Contents

Note: This symbol mark is for EU countries only.
This symbol mark is according to the directive 2012/19/EU Article 14 Information for users and Annex IX.
Your MITSUBISHI ELECTRIC product is designed and manufactured with high quality materials and components which can be recycled and reused.
This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste.
Please, dispose of this equipment at your local community waste collection/recycling centre.
In the European Union there are separate collection systems for used electrical and electronic product.
Please, help us to conserve the environment we live in!

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1. Safety precautions

- ►**Before installing the unit, make sure you read all the "Safety precautions".**
- ►**Please report to or take consent by the supply authority before connection to the system.**

⚠ WARNING:

Describes precautions that must be observed to prevent danger of injury or death to the user.

⚠ CAUTION:

Describes precautions that must be observed to prevent damage to the unit and/or limit the danger of injury or death to the user.

After installation work has been completed, explain the "Safety precautions," use, and maintenance of the unit to the customer/user according to the information in the Operation Manual and perform the test run to demonstrate operation. Both the Installation Manual and Operation Manual must be retained by the user. The Installation Manual and Operation Manual must be passed by the user to subsequent users.

⏚ : Indicates a part which must be grounded.

⚠ WARNING:

Carefully read the labels affixed to the main unit.

MEANINGS OF SYMBOLS DISPLAYED ON THE UNIT

	**WARNING** (Risk of fire)	This unit uses R290, a highly flammable refrigerant. If any refrigerant leaks or comes in contact with fire or a heated surface or environment, there is a risk of fire or explosion, and the installer and/or user is warned to take all possible safety precautions when handling the unit and R290, being sure to keep a safe distance at all times to any related fire or explosion and to notify the fire department immediately on becoming aware of such an outcome.
	Read the OPERATION MANUAL carefully before operation.	
	Service personnel are required to carefully read the OPERATION MANUAL and INSTALLATION MANUAL before operation.	
	Further information is available in the OPERATION MANUAL, INSTALLATION MANUAL, and the like.	

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⚠ WARNING:

- **The unit must only be installed/serviced/relocated/repaired/disposed, including any work undertaken on a related refrigerant circuit, by a competent electrician, with the requisite professional qualifications to install this unit and perform electrical works in your jurisdiction. Please contact your dealer for them.**
  Failure to conduct electric work, deal with the refrigerant circuit(s) and install/service/relocate/repair or dispose the unit correctly in accordance with the foregoing and all laws and regulations may lead to prosecution, water leakage, electric shock or fire. Mitsubishi Electric does not accept responsibility for any direct, indirect, special or consequential loss, damage, liability or expense incurred or suffered which results from any works undertaken by an unqualified or third party installer, or any failure, claim, damage or deficiency caused to a unit by improper installation, servicing, relocation, repair or disposing.
- **The work on refrigerant circuit can only be performed by certified or qualified personnel who are trained properly. Please contact your dealer for them.**
- **For installation and relocation work, follow the instructions in the Installation Manual and use tools and pipe components specifically made for use with R290 refrigerant.**
- **When installing the unit, use appropriate protective equipment and tools for safety.**
  Failure to do so could cause injuries.
- **The unit must be installed according to the Installation Manual in order to minimize the risk of damage from earthquakes, typhoons, or strong winds. An incorrectly installed unit may fall down and cause damage or injuries.**
- **The unit must be securely installed on a structure that can sustain its weight. If the unit is mounted on an unstable structure, it may fall down and cause damage or injuries.**
- **If the outdoor unit is installed in a small room, measures must be taken to prevent the refrigerant concentration in the room from exceeding the safety limit in the event of refrigerant leakage. Consult a installer regarding the appropriate measures to prevent the allowable concentration from being exceeded. Should the refrigerant leak and cause the concentration limit to be exceeded, hazards due to lack of oxygen in the room may result.**
- **Ventilate the room if refrigerant leaks during operation. If refrigerant comes into contact with a flame, there is risk of fire or explosion.**
- **The units must be powered by dedicated power lines and the correct voltage and circuit breakers must be used. Power lines with insufficient capacity or incorrect electrical work may result in electric shock or fire.**
- **This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.**
- **Use only specified cables for wiring. The wiring connections must be made securely with no tension applied on the terminal connections. Also, never splice the cables for wiring (unless otherwise indicated in the Installation Manual).**
  Failure to observe these instructions may result in overheating or a fire.
- **If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid hazard.**
- **The appliance shall be installed in accordance with national wiring regulations.**
- **The terminal block cover panel of the outdoor unit must be firmly attached. If the cover panel is mounted incorrectly and dust and moisture enter the unit, electric shock or fire may result.**
- **When servicing the outdoor unit, use only the specified refrigerant (R290) to charge the refrigerant lines. Do not mix it with any other refrigerant and do not allow air to remain in the lines.**
  If air is mixed with the refrigerant, then it can be the cause of abnormal high pressure in the refrigerant line, and may result in an explosion and other hazards.
  The use of any refrigerant other than that specified for the system will cause mechanical failure or system malfunction or unit breakdown. In the worst case, this could lead to a serious impediment to securing product safety.
- **In order to not invalidate unit warranty and maintain the correct and safe functioning of the unit, please use only parts and accessories recommended by Mitsubishi Electric, to be installed by a competent electrician with the requisite professional qualifications in your jurisdiction. We accepts no liability for damage or expenses caused by the incorrect installation of the unit and/or third party accessories, parts or components, which may result in water leakage, electric shock or fire.**
- **Do not alter the unit. Consult a dealer or authorized technician for repairs. If alterations or repairs are not performed correctly, water leakage, electric shock, fire or explosion may result.**
- **The user should never attempt to repair the unit or transfer it to another location. If the unit is installed incorrectly, water leakage, electric shock, fire or explosion may result. If the outdoor unit must be repaired or moved, ask a dealer or a competent electrician with the requisite professional qualifications in your jurisdiction.**

1. Safety precautions

- **A protective zone is defined for the area close around the unit. See section "3. Protective zone".**
- **When carrying out work on the refrigerant circuit or working in the protected area, a competent electrician with the requisite professional qualifications must use only the specified and appropriate tools.**
- **After installation has been completed, the installer must check for refrigerant leaks by using a professional leak detector tool. If refrigerant leaks into the room and comes into contact with the flame of a heater, or portable cooking range, sparks, static electricity or objects with high surface temperature (>370°C), a fire or explosion will occur, and all persons in close or adjacent vicinity of the leak must be immediately advised to move away to a safe distance in order for the area to be checked by a professional.**
- **In the event of refrigerant leakage, to do as follows:**
  - Evacuate any people from the danger zone.
  - From a safe position, switch off the electricity supply for all system components.
  - Remove ignition sources from the danger zone.
  - Do not operate the unit until repairs are completed.
- **Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.**
- **The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).**
- **Do not pierce or burn.**
- **Be aware that refrigerants may not contain an odour.**
- **Pipe-work shall be protected from physical damage.**
- **The installation of pipe-work shall be kept to a minimum.**
- **Compliance with national gas regulations shall be observed.**
- **Keep any required ventilation openings clear of obstruction.**
- **Do not use low temperature solder alloy in case of brazing the refrigerant pipes.**
- **When the installer is performing brazing work, be sure to ventilate the room sufficiently.**
  Make sure that there are no hazardous or flammable materials nearby.
  When performing the work in a closed room, small room, or similar location, make sure that there are no refrigerant leaks before performing the work.
  If refrigerant leaks and accumulates, it may ignite.
- **The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.**
- **Keep gas-burning appliances, electric heaters, and other fire sources (ignition sources) away from the location where installation, repair, and other outdoor unit work will be performed.**
  If refrigerant comes into contact with a flame, a fire or explosion will occur.
- **Do not smoke during work and transportation.**
- **When carrying out work on the refrigerant circuit, take protective measures to prevent static discharges.**
- **All automatic air vents installed in indoor water circuits MUST be closed after the air is removed from the water circuit during commissioning.**

1. Safety precautions

1.1. Before installation

⚠ CAUTION:

- **Do not use the unit in an unusual environment, choosing to do so many invalidate the unit's warranty. If the outdoor unit is installed in areas exposed to steam, volatile oil (including machine oil), or sulfuric gas, areas exposed to high salt content such as the seaside, or areas where the unit will be covered by snow, the performance can be significantly reduced and the internal parts can be damaged.**
- **Do not install the unit where combustible gases may leak, be produced, flow, or accumulate. If combustible gas accumulates around the unit, fire or explosion may result.**
- **Be sure to install it in an appropriate place according to section "2. Installation location and 3. Protective zone".**
- **The outdoor unit produces condensation during the heating operation. Make sure to provide drainage around the outdoor unit if such condensation is likely to cause damage.**
- **When drain piping is necessary, the condensate drain must not be connected to the waste water directly.**
- **When installing the unit in a hospital or communications office, be prepared for noise and electronic interference. Inverters, home appliances, high-frequency medical equipment, and radio communications equipment can cause the outdoor unit to malfunction or breakdown. The outdoor unit may also affect medical equipment, disturbing medical care, and communications equipment, harming the screen display quality.**
- **When the unit is running, vibrations or the noise of refrigerant running may be heard from the extension piping. Try to avoid installing the piping to thin walls, etc. as much as possible and provide sound insulation with the piping cover, etc.**

1.2. Before installation (relocation)

⚠ CAUTION:

- **Be extremely careful when transporting or installing the units. Two or more persons are needed to handle the unit, as it weighs 20 kg or more. Do not grasp the packaging bands. Wear protective gloves to remove the unit from the packaging and to move it, as you can injure your hands on the fins or the edge of other parts.**
- **Be sure to safely dispose of the packaging materials. Packaging materials, such as nails and other metal or wooden parts may cause stabs or other injuries.**
- **The base and attachments of the outdoor unit must be periodically checked for looseness, cracks or other damage. If such defects are left uncorrected, the unit may fall down and cause damage or injuries.**
- **Do not clean the outdoor unit with water. Electric shock may result.**

1.3. Before electric work

⚠ CAUTION:

- **Be sure to install circuit breakers. If not installed, electric shock may result.**
- **For the power lines, use standard cables of sufficient capacity. Otherwise, a short circuit, overheating, or fire may result.**
- **When installing the power lines, do not apply tension to the cables. If the connections are loosened, the cables can snap or break and overheating or fire may result.**
- **Be sure to ground the unit. Do not connect the ground wire to gas or water pipes, lightning rods, or telephone grounding lines. If the unit is not properly grounded, electric shock may result.**
- **Use circuit breakers (ground fault interrupter, isolating switch (+B fuse), and molded case circuit breaker) with the specified capacity. If the circuit breaker capacity is larger than the specified capacity, breakdown or fire may result.**

1.4. Before starting the test run

⚠ CAUTION:

- **Turn on the main power switch more than 12 hours before starting operation. Starting operation just after turning on the power switch can severely damage the internal parts. Keep the main power switch turned on during the operation season.**
- **Before starting operation, check that all panels, guards and other protective parts are correctly installed. Rotating, hot, or high voltage parts can cause injuries.**
- **Do not touch any switch with wet hands. Electric shock may result.**
- **Do not touch the refrigerant pipes with bare hands during operation. The refrigerant pipes are hot or cold depending on the condition of the flowing refrigerant. If you touch the pipes, burns or frostbite may result.**
- **After stopping operation, be sure to wait at least five minutes before turning off the main power switch. Otherwise, water leakage or breakdown may result.**

1.5. Using R290 refrigerant outdoor units

⚠ CAUTION:

- **Servicing shall be performed only as recommended by the manufacturer.**
- **Do not use refrigerant other than R290 refrigerant. If another refrigerant is used, the chlorine will cause the oil to deteriorate.**
- **Use the following tools specifically designed for use with R290 refrigerant. The following tools are necessary to use R290 refrigerant. Contact your nearest dealer for any questions. If incorrect tools are used, a fire or explosion will occur.**

Tools (for R290)	
Gauge manifold	Vacuum pump
Charge hose	Vacuum pump adapter
Gas leak detector	Electronic refrigerant charging scale

- **Be sure to use the correct tools. If dust, debris, or moisture enters the refrigerant lines, refrigeration oil deterioration may result.**
- **Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.**

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- **Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating systems, (1) to (5) shall be completed prior to conducting work on the systems.**

  (1) All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out.
  Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

  (2) The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

  (3) If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand.
  Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

  (4) No person carrying out work in relation to a refrigeration system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. “No Smoking” signs shall be displayed.

  (5) Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

- **Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer’s maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer’s technical department for assistance.**
  The following checks shall be applied to installations using flammable refrigerants:
  - The charge size is in accordance with the room size within which the refrigerant containing parts are installed.
  - The ventilation machinery and outlets are operating adequately and are not obstructed.
  - Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.
  - Refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being corroded.
- **Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.**
  Initial safety checks shall include that:
  - capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
  - no live electrical components and wiring are exposed while charging, recovering or purging the system;
  - there is continuity of earth bonding.
- **During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.**

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- **Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.**
  Ensure that the apparatus is mounted securely.
  Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres.
  Replacement parts shall be in accordance with the manufacturer's specifications.
- **Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.**
  Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.
  Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.
- **Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or pumps.**
- **Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks.**
  A halide torch (or any other detector using a naked flame) shall not be used.
- **Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)**
  Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% maximum) is confirmed.
  Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipework.
  If a leak is suspected, all naked flames shall be removed/extinguished.
  If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.
  For appliances containing flammable refrigerants, oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

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- **When breaking into the refrigerant circuit to make repairs – or for any other purpose conventional procedures shall be used. However, for flammable refrigerants it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:**
  - remove refrigerant
  - purge the circuit with inert gas
  - evacuate
  - purge again with inert gas
  - open the circuit by cutting.

  The refrigerant charge shall be recovered into the correct recovery cylinders. For appliances containing flammable refrigerants, the system shall be "flushed" with OFN to render the unit safe. This process may need to be repeated several times.

  Compressed air or oxygen shall not be used for purging refrigerant systems.

  For appliances containing flammable refrigerants, flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place.

  Ensure that the outlet for the vacuum pump is not close to any ignition sources and that ventilation is available.
- **In addition to conventional charging procedures, the following requirements shall be followed:**
  - Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
  - Cylinders shall be kept upright.
  - Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
  - Label the system when charging is complete (if not already).
  - Extreme care shall be taken not to overfill the refrigeration system.

  Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leaktested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.
- **Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.**

  a) Become familiar with the equipment and its operation.
  b) Isolate system electrically.
  c) Before attempting the procedure, ensure that:
  - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
  - all personal protective equipment is available and being used correctly;
  - the recovery process is supervised at all times by a competent person;
  - recovery equipment and cylinders conform to the appropriate standards.

  d) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
  e) Make sure that cylinder is situated on the scales before recovery takes place.
  f) Start the recovery machine and operate in accordance with manufacturer's instructions.
  g) Do not overfill cylinders. (No more than 80 % volume liquid charge).
  h) Do not exceed the maximum working pressure of the cylinder, even temporarily.
  i) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
  j) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and check.

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- **Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing flammable refrigerants, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.**
- **When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely. When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge are available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.**
  The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order.

Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.
The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders. If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

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1.6. Before temporarily decommissioning

⚠ CAUTION:

- **If there is a risk of frozen damage, drain the heating water from the unit.**

1.7. Before disposal

⚠ CAUTION:

- **The unit needs to be treated according to WEEE. Be sure to observe the following.**
- **Do not dispose of the unit with the household waste.**
- **If the unit is disposed, hand in the unit to a collection center for waste electrical or electronic equipment or to a recycler authorised by manufacturer.**
- **Dispose of the unit in an appropriate way according to the laws and ordinances of each country.**

2. Installation location

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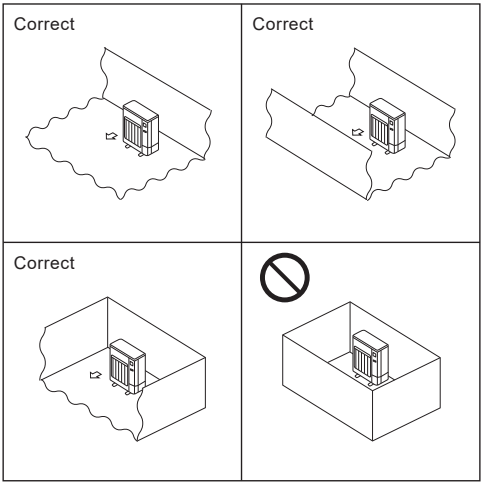
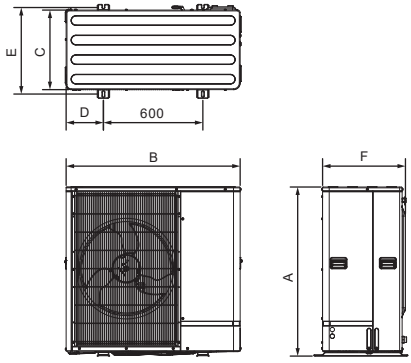


Fig. 2-1



(mm)

Models	A	B	C	D	E	F
50	1020	1050	480	225	520	500
60	1020	1050	480	225	520	500
80	1020	1050	480	225	520	500

Fig. 2-2

2.1. Choosing the outdoor unit installation location

○ R290 is heavier than air—as well as other refrigerants—so tends to accumulate at the base (in the vicinity of the floor). If R290 accumulates around base, it may reach a flammable concentration in case room is small. To avoid ignition, maintaining a safe work environment is required by ensuring appropriate ventilation. If a refrigerant leak is confirmed in a room or an area where there is insufficient ventilation, refrain from using of flames until the work environment can be improved by ensuring appropriate ventilation.

- Avoid locations exposed to direct sunlight or other sources of heat.
- Select a location from which noise emitted by the unit will not inconvenience neighbors.
- Select a location permitting easy wiring and pipe access to the power source and indoor unit.
- Avoid locations where combustible gases may leak, be produced, flow, or accumulate.
- Note that water may drain from the unit during operation.
- Select a level location that can bear the weight and vibration of the unit.
- Avoid locations where the unit can be covered by snow. In areas where heavy snow fall is anticipated, special precautions such as raising the installation location or installing a hood on the air intake must be taken to prevent the snow from blocking the air intake or blowing directly against it. This can reduce the airflow and a malfunction may result.
- Avoid locations exposed to oil, steam, or sulfuric gas.
- Use the transportation handles of the outdoor unit to transport the unit. If the unit is carried from the bottom, hands or fingers may be pinched.
- Refrigerant pipes connection shall be accessible for maintenance purposes.

○ Install outdoor units in a place where at least one of the four sides is open, and in a sufficiently large space without depressions. (Fig. 2-1)

- Define a protective zone close around the unit according to section “3. Protective zone”.

⚠ CAUTION:

- **Perform grounding.**
  Do not connect the ground wire to a gas pipe, water pipe arrester or telephone ground wire. Defective grounding could cause an electric shock.
- **Do not install the unit in a place where an inflammable gas leaks.**
  If gas leaks and accumulates in the area surrounding the unit, it could cause an explosion.
- **Install a ground leakage breaker depending on the installation place (where it is humid).**
  If a ground leakage breaker is not installed, it could cause an electric shock.
- **Perform the drainage/piping work securely according to the Installation Manual.**
  If there is a defect in the drainage/piping work, water could drop from the unit and household goods could be wet and damaged.

2.2. Outline dimensions (Outdoor unit) (Fig. 2-2)

2. Installation location

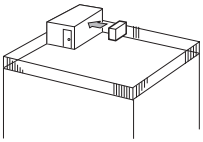


Fig. 2-3

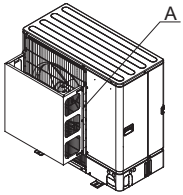


Fig. 2-4

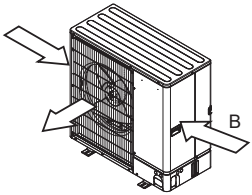


Fig. 2-5

2.3. Ventilation and service space

2.3.1. Windy location installation

When installing the outdoor unit on a rooftop or other location unprotected from the wind, situate the air outlet of the unit so that it is not directly exposed to strong winds. Strong wind entering the air outlet may impede the normal airflow and a malfunction may result.

The following shows three examples of precautions against strong winds.

(1) Face the air outlet towards the nearest available wall 35 cm away from the wall. (Fig. 2-3)

(2) Install an air guide if the unit is installed in a location where strong winds from a typhoon, etc. may directly enter the air outlet. (Fig. 2-4)
A: Air Protect Guide

(3) Position the unit so that the air outlet blows perpendicularly to the direction of the wind. (Fig. 2-5)
B: Wind direction

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2. Installation location

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2.3.2. When installing a single outdoor unit

Minimum dimensions are as follows, except for Max., meaning Maximum dimensions, indicated.

Refer to the figures for each case.

(1) Obstruction or closed surface at rear only (Fig. 2-6)

(2) Obstructions or closed surfaces at rear and above only (Fig. 2-7)

- Do not install an air outlet guide for upward airflow.

(3) Obstructions or closed surfaces at rear and sides only (Fig. 2-8)

(4) Obstruction or closed surface at front only (Fig. 2-9)

(5) Obstructions or closed surfaces at front and rear only (Fig. 2-10)

(6) Obstructions or closed surfaces at rear, sides, and above only (Fig. 2-11)

- Do not install an air outlet guide for upward airflow.

2.3.3. When installing multiple outdoor units

Leave a space of no less than 50 mm between the units.

Refer to the figures for each case.

(1) Obstruction or closed surface at rear only (Fig. 2-12)

(2) Obstructions or closed surfaces at rear and above only (Fig. 2-13)

- No more than 3 units must be installed side by side. In addition, leave space as shown.

C: Space (Fig. 2-13)

- Do not install air outlet guides for upward airflow.

(3) Obstruction or closed surface at front only (Fig. 2-14)

(4) Obstructions or closed surfaces at front and rear only (Fig. 2-15)

(5) Single parallel unit arrangement (Fig. 2-16)

- When using air outlet guides installed for upward airflow, the distance between the frontal faces of the units should be no less than 500 mm.

(6) Multiple parallel unit arrangement (Fig. 2-17)

- When using air outlet guides installed for upward airflow, the distance between the frontal faces of the units should be no less than 1000 mm.

(7) Stacked unit arrangement (Fig. 2-18)

- The units can be stacked up to two units high.
- No more than 2 stacked units must be installed side by side. In addition, leave space as shown.

D: Space (Fig. 2-18)

UNIT : mm

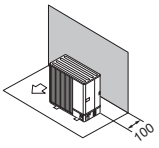


Fig. 2-6

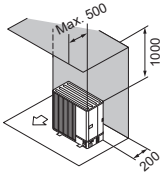


Fig. 2-7

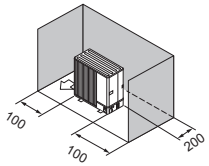


Fig. 2-8

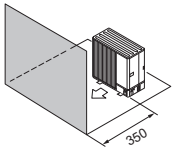


Fig. 2-9

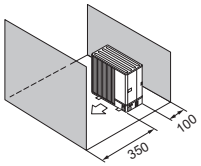


Fig. 2-10

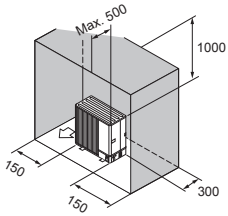


Fig. 2-11

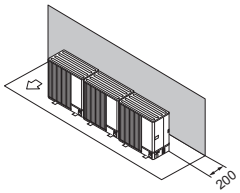


Fig. 2-12

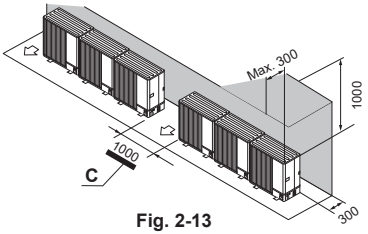


Fig. 2-13

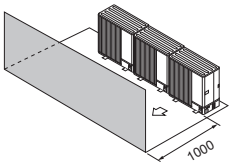


Fig. 2-14

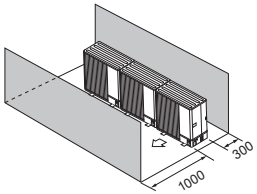


Fig. 2-15

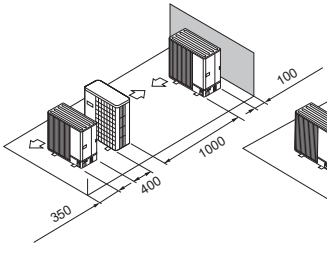


Fig. 2-16

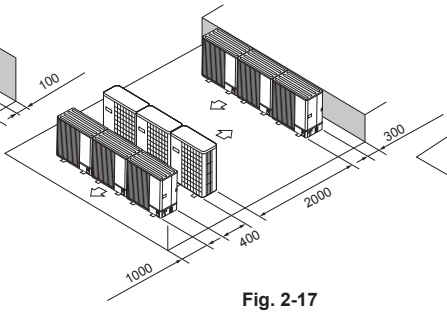


Fig. 2-17

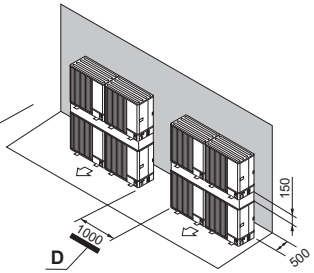


Fig. 2-18

2. Installation location

○ 2.4. An enclosed installation space

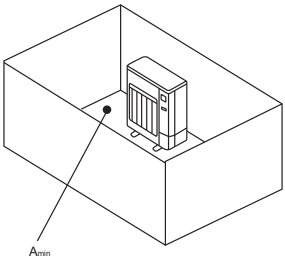
⚠ CAUTION:

If despite the instructions delineated in section “1. Safety precautions” of this Installation Manual you elect to install a unit in a space where all four sides are blocked and/or there are obstructions, you do so of your own risk and volition. Mitsubishi Electric does not warrant or represent the functionality; specification; quality; accuracy; or output deriving from any such unit installed in such a way and shall not be liable for any resulting cost or damage. In the event you still choose to install the unit(s) in such a space, we recommend that you accord with one of the following situations (A, B or C) below, to increase the likelihood of the unit’s function in accordance with its specification.

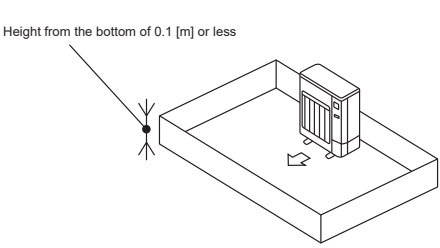
Note: The following recommended Situations are provided solely for the installer to consider safe operations, and do not warrant or guarantee the unit performance against its specification.

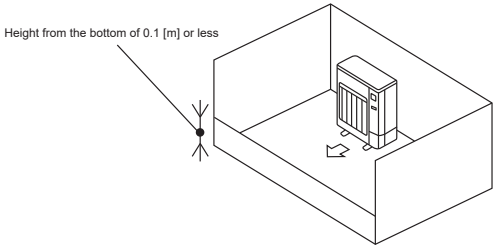
A) Secure sufficient installation space (minimum installation area A_{min}).
Install in a space with an installation area of A_{min} or more, corresponding to refrigerant quantity M (factory-charged refrigerant + locally added refrigerant).

M [kg]	A_{min} [m²]
0.6	44
1.0	72
1.5	108
2.0	143
2.5	179
3.0	215
3.5	250
4.0	286
4.5	322
5.0	358

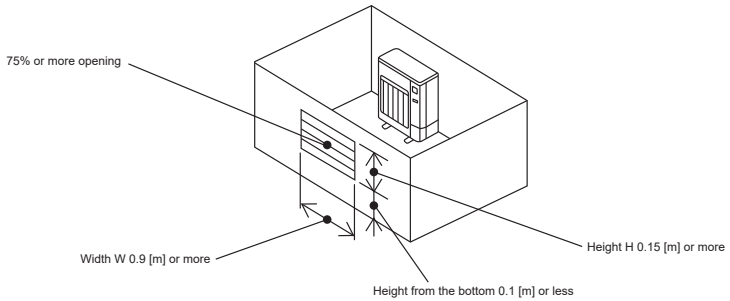


B) Install in a space with a depression height of ≤ 0.1 [m].





C) Create an opening in the closed face in front of the unit to enable ventilation in the area, ensuring to follow all professional safety instructions and equipment requirements when making the opening through drilling or otherwise.
Make sure that the width of the open area is 0.9 [m] or more and the height of the open area is 0.15 [m] or more.
However, the height from the bottom of the installation space to the bottom edge of the open area should be 0.1 [m] or less.
Open area should be 75% or more opening.



Note: This countermeasure is for keeping safety and specification is not guaranteed.

3. Protective zone

⚠ CAUTION:

The unit contains R290 refrigerant which is highly flammable. Great care must be taken when installing and servicing the unit which must be installed/serviced by a competent electrician, with the requisite professional qualifications to install this unit in your jurisdiction. In the event of a refrigerant leak, the installer and/or person in possession of the unit must ensure that no person is endangered outdoors or in adjacent buildings and no refrigerant has the potential to travel from the unit into the building and drainage systems. If you are concerned about a possible refrigerant leak from your unit, please contact your installer/supplier immediately or contact Mitsubishi Electric in your region directly for more information.

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A protective zone must be maintained around the area closest to the unit. See shaded in Fig. 3-1.

⚠ WARNING:

- **There must not be any building openings, entrance to the basement, grooves or entrance into the waste-water system. (such as windows, doors, ventilation openings or similar opening, flat-roof windows, light shafts, subsidence or depressions in the ground, pump shafts, inlets in sewers and waste water shafts, downpipes etc.)**
- **The protective zone must not extend to adjacent buildings or public traffic areas. (such as property boundaries or neighboring properties, footpaths and driveways)**
- **Ignition sources must not be present in the protective zone, either permanently or for a short period of time. (such as open flame, electrical systems, sockets, lamps, light switches, electrical house connections, sparking tools, objects with high surface temperatures of 370°C or higher)**

Protective zone

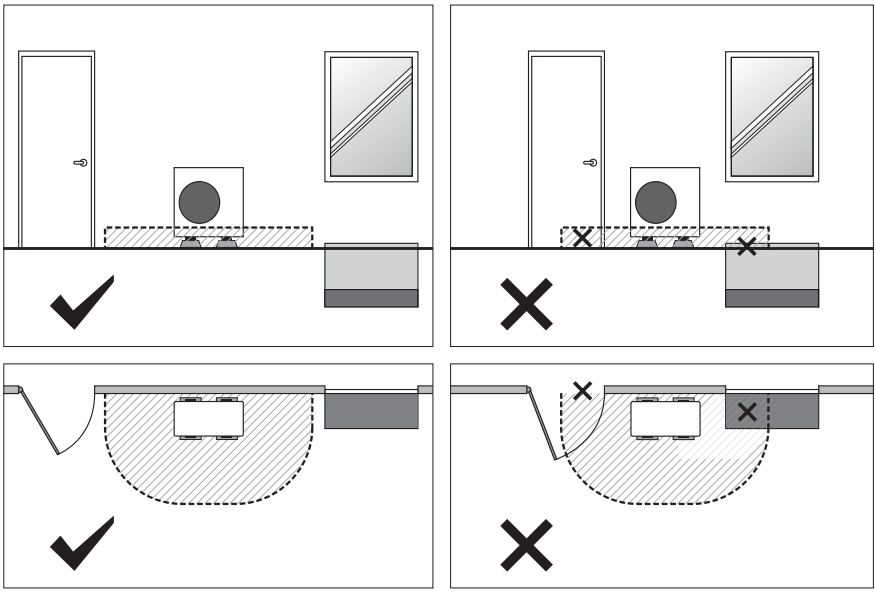


Fig. 3-1

3. Protective zone

- **Specific dimensions of the protective zone are specified for each installation condition. Refer to the figures for each case.**

(1) When installed in a location with an open around (Fig. 3-2)

Define the protective zone as follows:

- 1 m around of the unit
- 0.3 m from the ground.

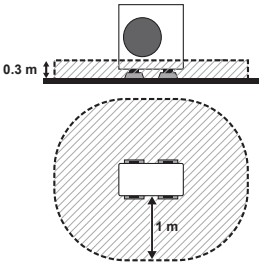


Fig. 3-2

(2) When installed in a location with 3 surfaces opened (in front of a building wall) (Fig. 3-3)

Define the protective zone as follows:

- 1 m to the sides and to the front of the unit
- the rear of the unit to the wall
- 0.3 m from the ground.

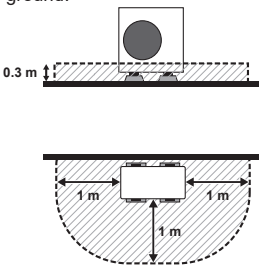


Fig. 3-3

(3) When installed in a location with 2 surfaces opened (where the distance between one side of the unit and the wall is less than 1 m, e.g. at the corner of a building wall) (Fig. 3-4)

Define the protective zone as follows:

- 1 m to the open side of the unit (A)
- 2.5 m to the front of the unit
- from the side of the unit to the wall (B)
- the rear of the unit to the wall
- 0.3 m from the ground.

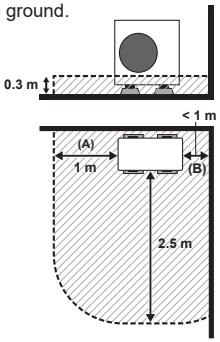


Fig. 3-4

(4) When installed in a location where only the front opened (building walls on both sides)
Where the distance between both sides of the unit and the wall is more than 1 m, define the protective zone as follows: (Fig. 3-5)
- 1 m to the sides and to the front of the unit
- the rear of the unit to the wall
- 0.3 m from the ground.

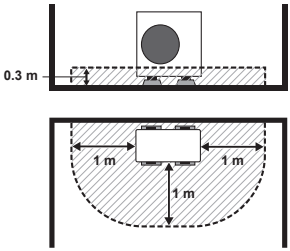


Fig. 3-5

Where the distance between both sides of the unit and the wall is less than 1 m, define the protective zone as follows: (Fig. 3-6)
- from the both sides of the unit to the wall
- 2.5 m to the front of the unit
- the rear of the unit to the wall
- 0.3 m from the ground.

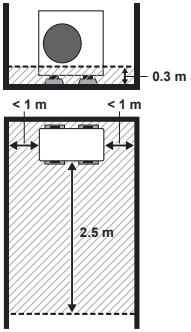
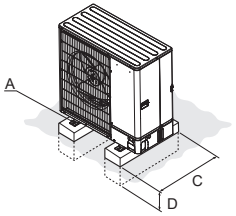
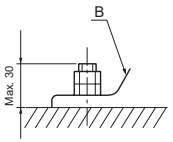


Fig. 3-6

Where the distance between one side of the unit and the wall is less than 1 m, same conditions as shown in Fig. 3-4 apply.

4. Installing the outdoor unit





A: M10 (3/8") bolt
B: Base
C: As long as possible.
D: Set deep in the ground

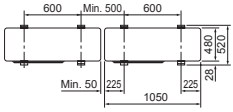


Fig. 4-1

(mm)

- Be sure to install the unit in a sturdy, level surface to prevent rattling noises during operation. (Fig. 4-1)

<Foundation specifications>

Foundation bolt	M10 (3/8")
Thickness of concrete	120 mm
Length of bolt	70 mm
Weight-bearing capacity	320 kg

- Make sure that the length of the foundation bolt is within 30 mm of the bottom surface of the base.
- Secure the base of the unit firmly with four-M10 foundation bolts in sturdy locations.

Installing the outdoor unit

- In addition to the unit base, use the installation holes on the back of the unit to attach wires, etc., if necessary to install the unit. Use self-tapping screws (ø5 × 15 mm or less) and install on site.

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⚠ WARNING:

- **The unit must be securely installed on a structure that can sustain its weight. If the unit is mounted on an unstable structure, it may fall down and cause damage or injuries.**
- **The unit must be installed according to the instructions in order to minimize the risk of damage from earthquakes, typhoons, or strong winds. An incorrectly installed unit may fall down and cause damage or injuries.**
- **Be sure to install the unit according to section "2. Installation location and 3. Protective zone".**
- **There must be no ignition sources in the protective zone.**
- **Take care that the tools used and work clothes do not become a source of ignition.**
- **The area shall be checked by the installer for refrigerant leak with a refrigerant detector prior to and during work in the protective zone.**
- **In the event of refrigerant leakage, to do as follows:**
  - Evacuate any people from the danger zone.
  - From a safe position, switch off the electricity supply for all system components.
  - Remove ignition sources from the danger zone.
  - Do not operate the unit until repairs are completed.
- **Wear protective equipment when touching the bottom of the outdoor unit.**
  Failure to do so could cause injuries.

⚠ CAUTION:

- **Install be unit on a rigid structure to prevent excessive operation sound or vibration.**

5. Drainage piping work

Outdoor unit drainage pipe connection

When drain piping is necessary, use the drain socket or the drain pan (option).

	WZ50	WZ60	WZ80
Drain socket	PAC-SG61DS-E		
Drain pan	PAC-SJ83DP-E		

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⚠ WARNING:

- **When drain piping is necessary, the condensate drain must not be connected directly, but e.g. via a siphon to the waste water, rainwater or drainage system.**

6. Water piping work

6.1. Water piping connection (Fig. 6-1)

- Connect the water pipes to the outlet and inlet pipes.
  (Parallel male screw for 1-inch water pipe (ISO 228/1-G1B))
- Inlet and outlet pipes position is shown on the Fig. 6-1.
- Install the hydraulic filter at the water intake.
- Maximum allowable torque at the water piping connection is 50 N•m.
- Use 2 spanners to tighten piping connections.
- Check if water leaks after installation.
- Inlet water gauge pressure must be between 0-0.3 MPa.

Note:

- **The water velocity in pipes should be kept within certain limits of material to avoid erosion, corrosion and excessive noise generation. Be aware, and take care of, that local velocities in small pipes, bends and similar obstructions can exceed the values above.**
  e.g.) Copper : 1.5 m/s
- **When connecting metal pipes made of different materials, be sure to insulate the joint to prevent electrolytic etching.**
- **Set up a field system so that the inlet water temperature and water flow rate can be within the allowable range specified in our technical data, etc.**
  If the unit is used out of the allowable range, the parts of unit might be damaged.
- **All automatic air vents installed in indoor water circuits MUST be closed after the air is removed from the water circuit during commissioning.**

6.2. Water quality condition

- The water in a system should be clean and with a pH value of 6.5-8.0.
- The followings are the maximum values;
  Calcium : 100 mg/L
  Chlorine : 100 mg/L
  Iron/manganese : 0.5 mg/L

[Fig. 6-1]
A: Water inlet
B: Water outlet

6.3. Minimum water quantity

Refer to the indoor unit Installation Manual.

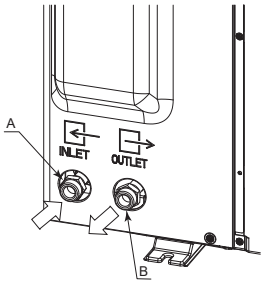

Fig. 6-1

Note: Make sure to perform the frozen prevention measure for water pipe system. (Water piping insulation, back-up pump system, using of a certain % ethylene glycol instead of normal water)
Insulate the water piping properly. The performance can be poor if the insulation is insufficient.

⚠ WARNING:

As the outlet water temperature can reach 75°C at maximum, do not touch the water piping directly with a bare hand.

In addition to annual servicing it is necessary to replace or inspect some parts after a certain period of system operation. Please see tables below for detailed instructions. Replacement and inspection of parts should always be done by a competent person with relevant training and qualifications.

Note:

Parts which require regular inspection

Parts	Check every	Possible failures
Pressure relief valve (3 bar)	1 year (turning the knob manually)	PRV would be fixed and expansion vessel would burst

Parts which require regular replacement

Parts	Replace every	Possible failures
Pressure relief valve (PRV) Air Separator	6 years	Water leakage

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6. Water piping work

6.4. Available range (Water flow rate, return water temp.)

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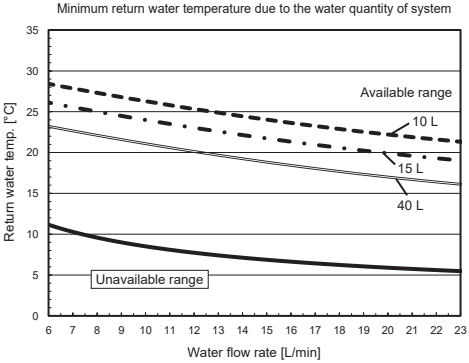
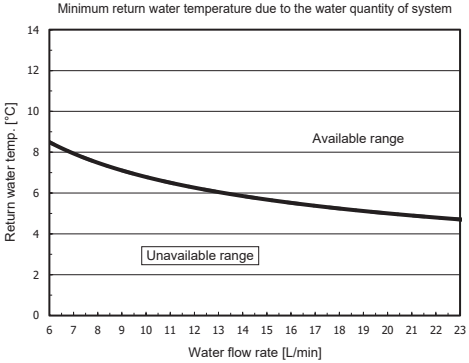
■ **Heating**



■ **Cooling**

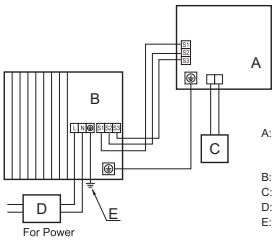


Note:
Be sure to avoid the unavailable range during defrosting.
Otherwise, the outdoor unit is insufficiently defrosted and/or the heat exchanger of the indoor unit may freeze.

7. Electrical work

7.1. Outdoor unit (Fig. 7-1, Fig. 7-2)

(1) Remove the service panel.
(2) Wire the cables referring to the Fig. 7-1 and the Fig. 7-2.



A: Indoor unit
(Interface unit/
Flow temp. controller)
B: Outdoor unit
C: Remote controller
D: Main switch (Earth leakage breaker)
E: Earth

Fig. 7-1

■ **Single phase**

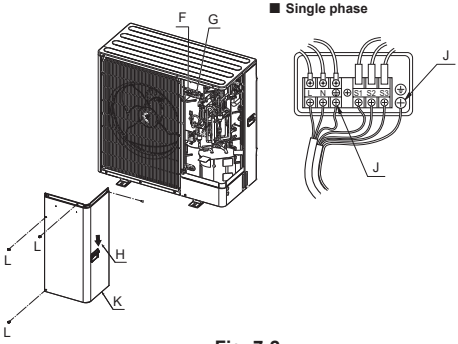


Fig. 7-2

F: Terminal block
G: Indoor/Outdoor connection terminal block (S1, S2, S3)
H: Service panel
J: Earth terminal
K: Wire the cables so that they do not contact the center of the service panel.
L: Hexalobular internal screws

⚠ CAUTION:

Be sure to install N-Line. Without N-Line, it could cause damage to unit.

⚠ WARNING:

- **Do not damage the refrigerant circuit otherwise refrigerant may leak.**
- **Be sure to check for refrigerant leakage with a detector before turning on the power. Never turn on the power if there is a refrigerant leak.**

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7. Electrical work

7.2. Field electrical wiring

Outdoor unit model			WZ50	WZ60	WZ80
Outdoor unit power supply			~/N (single), 50 Hz, 230 V	~/N (single), 50 Hz, 230 V	~/N (single), 50 Hz, 230 V
Outdoor unit input capacity Main switch (Breaker)		*1	16 A	16 A	25 A
Wiring Wire No. × size (mm^2)	Outdoor unit power supply		3 × Min. 1.5	3 × Min. 2.5	3 × Min. 2.5
	Indoor unit-Outdoor unit	*2	3 × 1.5 (Polar)	3 × 1.5 (Polar)	3 × 1.5 (Polar)
	Indoor unit-Outdoor unit earth	*2	1 × Min. 1.5	1 × Min. 1.5	1 × Min. 1.5
	Remote controller-Indoor unit	*3	2 × 0.3 (Non-polar)	2 × 0.3 (Non-polar)	2 × 0.3 (Non-polar)
Circuit rating	Outdoor unit L-N (single) Outdoor unit L1-N, L2-N, L3-N (3 phase)	*4	230 VAC	230 VAC	230 VAC
	Indoor unit-Outdoor unit S1-S2	*4	230 VAC	230 VAC	230 VAC
	Indoor unit-Outdoor unit S2-S3	*4	28 VDC	28 VDC	28 VDC
	Remote controller-Indoor unit	*4	12 VDC	12 VDC	12 VDC

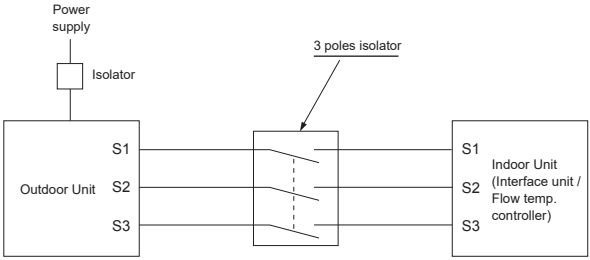
*1. A breaker with at least 3.0 mm contact separation in each poles shall be provided. Use earth leakage breaker (NV).
Make sure that the current leakage breaker is one compatible with higher harmonics.
Always use a current leakage breaker that is compatible with higher harmonics as this unit is equipped with an inverter.
The use of an inadequate breaker can cause the incorrect operation of inverter.

*2. Max. 45 m
If 2.5 mm^2 used, Max. 50 m
If 2.5 mm^2 used and S3 separated, Max. 80 m

*3. The 10 m wire is attached in the remote controller accessory.

*4. The figures are NOT always against the ground.
S3 terminal has 28 VDC against S2 terminal. However between S3 and S1, these terminals are NOT electrically insulated by the transformer or other device.

Notes:
1. **Wiring size must comply with the applicable local and national codes.**
2. **Power supply cables and the cables between Interface unit/Flow temp. controller and outdoor unit shall not be lighter than polychloroprene sheathed flexible cables. (Design 60245 IEC 57)**
3. **Be sure to connect the cables between Interface unit/Flow temp. controller and outdoor unit directly to the units (no intermediate connections are allowed).**
   Intermediate connections may result in communication errors. If water enters at the intermediate connection point, it may cause insufficient insulation to ground or a poor electrical contact.
   (If an intermediate connection is necessary, be sure to take measures to prevent water from entering the cables.)
4. **Install an earth longer than other cables.**
5. **Do not construct a system with a power supply that is turned ON and OFF frequently.**
6. **Use self-extinguishing distribution cables for power supply wiring.**
7. **Properly route wiring so as not to contact the sheet metal edge or a screw tip.**



⚠ WARNING:

- **In case of A-control wiring, there is high voltage potential on the S3 terminal caused by electrical circuit design that has no electrical insulation between power line and communication signal line. Therefore, please turn off the main power supply when servicing. And do not touch the S1, S2, S3 terminals when the power is energized. If isolator should be used between indoor unit and outdoor unit, please use 3-pole type.**

Never splice the power cable or the indoor-outdoor connection cable, otherwise it may result in a smoke, a fire or communication failure.

8. Test run

8.1. Before test run

► **After completing installation and the wiring and piping of the indoor and outdoor units, check for refrigerant leakage, looseness in the power supply or control wiring, wrong polarity, and no disconnection of one phase in the supply.**

► **Use a 500-volt megohmmeter to check that the resistance between the power supply terminals and ground is at least 1 MΩ.**

► **Do not carry out this test on the control wiring (low voltage circuit) terminals.**

⚠ WARNING:

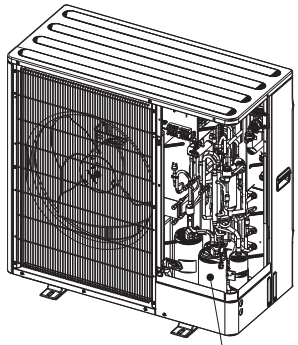
Do not use the outdoor unit if the insulation resistance is less than 1 MΩ.

Insulation resistance

After installation or after the power source to the unit has been cut for an extended period, the insulation resistance will drop below 1 MΩ due to refrigerant accumulating in the compressor. This is not a malfunction. Perform the following procedures.

If the unit is a PUZ-WZ80VAA, there are two compressors, and the following procedures shall be performed only on the compressor indicated in Fig. 8-1.

1. Remove the wires from the compressor and measure the insulation resistance of the compressor.
2. If the insulation resistance is below 1 MΩ, the compressor is faulty or the resistance dropped due the accumulation of refrigerant in the compressor.
3. After connecting the wires to the compressor, the compressor will start to warm up after power is supplied. After supplying power for the times indicated below, measure the insulation resistance again.
   If the unit is a PUZ-WZ80VAA, the only compressor that is warmed up is the one shown in Fig. 8-1.



Only this compressor
- perform procedures
- be warmed up

Fig. 8-1

   - The insulation resistance drops due to accumulation of refrigerant in the compressor. The resistance will rise above 1 MΩ after the compressor is warmed up for 4 hours.
     (The time necessary to warm up the compressor varies according to atmospheric conditions and refrigerant accumulation.)
   - To operate the compressor with refrigerant accumulated in the compressor, the compressor must be warmed up at least 12 hours to prevent breakdown.
4. If the insulation resistance rises above 1 MΩ, the compressor is not faulty.

⚠ CAUTION:

- **The compressor will not operate unless the power supply phase connection is correct.**
- **Turn on the power at least 12 hours before starting operation.**

- Starting operation immediately after turning on the main power switch can result in severe damage to internal parts. Keep the power switch turned on during the operational season.

► **The followings must be checked as well.**

- The outdoor unit is not faulty. LED1 and LED2 on the control board of the outdoor unit flash when the outdoor unit is faulty.

8.2. Test run

8.2.1. Using remote controller

Refer to the indoor unit Installation Manual.

Note :
Occasionally, vapor that is made by the defrost operation may seem as if smoke come up from the outdoor unit.

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9. System control

Set the refrigerant address using the DIP switch of the outdoor unit.

SW1 Function Setting

SW1 Setting	Refrigerant address
ON OFF 3 4 5 6 7	00
ON OFF 3 4 5 6 7	01
ON OFF 3 4 5 6 7	02
ON OFF 3 4 5 6 7	03
ON OFF 3 4 5 6 7	04
ON OFF 3 4 5 6 7	05

Note:

a) Up to 6 units can be connected.

b) Select one single model for all units.

c) For Dip switch setting for indoor unit, refer to the indoor unit's Installation Manual.

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10. Handing over to the user

- Explain the following items to the end user.
- How the unit operates.
- The particular risks, the protective zone and rules of conduct that are associated with R290 refrigerant.
- How the unit is avoided from frozen damage when stopping the unit.
- Ask a dealer or an authorized technician to carry out work on the unit.
- Keep the Installation Manual and Operation Manual so that don't lose them.
- Recommend that regular maintenance be performed.
  Ask a dealer to perform it.

11. Inspection and maintenance

- Refer to the Service Manual for maintenance.

12. Repair and service

Repairs must be carried out in accordance with the Service Manual.

12.1. Preparing repair and service work on the refrigerant circuit

- Work on the refrigerant circuit with flammable refrigerant in safety group A3 may only be carried out by authorised heating contractors. These heating contractors must be trained in accordance with EN 378 Part 4 or IEC 60335-2-40 Annex HH.
- Work on electrical equipment may only be carried out by a qualified electrician.
- Use only spare parts authorized by the manufacturer.

⚠ WARNING:

- **Do not fill the unit with more refrigerant than the specified amount.**
  Failure to follow this instruction may result in unit failure or fire hazard.

13. Decommissioning

13.1. Temporarily decommissioning the unit

1. Switch off all of the isolators to which the unit is connected in the building.
2. Disconnect the unit from the power supply.
3. If there is a risk of frost damage, drain the heating water from the unit.

13.2. Permanently decommissioning the unit

Have a authorised heating contractor permanently decommission the unit.

14. Recycling and disposal

14.1. Disposing of the packaging

The competent person who installed the unit is responsible for the disposal of the packaging.
Dispose of the packaging correctly.
Observe all relevant regulations.

14.2. Disposing of the unit

Do not dispose of the unit with the household waste.
According to the laws and ordinances of each country, hand in the unit to a collection center for waste electrical or electronic equipment or to a recycler authorised by manufacturer.

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⚠ WARNING:

Refrigerant must only be released, recovered and disposed properly by an authorised competent person.

14.3. Transportation of the unit for disposal

⚠ WARNING:

- **Be sure to observe the following safety requirements when transporting the unit.**

(1) Do not use a source of ignition during transportation, which includes: naked flames, sparks, static electricity, objects with high surface temperature (>370°C).
- Do not smoke.
- Do not use the electric devices, heater, lights, etc.

Fig. 14-1

(2) Vehicles with ventilation in the cargo area should be used.
- Like below image.

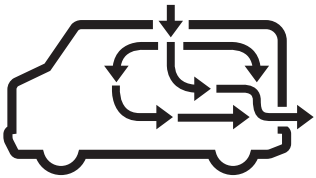

Fig. 14-2

- If vehicles are not equipped with a special ventilation system, fresh outside air intake mode and MAX fan volume operation are mandatory.

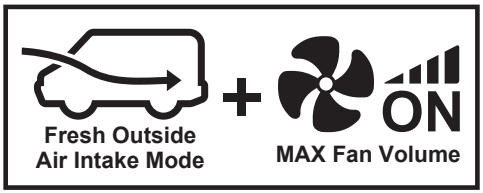

Fig. 14-3

(3) Be sure to carry the R290 detector and keep it working properly.

15. Specifications

Outdoor model		PUZ-WZ50VAA	PUZ-WZ60VAA	PUZ-WZ80VAA
Power supply	V / Phase / Hz	230 / Single / 50		
Dimensions (W × H × D)	mm	1050 × 1020 × 500		
Sound Power Level *1 (Heating)	dB(A)	56		58

*1 Measured under rated operation frequency.

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16. Serial number

■ The serial number is indicated on the SPEC NAME PLATE.