



EN

OWNER'S AND INSTALLATION MANUAL



OUTDOOR UNIT

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# **PREMIUM R32 ROUND R32**

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**GIA-UO-12SKR32 | GIA-UO-18SKR32  
GIA-UO-24SKR32 | GIA-UO-36SKR32**

Please, read carefully this manual before using the product.

Gracias | Thank you | Merci | Obrigado | Grazie



**ENGLISH**

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**GIA-U0-12SKR32 | GIA-U0-18SKR32  
GIA-U0-24SKR32 | GIA-U0-36SKR32**

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This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

# Safety Precautions

Please read this operating manual carefully before operating the unit.



Appliance filled with flammable gas R32.



Before use the appliance, read the owner's manual first.



Before install the appliance, read the installation manual first.



Before repair the appliance, read the service manual first.

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

## The Refrigerant

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 condition. 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 therefore need a less filling.

### WARNING:

Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacture. Should repair be necessary, contact your nearest authorized Service Center.

Any repairs carried out by unqualified personnel may be dangerous.

The appliance shall be stored in a room without continuously operating ignition sources. (For example: open flames, an operating gas appliance or an operating electric heater.)

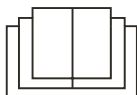
Do not pierce or burn.

Appliance shall be installed, operated and stored in a room with a floor area larger than "X"m<sup>2</sup> (see table 1). (only applies to appliances that are not fixed appliances)

Appliance filled with flammable gas R32. For repairs, strictly follow manufacturer's instructions only.

Be aware that refrigerants not contain odour.

Read specialist's manual.



# Safety Precautions



## **WARNING!**

This mark indicates procedures which, if improperly performed, might lead to the death or serious injury of the user.



## **CAUTION!**

This mark indicates procedures which, if improperly performed, might possibly result in personal harm to the user, or damage to property.



## **WARNING!**

**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.**

**For operating the air conditioner pleasantly, install it as outlined in this installation manual.**

**Connect the indoor unit and outdoor unit with the room air conditioner piping and cord available from our standard parts. This installation manual describes the correct connections using the installation set available from our standard parts.**

**Installation work must be performed in accordance with national wiring standards by authorized personnel only.**

**If refrigerant leaks while work is being carried out, ventilate the area. If the refrigerant comes in contact with a flame, it produces toxic gas.**

**Do not power on until all installation work is complete.**

**During installation, make sure that the refrigerant pipe is attached firmly before you run the compressor.**

**Do not operate the compressor under the condition of refrigerant piping not attached properly with 2-way or 3-way valve open.**

**This may cause abnormal pressure in the refrigeration cycle that leads to breakage and even injury.**

## **Safety Precautions**

During the pump-down operation, make sure that the compressor is turned off before you remove the refrigerant piping.

Do not remove the connection pipe while the compressor is in operation with 2-way or 3-way valve open.

This may cause abnormal pressure in the refrigerant cycle that leads to breakage and even injury.

When installing and relocating the air conditioner, do not mix gases other than the specified refrigerant (R32) to enter the refrigerant cycle.

If air or other gas enters the refrigerant cycle, the pressure inside the cycle will rise to an abnormally high value and cause breakage, injury, etc.

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.

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.

The appliance shall be installed in accordance with national wiring regulations.

# Safety operation of flammable refrigerant

## Qualification requirement for installation and maintenance man

All the work men who are engaging in the refrigeration system should bear the valid certification awarded by the authoritative organization and the qualification for dealing with the refrigeration system recognized by this industry. If it needs other technician to maintain and repair the appliance, they should be supervised by the person who bears the qualification for using the flammable refrigerant. It can only be repaired by the method suggested by the equipment's manufacturer.

## Installation notes

1. The air conditioner is not allowed to use in a room that has running fire (such as fire source, working coal gas ware, operating heater).
2. It is not allowed to drill hole or burn the connection pipe.
3. 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 1.
4. Leak test is a must after installation.

Table 1: Minimum room area (m<sup>2</sup>)

Minimum room area (m <sup>2</sup> )	Charge amount (kg)	≤1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5
	floor location	/	14.5	16.8	19.3	22.0	24.8	27.8	31.0	34.3	37.8	41.5	45.4	49.4	53.6
	window mounted	/	5.7	6.1	7.0	7.9	8.9	10.0	11.2	12.4	13.6	15.0	16.3	17.8	19.3
	wall mounted	/	3.1	3.4	3.6	3.9	4.1	4.4	4.6	4.8	5.1	5.3	5.6	5.8	6.1
	ceiling mounted	/	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0

Minimum room area (m <sup>2</sup> )	Charge amount (kg)	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
	floor location	58.0	62.6	67.3	72.2	77.2	82.5	87.9	93.4	99.2	105.1	111.2	117.5	123.9	130.5
	window mounted	20.9	22.5	24.2	26.0	27.8	29.7	31.6	33.6	35.7	37.8	40.0	42.3	44.6	47.0
	wall mounted	6.4	7.0	7.5	8.0	8.6	9.2	9.8	10.4	11.0	11.7	12.4	13.1	13.8	14.5
	ceiling mounted	5.1	5.3	5.5	5.7	5.9	6.1	6.5	7.0	7.4	7.8	8.3	8.7	9.2	9.7

## Maintenance

**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.

# Safety operation of flammable refrigerant

## **Welding**

If you should cut or weld the refrigerant system pipes in the process of maintaining, please follow the steps as below:

1. Shut down the unit and cut power supply.
  2. Eliminate the refrigerant.
  3. Vacuuming.
  4. Clean it with N2 gas.
  5. Cutting or welding.
  6. 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**

1. Use the refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant won't contaminate with each other.
2. The refrigerant tank should be kept upright at the time of filling refrigerant.
3. Stick the label on the system after filling is finished (or haven't finished).
4. Don't overfilling.
5. 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**

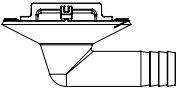
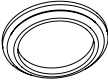
1. Please use the flammable gas detector to check before unload and open the container.
2. No fire source and smoking.
3. According to the local rules and laws.



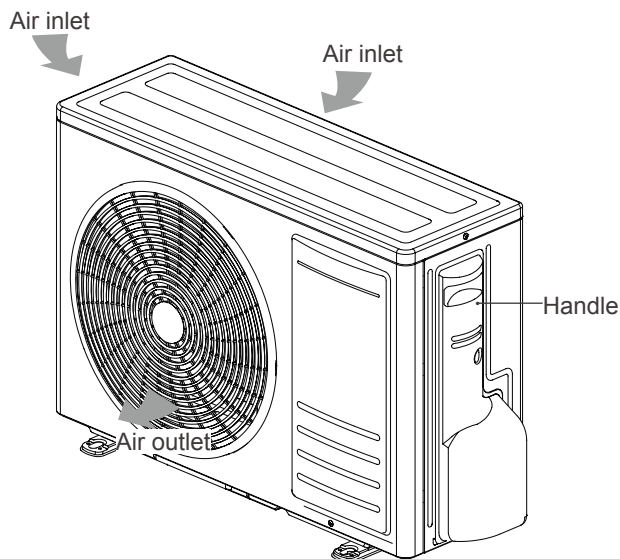
# Outline of the Unit and Main Parts

## Standard Accessory Parts

Table 2

Outdoor Unit	Drainage Connector		1	To connect with the hard PVC drain pipe
	Drain Plug		3	To plug the unused drain hole (Only for 24K unit)
	Other	Instructions		

## Outdoor unit



### NOTE

- The connection pipe and duct for this unit should be prepared by the user.
- The unit is standard equipped with rectangular duct.
- Actual product may be different from above graphics, please refer to actual products.

# Preparative for Installation

## *Safety precautions for installing and relocating the unit*

To ensure safety, please be mindful of the following precautions.



### WARNING

- 1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.**
  - Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture, resulting in injury.
- 2. When installing or moving this unit, do not charge the refrigerant which is not comply with that on the nameplate or unqualified refrigerant.**
  - Otherwise, it may cause abnormal operation, wrong action, mechanical malfunction or even series safety accident.
- 3. When refrigerant needs to be recovered during relocating or repairing the unit, be sure that the unit is running in cooling mode. Then, fully close the valve at high pressure side (liquid valve). About 30-40 seconds later, fully close the valve at low pressure side (gas valve), immediately stop the unit and disconnect power. Please note that the time for refrigerant recovery should not exceed 1 minute.**
  - If refrigerant recovery takes too much time, air may be sucked in and cause pressure rise or compressor rupture, resulting in injury.
- 4. During refrigerant recovery, make sure that liquid valve and gas valve are fully closed and power is disconnected before detaching the connection pipe.**
  - If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.
- 5. When installing the unit, make sure that connection pipe is securely connected before the compressor starts running.**
  - If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.
- 6. Prohibit installing the unit at the place where there may be leaked corrosive gas or flammable gas.**
  - If there leaked gas around the unit, it may cause explosion and other accidents.
- 7. Do not use extension cords for electrical connections. If the electric wire is not long enough, please contact a local service center authorized and ask for a proper electric wire.**
  - Poor connections may lead to electric shock or fire.
- 8. Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.**
  - Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

# Preparative for Installation

## Selection of the Installation Location



### **WARNING!**

The unit must be installed where strong enough to withstand the weight of the unit and fixed securely, otherwise the unit would topple or fall off.



### **CAUTION!**

- Do not install where there is a danger of combustible gas leakage.
- Do not install the unit near heat source, steam, or flammable gas.
- Children under 10 years old must be supervised not to operate the unit.
- Appliance shall be installed, operated and stored in a room with a floor area larger than "X" m<sup>2</sup> (see table 1).



Please notice that the unit is filled with flammable gas R32. Inappropriate treatment of the unit involves the risk of severe damages of people and material. Details to this refrigerant are found in chapter "refrigerant".

## **Decide the installation location with the customer as follows:**

### **Outdoor Unit**



### **WARNING!**

- Install the unit where it will not be tilted by more than 5°.
  - During installation, if the outdoor unit has to be exposed to strong wind, it must be fixed securely.
1. If possible, do not install the unit where it will be exposed to direct sunlight.  
(If necessary, install a blind that does not interfere with the air flow.)
  2. Install the outdoor unit in a place where it will be free from getting dirty or getting wet by rain as much as possible.
  3. Install the outdoor unit where it is convenient to connect the indoor unit.
  4. Install the outdoor unit where the condensate water can be drained out freely during heating operation. Do not place animals and plants in the path of the warm air.
  5. Take the air conditioner weight into account and select a place where noise and vibration are small.
  6. Install the outdoor unit where is capable of withstanding the weight of the unit and generates as less noise and vibration as possible.
  7. Provide the space shown in Fig.1, so that the air flow is not blocked. Also for efficient operation, leave three of four directions of peripheral constructions open.

# Preparative for Installation

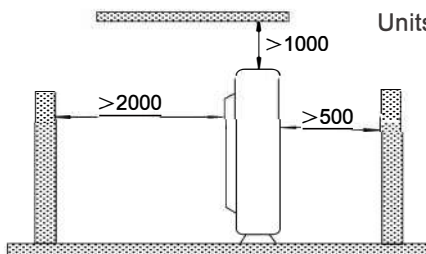
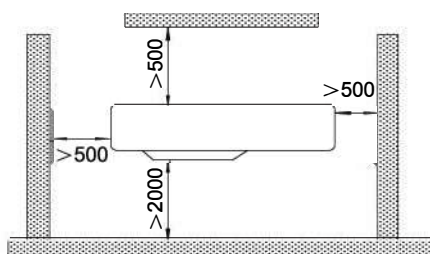


Fig.1

Units: mm

## Connection Pipe Requirement



### CAUTION!

The maximum length of the connection pipe is listed in the table below. Do not place the units between which the distance exceeds the maximum length of the connection pipe.

Table 3

Model	Size of Fitting Pipe (Inch)		Max. Pipe Length (m)	Max.height Difference between Indoor Unit and Outdoor Unit (m)
	Liquid	Gas		
GIA-UO-12SKR32	1/4	3/8	20	15
GIA-UO-18SKR32	1/4	1/2	20	15
GIA-UO-24SKR32	1/4	5/8	30	15
GIA-UO-36SKR32	3/8	5/8	30	15
GIA-UO-42SKR32	3/8	5/8	30	15

### Note:

1. The connection pipe should be insulated with proper water-proof insulating material.
2. The pipe wall thickness shall be 0.5-1.0mm and the pipe wall shall be able to withstand the pressure of 6.0 MPa. The longer the connecting pipe, the lower the cooling and heating effect performs.

# Preparative for Installation

## Electrical Requirement

Electric Wire Size and Fuse Capacity.

Table 4

Model	Power Supply	Capability of Air Switch (A)	Mínimum Sectional Area of Power Cable and Earth line (mm <sup>2</sup> )
GIA-UO-12SKR32	220-240V- ,50Hz	10	1.0
GIA-UO-18SKR32		16	1.5
GIA-UO-24SKR32		25	2.5
GIA-UO-36SKR32		25	2.5
GIA-UO-42SKR32		25	2.5

### **Note:**

- 1.The fuse is located on the main board.
2. Install the disconnect device with a contact gap of at least 3mm in all poles nearby the units.The appliance must be positioned so that the plug is accessible.
3. The specifications of the breaker and power cable listed in the table above are determined based on the maximum power (maximum amps) of the unit.
4. The specifications of the power cable listed in the table above are applied to the conduitguarded multi-wire copper cable (like, YJV copper cable, consisting of PE insulated wires and a PVC cable jacket) used at 40°C and resistible to 90°C(see IEC 60364-5-52). If the working condition changes, they should be modified according to the related national standard.
5. The specifications of the breaker listed in the table above are applied to the breaker with the working temperature at 40°C. If the working condition changes, they should be modified according to the related national standard.
6. Take 2 pieces of power cord of 0.75mm<sup>2</sup> as the communication lines between indoor and outdoor unit, with their longest lengths of 50m. Please select the appropriate line length as per the actual installation conditions. The communication lines can not be twisted together. For the unit, it's recommended to use 8m long communication line.
7. Take 2 pieces of power cord of 0.75mm<sup>2</sup> as the communication lines between the wired controller and the indoor unit, with their longest lengths of 30m. Please select the appropriate line length as per the actual installation conditions. The communication lines can not be twisted together. It's recommended to use 8m long communication line.
8. The wire size of the communication line should be no less than 0.75mm<sup>2</sup>. It's recommended to take 0.75mm<sup>2</sup> power cords as the communication line.

# Installation of the Unit

## Installation of the Outdoor Unit



### WARNING!

- Install the unit where it will not be tilted by more than 5°.
- During installation, if the outdoor unit has to be exposed to strong wind, it must be fixed securely.

## 1. Outdoor unit dimension

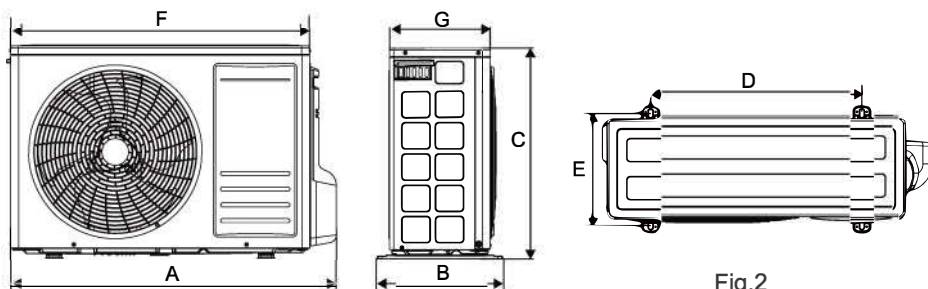


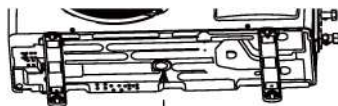
Fig.2

Table 5

Model \ Item	A	B	C	D	E	F	G
GIA-UO-12SKR32	830	325	540	540	290	762	257
GIA-UO-18SKR32	890	372	598	550	338	820	310
GIA-UO-24SKR32	960	396	700	560	364	890	340
GIA-UO-36SKR32	1020	396	1000	590	364	950	340
GIA-UO-42SKR32	1020	396	1000	590	364	950	340

## 2. Condensate Drainage of the Outdoor Unit(Only for the heat pump unit)

- (1). It is required to install a drain pipe for the outdoor unit to drain out the condensate water during heating operation. (only for the heat pump unit)
- (2). When installing the drain pipe, apart from the drain pipe mounting hole, all other holes should be plugged so as to avoid water leakage.(only for the heat pump unit)
- (3). Installation Method: Insert the pipe joint into the hole  $\Phi 25$  located at the base plate of the unit and then connect the drain pipe to the pipe joint.



Drain joint

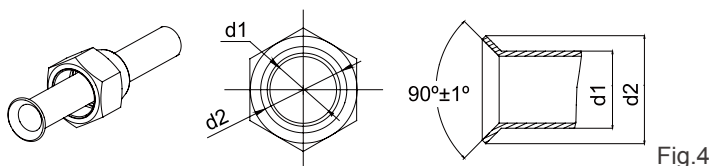
Fig.3

# Installation of the Unit

## Installation of the Connection Pipe

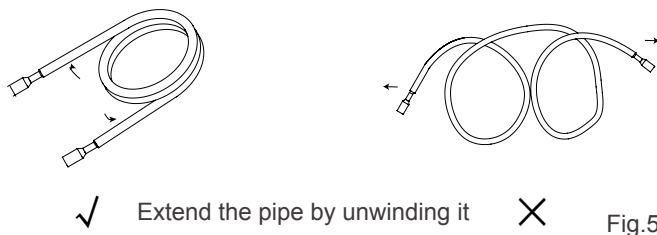
### 1. Flare Processing

- (1). Cut the connection pipe with the pipe cutter and remove the burrs.
- (2). Hold the pipe downward to prevent cuttings from entering the pipe.
- (3). Remove the flare nuts at the stop valve of the outdoor unit and inside the accessory bag of the indoor unit, then insert them to the connection pipe, after that, flare the connection pipe with a flaring tool.
- (4). Check if the flare part is spread evenly and there are no cracks (see Fig.4).

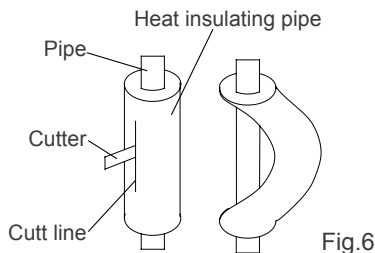


### 2. Bending Pipes

- (1). The pipes are shaped by your hands. Be careful not to collapse them.



- (2). Do not bend the pipes in an angle more than  $90^\circ$ .
- (3). When pipes are repeatedly bent or stretched, the material will harden, making it difficult to bend or stretch them any more. Do not bend or stretch the pipes more than three times.
- (4). When bending the pipe, do not bend it as is. The pipe will be collapsed. In this case, cut the heat insulating pipe with a sharp cutter as shown in Fig.6, and bend it after exposing the pipe. After bending the pipe as you want, be sure to put the heat insulating pipe back on the pipe, and secure it with tape.



### CAUTION!

- To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 150 mm or over.
- If the pipe is bent repeatedly at the same place, it will break.

# Installation of the Unit

## 3. Connecting the Pipe at the Indoor Unit Side

Detach the caps and plugs from the pipes.



### CAUTION!

- Be sure to apply the pipe against the port on the indoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.
- Do not remove the flare nut until the connection pipe is to be connected so as to prevent dust and impurities from coming into the pipe system.

Centering the pipe against port on the indoor unit, turn the flare nut with your hand.

Table 6 Flare nut tightening torque

Pipe Diameter (Inch)	1/4	3/8	5/8	1/2	3/4	7/8
Tightening Torque (N·m)	15-30	35-40	60-65	45-50	70-75	80-85



### CAUTION!

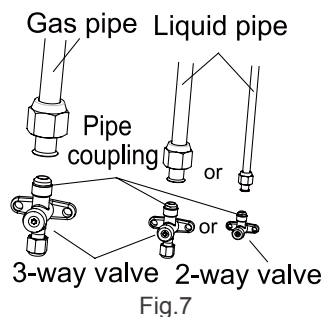
Be sure to connect the gas pipe after connecting the liquid pipe completely.

## 4. Connecting the Pipe at the Outdoor Side Unit

Tighten the flare nut of the connection pipe at the outdoor unit valve connector. The tightening method is the same as that as at the indoor side.

## 5. Checking the Pipe Connections for Gas Leaking

For both indoor and outdoor unit side, check the joints for gas leaking by the use of a gas leakage detector without fail when the pipes are connected.





# Installation of the Unit

## 7. Liquid Pipe and Drain Pipe

If the outdoor unit is installed lower than the indoor unit (See Fig.8)

- (1). A drain pipe should be above ground and the end of the pipe does not dip into water. All pipes must be restrained to the wall by saddles.
- (2). Taping pipes must be done from bottom to top.
- (3). All pipes are bound together by tape and restrained to wall by saddles.

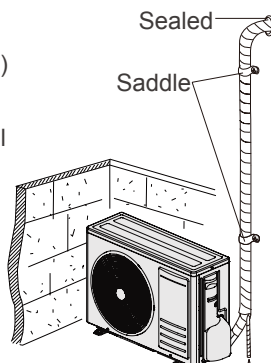


Fig.8

If the outdoor unit is installed higher than the indoor unit (See Fig.9)

- (1). Taping should be done from lower to the upper part.
- (2). All pipes are bound and taped together and also should be trapped to prevent water from returning to the room.
- (3). Restraint all pipes to the wall with saddles.

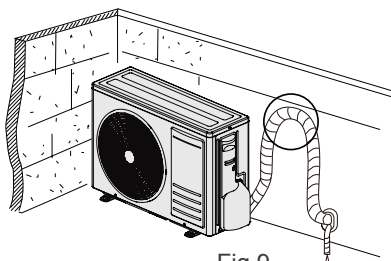


Fig.9

## Vacuum and Gas Leakage Inspection



### CAUTION!

Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation!  
There is no extra refrigerant in the outdoor unit for air purging!

### 1. Vacuum

- (1). Remove the caps of the liquid valve, gas valve and also the service port.
- (2). Connect the hose at the low pressure side of the manifold valve assembly to the service port of the unit's gas valve, and meanwhile the gas and liquid valves should be kept closed in case of refrigerant leak.
- (3). Connect the hose used for evacuation to the vacuum pump.
- (4). Open the switch at the lower pressure side of the manifold valve assembly and start the vacuum pump. Meanwhile, the switch at the high pressure side of the manifold valve assembly should be kept closed, otherwise evacuation would fail.
- (5). The evacuation duration depends on the unit's capacity, generally, 15 minutes for the 12K units, 20 minutes for the 18K units, 30 minutes for the 24/36/42K units, 45 minutes for the 48/60K units. And verify if the pressure gauge at the low pressure side of the

# Installation of the Unit

manifold valve assembly reads -1.0Mp (-75cmHg), if not, it indicates there is leak somewhere. Then, close the switch fully and then stop the vacuum pump.

- (6). Wait for some time to see if the system pressure can remain unchanged, 3 minutes for the units less than 18K, 5 minutes for the 18K~24K units, 10 minutes for the 36/42/48/60K units. During this time, the reading of the pressure gauge at the low pressure side can not be larger than 0.005Mp (0.38cmHg).
- (7). Slightly open the liquid valve and let some refrigerant go to the connection pipe to balance the pressure inside and outside of the connection pipe, so that air will not come into the connection pipe when removing the hose. Note that the gas and liquid valve can be opened fully only after the manifold valve assembly is removed.
- (8). Place back the caps of the liquid valve, gas valve and also the service port.

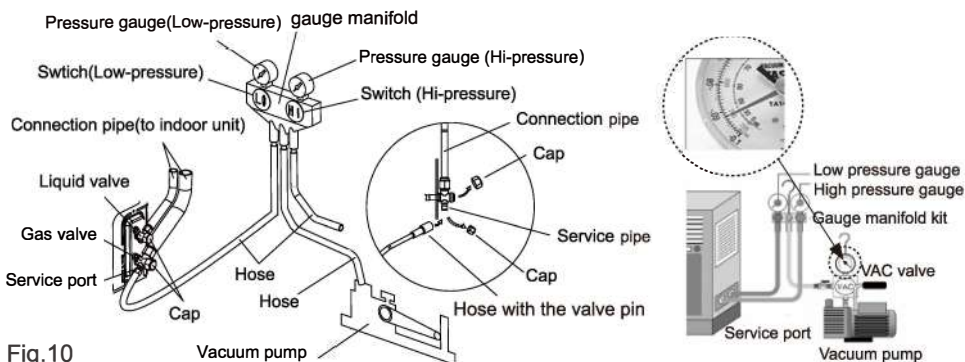


Fig.10

## Note:

For the large-sized unit, it has the service port for both the gas valve and the liquid valve. During evacuation, it is available to connect two hoses of the manifold valve assembly to two service ports to quicken the evacuating speed.

## 2. Additional Charge

Refrigerant suitable for a piping length of 5m is charged in the 12~42K outdoor unit at the factory, and for 48~60K outdoor unit refrigerant is charged for a piping length of 7.5m.

When the piping of 18~42K unit is longer than 7.5m or the piping of 48~60K unit is longer than 9.5m, additional charging is necessary.

Table 7

Model	Additional Refrigerant Amount for Extra Pipe
GIA-UO-12SKR32	16g/m
GIA-UO-18SKR32	
GIA-UO-24SKR32	
GIA-UO-36SKR32	30g/m
GIA-UO-42SKR32	

# Installation of the Unit

When the height difference between the indoor unit and outdoor unit is larger than 10 meters, an oil bend should be employed for every 6 meters.

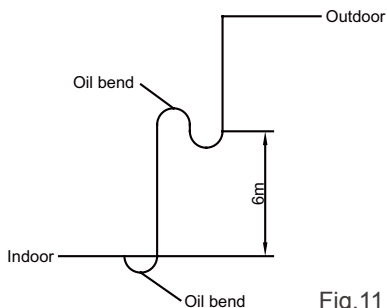


Fig.11

## Electrical Wiring

### 1. Wiring Precautions



#### **WARNING!**

- Before obtaining access to terminals, all supply circuits must be disconnected.
- The rated voltage of the unit is as shown as table 4
- Before turning on, verify that the voltage is within the 198~264V range (for single phase unit) or 342~415V range (for three-phase unit).
- Always use a special branch circuit and install a special receptacle to supply power to the air conditioner.
- Use a special branch circuit breaker and receptacle matched to the capacity of the air conditioner.
- The special branch circuit breaker is installed in the permanent wiring. Always use a circuit that can trip all the poles of the wiring and has an isolation distance of at least 3mm between the contacts of each pole.
- Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.
- Install a leakage special branch circuit breaker in accordance with the related laws and regulations and electric company standards.



#### **CAUTION!**

- The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.
- When the voltage is low and the air conditioner is difficult to start, contact the power company to raise the voltage.

# Installation of the Unit

## 2. Electrical Wiring

### (1). For solid core wiring (Fig.12)

- 1). Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation about 25mm (15/16") .
- 2). Using a screwdriver, remove the terminal screw(s) on the terminal board.
- 3). Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
- 4). Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screwdriver.

### (2). For strand wiring (Fig.12)

- 1). Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation about 10mm (3/8") .
- 2). Using a screwdriver, remove the terminal screw(s) on the terminal board.
- 3). Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped wire end.
- 4). Position the round terminal wire, and replace and tighten the terminal screw with a screwdriver.(Fig.13)

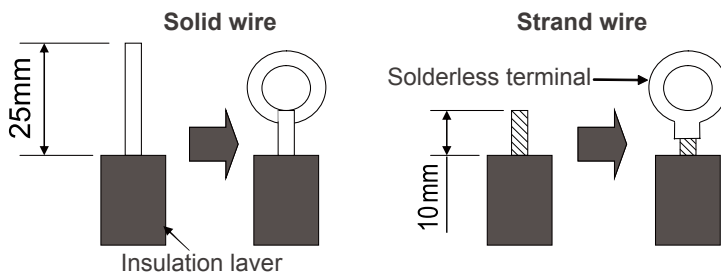


Fig.12

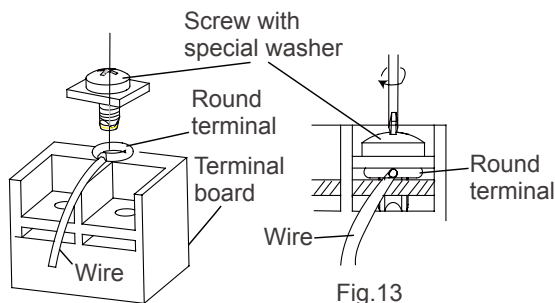


Fig.13

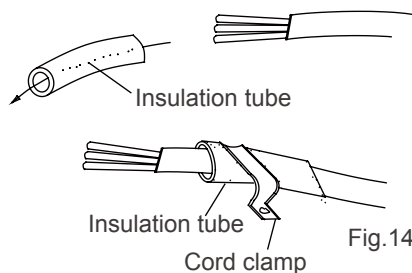


Fig.14

### (3). How to fix connection cord and power cord by cord clamp

After passing the connection cord and power cord through the insulation tube, fasten it with the cord clamp.(Fig.14)

# Installation of the Unit



## CAUTION!

- Before starting work, check that power is not being supplied to the indoor unit and outdoor unit.
- Match the terminal block numbers and connection cord colors with those of the indoor unit side.
- Erroneous wiring may cause burning of the electric parts.
- Connect the connection cords firmly to the terminal block. Imperfect installation may cause a fire.
- Always fasten the outside covering of the connection cord with cord clamps. (If the insulator is not clamped, electric leakage may occur.)
- Always connect the ground wire.

### (4). Electric wiring between the indoor and outdoor units

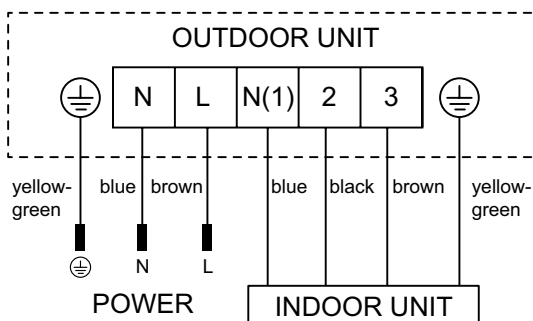


Fig.15

## Installation of Controllers

Refer to the Installation Manual of the controller for more details.

# Test Running

## Trial Operation and Testing

The meaning of error codes as shown below:

Table 8

Error Code	Name
CL	Filter filth blockage alert
E0	High exhaust temp. protection
E1	Overcapacity protection
E2	Compressor overload protection
E4	System high pressure protection
E5	System low pressure protection
E6	Lack refrigerant/valve stop protection
L0	Jumper malfunction
L2	No feedback signal of indoor unit fan
L3	Communication malfunction
L7	The communication between indoor unit and wired controller fault
L9	Water full protection
U0	Short/open circuit of indoor environment sensor
U1	Short/open circuit of indoor unit tube sensor
U2	Outdoor temp. sensor open/short circuit
U6	Liquid pipe temp. sensor malfunction
U7	Gas pipe temp. sensor malfunction
PC	Mode conflict

**Note:** When the unit is connected with the wired controller, the error code will be simultaneously shown on it.

# Test Running

## Working Temperature Range

Table 9

The unit may not work properly temperature range			
Cooling operation	Outdoor side temperature: above 43°C or below 15°C	Heating operation	Outdoor side temperature: above 24°C or below -15°C
	Indoor side temperature: below 21°C		Indoor side temperature: above 27°C

### **Note:**

1. The design of this unit conforms to the requirements of EN14511 standard.
2. The air volume is measured at the relevant standard external static pressure.
3. Cooling (heating) capacity stated above is measured under nominal working conditions corresponding to standard external static pressure. The parameters are subject to change with the improvement of products, in which case the values on nameplate shall prevail.
4. In this table, there are two outside DB values under the low temp cooling conditions, and the one in the brackets is for the unit which can operate at extreme low temperature.

# Troubleshooting and Maintenance

## Troubleshooting

If your air-conditioning unit suffers from abnormal operation or failure, please first check the following points before repair:

Table 10

Failure	Possible Reasons
The unit cannot be started.	<ol style="list-style-type: none"><li>1. The power supply is not connected.</li><li>2. Electrical leakage of air-conditioning unit causes tripping of the leakage switch.</li><li>3. The operating keys are locked.</li><li>4. The control loop has failure.</li></ol>
The unit operates for a while and then stops.	<ol style="list-style-type: none"><li>1. There is obstacle in front of the condenser.</li><li>2. The control loop is abnormal.</li><li>3. Cooling operation is selected when the outdoor ambient temperature is above 52°C.</li></ol>
Poor cooling effect.	<ol style="list-style-type: none"><li>1. The air filter is dirty or blocked.</li><li>2. There is heat source or too many people inside the room.</li><li>3. The door or window is open.</li><li>4. There is obstacle at the air intake or outlet.</li><li>5. The set temperature is too high.</li><li>6. There is refrigerant leakage.</li><li>7. The performance of room temperature sensor becomes worse</li></ol>
Poor heating effect	<ol style="list-style-type: none"><li>1. The air filter is dirty or blocked.</li><li>2. The door or window is not firmly closed.</li><li>3. The set room temperature is too low .</li><li>4. There is refrigerant leakage.</li><li>5. The outdoor ambient temperature is lower than -5°C.</li><li>6. Control loop is abnormal.</li></ol>

After carrying out the check of the above items and taking relevant measures to solve the problems found but the air-conditioning unit still does not function well, please stop the operation of the unit immediately and contact the local service agency. Only ask professional serviceman to check and repair the unit.



# Troubleshooting and Maintenance

## Routine Maintenance

Only a qualified service person is allowed to perform maintenance.

Before accessing to terminal devices, all power supply circuits must be disconnected.

Do not use water or air of 50°C or higher for cleaning air filters and outside panels.

### **Note:**

1. Do not remove the air filter except for cleaning. Unnecessary handling may damage the filter.
2. Do not clean the unit with gasoline, benzene, thinner, polishing powder or liquid insecticide, otherwise it would cause discoloration and deformation of the unit.
3. Do not wet the indoor unit in case of electric shock or fire hazard.

Increase the frequency of cleaning if the unit is installed in a room where the air is extremely contaminated. (As a yardstick for yourself, consider cleaning the filter once a half year.)

If dirt becomes impossible to clean, change the air filter. (Air filter for exchange is optional.)

(1). Removing the air filter from the duct.

(2). Cleaning the air filter

Remove dust from the air filter using a vacuum cleaner and gently rinse them in cool water. Do not use detergent or hot water to avoid filter shrinking or deformation. After cleaning dry them in the shade.

(3). Replacing the air filter

Reinstall the filter as before.

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#### AVERTISSEMENTS POUR L'ÉLIMINATION CORRECTE DU PRODUIT AUX TERMES DE LA DIRECTIVE 2002/96 / CE.

Au terme de son utilisation, le produit ne doit pas être éliminé avec les déchets urbains. Le produit doit être remis à l'un des centres de collecte sélective prévus par l'administration communale ou auprès des revendeurs assurant ce service. Éliminer séparément un appareil électroménager permet d'éviter les retombées négatives pour l'environnement et la santé dérivant d'une élimination incorrecte, et permet de récupérer les matériaux qui le composent dans le but d'une économie importante en termes d'énergie et de ressources. Pour rappeler l'obligation d'éliminer séparément les appareils électroménagers, le produit porte le symbole d'un caisson à ordures barré.