



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

SERVICE MANUAL

DC INVERTER MULTIPLE ZONE 30 & 36k (59)4 CH SYMPHONY CHOIR OUTDOOR UNIT

Model Numbers:

WMMS-30CH-V2B(59)4

WMMS-36CH-V2B(59)4



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.



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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.



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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 prior to the negative leak check.
5. Not conducting a positive leak check by charging the system with dry-nitrogen 350 PSI to hold for 3+ hours, and performing soap bubble testing.
6. Not conducting a negative leak check by evacuating the copper lines for 30 minutes for each zone. Vacuum must be held at 500 microns or better for at least 60 minutes, starting 60-minute timer after the vacuum pump is turned off.
7. Not selecting the correct size of 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 60 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 two 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 6
		Unit 2	Unit 7
		Unit 3	Unit 8
		Unit 4	Unit 9
		Unit 5	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?	
4) Who unpacked the unit and accessory boxes to check for damage?	Yes No	
5) Supply electrical power V/Ph/Hz measured at wiring terminal block of	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?	
Indoor unit: Outdoor unit:	Yes No	
6) Incoming electrical power V/Ph/Hz measured at terminal blocks 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?	
7) Wire gauge, length and terminal colors between circuit breaker/disconnect switch to outdoor unit:	Yes No	
8) Wire gauge, length and terminal colors between each indoor and outdoor unit:	22) If copper length were not made to the supplied or recommended refrigerant pipe length, how much refrigerant added or deducted?	
Unit A Unit B Unit C Unit D	23) Measured refrigerant pressures at outdoor service suction valve, when unit was stabilized.	
9) The size of HVAC circuit breaker/fuse or disconnect switch to the outdoor unit:	Heat pump (PSI): Cooling (PSI): Outdoor Ambient Temp. (°F):	
10) Are the inter-connecting wires and copper lines between indoor and outdoor units installed/covered/protected by line set covers, or anything else?	24) What were the measured temperatures (probe not touching any metal):	
11) What is the refrigerant pipe length between each indoor unit and the outdoor unit?	At cooling: indoor return air °F Discharge air °F and outdoor °F	
Unit A Unit B Unit C Unit D	At heating: indoor return air °F Discharge air °F and outdoor °F	
12) Where is/are the indoor unit(s) located? (Bedroom, kitchen, etc.)	25) Have you checked all unit functions with customer present, and all functions are working correctly?	
Unit A Unit B Unit C Unit D	Yes No	
13) What is the elevation difference between each indoor unit and the outdoor unit?	26) Did you show the user how to operate the unit? Did he/she understand you?	
Unit A Unit B Unit C Unit D	Yes No Yes No	
14) Did you check the indoor unit for condensate leakage and refrigerant leakage, before and after connecting them?	27) Do you provide regular one-year free technical service for this installation?	
Yes No	Yes No	
Installation Finished and Unit Works Successfully.	28) Do you list the working details in the invoice and leave a copy to the customer?	
Print Name of Installation HVAC Technician:	Yes No	
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 1559, 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's 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.

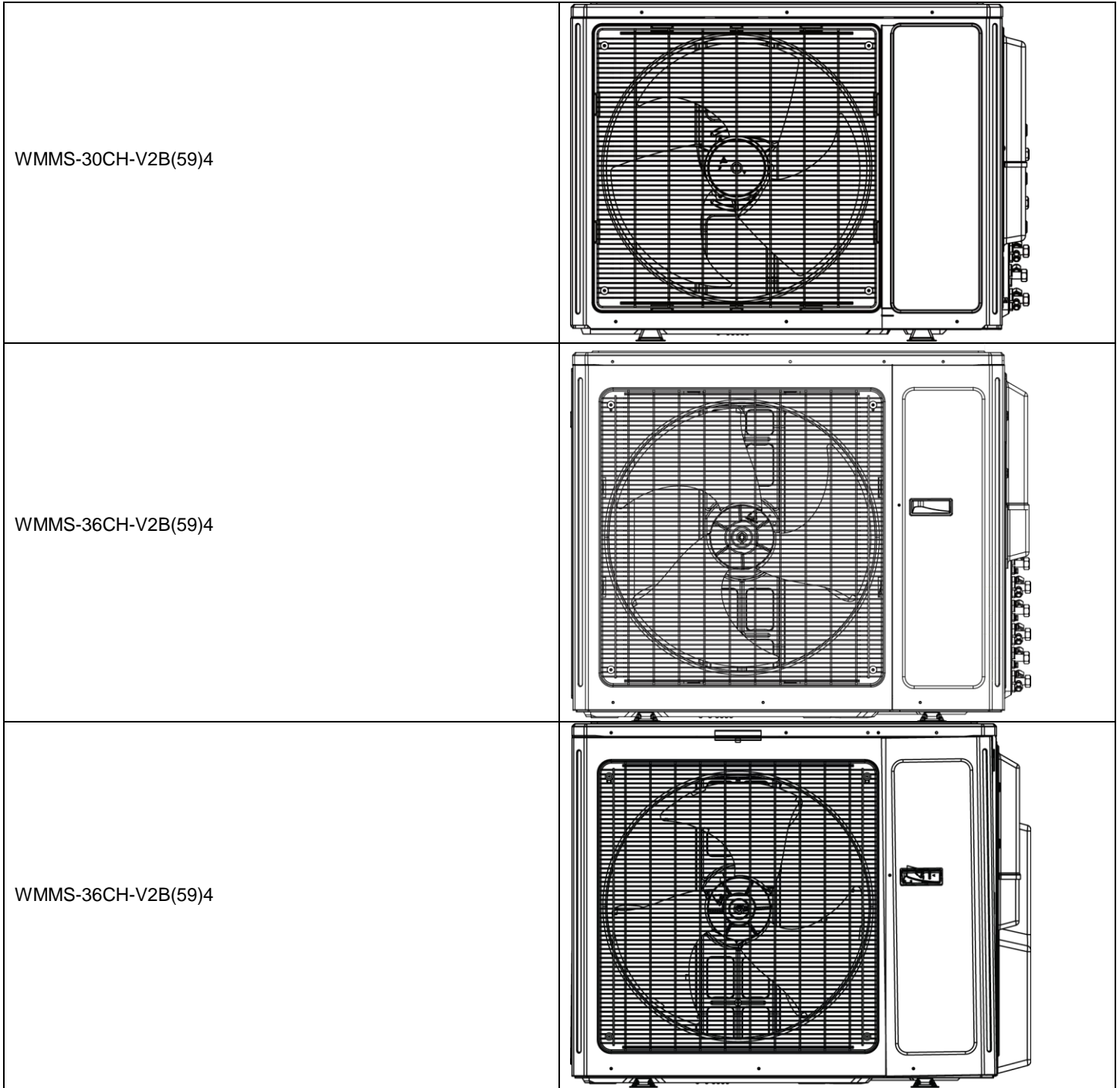
DO NOT store or install the units near food, paint, or other chemicals.

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.

Technical Information

Outdoor Unit



No	Model	Product code
1	WMMS-30CH-V2B(59)4	CB228W07700
2		CB228W07701
3	WMMS-36CH-V2B(59)4	CB228W07800
4		CB228W07801



(59)4 ODU Specification Sheet

Outdoor Unit Models		WMMS-30CH-V2B(59)4 (1 to 2)	WMMS-36CH-V2B(59)4 (2 to 3)	WMMS-42CH-V2B(59)4 (2 to 4)	WMMS-48CH-V2B(59)4 (2 to 5)	WMMS-60CH-V2B(59)4 (2 to 5)
Power Supply		208/230 / 1 / 60	208/230 / 1 / 60	208/230 / 1 / 60	208/230 / 1 / 60	208/230 / 1 / 60
Cooling Capacity* (Btu/h)	Max. IDU Cap. Total 2	30,000 (2 Thermal Zones)	36,000 (2 Thermal Zones)	42,000 (2 Thermal Zones)	48,000 (2 Thermal Zones)	60,000 (2 Thermal Zones)
	Rated 1	18,000	24,000	28,400	34,000	39,000
	Min	7,000	7,500	8,200	8,900	8,870
Total Power Input in Cooling Mode* (W)	Max.	2800	3300	4500	4500	5100
	Rated	1440	2250	2600	2600	3950
	Min.	650	800	900	1000	1200
SEER		22.00	21.00	21.00	21.00	21.00
HSPF	Btu/h/ W	10.50	10.50	10.50	10.50	10.20
Heating Capacity* (Btu/h)	Max. IDU Cap. Total 2	32,000	38,000	50,000	59,000	64,000
	Rated 1	19,000	26,000	30,000	42,500	45,000
	Min.	7,000	7,500	8,200	8,900	8,870
Total Power Input in Heating Mode*	Max.	2400	3000	3500	3500	4800
	Rated	1750	2500	2920	2920	4400
	Min.	650	800	900	1000	1200
Liquid Valve Size	In	2 x 1/4"	3 x 1/4"	4 x 1/4"	5 x 1/4"	5 x 1/4"
Gas Valve Size	In	2 x 3/8"	3 x 3/8"	4 x 3/8"	5 x 3/8"	5 x 3/8"
Compressor Oil		RB68EP	RB68EP	FV50S	FV50S	FV50S
L.R.A.	A	27	45	45	45	55
Compressor RLA	A	10.82	15.82	13.9	15.6	17.8
Compressor Power Input	W	1440	2550	4150	4150	4150
MCA	A	16	23	20-All IDUs EW / 30-All IDUs EC or EU	23-All IDUs EW / 40-All IDUs EC or EU	24
Fuse or Circuit Breaker (HVAC Type)	A	25	30	30-All IDUs EW / 40-All IDUs EC or EU	35-All IDUs EW / 50-All IDUs EC or EU	40-All IDUs EW / 50-All IDUs EC or EU
Throttling Method		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Starting Method		Transducer starting	Transducer starting	Transducer starting	Transducer starting	Transducer starting
Recommended Working Ambient Temp Ranges	°F	AC: 0 ~ 118 HP:-4 ~ 75	AC: 0 ~ 118 HP:-4 ~ 75	AC: 0 ~ 118 HP:-4 ~ 75	AC: 0 ~ 118 HP:-4 ~ 75	AC: 0 ~ 118 HP:-4 ~ 75
Condenser		Aluminum fin-copper tube	Aluminum fin-copper tube	Aluminum fin-copper tube	Aluminum fin-copper tube	Aluminum fin-copper tube
Output of Fan Motor	W	60	90	100	170	170
Fan Motor RLA	A	0.62	0.59	0.68	0.82	0.82





Outdoor Unit Models		WMMS-30CH-V2B(59)4 (1 to 2)	WMMS-36CH-V2B(59)4 (2 to 3)	WMMS-42CH-V2B(59)4 (2 to 4)	WMMS-48CH-V2B(59)4 (2 to 5)	WMMS-60CH-V2B(59) 4 (2 to 5)
Fan Motor Capacitor	uF	3	3.5	3.5	3.5	6
Fan Type-Piece		Axial-flow 1	Axial-flow 1	Axial-flow 1	Axial-flow 1	Axial-flow 1
Fan Diameter	In.	20.47	21.65	21.65	22.44	22.44
Defrosting Method		Auto Defrost	Auto Defrost	Auto Defrost	Auto Defrost	Auto Defrost
Climate Type		T1	T1	T1	T1	T1
Isolation		I	I	I	I	I
Moisture Protection		IP24	IP24	IP24	IP24	IP24
Max. Operating Pressure at High Side	PSI	550	550	550	550	550
Max. Operating Pressure at Low Side	PSI	240	240	240	240	240
Sound Pressure Level dB (H/L)	A	56	59	59	61	61
Sound Power Level dB (H/L)	A	63	69	69	71	71
Outdoor Unit Dimensions (W x H x D)	In.	38 x 27.6 x 13.4	38.6 x 31.1 x 13.4	38.4 x 31.1 x 14.6	42.8 x 43.43 x 17.32	42.8 x 43.43 x 17.32
Package Dimensions (W x H x D)	In.	40.5 x 29.53 x 18.03	42.64 x 33.63 x 19.21	42.64 x 33.66 x 19.21	45.59 x 48.62 x 19.41	45.59 x 48.62 x 19.41
Net /Gross Weight	LBs	114.6 / 124.5	153 / 164	154 / 169.76	198.4 / 216	198.4 / 216
R410A Refrigerant /Factory Pre-Charge for 25'	LBs	3.53	4.85	6.17	8.05	8.05
Maximum drive IDU NO.		2	3	4	5	5

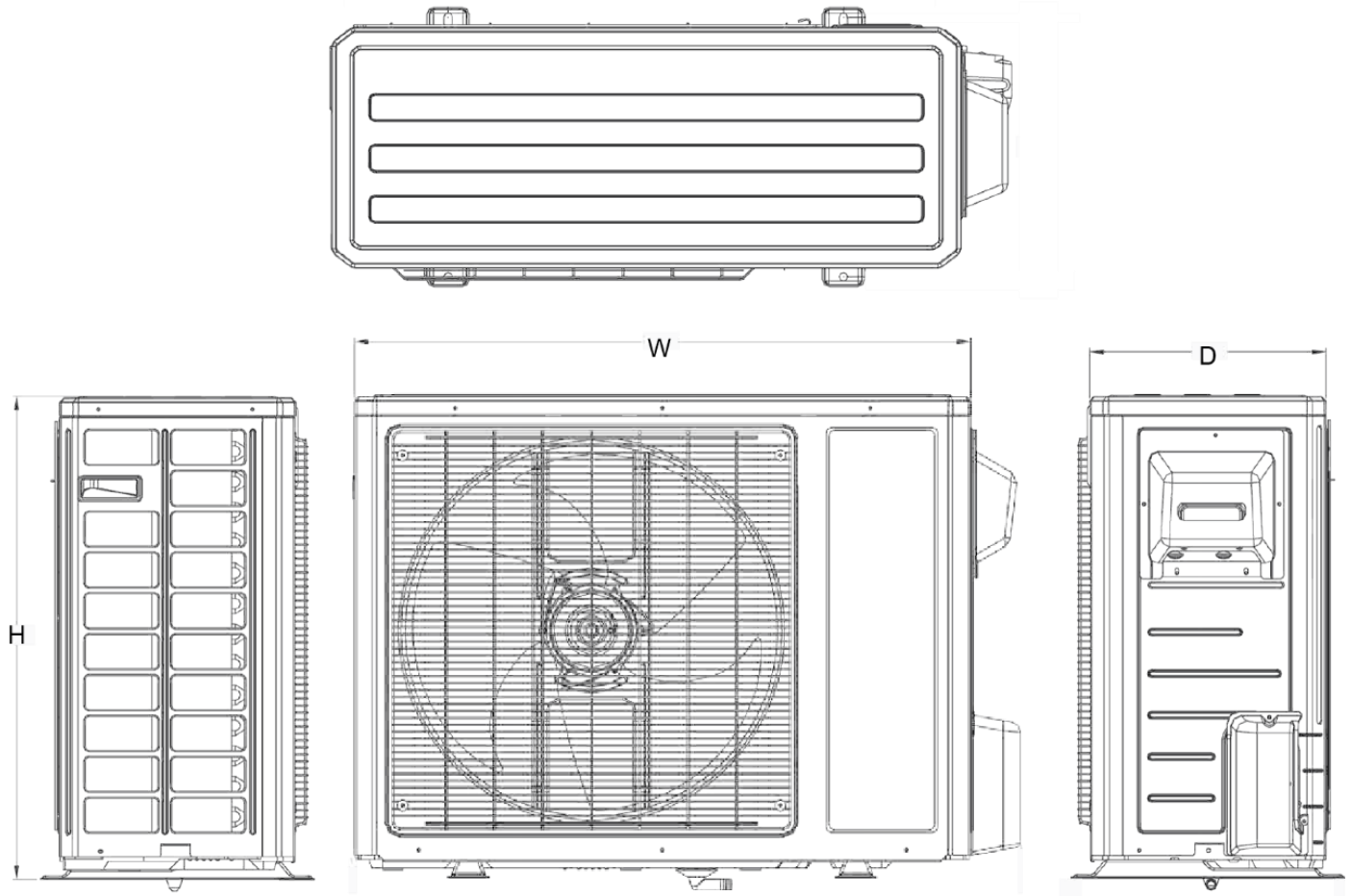
Notes:

1. Performance rated for matched system at standard conditions-cooling ID 80/67°F, OD 95°F; heating ID 70/60°F, OD 47/43°F.
Unit performance varies when weather changes from the standard one.
2. Select equipment capacity sizes per space load calculation schedule and cooling & heating hours. Not to over size or under size equipment.
3. Watch unit operation during extreme weather conditions in summer and winter. Wind baffle helps system cooling & heating performance in low ambient temperature ranges.
4. Heating capacities up to 85% @ 17°F ambient temperature, up to 60% @ -4°F.



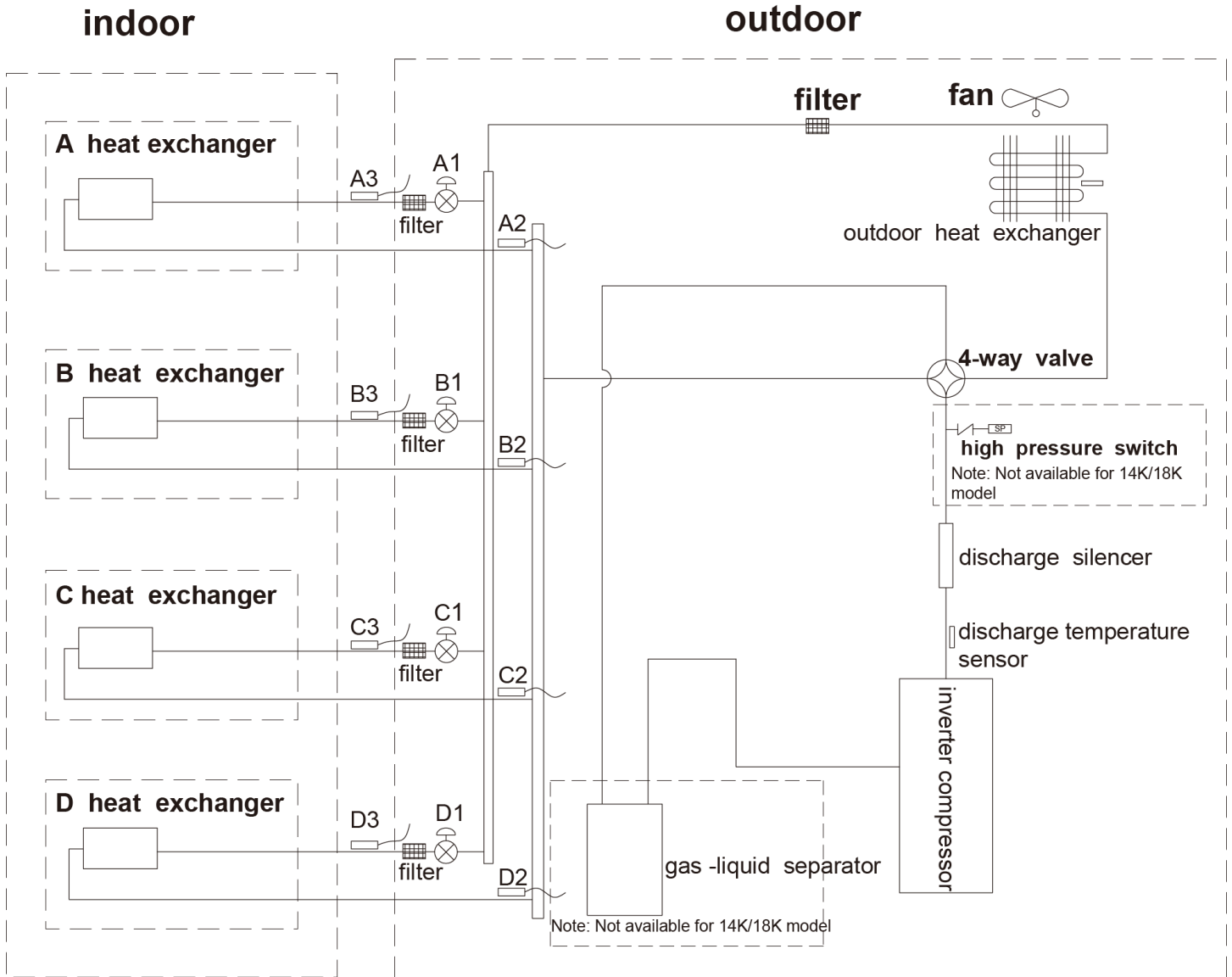
Outdoor Unit Dimension Diagram

OUTDOOR UNIT



Model	Dimensions (In)			Weight (lbs.)	
	W	H	D	Net	Operation
30CH	37.63	27.56	15.59	114.6	124.5
36CH	38.58	31.13	16.8	153	164
42CH	38.58	31.13	16.8	154	169.76
48CH	42.8	43.43	17.32	198.4	216
60CH	42.8	43.43	17.32	198.4	216

Refrigerant System Diagram



A1:A-unit electronic expansion valve
C1:C-unit electronic expansion valve
A2:A-unit gas pipe temperature sensor
C2:C-unit gas pipe temperature sensor
A3:A-unit liquid pipe temperature sensor
C3:C-unit liquid pipe temperature sensor

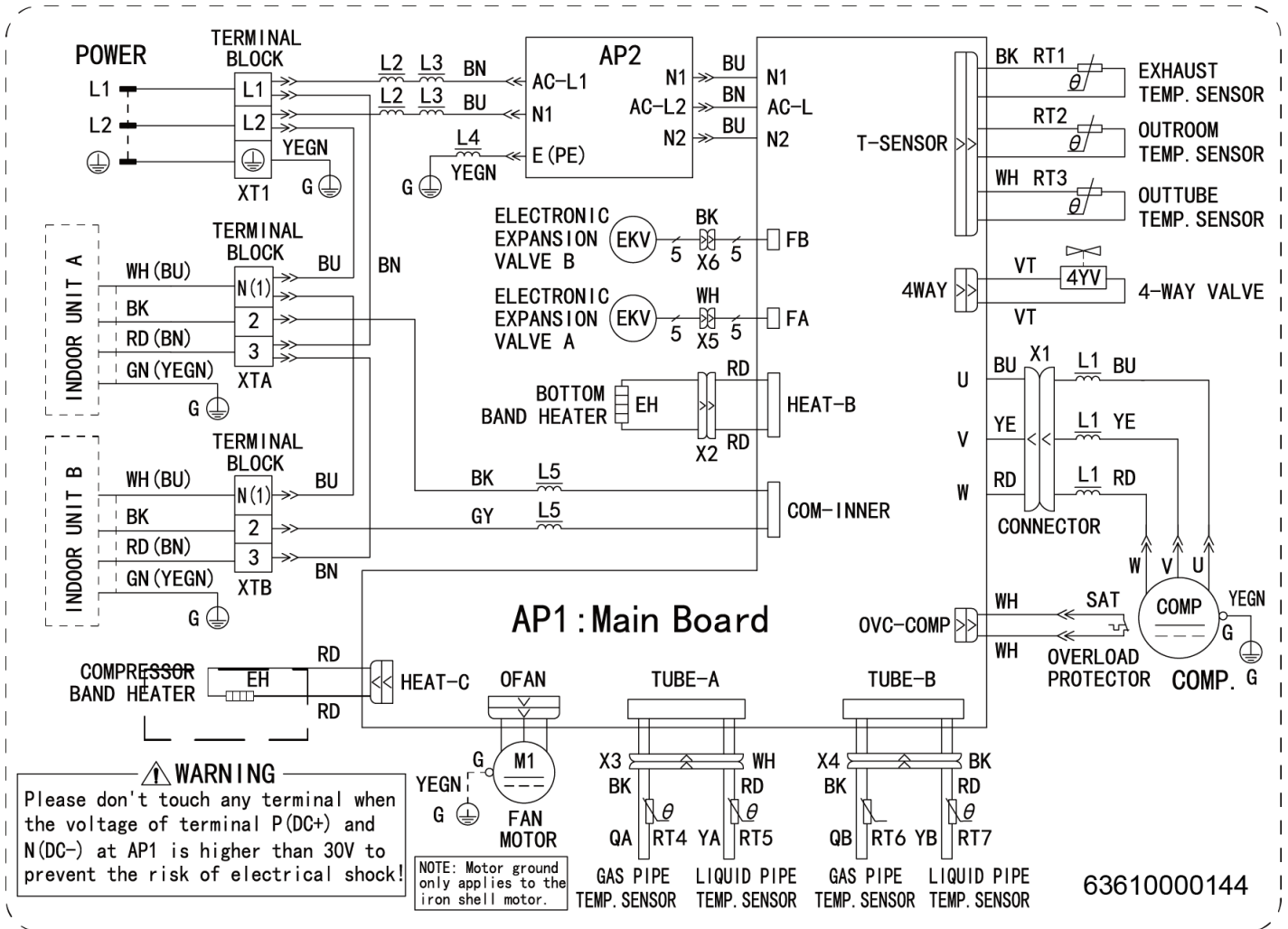
B1:B-unit electronic expansion valve
D1:D-unit electronic expansion valve
B2:B-unit gas pipe temperature sensor
D2:D-unit gas pipe temperature sensor
B3:B-unit liquid pipe temperature sensor
D3:D-unit liquid pipe temperature sensor

Electrical Wiring Diagram

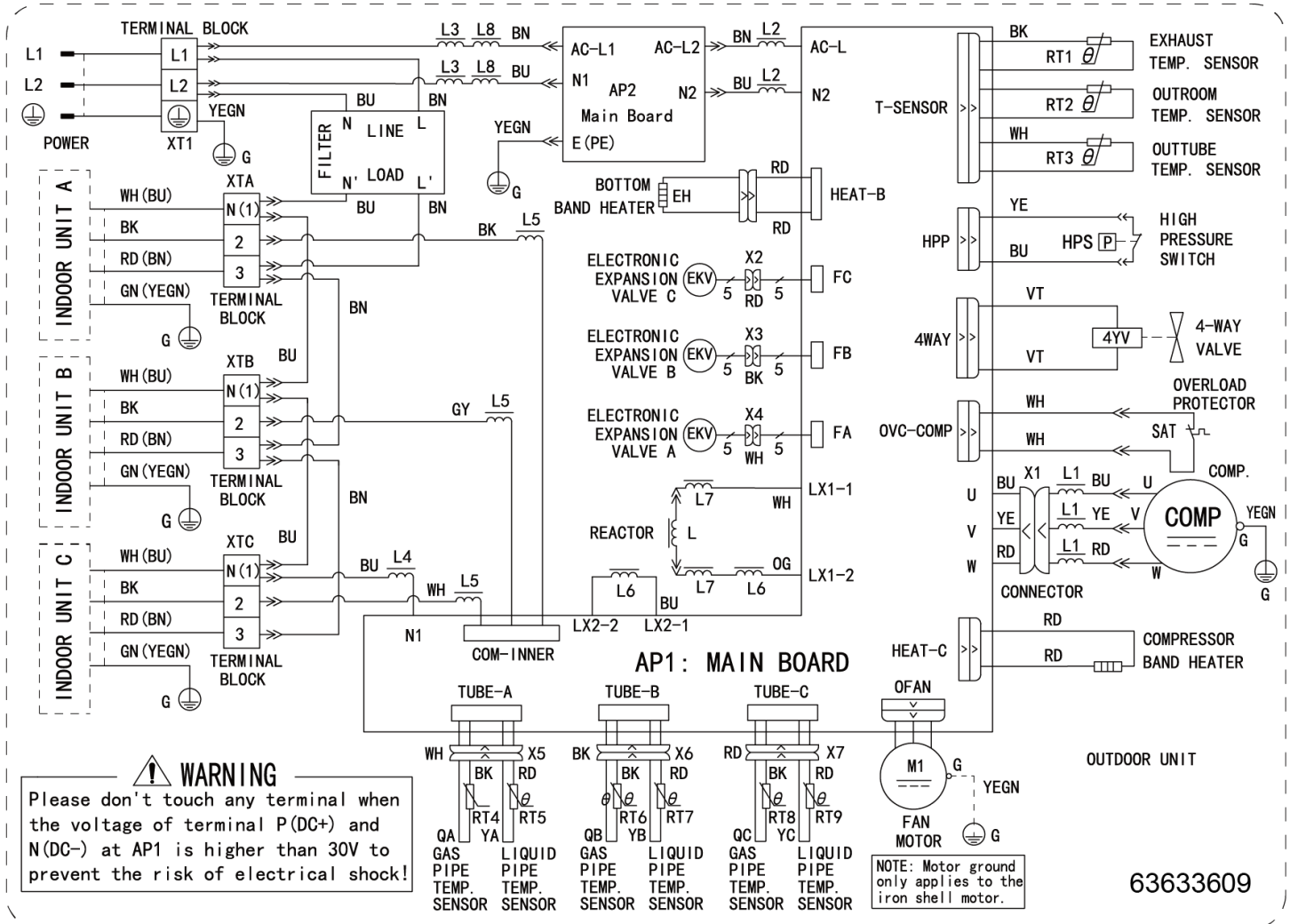
Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	GREEN	COMP	Compressor
YE	Yellow	BN	Brown		Grounding wire
RD	Red	BU	Blue		
YEGN	Yellow/Green	BK	Black		
VT	Violet	OG	Orange		

Outdoor Unit

WMMS-30CH-V2B(59)4



WMMS-36CH-V2B(59)4

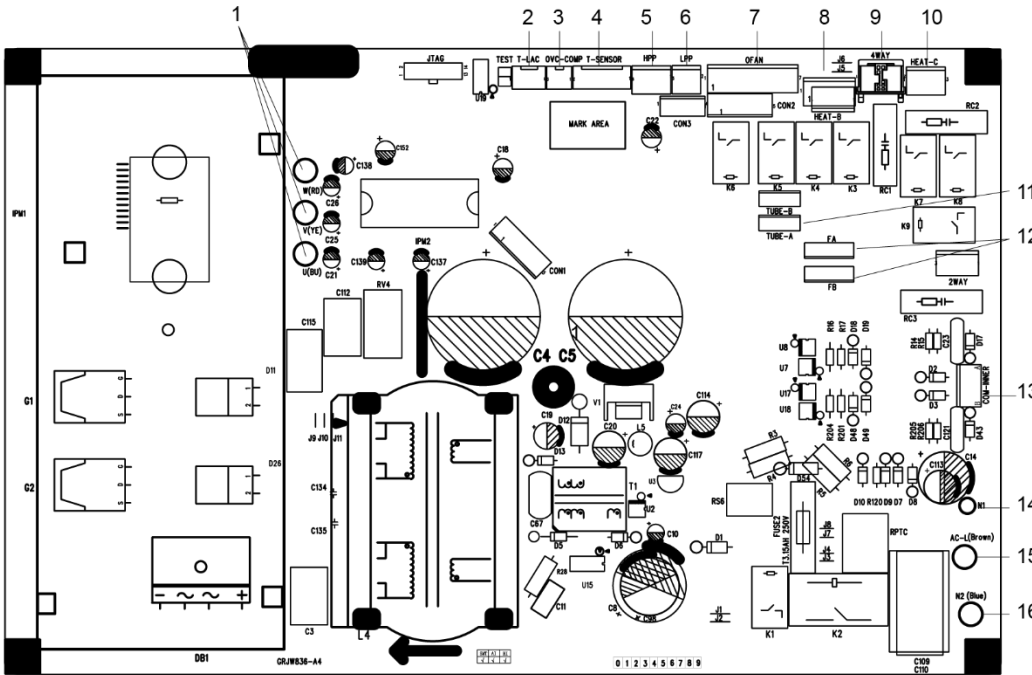


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

PCB Printed Diagram

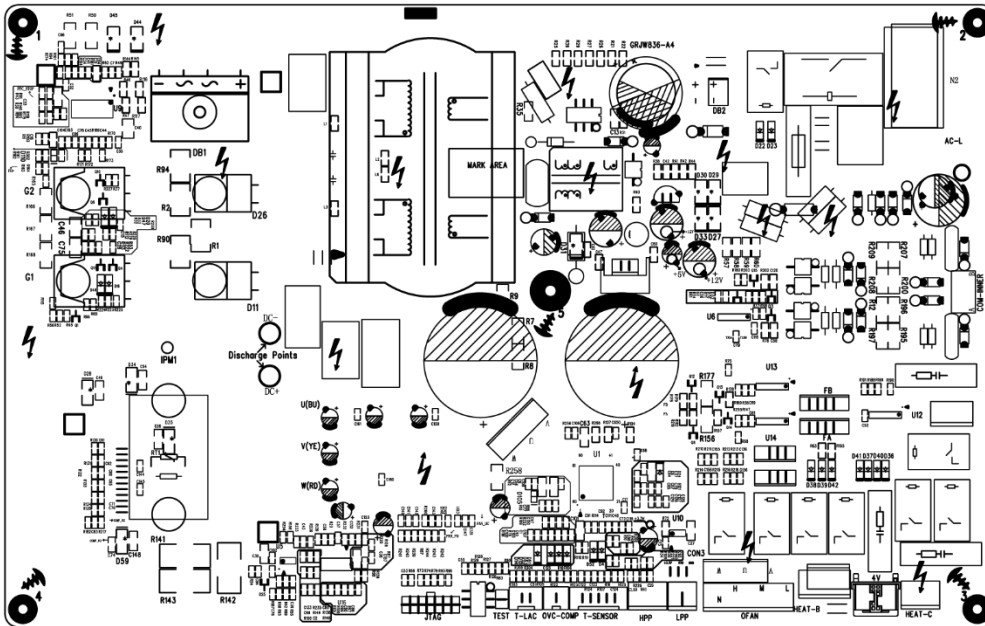
WMMS-30CH-V2B(59)4

● TOP VIEW



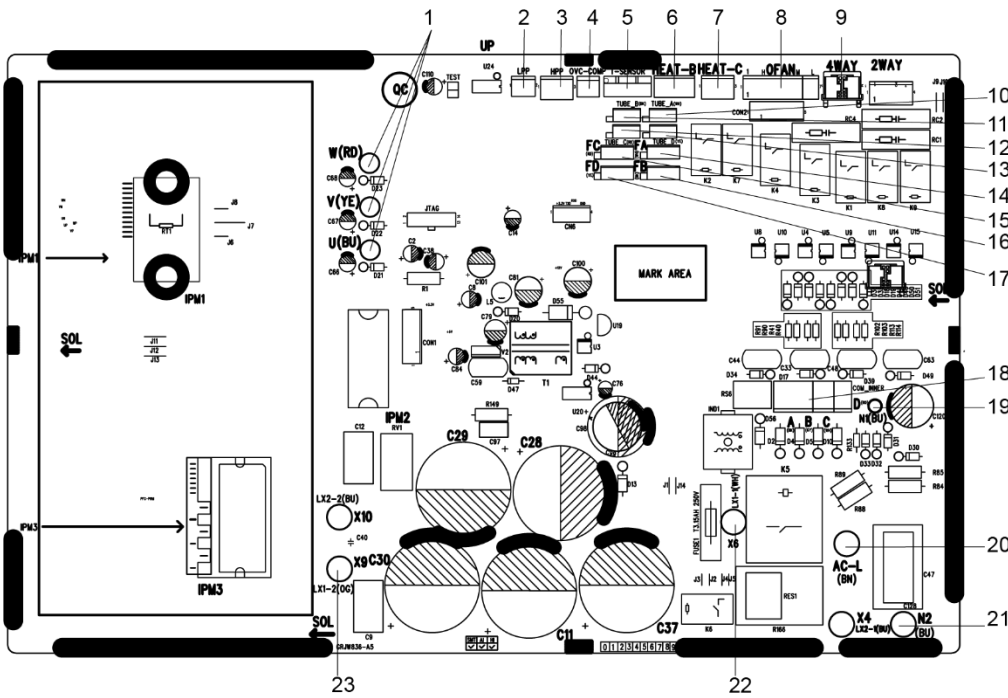
1	Terminal of compressor
2	Terminal of low-temperature cooling temperature sensor
3	Overload protection terminal of compressor
4	Temperature sensor terminal of outdoor unit
5	High pressure protection terminal
6	Low pressure protection terminal
7	Terminal of outdoor unit
8	Electric heating belt terminal of chassis
9	Terminal of 4-way valve
10	Electric heating belt terminal of compressor
11	Terminal of temperature sensor wire for liquid valve and gas valve
12	Terminal of electronic expansion valve
13	Terminal of communication wire for indoor unit and outdoor unit
14	Neutral wire terminal for communication
15	Live wire terminal
16	Neutral wire terminal

● BOTTOM VIEW



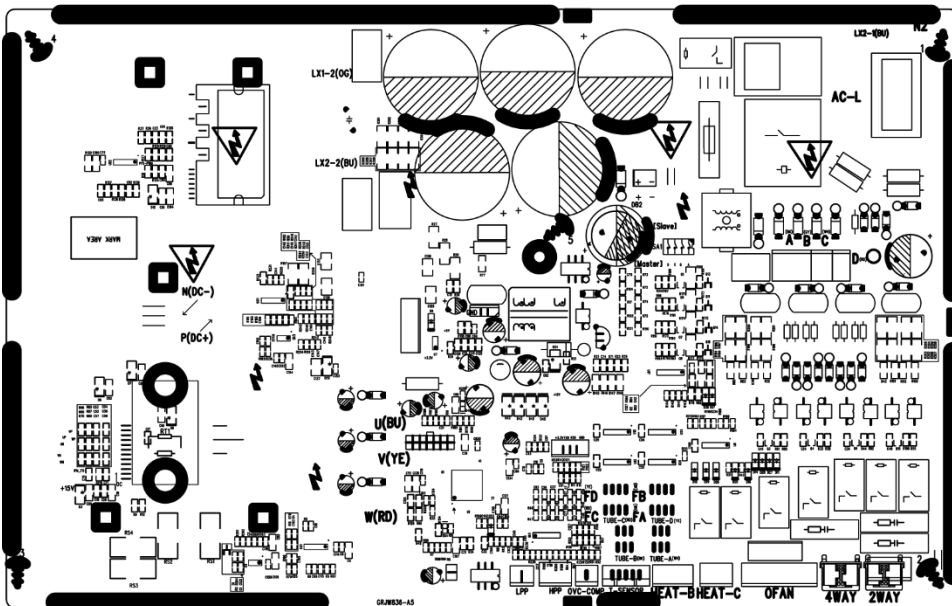
WMMS-36CH-V2B(59)4

● TOP VIEW



1	Terminal of compressor
2	Low pressure protection terminal
3	High pressure protection terminal
4	Overload protection terminal of compressor
5	Temperature sensor terminal of outdoor unit
6	Electric heating terminal of chassis
7	Electric heating terminal of compressor
8	Terminal of outdoor unit
9	Terminal of 4-way valve
10	Temperature sensor for liquid valve and gas valve for unit A
11	Temperature sensor for liquid valve and gas valve for unit B
12	Temperature sensor for liquid valve and gas valve for unit C
13	Temperature sensor for liquid valve and gas valve for unit D
14	Electronic expansion vale for unit A
15	Electronic expansion vale for unit C
16	Electronic expansion vale for unit B
17	Electronic expansion vale for unit D
18	Communication wire with indoor unit
19	Neutral wire for counciation
20	Live wire
21	Neutral wire
22	Reactor wire 1
23	Reactor wire 2

● BOTTOM VIEW



Functions and Control

Basic functions of the system

1. Cooling Mode

1.1. Cooling conditions and process:

If the compressor is in stop status and start the unit for cooling operation, when one of the indoor units reaches the cooling operation condition, the unit start cooling operation; in this case, the electronic expansion valve, the outdoor fan and the compressor start operation.

1.2. Stop in cooling operation

1.2.1. Compressor stops

the compressor stops immediately, the outdoor fan stops after 1 min.

1.2.2. Some of the indoor units reach the stop condition (the compressor does not stop)

The compressor operates immediately according to the required frequency. For the indoor unit with no requirement, the corresponding electronic expansion valve is closed to OP.

1.3. Cooling mode transfers to heating mode

When the unit transfers to heating mode, the 4-way valve is energized after the compressor stops for 2min. The other disposals are the same as stopping in cooling mode.

1.4. 4-way valve: in this mode, the 4-way valve is closed.

1.5. Outdoor fan control in cooling mode

The outdoor fan starts before 5s of the starting of compressor. The outdoor fan will run in high speed for 3min after starting and then it will run in set speed. The fan shall run at every speed for at least 80s. (When the quantity of running indoor unit is changed, the unit will enter the control described in 1.3.5.1 and 1.3.5.2); When the compressor stops, the outdoor fan runs at present speed and stops after 1min.

2. Dry Mode

2.1. The dry conditions and process are the same as those in cooling mode;

2.2. The status of 4-way valve: closed;

2.3. The temperature setting range: 16 ~ 30℃;

2.4. Protection function: the same as those in cooling mode;

2.5. In dry mode, the maximum value A of the capacity requirement percentage of single unit is 90% of that in cooling mode. The open condition of the electronic expansion valve, outdoor fan and compressor is the same as those in cooling mode.

3. Heating Mode

3.1 Cooling conditions and process:

When one of the indoor units reaches the heating operation condition, the unit starts heating operation.

3.2 Stop in heating operation:

3.2.1 When all the indoor units reach the stop condition, the compressor stops and the outdoor fan stops after 1min

3.2.2 Some of the indoor units reach the stop condition

The compressor reduces the frequency immediately and operates according to the required frequency

3.2.3 Heating mode transfers to cooling mode(dry mode), fan mode

a. The compressor stops

b. the power of 4-way valve is cut off after 2min

c. the outdoor fan stops after 1min

d. the status of 4-way valve: energized

3.3 Outdoor fan control in heating mode

The outdoor fan starts before 5s of the starting of compressor and then it will run in high speed for 40s

The fan shall run at every speed for at least 80s

When the compressor stops, the outdoor fan stops after 1min.

3.4 Defrosting function When the defrosting condition is met, the compressor stops; the electronic expansion valve of all indoor units open in big angle; the outdoor fan stops after 40s of the stop of compressor, meanwhile, the 4-way valve reverses the direction; after the 4-way valve reverses the direction, the compressor starts; then begin to calculate the time of defrosting, the frequency of the compressor rises to reach the defrosting frequency.

3.5 Oil-returned control in heating mode

- 3.5.1 Oil-returned condition The whole unit is operating in low frequency for a long time
- 3.5.2 Oil-returned process in heating mode The indoor unit displays “H1”
- 3.5.3 Oil-returned finished condition in heating mode
The duration reaches 5min

4. Fan Mode

The compressor, the outdoor fan and the 4-way valve are closed; temperature setting range is 61 - 86°F (16-30°C).

Protection Functions

1. Mode Conflict Protection of Indoor units

When the mode setting is different of other indoor units, the unit runs in below status:

The mode of the first operating indoor unit is the basic mode, then compare the mode of the other indoor units to see if there is a conflict. Cooling mode (dry mode) is in conflict with heating mode.

Fan mode is in conflict with heating mode and the heating mode is the basic mode. No matter which indoor unit operates first, the unit will run in heating mode.

2. Overload protection function

When the tube temperature is low, the compressor raises the operation frequency. When the tube temperature is high, the compressor frequency is restricted or slows down the operation frequency. When the tube temperature is too high, the compressor protection stops the compressor from running.

If the discharge temperature protection is tripped 6 times, the compressor will not resume operation. The compressor can resume running after cutting off the power and then turning the power back on. (If the compressor can run continuously for 7 minutes, the protection time records will be cleared).

3. Discharge Protection Function

When the discharge temperature is low, the compressor raises the operation frequency. When the discharge temperature is high, the compressor frequency is restricted or slows down the operation frequency. When the discharge temperature is too high, the compressor protection stops the compressor from running.

If the discharge temperature protection is tripped 6 times, the compressor will not resume operation. The compressor can resume running after cutting off the power and then turning the power back on. (If the compressor can run continuously for 7 minutes, the protection time records will be cleared).

4. Communication Malfunction

Detection of the quantity of installed indoor units:

After 3min of energizing, if the outdoor unit does not receive the communication data of an indoor unit, the outdoor unit will determine that indoor unit is not installed and will treat it as it is not installed. If the outdoor unit receives the communication data of that indoor unit later, the outdoor unit will treat that unit as installed.

5. Overcurrent Protection

- a. Overcurrent protection of complete unit
- b. phase wire current protection
- c. compressor phase current protection

6. Compressor High-Pressure Protection

1. When the high-pressure switch is detected to be cut off for 3s continuously, the compressor will enter high-pressure protection and will stop when it reaches a set temperature. Meanwhile, the outdoor unit will send the signal of “high-pressure protection” to the indoor units.
2. After the occurrence of a high-pressure protection fault, after the high-pressure switch is detected closed for 6s continuously, the compressor can resume operation only after cutting the power and then and then turning the power back on.

7. Compressor Overload Protection

If the compressor overload switch is detects movement, the indoor unit will display the corresponding malfunction as it stops when the indoor temperature reaching set temperature. When the compressor stops for more than 3min and the compressor overload switch is reset, the unit will resume operational status automatically. If the protection is triggered more than 6 times (if the running time of the compressor is longer than 30min, the protection times record will be cleared), the unit cannot resume operation status automatically, but can resume running after cutting the power and then and then turning the power back on.

8. Compressor Phase-Loss Protection

When the compressor starts, if one of the three phases is detected open, the compressor will enter phase-loss protection. The malfunction will be cleared after 1min, the unit will restart and then detect if there is still has phase-loss protection. If the phase-loss protection is triggered for 6 times continuously, the compressor will not restart but can resume operation only after cutting the power and then and then turning the power back on. If the running time of the compressor is longer than 7min, the protection time records will be cleared.

9. IPM Protection

When the IMP module protection is detected, the unit will stop when the indoor temperature reaches a set temperature, PFC is closed, and the unit will display IMP protection malfunction. After the compressor stops for 3min, the unit will resume operation automatically. If the IMP protection is tripped more than 6 times continuously, the system will stop and send the module protection signal to indoor unit. If the compressor runs longer than 7min, the protection time records will be cleared. The unit cannot resume operation status automatically, but can resume running only after cutting the power and then and then turning the power back on.

1. IMP module overheating protection
 - a. When $T_{IMP} > 185^{\circ}\text{F}$ (85°C), prohibited to raise frequency.
 - b. When $T_{IMP} \geq 194^{\circ}\text{F}$ (90°C), the operation frequency of compressor slows down by 15% every 90s according to the present capacity requirement of the complete unit. It will keep 90s after slowing down the frequency. After slowing down the frequency, if $T_{IMP} \geq 194^{\circ}\text{F}$ (90°C),, the unit will circulate the above movement until reaching the minimum frequency; if 185°F (85°C), $<T_{IMP} < 194^{\circ}\text{F}$ (90°C),, the unit will run at this frequency; when $T_{IMP} \leq 185^{\circ}\text{F}$ (85°C),, the unit will run at the frequency according to the capacity requirement;
2. When $T_{IMP} \geq 203^{\circ}\text{F}$ (95°C), the compressor will stop. After the compressor is stopped for 3min, if $T_{IMP} < 185^{\circ}\text{F}$ (85°C), the compressor and the outdoor fan will resume operation.

Installation and Maintenance

Notes for Installation and Maintenance

Safety Precautions: Important!

Please read the safety precautions carefully before installation and maintenance.

The following contents are very important for installation and maintenance.

Please follow the instructions below.

- The installation or maintenance must comply with the instructions.
- Comply with all national electrical codes and local electrical codes.
- Pay attention to the warnings and cautions in this manual.
- All installation and maintenance shall be performed by an HVAC qualified professional.
- All electric work must be performed by a licensed technician according to NEC, and local regulations and the instructions given in this manual.
- Be cautious during installation and maintenance. Do not allow incorrect operation to prevent electric shock, injury, damage to property, and other accidents.

⚠ WARNING

Electrical Safety Precautions:

1. Turn off the power supply of air conditioner before servicing and maintenance.
2. The air condition must use an individual circuit and do not share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power line can be reached.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire cannot be used for other purposes.
6. Must use protective accessories such as protective boards, cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must correspond to the live wire, neutral wire and grounding wire of the air conditioner.
8. The power cord and power connection wires cannot be pressed on by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified technician.
10. If the power cord or connection wire is not long enough, please purchase and use the correct power cord or connection wire from the manufacture or distributor. Do not splice or lengthen the wire.
11. For the air conditioner a circuit breaker must be installed in the circuit. The circuit breaker should be double pole double throw breaker and the contact parting distance should be greater than 1/8 inch.
12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.
13. Check to see if there is electric leakage on the unit body. If yes, eliminate the electric leakage.
14. Replace the fuse with a new one of the same specification if the fuse is blown. DO NOT replace it with a cooper wire or conducting wire.
15. If the unit is going to be installed in a humid place, a circuit breaker must be installed.

Installation Safety Precautions:

1. Select an installation location according to the requirements in this manual.(See the requirements in the installation section)
2. Transport and handle the unit with care. The unit should not be carried by only one person if it is more than 44 lb.
3. When installing the indoor unit and outdoor unit, an appropriate fixing bolt must be installed. Make sure the installation support is solid.
4. Wear a safety belt if the installation height is above 78 3/4 inches.
5. Use provided components or approved components during installation.
6. Make sure no foreign objects are left inside the unit after finishing installation.

Refrigerant Safety Precautions:

1. Avoid contact between refrigerant and fire as it generates poisonous gas; Prohibit prolong the connection pipe by welding.
2. Apply specified refrigerant only. Never have it mixed with any other refrigerant. Never have air remain in the refrigerant line as it may lead to rupture or other hazards.
3. Make sure no refrigerant gas is leaking when installation is completed.
4. If there is refrigerant leakage, please take sufficient measure to minimize the density of refrigerant.
5. Never touch the refrigerant piping or compressor without wearing glove to avoid scald or frostbite.

⚠WARNING

Improper installation may lead to fire hazard, explosion, electric shock or injury.

Safety Precautions for Installing and Relocating the Unit:

To ensure safety, please be mindful of the following precautions.

⚠WARNING

1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.
Any presence of air or other foreign substances in the refrigerant circuit will cause system pressure rise or the compressor to rupture, resulting in injury.
2. When installing or moving this unit, do not charge with refrigerant that does not comply with the refrigerant listed on the nameplate or unqualified refrigerant.
Otherwise, it may cause abnormal operation, incorrect operation, mechanical malfunction or possibly a serious accident.
3. When refrigerant needs to be recovered during the relocation or repairing the unit, be sure that the unit is running in cooling mode. Then, fully close the valve at high pressure side (liquid valve). About 30-40 seconds later, fully close the valve at low pressure side (gas valve), then immediately stop the unit and disconnect power. Please note that the time for refrigerant recovery should not exceed 1 minute.
If refrigerant recovery process takes too long, air may be sucked in and cause pressure rise or compressor rupture, which can result in damage or injury.
4. During refrigerant recovery, make sure that liquid valve and gas valve are fully closed and power is disconnected before detaching the connection pipe.
If compressor starts running when stop valve is opened and the connection pipe is not yet connected, air will be sucked in and cause pressure to rise or compressor to rupture, resulting in damage or injury.
5. When installing the unit, make sure that connection pipe is securely connected before the compressor starts running.
If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.
6. DO NOT install the unit near a location where it can come in contact with corrosive gas or flammable gas.
If gas leaks near or around the unit, it may result in an explosion or fire.
7. Do not use extension cords for electrical connections. If the electric wiring is not long enough, please contact a local authorized service center and ask for a proper electric wire.
Poor connections may lead to electric shock or fire.
8. Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.
Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

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

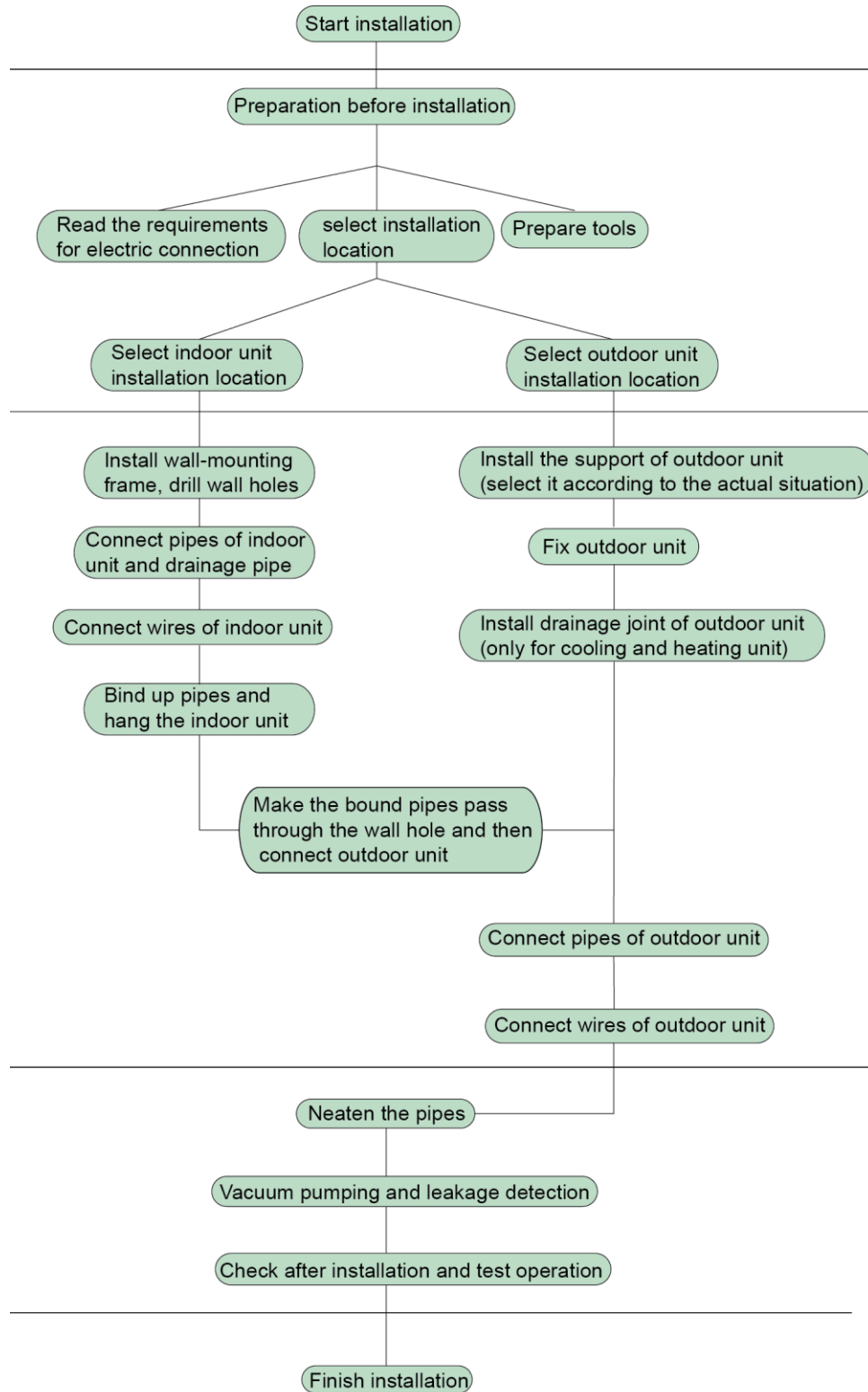
4) Trial Running Units and Inspection

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



Installation Manual

Installation procedures



Note: this flow is only for reference; please find the more detailed installation steps in this section.

Electrical Connections

1. Remove the handle at the right side plate of the outdoor unit (one screw).
2. Remove the cable clamp, connect the power connection cable with the terminal at the row of connection and fix the connection. The fitting line distribution must be consistent with the indoor unit terminal of line bank. Wiring should meet that of indoor unit.
3. Fix power connection wire using a wire clamp.
4. Ensure wire has been securely connected.
5. Install the handle.

! Including a double pole double throw breaker with suitable capacity. Please note the following table. Double pole double throw breaker should include a magnet buckle and heating buckle function, it can protect the circuit from shorting and/or overloading.

(Caution: Do not use only a fuse for protecting the circuit)

! An all-pole disconnection switch having a contact separation of at least 1/8 of an inch (3mm) between all poles should be connected in fixed wiring.

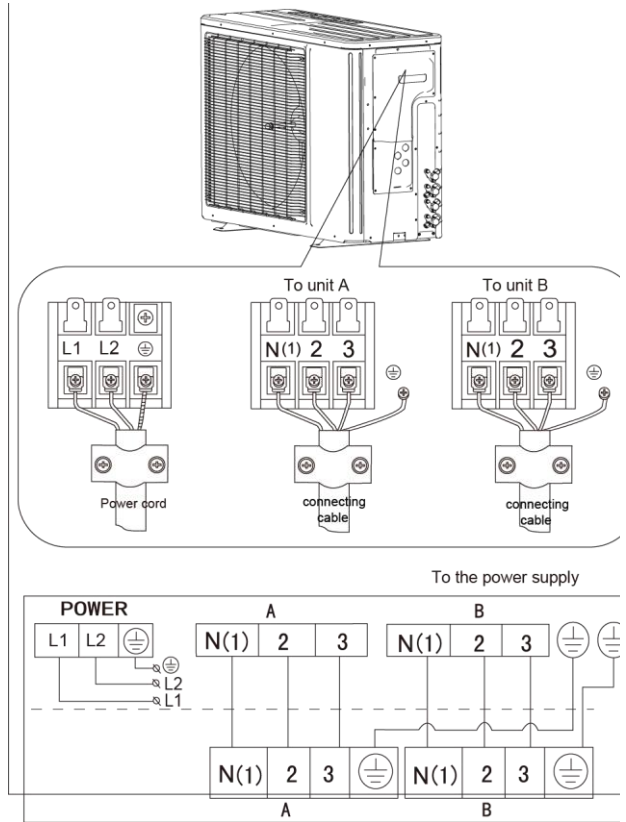
! Incorrect wire connections may cause malfunction of some electric components. After attaching the cable, ensure that leads between connections to fixed point have a gap between them.

! The connection pipes and the connecting wiring of unit A and unit B must be corresponding to each other respectively. Make sure you do not cross wire.

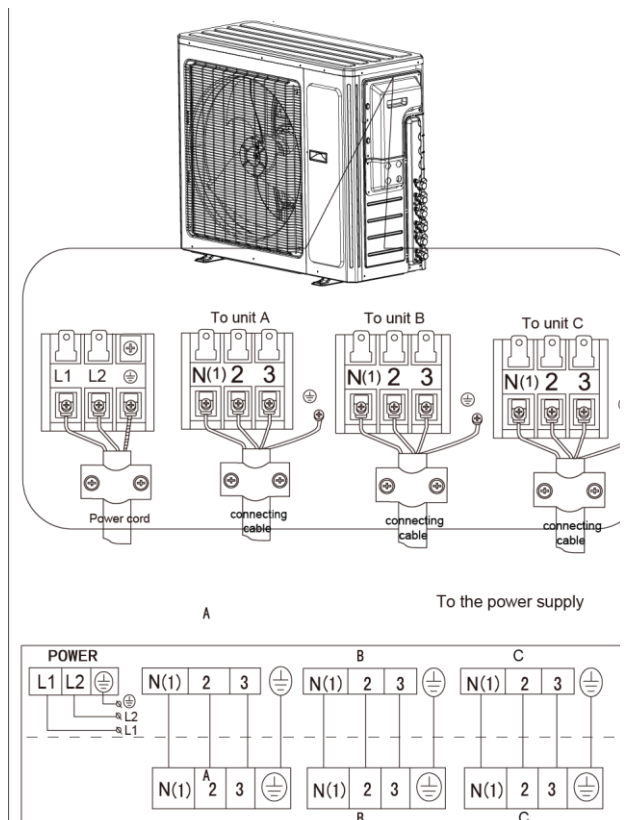
! The appliance should be installed in accordance with NEC wiring codes, and any local electrical regulations.

Note: the above figures are only intended to be a simple diagram of the appliance and may not correspond to the appearance of the units that have been purchased.

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Installing the Outdoor Unit

Location

Use bolts to secure the unit to a flat, solid floor.

When mounting the unit on a wall or the roof, make sure the support is firmly secured so that it cannot move in the event of intense vibrations or a strong wind.

Do not install the outdoor unit in pits or air vents

Installing the pipes

Use suitable connecting pipes and equipment for the R410A refrigerant.

Models(ft)	18K	24K
Max. connection pipe length	65.6 ft.	196.8 ft.
Max. connection pipe length (Simple one indoor unit)	32.8 ft.	65.6 ft.

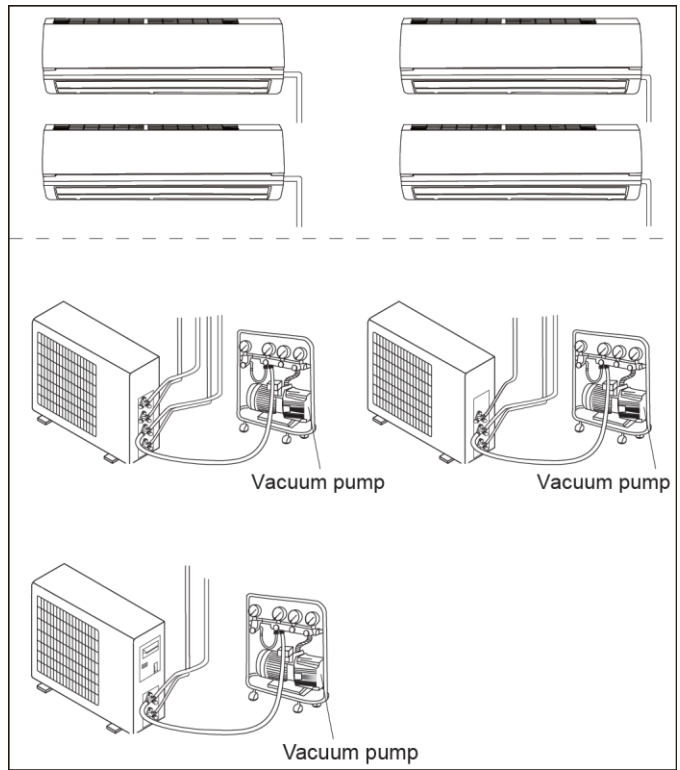
- Refrigerant pipes must not exceed the maximum heights 32.8ft (18/24K)
- Wrap all the refrigerant pipes and joints.
- Tighten the connections using two wrenches working in opposite directions.

⚠ CAUTION

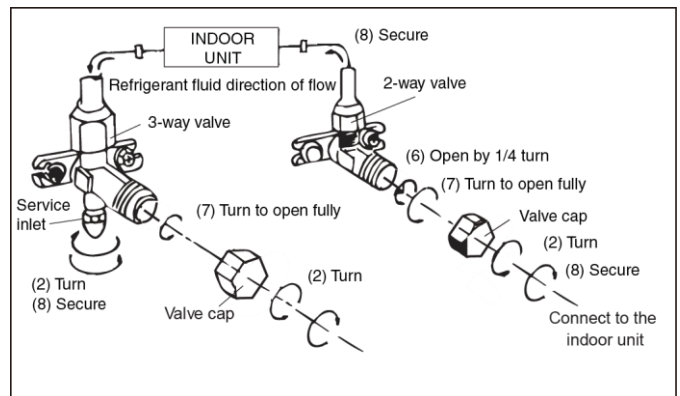
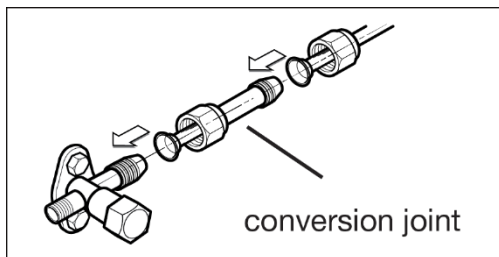
Installation Must be Performed in Accordance with the NEC/CEC by Authorized HVAC Technician Only.

Humid air left inside the refrigerant circuit can cause compressor malfunction. After having connected the indoor and outdoor units, bleed the air and humidity from the refrigerant circuit using a vacuum pump.

- (1) Unscrew and remove the caps from the 2-way and 3-way valves.
- (2) Unscrew and remove the cap from the service valve.
- (3) Connect the vacuum pump hose to the service valve.
- (4) Operate the vacuum pump for 10-15 minutes until an absolute vacuum of 10 mm Hg has been reached.
- (5) With the vacuum pump still in operation, close the low-pressure knob on the vacuum pump coupling. Stop the vacuum pump.
- (6) Open the 2-way valve by 1/4 turn and then close it after 10 seconds. Check all the joints for leaks using liquid soap or an electronic leak device.
- (7) Turn the body of the 2-way and 3-way valves. Disconnect the vacuum pump hose.
- (8) Replace and tighten all the caps on the valves.

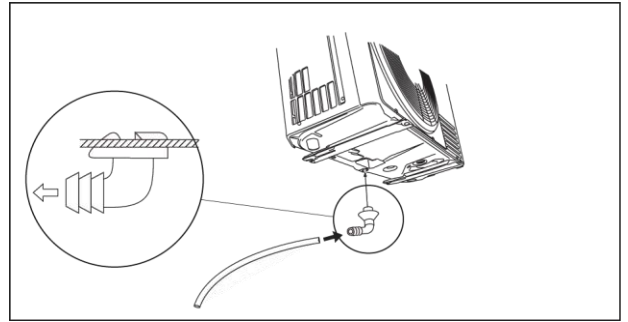


Hex nut diameter(inch)	Tightening torque (ft-lbf)
Φ1/4"	11.10~4.75
Φ3/8"	20.12~29.50
Φ1/2"	33.19~40.56
Φ5/8"	44.24~47.94
Φ3/4"	51.32~55.31



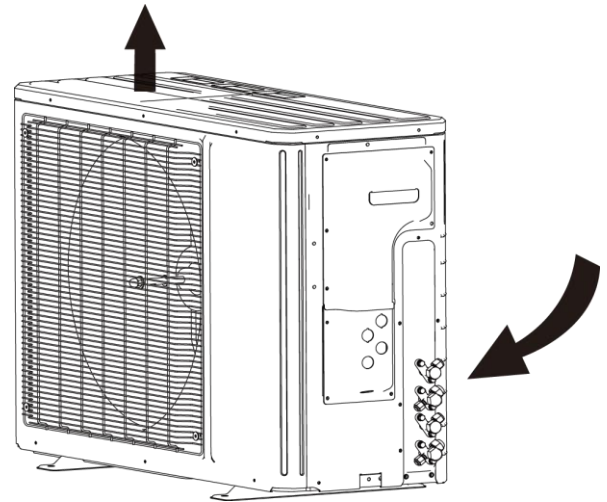
Install the drain fitting and the drain hose
(for heat pump models only)

Condensation is produced and flows from the outdoor unit when the appliance is operating in the heating mode. In order not to disturb neighbors and to respect the environment, install a drain fitting and a drain hose to channel the condensate water. Install the drain fitting and rubber washer on the outdoor unit chassis and connect a drain hose to it as shown in the figure

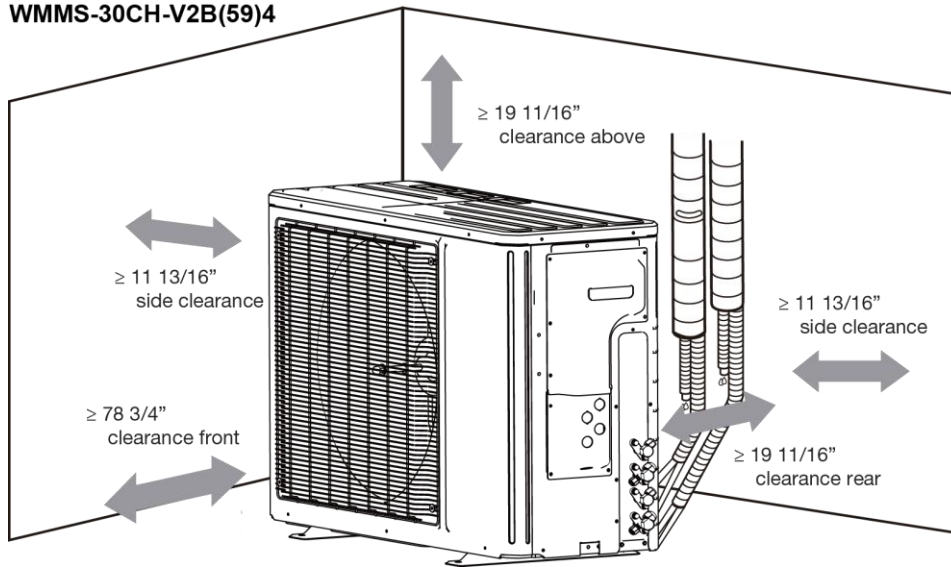


Installation Clearance Diagram

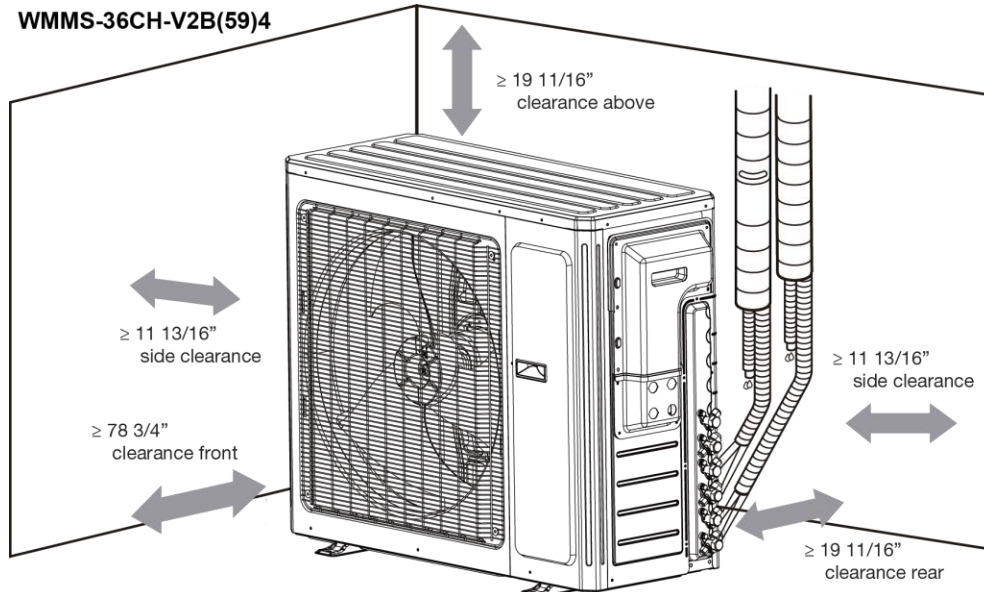
- ⚠ Use appropriate instruments and tools for the charging of R410A refrigerant.
- ⚠ Do not use any other refrigerant than R410A.
- ⚠ Do not use mineral oils to clean the unit.
- ⚠ The installation must be done by trained and qualified HVAC service personnel and in accordance with the instructions provided in this manual.
- ⚠ If your technician has any questions before installation, have him contact YMGI's technical support before installing to avoid the malfunction due to incorrect installation.
- ⚠ When lifting or moving the units, follow the advice provided by trained and qualified technicians.
- ⚠ Make sure that the recommended clearances are left around the unit.



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Check after Installation

Check Items	Problems Due to Improper Installation
Is the unit installation firm and stable?	The unit may fall, vibrate or make noise.
Has the system been checked for gas leakage?	May cause unsatisfactory cooling (heating) performance.
Is the thermal insulation of the unit sufficient?	May cause condensation and water dripping.
Is the moisture drainage unobstructed?	May cause condensation and water dripping.
Does the power supply voltage conform to the rated voltage specified on the data plate?	The unit may break down or the components may get burned out.
Are the lines and pipelines correctly installed?	The unit may break down or the components may be damaged.
Has the unit been safely grounded?	Risk of electrical shock or fire..
Do the size and lengths of the refrigerant lines conform to the unit requirements?	The unit may break down or the components may be damaged.
Are there any obstacles near the air inlet and outlet of the indoor and outdoor units?	The unit may break down or the components may be damaged.
Have the length of refrigeration pipes and refrigerant charge amount been recorded?	If the unit requires recharging due to servicing or leakage, it will be difficult to determine the correct refrigerant charge amount.

Troubleshooting

Flashing LED of Indoor/Outdoor Unit and Primary Judgement

1. About the malfunction display.
When several malfunctions happen at the same time, malfunction codes will cycle on the display.
2. Malfunction display method
 - (1) Hardware malfunction: In the event of a hardware malfunction, the error code will be displayed immediately. Please refer to “Malfunction status sheet”.
 - (2) Operation status: it will be displayed immediately. Please refer to “Malfunction status sheet”;
 - (3) Other malfunctions: Error code will be displayed after the compressor has been stopped for 200s, please refer to “Malfunction status sheet”.

Note: when the compressor starts up again, the malfunction display waiting time (200s) will be cleared.

3. Malfunction display control
4. Indoor unit displays malfunction code as shown in the sheet below. ODU communication light will be off for 1s and then blink for 1s circularly
5. Viewing malfunction code through remote controller
6. Enter viewing malfunction code: pressing light button for 6 times within 3S to view malfunction code;
7. Exit viewing malfunction code: pressing light button for 6 times within 3S or after the malfunction code is displayed for 5min.

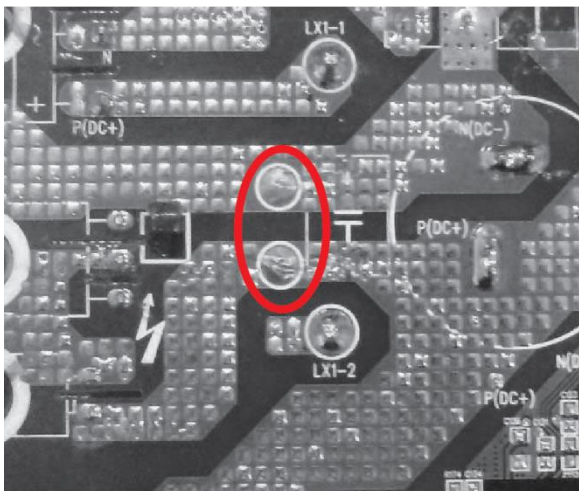
Malfunction status sheet		
Malfunction name	Malfunction type	Error Code
Zero cross detection circuit malfunction (for indoor unit)	Hardware malfunction	U8
Malfunction protection of jumper cap (for indoor unit)	Hardware malfunction	C5
No signal from IDU fan motor (for indoor unit)	Hardware malfunction	H6
Indoor ambient temperature sensor is open/short circuited	Hardware malfunction	F1
Indoor evaporator temperature sensor is open/short circuited	Hardware malfunction	F2
Liquid valve temperature sensor is open/short circuited	Hardware malfunction	b5
Gas valve temperature sensor is open/short circuited	Hardware malfunction	b7
Modular temperature sensor is open/short circuited	Hardware malfunction	P7
Outdoor ambient temperature sensor is open/short circuited	Hardware malfunction	F3
Outdoor condenser middle pip temperature sensor is open/short circuited	Hardware malfunction	F4
Outdoor discharge temperature sensor is open/short circuited	Hardware malfunction	F5
Communication malfunction	Hardware malfunction	E6
Malfunction of phase current detection circuit for compressor	Hardware malfunction	U1
Module high temperature protection	Viewing malfunction code through remote controller within 200 s;	P8
Refrigerant low or blockage protection of system (not available for residential ODU)	displayed directly on nixietube after 200 s	F0
Charging malfunction of capacitor	Hardware malfunction	PU
High pressure protection of system	Hardware malfunction	E1
Low pressure protection of system (reserved)	Hardware malfunction	E3
Compressor overload protection	Viewing malfunction code through remote controller within 200s; displayed directly on nixietube after 200s	H3

IPM Module protection	IPM Module protection, can be caused by over-charged refrigerant/high pressure (bad manifold gauge), restricted	H5
Indoor unit and outdoor unit do not match	Hardware malfunction	LP
Malfunction of memory chip	Hardware malfunction	EE
Incorrect connection of communication wire or malfunction of electronic expansion valve	Hardware malfunction	dn
Malfunction protection of outdoor fan 1	Hardware malfunction	L3
Detection status of incorrect connection of communication wires or malfunction of electronic expansion valve	Operation status	dd
Mode conflict	Operation status	E7
Refrigerant recycling mode	Operation status	Fo
X-fan	Operation status	AL
Defrosting or oil return in heating mode	Operation status	H1
Start failure of compressor	Viewing malfunction code through remote controller within 200s; displayed directly on nixietube after 200s	Lc
High discharge temperature protection of compressor		E4
Overload protection		E8
Whole unit overcurrent protection		E5
Compressor phase current protection		P5
Compressor desynchronizing		H7
Compressor phase-lacking/phase-inverse protection		Ld
IPM modular protection		H5
DC bus-bar low voltage protection		PL
DC bus-bar high voltage protection		PH
PFC protection		HC
The four-way valve is abnormal		U7

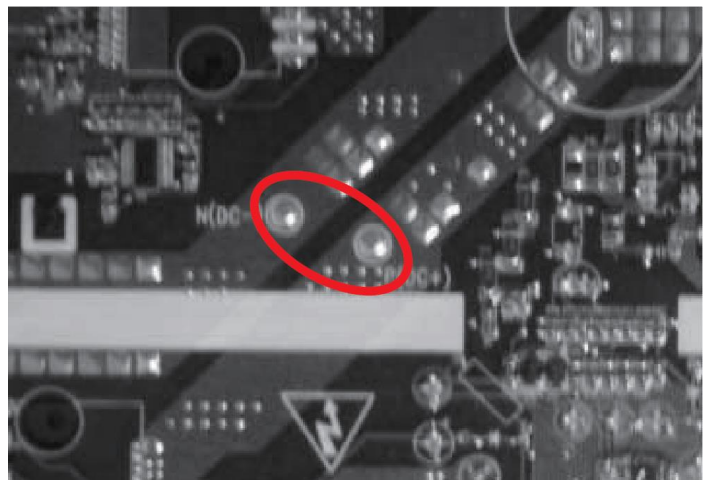
Malfunction Checking and Elimination

Note: discharge the position in below pictures with discharge resistance after open the top cover and check if the voltage is below 20V with universal meter, then begin to check.

30K:



36K:

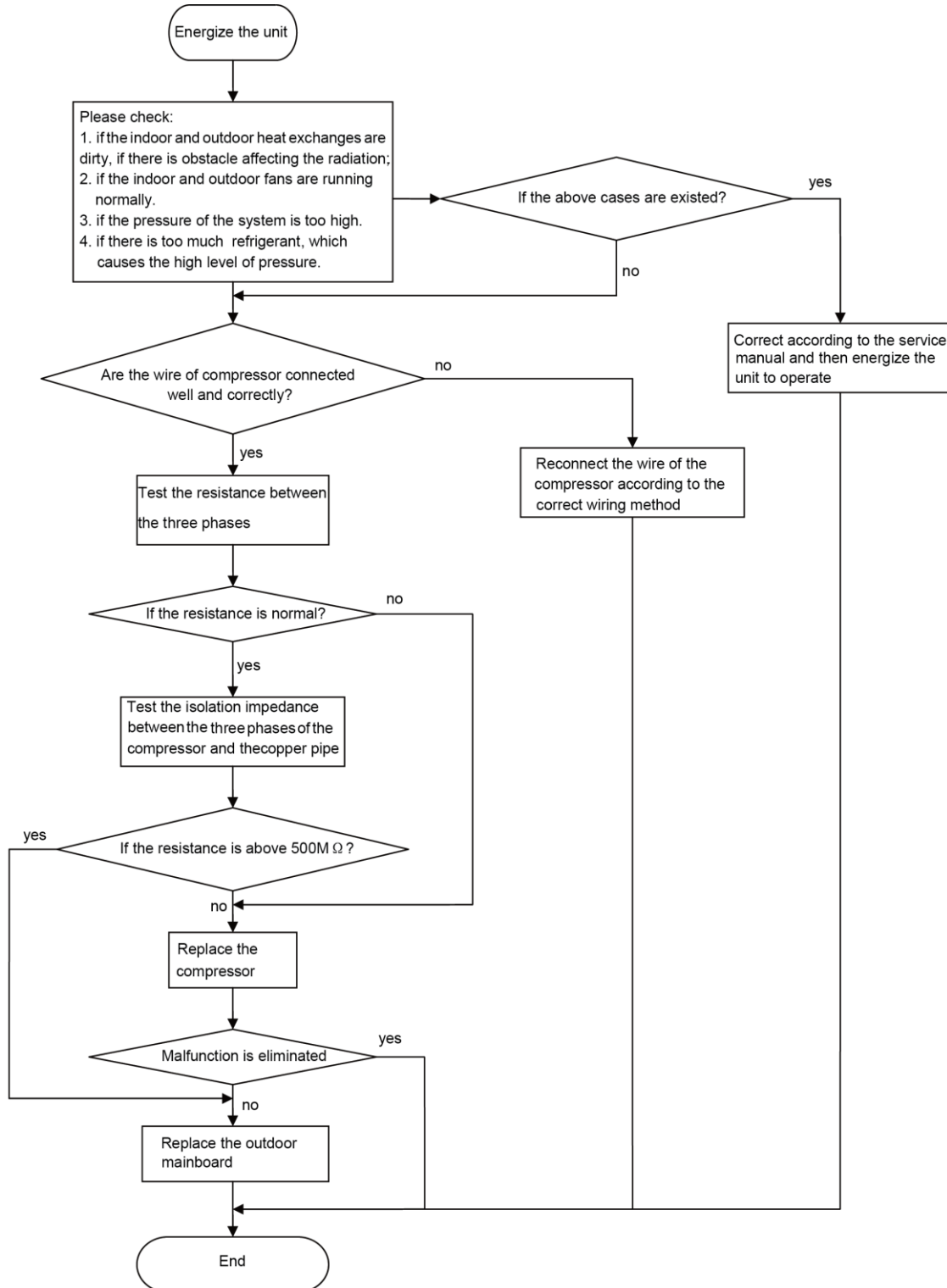


1. IPM protection malfunction:

Main points to check:

- If the input voltage of the unit is within normal range?
- If the connection wire of compressor is connected securely? Is it loose? Is the connection sequence correct?
- If the resistance of compressor coil is normal? If the isolation of compressor coil with copper pipe is good?
- If the unit is overloaded? Is the heat radiation of the unit good?
- If the refrigerant charge is suitable?

Flow chart:



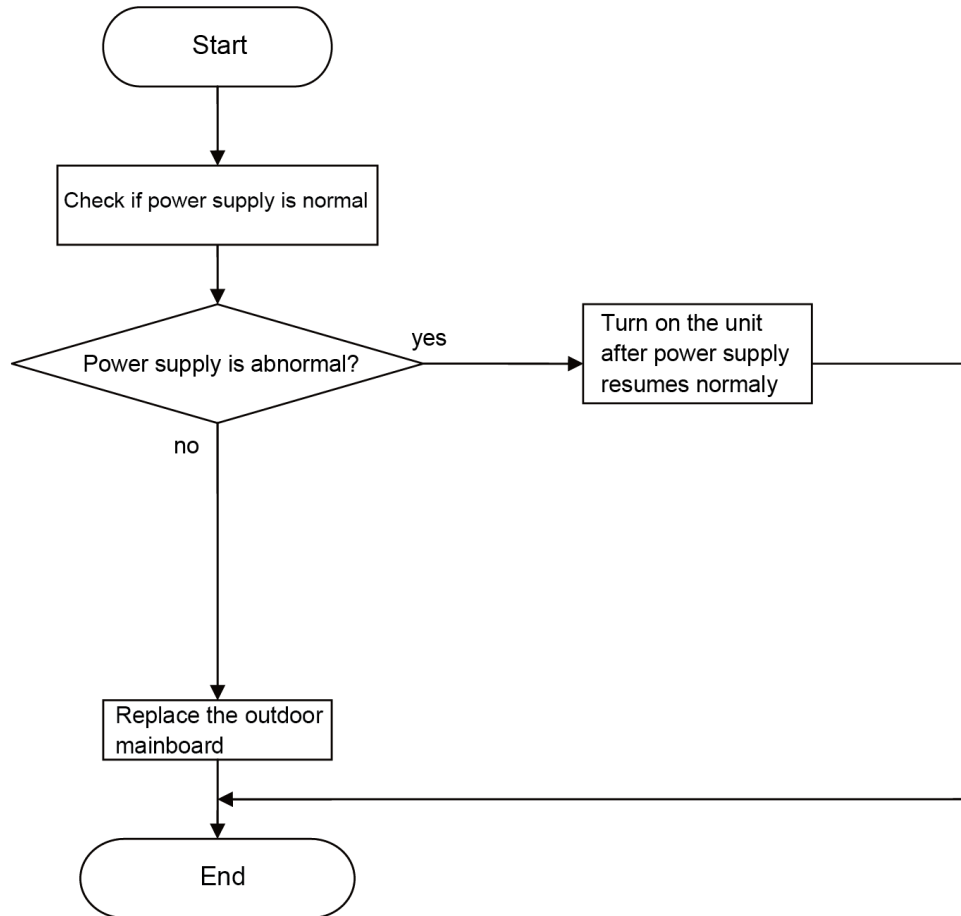
2. PFC protection malfunction, capacity charging malfunction

Main points to check:

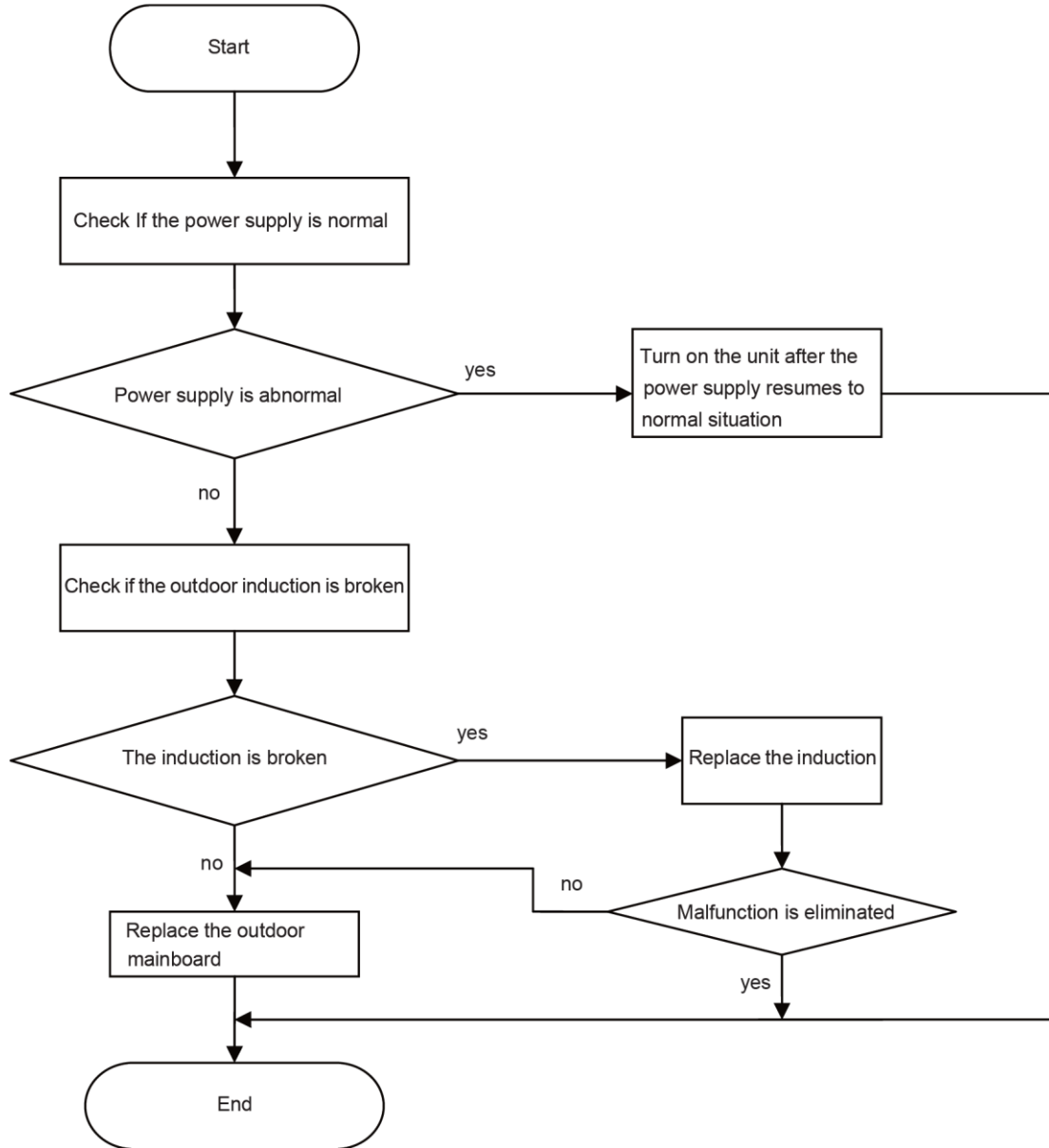
- If the wiring of the induction is connected well and if the induction is broken.
- If the mainboard is broken.

Flow chart:

For 30k



For 36k

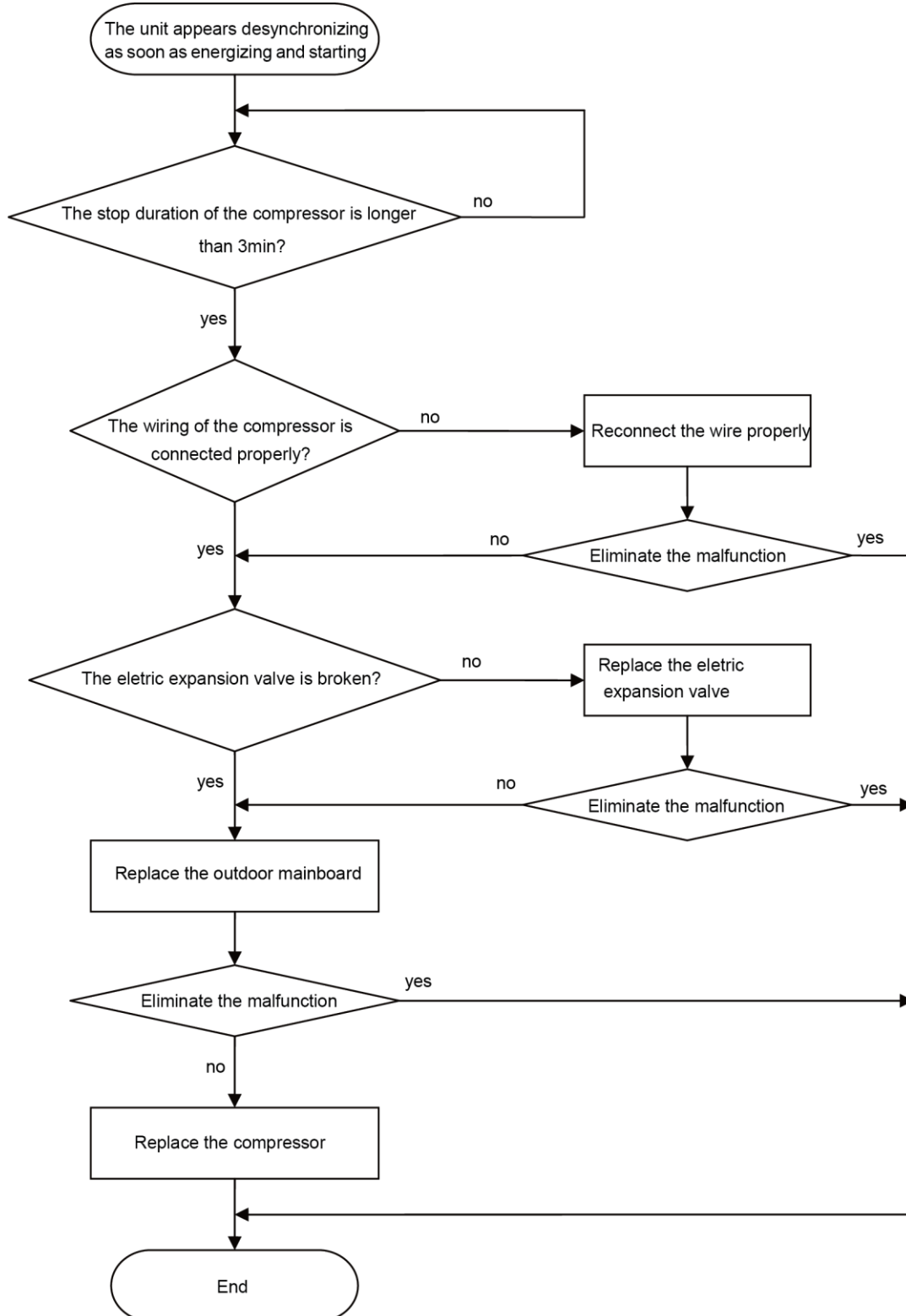


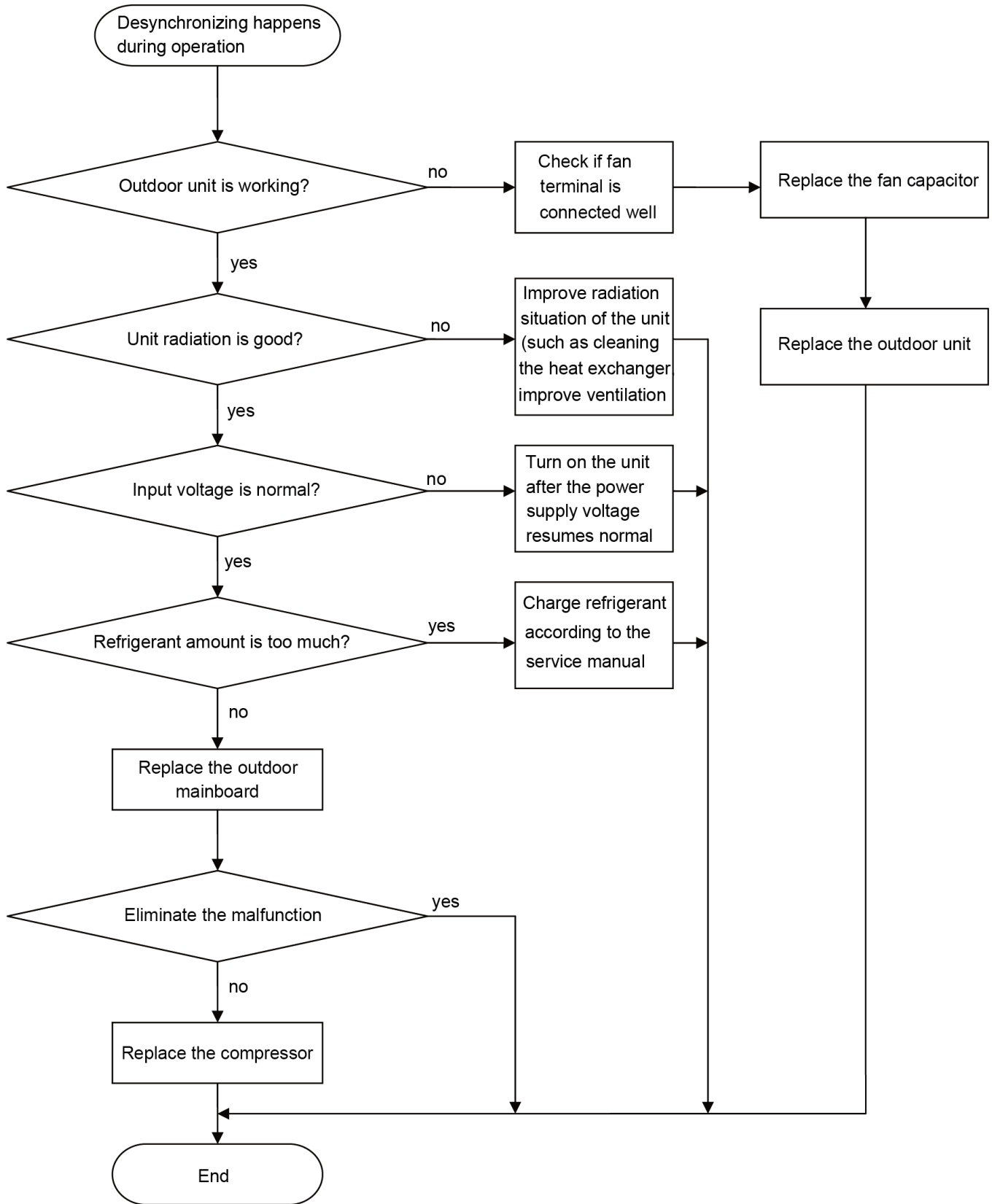
3. Compressor Desynchronizing Malfunction

Main points to check:

- If the electric expansion valve is working normally or it is broken.
- If the pressure of the system is too high
- If the radiation of the unit is good.

Flow chart:



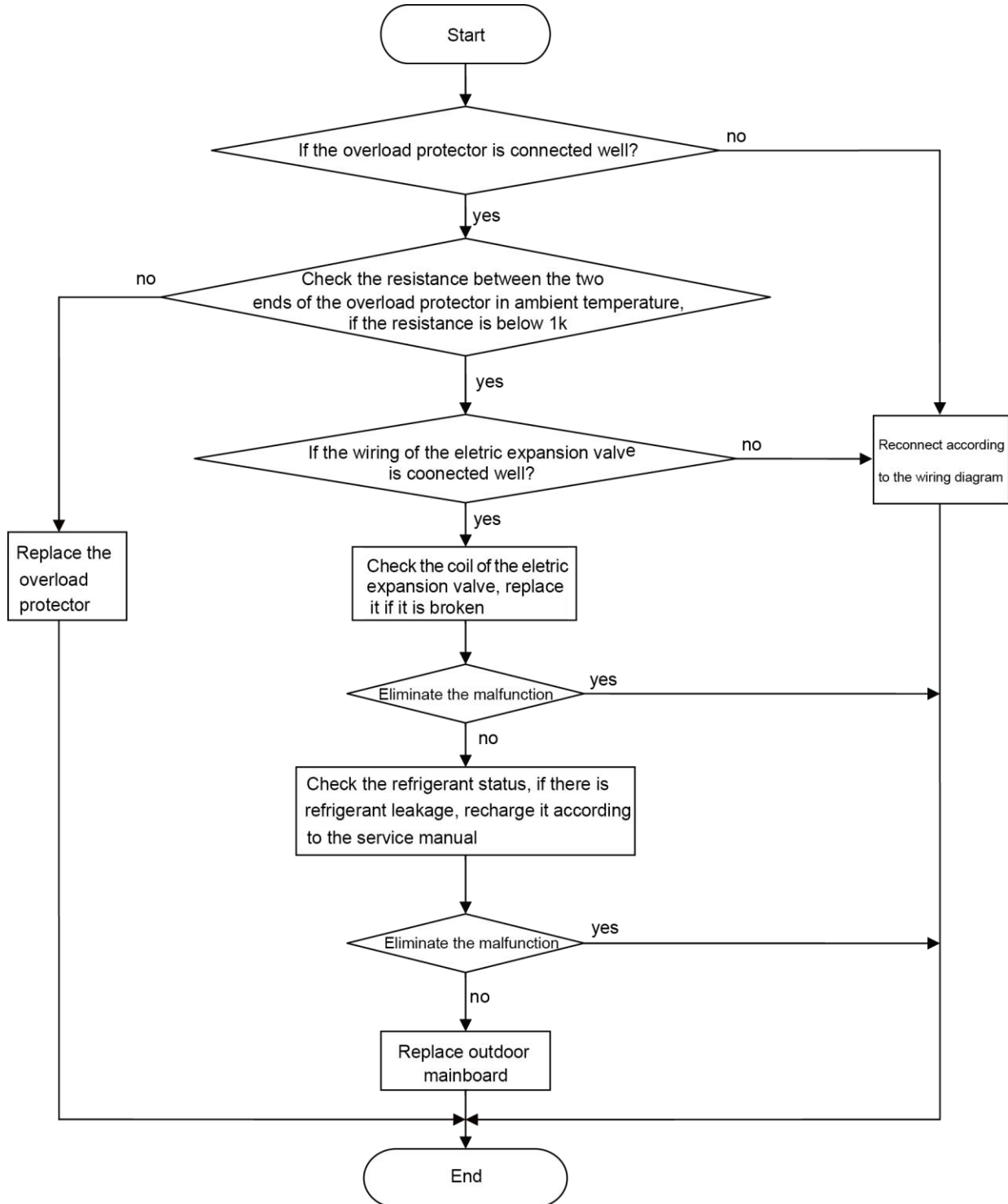


4. Compressor overload, discharge protection malfunction

Main points to check:

- If there is refrigerant leakage.
- If the electric expansion valve is connected well or it is broken.
- If the overload protector is broken.

Flow chart:



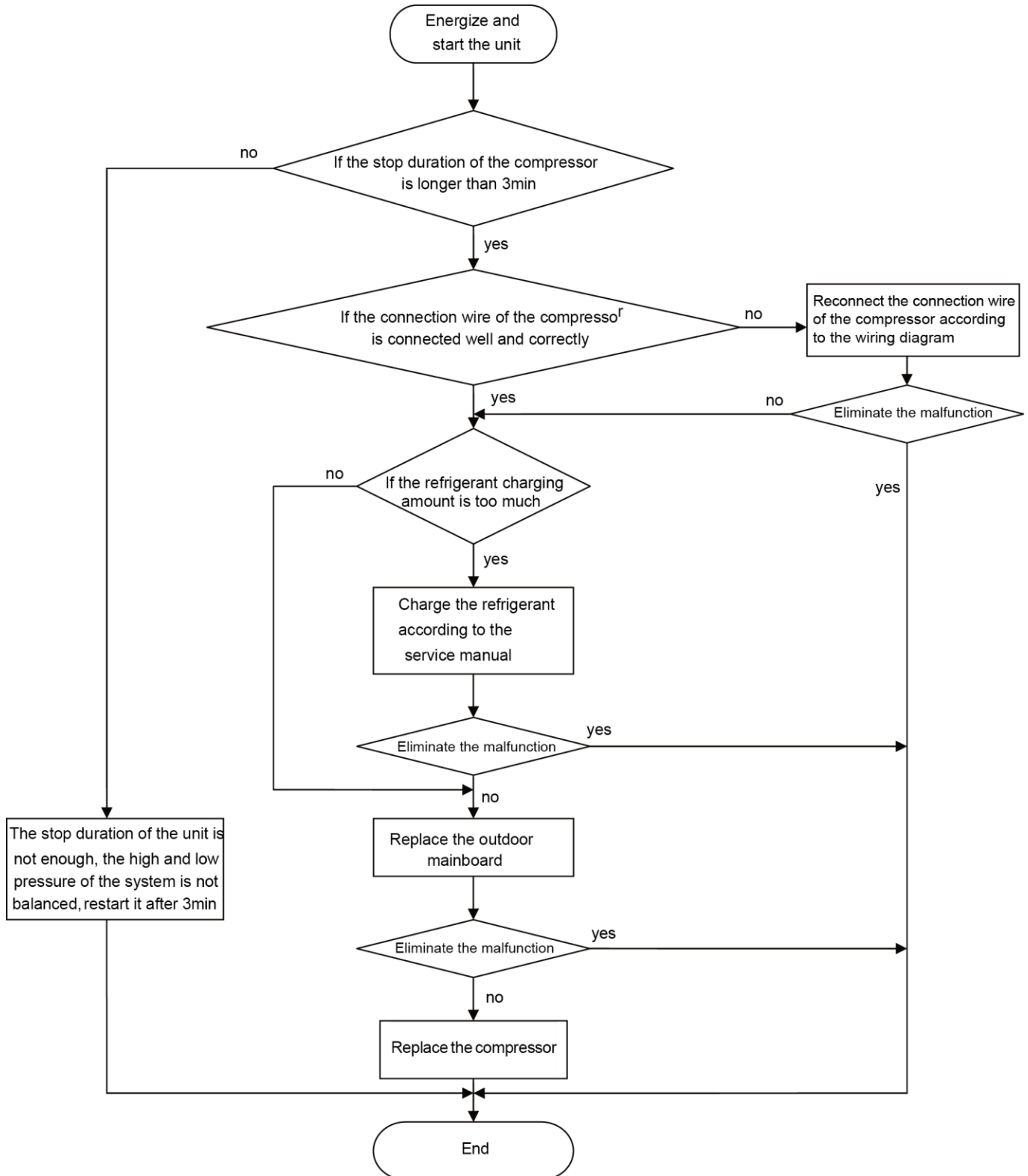
Note: the detection method of the coil of the electric expansion valve: there are five pieces of coil of the electric expansion valve, the resistance of one of them (the leftmost or the rightmost one) is almost the same as the resistance of other terminal (within 100 Ω). Judge the condition of the electronic expansion valve through detecting these resistance.

5. Start failure malfunction

Main points to check:

- If the stop duration of the compressor is sufficient.
- If the connection wire of the compressor is connected properly.
- If the compressor is broken
- If the system is charged with too much refrigerant.

Flow chart:

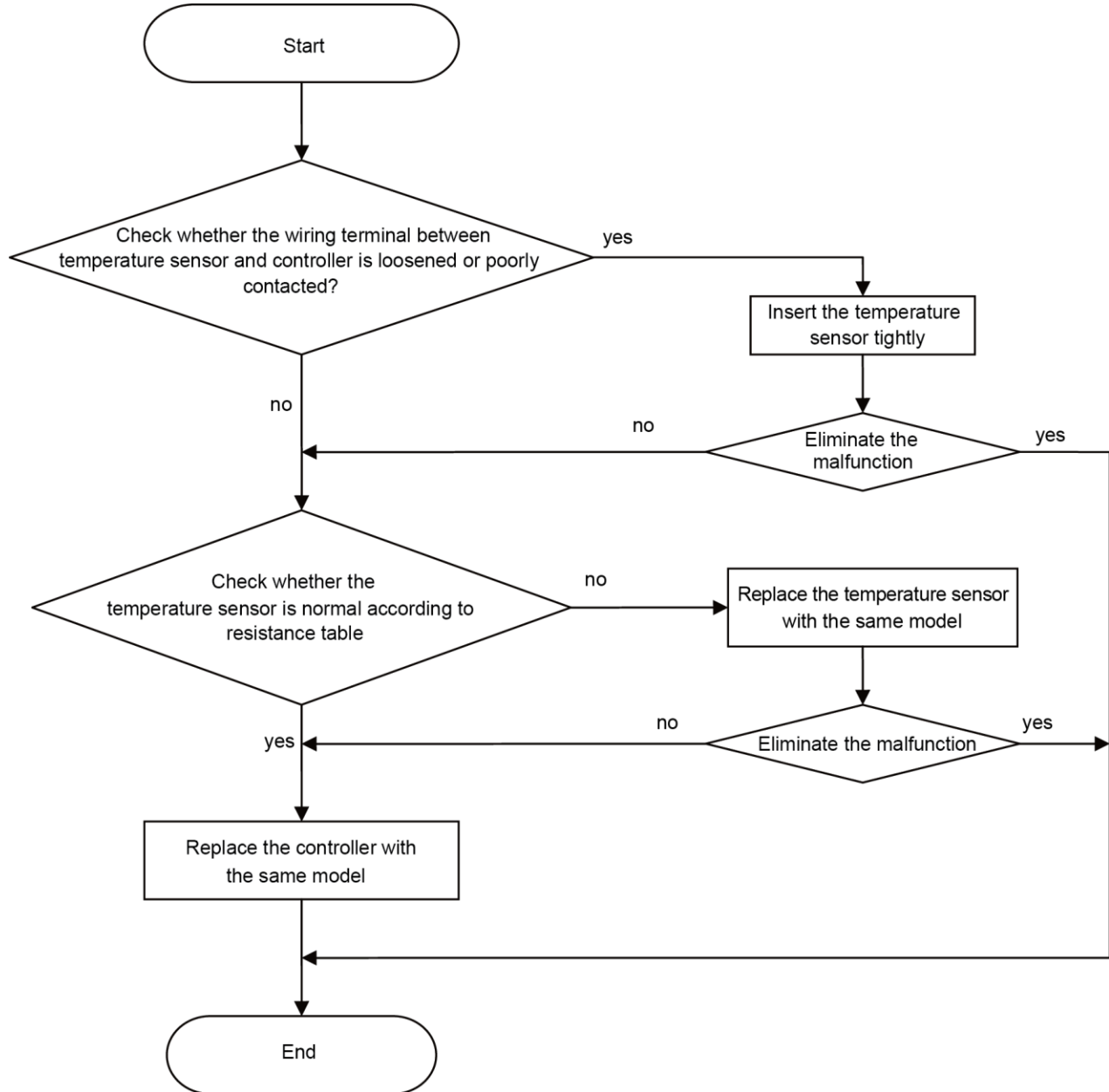


6. Temperature sensor malfunction

Main points to check:

- If the terminal of the temperature sensor is loosened or not connected.
- If the temperature; sensor is damaged or broken.
- If the mainboard is broken.

Flow chart:

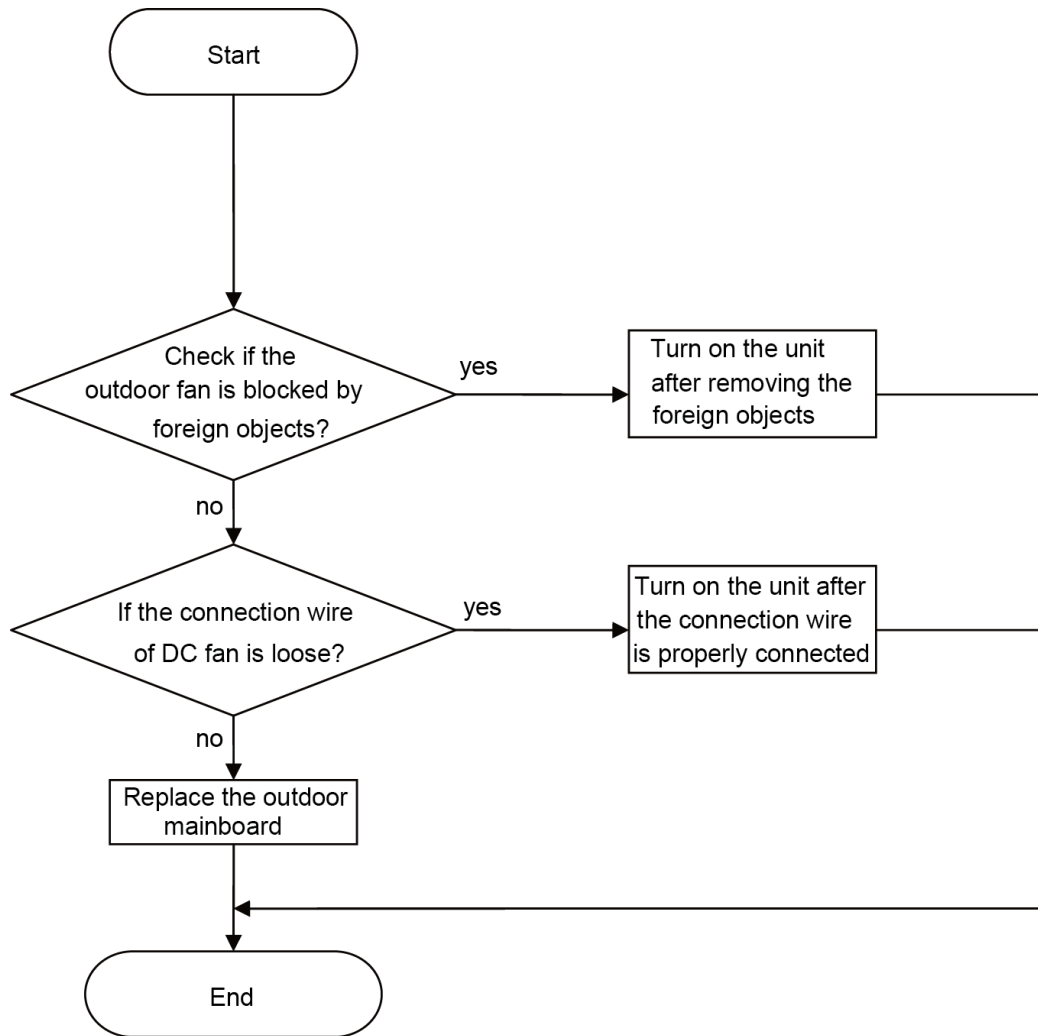


7. DC fan malfunction

Main points to check:

- If the outdoor fan is blocked by foreign objects.
- The connection wire of DC fan is connected reliably? Is it loose?

Flow chart:

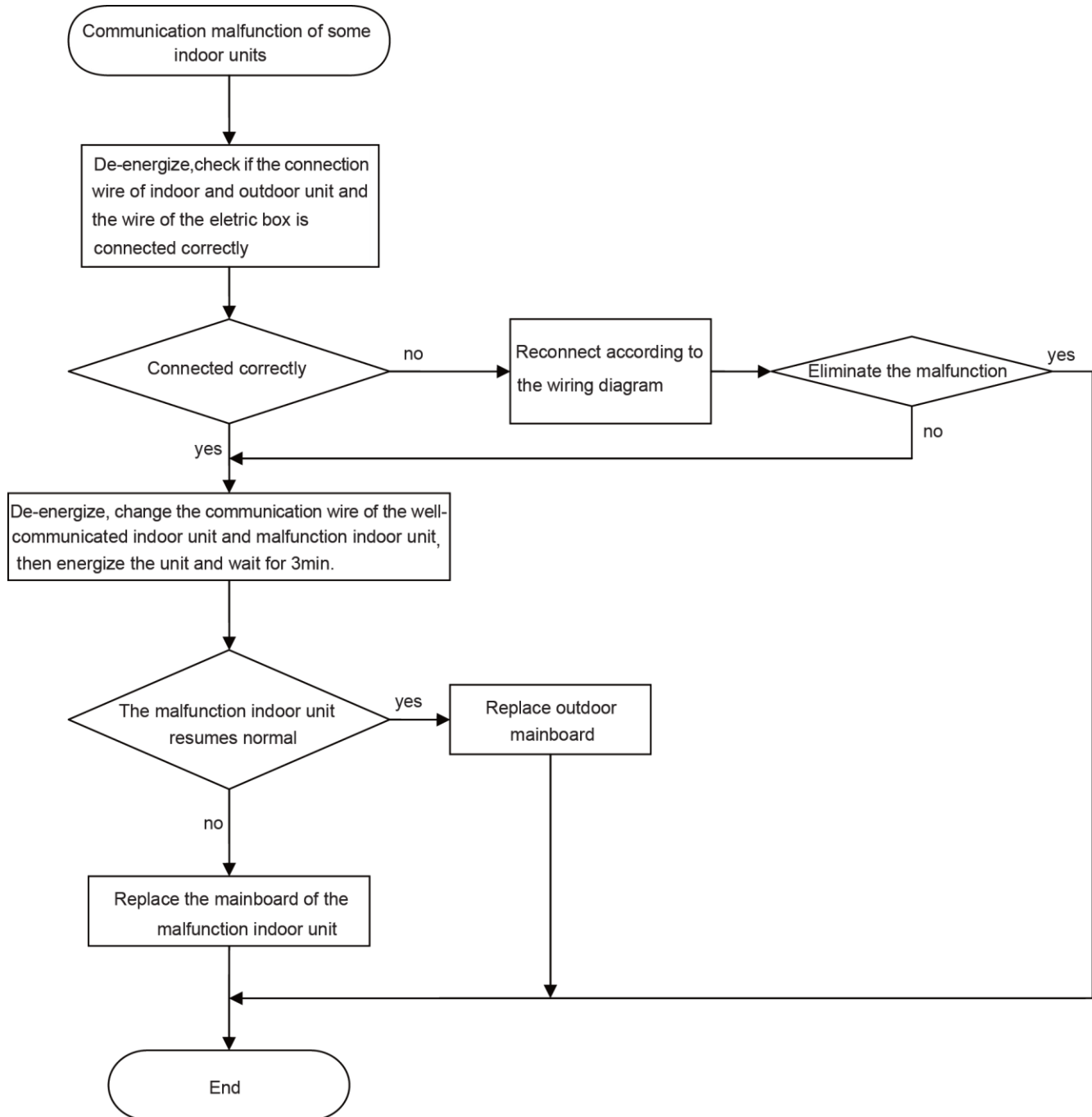


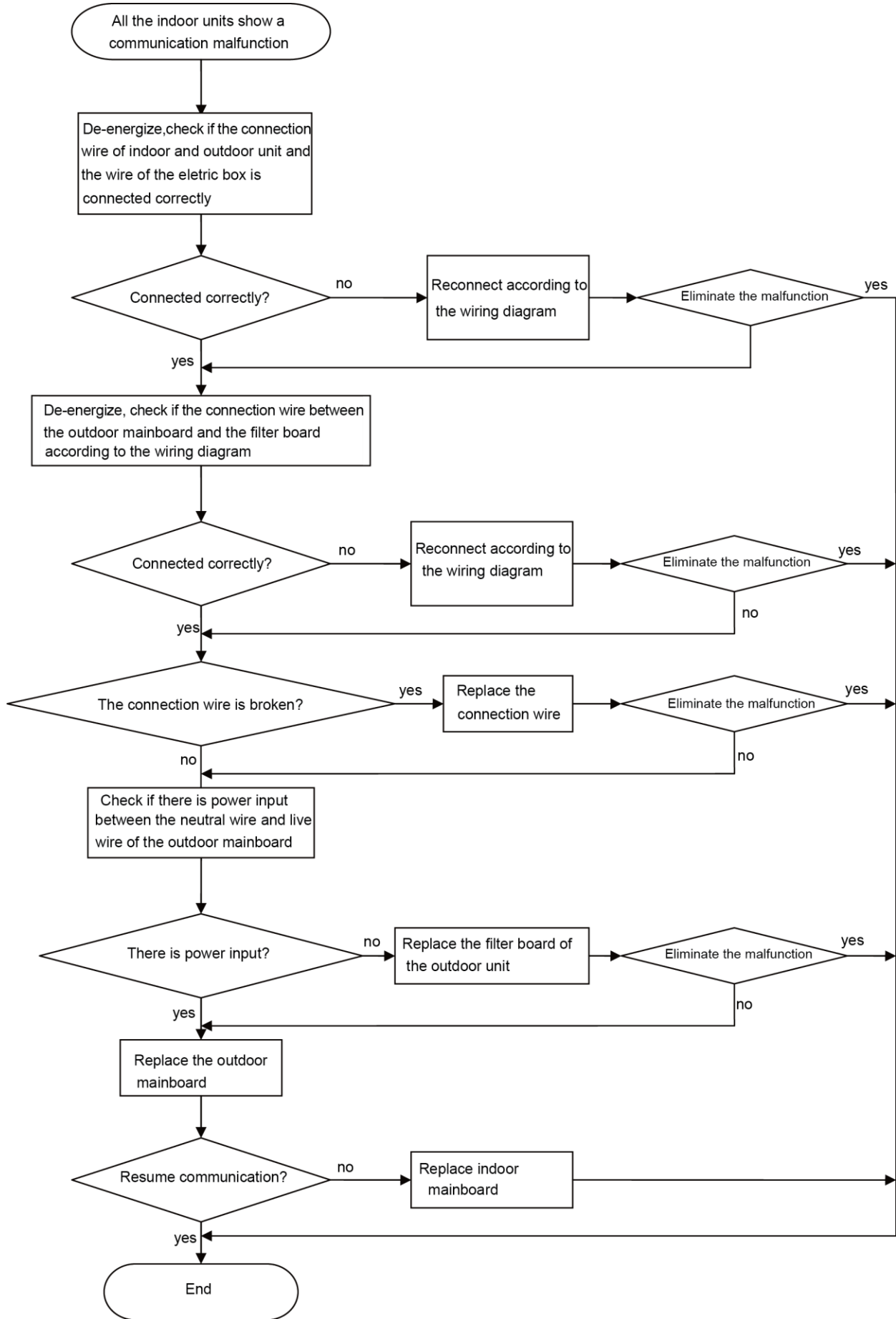
8. Communication malfunction

Main points to check:

- If the indoor mainboard or outdoor main board is broken.
- If the connection wire between the indoor unit and outdoor unit is connected well. If the wires inside the unit is connected well.

Flow chart:



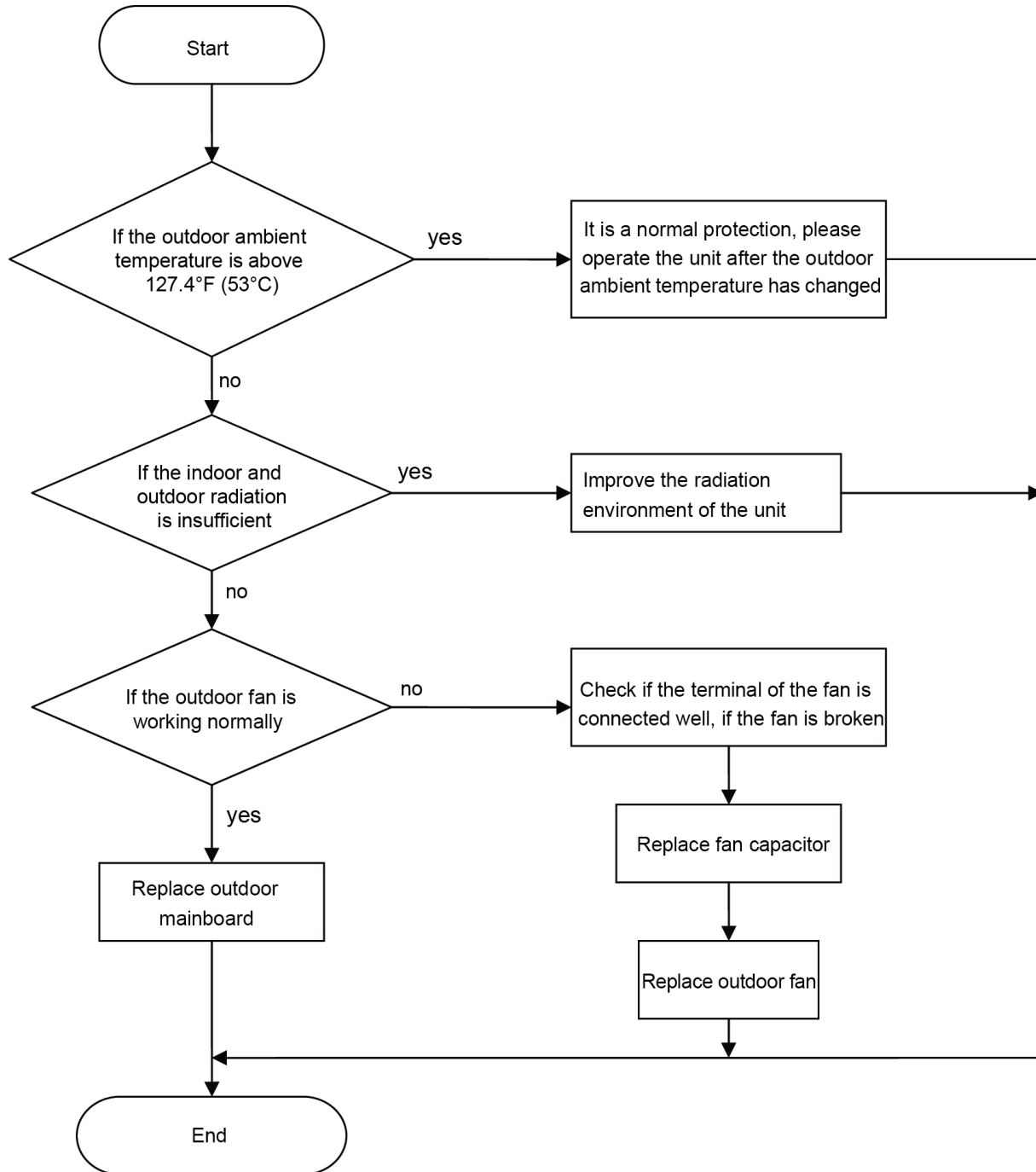


9. Anti-high temperature and overload malfunction

Main points to check:

- If the indoor fan and outdoor fan are running normally.
- If the outdoor ambient temperature is within the normal range.
- If the indoor and outdoor radiation environment is good.

Flow chart:



Maintenance Method for Common Malfunctions

1. Air Conditioner cannot be Started Up

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isn't bright and the buzzer can't give out sound	Confirm whether it's due to power failure. If yes, wait for power recovery. If not, check power supply circuit and make sure the power plug is connected well.
Wrong wire connection between indoor unit and outdoor unit, or poor connection for wiring terminals	Under normal power supply circumstances, operation indicator isn't bright after energization	Check the circuit according to circuit diagram and connect wires correctly. Make sure all wiring terminals are connected firmly
Electric leakage for air conditioner	After energization, room circuit breaker trips off at once	Make sure the air conditioner is grounded reliably. Make sure wires of air conditioner is connected correctly. Check the wiring inside air conditioner. Check whether the insulation layer of power cord is damaged. If yes, replace the power cord.
Model selection for air switch is improper	After energization, air switch trips off	Select proper air switch
Malfunction of remote controller	After energization, operation indicator is bright, while no display on remote controller or buttons have no action.	Replace batteries for remote controller Repair or replace remote controller

2. Poor Cooling (Heating) for Air Conditioner

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote control	Adjust the set temperature
Rotation speed of the IDU fan motor is set too low	Small amount of air blows	Set the fan speed at high or medium
Filter of indoor unit is blocked	Check the filter to see its blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation position is proper according to installation requirements for air conditioner	Adjust the installation position, and install the rainproof and sun proof for outdoor unit
Refrigerant is leaking	Discharged air temperature during cooling is higher than normal discharged air temperature. Discharged air temperature during heating is lower than normal discharged air temperature. Units pressure is much lower than regulated range	Find out the cause of the leakage and repair it. Add refrigerant.
Malfunction of 4-way valve	Unit blows cold air during heating	Replace the 4-way valve
Malfunction of capillary	Discharged air temperature during cooling is higher than normal discharged air temperature. Discharged air temperature during heating is lower than normal discharged air temperature. Unit pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked.	Replace the capillary
Flow volume of valve is insufficient	The pressure of valves is much lower than that stated in the specification	Open the valve completely
Malfunction of horizontal louver	Horizontal louver cant swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor can't operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor can't operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor can't operate	Refer to point 5 of maintenance method for details

3. Horizontal Louver Cant Swing

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Stepping motor is damaged	Stepping motor can't operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver can't operate	Replace the main board with the same model

4. ODU Fan Motor Can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Incorrect wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are firmly connected
Capacity of the ODU fan motor is damaged	Measure the capacity of fan capacitor with a universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the capacity of fan
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Motor of outdoor unit is damaged	When unit is on, cooling/heating performance is bad and ODU compressor generates a lot of noise and heat.	Change compressor oil and refrigerant. If no better, replace the compressor with a new one

5. Compressor Can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of compressor is damaged	Measure the capacity of fan capacitor with a universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the compressor capacitor
Power voltage is a little low or high	Use universal meter to measure the power supply voltage.	Recommended to equip with voltage regulator
Coil of compressor is burnt out	Use universal meter to measure the resistance between compressor terminals	Repair or replace compressor
Cylinder of compressor is blocked	Compressor can't operate	Repair or replace compressor

6. Air Conditioner is Leaking

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drainage pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe connection location of indoor unit	Wrap it again and bundle it tightly

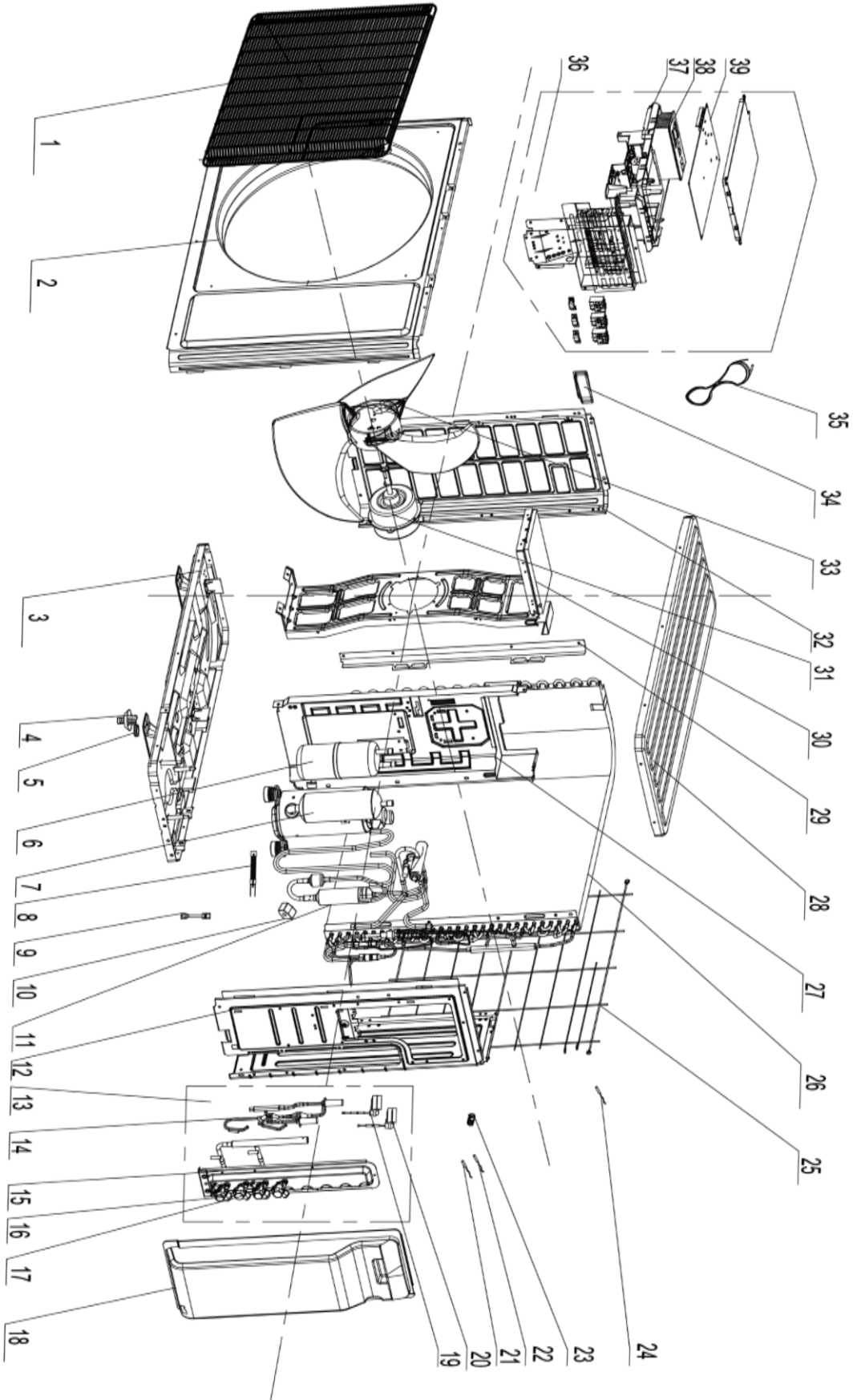
7. Abnormal Sound and Vibration

Possible causes	Discriminating method (air conditioner)	Troubleshooting
When turn on or turn off the unit, the panel and other parts will expand and there's abnormal sound	There's the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, there's abnormal sound due to flow of refrigerant inside air conditioner	Water-running sound can be heard	Normal phenomenon. Abnormal sound will disappear after a few minutes.
Foreign objects inside the indoor unit or there're parts touching together inside the indoor unit	There's abnormal sound from indoor unit	Remove foreign objects. Adjust all parts position of indoor unit, tighten screws and stick damping plaster between connected parts
Foreign objects inside the outdoor unit or there're parts touching together inside the outdoor unit	There's abnormal sound from outdoor unit	Remove foreign objects. Adjust all parts position of outdoor unit, tighten screws and stick damping plaster between connected parts
Short circuit inside the magnetic coil	During heating, the 4-way valve has abnormal electromagnetic sound	Replace magnetic coil
Abnormal shake of compressor	Outdoor unit gives out abnormal sound	Adjust the support foot mat of compressor, tighten the bolts
Abnormal sound inside the compressor	Abnormal sound inside the compressor	If add too much refrigerant during maintenance, please reduce refrigerant properly. Replace compressor for other circumstances.

Exploded View and Parts List

WMMS-30CH-V2B(59)4

The component picture is only for reference; please refer to the actual product.



NO.	Description	Part Code	Qty
	Model	WMMS-30CH-V2B(59)4	
1	Front Grill	01473049	1
2	Front Panel Assembly	00000300024	1
3	Chassis Sub-Assembly	02803263P	1
4	Drainage Connector	06123401	1
5	Drainage hole Cap	06813401/76713033/76713068	1
6	Gas-liquid Separator Assembly	07223048	1
7	Compressor and Fittings	00105249G	1
8	Electric Heater(Compressor)	7651300403	1
9	Tube Connector Sub-Assembly	/	/
10	Magnet Coil	4300040045	1
11	4-Way Valve Assembly	03073328	1
12	Right Side Plate	0130326801P	1
13	Valve Support Assembly	03016300003	1
14	Electronic Expansion Valve Assembly	03017400020	1
15	Valve Support Sub-Assembly	0171312802P	1
16	Cut off Valve	07130239	1
17	Cut off Valve	071302391	1
18	Valve Cover	/	/
19	Electric Expand Valve Fitting	43000084	1
20	Electric Expand Valve Fitting	4300008401	1
21	Temperature Sensor	39000073	1
22	Temperature Sensor	3900007301	1
23	Wiring Clamp	26115004	1
24	Temperature Sensor	39000073	1
25	Rear Grill	01473043	1
26	Condenser Assembly	011002000279	1
27	Clapboard Assembly	0123315301	1
28	Coping	012049000007P	1
29	Supporting Board(Condenser)	01795010	1
30	Motor Support Sub-Assembly	01705067	1
31	Fan Motor	1501506402	1
32	Left Side Plate	01305093P	1
33	Axial Flow Fan	10335008	1
34	Left Handle	2623305301	1
35	Connecting Cable	/	/
36	Electric Box Assembly	10000100023	1
37	Electric Box	20113027	1
38	Radiator	49010252	1
39	Main Board	30138000310	1

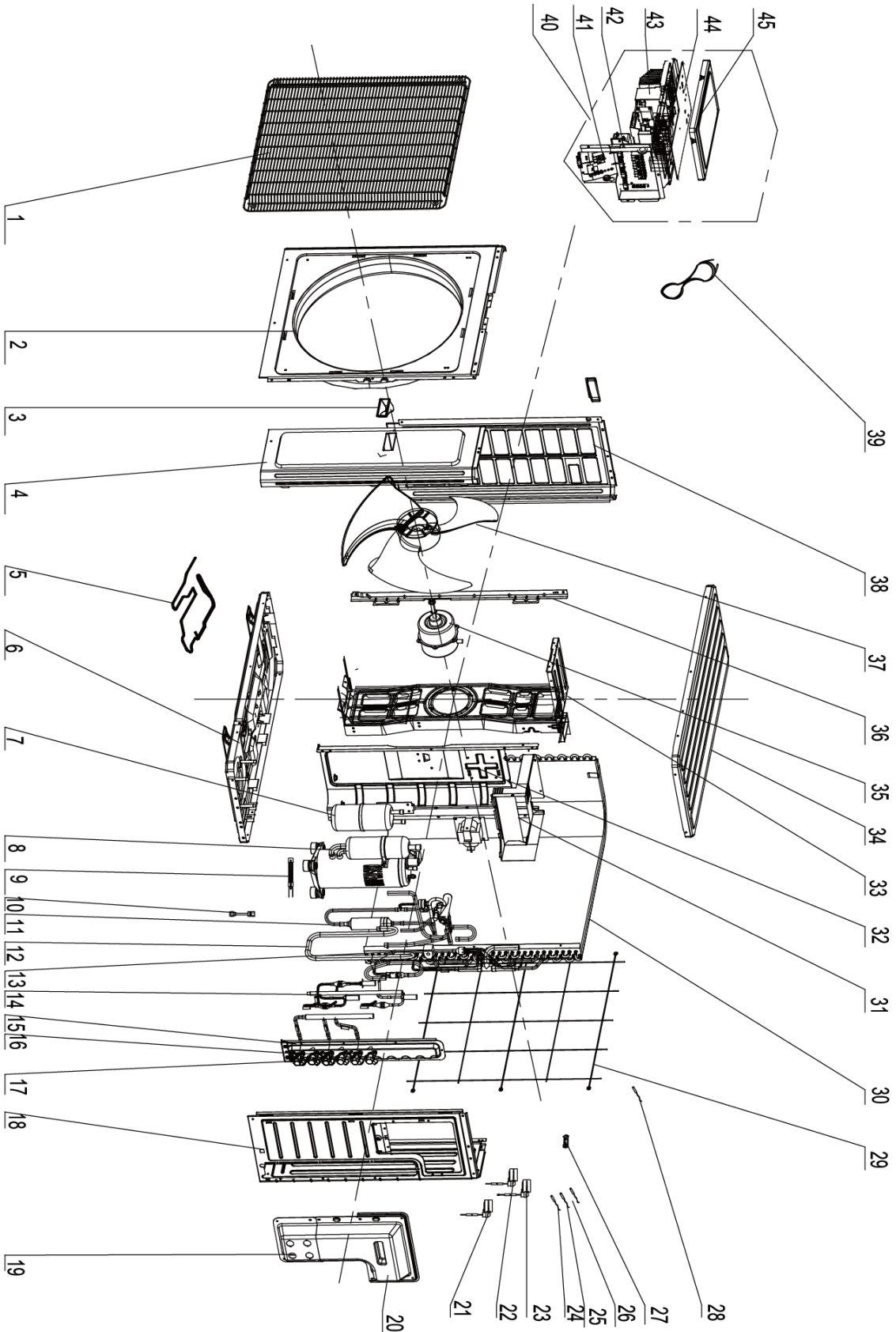
Above data is subject to change without notice.



NO.	Description	Part Code	Qty
	Model	WMMS-30CH-V2B(59)4	
1	Front Grill	016004000006	1
2	Front Panel Assembly	000003060055	1
3	Chassis Sub-Assembly	02803263P	1
4	Drainage Connector	06123401	1
5	Drainage hole Cap	06813401/76713033/76713068	1
6	Gas-liquid Separator Assembly	07223048	1
7	Compressor and Fittings	00105249G	1
8	Electric Heater(Compressor)	7651300403	1
9	Tube Connector Sub-Assembly	/	/
10	Magnet Coil	4300040045	1
11	4-Way Valve Assembly	03073328	1
12	Right Side Plate	0130326802P	1
13	Valve Support Assembly	03016300003	1
14	Electronic Expansion Valve Assembly	03017400020	1
15	Valve Support Sub-Assembly	0171312802P	1
16	Cut off Valve	07130239	1
17	Cut off Valve	07130239	1
18	Valve Cover	/	/
19	Electric Expand Valve Fitting	43000084	1
20	Electric Expand Valve Fitting	43000084	1
21	Temperature Sensor	39000073	1
22	Temperature Sensor	39000073	1
23	Wiring Clamp	26115004	1
24	Temperature Sensor	39000073	1
25	Rear Grill	01473043	1
26	Condenser Assembly	011002000279	1
27	Clapboard Assembly	0123315301	1
28	Coping	012049000007P	1
29	Supporting Board(Condenser)	01795010	1
30	Motor Support Sub-Assembly	01705036	1
31	Fan Motor	1501506402	1
32	Left Side Plate	01305093P	1
33	Axial Flow Fan	10335008	1
34	Left Handle	2623305301	1
35	Connecting Cable	/	/
36	Electric Box Assembly	10000100023	1
37	Electric Box	20113027	1
38	Radiator	49010252	1
39	Main Board	30138000310	1



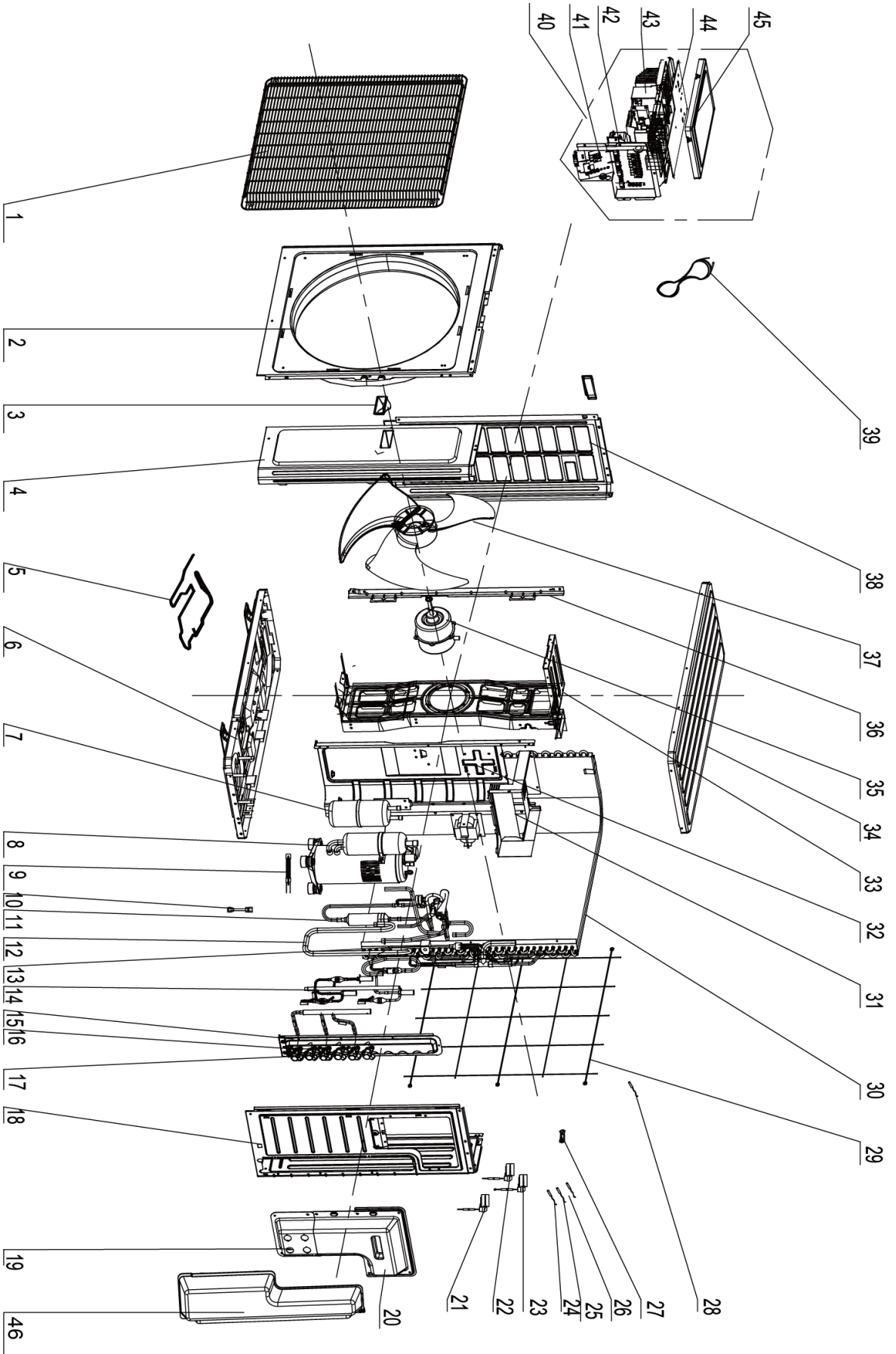
MMMS-36CH-V2B(59)4



The component picture is only for reference; please refer to the actual product.

NO.	Description	Part Code	Qty
	Model	WMMS-36CH-V2B(59)4	
1	Front Grill	01473050	1
2	Cabinet	0143500401P	1
3	Left Handle	02113031	1
4	Front Side Plate	01305086P	1
5	Electrical Heater (Chassis)	7651000411	1
6	Chassis Sub-Assembly	02803280P	1
7	Gas-liquid Separator	07223048	1
8	Compressor and Fittings	0010524501	3
9	Electric Heater(Compressor)	7651873215	1
10	Tube Connector Sub-Assembly	06643008	1
11	4-Way Valve Assembly	03015200001	1
12	Connection Pipe	03509700042	1
13	Magnet Coil	4300040045	1
14	Electronic Expansion Valve Assembly	0713395301	1
15	Valve Support Assembly	0713395401	1
16	Cut off Valve	07130239	1
17	Cut off Valve	07130239	1
18	Right Side Plate	0131410000901P	1
19	Wiring Cover Sub-Assembly	01264100034	1
20	Handle Assembly	02204100008	1
21	Electric Expand Valve Fitting	43000084	1
22	Electric Expand Valve Fitting	4300008401	1
23	Electric Expand Valve Fitting	4300008402	1
24	Temperature Sensor	3900030901	1
25	Temperature Sensor	39000073	1
26	Temperature Sensor	3900007305/3900007306	1
27	Wiring Clamp	26115004	1
28	Temperature Sensor	3900030901	1
29	Rear Grill	01574100003	1
30	Condenser Assembly	0116398001	1
31	Electric Box (Fireproofing)	01413426	1
32	Clapboard Sub-Assembly	01233190	1
33	Motor Support Sub-Assembly	017012000017	1
34	Top Cover Sub-Assembly	01255007	1
35	Fan Motor	017012000017	1
36	Condenser Support Plate	01175092	1
37	Axial Flow Fan	10335014	1
38	Left Side Plate	01305043P	1
39	Connecting Cable	/	/
40	Electric Box Assembly	10000100020	1
41	Terminal Board	42010178	1
42	Connection Support	01703211	1
43	Electric Box	20113015	1
44	Main Board	30138000311	1
45	Electric Box Cover Sub-Assembly	02603217	1

WMMS-36CH-V2B(59)4



The component picture is only for reference; please refer to the actual product.



NO.	Description	Part Code	Qty
	Model	WMMS-36CH-V2B(59)4	
1	Front Grill	01473050	1
2	Cabinet	0143500401P	1
3	Left Handle	26235401	1
4	Front Side Plate	01305086P	1
5	Electrical Heater (Chassis)	7651000411	1
6	Chassis Sub-Assembly	02803280P	1
7	Gas-liquid Separator	07223048	1
8	Compressor and Fittings	0010524501	3
9	Electric Heater(Compressor)	7651873215	1
10	Tube Connector Sub-Assembly	06643008	1
11	4-Way Valve Assembly	03015200001	1
12	Connection Pipe	03509700042	1
13	Magnet Coil	4300040045	1
14	Electronic Expansion Valve Assembly	0713395301	1
15	Valve Support Assembly	0713395401	1
16	Cut off Valve	07130239	1
17	Cut off Valve	07130239	1
18	Right Side Plate	0131410000902P	1
19	Wiring Cover Sub-Assembly	01264100034	1
20	Handle Assembly	02204100008	1
21	Electric Expand Valve Fitting	43000084	1
22	Electric Expand Valve Fitting	4300008401	1
23	Electric Expand Valve Fitting	4300008402	1
24	Temperature Sensor	3900030901	1
25	Temperature Sensor	39000073	1
26	Temperature Sensor	3900007305/3900007306	1
27	Wiring Clamp	26115004	1
28	Temperature Sensor	3900030901	1
29	Rear Grill	01574100003	1
30	Condenser Assembly	0116398001	1
31	Electric Box (Fireproofing)	01413426	1
32	Clapboard Sub-Assembly	01233190	1
33	Motor Support Sub-Assembly	017012000017	1
34	Top Cover Sub-Assembly	000051000024	1
35	Fan Motor	017012000017	1
36	Condenser Support Plate	01175092	1
37	Axial Flow Fan	10335014	1
38	Left Side Plate	01305043P	1
39	Connecting Cable	/	/
40	Electric Box Assembly	10000100020	1
41	Terminal Board	42010178	1
42	Connection Support	01703211	1
43	Electric Box	20113015	1
44	Main Board	30138000311	1
45	Electric Box Cover Sub-Assembly	02603217	1
46	Valve Cover	200087000006	1

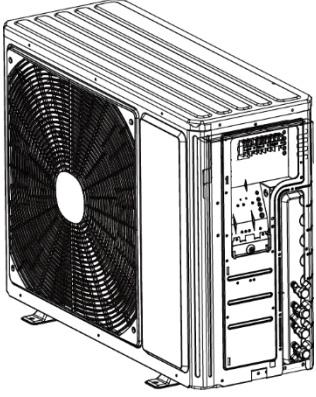
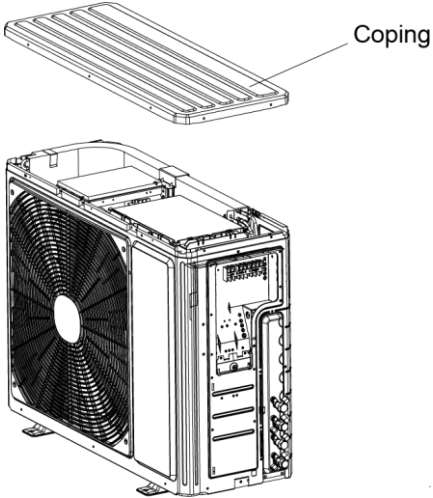
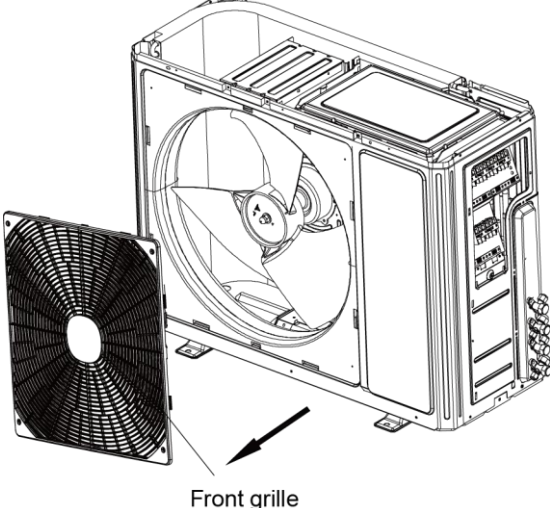


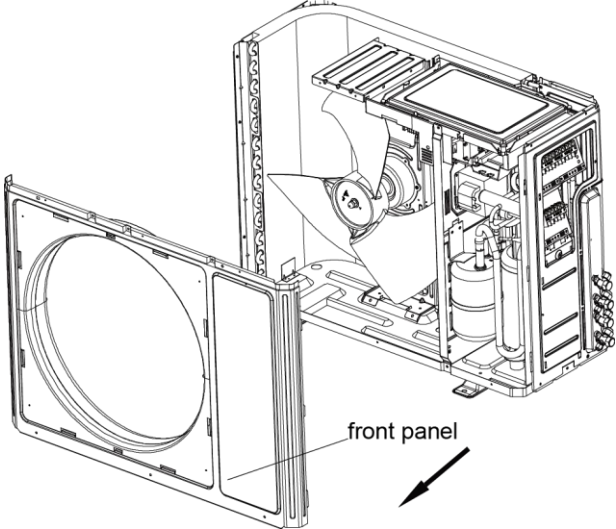
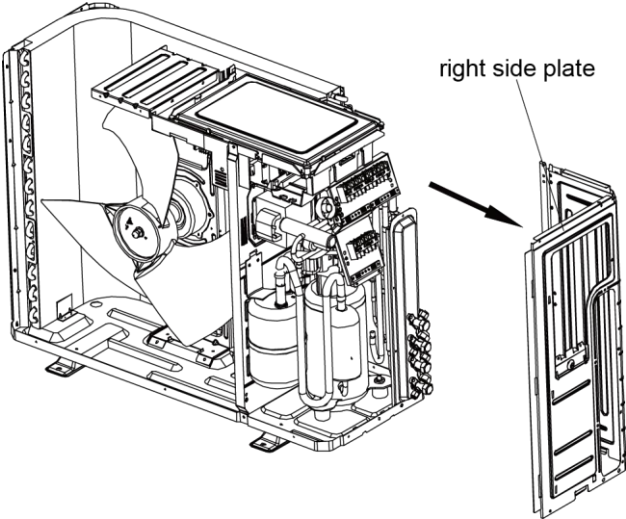
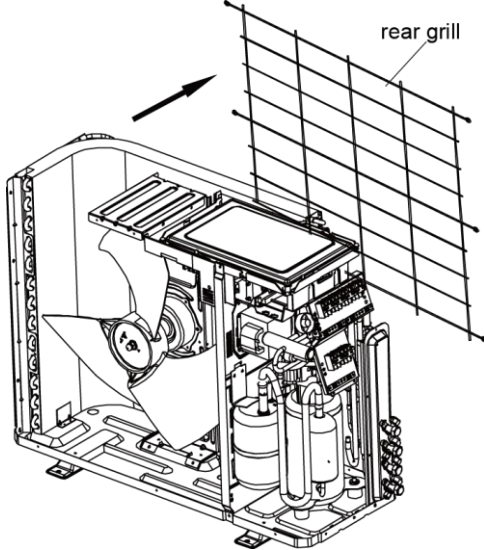
Disassembly Procedure

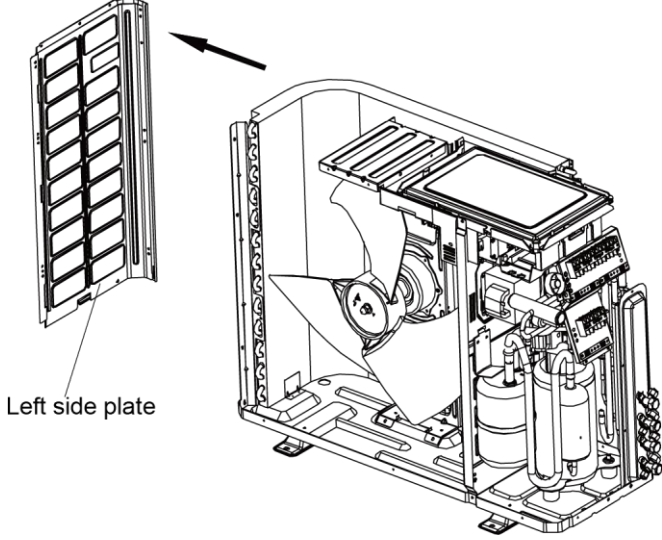
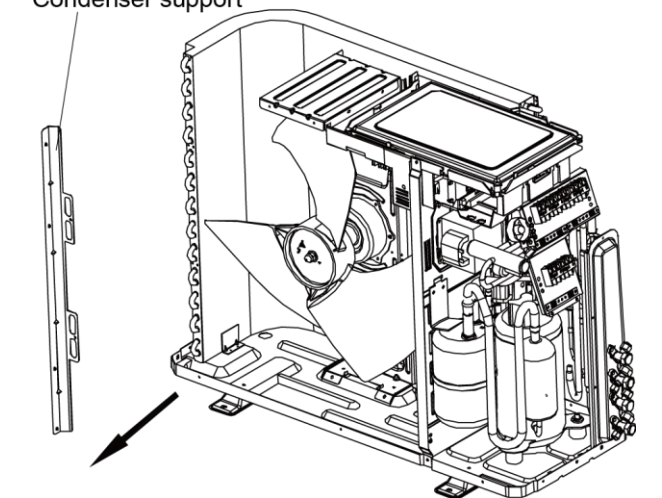
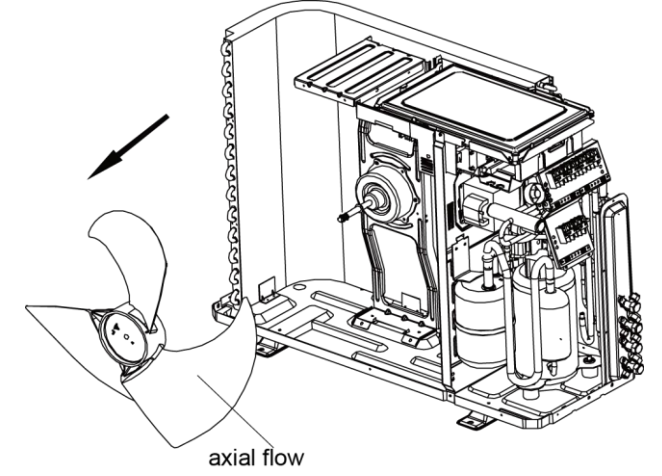
⚠ Warning: Be sure to wait for a minimum of 20 minutes after turning off all power supplies and discharge the refrigerant completely before removal.

WMMS-30CH-V2B(59)4

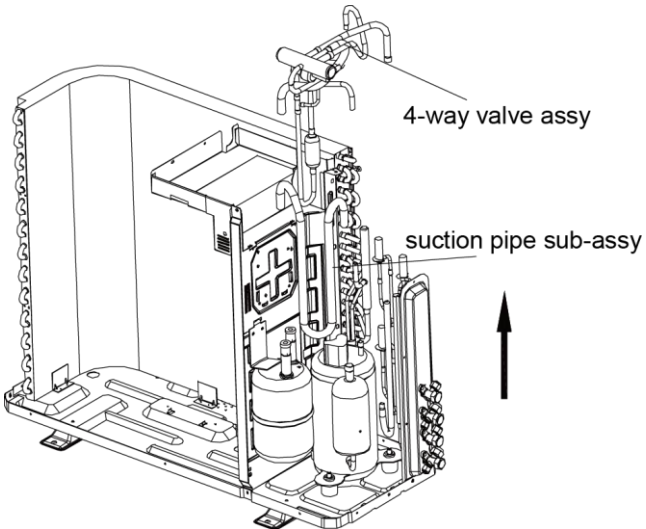
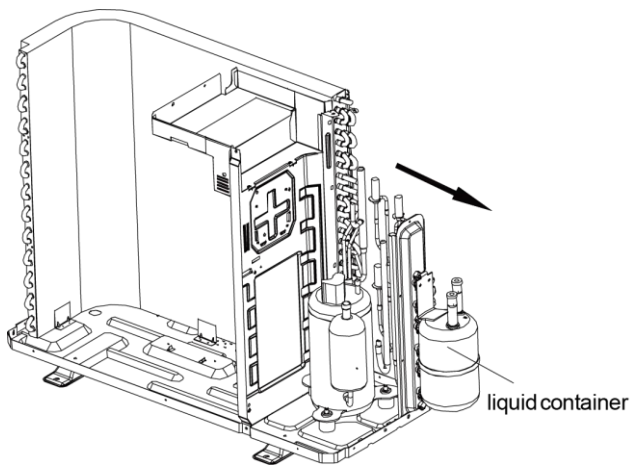
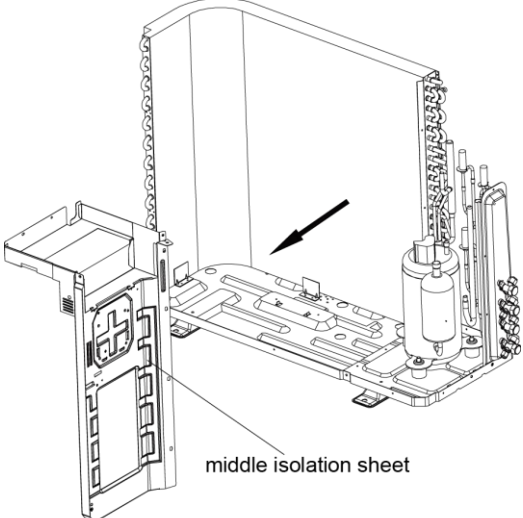
NOTE: Only cut-off valve of valve support, electronic expansion valve and coil have some differences

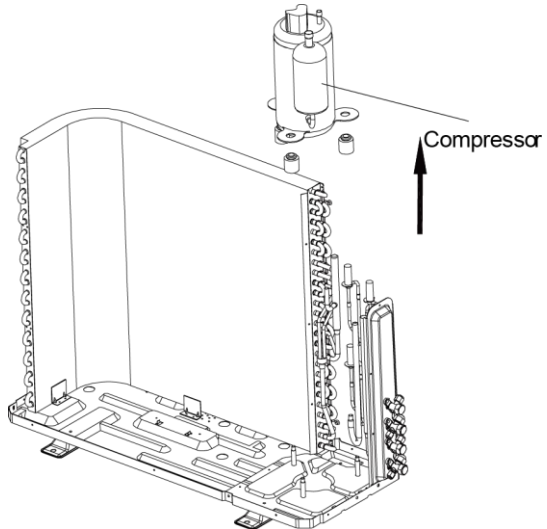
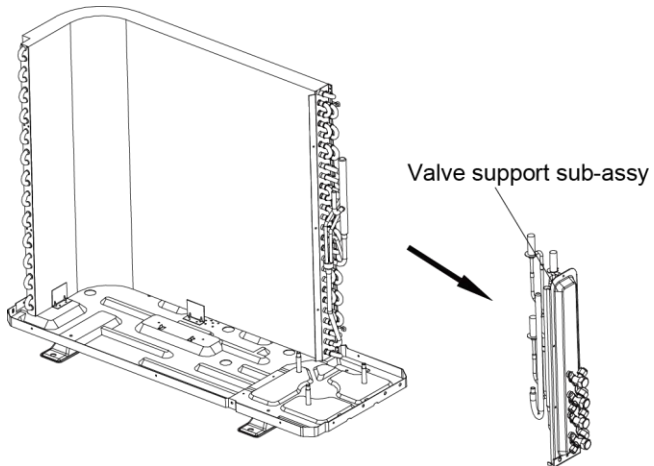
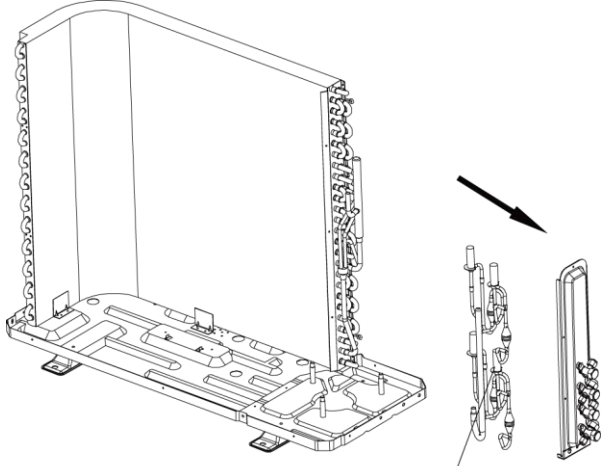
Steps	Procedure
<p>1. Before disassembly</p> <p>a. Complete axonometric drawing.</p>	
<p>2. Remove Coping</p> <p>a. Remove the connection screws connecting the top panel with the right side plate and the left side plate, and then remove the Coping</p>	 <p style="text-align: right;">Coping</p>
<p>3. Remove front grille</p> <p>a. Remove the connection screws connecting the front grille and the front panel, and then loosen the clasp to remove the front grille.</p>	 <p style="text-align: center;">Front grille</p>

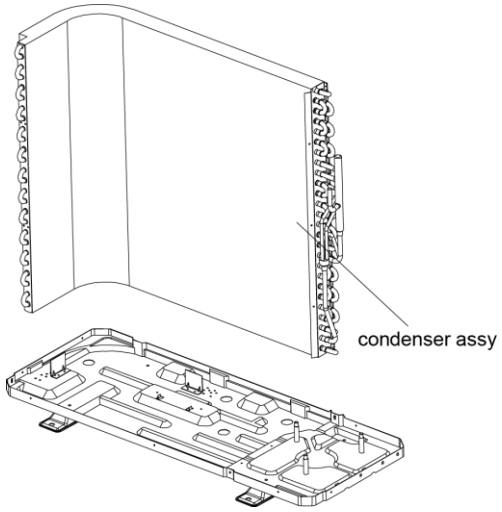
Steps	Procedure
<p>4. Remove front panel</p> <p>a. Remove the screws connecting the front panel and then remove the front panel.</p>	 <p>front panel</p>
<p>5. Remove right side plate</p> <p>a. Remove the screws connecting the right side plate with the chassis and the valve support. Then remove the right side plate.</p>	 <p>right side plate</p>
<p>6. Remove rear grill</p> <p>a. Remove the screws connecting the rear grill and the left side plate, and then remove the rear grill.</p>	 <p>rear grill</p>

Steps	Procedure
<p>7. Remove left side plate</p> <p>a. Remove the screws fixing the left side plate with the chassis and the condenser support, and then remove the left side plate.</p>	 <p>Left side plate</p>
<p>8. Remove condenser support</p> <p>a. Remove the connection screws connecting the condenser support and the chassis, and then remove the condenser support.</p>	 <p>Condenser support</p>
<p>9. Remove axial flow</p> <p>a. Remove the nut on the blade and then remove the axial flow blade.</p>	 <p>axial flow</p>

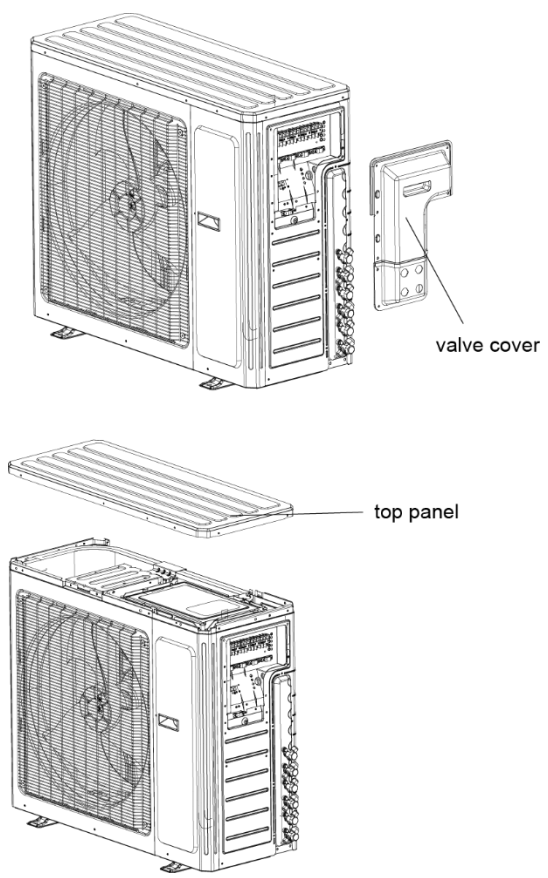
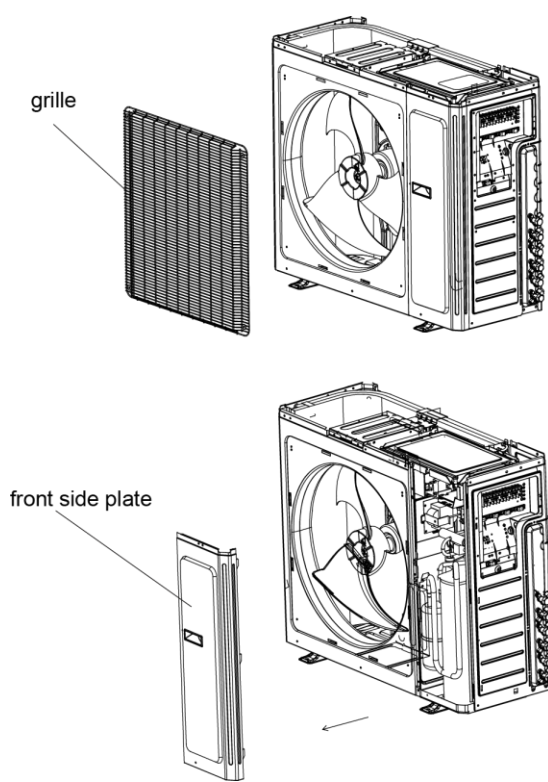
Steps	Procedure
<p>10. Remove motor and motor support</p> <p>a. Remove the 4 tapping screws fixing the motor and disconnect the leading wire insert of the motor. Then remove the motor. Remove the 2 tapping screws fixing the motor support and chassis, and then lift the motor support to remove it.</p>	
<p>11. Remove electric box assembly</p> <p>a. Remove the screws fixing the electric box assembly and the middle isolation sheet, and then lift the electric box assembly to remove it.</p>	
<p>12. Remove PFC induction</p> <p>a. Remove the screw connecting the PFC induction and middle isolation sheet, and then remove the PFC induction</p>	

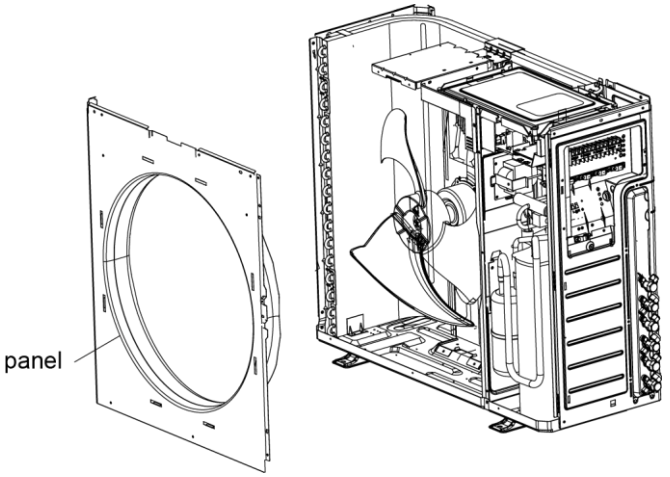
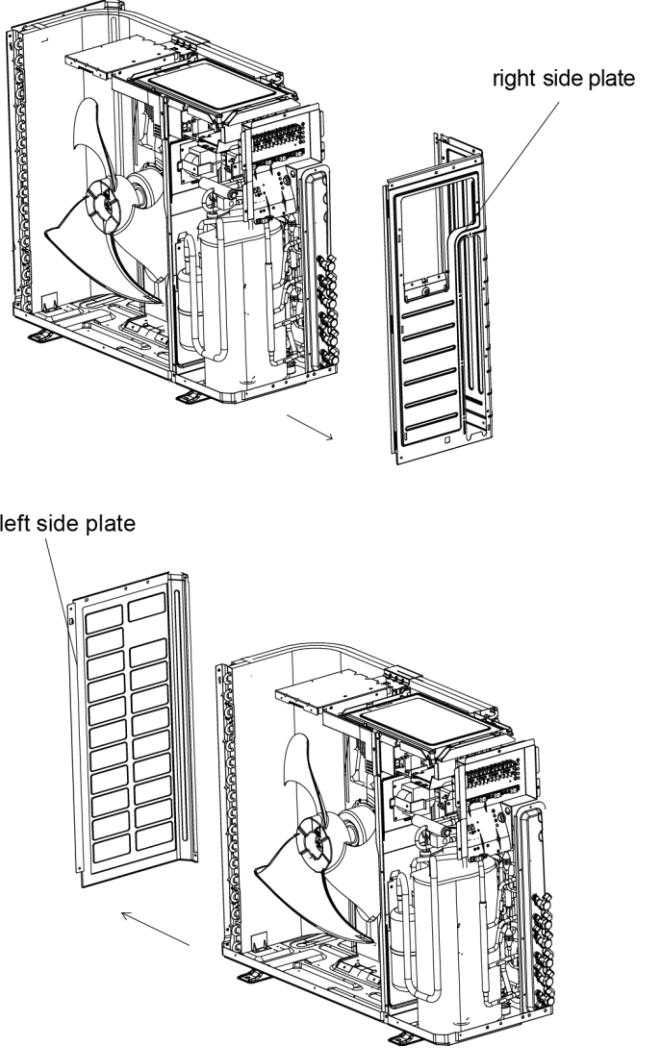
Steps	Procedure
<p>13. Remove 4-way valve assembly and suction pipe sub-assembly</p> <p>a. Unsolder the welding joint connecting the 4-way valve assembly with compressor suction and discharge port, the valve with the outlet pipe of condenser. Then lift the 4-way valve assembly to remove it.</p> <p>(NOTE: Discharge the refrigerant completely before unsoldering.)</p> <p>b. Unsolder the welding joint connecting the suction pipe sub-assembly with compressor and liquid container, and then remove the suction pipe sub-assembly.</p>	 <p>4-way valve assy</p> <p>suction pipe sub-assy</p>
<p>14. Remove liquid container</p> <p>a. Remove the screws connecting the isolation plate sub-assembly and the liquid container, and then lift the liquid container to remove it.</p>	 <p>liquid container</p>
<p>15. Remove middle isolation sheet</p> <p>a. Remove the screws connecting the middle isolation sheet with the chassis assembly and the condenser assembly, and then remove the middle isolation sheet.</p>	 <p>middle isolation sheet</p>

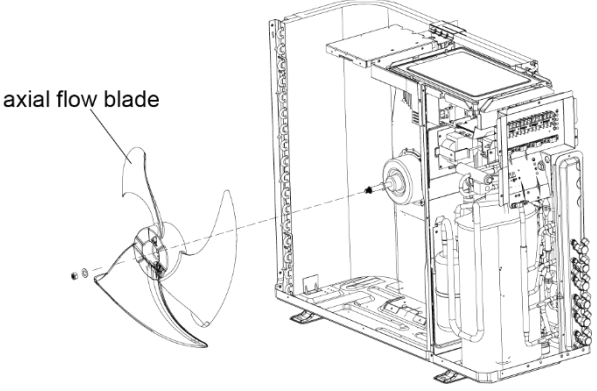
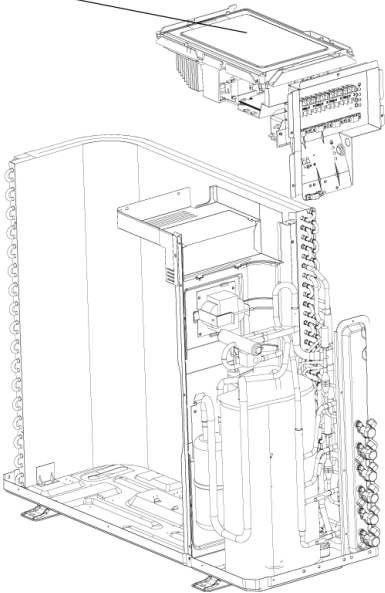
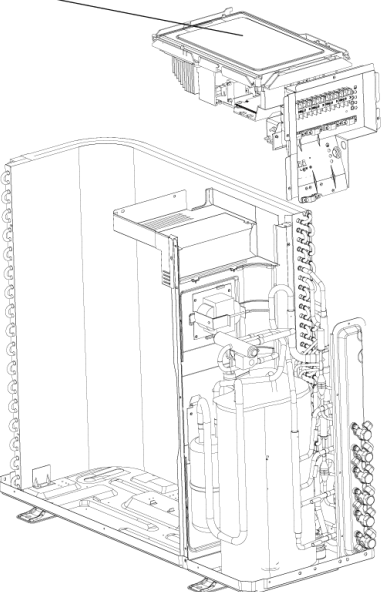
Steps	Procedure
<p>16. Remove compressor</p> <p>a. Remove the 3 foot nuts fixing the compressor and then remove the compressor.</p>	
<p>17. Remove valve support sub-assembly</p> <p>a. Remove the screw connecting the valve support assembly and the chassis sub-assembly, and then remove the valve support assembly.</p>	
<p>18. Remove electronic expansion valve assembly</p> <p>a. Unsolder the welding joint connecting the electronic expansion valve sub-assembly with the gas collection pipe, and then remove the electronic expansion valve assembly.</p> <p>(Note: when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature).</p>	

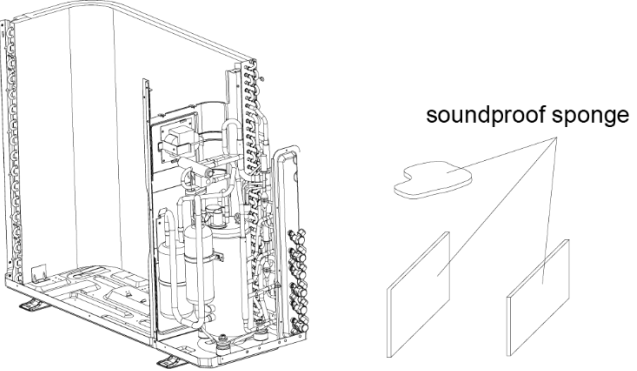
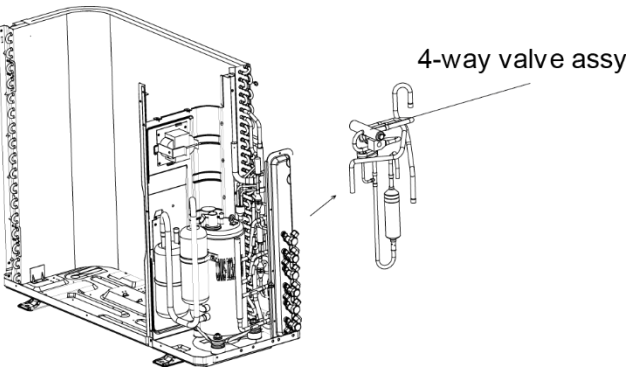
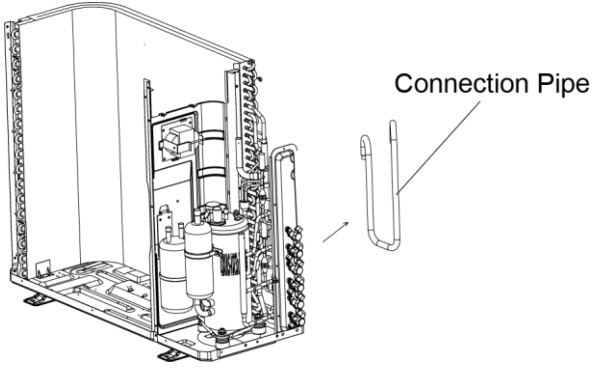
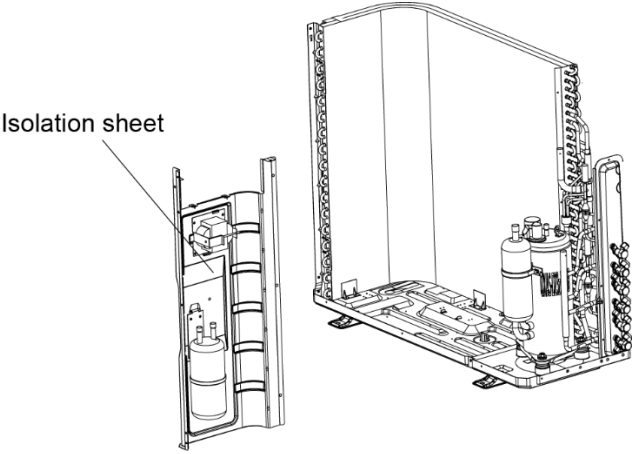
Steps	Procedure
<p>19. Remove condenser assembly</p> <p>a. Remove the screws connecting the condenser assembly and the chassis assembly, and then remove the condenser assembly.</p>	 <p>The diagram illustrates the removal of the condenser assembly. It shows a perspective view of the condenser assembly, which is a vertical rectangular unit with a series of coils on its side. A label 'condenser assy' points to this unit. Below it, a perspective view of the chassis assembly is shown, which is a flat, rectangular metal plate with various mounting points and screws. The condenser assembly is shown being lifted away from the chassis assembly, indicating the removal process.</p>

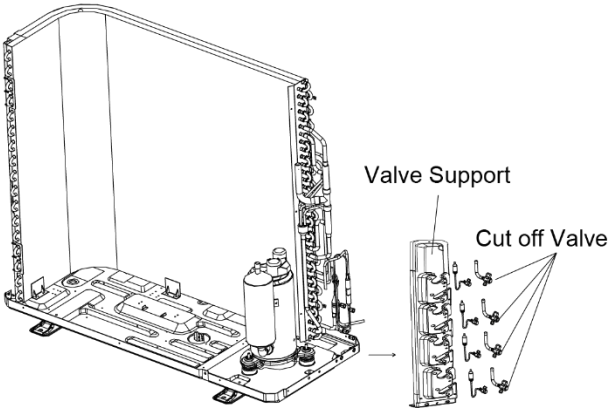
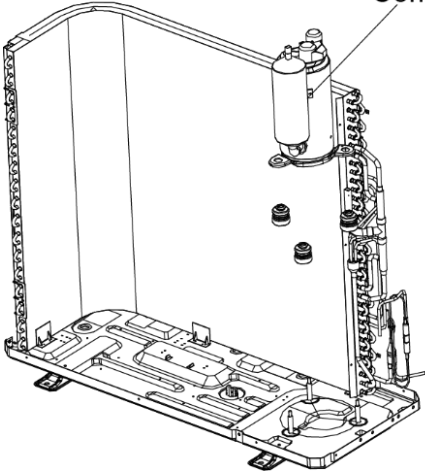
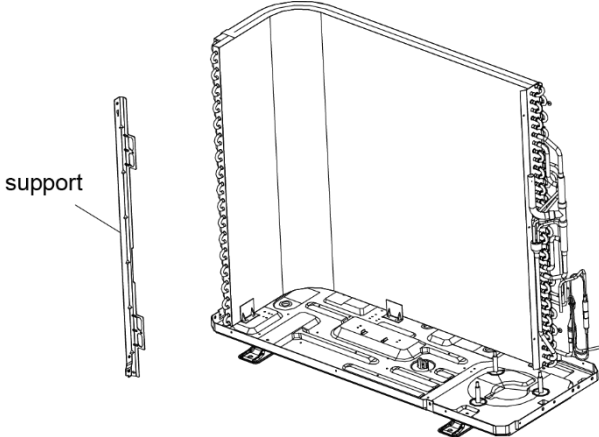
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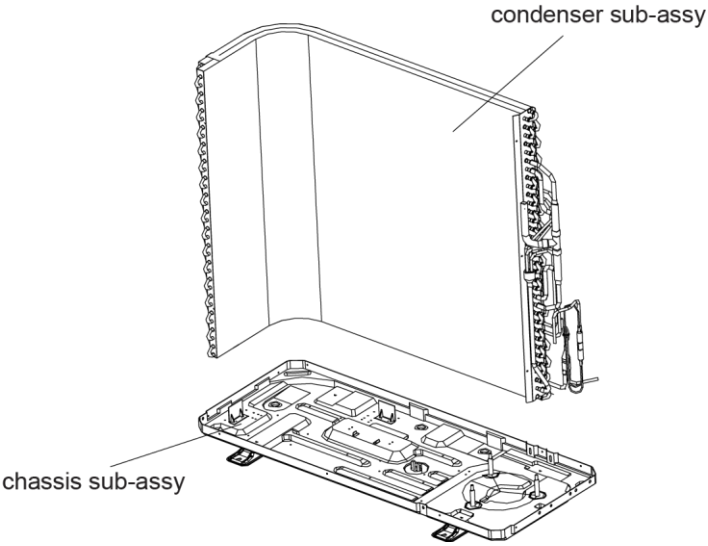
Steps	Procedure
<p>1. Remove valve cover and top panel</p> <p>a. Twist off the screws used for fixing and valve cover, pull valve cover up ward to remove it.</p> <p>b. Remove the 3 screws connecting the top panel with the front panel and the right side plate, and then remove the top panel.</p>	 <p>The diagram illustrates the first step of the procedure. It shows three stages of disassembly: 1) The removal of the valve cover, which is a rectangular panel on the right side of the unit. 2) The removal of the top panel, which is a long, narrow rectangular panel at the top of the unit. 3) The resulting unit with the valve cover and top panel removed, showing the internal components and the front panel.</p>
<p>2. Remove grille, front side plate and panel.</p> <p>a. Remove the 2 screws connecting the grille and the panel, and then remove the grille.</p> <p>b. Remove the 1 screw connecting the front side plate and the panel, and then remove the front side plate.</p>	 <p>The diagram illustrates the second step of the procedure. It shows two stages of disassembly: 1) The removal of the grille, which is a rectangular mesh panel on the front of the unit. 2) The removal of the front side plate, which is a vertical rectangular panel on the right side of the unit. The resulting unit is shown with the grille and front side plate removed, revealing the internal fan and other components.</p>

Steps	Procedure
<p>c. Remove the 5 screws connecting the panel with the chassis and the motor support, and then remove the panel.</p>	
<p>3. Remove right side plate and left side plate</p> <p>a. Remove the screws connecting the right side plate with the chassis, the valve support and the electric box, and then remove the right side plate assembly.</p> <p>b. Remove the screws connecting the left side plate and the chassis, and then remove the left side plate assembly.</p>	

Step	Procedure
<p>4. Remove fan motor and axial flow blade</p> <p>a. Remove the nuts fixing the blade and then remove the axial flow blade.</p>	 <p>axial flow blade</p>
<p>b. Remove the 4 tapping screws fixing the motor; disconnect the leading wire insert of the motor and then remove the motor. Remove the 2 tapping screws fixing the motor support and then pull the motor support upwards to remove it.</p>	 <p>electric box</p>
<p>5. Remove electric box</p> <p>a. Remove the screws fixing the electric box sub-assembly; loosen the wire bundle; pull out the wiring terminals and then pull the electric box upwards to remove it.</p>	 <p>electric box</p>

Step	Procedure
<p>6. Remove soundproof sponge and 4-way valve assembly</p>	 <p>soundproof sponge</p>
<p>a. Since the piping ports on the soundproof sponge are torn easily, remove the soundproof sponge carefully</p>	
<p>b. Discharge the refrigerant completely; unsolder the pipelines connecting the compressor and the condenser assembly, and then remove the 4-way valve assembly.</p>	 <p>4-way valve assy</p>
	 <p>Connection Pipe</p>
<p>7. Remove Isolation sheet</p>	 <p>Isolation sheet</p>
<p>a. Remove the 3 screws fixing the isolation sheet and then remove the Isolation sheet.</p>	

Step	Procedure
<p>8. Remove Cut off Valve and Valve Support</p> <p>a. Remove the 2 bolts fixing the valve subassemblies. Unsolder the welding joint connecting the gas valve and the return air pipe. Remove the gas valve.</p> <p>(Note: When unsoldering the soldering joint, wrap the gas valve with wet cloth completely to avoid damage to the valve caused by high temperature.)</p> <p>b. Unsolder the welding joint connecting the liquid valve and the connecting pipe. Remove the liquid valve.</p> <p>c. Remove screws fixing valve support and then remove the valve support; remove the screw fixing the condenser and then pull the condenser upwards to remove it.</p>	
<p>9. Remove compressor</p> <p>a. Remove the 3 foot nuts fixing the compressor and then remove the compressor.</p>	
<p>10. Remove support</p> <p>a. Remove the screws connecting the support and condenser assembly, and then remove the support.</p>	

Step	Procedure
<p data-bbox="142 205 581 237">11. Remove condenser sub-assembly</p> <p data-bbox="131 491 602 558">a. Remove the chassis sub-assembly and condenser sub-assembly.</p>	 <p data-bbox="1268 226 1484 258">condenser sub-assy</p> <p data-bbox="781 688 964 720">chassis sub-assy</p> <p>The diagram shows an exploded view of two components. The 'condenser sub-assy' is a vertical rectangular unit with a coil of pipes on its right side. The 'chassis sub-assy' is a flat, rectangular metal tray with various mounting points and a central circular component. Lines connect the text labels to their respective parts in the diagram.</p>

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree: $T_f = T_c \times 1.8 + 32$

Set temperature

Fahrenheit display temperature °F	Fahrenheit °F	Celsius °C	Fahrenheit display temperature °F	Fahrenheit °F	Celsius °C	Fahrenheit display temperature °F	Fahrenheit °F	Celsius °C
61	60.8	16	69/70	69.8	21	78/79	78.8	26
62/63	62.6	17	71/72	71.6	22	80/81	80.6	27
64/65	64.4	18	73/74	73.4	23	82/83	82.4	28
66/67	66.2	19	75/76	75.2	24	84/85	84.2	29
68	68	20	77	77	25	86	86	30

Ambient temperature

Fahrenheit display temperature °F	Fahrenheit °F	Celsius °C	Fahrenheit display temperature °F	Fahrenheit °F	Celsius °C	Fahrenheit display temperature °F	Fahrenheit °F	Celsius °C
32/33	32	0	55/56	55.4	13	79/80	78.8	26
34/35	33.8	1	57/58	57.2	14	81	80.6	27
36	35.6	2	59/60	59	15	82/83	82.4	28
37/38	37.4	3	61/62	60.8	16	84/85	84.2	29
39/40	39.2	4	63	62.6	17	86/87	86	30
41/42	41	5	64/65	64.4	18	88/89	87.8	31
43/44	42.8	6	66/67	66.2	19	90	89.6	32
45	44.6	7	68/69	68	20	91/92	91.4	33
46/47	46.4	8	70/71	69.8	21	93/94	93.2	34
48/49	48.2	9	72	71.6	22	95/96	95	35
50/51	50	10	73/74	73.4	23	97/98	96.8	36
52/53	51.8	11	75/76	75.2	24	99	98.6	37
54	53.6	12	77/78	77	25			

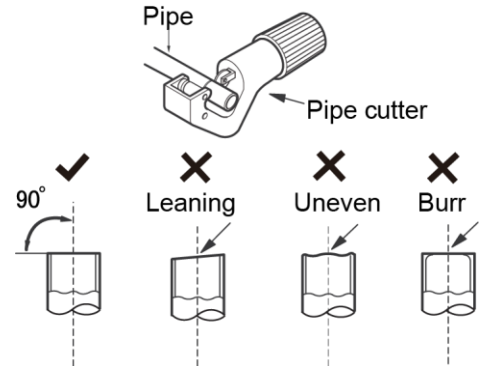
Appendix 2: Pipe Expanding Method



Note: Improper pipe expanding is the main cause of refrigerant leakage. Please expand the pipe according to the following steps:

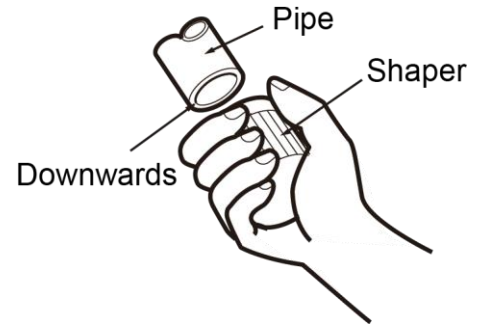
A. Cut the pipe

- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.



B. Remove the burrs

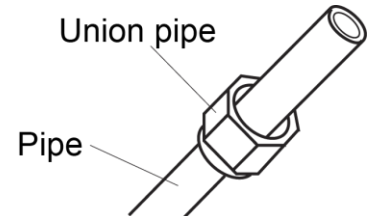
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



C. Put on suitable pipe insulation

D. Put on the union nut

- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



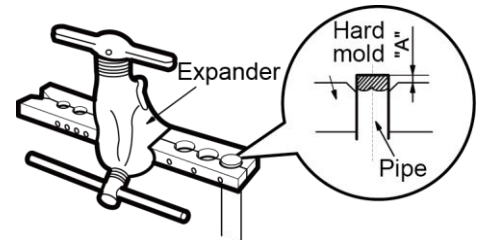
E. Expand the port

- Expand the port with expander.



Note: "A" is different according to the diameter, please refer to the sheet below

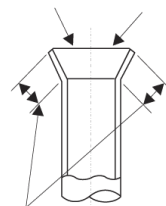
Outer diameter(inch)	A(inch)	
	Max	Min
Φ1/4	2/39	1/36
Φ3/8	1/16	1/51
Φ1/2	1/14	1/51
Φ5/8	5/53	2/23



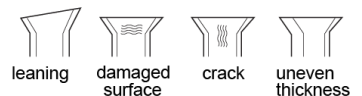
F. Inspection

- Check the quality of expanding port. If there is any blemish, expand the port again according to the steps above.

Smooth surface



Improper expanding



The length is equal



Appendix 3: List of Resistance for Temperature Sensor Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor (15K)

Temp. (°F)	Resistance (kΩ)	Temp. (°F)	Resistance (kΩ)	Temp. (°F)	Resistance (kΩ))	Temp. (°F)	Resistance (kΩ)
-2.2	138.1	68	18.75	138.2	3.848	208.4	1.071
-0.4	128.6	69.8	17.93	140	3.711	210.2	1.039
1.4	121.6	71.6	17.14	141.8	3.579	212	1.009
3.2	115	73.4	16.39	143.6	3.454	213.8	0.98
5	108.7	75.2	15.68	145.4	3.333	215.6	0.952
6.8	102.9	77	15	147.2	3.217	217.4	0.925
8.6	97.4	78.8	14.36	149	3.105	219.2	0.898
10.4	92.22	80.6	13.74	150.8	2.998	221	0.873
12.2	87.35	82.4	13.16	152.6	2.896	222.8	0.848
14	82.75	84.2	12.6	154.4	2.797	224.6	0.825
15.8	78.43	86	12.07	156.2	2.702	226.4	0.802
17.6	74.35	87.8	11.57	158	2.611	228.2	0.779
19.4	70.5	89.6	11.09	159.8	2.523	230	0.758
21.2	66.88	91.4	10.63	161.6	2.439	231.8	0.737
23	63.46	93.2	10.2	163.4	2.358	233.6	0.717
24.8	60.23	95	9.779	165.2	2.28	235.4	0.697
26.6	57.18	96.8	9.382	167	2.206	237.2	0.678
28.4	54.31	98.6	9.003	168.8	2.133	239	0.66
30.2	51.59	100.4	8.642	170.6	2.064	240.8	0.642
32	49.02	102.2	8.297	172.4	1.997	242.6	0.625
33.8	46.6	104	7.967	174.2	1.933	244.4	0.608
35.6	44.31	105.8	7.653	176	1.871	246.2	0.592
37.4	42.14	107.6	7.352	177.8	1.811	248	0.577
39.2	40.09	109.4	7.065	179.6	1.754	249.8	0.561
41	38.15	111.2	6.791	181.4	1.699	251.6	0.547
42.8	36.32	113	6.529	183.2	1.645	253.4	0.532
44.6	34.58	114.8	6.278	185	1.594	255.2	0.519
46.4	32.94	116.6	6.038	186.8	1.544	257	0.505
48.2	31.38	118.4	5.809	188.6	1.497	258.8	0.492
50	29.9	120.2	5.589	190.4	1.451	260.6	0.48
51.8	28.51	122	5.379	192.2	1.408	262.4	0.467
53.6	27.18	123.8	5.197	194	1.363	264.2	0.456
55.4	25.92	125.6	4.986	195.8	1.322	266	0.444
57.2	24.73	127.4	4.802	197.6	1.282	267.8	0.433
59	23.6	129.2	4.625	199.4	1.244	269.6	0.422
60.8	22.53	131	4.456	201.2	1.207	271.4	0.412
62.6	21.51	132.8	4.294	203	1.171	273.2	0.401
64.4	20.54	134.6	4.139	204.8	1.136	275	0.391
66.2	19.63	136.4	3.99	206.6	1.103	276.8	0.382





Resistance Table of Tube Temperature Sensors for Indoor and Outdoor (20K)

Temp. (°F)	Resistance (kΩ)	Temp. (°F)	Resistance (kΩ)	Temp. (°F)	Resistance (kΩ)	Temp. (°F)	Resistance (kΩ)
-2.2	181.4	68	25.01	138.2	5.13	208.4	1.427
-0.4	171.4	69.8	23.9	140	4.948	210.2	1.386
1.4	162.1	71.6	22.85	141.8	4.773	212	1.346
3.2	153.3	73.4	21.85	143.6	4.605	213.8	1.307
5	145	75.2	20.9	145.4	4.443	215.6	1.269
6.8	137.2	77	20	147.2	4.289	217.4	1.233
8.6	129.9	78.8	19.14	149	4.14	219.2	1.198
10.4	123	80.6	18.13	150.8	3.998	221	1.164
12.2	116.5	82.4	17.55	152.6	3.861	222.8	1.131
14	110.3	84.2	16.8	154.4	3.729	224.6	1.099
15.8	104.6	86	16.1	156.2	3.603	226.4	1.069
17.6	99.13	87.8	15.43	158	3.481	228.2	1.039
19.4	94	89.6	14.79	159.8	3.364	230	1.01
21.2	89.17	91.4	14.18	161.6	3.252	231.8	0.983
23	84.61	93.2	13.59	163.4	3.144	233.6	0.956
24.8	80.31	95	13.04	165.2	3.04	235.4	0.93
26.6	76.24	96.8	12.51	167	2.94	237.2	0.904
28.4	72.41	98.6	12	168.8	2.844	239	0.88
30.2	68.79	100.4	11.52	170.6	2.752	240.8	0.856
32	65.37	102.2	11.06	172.4	2.663	242.6	0.833
33.8	62.13	104	10.62	174.2	2.577	244.4	0.811
35.6	59.08	105.8	10.2	176	2.495	246.2	0.77
37.4	56.19	107.6	9.803	177.8	2.415	248	0.769
39.2	53.46	109.4	9.42	179.6	2.339	249.8	0.746
41	50.87	111.2	9.054	181.4	2.265	251.6	0.729
42.8	48.42	113	8.705	183.2	2.194	253.4	0.71
44.6	46.11	114.8	8.37	185	2.125	255.2	0.692
46.4	43.92	116.6	8.051	186.8	2.059	257	0.674
48.2	41.84	118.4	7.745	188.6	1.996	258.8	0.658
50	39.87	120.2	7.453	190.4	1.934	260.6	0.64
51.8	38.01	122	7.173	192.2	1.875	262.4	0.623
53.6	36.24	123.8	6.905	194	1.818	264.2	0.607
55.4	34.57	125.6	6.648	195.8	1.736	266	0.592
57.2	32.98	127.4	6.403	197.6	1.71	267.8	0.577
59	31.47	129.2	6.167	199.4	1.658	269.6	0.563
60.8	30.04	131	5.942	201.2	1.609	271.4	0.549
62.6	28.68	132.8	5.726	203	1.561	273.2	0.535
64.4	27.39	134.6	5.519	204.8	1.515	275	0.521
66.2	26.17	136.4	5.32	206.6	1.47	276.8	0.509





Resistance Table of Discharge Temperature Sensor for Outdoor (50K)

Temp. (°F)	Resistance (kΩ)	Temp. (°F)	Resistance (kΩ)	Temp. (°F)	Resistance (kΩ)	Temp. (°F)	Resistance (kΩ)
-20.2	853.5	50	98	120.2	18.34	190.4	4.754
-18.4	799.8	51.8	93.42	122	17.65	192.2	4.609
-16.6	750	53.6	89.07	123.8	16.99	194	4.469
-14.8	703.8	55.4	84.95	125.6	16.36	195.8	4.334
-13	660.8	57.2	81.05	127.4	15.75	197.6	4.204
-11.2	620.8	59	77.35	129.2	15.17	199.4	4.079
-9.4	580.6	60.8	73.83	131	14.62	201.2	3.958
-7.6	548.9	62.6	70.5	132.8	14.09	203	3.841
-5.8	516.6	64.4	67.34	134.6	13.58	204.8	3.728
-4	486.5	66.2	64.33	136.4	13.09	206.6	3.619
-2.2	458.3	68	61.48	138.2	12.62	208.4	3.514
-0.4	432	69.8	58.77	140	12.17	210.2	3.413
1.4	407.4	71.6	56.19	141.8	11.74	212	3.315
3.2	384.5	73.4	53.74	143.6	11.32	213.8	3.22
5	362.9	75.2	51.41	145.4	10.93	215.6	3.129
6.8	342.8	77	49.19	147.2	10.54	217.4	3.04
8.6	323.9	78.8	47.08	149	10.18	219.2	2.955
10.4	306.2	80.6	45.07	150.8	9.827	221	2.872
12.2	289.6	82.4	43.16	152.6	9.489	222.8	2.792
14	274	84.2	41.34	154.4	9.165	224.6	2.715
15.8	259.3	86	39.61	156.2	8.854	226.4	2.64
17.6	245.6	87.8	37.96	158	8.555	228.2	2.568
19.4	232.6	89.6	36.38	159.8	8.268	230	2.498
21.2	220.5	91.4	34.88	161.6	7.991	231.8	2.431
23	209	93.2	33.45	163.4	7.726	233.6	2.365
24.8	198.3	95	32.09	165.2	7.47	235.4	2.302
26.6	199.1	96.8	30.79	167	7.224	237.2	2.241
28.4	178.5	98.6	29.54	168.8	6.998	239	2.182
30.2	169.5	100.4	28.36	170.6	6.761	240.8	2.124
32	161	102.2	27.23	172.4	6.542	242.6	2.069
33.8	153	104	26.15	174.2	6.331	244.4	2.015
35.6	145.4	105.8	25.11	176	6.129	246.2	1.963
37.4	138.3	107.6	24.13	177.8	5.933	248	1.912
39.2	131.5	109.4	23.19	179.6	5.746	249.8	1.863
41	125.1	111.2	22.29	181.4	5.565	251.6	1.816
42.8	119.1	113	21.43	183.2	5.39	253.4	1.77
44.6	113.4	114.8	20.6	185	5.222	255.2	1.725
46.4	108	116.6	19.81	186.8	5.06	257	1.682
48.2	102.8	118.4	19.06	188.6	4.904	258.8	1.64





**EXTENDED RATINGS-Variou Indoor and Outdoor Temperatures
WMMS-30CH-V2B(59)4
COOLING PERFORMANCE**

DB WB	Indoor Ambient Temperature											
	70°F (21°C)			75°F (24°C)			80°F (27°C)			90°F (32°C)		
	59°F (15°C)			63°F (17°C)			67°F (19°C)			73°F (23°C)		
	TC (BtuH)	SC (BtuH)	Input Power (watts)	TC (BtuH)	SC (BtuH)	Input Power (watts)	TC (BtuH)	SC (BtuH)	Input Power (watts)	TC (BtuH)	SC (BtuH)	Input Power (watts)
-0.4°F (-18°C)	10,850	8,510	700	12,230	9,600	740	12,930	10,140	770	14,570	11,430	820
5°F (-15°C)	11,120	8,720	700	12,550	9,840	750	13,420	10,530	770	14,940	11,720	820
14°F (-10°C)	11,480	9,010	720	12,950	10,160	760	13,690	10,740	790	15,430	12,100	850
23°F (-5°C)	12,580	9,870	720	14,330	11,240	760	15,420	12,090	790	16,960	13,300	840
32°F (0°C)	13,226	10,375	719	15,064	11,814	763	15,489	12,143	789	17,829	13,989	841
41°F (5°C)	13,905	10,907	756	15,836	12,419	802	16,283	12,766	829	18,743	14,707	884
50°F (10°C)	14,484	11,361	788	16,496	12,937	835	16,961	13,298	864	19,524	15,319	921
59°F (15°C)	15,260	11,970	830	17,380	13,630	880	17,870	14,010	910	20,570	16,140	970
68°F (20°C)	17,281	13,553	1,221	18,361	14,398	1,260	19,621	15,389	1,337	22,501	17,650	1,430
77°F (25°C)	17,077	13,395	1,254	18,163	14,246	1,293	19,441	15,249	1,375	22,321	17,504	1,474
86°F (30°C)	16,235	12,733	1,403	17,317	13,584	1,447	18,901	14,824	1,535	21,631	16,963	1,645
95°F (35°C)	15,367	12,052	1,507	16,441	12,891	1,551	18,001	14,119	1,650	20,719	16,252	1,766
104°F (40°C)	14,623	11,469	1,557	15,691	12,307	1,606	17,533	13,754	1,705	19,975	15,662	1,826
113°F (45°C)	13,873	10,879	1,590	14,941	11,718	1,639	16,789	13,164	1,744	19,225	15,079	1,865
118°F (48°C)	13,501	10,587	1,606	14,401	11,292	1,656	16,201	12,709	1,760	18,541	14,544	1,881

HEATING PERFORMANCE

Outdoor	Indoor Ambient Temperature												
	DB	70°F (21°C)				75°F (24°C)				80°F (27°C)			
	WB	59°F (15°C)				63°F (17°C)				67°F (19°C)			
	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	
Outdoor Ambient Temperature (DB)	-5°F (-21°C)	10,865	10,865	1,840	1.73	10,656	10,656	1,880	1.66	10,325	10,325	1,920	1.58
	0°F (-18°C)	11,121	11,121	1,800	1.81	10,800	10,800	1,840	1.72	10,598	10,598	1,880	1.65
	5°F (-15°C)	11,428	11,428	1,751	1.91	11,099	11,099	1,791	1.82	10,891	10,891	1,831	1.74
	7°F (-14°C)	11,736	11,736	1,722	2.00	11,397	11,397	1,762	1.90	11,184	11,184	1,802	1.82
	17°F (-8°C)	12,597	12,597	1,663	2.22	12,229	12,229	1,703	2.11	11,997	11,997	1,743	2.02
	28°F (-2°C)	14,230	14,230	1,601	2.60	13,856	13,856	1,641	2.47	13,458	13,458	1,681	2.35
	38°F (3°C)	17,693	17,693	1,593	3.26	17,319	17,319	1,633	3.11	16,927	16,927	1,673	2.97
	47°F (8°C)	19,997	19,997	1,590	3.69	19,392	19,392	1,630	3.49	19,006	19,006	1,670	3.34
	57°F (14°C)	20,657	20,657	1,519	3.99	20,033	20,033	1,559	3.77	19,635	19,635	1,599	3.60
	68°F (20°C)	21,490	21,490	1,495	4.21	20,840	20,840	1,535	3.98	20,430	20,430	1,575	3.80
77°F (25°C)	21,990	21,990	1,461	4.41	21,330	21,330	1,501	4.16	20,900	20,900	1,541	3.97	

LEGEND

DB --- Dry Bulb
WB --- Wet Bulb

TC --- Total Net Cooling Capacity (BtuH)

SC --- Sensible Capacity (BtuH)

Input Power---(Watts)

Specifications are subject to change without notice. Manufacturer reserves the right to discontinue or modify specifications or designs without notice or without incurring obligations. All rights reserved.





**EXTENDED RATINGS-Various Indoor and Outdoor Temperatures
WMMS-36CH-V2B(59)4
COOLING PERFORMANCE**

DB WB	Indoor Ambient Temperature											
	70°F (21°C) 59°F (15°C)			75°F (24°C) 63°F (17°C)			80°F (27°C) 67°F (19°C)			90°F (32°C) 73°F (23°C)		
	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)
-0.4°F (-18°C)	14,670	11,510	1,180	16,550	12,980	1,250	17,500	13,720	1,300	19,720	15,460	1,390
5°F (-15°C)	15,050	11,800	1,180	16,970	13,320	1,260	18,160	14,240	1,300	20,220	15,860	1,390
14°F (-10°C)	16,590	13,010	1,200	17,710	14,680	1,270	19,780	15,510	1,320	22,290	17,480	1,410
23°F (-5°C)	18,170	14,260	1,200	20,700	16,240	1,270	22,270	17,470	1,310	24,500	19,220	1,400
32°F (0°C)	19,103	14,986	1,196	21,764	14,466	1,265	22,379	17,543	1,309	25,759	20,204	1,404
41°F (5°C)	20,083	15,754	1,257	22,880	15,208	1,330	23,527	18,442	1,376	27,080	21,240	1,476
50°F (10°C)	20,919	16,411	1,310	23,833	15,841	1,386	24,507	19,211	1,433	28,209	22,125	1,538
59°F (15°C)	22,040	17,290	1,380	25,110	16,690	1,460	25,820	20,240	1,510	29,720	23,310	1,620
68°F (20°C)	24,961	19,577	2,028	26,521	20,797	2,092	28,341	22,228	2,219	32,501	25,494	2,375
77°F (25°C)	24,666	19,349	2,082	26,235	20,578	2,146	28,081	22,026	2,283	32,241	25,283	2,448
86°F (30°C)	23,453	18,392	2,329	25,013	19,621	2,402	27,301	21,412	2,548	31,245	24,502	2,731
95°F (35°C)	22,196	17,409	2,503	23,748	18,620	2,576	26,001	20,394	2,740	29,927	23,475	2,932
104°F (40°C)	21,122	16,566	2,585	22,664	17,777	2,667	25,325	19,867	2,831	28,853	22,623	3,032
113°F (45°C)	20,038	15,714	2,640	21,581	16,926	2,722	24,250	19,015	2,895	27,769	21,781	3,096
118°F (48°C)	19,501	15,293	2,667	20,801	16,311	2,749	23,401	18,357	2,923	26,781	21,008	3,124

HEATING PERFORMANCE

Outdoor	DB WB	Indoor Ambient Temperature											
		70°F (21°C) 59°F (15°C)				75°F (24°C) 63°F (17°C)				80°F (27°C) 67°F (19°C)			
		TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)
Outdoor Ambient Temperature (DB)	-5°F (-21°C)	16,563	16,563	2,470	1.97	16,045	16,045	2,500	1.88	15,625	2,530	1,624	2.82
	0°F (-18°C)	16,974	16,974	2,410	2.06	16,485	16,485	2,440	1.98	16,177	2,470	1,669	2.84
	5°F (-15°C)	17,442	17,442	2,335	2.19	16,939	16,939	2,365	2.10	16,622	2,395	1,706	2.85
	7°F (-14°C)	17,909	17,909	2,392	2.19	17,393	17,393	2,422	2.10	17,067	2,452	1,744	2.87
	17°F (-8°C)	19,224	19,224	2,358	2.39	18,662	18,662	2,388	2.29	18,308	2,418	1,819	2.95
	28°F (-2°C)	21,716	21,716	2,332	2.73	21,145	21,145	2,362	2.62	20,538	2,392	1,938	3.11
	38°F (3°C)	27,000	27,000	2,319	3.41	26,429	26,429	2,349	3.30	25,831	2,379	2,230	3.39
	47°F (8°C)	29,017	29,017	2,318	3.67	29,592	29,592	2,348	3.69	29,003	2,378	2,320	3.66
	57°F (14°C)	31,523	31,523	2,213	4.18	30,571	30,571	2,243	4.00	29,964	2,273	2,365	3.71
	68°F (20°C)	32,810	32,810	2,177	4.42	31,810	31,810	2,207	4.22	31,180	2,237	2,450	3.73
77°F (25°C)	33,570	33,570	2,142	4.59	32,550	32,550	2,172	4.39	31,900	2,202	2,510	3.72	

LEGEND

- DB --- Dry Bulb
- WB --- Wet Bulb
- TC --- Total Net Cooling Capacity (BtuH)
- SC --- Sensible Capacity (BtuH)
- Input Power---(Watts)

Specifications are subject to change without notice. Manufacturer reserves the right to discontinue or modify specifications or designs without notice or without incurring obligations. All rights reserved.





**EXTENDED RATINGS-Various Indoor and Outdoor Temperatures
WMMS-42CH-V2B(59)4
COOLING PERFORMANCE**

DB WB	Indoor Ambient Temperature											
	70°F (21°C) 59°F (15°C)			75°F (24°C) 63°F (17°C)			80°F (27°C) 67°F (19°C)			90°F (32°C) 73°F (23°C)		
	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)
-0.4°F (-18°C)	17,230	13,510	1,050	19,430	15,240	1,110	20,540	16,110	1,150	23,150	18,150	1,230
5°F (-15°C)	17,670	13,860	1,050	19,930	15,630	1,120	21,320	16,720	1,150	23,730	18,620	1,230
14°F (-10°C)	18,500	14,510	1,060	20,870	16,370	1,120	22,060	17,300	1,160	24,860	19,490	1,240
23°F (-5°C)	20,270	15,900	1,060	23,090	18,110	1,120	24,840	19,490	1,150	27,330	21,430	1,230
32°F (0°C)	20,368	17,612	1,430	23,281	19,840	1,430	25,621	21,538	1,699	26,748	25,005	1,612
41°F (5°C)	21,413	18,515	1,503	24,474	20,857	1,503	26,935	22,643	1,786	28,119	26,288	1,695
50°F (10°C)	22,305	19,287	1,566	25,494	21,726	1,566	28,057	23,586	1,860	29,291	27,383	1,765
59°F (15°C)	23,500	20,320	1,650	26,860	22,890	1,650	29,560	24,850	1,960	30,860	28,850	1,860
68°F (20°C)	24,520	21,135	1,736	27,550	23,714	1,760	30,313	25,704	2,009	31,228	29,201	2,025
77°F (25°C)	28,631	23,264	2,108	31,071	25,502	2,111	33,852	27,389	2,365	37,373	28,573	2,402
86°F (30°C)	30,859	24,172	2,826	33,084	26,134	2,853	35,179	32,712	2,905	39,601	29,290	2,955
95°F (35°C)	28,914	23,131	3,099	31,218	25,298	3,121	33,654	26,154	3,206	37,012	28,522	3,267
104°F (40°C)	22,851	20,906	2,566	24,550	22,872	2,583	26,052	24,462	2,773	28,321	25,171	2,668
113°F (45°C)	17,839	17,658	2,172	19,214	19,057	2,207	25,738	25,110	2,835	21,800	21,387	2,244
118°F (48°C)	13,700	13,628	1,708	15,030	14,908	1,762	16,634	16,382	1,896	17,770	17,433	1,867

HEATING PERFORMANCE

Outdoor	DB WB	Indoor Ambient Temperature											
		70°F (21°C) 59°F (15°C)				75°F (24°C) 63°F (17°C)				80°F (27°C) 67°F (19°C)			
		TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)
Outdoor Ambient Temperature (DB)	-5°F (-21°C)	18,126	18,126	2,870	1.85	17,756	17,756	2,900	1.79	17,059	17,059	2,930	1.71
	0°F (-18°C)	18,500	18,500	2,810	1.93	17,960	17,960	2,840	1.85	17,630	17,630	2,870	1.80
	5°F (-15°C)	19,510	19,510	2,730	2.09	18,950	18,950	2,760	2.01	18,590	18,590	2,790	1.95
	7°F (-14°C)	20,010	20,010	2,720	2.16	19,050	19,050	2,750	2.03	19,360	19,360	2,780	2.04
	17°F (-8°C)	20,940	20,940	2,700	2.27	20,330	20,330	2,730	2.18	19,950	19,950	2,760	2.12
	28°F (-2°C)	23,660	23,660	2,680	2.59	23,040	23,040	2,710	2.49	22,380	22,380	2,740	2.39
	38°F (3°C)	29,420	29,420	2,670	3.23	28,800	28,800	2,700	3.13	28,140	28,140	2,730	3.02
	47°F (8°C)	33,250	33,250	2,650	3.68	32,240	32,240	2,680	3.53	31,600	31,600	2,710	3.42
	57°F (14°C)	34,350	34,350	2,520	4.00	33,310	33,310	2,550	3.83	32,650	32,650	2,580	3.71
	68°F (20°C)	35,750	35,750	2,450	4.28	34,660	34,660	2,480	4.10	33,970	33,970	2,510	3.97
77°F (25°C)	36,580	36,580	2,420	4.43	35,470	35,470	2,450	4.24	34,760	34,760	2,480	4.11	

LEGEND

DB --- Dry Bulb
WB --- Wet Bulb
TC --- Total Net Cooling Capacity (BtuH)

SC --- Sensible Capacity (BtuH)
Input Power---(Watts)

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**EXTENDED RATINGS-Various Indoor and Outdoor Temperatures
WMMS-48CH-V2B(59)4
COOLING PERFORMANCE**

DB WB	Indoor Ambient Temperature											
	70°F (21°C) 59°F (15°C)			75°F (24°C) 63°F (17°C)			80°F (27°C) 67°F (19°C)			90°F (32°C) 73°F (23°C)		
	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)
-0.4°F (-18°C)	20,420	16,010	1,200	23,030	18,060	1,270	24,152	19,090	1,320	27,430	21,510	1,410
5°F (-15°C)	20,940	16,420	1,200	23,620	18,530	1,280	24,995	19,820	1,320	28,130	22,030	1,410
14°F (-10°C)	21,690	17,010	1,220	24,470	19,190	1,300	25,908	20,280	1,340	29,150	22,860	1,440
23°F (-5°C)	23,770	18,640	1,220	27,080	21,240	1,300	26,896	22,840	1,330	32,040	25,130	1,430
32°F (0°C)	24,979	19,588	1,222	28,455	22,319	1,291	29,178	22,943	1,335	33,681	25,057	1,395
41°F (5°C)	26,260	20,593	1,285	29,914	23,463	1,358	33,822	24,119	1,403	35,409	26,342	1,467
50°F (10°C)	27,355	21,451	1,338	31,161	24,441	1,414	37,125	25,124	1,462	36,884	27,440	1,528
59°F (15°C)	28,820	22,600	1,410	32,830	25,750	1,490	36,785	26,470	1,540	38,860	28,910	1,610
68°F (20°C)	32,620	29,556	2,010	33,422	30,044	1,995	36,444	31,733	2,010	41,526	33,695	2,025
77°F (25°C)	35,145	30,300	2,450	39,240	31,409	2,435	35,763	32,791	2,440	45,040	34,872	2,430
86°F (30°C)	35,486	30,368	3,120	38,438	32,364	3,125	35,082	33,012	3,160	45,211	34,650	3,185
95°F (35°C)	32,176	28,781	3,300	35,827	31,255	3,400	34,060	31,921	3,335	41,014	34,275	3,405
104°F (40°C)	27,451	26,444	3,075	30,095	28,543	3,085	33,617	29,856	3,115	35,452	32,671	3,145
113°F (45°C)	23,544	23,203	2,765	25,642	24,926	2,790	33,174	25,779	2,800	29,686	28,833	2,825
118°F (48°C)	16,382	16,232	1,856	17,504	17,242	1,911	32,471	18,354	1,986	20,186	19,923	2,023

HEATING PERFORMANCE

Outdoor WB	DB	Indoor Ambient Temperature											
		70°F (21°C) 59°F (15°C)				75°F (24°C) 63°F (17°C)				80°F (27°C) 67°F (19°C)			
		TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)
Outdoor Ambient Temperature (DB)	-5°F (-21°C)	21,908	21,908	3,732	1.72	21,749	21,749	3,747	1.70	21,350	21,350	3,777	1.66
	0°F (-18°C)	23,744	23,744	3,736	1.86	23,571	23,571	3,751	1.84	23,119	23,119	3,781	1.79
	5°F (-15°C)	25,047	25,047	3,717	1.97	24,861	24,861	3,732	1.95	24,396	24,396	3,762	1.90
	7°F (-14°C)	26,085	26,085	3,672	2.08	25,899	25,899	3,687	2.06	25,407	25,407	3,717	2.00
	17°F (-8°C)	26,870	26,870	3,524	2.23	26,684	26,684	3,539	2.21	26,165	26,165	3,569	2.15
	28°F (-2°C)	30,142	30,142	3,458	2.55	30,302	30,302	3,473	2.56	29,783	29,783	3,503	2.49
	38°F (3°C)	37,910	37,910	3,415	3.25	38,070	38,070	3,430	3.25	37,538	37,538	3,460	3.18
	47°F (8°C)	42,566	42,566	3,409	3.66	42,247	42,247	3,424	3.62	41,395	41,395	3,454	3.51
	57°F (14°C)	43,976	43,976	3,340	3.86	43,630	43,630	3,355	3.81	42,752	42,752	3,385	3.70
	68°F (20°C)	45,758	45,758	3,315	4.05	45,413	45,413	3,330	4.00	44,495	44,495	3,360	3.88
77°F (25°C)	46,823	46,823	3,350	4.10	46,463	46,463	3,365	4.05	45,532	45,532	3,395	3.93	

LEGEND

- DB --- Dry Bulb
- WB --- Wet Bulb
- TC --- Total Net Cooling Capacity (BtuH)
- SC --- Sensible Capacity (BtuH)
- Input Power---(Watts)

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**EXTENDED RATINGS-Various Indoor and Outdoor Temperatures
WMMS-60CH-V2B(59)4
COOLING PERFORMANCE**

DB WB	Indoor Ambient Temperature											
	70°F (21°C) 59°F (15°C)			75°F (24°C) 63°F (17°C)			80°F (27°C) 67°F (19°C)			90°F (32°C) 73°F (23°C)		
	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)
-0.4°F (-18°C)	23,610	18,510	1,620	26,630	20,890	1,710	28,140	22,070	1,780	31,720	24,870	1,900
5°F (-15°C)	24,210	18,990	1,620	27,310	21,420	1,730	29,220	22,910	1,780	32,520	25,510	1,900
14°F (-10°C)	24,880	19,510	1,630	28,070	22,020	1,730	29,670	23,270	1,800	33,440	26,220	1,920
23°F (-5°C)	27,260	21,380	1,630	31,060	24,360	1,730	33,410	26,200	1,780	36,750	28,820	1,910
32°F (0°C)	28,654	22,475	1,629	32,641	25,603	1,725	32,329	26,323	1,785	38,639	29,478	1,915
41°F (5°C)	30,124	23,627	1,713	34,315	26,916	1,813	33,987	27,673	1,877	40,621	30,989	2,014
50°F (10°C)	31,379	24,612	1,784	35,745	28,038	1,889	35,403	28,826	1,955	42,313	32,281	2,098
59°F (15°C)	33,060	25,930	1,880	37,660	29,540	1,990	37,300	30,370	2,060	44,580	34,010	2,210
68°F (20°C)	33,012	29,754	1,980	33,575	29,396	1,990	37,499	32,125	2,000	44,870	34,138	2,210
77°F (25°C)	35,213	29,174	2,480	37,977	30,965	2,685	41,389	33,541	2,820	47,804	34,463	2,515
86°F (30°C)	36,510	29,037	3,650	38,540	31,238	3,555	43,334	34,121	3,600	48,572	35,333	3,280
95°F (35°C)	33,780	29,344	3,635	36,612	31,801	3,485	40,809	33,780	3,590	41,406	33,814	3,555
104°F (40°C)	29,481	27,297	3,600	33,831	30,931	3,645	34,974	32,586	3,670	37,875	32,722	3,735
113°F (45°C)	23,203	22,486	2,750	25,779	24,567	2,775	28,662	26,683	2,800	29,856	28,031	2,830
118°F (48°C)	16,795	16,508	1,988	18,255	17,668	2,101	19,381	18,528	2,158	20,531	19,749	2,204

HEATING PERFORMANCE

Outdoor WB	DB	Indoor Ambient Temperature											
		70°F (21°C) 59°F (15°C)				75°F (24°C) 63°F (17°C)				80°F (27°C) 67°F (19°C)			
		TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)	TC (Btu/H)	SC (Btu/H)	Input Power (watts)	COP (W/W)
Outdoor Ambient Temperature (DB)	-5°F (-21°C)	24,180	24,180	3,820	1.86	23,565	23,565	3,850	1.79	23,016	23,016	3,900	1.73
	0°F (-18°C)	24,880	24,880	3,740	1.95	24,160	24,160	3,770	1.88	23,710	23,710	3,820	1.82
	5°F (-15°C)	26,240	26,240	3,630	2.12	25,490	25,490	3,660	2.04	25,010	25,010	3,710	1.98
	7°F (-14°C)	27,350	27,350	3,570	2.25	26,550	26,550	3,600	2.16	26,040	26,040	3,650	2.09
	17°F (-8°C)	28,170	28,170	3,440	2.40	27,350	27,350	3,470	2.31	26,830	26,830	3,520	2.23
	28°F (-2°C)	31,820	31,820	3,400	2.74	30,990	30,990	3,430	2.65	30,100	30,100	3,480	2.54
	38°F (3°C)	39,560	39,560	3,380	3.43	38,730	38,730	3,410	3.33	37,850	37,850	3,460	3.21
	47°F (8°C)	43,720	43,720	3,470	3.69	43,360	43,360	3,500	3.63	42,500	42,500	3,550	3.51
	57°F (14°C)	46,190	46,190	3,280	4.13	44,800	44,800	3,310	3.97	43,910	43,910	3,360	3.83
	68°F (20°C)	48,080	48,080	3,180	4.43	46,620	46,620	3,210	4.26	45,690	45,690	3,260	4.11
	77°F (25°C)	49,190	49,190	3,140	4.59	47,710	47,710	3,170	4.41	46,750	46,750	3,220	4.26

LEGEND

- DB --- Dry Bulb
- WB --- Wet Bulb
- TC --- Total Net Cooling Capacity (BtuH)
- SC --- Sensible Capacity (BtuH)
- Input Power---(Watts)

Specifications are subject to change without notice. Manufacturer reserves the right to discontinue or modify specifications or designs without notice or without incurring obligations. All rights reserved.





USER NOTES

Please record any questions or problems you have experienced as a unit history:

No.	Date	Company Name, Technician Name, Phone & HVAC License #	Job Not Performed by Technician	Technician Checklist Completed Fully?

SERVICE / MAINTENANCE NOTES

No.	Date	Type of Service / Maintenance	Company Name, Technician Name, Phone & HVAC License #





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.

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- **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**
(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
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