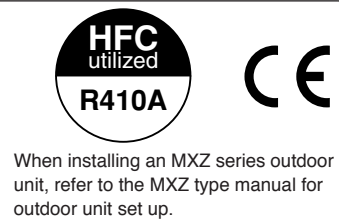


SPLIT-TYPE AIR CONDITIONERS

 Models
MZ-GB50VA
MUZ-GB50VA Series
 [FLARE CONNECTION TYPE]


When installing an MZ series outdoor unit, refer to the MZ2 type manual for outdoor unit set up.

1. THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR SAFETY

- Please provide an exclusive circuit for the air conditioner and do not connect other electrical appliances to it.
- Be sure to read "THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR SAFETY" before installing the air conditioner.
- Be sure to observe the cautions specified here as they include important items related to safety.
- The indications and meanings are as follows.

| WARNING | |
|---------|--|
| | Could lead to death, serious injury, etc. |
| | Could lead to serious injury in particular environments when operated incorrectly. |

- After reading this manual, be sure to keep it together with the OPERATING INSTRUCTIONS in a handy place on the customer's site.

DO NOT INSTALL THE UNIT BY YOURSELF (CUSTOMER)

Incomplete installation could cause injury due to fire, electric shock, the unit falling or leakage of water. Consult the dealer from whom you purchased the unit or special installer.

Install the unit securely in a place which can bear the weight of the unit. When installed in an insufficient strong place, the unit could fall causing injury.

Use the specified wires to connect the indoor and outdoor units securely and attach the wires firmly to the terminal block connecting sections so the stress of the wires is not applied to the sections. Incomplete connecting and fixing could cause fire.

Do not use intermediate connection of the power cord or the extension cord and do not connect many devices to one AC outlet. It could cause a fire or an electric shock due to contact, defective insulation, exceeding the permissible current, etc.

Check that the refrigerant gas does not leak after installation has completed. If refrigerant gas leaks indoors, and comes into contact with the fire of a fan heater, space heater, stove, etc., harmful substances will be generated.

Perform the installation securely referring to the installation manual. Incomplete installation could cause a personal injury due to fire, electric shock, the unit falling or leakage of water.

Perform electrical work according to the installation manual and be sure to use an exclusive circuit. If the capacity of the power circuit is insufficient or there is incomplete electrical work, it could result in a fire or an electric shock.

Attach the electrical cover to the indoor unit and the service panel to the outdoor unit securely. If the electrical cover of the indoor unit and/or the service panel in the outdoor unit are not attached securely, it could result in a fire or an electric shock due to dust, water, etc.

Be sure to use the part provided or specified parts for the installation work. The use of defective parts could cause an injury or leakage of water due to a fire or an electric shock.

Be sure to cut off the main power in case of setting up the indoor electronic control P.C. board or wiring works. It could cause an electric shock.

The appliance shall be installed in accordance with national wiring regulations.

When installing or relocating the unit, make sure that no substance other than the specified refrigerant (R410A) enters the refrigerant circuit. Any presence of foreign substance such as air can cause abnormal pressure rise or an explosion.

1

3. INSTALLATION DIAGRAM & ACCESSORIES

FLARED CONNECTIONS

- This unit has flared connections on both indoor and outdoor sides.
- Remove the outdoor units valve cover, then connect the pipe.
- Refrigerant pipes are used to connect the indoor and outdoor units.
- Be careful not to crush or bend the pipe in pipe bending.

| Pipe length | Limits | |
|-------------------|-----------|-----------|
| | 30 m max. | 15 m max. |
| Height difference | 15 m max. | |
| No. of bends | 10 max. | |

Refrigerant adjustment ... If pipe length exceeds 7 m, additional refrigerant (R410A) charge is required. (The outdoor unit is charged with refrigerant for pipe length up to 7 m.)

| Pipe length | Additional charge is required. | |
|-------------------------|--|---------------|
| | Up to 7 m | Exceeding 7 m |
| Refrigerant to be added | 20 g/m × (refrigerant piping length (m) - 7) | |

ACCESSORIES

Check the following parts before installation.

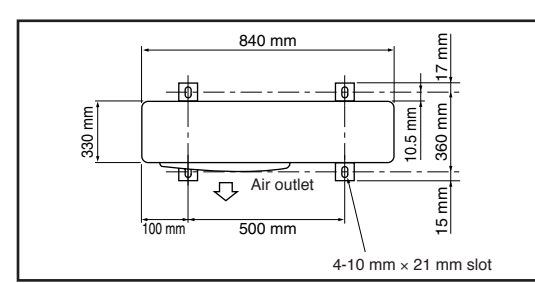
| Item | Quantity |
|---|----------|
| Installation plate | 1 |
| Installation plate fixing screw (4 × 25 mm) | 5 |
| Remote controller holder | 1 |
| Fixing screw for (3.5 × 16 mm (Black)) | 2 |
| Battery (AAA) for remote controller | 2 |
| Wireless remote controller | 1 |
| Felt tape (Used for left or left-rear piping) | 1 |

Outdoor unit

| | |
|---------------|---|
| Drain socket | 1 |
| Drain cap e33 | 2 |

PART TO BE PROVIDED AT YOUR SITE

| | |
|--|--------|
| Indoor/outdoor unit connecting wire (4-core 1.0 mm ²) | 1 |
| Extension pipe | 1 |
| Wall hole sleeve | 1 |
| Wall hole cover | 1 |
| Pipe fixing band (The quantity depends on the pipe length.) | 2 to 5 |
| Fixing screw for (4 × 20 mm (The quantity depends on the pipe length.)) | 2 to 5 |
| Piping tape | 1 |
| Putty | 1 |
| Drain hose (or soft PVC hose, 15 mm inner dia.) | 1 or 2 |
| Refrigeration oil | 1 |
| Power supply cord (See the table in 5-1 INDOOR/OUTDOOR UNIT CONNECTING WIRE CONNECTION for the cord size.) | 1 |



Note: When operating the air conditioner in low outside temperature, be sure to follow the instructions described below.

- Never install the outdoor unit in a place where its air inlet/outlet side may be exposed directly to wind.
- To prevent exposure to wind, install the outdoor unit with its air inlet side facing the wall.
- To prevent exposure to wind, it is recommended to install a baffle board on the air outlet side of the outdoor unit.

CAUTION

- **Earth the unit.** Do not connect the earth to a gas pipe, water pipe, lightning rod or telephone earth. Defective earthing 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 an earth leakage breaker depending on the installation place (Where it is humid).** If an earth 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 hazardous goods could be wet and damaged.
- **Fasten a flare nut with a torque wrench as specified in this manual.** When fastening too tight, a flare nut may broken after a long period and cause a leakage of refrigerant.

2. SELECTING THE INSTALLATION LOCATION

2-1 INDOOR UNIT

- Where airflow is not blocked.
- Where dry air spreads over the entire room.
- Maximum refrigerant piping length between indoor unit and outdoor unit is 30 m and the difference of height of both units is 15 m.
- Rigid wall without vibration.
- Where it is not exposed to direct sunshine.
- Where easily drained.
- At a distance 1 m or more away from your TV and radio. Operation of the air conditioner may interfere with radio or TV reception in areas where reception is weak. An amplifier may be required for the affected device.
- In a place as far away as possible from fluorescent and incandescent lights so the infrared remote control can operate the air conditioner normally.
- Where the air filter can be removed and replaced easily.

2-2 OUTDOOR UNIT

- Where it is not exposed to strong wind.
- Where airflow is good and strong.
- Where it is not exposed to rain and direct sunshine.
- Where neighbours are not annoyed by operation sound or hot air.
- Where rigid wall or support is available to prevent the increase of operation sound or vibration.
- Where there is no risk of combustible gas leakage.
- When installing the unit at a high level, be sure to fix the unit legs.
- Where it is at least 3 m away from the antenna of TV set or radio. Operation of the air conditioner may interfere with radio or TV reception in areas where reception is weak. An amplifier may be required for the affected device.
- Install the unit horizontally.
- Please install it in an area not affected by snowfall or blowing snow. In areas with heavy snow, please install a canopy, a pedestal and/or some baffle boards.

Note:

It is advisable to make a piping loop near outdoor unit so as to reduce vibration transmitted from there.

CAUTION

- Avoid the following places for installation where air conditioner trouble is liable to occur.
 - Where flammable gas could leak.
 - Where there is much machine oil.
 - Slightly places such as the seaside.
 - Where sulfide gas is generated such as a hot spring.
 - Where there is high-frequency or wireless equipment.

2-3 WIRELESS REMOTE CONTROLLER WIRING

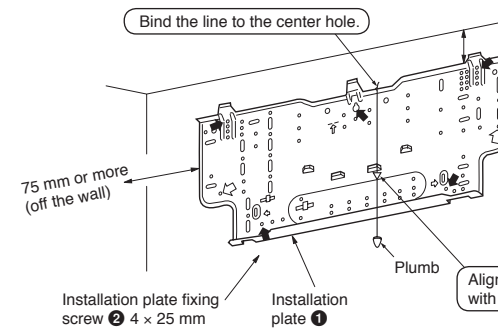
- Place of mounting.
 - Where it is easy to operate and easily visible.
 - Where children can not touch.
- Mounting.
 - Select a position about 1.2 m above the floor, check that signals from the remote controller are surely received by the indoor unit from that position ("beep" or "beep-beep" receiving tone sounds). After that, attach remote controller holder to a pillar or wall and set the wireless remote controller.

In rooms where inverter type fluorescent lamps are used, the signal from the wireless remote controller may not be received.

4. INDOOR UNIT INSTALLATION

4-1 FIXING OF INSTALLATION PLATE

- Find a structural material (such as a stud) in the wall and fix installation plate horizontally.



To prevent the installation plate from vibrating, be sure to fix the holes as indicated by the arrows.

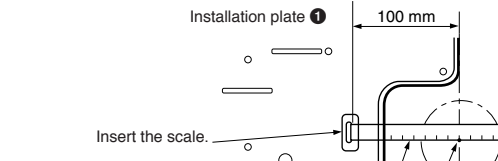
When bolts recessed in the concrete wall area to be utilized, secure the installation plate using 11 × 20 (11 × 20 wall hole (450 mm pitch)).

If the recessed bolt is too long, change it for a shorter one available in the market.

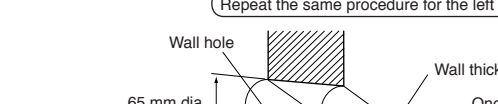
4-2 WALL HOLE DRILLING

- Determine the wall hole position.
- Drill a 65 mm hole so that its location can be lower than inside.
- Insert the wall hole sleeve.

Positioning of the holes on the wall



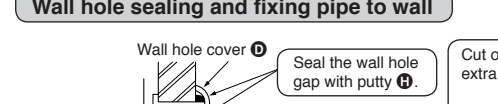
Align the scale with the line. Hole dia. 65 mm. Repeat the same procedure for the left hole.



Wall hole cover (Indoor side). Cut with 1 extra length. (Wall hole cross section).

Be sure to use wall hole sleeve to prevent the outdoor connecting wires from contacting with metal part in the wall and to prevent damage by rain as the wall is hollow.

Wall hole sealing and fixing pipe to wall. Seal the wall hole gap with putty. Fix the pipe to wall with pipe fixing band.



Indoor unit. Wall hole sleeve. Fixing screw. Never out the indoor and outdoor unit connecting wire and connect it to other wires. It may cause a fire.

4-3 INDOOR/OUTDOOR UNIT CONNECTING WIRE CONNECTION

- Use special room air conditioning circuit.

Indoor/outdoor unit connecting wire Specification Cable 4-core 1.0 mm², in conformity with Design 245 IEC 57.

CAUTION

Never out the indoor and outdoor unit connecting wire and connect it to other wires. It may cause a fire.

In rooms where inverter type fluorescent lamps are used, the signal from the wireless remote controller may not be received.

6. INDOOR/OUTDOOR UNIT CONNECTION FINISHING AND TEST RUN

INSTALLATION INFORMATION FOR THE AIR CONDITIONER WITH R410A REFRIGERANT

- This room air conditioner adopts an HFC refrigerant (R410A) which will never destroy the ozone layer.
- Pay particular attention to the following points, though the basic installation procedure is same as that for R22 air conditioners.
- As R410A has a working pressure approx. 1.6 times as high as that of R22, some special tools and piping parts / materials are required. (Refer to the table below.)
- Take sufficient care not to allow water and other contaminants to enter the R410A refrigerant during storage and installation, since it is more susceptible to contaminants than R22.
- For refrigerant piping, use clean, pressure-proof parts / materials specifically designed for R410A.
- Composition change may occur in R410A since it is a mixed refrigerant. When charging, charge liquid refrigerant to prevent composition change.

The following tools are required for R410A refrigerant. Some R22 tools can be substituted for R410A tools.

The diameter of the service port on the stop valve in outdoor unit has been changed to prevent any other refrigerant being charged into the unit. (Cap size has been changed from 7/16 UNF with 20 threads to 1/2 UNF with 20 threads.)

| R410A tools | Can R22 tools be used? | Description |
|-------------------|------------------------|---|
| Gauge manifold | No | R410A has high pressures beyond the measurement range of existing gauges. Port diameters have been changed to prevent any other refrigerant from being charged into the unit. |
| Charge hose | No | Use hose material and cap size have been changed to improve the pressure resistance. |
| Gas leak detector | No | Dedicated for HFC refrigerant. |
| Torque wrench | Yes | 1/4 |
| Flare tool | No | 1/2 |

Flare tool Yes: Clamp bar hole has been enlarged to reinforce the spring strength in the tool.

Flare gauge New: Provided for flaring work (to be used with R22 flare tool).

Vacuum pump adaptor New: Provided to prevent the back flow of oil. This adaptor enables you to use existing vacuum pumps.

Electronic scale for refrigerant charging New: It is difficult to measure R410A with a charging cylinder because the refrigerant bubbles due to high pressure and high-speed vaporization.

No: Not substitutable for R410A Yes: Substitutable for R410A

6-2 FLARING WORK

- Main cause of gas leakage is defect in flaring work. Carry out correct flaring work in the following procedure.

- **1) Pipe cutting**
 - Cut the copper pipe correctly with pipe cutter.

Good: Even length all around. Inside is shining without any scratches.

No good: Tilted. Uneven. Buried.

6-3 PIPE CONNECTION

- Note: Fasten a flare nut with a torque wrench as specified in the table below. When fastened too tight, a flare nut may broken after a long period and cause a leakage of refrigerant.
- Apply a thin coat of refrigeration oil on the seat surface of pipe.
- For connection first align the center, then tighten the first 3 to 4 turns of flare nut joint.
- Use tightening torque table below as a guideline for indoor unit side flare joint section, and tighten using two wrenches. Excessive tightening damages the flare section.

6-4 TEST RUN

- Before performing the test run, check for any wrong wiring.
- Wrong wiring prevents normal operation or results in blown fuse disabling operation.
- The test run can be started by pressing EMERGENCY OPERATION switch.
- When the EMERGENCY OPERATION switch is once pressed, the unit will start the test run (continuous operation) for 30 minutes.
- A thermostat does not work during this time. After 30 minutes the unit will start the EMERGENCY OPERATION at a fixed temperature setting of 24 °C in COOL MODE.
- Perform test run in the following procedure.

INSULATION AND TAPING

- Cover piping joints with pipe cover.
- For outdoor unit side, surely insulate every piping including valves.
- Using piping tape, apply taping starting from the entry of outdoor unit.
- Stop the end of piping tape with tape (with adhesive agent attached).
- When piping have to be arranged through ceiling, closet or where the temperature and humidity are high, wind additional commercially sold insulation for prevention of condensation.

4-4 AUTO RESTART FUNCTION

- These models are equipped with an auto restart function. If you do not want to use this function, please consult the service representative because the setting of the unit needs to be changed.
- When the indoor unit is controlled with the remote controller, the operation mode, the set temperature, and the fan speed are memorized by the indoor electronic control P.C. board. The auto restart function sets to work the moment the power has restored after power failure, then, the unit will restart automatically. If the unit is operated in "AUTO" mode before power failure, the operation mode (COOL, DRY or HEAT) is not stored in the memory. When the main power is turned on, the unit decides the operation mode by the initial room temperature at restart and starts operation again.

Operation

1. If the main power has been cut, the operation settings remain.
2. When three minutes have passed after power was restored, the unit will restart automatically according to the memory.

Note:

- The operation settings are memorized within 10 seconds have passed after the remote controller was operated with the power failure occurs while AUTO START/STOP timer is active, the timer setting is cancelled. As these models are equipped with an auto restart function, the air conditioner starts operating with timer cancelled at the same time that power is restored.
- If the unit has been off with the remote controller before power failure, the auto restart function does not work as the power before the power failure is off.
- To prevent breaker off due to the rush of starting current, systematize other home appliances not to turn on at the same time.

4-5 PIPE FORMING

- Place the drain hose below the refrigerant piping.
- Make sure that the drain hose is not heaved or snaked.
- Do not pull up the tape to apply the tape.
- When the drain hose passes the room, be sure to wrap insulation material (obtainable at a store) around it.
- Wrap the felt tape around the pipe and the drain hose, then put the pipe in the back space of the indoor unit.

CAUTION

- Use the indoor/outdoor unit connecting wire that meets the Standards to connect the indoor and outdoor units and fix the wire to the terminal block securely so that no external force is conveyed to the connecting section of the terminal block. Incomplete connection or fixing of the wire could result in a fire.
- Attach the VA clamp securely. If it is attached incorrectly, it could result in a fire or an electric shock due to dust, water, etc.

Loosen terminal screw. Indoor terminal block. Earth wire (green/yellow). Indoor/outdoor unit connecting wire (4-core 1.0 mm²). Outdoor terminal block.

Be careful not to make mis-wiring. Firmly tighten the terminal screws to prevent them from loosening. After tightening, pull the wires lightly to confirm that they do not move. If the connecting wire is incorrectly connected to the terminal block, the unit does not operate normally.

If an earth is incorrect, it may cause an electric shock. Make earth wire a little longer than the others. (more than 55 mm)

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FOR REAR, RIGHT OR DOWNWARD PIPING

- Pipe arrangement. Put the refrigerant piping and the drain hose together, then apply piping tape to them.
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FOR LEFT OR LEFT-REAR PIPING

- Pipe arrangement. Put the refrigerant piping and the drain hose together, then apply felt tape to them.
- Be careful not to make mis-wiring.
- Firmly tighten the terminal screws to prevent them from loosening.
- After tightening, pull the wires lightly to confirm that they do not move.
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