To Users

Thank you for selecting ARYA product. Please read this instruction manual carefully before installing and using the product, so as to master and correctly use the product. In order to guide you to correctly install and use our product and achieve expected operating effect, we hereby instruct as below:

(1) 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.

(2) In order to ensure reliability of product, the product may consume some power under stand-by status for maintaining normal communication of system and preheating refrigerant and lubricant. If the product is not to be used for long, cut off the power supply; please energize and preheat the unit in advance before reusing it.

(3) Please properly select the model according to actual using environment, otherwise it may impact the using convenience.

(4) If the product needs to be installed, moved or maintained, please contact our designated dealer or local service center for professional support. Users should not disassemble or maintain the unit by themselves, otherwise it may cause relative damage, and our company will bear no responsibilities.

(5) All the illustrations and information in the instruction manual are only for reference. In order to make the product better, we will continuously conduct improvement and innovation. If there is adjustment in the product, please subject to actual product.

(6) 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.

Exception Clauses

Manufacturer will bear no responsibilities when personal injury or property loss is caused by the following reasons:

(1) Damage the product due to improper use or misuse of the product.

(2) Alter, change, maintain or use the product with other equipment without abiding by the instruction manual of manufacturer.

(3) After verification, the defect of product is directly caused by corrosive gas.

(4) After verification, defects are due to improper operation during transportation of product.

(5) Operate, repair, maintain the unit without abiding by instruction manual or related regulations.

(6) After verification, the problem or dispute is caused by the quality specification or performance of parts and components that produced by other manufacturers.

(7) The damage is caused by natural calamities, bad using environment or force majeure.

Safety Notice

	The air conditioner is charged with inflammable refrigerant R32.
	Before using the air conditioner, please first read the instruction manual.
	Before installing the air conditioner, please first read the instruction manual.
	Before repairing the air conditioner, please first read the technical service manual.

Compared with common refrigerant, R32 is an environmental-friendly refrigerant that has no harm to the ozone layer and weak greenhouse effect. Its GWP is 675. Because of its thermodynamic characteristics, R32 requires a smaller charging quantity to reach high energy efficiency. It is inflammable andodour less, but may cause explosion under certain circumstances.

ARYA

Contents

1 Precaution

- Read the following " PRECAUTIONS" carefully before installation.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below. incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

⚠ WARNING	This indication shows the possibility of causing death or serious injury.
⚠ CAUTION	This indication shows the possibility of causing injury or damage toproperties only.

⚠ NOTES !

1.Injury means causing harmed, burned, electrical shocked, but not serious for hospitalization.
2.Damage of property means disrepair of property, material.

- Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions, Please remind thecustomer to keep the operating instructions for future reference.

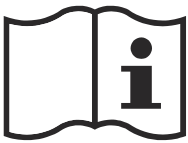
⚠ WARNING
• Engage dealer or specialist for installation, If installation done by user is defective, it will cause water leakage, electrical shock or fire.
• Install according to this installation instructions strictly, If installation is defective, it will cause water leakage, electrical shock or fire.
• Use the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock.
• Install at a strong and firm location which is able to with stand the set's weight. if the strength is not enough or installation is not properly done, the set will drop and cause injury.
• For electrical work, follow the local national wiring standard, regulation and this installation instructions, An independent circuit and single outlet must be used, If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire.
• When carrying out piping connection, take care not to let air or other substances other than the specified refrigerant go into refrigeration cycle. Otherwise, it will cause lowercapacity, abnormal high pressure in the refrigeration cycle, explosion and injury.
• Grounding is necessary, It may cause electrical shock if grounding is not perfect.
• Do not install the unit at place where leakage of fammable gas may occur. In case gasleaks and accumulates at surrounding of the unit, it may cause fire.

- The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experienceand knowledge, unless they have been given supervision or instruction.
- Children being supervised not to play with the appliance.
- The appliance shall be installed in accordance with national wiring regulations.
- 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.

INSTRUCTIONS FOR SERVICING(R32)

1. Check the information in this manual to find out the dimensions of space needed for proper installation of the device, including the minimum distances allowed compared to adjacent structures.
2. Appliance shall be installed, operated and stored in a room with a floor area larger than $4m^2$.
3. The installation of pipe-work shall be kept to a minimum.
4. The pipe-work shall be protected from physical damage, and shall not be installed in an unventilated space if the space is smaller than $4m^2$.
5. The compliance with national gas regulations shall be observed.
6. The mechanical connections shall be accessible for maintenance purposes.
7. Follow the instructions given in this manual for handling, installing, cleaning, maintaining and disposing of the refrigerant.
8. Make sure ventilation openings clear of obstruction.
9. **Notice:** The servicing shall be performed only as recommended by the manufacturer.
10. **Warning:** The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
11. **Warning:** The appliance shall be stored in a room without continuously operating open flames (for example an operating gas appliance) and ignition sources (for example an operating electric heater).
12. The appliance shall be stored so as to prevent mechanical damage from occurring.
13. It is appropriate that anyone who is called upon to work on a refrigerant circuit should hold a valid and up-to-date certificate from an assessment authority accredited by the industry and recognizing their competence to handle refrigerants, in accordance with the assessment specification recognized in the industrial sector concerned. Service operations should only be carried out in accordance with the recommendations of the equipment manufacturer. Maintenance and repair operations that require the assistance of other qualified persons must be conducted under the supervision of the person competent for the use of flammable refrigerants.
14. Every working procedure that affects safety means shall only be carried out by competent persons.
15. **Warning:**
    (1)Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
    (2)The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating as appliance or an operating electric heater).
    (3)Do not pierce or burn.
    (4)Be aware that refrigerants may not contain an odor.

Caution: Risk of fire



Operating instructions

Read technical manual

INSTRUCTIONS FOR SERVICING(R32)

16.**Information on servicing:**

1) 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 minimized. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

2) Work procedure

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

3) 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. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material

4) 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 flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. non−sparking, adequately sealed or intrinsically safe.

5) Presence of fire extinguisher

If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO_2 fire extinguisher adjacent to the charging area.

6) No ignition sources

No person carrying out work in relation to a refrigeration 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.

7) 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.

8) Checks to the refrigeration 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.

INSTRUCTIONS FOR SERVICING(R32)

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

-- The charge size 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;

-- Refrigeration 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.

9) 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 there no live electrical components and wiring are exposed while charging, recovering or purging the system;

-- That there is continuity of earth bonding.

17. **Repairs to sealed components**

1) During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

2) Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc. Ensure that apparatus is mounted securely. Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

⚠ NOTE

The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

18. **Repair to intrinsically safe components**

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use. Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating. Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

19.**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.

20.**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.

21.**Leak detection methods**

The following leak detection methods are deemed acceptable for systems containing flammable refrigerants. Electronic leak detectors shall be used to detect flammable refrigerants, but 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 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. If a leak is suspected, all naked flames shall be beremoved/ 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. Oxygen free nitrogen (OFN) shall then be purged thrugh the system both before and during the brazing process.beremoved/ 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. Oxygen free nitrogen (OFN) shall then be purged thrugh the system both before and during the brazing process.

22.**Removal and evacuation**

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

-- Remove refrigerant;
-- Purge the circuit with inert gas;
-- Evacuate;
-- Purge again with inert gas;
-- Open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be flushed with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task.

Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place.

Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

23.**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 reclaimed 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 the cylinder is situated on the scales before recovery takes place.
g) Start the recovery machine and operate in accordance with manufacturer's 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 refrigeration system unless it has been cleaned and checked.

24. Labeling

Equipment shall be labeled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

25. 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 labeled 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 all appropriate refrigerants including, when applicable, flammable refrigerants. 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. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.
The recovered refrigerant shall be returned to the refrigerant supplier in the correct recover 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 evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

INSTALLATION PRECAUTIONS(R32)

Important Considerations

1. The air conditioner must be installed by professional personnel and the Installation manual is used only for the professional installation personnel! The installation specifications should be subject to our after-sale service regulations.
2. When filling the combustible refrigerant, any of your rude operations may cause serious injury or injuries to human body and objects.
3. A leak test must be done after the installation completed.
4. It is a must to do the safety inspection before maintaining or repairing an air conditioner using combustible refrigerant in order to ensure that the fire risk is reduced to minimum.
5. It is necessary to operate the machine under a controlled procedure in order to ensure that any risk arising from the combustible gas or vapor during the operation is reduced to minimum.
6. Requirements for the total weight of filled refrigerant and the area of a room to be equipped with an air conditioner.

Operating condition

The protective device maybe trip and stop the unit within temp range listed below:

HEATING	Outdoor air temperature is over 24℃
	Outdoor air temperature is below −25℃
	Room temperature is over 30℃
COOLING	Outdoor air temperature is over 58℃
	Outdoor air temperature is below −15℃
	Room temperature is below 17℃
DRY	Room temperature is below 17℃

If the air conditioner runs for a long time in "COOLING" or "DRY" mode at air relative humidity higher than 80% (doors or windows opened),dew may generate and drip near air outlet.

Noise pollution

- Install the air conditioner in a place that can bear its weight in order to operate more quietly.
- Install the outdoor unit in a place where the air discharged and the operation noise do not annoy your neighbors.
- Do not place any obstacles in front of the outlet of the outdoor unit for fear it affects operation and increases the noise level.

Features of Protector

❶ The protective device will trip at following cases.

- Stop the appliance and restart it at once or change other modes during operation, you have to wait 3 minutes before restarting.
- After switching on the power circuit breaker and then turn on the air conditioner at once, you have to wait about 20 seconds.

❷ In case all operations have stopped, you need

- Press "ON/OFF" button again to restart it.
- Set TIMER once again if it has been canceled.

Inspection

After a long time of operation, the air conditioner should be inspected for the following items.

- Abnormal heating of the power supply cord and plug or even a burnt smell.
- Abnormal operating noise or vibration.
- Water leakage from indoor unit.
- Metal cabinet electrified .

Stop using the air conditioner if above problem happened.
It is advisable that the air conditioner should be given a detail check-up after using for five years even if none of the above happen.

Feature of HEATING mode

Preheat

2-5 minutes are necessary to preheat the indoor heat exchanger at the beginning of "HEATING" operation, lest cold air be discharged.

Defrost

In "HEATING" operation the appliance will defrost automatically. This procedure lasts 2～10 minutes, then returns to "HEATING" mode automatically. During defrosting, indoor fan stop running and return to heating mode operation automatically when defrosting has finished.

2 Installation

2.1 Installation Preparation

2.1.1 Notice on Installation

(1) Notice on Refrigerant Concentration before Installation.

This air conditioner uses R32 refrigerant. The construction area for installation, operation and storage of the air conditioner must be larger than the minimum construction area. The minimum area for installation is determined by:

1) Refrigerant charging quantity for the entire system factory (ex-charging quantity + additional charging quantity).
2) Checking out in the applicable tables:
   A. For indoor unit, confirm the model of indoor unit and check the corresponding table.
   B. For outdoor unit that is installed or placed indoors, select the corresponding table according to the height of the room.

Height of the room	Select the applicable table
<1.8m	Floor standing type
≥1.8m	Cassette type

3) Refer to the following table to check out the minimum construction area.

Ceiling type		Wall mounted type		Floor standing type	
Weight (kg)	Area (m^2)	Weight (kg)	Area (m^2)	Weight (kg)	Area (m^2)
<1.224	—	<1.224	—	<1.224	—
1.224	0.956	1.224	1.43	1.224	12.9
1.4	1.25	1.4	1.87	1.4	16.8
1.6	1.63	1.6	2.44	1.6	22.0
1.8	2.07	1.8	3.09	1.8	27.8
2.0	2.55	2.0	3.81	2.0	34.3
2.2	3.09	2.2	4.61	2.2	41.5
2.4	3.68	2.4	5.49	2.4	49.4
2.6	4.31	2.6	6.44	2.6	58.0
2.8	5.00	2.8	7.47	2.8	67.3
3.0	5.74	3.0	8.58	3.0	77.2

Ceiling type		Wall mounted type		Floor standing type	
Weight (kg)	Area (m^2)	Weight (kg)	Area (m^2)	Weight (kg)	Area (m^2)
<1.224	—	<1.224	—	<1.224	—
3.2	6.54	3.2	9.76	3.2	87.9
3.4	7.38	3.4	11.0	3.4	99.2
3.6	8.27	3.6	12.4	3.6	111
3.8	9.22	3.8	13.8	3.8	124
4.0	10.2	4.0	15.3	4.0	137
4.2	11.3	4.2	16.8	4.2	151
4.4	12.4	4.4	18.5	4.4	166
4.6	13.5	4.6	20.2	4.6	182
4.8	14.7	4.8	22.0	4.8	198
5.0	16.0	5.0	23.8	5.0	215
5.2	17.3	5.2	25.8	5.2	232
5.4	18.6	5.4	27.8	5.4	250
5.6	20.0	5.6	29.9	5.6	269
5.8	21.5	5.8	32.1	5.8	289
6.0	23.0	6.0	34.3	6.0	309
6.2	24.5	6.2	36.6	6.2	330
6.4	26.1	6.4	39.1	6.4	351
6.6	27.8	6.6	41.5	6.6	374
6.8	29.5	6.8	44.1	6.8	397
7.0	31.3	7.0	46.7	7.0	420
7.2	33.1	7.2	49.4	7.2	445
7.4	34.9	7.4	52.2	7.4	470
7.6	36.9	7.6	55.1	7.6	496
7.8	38.8	7.8	58.0	7.8	522
8.0	40.8	8.0	61.0	8.0	549

(2) When installing an outdoor unit with single fan, hold the handle and then lift it up slowly (Do not touch the condenser with your hand or other objects). If you hold only one side of the casing, the casing may be pulled out of shape, so please hold the base of the unit as well. During installation,be sure to use the components specified in the instruction manual.

(3) Please use the charging machine specialized for R32 refrigerant before charging, keep the refrigerant tank in an upright position. After charging,stick a label on the air conditioner saying no excessive charging.

(4)The following tools will be used: 1) Liquid-level gauge; 2)Screwdriver; 3) Electric driven rotary hammer; 4)Drill; 5)Pipe expander; 6)Torque wrench; 7) Open-end wrench; 8)Pipe cutter; 9)Leak detector; 10)Vacuum pump; 11) Pressure gauge; 12) Universal meter; 13) Hexagon wrench; 14)Tapeline.

2.1.2 Selection of Installation Location

INDOOR UNITS

1.A place where there are sufficient space for repair Hung ceiling that can bear the weight of the machine.

2.A place that air inlet and outlet is not hindered and without influence from outdoor air.

3.A place without heat source like smoke, fire or toxic pullution.

4.A place where air flow can be transmitted everywhere in the room.

5.A place convienient for installation.

OUTDOOR UNITS

1.A place where there is sufficient space for installation and repair.

2.A place wherethe air inlet and out let are not hindered，without strong air flowing.

3.A dry and ventilated place.

4.A place where the over hanging is level and bear the weight of the outdoor unit，without much noise.

5.A place where neighbours are not annoyed by noise and exhausted air.

6.A place without leakage of flammable gas.

7.A place convenient for installation.

Caution:Location in the following places may cause malfunction of the machine.

1.A place where there is flammable gas leakage.

2.There is saltyair surrounding(near the coast)

3.There is caustic gas(the sulfide，for example) existing in the ai.

4.A place where can not bear the weight of the machine.

5.In kitchen where it is full of oil gas.

6.There is strong electromagnetic wave existing.

7.There is acid or alkaline liquid evaporating.

8.A place where air circulation is not enough.

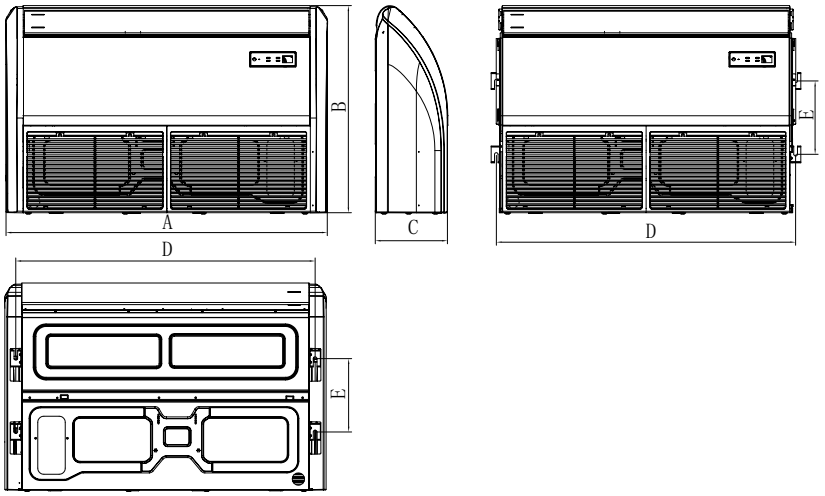
9.Other special surroundings.

2.1.3 Unit Dimension

(1) Indoor Unit

1.The positioning of celling hole, indoor unit and hanging screw bolts.

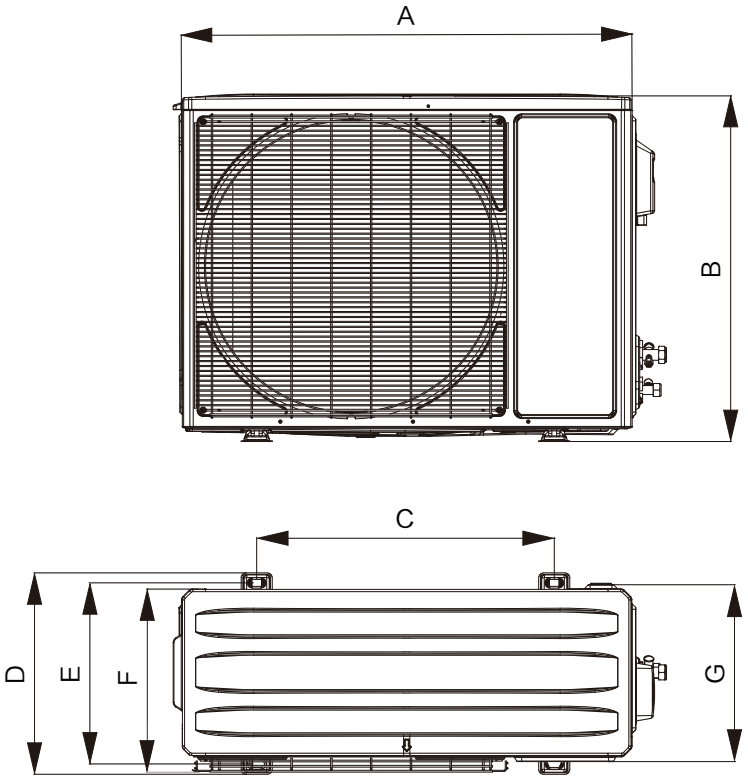
2.Size of mounted hook



Unit: mm

Dimension / Capasity	A	B	C	D	E
18/24K	1055	675	235	980	240
30/36K	1275	675	235	1200	240
42/48/55K	1635	675	235	1560	240

(2) Outdoor Unit



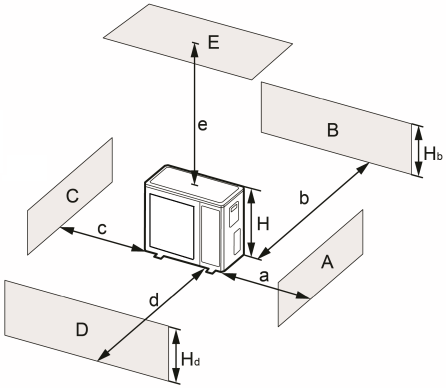
Unit: mm

MODEL	A	B	C	D	E	F	G
18K	780	605	516	350	314	321	307
24/30K	845	700	586	375	348	358	342
36/42K	910	804	607	421	390	391	378
48/55K	1010	858	660	494	462	440	436

2.1.4 Diagram of Unit Installation Space and Location

(1) Diagram of installation space and location for outdoor unit (Notice: for best performance of the outdoor unit, make sure its installation space conforms to the following installation dimensions).

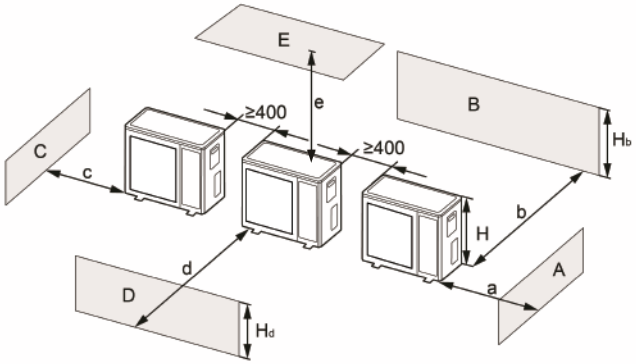
1) When one outdoor unit is to be installed.



LOCATION	Hb Hd H		(mm)				
			a	b	c	d	e
B	—		—	≥100	—	—	—
A,B,C,	—		≥300	≥100	≥100	—	—
B,E	—		—	≥100	—	—	≥1000
A,B,C,E	—		≥300	≥150	≥150	—	≥1000
D	—		—	—	—	≥1000	—
D,E	—		—	—	—	≥1000	≥1000
B,D	$H_b<H_d$	$H_d>H$	—	≥100	—	≥1000	—
	$H_b>H_d$	$H_d<H$	—	≥100	—	≥1000	—
B,D,E	$H_b<H_d$	$H_b\leq 1/2H$	—	≥250	—	≥2000	≥1000
		$1/2H<H_b\leq H$	—	≥250	—	≥2000	≥1000
		$H_b>H$	Prohibited				
	$H_b>H_d$	$H_d\leq 1/2H$	—	≥100	—	≥2000	≥1000
		$1/2H<H_d\leq H$	—	≥200	—	≥2000	≥1000
		$H_d>H$	Prohibited				

2) When two or more outdoor units are to be installed side by side.

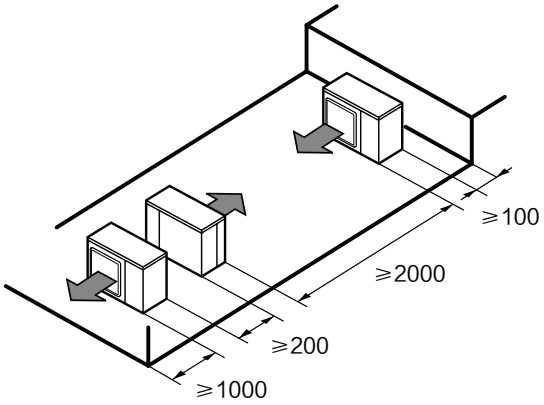
Unit: mm

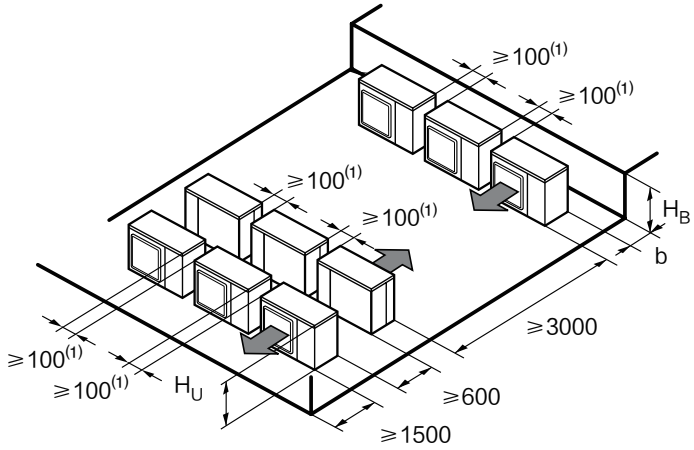


LOCATION	Hb Hd H		(mm)				
			a	b	c	d	e
A,B,C	—		≥300	≥300	≥1000	—	—
A,B,C,E	—		≥300	≥300	≥1000	—	≥1000
D	—		—	—	—	≥2000	—
D,E	—		—	—	—	≥2000	≥1000
B,D	$H_b<H_d$	$H_d>H$	—	≥300	—	≥2000	—
	$H_b>H_d$	$H_d\leq 1/2H$	—	≥250	—	≥2000	—
		$1/2H<H_d\leq H$	—	≥300	—	≥2500	—
B,D,E	$H_b<H_d$	$H_b\leq 1/2H$	—	≥300	—	≥2000	≥1000
		$1/2H<H_b\leq H$	—	≥300	—	≥2500	≥1000
		$H_b>H$	Prohibited				
	$H_b>H_d$	$H_d\leq 1/2H$	—	≥250	—	≥2500	≥1000
		$1/2H<H_d\leq H$	—	≥300	—	≥2500	≥1000
		$H_d>H$	Prohibited				

3）When outdoor units are installed in rows.

Unit: mm

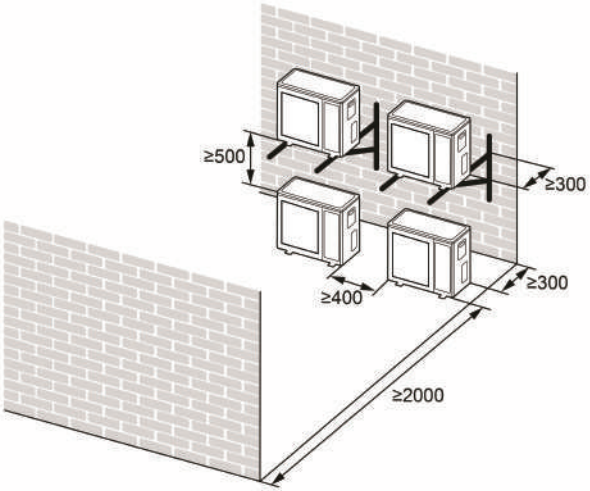




H_B H_U	b (mm)
$H_B \leqslant \frac{1}{2} H_U$	b≥250
$\frac{1}{2}H_U < H_B \leqslant H_U$	b≥300
$H_B > H_U$	⊘

4）When outdoor units are installed one above another.

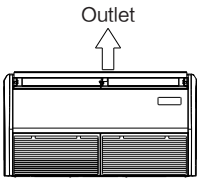
Unit: mm



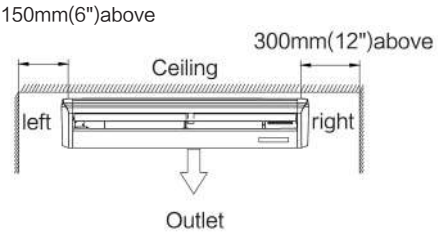
（2）Diagram of installation location and space for indoor unit（Notice: for the best performance of indoor unit, make sure its installation space conforms to the following installation dimensions）.

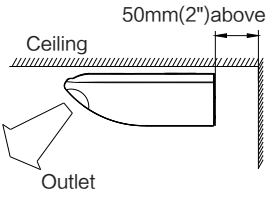
Unit: mm

● Floor console



● Under ceiling





2.2 Unit Installation

Pre-installation precautions

Please confirm that the installation personnel are qualified in relevant installation service. If the air conditioner was installed by persons without special skills, normal operations would not be ensured, even the personal and estate safety would be affected

⚠ NOTE

The air conditioner must be correctly installed by installation technicians according to the attached Installation Manual , and the user himself should not install it.

User guideline

1. The user's installation site should be provided with regular power supply in conformity with that indicated in nameplate of the air conditioner, and its voltage should be with in a range 90 %-110 % of the rated voltage value.
2. Power circuit should be equipped with protector, such as electricity leakage protector or air switch, which should possess a capacity greater than 1.5 times the maximum current value of the air conditioner.
3. Never fail to adopt personal circuit and effectively-grounded socket compatible with the attached plug of the air conditioner. The attached plug is equipped with grounding pin, and it must not be modified as desired.
4. Please adopt the fuse or circuit breaker prescribed in Installation Instructions.
5. Only qualified electrician is allowed to carry out wiring tasks strictly according to electric safety requirements.
6. Do ensure good earth of air conditioner, in other words, the main power switch of air conditioner must be connected to reliable ground wire.

Precautions

The air conditioner should be installed securely；otherwise poor installation may lead to abnormal noises and vibration.

Outdoor unit should be installed at a spot ensuring that its air outlet noises and hot exhaust will not violate your neighbors.

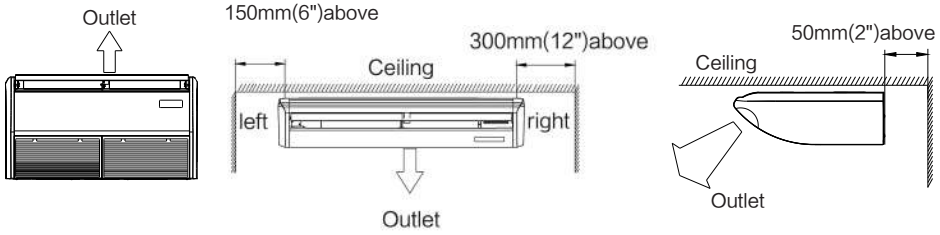
2.2.1 Indoor Unit Installation

2.2.1.1 Preparation for Installing the Indoor Unit

Installation Space

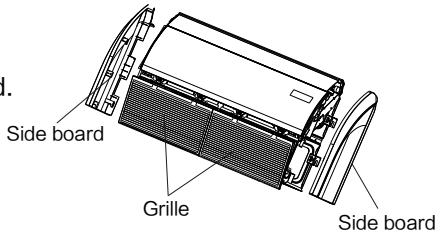
Ensure sufficient space for installation and repair.
GENERAL: This installation instruction sheet briefly outlines where and how to install the air conditioning system. Please read over the entire set of instructions for the indoor and outdoor units and make sure all accessory parts listed are with the system before beginning.

● Floor console ● Under ceiling



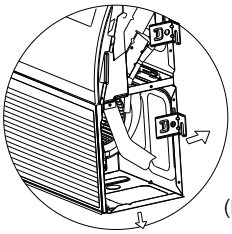
Installation procedure

Please remove the grille and the side board.

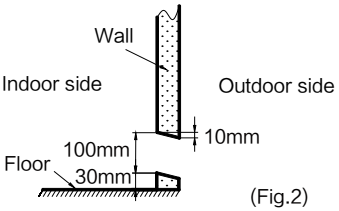


FLOOR CONSOLE TYPE

1.Select the piping and drainage directions.
The piping and drain can be made in two directions as shown below(fig.1).
NOTE:
After the pipeline is connected, the tapping hole should be sealed with tape or sponge.
When the direction is selected,please drill a 100mm(4")diameter hole on the wall, and the hole must be tilted downward towards the outdoor for smooth water flow.
When the pipe isled out from the rear,make a hole in figure,at the position shown(fig.2).

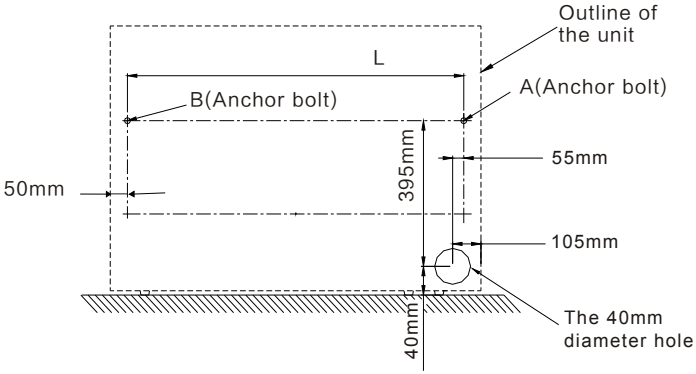


(Fig.1)



(Fig.2)

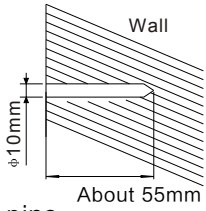
2.Drilling holes for anchor bolts and installing the anchor blots(m10)
According to the position of the hole, install two expansible anchor bolts(A and B) at the position shown in the figure.



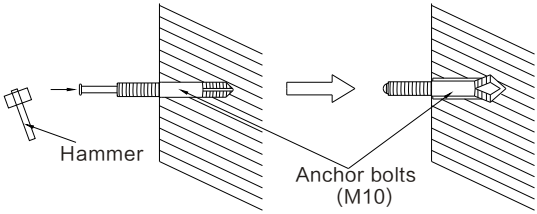
NOTE:

Coolling Capacity / Dimension	18/24K Btu/hr	30-36K Btu/hr	42-55K Btu/hr
L	980mm	1200mm	1560mm

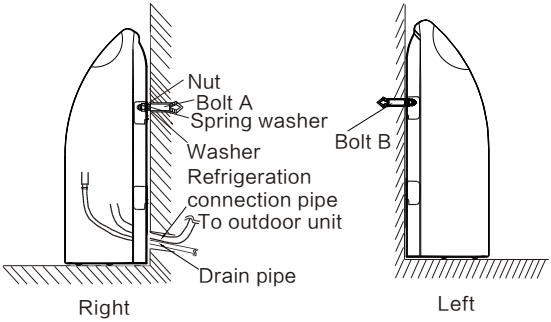
With a concrete drill, drill two 10mm diameter holes at the position(A and B)on the wall.



Insert the anchor bolts into the drilled holes, and drive the pins completely into the anchor bolts with a hammer.

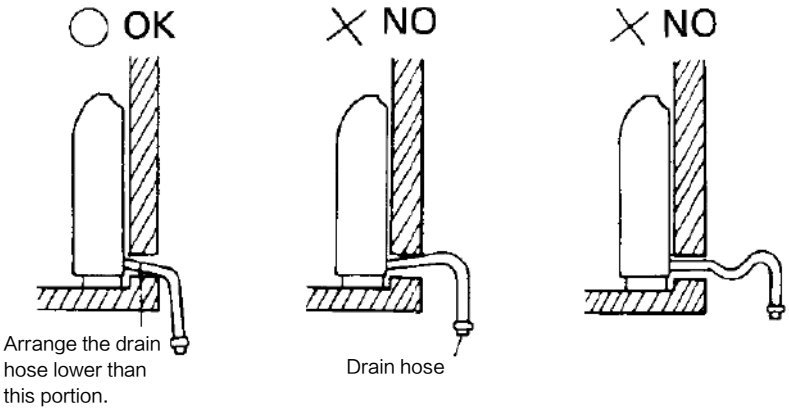


Install the unit to them with nuts,washers and spring washers
NOTE: The installation angle should not exceed 15 degrees.



⚠ CAUTION

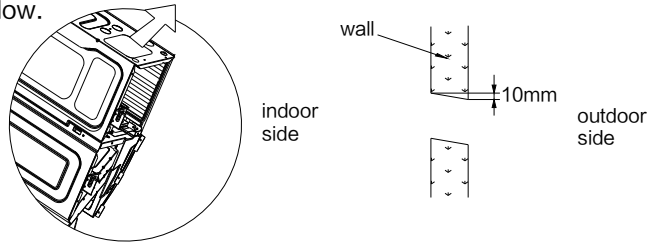
Be sure to arrange the drain hose so that it is leveled lower than the drain hose connecting port of the indoor unit.



UNDER CEILING TYPE

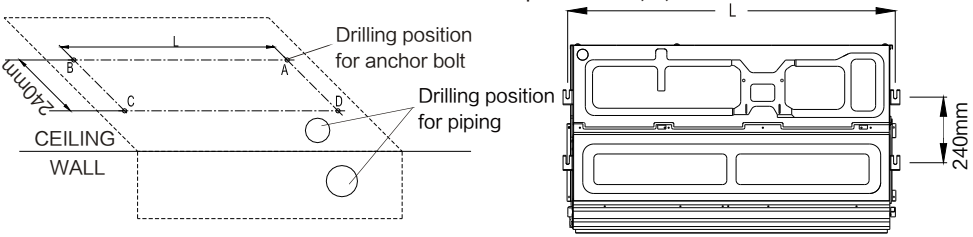
1.Select piping and drain directions.

CAUTION: Install the drainage hose at the rear,it should not be installed on the top. When the directions are selected, drill 80 mm (3−1/8") and 50 mm (2") or 150 mm (6") dia. hole on the wall so that the hole is tilted downward toward the outdoor for smooth water flow.



2. Drilling holes for anchor bolts and installing the anchor blots(m10).

Please drill four holes for anchor bolts at the position A,B,C and D.



NOTE:

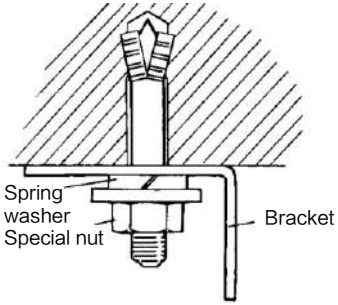
Coolling Capacity / Dimension	18/24K Btu/hr	30-36K Btu/hr	42-55K Btu/hr
L	980mm	1200mm	1560mm

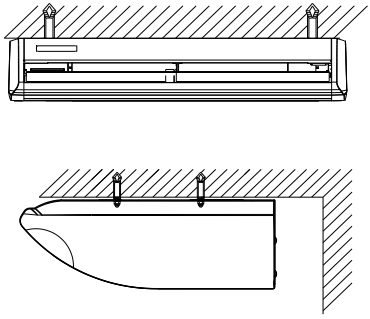
3.Installing indoor unit

Now,securely tighten nuts to each bolt with washers and spring washers.

NOTE: The installation angle should not exceed 10 degrees.

Mount the unit to the anchor bolts.





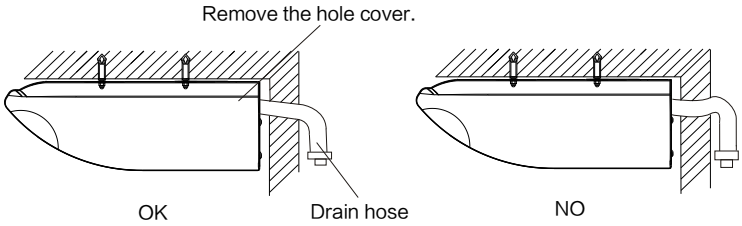
DRAINAGE PIPE CONNECTION

1.Installing the drain hose

Insert the drain hose into the drain pan, then secure the drain hose with a nylon fastener(we have connected the drain hose to the drain pan in the factory,you just need connect the drain pipe.).

Wrap the insulation (drain hose) around the drain hose connection.

Be sure to arrange the drain hose so that it is leveled lower than the drain hose connecting port of the indoor unit.



2.Drainage test

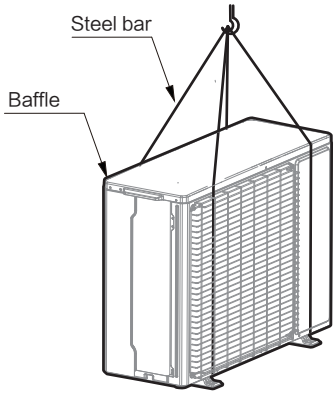
A.Check whether the drain pipe is unhindered and each joint is airproof.

B.Inject 2000ml water into the drain pan to test whether the water flows smoothly.

2.2.2 Outdoor Unit Installation

2.2.2.1 Move outdoor unit

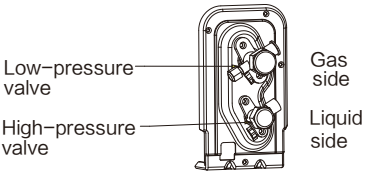
1. Please use 4 pieces of 6mm steel wire hanging the outdoor unit up and move in.
2. To avoid the outdoor unit is out of shape, please add the baffles at the surface of outdoor unit where the steel wire rope may touch.
3. After moving, please remove the tray wood on the bottom.



2.2.2.2 Installation space

1. After leaving repair space as illustrated below, install the outdoor unit with power supply equipment installed at the side of the outdoor unit.
2. Please make sure necessary space for installation and repair.

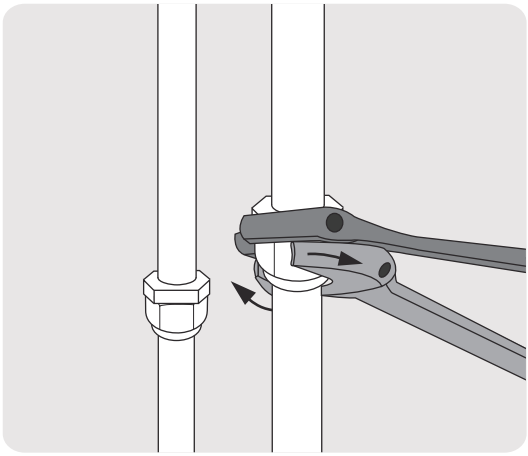
2.2.3 Connection Pipe Installation



1. The junction is inside the cover of the right panel，please take off the cover first.
2. The pipe gets out of the side gap of the cover.
3. After connecting from the valve gap，reinstall it from left，right or backwards for installation.
4. The right picture is the sketch map of valve installation board of outdoor. Gas-side （low pressure）is the one upward，liquid side is the one downward.

2.2.3.1 Installation Notice and Requirement on Connection Pipe

Installation of ordinary nut unfold the connecting pipe and bend the connecting pipe according to the required length. Open the nut cover on the indoor unit's pipe and align the conical mouth of the connecting pipe with the center of the indoor unit's pipe. Tighten the nut by hand and then tighten it with a torque wrench. If you need to break the connection between indoor and outdoor units, cut the connector. Replace with a new one and weld again.



⚠ NOTES
(1) The air conditioner must be installed in a room that is larger than the minimum room area. And it is not allowed to use in a room that has running fire.
(2) Before break the connection pipes between indoor and outdoor units, eliminate the refrigerant first and make sure there is no fire source or potential fire source in the maintenance area. And make sure the area is well-ventilated.
(3) The tamperproof box should not be overlapped during installation and must be completely covered with the accompanied insulated pipe before wrapping.

Installation method: Connect the connection pipes first to the indoor unit and then to the outdoor unit When bending a connection pipe, be careful not to damage the pipe. Do not over-tighten the screw nut, otherwise leakage will occur. Besides, the outside of connection pipe should be added with a layer of insulating cotton to protect it from mechanical damage duringin stallation, maintenance and transportation.

Pipe Material		Copper Pipe for Air Conditioner		
Model		18K	24K	30/36/42/48/55K
Size(mm)	Liquid side	6.35(1/4 inch)	6.35(1/4 inch)	9.52(3/8 inch)
	Gas side	9.52(3/8 inch)	12.7(1/2 inch)	15.88(5/8 inch)

Additional refrigerant charge

The additional charge is base on the diameter and length of outlet/inlet liquid type. This AC has been charged with that for 5m pipe, those beyond 5m should recharge as follows.

Model	Additional charge for 1m pipe(R32)/g
18/24K	16
30K	24
36/42/48K	32
55K	40

Conventional pipe, cooling capacity18000~30000Btu/h		Allowed value
Longest pipe(L)		30m
Maximum height drop	Height drop between indoor and outdoor unit (H)	15m

Conventional pipe, cooling capacity 36000~55000Btu/h		Allowed value
Longest pipe(L)		75m
Maximum height drop	Height drop between indoor and outdoor unit (H)	30m

Connection pipe should adopt water-proof insulating material. It's wall thickness should be 0.5-1.0mm and the pipe wall should be able to with stand 6.0MPa. The longer the connection pipe is the worse cooling perfomance it has.

When the drop between indoor and outdoor units is longer than 10m, an oil return bend should be added every 6m.

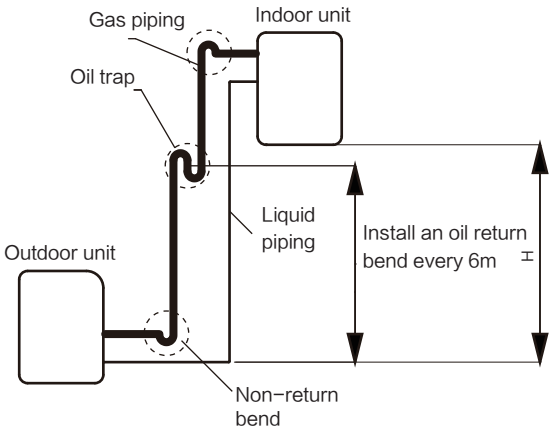
The requirement on the adding of oil retum bend is as below:

(2) Outdoor unit is above the indoor unit.

There's no need to add non-return bend at the lowest or highest position of the vertical pipe, as shown below:

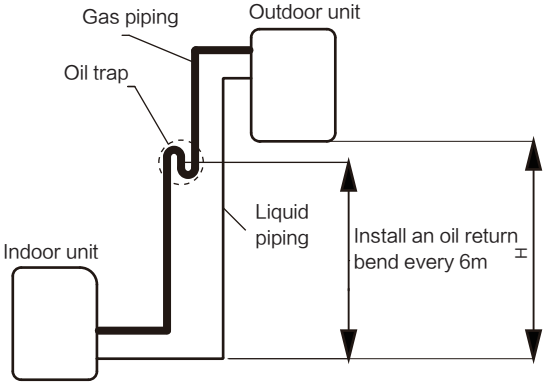
(1) Outdoor unit is beneath the indoor unit.

It's necessary to add oil return bend and non-return bend at the lowest and highest position of the vertical pipe, as shown below:

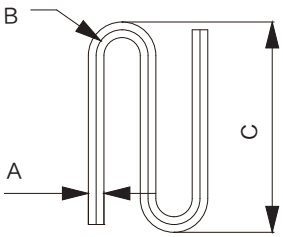


(2) Outdoor unit is above the indoor unit.

There's no need to add non−return bend at the lowest or highest position of the vertical pipe, as shown below:



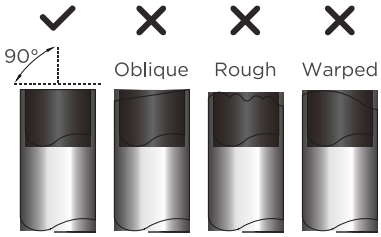
Dimensions for the making of oil return bend are as follows.



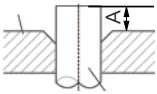
A(inch)	B(mm)	C(mm)
Φ3/8	≥20	≤150
Φ1/2	≥26	≤150
Φ5/8	≥33	≤150

2.2.3.2 Pipe Flaring

1.Cut the refrigerant pipe off with pipe cutter.



2.Flaring after putting the pipe into connection nut.



Outside Diameter	A（mm）	
	MAX	MIN
1/4″	8.7	8.3
3/8″	12.4	12.0
1/2″	15.8	15.4
5/8″	19.0	18.6
3/4″	23.3	22.9

Stop valve operation item

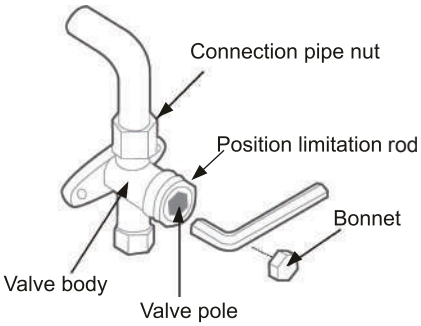
Open the valve rod til to the position limitation rod.Do not try to open larger.

Fasten the bonnet with spanner or similar tools

Fasten the bonnet of valve rod.

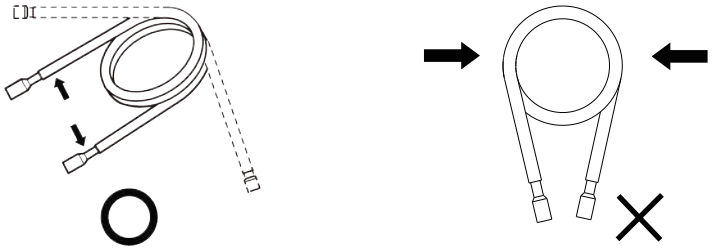
Liquid side（ 3/8",1/2"）:1180N.cm（120kgf.cm）

gas side（5/8",3/4"）:1180N.cm（120kgf.cm）



2.2.3.3 Pipe Bending

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

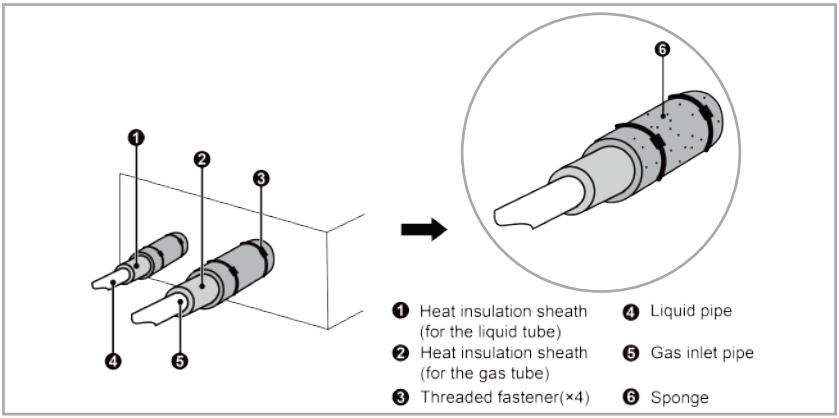


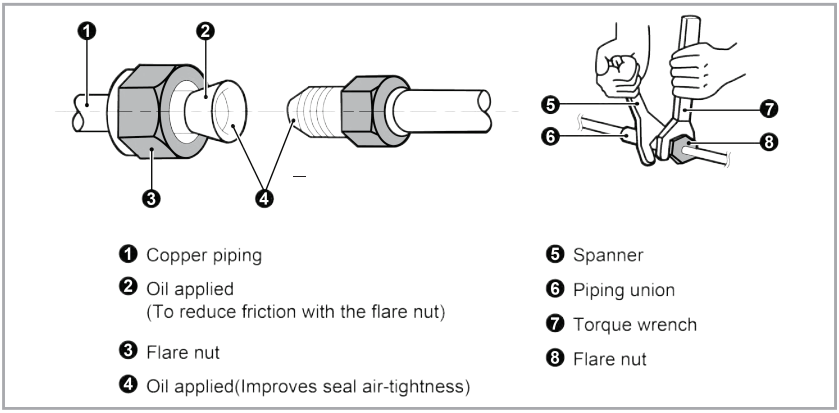
(2)Do not bend the pipes in an angle more than 90°

(3)If the pipe is repeatedly bent or extended, it will become hard and difficult to be bent or extended. So do not bend or extend the pipe for more than 3times.

2.2.3.4 Connection Pipe of indoor and Outdoor Units

⚠ NOTES
(1) Connect the pipe to the unit. Please follow the instructions stated in the figures below.Use both spanner and torque wrench.
(2) When connecting the tapered screw nut, first apply chilled machine oil on its inner and outer surface and then screw it up for 3~4 circles.
(3) Confirm the tightening torque by referring to the following table (If the screw nut is over-twisted, it may be damaged and cause leakage).
(4) Check whether gas leakage occurs to the connection pipe and then apply thermal insulation, as shown below.
(5) Wind sponge around the joint of gas pipe and heat insulation sheath of gas collecting pipe.
(6) Be sure to connect gas pipe after liquid pipe is connected.
(7) The installation of pipe-work shall be kept to a minimum.
(8) Pipe-work shall be protected from physical damage and shall not be installed in an unventilated space.

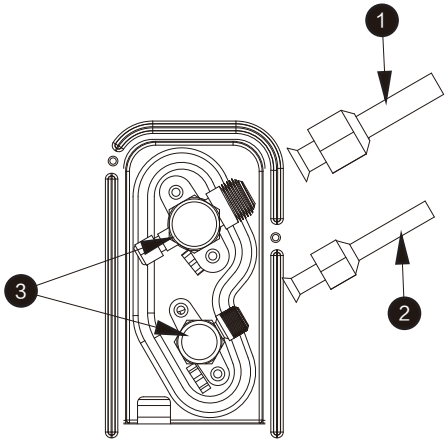




According to installation conditions, overlarge wrenched torch will destroy the nut.

Pipe diameter (inch)	Tightening torque
Φ1/4	1420~1720 N · cm (144~176kg f · cm)
Φ3/8	3270~3990 N · cm (333~407kg f · cm)
Φ1/2	4950~6030 N · cm (504~616kg f · cm)
Φ5/8	6180~7540 N · cm (630~770kg f · cm)
Φ3/4	9720~11860 N · cm (990~1210kg f · cm)

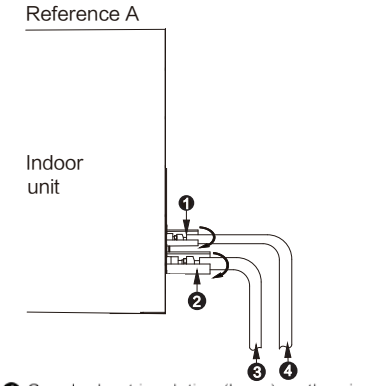
Screw on the flare nut of the flaring connecting pipe on the outdoor unit valve.
The method of screwing the flare nut is the same with that for indoor unit.



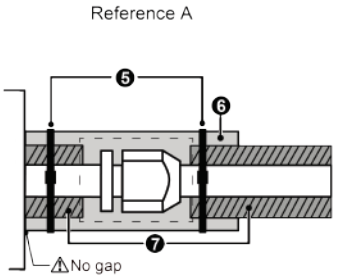
1 Gas pipe
2 Liquid pipe
3 Pipe coupling

2.2.3.5 Thermal insulation of Pipe Joint （Only for indoor unit）

Stick coupler heat insulation (large and small) to the place where connecting pipes.



1 Coupler heat insulation (large) on the pipe
2 Coupler heat insulation (small) on the pipe
3 Liquid pipe
4 Gas pipe



5 Threaded fastener
6 Cover this portion with heat insulating material also without fail
7 Heat insulation pipe

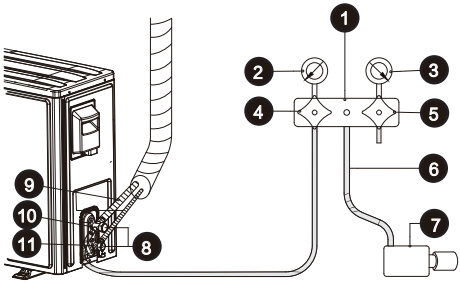
2.2.4 Connection Pipe Vacuum Pumping and Leak Detection

2.2.4.1 Vacuum Pumping

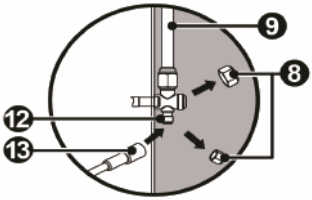
⚠ NOTE
Make sure the outlet of vacuum pump is away from fire source and is well-ventilated.

When vacuum pump is used, each low-pressure valve must be manipulated as follow. Please refer to operation manual for the usage of manifold valve.

1.Connect the recharged hose to lower pressure valve jucntion (low/high pressure valve must be tightened.)
2.Connect the charged hose junction with vacuum pump.
3.Open the low pressure handler of manifold fully.
4.Start vacuumizing with vacuum pump. When vacuumizing begins,loosen the nut of low pressure valve a bit. Check is the air enters(noise of vacuum pump changes, the all-purpose meter indication change from negative to zero), then tighten the nut of connection pipe.
5.After vacuumizing finishing, tighten the low pressure handler of manifold valve fully and stops the vacuum pump. When vacuumizing is carried out for over 15 minutes,please confirm if the all-purpose meter points at $-1.0X10^5$ Pa(-76cmHg)
6.Open the high/low pressure valve fully.
7.Dismantle the recharged hose from charge gap of low pressure valve.
8.Tighten the bonnet of low pressure valve.



1. Gauge manifold
2. Pressure gauge (Low-pressure)
3. Pressure gauge (High-pressure)
4. Switch (Low-pressure)
5. Switch (High-pressure)
6. Hose
7. Vacuum pump
8. Cap
9. Connection pipe
10. Gas valve
11. Liquid valve
12. Service port
13. Hose with the valve pin



For large-size units, there are maintenance ports for liquid valve and gas valve. During evacuation，you may connect the two hoses of the branch valve assembly to the maintenance ports to speed up the evacuation.

The following leak detection methods are deemed acceptable for systems containing flammable refrigerants.

Electronic leak detectors shall be used to detect flammable refrigerants,but 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 percent age 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 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.

If a leak is suspected, all naked flames shall be removed / extinguished. If a leak age 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. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

2.2.5 Refrigerant Adding

⚠ NOTE

Before and during operation, use an appropriate refrigerant leak detector to monitor the operation area and make sure the technicians can be well aware of any potential or actual leakage of inflammable gas. Make sure the leak detecting device is applicable to inflammable refrigerant. For example, it should be free of sparks, completely sealed and safe in nature.

2.2.6 Installation of Drain Pipe

(1) It is not allowed to connect the condensate drain pipe into waste pipe or other pipelines which are likely to produce corrosive or peculiar smell to prevent the smell from entering indoors or corrupt the unit.

(2) It is not allowed to connect the condensate drain pipe into rain pipe to prevent rain water from pouring in and cause property loss or personal injury.

(3) Condensate drain pipe should be connected into special drain system for air conditioner.

2.3 Cleaning

Warning:please shut down the unit and cut off the power before cleaning for safe.

2.3.1 Cleaning the unloaded filter

1.Clean the unloaded filter with vacuum cleaner or water.

2.Scrub with neutral detergent if the filter is too dirty. Do not wash with hot water (about above 50℃)，in case it is out of shape.

3.Place it on a ventilated place and cannot beunder the sunshine directly after washing lest it is out of shape.

2.4 Maintenance

1. Please do the following job well if the air conditioner is not used for a long time in order to dry the unit completely，set the FAN mode and runs for 3-4 hours. Shut down the air conditioner and cut off the power supply.

2. When used again after the unit stops for a long perio：When cleaning the filter and indoor unit, you must stop the unit and cut off power supply Wipe the indoor unit with soft cloth. It is forbidden to push the machine with petrol. benzene, lye, powder，detergent, insecticide etc. Which will damage the unit.

3. Ensure air in let and outlet of indoor and outdoor unit are not blocked by rubbish. Check
whether the grounded wire is loose and flexible, then connect the power.

2.5 Electric wiring

2.5.1 Requirement and Notice on Electrical Installation

⚠ WARNING

1. Specified power cables should be used. Do not apply any pressure on the terminals used to connect. Improper connection may cause fire.

2. Grounding must be properly done. The grounding wire should be away from gas pipes, water pipes, telephone, lightening rods or other grounding wires. Improper grounding may cause electric shock.

3. Electric Wiring must be done by professionals. Use a separate circuit according to national regulations. The temperature of refrigerant circuit will be hight ,please keep the interconnection able away from the copper tube.
If the wiring capacity is not enough, electric shock or fire may occur.
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.
An all−pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

CAUTION

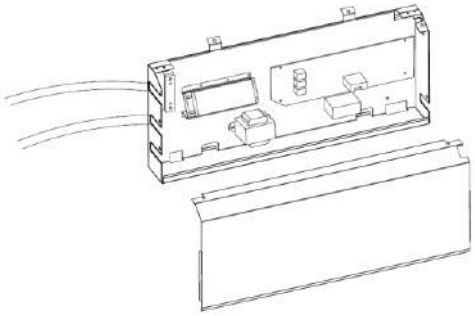
Be sure to Install Current Leakage Protection Switch. Or electric shock may occur.

1.Power cord is to be selected according to national regulations.
2.Outdoor unit power cord should be selected and connected according to the outdoor unit installation manual.
3.Wiring should be away from high temperature components, or the insulation layer of the wires may melt down.
4.Use wire clamp to fix the wires and terminal block after connection.
5.Control wire should be wrapped together with heat insulated refrigerant pipes.
6.Connect the indoor unit to power only after the refrigerant has been vacuumed.
7.Don't connect the power wire to the signal wire connection end.

⚠ NOTES

1. Power cord indicates the supply cable from indoor air switch to indoor unit or outdoor unit Indoor/outdoor power connecting wire indicates the supply cable connecting indoor unit and outdoor unit.
2. Cross-section area of power cord wire is the minimum value here. In case power-connecting wire is longer than usual, just select the conductor cross-section a level higher than the specified one to avoid voltage drop.
3. The cross section of ground wire for the whole set of air conditioner should be 2 mm' at least.Power cord connected to indoor unit should be cable RVV (300-500V): the power cord connected to outdoor unit and the indoor/outdoor power connecting wire should be multi-wire strand cable (neoprene)YZW(300-500V).
4. In case single-core double-layer wire is adopted, its cross section should be one level bigger than the specified one, and the wire should be covered with dedicated electric sheath.

1. Wiring method for indoor unit: Take off the electric box cover from the sub-assembly of electric box. Then connect the wires. Connect the connection wires of indoor unit according to the corresponding marks.



2.4.2 Electrical Parameters

2.4.2.1 Wire Specifications and Fuse

Indoor Unit	Power Supply	Fuse Capacity	Circuit Breaker Capacity	Min. Sectional Area of Power Cord
	V/Ph/Hz	A	A	mm^2
18K	220-240V~ 50Hz	5	20	1.5
24K			25	2.5
30K			32	2.5
36K-55K			10	1.5

Outdoor Unit	Power Supply	Fuse Capacity	Circuit Breaker Capacity	Min. Sectional Area of Power Cord
	V/Ph/Hz	A	A	mm^2
18K	220-240V~ 50Hz	25	20	1.5
24K		30	25	2.5
30K		30	32	2.5
36K		30	32	2.5
42K		30	32	2.5
48K	380-415V~3N 50Hz	25	20	1.5
55K		25	20	1.5

⚠ NOTES

1.Fuse is located on the main board.

2.Install a circuit breaker near the outdoor units with at least 3mm contact gap. The units must be able to be plugged or unplugged.

3.Circuit breaker and power cord specifications listed in the above table are determined based on the maximum power input of the units.

4.Specifications of circuit breaker are based on a working condition where the working temperature is 40℃. If working condition changes, please adjust the specifications according to national standards.

5.The wire gauge of power cords and communication cords requirement should be used according to the wiring diagrams. The maximum length of 18-30k units is 30m, the maximum length of 36-55K units is 75m.Please select a proper length according to local conditions.

6.The diameter of the communication cable should not be less than 0.75 square millimeters. It is recommended to use a 0.75 square millimeter power cable with a twisted pair and shielding layer as the communication cable.

2.5.3 Connection of Power Cord and Communication Cord

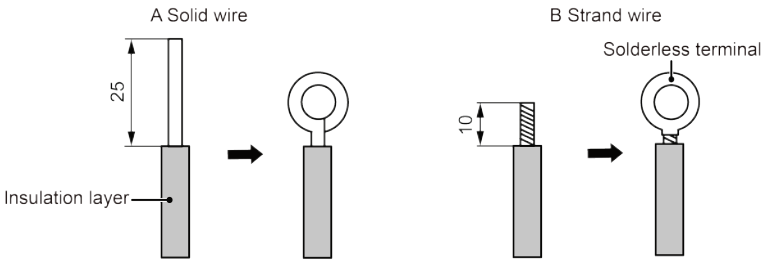
(1) For solid wires (as shown below):

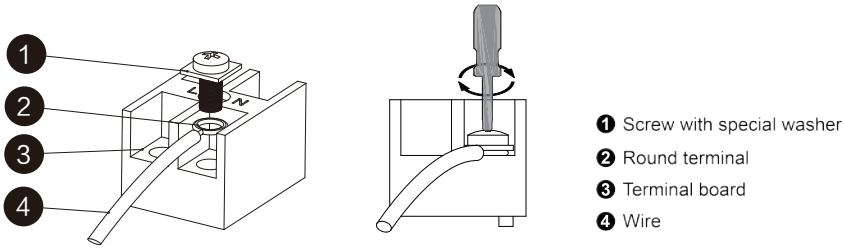
1) Use wire cutters to cut off the wire end and then peel away about 25mm of the insulation layer.
2) Use a screwdriver to unscrew the terminal screw on the terminal board.
3) Use nippers to bend the solid wire into a ring that fits the terminal screw.
4) Form a proper ring and then put it on the terminal board. Use a screwdriver to tighten up the terminal screw.

(2) For strand wires (as shown below):

1) Use wire cutters to cut off the wire end and then peel away about 10mm of the insulation layer.
2) Use a screwdriver to unscrew the terminal screw on the terminal board.
3) Use a round terminal fastener or clamp to fix the round terminal firmly on the peeled wire end.
4) Locate the round terminal conduit. Use a screwdriver to replace it and tighten up the terminal screw (as shown below).

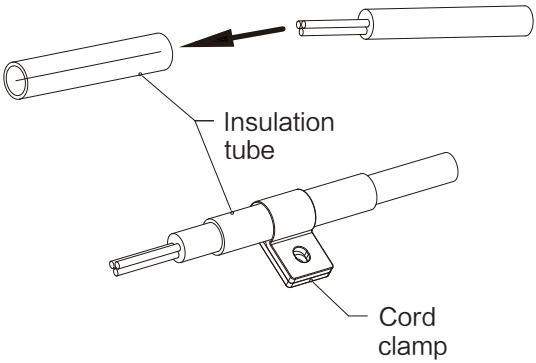
Unit: mm





（3）How to connect the connection wire and power cord.

Lead the connection wire and power cord through the insulation tube. Then fix the wires with wire clamps (as shown in the following figure).



（4）Outdoor unit wiring

1.Copper-cored wire should be selected.

2. As the electric control box is inside the unit body, dismantle the valve installation cover,top cover right front board sequenly when connecting wires. Then connect the responding wires from the hole of the electric of the right back board.

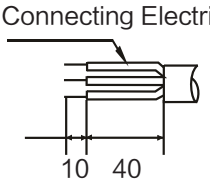
3. Mate series number according to junction box of outdoor unit. (Disposed length of connection wire is good enough for inserting the conenction pole completely).

4. Wrap the electric wire(conductor),which is not inserted into the connection pole, with PVC belt and make it avoid any electric appliance or metal elements.

5. After installing cable connection lug on the main power wire, then connect to the terminal row.

6. Connection lug should be installed on the grounded wire of all cables. Only finishing that all cables can be connected to grounded bolt.
7. The electric wire from wire terminal should be through wire clips.
8.Please refer to the right illustration.

Unit:mm



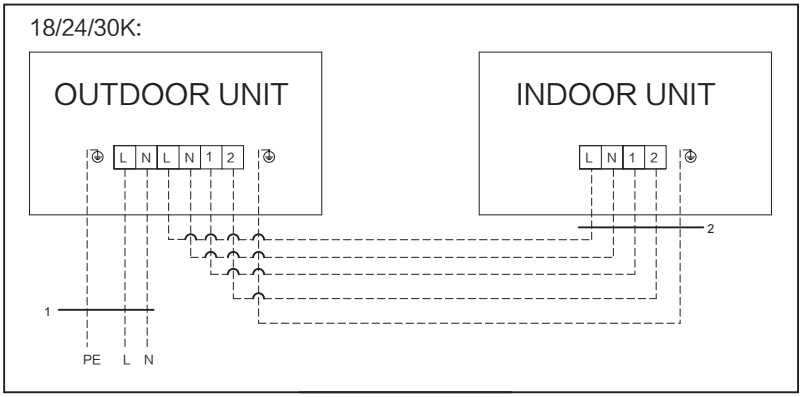
⚠ NOTE

The indoor unit should be connected correctly with the high-pressure and low-pressure stop valve of the outdoor unit as well as the signal line. Otherwise，some electrical componets and system may suffer damages

⚠ WARNING
(1) Before working, please check whether the indoor and outdoor units are powered on.
(2) Match the terminal numbers and wire colors with the colors indicated in the indoor unit.
(3) Wrong wire connection may burn the electrical components.
(4) Connect the wires firmly to the wiring box. Incomplete installation may lead to fire hazard.
(5) Please use wire clamps to secure the external covers of connecting wires.(Insulators must be clamped securely; otherwise, electric leakage may occur.)
(6) Ground wire should be connected.

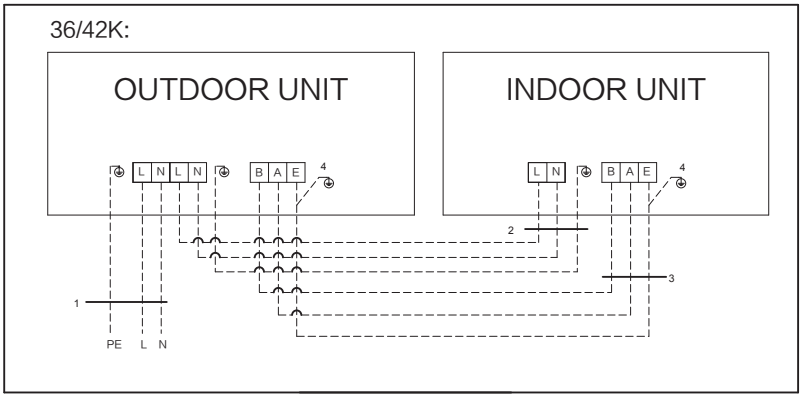
External wiring diagrams.

The following wiring diagram is about 18/24/30K models.



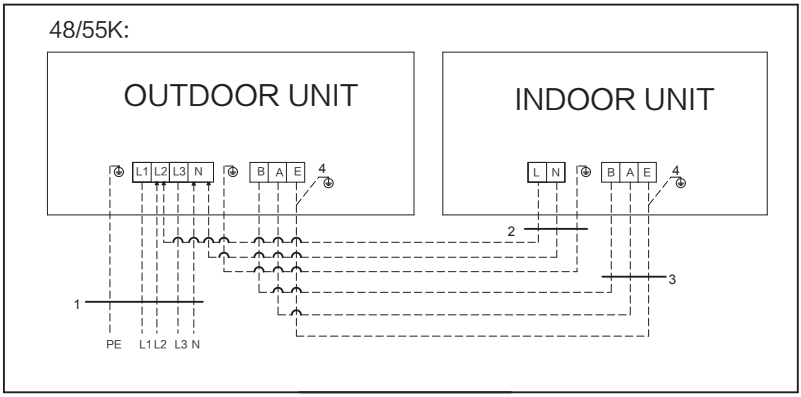
Single-phase unit: 18K	Single-phase unit: 24K/30K
1.Power cords 3x1.5㎜²	1.Power cords 3x2.5㎜²
2.Connecting cords of indoor and outdoor units 5x1.5㎜²	2.Connecting cords of indoor and outdoor units 5x2.5㎜²

The following wiring diagram is suitable for 36/42K models.



Single-phase unit: 36K /42K
1.Power cords 3x2.5㎜²
2.Power cords 3x1.5㎜²
3.Communication cords 3x0.75㎜²
4.Shielding layer grounding

Three-phase unit: 48K/55K.



Three-phase units: 48K/55K
1.Power cords 5x1.5mm²
2.Power cords 3x1.5mm²
3.Communication cords 3x0.75mm²
4.Shielding layer grounding

Operation after connecting the power:

(1) If all the above works are finished, power on the unit.

(2) Make sure the indoor and outdoor units can run normally.

(3) Feel the air flow of the indoor unit to see if it is normal.

(4) Press the swing button or speed control button on remote control or wired control to see if the fan can run normally.

⚠ NOTES

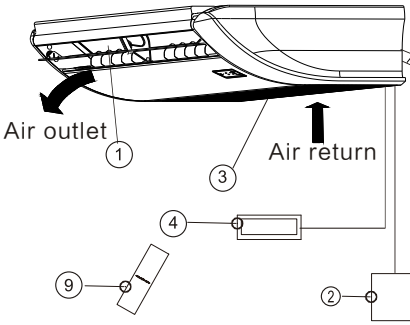
1.If you use remote control to turn off the unit and then immediately turn the unit on again, compressor will need 3 min to restart. Even if you press “ON/OFF" button on the remote control, it won't be started up right away.

2.If there's no display on the wired control, it's probably because the connection wire between the indoor unit and wired control is not connected Please check again.

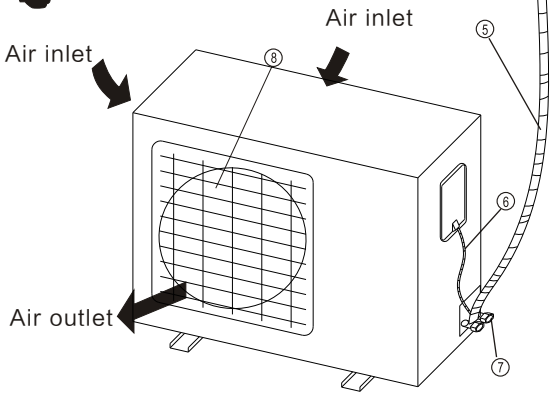
3 Product introduction

3.1 Overall Layout

Indoor Unit



Outdoor Unit



① Air Outlet
② Wire controller
③ Filter
④ Remote controller receiver
⑤ Refrigerant connection pipe
⑥ Connecting cord
⑦ Cut−off valve
⑧ Air Outet grille
⑨ Remote controller

Requirements

- The air conditioner cannot be started up until it is powered on for 2 hours. Furthermore, in case of a shutdown lasting for about one diel only, please do not cut off the electricity supply. (it is necessary to heat the crankcase heater so as to avoid force start of compressor.)
- Notice that the air inlet/outlet must not be choked up. If choke up takes place, the air conditioner behavior may be affected, or air conditioner cannot run because of actuation of protector.

■ About SLEEP operation

About SLEEP Operation

When the SLEEP operation is selected,the room temperature is auto-matically controlled with elapsed time so that the room isn't too cool during cooling or too warm during heating.

■ About power-off memory function

When the air conditioner disconnect the power suddenly, restart it, the air conditioner operates at the mode it did before power suddenly failed.

⚠ CAUTION

If any of the following conditions occur,stop the air conditioner immediately,set off the power switch, and contact the dealer.

- The indicator lamps flash rapidly(five times per second),you disconnect the unit with the power and then connect the unit with the power again after two or three minutes but the lamps still flash.
- Switch operations are erratic.
- The fuse is blown frequently or the circuit breaker is tripped frequently.
- Foreign matter or water has fallen inside the air conditioner.
- Any other unusual condition is observed.

4 Maintenance

4.1 Display panel

1.Trouble display of indoor display panel

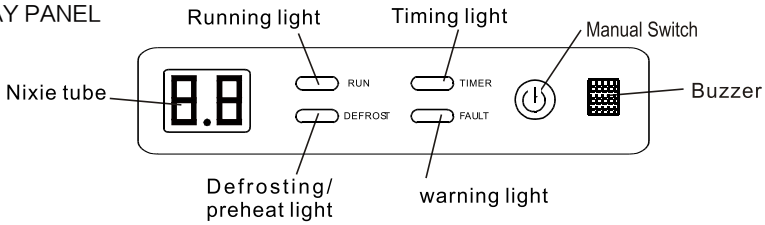
Infrared signal receiver: receive the signal from the remote controller.

To make your remote controller operation more efficient, please let remote controller emittor aim at infrared signal receiver.

Buzzer: firstly power supplied or any of remote controller operations will make the buzzer sound once.

Some obstacles occuring in the system will be recognized by intelligent recognition system of unit ,lighting on the DISPLAY PANEL flashing show the type of obstacles.

⬠ DISPLAY PANEL



（1）.Display function declaration :

LED light the state of running light

1)When powered-on the first time, the running light twinkles, while the double-8 does not lit.

2)When started-up normally, the running light lights on, while the double-8 shows the designed temperature.

3)When operated normally, the running light lights on, while the double-8 shows the designed temperature.

4)When closed down, both LED and double-8 are gone out.

LED light the state of Timing light

1)When timing set, the timing light lights on, and the double-8 flash shows the time setting within 5 seconds,then shows the designed temperature.

2)When without time setting, the timing light gone out, while the double-8 back to the original state.

LED light the state of defrosting/preheat light

1)When in the state of defrost, oil return, cold-wind proof, the defrosting/preheat light lights on, while the double-8 shows the designed temperature. (One-driven-one does not show the oil return state).

2)When out of the state of defrost, oil return, cold-wind proof, the defrosting/preheat light gone out, while the double-8 shows the designed temperature. (One-drive-one does not show the oil return state).

LED light the state of warning light

1)When double-8 shows E* or P*, the running lights gone out, while the warning light lights on

（2）.Trouble display of outdoor unit

1）During standby, the digital tube displays the numbers of indoor unit currently connected and communicating.

2）When the compressor operates, the digital tube displays the frequency value of the inverter compressor.

3）The digital tube displays “dxx” during defrosting；The digital tube displays “Cxx” during oil return.

4）During trouble protection, the information code displayed by the digital tube is as follows.

4.2 Error Code

⚠ WARNING
(1) If abnormal things (for example, awful smell) occur, please stop the unit immediately and disconnect power. Then contact TCL's authorized service center. If the unit continues to run in abnormal situations, it may get damaged and cause electric shock or fire hazard.
(2) Do not repair the air conditioner by yourself. Improper maintenance will cause electric shock or fire hazard. Please contact TCL's authorized service center and send for professional service staff to repair.

If the display panel or wired control displays an error code, please refer to the error code meaning stated in the following table.

Error Code	Error Content	Serial number	Error Definition and Protetion
E0	Indoor and outdoor communication failure	1	Hardware Error
E1	Indoor ambient temperature sensor failure	2	Hardware Error
E2	Indoor fancoil temperatu re sensor failure	3	Hardware Error
E3	Outdoor fancoil temperature sensor failure	4	Hardware Error
E4	Abnormal system malfunction(lack of fluorine)	5	Hardware Error
E5	Model configuration error	6	Hardware Error
E6	Indoor PG/DC fan failure	7	Hardware Error
E7	Outdoor ambient temperature sensor failure	8	Hardware Error

Error Code	Error Content	Serial number	Error Definition and Protetion
E8	Outdoor exhaust temperature sensor failure	9	Hardware Error
E9	Outdoor IPM module failure/compressor drive failure	10	Hardware Error
EA	Outdoor current sensor failure	11	Hardware Error
Eb	PCB and display screen communication Failure	12	Hardware Error
EC	Outdoor modules Communication failure	13	Hardware Error
EE	Outdoor EEPROM fault	14	Hardware Error
EF	Outdoor DC fan failure	15	Hardware Error
EH	Outdoor suction sensor failure	16	Hardware Error
EP	Outdoor compressor casing top failure	17	Hardware Error
EU	Outdoor voltage sensor failure	18	Hardware Error
Ej	Outdoor central coil temperature sensor failure	19	Hardware Error
En	Outdoor air pipe temperature sensor failure	20	Hardware Error
Ey	Outdoor liquid pipe temperature sensor failure	21	Hardware Error
P0	IPM module protection	22	Others Error
P1	Overvoltage and undervoltage protection	23	Others Error
P2	Overcurrent protection	24	Others Error
P3	Other protections	25	Others Error
P4	Protection against excessive outdoor exhaust temperature	26	Others Error
P5	Cooling protection against overcooling	27	Others Error
P6	Cooling and anti overheating protection	28	Others Error
P7	Heating and anti overheating protection	29	Others Error
P8	Protection against high or low outdoor temperature	30	Remote control display adjustment
P9	Compressor drive protection (abnormal load)	31	Others Error
PA	Communication failure/mode conflict	32	Others Error
F0	Infrared human sensing sensor failure	33	Remote control display adjustment

Error Code	Error Content	Serial number	ErrorDefinition and Protetion
F1	Battery module failure	34	Remote control display adjustment
F2	Exhaust temperature sensor failure protection	35	Others Error
F3	Failure protection of outer tube temperature sensor	36	Others Error
F4	Abnormal protection of refrigerant circulation	37	Others Error
F5	PFC protection	38	Others Error
F6	Compressor missing/reverse phase protection	39	Others Error
F7	Module temperature protection	40	Others Error
F8	Abnormal commutation of four-way valve	41	Others Error
F9	Module temperature sensor circuit malfunction	42	Hardware Error
FA	Compressor phase current detection fault	43	Hardware Error
Fb	Cooling and heating overload protection limit / reduce frequency	44	Remote control display adjustment
FC	High power protection limit / reduce frequency	45	Remote control display adjustment
FE	Module current (compressor phase current) protection limit / reduce frequency	46	Remote control display adjustment
FF	Module temperature protection limit / reduce frequency	47	Remote control display adjustment
FH	Drive protection limit / reduce frequency	48	Remote control display adjustment
FP	Anti condensation protection limit / reduce frequency	49	Remote control display adjustment
FU	Anti freezing protection limit / reduce frequency	50	Remote control display adjustment
Fj	Exhaust protection limit / reduce frequency	51	Remote control display adjustment
Fn	External AC current protection limit / reduce frequency	52	Remote control display adjustment
Fy	Fluorine deficiency protection	53	Others Error
H1	High pressure switch malfunction	54	Hardware Error

Error Code	Error Content	Serial number	Error Definition and Protetion
H2	Low pressure switch malfunction	55	Hardware Error
bf	TVOC sensor failure	56	Remote control display adjustment
bc	PM2.5 sensor failure	57	Remote control display adjustment
bj	Humidity sensor failure	58	Remote control display adjustment
bE	CO_2 sensor malfunction	59	Hardware Error
bd	Fresh air fan failure	60	Hardware Error
d4	Water full protection	61	Others Error
d5	Access control protection	62	Hardware Error

4.3 Failures not caused by errors

(1) If your air conditioner fails to function normally, please first check the following items before maintenance:

Problem	Cause	Corrective measure
The air conditioner can't run.	If you turn off the unit and then immediately turn it on, in order to protect the compressor and avoid system overload, compressor will delay running for 3 min.	Please wait for a while.
	Wire connection is wrong.	Connect wires according to the wiring diagram.
	Fuse or circuit breaker is broken.	Replace the fuse or switch on the circuit breaker.
	Power failure.	Restart after power is resumed.
	Power plug is loose.	Reinsert the power plug.
	Remote controller has low battery.	Replace the batteries.
Bad cooling or heating effect.	Air inlet and outlet of indoor or outdoor units have been blocked.	Clear the obstacles and keep the room for indoor and outdoor units well ventilated.
	Improper temperature setting.	Reset a proper temperature.
	Fan speed is too low	Reset a proper fan speed.

Problem	Cause	Corrective measure
Bad cooling or heating effect.	Air flow direction is not right.	Change the direction of air louvers.
	Doors or windows are open.	Close them.
	Exposed under direct sunshine.	Put on curtains or louvers in front of the windows.
	Too many heat sources in the room.	Remove unnecessary heat sources.
	Filter is blocked or dirty.	Send for a professional to clean the filter.
	Air inlets or outlets of the units are blocked.	Clear away obstacles that are blocking the air inlets and outlets of indoor and outdoor units.

(2) The following situations are not operation failures.

Phenomenon	Time of occurrence	Cause
Mist comes from the air conditioner.	During operation.	If the unit is running under high humidity, the wet air in the room will be quickly cooled down.
The air conditioner generates some noise.	System switches to heating mode after defrosting.	Defrosting process will generate some water, which will turn to water vapor.
	The air conditioner is buzzing at the beginning of operation.	Temperature controller will be buzzing when it starts working. The noise will become weak 1min later.
	When the unit is turned on, it purrs.	When the system is just started, the refrigerant is not stable. About 30s later, the purr of the unit becomes low.
	About 20s after the unit first enables the heating mode or there is refrigerant brushing sound when defrosting under heating.	It's the sound of 4-way valve switching direction. The sound will disappear after the valve changes its direction.
	There is hissing sound when the unit is started or stopped and a slight hissing sound during and after operation.	It's the sound of gaseous refrigerant that stops flowing and the sound of drainage system.

Phenomenon	Time of occurrence	Cause
The air conditioner generates some noise.	There is a sound of crunching during and after operation.	Because of temperature change, front panel and other components may be swelled up and cause abrasion sound.
	There is a hissing sound when the unit is turned on or suddenly stopped during operation or after defrosting.	Because refrigerant suddenly stops flowing or changes the flow direction.
Dust comes from the air conditioner.	The unit starts operation after being unused for a long time.	Dust inside the indoor unit comes out together with the air.
The air conditioner generates some smell.	During operation .	The room smell or the smell of cigarette comes out through the indoor unit .

NOTE

Check th e above items and ado pt the corresponding corrective measures.
If the air conditioner continues to function poorly, please stop the air conditioner immediately and contact TCL's authorized local service center. Ask our professional service staff to check and repair the unit.

4.4 Unit Maintenance

⚠ NOTES
(1) Before cleaning, please make sure the unit is stopped. Cut the circuit breaker and remove the power socket, otherwise, electric shock may occur.
(2) Do not wash the air conditioner with water, otherwise fire hazard or electric shock may occur.
(3) When cleaning the filter, please be careful of your steps. If you need to work high above the ground, please be extremely careful.

4.4.1 Filter screen cleaning

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 exch-angeis 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 and Reinstall the filter as before.

4.4.2 Heat Exchanger of Outdoor Unit

Conduct cleaning for the heat exchanger of outdoor unit periodically, clean it once at least in every two months. Clean the dust and sundries on the surface of the heat exchanger with dust collector and nylon brush, if there's compressed air source; use the compressed air to blow the dust on the surface of the heat exch-anger. Don't use tap water for cleaning.

4.4.3 Drainage Pipe

Periodically check if the drainage pipe is blocked to smooth the condensate water.

4.4.4 Notices at the Beginning of the Using Season

(1)Check if the air inlet/outlet of indoor/outdoor unit is blocked.

(2)Check if the ground connection is reliable.

(3)Check if the battery of remote controller is replaced.

(4)Check if the air filter screen is properly installed.

(5)If starting up again after long-term shut down, preset the power switch of air conditioner to "ON" status before 8h of operation, to preheat the crankcase of outdoor compressor.

(6) Check if the installation of outdoor unit is firm, if not, please contact with TCL appointed maintenance center.

4.4.5 Maintenance at the End of the Using Season

(1)Cut off the main power of air conditioner.

(2)Clean the filter screen, indoor and outdoor unit.

(3)Clean the dust and sundries in indoor and outdoor unit.

(4)If the outdoor unit is rusty, coat the rusty location with paint to prevent it from expanding.

4.5 Notice on Maintenance

4.5.1 Information on Servicing

The manual shall contain specific information for service personnel who shall be instructed to undertake the following when servicing an appliance that employs a flammable refrigerant.

4.5.1.1 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 minimized. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

4.5.1.2 Work Procedure

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

4.5.1.3 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. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

4.5.1.4 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 flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants. non−sparking, adequately sealed or intrinsically safe.

4.5.1.5 Presence of Fire Extinguisher

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

4.5.1.6 No Ignition Sources

No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant 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 flammable 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.

4.5.1.7 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 extermally into the atmosphere.

4.5.1.8 Checks to the Refrigeration Equipment

When 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 them anufacturer's technical department for assistance.

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

(1)The charge size is in accordance with the room size within which the refrigerant containing parts are installed.

(2)The ventilation machinery and outlets are operating adequately and are not obstructed.

(3)If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.

(4)Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.

(5)Refrigeration 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

4.5.1.9 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:

(1)That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking.

(2)That no live electrical components and wiring are exposed while charging,recovering or purging the system.

(3)That there is continuity of earth bonding.

4.5.2 Repairs to Sealed Components

(1)During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

(2)Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification,damage to seals, incorrect fitting of glands, etc.

Ensure that apparatus is mounted securely.

Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

⚠ NOTE

The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

4.5.3 Repair to Intrinsically Safe Components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.

Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

4.5.4 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 ageing or continual vibration from sources such as compressors or fans.

4.5.5 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.

4.5.6 Removal and Evacuation

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

(1)Remove refrigerant.

(2)Purge the circuit with inert gas.

(3)Evacuate.

(4)Purge again with inert gas.

(5)Open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be “flushed" with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task.

Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipework are to take place.

Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

4.5.7 Charging Procedures

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

(1) Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.

(2) Cylinders shall be kept upright.

(3) Ensure that the refrigeration system is earthed prior to charging the system with refrigerant .

(4) Label the system when charging is complete (if not already).

(5) Extreme care shall be taken not to overfill the refrigeration system.

(6) Prior to recharging the system it shall be pressure tested with OFN. 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 .

4.5. 8 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 reuse of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced :

(1) Become familiar with the equipment and its operation.

(2) Isolate system electrically.

(3) Before attempting the procedure ensure that:
   1) Mechanical handling equipment is available, if required, for handling refrigerant cylinders.
   2) All personal protective equipment is available and being used correctly.
   3) The recovery process is supervised at all times by a competent person.
   4) Recovery equipment and cylinders conform to the appropriate standards.

(4) Pump down refrigerant system, if possible.

(5) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

(6) Make sure that cylinder is situated on the scales before recovery takes place.
(7) Start the recovery machine and operate in accordance with m anufacturer's instructions .
(8) Do not overfill cylinders. (No more than 80 % volume liquid charge).
(9) Do not exceed the maximum working pressure of the cylinder, even temporarily.
(10) 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.
(11) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked .

4 .5.9 Labelling

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

4.5.10 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-offvalves 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 flammable refrigerants. 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. Before using the recovery machine,

check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of are frigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Notice 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 evacuation process shall be carried out prior to returning the compressor to the suppliers. When oil is drained from a system,it shall be carried out safely.

4.6 After-sales Services

When your air conditioner can not run in order, please shut down the machine and cut off the power supply immediately. Then contact dealers.