Floor Type Air-Conditioner
MFZ-KA25VA
MFZ-KA35VA
MFZ-KA50VA

INSTALLATION MANUAL

• This manual only describes the installation of indoor unit.
  When installing the outdoor unit, refer to the installation manual of outdoor unit.

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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FOR INSTALLER
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.

<table>
<thead>
<tr>
<th>WARNING</th>
<th>(Could lead to death, serious injury, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Do not install the unit by yourself (user). Incomplete installation could cause fire or electric shock, injury due to the unit falling, or leakage of water. Consult the dealer from whom you purchased the unit or a qualified installer.</td>
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<tr>
<td>• Perform the installation securely referring to the installation manual. Incomplete installation could cause fire or electric shock, injury due to the unit falling, or leakage of water.</td>
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<tr>
<td>• When installing the unit, use appropriate protective equipment and tools for safety. Failure to do so could cause injury.</td>
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<tr>
<td>• 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.</td>
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<tr>
<td>• 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.</td>
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<tr>
<td>• Do not damage the wires by applying excessive pressure with parts or screws. Damaged wires could cause fire.</td>
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<tr>
<td>• 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.</td>
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<tr>
<td>• 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 securing could cause fire.</td>
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<tr>
<td>• Do not install the unit in a place where inflammable gas may leak. If gas leaks and accumulates in the area around the unit, it could cause an explosion.</td>
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<tr>
<td>• Do not use intermediate connection of the power cord or the extension cord and do not connect many devices to one AC outlet.</td>
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<tr>
<td>• If there is dust, clogging, or loose parts on the power supply plug or the P.C. board or wiring works. Be sure to cut off the main power in case of setting up the indoor P.C. board or wiring works.</td>
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<tr>
<td>• Fasten a flare nut with a torque wrench as specified in this manual. If fastened too tight, a flare nut may break after a long period and cause refrigerant leakage.</td>
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<tr>
<td>• Install an earth leakage breaker depending on the installation place. If an earth leakage breaker is not installed, it could cause electric shock.</td>
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</table>

<table>
<thead>
<tr>
<th>CAUTION</th>
<th>(Could lead to serious injury in particular environments when operated incorrectly.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Do not connect the earth to a gas pipe, water pipe, lightning rod or telephone earth. Defective earthing could cause electric shock.</td>
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</tr>
<tr>
<td>• Do not install the outdoor unit where small animals may live. If small animals enter and touch the electric parts inside the unit, it could cause a malfunction, smoke emission, or fire. Also, advise user to keep the area around the unit clean.</td>
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</table>

1-2. SELECTING THE INSTALLATION LOCATION

**INDOOR UNIT**

- Where airflow is not blocked
- Where cool air spreads over the entire room.
- 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.

**REMOTE CONTROLLER**

- Where it is easy to operate and easily visible.
- Where children cannot touch it.
- 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 (‘keep’ or ‘keep keep’ receiving tone sounds). After that, attach remote controller holder (2) to a pillar or wall and install wireless remote controller (12).

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

1-3. REQUIRED TOOLS FOR INSTALLATION

- Phillips screwdriver
- Level
- Scale
- Utility knife or scissors
- 25, 35 class 65 mm/ 50 Class 75 mm hole saw
- Torque wrench
- Wrench (or spanner)
- 4 mm hexagonal wrench
- Flare tool for R410A
- Gauge manifold for R410A
- Vacuum pump for R410A
- Charge hose for R410A
- Pipe cutter with reamer
### 1-4. SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>Power supply <strong>1</strong></th>
<th>Wire specifications <strong>2</strong></th>
<th>Pipe size (thickness <strong>3</strong>, <strong>4</strong>)</th>
<th>Pipe length and height difference <strong>5</strong>, <strong>6</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Voltage Frequency</td>
<td>Indoor/outdoor connecting wire</td>
<td>Gas</td>
<td>Liquid</td>
</tr>
<tr>
<td>MFZ-KA25/35VA</td>
<td>230 V 50 Hz</td>
<td>4-core 1.5 mm²</td>
<td>ø9.52 mm (0.8 mm)</td>
<td>ø6.35 mm (0.8 mm)</td>
</tr>
<tr>
<td>MFZ-KA60VA</td>
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**1** 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.)

**2** Use wires in conformity with design 60245 IEC 57.

**3** Never use pipes with thickness less than specified. The pressure resistance will be insufficient.

**4** Use a copper pipe or a copper-alloy seamless pipe.

**5** Be careful not to crush or bend the pipe during pipe bending.

**6** Refrigerant pipe bending radius must be 100 mm or more.

**7** Insulation material: Heat resisting foam plastic 0.045 specific gravity

**8** Be sure to use the insulation of specified thickness. Excessive thickness may cause incorrect installation of the indoor unit and insufficient thickness may cause dew dripping.

### 1-5. INSTALLATION DIAGRAM

- Be sure to use wall hole sleeve (C) to prevent indoor/outdoor connecting wire (A) from contacting metal parts in the wall and to prevent damage by rodents in case the wall is hollow.
- Seal the wall hole gap with putty (H).
- Fix the pipe to wall with pipe fixing band (E).
- After the leak test, apply insulating material tightly so that there is no gap.

Outdoor units may be different in appearance.

### ACCESSORIES

**Check the following parts before installation.**

| (1) Drain hose * | 1                     |
| (2) Remote controller holder | 1                                 |
| (3) Fixing screw for (2) 3.5 × 16 mm (Black) | 2                          |
| (4) Pipe cover | 1                                 |
| (5) Band | 2                                 |
| (6) Battery (AAA) for (12) | 2                          |
| (7) Indoor unit mounting bracket | 1                                 |
| (8) Fixing screw for (7) 4 × 20 mm | 5                                |
| (9) Wood 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) Fixing screw for (E) 4 × 20 mm | 2 to 5                               |
| (G) Piping tape | 1                                 |
| (H) Putty | 1                                 |
| (I) Drain hose (or soft PVC hose, 15 mm inner dia. or hard PVC pipe VP16) | 1 or 2                            |
| (J) Refrigeration oil | 1                                 |

*Note: Place indoor/outdoor unit connecting wire (A) and power supply cord at least 1 m away from the TV antenna wire.
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. 65 mm hole (dia. 75 mm for KA50). 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

(The following figure is a front view of the indoor unit installation location.)

FOR RIGHT DOWNWARD OR LEFT DOWNWARD PIPING

(The following figure is a view of the bottom of the indoor unit from above.)

FOR LEFT PIPING

FOR RIGHT PIPING

When the unit is installed on the wall.

When the unit is installed on the floor.

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.

* Do not open 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(ω) 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.

EMBDED 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) lightly 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.)

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 (l) 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)

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.

Fig. 1
Fig. 2
Fig. 3
Fig. 4
Fig. 5
3.

3-1. 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)
   • Put the end of the copper pipe to downward direction as you remove burrs in order to avoid to let burrs drop in the piping.
3) Remove flare nuts attached to indoor and outdoor units, then put them on pipe having completed burr removal. (Not possible to put them on after flaring work.)
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.
5) Check
   • Compare the flared work with Fig. 6.
   • If flare is noted to be defective, cut off the flared section and do flaring work again.

3-2. PIPE CONNECTION

• Fasten flare nut with a torque wrench as specified in the table.
• When fastened too tight, flare nut may break after a long period and cause refrigerant leakage.

Indoor unit connection
Connect both liquid and gas pipings to indoor unit.
• Apply a thin coat of refrigeration oil (J) on the seat surface of pipe.
• For connection, first align the center, then tighten the first 3 to 4 turns of flare nut.
• Use tightening torque table above as a guideline for indoor unit side union joint section, and tighten using two wrenches. Excessive tightening damages the flare section.

Outdoor unit connection
Connect pipes to stop valve pipe joint of the outdoor unit in the same manner applied for indoor unit.
• For tightening, use a torque wrench or spanner and use the same tightening torque applied for indoor unit.

**WARNING**
When installing the unit, securely connect the refrigerant pipes before starting the compressor.

3-3. 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 additional commercially sold insulation to prevent condensation.
4. TEST RUN

4-1. 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 24ºC) 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.

Checking the remote (infrared) signal reception
Press the ON/OFF button on the remote controller (12) and check that an electronic sound is heard from the indoor unit. Press the ON/OFF button again to turn the air conditioner off.
• Once the compressor stops, the restart preventive device operates so the compressor will not operate for 3 minutes to protect the air conditioner.

4-2. AUTO RESTART FUNCTION
This product is equipped with an auto restart function. When the power supply is stopped during operation, such as during blackouts, the function automatically starts operation in the previous setting once the power supply is resumed. (Refer to the operating instructions for details.)

Caution:
• After test run or remote signal reception check, turn off the unit with the E.O. SW or the remote controller before turning off the power supply. Not doing so will cause the unit to start operation automatically when power supply is resumed.
To the user
• After installing the unit, make sure to explain the user about auto restart function.
• If auto restart function is unnecessary, it can be deactivated. Consult the service representative to deactivate the function. Refer to the service manual for details.

4-3. EXPLANATION TO THE USER
• Using the OPERATING INSTRUCTIONS, explain to the user how to use the air conditioner (how to use the remote controller, how to remove the air filters, how to remove or put the remote controller in the remote controller holder, how to clean, precautions for operation, etc.)
• Recommend the user to read the OPERATING INSTRUCTIONS carefully.

5. 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.

WARNING
When pumping down the refrigerant, stop the compressor before disconnecting the refrigerant pipes. The compressor may burst if air etc. get into it.
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) to the connecting cable at 50 mm from the edge of an insulation coating part.

2. Remove the front panels 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 blow. 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.