1. BEFORE INSTALLATION

1-1. THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR SAFETY
- Be sure to read "THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR SAFETY" before installing the air conditioner.
- Be sure to observe the warnings and cautions specified here as they include important items related to safety.
- After reading this manual, be sure to keep it together with the OPERATING INSTRUCTIONS for future reference.

**WARNING**
(Could lead to death, serious injury, etc.)
- Do not install the unit by yourself (user).
- Incorrect installation could cause fire, electric shock, injury due to the unit falling, or leakage of water. Consult the dealer or a qualified installer.
- Perform the installation securely referring to the installation manual.
- Incorrect installation could cause fire, electric shock, injury due to the unit falling, or leakage of water.
- When installing the unit, use appropriate protective equipment.
- Failure to do so could cause injury.
- Install the unit securely in a place which can bear the weight of the unit.
- If the installation location cannot bear the weight of the unit, the unit could fall causing injury.
- Perform electrical work according to the installation manual and be sure to use an exclusive circuit. Do not connect other electrical appliances to the 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.
- Secure the unit correctly.
- Do not connect the earth to a gas pipe, water pipe, lightning rod or telephone earth. Defective earthing could cause electric shock.
- Do not damage the wires by applying excessive pressure with parts or screws.
- Damaged wires could cause fire.
- Be sure to cut off the main power in case of setting up the indoor P.C. board or wiring works.
- Failure to do so could cause electric shock.
- Use the specified wires to connect the indoor and outdoor units. Do not use the wires firmly to the terminal block connecting sections so the stress of the wires is not applied to the sections.

**CAUTION**
(Could lead to serious injury in particular environments when operated incorrectly.)
- Install an earth leakage breaker depending on the installation place.
- If an earth leakage breaker is not installed, it could cause electric shock.
- Perform the drainage/piping work securely according to the installation manual.
- If there is dust, clogging, or loose parts on the power supply plug or outlet, it could cause electric shock.
- If refrigerant gas leaks indoors, and comes into contact with a fire, harmful gas could be generated.
- When plugging the power supply plug into the outlet, be sure to use the parts provided or specified parts for the installation work.
- The use of defective remote controllers may result in a fire or an electric shock.
- Use the specified wires to connect the indoor and outdoor units. Do not use intermediate connection of the power supply plug or the outlet.
- Damage to the electrical cover could cause electric shock.
- Do not connect the earth to a gas pipe, water pipe, lightning rod or telephone earth. Defective earthing could cause electric shock.
- Be sure to cut off the main power in case of setting up the indoor P.C. board or wiring works.
- Failure to do so could cause injury.

1-2. SELECTING THE INSTALLATION LOCATION

**INDOOR UNIT**
- Where airflow is not blocked.
- Where cool air spreads over the entire room.
- Where it is not exposed to direct sunshine.
- Where it is not exposed to wind or rain.
- Where it can be easily adjusted.
- 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. An amplifier may be required for the affected area.
- In a place as far as possible from fluorescent and incandescent lights (so the infrared remote control can operate the conditioned space).
- Where the air filter can be replaced and replaced easily.
- Where it is simple to modify or extend.
- Where it can be easily modified.
- Where it can be cut off without affecting the installation of other equipment.

**REMOTE CONTROLLER**
- Where it is easy to operate and easily visible.
- Where it can be cut off without affecting the installation of other equipment.
- Select a position about 1.2 m above the floor and 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 install wire-less remote controller.

1-3. SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>Indoor unit</th>
<th>Outroor unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>Frequency</td>
<td>Breaker capacity</td>
</tr>
<tr>
<td>MFZ-FB50VA</td>
<td>230 V</td>
<td>50 Hz</td>
</tr>
<tr>
<td>MFZ-FB50VAD</td>
<td>16 A</td>
<td>2-core 2.0 mm²</td>
</tr>
<tr>
<td>MFZ-FB50VAH</td>
<td>10 A</td>
<td>4-core 1.0 mm²</td>
</tr>
<tr>
<td>3-core 2.0 mm²</td>
<td>12.7 / 6.35 mm² (0.8 mm²)</td>
<td></td>
</tr>
</tbody>
</table>

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

**OUTDOOR UNIT**
- Where it is not exposed to strong wind.
- Where airflow is good and dustless.
- Where rain or direct sunlight can be avoided as much as possible.
- 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.
- When installing the unit at a high level, be sure to secure the unit legs.
- When installing the unit, be sure to install the unit legs.
- When installing the unit, install 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 area.
- 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.
- 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.
- Avoid the following places for installation where air conditioner trouble is likely to occur.
- Where flammable gas could leak.
- Where there is much machine oil.
- Salty places such as the seaside.
- Where sulfdie gas is generated such as a hot spring.
- Where there is high-frequency or wireless equipment.

**Pipe specifications**
- Power supply wire specifications
- Wire size (thickness *3, *4)
- Pipe size

**Note:**
- Connect to the power switch which has a gap of 3 mm or more when open to interrupt the source power phase. (When the power switch is shut off, it must interrupt all phases.)
- Use wires in conformity with design 60245 IEC 57. The unit shall be installed in accordance with national wiring regulations.
- Never use pipes with thickness less than specified. The pressure resistance will be insufficient.
- Use copper pipe or a copper-alloy seamless pipe.
- Be careful not to crush or bend the pipe during pipe bending.
- An amplifier may be required for the affected area.
- Install the unit horizontally.
- When pipe length exceeds 7 m, additional refrigerant (R410A) charge is required. (No additional charge is required for pipe length less than 7 m.)
**1-4. INSTALLATION DIAGRAM**

**ACCESSORIES**
Check the following parts before installation.

- **<Indoor unit>**
  1. Drain hose * 1
  2. Remote controller holder 1
  3. Screw for (2) 2.5 x 16 mm (Black) 2
  4. Pipe cover 1
  5. Band 2
  6. Battery (AAA) for (12) 2
  7. Indoor unit mounting bracket 1
  8. Screws for (7) 4 x 25 mm 5
  9. Screw for indoor unit fixation 4
  10. Washer of (9) 4
  11. Felt tape (For left or left-rear piping) 1
  12. Wireless remote controller 1
  13. Air cleaning filter 1

* Note: The Drain hose is connected to the unit.

**PARTS TO BE PROVIDED AT YOUR SITE**
- (A) Indoor/outdoor unit connecting wire* 1
- (B) Extension pipe 1
- (C) Wall hole sleeve 1
- (D) Wall hole cover 1
- (E) Pipe fixing band 2 to 5
- (F) Screws for (E) 4 x 20 mm 2 to 5
- (G) Pipe sealing tape 1
- (H) Putty 1
- (I) Drain hose (or soft PVC hose, 15 mm inner diameter or hard PVC pipe VP16) 1
- (J) Refrigeration oil 1
- (K) Power supply cord* 1

* Note: Place indoor/outdoor unit connecting wire (A) and power supply cord (K) at least 1 m away from the TV antenna wire.

**IMPORTANT NOTES**
To comply with the requirements of Australian standard AS/NZS 3000 electrical installations (wiring rules), the electrical wiring required between the indoor and outdoor units must be installed by a licenced electrical contractor.

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**2. INDOOR UNIT INSTALLATION**

**2-1. FIXING OF INDOOR UNIT MOUNTING BRACKET**
- Find a structural material (such as a stud) in the wall and fix bracket (7) horizontally with fixing screws (8).
- To prevent bracket (7) from vibrating, be sure to install the fixing screws in the holes indicated by [-] in the illustration. For added support, fixing screws may also be installed in other holes.

**2-2. HOLE DRILLING**
1) Determine the wall hole position.
2) Drill a dia. 75 mm hole. The outdoor side should be 5 to 7 mm lower than the indoor side.
3) Insert wall hole sleeve (C).

**HOLE POSITIONS**
- **FOR REAR OR LEFT-REAR PIPING**
- **FOR LEFT PIPING**
- **FOR RIGHT PIPING**
2-3. INDOOR UNIT PREPARATION
Remove the front panel of the indoor unit.
1) Push the 2 locations marked “PUSH” on the upper part of the front grille until a “click” is heard.
2) Open the front grille toward you.
3) Remove the 2 screws.
4) Grasp the rear horizontal vane at the upper air outlet, and open it.
5) Push the 3 locations on the top of the front panel, and then pull the upper part of the front panel toward you.
6) Remove the front panel while lifting it up (slightly).
* The front panel can be removed without opening the damper of the lower air outlet.

2-4. INDOOR UNIT INSTALLATION
- Hook the top of the indoor unit on the indoor unit mounting bracket (7).
- Use the included wood screws (9) and washer (10), and fasten the indoor unit at 2 locations each at the top and the middle of the unit.

2-5. EMBEDDING THE INDOOR UNIT IN A WALL
- When installing a grating, use a grating with narrow upper and lower horizontal bars so that the airflow from the upper and lower air outlets does not contact the bars. If the horizontal bars will block the lower air outlet, use a stand, etc., to adjust the height of the indoor unit. If the upper or lower air outlet is blocked, the air conditioner will not be able to cool or warm the room well.
- Do not block the receiver with the grating. Otherwise, the grating will interfere with the remote controller signal and significantly reduce the distance and area (angle) from which the signals can be received.
- Use a grating with vertical bars, etc., that has at least 75% open area. If the grating has horizontal bars or if the open area is less than 75%, performance could be reduced.
- When the indoor unit is embedded in a wall (built-in), the time it takes for the room temperature to reach the set temperature will increase.

EMBEDDED INDOOR UNIT SETTING (MUST BE PERFORMED)
- When embedding the indoor unit in a wall, restrict the movement of the horizontal vane for the upper air outlet so that it only operates horizontally.
- If this setting is not performed, heat will build up in the wall and the room will not be cooled or warmed properly.
- Cut the wires on the left and right sides of JRFBL using a pair of nippers, etc., as shown below.
2-6. CONNECTING WIRES FOR INDOOR UNIT
You can connect indoor/outdoor lead wire without removing the front grille.

1) Open the front grille.
2) Remove panel.
3) Remove electrical cover.
4) Remove cord clamp.
5) Pass indoor/outdoor unit connecting wire (A) from the back of the indoor unit and process the end of the wire.
6) Loosen terminal screw, and connect first the earth wire, then indoor/outdoor unit connecting wire (A) to the terminal block. Be careful not to make mis-wiring. Fix the wire to the terminal block securely so that no part of its core is appeared, and no external force is conveyed to the connecting section of the terminal block.
7) Firmly tighten the terminal screws to prevent them from loosening. After tightening, pull the wires lightly to confirm that they do not move.
8) Secure indoor/outdoor unit connecting wire (A) and the earth wire with the cord clamp. Never fail to hook the left claw of the cord clamp. Attach the cord clamp securely.

- Make earth wire a little longer than others. (More than 55 mm)
- For future servicing, give extra length to the connecting wires.

2-7. PIPE FORMING AND INSTALLATION
Pipe Forming
- Route the drain hose diagonally below the connecting pipes.
- Make sure that the drain hose is not routed upward and that there are no waves in the hose.
- Do not pull the hose when applying the tape.
- Route the piping so that it does not project past the rear of the indoor unit. (Refer to the figure to the right.)

Connecting Pipe Installation
- Install the connecting pipes so that the piping can move slightly to the front, back, left, and right.

- Be sure to insulate the connecting pipes and place them near the rear of the indoor unit so that they do not contact the front panel.
- Be careful not to crush the connecting pipes when bending them.

FOR LEFT OR LEFT-REAR PIPING
Bundle the connecting pipes and drain hose together, and then wrap them in felt tape (11).

Cut and use the lower side panels on the left and right sides of the indoor unit as shown below.
Smooth the cut edges of the side panels so that they will not damage the insulation coating.
- For left or right piping
- Installing flush against a wall with molding

Wrap the felt tape (11) tightly around the pipes and hose starting near where the pipes and hose are routed from the indoor unit. (The overlap width of the felt tape (11) should not be more than 1/2 of the tape width.)

Start wrapping the piping tape (G) around the pipes and hose 10 mm inside the indoor unit.

Fasten the end of the felt tape (11) with a bandages stopper.

Make sure that the drain hose is not routed upward.
2-8. DRAIN PIPING
- If the extension drain hose has to pass through a room, be sure to wrap it with commercially sold insulation.
- The drain hose should point downward for easy drain flow. (Fig. 1)
- If the drain hose provided with the indoor unit is too short, connect it with drain hose (1) that should be provided at your site. (Fig. 2)
- When connecting the drain hose to the hard vinyl chloride pipe, be sure to insert it securely into the pipe. (Fig. 3)
- Do not make drain piping as shown below.

3. OUTDOOR UNIT INSTALLATION

3-1. CONNECTING WIRES FOR OUTDOOR UNIT
1) Open the service panel.
2) Loosen terminal screw, and connect indoor/outdoor unit connecting wire (A) from the indoor unit correctly on the terminal block. Be careful not to make mis-wiring. Fix the wire to the terminal block securely so that no part of its core is appeared, and no external force is conveyed to the connecting section of the terminal block.
3) Firmly tighten the terminal screws to prevent them from loosening. After tightening, pull the wires lightly to confirm that they do not move.
4) Connect power supply cord (K).
5) Fix indoor/outdoor unit connecting wire (A) and power supply cord (K) with the cord clamp.
6) Close the service panel securely.

3-2. FLARING WORK
1) Cut the copper pipe correctly with pipe cutter. (Fig. 1, 2)
2) Completely remove all burrs from the cut cross section of pipe. (Fig. 3)
- Make earth wire a little longer than others. (More than 60 mm)
- For future servicing, give extra length to the connecting wires.
3) Make sure to hook the catch
4) Flaring work (Fig. 4, 5). Firmly hold copper pipe in the dimension shown in the table. Select A mm from the table according to the tool you use.

3-9. FRONT PANEL INSTALLATION
1) Open the horizontal vane for the upper air outlet.
2) Fit the front panel onto the indoor unit from the front, and then push the upper and lower areas that are marked with arrows.
3) Push the areas above and below the lower air outlet that are marked with arrows.
4) After installing the front panel, install the 2 screws below the upper air outlet.

The Drain hose is removed at installation.
- When routing the drain piping, make sure that the drain hose (1) is routed as shown. (Fig. 4)
- Insert the drain hose all the way to the base of the drain pan (end connection). (Fig. 5)
- Make sure that the catch of the drain hose is securely hooked onto the projection on the hose fitting of the drain pan.
- After connecting the drain hose, be sure to pull the hose to confirm that it is connected securely.

The catch should be located on the underside of the hose.

The Drain hose is removed at installation. (Fig. 4)
- Insert the drain hose all the way to the base of the drain pan.
- After connecting the drain hose, be sure to pull the hose to confirm that it is connected securely.

With the service panel removed, make the terminal block wiring. (Fig. 1, 2, 3)
- Make sure to hook the catch

Pipe diameter (mm) Nut (mm) Clutch type tool for R410A Clutch type tool for R22 Wing nut type tool for R22 N-m kgf•cm
- ø 6.35 (1/4") 17 0 to 0.5 1.0 to 1.5 1.5 to 2.0 13.7 to 17.7 34.3 to 41.2 49.0 to 56.4 73.5 to 87.5
- ø 9.52 (3/8") 22 2.0 to 2.5 35 to 42 50 to 57 75 to 80
- ø 12.7 (1/2") 26
- ø 15.88 (5/8") 29

Tightening torque
- ø 6.35 (1/4") 17 13.7 to 17.7 34.3 to 41.2 49.0 to 56.4 73.5 to 87.5
- ø 9.52 (3/8") 22 35 to 42 50 to 57 75 to 80
- ø 12.7 (1/2") 26
- ø 15.88 (5/8") 29
4. PURGING PROCEDURES, LEAK TEST, AND TEST RUN

4-1. PURGING PROCEDURES AND LEAK TEST

1) Remove service port cap of stop valve on the side of the outdoor unit gas pipe. (The stop valve will not work in its initial state fresh out of the factory, totally closed with cap.)

2) Connect gauge manifold valve and vacuum pump to service port of stop valve on the gas pipe side of the outdoor unit.

3-4. INSULATION AND TAPING

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

4-2. TEST RUN

Make sure the following is done.
• The area around the damper is free of any objects, and the movement of the damper is not blocked.
• Panel is installed correctly.
• Indoor and outdoor units are installed correctly, and power is supplied.

1) Press the E.O. SW once for COOL, and twice for HEAT operation. Test run will be performed for 30 minutes. If the left lamp of the operation indicator blinks every 0.5 seconds, inspect the indoor/outdoor unit connecting wire (A) for mis-wiring. After the test run, emergency mode (set temperature 24°C) will start.
2) To stop operation, press the E.O. SW several times until all LED lamps turn off. Refer to operating instructions for details.

3) Run the vacuum pump. (Vaccumize for more than 15 minutes.)
4) Check the vacuum with gauge manifold valve, then close gauge manifold valve, and stop the vacuum pump.
5) Leave as it is for one or two minutes. Make sure pointer gauge manifold valve remains in the same position. Confirm that pressure gauge shows –0.101 MPa [Gauge] (–760 mmHg).
6) Remove gauge manifold valve quickly from service port of stop valve.
7) After refrigerant pipes are connected and evacuated, fully open all stop valves on both sides of gas pipe and liquid pipe. Operating without fully opening lowers the performance and this causes trouble.
8) Refer to 1-3., and charge the prescribed amount of refrigerant if needed. Be sure to charge slowly with liquid refrigerant. Otherwise, composition of the refrigerant in the system may be changed and affect performance of the air conditioner.
9) Tighten cap of service port to obtain the initial status.
10) Leak test

5. PUMPING DOWN

5-1. PUMPING DOWN

When relocating or disposing of the air conditioner, pump down the system following the procedure below so that no refrigerant is released into the atmosphere.

1) Connect the gauge manifold valve to the service port of the stop valve on the gas pipe side of the outdoor unit.
2) Fully close the stop valve on the liquid pipe side of the outdoor unit.
3) Close the stop valve on the gas pipe side of the outdoor unit almost completely so that it can be easily closed fully when the pressure gauge shows 0 MPa [Gauge] (0 kgf/cm²).
4) Start the emergency COOL operation.
   • To start the emergency operation in COOL mode, disconnect the power supply plug and/or turn off the breaker. After 15 seconds, connect the power supply plug and/or turn on the breaker, and then press the E.O. SW once. (The emergency COOL operation can be performed continuously for up to 30 minutes.)
5) Fully close the stop valve on the gas pipe side of the outdoor unit when the pressure gauge shows 0.05 to 0 MPa [Gauge] (approx. 0.5 to 0 kgf/cm²).
6) Stop the emergency COOL operation.
   • Press the E.O. SW twice to stop the operation.
6. Connecting an interface to the air conditioner (Option)

Connecting an interface to the air conditioner
- Connect an interface to the indoor control board of an air conditioner with a connecting cable.
- Cutting or extending the connecting cable of the interface results in defects in connecting. Do not bundle the connecting cable together with power supply cord, indoor/outdoor connecting wire, and/or earth wire. Keep as much distance as possible between the connecting cable and those wires.
- The thin part of the connecting cable should be stored and placed where customers cannot touch it.

1. Attach the mounting cord clamp (medium) at 50 mm from the edge of an insulation coating part.
2. Remove the front panel and the electrical cover.
3. Slide out the indoor control board, and connect the connecting cable to CN105 on the indoor control board.
4. Remove the screw (B) shown in the photo below. Fix the mounting cord clamp (medium), which has attached to the connecting cable, with the screw (B).
5. Secure the connecting cable with the clamp and hook according to the photo below.
6. Reinstall the indoor control board, the electrical cover, and the front panel.

**WARNING**
Fix the connecting cable at the prescribed position securely. Incorrect installation may cause electric shock, fire, and/or malfunction.