above guideline with the indoor or outdoor (ambient) temperature-refrigerant pressure chart, or generally 8-12F super-heat method.

PRESSURE CHECKING

System pressure checking should be a must-do job during trial running of initial installation, and compressor/refrigerant-related troubleshooting. It is a more accurate refrigerant adjusting method than rough refrigerant addition or deduction guideline shown above.

In some cases, if the service valve on unit is 5/16" and your service valve connection is 1/4", need to use a 5/16"-1/4" adaptor so that you can connect to your manifold. Need to pay attention to use the right manifold that is rated for the refrigerant in the unit, and pay attention to connect to the right hose (blue hose for low pressure, red hose for high pressure, yellow hose for vacuum or charging or deduction). Not recommended to put hose onto service valve while compressor is running. Remove hose quickly and carefully to avoid air suck-in, refrigerant leakage, or any refrigerant-freezing burn.

The following curves are only reference for system pressure checking. Actual pressures may vary upon many factors such as inter-connecting pipe length, refrigerant charge / leakage level, elevation difference between indoor unit and outdoor unit, tool calibration, reading error, and so on.

SYSTEM INSPECTION AND TRIAL RUNNING

Reference Temperature-Pressure Table (Split Condensing Unit-R134A AC)

Cooling mode														
Outdoor Dry-Blub(°F)	25	35	50	55	60	67	75	82	90	95	100	105	110	115
Outdoor Dry-Blub(°C)	-3.9	1.7	10	12.8	15.6	19.4	23.9	27.8	32.2	35	37.8	40.6	43.3	46.1
Outdoor Wet-Blub(°F)	23	30.2	42.8	46.9	51.1	59.5	66.6	64.9	71.2	75	79	82.9	86.9	90.7
Outdoor Wet-Blub(°C)	-5	-1	-6	8.3	10.6	15.3	19.2	18.3	21.8	23.9	26.1	28.3	30.5	32.6
Indoor Dry-Blub 80°F(26.7°C)														
Indoor Wet-Blub 67°F(19.4°C)														
Suction-PSI/F	33/42.3	34/45.6	36/47.2	38/48.6	39/49.2	40/50.4	41/51.5	43/52.8	44/53.2	45/53.5	47/53.8	48/54.1	49/55.3	51/56.5



Reference Temperature-Pressure Table (Split Condensing Unit, R410A-Heat Pump)

Heating mode									
Outdoor Dry-Blub(°F)	17	25	30	35	40	45	47	55	62
Outdoor Dry-Blub° (C)	-8.3	-3.9	-1.1	1.7	4.4	7.2	8.3	12.8	16.7
Outdoor Wet-Blub(°F)	15	22.8	27.5	28.9	36.3	41	43	50.4	56.5
Outdoor Wet-Blub(°C)	-9.4	-5.1	-2.5	-1.7	2.4	5	6.1	10.2	13.6
Indoor Dry-Blub	70°F(21.1°C)								
Indoor Wet-Blub	60°F(15.6°C)								
Discharge-PSI/°F	159/106	168/112	174/128	179/131	183/132	188/138	195/143	203/143	210/163

CHECK AFTER INSTALLATION AND TEST OPERATION

Items to be checked	Possible Problems or Consequences
Has the unit been positioned firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient cooling (heating), or compressor overheating, or other unit malfunctions.
Is heat insulation sufficient?	It may cause unexpected condensate and dripping.
Is drainage pipe tested?	It may cause leakage or unexpected dripping.
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause unit malfunction or damage to the part/unit.
Are the electrical wires and pipes connection installed correctly and securely?	It may cause unit malfunction or damage to the part/unit.
Has the unit been connected to a secure ground connection?	It may cause electric leakage.
Is the power cord specified properly per NEC codes?	It may cause wire to overheat or even catch fire.
Has the air inlet and outlet been cleared?	It may cause insufficient cooling/heating capacity, and unexpected noise.
Has the refrigerant pressure been checked or refrigerant been adjusted accordingly?	It may generate unexpected noise, freezing pipe, capacity issues, compressor or system damage or even worse.
Has the installing technician filled all the fields in the checklist inside the warranty registration card?	If not filed or not filled completely or correctly, your factory warranty may not be qualified.

TEST OPERATION

Before test operation

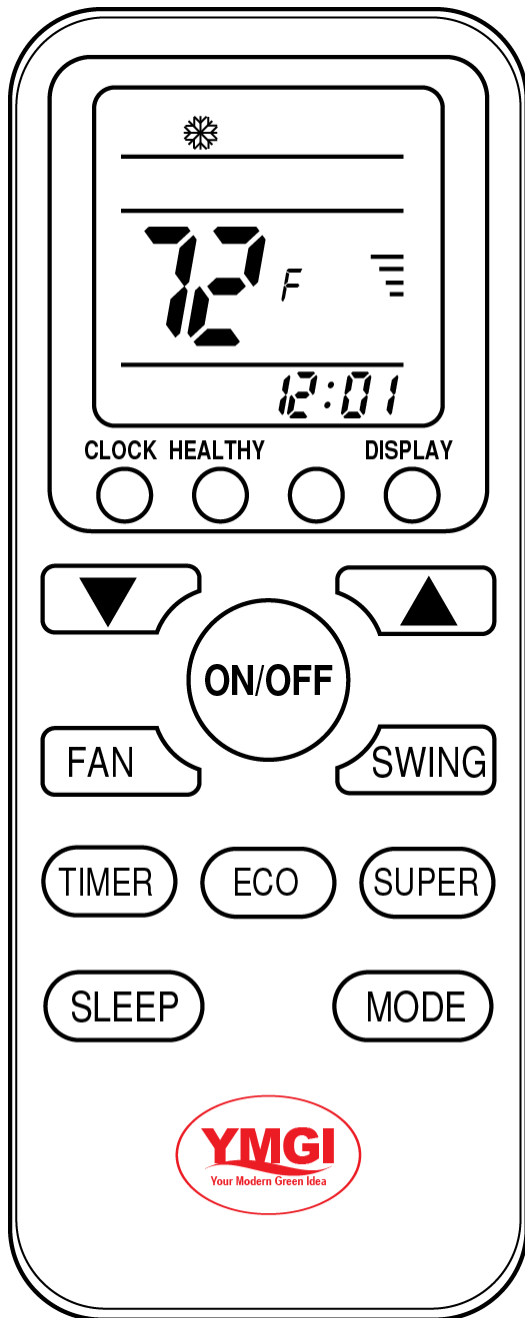
1. Do not turn on power before installation is finished completely.
2. Electric wires must be connected correctly and securely.
3. Cut-off valves of the connection pipes should be back seated/turned on.
4. All the left over installation material scraps must be cleared away from the unit before initial start-up.

Test operation method

1. Switch on power, press "ON/OFF" button on the wireless remote control to start the operation.
2. Press MODE button, to select the COOL, HEAT (not available for cooling only unit's), FAN and so on to check :
 - All the functions (to make sure the unit functions correctly and properly).
 - Refrigerant (pressures/temperatures at service values/pipes should be good).
 - Drainage (condensate/water flow should be dripping out of drainage pipe ONLY).
 - Noise (there should be not any abnormal sound).



Buttons on Remote Controller



Button	Description
▲ TEMP UP	Press it to increase the temperature /time setting
▼ TEMP DOWN	Press it to increase the temperature /time setting
ON/OFF	Press it to start or stop operation
FAN	To select the fan speed low/mid/high
TIMER	Press it to set auto-off timer
SLEEP	To activate the function "SLEEP"
ECO	Press the button, the air conditioner will work in Fixed frequency, run in Economic operation method
MODE	To select the mode of operation
SUPER	Press to activate the Super function which enables the unit to reach the preset temperature in the shortest time. Compressor and fan motors run at highest speeds.
SWING	To activate /deactivate the movement of fan louvers
CLOCK	Press button, the time on the clock will begin blinking. Press UP/DOWN to adjust the time. Press the CLOCK bottom again to set the time
DISPLAY	To switch on/off the LED display
HEALTHY	To switch on/off HEALTHY function, it is a button which controls the Ionizer or plasma generator for inverter models if available


Introduction for buttons on remote controller

Note:

- Above figure shows all indicators for the purpose of illustration, but when in use, only the activated function icons are indicated. When air-conditioner is in cooling only mode, the HEAT icon indicates the fan status.
- When SUPER operation is selected, room temperature cannot be changed. If you would like to adjust the room temperature, turn off the SUPER function.

Using the Remote Control

Mode Selection

- Point the remote control at the unit, and press the ON/OFF button to turn on the system. Then press the MODE button to select the desired mode: AUTO, COOL, DRY, HEAT, or FAN.
- Press the "▲" or "▼" buttons to increase or decrease the desired temperature. The temperature range is 61°F-88°F (16°C-32°C).
- In AUTO or DRY modes the system is automatically set to 76°F (26°C) and cannot be adjusted.
- Press the FAN button to choose the amount of air flow you would like. Pressing this button can set fan speed cycle: auto (AUTO), low (■), medium (■■), high (■■■). In AUTO or DRY modes, the unit will automatically run the fan at low speed and is not adjustable.
- Press the SWING button to choose the up/down air flow direction you desire. The SWING icon  will be lit when in use. When not flashing, it indicates the louvers are in a fixed position. In DRY mode the SWING function cannot be set.

TIMER

To set the timed switch on or off, or to cancel the timer settings.

- Press the TIMER button once. The hours display will flash. Use the "▲" or "▼" to set the number of hours before you would like the unit to switch on.
- Press the TIMER button a second time. The minutes display will flash. Use the "▲" or "▼" to set the number of minutes before you would like the unit to switch on.
- Press the TIMER button a third time, and the command will be sent to the unit.
- Press the TIMER button a fourth time and use the "▲" or "▼" buttons to set the hours for the unit to turn off.
- Press the TIMER button a fifth time, and use the "▲" or "▼" buttons to set the minutes for the unit to turn off.
- Press the TIMER button a sixth time, and the command will be sent to the unit.
- To cancel the TIMER settings, press the TIMER button after the ON or OFF Timer function has been set.

SUPER

The SUPER button turns on SUPER operation. SUPER mode can be used in COOL or HEAT Mode, and will not work in AUTO, DRY, or FAN Modes. If the SLEEP function is set, the SUPER function is cancelled.

CLOCK

The CLOCK button is used to set the time. With unit on, press the CLOCK button. The clock on the display screen will blink. Use the "▲" or "▼" buttons to set the time. Press the CLOCK button again to set the time.

SLEEP

The SLEEP button is used to set or cancel the Sleep Function. When set, the SLEEP function will switch the fan speed to low, but you can set the fan speed to Medium or High speeds. If the SUPER function is set, the SLEEP function will be cancelled.

ECO

Press the ECO button to start up or turn off energy-saving function. When energy-saving function is started up, "ECO" will be displayed on the remote controller screen, and air conditioner will adjust the set temperature automatically according to factory settings to reach to the best energy-saving effect. Press ECO button again to exit energy-saving function.

Note:

- Under energy-saving function, fan speed is defaulted to auto speed and it cannot be adjusted.
- Under energy-saving function, set temperature cannot be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and energy-saving function can't operate at the same time. If energy-saving function has been set under cooling mode, pressing the sleep button will cancel energy-saving function. If sleep function has been set under cooling mode, starting the energy-saving function will cancel sleep function.

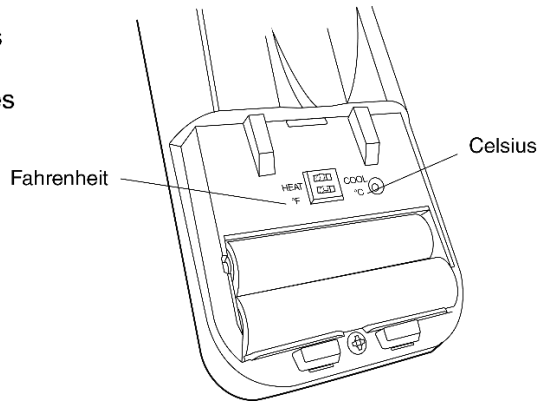
Operation Guide

1. After turning on the power at the fuse box, press "ON/OFF" button on remote control to turn on the air conditioner.
2. Press "MODE" button to select your required mode: AUTO, COOL, DRY, FAN, HEAT.
3. Press "▲" or "▼" button to set your required temperature. (Temperature can't be adjusted under auto mode).
4. Press "FAN" button to set your required fan speed: auto, low, medium and high speed.
5. Press "SWING" button to select fan blowing angle.

Switch between °F and °C

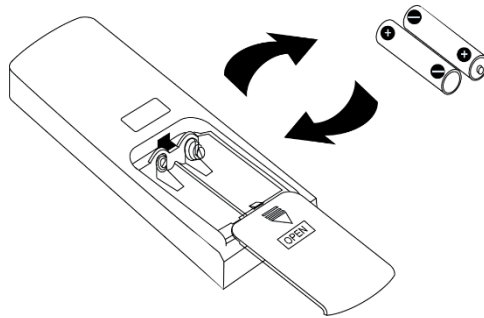
1. To switch remote control and Indoor Unit between Celsius and Fahrenheit, remove the battery cover, and the batteries. Two switches are located behind the battery cover. Flip the switches found on the back to the desired temperature setting (°F or °C). Replace the batteries. Remote will turn on in the set mode.

1. Remove the Batteries
2. Flip switch.
3. Then replace batteries



CHANGING BATTERIES AND NOTICES

- 1) Press gently along the arrowhead direction to push the back cover open on the remote control.
- 2) Take out the old batteries. (As shown in figure)
- 3) Insert two new AAA1.5V dry batteries, and pay attention to the polarity. (As shown in figure)
- 4) Attach the back cover of wireless remote control. (As shown in figure)



NOTICE:

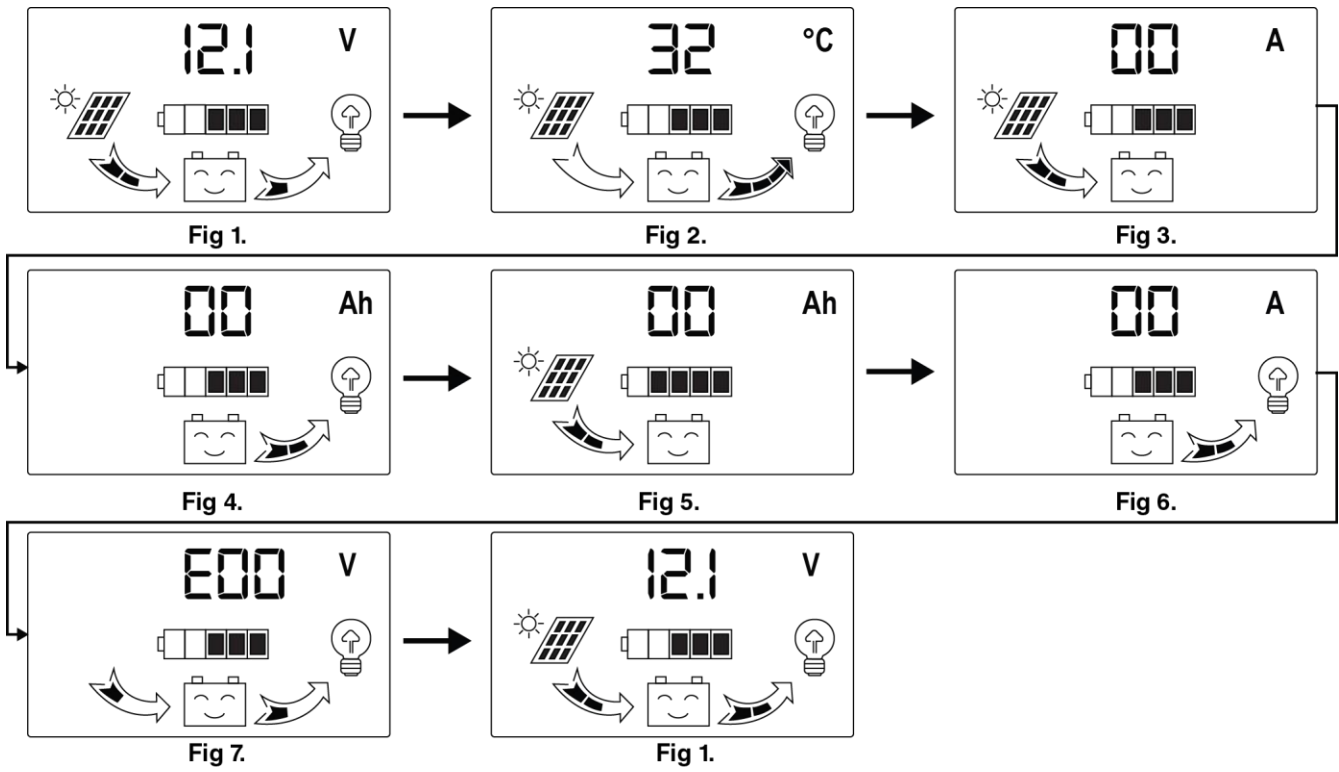
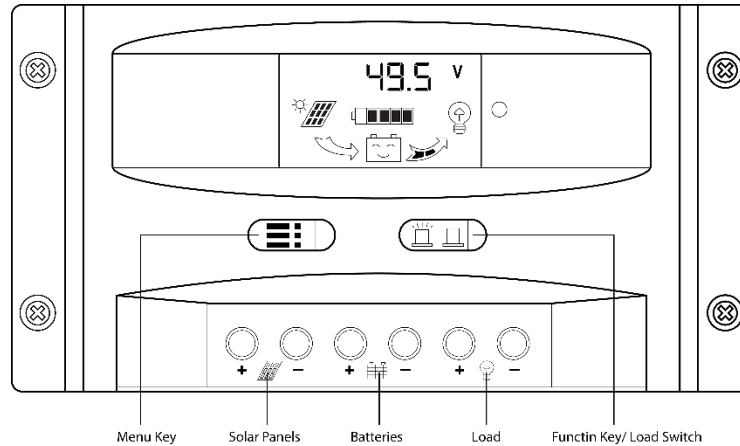
- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 25 ft., and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you will not be using the remote for prolonged periods, please take out the batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.

NOTE:

When changing the batteries, do not use the old or different batteries, otherwise, it can cause the remote control to malfunction. The operation should be in its receiving range. It should be placed 36 inches away from a TV set or stereo. If the wireless remote control cannot operate normally, please take the batteries out, wait 30 seconds and reinsert them. If the remote still doesn't operate normally, please change the batteries. If the wireless remote control will not be used for an extended period, it is recommended to remove the batteries. Leaving the batteries in could cause them to leak. This will cause damage to the remote control.

Charge Controller Operation Instructions

(-)20A/30A Operation Instructions.



1. The main interface display setting (Figure 1)

Press the “Menu” button for 3 seconds to enter. After selecting from the three types of battery, press Mode. (FLD closed lead acid battery mode, SLC open lead acid battery mode, and GEL colloid battery mode.) The default is GEL battery mode.

2. Temperature display interface (Figure 2)

The temperature of the working environment of the controller can be viewed in this interface.

3. Charging current interface (Figure 3)

This interface parameter allows you to see the value of the charge current of the solar panel to the battery. Press the MENU button for 3 seconds to select, and you can adjust the voltage value of the three available charging modes. (FLOAT Float voltage, ABSORB charging voltage, and charging voltage EQU equilibrium).

4. Load Current interface (Figure 4)

This interface parameter allows you to see the value of the discharge current of the battery to the load. Press the

More key and any other button for 3 seconds to select. You can set the battery low voltage protection (LVD), Battery Low Voltage Reset voltage (LVR) 1-24 hour light control with delay setting mode (see details about setting in #7)

5. **Cumulative charge power (An) (Figure 5)**

This parameter is the charged AH counter, which shows the total power output of the solar panel(s) Press the Menu key for more than 5 seconds, and the counter will be zero

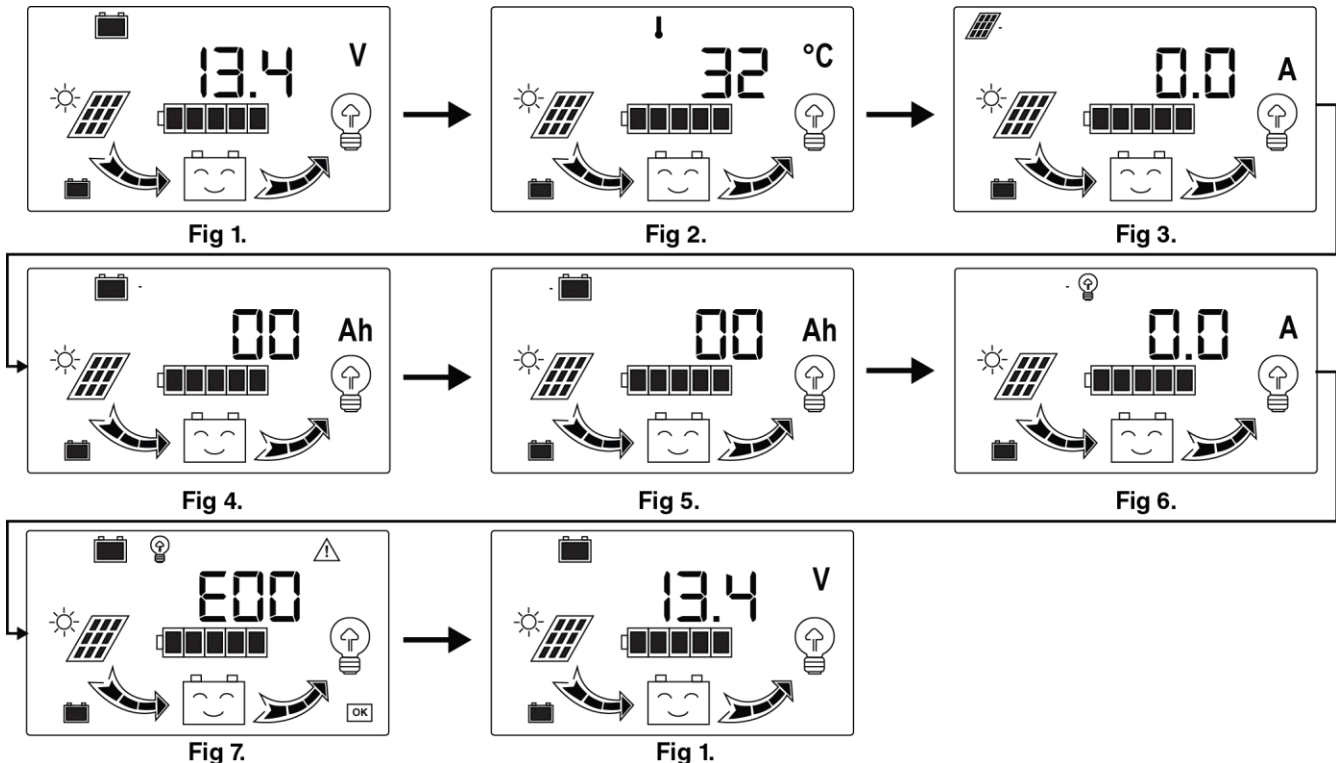
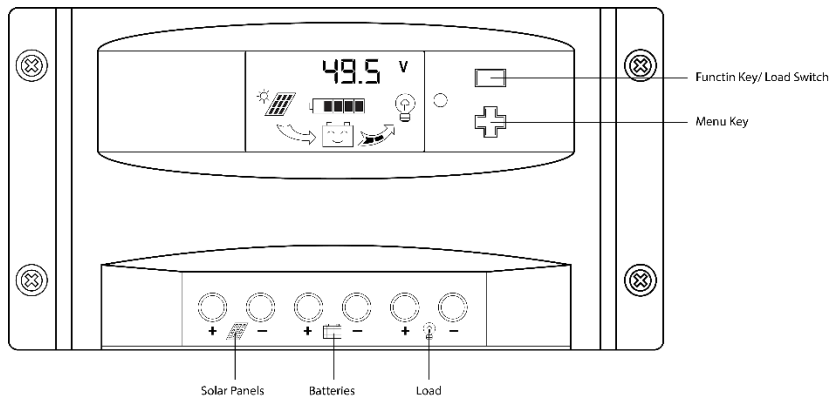
6. **The Cumulative Discharge of Power (An) (Figure 6)**

The parameter to discharge power meter, shows the load energy consumption. Hold down the Menu key for 5 seconds and the gauge will be zero.

7. **Warning display interface (Figure 7)**

The warning interface will display after the protection circuit is started.

(-)40A/50A/60A Operation Instructions.



1. **Set the ABSORB (solar charging voltage) (Figure 1)**

The main interface can be loaded by pressing the Menu button for 3 seconds. To enter the ABSORB setup, press MENU. When the number starts to flash, press the FUNCTION button to set the solar charging voltage. After setting, press the FUNCTION button again. The MENU button can be locked out. Press the MENU button to exit 3 second exit is arranged under the same operation.

2. Set the FLOAT (solar float voltage) (Figure 2)

Press the MENU key for 3 seconds in the main interface, and the press FUNCTION after selecting the ABSORB settings. Display the FLOAT settings interface and press a menu key, and when the numbers begin to flash, press the FUNCTION button again. Set the solar float voltage. Once you have is set, press the MENU button to lock.

3. Set the LVD voltage (battery low voltage protection setting) (Figure 3)

Press the MENU key 3 seconds in the main interface. Enter the ABSORB settings interface, and press the two function key. This will display the LVD settings interface. Press a MENU key and when the numbers begin to flash, press the function button. When the batter low voltage protection is set, setup is complete. Press the MENU button to lock.

4. Set the LVR (Battery Low Voltage Reset voltage) (Figure 4)

Press the MENU key 3 seconds in the main interface, then enter the ABSORB settings interface. Select the third function button, displays the LVR settings interface. Press a menu key, and when the numbers begin to flash, press the FUNCTION button. The battery low voltage reset setup is complete. Click a menu button to lock.

5. Choose the battery charging mode (Figure 5)

Press the MENU key 3 seconds in the main interface, then enter the ABSORB settings interface, and select the fourth function button to display the battery mode setting interface. Press the MENU key, and the letters will start flashing. Press the FUNCTION button to select the battery mode (press the FUNCTION key to select three battery type mode: FLD closed lead acid-battery mode, SLD Open type lead-acid battery mode, and GEL colloid battery mode. GEL is the default. Battery mode setup is now complete. Press the MENU button to lock.

6. Setting Temperature Trim (Figure 6)

Press the MENU key for 3 seconds in the main interface, then enter the ABSORB settings interface. Select the fifth function button, display temperature adjustment settings interface. Press the MENU button, when the letters start flashing, press the FUNCTION key, setting the temperature adjustment. When setting is finished, press MENU key to lock.

7. Set Light Control Mode (Figure 7)

Press the MENU key for 3 seconds in the main interface, then enter the ABSORB settings interface. Select the sixth function button to display the Light Control Mode Settings interface. Press the MENU key and the letters will begin to flash, then press the FUNCTION key to set light control mode. 00 is Pure Light control mode, 01-15 is Hour Light control with delay mode, and 24 is Constant On mode. After setup is complete, press the MENU button to lock

Technical Data

Model	20A	30A	40A	50A	60A
System Voltage	12V / 24 V (Automatically switches), 48V				
Maximum Voltage of Solar Panel Input	50V (12V / 24V), 100V (48V)				
Self Loss	≤13MA				
Maximum charge current	20A	30A	40A	50A	60A
Maximum discharge current	20A	30A	40A	50A	60A
LVD	10.7V (10-13.8V), 21.4V (20-27.6V), 42.8V (40-55.2V)				
LVR					
Floating Voltage					
Battery Over Pressure Protection	15V / 30V / 60V				
Input Reverse Connection Protection	Yes	Yes	Yes	Yes	Yes
Charging Mode	PWM	PWM	PWM	PWM	PWM
Temperature Compensation	-24mv/C, -48mv/C, -96mv/C, Relative to 12V / 24V / 48V systems				
Waterproof level	IP32	IP32	IP32	IP32	IP32
Product size	7 3/8" x 3 9/16" x 1 7/8"		7 11/16" x 4 1/4" x 2"		7 3/8" x 4 13/16" x 2 1/4"
Packaging Size	7 7/8" x 4 1/64" x 2 3/32"		8 1/4" x 4 5/8" x 2 5/16"		7 7/8" x 5 3/16" x 2 1/2"
Weight	0.705 lbs		0.75 lbs		1.30 lbs

Common Faults and Solutions

If your solar air conditioner cannot work normally, please check the following items before maintenance. If the faults cannot be solved, please contact an HVAC technician or the distributor.

Phenomenon	Possible Reason	Solution
Out of operation	<ol style="list-style-type: none"> 1. Power failure 2. Breaker tripping 3. Voltage is exceedingly low. 4. Air conditioner fuse is burnt out. 5. Air conditioner is turned off as a result of the timer being set incorrectly. 6. Air conditioner is in defrost mode. 	<ol style="list-style-type: none"> 1. Reconnect the power supply 2. Contact a service technician 3. Consult the electrician or distributor. Buy a stabilizing voltage supply to ensure operation. (below 42v) 4. Change the fuse or consult a service technician. 5. Cancel the Timer, shut down, and restart the system. 6. Please wait for a moment.
Poor cooling and heating effect	<ol style="list-style-type: none"> 1. The filters are dirty or blocked 2. A heat source or the number people are indoors are generating heat above the unit's capacity. 3. Temperature setting is incorrect. 4. The air inlet or air outlet of the Indoor Unit are blocked. 5. A window or the door is open. 6. Outdoor temperature is below 0°C while heating. 7. Refrigerant level is low. 8. The solar panels are not in direct sunlight. 	<ol style="list-style-type: none"> 1. Clean filters to improve air flow efficiency 2. Remove the heat source if possible. (Make sure your air conditioner has the correct capacity when purchasing.) 3. Reset the temperature. 4. Remove objects so airflow is unrestricted 5. Close doors and windows to avoid conditioned air escaping. 6. Other subsidiary heating apparatuses can be applied simultaneously. 7. Contact a technician if refrigerant is low. 8. Move solar panels so they face to sun.
Strange noise from unit	<ol style="list-style-type: none"> 1. Water flow sound 2. Exhaust sound 3. Arrangement is instable. 4. The operation noise is obviously unusual. 	<ol style="list-style-type: none"> 1. Refrigerant is circulating in the machine when the air conditioner is running or switches off. Please wait for a moment. 2. The sound of the four way valve switching. Please wait for a moment. 3. Contact your installation technician. The system may be installed incorrectly. 4. If unusual noise is heard, please contact a service technician.
Compressor cannot work.	<ol style="list-style-type: none"> 1. The temperature setting is incorrect. 2. The LCD shows Timer is 'on'. 3. For protection, the compressor will not work in the first 3 minutes. Please wait for a moment. 	<ol style="list-style-type: none"> 1. Reset the temperature. 2. Cancel the Timer, then restart the system. 3. This is a normal phenomenon. Please wait for a moment.
Fan does not immediately blow when heating.	<ol style="list-style-type: none"> 1. If the heat pump blows when the evaporator is not preheated, the air circulated will be cold. Please wait for the evaporator to preheat. 	<ol style="list-style-type: none"> 1. Please wait for a moment. Allow the coil to preheat.
The compressor starts and stops frequently.	<ol style="list-style-type: none"> 1. The input voltage is exceedingly low. 2. Too many appliances are on the same line. The voltage for the air conditioner is insufficient. 3. The room does not retain heat 	<ol style="list-style-type: none"> 1. Check the power source (voltage and wire diameter). When the voltage is low, and the wire gauge may be too small. You can also buy a power stabilizer, or wire the system to municipal power. You may also wish to consult an HVAC technician or the distributor. 2. Prepare a special power cord for the air conditioner. 3. Improve the insulation of the room. Also check for any open windows, doors, or drafts that may be caused by improper insulation.

If your solar air conditioner is not working normally, please check above items before performing any maintenance or service. If the faults cannot be solved, please contact an HVAC technician or the distributor.

Common Failures: Troubleshooting and Diagnosis

Non-failure Phenomena

1. When you start up or shut down the solar heat pump, you may hear gurgling sound. This is the noise made when refrigerant flows through the coil, and is not a malfunction.
2. The solar heat pump does not immediately restart after being shut down and turned back on. The unit is programmed to wait 3 minutes before restarting. During this time the compressor will not run in cooling, dehumidifying and heating modes.
4. On occasion, the solar air conditioner will filter out contaminants that have an unpleasant smell. If you run the system and air blown by the Indoor unit has an odor, the filters require cleaning.
5. While heating, the Indoor unit and the Outdoor unit may stop simultaneously, but the compressor continues to run. This indicates the unit is defrosting. The unit will continue heating after defrosting has completed.
6. When system is heating, the Outdoor unit may generate condensation. This is a result of defrosting and thawing, and is not a malfunction.
7. After the solar heat pump is used in the automatic mode, starts or stops, the air conditioner may beep. This is a result of self-balanced pressure, and is not a malfunction.

Tips for Saving Energy:

- Never block the air inlet or outlet of the solar air conditioner. The air conditioner will not run normally and can be damaged if the inlets or outlets are obstructed.
- When cooling, avoid direct sun light in the room you are cooling. Please close the blinds or curtains.
- If the wall and ceiling of the room is heated in direct sunlight, it will take longer to cool or heat the room.
- Keep the air filters clean. Clogged filters will greatly reduce the efficiency of the air conditioner.
- Keep windows, doors and any openings closed, to avoid cool air loss.

Failure Display Status List

ERROR CODE	DESCRIPTION	TROUBLE SHOOTING
E1	Indoor Unit-Air Temperature Sensor error	Check resistances, contacts to the board
E2	Indoor Unit-Tube Temperature Sensor error	Check resistances, contacts to the board
E3	Indoor Unit-Fan Motor no feedback/error	Check motor, resistances, contacts to the board and filter
E4	Outdoor Unit-voltage between + and – lower than 40VDC (12-24K 48V) or 20V (09K 24V)	Check charge controller, panel specs/connections
E5	Outdoor Unit-voltage between + and – higher than 60VDC (12-24K 48V) or 30V (09K 24V)	Check charge controller, panel specs/connections
E6	Outdoor Unit-refrigeration pressure too low	Check refrigerant pressure, and low pressure switch
E7	Outdoor Unit-refrigeration pressure too high	Check fan motor, high pressure switch, and clean the filter
E8	Outdoor Unit-refrigerant is low	Check refrigerant pressure, sensor, potential leak points before recharging
E9	Indoor Unit-Protecting the coil from becoming frozen	Check refrigerant pressure, charge, sensor, potential leak points before recharge. Check Indoor fan motor, filter, and clean the coil.

If any of the above malfunctions occur, please contact your HVAC technician or distributor.

CLEANING AND CARE

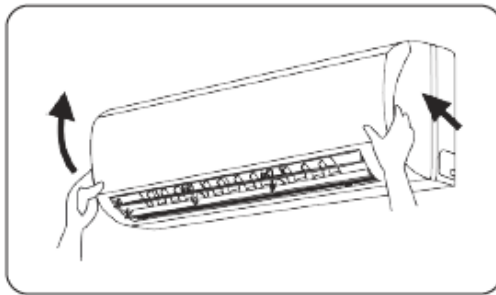
⚠ CAUTION

- Turn the unit power off and unplug the power cord before cleaning the air conditioner. Failure to do so can result in electric shock.
- Never sprinkle water on the indoor unit for cleaning because it can cause an electric shock.
- Volatile liquids (e.g. thinner or gasoline) will damage the air conditioner. (So, wipe the units with a dry soft cloth, or a cloth slightly moistened with water or a mild nonabrasive cleanser.)

CLEAN THE FRONT PANEL (MAKE SURE TO TAKE IT OFF BEFORE CLEANING)

Take off the front panel

Along the direction of arrows, lift the front panel up, meanwhile hold both slots of the front panel and remove.



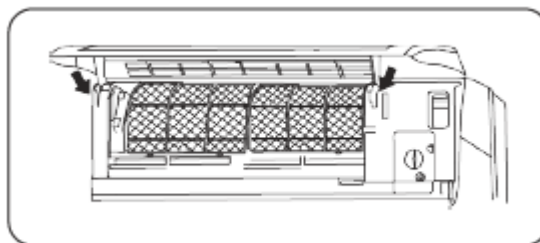
Washing

Clean with a soft brush, water and neutral detergent and then dry it. (Note: Before cleaning the unit, please remove the display box first, then wash the panel. (If the unit has displayed on the front panel.) Never use water that has a temperature above 113°F to wash the panel or it could cause deformation or discoloration.)



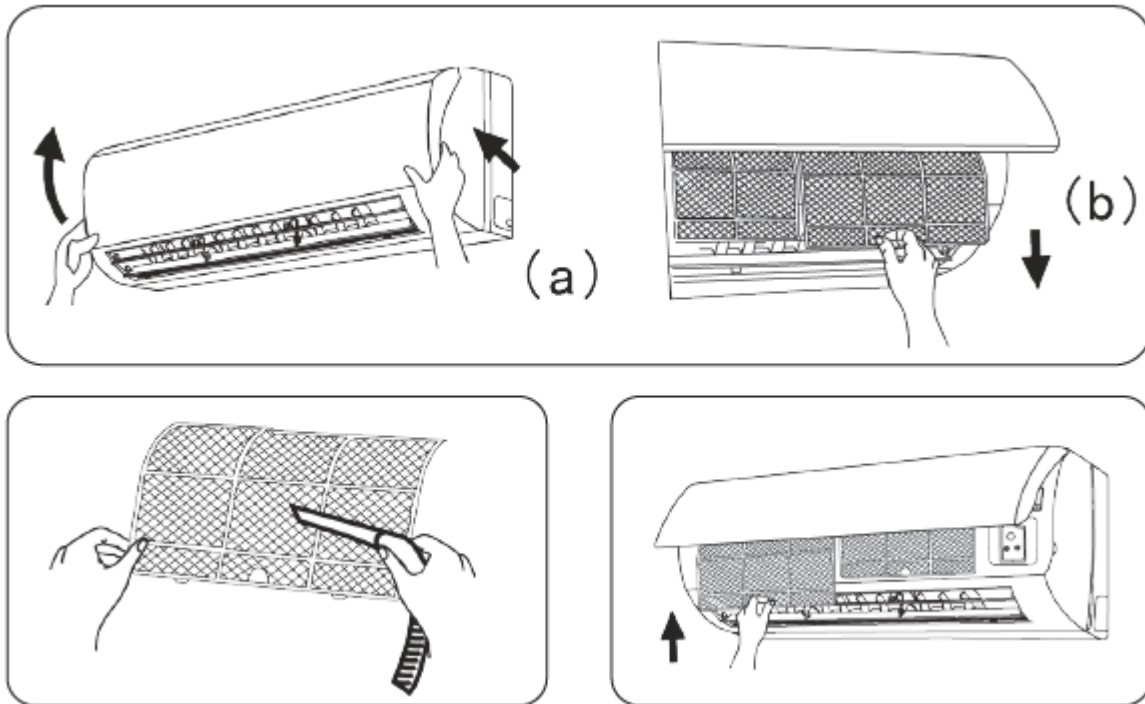
Install front panel

Place two supports of the front panel into the slots, along the direction of arrows to cover and clasp the front panel. As show in figure.



CLEANING THE AIR FILTERS (RECOMMENDED ONCE EVERY THREE MONTHS)

Note: If the unit is in a dusty area, the air filters should be cleaned more often. After taking off the filter, be sure not to touch the fin on the indoor unit as this can cause injury.



To Remove the Air Filter

By holding onto the bottom slot of the air filter slightly push the filter in an upward motion at a slight angle and then pull downward carefully.

Cleaning

To clean the dust adhering to the filters, you can either use a vacuum cleaner, or wash them with warm water and a neutral detergent, the water should be below 113°F. When the filters have been cleaned, air dry completely out of direct sunlight.

NOTE: Never use water hotter than 113°F to wash the unit or the filters as this can discolor and/or deform the unit. Never dry the filters by a fire or open flame as this can be dangerous. Always air dry the filters.

Reinsert the filters

Reinsert the filters aligning with the arrow head, then cover the surface panel and clasp it.

CHECK BEFORE COOLING/HEATING SEASON COMES:

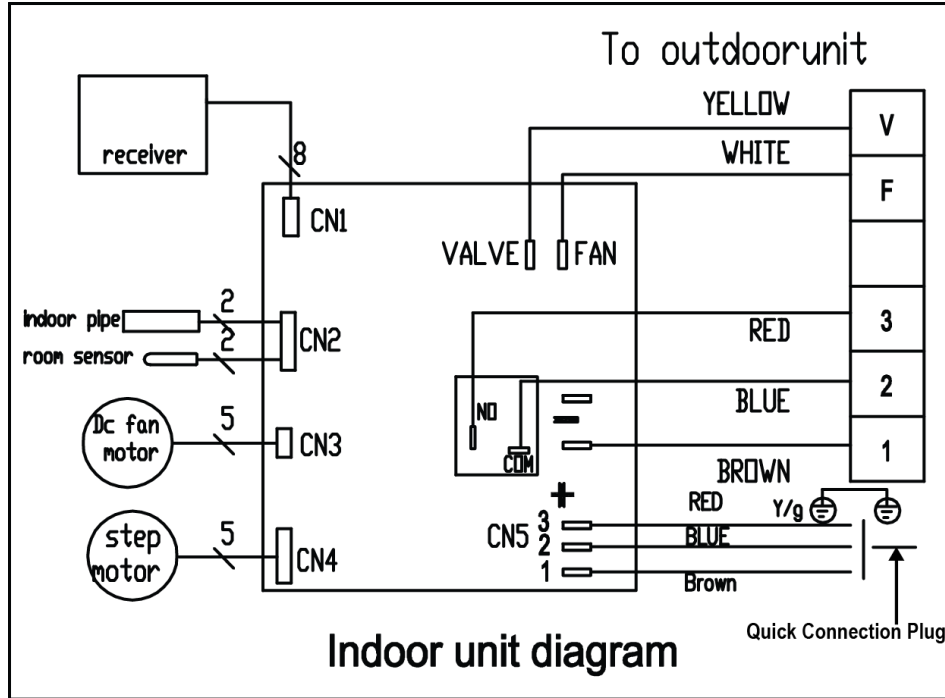
1. If the unit is still connected to the correct electric power V/Ph/Hz.
2. If the unit is still securely fastened.
3. If the batteries of remote controller are good.
4. If the filter is loaded and clean
5. If the intake and discharge vents are clear from any obstructions.



IF THE SYSTEM IS GOING TO BE UNUSED FOR A PROLONGED PERIOD

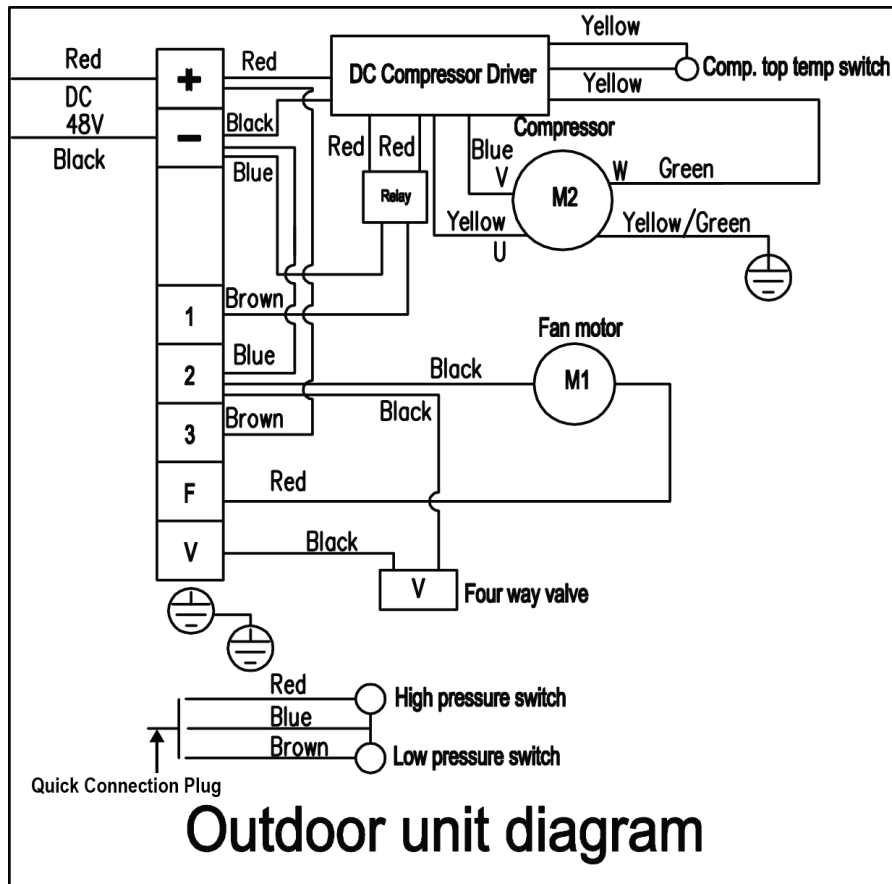
1. Turn main power off by disconnecting electrical power disconnect switch.
2. Clean filter and unit.
3. Cover the unit to keep dust or moisture out of the unit.

Indoor Wiring Diagram



Indoor unit diagram

Outdoor Wiring Diagram



Outdoor unit diagram

Resistance-temperature characteristic table (R-T CONVERSION TABLE) 50K
Compressor discharge temperature sensor

Temp °F	Resistance (KΩ)	Temp °F	Resistance (KΩ)	Temp °F	Resistance (KΩ)	Temp °F	Resistance (KΩ)	Temp °F	Resistance (KΩ)
-40.0	2009.2	32.0	168.1	104.0	26.507	176.0	6.1909	248.0	2.0354
-38.2	1869	33.8	159.46	105.8	25.464	177.8	6.0141	249.8	1.9842
-36.4	1739.6	35.6	151.32	107.6	24.468	179.6	5.8339	251.6	1.9345
-34.6	1620.2	37.4	143.66	109.4	23.517	181.4	5.5905	253.4	1.8863
-32.8	1509.8	39.2	136.43	111.2	22.608	183.2	5.6037	255.2	1.8395
-31.0	1407.8	41.0	129.62	113.0	21.74	185.0	5.4333	257.0	1.7941
-29.2	1313.5	42.8	123.19	114.8	20.911	186.8	5.269	258.8	1.7501
-27.4	1226.2	44.6	117.12	116.6	20.118	188.6	5.1105	260.6	1.7073
-25.6	1145.3	46.4	111.39	118.4	19.359	190.4	4.9576	262.4	1.6658
-23.8	1070.4	48.2	105.98	120.2	18.634	192.2	4.8104	264.2	1.6255
-22.0	1001	50.0	100.87	122.0	17.94	194.0	4.6678	266.0	1.5864
-20.2	936.58	51.8	96.04	123.8	17.276	195.8	4.5304	267.8	1.5484
-18.4	876.76	53.6	91.47	125.6	16.641	197.6	4.3978	269.6	1.5115
-16.6	821.21	55.4	87.148	127.4	16.032	199.4	4.269	271.4	1.4757
-14.8	769.58	57.2	83.057	129.2	15.45	201.2	4.1462	273.2	1.4408
-13.0	721.58	59.0	79.185	131.0	14.892	203.0	4.0268	275.0	1.407
-11.2	676.92	60.8	75.519	132.8	14.351	204.8	3.9114	276.8	1.3741
-9.4	635.35	62.6	72.045	134.6	13.845	206.6	3.8	278.6	1.3421
-7.6	596.63	64.4	68.754	136.4	13.353	208.4	3.6923	280.4	1.311
-5.8	560.55	66.2	65.634	138.2	12.882	210.2	3.5887	282.2	1.2808
-4.0	526.92	68.0	62.676	140.0	12.43	212.0	3.4876	284.0	1.2515
-2.2	495.54	69.8	59.87	141.8	11.997	213.8	3.3903	285.8	1.2229
-0.4	466.26	71.6	57.207	143.6	11.581	215.6	3.2978	287.6	1.1951
1.4	438.91	73.4	54.679	145.4	11.182	217.4	3.2052	289.4	1.1681
3.2	413.37	75.2	52.279	147.2	10.799	219.2	3.1172	291.2	1.1418
5.0	367.69	77.0	50	149.0	10.431	221.0	3.032	293.0	1.1163
6.8	367.16	78.8	47.834	150.8	10.078	222.8	2.9497	294.8	1.0914
8.6	346.26	80.6	45.775	152.6	9.7393	224.6	2.8699	296.6	1.0672
10.4	326.7	82.4	43.818	154.4	9.4134	226.4	2.7927	298.4	1.0436
12.2	308.38	84.2	41.956	156.2	9.1002	228.2	2.718	300.2	1.0207
14.0	291.22	86.0	40.185	158.0	8.5991	230.0	2.6457	302.0	0.9984
15.8	275.13	87.8	38.5	159.8	8.3096	231.8	2.5756		
17.6	260.05	89.6	36.896	161.6	8.0313	233.6	2.5077		
19.4	245.89	91.4	35.368	163.4	7.7637	235.4	2.442		
21.2	232.6	93.2	33.913	165.2	7.5001	237.2	2.3783		
23.0	220.13	95.0	32.527	167.0	7.2234	239.0	2.3166		
24.8	208.4	96.8	31.206	168.8	7.015	240.8	2.2568		
26.6	197.38	98.6	29.947	170.6	6.7904	242.6	2.1989		
28.4	187.02	100.4	28.746	172.4	6.5694	244.4	2.1427		
30.2	177.27	102.2	27.6	174.2	6.4785	246.2	2.0882		



Resistance-temperature characteristic table (R-T CONVERSION TABLE) 5K All Other Sensors

Temp. °F	R min (KΩ)	R nom (KΩ)	R max (KΩ)	Temp. °F	R min (KΩ)	R nom (KΩ)	R max (KΩ)	Temp. °F	R min (KΩ)	R nom (KΩ)	R max (KΩ)
-40.0	105.8	115.2	125.3	50.0	8.869	9.161	9.460	140.0	1.413	1.477	1.544
-38.2	99.75	108.4	117.8	51.8	8.510	8.783	9.061	141.8	1.369	1.432	1.497
-36.4	94.06	102.1	110.8	53.6	8.167	8.422	8.682	143.6	1.326	1.388	1.452
-34.6	88.74	96.23	104.3	55.4	7.841	8.079	8.321	145.4	1.284	1.345	1.409
-32.8	83.76	90.71	98.20	57.2	7.529	7.751	7.977	147.2	1.245	1.304	1.367
-31.0	79.09	85.55	92.50	59.0	7.232	7.439	7.649	149.0	1.206	1.265	1.326
-29.2	74.72	80.72	87.18	60.8	6.948	7.141	7.337	150.8	1.169	1.227	1.287
-27.4	70.62	76.20	82.19	62.6	6.677	6.857	7.039	152.6	1.133	1.190	1.249
-25.6	66.77	71.97	77.53	64.4	6.419	6.586	6.755	154.4	1.099	1.155	1.213
-23.8	63.16	68.00	73.17	66.2	6.171	6.327	6.485	156.2	1.066	1.120	1.177
-22.0	59.77	64.27	69.08	68.0	5.935	6.080	6.226	158.0	1.034	1.087	1.143
-20.2	56.59	60.78	65.25	69.8	5.709	5.844	5.980	159.8	1.003	1.055	1.110
-18.4	53.60	57.50	61.66	71.6	5.493	5.618	5.744	161.6	.9728	1.024	1.078
-16.6	50.79	54.42	58.29	73.4	5.287	5.403	5.520	163.4	.9439	.9946	1.048
-14.8	48.14	51.53	55.13	75.2	5.089	5.197	5.305	165.2	.9161	.9658	1.018
-13.0	45.65	48.81	52.16	77.0	4.900	5.000	5.100	167.0	.8891	.9379	.9890
-11.2	43.31	46.25	49.37	78.8	4.710	4.812	4.912	168.8	.8631	.9110	.9612
-9.4	41.10	43.85	46.75	80.6	4.532	4.631	4.731	170.6	.8380	.8850	.9342
-7.6	39.02	41.58	44.29	82.4	4.360	4.459	4.559	172.4	.8137	.8598	.9082
-5.8	37.06	39.45	41.98	84.2	4.195	4.294	4.393	174.2	.7902	.8355	.8830
-4.0	35.22	37.44	39.80	86.0	4.038	4.136	4.235	176.0	.7675	.8119	.8585
-2.2	33.47	35.55	37.74	87.8	3.887	3.985	4.083	177.8	.7455	.7891	.8349
-0.4	31.82	33.76	35.81	89.6	3.743	3.840	3.938	179.6	.7243	.7671	.8120
1.4	30.27	32.08	33.99	91.4	3.605	3.701	3.798	181.4	.7038	.7457	.7899
3.2	28.80	30.49	32.27	93.2	3.473	3.568	3.664	183.2	.6839	.7251	.7684
5.0	27.41	28.99	30.65	95.0	3.347	3.441	3.536	185.0	.6647	.7051	.7477
6.8	26.10	27.58	29.12	96.8	3.225	3.318	3.413	186.8	.6462	.6858	.7276
8.6	24.86	26.24	27.68	98.6	3.109	3.201	3.294	188.6	.6282	.6671	.7081
10.4	23.69	24.98	26.33	100.4	2.998	3.089	3.181	190.4	.6109	.6490	.6893
12.2	22.58	23.78	25.04	102.2	2.891	2.981	3.072	192.2	.5941	.6315	.6710
14.0	21.53	22.65	23.83	104.0	2.788	2.877	2.967	194.0	.5778	.6145	.6533
15.8	20.53	21.59	22.68	105.8	2.690	2.778	2.867	195.8	.5620	.5981	.6362
17.6	19.59	20.58	21.60	107.6	2.596	2.682	2.770	197.6	.5468	.5822	.6196
19.4	18.70	19.62	20.58	109.4	2.506	2.591	2.678	199.4	.5321	.5668	.6035
21.2	17.85	18.71	19.61	111.2	2.419	2.503	2.589	201.2	.5178	.5518	.5879
23.0	17.05	17.86	18.69	113.0	2.336	2.418	2.503	203.0	.5039	.5374	.5728
24.8	16.29	17.04	17.82	114.8	2.256	2.337	2.420	204.8	.4905	.5233	.5581
26.6	15.57	16.27	17.00	116.6	2.179	2.259	2.341	206.6	.4776	.5097	.5439
28.4	14.88	15.54	16.22	118.4	2.105	2.184	2.265	208.4	.4650	.4966	.5301
30.2	14.23	14.85	15.48	120.2	2.034	2.112	2.192	210.2	.4528	.4838	.5167
32.0	13.61	14.19	14.78	122.0	1.966	2.043	2.121	212.0	.4410	.4714	.5037
33.8	13.03	13.56	14.12	123.8	1.901	1.976	2.053	141.8	1.369	1.432	1.497
35.6	12.47	12.97	13.49	125.6	1.838	1.912	1.988	143.6	1.326	1.388	1.452
37.4	11.94	12.41	12.89	127.4	1.777	1.850	1.925	145.4	1.284	1.345	1.409
39.2	11.43	11.87	12.32	129.2	1.719	1.791	1.864				
41.0	10.95	11.36	11.78	131.0	1.663	1.733	1.806				
42.8	10.49	10.88	11.27	132.8	1.609	1.678	1.750				
44.6	10.06	10.41	10.78	134.6	1.557	1.625	1.695				
46.4	9.641	9.976	10.32	136.4	1.507	1.574	1.643				
48.2	9.245	9.559	9.878	138.2	1.459	1.525	1.593				





YMGI is dedicated to designing, manufacturing and distributing the highest quality, energy saving and environmentally friendly air conditioner and heat pump products, while providing the best service and support to all of our customers. Our mission is to help build a sustainable, efficient and green world.

YMGI Symphony-Ductless & Ducted Heat Pump & Heat Recovery:

- **Symphony SOLAR DC Inverter**
 (56) Single PV, (79) Single PH 12-18K Btu/h
 (86) Single Zone All DC 09-24K Btu/h
 (55) Multi Zone Solar VRF 3, 4, 8, 16, and 24 Ton.
- **Symphony SOLO DC Inverter**
 (54) Series -22 °F Heat Pump and Universal Cabinet
 (57)2,3 Single Zone 16 SEER, 09-36K Btu/h
 (58)4, (78)1-Single Zone 18-23 SEER, 09-36K Btu/h
- **Symphony CHOIR DC Inverter**
 (46)2 DC Inverter Multiple Zone 15 SEER, 2x09K and 2x12K Btu/h
 (59)2S-DC Inverter Multiple Zone 16 SEER 6x09K to 9x09K Btu/h
 (59)4-DC Inverter Multiple Zone 21 SEER 2x09K to 5x12K Btu/h
- **Symphony VRF - DC Inverter HP, Heat Recovery, and Solar. Up to 64 zones.**
 (55)5 -4°F Heat Pump, Heat Recovery
 (55)5 -22°F Ultra Heating Heat Pump, Heat Recovery
Air Source and Water Source
- **Symphony HARMONY-Packaged Self-Contained**
 42"x16" PTAC/PTHP Electric Heater or Hot Water Coil
 26"x16" TTWA
 VPAK
- **Symphony CONDUCTOR-Split Type Condensing Units**
 Side Discharge VRUO, YTAC & SHCR

YMGI Group
601 Arrow Ln, O'Fallon, MO 63366
www.YmgiGroup.com
Tel: 866-833-3138 • Fax: 866-377-3355
Email: info@YmgiGroup.com

Unit appearance and specifications are subject to change without notice.
Copyright ©2021 YMGI Group

