



**mitsubishi  
electric**

REFRIGERANT  
R32/R410A

## FLOOR TYPE AIR CONDITIONERS

MFZ-KT25VG

MFZ-KT35VG

MFZ-KT50VG

MFZ-KT60VG

**Note:**

These models can be connected to the multi units, except for KT60.

INSTALLATION MANUAL

English

TESİS ETME KILAVUZU

Türkçe

## CONTENTS

1. BEFORE INSTALLATION.....	1
2. INDOOR UNIT INSTALLATION.....	4
3. FLARE CONNECTION, PIPE CONNECTION.....	8
4. TEST RUN.....	8
5. PUMPING DOWN.....	9

## Model names are indicated in 1-3.





This installation manual describes only for the indoor unit. Refer to the MXZ type manual for outdoor unit set up.

## Required Tools for Installation

Phillips screwdriver	Flare tool for R32, R410A
Level	Gauge manifold for R32, R410A
Scale	Vacuum pump for R32, R410A
Utility knife or scissors	Charge hose for R32, R410A
75 mm hole saw	Pipe cutter with reamer
Torque wrench	Water bottle
Wrench (or spanner)	0.9 to 1.0 L water

## 1. BEFORE INSTALLATION

## MEANINGS OF SYMBOLS DISPLAYED ON INDOOR UNIT AND/OR OUTDOOR UNIT

	<b>WARNING</b> (Risk of fire)	This unit uses a flammable refrigerant. If refrigerant leaks and comes in contact with fire or heating part, it will create harmful gas and there is risk of fire.
		Read the OPERATING INSTRUCTIONS carefully before operation.
		Service personnel are required to carefully read the OPERATING INSTRUCTIONS and INSTALLATION MANUAL before operation.
		Further information is available in the OPERATING INSTRUCTIONS, INSTALLATION MANUAL, and the like.

## 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).**  
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.
- **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.
- **When installing the unit, use appropriate protective equipment and tools for safety.**  
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.
- **Electrical work should be performed by a qualified, experienced electrician, according to the installation manual. 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.
- **Earth 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 or 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 electric shock.
- **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. Do not extend the wires, or use intermediate connection.**  
Incomplete connecting and securing could cause fire.
- **Do not install the unit in a place where flammable gas may leak.**  
If gas leaks and accumulates in the area around the unit, it could cause an explosion.
- **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 defective contact, defective insulation, exceeding the permissible current, etc.
- **Be sure to use the parts 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, an electric shock, the unit falling, etc.
- **When plugging the power supply plug into the outlet, make sure that there is no dust, clogging, or loose parts in both the outlet and the plug. Make sure that the power supply plug is pushed completely into the outlet.**  
If there is dust, clogging, or loose parts on the power supply plug or the outlet, it could cause electric shock or fire. If loose parts are found on the power supply plug, replace it.
- **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 of the outdoor unit are not attached securely, it could result in a fire or an electric shock due to dust, water, etc.
- **When installing, relocating, or servicing the unit, make sure that no substance other than the specified refrigerant (R32/R410A) enters the refrigerant circuit.**  
Any presence of foreign substance such as air can cause abnormal pressure rise and may result in explosion or injury. The use of any refrigerant other than that specified for the system will cause mechanical failure, system malfunction, or unit breakdown. In the worst case, this could lead to a serious impediment to securing product safety.
- **Do not alter the unit.**  
It may cause fire, electric shock, injury or water leakage.
- **Do not discharge the refrigerant into the atmosphere. If refrigerant leaks during installation, ventilate the room. Check that the refrigerant does not leak after installation has been completed.**  
If refrigerant leaks and comes in contact with fire or heating part of such a fan heater, kerosene heater, or cooking stove, it will create harmful gas. Provide ventilation in accordance with EN378-1.
- **Use appropriate tools and piping materials for installation.**  
The pressure of R32/R410A is 1.6 times more than R22. Not using appropriate tools or materials and incomplete installation could cause the pipes to burst or injury.
- **When pumping down the refrigerant, stop the compressor before disconnecting the refrigerant pipes.**  
If the refrigerant pipes are disconnected while the compressor is running and the stop valve is open, air could be drawn in and the pressure in the refrigeration cycle could become abnormally high. This could cause the pipes to burst or injury.
- **When installing the unit, securely connect the refrigerant pipes before starting the compressor.**  
If the compressor is started before the refrigerant pipes are connected and when the stop valve is open, air could be drawn in and the pressure in the refrigeration cycle could become abnormally high. This could cause the pipes to burst or injury.
- **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.
- **The unit shall be installed in accordance with national wiring regulations.**
- **When using a gas burner or other flame-producing equipment, completely remove all of the refrigerant from the air conditioner and ensure that the area is well-ventilated.**  
If the refrigerant leaks and comes in contact in fire or heating part, it will create harmful gas and there is risk of fire.
- **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.**
- **Keep gas-burning appliances, electric heaters, and other fire sources (ignition sources) away from the location where installation, repair, and other air conditioner work will be performed.**
- **The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.**
- **Do not turn the breaker OFF except the case of burning smell, or when performing maintenance or inspection.**  
The power cannot be supplied to the refrigerant sensor mounted in the indoor unit, and the sensor cannot detect the refrigerant leakage. This may cause a fire.

**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 defect in the drainage/piping work, water could drop from the unit, soaking and damaging household goods.
- **Do not touch the air inlet or the aluminum fins of the outdoor unit.**  
This could cause injury.

- **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.
- **Do not operate the air conditioner during interior construction and finishing work, or while waxing the floor.**  
Before operating the air conditioner, ventilate the room well after such work is performed. Otherwise, it may cause volatile elements to adhere inside the air conditioner, resulting in water leakage or scattering of dew.

- **Do not install the unit in a place where smoke, gas, or chemicals may fill.**  
The refrigerant sensor mounted in the indoor unit may react to it, and display an error of refrigerant leakage.
- **Be careful of the fan rotation when the breaker is ON.**  
When the refrigerant sensor detects the refrigerant leakage, the fan starts rotating automatically. This may cause injury.

## 1-2. SELECTING THE INSTALLATION LOCATION

This manual only describes the installation of indoor unit.

When installing the outdoor unit, refer to the installation manual of outdoor unit.

### INDOOR UNIT

**WARNING**

**This unit should be installed in rooms which exceed the floor space specified in outdoor unit installation manual.**

- Refer to outdoor unit installation manual.

- Where airflow is not blocked.
- Where cool (or warm) air spreads over the entire room.
- Rigid wall without vibration.
- Where it is not exposed to direct sunshine. Do not expose to direct sunshine also during the period following unpacking to before use.
- 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. An amplifier may be required for the affected device.
- In a place as far away as possible from fluorescent and incandescent lights. In order to make the infrared remote control operate the air conditioner normally. The heat from the lights may cause deformation or the ultraviolet may cause deterioration.
- Where the air filter can be removed and replaced easily.
- Where it is away from the other heat or steam source.
- Do not install the unit in the environment where any gas equipment for propane, butane or methane, sprays such as bug killer, equipment which generates smoke, paint etc., and chemicals are used, or in the place where sulfur-based gas is generated.
- The refrigerant sensor mounted in the indoor unit may react to them, and display an error of refrigerant leakage. This may cause the unit not to operate.

### 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 ('beep' or 'beep beep' receiving tone sounds). After that, attach remote controller holder to a pillar or wall and install wireless remote controller.

**Note:**

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

**Note:**

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.
- Where oil is splashed or where the area is filled with oily smoke (such as cooking areas and factories, in which the properties of plastic could be changed and damaged).
- Salty places such as the seaside.
- Where sulfide gas is generated such as hot spring, sewage, waste water.
- Where there is high-frequency or wireless equipment.
- Where there is emission of high levels of VOCs, including phthalate compounds, formaldehyde, etc., which may cause chemical cracking.
- The appliance shall be stored so as to prevent mechanical damage from occurring.

If connect to the outdoor unit that uses R32 refrigerant, install in a room with a floor area of Amin or more, corresponding to refrigerant M (factory-charged refrigerant + locally add refrigerant). For refrigerant quantity and additional refrigerant charge, refer to the outdoor unit.

M [kg]	Amin [m <sup>2</sup> ]
1.00	No requirements
1.10	
1.20	
1.30	
1.40	
1.50	
1.60	
1.70	
1.80	
1.84	
1.90	3.63
2.00	3.75
2.10	3.95
2.20	4.15
2.30	4.34
2.40	4.54
	4.74

Refer to the installation manual of outdoor unit for refrigerant charge.

## 1-3. SPECIFICATIONS

Model	Power supply *1		Wire specifications *2	Pipe size (thickness *3, *4, *5, *6)		Insulation thickness *7,*8
	Rated Voltage	Frequency		Gas	Liquid	
MFZ-KT25VG	230 V	50 Hz	4-core 2.0 mm <sup>2</sup>	ø9.52 mm (0.8 mm)	ø6.35 mm (0.8 mm)	14 mm
MFZ-KT35VG				ø12.7 mm (0.8 mm)		
MFZ-KT50VG				ø15.88 mm (0.8 mm)		
MFZ-KT60VG						

\*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.

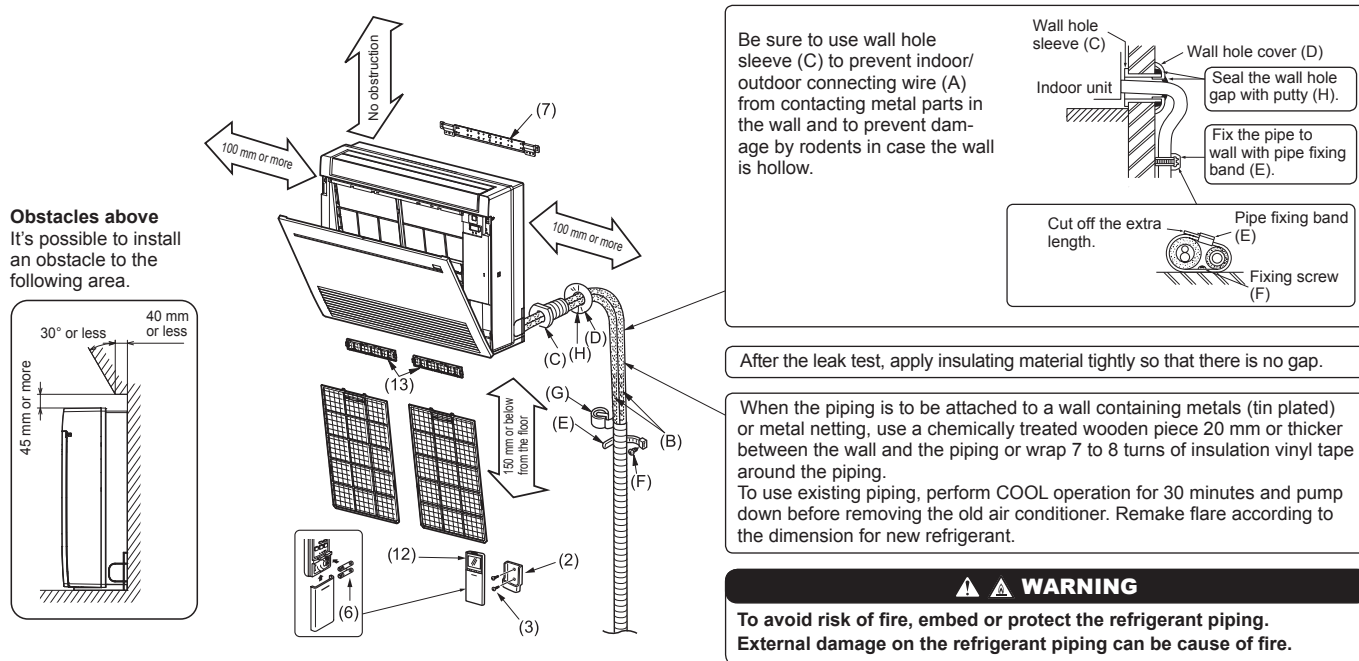
\*7 Insulation material : Heat resisting foam plastic 0.045 specific gravity

\*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 drippage.

## 1-4. INSTALLATION DIAGRAM

When installing outdoor units, refer to the installation of outdoor units.

The piping specification table does not provide a minimum line set length. However, indoor units with connected piping length less than 3 m could produce intermittent noise during normal system operation in very quiet environments. Please be aware of this important information when installing and locating the indoor unit within the conditioned space.



Units should be installed by licensed contractor according to local code requirements.

### 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 × 25 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	2
(14) Joint pipe (KT60 only)	1
(15) Pipe cover for joint pipe (KT60 only)	1
(16) Breaker tag	1
(17) Breaker notice	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
(J) Drain hose (or soft PVC hose, 15 mm inner dia. or hard PVC pipe VP16)	1 or 2
(K) Refrigeration oil	1
(L) Power supply cord*	1

\* Note:

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

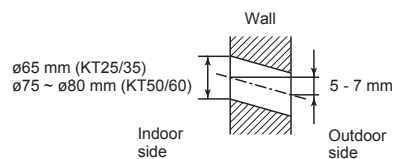
## 2. INDOOR UNIT INSTALLATION

### 2-1. FIXING OF INDOOR UNIT MOUNTING BRACKET

- Do not install the indoor unit at a place higher than 150 mm.
- 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 in the illustration. For added support, fixing screws may also be installed in other holes.

### 2-2. HOLE DRILLING

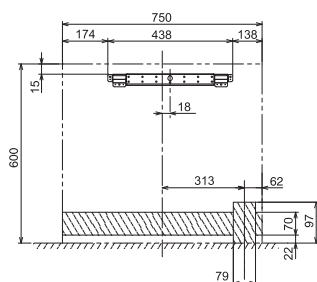
- 1) Determine the wall hole position.
- 2) Drill a dia. 65 mm hole (dia. 75 ~ 80 mm for KT50/60). The outdoor side should be 5 to 7 mm lower than the indoor side.
- 3) Insert wall hole sleeve (C).



#### HOLE POSITIONS

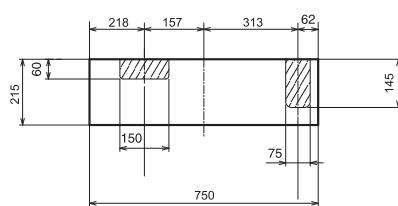
##### FOR REAR OR LEFT-REAR PIPING

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



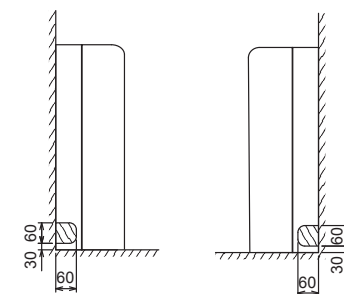
##### FOR RIGHT DOWNWARD OR LEFT DOWNWARD PIPING

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



##### FOR LEFT PIPING

##### FOR RIGHT PIPING



### 2-3. INDOOR UNIT PREPARATION

Remove the front panel of the indoor unit.

- 1) Push down the tab on the both sides of the unit to open the front panel.
- 2) Pull the front panel toward you to remove it.
- 3) Remove the 2 screws.
- 4) Open the rear horizontal vane.
- 5) Push the 2 locations on the top of the panel, and then pull the upper part of the panel toward you.
- 6) Remove the panel while lifting it up (slightly).

