**INSTALLATION MANUAL** 

#### 1. THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR SAFETY

- Please provide an exclusive circuit for the air conditioner and do not connect other electrical appliances to it. Be sure to read "THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR
- SAFETY" before installing the air conditions Be sure to observe the cautions specified here as they include important items
- related to safety. • The indications and meanings are as follows.

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. 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

- 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 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.

## wireless remote controller may not be received.

#### FLARED CONNECTIONS

 This unit has flared connections on both indoor and outdoor sides. Remove the outdoor units valve cover, then connect the pipe.

3. INSTALLATION DIAGRAM & ACCESSORIES

- Refrigerant pipes are used to connect the indoor and outdoor units. Be careful not to crush or bend the pipe in pipe bending.

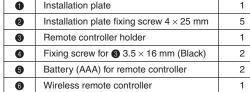
Limits		
Pipe length	20 m max.	
Height difference	12 m max.	
No. of bends	10 max.	
Defrigarant adjustment	If nine length avecade 7 mg	

 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.) No additional charge is required.

Pipe length	Exceeding 7 m	Additional charge is required.
		(Refer to the table below.)
Refrigerant to be added		30 g/m × (refrigerant piping length (m

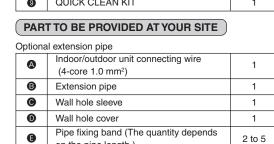
## **ACCESSORIES**

Check the following parts before installation <Indoor unit>



 QUICK CLEAN KIT PART TO BE PROVIDED AT YOUR SITE

Felt tape (Used for left or left-rear piping)



on the pipe length. Fixing screw for **(B)** 4 × 20 mm (The 2 to 5 quantity depends on the pipe length.) Piping tape Putty Drain hose (or soft PVC. hose, 15 mm 1 or 2 inner dia. or hard PVC pipe VP16) Refrigeration oil

Power supply cord (See the table in 5-1 INDOOR/OUTDOOR UNIT CONNECTING WIRE CONNECTION for the cord size.) 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 its air inlet side facing the wall.
- To prevent exposure to wind, it is recommended to install a baffle board on the air outlet side of the outdoor unit.

MUZ-GA25/GA35VA (H)

[FLARE CONNECTION TYPE]



**⚠** CAUTION ■ Earth the unit. Do not connect the earth to a gas pipe, water pipe, lightning rod or telephone earth. Defective earthing could cause an electric shock ■ Do not install the unit in a place where an inflammable gas leaks. If gas leak and accumulate in the area surrounding the unit, it could cause an

(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

■ Install an earth leakage breaker depending on the installation place

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

#### 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 20 m and the difference of height of both units is 12 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 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.

#### 2-2 OUTDOOR UNIT

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

It is advisable to make a piping loop near outdoor unit so as to reduce vibration transmitted from there.

**↑** CAUTION Avoid the following places for installation where air conditioner trouble is liable to

 Where flammable gas could leak. Where there is much machine oi Salty places such as the seaside.

2-3 WIRELESS REMOTE CONTROLLER MOUNTING

 Place of mounting Where it is easy to operate and easily visible. Where children can not touch.

Where sulfide gas is generated such as a hot spring.

Where there is high-frequency or wireless equipment.

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 3 to a pillar or wall and set the wireless remote controller 6. In rooms where inverter type fluorescent lamps are used, the signal from the

Use the refrigerant pipes that meet the following specifications

mm

6.35

9.52

mm or more without

sides of the unit.

For liquid

is insufficient.

Outside diameter | Insulation thickness

Use a copper pipe or a copper-alloy seamless pipe with a thickness of 0.8 mm.

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

③ Refrigerant pipe bending radius must be 100 mm or more.

Never use any pipe with a thickness less than 0.8 mm, as the pressure resistance

Decide the installation position using mark on the installation

ate indicating the indoor unit size as reference

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

mm

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

Insulation material

drain hose is not

Piping can be directed towards real

Lock the catch

Separate the 2 connecting pipes and

8 mm thickness thermal insulation

When the piping is to be attached to a

etal netting, use a chemically treate

en the wall and the piping of

Please deliver to end user with box.

ap 7 to 8 turns of insulation vinyl

ooden piece 20 mm or thicker

ape around the piping.

Units should be installed by licensed contractor

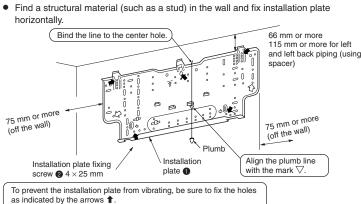
according to local code requirement.

Heat resisting foam plast

0.045 specific gravity

## 4. INDOOR UNIT INSTALLATION

#### 4-1 FIXING OF INSTALLATION PLATE



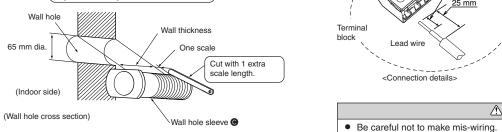
When bolts recessed in the concrete wall are to be utilized, secure the installation plate  $\bullet$  using  $11 \times 20 \cdot 11 \times 26$  oval hole (450 mm pitch). If the recessed bolt is too long, change it for a shorter one available in the market.

## 4-2 WALL HOLE DRILLING

 Determine the wall hole position. Drill a 65 mm hole so that outside can be lower than inside. Insert the wall hole sleeve .

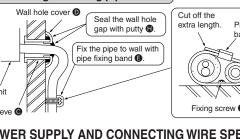
## Positioning of the holes on the wall

Align the scale with the line. 65 mm Repeat the same procedure for the left hole



Be sure to use wall hole sleeve **(9)** 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



4-3 POWER SUPPLY AND CONNECTING WIRE SPECIFICATIONS Use special room air conditioning circuit.

Indoor/outdoor unit connecting wire Specification	Cable 4-core 1.0 mm², in conformity with Design 245 IEC 57.	

#### 4-4 INDOOR AND OUTDOOR CONNECTING WIRE CON-4-5 AUTO RESTART FUNCTION

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

Process the end of the earth wire and connect the wire to the earth terminal of the

Process the end of the indoor/outdoor unit connecting wire and fix the wire to the

Secure the indoor/outdoor unit connecting wire and the earth wire with the VA clamp.

**↑** WARNING

• Use the indoor/outdoor unit connecting wire that meets the Standards to connect

no external force is conveyed to the connecting section of the terminal block.

• Attach the VA clamp securely. If it is attached incorrectly, it could result in a fire or

♠ CAUTION

• If the connecting wire is incorrectly connected to the terminal block, the unit does

• Firmly tighten the terminal screws to prevent them from loosening

• Make earth wire a little longer than the others. (more than 55 mm)

Remove flare nuts attached to indoor and outdoor Flare nut

units, then put them on pipe having completed

(not possible to put them on after flaring work)

Carry out flaring work using flaring tool as shown below.

Flare tool for R410A

0 to 0.5

0 to 0.5

Firmly hold copper pipe in a die in the dimension shown in the table above.

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

clutch type

· Compare the flared work with figure below.

Conventional flare tool

Wing nut type

1.5 to 2.0

1.5 to 2.0

Clutch type

1.0 to 1.5

1.0 to 1.5

Flare nut for R410A pipe differs from R22 pipe.

Refer to the following table for detail

• If an earth is incorrect, it may cause an electric shock.

not operate normally

After tightening, pull the wires lightly to confirm that they do not move.

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

an electric shock due to dust, water, etc.

the indoor and outdoor units and fix the wire to the terminal block securely so that

Never fail to hook the right claw or

the VA clamp to secure indoor/outdoor unit connecting wire **(A)**.

Securely push the wire into

part of its core is appeared

r/outdoor unit connecting wire 🛭

the terminal block until no

S1|S2|S3|@

|S1|S2|S3|(=

Outdoor terminal block

Remove the corner box.

Remove the VA clamp

electrical parts box.

Reinstall the corner box.

terminal block.

- These models are equipped with an auto restart function. If you do not want to use this function, please consult the service representative because the setting of the unit
- needs to be changed. • When the indoor unit is controlled with the remote controller, the operation mode, the set temperature, and the fan speed are memorized by the indoor electronic control PC 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 "AUTO" mode before power failure, the operation mode (COOL, DRY or HEAT) is not stored in the memory. When the main power is turned on, the unit decides the

operation mode by the initial room temperature at restart and starts operation again.

 If the main power has been cut, the operation settings remain. ② When three minutes have passed after power was restored, the unit will restart automatically according to the memory.

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

- remote controller was operated • If the main power is turned off or a power failure occurs while AUTO START/STOP
- auto restart function, the air conditioner starts operating with timer cancelled at the same time that power is restored. • If the unit has been off with the remote controller before power failure, the auto

timer is active, the timer setting is cancelled. As these models are equipped with an

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

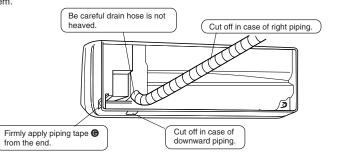
#### appliances not to turn on at the same time. 4-6 PIPE FORMING

- Place the drain hose below the refrigerant piping.
- Make sure that the drain hose is not heaved or snaked.
- Do not pull the hose to apply the tape. When the drain hose passes the room, be sure to wrap insulation material (obtain
- able at a store) around it. • Wrap the felt tape \* around the pipe and the drain hose, then put the pipe in the back space of the indoor unit.



#### Pipe arrangemen Put the refrigerant piping and the drain hose together, then apply piping tape @ to

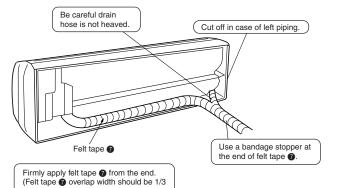
Be careful drain hose is no



- Insert the piping and the drain hose into the wall hole sleeve **©**, and hook the upper
- part of the indoor unit on the installation plate 1. • Check if the indoor unit is hooked securely on the installation plate • by moving the unit to left and right.
- Thrust the lower part of the indoor unit into the installation plate 1

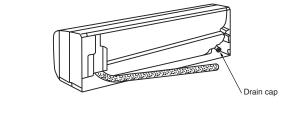
#### FOR LEFT OR LEFT-REAR PIPING

Put the refrigerant piping and the drain hose together, then apply felt tape 7 to them.



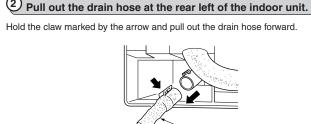
REATTACHING DRAIN HOSE

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



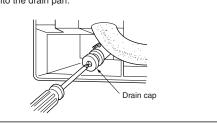
 $oldsymbol{oldsymbol{\cup}}$  Pull out the drain cap at the rear right of the indoor unit.

Hold the convex section at the end and pull the drain cap.



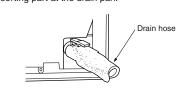
#### Put the drain cap into the section to which the drain hose is to be attached at the rear of the indoor unit.

Insert the screwdriver, etc. (not sharp-edged tool) into the hole at the end of the cap and insert the cap fully into the drain pan.



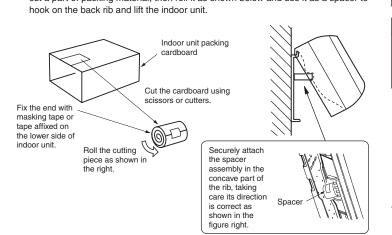
Insert the drain hose into the section to which the drain hose is to be attached at the rear right of the indoor unit.

Insert the drain hose fully into the drain pan. Check if the hose is hooked securely to the projection of its inserting part at the drain pan



#### INDOOR UNIT INSTALLATION

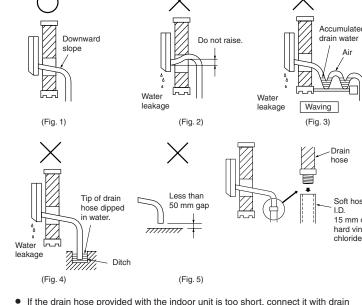
 Insert the drain hose into the wall hole sleeve . and hook the upper part of indoor unit on the installation plate 1. Then, move the unit to the very edge of the left side for putting the piping easily in the back space of the indoor unit. After that, cut a part of packing material, then roll it as shown below and use it as a spacer to



• Connect the refrigerant piping with the extension pine **B**. Thrust the lower part of the indoor unit into the installation plate

#### 4-7 DRAIN PIPING

• The drain hose should point downward for easy drain flow. (Fig. 1) Do not make drain piping as shown in Fig. 2 to 5.



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 commercially sold insulation.

## 5-1 INDOOR/OUTDOOR UNIT CONNECTING WIRE

5. OUTDOOR UNIT INSTALLATION

CONNECTION • Connect the indoor/outdoor unit connecting wire (A) from the indoor unit correctly

 Connect the power supply cord **(S)**. • For future servicing, give extra length to connecting wire. • Peel off both ends of connecting wire (extension wire).

 Be careful not to contact connecting wire with piping. 15 mm Make earth wire a little longer than the others. (more than 35 mm) • For the indoor/outdoor unit connecting wires, be sure to use the ones in compli-

ance with the standards. Be sure to push the core until it is hidden and pull each cable to make sure that it is not pulled up incomplete insertion may cause a risk of burning the terminal Power supply cord specifica-Cable 3-core 1.0 mm<sup>2</sup>, in conformity with

Indoor and Outdoor connecting | Cable 4-core 1.0 mm<sup>2</sup>, in conformity with wire specification Design 245 IEC 57

#### 7-1 HOW TO REMOVE AND INSTALL THE PANEL **ASSEMBLY**

#### Removal procedure

on the terminal block.

 $\bigcirc$ 

After finishing the installation, check the following items and mark the  $\hfill\square$  next to each

Once the compressor stops, the restart preventive device operates so the compressor

] Have the ends of the indoor/outdoor connecting wire been properly inserted into the Has the indoor/outdoor connecting wire been secured firmly?

Is the earth wire connected proper Are the pipes designed for use with R410A or do they have the specified thickness?

Are the pipes at the rear of the unit bundled with felt tape (for left and left-rear piping  $\hfill \square$  Can the installation location bear the weight of the unit and not amplify its vibration or

ls the front panel installed securely? Has the test run been carried out? Has the drain work been performed properly and are there no bubbling sounds?

6-7 EXPLANATION TO THE CUSTOMER • Using the OPERATING INSTRUCTIONS, explain the following to the customer, how to

indoor/outdoor unit connecting wire A for mis-wiring.

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

#### Checking the remote (infrared) signal reception 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. run and the emergency operation are released by commands from

#### will not operate for three minutes to protect the air conditioner. 6-6 CHECKING AFTER INSTALLATION

Are the power supply cord and indoor/outdoor connecting wire connected directly to the units (no intermediate connections)?  $\sqsupset$  Is the earth wire longer than the other wires so that it will not become disconnected

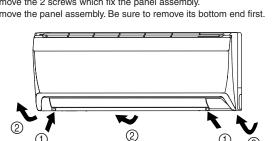
Are the stop valves open fully? ] Is the drain hose properly installed? Has water been poured through the drain hose to confirm proper drainage?

Is the area under the unit free of objects that block the air outlet? Are the vertical and horizontal vanes closed securely?

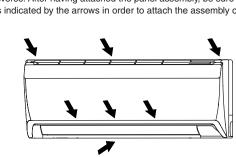
control temperature, how to remove the air filters, how to remove or put the remote controller in the remote controller holder, how to clean, precautions for operation, etc. • Recommend the customer to read the OPERATING INSTRUCTIONS carefully.

## 7. FOR MOVEMENT AND MAINTENANCE

Remove the 2 screws which fix the panel assembly. Remove the panel assembly. Be sure to remove its bottom end first.



Install the panel assembly following the removal procedure  $\mathbin{\textcircled{\scriptsize 1}}$  and  $\mathbin{\textcircled{\scriptsize 2}}$  (described above) in reverse. After having attached the panel assembly, be sure to press the positions as indicated by the arrows in order to attach the assembly completely to the



## 7-2 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.

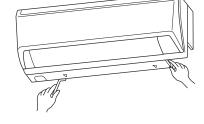
supply plug and/or turn off the breaker. After 15 seconds, connect the power supply plug and/or turn on the breaker, and then press the EMERGENCY OPERATION switch once. (The EMERGENCY COOLING OPERATION can be performed continuously for up to 30 minutes.)

(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).

## When releasing the corner part

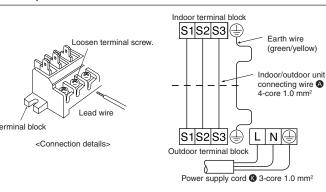
Release both left and right bottom corner part of indoor unit and pull it downward and forward as below to release the hooks.



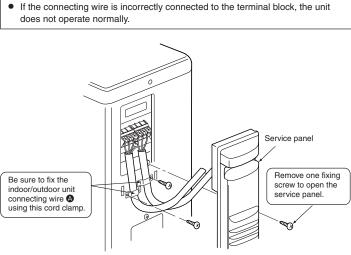
Connect to the power switch which has a gap of 3 mm or more when open to (When the power switch is shut off, it must interrupt all phases.) (Rated Voltage/Frequency: 230 V/50 Hz) (Input capacity Main switch/Fuse:10 A)

#### / WARNING • 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. Never cut the power cord and connect it to other wires. It may cause a fire.



• 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.

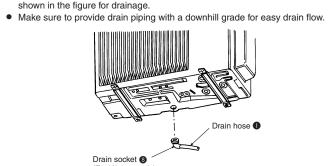


Be sure to attach the service panel of the outdoor unit securely. If it is not attached correctly, it could result in a fire or an electric shock due to dust, water, etc.

Connect the drain hose ① (obtainable at a store, inside diameter: 15 mm) as

#### 5-2 DRAIN PIPING FOR OUTDOOR UNIT

• Provide drain piping before indoor and outdoor piping connection. (It will be hard to install drain socket 8 if indoor and outdoor piping connection is conducted prior to drain piping as outdoor unit becomes immovable.)



Do not use the drain socket 8 in the cold region. Drain may freeze and it makes the

#### If the above method cannot be used

Remove the 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 indoor



7-4 GAS CHARGE (1) 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

In case of adding refrigerant, comply with the quantity specified for the refrigerating **↑** CAUTION

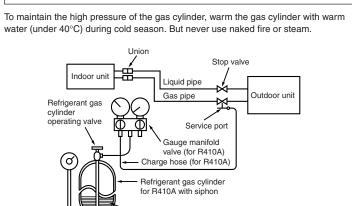
Take care not to discharge refrigerant into the atmosphere during installation,

 When charging the refrigerant system with additional refrigerant, be sure to use liquid refrigerant. Adding gas refrigerant may change the composition of the refrigerant in the system and affect normal operation of the air conditioner. Also, charge the

Do not discharge the refrigerant into the atmosphere.

system slowly, otherwise the compressor will be locked.

reinstallation, or repairs to the refrigerant circuit.



Refrigerant (liquid)

Electronic scale for

refrigerant charging

This product is designed and intended for use in the residential, commercial and

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

#### 6. INDOOR/OUTDOOR UNIT CONNECTION FINISHING AND TEST RUN

#### INSTALLATION INFORMATION FOR THE AIR CONDI-**TIONER 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 contaminations to enter the

R410A refrigerant during storage and installation, since it is more susceptible to

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

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

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

(4) Composition change may occur in R410A since it is a mixed refrigerant. When

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 diameters have been changed to prevent any other refrigerant from being charged into the unit.			
Charge hose	No	Hose 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	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	New	Provided to prevent the back flow of oil. This adapter enables you to use existing vacuum			

#### for refrigeran No: Not substitutable for R410A Yes: Substitutable for R410A

Electronic scal

contaminations than R22.

designed for R410A.

substituted for R410A tools.

6-2 FLARING WORK

Carry out correct flaring work in the following procedure

Main cause of gas leakage is defect in flaring work.

1 Pipe cutting Cut the copper pipe correctly with pipe cutte

avoid to let burrs drop in the piping.

· 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

It is difficult to measure R410A with a charging

cylinder because the refrigerant bubbles due to

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

applied for indoor unit.

**INSULATION AND TAPING** 

Cover piping joints with pipe cover

Outside diameter

ø6.35 mm

ø9.52 mm

5 Check

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

of refrigerant. Indoor unit connection 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 guideline 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 34.3 to 41.2 | 350 to 420 Outdoor unit connection

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

• Stop the end of piping tape **6** with tape (with adhesive agent attached).

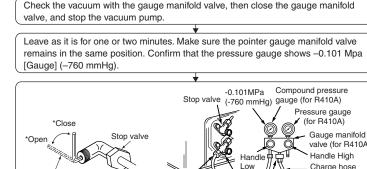
Using piping tape **6**, apply taping starting from the entry of outdoor unit.

• When piping have to be arranged through above ceiling, closet or where the

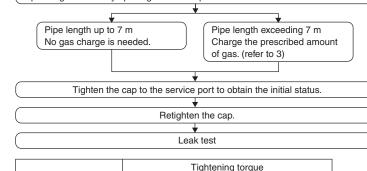
temperature and humidity are high, wind additional commercially sold insulation for

## PURGING PROCEDURES

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 Connect the gauge manifold valve and the vacuum pump to the service port of the



pump with the function to Adapter for prevent the \*4 to 5 turns back flow) Remove the gauge manifold valve quickly from the service port of the stop valve.

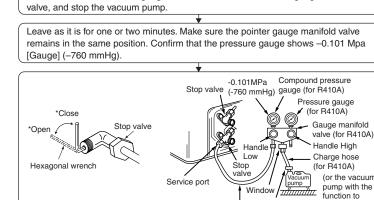


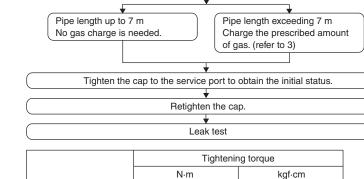
#### Cap for service por Cap for stop valve

• 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.

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

> stop valve on the gas pipe side of the outdoor unit. Run the vacuum pump. (Vacuumize for more than 15 minutes.)





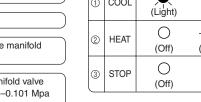
13.7 to 17.7

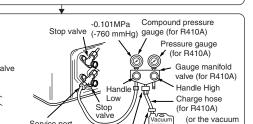
19.6 to 29.4

 Perform test run in the following procedure. Insert the power supply plug into the power outlet and/or turn on the breaker. Check that all LED lamps are not lit.

 Press the EMERGENCY OPERATION switch. 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

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  $\textcircled{1} \sim \textcircled{3}$  every time the EMERGENCY OPERATION switch is pressed." Mode | Operation Indicator lamp





140 to 180

200 to 300

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.

#### 6-5 TEST RUN • Before performing the test run, recheck for any wrong wiring. Wrong wiring prevents normal operation or results in blown fuse disabling operation

If they are blinking, the horizontal vane is not installed correctly. In this case, disconnect the power supply plug and/or turn off the breaker, and then

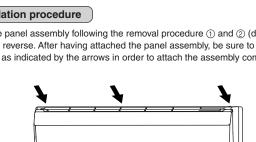
# reinstall the horizontal vane. (See the OPERATING INSTRUCTIONS.)

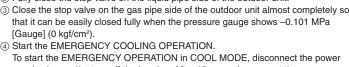


## Is the specified power supply voltage used? Is the power line equipped with the circuit breaker?

Has the leak test been carried out for the pipe connections? ] Has air purging been carried out?

## Have all of the ⚠ WARNING and ⚠ CAUTION items in "1. THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR SAFETY" been checked?





#### ® Stop the EMERGENCY COOLING OPERATION. Press the EMERGENCY OPERATION switch twice to stop the operation. 7-3 REMOVING THE INDOOR UNIT Remove the bottom of the indoor unit from the installation plate.

light-industrial environment. The product at hand is based on • Low Voltage Directive 73/23/ EEC the following EU regulations: • Electromagnetic Compatibility Directive 89/336/