



# **Owner's Manual**

## **Original Instructions**

Mini Console



Thank you for choosing our product.

Please read this Owner's Manual carefully before operation and retain it for future reference.

If you have lost the Owner's Manual, please contact the local agent or visit [www.gree.com](http://www.gree.com) or send an email to [global@cn.gree.com](mailto:global@cn.gree.com) for the electronic version.

Indoor Unit	Outdoor Unit
GEH(09)AA-D6DNA1A/I	CON09HP230V1R32AH
GEH(12)AA-D6DNA1A/I	CON12HP230V1R32AH
GEH(18)AA-D6DNA1A/I	CON18HP230V1R32AH

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### **Thank you for selecting our products**





One of the benefits awaiting you with our room air conditioner is not only comfort of life but also good health. This operation instruction brings you the many comfort and technological features your unit has to offer. In addition, it provides you vital information about maintenance, service and economical operating. Take the next few minutes to discover how to get your comfort and economy of the operation from your new room air conditioner.

The figures in this manual may be different with the material objects, please refer to the material objects for reference.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

External static pressures at the appliance was tested is 0 Pa  
Fuse link: T250 V; 3.15 A

## The refrigerant

 <p>Refrigerant Safety Group <b>A2L</b></p> <p>Appliance filled with flammable magas R32.</p>	 <p>Before install the appliance, read the installation manual first.</p>
 <p>Before use the appliance, read the owner's manual first.</p>	 <p>Before repair the appliance, read the service manual first.</p>

- To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32, which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can lead to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.
- Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozonosphere. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units there fore need a less filling.

### WARNING

- Appliance filled with flammable gas R32.
- Appliance shall be installed, operated and stored in a room with a floor area not less than  $X \text{ m}^2$ .  
(Please refer to table "a" in section of " Safety operation of flammable refrigerant " for space X.)
- The appliance shall be stored in a room without continuously operating ignition sources.  
(for example:open flames,an operating gas appliance or an operating electric heater.)
- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- Ducts connected to an appliance shall not contain an ignition source.
- Keep any required ventilation openings clear of obstruction.
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odour.
- Do not use means to accelerate the defrosting

- process or to clean,other than those recommended by the manufacturer.
- Servicing shall be performed only as recommended by the manufacturer.
  - Should repair be necessary,contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous.
  - Compliance with national gas regulations shall be observed.
  - Read specialist's manual.



## Safety operation of flammable refrigerant

### Qualification of workers

Qualification of the working personnel for maintenance, service and repair operations should according to UL 60335-2 -40、 CAN/C-SA-C22.2 No. 60335-2-40: 22 Annex HH.. Every working procedure that affects safety means shall only be carried out by competent persons according to Annex HH. Special training additionalto usual refrigerating equipment repair procedures is required when equipment with FLAMMABLE REFRIGERANTS is affected.

### Installation notes

- The air conditioner must be installed in a room that is larger than the minimum room area. The minimum room area is shown on the nameplate or following table a.
- It is not allowed to drill hole or burn the connection pipe.
- Leak test is a must after installation.

## Safety operation of flammable refrigerant

**table a - Minimum room area ( m<sup>2</sup> )**

Based on UL 60335-2-40 requirements  
The following installation height and area for customer reference

Charge amount (kg)	Installation height (m)
	Minimum room area (m <sup>2</sup> )
≤2.7	8.1
2.8	8.4
2.9	8.7

### Maintenance notes

- Check whether the maintenance area or the room area meet the requirement of the nameplate.
  - It's only allowed to be operated in the rooms that meet the requirement of the nameplate.
- Check whether the maintenance area is well-ventilated.
  - The continuous ventilation status should be kept during the operation process.
- Check whether there is fire source or potential fire source in the maintenance area.
  - The naked flame is prohibited in the maintenance area; and the "no smoking" warning board should be hanged.
- Check whether the appliance mark is in good condition.
  - Replace the vague or damaged warning mark.

### Welding

- If you should cut or weld the refrigerant system pipes in the process of maintaining, please follow the steps as below:
  - a. Shut down the unit and cut power supply
  - b. Eliminate the refrigerant
  - c. Vacuuming
  - d. Clean it with N<sub>2</sub> gas
  - e. Cutting or welding
  - f. Carry back to the service spot for welding
- The refrigerant should be recycled into the specialized storage tank.
- Make sure that there isn't any naked flame near the outlet of the vacuum pump and it's well-ventilated.

### Filling the refrigerant

- Use the refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant won't contaminate with each other.
- The refrigerant tank should be kept upright at the time of filling refrigerant.
- Stick the label on the system after filling is finished (or haven't finished).
- Don't overfilling.
- After filling is finished, please do the leakage detection before test running; another time of leak detection should be done when it's removed.

### Safety instructions for transportation and storage

- Please use the flammable gas detector to check before unload and open the container.
- No fire source and smoking.
- According to the local rules and laws.

### Safety of Construction

- For appliances using FLAMMABLE REFRIGERANTS, all joints made in the installation between parts of the REFRIGERATING SYSTEM, with at least one part charged, shall be made in accordance with the following:
  - A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant to flow between the REFRIGERATING SYSTEM parts. A vacuum valve shall be provided to evacuate the interconnecting pipe or any uncharged REFRIGERATING SYSTEM part.
  - Mechanical connectors used indoors shall comply with ISO 14903. When mechanical connectors are reused indoors, sealing parts shall be renewed. When flared joints are reused indoors, the flare part shall be refabricated.
  - Refrigerant tubing shall be protected or enclosed to avoid damage.
  - Flexible refrigerant connectors (such as connecting lines between the indoor and outdoor unit) that may be displaced during NORMAL OPERATION shall be protected against mechanical damage.

## ■ Safety operation of flammable refrigerant

### Pressure test and leak detect

- After completion of field piping for split systems, the field pipework shall be pressure tested with an inert gas and then vacuum tested prior to refrigerant charging, according to the following requirements.

The minimum test pressure for the low side of the system shall be the low side design pressure and the minimum test pressure for the high side of the system shall be the high side design pressure, unless the high side of the system, cannot be isolated from the low side of the system in which case the entire system shall be pressure tested to the low side design pressure.

- Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure. No leak shall be detected.

## ■ Notices for using refrigerant sensor

- The refrigerant sensor can monitor whether R32 refrigerant leaks in real time. When the leakage of R32 refrigerant is detected, the sensor will trigger the alarm and emit a buzzer, and the indoor unit will display "EA" code. Meanwhile, the outdoor unit will stop running.
- In case of refrigerant leakage, please open the window immediately for ventilation to reduce the concentration of refrigerant in the room. Meanwhile, check the room to ensure that there is no fire source. After completing the above operations, please leave the room and go to the safe place, and then contact the after-sales service team for maintenance.
- When the refrigerant sensor reaches its service life or is damaged, the indoor unit will display "FE" code. Please contact the after-sales service team to replace the refrigerant sensor.
- Avoid oil and water splashing into the refrigerant sensor, otherwise it may cause damage to the refrigerant sensor.

- Avoid using it in the environment with electro-magnetic interference, chemical substances (such as chemical plants, etc.), flammable gas, combustible and explosive gas and smog, etc.
- Avoid using items containing ethanol (such as perfume, etc.) and smog-producing items (such as cigarettes, etc.) near the refrigerant sensor, otherwise it will lead to abnormal conditions such as false alarms of the refrigerant sensor. If such phenomenon occurs, please contact the after-sales service team for maintenance.
- Only applicable to refrigerant sensor models.

## **FCC WARNING**

**WARNING:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **FCC STATEMENT**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions :

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## **IC STATEMENT**

This device complies with Industry Canada licence exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## IC STATEMENT

This equipment complies with FCC's and IC's RF radiation exposure limits set forth for an uncontrolled environment. The antenna(s) used for this transmitter must be installed and operated to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter. Installers must ensure that 20cm separation distance will be maintained between the device (excluding its handset) and users.

Cet appareil est conforme aux limites d'exposition au rayonnement RF stipulées par la FCC et l'IC pour une utilisation dans un environnement non contrôlé. Les antennes utilisées pour cet émetteur doivent être installées et doivent fonctionner à au moins 20 cm de distance des utilisateurs et ne doivent pas être placées près d'autres antennes ou émetteurs ou fonctionner avec ceux-ci. Les installateurs doivent s'assurer qu'une distance de 20 cm sépare l'appareil (à l'exception du combiné) des utilisateurs.

**WARNING****Installation**

- Installation or maintenance must be performed by qualified professionals.
- The appliance shall be installed in accordance with national wiring regulations.
- According to the local safety regulations, use qualified power supply circuit and circuit breaker.
- All wires of indoor unit and outdoor unit should be connected by a professional.
- Be sure to cut off the power supply before proceeding any work related to electricity and safety.
- Make sure the power supply matches with the requirement of air conditioner.
- Unstable power supply or incorrect wiring may result in electric shock, fire hazard or malfunction. Please install proper power supply cables before using the air conditioner.
- The grounding resistance should comply with national electric safety regulations.
- Air Conditioner should be properly grounded. Incorrect grounding may cause electric shock.
- Do not put through the power before finishing installation.
- Do install the circuit breaker. If not, it may cause malfunction.
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- Circuit breaker should be included magnet buckle and heating buckle function. It can protect the overload and circuit-short.
- Installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.



## CAUTION

### Installation

- Instructions for installation and use of this product are provided by the manufacturer.
- Select a location which is out of reach for children and far away from animals or plants. If it is unavoidable, please add the fence for safety purpose.
- The indoor unit should be installed close to the wall.
- Don't use unqualified power cord.
- If the length of power connection wire is insufficient, please contact the supplier for a new one.
- The appliance must be positioned so that the plug is accessible.
- For the air conditioner with plug, the plug should be reachable after finishing installation.
- For the air conditioner without plug, a circuit breaker must be installed in the line.
- The yellow-green wire in air conditioner is grounding wire, which can't be used for other purposes.
- The air conditioner is the first class electric appliance. It must be properly grounded with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
- The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.



### WARNING

- Before operation, please confirm whether power specification complies with that on nameplate.
  - Before cleaning or maintaining the air conditioner, please turn off air conditioner and pull out the power plug.
  - Make sure the power cord hasn't been pressed by hard objects.
  - Do not pull or drag the power cord to pull out the power plug or move the air conditioner.
  - Do not insert or pull out the power plug with wet hands. Please use the grounded power. Make sure the grounding is reliable.
  - If the SUPPLY CORD is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- If abnormal condition occurs (e. g. burned smell), please disconnect power at once and then contact local dealer.
  - When nobody is taking care of the unit, please turn it off and remove the power plug or disconnect power.
  - Do not splash or pour water on air conditioner. Otherwise, it may cause short circuit or damage to air conditioner.
  - Prohibit operating heating equipment around the air conditioner.
  - Prohibit operating the unit in the bathroom or laundry room.
  - Far away from fire source, inflammable and explosive objects.
  - Children and disabled people are not allowed to use the portable room.



### WARNING

- air conditioner without supervision.
- Keep children from playing or climbing on the air conditioner.
- Do not put or hang dripping objects above the air conditioner.
- Do not repair or disassemble the air conditioner by yourself.
- Do not block air outlet or air inlet.
- Prohibit inserting any objects into the air conditioner.
- Do not through sundries into the air duct. If there are sundries get into the air duct, please contact the professionals to deal with it.
- Do not use an extension cord.
- A fuse or circuit breaker should be added at the product circuit. Please refer to the MOP value

- on the nameplate for the detailed specification.
- The appliance shall be installed in accordance with national wiring regulations.
- If a **STATIONARY APPLIANCE** is not fitted with a **SUPPLY CORD** and a plug, an all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

**WARNING****Operation and Maintenance**

- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Do not connect air conditioner to multi-purpose socket. Otherwise, it may cause fire hazard.
- Do not disconnect power supply when cleaning air conditioner. Otherwise, it may cause electric shock.
- Do not wash the air conditioner with water to avoid electric shock.
- Do not spray water on indoor unit. It may cause electric shock or malfunction.
- Do not repair air conditioner by yourself. It may cause electric shock or damage. Please contact dealer when you need to repair air conditioner.
- After removing the filter, do not touch fins to avoid injury.
- Do not extend fingers or objects into air inlet or air outlet. It may cause personal injury or damage.



## CAUTION

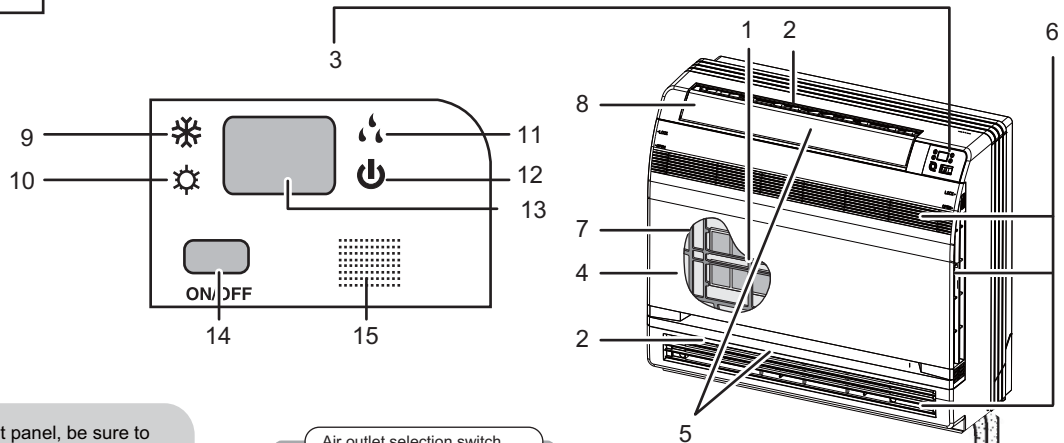
### Operation and Maintenance

- Do not spill water on the remote controller, otherwise the remote controller may be broken.
  - Do not use fire or hair dryer to dry the filter to avoid deformation or fire hazard.
  - Do not block air outlet or air inlet. It may cause malfunction.
  - Do not step on top panel of outdoor unit, or put heavy objects. It may cause damage or personal injury.
  - For appliances made up of more than one factory made assembly specified by the manufacturer to be used together, instructions shall be provided for completing the assembly to ensure compliance with the requirements.
- When below phenomenon occurs, please turn off air conditioner and disconnect power immediately, and then contact the dealer or qualified professionals for service.
    - Power cord is overheating or damaged.
    - There's abnormal sound during operation.
    - Circuit breaker trips off frequently.
    - Air conditioner gives off burning smell.
    - Indoor unit is leaking.

# 1

## Part names and their functions

### INDOOR UNIT



### CAUTION

Before opening the front panel, be sure to stop the operation and turn the breaker OFF.  
Do not touch the metal parts on the inside of the indoor unit, as it may result in injury.

#### 1. Air-Purifying Filter:

- These filters are attached to the inside of the air filters.
- Note: Healthy filter is the optional accessory.

#### 2. Air outlet

#### 3. Display

#### 4. Front panel

#### 5. Louvers (vertical blades)

- The louvers are inside of the air outlet.

#### 6. Air inlet

#### 7. Air filter

#### 8. Flap (horizontal blade)

#### 9. Cool mode indicator

#### 10. Heat mode indicator

#### 11. Dry mode indicator

#### 12. Run ON/OFF indicator

#### 13. LED display

#### 14. Indoor Unit ON/OFF switch:

- Push this switch once to start operation. Push once again to stop it.
- The operation mode refers to the following table.

Model	Mode	Temperature setting	Air flow rate
COOLING ONLY	AUTO	25°C (77°F)	AUTO
HEAT PUMP	AUTO	25°C (77°F)	AUTO

- This switch is useful when the remote controller is missing.

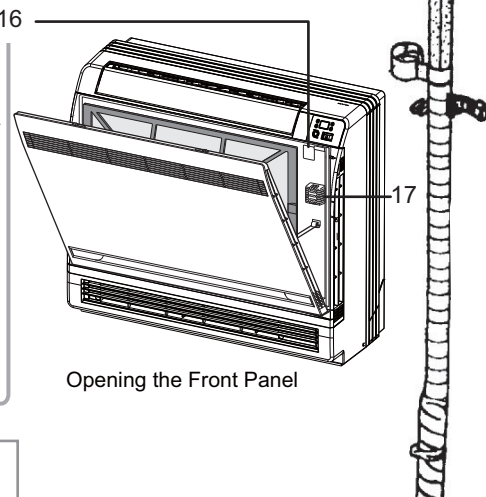
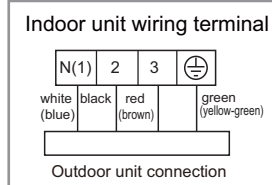
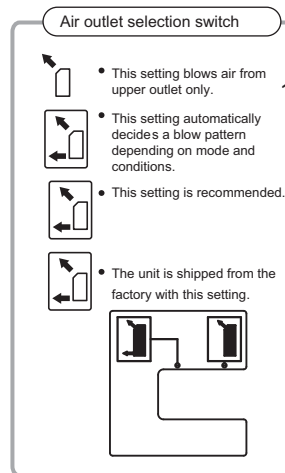
#### 15. Signal receiver:

- It receives signals from the remote controller.
- When the unit receives a signal, you will hear a short beep.
- Settings changed....beep

#### 16. Air outlet selection switch

#### 17. Room temperature sensor:

- It senses the air temperature around the unit.



Opening the Front Panel

#### NOTE:

- ① If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.
- ② The appliance shall be installed in accordance with national wiring regulations.
- ③ An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

# 2

## How to use the remote control to operate the unit

### Buttons on remote controller

### Introduction for icons on display screen



	Quiet	
	Set fan speed	
	Turbo mode	
	Send signal	
Operation mode		Auto mode
		Cool mode
		Dry mode
		Fan mode
		Heat mode
	X-FAN function	
	Power limiting operation	
	Set temperature	
	Indoor ambient temp.	
	TIMER ON / TIMER OFF	
	Set time	
	Left & right swing	
	Up & down swing	
	Child lock	
	Air function	
	Health function	
	WiFi function	
	LED	
	I feel	
	Sleep mode	

## Introduction for buttons on remote controller

### NOTE

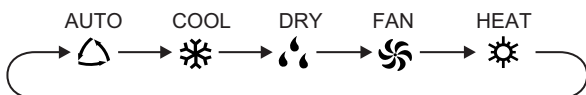
- This is a general use remote controller. It could be used for the air conditioner with multifunction. For the functions which the model doesn't have, if press the corresponding button on the remote controller, the unit will keep the original running status.
- After putting through the power, the air conditioner will give out a sound. Power indicator "⏻" is ON. After that, you can operate the air conditioner by using remote controller.
- Under on status, pressing the button on the remote controller, the signal icon "📶" on the display of remote controller will blink once and the air conditioner will give out a "di" sound, which means the signal has been sent to the air conditioner.

### ⏻ On/Off button

Press this button to turn on the unit. Press this button again to turn off the unit.

### Mode button

Press this button to select your required operation mode.



- When selecting auto mode, air conditioner will operate automatically according to the sensed temperature. Press "Fan" button can adjust fan speed. Press "🌀" / "🌀" button can adjust fan blowing angle.
- After selecting cool mode, air conditioner will operate under cool mode. Press "+" or "-" button to adjust set temperature. Press "Fan" button to adjust fan speed. Press "🌀" / "🌀" button to adjust fan blowing angle.
- When selecting dry mode, the air conditioner operates at low speed under dry mode. Under dry mode, fan speed can't be adjusted. Press "🌀" / "🌀" button to adjust fan blowing angle.
- When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating. Press "Fan" button to adjust fan speed. Press "🌀" / "🌀" button to adjust fan blowing angle.

- When selecting heat mode, the air conditioner operates under heat mode. Press "+" or "-" button to adjust set temperature. Press "Fan" button to adjust fan speed. Press "🌀" / "🌀" button to adjust fan blowing angle.

### NOTE

- For preventing cold air, after starting up heat mode, indoor unit will delay 1~5 minutes to blow air (Actual delay time depends on indoor ambient temperature).
- Set temperature range from remote controller: 16~30 C (61~86°F).
- This mode indicator is not available for some models.
- Cooling only unit won't receive heat mode signal. If setting heat mode with remote controller, press "On/Off" button can't start up the unit.

### Fan button

This button is used for setting Fan Speed in the sequence that goes from AUTO, 🌀, 🌀, 🌀, 🌀, 🌀, 🌀, 🌀, 🌀, then back to Auto.



- Low speed 🌀 Low-Medium speed 🌀 Medium speed 🌀
- Medium-High speed 🌀 High speed 🌀
- Turbo speed 🌀 Quiet speed 🌀

### NOTE

- It's low fan speed under dry mode.
- X-FAN function Hold fan speed button for 2s in cool or dry mode, the icon "🌀" is displayed and the indoor fan will continue operation for a few minutes in order to dry the indoor unit even though you have turned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in auto, fan or heat mode.  
This function indicates that moisture on evaporator of indoor unit will be blown after the unit is stopped to avoid mould.
- Having set X-FAN function on: After turning off the unit by pressing "On/Off" button indoor fan will continue running for a few minutes. at low speed. In this period, Hold fan speed button for 2s to stop indoor fan directly.
- Having set X-FAN function off: After turning off the unit by pressing "On/Off" button, the complete unit will be off directly.

## + / - button

Press "+" or "-" button once increase or decrease set temperature 1°C(°F). Holding "+" or "-" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly.

## Wifi button

Press "Wifi" button to turn on WiFi function, "Wifi" icon will be displayed on the remote controller; Hold "Wifi" button for 5s to turn off WiFi function and "Wifi" icon will disappear. Under off status, press "Mode" and "Wifi" buttons simultaneously for 1s, WiFi module will restore factory settings.

### NOTE

- This function is only available for some models.

## Health button

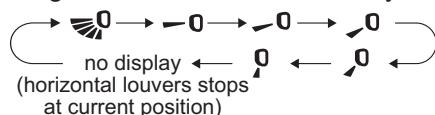
Press this button to turn on or turn off the health and air functions in operation status. Press this button for the first time to start air function; LCD displays "🌀". Press the button for the second time to start health and air functions simultaneously; LCD displays "🌀" and "🌿". Press this button for the third time to quit health and air functions simultaneously. Press the button for the fourth time to start health function; LCD display "🌿". Press this button again to repeat the operation above.

### NOTE

- This function is only available for some models.

## UD-swing button

Press this button can select up & down swing angle. Fan blow angle can be selected circularly as below:



- When selecting "🌀", air conditioner is blowing fan automatically. Horizontal louver will automatically swing up & down at maximum angle.
- When selecting "↖️", "↘️", "↙️", "↗️", "🌀", air conditioner is blowing fan at fixed position. Horizontal louver will stop at the fixed position.
- Hold "🌀" button above 2s to set your required

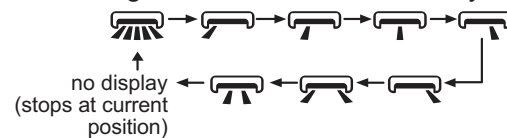
swing angle. When reaching your required angle, release the button.

### NOTE

- Press this button continuously more than 2s, the main unit will swing back and forth from up to down, and then loosen the button, the unit will stop swinging and present position of guide louver will be kept immediately.
- Under swing up and down mode, when the status is switched from off to 🌀, if press this button again 2s later, 🌀 status will switch to off status directly; if press this button again within 2s, the change of swing status will also depend on the circulation sequence stated above.

## LR-swing button

Press this button can select left & right swing angle. Fan blow angle can be selected circularly as below:



### NOTE

- Press this button continuously more than 2s, the main unit will swing back and forth from left to right, and then loosen the button, the unit will stop swinging and present position of guide louver will be kept immediately.
- Under swing left and right mode, when the status is switched from off to 🌀, if press this button again 2s later, 🌀 status will switch to off status directly; if press this button again within 2s, the change of swing status will also depend on the circulation sequence stated above.
- This function only applicable for some models.

## Clock button

Press this button to set clock time. "🕒" icon on remote controller will blink. Press "+" or "-" button within 5s to set clock time. Each pressing of "+" or "-" button, clock time will increase or decrease 1 minute. If hold "+" or "-" button, 2s later, time will change quickly. Release this button when reaching your required time. Press "Clock" button to confirm the time. "🕒" icon stops blinking.

### NOTE

- Clock time adopts 24-hour mode.
- The interval between two operations can't exceed 5s. Otherwise, remote controller will quit setting status. Operation for TIMER ON/TIMER OFF is the same.



## Timer on / Timer off button

- TIMER ON button**  
 "TIMER ON" button can set the time for timer on. After pressing this button, "🕒" icon disappears and the word "ON" on remote controller blinks. Press "+" or "-" button to adjust TIMER ON setting. After each pressing "+" or "-" button, TIMER ON setting will increase or decrease 1min. Holding "+" or "-" button, 2s later, the time will change quickly until reaching your required time.  
 Press "TIMER ON" to confirm it. The word "ON" will stop blinking. "🕒" icon resumes displaying.  
 Cancel TIMER ON: Under the condition that TIMER ON is started up, press "TIMER ON" button to cancel it.
- TIMER OFF button**  
 "TIMER OFF" button can set the time for timer off. After pressing this button, "🕒" icon disappears and the word "OFF" on remote controller blinks. Press "+" or "-" button to adjust TIMER OFF setting. After each pressing "+" or "-" button, TIMER OFF setting will increase or decrease 1min. Holding "+" or "-" button, 2s later, the time will change quickly until reaching your required time.  
 Press "TIMER OFF" and the word "OFF" will stop blinking. "🕒" icon resumes displaying.  
 Under the condition that TIMER OFF is started up, press "TIMER OFF" button to cancel it.

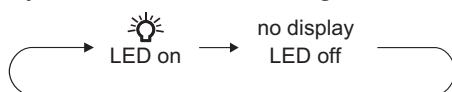
### NOTE

- Under on and off status, you can set TIMER OFF or TIMER ON simultaneously.
- Before setting TIMER ON or TIMER OFF, please adjust the clock time.
- When turning on TIMER ON or TIMER OFF function, set this function valid all the time and the air conditioner will be turned on or turned off at set temperature every day. On/Off button has no affect to setting. If this function is not required, use the remote controller to cancel it.



## Light button

Press this button to control the LED status on the display, the circulation change is as follow:



## Function introduction for combination buttons

### Energy-saving function

Under cooling mode, press "Mode" and "Clock" buttons simultaneously to start up or turn off energy-saving function. When energy-saving function is started up, "SE" will be shown on remote controller, and air conditioner will adjust the set temperature automatically according to ex-factory setting to reach to the best energy-saving effect. Press "Mode" and "Clock" buttons simultaneously again to exit energy-saving function.

### NOTE

- Under energy-saving function, fan speed is defaulted at auto speed and it can't be adjusted.
- Under energy-saving function, set temperature can't be adjusted.
- Sleep function and energy-saving function can't operate at the same time. If energy-saving function has been set under cool mode, press "Clock" and "Light" buttons simultaneously will cancel energy-saving function. If sleep function has been set under cool mode, start up the energy-saving function will cancel sleep function.

### Child lock function

Hold "On/Off" and "-" buttons simultaneously for 3s to turn on or turn off child lock function. When child lock function is on, "🔒" icon is displayed on remote controller. If you operate the remote controller, the "🔒" icon will blink three times without sending signal to the unit.

### Temperature display switchover function

Under OFF status, hold "Mode" and "-" buttons simultaneously for 3s to switch temperature display between °C and °F.



### function

Power limit function is for limiting power of the whole unit. Press "Mode" and "Light" buttons simultaneously, the remote controller will circularly display as the

following:



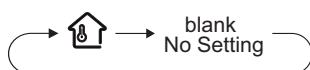
- Maximum power limited under the mode is lower than that of mode.
- If you want to cancel the power limiting function, press "Mode" and "Light" buttons simultaneously till the icon in remote controller is not displayed.
- When the remote controller is turned off, power limiting function is cancelled. If you want to activate the function, please repress "Mode" and "Light" buttons simultaneously.
- If the current power is lower than the maximum power of mode, then the power will not be limited after entering into such mode.
- For the model with one outdoor unit and two indoor units, if any one of indoor units enters into power limiting function, the outdoor unit will enter into the set limiting power mode of indoor unit; when two indoor units enter into power limiting mode, then the power of outdoor unit will be limited according to the lower power of the two indoor units.

## NOTE

- This function is only available for some models.

## Indoor ambient temperature

By holding "On/Off" and "" buttons simultaneously, you can see indoor ambient temperature on indoor unit's display. The setting on remote controller is selected circularly as below:



- When selecting "" with remote controller, temperature indicator on indoor unit displays indoor ambient temperature.

## Clean reminder function of filter

The reminder function is defaulted to be OFF. Hold "On/Off" and "" buttons simultaneously for 5s to turn it on. The buzzer will give out sound for 0.5s and the dual-8 nixie tube on the display will be on for 3s; Once the reminder function is turned on, when the air conditioner has reached to the set time, the dual-8 nixie tube will flash about 30s when the unit is turned on each time to remind the user to clean the filter; you can turn off this cycle reminder by holding "On/Off" and "" buttons simultaneously for 5s and then the air conditioner will count time again.

## NOTE

- Once the reminder function is turned on, only this cycle reminder can be cleared.
- This function is only available for some models.

## Auto clean function

Under unit off status, hold "Mode" and "" buttons simultaneously for 5s to turn on or turn off the auto clean function. When the auto clean function is turned on, indoor unit displays "CL". During the auto clean process of evaporator, the unit will perform fast cooling or fast heating. There may be some noise, which is the sound of flowing liquid or thermal expansion or cold shrinkage. The air conditioner may blow cool or warm air, which is a normal phenomenon. During cleaning process, please make sure the room is well ventilated to avoid affecting the comfort.

## NOTE

- The auto clean function can only work under normal ambient temperature. If the room is dusty, clean it once a month; if not, clean it once every three months. After the auto clean function is turned on, you can leave the room. When auto clean is finished, the air conditioner will enter standby status.
- This function is only available for some models.

## Night mode

Under cooling or heating mode, when turning on sleep mode and turn to low speed or quiet notch, the outdoor unit would enter into night mode.

## NOTE

- When you feel that the cooling and heating effect is poor, please press "Fan" button to other fan speed or press "Clock" and "Light" buttons simultaneously to exit the night mode.
- The night mode can only work under normal ambient temperature.
- This function is only available for some models.

## I FEEL function

Press "Health" and "+" buttons simultaneously to start I FEEL function and "" will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature

according to the detected temperature. Press "Health" and "+" buttons simultaneously again to turn off I FEEL function and "i" will disappear.

- Please put the remote controller near user when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature. When I FEEL function is turned on, the remote controller should be put within the area where indoor unit can receive the signal sent by the remote controller.

## Sleep function

Press "Clock" and "Light" buttons simultaneously, can select Sleep 1 (☺), Sleep 2 (☺), Sleep 3 (☺) and cancel the Sleep, circulate between these, after electrified, Sleep Cancel is defaulted.

- Sleep 1 is Sleep mode 1, in Cool modes: sleep status after run for one hour, the main unit setting temperature will increase 1, two hours, setting temperature increased 2, then the unit will run at this setting temperature; In Heat mode: sleep status after run for one hour, the setting temperature will decrease 1, two hours, setting temperature will decrease 2, then the unit will run at this setting temperature.
- Sleep 2 is sleep mode 2, that is air conditioner will run according to the presetting a group of sleep temperature curve.
- Sleep 3 the sleep curve setting under Sleep mode by DIY;
  - (1) Under Sleep 3 mode, press "Health" button for a long time, remote controller enters into user individuation sleep setting status, at this time, the time of remote controller will display "1HOUR", the setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink (The first entering will display according to the initial curve setting value of original factory);
  - (2) Adjust "+" and "-" button, could change the corresponding setting temperature, after adjusted, press "Health" button for confirmation;
  - (3) At this time, 1 hour will be automatically increased at the timer position on the remote control, (that are "2HOUR" or "3HOUR" or "8HOUR"), the place of setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink;
  - (4) Repeat the above step (2)~(3) operation, until 8 hours temperature setting finished, sleep curve setting finished, at this time, the remote controller will resume the original timer display; temperature display will resume to original setting temperature.

- Sleep 3 the sleep curve setting under Sleep mode by DIY could be inquired:

The user could accord to sleep curve setting method to inquire the presetting sleep curve, enter into user individuation sleep setting status, but do not change the temperature, press "Health" button directly for confirmation. Note: In the above presetting or enquiry procedure, if continuously within 10s, there is no button pressed, the sleep curve setting within 10s, there is no button pressed, the sleep curve setting status will be automatically quit and resume to display the original displaying. In the presetting or enquiry procedure, press "On/Off" button, "Mode" button, "Clock" and "Light" buttons simultaneously, the sleep curve setting or enquiry status will quit similarly.

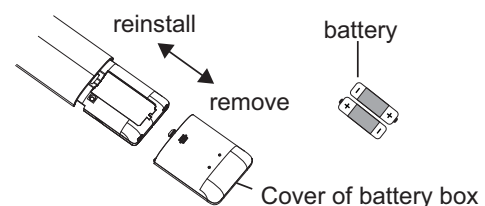
## 8°C heating function

Under heat mode, press "Mode" and "Clock" buttons simultaneously to start up or turn off 8°C heating function. When this function is started up, "8°C" will be shown on remote controller, and the air conditioner keep the heating status at 8°C. Press "Mode" and "Clock" buttons simultaneously again to exit 8°C heating function.

### NOTE

- Under 8°C heating function, fan speed is defaulted at auto speed and it can't be adjusted.
- Under 8°C heating function, set temperature can't be adjusted.
- Sleep function and 8°C heating function can't operate at the same time. If 8°C heating function has been set under heat mode, press "Clock" and "Light" buttons simultaneously will cancel 8°C heating function. If sleep function has been set under heat mode, start up the 8°C heating function will cancel sleep function.
- Under °F temperature display, the remote controller will display 46°F heating.

## Replacement of batteries in remote controller



1. Press the back side of remote controller marked with "☰", as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.

### NOTICE

- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you don't use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.

Before inspection and maintenance of the unit. PLEASE set power switch to "OFF" to cut off the power supply.

### 3.1 Units

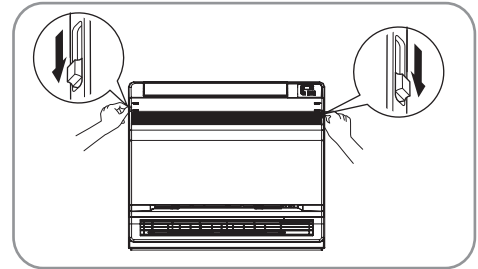
- Indoor unit, Outdoor unit and Remote controller

1. Wipe them with dry soft cloth.

- Front panel

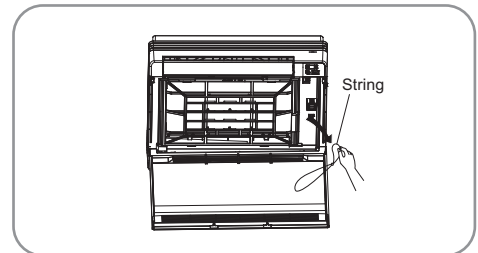
1. Open the front panel.

Slide the two stoppers on the left and right sides inward until they click.



2. Remove the front panel.

- Remove the string.
- Allowing the front panel to fall forward will enable you to remove it.

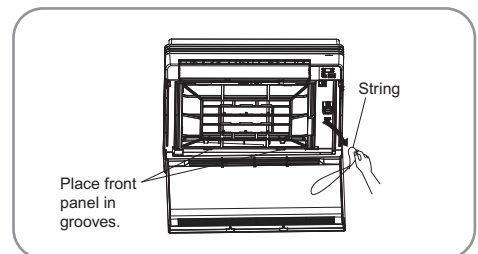


3. Clean the front panel.

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the front panel with water, dry it with cloth, dry it up in the shade after washing.

4. Attach the front panel.

- Insert the front panel into the grooves of the unit (3 places).
- Attach the string to the right, inner-side of the front grille.
- Close the panel slowly.



#### CAUTION

- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40°C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

### 3.2 Filters

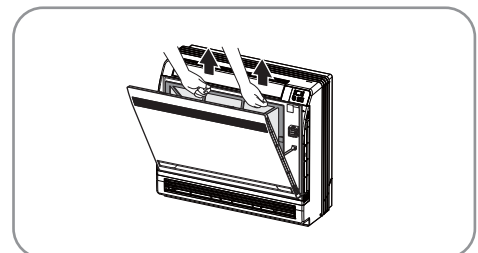
1. Open the front panel.

2. Remove the air filter.

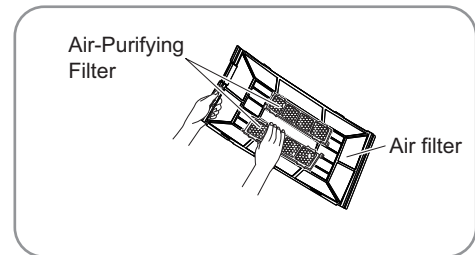
- Press the claws on the right and left of the air filter down slightly, then pull upward.

3. Take off the Air-Purifying Filter.

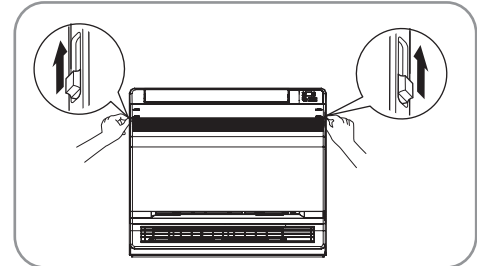
- Hold the tabs of the frame, and remove the claws in 4 places.



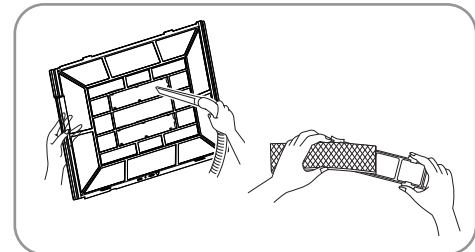
4. Clean or replace each filter.  
See figure.



5. Set the air filter and Air-Purifying Filter as they were and close the front panel.
- Operation without air filters may result in troubles as dust will accumulate inside the indoor unit.



6. Wash the air filters with water or clean them with vacuum cleaner.
- If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
  - It is recommended to clean the air filters every week.



## 3.3 Air-Purifying Filter

The Air-Purifying Filter can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

### • Maintenance

1. Vacuum dusts, and soak in warm water or water for about 10 to 15 minutes if dirt is heavy.
2. Do not remove filter from frame when washing with water.
3. After washing, shake off remaining water and dry in the shade.
4. Since the material is made out of paper, do not wring out the filter when removing water from it.

### • Replacement

Remove the tabs on the filter frame and replace with a new filter.

- Dispose of the old filter as flammable waste.
- Note: Healthy filter is the optional accessory.

## NOTE

- Operation with dirty filters:
 

(1) cannot deodorize the air.	(2) cannot clean the air.
(3) results in poor heating or cooling.	(4) may cause odour.

## Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. <ul style="list-style-type: none"><li>• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.</li></ul>

### 3.4 Before a long idle period

1. Operate the "FAN only" for several hours on a fine day to dry out the inside.
  - Press "MODE" button and select "FAN" operation.
  - Press "ON/OFF" button and start operation.
2. After operation stops, turn off the breaker for the room air conditioner.
3. Clean the air filters and set them again.
4. Take out batteries from the remote controller.

## NOTE

- When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

**Working principle and special functions for cooling****Principle:**

Air conditioner absorbs heat in the room and transmit to outdoor and discharged, so that indoor ambient temperature decreased, its cooling capacity will increase or decrease by outdoor ambient temperature.

**Anti-freezing function:**

If the unit is running in COOL mode and in low temperature, there will be frost formed on the heat exchanger, when indoor heat exchanger temperature decreased below 0 °C (32°F), the indoor unit microcomputer will stop compressor running and protect the unit.

**Working principle and special functions for heating****Principle:**

- \* Air conditioner absorbs heat from outdoor and transmits to indoor, in this way to increase room temperature. This is the heat pump heating principle, its heating capacity will be reduced due to outdoor temperature decrease.
- \* If outdoor temperature becomes very low, please operate with other heating equipments.

**Defrosting:**

- \* When outdoor temperature is low but high humidity, after a long while running, frost will form on outdoor unit, that will effect the heating effect, at this time, the auto defrosting function will act, the heat running will stop for 8-10mins.
- \* During the auto defrosting, the fan motors of indoor unit and outdoor unit will stop.
- \* During the defrosting, the indoor indicator flashes(or display "H1"), the outdoor unit may emit vapor, This is due to the defrosting, it isn't malfunction.
- \* After defrosting finished,the heating will recover automatically.

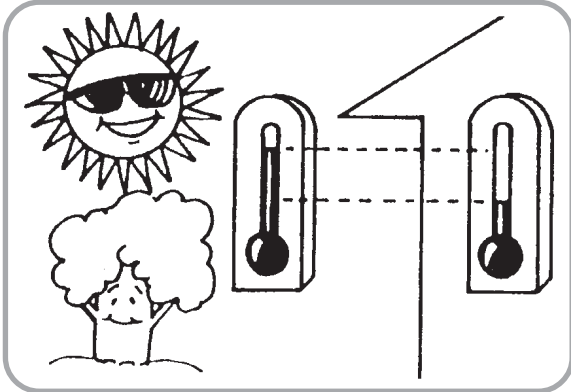
**Anti-cool wind function:**

In Heat mode, the following three kinds of status, if indoor heat exchanger hasn't achieve certain temperature that indoor fan motor will not start, in this way to prevent blowing cool wind (within 3mins):

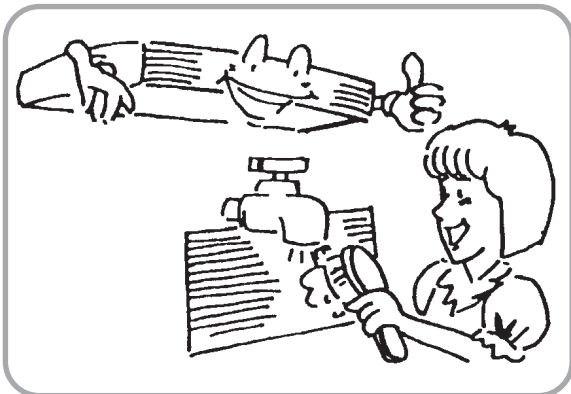
1. Heat operation just started up.
2. After Auto defrosting operation is finished.
3. Heating under low temperature.

The climate type of this unit is according to the nameplate.

- The temperature should not be set lower than what you need. This would result to increase energy cost.



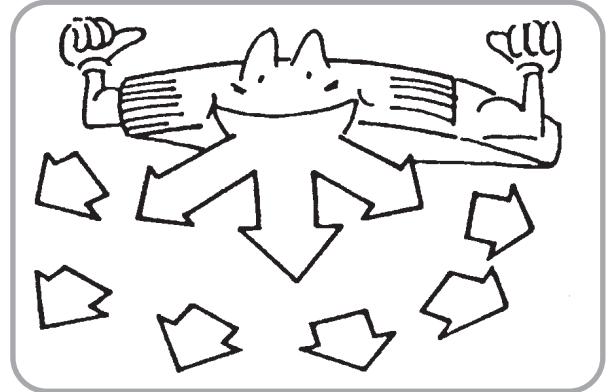
- Clean the air filter every week for higher efficiency.



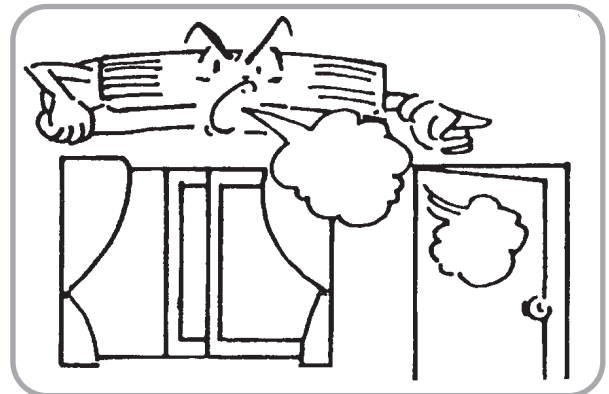
- Draw close curtains or close glass windows when cooling to prevent heat load from sun light which may cause more electricity cost.



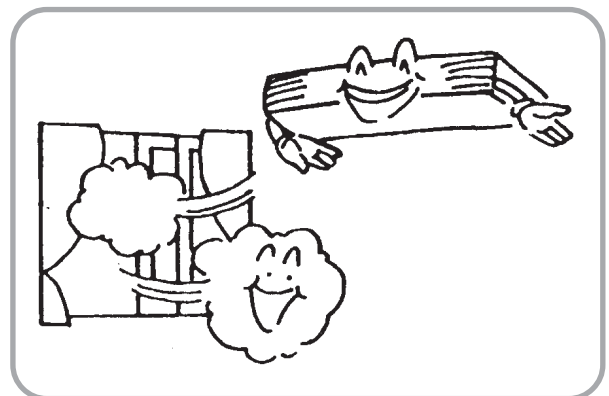
- To distribute cool air through out the room, adjust air flow direction as shown by the arrows (see picture) to diffuse cool air.



- Close window and door while operating the unit to prevent leakage of cooled air to save energy.



- In case of ineffective ventilation, open the window to ventilate the room air once in a while but not too long since cooled air will be uselessly drained out.

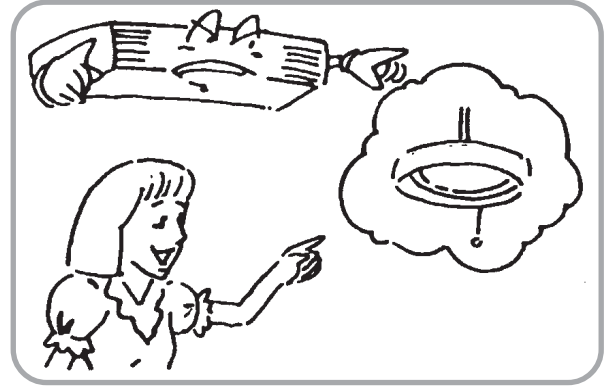


# 5 Precautions

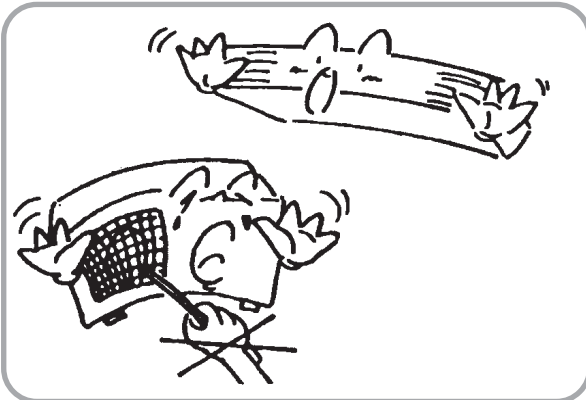
- Check electrical system (voltage and frequency). Use the proper power supply indicated on the unit to operate the airconditioner and only fuses with specified capacity. Do not use pieces of wire instead of fuse.



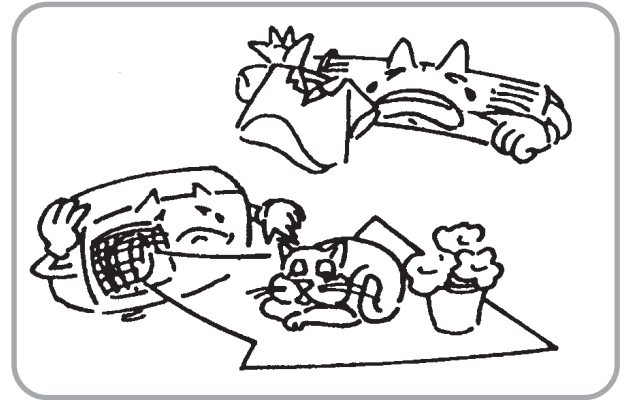
- Turn off the airconditioner if, while running, electricity interference occurs. If the unit is not to be used for a long time, cut off the power supply main switch.



- Do not insert objects into the air inlet or outlet when the airconditioner is running as it may cause damage or personal injury. Also pay special attention when children are around.



- Do not locate any obstacle against the air flow direction of indoor and outdoor unit. Inefficient performance or malfunction may result.



- Do not channel the air flow directly at people, especially infants, aged persons, or patients.



- Do not locate a heater or any other heat source close to the unit. The heat may deform plastic parts.



# 6

## Checking before contact the service man

Check the following before contact the service man. You may find the solution to your problems.

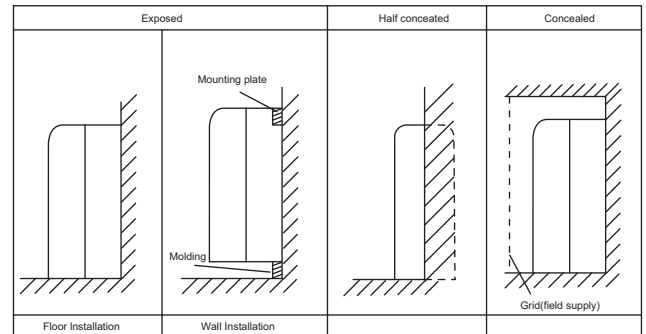
After checking, if it still does not operate, please contact your local dealer.

PROBLEM	CAUSES
No operation	<ul style="list-style-type: none"> <li>● Check if electrical wire is damaged &amp; check if breaker switch is still on.</li> <li>● Check if the power supply is in order.</li> <li>● Check if the timer switch is on or not.</li> </ul>
The air conditioner runs but does not cool enough.	<ul style="list-style-type: none"> <li>● Check if the preset temperature is too high.</li> <li>● Check if the sunlight shines directly into the room.</li> <li>● Check if the door and window are opened.</li> <li>● Check if there is anything obstructing the air discharge.</li> <li>● Check if the exhaust fan still operates.</li> <li>● Check if the air filter is dirty or clogged.</li> </ul>
Vapor or mist fume coming out of the unit while running.	<ul style="list-style-type: none"> <li>● Hot air in the room mixes with cool air. This causes smoke fume.</li> </ul>
Inoperative remote control.	<ul style="list-style-type: none"> <li>● Loosened or disconnected wire between the unit and the display.</li> <li>● Check if the batteries are inserted in correct directions</li> <li>● Check if the batteries are exhausted or not.</li> </ul>

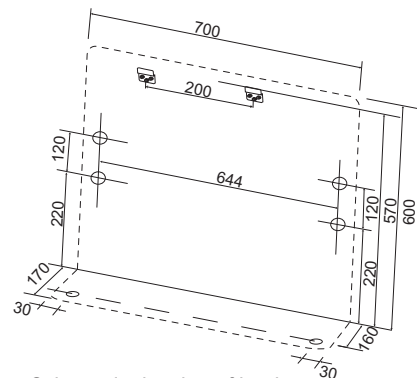
# 7 Installation of indoor unit

## SELECTION OF INSTALLATION LOCATION.

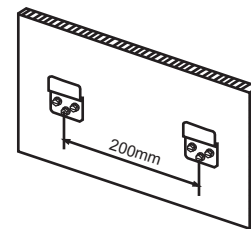
- Such a place where cool air can be distributed throughout the room.
- Such a place where condensation water is easily drained out.
- Such a place that can handle the weight of indoor unit.
- Such a place which has easy access for maintenance.
- The appliance shall not be installed in the laundry.



Location for securing the installation panel.



Schematic drawing of hooks:



## THERE ARE 2 STYLES OF INSTALLATION.

- WALL TYPE

- FLOOR TYPE

Each type is similar to the other as follows;

### Indoor unit

The indoor unit should be sited in a place where:

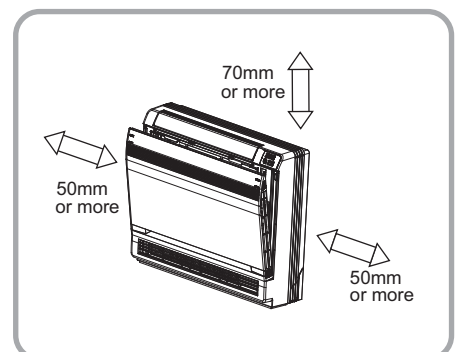
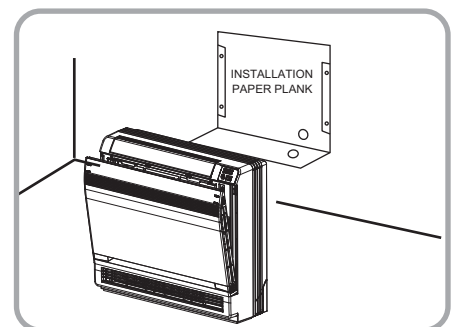
- 1) the restrictions on installation specified in the indoor unit installation drawings are met.
- 2) both air intake and exhaust have clear paths met.
- 3) the unit is not in the path of direct sunlight.
- 4) the unit is away from the source of heat or steam.
- 5) there is no source of machine oil vapour (this may shorten indoor unit life).
- 6) cool(warm) air is circulated throughout the room.
- 7) the unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote controller range.
- 8) the unit is at least 1 metre away from any television or radio set(unit may cause interference with the picture or sound).

## CAUTIONS FOR INSTALLATION WHERE AIR CONDITIONER TROUBLE IS LIABLE TO OCCUR.


- Where there is too much of oil area.
- Where it is acid base area.
- Where there is irregular electrical supply.

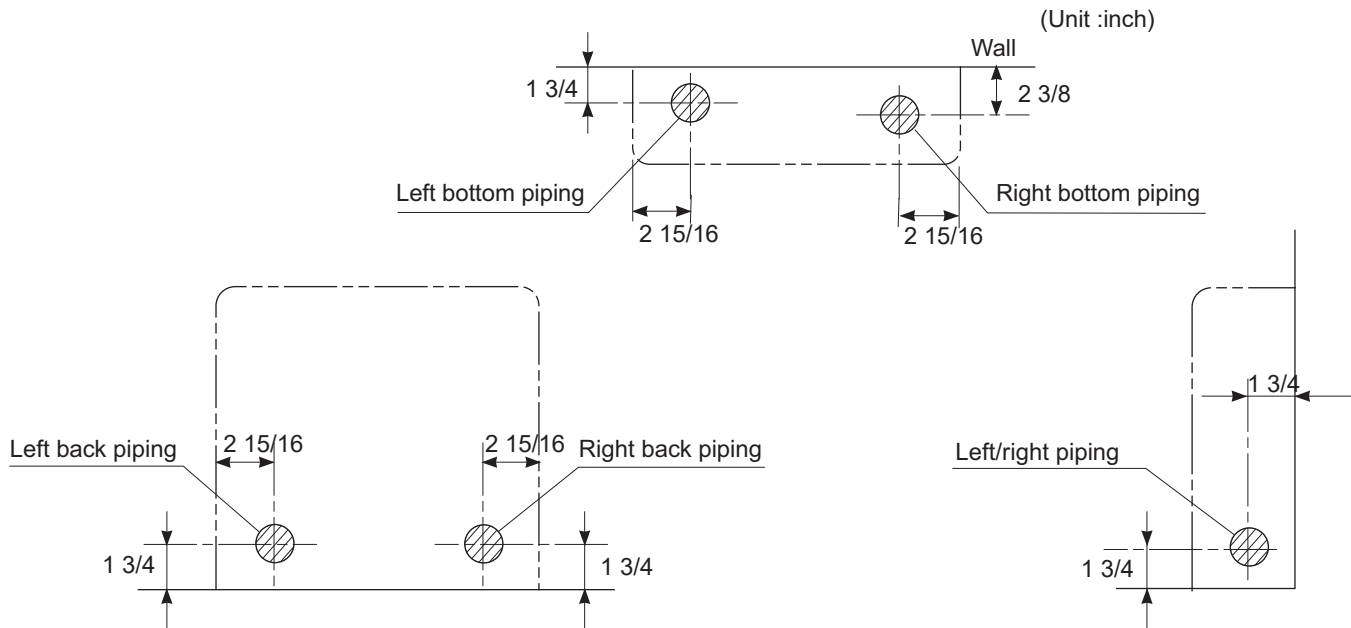
### Indoor Unit Installation Drawings

The indoor unit may be mounted in any of the three styles shown here. Console unit shall be installed on the ground or the position where is 0.3m from the floor.



## Refrigerant piping

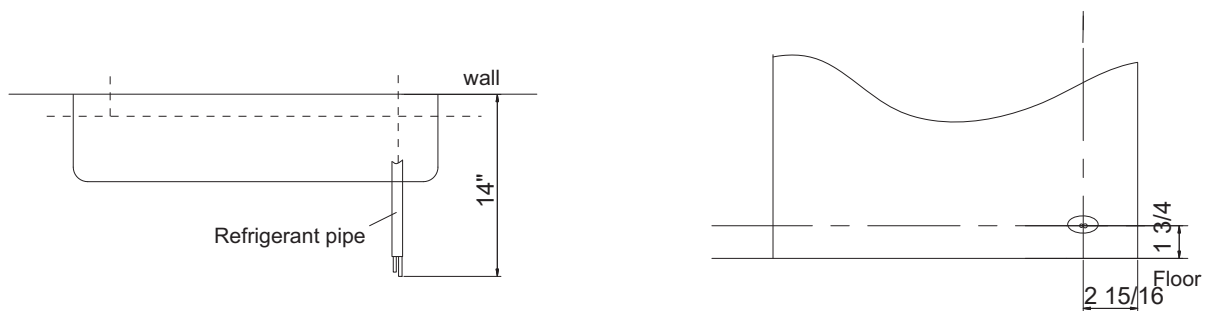
- 1) Drill a hole (2 3/16 in diameter ) in the spot indicated by the  symbol in the illustration as below .
- 2) The location of the hole is different depending on which side of the pipe is taken out .
- 3) For piping ,see **Connecting the refrigerant pipe** ,under Indoor Unit Installation(1).
- 4) Allow space around the pipe for a easier indoor unit pipe connection.



### CAUTION

Min.allowable length

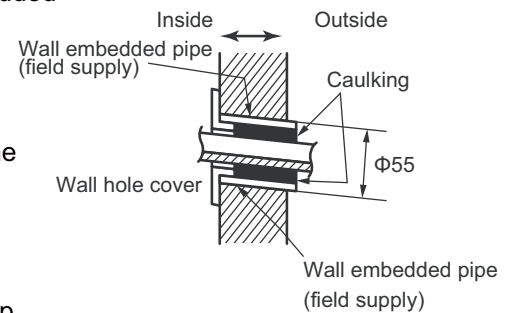
- The suggested shortest pipe length is 2.5m,in order to avoid noise from the outdoor unit and vibration. (Mechanical noise and vibration may occur depending on how the unit is installed and the environment in which it is used.)
- See the installation manual for the outdoor unit for the maximum pipe length.



## Boring a wall hole and installing wall embedded pipe

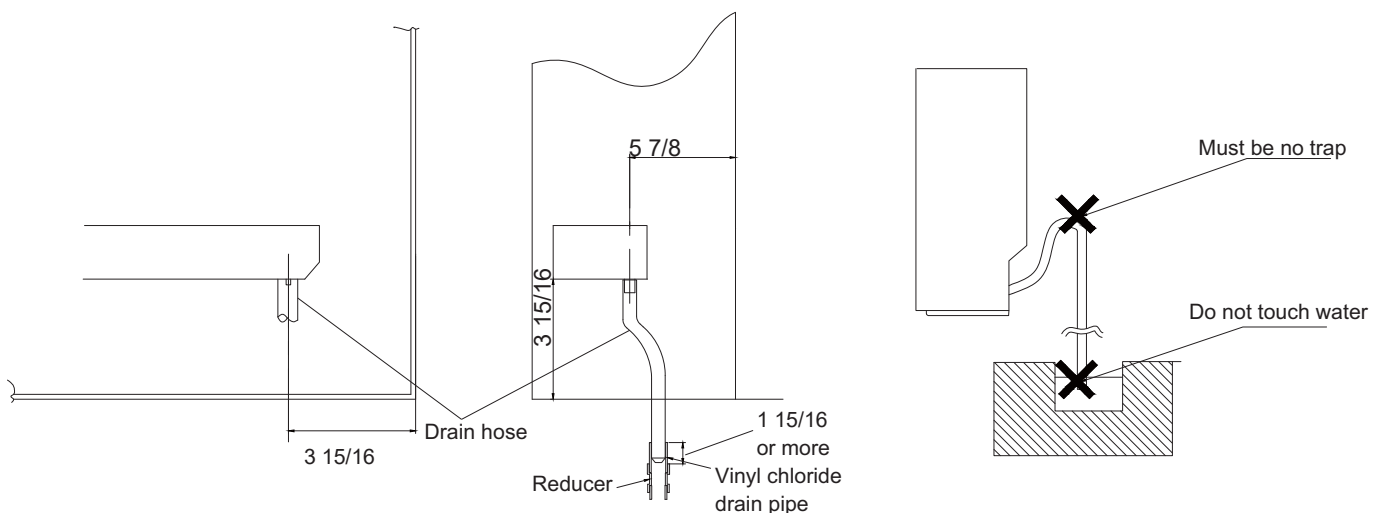
- For walls containing metal frame or metal board ,be sure to use a wall embedded pipe and wall cover in the feed-through hole to prevent water leakage.
- Be sure to caulk the gaps around the pipes with caulking material to prevent water leakage.

- 1)Bore a feed-through hole of 55mm in the wall so it has a down slope toward the outside.
- 2)Insert a wall pipe into the hole.
- 3)Insert a wall cover into wall pipe .
- 4)After completing refrigerant piping, wiring, and drain piping, caulk pipe hole gap with putty.



## Drain piping

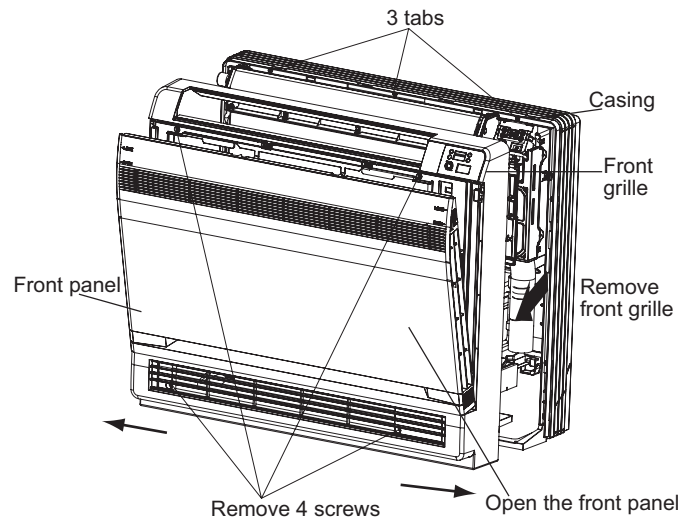
- 1)Use commercial rigid polyvinyl chloride pipe (general VP 20 pipe, outer diameter 26mm, inner diameter 20mm ) for the drain pipe.
- 2)The drain hose (outer diameter 18mm at connecting end, 220mm long)is supplied with the indoor unit. Prepare the drain pipe picture below position.
- 3)The drain pipe should be inclined downward so that water will flow smoothly without any accumulation.(Should not be trap.)
- 4)Insert the drain hose to this depth so it won't be pulled out of the drain pipe.
- 5)Insulate the indoor drain pipe with 10mm or more of insulation material to prevent condensation.
- 6)Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



## Installing indoor unit

### 1.Preparation

- Open the front panel, remove the 4 screws and dismount the front grille while pulling it forward.
- Follow the arrows to disengage the clasps on the front case to remove it.
- Follow the procedure below when removing the slit portions.

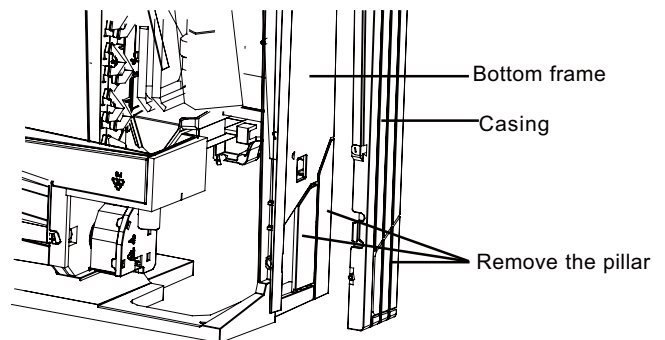
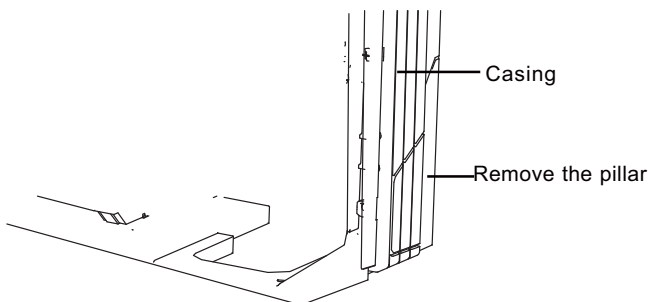
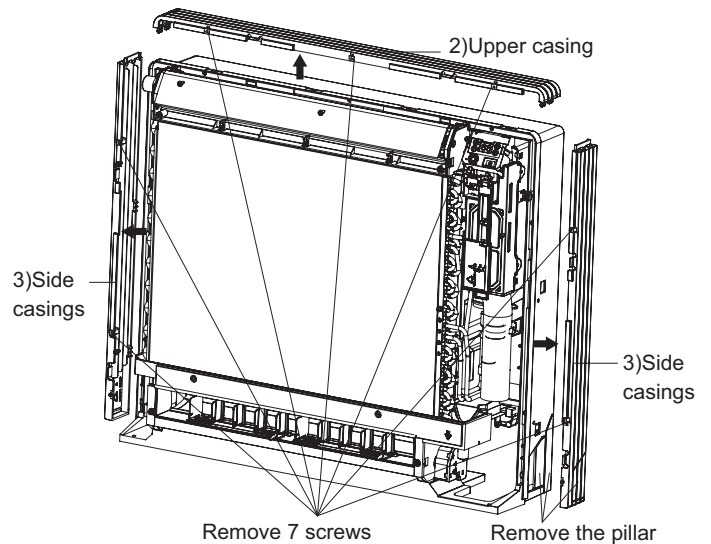


#### ■ For Moldings

- Remove the pillars. (Remove the slit portions on the bottom frame using nippers.)

#### ■ For Side Piping

- Remove the pillars.
  - 1) Remove the 7 screws.
  - 2) Remove the upper casing (2 tabs).
  - 3) Remove the left and right casings (2 tabs on each side).
  - 4) Remove the slit portions on the bottom frame and casings using nippers.
  - 5) Return by following the steps in reverse order (3>2>1).



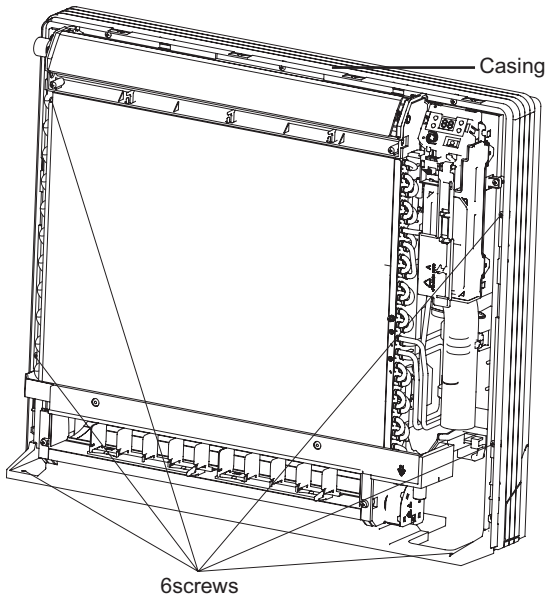
### 2.Installation

- Secure using 6 screws for floor installations.(Do not forget to secure to the rear wall.)
- For wall installations, secure the mounting plate using 5 screws and the indoor unit using 4 screws.

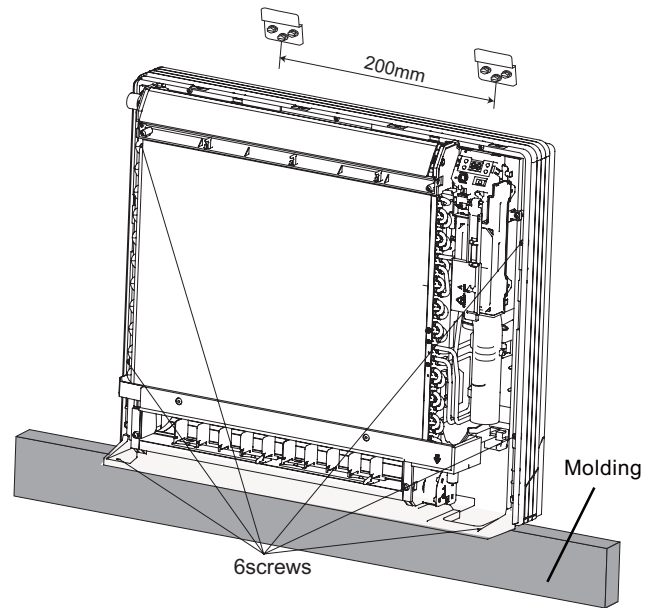
The mounting plate should be installed on a wall which can support the weight of the indoor unit.

- 1) Temporarily secure the mounting plate to the wall, make sure that the panel is completely level, and mark the boring points on the wall.
- 2) Secure the mounting plate to the wall with screws.

## Floor Installation



## Wall Installation



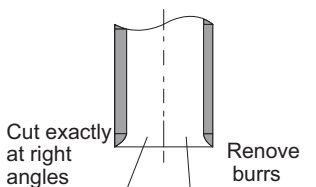
- 3) Once refrigerant piping and drain piping connections are complete, fill in the gap of the through hole with putty. A gap can lead to condensation on the refrigerant pipe, and drain pipe, and the entry of insects into the pipes.
- 4) Attach the front panel and front grille in their original positions once all connections are complete.

## Flaring the pipe end

- 1) Cut the pipe end with a pipe cutter.
- 2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
- 3) Fit the flare nut on the pipe.
- 4) Flare the pipe.
- 5) Check that the flaring is properly made.

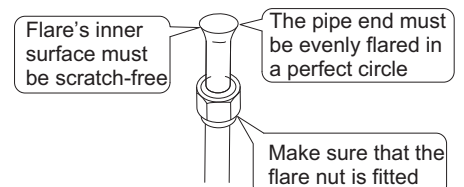
### ⚠ WARNING

- 1) DO not use mineral oil on flared part.
- 2) Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.
- 3) Never use piping which had been used for previous installations. Only use parts which are delivered with the unit.
- 4) Do never install a drier to this R32 unit in order to guarantee its lifetime.
- 5) The drying material may dissolve and damage the system.
- 6) Incomplete flaring may cause refrigerant gas leakage.



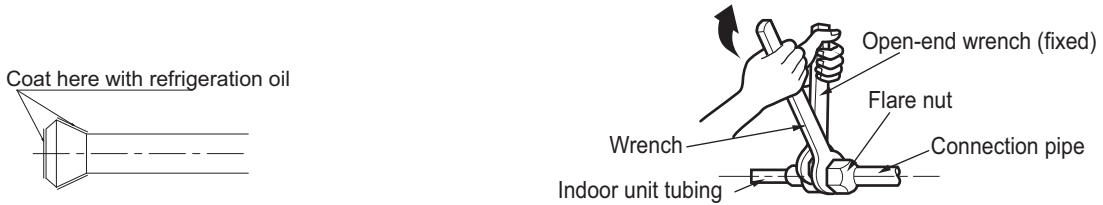
Flaring  
Set exactly at the position shown below

Flare tool for R32	Conventional flare tool	
	Clutch-type	Wing-nut type (Imperial-type)
A	0-0.5mm	1.0-1.5mm
		1.5-2.0mm



## Connecting the refrigerant pipe

1) Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and gas leaks.



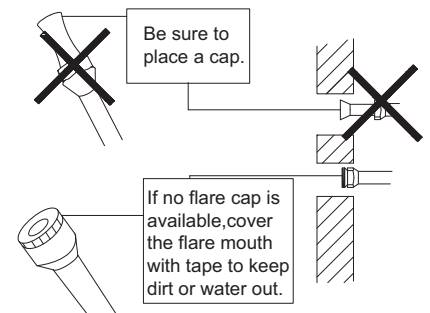
2) Align the centres of both flares and tighten the flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.

3) To prevent gas leakage, apply refrigeration oil on both inner and outer surfaces in the flare. (Use refrigeration oil for R32.)

Flare nut tightening torque		
Gas side		Liquid side
09K/12K	18K	09K/12K/18K
3/8 inch	1/2 inch	1/4 inch
22-25 ft-lb	36-40 ft-lb	11-14 ft-lb

### Caution on piping handling

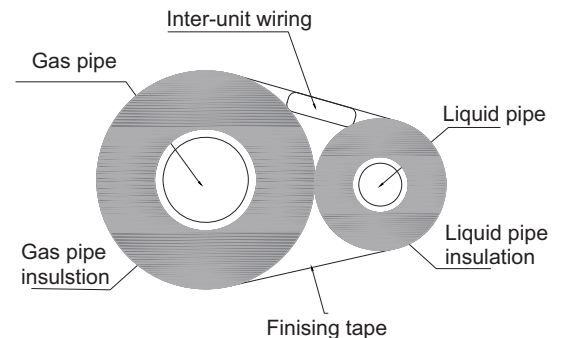
- 1) Protect the open end of the pipe against dust and moisture.
- 2) All pipe bends should be as gentle as possible. Use a pipe bender for bending.  
(Bending radius should be 30 to 40mm or larger.)



### Selection of copper and heat insulation materials

● When using commercial copper pipes and fittings, observe the following:

- 1) Insulation material: Polyethylene foam  
Heat transfer rate: 0.041 to 0.052W/mK (0.035 to 0.045kca/(mh°C))  
Refrigerant gas pipe's surface temperature reaches 110°C max.  
Choose heat insulation materials that will withstand this temperature.



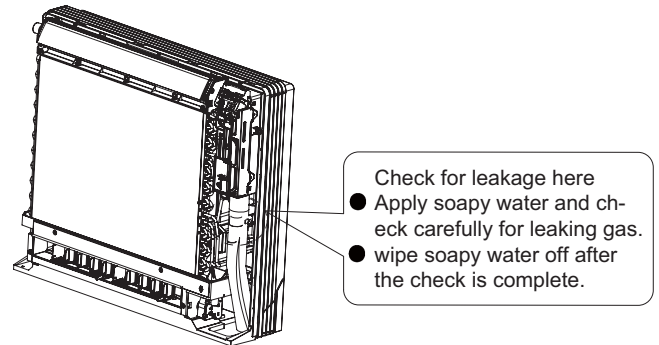
2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

Gas side		Liquid side	Gas pipe thermal insulation		Liquid pipe thermal insulation
09K/12K	18K		09K	18K	
O.D. 9.55mm	O.D. 12.7mm	O.D. 6.4mm	I.D. 12-15mm	I.D. 14-16mm	I.D. 8-10mm
Thickness 0.8mm			Thickness 10mm Min.		

3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

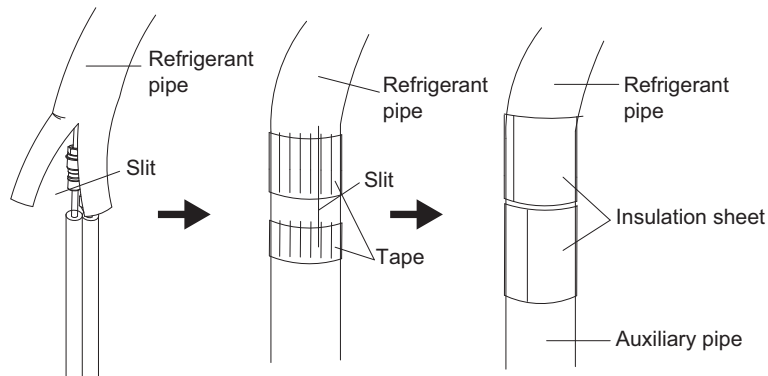
## Checking for gas leakage

- 1) Check for leakage of gas after air purging
- 2) See the sections on air purges and gas leak checks in the installation manual for the outdoor unit.



## Attaching the connection pipe

- Attach the pipe after checking for gas leakage, described above.
- 1) Cut the insulated portion of the on-site piping, matching it up with the connecting portion.
  - 2) Secure the slit on the refrigerant piping side with the butt joint on the auxiliary piping using the tape, making sure there are no gaps.
  - 3) Wrap the slit and butt joint with the included insulation sheet, making sure there are no gaps.

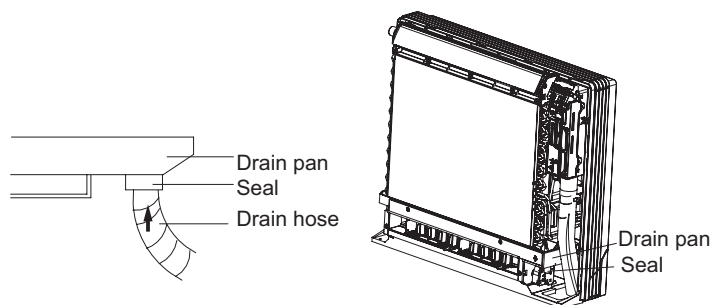


### **!** CAUTION

- 1) Insulate the joint of the pipes securely. Incomplete insulation may lead to water leakage.
- 2) Push the pipe inside so it does not place undue force on the front grille.

## Connecting the drain hose

Insert the supplied C drain hose into the socket of the drain pan.  
Fully insert the drain hose until it adheres to a seat of the socket.



## Power Cord Size and Fuse Capacity

Indoor Units	Power Supply	Fuse Capacity	Min. Power Supply Cord
	V/Ph/Hz	A	mm <sup>2</sup>
09~18K	208/230V~ 60Hz	T3.15AH	4×AWG14

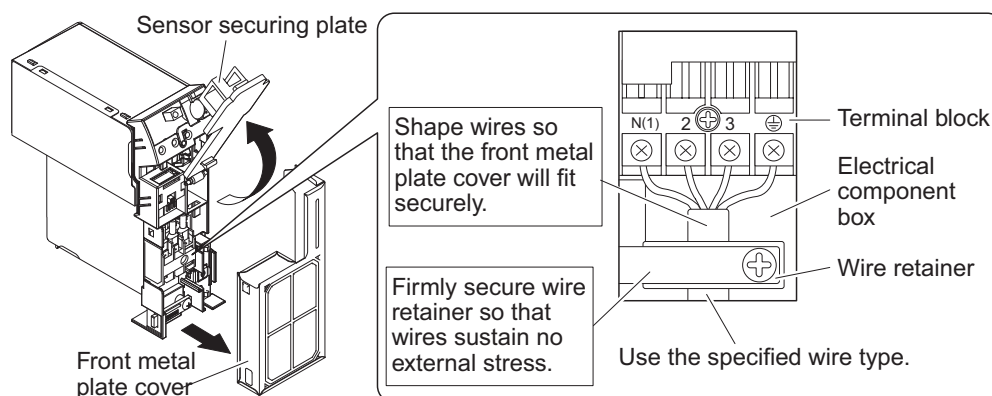
● Live the sensor securing plate, remove the front metal plate cover, and connect the branch wiring to the terminal block.

1) Strip wire ends (15mm)

2) Match wire colours with terminal numbers on indoor and outdoor unit's terminal blocks and firmly screw wires to the corresponding terminals.

3) Connect the earth wires to the corresponding terminals.

4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.



### ⚠ CAUTION

1) Do not use tapped wires, stranded wires, extension cords, or starburst connections, as they may cause overheating, electrical shock, or fire.

2) Do not use locally purchased electrical parts inside the product. (Do not branch the power for the drain pump, etc, from the terminal block.) Doing so may cause electric shock or fire.)

# 8 Routine check after installation

## ● Check after installation

Items to be checked	Possible malfunction	Situation
Has it been fixed firmly?	The unit may drop,shake or emit noise.	
Have you done the refrigerant leakage test?	It may cause insufficient refrigerating capacity.	
Is heat insulation sufficient?	It may cause condensation and dripping.	
Does the unit drain well?	It may cause condensation and dripping.	
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause electric malfunction or damage the part.	
Is the electrical wiring and piping connection installed correctly and securely?	It may cause electric malfunction or damage the part.	
Has the unit been connected to a secure earth connection?	It may cause electrical leakage.	
Is the power cord specified?	It may cause electric malfunction or damage the part.	
Has the inlet and outlet been covered?	It may cause insufficient refrigerating capacity.	
Has the length of connection pipes and the refrigerant charge been record?	The refrigerating capacity is not accurate	

## Working temperature range

	Indoor side DB/WB(°C/°F)	Outdoor side DB/WB(°C/°F)
Maximum cooling	26.7/19.4 (80/67)	50/24 (122/75)
Maximum heating	26.7/- (80/-)	30/18 (86/65)

### **NOTICE:**

- The operating temperature range (indoor temperature):  
 Cooling unit: 16°C(61°F)~40°C(104°F).  
 Heat pump unit: for cooling mode is 16°C(61°F)~40°C(104°F);  
 for heating mode is 5°C(41°F)~30°C(86°F).

## **Aptitude requirement for maintenance man(repairs should be done only be specialists).**

- a. Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorises their competence to handle refrigerants safely in accordance with an industry recognised assessment specification.
- b. Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

That pipe-work including piping material, pipe routing, and installation shall include protection from physical damage in operation and service, and be in compliance with national and local codes and standards, such as ASHRAE 15, ASHRAE 15.2, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. All field joints shall be accessible for inspection prior to being covered or enclosed.

- **Checks to the area**

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

- **Work procedure**

Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

- **General work area**

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

- **Checking for presence of refrigerant**

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking adequately sealed or intrinsically safe.

- **Presence of fire extinguisher**

If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

- **No ignition sources**

No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

- **Ventilated area**

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

- **Checks to the refrigerating equipment**

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance.

The following checks shall be applied to installations using flammable refrigerants:

- the actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed;
- the ventilation machinery and outlets are operating adequately and are not obstructed;
- if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;
- marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
- refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently

resistant to being corroded or are suitably protected against being so corroded.

- **Checks to electrical devices**

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

- that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- that no live electrical components and wiring are exposed while charging, recovering or purging the system;
- that there is continuity of earth bonding.

- **Repairs to sealed components**

Sealed electrical components shall be replaced.

- **Repair to intrinsically safe components**

Intrinsically safe components must be replaced.

- **Cabling**

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

- **Detection of flammable refrigerants**

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% maximum) is confirmed.

Leak detection fluids are also suitable for use with

most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

NOTE: Examples of leak detection fluids are

- bubble method,
- fluorescent method agents.

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to clause Removal and evacuation.

- **Removal and evacuation**

When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:

- safely remove refrigerant following local and national regulations;
  - evacuate;
  - purge the circuit with inert gas (optional for A2L);
  - evacuate (optional for A2L);
  - continuously flush or purge with inert gas when using flame to open circuit; and
  - open the circuit.

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be available.

### • Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigerating system.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

### • Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

- a) Become familiar with the equipment and its operation.
- b) Isolate system electrically.
- c) Before attempting the procedure, ensure that:
  - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
  - all personal protective equipment is available and being used correctly;
  - the recovery process is supervised at all times by a competent person;
  - recovery equipment and cylinders conform to the appropriate standards.
- d) Pump down refrigerant system, if possible.
- e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- f) Make sure that cylinder is situated on the scales before recovery takes place.
- g) Start the recovery machine and operate in accordance with instructions.

h) Do not overfill cylinders. (No more than 80% volume liquid charge).

- i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
- j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
- k) Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

### • Labelling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing flammable refrigerants, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

### • Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge are available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition.

The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated

to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

### **Transportation, marking and storage for units**

#### **Transport of equipment containing flammable refrigerants.**

Attention is drawn to the fact that additional transportation regulations may exist with respect to equipment containing flammable gas. The maximum number of pieces of equipment or the configuration of the equipment permitted to be transported together will be determined by the applicable transport regulations.

#### **Marking of equipment using signs**

Signs for similar appliances used in a work area are generally addressed by local regulations and give the minimum requirements for the provision of safety and/or health signs for a work location.

All required signs are to be maintained and employers should ensure that employees receive suitable and sufficient instruction and training on the meaning of appropriate safety signs and the actions that need to be taken in connection with these signs.

The effectiveness of signs should not be diminished by too many signs being placed together.

Any pictograms used should be as simple as possible and contain only essential details.

#### **Disposal of equipment using flammable refrigerants**

See national regulations.

#### **Storage of equipment/appliances**

The storage of the appliance should be in accordance with the applicable regulations or instructions, whichever is more stringent.

Avoid other heat sources or direct sun light.

Avoid a place where is possible for inflammable gas to leak out.

#### **Storage of packed (unsold) equipment**

Storage package protection should be constructed such a way that mechanical damage to the equipment inside the package will not cause a leak of the REFRIGERANT CHARGE.

The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.



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