

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 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.

CAUTION
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.

WARNING
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.

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.

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 hanging could cause fire.

Do not use intermediate connection of the power cord or the extension cord and do not connect any devices to an AC outlet.

If it could cause a fire or an electric shock due to defective contact, defective insulation, exceeding the permissible current, etc.

Check that the leakage of 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 due to dust, water, etc.

Attach the electrical cover to the indoor unit and the service panel to the outdoor unit securely.

If the electrical cover in 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, an electric shock, the unit falling, etc.

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.

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 bending.

Limits	MSZ-A18/A24/A26/A30
Pipe length	30 m max.
Height difference	15 m max.
No. of bends	10 max.

- Refrigerant adjustment ... If pipe length exceeds 7 m, additional refrigerant (R-410A) charge is required.
- The outdoor unit is charged with refrigerant for pipe length up to 7 m.)

Pipe length	Up to 7 m	No additional charge is required.
Exceeding 7 m	Additional charge is required. (Refer to the table below.)	

Refrigerant to be added	MSZ-A18	20 gm × (refrigerant piping length (m) - 7)
	MSZ-A24	20 gm × (refrigerant piping length (m) - 7)
	MSZ-A26	55 gm × (refrigerant piping length (m) - 7)
	MSZ-A30	55 gm × (refrigerant piping length (m) - 7)

ACCESSORIES

Check the following parts before installation.

- Indoor unit
- Outdoor unit
- Installation plate
- Installation plate fixing screw 4 × 25 mm
- Remote controller holder
- Fixing screw for 3.5 × 16 mm (Black) 2
- Battery (AAA) for remote controller 2
- Wireless remote controller 1
- Fat tape (Used for left or left-rear piping) 1
- Air cleaning filter 2

PART TO BE PROVIDED AT YOUR SITE

- Optional extension pipe
- Indoor/outdoor unit connecting wire (2-core 1.0 mm²-2.0 mm²) 1
- Extension pipe 1
- Wall hole sleeve 1
- Wall hole cover 1
- Pipe flange 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. or hard PVC pipe VP16) 1
- Refrigeration oil 1
- Power supply cord (See the table in 5 INDOOR/OUTDOOR WIRE CONNECTION AND OUTDOOR POWER SUPPLY CORD CONNECTION for the cord size.) 1

Indoor/outdoor unit connecting wire	2-core 1.0 mm ² -2.0 mm ²
Extension pipe	1
Wall hole sleeve	1
Wall hole cover	1
Pipe flange 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. or hard PVC pipe VP16)	1
Refrigeration oil	1
Power supply cord (See the table in 5 INDOOR/OUTDOOR WIRE CONNECTION AND OUTDOOR POWER SUPPLY CORD CONNECTION for the cord size.)	1

CAUTION

Be sure to use the insulation of specified thickness. Excessive thickness may cause incorrect installation of the indoor unit and lack of thickness may cause dust-stripping.

Decide the installation position using mark on the installation plate indicating the indoor unit size as reference.

Piping can be directed towards rear, down, left or left-rear directions.

Lock the catch.

Note: Do not install the air outlet.

Separate the 2 connecting pipes and apply insulation individually.

When the piping is to be attached to a wall containing metal (tin-plated) or metal netting, use a chemically treated wooden plate 20 mm or thicker between the wall and the piping or wrap 7 to 8 mm of insulation vinyl tape around the piping.

5 mm thickness thermal insulation plastic.

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

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.



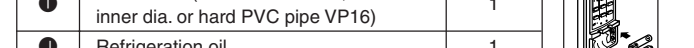
To prevent the installation plate from vibrating, be sure to fix the holes as indicated by the arrow.

When bolts recessed in the concrete wall are to be utilized, secure the installation plate using 11 × 20 - 11 × 20 oval 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

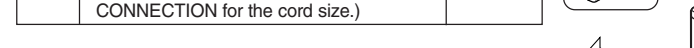
- Determine the wall hole position.
- Drill a 75 mm hole so that outside can be lower than inside.
- Install the wall hole sleeve.

Positioning of the holes on the wall



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 rat in case the wall is hollow.

Wall hole sealing and fixing pipe to wall



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 rat in case the wall is hollow.

2-1 INDOOR UNIT

- Where airflow is not blocked.
- Where cool 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 interferes 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.
- The distance between the floor and the bottom of the unit should be 1.8 m or more.

2-2 OUTDOOR UNIT

- Where it is not exposed to strong wind.
- Where airflow is good and clean.
- 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 interferes with radio or TV reception in areas where reception is weak. An amplifier may be required for the affected device.
- 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.
- 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.

2-3 WIRELESS REMOTE CONTROLLER MOUNTING

- 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.

6. INDOOR/OUTDOOR UNIT CONNECTION FINISHING AND TEST RUN

6-1 TOOLS DEDICATED 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 contamination than R22.
- For refrigerant piping, use clean, pressure-proof parts / materials specifically designed for R410A. (Refer to 2. Refrigerant piping.)
- Ensure that the 2 refrigerant pipes are installed to prevent condensation.
- Composition change may occur in R410A since it is a mixed refrigerant. When charging, charge liquid refrigerant to prevent composition change.

6-1 TOOLS DEDICATED FOR THE AIR CONDITIONER WITH R410A REFRIGERANT

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 dimensions have been changed to prevent any other refrigerant from being charged into the unit.
Charge hose	No	Use same 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 and 3/8
Flare tool	No	1/2 and 5/8
Flare nut	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 pump.
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.

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.

2) Burrs removal

- Completely remove all burrs from the cut cross section of pipe.
- 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) Putting nut on

- Before 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)
- Flare nut for R410A pipe differs from R22 pipe. Refer to the following table for detail.

mm	inch	R410A	R22
ø6.35	1/4	17	17
ø9.52	3/8	22	22
ø12.7	1/2	26	24
ø15.88	5/8	29	27

4) Flaring work

- Carry out flaring work using flaring tool as shown below.
- When charging, charge liquid refrigerant to prevent composition change.

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.
- Indoor unit connection
- Connect both liquid and gas piping to indoor unit.
- 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.
- Use tightening torque table below as a guideline for indoor unit side union joint section, and tighten using two wrenches. Excessive tightening damages the flare section.

Pipe diameter	Tightening torque	
	N·m	kgf·cm
ø6.35 mm	13.7 to 17.7	140 to 180
ø9.52 mm	24.3 to 31.2	250 to 320
ø12.7 mm	49.0 to 56.4	500 to 575
ø15.88 mm	73.5 to 78.4	750 to 800

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 above ceiling, closet or where the temperature and humidity are high, wind additional commercially sold insulation for prevention of condensation.

4-3 CONNECTING WIRE SPECIFICATIONS

- Use special room air conditioning circuit.

Power supply cord length (Lead to left/Lead to right)	1 m/2 m
Indoor/outdoor unit connecting wire Specification	Cable 2-core 1.0 mm ² , in conformity with Design 245 IEC 57.

- Take out power supply cord from the left or right bottom corner of the indoor unit.

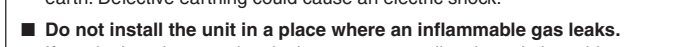
Connect to the power switch which has a gap of 3 mm or more when open to interrupt the source power phase. (When the power switch is shut off, it must interrupt all phases.) (Rated Voltage : 230 V) (Input capacity: Main switch/Fluse : 10 A) (This plug has to be the one meets the Standards.)



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

CAUTION

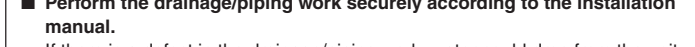
Do not bundle the spare wire, but put it as shown below.



4-4 INDOOR AND OUTDOOR CONNECTING WIRE CONNECTION

You can connect indoor/outdoor lead wire without removing the front panel.

- Open the front panel.
- Remove one screw holding the electrical cover, then remove the cover.
- Pass the indoor/outdoor unit connecting wires from the back of the indoor unit and process the end of the wire, then connect it to the terminal block.
- Replace the fixture and electrical cover securely.



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 fraying of the wires could result in a fire.

Attach the electrical cover securely. If it is attached incorrectly, it could result in a fire or an electric shock due to dust, water, etc.

CAUTION

Loosen terminal screw

Indoor terminal block

Outdoor terminal block

Indoor/outdoor unit connecting wire 2-core 1.0 mm²

Lead wire

Connection details

Indoor terminal block

Outdoor terminal block

Indoor/outdoor unit connecting wire 2-core 1.0 mm²

Lead wire

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Indoor/outdoor unit connecting wire 2-core 1.0 mm²

Lead wire

Connection details
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