

(Indoor unit MSC type is the common specifications of MS type and MSH type.) MS-GA20/25/35VB MSH-GA20/25/35VB [FLARE CONNECTION TYPE]

SPLIT-TYPE AIR CONDITIONERS



# 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 conditione
- 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

and attach the wires firmly to the terminal block connecting sections so

■ 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

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 defective contact, defective insulation, exceeding the permissible current, etc. ■ Check that the refrigerant gas do not leak after installation has com-
- 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 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
- 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 ■ 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.

# **↑** CAUTION

earth. Defective earthing could cause an electric shock ■ Do not install the unit in a place where an inflammable gas leaks.

When installing an MUX or MXZ

series outdoor unit, refer to the MSC

type manual for indoor unit set up.

■ 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

- If there is a defect in the drainage/piping work, water could drop from the unit and household goods could be wet and damaged Fasten a flare nut with a torque wrench as specified in this manual.
- When fastened too tight, a flare nut may broken after a long period and cause a leakage of refrigerant.

# 2. SELECTING THE INSTALLATION LOCATION

- Where cool air spreads over the entire room.
- (20/25 type), 25 m (35 type) and the difference of height of both units is 10 m.
- Where easily drained.
- weak. An amplifier may be required for the affected device.
- the infrared remote control can operate the air conditioner normally).
- Where the air filter can be removed and replaced easily.

- Where airflow is good and dustless.
- Where neighbours are not annoyed by operation sound or hot air.
- Where there is no risk of combustible gas leakage
- 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.
- heavy snow, please install a canopy, a pedestal and/or some baffle boards.

# **↑** CAUTION

- Where flammable gas could leal
- Salty places such as the seaside.
- 2-3 WIRELESS REMOTE CONTROLLER MOUNTING Place of mounting
- Where children can not touch.
- Select a position about 1.2 m above the floor, check that signals from the remote
- pillar or wall and set the wireless remote controller 6.



# PIPING PREPARATION Specifications

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.

3. INSTALLATION DIAGRAM & ACCESSORIES

be careful flot to crush of bend the pipe in pipe bendin				
Limits				
Pipe length	20/25 type	20 m max.		
	35 type	25 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.)

	ACCESSORIES	S	et
	Refrigerant to be added		20 g/m × (refrigerant piping length (m)
		Exceeding 7 III	(Refer to the table below.)
	Pipe length	Exceeding 7 m	Additional charge is required.
1		Up to / m	No additional charge is required.

# Check the following parts before installation.

# Installation plate 2 Installation plate fixing screw 4 × 25 mm Remote controller holder 4 Fixing screw for 3 3.5 × 16 mm (Black) Battery (AAA) for remote controller

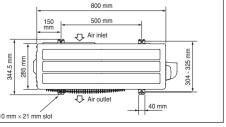
6 Wireless remote controller Felt tape (Used for left or left-rear piping) <Outdoor unit: MUH type> Drain socket

# Drain cap PART TO BE PROVIDED AT YOUR SITE

# (2-core 1.0 mm<sup>2</sup>) Extension pipe

 Wall hole sleeve Wall hole cover Pipe fixing band (The quantity depends 2 to 5 on the pipe length.) Fixing screw for **(3)** 4 × 20 mm (The 2 to 5 quantity depends on the pipe length.) Piping tape Putty Drain hose (or soft PVC. hose, 15 mm

inner dia. or hard PVC pipe VP16) Power supply cord (1.0 mm²) Refrigeration oil 150 500 mm



### 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 it
- 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.

- Please provide an exclusive circuit for the air conditioner and do not connect other
- Earth the unit. Do not connect the earth to a gas pipe, water pipe, lightning rod or telephone
- If gas leak and accumulate in the area surrounding the unit, it could cause an

### 2-1 INDOOR UNIT · Where airflow is not blocked

- Maximum refrigerant piping length between indoor unit and outdoor unit is 20 m
- Where it is not exposed to direct sunshine
- 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 In a place as far away as possible from fluorescent and incandescent lights (so
- 2-2 OUTDOOR UNIT Where it is not exposed to strong wind.
- Where it is not exposed to rain and direct sunshine.
- Where rigid wall or support is available to prevent the increase of operation sound
- When installing the unit at a high level, be sure to fix the unit legs
- Please install it in an area not affected by snowfall or blowing snow. In areas with
- It is advisable to make a piping loop near outdoor unit so as to reduce vibration

transmitted from there.

# Avoid the following places for installation where air conditioner trouble is liable to

- Where there is much machine oil.
- Where sulfide gas is generated such as a hot spring. Where there is high-frequency or wireless equipmen
- Where it is easy to operate and easily visible.
- controller are surely received by the indoor unit from that position ('beep' or 'beepbeep' receiving tone sounds). After that, attach remote controller holder 3 to a In rooms where inverter type fluorescent lamps are used, the signal from the

wireless remote controller may not be received.

# 5. OUTDOOR UNIT INSTALLATION INDOOR/OUTDOOR UNIT CONNECTING WIRE CONNECTION AND OUTDOOR POWER SUPPLY CORD CONNECTION • Connect the indoor/outdoor unit connecting wire **(A)** from the indoor unit correctly on

Heat resisting foam plast 0.045 specific gravity 9.52 For gas • Use a copper pipe or a copper-alloy seamless pipe with a thickness of 0.8 mm. Never use any pipe with a thickness less than 0.8 mm, as the pressure resistance

2 Ensure that the 2 refrigerant pipes are insulated to prevent condensation.

3 Refrigerant pipe bending radius must be 100 mm or more. **⚠** CAUTION Be sure to use the insulation of specified thickness. Excessive thickness may

6.35

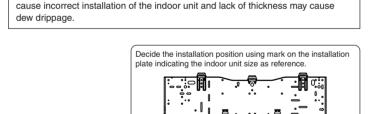
For liquid

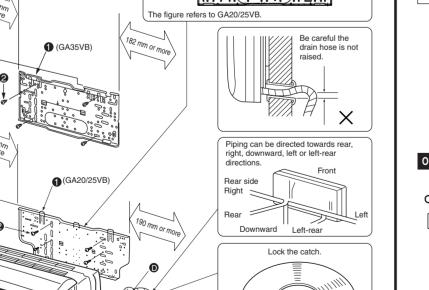
Basically open 100 mm

obstruction in front and

on both sides of the unit.

or more without any





eparate the 2 connecting pipes and apply insulation individually

> When the piping is to be attached to a wall containing metals (tin plated) or

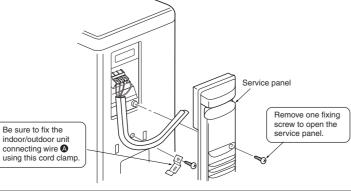
between the wall and the piping or

ape around the piping.

Units should be installed by licensed contractor

ccording to local code requirement

 Use care 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.



Be sure to attach the service panel of the outdoor unit securely. If it is not attached

# 4-3 POWER SUPPLY AND CONNECTING WIRE SPECIFICATIONS

79 mm or more

79 mm or more

with the mark  $\nabla$ .

ixing plate 1

To prevent the installation plate from vibrating, be sure to fix the holes

plate 1 using  $11 \times 20 \cdot 11 \times 26$  oval hole (450 mm pitch).

2) Drill a 75 mm hole so that outside can be lower than inside.

Installation plate 1

Align the scale with the line.

Repeat the same procedure for the left hole.

Be sure to use wall hole sleeve **()** to prevent the outdoor connecting wires from

gap with putty .

Rated Voltage Breaker capacity Connect to the supply terminals and leave a contact separation of at least 3 mm at each pole to disconnect

For the power supply cord and the indoor/outdoor unit connecting wires, be sure to

Be sure to push the core until it is hidden and pull each cable to make sure that it is not

Power supply cord Specification Cable 3-core 1.0 mm², in conformity with Design 245 IEC 57.

Indoor and Outdoor connecting wire Specification

Cable 2-core 1.0 mm², in conformity with Design 245 IEC 57.

Loosen terminal screv

Outdoor unit COOL & HEAT (MUH & MXZ) type

3 N

2-core 1.0 mm<sup>2</sup>

pulled up incomplete insertion may cause a risk of burning the terminal blocks.

A means for disconnection of the supply with an isolation switch, or similar

device, in all active conductors shall be incorporated in the fixed wiring.

Fix the pipe to wall with

contacting with metal part in the wall and to prevent damage by rat in case the wall

When bolts recessed in the concrete wall are to be utilized, secure the installation

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

75 mm

scale length.

Fixing screw (

35 mm

screw 2 4 × 25 mm

4-2 WALL HOLE DRILLING

Positioning of the holes on the wall

(Wall hole cross section)

Wall hole sealing and fixing pipe to wall

For future servicing, give extra length to connecting wire

10 A

Peel off both ends of connecting wire (extension wire).

off power supply wire to the size as shown in the right.

Never cut the power cord and connect it to other wires.

utdoor unit COOL ONLY (MU & MUX) type

3 N 2...1.

Be careful not to contact connecting wire with piping.

use the ones in compliance with the standards.

When too long, or connected by cutting off the middle, peel

Make earth wire a little longer than others (more than 35 mm)

Wall hole sleeve

the terminal block.

230 V

Determine the wall hole position

Insert the wall hole sleeve **©**.

as indicated by the arrows 1.

09 mm or more for le

and left back piping (using

and left back piping (using

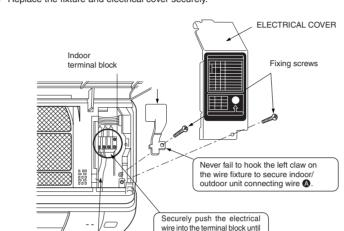
special room air conditioning circuit.				
er supply cord length d to left/Lead to right)	0.3 m/1 m			
or/outdoor unit connecting Specification	Cable 2-core 1.0 mm², in conformity with Design 245 IEC 57.			

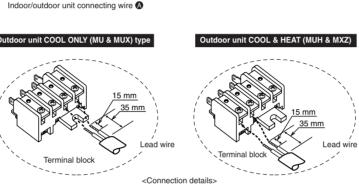
• Take out power supply cord from the left or right bottom corner of the indoor unit. Connect to the power switch which has a gap of 3 mm or more when open to interrupt the source power phase (When the power switch is shut off, it must interrupt all phases. (Rated Voltage/Frequency: 230 V/50 Hz) Input capacity Main switch/Fuse:10 A) (This plug has to be the one meets the Standards.) Power supply cord Green/Yellow : Ground

♠ WARNING Never cut the indoor and outdoor unit connecting wire and connect it to other wire Do not bundle the spare wire, but put it as shown below

# 4-4 INDOOR/OUTDOOR UNIT CONNECTING WIRE CONNECTION (BEFORE HOOKING THE UNIT)

- You can connect indoor/outdoor lead wire without removing the front panel. Open the front grille of the front panel. Remove one screw holding the electrical cover, then remove the cover Remove one screw holding the electrical wire, then remove the fixture.
- In case the outdoor unit is MU type, change the setting of SW2. (refer to 4-5 Pass the indoor/outdoor unit connecting wire 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.





part of its core is appeared.

# **⚠** CAUTION 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 35 mm)

6. INDOOR/OUTDOOR UNIT CONNECTION

FINISHING AND TEST RUN

designed for R410A. (Refer to 2. Refrigerant piping.)

from 7/16 UNF with 20 threads to 1/2 UNF with 20 threads.)

# 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.
- the source power pole. (when the power switch is shut off, it must disconnect all poles.) 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 contaminations to enter the R410A refrigerant during storage and installation, since it is more susceptible to contaminations

For refrigerant piping, use clean, pressure-proof parts / materials specifically

# 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 ubstituted for R410A tools. he 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

Gauge manifold	No	urement range of existing gauges.  Port diameters have been changed to pri any other refrigerant from being charged in unit.		
Charge hose	No	Hose material and cap size have been cha to improve the pressure resistance.		
Gas leak detector	No	Dedicated for HFC refrigerant.		
Torque wrench	Yes	1/4 and 3/8		
Flare tool	Yes	Clamp bar hole has been enlarged to rein the spring strength in the tool.		
Flare gauge	New	Provided for flaring work (to be used with flare tool).		
Vacuum pump adaptor	New	Provided to prevent the back flow of oil. adapter enables you to use existing var pumps.		
Electronic scale for refrigerant charging	New	It is difficult to measure R410A with a cha cylinder because the refrigerant bubbles of 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.

Cut the copper pipe correctly with pipe cutter.

2 Burrs removal

Completely remove all burrs from the cut cross section of pipe.

# avoid to let burrs drop in the piping.

· Put the end of the copper pipe to downward direction as you remove burrs in order to

# 

### units, then put them on pipe having completed (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.

inch R410A ø6.35 1/4

### ø9.52 3/8 4 Flaring work · Carry out flaring work using flaring tool as shown below

Outdoor unit COOL ONLY (MU & MUX) type Outdoor unit COOL & HEAT (MUH & MXZ) type

**⚠** CAUTION

Common specifications for MS type and MSH type are provided against the indoor

unit and the remote controller. They are set up for MSH type when they are shipped

from the factory. In order to switch over the setting to MS type, change SW2-(2) an

If the terminal block is connected incorrectly, the unit does not operate normal

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.

Attach the electrical cover securely. If it is attached incorrectly, it could result in a fire

4-5 HOW TO SWITCH OVER MS TYPE/MSH TYPE AND AUTO

<INDOOR ELECTRONIC CONTROL P.C. BOARD>

When the units are shipped from the factory, SW2 is set up as following.

SLIDE SWITCH as following figures. (Refer to 4-5 in detail.)

(Outdoor unit MUH & MXZ type)

If a ground is incorrect, it may cause an electric shock.

or an electric shock due to dust, water, etc.

SW2-1) sets up AUTO RESTART FUNCTION ON/OFF

SW2-1: AUTO RESTART FUNCTION ON (downside)

RESTART FUNCTION

SW2-2 switches over MS type/MSH type.

The details of SW2

SW2-2: MSH type (downside)

ncomplete connection or fixing of the wire could result in a fire.

2-core 1.0 mm

(Outdoor unit MU & MUX type

SLIDE SWITCH

→ FRONT

R22

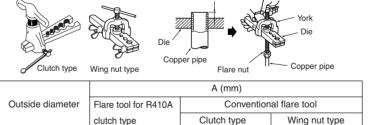
1.5 to 2.0

1.5 to 2.0

3 N 2...1...

Indoor electroni

Indoor terminal block



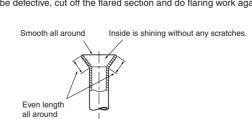
# · Firmly hold copper pipe in a die in the dimension shown in the table above. 5 Check

ø9.52 mm

· Compare the flared work with figure below · If flare is noted to be defective, cut off the flared section and do flaring work again

0 to 0.5

0 to 0.5



1.0 to 1.5

1.0 to 1.5

# 6-3 PIPE CONNECTION

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 Indoor unit connection

Apply a thin coat of refrigeration oil on the seat surface of pipe.

Connect both liquid and gas pipings to indoor unit.

 For connection first align the center, then tighten the first 3 to 4 turns of flare nut. Use tightening torque table below as a quideline for indoor unit side union joint section, and tighten using two wrenches. Excessive tightening damages the flare

13.7 to 17.7 140 to 180 ② Outdoor unit connection Connect pipes to stop valve pipe joint of the outdoor unit in the same manner applied for • For tightening, use a torque wrench or spanner and use the same tightening torque

# **INSULATION AND TAPING**

applied for indoor unit.

- Using piping tape **6**, apply taping starting from the entry of outdoor unit.
- Stop the end of piping tape with tape (with adhesive agent attached).

For outdoor unit side, surely insulate every piping including valves.

# When piping have to be arranged through above ceiling, closet or where the temperature and humidity are high, wind additional commercially sold insulation for

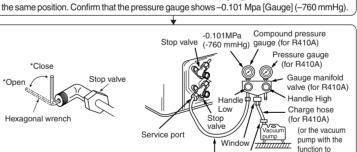
stop valve on the gas pipe side of the outdoor unit.

# 6-4 PURGING PROCEDURES-LEAK TEST PURGING PROCEDURES Connect the refrigerant pipes (both liquid pipe and the gas pipe) between the indoor and the outdoor unit.

Remove the service port cap of the stop valve on the side of the outdoor unit gas pipe (The stop valve will not work in it initial state fresh out of the factory (totally closed with cap on).) Connect the gauge manifold valve and the vacuum pump to the service port of the

Run the vacuum pump. (Vacuumize for more than 15 minutes.) Check the vacuum with the gauge manifold valve, then close the gauge manifold valve, and stop the vacuum pump.

eave as it is for one or two minutes. Make sure the pointer gauge manifold valve remains in



function to Adapter for prevent the back Remove the gauge manifold valve quickly from the service port of the stop valve.

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 Pipe length up to 7 m Pipe length exceeding 7 m Charge the No gas charge is needed prescribed amount of gas. (refer to 3)

Tighten the cap to the service port to obtain the initial status. Retighten the car Leak test Tightening torque N⋅m kaf-cm

13.7 to 17.7

19.6 to 29.4

140 to 180

200 to 300

## 6-5 TEST RUN COOL ONLY (MU & MUX) type

Cap for service port

Cap for stop valve

Before performing the test run, recheck 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.

Press it once, and after test run for 30 minutes the EMERGENCY COOL MODE starts.

(The operation mode changes in order of ① ~ ② every time the EMERGENCY

Perform test run in the following procedure. Insert the power supply plug into the power outlet and/or turn on the breaker. PROCEDURE

| Mode | Operation Indicator lam (Light) (Off)

Press the EMERGENCY OPERATION switch.

Press it once more, and the operation stops

COOL ONLY

(MU & MUX Type)

SLIDE SWITCH

SLIDE SWITCH

COOL & HEAT (MUH & MXZ) type Wrong wiring prevents normal operation or results in blown fuse disabling operation The test run can be started by pressing EMERGENCY OPERATION switch. When run (continuous operation) for 30 minutes.

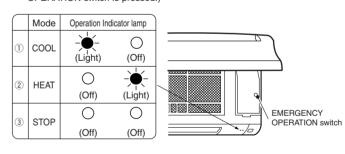
A thermostat does not work during this time. After 30 minutes the unit will start the EMERGENCY OPERATION at a fixed temperature setting of 24 °C in COOL MODE or HEAT MODE. Perform test run in the following procedure.

Insert the power supply plug into the power outlet and/or turn on the breaker PROCEDURE Press the EMERGENCY OPERATION switch

Hold the claw marked by the arrow and pull out the drain hose forward

Press it once, and after test run for 30 minutes the EMERGENCY COOL MODE starts. If the left side lamp of the operation indicator blinks every 0.5 seconds, inspect the indoor/outdoor unit connecting wire (a) for mis-wiring. Press it once more, and the EMERGENCY HEAT MODE starts. Press it once more, and the operation stops

(The operation mode changes in order of ① ~ ③ every time the EMERGENCY OPERATION switch is pressed.)



 In starting the heating operation, indoor unit fan may not operate to pervent blowing cool air. Please wait for a few minutes until the temperature of heat exchanger rises

COOL ONLY (MU & MUX) type and COOL & HEAT (MUH & MXZ) type

### Press the ON/OFF button on the remote controller and check that an electronic sound is heard from the indoor unit. Press the ON/OFF button again to turn the air conditioner off. If the indoor unit is operated with the remote controller, both the test run and the emergency operation are released by commands

• Using the OPERATING INSTRUCTIONS, explain the following to the customer, how

to control temperature, 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.

 Once the compressor stops, the restart preventive device operates so the compressor will not operate for three minutes to protect the air conditioner. 6-6 EXPLANATION TO THE CUSTOMER

Checking the remote (infrared) signal reception

# Recommend the customer to read the OPERATING INSTRUCTIONS carefully. 7. FOR MOVEMENT AND MAINTENANCE

7-1 HOW TO INSTALL THE FRONT PANEL Before installing the front panel, set the horizontal vane to the position as shown 2) Insert the bottom of the front panel under the horizontal vane.

3) Set the top of the front panel.

(4) Push as the arrow mark on the front panel to fix it to the air conditioner

 Place the drain hose below the refrigerant piping. Make sure that the drain hose is not heaved or snaked

4-7 PIPE FORMING

CONDITION

Outdoor unit

MU&MUX type

ow to switch over MS type/MSH type

How to release the AUTO RESTART

Remove the screws of the electrical cover.

Remove the screw of the terminal block.

Disconnect all the lead wires from TAB12

Remove the screw of the earth cable.

Notes: (AUTO RESTART FUNCTION)

automatically according to the memory.

appliance not to turn on at the same time

The details of SLIDE SWITCH

3 Put the two batteries (AAA) in the place.

(5) Press the reset button with a pen, etc

1) Pull out the upper lid.

HOW TO SWITCH

4 Fix the upper lid.

OVER MS TYPE/

MSH TYPE

shipped from the factory.

<REMOTE CONTROLLER>

remote controller was operated.

that a power has restored.

Notes: (How to take out the indoor electronic control P.C. board

Disconnect all the connectors on the electronic control P.C. board

Remove the indoor electronic control P.C. board and the display P.C. board from

When the units of these models are shipped from the factory, auto restart function

When the indoor unit is controlled with the remote controller, the operation mode, 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 "I FEEL

CONTROL" mode before power failure, the operation is not memorized. In "I FEEL

CONTROL" mode, the operation is decided by the initial room temperature at (re)start.

When three minutes have passed after power was restored, the unit will restart

The operation settings are memorized when 10 seconds have passed after the

If the main power is turned off or a power failure occurs while AUTO START/STOP

timer is active, the timer setting is cancelled. As this model is equipped with the

auto restart function, the air conditioner should start operating at the same time

If the unit has been off with the remote controller before power failure, the auto

restart function does not work as the power button of the remote controller is off.

• To prevent breaker off due to the rush of starting current, systematize other home

② Set the SLIDE SWITCH in the battery place with a pen tip as shown in the table

below. The switch is set up for "COOL & HEAT (Left side)", when the units are

**COOL & HEAT** 

(MUH & MXZ Type)

SLIDE SWITCH

4-6 HOW TO SWITCH OVER MS TYPE/MSH TYPE

If the main power (230V AC) has been cut, the operation settings remain.

FUNCTION

Remove the front panel.

Remove the electrical cover.

Remove the terminal cover

Remove the cord clamp.

SW2-2: upside

MUH&MXZ type

SW2-(2): downside

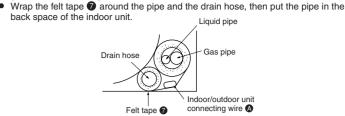
AUTO RESTART

FUNCTION OFF

SW2-11: upside

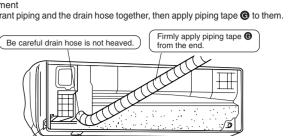
SW2

- Do not pull the hose to apply the tape.
- When the drain hose passes the room, be sure to wrap insulation material (obtainable at a store) around it.



# FOR REAR, RIGHT OR DOWNWARD PIPING

Put the refrigerant piping and the drain hose together, then apply piping tape 6 to them.



- Cut off in case of right piping. Cut off in case of downward piping • Insert the piping and the drain hose into the wall hole sleeve ( ), and hook the
- pper part of the indoor unit on the installation plate  $oldsymbol{0}$ . Check if the indoor unit is hooked securely on the installation plate 1 by moving the unit to left and right.

### Thrust the lower part of the indoor unit into the installation plate 1 FOR LEFT OR LEFT-REAR PIPING

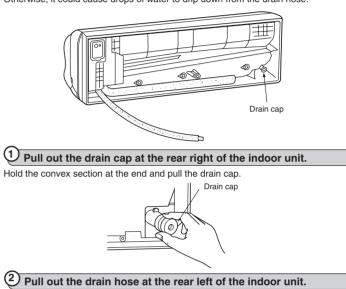
Pipe arrangement

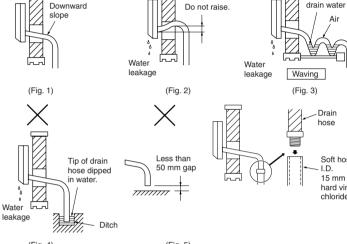
Put the refrigerant piping and the drain hose together, then apply felt tape **1** to them. Be careful drain hose is not heaved.

Cut off in case of left piping.

Firmly apply felt tape  $\ref{prop}$  from the end. (Felt tape  $\ref{prop}$  overlap width should be 1/3 the tape width.)

Be sure to reattach the drain hose and the drain cap in case of left or left-rear piping. Otherwise, it could cause drops of water to drip down from the drain hose.





Put the drain cap into the section to which the drain hose is to

Insert the screwdriver, etc. (not sharp-edged tool) into the hole at the end of the cap

Insert the drain hose into the section to which the drain hose is

Insert the drain hose fully into the drain pan. Check if the hose is hooked securely to

Insert the drain hose into the wall hole sleeve (6), and hook the upper part of indoor unit on the

installation plate 1. Then, move the unit to the very edge of the left side for putting the piping

easily in the back space of the indoor unit. After that, cut a part of packing material, then roll it

as shown below and use it as a spacer to hook on the back rib and lift the indoor unit.

Indoor unit packing

ecurely attach the

the rib, taking care its

shown in the figure right.

spacer assembly in

to be attached at the rear right of the indoor unit.

the projection of its inserting part at the drain pan.

piece as shown in

4-8 DRAIN PIPING

Connect the refrigerant piping with the extension pipe **B**.

Do not make drain piping as shown in Fig. 2 to 5.

Thrust the lower part of the indoor unit into the installation plate 1

• The drain hose should point downward for easy drain flow. (Fig. 1)

NDOOR UNIT INSTALLATION

Fix the end wit

masking tape or tape affixed on

the lower side of

be attached at the rear of the indoor unit.

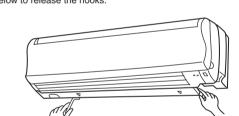
and insert the cap fully into the drain pan.

- 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. • If the extension drain hose has to pass through a room, be sure to wrap it with

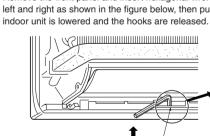
# 7-2 REMOVING THE INDOOR UNIT Remove the bottom of the indoor unit from the installation plate.

commercially sold insulation.

When releasing the corner part Release both left and right bottom corner part of indoor unit and pull it downward and forward as below to release the hooks.



If the above method cannot be used Remove the front panel and insert hexagonal wrenches into the square holes on the left and right as shown in the figure below, then push them up; the bottom of the



# 7-3 GAS CHARGE

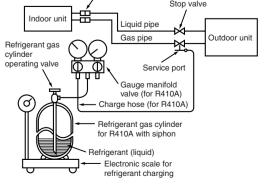
Connect gas cylinder to the service port of stop valve (3-way) Execute air purge of the pipe (or hose) coming from refrigerant gas cylinder. Replenish specified amount of the refrigerant, while operating the air conditioner for cooling.

In case of adding refrigerant, comply with the quantity specified for the refrigerating cycle.

**↑** CAUTION

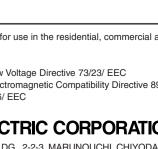
Do not discharge the refrigerant into the atmosphere. Take care not to discharge refrigerant into the atmosphere during installation, reinstallation, or repairs to the refrigerant circuit. For additional charging, charge the refrigerant from liquid phase of the

compressor to be locked. Thus, charge the refrigerant slowly. maintain the high pressure of the gas cylinder, warm the gas cylinder with warm vater (under 40°C) during cold season. But never use naked fire or steam



This product is designed and intended for use in the residential, commercial and The product at hand is based on • Low Voltage Directive 73/23/ EEC

HEAD OFFICE: MITSUBISHI DENKI BLDG., 2-2-3, MARUNOUCHI, CHIYODA-KU,



the following EU regulations: • Electromagnetic Compatibility Directive 89/ 336/ EEC

MITSUBISHI ELECTRIC CORPORATION

