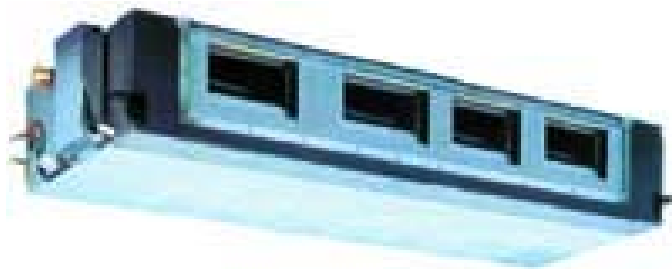




Commercial Air Conditioning

SERVICE MANUAL



Models

AD96NAHAEA

AP96NACAEA

AU96NATAEA

● Features

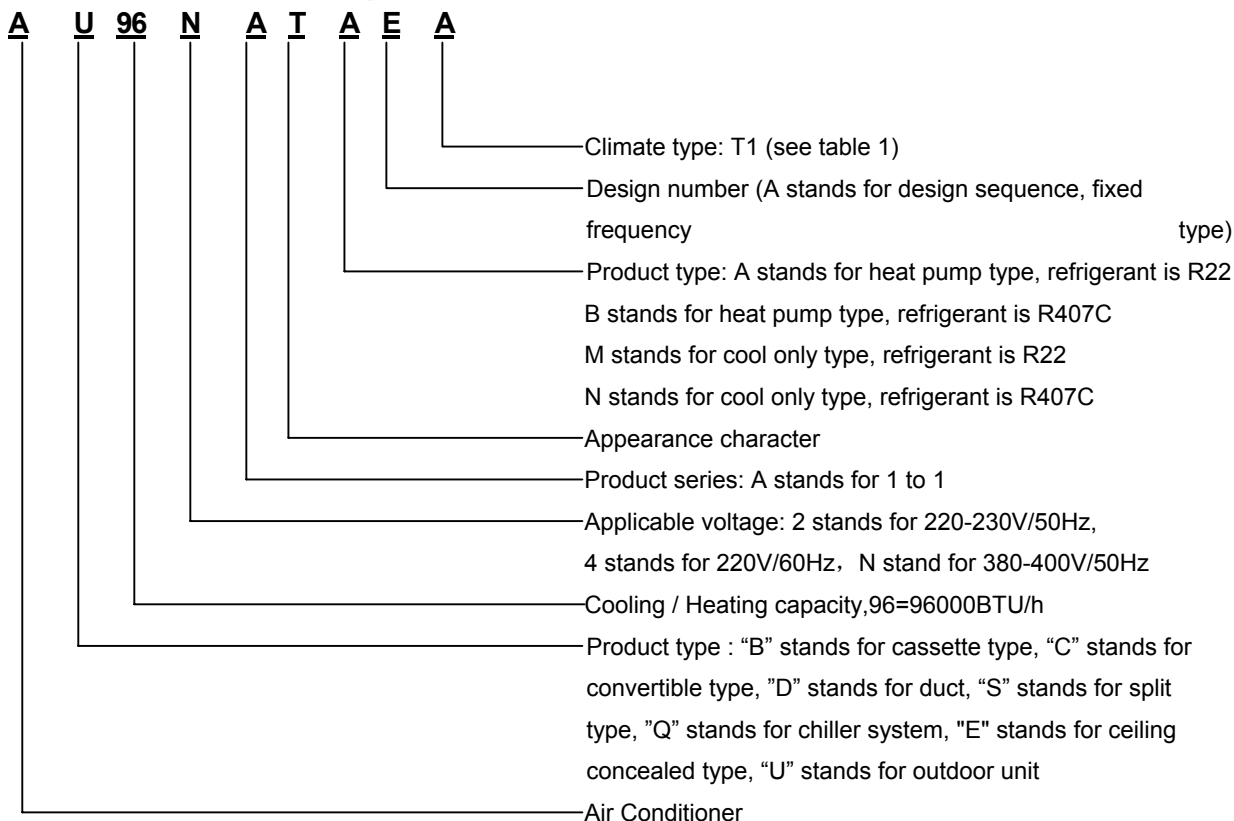
- The outdoor can match with both of duct and cabinet type indoor unit
- The indoor unit is identical for heat pump and cooling only unit
- Infra red remote controller or wired controller
- Central control and full automation, if connected with a central controller
- 24-hour timer (standard)
- Auto-restart function
- Strong energy distribution

CONTENTS

Contents.....	2
1. Description of products & features.....	3
2. Specification.....	5
3. Safety precaution.....	10
4. Net dimension of indoor and outdoor.....	12
5. Installation instructions.....	15
6. Parts and functions.....	37
7. Remote controller functions.....	38
8. Refrigerant diagram.....	58
9. Electrical control functions.....	59
10. Diagnostic information (trouble shooting).....	67
11. Electrical data.....	71
12. Exploded view and parts lists.....	73
13. Performance curves.....	81
14. Noise level charts.....	85
15. Air velocity distribution.....	89

1. DESCRIPTION OF PRODUCTS & FEATURES

1.1. Products code explanation



1.2 Brief Introduction for T1、T2、T3 working condition

Type of Air Conditioner	Climate type		
	T1	T2	T3
Cooling Only	18 °C~43°C	10°C~35°C	21°C~52°C
Heat pump	-7°C~43°C	-7°C~35°C	-7°C~52°C
Electricity Heating	~43°C	~35°C	~52°C

1.3 Operating Range of Air Conditioners

Temp.		Mode	Rated	Maximum	Minimum
Cooling	Indoor	DB °C	27	32	15
		WB °C	19	23	14
	Outdoor	DB °C	35	43	-5
		WB °C	24	26	6
Heating	Indoor	DB °C	20	27	10
		WB °C	14.5	---	--
	Outdoor	DB °C	7	23	-10
		WB °C	6	18	---

1.4 Product features

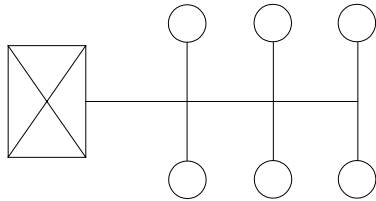
Universal outdoor unit

The outdoor unit can match with duct and cabinet type indoor unit.

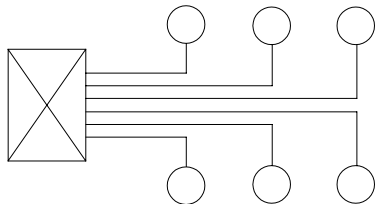
High static pressure design for duct unit

The designed exterior static pressure can be adjusted from 0Pa~196Pa. The air outlet duct can be selected freely, generally, there are two types as follow:

A: Main duct system



B: Branch duct system



Duct unit: super thin unit body, no occupying the indoor space

The whole unit can be concealed in the building, without effect of the indoor décor.

With air inlet filter, enhance the air quality

The high efficiency filter can collect the dirt and remove the bacterium, which can be installed on the easy-to-unload place, convenient to be cleaned.

Cabinet unit: newly designed luxurious LCD operation panel

On the front panel, you can find there is a luxurious operation panel. Just slightly pressing, the comfort will come around you. Meanwhile, the unit is equipped with the advanced large angel remote receiving technology.

Multiple control types



The duct and cabinet unit can be controlled by the wired controller or by the infrared controller. The cabinet type unit can be controlled with the infrared controller. If the unit is duct type and you want infrared type, you need to add an infrared controller YR-H71.



And the infrared controller can be equipped with the controller holder, convenient to fix the remote controller.

Convenient infrared remote controller

The newly designed infrared remote controller YR-H71 can be used for all indoor units of single type, multi split type, and H-MRV type except for the cabinet unit. This controller can be compatible with all old remote controllers except for that of cabinet units.

Auto-restart function (optional)

All indoor units have auto-restart function. When the power supply cut off suddenly, the unit will automatically recover the previous running mode once the power supply is on.

Self-diagnostic function

In the course of operation, if the failure occurs, the failure code will display on the wired controller or on the operation panel. Then according to the failure code chart, you can eliminate the failure soon.

Central control function, if connected with a detector and a central controller

24-hour timer (standard)

Changeover function

The unit can realize changeover function to enhance the reliability and the precision by connecting a detector.

2. SPECIFICATION

item			Model	AU96NATAEA	
Function				cooling	heating
Capacity			BTU/h	92000	96000
Capacity			W	27000	28000
Sensible heat ratio				75%	/
Total power input			W	10000	9000
Max. power input			W	13000	13000
EER or COP			W/W	2.70	3.11
Dehumidifying capacity			10 - ³ m ³ /h	10	
Power cable				5*6.0	
Signal cable			section	1*1.5	
Connecting cable			section	3*2.5	
Wired control cable	for wired control unit		section	3*0.5	
Power source			N, VAC, Hz	3, 380-400, 50	
Running /Max.Running			A / A	cooling 18/22.8	heating 16.5/22.8
Start Current			A	36	
Class of anti electric shock				I -class	
Circuit breaker			A	40	
Max. operating pressure of heat side			Mpa	3.0	
Max. operating pressure of cold side			Mpa	3.0	
Outdoor unit	Unit model (color)			AU96NATAEA (WHITE)	
	Compressor	Model / Manufacture		JT300D-Y1L / DAIKIN	
		Oil model		/	
		Oil type		MINERAL	
		Oil charging	cm ³	3000	
		Type		scroll	
		Protection type		inner thermal protection, 3-phase protection, pressure	
		Starting method		direct startup	
	Fan	Type × Number		Axial × 1	
		Speed	r/min	/	
		Fan motor output power		350	
		Air-flow(H-M-L)		10000/-/6000	
	Heat exchanger	Type / Diameter		TP2M / 9.52x0.35	
		Total area	m ²	about 1.8	
		Temp. scope		cooling: 43~60 / heating: 6~7	
	Dimension	External	(L×W×H) mm×mm×mm	990*760*1700	
		Package	(L×W×H) mm×mm×mm	1150*925*1870	
	Drainage pipe (material , I.D./O.D.)		mm	/	
	Refrigerant control method		mm/mm	Capillary tube	
	Defrosting			Automatic	
	Volume of Accumulator		L	NO	
	Noise level		dB(A)	≤65	
	Type of Four way valve			/	
	material of reduce noise			XPE	
	crankcase heater power		W	34*2	
	Weight (Net / Shipping)		kg / kg	161/185	
PIPING	Refrigerant	Type / Charge	g	R22/8500	
		Recharge quantity	g/m	115	
	Pipe	Liquid	mm	12.7	
		Gas	mm	28.58	
	Connecting Method			flared	
	Between I.D & O.D	MAX.Drop	m	15	
		MAX.Piping length	m	30	

Normal condition: indoor temperature (cooling): 27°CDB/19°CWB, indoor temperature (heating): 20°CDB

Outdoor temperature(cooling): 35°CDB/24°CWB, outdoor temperature(heating): 7°CDB/6°CWB

The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

item				Model	AD96NAHAEA	
Function					cooling	heating
Capacity				BTU/h	92000	96000
Capacity				kW	27000	28000
Sensible heat ratio					75%	/
Total power input				W	10000	9000
Max. power input				W	13000	13000
EER or COP				W/W	2.70	3.11
Dehumidifying capacity				10 - ³×m³/h	10	
Signal cable				section	1*1.5	
Connecting cable				section	3*2.5	
Power source				N, V, Hz	1, 220-230, 50	
Indoor unit	Unit model (color)				AD96NAHAEA/grey	
	Fan	Type × Number			Centrifugal×2	
		Speed(H-M-L)		r/min	1070±30/860±40/960±50	
		Fan motor output power		W	270	
		Air-flow(H-M-L)		m³/h	3600	
	Heat exchanger	Type / Diameter		mm	TP2M/Φ9.52	
		Total Area		m²	0.41	
		Temp. scope		℃	2-7	
	Dimension	External	(L×W×H)	mm×mm×mm	1570*840*360	
		Package	(L×W×H)	mm×mm×mm	1800*980*495	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired)				Wired	
	Fresh air hole dimension			mm	/	
	Electricity Heater			kW	0	
	Noise level (H-M-L)			dB(A)	58/-/51	
Weight (Net / Shipping)			kg / kg	92/100		
Normal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.						

item			Model	AP96NACAEA	
Function				cooling	heating
Capacity			BTU/h	92000	96000
Capacity			kW	27000	28000
Sensible heat ratio				75%	/
Total power input			W	10000	9000
Max. power input			W	13000	13000
EER or COP			W/W	2.70	3.11
Dehumidifying capacity			10 - ³ ×m ³ /h	10	
Signal cable			section	1*1.5	
Connecting cable			section	3*2.5	
Power source			N, V, Hz	1, 220-230, 50	
Indoor unit	Unit model (color)			AP96NACAEA/ivory white	
	Fan	Type × Number		Centrifugal×2	
		Speed(H-M-L)		r/min	
		Fan motor output power		W	
		Air-flow(H-M-L)		m ³ /h	
	Heat exchanger	Type / Diameter		mm	
		Total Area		m ²	
		Temp. scope		℃	
	Dimension	External	(L×W×H)	mm×mm×mm	
		Package	(L×W×H)	mm×mm×mm	
	Drainage pipe (material , I.D./O.D.)		mm	PVC 18/20	
	Control type (Remote /wired)			Remote	
	Fresh air hole dimension		mm	/	
	Electricity Heater		kW	0	
	Noise level (H-M-L)		dB(A)	58/-/51	
	Weight (Net / Shipping)		kg / kg	102/110	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB

Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB

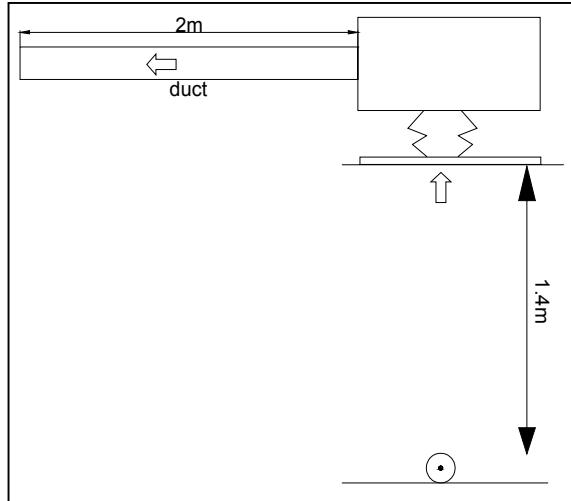
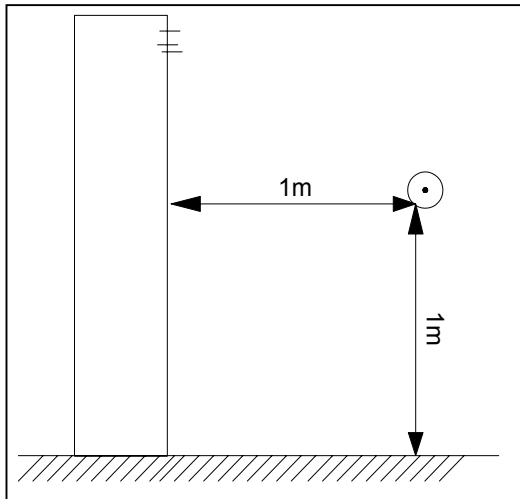
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level. The detailed method please refer to the following information:

Installation state: the unit should be placed on the flat floor or be mounted in horizontal direction.

Testing method:

standing-on-floor unit: If the unit cooling capacity is over 28000W, the noise level should be measured at the front, left, right directions respectively.

duct unit without auxiliary duct:



outdoor unit:

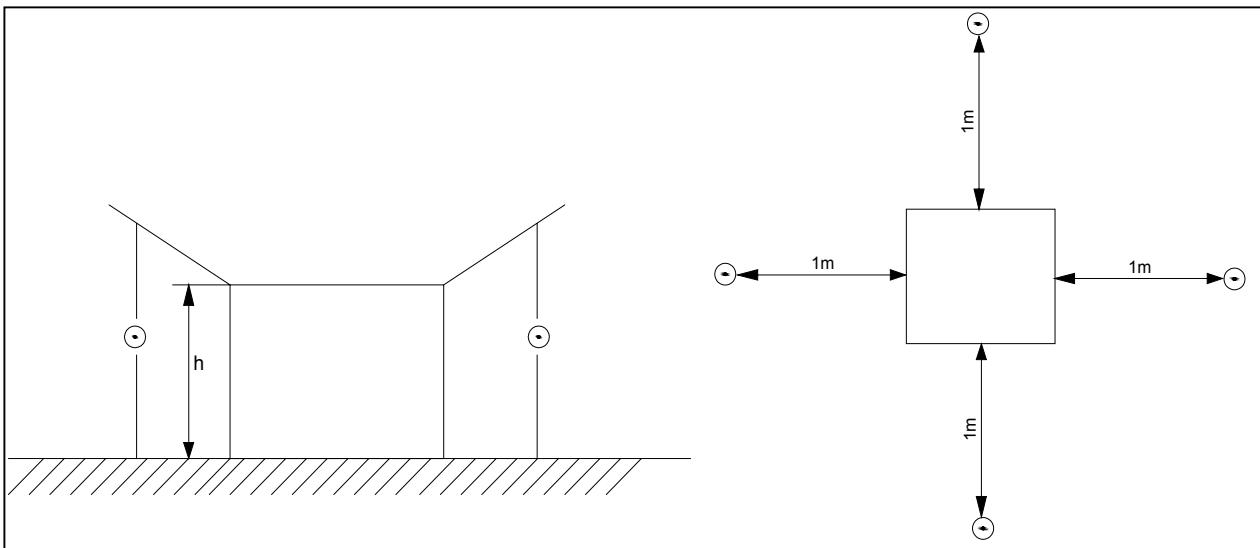
1.air outlet from side: the noise level is the average sound pressure level measured from front, left, right directions.

2.air outlet from top: the noise level is the average sound pressure level measured from front, back, left, right directions.

measured point:

H (height to the ground) = $(h$ (unit height) + 1m) / 2

and, it is 1m to each side.



Note: ⊙ is the real time analyser position

3. Safety precaution of indoor and outdoor

Carefully read the following information in order to operate the airconditioner correctly.

Below are listed three kinds of Safety Cautions and Suggestions.

WARNING! Incorrect operations may result in severe consequences of death or serious injuries.

CAUTION! Incorrect operations may result in injuries or machine damages; in some cases may cause serious consequences.

INSTRUCTIONS: These information can ensure the correct operation of the machine.

Be sure to conform with the following important Safety Cautions.

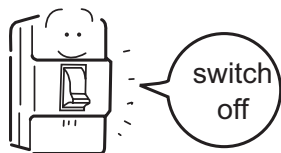
The Safety Cautions should be at hand so that they can be checked at any time when needed.

If the conditioner is transferred to the new user, this manual should be as well transferred to the new user.

WARNING!

- If any abnormal phenomena is found (e. g. smell of firing), please cut off the power supply immediately, and contact the dealer to find out the handling method.

In such case, to continue using the conditioner will damage the conditioner, and may cause electrical shock or fire hazard.



- After a long time use of air-conditioner the base should be checked for any damages.

If the damaged base is not repaired, the unit may fall down and cause accidents.



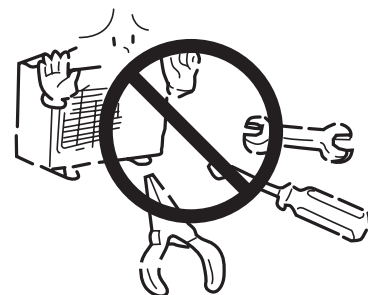
- Don't dismantle the outlet of the outdoor unit.

The exposure of fan is very dangerous which may harm human beings.



- When need maintenance and repairment, call dealer to handle it.

Incorrect maintenance and repairment may cause water leak, electrical shock and fire hazard.



WARNING!

- **Installed electrical-leaking circuit breaker.**

It easily cause electrical shock without circuit breaker.

- **Air-conditioner can't be installed in the environment with inflammable gases because the inflammable gases near to air-conditioner may cause fire hazard.**

- **Please let the dealer be responsible for installing the conditioner.**

Incorrect installation may cause water leak, electrical shock and fire hazard.

- **Call the dealer to take measures to prevent the refrigerant from leaking.**

If conditioner is installed in a small room be sure to take every measure in order to prevent suffocation accident even in case of refrigerant leakage.

- **When conditioner is deinstalled or reinstalled dealer should be responsible for them.**

Incorrect installation may cause water leaking, electrical shock and fire hazard.

- **Connect earthing wire.**

Earthing wire should not be connected to the gas pipe, water pipe, lightning rod or phone line, in-correct earthing may cause shock.



Earthing

- **No goods or nobody is permitted to placed on or stand on outdoor unit.**

The falling of goods and people may cause accidents.



- **Don't operate the air-conditioner with damp hands.**

Otherwise will be shocked.



- **Only use correctly-typed fuse.**

May not use wire or any other materials replacing fuse, other-wise may cause faults or fire accidents.



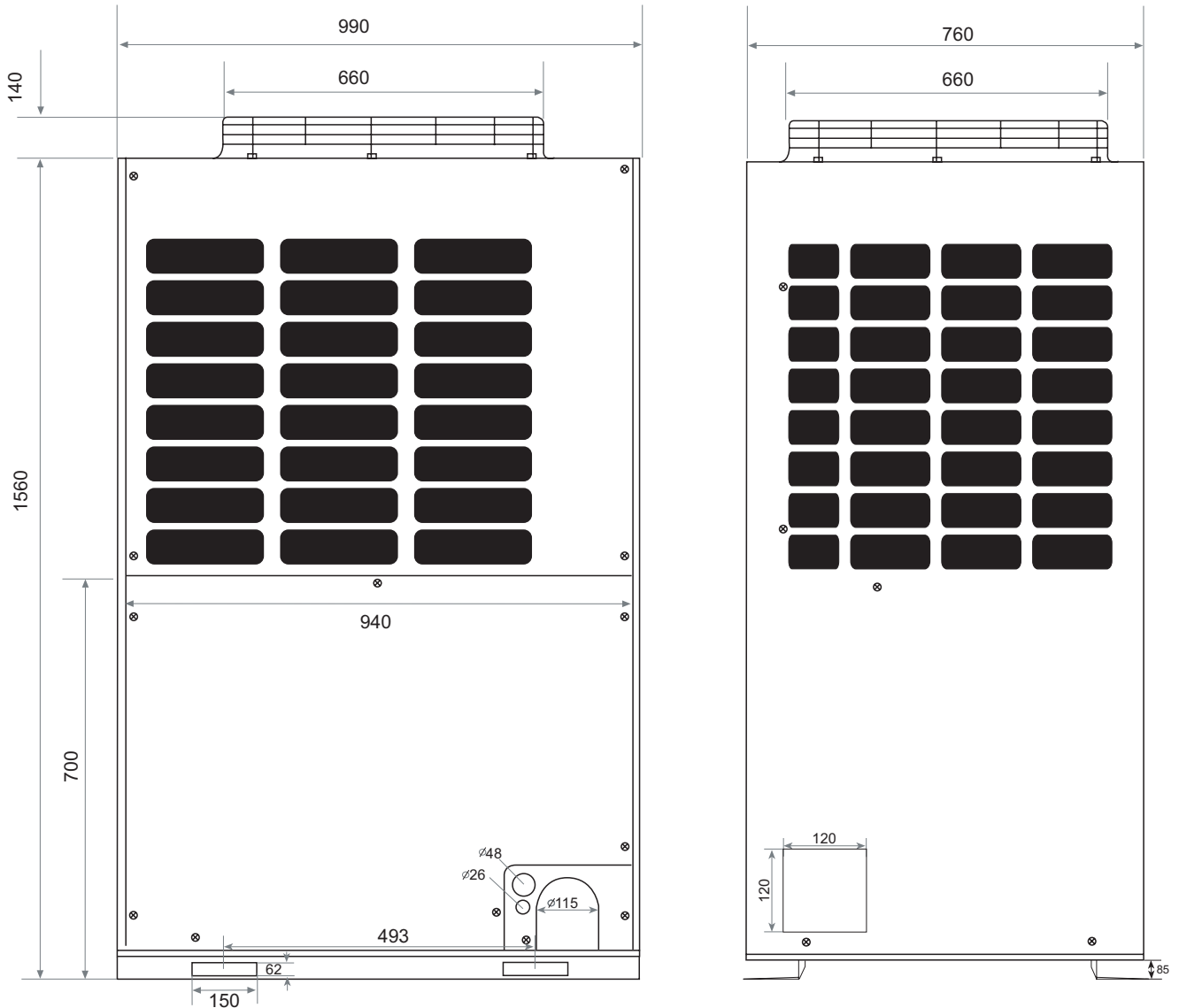
- **Use discharge pipe correctly to ensure efficient discharge.**

Incorrect pipe use may cause water leaking.

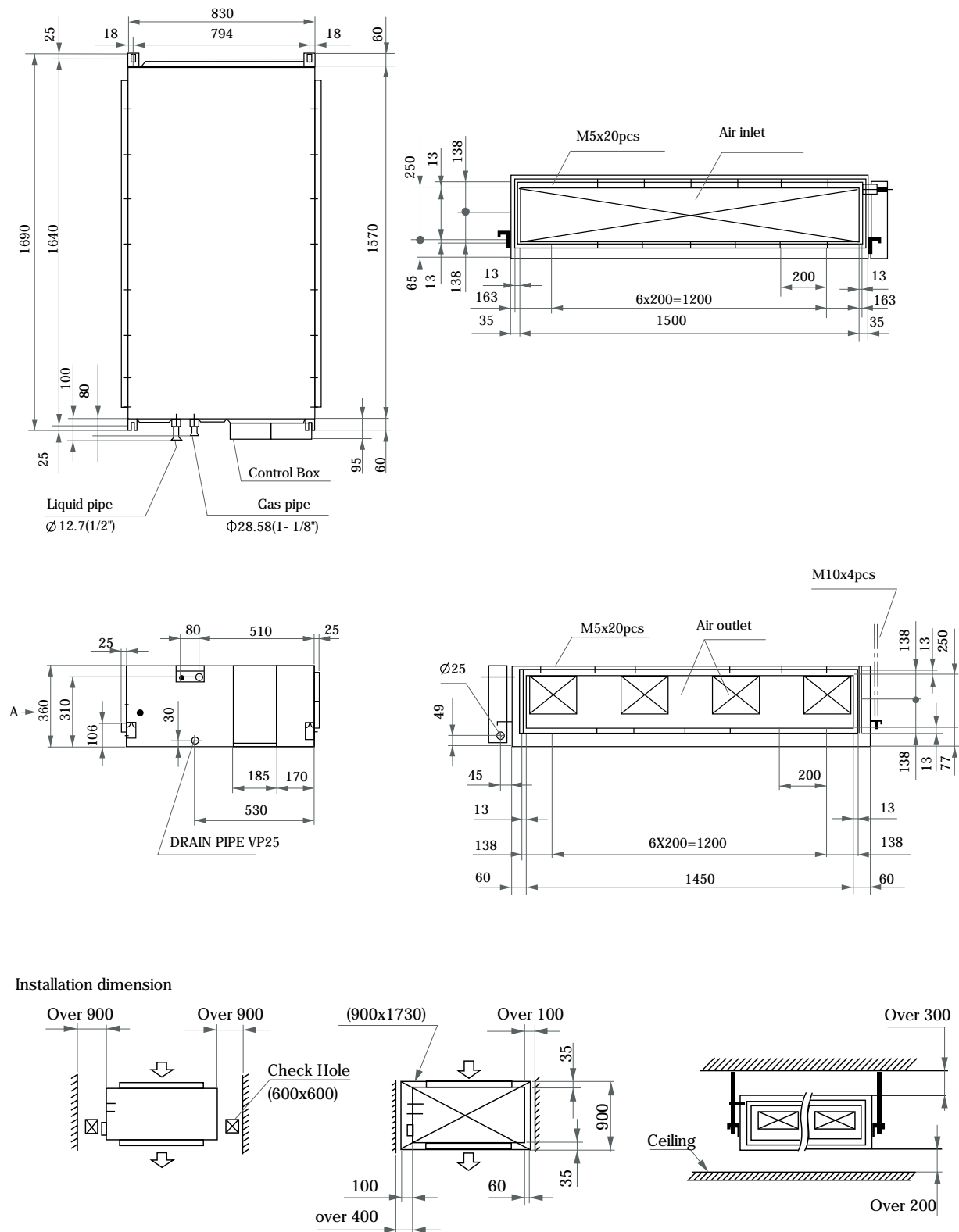
4. Net dimension of indoor and outdoor

Outdoor dimension

Model: AU96

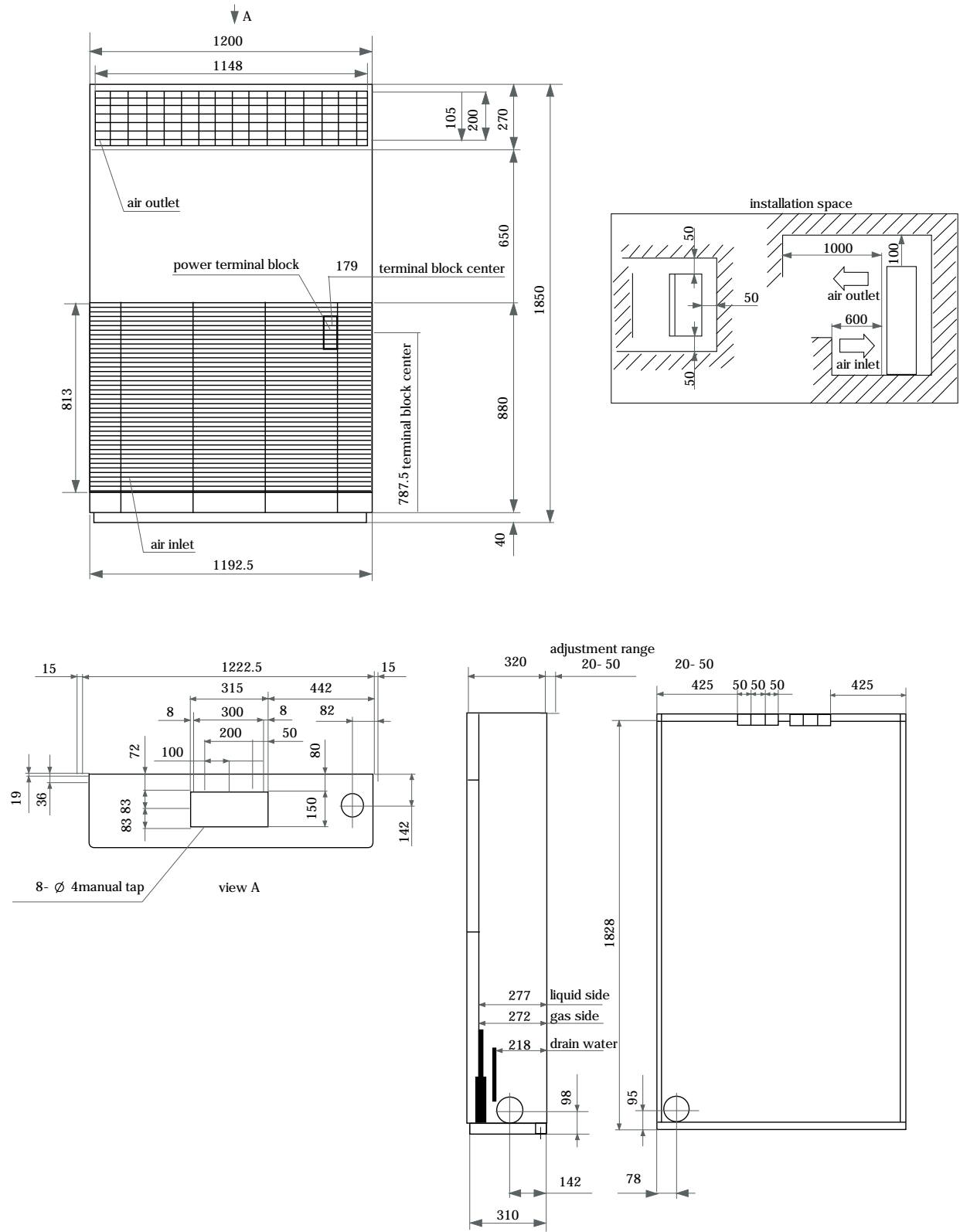


Model: AD96



(mm)

Model: AP96



(mm)

5. Installation Instructions

5.1 Outdoor installation procedure

Selection of installation site



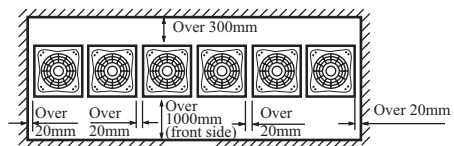
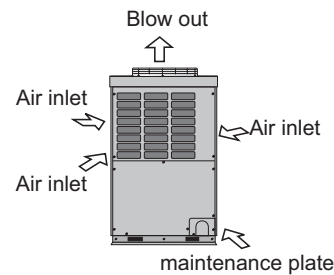
Warning

- It should be installed at places where it is firm enough to withstand the weight of the air conditioner to prevent falling.
- Typhoon and earthquake prevention. It should be installed according to specific requirements.

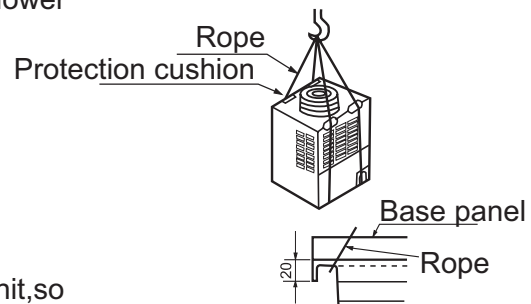
Inappropriate installation may lead to accidents.

Installation space

- (1) During installation, connect the outdoor unit and align the mounting surface (See the figure on the right). Mount the electric distribution device on the external side of the unit in accordance to the installation instructions for electric distribution device.
- (2) To ensure good performance of the machine and facilitate installation and maintenance, adequate space must be reserved (See figure on the right).



Note: Obstacles should be 2000mm off the top of the outdoor unit. Obstacles nearby should be 400mm lower than the top of the unit.



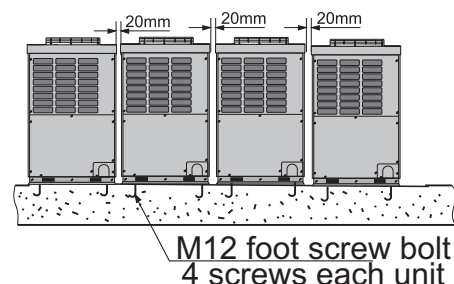
1. Handling

As there is no protective package for the outdoor unit, so the following points merit attention:

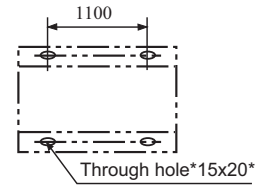
- (1) When forklift is used, insert the fork into the holes in the base plate.
- (2) When crane is used, lift the unit with 4 pieces of steel rope with diameter above 6 mm.
- (3) Put protective materials between the cable and the unit to prevent deformation and damage of the surface.

2. Mounting

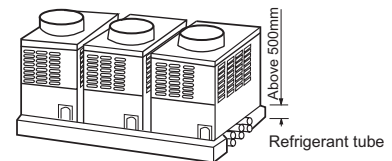
- (1) The distance between two connections must not be less than 20mm.



- Refer to the following figure for the distance between the foundation bolts.

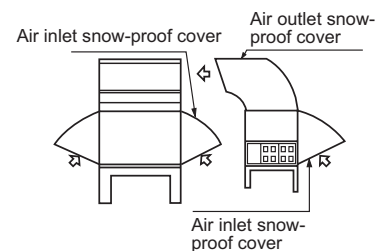


- (2) When the refrigerant pipe is connected from the bottom of the unit, the unit should be raised at least 500mm (see the figure below)



- (3) In snowy regions, snow-proof facilities should be used (see the figure below).

(Poor snow-proof facilities may lead to damage. To avoid inconveniences, the unit should be raised and snow-proof covers should be installed at the air inlet and outlet.)



- (4) During installation, anti-vibration rubber pads should be used between the machine and the bracket.

3. Connection of refrigerant pipe

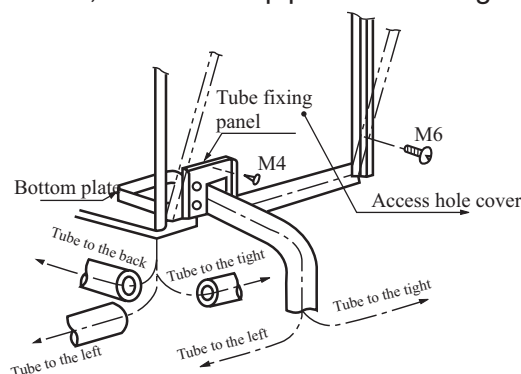


Warning

- During installation, if refrigerant leakage occurs, ventilation measures must be taken. When refrigerant meets with fire, hazardous gas will be produced.
 - After installation, make sure that there is no refrigerant leakage.
- Refrigerant, if meeting with heaters and stoves, etc. in the room, may produce hazardous gas.

Connection of refrigerant pipe

- (1) The joints of the refrigerant pipe are inside the unit. Take off the access hole cover in front of the unit.
- (2) The pipe can be connected from the front or bottom of the outdoor unit.
- (3) Remove the L-shaped pipe from the valve by welding and connect the accessory pipe to the valve.
- (4) In the case of front connection, cut the accessory pipe at the height of the fixing panel. Then join the pipe with an elbow and let it go through the fixing panel. For the convenience of maintenance, bend the pipe down (once) and then connect pipe to the right or left.
- (5) In the case of bottom connection, join the pipe with accessory pipe through the holes in the base plate of the outdoor unit, and connect pipe to the left or right or the back.



(6) During welding, the gas pipe valve must be cooled down with a wet cotton cloth.

During welding of the distribution pipe

1. In case of brazing weld of joint, nitrogen must be filled in the pipe to prevent oxidization.
2. The refrigerant pipe should be newly-made and clean. During installation, do not let water and other substance into the pipe.
3. Use two spanners to tighten the connecting nut. One spanner will make loose connection. The torque moment should conform to the specified value. (Refer to the below)

Tube diameter (mm)	Torque moment for pre-installation (N.m)	Torque moment for tightening up (N.m)
Ø 12.70	49.0(5.0kgf m)	53.9(5.5kgf m)

Selection of tube material and size

Determination of tube diameter (Refer to the diagram on next page for steps 1,2,3,4 and 5 below)

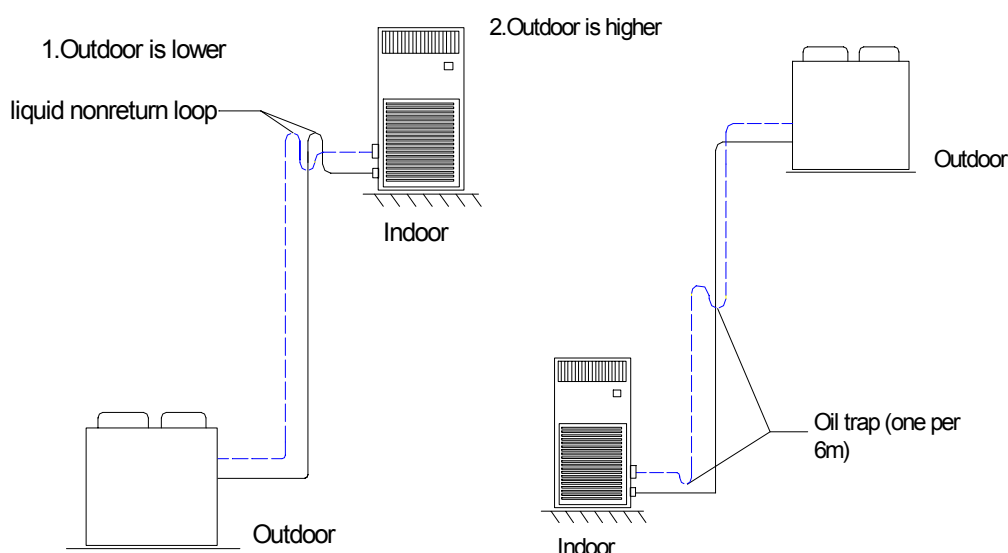
1. Tube between the outdoor unit and the first bypass(main tube):

The diameter of the main tube and the outdoor tube should be the same.

2. Tube between bypasses(sub-tube):

The diameter of the sub-pipe is determined according to the total capacity of all the connected indoor units. But if it is larger than the capacity of the outdoor unit, the diameter should be determined according to the capacity of the outdoor unit.

Install the nonreturn loop and oil trap



Crucial points:

When testing, never use oxygen, flammable and poisonous gases.

Step 1: Charge for more than 3 minutes under 0.3MPa(3.0kg/cm²g)

Step 2: Charge for more than 3 minutes under 1.5MPa(15kg/cm²g)

--Serious leakage may be found.

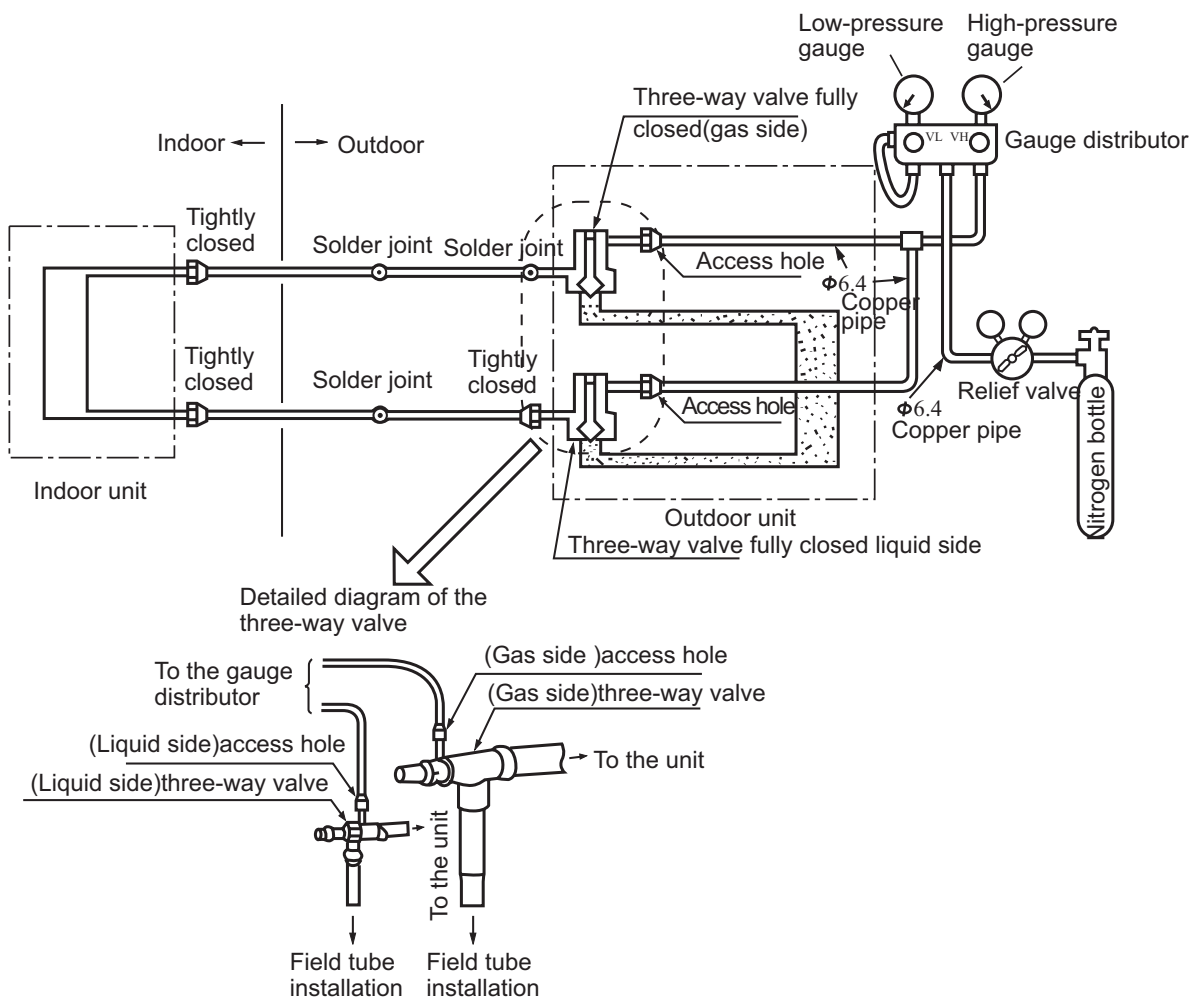
Step 3: Charge for more than 24 hours under 3.0MPa(3.0kg/cm²g)

--Small leakage may be found.

Check for pressure decrease

Without pressure decrease-Pass

With pressure decrease-Check for leakage. There will be a 0.01MPa(0.1kg/cm²g) pressure change for every 1 C ambient temperature change during the 24-hour pressure charge. It should be corrected during the test.

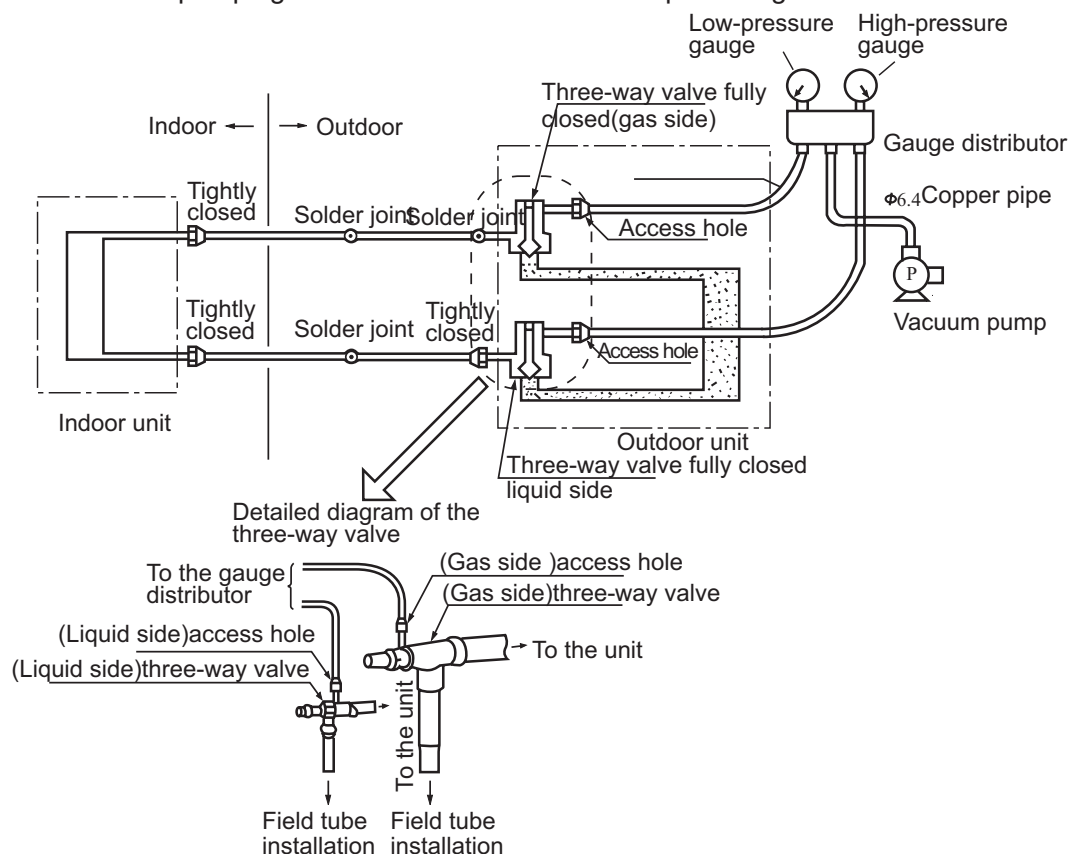


Check for leakage

- In the case of pressure decrease during steps 1 to 3 ,check the joints with the ear,hand or soapsuds for leakage.Repair it by welding or tighten the connecting nut up.

Vacuum Pumping

- Use vacuum pump to evacuate the air.Never use the refrigerant for the evacuation.
- Drain off the nitrogen gas after the leak test and then connect the vacuum pump as shown in the figure below.
- The vacuum pumping must be done from both the liquid and gas inlets.



- Use a vacuum pump with high degree of vacuum(below-755mmHg) and large volume displacement (above 40L/min)
- The pumping time depends on the length of the connecting pipe.Generally,it takes about 2-3 hours. Make sure that the Y-shaped valves on both the gas and liquid sides are closed before pumping.
- If the vacuum can no reach-755mmHg within 2 hours,continue pumping for another 1 hour.
- If the vacuum can no reach-755mmHg after more than 2 hour's pumping,close the valves V_L and V_H on the gauge distributor and stop pumping.One hour later,check the vacuum again.If the vacuum has changed,it means there is a leakage.Repair it.
- After the above steps,replace the vacuum pump with the refrigerant pump and refill refrigerant.

Charging refrigerant

- | | |
|--|---|
| <ul style="list-style-type: none"> ● Refrigerant must be charged in liquid state. ● Refrigerant bottle with or without a siphon tube can be refilled with refrigerant upright or upside down,Respectively. | <ul style="list-style-type: none"> ● Containers for R22 refrigerant must be marked with R22 and a brown Stripe. ● R407C refrigerant cannot share the same instrument distributor and filling pipes. |
|--|---|

Refilling of refrigerant

After the vacuum pumping, replace the vacuum pump with the refrigerant pump and refill refrigerant.

Calculation of refrigerant quantity

The factory filled refrigerant into the piping excludes the part of pipes according to be refilled on the site.

Refill the amount of refrigerant into the piping according to the following formula.

The factory filled refrigerant is listed in the table below:

The quantity of the refrigerant to be refilled during installation depends on the diameter and length of the liquid piping.

The quantity of the refrigerant to be refilled on the site = Actual length of liquid tube x quantity of refrigerant to be refilled for per meter of liquid pipe.

Recharge refrigerant

When the outdoor valve is shut, fill the refrigerant from the access hole at the gas and liquid sides.

If the required filling is impossible, open all the gas and liquid valves, then slightly shut the gas valve, run the compressor and fill the refrigerant from the access hole at the gas side. Now adjust the gas valve to control the refrigerant flow, which will be gasified during absorption by the system.

If there is insufficient refrigerant in the system caused by leaks, refill it after the remaining refrigerant is recollected.

Open all valves

- Open all the valves of the outdoor unit.

Heat isolation of the pipes

- Separate isolation should be made for the liquid and gas pipes.
- Materials used for the pipe isolation at the gas side must withstand above 120 °C temperature.

For AU96NATAEA:

Charging refrigerant (R22): Before charging refrigerant, the pressure in the system must be kept at least for 15 minutes under 130Pa, and the pressure will not go up within 30 minutes, only in this case, the refrigerant can be filled.

When the connection pipe is less than 5 meters, additional refrigerant needs not be charged. Once the connection pipe is more than 5 meters, please recharge the refrigerant as the following formula:

Refrigerant quantity = (length of connection pipe - 5m) * 115g

Detailed procedures:

- Cut off the vacuum pump pipe to prepare charging refrigerant
 - Place the R22 container on the scales, switch off the low pressure valve of the pressure pipe to make the liquid type refrigerant enter the system from the high pressure side.
 - If the system pressure goes up, stop charging refrigerant and when the refrigerant quantity arrives the rated value, switch off the high pressure valve, then place the R22 container on the scales with the jaw to up. Open the low pressure valve to start up the unit, at this time, the refrigerant is gas state.
- When the charged refrigerant arrives the rated value, after confirming the refrigerant quantity is proper, unload the flexible joint and install the copper nut of the connector.

Electric wiring

Note:

All the wires should be copper core wires.

The power cable of indoor unit should be equipped according to the operation manual indoor unit.

When connecting the indoor & outdoor wire, check the number of the indoor & outdoor terminals, the terminals with the same number connected together with one wire.

Incorrect wiring will damage the controller of the air conditioner or make the unit work abnormally.

The air conditioner must use special power circuit and special air switch (40A), groundign wire.

The wiring work should be done by a qualified electrician according to the national wiring rule.

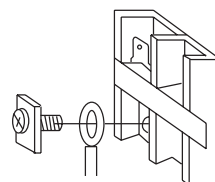
The creepage breaker must be installed. The grounding line and the neutral line of the receptacle must be strictly separated. It is incorrect to connect the neutral line with the grounding line.

The connection type of power cord is Y connection. If the soft power cord is damaged, to avoid risk, it must be replaced by the manufacturer or their specific repair department or similar professional worker.

Wiring method

1.The wiring method of orbicular terminal

For the connection wire which end is orbicular terminal, its wiring method is as the right figure shown. Dismantle the screw and put it through the ring at the end of the connection wire, then connect it to the terminal block and tighten the screw.

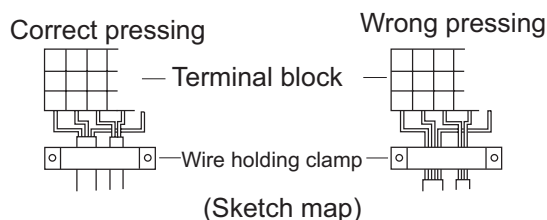


The wiring method of orbicular terminal

2.The wiring method of straight terminal For those connection wires whose end are not orbicular terminals, their wiring method is: Loosen the connecting screw, insert the end of the wire directly into the terminal block, and then tighten screw. Pull the wire outwards slightly to confirm it is held tightly.

3.Pressing method of connection wire:

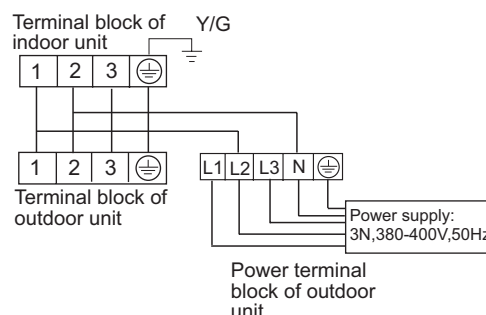
After wiring, the connection wire must be pressed with wire holding clamp. The wire holding clamp should press on the out cover of the connection wire. As the right figure shown:



Connect wire between indoor & outdoor unit

As the wiring diagram show to arrange the connection wire.

Note: The terminal block's mark at the two ends of the connection wire should be corresponding one by one, otherwise the air conditioner cannot work normally.



Others

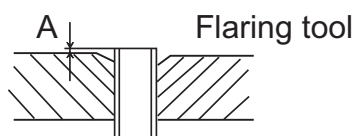
1. Power supply

- The parameter of power cord is over 2.5mm .
- Air conditioner must use an exclusive line (over 30A)
- When installation air conditioner in a wet place, try to use a circuit breaker against Current leakage.
- For installation in other places, use circuit breaker as far as possible.

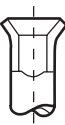

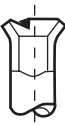

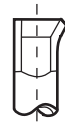

- The breaker of the air conditioner should be all-pole switch ; and the distance between its two contacts should be no less 3 mm.
- Such means for disconnection must be incorporation in the fixed wiring

2. Pipe cutting and flaring

- Be sure to carry out deburring after pipe cutting with a pipe cutter.
- Insert flaring tool to make a flare.



	Pipe dia.	Dimension A(mm)
Liquid pipe	Ø 12.7mm (1/2")	1.2 ~ 2.0

Correct	Incorrect					
						
	Lean	Damaged flare	Crack	Partial	Too outside	

Installation inspection and test run:

Please operate unit according to this Manual.

Items to be checked during test run. Please made a "✓" in "□"

- ☐ Are there any gas leakage?
- ☐ How is insulation at piping connection carried out?
- ☐ Are electric wires of indoor and outdoor unit firmly inserted into terminal block?
- ☐ Is electric wiring of indoor and outdoor securely fixed?
- ☐ Is draminage securely carried out?
- ☐ Is earth line (grounding) securely connected?
- ☐ Is power supply voltage abided by the code?
- ☐ Is there any noise?
- ☐ Is control display normal?
- ☐ Is cooling operation normal?
- ☐ Is room temp. regulator normal?

3.Calculation of refrigerant density

Calculation will be made according to the following methods:

- 1) Total refrigerant content of each system (kg) =content of 1 outdoor system + refilled refrigerant
Content of 1 outdoor system:Factory filled refrigerant
Refilled refrigerant:Filled content during installation according to the diameter and length of the liquid piping.
- 2) Calculation of the minimum room sapce (m³).
- 3) Calculation of refrigerant density

$$\frac{\text{Total refrigerant content}}{\text{Minimum room space}} \leq \text{Refrigerant density:0.3(kg/m}^3\text{)}$$

2.Preventive measures against excess of critical value

1) Make ventilation holes

Ventilation holes should be built above and under the door. The area of each hole should not be smaller than 0.15% of the room space. Holes can be made directly in the wall.

2) Reduce the filling content of refrigerant

Filling content of refrigerant can be reduced by shortening the distance between the indoor and outdoor units.

By reducing the capacity of the outdoor unit.

When outdoor unit be made up of several units. the outdoor capacity of each system should reduce. So the refrigerant content of system reduce.

3) Install ventilation fans.

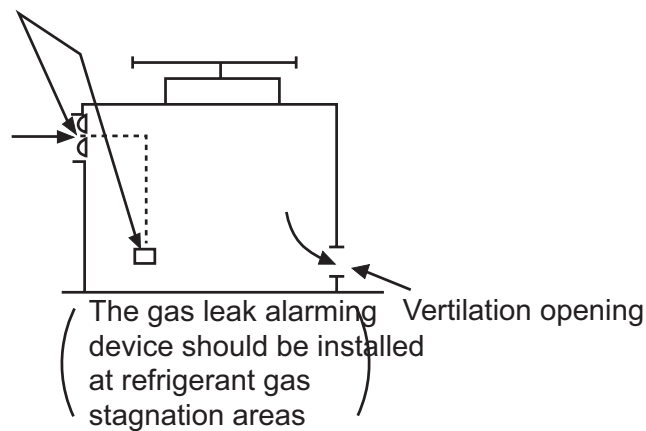
Users can install uninterrupted ventilation fans to keep the refrigerant density under the critical value.

If uninterrupted ventilation is impossible, a combined fanning and alarming device should be installed in its stead (through which immediate ventilation is possible when leak occurs).

(See the figure below)

An example

Ventilation fan and gas leak alarming device



Installation instruction

Notice

This manual can not include all kinds of conditions, if you have new requirements and questions, please contact with local Haier Sales Center.

Warning

Before installing the unit, please read this manual carefully. Improper installation may cause accidents and make unit damage or death.

Installation tools







- | | |
|------------------------------|--|
| 1. Screw driver | 2. Hacksaw |
| 3. 70mm dia. hole core drill | 4. Spanner (dia. 17, 27mm) |
| 5. Spanner (14, 17, 27mm) | 6. Pipe cutter |
| 7. Flaring tool | 8. Knife |
| 9. Nipper | 10. Gas leakage detector or soap water |
| 11. Measuring tape | 12. Reamer |
| 13. Refrigerant oil | 14. Lead-solder tool |

Standard accessories

Following parts shall be field supplied

Mark	Parts name
Ⓐ	Adhesive tape
Ⓑ	Pipe clip
Ⓒ	Connecting hose
Ⓓ	Drain hose
Ⓔ	Insulation material
Ⓕ	Putty

Parts in the following list are accessories for the unit installation which can be used if necessary.

No.	Shape and description	QTY
①	 Fall-prevention fitting metal	1
②	 Self-tapping screw	5
③	 Wooden bolt	2
④	 Wall hole cover	2
⑤	 Piping hole cover	1
⑥	 L-shaped metal	2

Installation procedure

1. Before installation

[Before finishing installation, do not throw the attached installation parts away.]

- Confirm the route to carry the units to the installation place.
- Do not remove the package of the unit, before carrying it to the installation place.
- When have to remove the package, use a soft material or protection board with rope to lift the unit to prevent the unit from damage or bumping scrape.

2. Selection of installation place

- Select the firm place that will not influenced by vibration and can bear the weight of the unit
- Select the place with easy drainage and place can perform outdoor unit pipe connecting.
- Select the place far away from heat source, vapor source and direct sunshine to avoid the causing of the trouble in operation parts and the deformation of the casing.
- Select the place where the cool air or warm air can evenly spread to every corner of the room.
- Select the place near power receptacle leaving sufficient space around the unit. (Referring to installation diagram)

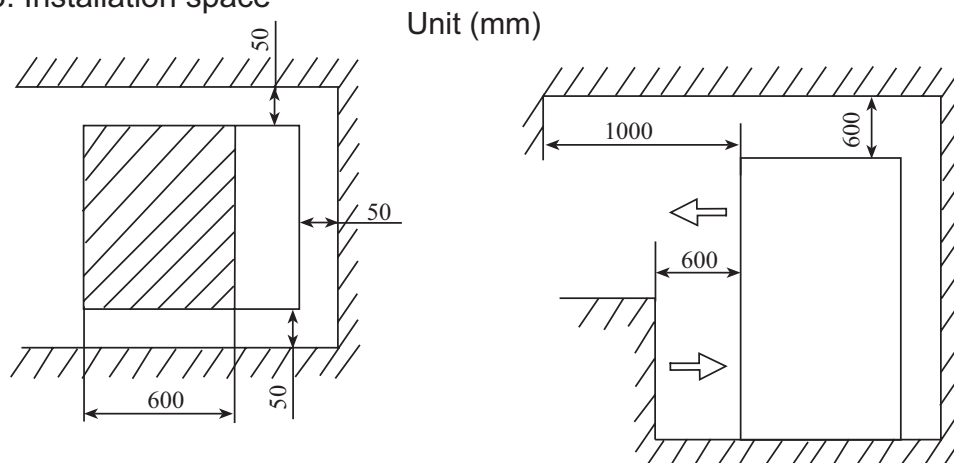
Avoid the following installation places

- Place with oil fog splash and much vapor (e.g. mechanical plant and kitchen, etc.) to prevent heat exchanger from performance lowering and plastic parts from corroding to damage.
- Place may generate or keep corrosive gas (sulfur dioxide, etc.), flammable gas (diluent, gasoline, etc.) to prevent heat exchanger from corroding, plastic parts from damage and flammable gas from causing fire accident.

Hospital, etc. places near the machine generates electromagnetic wave or high frequency signal to prevent the mixed wave from causing wrong action of the control parts.

- Place can be blown by the sea wind (coastal area) to prevent the casing and heat exchanger from corroding.
- (Indoor unit) please keep the spaces larger than the following dimension.

3. Installation space



Installation of indoor unit

Selection of installation place

Place where it is easy to route drainage pipe and outdoor piping.

Place away from heat source and with less direct sunlight.

Place where cool and warm air could be delivered evenly to every corner of the room.

Place near power supply socket. Leave enough space around the unit (refer to installation drawings).

Fixing of the unit

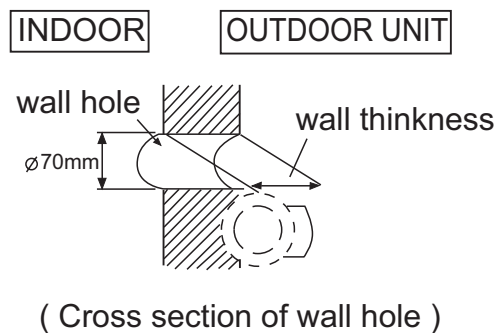
1. Position of the wall hole

Wall hole should be decided according to installation place and piping direction. (refer to installation drawings)

2. Making a wall hole

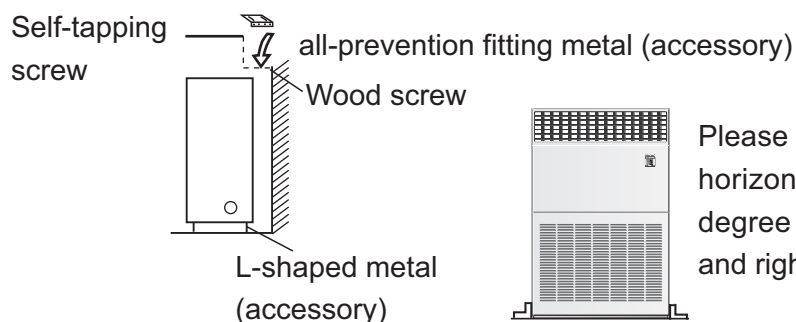
Drill a hole of 70mm dia. with a little slope towards outside.

Install piping hole cover and seal it with putty after installation.



Fixing of indoor unit

To prevent it from fall off, please fix the unit with fall-prevention fitting at wall and L-shaped metal at floor.

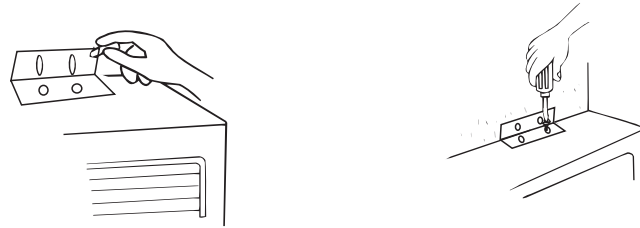


Please install the whole unit horizontally, with a slope of 1 degree at front and rear, left and right.

Installation of fall-prevention fitting metal:

Fix the fitting metal to the wall by screws so that there is no clearance between them.

With the unit set up vertically, fix the fitting metal to the unit with screws while making an adjustment at the long portion of the hole so that there is no clearance between the upper surface and the fitting metal.



Installation of L-shaped metal

Fix to the unit by screws so that there is no clearance between the fitting metal and the unit.
After confirming that the unit has been set up vertically to the floor, fix it to the floor by bolt.



Piping connection

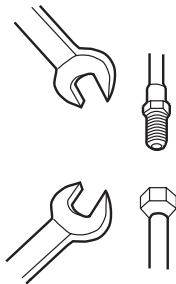
1. Connecting method

Apply refrigerant oil at half union and flare nut.

To bend a pipe, give the roundness as large as possible not to crash the pipe.

When connecting pipe, hold the pipe centre to centre then screw nut on by hand, refer to Fig.

Be careful not to let sundries, such as sands enter the pipe.

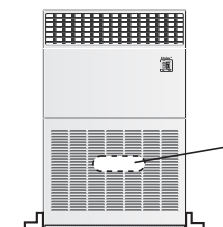


Forced fastening without centering may damage the threads and cause a gas leakage.

Pipe diameter	Fastening torque
Liquid pipe 12.7mm(3/8")	42N·m

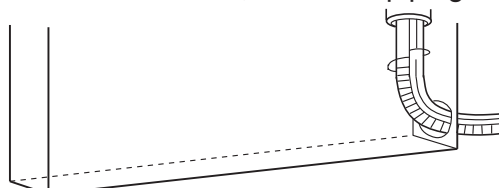
2. Piping connection of indoor unit

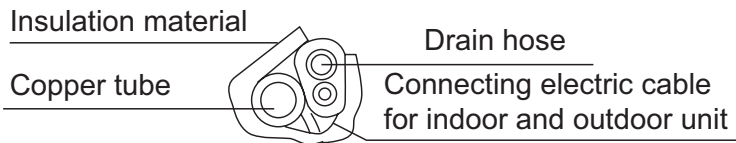
Arrangement of piping and drainage pipe



After opening inlet grill, you will see a control box as shown in the Fig.
Remove the cover before working.

Cut away, with a hammer or a saw, the lid for piping according to piping direction.



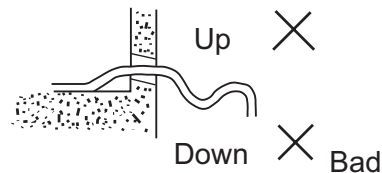
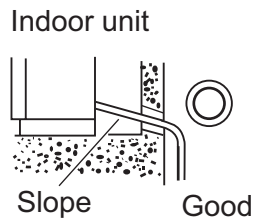


According to the piping method, connect the piping on indoor unit with union of connecting pipe. Arrange the piping as per the wall hole and bind drain hose connecting electric cable and piping together with polyethylene tape.

Insert the bound piping connecting electric cable and drain hose through wall hole to connect with outdoor unit.

Arrangement of drain hose

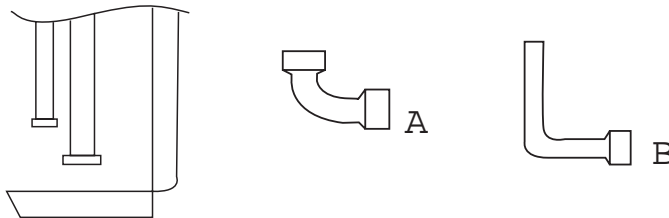
- Drain hose shall be placed in under place.
- There should be a slope when arrange drain hose. Avoid up and down waves in drain hose.



If humidity is high, drain pipe(especially in room and indoor unit) must be covered with insulation material.

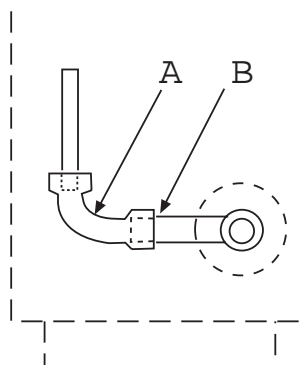
Main points of installation refrigerant pipe

- ① Please install the gas pipe and liquid pipe according to the following shown method.
Please remove the cover piece on the gas pipe and the screw cap on the liquid pipe.



- ② Please connect the connecting pipes between indoor and outdoor unit according to the following method.

- a) When introducing the pipe from right side
Use attached accessory <A> to connect the on-the-spot connecting pipe and gas pipe.



b) When introducing pipe from rear side or left side

Use attached accessory <A> to connect the on-the-spot connecting pipe and gas pipe.

③ After finishing connection of connecting pipe, please do thermal insulation treatment by using the attached thermal insulation material. Otherwise, it may cause water leakage.

● Setting of wire controller dial switch

Setting of this series of air conditioner dial switch: 1, ON; 2, ON.

Indoor installation instruction

⚠ NOTICE

All Wiring of this installation must comply with NATIONAL, STATE AND LOCAL REGULATIONS. These instructions do not cover all variations for every kind of installation circumstance. Should further information be desired or should particular

⚠ WARNING

BE SURE TO READ THESE INSTRUCTIONS CAREFULLY BEFORE BEGINNING INSTALLATION. FAI-LURE TO FOLLOW THESE INSTRUCTIONS COULD

1. Before installation [Before finishing installation, do not throw the attached parts installation needs]

- Confirm the way to move the unit to the installation place.
- Before moving the unit to the installation place, do not remove their packages.
When have to remove the package, use a soft material or protection board with rope to lift the unit assembly to avoid unit damage or bumping a scrape.

2. Select installation place

(1) The chosen installation place should meet the following requirements and get the user's consent.

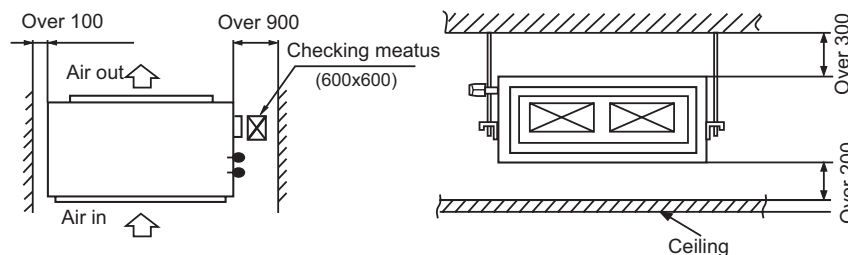
- Place ensures ideal airflow distribution.
- The passage of airflow has no obstacles.
- When importing outside air, it should be imported directly from outdoors. (if the pipe can not be extended, it also can not be imported from top)
- Place ensures enough space for maintenance.
- The pipe length between indoor and outdoor unit is in the permitted limit (referring to outdoor unit installation part).
- The indoor unit, outdoor unit, electric wire and connection wire is at least 1m away from television and radio. This is to avoid the image disturbance and noise caused by the above-mentioned home appliance. (Even if 1m away, if the electromagnetic wave is too strong, it can also cause noise.)

(2) The height of ceiling

- The indoor unit can install on the ceiling, which height is no more than 3m.

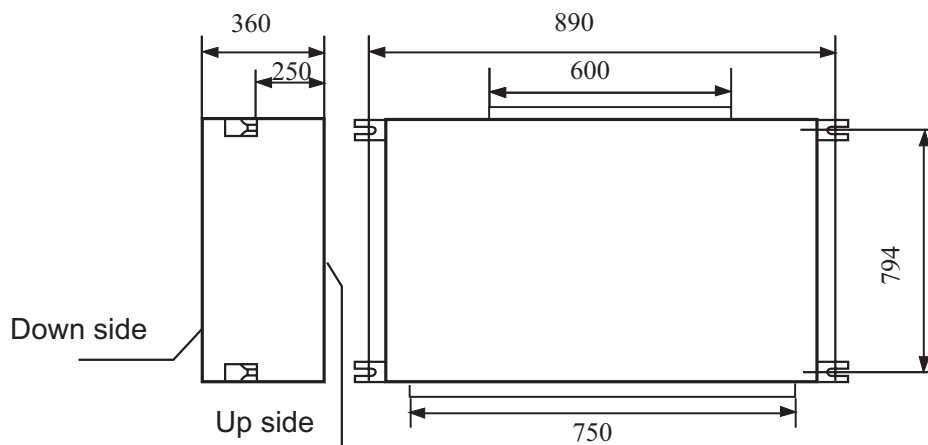
(3) Install and use the hoisting screw. Check if the installation place can bear the weight of unit assembly.

- If not certain, strengthen it before install the unit.



3. Preparation before installation

(1) The position relation among hoisting screw (unit: mm)



(2) If necessary, cut the opening installation and checking needed on the ceiling. (If has ceiling)

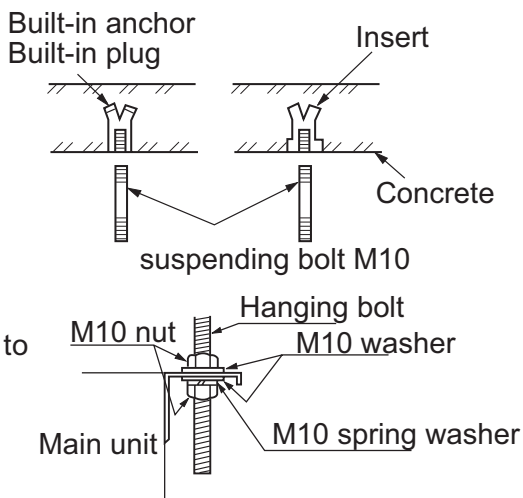
- Before installation, finish the preparation work of all the pipes (refrigerant, drainage) and wire (wire controller connection wire, indoor and outdoor unit connection wire) of indoor unit, so that after installation, they can be immediately connected with outdoor unit.
- Cut the opening on the ceiling. Maybe it needs to strengthen the ceiling to keep the ceiling even and flat and prevent the ceiling from vibration. For details, please consult to the builder.

(3) Suspending bolts installation

- Use care of the piping direction when the unit is
(Use M10 screw bolt)

In order to bear the weight of the unit, for existed ceiling, using foundation screw bolt, for new ceiling, using burying embedded screw bolt, burying screw bolt or spot supplied other parts.

Before going on installation, adjust the gaps with ceiling.



4. Installation of indoor unit

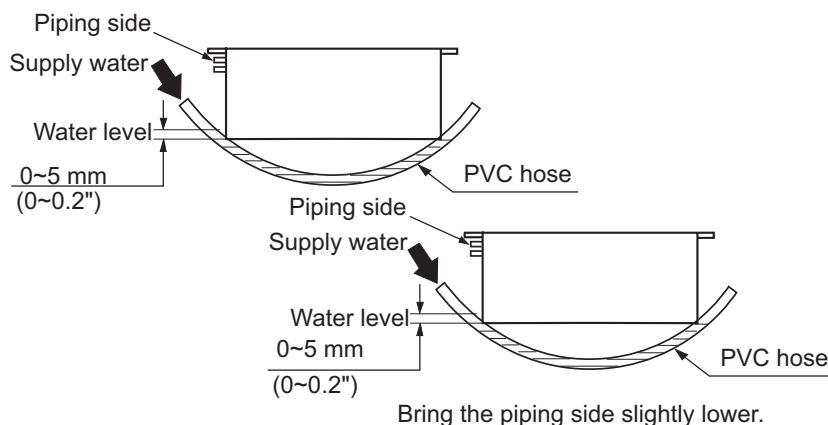
- Fix the indoor unit to the hanger bolts.
If required, it is possible to suspend the unit to the beam, etc.

Note

When the dimensions of main unit and ceiling holes does not match, it can be adjusted with the slot holes of hanging bracket.

Adjusting to the levelness

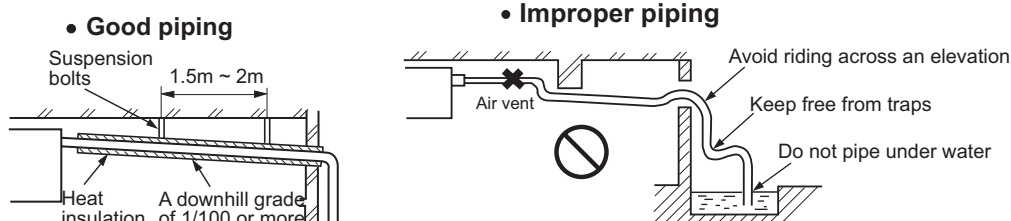
- (a) Adjust the out-of levelness using a level or by the following method.
- Make adjustment so that the relation between the lower surface of the unit proper and water level in the hose becomes as given below.



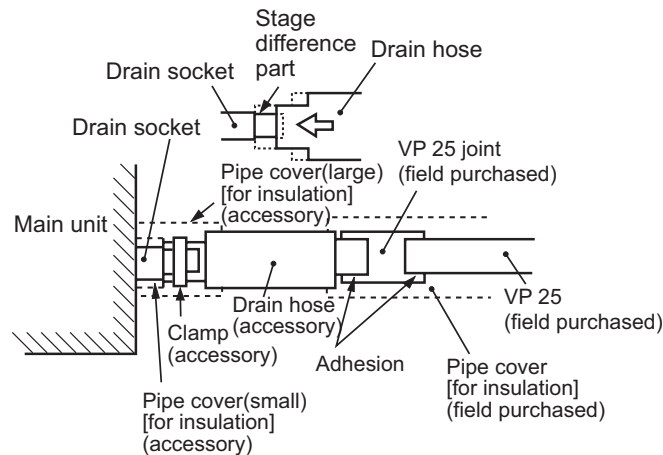
- (b) Unless the adjustment to the levelness is made properly, malfunctioning or failure of the float switch may occur.

5. Drain Piping

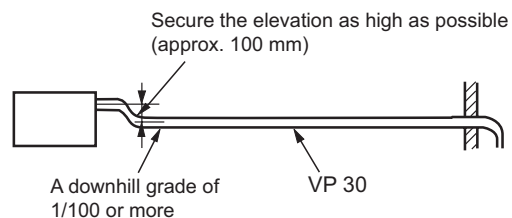
- (a) Drain piping should always be in a downhill grade (1/50~1/100) and avoid riding across an elevation or making traps.



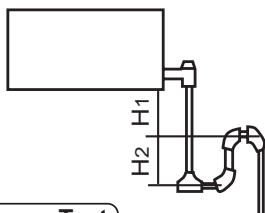
- (b) When connecting the drain pipe to unit, pay sufficient attention not to apply excess force to the piping on the unit side. Also, fix the piping at a point as close as possible to the unit.
- (c) For drain pipe, use hard PVC general purpose pipe VP-25(I.D.1") which can be purchased locally. When connecting, insert a PVC pipe end securely into the drain socket before tightening securely using the attached drain hose and clamp. Adhesive must not be used connection of the drain socket and drain hose (accessory).



- (d) When constructing drain piping for several units, position the common pipe about 100 mm below the drain outlet of each unit as shown in the sketch. Use VP-30(1 1/4") or thicker pipe for this purpose.



- (e) The stiff PVC pipe put indoor side should be heat insulated.
- (f) Avoid putting the outlet of drain hose in the places with irritant gas generated. Do not insert the drain hose directly into drainage, where the gas with sulfur may be generated.
- (g) Backwater bend
Because the drain spout is at the position, which negative pressure may occur. So with the rise of water level in the drain pan, water leakage may occur. In order to prevent water leakage, we designed a backwater bend. The structure of backwater bend should be able to be cleaned. As the below figure shown, use T type joint. The backwater bend is set near the air conditioner.
- As figure shown, set a backwater bend in the middle of drain hose.



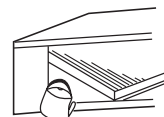
H1=100mm or the static pressure of air sending motor
H2=1/2H1 (or between 50~100mm)

Drainage Test

- Conduct a drainage test after completion of the electrical work.
- During the trial, make sure that drain flows properly through the piping and that no water leaks from connections.
- In case of a new building, conduct the test before it is furnished with the ceiling.
- Be sure to conduct this test even when the unit is installed in the heating season.

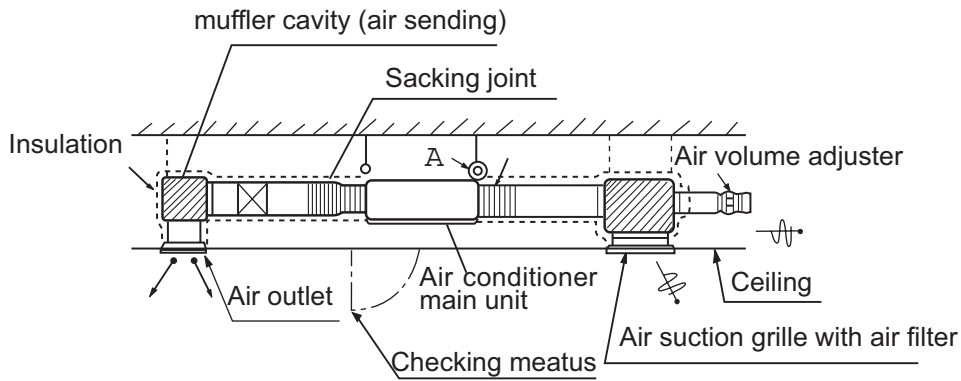
Procedures

- Supply about 1000 cc of water to the unit through the air outlet using a feed water pump.
- Check the drain while cooling operation.

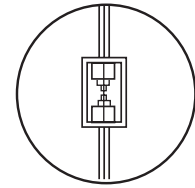


6. Installation of air suction and discharging duct

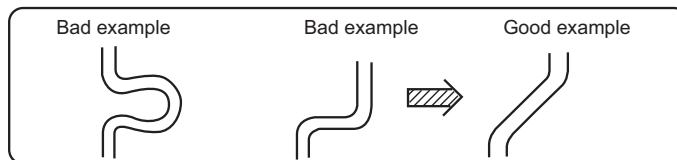
Please consult the after-sales service worker of Haier Air Conditioner for the choosing and installation of suction inlet, suction duct, discharging outlet and discharging duct. Calculating the design drawing and outer static pressure, and choose the discharging duct with proper length and shape.



Enlarging chart of
profile chart A
Vibration resistance hook

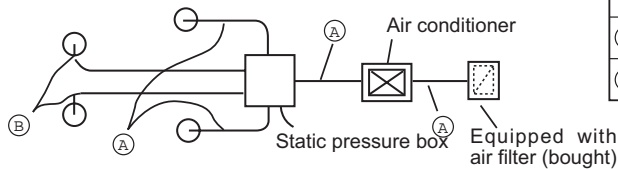


- The length difference among every duct is limited below 2:1.
- Reduce the length of duct as possible as can.
- Reduce the amount of bend as possible as can.
- Use heat insulation material to bind and seal the part connecting main unit and the flare part of air discharging duct. Perform duct installation work, before the fitment of ceiling.



7. Calculation method of the dimension of the simple quadrate air duct

Presuming the unit length friction impedance of the duct is 1Pa/m, when the dimension of one side of the air duct is fixed as 250mm, as shown below:



	Air volume	Duct(mm×mm)	Air volume	Duct(mm×mm)
Ⓐ	2400m³/h (40m³/min)	250×560	1200m³/h (20m³/min)	250×310
Ⓑ	600m³/h (10m³/min)	250×190	300m³/h (5m³/min)	250×120
	AD42NAHAAA AU42NAQAAA (HDU-42H03/H)		AD242AHAAA AU242AOAAA (HDU-24H03/H)	

- The calculation of duct resistance (the simple calculation is as follow table)

Straight part	Calculate as per 1m length 1Pa, 1Pa/m
Bend part	Each bend takes as a3~4m long straight duct
Air out part	Calculate as 25Pa
Static pressure box	Calculate as 50Pa/each
Air inlet grille (with air filter)	Calculate as 40Pa/each

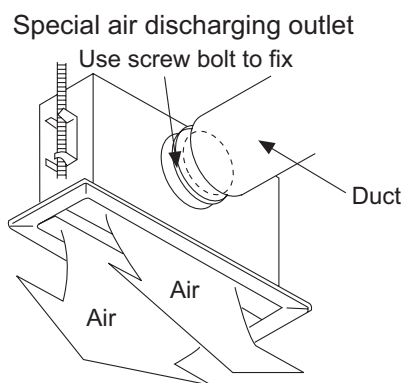
• The chosen chart of simple duct

Shape	Square duct
Item	Dimension
Air volume	
$m^3/h(m^3/n)$	(mmxmm)
100	250 x 60
200	250 x 90
300	250 x 120
400	250 x 140
500	250 x 170
600(10)	250 x 190
800	250 x 230
1,000	250 x 270
1,200(20)	250 x 310
1,400	250 x 350
1,600	250 x 390

Shape	Square duct
Item	Dimension
Air volume	
$m^3/h(m^3/n)$	(mmxmm)
1,800(30)	250 x 430
2000	250 x 470
2400	250 x 560
3,000(50)	250 x 650
3,500	250 x 740
4,000	250 x 830
4,500	250 x 920
5,000	250 x 1000
5,500	250 x 1090
6,000(100)	250 x 1180

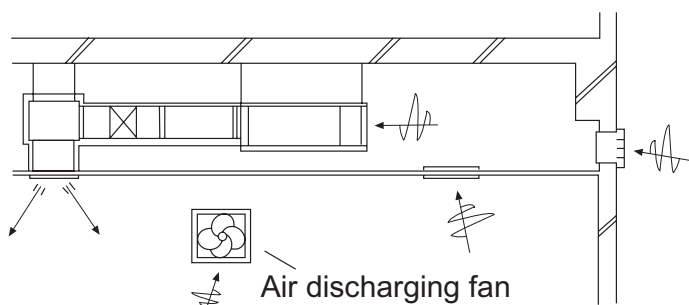
8. The attentive matters in installation of air suction and discharging duct

- Recommend to use anti-frost and sound-absorbing duct. (locally bought)
- The duct installation work should be finished before the fitment of ceiling.
- The duct must be heat insulated.
- The specific air-discharging outlet should be installed at the place where the airflow can be reasonably distributed.
- The surface should leave a checking meatus for checking and maintenance.



9. The examples of improper installation

- Do not use air in duct and take the ceiling inner side instead. The result is because of the irregular outer air mass, strong wind and sunshine, the humidity is increased.
- There may be water drop on the outside of duct. For cement and other new constructions, even if not taking ceiling inner side as duct, the humidity will also be so high. At this time, use glass fiber to perform heat preservation to the whole. (use iron net to bind the glass fiber)
- Maybe exceeding the unit operation limit (for example: when indoor dry bulb temperature is 35 C, wet bulb temperature 24 C), it may lead to overload of compressor.
- Affected by the capacity of air discharging fan, the strong wind in the outer duct and wind direction, when unit air sending volume exceeds the limit, the discharged water of heat exchanger will overflow, leading to water leakage.



Improper example

10. The operation method of fan controller

Through the fan controller switch in the electric box, the air volume of this unit can be continuously adjusted.

It is unnecessary to adjust air volume through the duct side wind level (unit outside static adjustment).

The air volume set should be in the operation air volume range.

Figure I shows the position of fan controller in the electric box and operation method.

After finishing the electric work, perform test run. According to the main points in Figure II making the chosen switch No. accordant. And confirm if it reaches the needed air volume.

Note:

- 1) When operating the fan controller, it is possible to touch the electric charging part, so do cut off the power supply.
- 2) Do not set the dial at the position less than 1.
- 3) The figure circled in Figure II indicate the capacity number of fan controller. The non-listed capacity number may exceed the permitted operation capacity range, so it is impossible to operate.
- 4) When delivering from factory, the capacity number of fan controller is set at □No.5□.

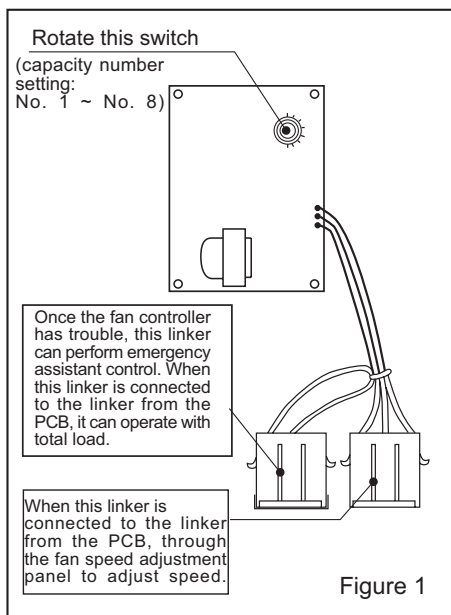


Figure 1

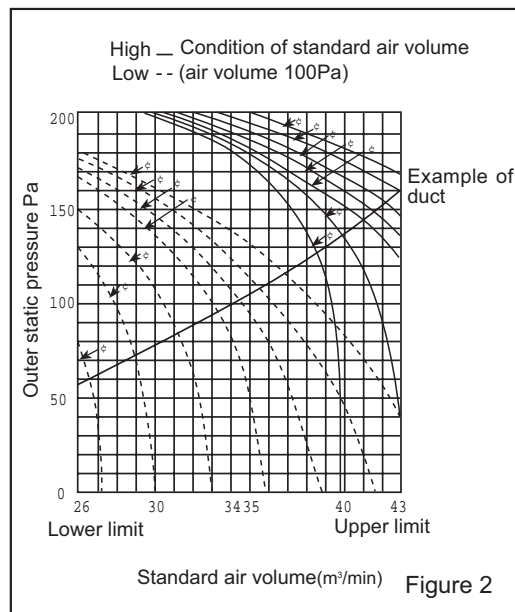


Figure 2

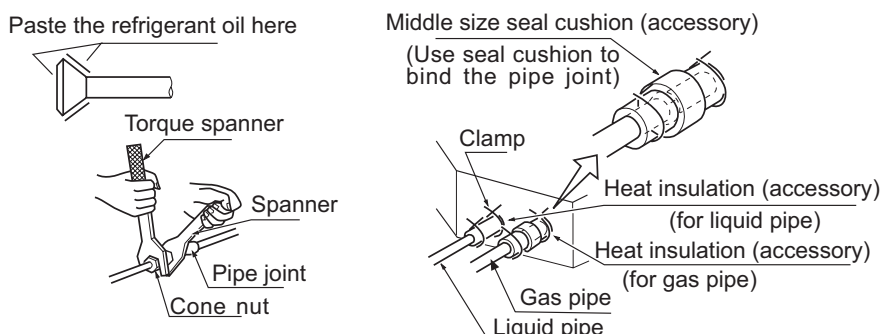
● The example of the method of choosing capacity number:

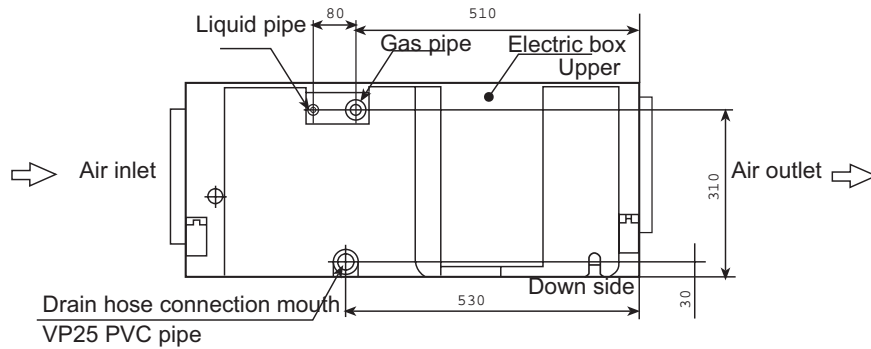
- 1) If the unit is in high-speed operation, needing take outer static pressure is 180Pa in capacity air volume 34m³/min as working condition point, according to Figure II □The characteristic chart of air volume□, the capacity number of fan controller is No. 2.
- 2) If the unit is in low speed operation, needing take outer static pressure is 60Pa in capacity air volume 32m³/min as working condition point, according to Figure II □The characteristic chart of air volume□, the capacity number of fan controller is No. 4.

11. Refrigerant pipe

[The air side pipe, liquid side pipe must be faithfully heat insulated, if no heat insulation, it may cause water leakage.]

- The outdoor unit has been charged with refrigerant.
- When connect the pipe to the unit or dismantling the pipe from the unit, please follow the figure shown, use spanner and torque spanner together.
- When connect cone nut, the inner side and outside of cone nut should paste with refrigerant oil. Use hand to twist 3-4 rings, then fasten with spanner.
- Referring to Table I to confirm the fasten torque. (too tight may damage nut leading to leakage)
- Check if the connection pipe leaks, then do heat insulation treatment, as below figure shown.
- Only use seal cushion to bind the joint part of air pipe and heat insulation parts.





Specification of pipe (mm)	Tighten torque	Cone dimension A (mm)	Cone
ϕ 12.70	50N.m	1.2~2.0	$45^\circ \pm 2$ $90^\circ \pm 0.5$

Electric wiring

⚠ WARNING

DANGER OF BODILY INJURY OR DEATH
TURN OFF ELECTRIC POWER AT CIRCUIT BREAKER OR POWER SOURCE BEFORE MAKING ANY ELECTRIC CONNECTIONS. GROUND CONNECTIONS MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS.

(1) Selection of size of power supply and interconnecting wires.

Precautions for Electric wiring

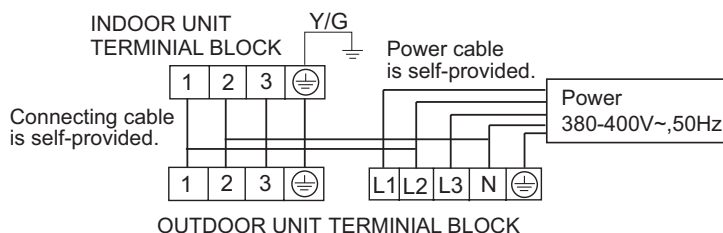
- Electric wiring work should be conducted only by authorized personnel.
- Do not connect more than three wires to the terminal block. Always use round type crimped terminal lugs with insulated grip on the ends of the wires.
- Use copper conductor only.

Select wire sizes and circuit protection from table below. (This table shows 20 m length wires with less than 2% voltage drop.)

Item Model	Phase	Circuit breaker		Power source wire size	Earth leakage breaker	
		Switch breaker (A)	Overcurrent protector		Switch break	Leak current
_____	3	30	40	6.0 mm ²	30	30mA

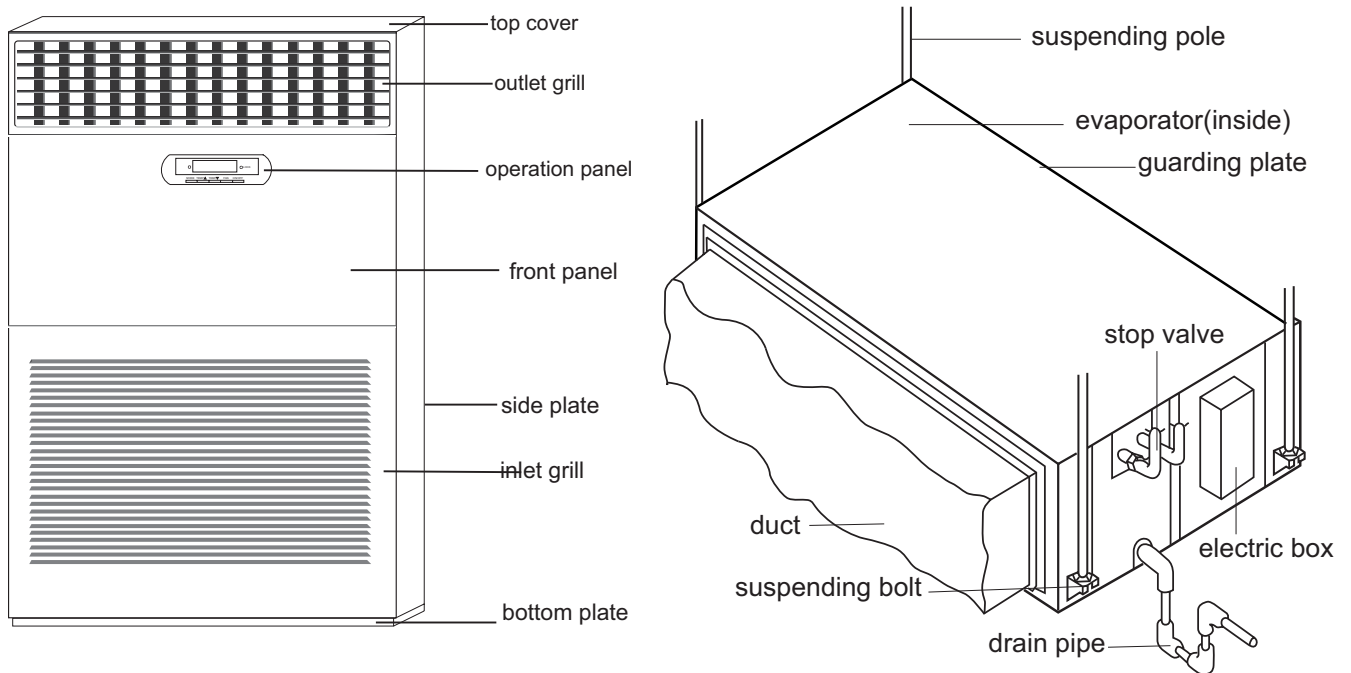
(2) Wiring connection

Make wiring to supply power to the outdoor unit, so that the power for the indoor unit is supplied by terminals.

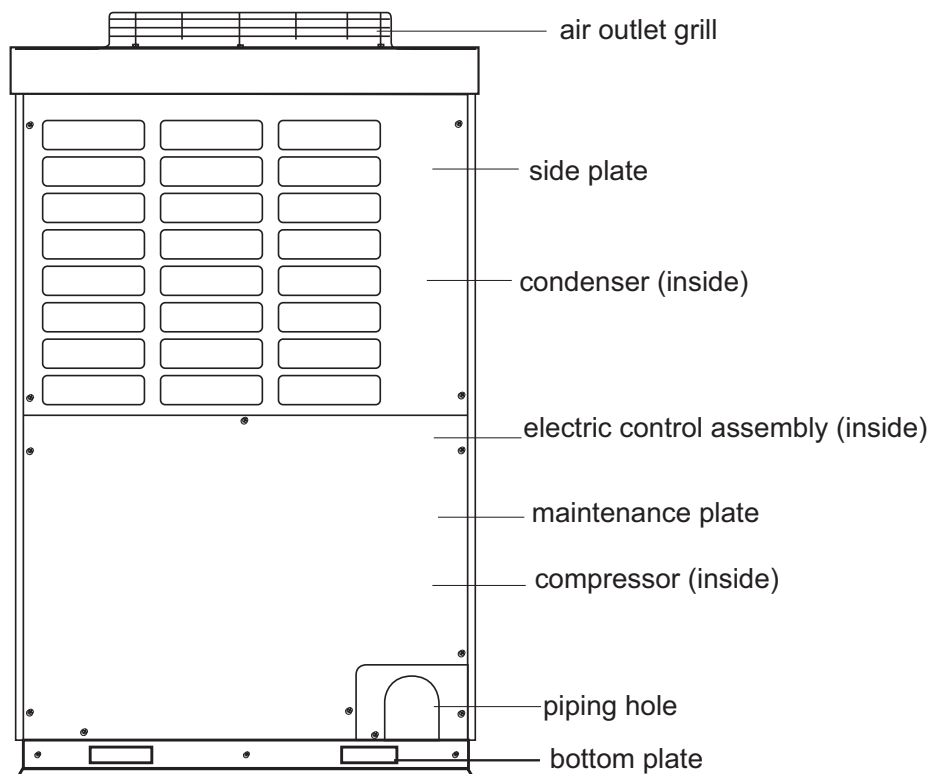


6. Parts and Functions

Indoor unit:

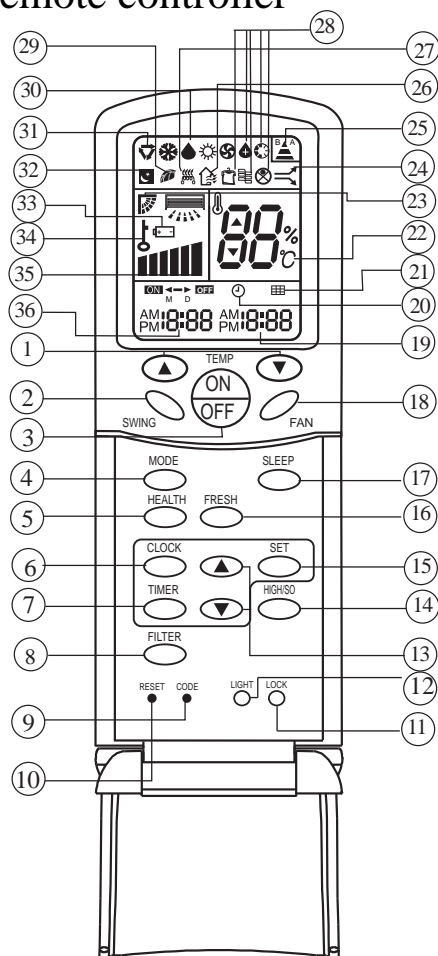


Outdoor unit:



7. Remote controller functions

Remote controller



1.TEMP Setting Button

(Used to set temperature. Setting ranges: 16°C to 30°C)

In Up/Down function, for controlling up and down filter.

2.SWING Button

If you press this button once, auto swing will be activated.

If you press this button again, the louver will fix in the present position.

3.Power ON/OFF Button

Used for unit start and stop

After power on, the LCD of remote controller will display the previous operation state (except for TIMER, SLEEP and SWING state).

4.Operation MODE

Used to select operation mode.

Every time you press MODE button, operation mode changes according to following sequence:



5.HEALTH Button

Used to set health mode, if the unit has the negative ion function and oxygen bar function.

6.CLOCK Button

Used to set correct time.

7.CLOCK Button

Used to select TIMER ON, TIMER OFF.

(Note: if time of TIMER ON is the same as TIMER OFF, TIMER ON/OFF cannot be set)

8. FILTER Button

Used to set up/down function of filter.

9. CODE Button

Used to select code A or B, for this unit, the code is A.

10.RESET Button

Press this button by using a sharp article to resume the correct operation of the remote controller in case of need, i.e. for example in case of malfunctions due to electromagnetic noise.

11.LOCK Button

Used to lock operation button and LCD display contents: by pressing this button, other buttons comes out of function and lock state display appears; if you press it again, lock state will be no more active and lock state display will disappear.

12.LIGHT Button

Used to light the control panel (only for cabinet unit)

13.Up and down Button

Used to set TIMER and CLOCK up or down.

14.HIGH/SO Button

Used to select HIGH or SOFT operation.

15.SET Button

Used to confirm TIMER and CLOCK settings.

16.FRESH Button

Used to set fresh mode, the unit will draw in fresh air.

17.SLEEP Button

(The clock must be corrected before setting sleep function)

Used to set sleep mode.

NOTE: 1.Cooling only air conditioner does not have the displays and functions related to heating.

2.HIGH/SO button

This button is activated in Cooling/Heating mode, the fan speed is in AUTO mode after pressing it and "high function" will be cancelled automatically after 15 minutes running.

18.FAN Button

Used to select fan speed:LOW,MID,HIGH,AUTO.

19.TIMER OFF Display

20.CLOCK Display

21.FILTER Display

22.TEMPERATURE Display

23.AUTO SWING Display

24.HIGH/SO Display

25.SIGNAL SENDING Display

26.FRESH AIR Display

27.ELECTRICAL HEATING Display

28.Some other buttons

All these functions are not available now.

29.HEALTH Display

Displays when healthy run function is set.

30.DEHUMIDIFICATION Display

31.Operation MODE Display

AUTO RUN	COOL RUN	DRY RUN	HEAT RUN	FAN RUN

32.SLEEP State Display

33.BATTERY Energy Display

Notify the user when it is time to change the batteries.

34.LOCK State Display

35.FAN SPEED Display

LO		
MID		
HI		
AUTO		

36.TIMER ON Display

Remote Controller' Operation

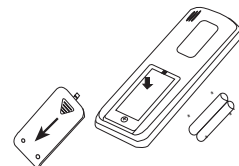
- When in use, direct signal transmission head to the receiver placed on the indoor unit

- The distance between the remote controller and the receiver should be max 7m and there should be no obstacle between them.
- Do not throw the remote controller; prevent it from being damaged.
- When operating the remote controller in an area where electronically controlled lights are installed or wireless handsets are used, please move closer to the indoor unit as the function of the remote controller might be affected by signals emitted by the above mentioned equipments.

Battery loading

Battery loading

Batteries are fitted as follows:



Remove the battery compartment lid

Slightly press and disengage the battery compartment lid marked with and then hold the remote controller by the upper section and then remove the battery compartment lid by pressing in the direction of the arrow as shown in the figure above.

Loading the battery

Ensure that batteries are correctly placed in the compartment as required for positive and negative terminals.

Replacing the battery compartment lid

The battery compartment lid is reinstalled in the reverse sequence.

Display review

Press the button to see if batteries are properly fitted. If no display appears, refit the batteries.

Confirmation indicator

If no indication is displayed after press ON/OFF button, reload the batteries.

Caution:

If the remote controller does not operate as designed after fitting new batteries of the same type, press the Reset button (marked) with a pointed article.

Note:

It is recommended that the batteries be removed from the compartment if the remote controller is not used for an extended period.

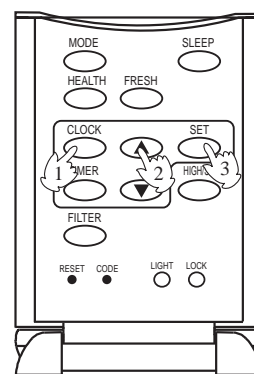
The remote controller is programmed for automatic test of operation mode after the batteries are replaced. When the test is conducted, all icons will appear on the screen and then disappear if the batteries are properly fitted.

Clock Set

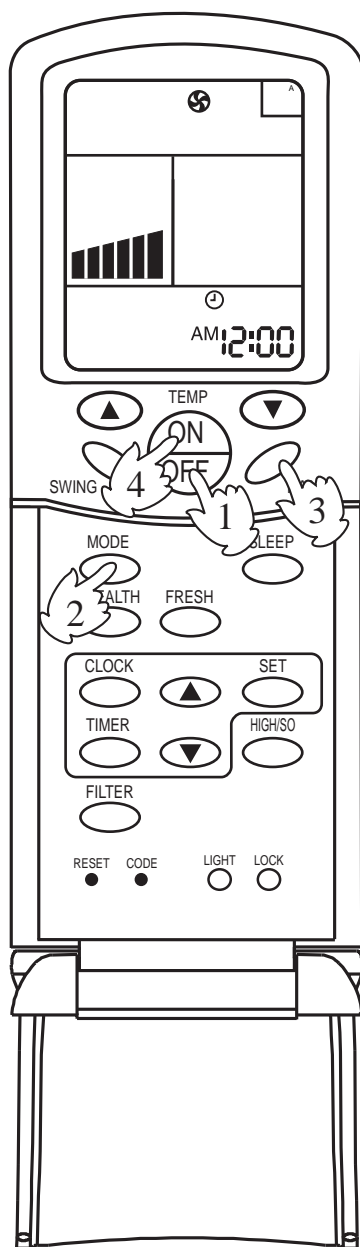
When unit is started for the first time and after replacing batteries in remote controller, clock should be adjusted as follows:

- 1.Press CLOCK button, clock indication of " AM " or " PM " flashes.
- 2.Press or to set correct time. Each press will increase or decrease 1 min. If the button is kept pressed, time will increase or decrease quickly.
- 3.After time setting is confirmed, press "SET" : AM or PM stop flashing, while clock starts working.

Note:AM means morning and PM means afternoon.



Fan Operation



1. Unit start

Press ON/OFF button to start your air conditioner.

Previous operation status appears on LCD (except for TIMER, SLEEP, and SWING setting).

2. Select operating mode

Press MODE button. At each press, operation mode changes as follows:



Then select FAN

3. Adjust fan speed

Press FAN button. At each press, fan speed changes as follows:



Air conditioner will run at the selected fan speed.

When in AUTO mode, unit will adjust fan speed according to room temperature automatically.

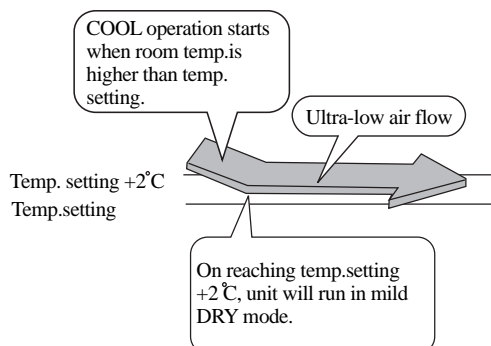
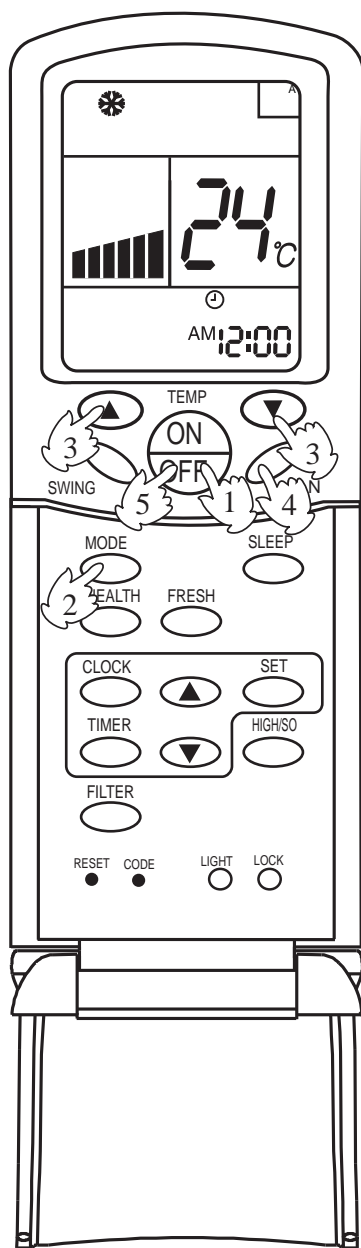
4. Unit stop

Press ON/OFF button to stop unit.

About FAN mode

When the air conditioner runs in FAN mode, it is not possible to select AUTO FAN or to set temperature.

AUTO, COOL, HEAT and DRY Operation



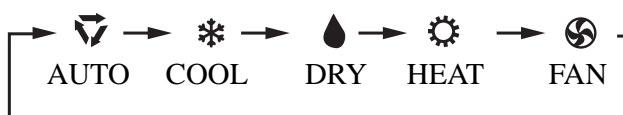
1. Unit start

Press ON/OFF button, unit starts.

Previous operation status appears on LCD (except for TIMER, SLEEP and SWING setting)

2. Select operation mode

Press MODE button. At each press, operation mode changes as follows:



Then select AUTO run or select COOL operation or select DRY operation or select HEAT operation

3. Temperature setting

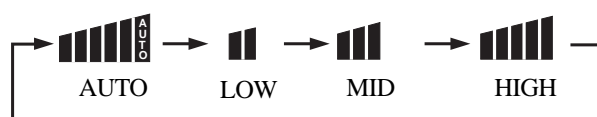
Press TEMP button.

- ▲ Every time the button is pressed, temp. setting increases 1°C; if the button is kept pressed, temp. setting will increase quickly.
- ▼ Every time the button is pressed, temp. setting decreases 1°C, if the button is kept pressed, temp. setting will decrease quickly.

Set proper temperature

4. Adjust FAN button

Press FAN button. At each press, fan speed changes as follows:



Air conditioner will run at the selected fan speed.

5. Unit stop

Press ON/OFF button, unit stops.

In ATUO mode, the temperature setting is not displayed on LCD. In this mode, during running air conditioner will select COOL, HEAT or FAN mode automatically according to the room temperature.

In DRY mode, when room temperature becomes 2°C higher than temperature setting, unit will run intermittently at LOW speed regardless of FAN setting. When room temperature is lower than temperature setting, unit will only run FAN operation.

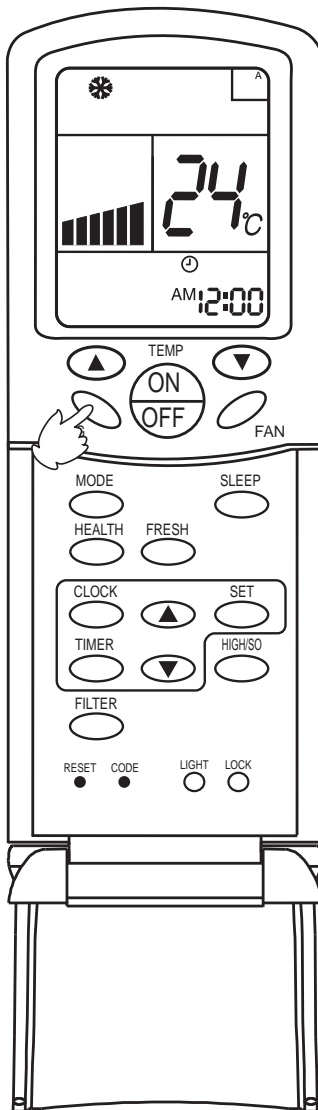
In HEAT mode, warm air will blow out after a short period of time due to cold-draft prevention function.

Adjusting air flow direction

AUTO SWING

Press SWING button.

Up and down airflow varies upwards and downwards. Left and right airflow varies left and right sides.



AUTO SWING

When the automatic swing louver moves to the proper angle, press SWING button can fix the airflow direction.

- Always use SWING button on the remote controller to adjust flaps. Adjusting them by hand may result in air conditioner's abnormally running.
- In COOL or DRY mode, do not leave the louver in downward position for a long time, as the water vapor close to the grille may condense and water may drop from the air conditioner.
- Please carefully set temperature when children, old or infirm people uses the air conditioner.
- In case of great humidity, If the vertical flaps are completely turned towards left or right, the louver will drop water.
- Never adjust the louver directly by hand, as this could make it work abnormally. If the louver work abnormally, stop unit, restart and adjust the louver by remote controller.

After unit stops:

Displays on the LCD disappear.

All indicators on the indoor unit go out.

Swing louver automatically close the air outlet.

Hints:

As in COOL mode air flows downwards, adjusting airflow horizontally will be much more helpful for a better air circulation

As in HEAT mode air flows upwards, adjusting airflow downward will be much more helpful for a better air circulation.

Be careful not to catch a cold when cold air blows downward directly.

Sleep Function

Before going to bed you can press down the SLEEP button and the air conditioner will run so as to make you sleep more comfortably.

Before using this function, the clock must be set.

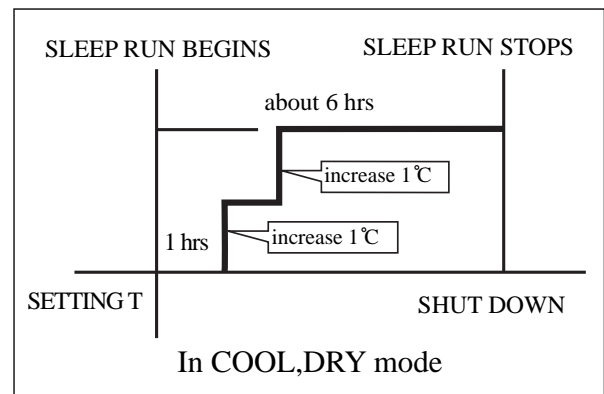
Use of SLEEP function

After the unit's start, set running mode and then press SLEEP button once to make the air conditioner have the previous-set sleep time (first power-on is "1h"). The sleep symbol will appear. Press time button ▲/▼: you can choose the time in 1~8 hours. Each time the button is pressed, the time increases/decreases 1 hour: "xh" and "OFF" indications appear on the display.

Operation Mode

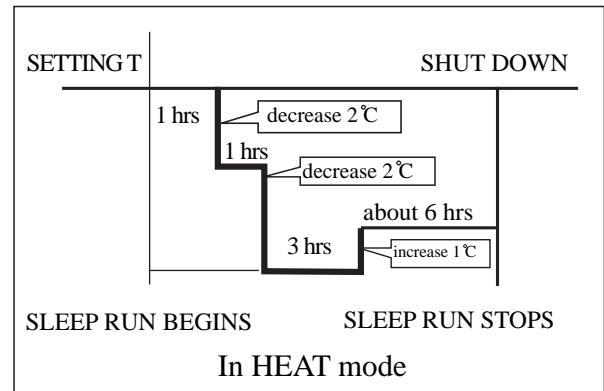
1. In COOL, DRY mode

One hour after sleeping operation start, the temperature is 1 °C higher than the setting one. After another hour, temperature rises 1 °C: sleep run continuously for another 6 hours and then stops. The actual temperature is higher than the setting one which is to prevent from being too cold to your sleep.



2. In HEAT mode

One hour after sleeping operation start, the temperature is 2 °C lower than the setting one. After another hour, temperature decreases by 2 °C more. Temperature will automatically rise by 1 °C after another 3 hours' continuous operation. The actual temperature is lower than the setting one which is to prevent from being too hot to your sleep.

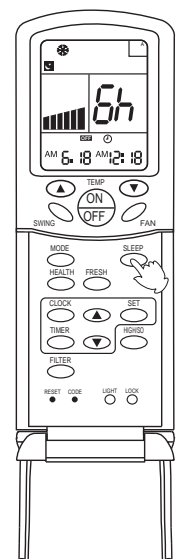


3. In AUTO mode.

The air conditioner will run in corresponding sleep operation according to the automatically selected operation mode.

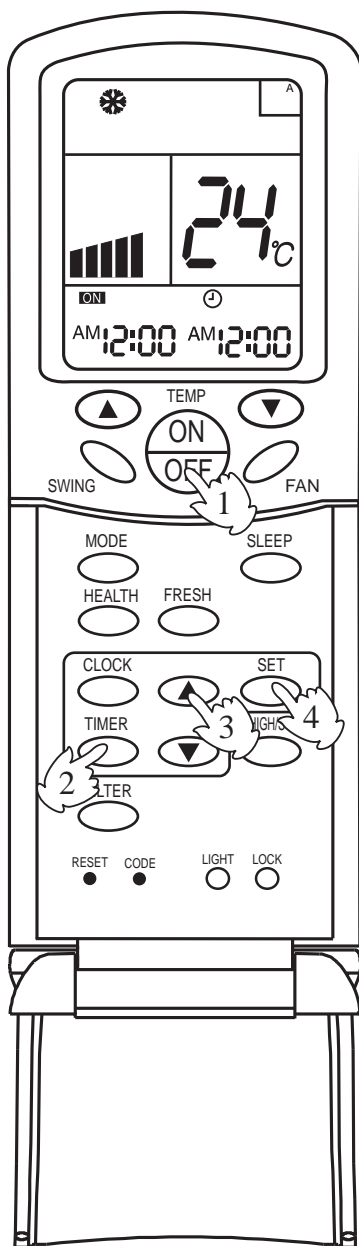
Notes:

- After setting SLEEP function, it is not possible to set clock.
- If set-sleep time does not reach 8 hours, unit will automatically stop operation after set time is reached.
- Set "TIMER ON" or "TIMER OFF" in COOL, DRY mode function first, then set SLEEP. After set SLEEP function, the TIMER function cannot be set.



Timer ON/OFF Function

Set clock correctly before starting TIMER operation



1. Unit start

After unit start, select your desired operation mode (operation mode will be displayed on LCD)

2. TIMER mode selection

Press TIMER button on the remote controller to change TIMER mode. Every time the button is pressed, display of TIMER mode changes as follows:



Then select TIMER mode as needed (TIMER ON or TIMER OFF). Now **ON** or **OFF** will flash.

3. TIMER setting (press time adjust buttons ▲ ▼)

- ▲ Every time the button is pressed, time increases 10 minutes. If the button is kept pressed, time changes quickly.
- ▼ Every time the button is pressed, time decreases 10 minutes. If the button is kept pressed, time changes quickly. It can be adjusted within 24 hours at will.

4. Confirm setting

After setting correct time, press SET button to confirm time. Now **ON** or **OFF** stop flashing.

Time displayed: unit starts or stops at X hour X min (TIMER ON or TIMER OFF)

5. Cancel TIMER mode

Just press TIMER button several times until TIMER mode disappears.

Hints:

After replacing batteries or if a power failure occurs, TIMER setting must be reset.

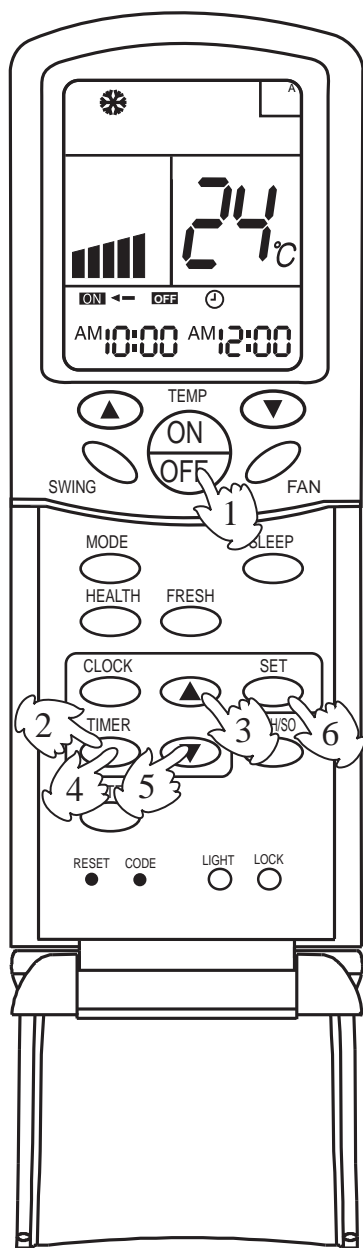
Remote controller has memory function. When you use TIMER mode next time, just press SET button after mode selection if timer setting is the same as the previous one.

Note:

After setting TIMER function, the remote controller displays TIMER time. If you want to see clock time, just press CLOCK button once: clock time will be displayed (if you press the button again continuously, you can adjust clock). 5 seconds later, the display will show TIMER time again.

Timer ON-OFF Function

Set clock correctly before starting TIMER operation



1. Unit start

After unit start, select your desired operation mode (operation mode will be displayed on LCD)

2. TIMER mode selection

Press TIMER button on the remote controller to change TIMER mode. Every time the button is pressed, display of TIMER mode changes as follows:



Then select TIMER ON-OFF mode. **ON** will flash.

3. Time setting for TIMER ON

Press time button \blacktriangle

\blacktriangle Every time the button is pressed, time increases 10 minutes. If the button is kept pressed, time will change quickly.

\blacktriangledown Every time the button is pressed, time decreases 10 minutes. If the button is kept pressed, time will change quickly. It can be adjusted within 24 hours at will. AM refers to morning and PM refers to afternoon.

4. Timer confirming for TIMER ON

After setting correct time, press TIMER button to confirm time. Now **ON** stops to flash, while **OFF** starts flashing.

Time displayed : unit starts at X hour X min.

5. Timer setting for TIMER OFF

Press time buttons \blacktriangle and follow the same procedures in " Time setting for TIMER ON"

6. Time confirming for TIMER OFF

After time setting, press SET button to confirm time. **OFF** stops to flash. Time displayed: unit starts at X hour X min.

7. Canel TIMER mode

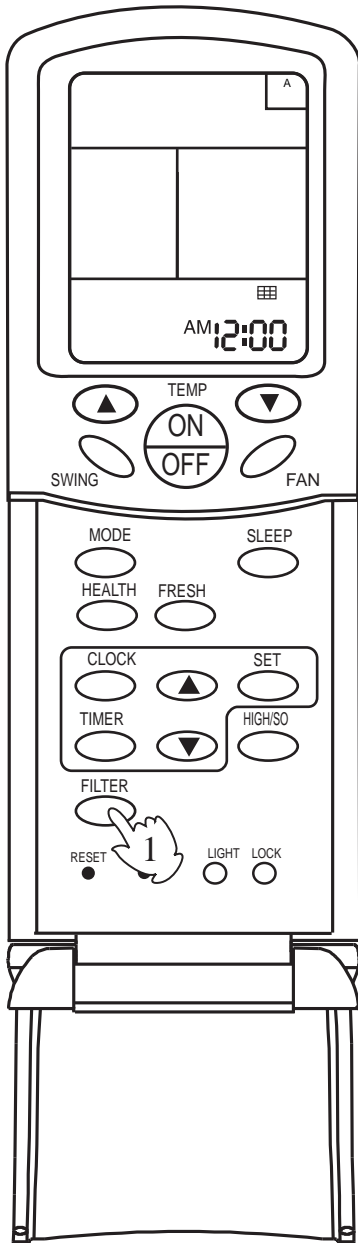
Just press TIMER button several times until TIMER mode disappears.

According to the time setting sequence of TIMER ON and TIMER OFF, either start-stops or stops-start can be realized.

If the time setting of TIMER ON is the same as TIMER OFF, TIMER ON-OFF function cannot be set.

Filter Up/Down

(Only for 600*600 panel of single unit)



After the air conditioner has operated for a certain period, dust has accumulated on the filter, and the filter up/down function can be used to clean it.

1. Whether unit starts or stops, continuously press FILTER button for 3 seconds, and enter the filter up/down waiting status (when unit stops, the yellow TIMER indicator flashes, and filter and clock indication are displayed on the remote controller. Only the FILTER button, the temperature buttons "▲" "▼" and time buttons ▲ ▼ are active).
2. Press temperature "▲" button or time "▼" button in filter up/down waiting status: the up/down mechanism makes the filter moving downward and does not stop until it has reached the maximum limit.
3. Press temperature "▲" button or time "▲" button in filter up/down waiting status: the up/down mechanism makes the filter to moving upward till near the surface board and then automatically adjusts it to reset (when adjusting to reset, it will not be controlled by the remote controller till the adjustment is finished).
4. During moving downward, press temperature "▲" button or time "▲" button: moving stops.
5. During moving downward, press temperature "▼" button or time "▼" button: moving stops.
6. Continuously press FILTER button 3 seconds again to cancel the filter up/down waiting mode (unit stops, the black timer indicator stops flashing, the filter goes back to the original position, the remote controller goes back to off status and only clock is displayed).

Note:

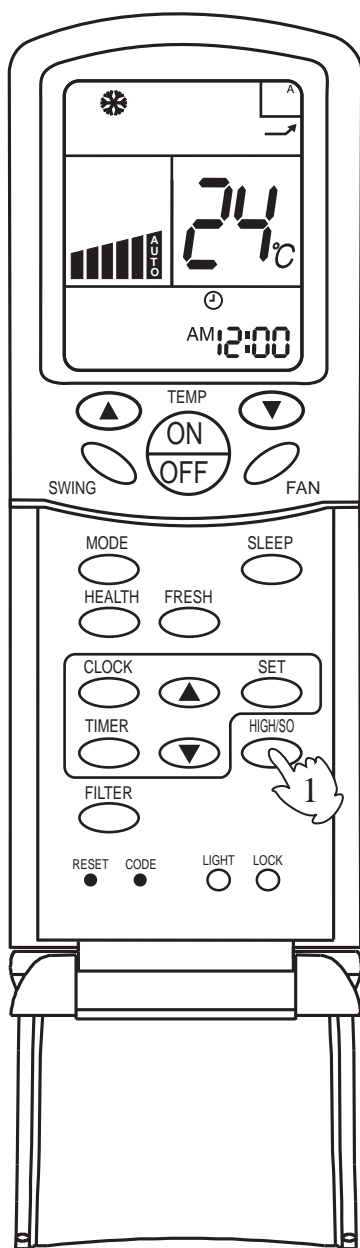
If the filter does not thoroughly go back to the original position, only needs to operate several times repeatedly.

" High mode " Operation

Outline of operation in "High Mode"


This function is suitable when the set temperature must be reached in the shortest delay.

The button "HIGH/SO", referred to this function, is effective in Cooling/Heating mode (not in Auto/Dry/Fan modes).



ON


Press the HIGH/SO button once

The indication  appears on the display of the remote controller and operation in "High Mode" starts.

The AUTO fan speed is automatically set and the corresponding indication is also displayed.

OFF

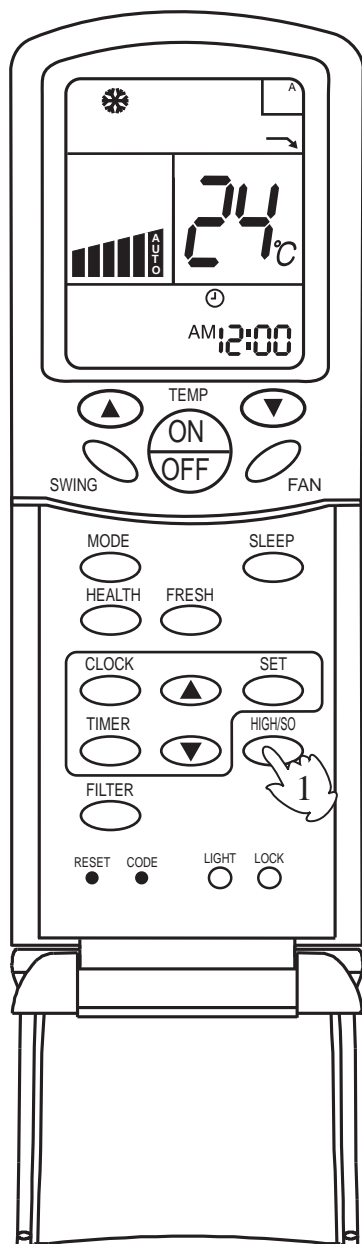
Press the HIGH/SO button twice

If the button is pressed once, the indication  is displayed on the remote controller. If you press the button once again, the indication disappears, regular operation is restored and fan speed goes back to the mode set before "High Mode" operation.

NOTICE:

- When the air conditioner is operating in " High Mode " , unevenness of room air temperature may occur due to the intensive operation in a short time.
- Anyway, operation in "High Mode", does not last for more than 15 minutes, then regular operation is automatically restored.

" Soft mode " Operation



Outline of operation in "Soft Mode"

Operation in "Soft Mode", more silent, is suitable when noises should be reduced, e.g.. for reading or sleeping.

The button "HIGH/SO", referred to this operation, is effective in Cooling/Heating mode (not in Auto/Dry/Fan modes).

ON


Press the HIGH/SO button twice

The indication  appears on the display of the remote controller and operation in "Soft Mode" starts.

The AUTO fan speed is automatically set and the corresponding indication is also displayed.

OFF

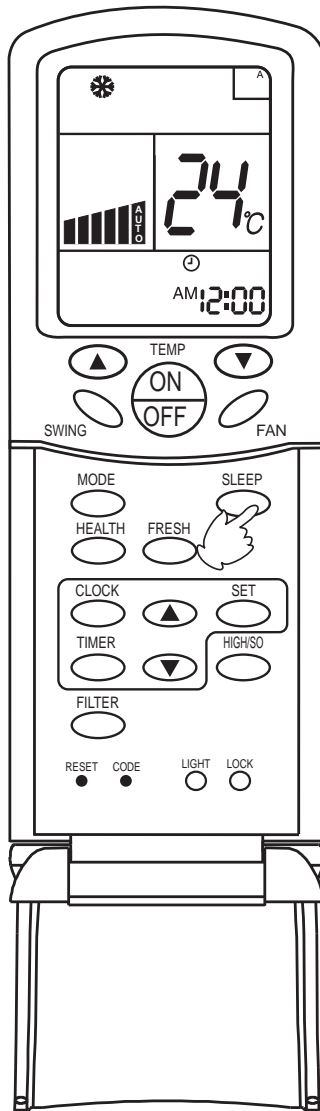
Press the HIGH/SO button twice

If the button is pressed once, the indication  is disappears from the remote controller's display. If you press the button once again, regular operation is restored and fan speed goes back to the mode set before "Soft Mode" operation.

NOTICE:

- When the air conditioner is operating in " High Mode " , unevenness of room air temperature may occur due to the intensive operation in a short time.
- Anyway, operation in "High Mode", does not last for more than 15 minutes, then regular operation is automatically restored.

Auto restart function setting



Setting method (to be applied for a necessary situation) :

After the power failure compensation is set, if power failure suddenly occurs while the air conditioner is working, it will resume the previous working state when the power is supplied again.

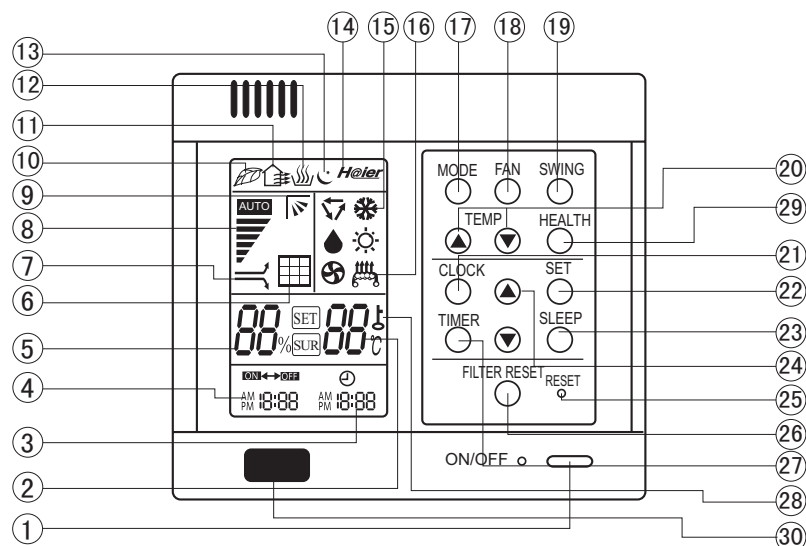
Setting Method: When the remote controller is on (excluding timer mode and fan mode), press the "Sleep" button on the remote controller 10 times within 5 seconds, and after the buzzer rings 4 times, the air conditioner will enter the state of auto restart.

Cancel Method: Press the "Sleeping" button on the remote controller 10 times within 5 seconds, and after the buzzer rings 2 times, the auto restart mode will be cancelled.

Notes: When a power failure suddenly occurs during the air conditioner is working after the power failure compensation is set, if the air conditioner will not be used for a long time, please cut off the power supply to prevent its operation from being resumed after the power is supplied again, or press the "Switch On/Off" button after the power comes again.

If the unit has not the "sleep" button or function, please realize the function by pressing "swing" with the same method.

Wired controller YR-E06



1.ON/OFF button

Used to turn on/off unit

2.Temperature display

3.Clock display

4.Timer ON/OFF display

5.Humidity display

6.Air filter cleaning display

When there is too much dust collected on the air inlet, the wire controller will show this display to remind the user to clean the air inlet. After cleaning and installation, just press the air filter reset button.

7.Super/Soft operation display

8.Fan speed display



9.Auto Swing display

10.Health state display

11.Fresh air state display

12.Humidifying state display

13.Sleep state display

14.Network control display

15.Working mode display

Working mode	Auto operation	Cooling operation	Dehumidifying operation	Heating operation	Fan operation
Wire controller					

16.Electric heating display

17.Operation mode button

Used to set working mode: Auto, Cooling, Dehumidifying, Heating, Fan

18.Fan speed button

Used to set fan speed: Low Fan, Med Fan, High Fan, Auto

19.Swing button

Used to set Auto Swing or Fixed air sending direction

20.Temperature Setting button

Used to set temperature, temperature range: 16 C~30 C

21.Clock button

Used to calibrate the time of timer and clock

22.Setting button

Used to confirm the time of timer and clock

23.Sleep button

Used to set Sleep state

24.Time Adjusting button

Used to adjust the time of timer and clock

25.Reset button

When the wire controller appears abnormal condition, use a sharp-pointed article to press this button to make the wire controller resume normal

26.Air Filter Reset button

After cleaning the air inlet, press this button, the unit can start to operate

27.Timer button

Used to set the mode of timer

28.Lock state display

29.Health

Used to control the generating oxygen function and negative ion-function

30.Remote control window

Used to receive the remote control signal

Note: 1.This model does not have the following related display and function (5)(6)(7)(9)(11)(12)(14)(16)(26)
2.The outdoor unit no oxygen-bar function or no negative ion unit no (10)(29) health function and health display.

Calibration of clock

When turning on the unit for the first time, the clock should be calibrated. The method of calibration is:

- 1.Press "Clock" button, the Clock display " AM " " PM " will flash.
- 2.Press ▲ or ▼ to adjust time. For each press, the time will increase or decrease 1 minute. If depressing the button, the time will increase or decrease rapidly.
- 3.After confirming the time, press " Set " button, " AM " or " PM " will stop flashing, the clock will begin to work.

Recommendations

- Use COOL in summer.
- Use HEAT in winter.
- Use DRY in spring, autumn and in damp climate.

(1) Unit

Press ON/OFF button, unit starts.
Previous operation status appears on display
(Not Timer setting). Power indicator lights up.

(2) Select operation

Press MODE button. For each press, operation mode changes as follows:



Unit will run in operation mode displayed on LCD. Stop display at your desired mode.

(3) Select temp.

Press TEMP button

- ▲ Every time the button is pressed, temp. setting increases $^{\circ}1\text{ C}$.
If button is kept depressed, temp. setting will increase quickly.
- ▼ Every time the button is pressed, temp. setting decreases $^{\circ}1\text{ C}$.
If button is kept depressed, temp. setting will decrease quickly.
Unit will start running to reach the temp. setting on LCD.

(4) Fan speed

Press FAN button. For each press, fan speed changes as follows:

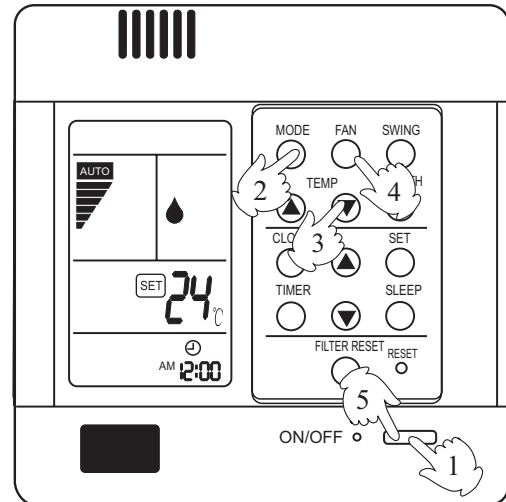
Wire controller



Remote controller



- Auto running: During the Auto running mode, air conditioning running and can auto-select the cooling, heating, fan mode according to the room temperature.
- Fan running: The AC only have air supply running no cooling and heating running at the condition, AC can't have auto air supply running, and can't display the setting temperature value on the LCD.
- During the heating running, after start the AC, in order to prevent cooled air, AC can stop for a while before send heat air.
- During the dehumidification running, when the room temp. setting temp., not setting condition according to the air speed.



Unit runs at the speed displayed on LCD. In HEAT mode, warm air will blow out after a short period of time due to cold-draft prevention function.
In DRY mode, when room temp. becomes 2 C higher than temp. setting, unit will run intermittently at LOW speed regardless of FAN setting.

(5) Unit stop

Press ON/OFF button.
Only time and room temp remains on LCD.
All indicators go out.
Vertical flap closes automatically.

Hint

Wire controller can memorize each operation status.
When starting it next time, just press ON/OFF button and unit will run in previous status.

Set Clock correctly before starting Timer operation.

You can let unit start or stop automatically at following time: Before you wake up in the morning, or get back from outside or after you fall asleep at night.

TIMER

(1)After unit start, select your desired operation mode.

Operation mode will be displayed on LCD. Power indicator lights up.

(2)TIMER mode selection

Press TIMER button to change TIMER mode. Every time the button is pressed, display changes as follows:



Select your desired TIMER mode (ON or OFF)

(3)Timer setting

Press TIME ▲/▼ button.

- ▲ Every time the button is pressed, time increases 10min. If button is kept depressed, time will change quickly.
 - ▼ Every time the button is pressed, time decreases 10min. If button is kept depressed, time will change quickly.
- Time will be shown on LCD. It can be adjusted within 24hours.

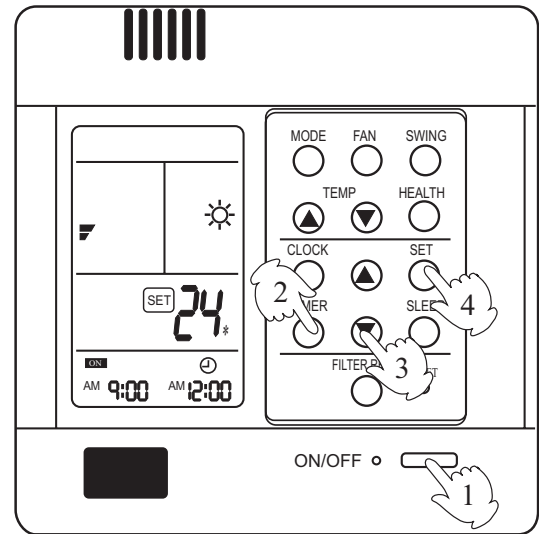
(4)Confirming your setting

After setting correct time, press SET button to confirm "ON" or "OFF" stops flashing. Time displayed: Unit starts or stops at x hour x min (ON or OFF). Timer mode indicator lights up.

To cancel TIMER

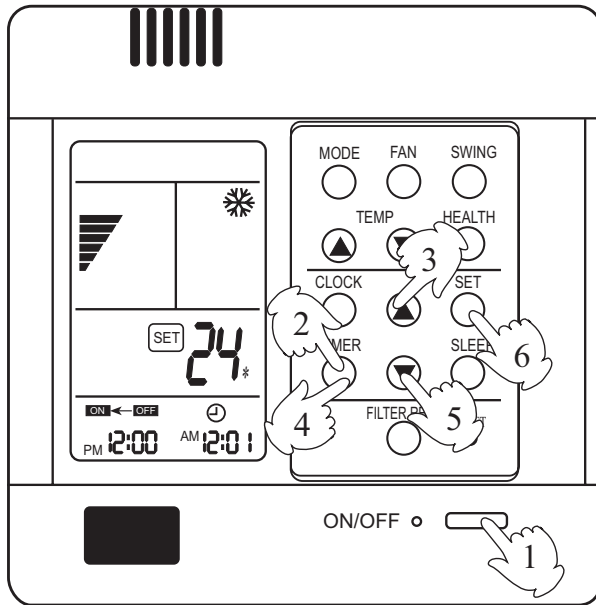
Just press TIMER button several times until TIMER mode disappears.

- According to the setting timing open, close sequence, can realize first open then close the unit or first close then open the unit.



Hints:•Wire controller possesses memory function, when use TIMER mode next time, just press SET button after mode selecting if timer setting is the same as previous one.

- Wire remote controller or remote controller can memorize each working condition. Next time open the unit, only need to press the ON/OFF key, the AC can work according to last time working condition.(Timing, Sleeping and Swing mode not included.)
- From Timing close to timing open, can setting sleep mode.
- Please close health function first before setting Timer, then you can do the TIMER ON operation. Please do not use the health function when in TIMER ON state.



TIMER ON-OFF

(1) After unit start, select your desired operation mode

Operation mode will be displayed on LCD. Power indicator lights up.

(2) Press TIMER button to change TIMER mode

Every time the button is pressed, display changes as follows:



Select ^{ON}
_{OFF} .

(3) Time setting for TIMER ON

Press TIME button.

- ▲ Every time the button is pressed, time increases 10min. If button is kept depressed, time will change quickly.
- ▼ Every time the button is pressed, time decreases 10min. If button is kept depressed, time will change quickly. Time will be shown on LCD. It can be adjusted within 24 hours.

AM refers to morning and PM to afternoon.

(4) Time confirming for TIMER

After time setting, press TIMER button to confirm. "ON" stops blinking, While "OFF" starts blinking. Time displayed: Unit starts at X hour X min.

(5) Time setting for TIMER OFF

Follow the same procedures in "Time setting for TIMER ON".

(6) Time confirming for TIMER OFF

After time setting, press SET button to confirm. "OFF" stops flashing. Time displayed: Unit stops at X hour X min.

To cancel TIMER mode

- Just press TIMER button several times until TIMER mode disappears.
- According to the Time setting sequence of TIMER ON or TIMER OFF, either Start-Stop or Stop-Start can be achieved.

Note: Before using this function, must adjust the clock, or the sleep function will be disordered.

Comfortable Sleep

At night, before going to bed you can press down the SLEEP button on the controller and the air-conditioner will run by the comfortable sleeping mode to make you sleep more comfortable.

Press SLEEP button once to make the air conditioner have the pre-set sleep time (first power-on is "1h"), the sleep symbol will appear. Press time button ▲/▼, you can choose the time in 1~8 hours. Each press of ▲/▼, the time increases/reduces 1 hour and "xh" appear in the humidity setting area, "OFF" appears in "TIMER OFF" display area and timer-off time; press SLEEP button again to cancel sleep function, the sleep symbol disappears.

In cooling, dehumidifying mode

One hour after sleeping operation start, the temp. is 1°C higher than the setting one. After another hour the temp. rises 1°C and then run continuously for another 6hrs' and then close. The actual temp. is higher than the setting one which is to prevent from being too cool to your sleep.

In heating mode

One hour after start up, the temp. decrease 2°C lower than the setting one. After another hour decrease by more 2°C.

The temperature will automatically rise by 1°C after another 3hrs' operation, and then automatically close after 3hrs' continuous operation. The actual temperature is lower than the setting one which is to prevent from being too hot to your sleep.

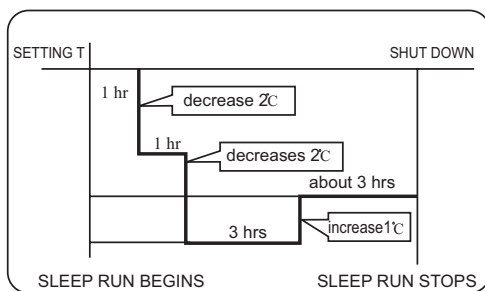
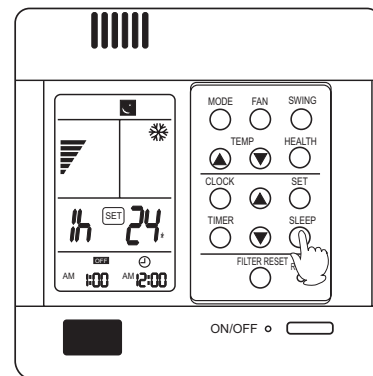
Note: In AUTO mode, unit will run in SLEEP function according to the operation mode.

After setting SLEEP function, it is forbidden to calibrate clock.

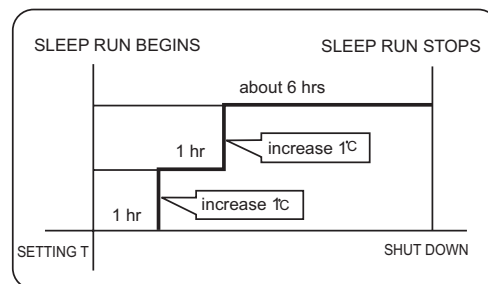
If the set sleep-time does not reach 8 hours, the unit will stop operation automatically after set time is complete.

Set "TIMER-OFF" function first, then set SLEEP, and the sleep-set is performance; set TIMER-ON function first, the sleep function can only be set before TIMER-ON; if set the SLEEP function first, the TIMER function can not be set.

- After setting sleep function, not allowed to adjust the clock. Can't use the remote controller operate the AC. If so, please cancel the sleep function first.
- After setting sleep function, can't set the timing function.



Heat mode



Cooling mode

Auto restart function (to be applied for a necessary situation) :

After the auto-restart function is set, if power failure suddenly occurs while the air conditioner is working, it will resume the previous working state when the power is supplied again.

Setting Method: When the remote controller is on (excluding timer mode and fan mode), press the "SLEEP" button on the remote controller 10 times within 5 seconds, and after the buzzer rings 4 times, the air conditioner will enter the state of auto-restart function.

Cancel Method: Press the "Sleeping" button on the remote controller 10 times within 5 seconds, and after the buzzer rings 2 times, the power failure compensation mode will be cancelled.

Notes: When a power failure suddenly occurs during the air conditioner is working after the power failure compensation is set, if the air conditioner will not be used for a long time, please cut off the power supply to prevent its operation from being resumed after the power is supplied again, or press the "Switch On/Off" button after the power comes again. If the controller no sleep key, use the "swing" key instead the "sleeping" on setting the auto restart function.

Concerning MRV Auto Restart function for H-MRV models

Haier Auto Restart function when the unit power drops down suddenly, the unit microprocessor will store the previous working condition and when the power is on again, the unit will run as this memory.

Auto Restart function is designed basically on the MRV whole system, but it is suitable for each indoor unit individually.

If some of indoor units power cut down, but the outdoor unit and the other indoor units still work, maybe problems will happen such as freezing at cooling mode and overload protection at heating mode on those indoor units without power.

Reason

When one or some indoor units power drops down and the other indoor units are still work, the indoor units without the power, will keep the previous working condition before the power is off. And expansion valve keeps open at a kind of opening rate condition as the previous requirement, so there is refrigerant flowing in the exchanger, but the indoor fan stops working. If the units work at cooling mode, the indoor units without the power will maybe make freezing. If the unit works at heating mode, maybe the outdoor unit compressor will stop because of the pressure or temperature protection. This is our design basically on Auto Restart function currently.

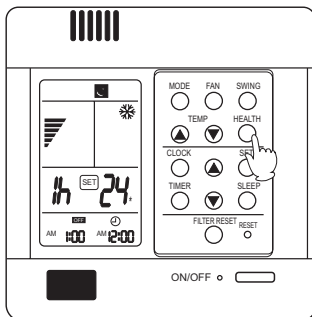
Haier, Herewith, solemnly informs our customers, installers, distributors, etc. **when making installation, please make sure when the power is shut down whether artificially or accidentally, the whole system including outdoor unit and all the indoor units must be off. If you do not make the installation as our indication, Haier will not be responsible for any problem resulting from this.**

User Caution

About the remote control operation, above only take wired remote controller and remote controller as a example about the remote controller and remote receiver use method, it is the same remote controller, please use refer to above method.

No sleep function when use remote and remote receiver.

About health function



- On the "Health" mode, if you want to setting timing open mode, should close the health first: On the timing open mode, please don't use health function.

1.How to use the health function (only for units with this function)
After set the right function mode, press health button, remote controller or wire controller displays "🌿", oxygen pump or negative ion generator starts up to apply oxygen or negative ion to indoor unit. Press the button again, the sign "🌿" disappeared and negative ion generator stops working. After all health function of the indoor unit being fully canceled, oxygen pump stopped.

CAUTION:

When the temperature of the outdoor unit is lower than 4°C , oxygen pump is automatically stopped, if press health button just then, oxygen pump could not start up. But if the air conditioner has the negative ion function simultaneous, when press the health button, negative ion function could still be operated. When the temperature of the outdoor unit is higher than 6°C , oxygen pump could automatically resume to oxygen-make function.

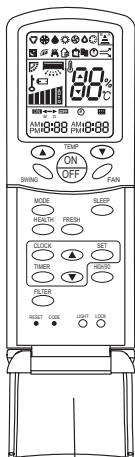
For H-MRV wired type indoor unit, the wired controller can be matched with the remote controller YR-H71 to realize the remote control function.

Left picture is a wired remote controller, which can be used on Series wired control units, The remote controller can be purchased extrally.

Wired remote Controller using method:

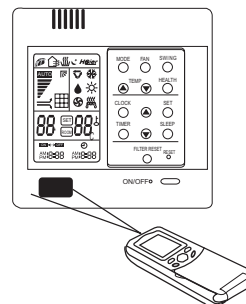
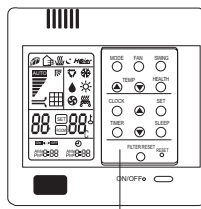
- 1.Use one wired remote controller. See fig (1)
- 2.Also can buy a remote controller extrally, realize wired remote control + remote control dual control modes.

3.When the remote controller can be used on series wired remote controller units ,than please press the button "CODE" to choose the program of code "A"



Remote controlller Wire remote controlller

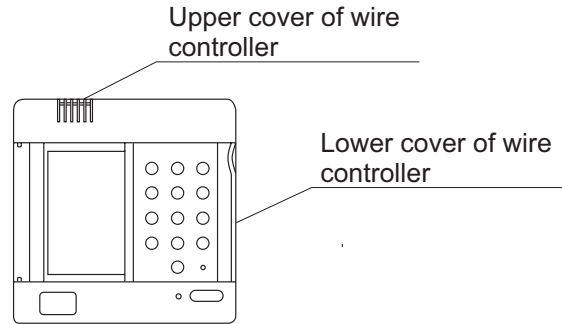
Remote controlller is an accessory, to be ordered extrally



1. Remove upper cover of wire controller

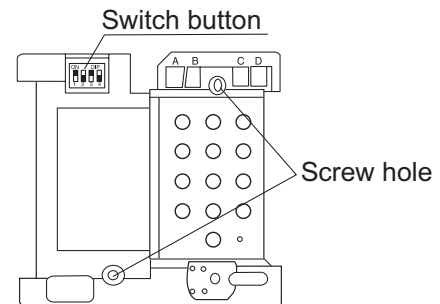
Remove upper part of wire controller by press.

PCB is mounted on lower part of wire controller, be careful not to damage it.



2. Install the wired remote controller

Please drill two holes on the wall according to the back cover screw hole position of the wire remote controller, then strike the wood block to the holes respectively, then align the 2 screw hole of the wire controller back cover to the wood block, fasten the wire remote controller to the wall use wood screws.



3. Switch setting

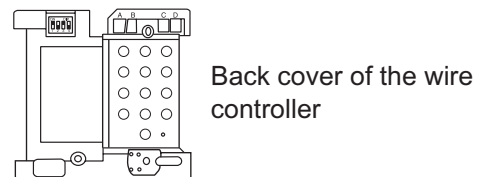
The switches setting as follows: 1.ON 2.OFF 3.ON 4.OFF

Note

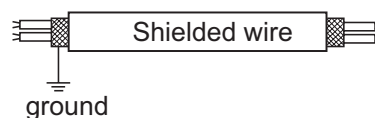
Try as far as possible a flat surface for installation. Don't use excessive force when tightening screws, or lower part might get deformed.

4. Connecting method as the following chart

No	Symbol	colour	contents
1	A	White or Green	12V
2	B	Red	Gnd
3	C	Yellow	COM
4	D	—	—



- Use shielded wires for telecommunication between wire controller and indoor unit; indoor unit and outdoor unit. Ground the shield on one side.
- Otherwise misoperation because of noise may occur.
- Signal wire is self-provided by user.



5. Replace the upper cover of wire controller

Be careful not to hold down the wiring.

Hint 1. Power supply switch and signal wire should be prepared by the user.
2. Don't touch PCB with hand.

8. Refrigerant Diagram

The part function as follow:

Compressor:

To absorb the refrigerant in the evaporator, and compress to the condensing pressure, then discharge them to the condenser.

Condenser:

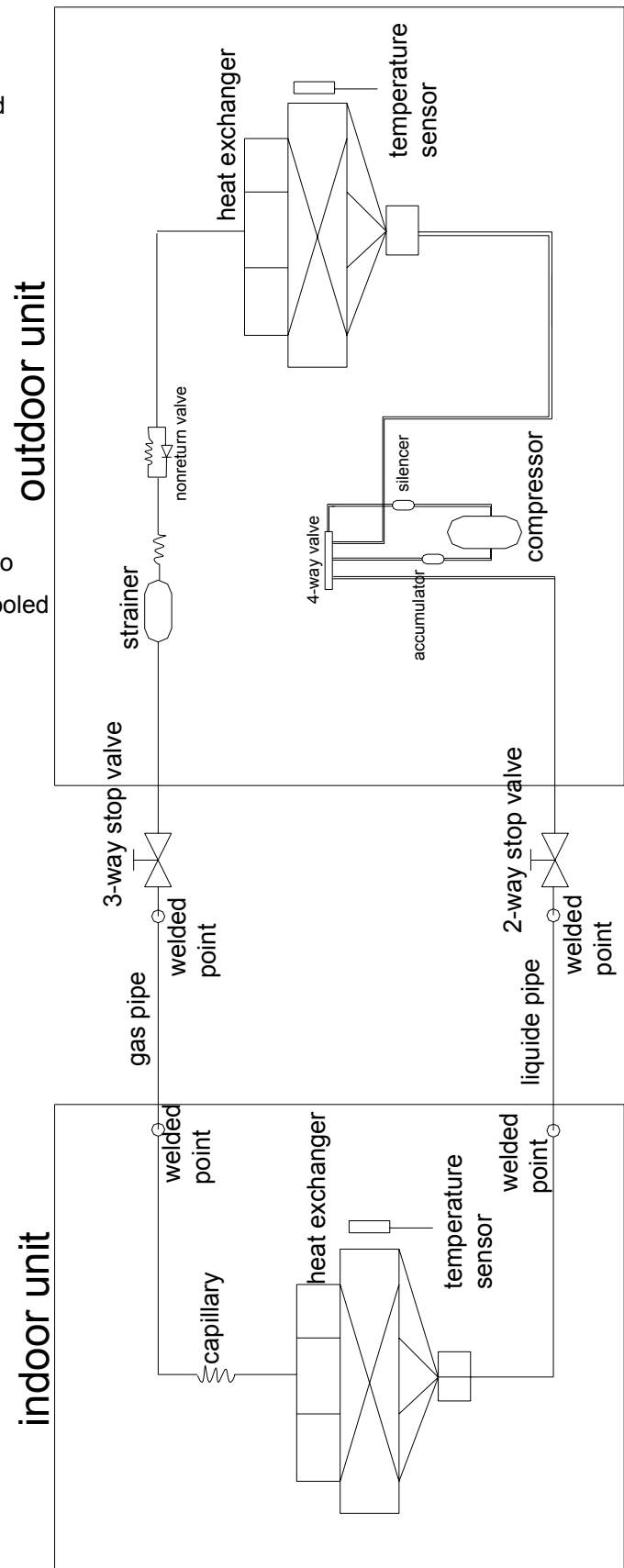
Condense the refrigerant with high pressure from the compressor into the liquid state.

Capillary:

- Make the pressure change from condensing pressure to evaporating pressure
- Make the partial liquid change into steam

Evaporator:

Make the liquid state refrigerant evaporated into steam, which can absorb the heat energy of cooled object.



9. Electrical Control Functions

Anti-freezed protection:

After running for 9 minutes from compressor startup, the unit will check if the indoor coil temperature is below 0°C, the outdoor fan motor will stop running.

After the compressor stops, if the below conditions can be met, the compressor and the outdoor fan motor will begin to run again:

- 1.Shutoff time over 3 minutes
- 2.Indoor coil temperature up to over 7°C

3-minute protection of compressor when startup

Once the compressor stops running, you can restart up only after 3 minutes. When the unit powered off in operation, if the shutoff time is below 3 minutes, it will be 3 minutes at least after powered on when the compressor starts up again. Powered on for the first time, there is no 3-minutes delay protection.

Auto defrosting function

1) Starting condition

The unit is in heat mode, and the compressor runs for 35 minutes continuously.

The compressor has run totally for 45 minutes, and the compressor runs for over 5 minutes continuously.

If either of the above conditions is met, and the indoor receives the defrosting signal from the outdoor unit, the unit begins to defrost and send the signal to outdoor.

2) Quit condition

The outdoor receives the signal to quit from the defrost or the defrosting time is over 12 minutes, the defrost will be over and send the relative signal to the outdoor.

Temperature cutoff protection:

When the indoor coil temperature is over 68°C for 10 seconds, the compressor and the outdoor fan motor will stop. When the compressor has stopped for 3 minutes and when the coil temperature is below 46°C, the compressor and the outdoor fan motor will operate again.

Anti cold air protection in heat mode:

If it is the first time in heat mode or the defrost is over, when the indoor coil temperature is below 28

°C, the indoor fan motor will stop when the indoor coil temperature is no less than 28°C and less than 38°C, the indoor fan motor will run in low speed when the indoor coil temperature is over 38°C or the compressor has run for over 4 minutes, the indoor fan motor will run at the set speed.

10. Diagnostic information (troubleshooting)

10.1 System failure

If the refrigerant in the system cannot flow fluently or the airflow circles more slowly, please check due to the following procedures.

10.1.1 Cooling

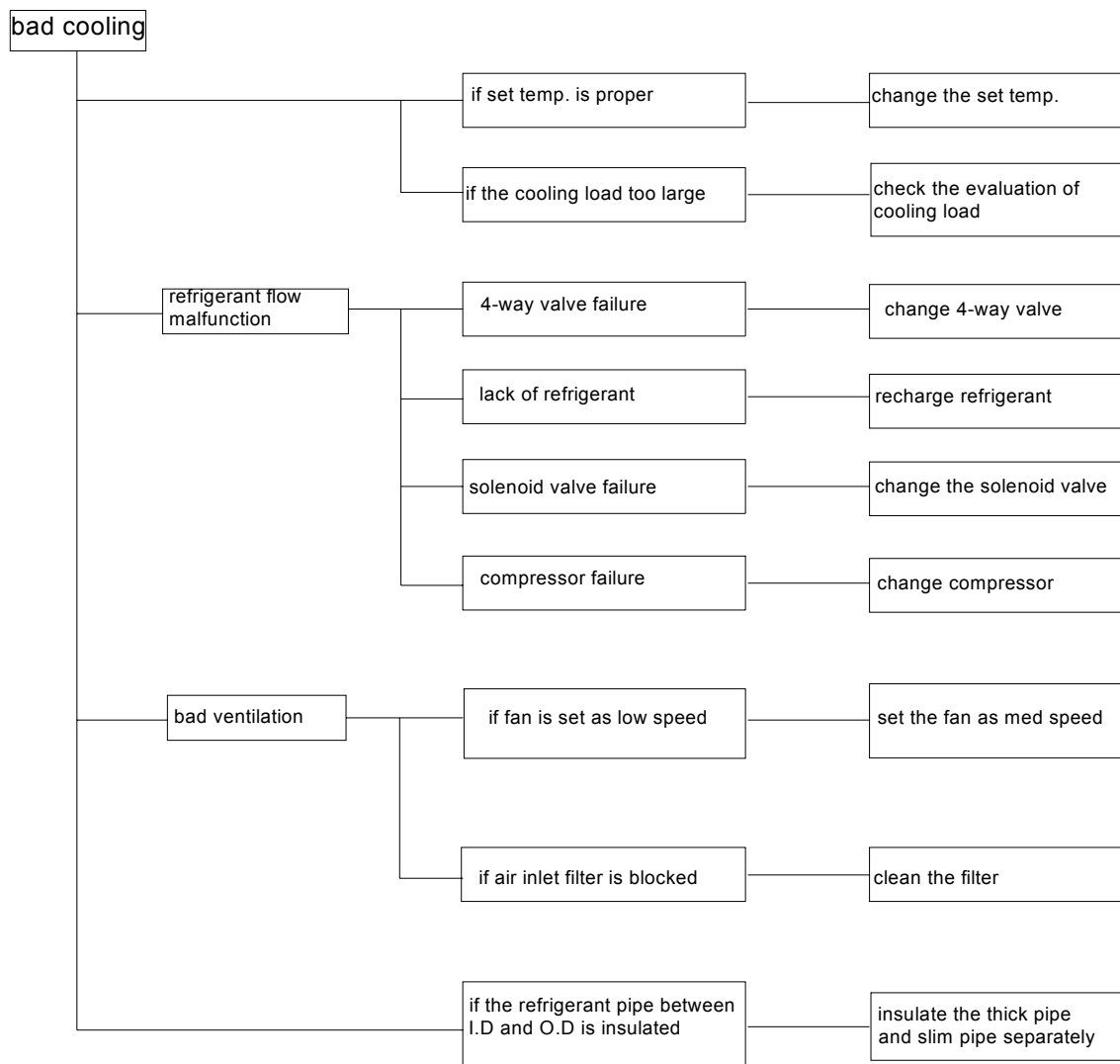


Figure 1

10.1.2 Heating

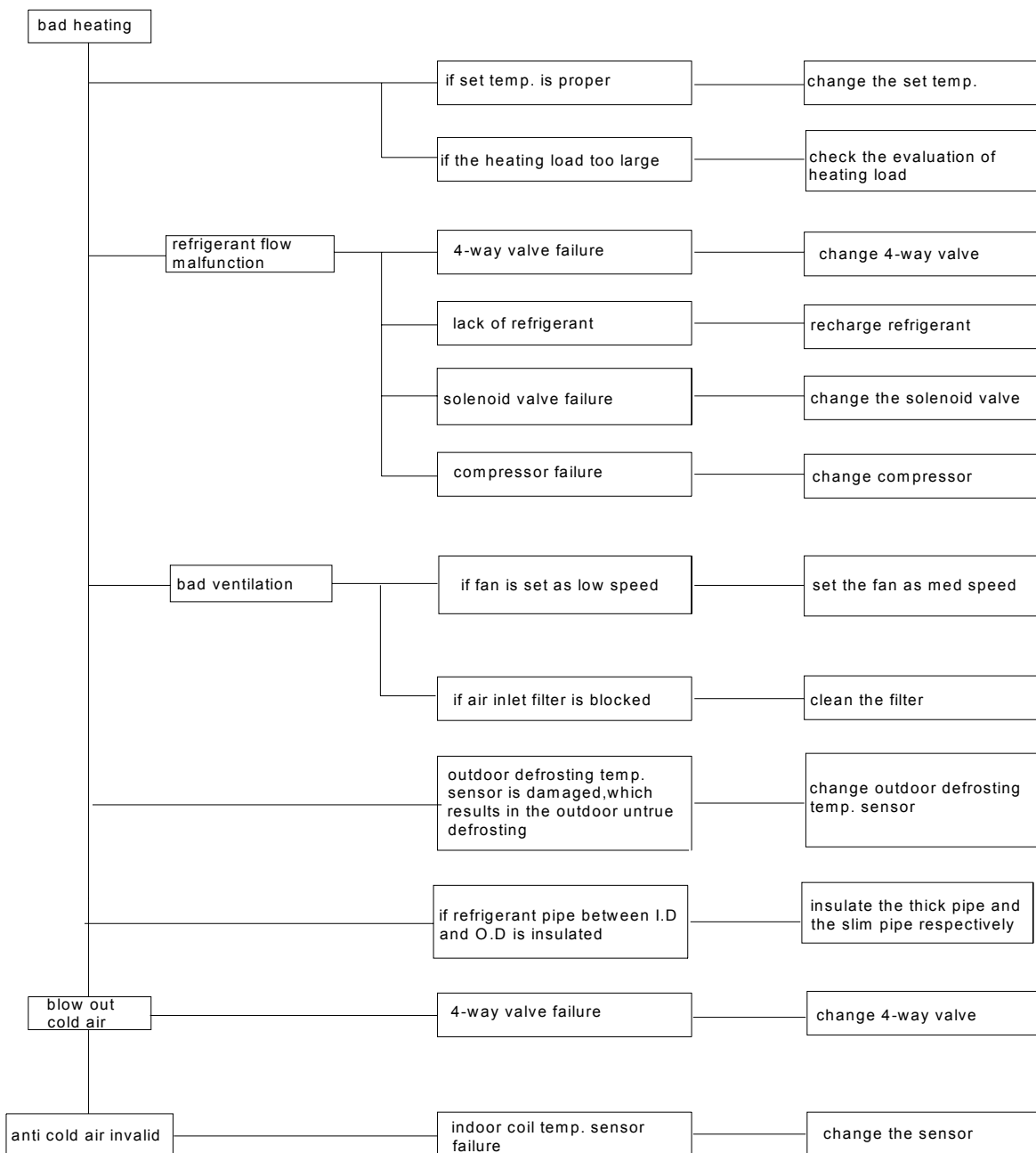


Figure 2

10.1.3 Unit operation

a. Indoor fan not running

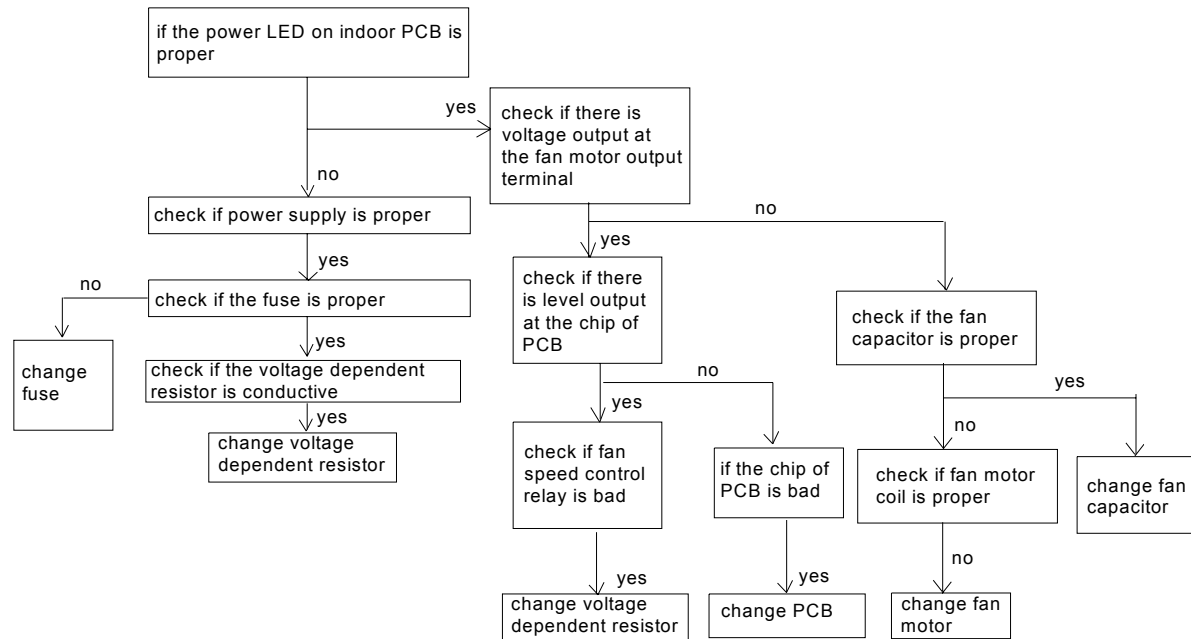


Figure 3

b. Outdoor fan not running

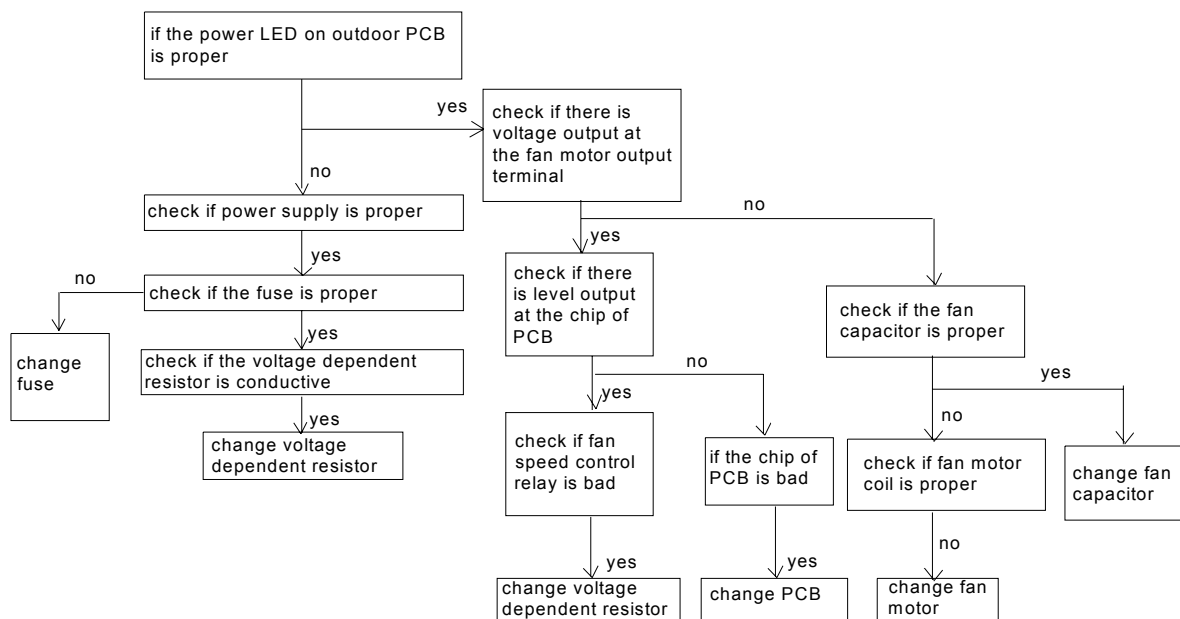


Figure 4

10.2 Failure code

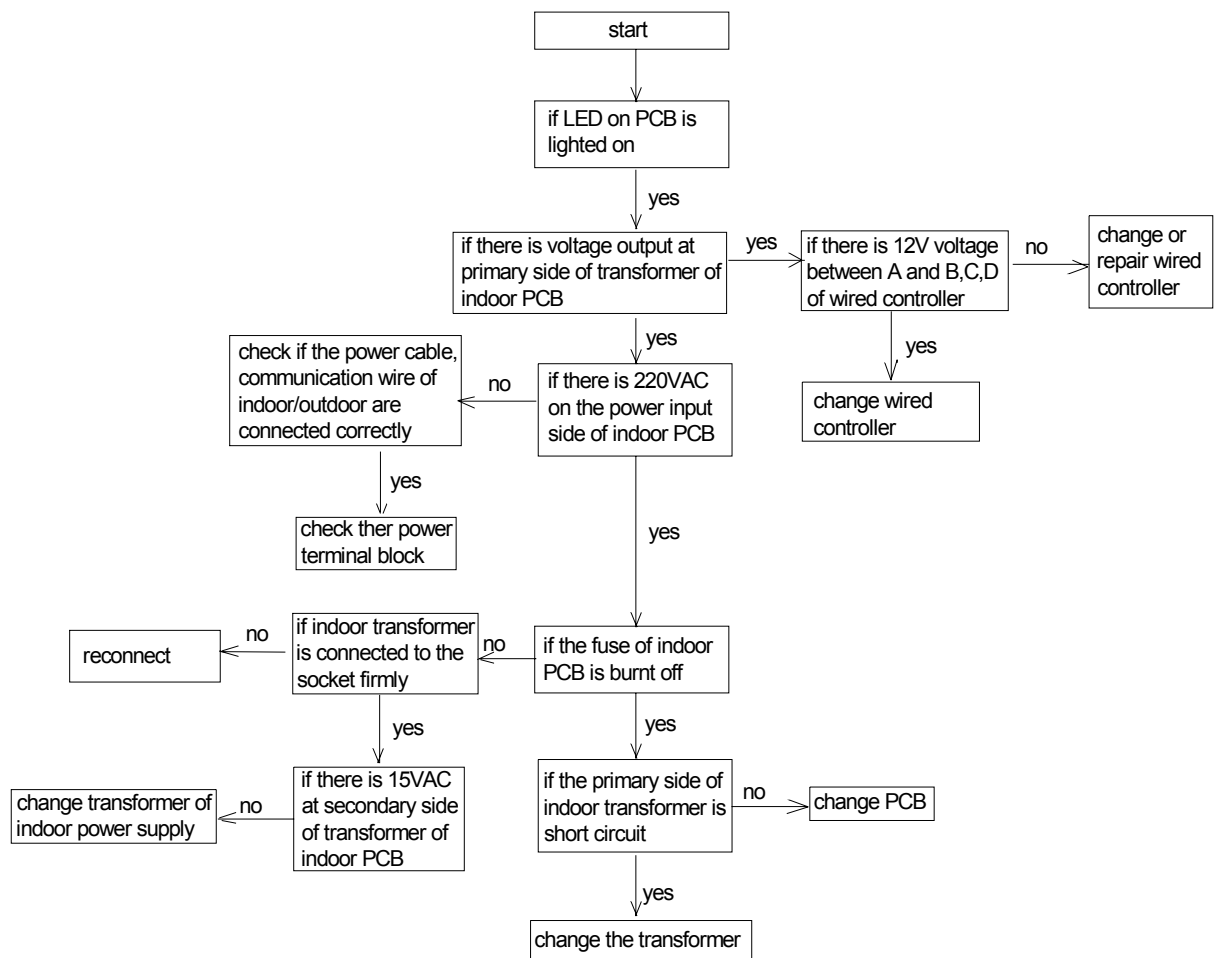
AP96NACAEA adopts operation panel+infrared control type, while AD96NAHAEA adopts wired control type. If the air conditioner occurs failure, the failure code will be displayed on the wired controller or the operation panel as the following chart:

Failure code	Reason
E0	Indoor float switch abnormal
E1	Indoor ambient temp. sensor abnormal

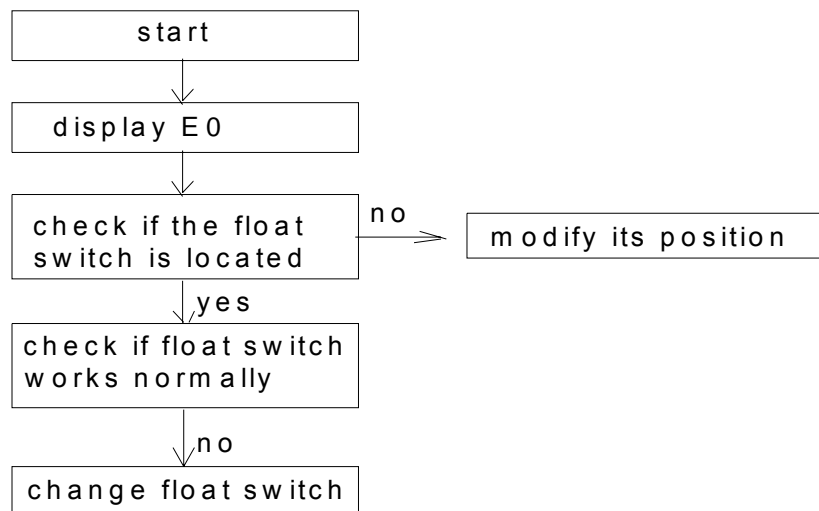
E2	Indoor coil temp. sensor abnormal
E3	Outdoor ambient temp. sensor abnormal
E4	Outdoor coil temp. sensor abnormal
E5	Over current protection
E6	High/low pressure protection
E8	Communication abnormal between panel and indoor unit
E9	Communication abnormal between outdoor and indoor unit

Diagnose and troubleshooting

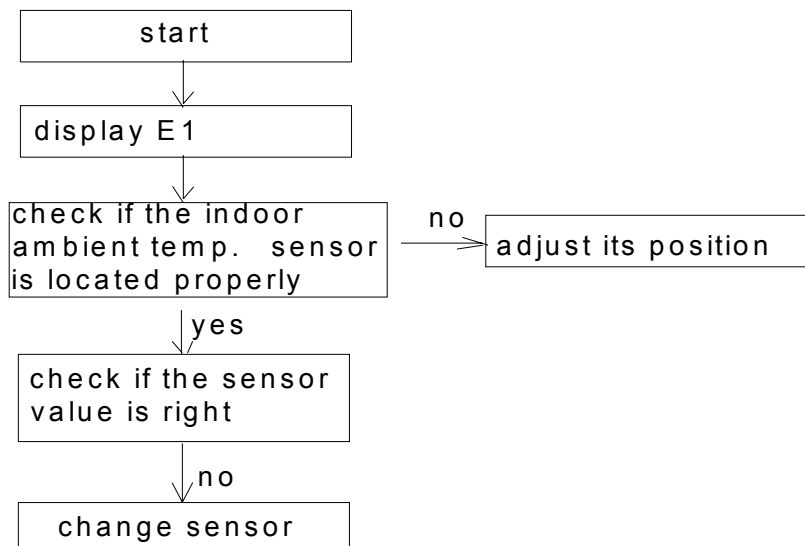
1) No display on LCD of wired controller, and the unit not running



2) E0 – float switch abnormal

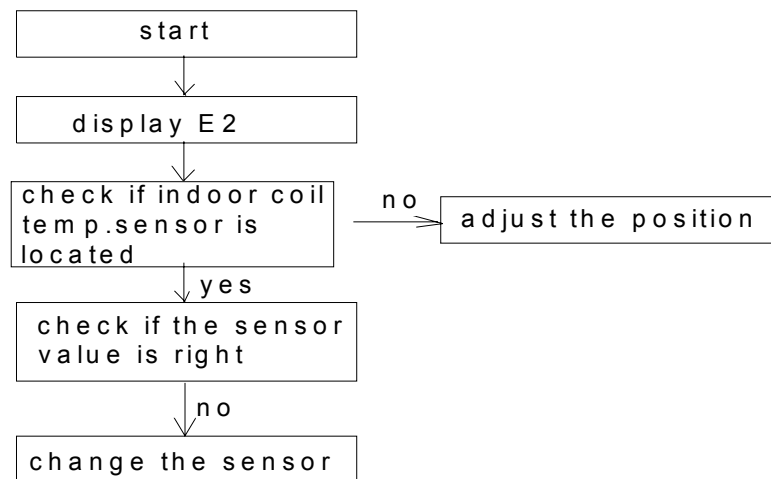


3) E1 – indoor ambient temperature sensor abnormal



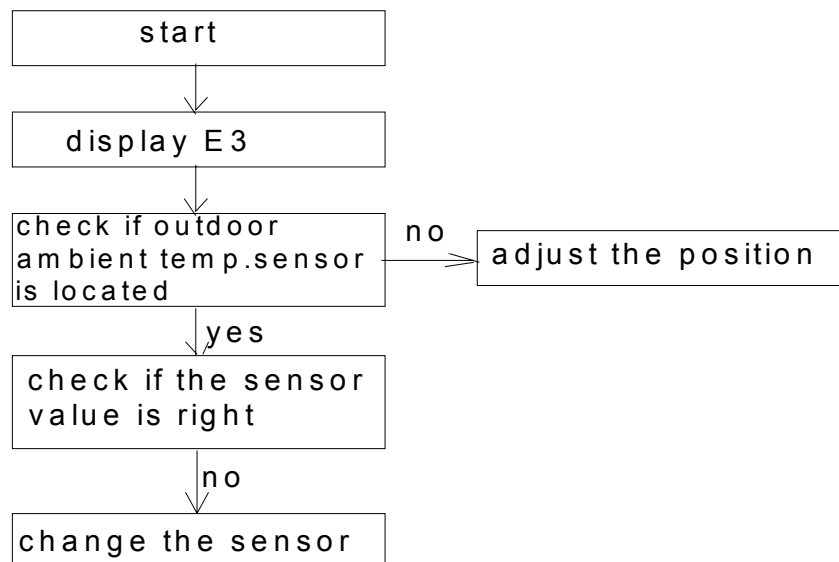
Note: value of indoor ambient temperature sensor is 23K Ω .

4) E2 – indoor coil temperature sensor abnormal

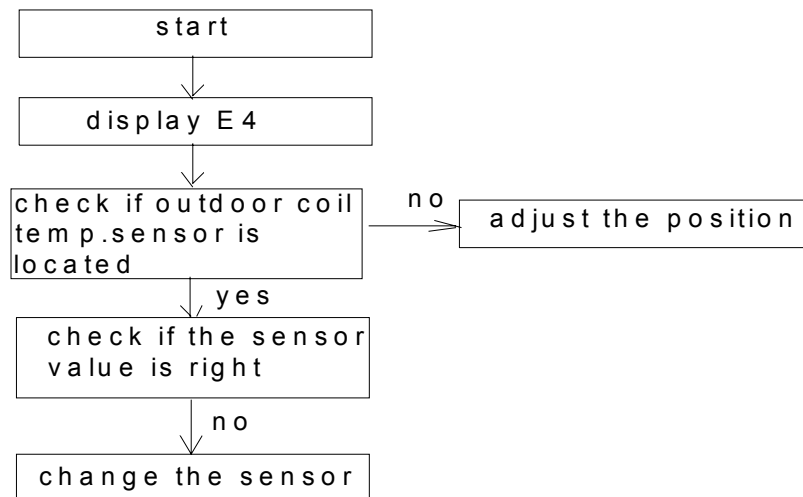


Note: indoor coil temperature sensor value is 10K Ω .

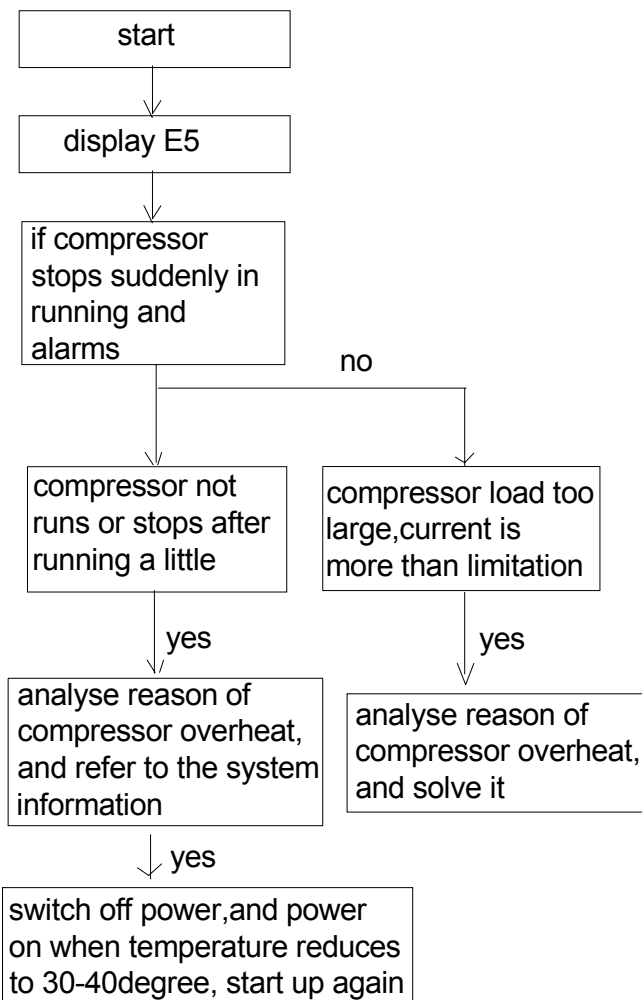
5) E3 – outdoor ambient temperature sensor abnormal



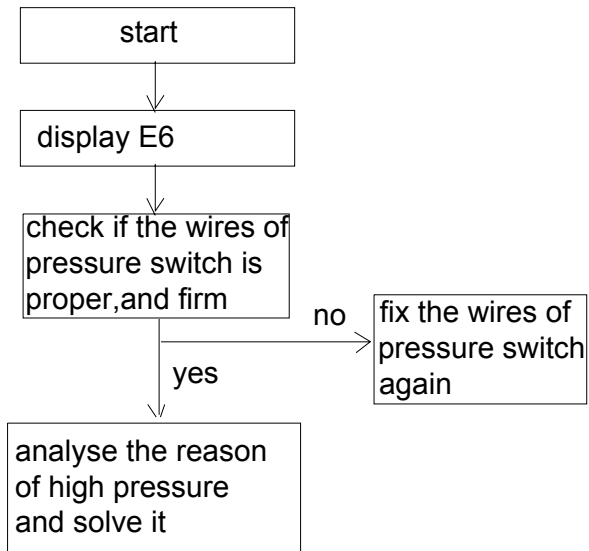
6) E4 – outdoor coil temperature sensor abnormal



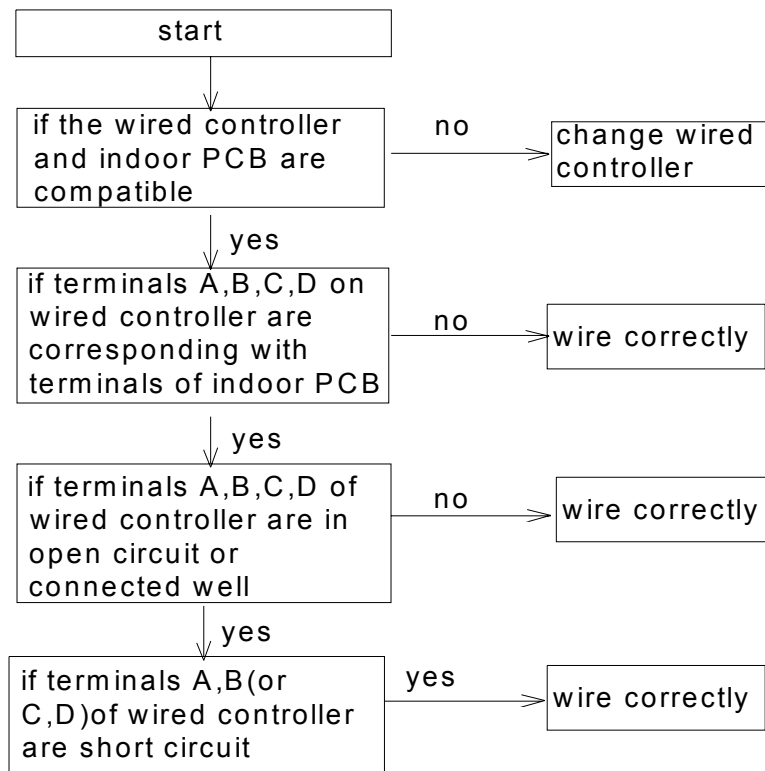
7) E5 – over current protection



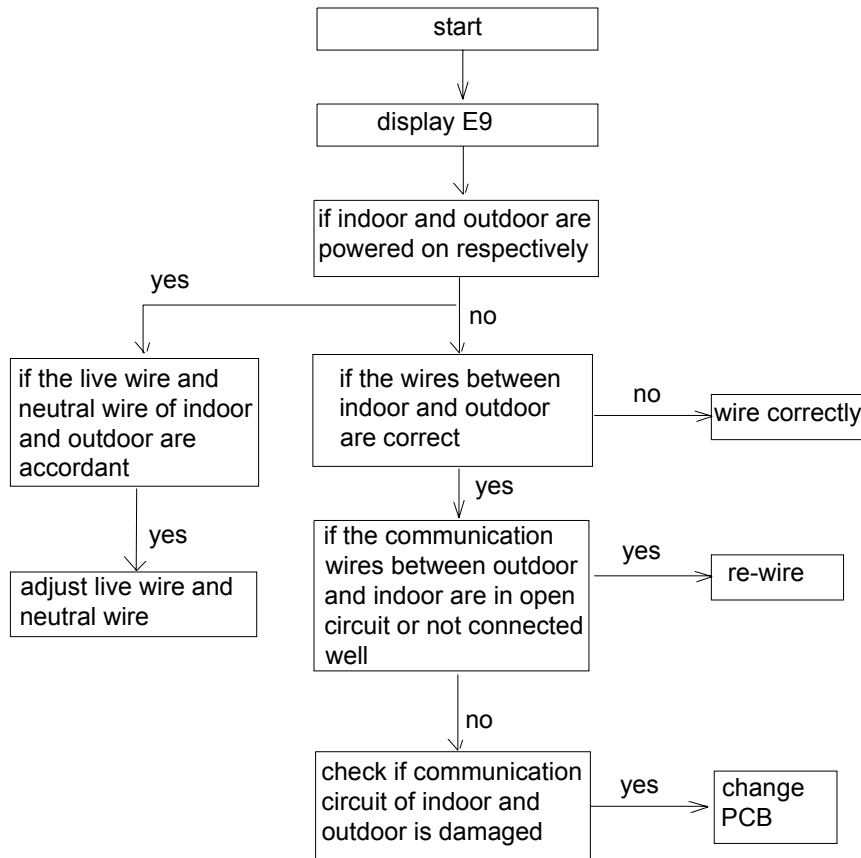
8) E6 – pressure protection



9) E8 – communication failure between operation panel and indoor unit



10) E9 – communication failure between indoor and outdoor



10.3 Typical resistance value of sensors

Indoor coil temperature sensor: $R_{25^{\circ}\text{C}}=10\text{K}\Omega \pm 3\%$, $B(25/50)=3741\text{K} \pm 70\text{K}$

temperature	value	temperature	value	temperature	value
-30°C	155.4	11°C	18.4	52°C	3.525
-29°C	146.4	12°C	17.59	53°C	3.402
-28°C	138.1	13°C	16.81	54°C	3.283
-27°C	130.2	14°C	16.08	55°C	3.17
-26°C	122.9	15°C	15.38	56°C	3.061
-25°C	116	16°C	14.71	57°C	2.956
-24°C	109.5	17°C	14.08	58°C	2.855
-23°C	103.5	18°C	13.48	59°C	2.759
-22°C	97.77	19°C	12.91	60°C	2.666
-21°C	92.44	20°C	12.36	61°C	2.577
-20°C	87.42	21°C	11.84	62°C	2.491
-19°C	82.71	22°C	11.35	63°C	2.408
-18°C	78.29	23°C	10.88	64°C	2.329
-17°C	74.12	24°C	10.43	65°C	2.253
-16°C	70.21	25°C	10	66°C	2.179
-15°C	66.52	26°C	9.592	67°C	2.108
-14°C	63.06	27°C	9.204	68°C	2.04
-13°C	59.79	28°C	8.833	69°C	1.975

-12℃	56.71	29℃	8.479	70℃	1.912
-11℃	53.81	30℃	8.141	71℃	1.851
-10℃	51.08	31℃	7.819	72℃	1.793
-9℃	48.5	32℃	7.511	73℃	1.737
-8℃	46.07	33℃	7.217	74℃	1.682
-7℃	43.77	34℃	6.936	75℃	1.63
-6℃	41.6	35℃	6.668	76℃	1.58
-5℃	39.55	36℃	6.411	77℃	1.531
-4℃	37.62	37℃	6.166	78℃	1.484
-3℃	35.79	38℃	5.931	79℃	1.439
-2℃	34.06	39℃	5.707	80℃	1.395
-1℃	32.43	40℃	5.492	81℃	1.353
0℃	30.88	41℃	5.287	82℃	1.313
1℃	29.42	42℃	5.09	83℃	1.274
2℃	28.03	43℃	4.902	84℃	1.236
3℃	26.72	44℃	4.722	85℃	1.2
4℃	25.48	45℃	4.549	86℃	1.164
5℃	24.3	46℃	4.383	87℃	1.13
6℃	23.18	47℃	4.225	88℃	1.098
7℃	22.12	48℃	4.073	89℃	1.066
8℃	21.12	49℃	3.927	90℃	1.035
9℃	20.17	50℃	3.788		
10℃	19.26	51℃	3.654		

Indoor ambient temperature sensor: R25℃=23K Ω \pm 3.5%, B(25/5)=4177K \pm 103K

temperature	value	temperature	value	temperature	value
-20℃	251.8	16℃	35.31	52℃	7.178
-19℃	236.9	17℃	33.63	53℃	6.897
-18℃	223.1	18℃	32.04	54℃	6.628
-17℃	210.1	19℃	30.53	55℃	6.371
-16℃	197.9	20℃	29.1	56℃	6.125
-15℃	186.5	21℃	27.75	57℃	5.889
-14℃	175.9	22℃	26.47	58℃	5.664
-13℃	165.9	23℃	25.25	59℃	5.449
-12℃	156.5	24℃	24.1	60℃	5.243
-11℃	147.7	25℃	23	61℃	5.046
-10℃	139.5	26℃	21.96	62℃	4.857
-9℃	131.8	27℃	20.97	63℃	4.676
-8℃	124.5	28℃	20.03	64℃	4.502
-7℃	117.7	29℃	19.14	65℃	4.336
-6℃	111.3	30℃	18.3	66℃	4.177
-5℃	105.3	31℃	17.49	67℃	4.024
-4℃	99.63	32℃	16.73	68℃	3.878
-3℃	94.3	33℃	16	69℃	3.738

-2℃	89.3	34℃	15.3	70℃	3.603
-1℃	84.58	35℃	14.65	71℃	3.474
0℃	80.14	36℃	14.02	72℃	3.35
1℃	75.96	37℃	13.42	73℃	3.231
2℃	72.02	38℃	12.85	74℃	3.117
3℃	68.31	39℃	12.31	75℃	3.008
4℃	64.81	40℃	11.79	76℃	2.903
5℃	61.51	41℃	11.3	77℃	2.802
6℃	58.39	42℃	10.83	78℃	2.705
7℃	55.45	43℃	10.39	79℃	2.611
8℃	52.68	44℃	9.96	80℃	2.522
9℃	50.06	45℃	9.553		
10℃	47.58	46℃	9.165		
11℃	45.24	47℃	8.794		
12℃	43.02	48℃	8.441		
13℃	40.93	49℃	8.103		
14℃	38.95	50℃	7.78		
15℃	37.08	51℃	7.472		

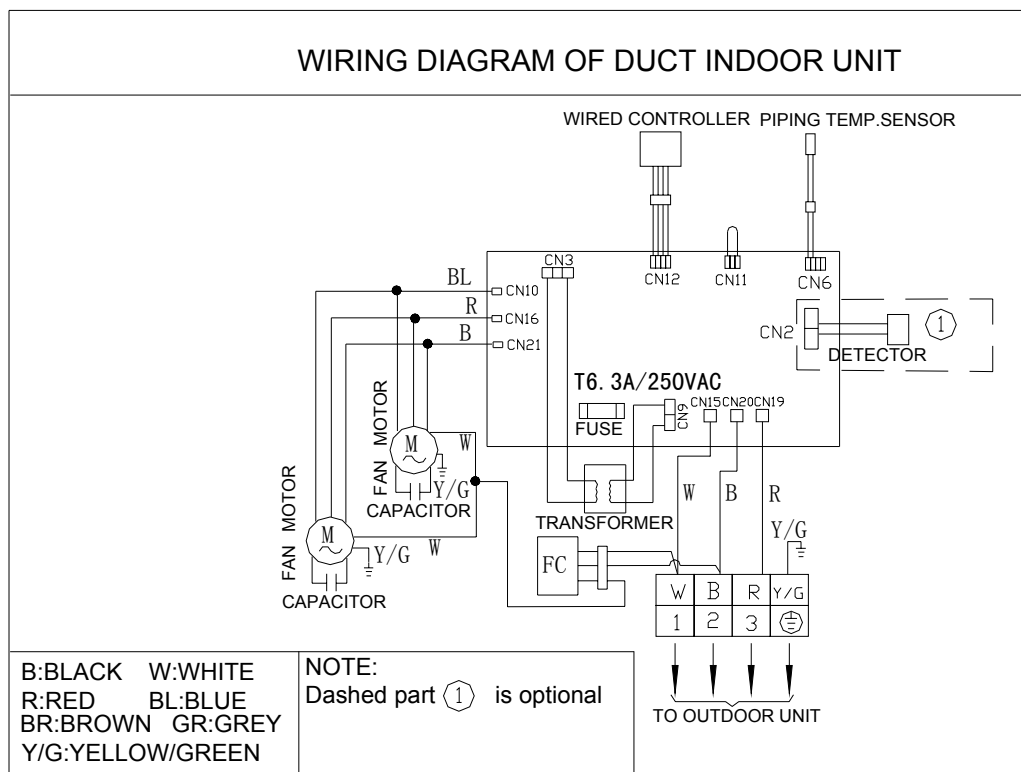
Outdoor ambient/coil temperature sensor: R25℃=5KΩ ± 1%, B(25/50)=3450K ± 1%

temperature	value	temperature	value	temperature	value
-20℃	37.44	16℃	7.142	52℃	1.912
-19℃	35.55	17℃	6.857	53℃	1.85
-18℃	33.77	18℃	6.586	54℃	1.79
-17℃	32.08	19℃	6.327	55℃	1.733
-16℃	30.49	20℃	6.08	56℃	1.678
-15℃	29	21℃	5.844	57℃	1.625
-14℃	27.58	22℃	5.619	58℃	1.574
-13℃	26.24	23℃	5.403	59℃	1.525
-12℃	24.98	24℃	5.197	60℃	1.477
-11℃	23.78	25℃	5	61℃	1.432
-10℃	22.65	26℃	4.812	62℃	1.388
-9℃	21.59	27℃	4.631	63℃	1.345
-8℃	20.58	28℃	4.459	64℃	1.304
-7℃	19.62	29℃	4.294	65℃	1.265
-6℃	18.72	30℃	4.136	66℃	1.227
-5℃	17.86	31℃	3.985	67℃	1.19
-4℃	17.05	32℃	3.84	68℃	1.154
-3℃	16.27	33℃	3.701	69℃	1.12
-2℃	15.54	34℃	3.568	70℃	1.087
-1℃	14.85	35℃	3.44	71℃	1.055
0℃	14.19	36℃	3.318	72℃	1.024
1℃	13.56	37℃	3.201	73℃	0.9946
2℃	12.97	38℃	3.088	74℃	0.9657

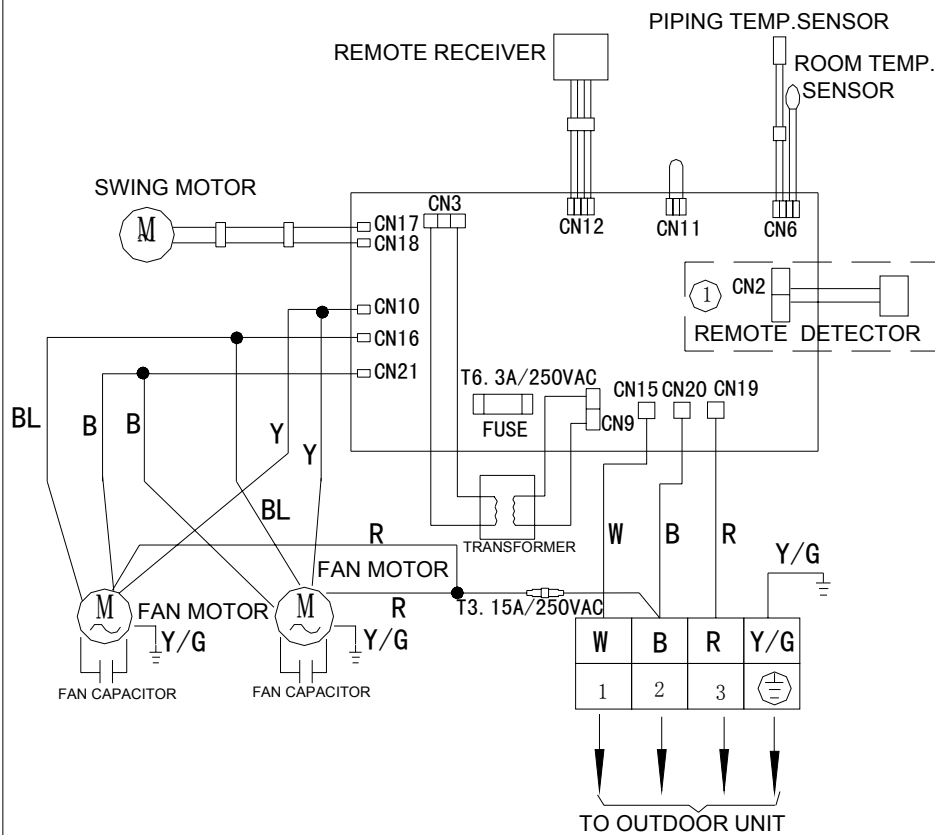
3°C	12.41	39°C	2.981	75°C	0.9379
4°C	11.87	40°C	2.877	76°C	0.911
5°C	11.36	41°C	2.778	77°C	0.8849
6°C	10.88	42°C	2.682	78°C	0.8598
7°C	10.41	43°C	2.591	79°C	0.8354
8°C	9.976	44°C	2.503	80°C	0.8119
9°C	9.559	45°C	2.418		
10°C	9.161	46°C	2.337		
11°C	8.783	47°C	2.259		
12°C	8.422	48°C	2.184		
13°C	8.079	49°C	2.112		
14°C	7.752	50°C	2.043		
15°C	7.439	51°C	1.976		

11. Electric data

11.1 Wiring diagram



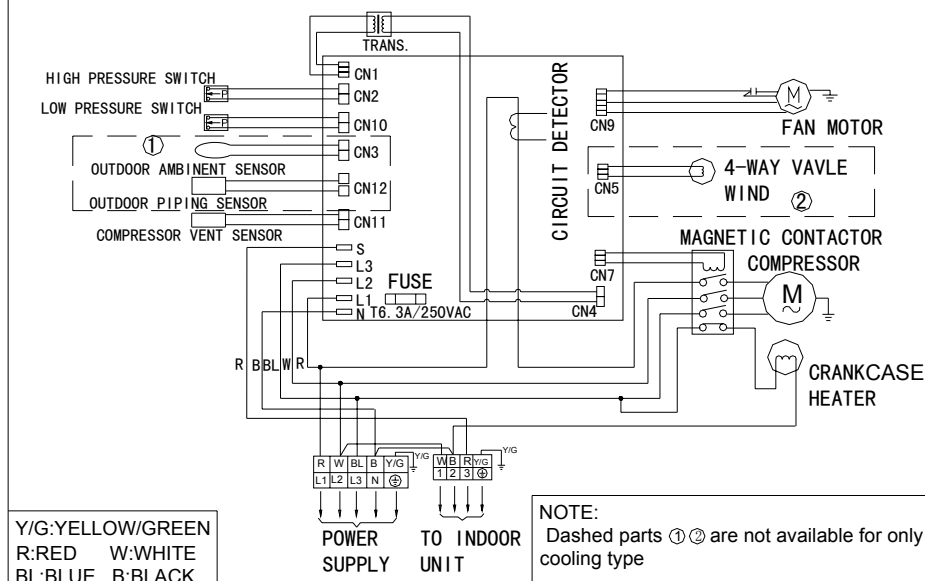
WIRING DIAGRAM OF CABINET INDOOR UNIT



NOTE: Dashed part ① is optional

W: WHITE R: RED BR: BROWN
B: BLACK GR: GREY Y/G: YELLOW/GREEN

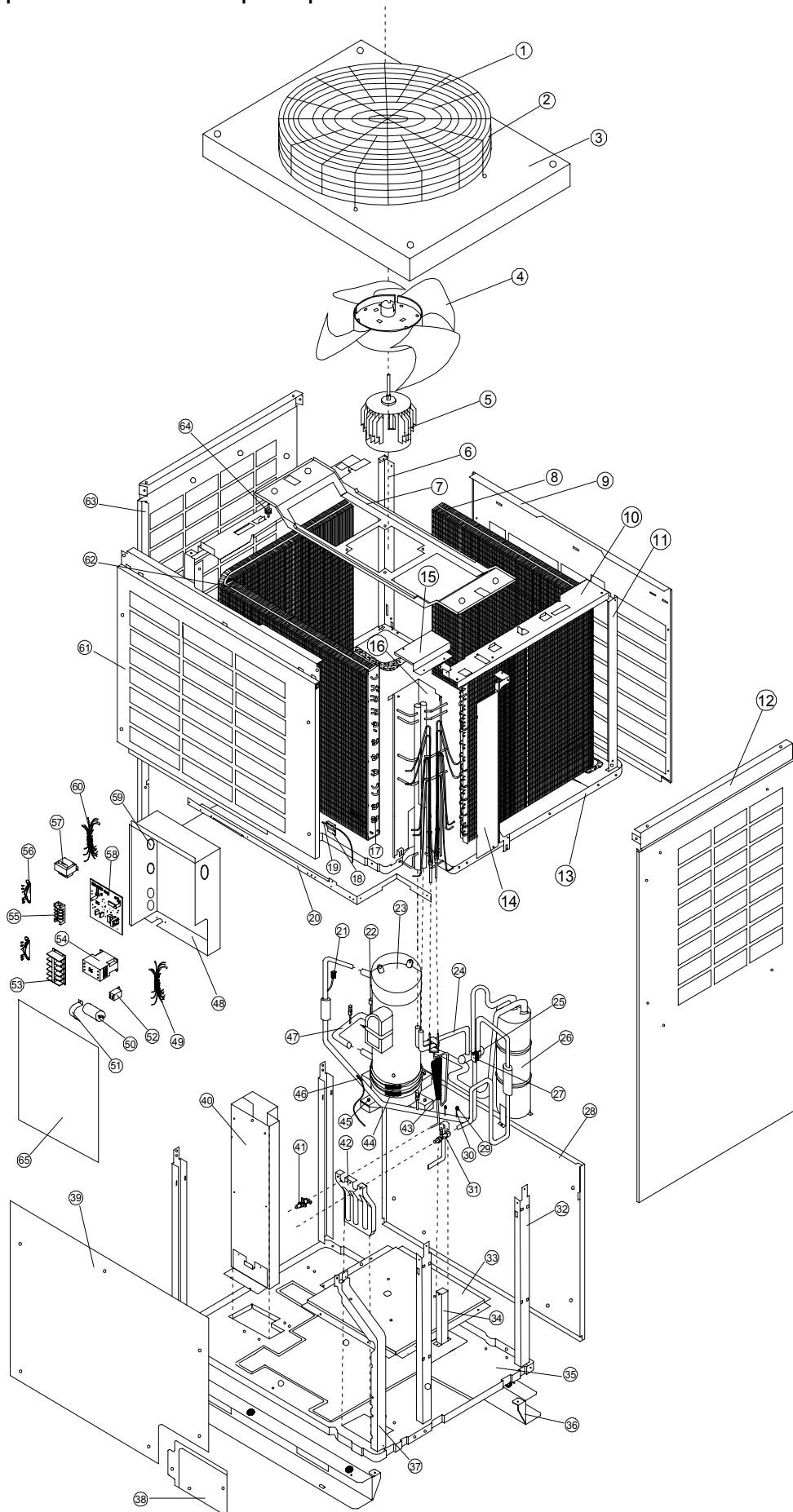
WIRING DIAGRAM OF OUTDOOR UNIT



Y/G: YELLOW/GREEN
R: RED W: WHITE
BL: BLUE B: BLACK

NOTE:
Dashed parts ① ② are not available for only cooling type

12. Exploded view and spare parts list



No. in exploded view	Spare parts number	Spare parts description in english	Model	Qty	Failure rate	The proportion of the spare part stock	Remark
1	0010151115	top grille	AU96NATAEA	1	0.00%	0.000%	×
2	0010851121	air loop (belong to top cover assly)	AU96NATAEA	1	0.00%	0.000%	×
3	0010851121	top cover assembly	AU96NATAEA	1	0.00%	0.000%	×
4	0010251013	fan	AU96NATAEA	1	0.02%	0.024%	*
5	0010450788	outdoor motor	AU96NATAEA	1	0.02%	0.024%	*
6	0010151081	fixing bracket 3	AU96NATAEA	1	0.00%	0.000%	×
7	0010151076	motor fixing bracket	AU96NATAEA	1	0.00%	0.000%	×
8	0010753879	condenser assembly 2	AU96NATAEA	1	0.01%	0.012%	
9	0010151059	back guarding plate	AU96NATAEA	1	0.00%	0.000%	×
10	0010851120	motor fixing plate assembly	AU96NATAEA	1	0.00%	0.000%	×
11	0010151080	fixing bracket 2	AU96NATAEA	2	0.00%	0.000%	×
12	0010851428	right side plate	AU96NATAEA	1	0.00%	0.000%	×
13	0010151083	partition plate	AU96NATAEA	1	0.00%	0.000%	×
14	0010151073	fixing bracket	AU96NATAEA	1	0.00%	0.000%	×
15	0010151065	access plate	AU96NATAEA	1	0.00%	0.000%	×
16	0010151064	big access plate	AU96NATAEA	1	0.00%	0.000%	×
17	0010450398	coil temperature sensor	AU96NATAEA	1	0.02%	0.024%	*
18	001A5736055	ambient temperature sensor clip	AU96NATAEA	1	0.00%	0.000%	×
19	001A3900110	ambient temperature sensor	AU96NATAEA	1	0.02%	0.024%	*
20	0010151072	horizontal plate	AU96NATAEA	1	0.00%	0.000%	×
21	0010450098	low pressure switch	AU96NATAEA	1	0.02%	0.024%	*
22	0010450097	high pressure switch	AU96NATAEA	1	0.02%	0.024%	*
23	0010751777	compressor	AU96NATAEA	1	0.02%	0.024%	*
24	0010753472	pipe assembly	AU96NATAEA	1	0.00%	0.000%	×
25	001A2500135	4-way valve	AU96NATAEA	1	0.00%	0.000%	×
26	001A21111604	air-liquid segregator	AU96NATAEA	1	0.01%	0.012%	
27	0010450094	solenoid valve winding	AU96NATAEA	1	0.02%	0.024%	*
28	0010151086	back panel plate	AU96NATAEA	1	0.00%	0.000%	×
29	001A17561378	heat insulation pipe	AU96NATAEA	1	0.00%	0.000%	×
30	0010753850	by-pass capillary	AU96NATAEA	2	0.00%	0.000%	×
31	001A2500136	gas pipe stop valve	AU96NATAEA	1	0.00%	0.000%	×
32	0010151084	lower bracket 1	AU96NATAEA	4	0.00%	0.000%	×
33	0010851119	compressor bracket assembly	AU96NATAEA	1	0.00%	0.000%	×
34	0010151057	big valve pedestal	AU96NATAEA	1	0.00%	0.000%	×
35	0010152366	bottom plate	AU96NATAEA	1	0.00%	0.000%	×
36	0010151066	bottom bracket	AU96NATAEA	2	0.00%	0.000%	×
37	0010151060	lower bracket	AU96NATAEA	1	0.00%	0.000%	×
38	0010151061	maintenance plate	AU96NATAEA	1	0.00%	0.000%	×
39	0010851427	front panel	AU96NATAEA	1	0.00%	0.000%	×
40	0010851009	water groove assembly	AU96NATAEA	1	0.00%	0.000%	×
41	001A2500139	liquid pipe stop valve	AU96NATAEA	1	0.00%	0.000%	×
42	0010151074	valve pedestal	AU96NATAEA	1	0.00%	0.000%	×
43	001A17551381	soft material	AU96NATAEA	1	0.00%	0.000%	×
44	0010450697	electric heater	AU96NATAEA	2	0.00%	0.000%	×
45	001A5102050	flange nut M8	AU96NATAEA	4	0.00%	0.000%	×
46	0010450243	discharging temperature sensor	AU96NATAEA	1	0.02%	0.024%	*
47	0010753834	capillary	AU96NATAEA	1	0.00%	0.000%	×
48	0010151077	electric control box	AU96NATAEA	1	0.00%	0.000%	×
49	0010450789	wires	AU96NATAEA	1	0.00%	0.000%	×
50	0010450792	outdoor fan capacitor	AU96NATAEA	1	0.04%	0.048%	*

51	0010151537	capacitor clip	AU96NATAEA	1	0.00%	0.000%	×
52	0010400298	relay	AU96NATAEA	1	0.02%	0.024%	*
53	0010450913	power terminal block	AU96NATAEA	1	0.00%	0.000%	×
54	0010450376	AC contactor	AU96NATAEA	1	0.02%	0.024%	*
55	0010451265	terminal block (with PVC sleeves)	AU96NATAEA	1	0.00%	0.000%	×
56	001A5745116	wire-pressing clips	AU96NATAEA	2	0.00%	0.000%	×
57	0010451346	transformer	AU96NATAEA	1	0.02%	0.024%	*
58	0010451443	PCB	AU96NATAEA	1	0.04%	0.048%	*
59	001A17521476	rubber loop	AU96NATAEA	1	0.00%	0.000%	×
60	/	fan speed control wiring	AU96NATAEA	/	/	/	/
61	0010151058	front guarding plate	AU96NATAEA	1	0.00%	0.000%	×
62	0010753878	condenser assembly 1	AU96NATAEA	1	0.01%	0.012%	
63	0010152361	left side plate	AU96NATAEA	1	0.00%	0.000%	×
64	0010251084	cushion rubber	AU96NATAEA	4	0.00%	0.000%	×
65	0010151465	electric control box cover	AU96NATAEA	1	0.00%	0.000%	×

1,The failer rate and the proportion of the spare-part stock are regarded as the reference of the stock for spare-parts;The first time should be stocked accroded with the proportion of the spare-parts,and it should be adjusted with the actual quantity 3 months later.

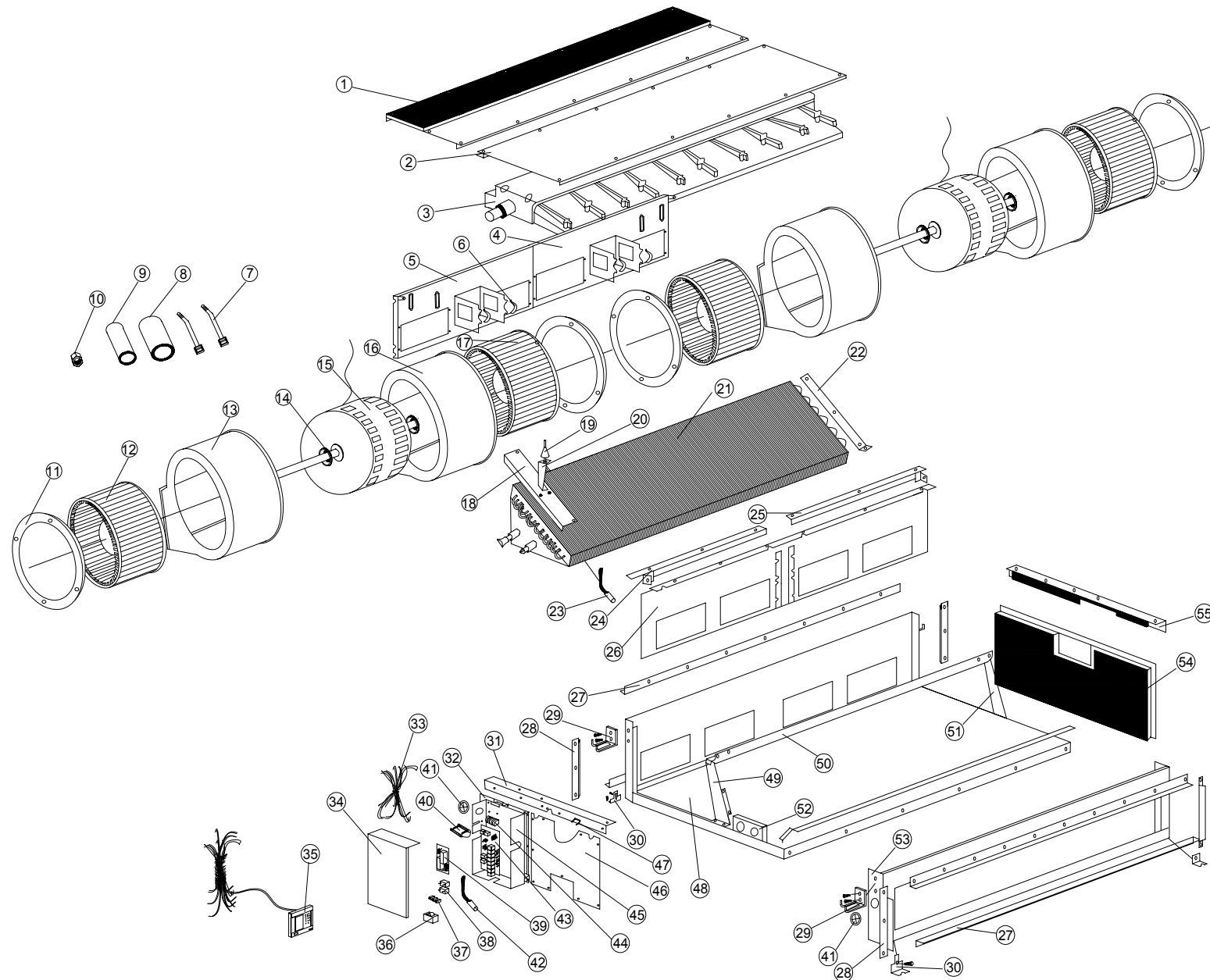
2,easy-damaged;The spare-part which is often damaged and the customer must stock in the spare-parts warehouse,and should be marked with "**"

3,possible damaged:The spare-part which is not often damaged like the easy damaged one and the customer may stock in the spare-part warehouse accord with the actual case,should be marked with " " .

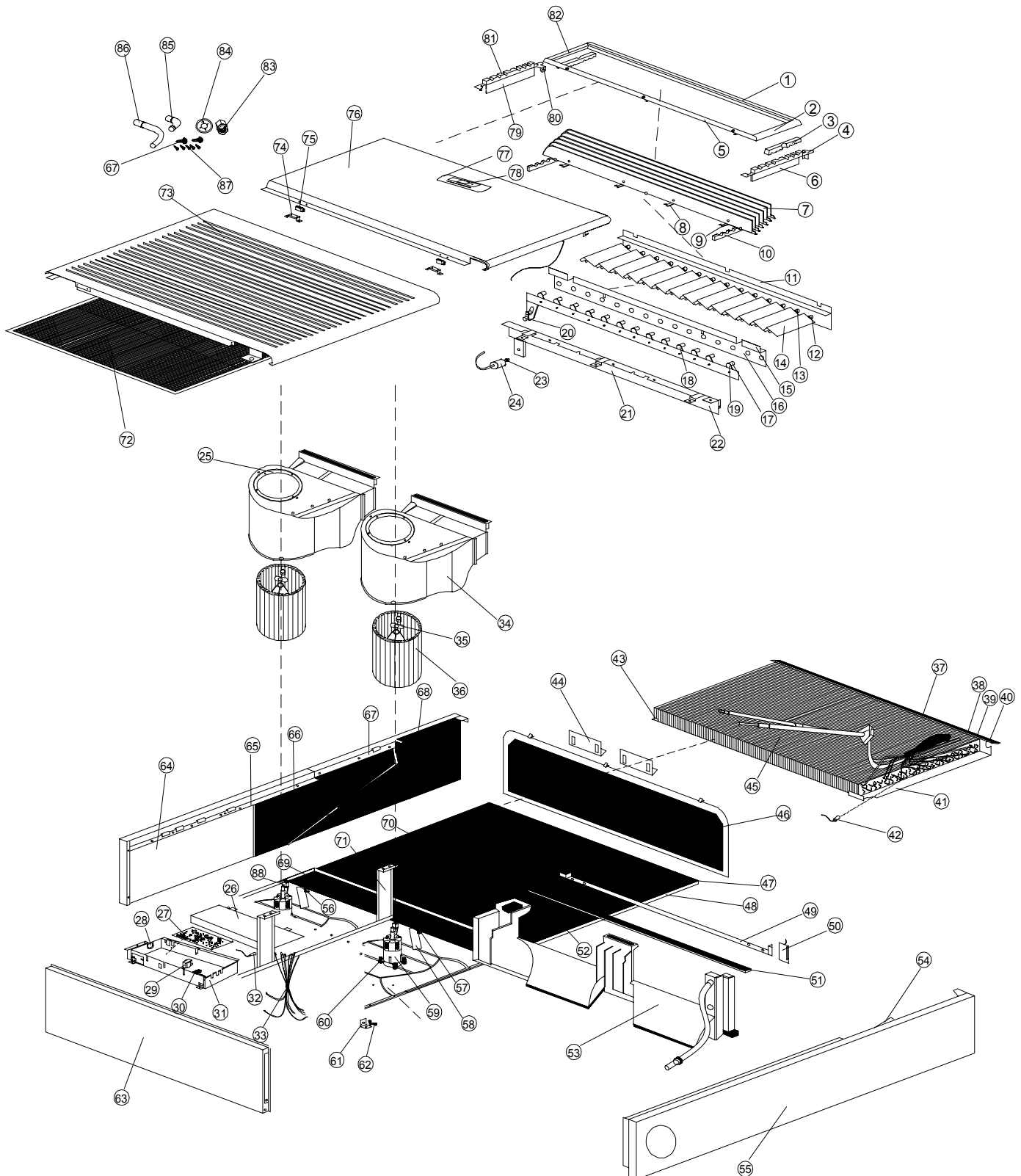
4,not need provided :The spare-part which is seldom damaged or the maintenance man could not maitmains.The spare parts may be air freighted by the factory if they were damaged.The customer nees not stock in the spare-part warehouse,should be marked with " x " .

5,Above should be improved accord with the reply of the market half a year per time.

6.The spare parts price on net is FOB Qingdao term.



No. in exploded view	Spare parts number	Spare parts description in english	Model	Qty	Failure rate	the proportion of the spare part stock	Remark
1	0010150286	guard plate 1	AD96NAHAEA	1	0.00%	0.000%	×
2	0010150289	guard plate 2	AD96NAHAEA	1	0.00%	0.000%	×
3	0010250260	drainage pan	AD96NAHAEA	1	0.00%	0.000%	×
4	0010150379	supporting plate 2 assembly	AD96NAHAEA	1	0.00%	0.000%	×
5	001A0100907	supporting plate 1 assembly	AD96NAHAEA	1	0.00%	0.000%	×
6	0010151134	motor fixing bolt	AD96NAHAEA	4	0.00%	0.000%	×
7	001A6645001	wires clip	AD96NAHAEA	6	0.00%	0.000%	×
8	001A1734260	heat insulation pipe	AD96NAHAEA	1	0.00%	0.000%	×
9	001A1734261	heat insulation pipe (liquid pipe)	AD96NAHAEA	1	0.00%	0.000%	×
10	001A5313008	copper nut	AD96NAHAEA	1	0.00%	0.000%	×
11	001A13011044	sealing ring of scroll case	AD96NAHAEA	4	0.00%	0.000%	×
12	001A2301102	fan 1	AD96NAHAEA	2	0.02%	0.024%	*
13	001A13011040	scroll case 1	AD96NAHAEA	2	0.00%	0.000%	×
14	001A5401035	spring washer	AD96NAHAEA	2	0.00%	0.000%	×
15	001A3000291	indoor motor	AD96NAHAEA	2	0.04%	0.048%	*
16	001A13011041	scroll case 2	AD96NAHAEA	2	0.00%	0.000%	×
17	001A2301103	fan 2	AD96NAHAEA	2	0.02%	0.024%	*
18	0010800290	evaporator fixing plate 3	AD96NAHAEA	1	0.00%	0.000%	×
19	001A3400160	float switch	AD96NAHAEA	1	0.01%	0.012%	
20	0010151136	float bracket	AD96NAHAEA	1	0.00%	0.000%	×
21	0010751619	evaporator assembly	AD96NAHAEA	1	0.01%	0.012%	
22	0010151133	evaporator fixing plate 2	AD96NAHAEA	1	0.00%	0.000%	×
23	001A3900006	coil temperature sensor	AD96NAHAEA	1	0.02%	0.024%	*
24	0010150376	left fixing groove	AD96NAHAEA	1	0.00%	0.000%	×
25	0010150405	right fixing groove	AD96NAHAEA	1	0.00%	0.000%	×
26	0010850513	fixing bracket assembly	AD96NAHAEA	1	0.00%	0.000%	×
27	001A13011053	short frame 1	AD96NAHAEA	1	0.00%	0.000%	×
28	001A13011055	short frame 2	AD96NAHAEA	1	0.00%	0.000%	×
29	0010151123	hanging bracket	AD96NAHAEA	4	0.00%	0.000%	×
30	0010151135	fixed bracket	AD96NAHAEA	4	0.00%	0.000%	×
31	0010151131	fixed reinforced plate 1	AD96NAHAEA	1	0.00%	0.000%	×
32	0010851029	cushion 2 assembly of cover plate	AD96NAHAEA	1	0.00%	0.000%	×
33	0010450377	wires assembly	AD96NAHAEA	1	0.00%	0.000%	×
34	0010151140	electric box cover	AD96NAHAEA	1	0.00%	0.000%	×
35	0010400137	wired controller	AD96NAHAEA	1	0.02%	0.024%	*
36	0010451346	transformer	AD96NAHAEA	1	0.01%	0.012%	×
37	0010400298	relay	AD96NAHAEA	3	0.02%	0.024%	*
38	001A3600254	capacitor	AD96NAHAEA	1	0.02%	0.024%	*
39	001A3300352	fan speed control board	AD96NAHAEA	1	0.02%	0.024%	*
40	001A5745116	wire-pressing clip	AD96NAHAEA	1	0.00%	0.000%	×
41	001A1452861	rubber wiring hole	AD96NAHAEA	1	0.00%	0.000%	×
42	/	ambient temperature sensor	AD96NAHAEA	/	/	/	/
43	0010400132	indoor PCB	AD96NAHAEA	1	0.04%	0.048%	*
44	0010451265	terminal block	AD96NAHAEA	1	0.00%	0.000%	×
45	0010851015	electric box assembly	AD96NAHAEA	1	0.00%	0.000%	×
46	0010851028	cushion 1 assembly of cover plate	AD96NAHAEA	1	0.00%	0.000%	×
47	001A1439315	plastic clip	AD96NAHAEA	6	0.00%	0.000%	×
48	0010851016	bottom plate	AD96NAHAEA	1	0.00%	0.000%	×
49	0010151137	fixed bracket 1	AD96NAHAEA	1	0.00%	0.000%	×
50	0010150378	evaporator fixing plate	AD96NAHAEA	1	0.00%	0.000%	×
51	0010151138	fixed bracket 2	AD96NAHAEA	1	0.00%	0.000%	×
52	0010151124	liquid inlet/outlet guard plate	AD96NAHAEA	1	0.00%	0.000%	×
53	0010150401	air inlet connection frame	AD96NAHAEA	1	0.00%	0.000%	×
54	0010151128	cover plate 3	AD96NAHAEA	1	0.00%	0.000%	×
55	0010151132	fixed reinforced plate 2	AD96NAHAEA	1	0.00%	0.000%	×



No. in exploded view	Spare parts number	Spare parts description in english	Model	Qty	Failure rate	The proportion of the spare part stock	Remark
1	0010150606	upper air outlet horizontal frame	AP96NACAEA	1	0.00%	0.000%	×
2	0010250641	right air outlet frame	AP96NACAEA	1	0.00%	0.000%	×
3	0010250379	upper fixing rubber of horizontal louver	AP96NACAEA	2	0.00%	0.000%	×
4	0010250473	cushion for clip of air outlet grille	AP96NACAEA	2	0.00%	0.000%	×
5	0010150604	lower air outlet horizontal frame	AP96NACAEA	1	0.00%	0.000%	×
6	0010150415	right clip of horizontal louver	AP96NACAEA	1	0.00%	0.000%	×
7	0010250367	horizontal louver	AP96NACAEA	6	0.00%	0.000%	×
8	0010250368	connecting pole 1	AP96NACAEA	4	0.00%	0.000%	×
9	0010250369	connecting pole 2	AP96NACAEA	3	0.00%	0.000%	×
10	0010250481	lower fixing rubber of horizontal louver	AP96NACAEA	2	0.00%	0.000%	×
11	0010250639	lower air outlet frame	AP96NACAEA	1	0.00%	0.000%	×
12	0010250371	sleeve 1	AP96NACAEA	15	0.00%	0.000%	×
13	0010250372	sleeve 2	AP96NACAEA	13	0.00%	0.000%	×
14	0010250370	vertical louver	AP96NACAEA	15	0.00%	0.000%	×
15	0010850634	lower air outlet horizontal frame assembly 2	AP96NACAEA	1	0.00%	0.000%	×
16	0010250476	cushion 2 for fixing plate of air outlet grille	AP96NACAEA	1	0.00%	0.000%	×
17	0010250373	sleeve 3	AP96NACAEA	13	0.00%	0.000%	×
18	0010250380	swing connecting pole 1	AP96NACAEA	1	0.00%	0.000%	×
19	0010250381	swing connecting pole 2	AP96NACAEA	1	0.00%	0.000%	×
20	0010250375	motor sleeve	AP96NACAEA	1	0.00%	0.000%	×
21	0010850634	lower air outlet horizontal frame 2	AP96NACAEA	1	0.00%	0.000%	×
22	0010250477	cushion 3 for fixing plate of air outlet grille	AP96NACAEA	1	0.00%	0.000%	×
23	0010150750	sleeve washer	AP96NACAEA	13	0.00%	0.000%	×
24	001A3000016A	synchromotor	AP96NACAEA	1	0.02%	0.024%	*
25	0010200026	air ring	AP96NACAEA	2	0.00%	0.000%	×
26	001A1301379	electric control box cover assembly	AP96NACAEA	1	0.00%	0.000%	×
27	0010452039	indoor PCB	AP96NACAEA	1	0.02%	0.024%	*
28	001A1452909	rubber wiring hole	AP96NACAEA	1	0.00%	0.000%	×
29	0010451262	transformer	AP96NACAEA	1	0.01%	0.012%	×
30	0010451265	terminal block	AP96NACAEA	1	0.00%	0.000%	×
31	001A01001024	electric control box assembly	AP96NACAEA	1	0.00%	0.000%	×
32	0010451323	ambient temperature sensor	AP96NACAEA	1	0.04%	0.048%	*
33	0010452015	wires	AP96NACAEA	1	0.00%	0.000%	×
34	0010850741	scroll case assembly	AP96NACAEA	1	0.00%	0.000%	×
35	0010150924	fan washer	AP96NACAEA	4	0.00%	0.000%	×
36	0010250579	fan	AP96NACAEA	2	0.04%	0.048%	*
37	0010250470	cushion 2 for evaporator fixing plate	AP96NACAEA	1	0.00%	0.000%	×
38	0010150529	evaporator fixing plate 1	AP96NACAEA	1	0.00%	0.000%	×
39	0010250469	cushion 1 for evaporator fixing plate	AP96NACAEA	1	0.00%	0.000%	×
40	0010250471	cushion 3 for evaporator fixing plate	AP96NACAEA	1	0.00%	0.000%	×
41	0010150530	evaporator fixing plate 2	AP96NACAEA	1	0.00%	0.000%	×
42	0010450644	indoor coil temperature sensor	AP96NACAEA	1	0.04%	0.048%	*
43	0010150531	evaporator fixing plate 3	AP96NACAEA	1	0.00%	0.000%	×
44	0010150523	packaging fixing plate	AP96NACAEA	2	0.00%	0.000%	×
45	0010852401	evaporator assembly	AP96NACAEA	1	0.00%	0.000%	×
46	0010850740	top plate assembly	AP96NACAEA	1	0.00%	0.000%	×
47	0010250442	cushion 1 of bottom plate	AP96NACAEA	1	0.00%	0.000%	×
48	0010850629	back plate assembly	AP96NACAEA	1	0.00%	0.000%	×
49	0010150417	air flow flap	AP96NACAEA	1	0.00%	0.000%	×
50	0010150526	fixing clip of drain pan	AP96NACAEA	1	0.00%	0.000%	×
51	0010250769	packaging cushion	AP96NACAEA	3	0.00%	0.000%	×

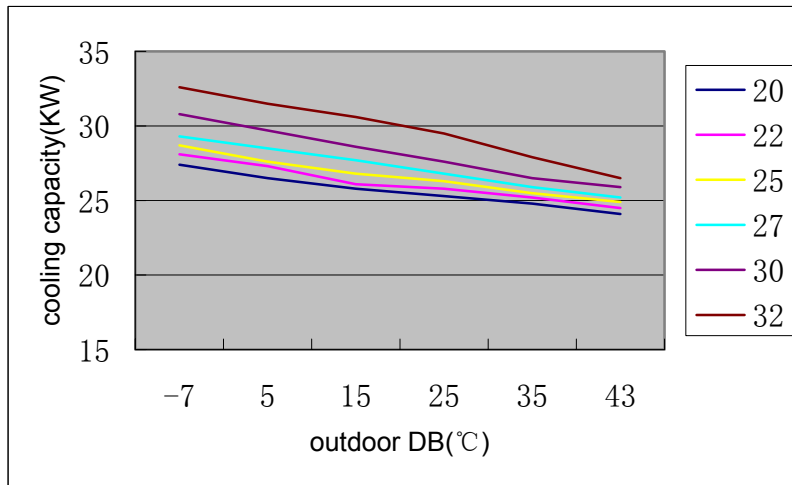
52	0010250443	cushion 2 of bottom plate	AP96NACAEA	1	0.00%	0.000%	×
53	0010850742	drainage pan assembly	AP96NACAEA	1	0.00%	0.000%	×
54	0010250429	cushion 2 of right side plate	AP96NACAEA	1	0.00%	0.000%	×
55	0010851511	right side plate	AP96NACAEA	1	0.00%	0.000%	×
56	0010150527	fixing clip of scroll case	AP96NACAEA	2	0.00%	0.000%	×
57	0010250446	fixing plate of scroll case	AP96NACAEA	2	0.00%	0.000%	×
58	0010150528	wire-pressing plate	AP96NACAEA	2	0.00%	0.000%	×
59	0010450787	indoor motor	AP96NACAEA	2	0.04%	0.048%	*
60	0010150751	washer of motor sleeve	AP96NACAEA	1	0.00%	0.000%	×
61	001A1445087	fixing bracket	AP96NACAEA	4	0.00%	0.000%	×
62	001A5002066	wooded screws	AP96NACAEA	3	0.00%	0.000%	×
63	0010851508	bottom plate assembly	AP96NACAEA	1	0.00%	0.000%	×
64	0010851510	left side plate assembly	AP96NACAEA	1	0.00%	0.000%	×
65	0010250441	cushion 4 of left side plate	AP96NACAEA	1	0.00%	0.000%	×
66	0010250439	cushion 2 of left side plate	AP96NACAEA	1	0.00%	0.000%	×
67	0010250440	cushion 3 of left side plate	AP96NACAEA	1	0.00%	0.000%	×
68	0010250438	cushion 1 of left side plate	AP96NACAEA	1	0.00%	0.000%	×
69	0010250444	cushion 3 of back plate	AP96NACAEA	1	0.00%	0.000%	×
70	0010250445	cushion 4 of back plate	AP96NACAEA	1	0.00%	0.000%	×
71	0010150525	scroll case bracket	AP96NACAEA	1	0.00%	0.000%	×
72	0010251682	filter	AP96NACAEA	1	0.00%	0.000%	×
73	0010852371	air inlet grille	AP96NACAEA	1	0.00%	0.000%	×
74	0010150753	magnetic fixing clip	AP96NACAEA	2	0.00%	0.000%	×
75	001A0100075	lock	AP96NACAEA	2	0.00%	0.000%	×
76	0010851509	front panel assembly	AP96NACAEA	1	0.00%	0.000%	×
77	0010403556	control panel	AP96NACAEA	1	0.02%	0.024%	*
78	0010805699	display board	AP96NACAEA	1			
79	0010250472	cushion 1 for fixing clip of air outlet grille	AP96NACAEA	2	0.00%	0.000%	×
80	0010250474	cushion 2 for fixing clip of air outlet grille	AP96NACAEA	2	0.00%	0.000%	×
81	0010150414	left fixing clip of horizontal flap	AP96NACAEA	1	0.00%	0.000%	×
82	0010250640	left air outlet frame	AP96NACAEA	1	0.00%	0.000%	×
83	001A5313008	nut	AP96NACAEA	1	0.00%	0.000%	×
84	001A5401032	washer M8	AP96NACAEA	1	0.00%	0.000%	×
85	0010250570	liquid inlet heat preservation sleeve	AP96NACAEA	1	0.00%	0.000%	×
86	0010250571	liquid outlet heat preservation sleeve	AP96NACAEA	1	0.00%	0.000%	×
87	001A5002116	screws(4*12BBTHC)	AP96NACAEA	5	0.00%	0.000%	×
88	001A3600134	fan capacitor (8uF/450V)	AP96NACAEA	2	0.02%	0.024%	*

13. Performance curves

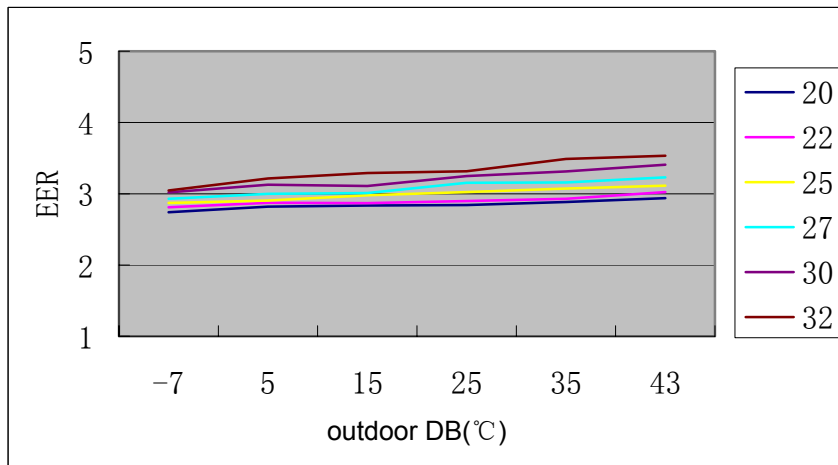
13.1 AD96NAHAEA

a. Cooling mode:

Temp. – capacity performance curves

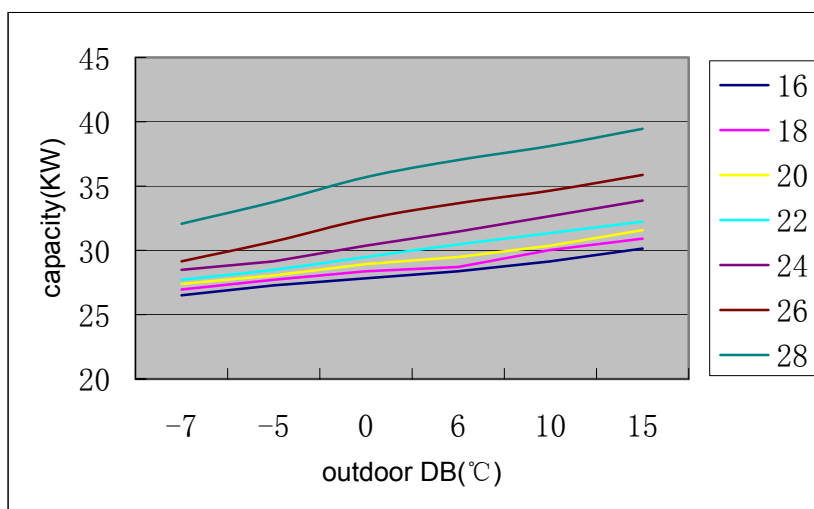


Temp. – EER performance curves

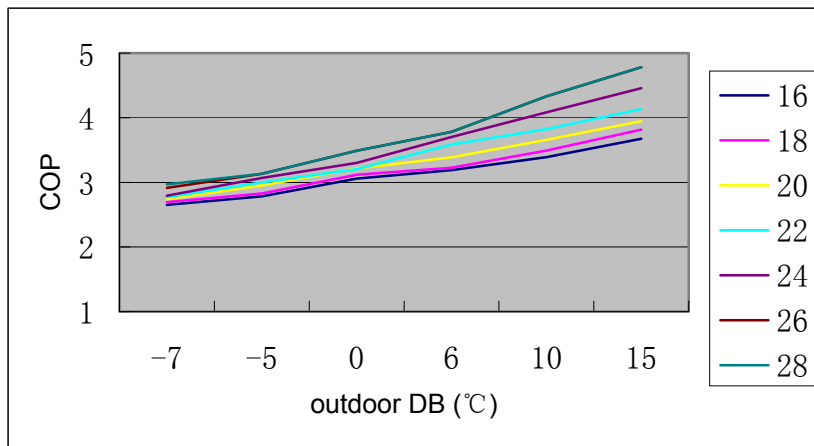


b. Heating mode:

Temp. – capacity performance curves

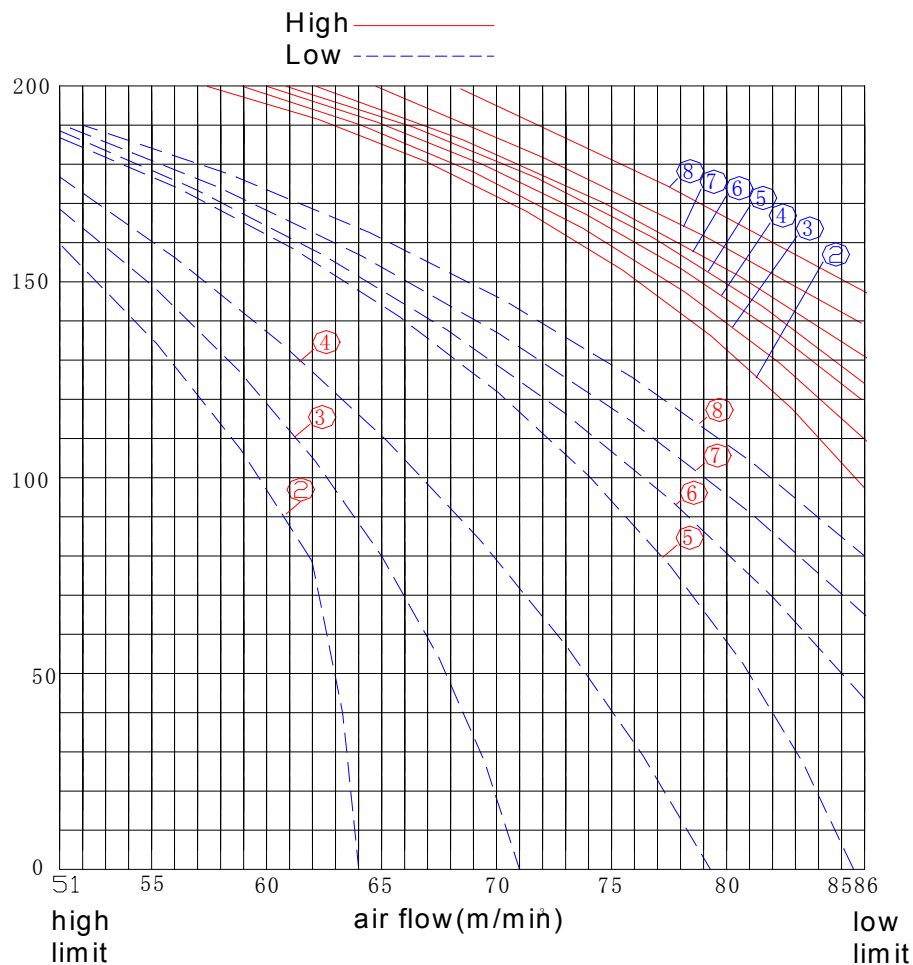


Temp. – COP performance curves



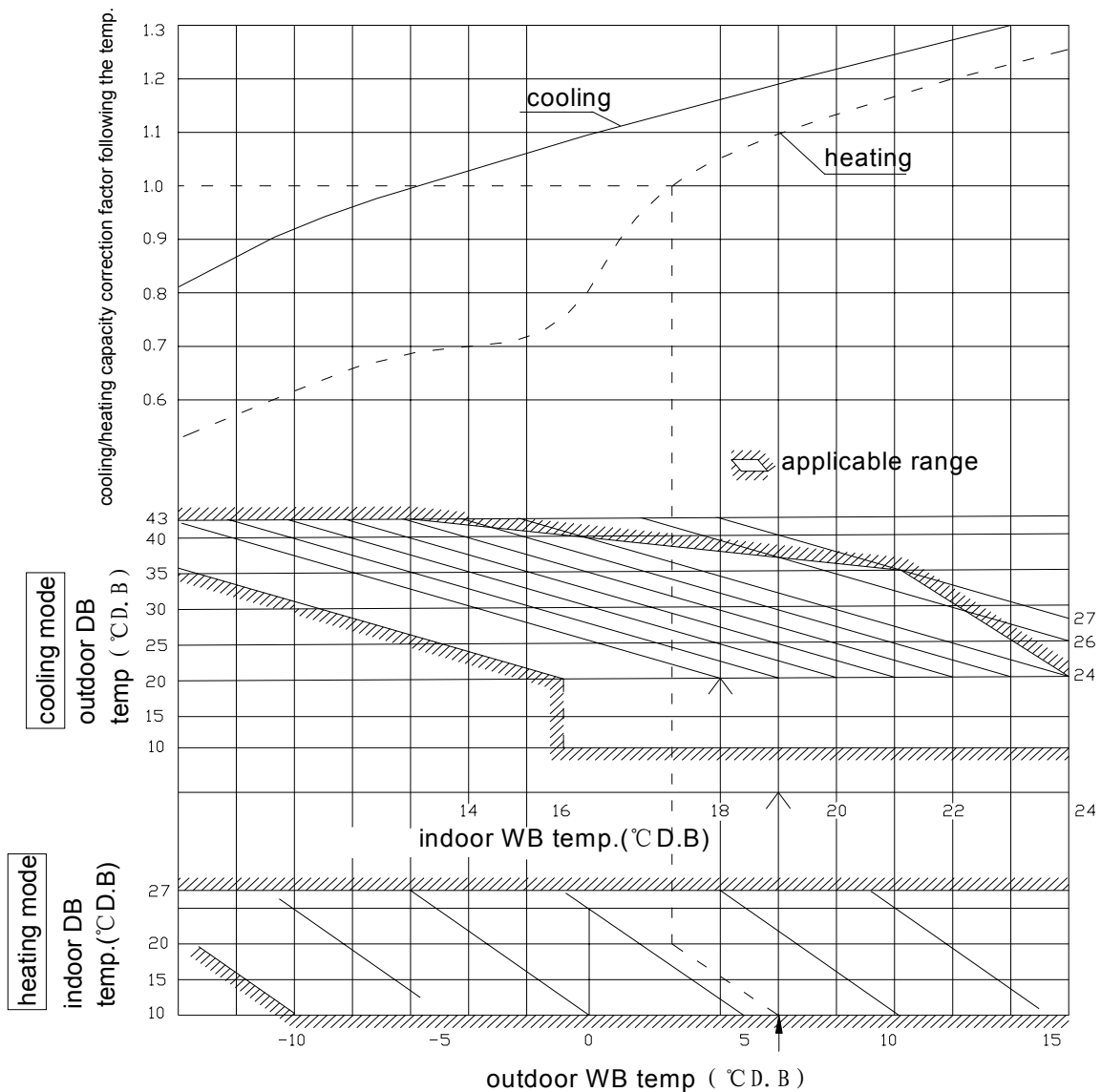
c. Air flow and static pressure curves

1. The digits in the circle stand for the air step of the fan speed control board.
2. The red real line shows the air flow and static pressure changing state at different air step in high speed; the blue dashed line shows the air flow and static pressure changing state at different air step in low speed.



13.2 AP96NACAEA

Correction factor according to the indoor/outdoor temperature:



a. Correction factor due to the piping length

The correction factor in the below chart are measured in the case that the height drop between indoor and outdoor is zero.

Piping length (m)	5	10	15	20	25	30	35	40	45	50
heating	1.0	1.0	1.0	1.0	1.0	0.995	0.995	0.99	0.99	0.985
cooling	1.0	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91

Note: Calculating method of piping length

Equivalent length=actual length+ (0.2×curling quantity)

b. Correction factor due to the height drop between I.U&O.U

If in cooling mode, the outdoor unit is lower, while in heating mode, the outdoor unit is upper, only in this case, in addition that the above correction factor due to the piping length is taken into consideration, the following factor should also be taken into consideration:

Height drop	5m	10m	15m	20m	25m	30m
Correction factor	0.01	0.02	0.03	0.04	0.05	0.06

c. Correction factor due to the air flow

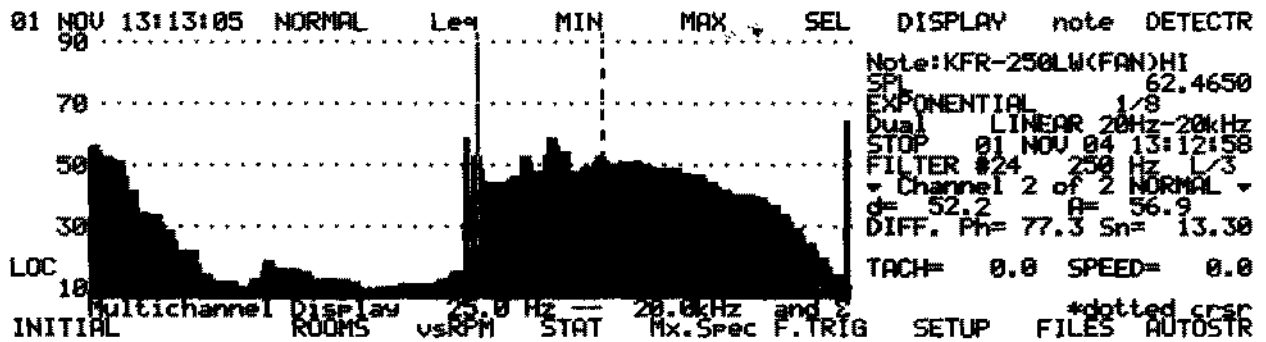
High speed: 1.0; Med speed: 0.95; Low speed: 0.9

14. Noise level

The cabinet unit is identical with KFR-250LW, which is sold in China, so herein we will show out the noise level of KFR-250LW.

01 NOV 13:13:05 NORMAL Leq MIN MAX SEL DISPLAY note DETECTR
90
70
50
30
10
LOC
INITIAL
Multichannel Display 25.0 Hz — 20.0 kHz and 8
ROOMS usKPM STAT Hx.Spec F.TRIG SETUP FILES AUTOSTR

Date and Time: 01 NOV 04 13:13
Data Type: SPL spectra



Data Type: SPL spectra

Note: KFR-250LW(FAN)HI

CHANNEL			1											
FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB
14 25.0 Hz	55.6	55.6	15 31.5 Hz	52.1	52.1	16 40.0 Hz	50.3	50.3	17 50.0 Hz	41.1	41.1			
18 63.0 Hz	33.7	33.7	19 80.0 Hz	33.0	33.0	20 100 Hz	28.1	28.1	21 125 Hz	21.1	21.1			
22 160 Hz	21.0	21.0	23 200 Hz	13.8	13.8	24 250 Hz	11.1	11.1	25 315 Hz	11.3	11.3			
26 400 Hz	9.9	9.9	27 500 Hz	12.2	12.2	28 630 Hz	18.2	18.2	29 800 Hz	15.5	15.5			
30 1.00kHz	15.3	15.3	31 1.25kHz	14.5	14.5	32 1.60kHz	12.5	12.5	33 2.00kHz	12.4	12.4			
34 2.50kHz	11.9	11.9	35 3.15kHz	11.2	11.2	36 4.00kHz	9.1	9.1	37 5.00kHz	9.3	9.3			
38 6.30kHz	9.9	9.9	39 8.00kHz	10.1	10.1	40 10.0kHz	10.6	10.6	41 12.5kHz	10.4	10.4			
42 16.0kHz	11.7	11.7	43 20.0kHz	15.0	15.0									
SUM	58.1	58.1												
A-WEIGHT		26.1												

CHANNEL 2															
FREQ		DISP-dB	RMS-dB	FREQ		DISP-dB	RMS-dB	FREQ		DISP-dB	RMS-dB	FREQ		DISP-dB	RMS-dB
14	25.0 Hz	52.3	52.3	15	31.5 Hz	43.5	43.5	16	40.0 Hz	43.6	43.6	17	50.0 Hz	45.7	45.7
18	63.0 Hz	51.8	51.8	19	80.0 Hz	47.4	47.4	20	100 Hz	58.1	58.1	21	125 Hz	53.7	53.7
22	160 Hz	46.9	46.9	23	200 Hz	48.6	48.6	24	250 Hz	52.2	52.2	25	315 Hz	49.8	49.8
26	400 Hz	50.2	50.2	27	500 Hz	50.1	50.1	28	630 Hz	48.8	48.8	29	800 Hz	48.1	48.1
30	1.00kHz	47.9	47.9	31	1.25kHz	46.0	46.0	32	1.60kHz	46.0	46.0	33	2.00kHz	43.7	43.7
34	2.50kHz	41.6	41.6	35	3.15kHz	39.5	39.5	36	4.00kHz	39.4	39.4	37	5.00kHz	38.4	38.4
38	6.30kHz	36.4	36.4	39	8.00kHz	32.6	32.6	40	10.0kHz	28.6	28.6	41	12.5kHz	24.0	24.0
42	16.0kHz	18.7	18.7	43	20.0kHz	14.1	14.1								
SUM		63.6	63.6												
A-WEIGHT			56.9												

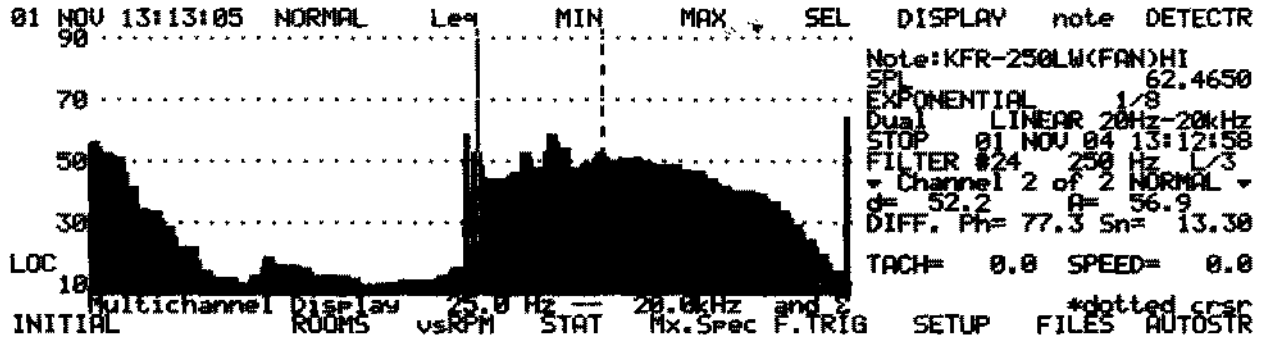
左右电机
493 / 14727 / mm

LARSON-DAVIS

2900 RTA B5.24

Date and Time: 01 NOV 04 13:13

Data Type: SPL spectra



Data Type: SPL spectra

Note: KFR-250LW(FAN)HI

CHANNEL 1															
FREQ		DISP-dB	RMS-dB	FREQ		DISP-dB	RMS-dB	FREQ		DISP-dB	RMS-dB	FREQ		DISP-dB	RMS-dB
14	25.0 Hz	55.6	55.6	15	31.5 Hz	52.1	52.1	16	40.0 Hz	50.3	50.3	17	50.0 Hz	41.1	41.1
18	63.0 Hz	33.7	33.7	19	80.0 Hz	33.0	33.0	20	100 Hz	28.1	28.1	21	125 Hz	21.1	21.1
22	160 Hz	21.0	21.0	23	200 Hz	13.8	13.8	24	250 Hz	11.1	11.1	25	315 Hz	11.3	11.3
26	400 Hz	9.9	9.9	27	500 Hz	12.2	12.2	28	630 Hz	18.2	18.2	29	800 Hz	15.5	15.5
30	1.00kHz	15.3	15.3	31	1.25kHz	14.5	14.5	32	1.60kHz	12.5	12.5	33	2.00kHz	12.4	12.4
34	2.50kHz	11.9	11.9	35	3.15kHz	11.2	11.2	36	4.00kHz	9.1	9.1	37	5.00kHz	9.3	9.3
38	6.30kHz	9.9	9.9	39	8.00kHz	10.1	10.1	40	10.0kHz	10.6	10.6	41	12.5kHz	10.4	10.4
42	16.0kHz	11.7	11.7	43	20.0kHz	15.0	15.0								
SUM		58.1													
A-WEIGHT			26.1												

CHANNEL 2															
FREQ		DISP-dB	RMS-dB	FREQ		DISP-dB	RMS-dB	FREQ		DISP-dB	RMS-dB	FREQ		DISP-dB	RMS-dB
14	25.0 Hz	52.3	52.3	15	31.5 Hz	43.5	43.5	16	40.0 Hz	43.6	43.6	17	50.0 Hz	45.7	45.7
18	63.0 Hz	51.8	51.8	19	80.0 Hz	47.4	47.4	20	100 Hz	58.1	58.1	21	125 Hz	53.7	53.7
22	160 Hz	46.9	46.9	23	200 Hz	48.6	48.6	24	250 Hz	52.2	52.2	25	315 Hz	49.8	49.8
26	400 Hz	50.2	50.2	27	500 Hz	50.1	50.1	28	630 Hz	48.8	48.8	29	800 Hz	48.1	48.1
30	1.00kHz	47.9	47.9	31	1.25kHz	46.0	46.0	32	1.60kHz	46.0	46.0	33	2.00kHz	43.7	43.7
34	2.50kHz	41.6	41.6	35	3.15kHz	39.5	39.5	36	4.00kHz	39.4	39.4	37	5.00kHz	38.4	38.4
38	6.30kHz	36.4	36.4	39	8.00kHz	32.6	32.6	40	10.0kHz	28.6	28.6	41	12.5kHz	24.0	24.0
42	16.0kHz	18.7	18.7	43	20.0kHz	14.1	14.1								
SUM		63.6													
A-WEIGHT			56.9												

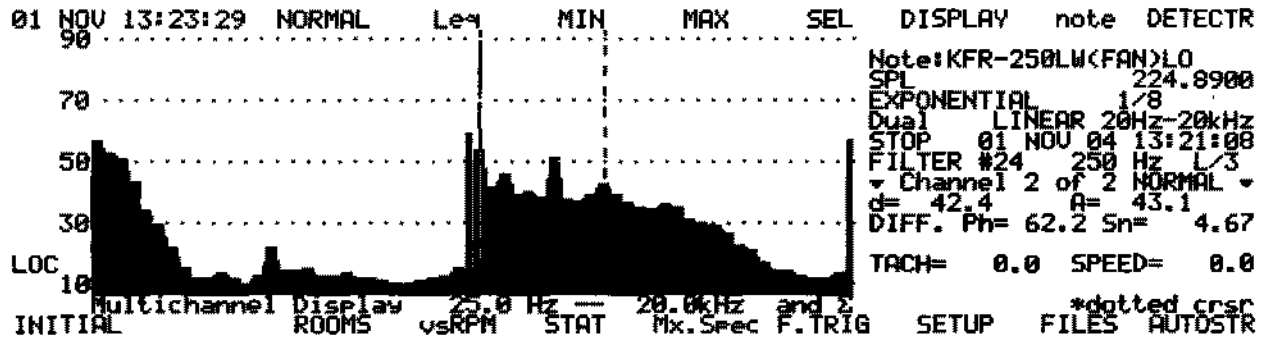
左右电机
493 1472 r/min

LARSON-DAVIS

2900 RTA 85.24

Date and Time: 01 NOV 04 13:23

Data Type: SPL spectra



Data Type: SPL spectra

Note: KFR-250LW(FAN)LO

CHANNEL	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB
14	25.0 Hz	56.4	56.4	15	31.5 Hz	52.1	16	40.0 Hz	50.4	17	50.0 Hz	43.1
18	63.0 Hz	33.7	33.7	19	80.0 Hz	28.5	20	100 Hz	21.0	21	125 Hz	14.4
22	160 Hz	11.4	11.4	23	200 Hz	11.6	24	250 Hz	12.7	25	315 Hz	11.5
26	400 Hz	9.5	9.5	27	500 Hz	11.9	28	630 Hz	21.3	29	800 Hz	14.1
30	1.00kHz	14.1	14.1	31	1.25kHz	14.2	32	1.60kHz	12.4	33	2.00kHz	12.4
34	2.50kHz	12.6	12.6	35	3.15kHz	11.6	36	4.00kHz	11.2	37	5.00kHz	10.1
38	6.30kHz	10.0	10.0	39	8.00kHz	9.8	40	10.0kHz	10.1	41	12.5kHz	10.9
42	16.0kHz	12.0	12.0	43	20.0kHz	14.8						
SUM		58.6	58.6									
A-WEIGHT			26.4									

CHANNEL	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB	FREQ	DISP-dB	RMS-dB
14	25.0 Hz	52.8	52.8	15	31.5 Hz	41.3	16	40.0 Hz	45.7	17	50.0 Hz	38.6
18	63.0 Hz	39.2	39.2	19	80.0 Hz	37.7	20	100 Hz	50.3	21	125 Hz	36.7
22	160 Hz	35.9	35.9	23	200 Hz	38.7	24	250 Hz	42.4	25	315 Hz	38.9
26	400 Hz	36.0	36.0	27	500 Hz	34.2	28	630 Hz	34.0	29	800 Hz	35.8
30	1.00kHz	34.4	34.4	31	1.25kHz	30.1	32	1.60kHz	29.8	33	2.00kHz	28.6
34	2.50kHz	25.9	25.9	35	3.15kHz	22.3	36	4.00kHz	20.1	37	5.00kHz	16.3
38	6.30kHz	13.9	13.9	39	8.00kHz	13.4	40	10.0kHz	12.4	41	12.5kHz	11.3
42	16.0kHz	11.2	11.2	43	20.0kHz	12.7						
SUM		56.3	56.3									
A-WEIGHT			43.1									

左右电机
270 / 267 r/min

The noise level of AD96NAHBEA will be supplied when after the noise testing.

15. Air velocity and distribution

Sincere Forever

Haier Group

Haier Industrial Park, No.1, Haier Road

266101, Qingdao, China

<http://www.haier.com>