

SERVICE MANUAL



Model

HCFU-42CF03 HCFU-42HF03

● Features

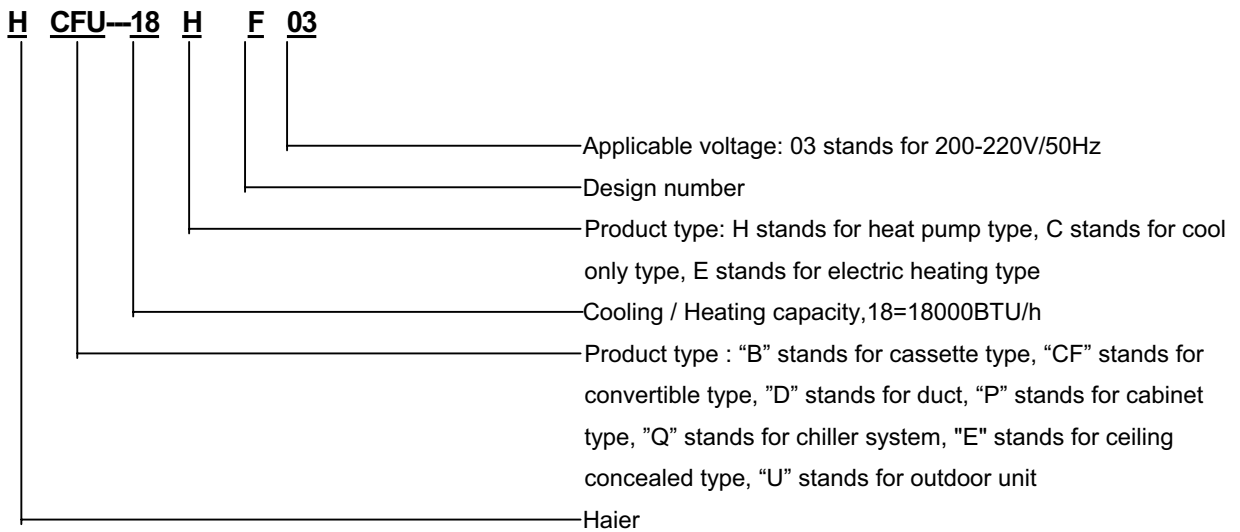
- Long distribution pipe and high drop
- Auto-check function
- Flexible and easy installation
- Fresh air hole, more natural, more healthy
- Infrared remote controller & wired controller
- Optional safety devices and much more precision control device

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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	18
		WB °C	19	23	14
	Outdoor	DB °C	35	43	10
		WB °C	24	26	6
Heating	Indoor	DB °C	20	27	15
		WB °C	14.5	---	--
	Outdoor	DB °C	7	24	-7
		WB °C	6	18	---

1.4 Products line up

1.4.1 Outdoor unit

HCFU-42CF03		
HCFU-42HF03		

1.5 Product features

1.5.1 Outdoor unit .

Flexible and easy installation

The outdoor can meet the higher request of installation. From the specifications, you will find for each unit, how long and how high the piping will be, which will be convenient for design and installation.

Optional safety devices and much more precision control device

- a. Ambient **temperature sensor**, coil temperature sensor and compressor temperature sensor make the temperature control and defrosting control more precise.
- b. **High/low pressure switch** can feel the discharging pipe pressure and suction pipe pressure on time and precisely. If the pressure is too low or too high, it will stop the compressor to prevent it being damaged for the sake of pressure.
- c. **3 minutes delay protection** for the compressor, the device can protect the compressor from some damages and make the compressor have a long life.

Silent operation

New design of long piping length and large drop

1.5.2 Decent convertible indoor unit

Optional installation mode

The indoor unit can be installed on the floor or to the ceiling, it is determined by the host favor and the room décor. It is more convenient to service and installation.

Silent operation

The convertible unit is equipped with a high efficient, smooth, multi-blade centrifugal fan, which generates a powerful but gentle airflow to any corner in the room.

Space-saving design

An innovative fan and the ultra thin heat exchanger result in the ultra thin convertible unit. Fully adjustable mounting brackets make it possible to install the unit even in the tightest places. Less than 199mm (for HDU-18) of vertical direction are required for installation.

Large angle air supplying

100° wide angle louvers and 70° wide angle blades design to make a precise control of the airflow, it equably distributes the comfortable air to every coner of the room

Automatically control of airflow direction for fast temperature adjusting

Central control function, if connected with a central controller

2. SPECIFICATION

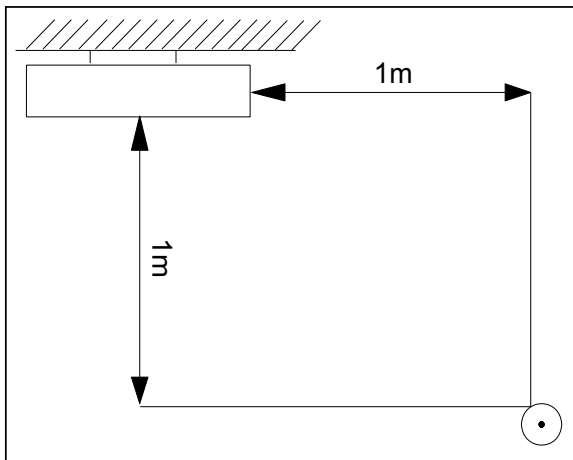
item		Model		HCFU-42CF03		
Function				cooling	heating	
Capacity			BTU/h	42000	/	
Capacity			kW	12.3	/	
Sensible heat ratio				75%	/	
Total power input			W	4600	/	
Max. power input			W	5700	/	
EER or COP			W/W	2.67	/	
Dehumidifying capacity			10 - ³ m ³ /h	4.7		
Power cable			section	5G×2.5mm ²		
Signal cable			section	4×0.75mm ²		
Connecting cable			section			
Wired control cable	for wired control unit		section	/	/	
Power source			N, V, Hz	3, 380-400, 50		
Running /Max. Running current			A / A	cooling 8.5/9.3		
Start Current			A	50		
Class of anti electric shock				/	/	
Circuit breaker			A	30		
Max. operating pressure of heat side			Mpa	2.8		
Max. operating pressure of cold side			Mpa	2.8		
Indoor unit	Unit model (color)			HCFU-42CF03(INDOOR) (WHITE)		
	Fan	Type × Number			Centrifugal × 1	
		Speed(H-M-L)		r/min	1200±50/1100±50/950±50r/min	
		Fan motor output power		kW	0.14	
		Air-flow(H-M-L)		m ³ /h	2000/1800/1600	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m ²	0.808(1350*252*39.9)	
		Temp. scope		°C	2-7	
	Dimension	External	(L×W×H)	mm×mm×mm	1580*700*240	
		Package	(L×W×H)	mm×mm×mm	1710*790*315	
	Air sending angle				/	/
	Drainage pipe (material , I.D./O.D.)			mm	PVC26/32	
	Control type (Remote /wired /model)				REMOTE	
	Fresh air hole dimension			mm	/	
	Outlet distribution hole dimension			mm	/	
	Electricity Heater			kW	/	
Noise level (H-M-L)			dB(A)	55		
Weight (Net / Shipping)			kg / kg	54/61		
Panel	Dimension	External	(L×W×H)	mm×mm×mm	/	
		Package	(L×W×H)	mm×mm×mm	/	
	Weight (Net / Shipping)			kg / kg	/	
Outdoor unit	Unit model (color)			HCFU-42CF03(OUTDOOR) (WHITE)		
	Compressor	Model / Manufacture			JT160BCBY1L DAKIN	
		Oil model			SUNISO 4GSDID-K/DAPHNE SE56P	
		Oil type			/	
		Oil charging			1500-1700	
		Type			SCROLL	
		Protection type			Inner thermal protection	
		Starting method			hard startup	
		Type × Number			Axial × 1	
	Fan	Speed		r/min	740±50	
		Fan motor output power		kW	0.156	
		Air-flow(H-M-L)		m ³ /h	6000	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ9.52	
		Row / Fin pitch			2 /	
	Dimension	External	(L×W×H)	mm×mm×mm	1008×830×410	
		Package	(L×W×H)	mm×mm×mm	1130×930×490	
	Drainage pipe (material , I.D./O.D.)			mm	/	
	Refrigerant control method			mm/mm	Capillary tube	
	Defrosting				Automatic	
Volume of Accumulator			L	/		
Noise level			dB(A)	64		
Type of Four way valve				/		
material of reduce noise				/		
crankcase heater power			W	/		
Weight (Net / Shipping)			kg / kg	92/100		
PIPING	Refrigerant	Type / Charge	g	R22/2500G		
		Recharge quantity	g/m	/		
	Pipe	Liquid	mm	9.52		
		Gas	mm	19.05		
	Connecting Method			Flared		
Between I.D & O.D	MAX.Drop		m	30		
	MAX.Piping length		m	50		

Normal condition: indoor temperature (cooling): 27 °CDB/19°CWB, indoor temperature (heating): 20 °C DB
 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. The detailed method please refer to the following information:

item	Model			HCFU-42HF03		
Function				cooling	heating	
Capacity			BTU/h	42000	48000	
Capacity			kW	12.3	14.06	
Sensible heat ratio				75%		
Total power input			W	4600	4600	
Max. power input			W	5540	5220	
EER or COP			W/W	2.67	3.06	
Dehumidifying capacity			10 ⁻³ ×m ³ /h	4.7		
Power cable			section	5G×2.5mm ²		
Signal cable			section	6×0.75mm ²		
Connecting cable			section			
Wired control cable	for wired control unit		section	/	/	
Power source			N, V, Hz	3, 380-400, 50		
Running /Max.Running current			A / A	cooling 8.8/9.6	heating 8.6/9.2	
Start Current			A	50		
Class of anti electric shock				I	I	
Circuit breaker			A	30	30	
Max. operating pressure of heat side			Mpa	2.8	2.8	
Max. operating pressure of cold side			Mpa	2.8	2.8	
Indoor unit	Unit model (color)			HCFU-42HF03(INDOOR) (WHITE)		
	Fan	Type × Number			Centrifugal × 1	
		Speed(H-M-L)		r/min	1200±50/1100±50/950±50r/min	
		Fan motor output power		kW	0.14	
		Air-flow(H-M-L)		m ³ /h	2000/1800/1600	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m ²	0.808(1350*252*39.9)	
		Temp. scope		℃	2-7	
	Dimension	External	(L×W×H)	mm×mm×mm	1580*700*240	
		Package	(L×W×H)	mm×mm×mm	1710*790*315	
	Air sending angle				/	/
	Drainage pipe (material , I.D./O.D.)			mm	PVC26/32	
	Control type (Remote /wired /model)				REMOTE	
	Fresh air hole dimension			mm	/	
	Outlet distribution hole dimension			mm	/	
	Electricity Heater			kW	/	
	Noise level (H-M-L)			dB(A)	55	
Weight (Net / Shipping)			kg / kg	54/61		
Panel	Dimension	External	(L×W×H)	mm×mm×mm	/	
		Package	(L×W×H)	mm×mm×mm	/	
	Weight (Net / Shipping)			kg / kg	/	
Outdoor unit	Unit model (color)			HCFU-42HF03 (OUTDOOR) (WHITE)		
	Compressor	Model / Manufacture			JT160BCBY1L DAKIN	
		Oil model			SUNISO 4GSDID-K/DAPHNE SE56P	
		Oil type			/	
		Oil charging			1500-1700	
		Type			SCROLL	
		Protection type			Inner thermal protection	
		Starting method			hard startup	
	Fan	Type × Number			Axial × 1	
		Speed		r/min	840±50	
		Fan motor output power		kW	0.016	
		Air-flow(H-M-L)		m ³ /h	6000	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ9.52	
		Row / Fin pitch			2 /	
		Temp. scope		℃	cooling: 43~60 / heating: 6~7	
	Dimension	External	(L×W×H)	mm×mm×mm	1250×340×948	
		Package	(L×W×H)	mm×mm×mm	1350×410×1090	
	Drainage pipe (material , I.D./O.D.)			mm	/	
	Refrigerant control method			mm/mm	Capillary tube	
	Defrosting				Automatic	
Volume of Accumulator			L	/		
Noise level			dB(A)	62		
Type of Four way valve				/		
material of reduce noise				/		
crankcase heater power			W	47		
Weight (Net / Shipping)			kg / kg	106/111		
PIPING	Refrigerant	Type / Charge	g	R22/2800		
		Recharge quantity	g/m	/		
	Pipe	Liquid	mm	9.52		
		Gas	mm	19.05		
	Connecting Method			Flared		
	Between I.D & O.D	MAX.Drop	m	30		
MAX.Piping length		m	50			
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.						
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:

mounting-on-ceiling unit:



outdoor unit:

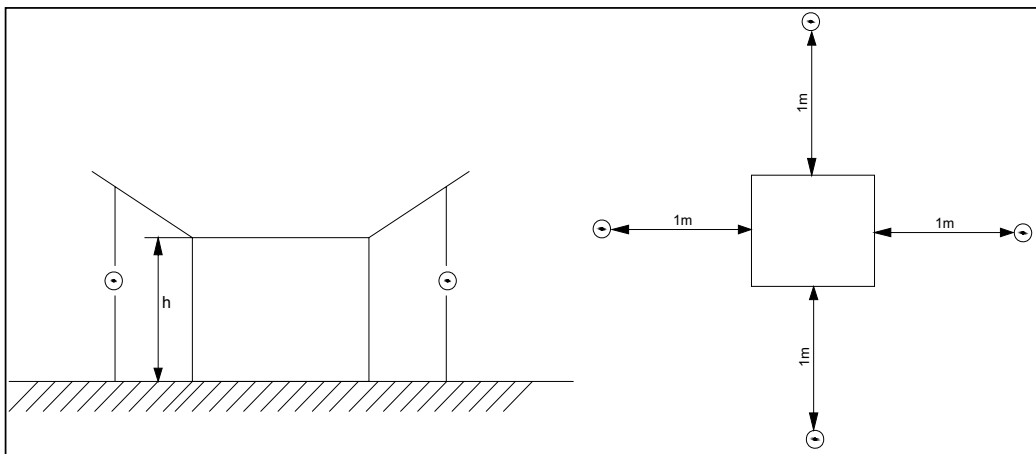
1.air outlet from side: the noise level is the average sound pressure level measured from front, left, right directions.

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.

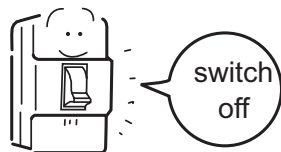
The Safety Cautions should be at hand so that they can be checked at any time when needed.

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.



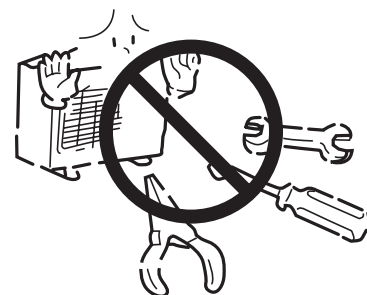
- Don't dismantle the outlet of the outdoor unit.

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.**

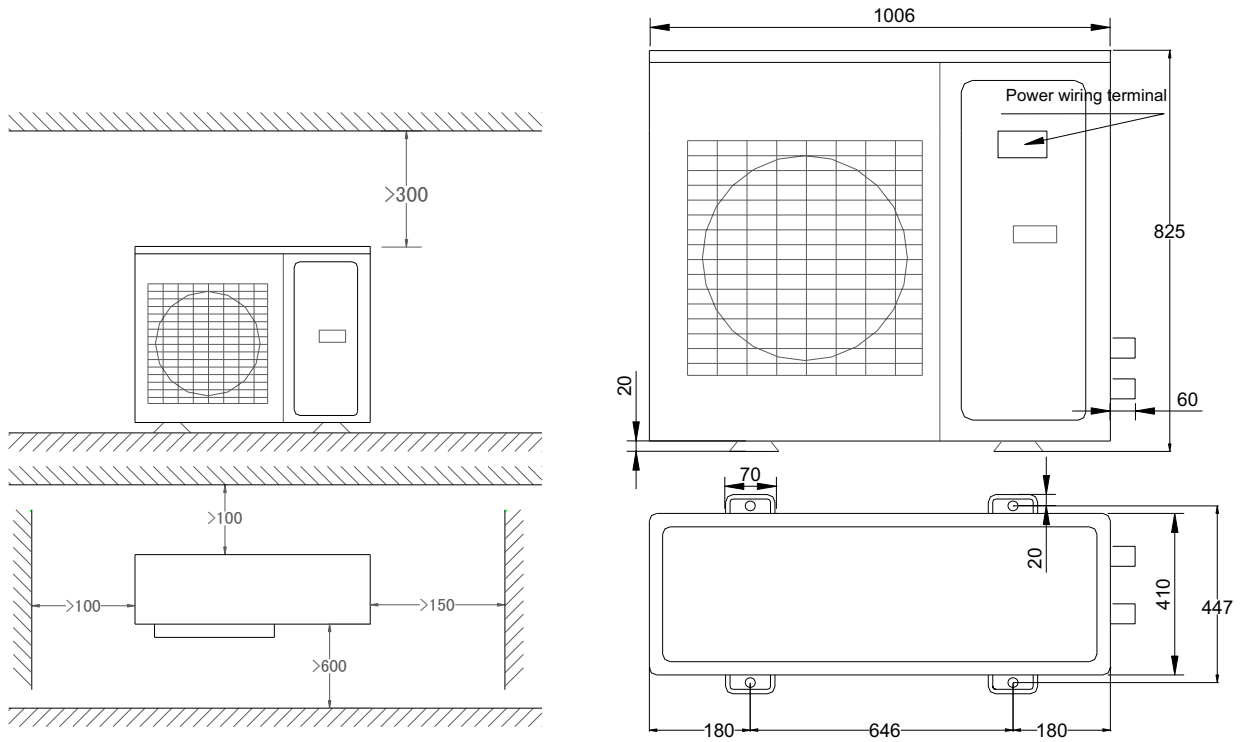
May not use wire or any other materials replacing fuse, other-wise may cause faults or fire accidents.



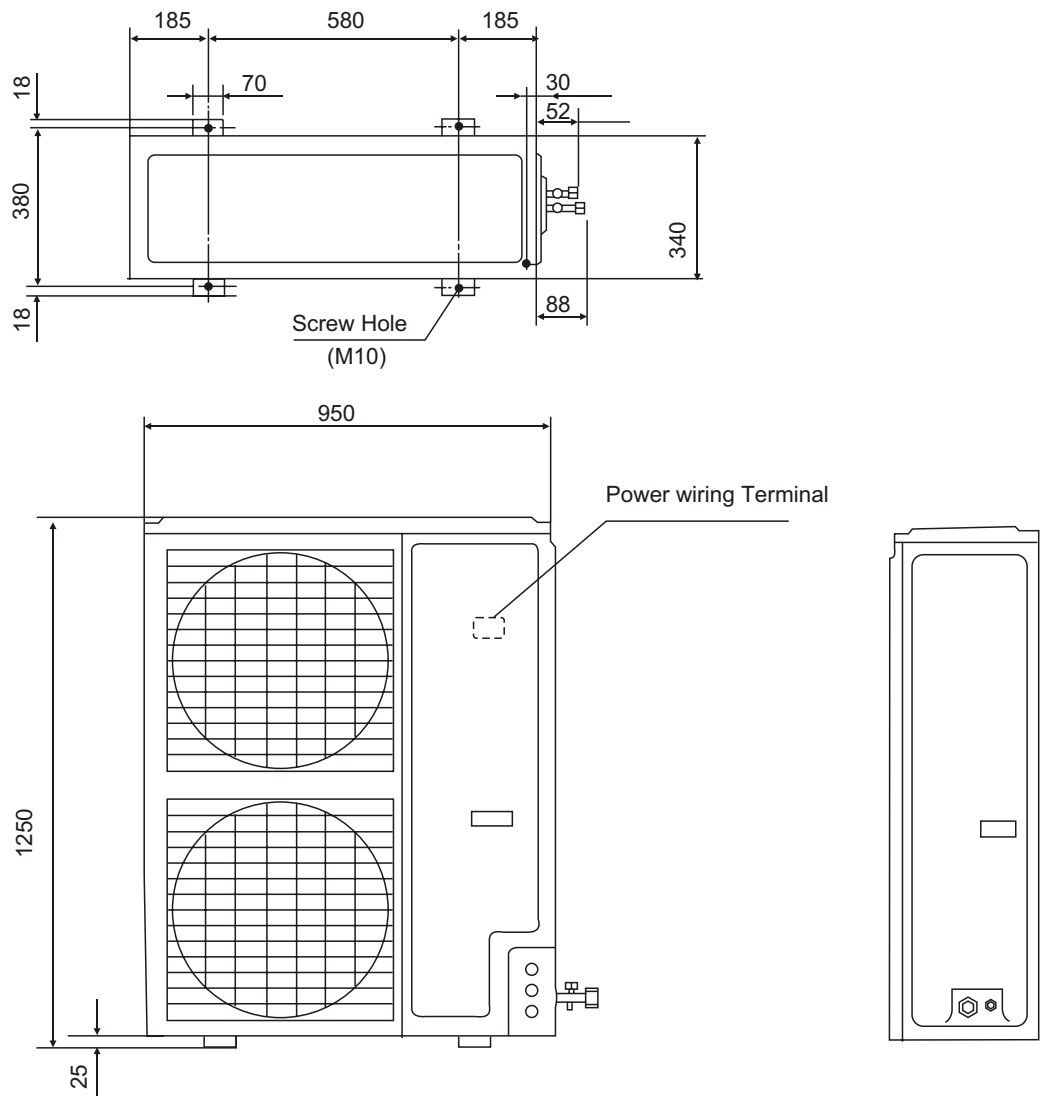
- **Use discharge pipe correctly to ensure efficient discharge.**

Incorrect pipe use may cause water leaking.

4.2 Outdoor unit HCFU-42CF03



HCFU-42HF03



5 INSTALLATION INSTRUCTIONS

Please ask the dealer or specialist to install, never try by the users themselves. After the installation please be sure of the following conditions.

WARNING !

- **Please call dealer to install the air-conditioner.**

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

CAUTION !

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

- **Installed electrical-leaking circuit breaker.** It easily cause electrical shock without circuit breaker.

- **Connect earthing wire.**

Earthing wire should not be connected to the gas pipe, water pipe, lightning rod or phone line, incorrect earthing may cause



Earthing

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

Incorrect pipe use may cause water leaking.

[Location]

- Air-conditioner should be located in well-vented and easily-accessible place.
- Air-conditioner should not be located in the following places:
 - (a) Places with machine oils or other oil vapours.
 - (b) Seaside with high salt content in the air.
 - (c) Near to hot spring with high content of sulfide gases.
 - (d) Area with frequent fluctuation of voltage e.g. factory, etc.
 - (e) In vehicles or ships.
 - (f) Kitchen with heavy oil vapour or humidity.
 - (g) Near to the machine emitting electric-magnetic waves.
 - (h) Places with acid, alkali vapour.
- TV, radio, acoustic appliances etc are at least

supply wire, connecting wire, pipes, otherwise images may be disturbed or noises be created.

- As required, take measures against heavy snow.

[Wiring]

- Air-conditioner should be equipped with special power supply wire.

[Operating noise]

- Choose the following locations:
 - (a) Capable of supporting air-conditioner weight, don't increase operating noise and vibration.
 - (b) Hot vapour from outdoor unit outlet and operating noise don't disturb neighbour.
- No obstacles around the outdoor unit outlet.

For authorized service personnel only

WARNING

- (1) For the room air conditioner to operate satisfactorily, install it as outlined in this installation manual.
- (2) Connect the indoor unit and outdoor unit with the room air conditioner piping and cords available from our standard parts. This in stallation manual describes for the correct connections so that the installation set available from our standard parts should be used.
- (3) Installation work must be performed in accordance with national wiring standards by authorized personnel only.
- (4) Never cut the power cord, lengthen or shorten the cord, or change the plug.

- (5) Also, do not use an extension cord.
- (6) Plug in the power cord plug firmly. If the receptacle is loose, repair it before using the air conditioner.
- (7) Do not turn on the power until all installation work is done.
 - Be careful not to scratch the room air conditioner when handing it.
 - After installation, explain correct operation to the customer, according to the operating manual.
 - Let the customer keep this installation manual because it will be used when the room air conditioner is serviced or moved.

SELECTING THE MOUNTING POSITION

⚠ WARNING

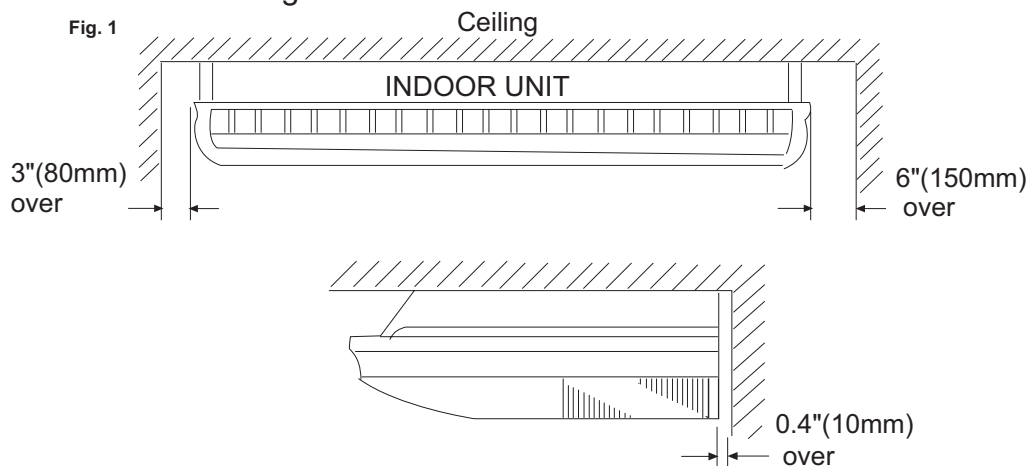
- Install at a place that can withstand the weight of the indoor units and install positively so that the units will not topple or fall.

⚠ CAUTION

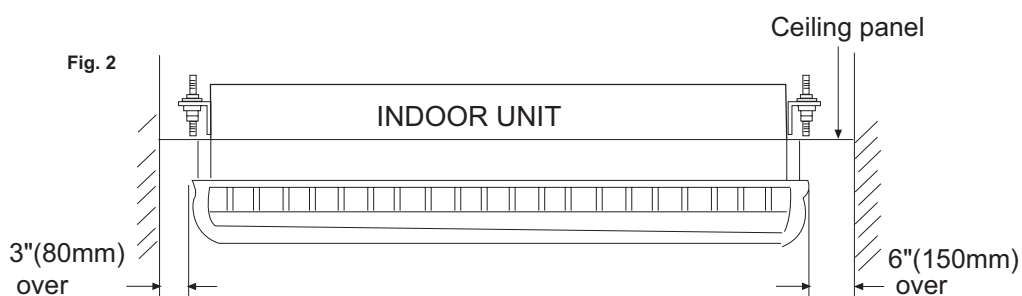
- Do not install where there is the danger of combustible gas leakage.
- Do not install near heat sources.
- If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

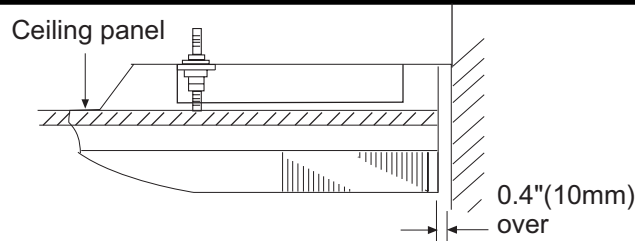
- (1) Install the indoor unit level on a strong wall which is not subject to vibration.
 - (2) The inlet and outlet ports should not be obstructed : the air should be able to blow all over the room.
 - (3) Do not install the unit where it will be exposed to direct sunlight ,
 - (4) Install the unit where connection to the outdoor unit is easy.
 - (5) Install the unit where the drain pipe can be easily installed.
 - (6) Take servicing , etc.into consideration and leave the spaces shown in (Fig.1 or 2) .
- Also install the unit where the filter can be removed .

For mounted on the ceiling:



For half concealed installation:





ACCESSORIES

Standard accessories:

No.	Accessory parts	Qty.	Remarks
①	Remote controller	1	_____
②	Battery	2	_____
③	Wire clamp	4	_____
④	Heat insulation sheathing	1+1	_____
⑤	Screw	2+2	_____
⑥	Drain hose	1	_____
⑦	Screw cap	1+1	_____
⑧	Flat washer	8	_____
⑨	Remote controller bracket	1	_____

Optional parts

Ceiling panel

Mark	Parts name
Ⓐ	Adhesive tape
Ⓑ	Saddle (L.S) with screws
Ⓒ	Drain hose
Ⓓ	Heat insulation material
Ⓔ	Piping hole cover
Ⓕ	Putty
Ⓖ	Plastic clamp

CONNECTION PIPE REQUIREMENT

Model	Diameter		Maximum length	Maximum height (between indoor and outdoor)
	Liquid side	Gas side		
For series 362, 482	9.52 mm	19.05mm	50 m	30 m
For series 282	9.52 mm	15.88mm	30 m	20 m

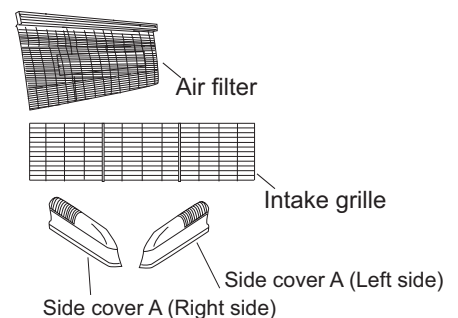
INSTALLATION PROCEDURE

Install the room air conditioner as follows:

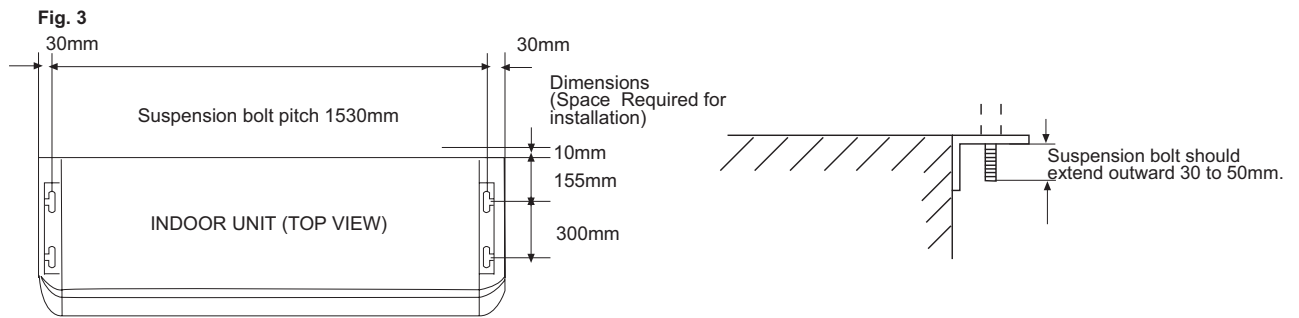
1) REMOVE THE INTAKE GRILL AND SIDE COVER

- (1) Remove the two Air filters
- (2) Remove the two intake grilles
- (3) Remove the Side cover A (Right and left side)
- (4) This air conditioner can be set up to intake fresh air .

For information about how to install for fresh-air intake, refer to page 22 "FRESH-AIR INTAKE".

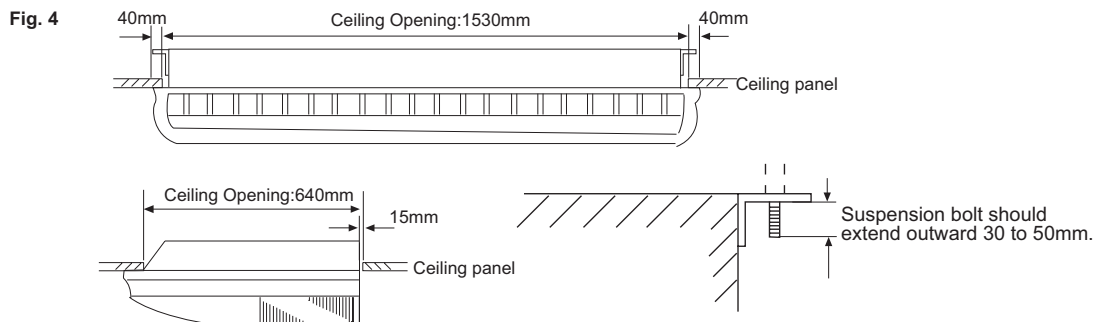


2) LOCATION OF CEILING SUSPENSION BOLTS



For half-concealed installation

Suspension-bolt pitch should be as shown in Fig.4.

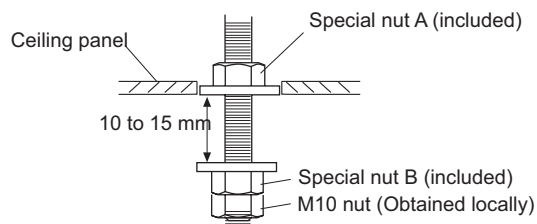


DRILLING THE HOLES AND ATTACHING THE SUSPENSION BOLTS

- (1) Drill 25mm-diameter holes at the suspension-bolt locations.
(The two special nuts are provided with the unit. The M10 nut must be obtained locally.) Refer to Fig.5.
- (2) Install the bolts, then temporarily attach Special nuts A and B and a normal M10 nut to each bolt.

Fig. 5

Bolt Strength	980 to 1470 N (100 TO 150 kgf)
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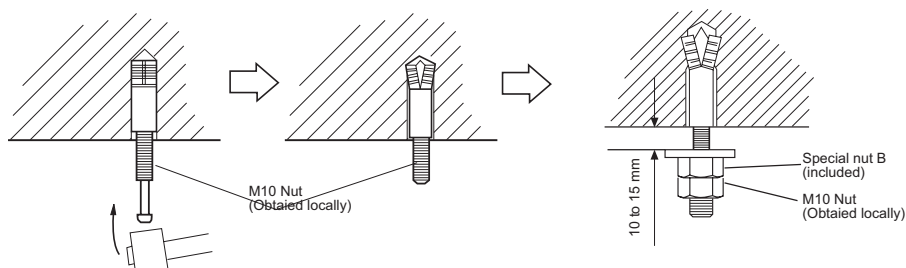


IF USING ANCHOR BOLTS

- (1) Drill holes for anchor bolts at the locations at which you will set the suspension bolts. Note that anchor bolts (to be obtained locally).
- (2) Install the anchor bolts, then temporarily attach special nut "B" (included) and a locally-procured M10 nut to each of the bolts. (See Fig.6.)

Anchor-Bolt Strength	980 to 1470 N (100 TO 150 kgf)
----------------------	--------------------------------

Fig. 6



INSTALLING THE INDOOR UNIT

(1) Lift unit so that suspension bolts pass through suspension fittings at the sides (four places), and slide the unit back. (See Fig.8.)

Fig. 7

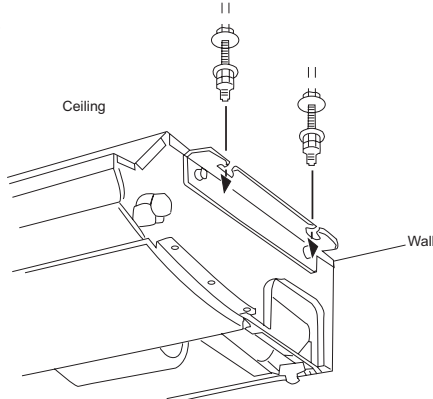
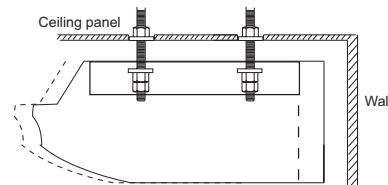


Fig. 8

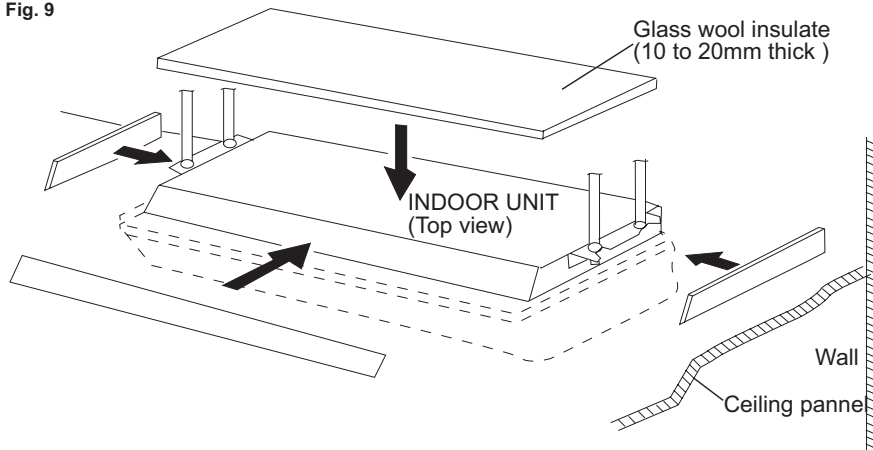


(2) Fasten the indoor unit into place by tightening-up the special "B", bolts and the M10 nuts. Make sure that unit is secure and will not shift back and forth.

FOR HALF-CONCEALED INSTALLATION

When installing the indoor unit in a semi-concealed orientation, make sure to reinforce the insulation of the unit on all sides. Drops of water may fall from the unit if it is not thoroughly insulated.

Fig. 9



⚠ CAUTION

In order to check the drainage, be sure to use a level during installation of the indoor unit. If the installation site of the indoor unit is not level, water leakage may occur

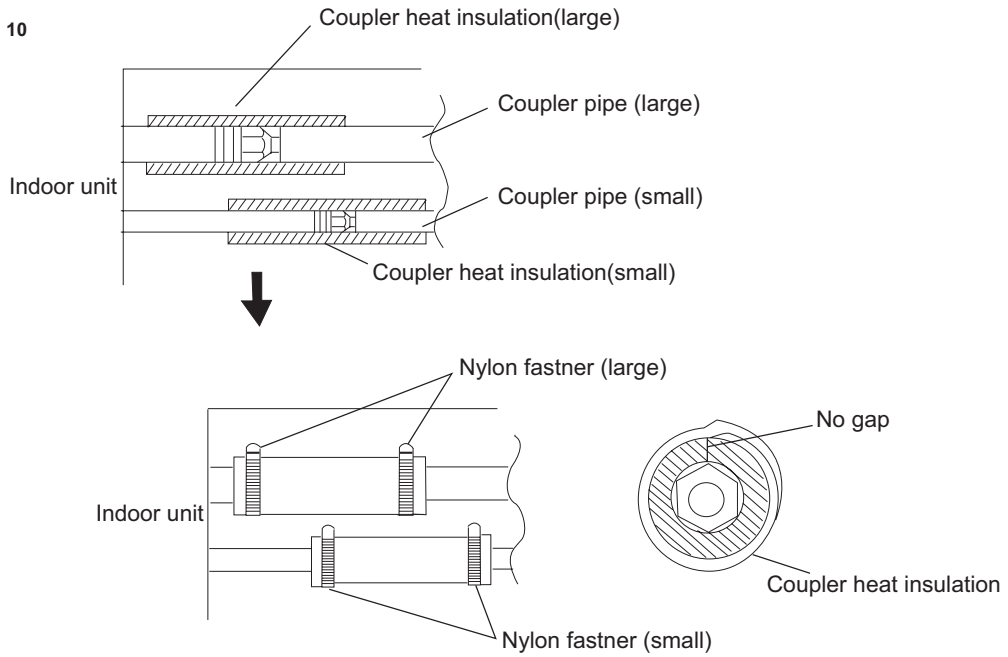
INSTALLING THE COUPLER HEAT INSULATION

After checking for gas leaks, insulate by wrapping insulation around the two parts (large and small) of the indoor unit coupler, using the coupler heat insulation.

After installing the coupler heat insulation, wrap both ends with vinyl tape so that there is no gap.

Secure both ends of the heat insulation material using nylon fasteners.

Fig. 10



When using an auxiliary pipe, make sure that the fastener used is insulated in the same way.

DRAIN PIPING

Install the drain pipe with downward gradient (1/50 to 1/100) and so there are no rises or traps in the pipe.

Use general hard polyvinyl chloride pipe (VP25)[outside diameter 38 mm.]

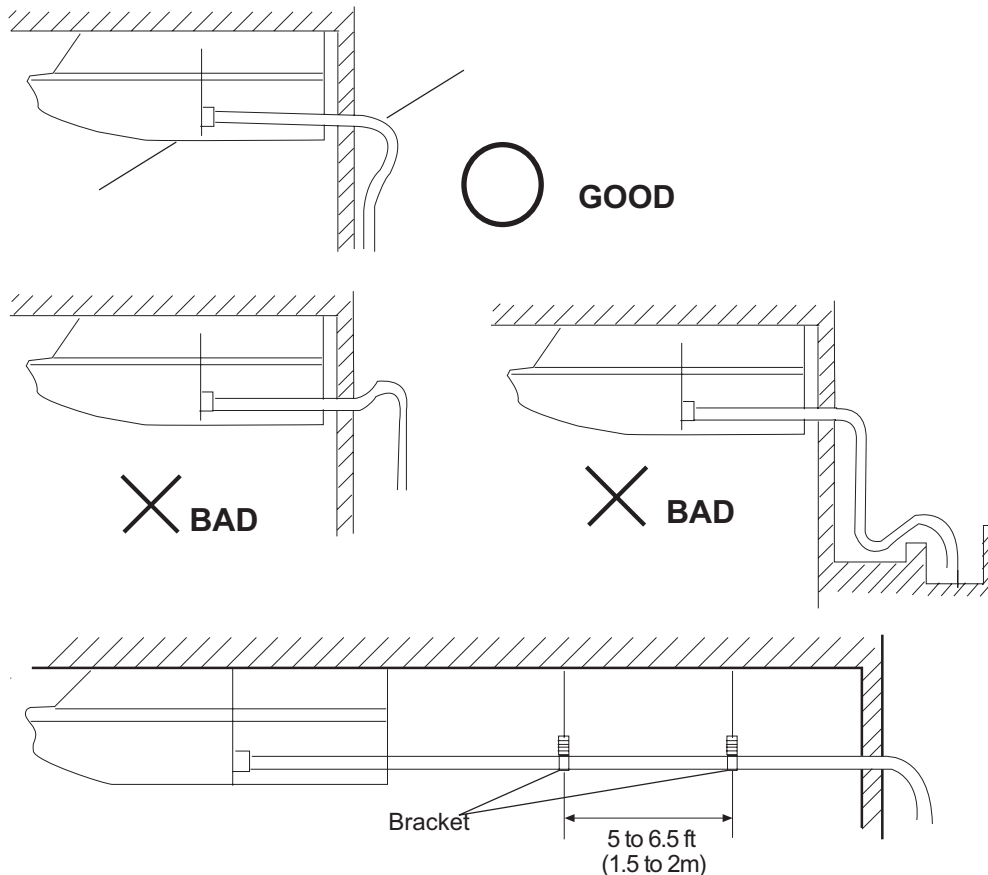
During installation of the drain pipe, be careful to avoid applying pressure to the drain point of the unit.

When the pipe is long, install supporters (Fig 11).

Do not perform air bleeding.

Always heat insulate (8mm or over thick) the indoor side of the drain pipe.

Fig. 11



(1) Install insulation for the drain pipe.(See Fig.12 and 13)

Cut the included insulation material to an appropriate size and adhere it to the pipe.

Fig. 12

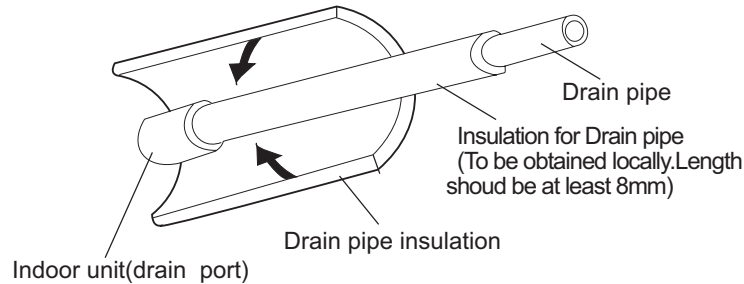
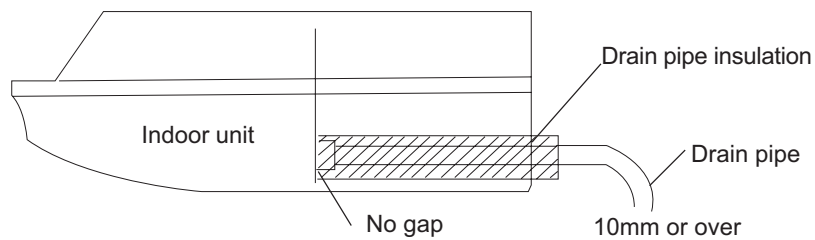
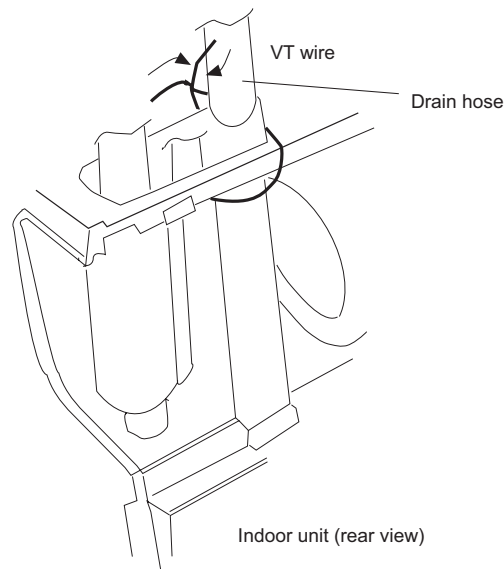


Fig. 13



(2) If "Right rear piping ":fasten the drain pipe with VT wires so that the pipe slopes correctly within the indoor unit.

Fig. 14



ELECTRICAL WIRING

HOW TO CONNECT WIRING TO THE TERMINALS

A.For solid core wiring (or F-cable)

(1)Cut the wire and with a wire cutter or wire-cutting pliers,then strip the insulation to about 15/16"(25mm) of expose the solid wire.

(2)Using a screwdriver ,remove the terminal screw(s) on the terminal board.

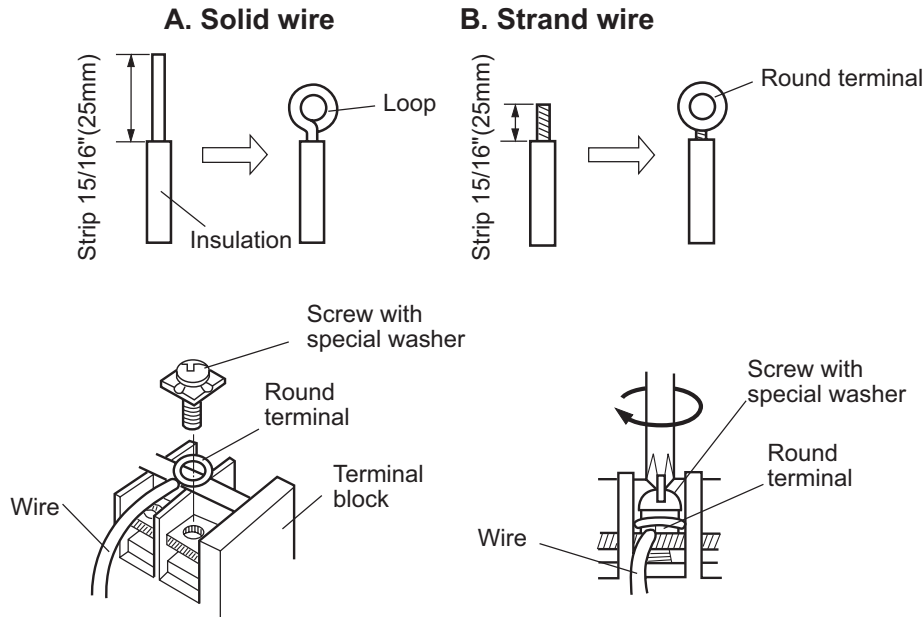
(3)Using pliers,bend the solid wire to form a loop suitable for the terminal screw.

B.For strand wiring

(1)Cut the wire and with a wire cutter or wire-cutting pliers,then strip the insulation to about 3/8"(10mm) of expose the solid wire.

(2)Using a screwdriver ,remove the terminal screw(s) on the terminal board.

Fig. 15



HOW TO FIX CONNECTION CORD AND POWER CABLE AT THE CORD CLAMP

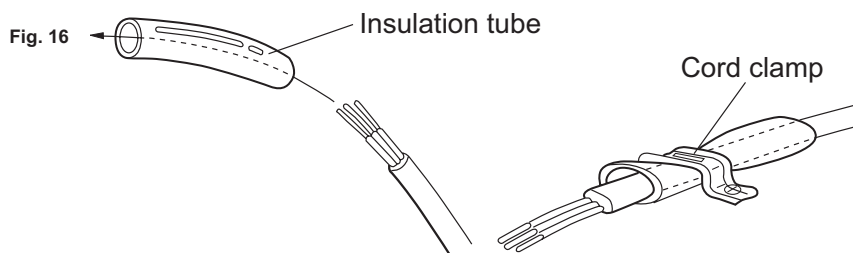
After passing the connection cord and power cable through the insulation tube, fasten it with the cord clamp, as shown in Fig.16

ELECTRICAL REQUIREMENT

- Electric wire size and fuse capacity:

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 (mm ²)	Earth leakage breaker	
		Switch breaker (A)	Overcurrent protector		Switch breaker	Leak current(mA)
For series 282	1	40	26	6.0	40	30
For series 362, 482	3	30	20	4.0	30	20



Use VW-1, 0.5 to 1.0 mm thick, PVC tube as the insulation tube.

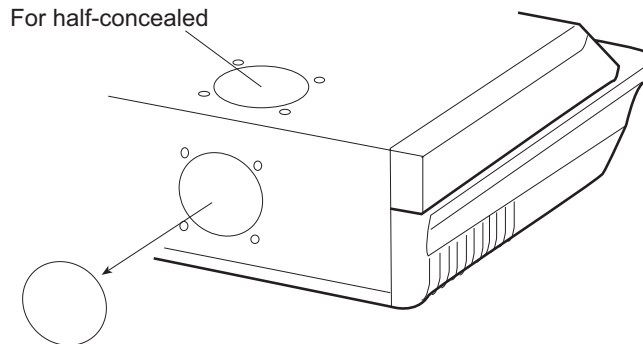
⚠ CAUTION

- (1) Match the terminal block numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric parts.
- (2) Connect the connection cords firmly to the terminal block. Imperfect installation may cause a fire.
- (3) Always fasten the outside covering of the connection cord with the cord clamp. (If the insulator is chafed, electric leakage may occur.)
- (4) Always connect the ground wire.

FRESH-AIR INTAKE

(1) Take away the knockout hole for the fresh-air intake, as shown in Fig. 17. (If using half-concealed installation, take down the top knockout hole instead)

Fig. 17

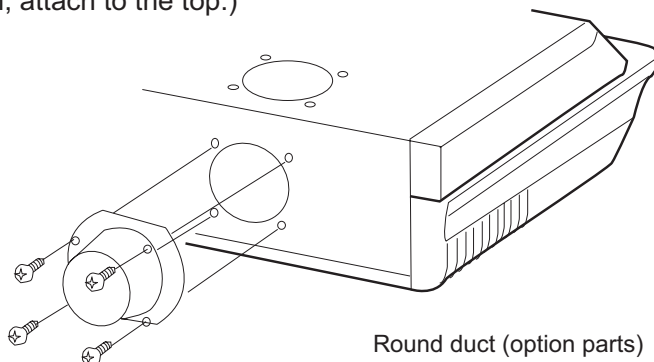


CAUTION

- (1) When removing the cabinet (iron plate), be careful not to damage the indoor unit internal parts and surrounding area (outer case).
- (2) When processing the cabinet (iron plate), be careful not to injure yourself with burrs, etc.

(2) Fasten the round flange (optional) to the fresh air intake, as shown in Fig. 18. (If using half-concealed installation, attach to the top.)

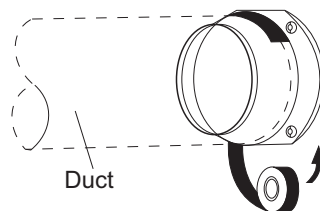
Fig. 18



[After completing "INDOOR UNIT INSTALLATION"....]

- (3) Connect the duct to the round flange.
- (4) Seal with a band and vinyl tape, etc. so that air does not leak from the connection.

Fig. 19



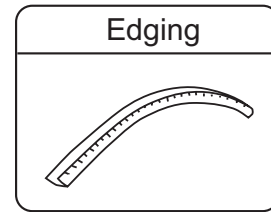
CONNECTION CORDS

- (1) Remove the cord clamp.
- (2) Put the end of the connection cords to the positions shown in Fig. 20.
- (3) Connect the end of the connection cord fully into the terminal block.
- (4) Fasten the connection cord with a cord clamp.
- (5) Fasten the end of the connection cord with the screw.
- (6) For series 28, 36, 42, 52, the power cable and connecting cable are self-provided.

Outdoor installation

1. Accessories

"Edging" for protection of electric wires from an opening edge.

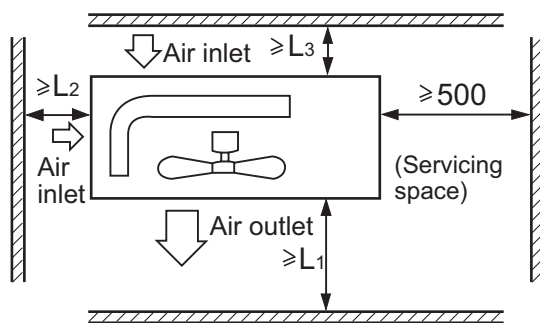


2. Selection of the place of installation

Select the place of installation satisfying the following conditions and, at the same time, obtain a consent from the client or user.

- Place where air circulates.
- Place free from heat radiation from other heat sources.
- Place where drain water may be discharged.
- Place where noise and hot air may not disturb the neighborhood.
- Place where there is not heavy snowfall in the winter time.
- Place where obstacles do not exist near the air inlet and air outlet .
- Place where the air outlet may not be exposed to a strong wind.
- Place surrounded at four sides are not suitable for installation. A 1m or more of overhead space is needed for the unit.
- Mount guide-louvers to place where short-circuit is a possibility.
- When installing several units, secure sufficient suction space to avoid short circuiting.

(1) Open space requirement around the unit

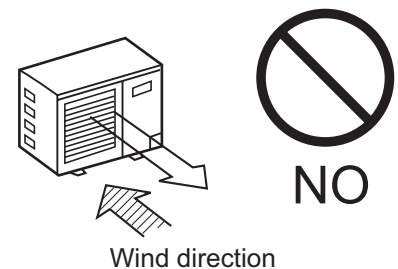


Note :

- (1). Fix the parts with screws
- (2). Don't intake the strong wind directly to the outlet air-flow hole.
- (3). A one meter distance should be kept from the unit top
- (4). Don't block the surroundings of the unit with sundries

Unit: mm

Case	I	II	III
Distance			
L ₁	open	open	500
L ₂	300	0	open
L ₃	150	300	150



Wind direction

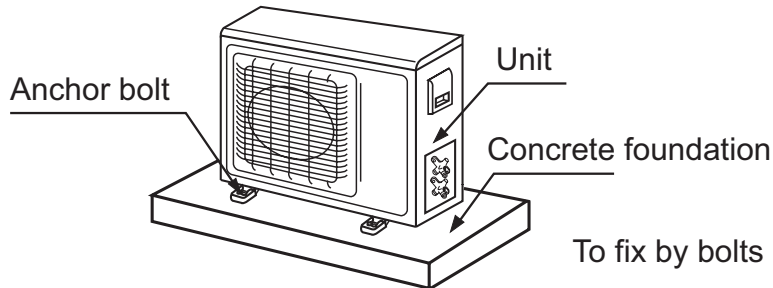
(2) Installation where the area with strong winds.

Install the unit so that the air outlet section of the unit must NOT be faced toward wind direction.

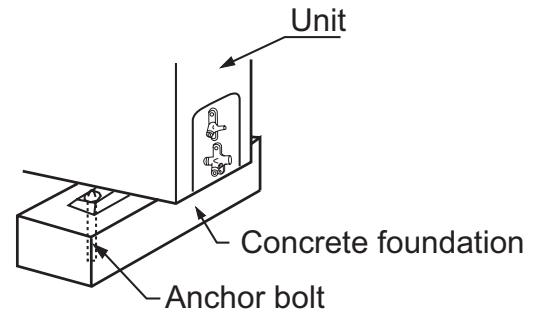
(3) Installation

Fix the unit in a proper way according to the condition of a place where it is installed by referring to the following .

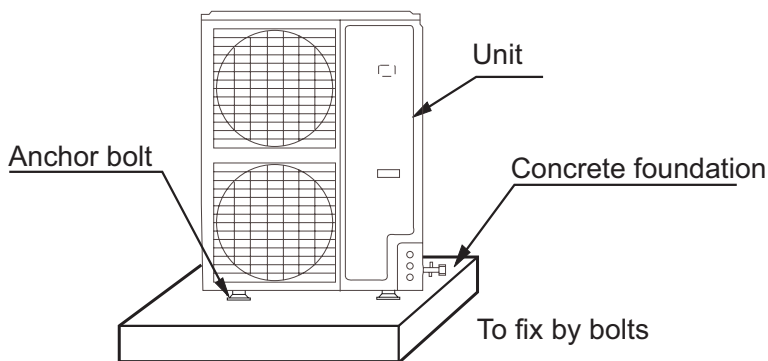
(a) Concrete foundation



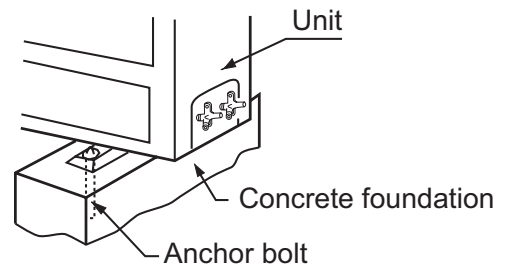
(b) Foundation anchor



(a) Concrete foundation



(b) Foundation anchor



Note: (1) Give enough room for the concrete foundation to fix by anchor bolts.

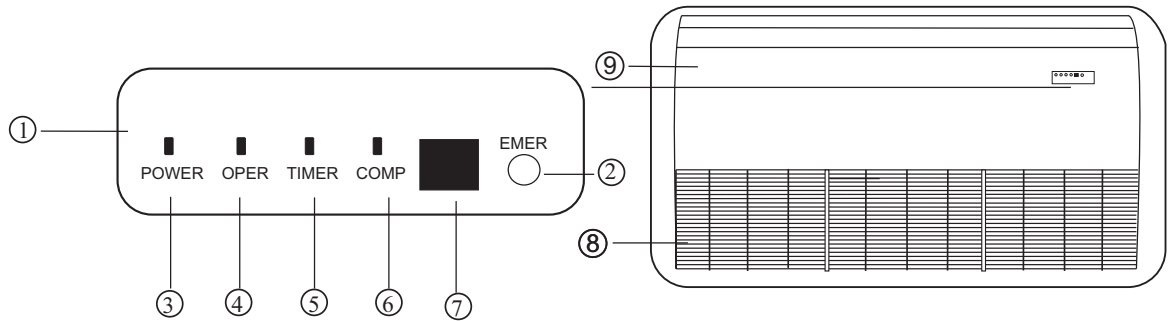
Note: (1) Place the concrete foundation deep enough.

(4) Installation sketch of outdoor unit

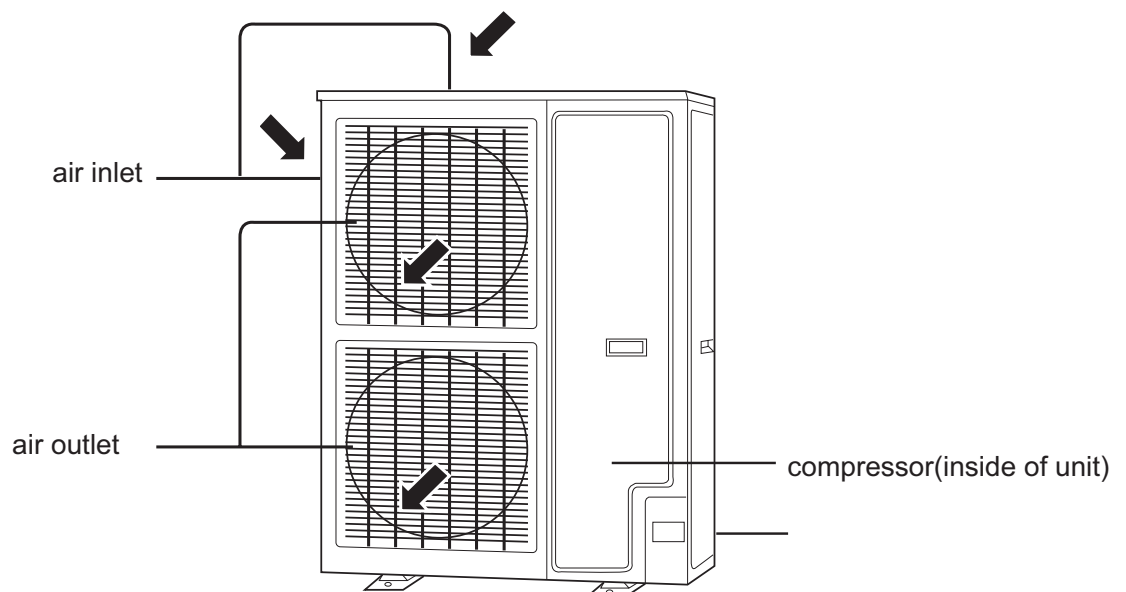
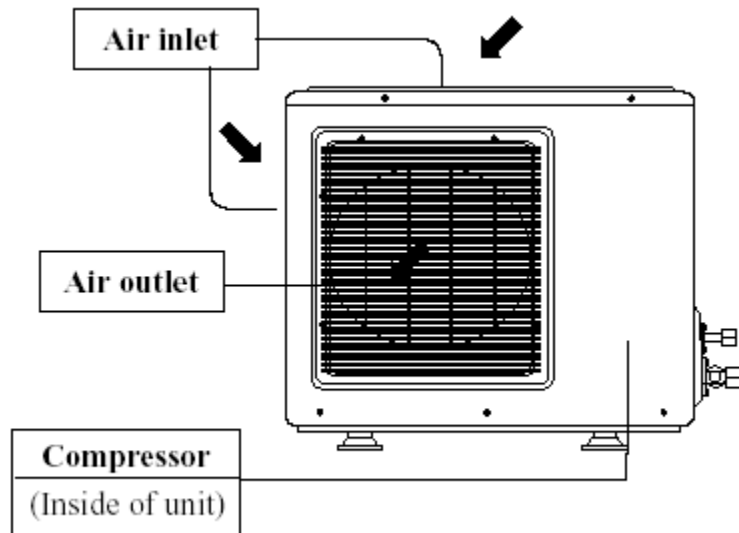
- Install the unit so that the angle of inclination must be less than 3 degrees.

The detailed information please refers to the Operation & Instruction Manual.

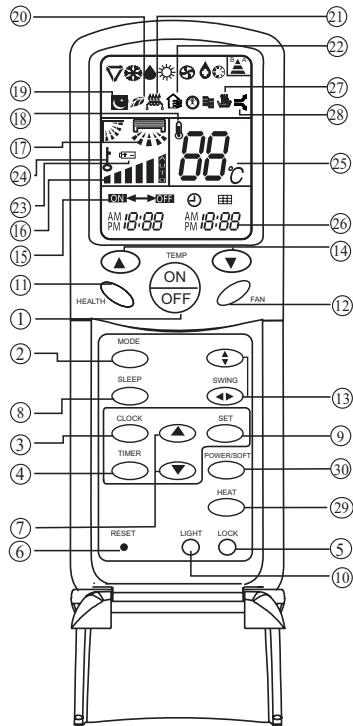
6. Parts and Functions



- ① Operating Control Panel
- ② Emergency switch
- ③ Power Indicator Lamp
- ④ OPERATION Indicator Lamp
- ⑤ TIMER Indicator Lamp
- ⑥ Compressor Lamp
- ⑦ Remote receiver
- ⑧ Inlet Grill (Filter inside)
- ⑨ Front panel



7 Infrared controller YR-H50 Manual Operation



- ① Power ON/OFF
Used for unit start and stop.
- ② MODE
Used to select AUTO run, COOL, DRY, HEAT and FAN operation.
- ③ CLOCK
Used to set correct time.
- ④ TIMER
Used to select TIMER ON, TIMER OFF, TIMER ON/OFF.
- ⑤ LOCK
Used to lock buttons and LCD display.
- ⑥ RESET
Used to reset the controller back to normal condition.
- ⑦ HOUR
Used to set clock and timer setting.
- ⑧ SLEEP
Used to select sleep mode
- ⑨ SET
Used to confirm Timer and Clock setting.
- ⑩ LIGHT
Control the light up and go out of the control panel's background light source and control the switch of the buzzer.
- ⑪ HEALTH
Used to set Health operation function
- ⑫ FAN
Used to select fan speed: AUTO, LOW FAN, MED FAN, HIGH FAN.

- ⑬ SWING
Used to set UP/DOWN air sending and RIGHT /LEFT air sending direction.
- ⑭ TEMP
Used to set temp., temp. range: 16°C~30°C
- ⑮ Timer ON/OFF display
- ⑯ Fan speed and air sending direction display



- ⑰ Swing direction display
- ⑱ Room temperature display
- ⑲ Sleep state display
- ⑳ Health display
Display when set Health operation function.
- ㉑ Electric Heating display
- ㉒ Fresh Air state display
- ㉓ Battery Capacity display
Display when the electric power of the battery is insufficient.
- ㉔ Lock state display
- ㉕ Temperature display
Used to display the set temperature and room temperature.
- ㉖ Clock display
- ㉗ Humidifying display
- ㉘ Power/Soft operation display
- ㉙ HEAT
Select Auxiliary electric heater
- ㉚ POWER/SOFT
Select power/soft

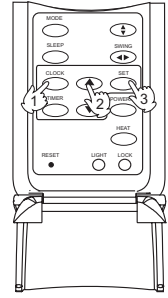
Clock set

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

Press CLOCK button, "AM" or "PM" flashes.

Press ▲ or ▼ to set correct time. Each press will increase or decrease 1 second. If the button is kept pressed, time will change quickly.

After time setting is confirmed, press SET, "AM" and "PM" stop flashing, while clock starts working.



Remote controller's operation

- When in use, put the signal transmission head directly to the receiver hole on the indoor unit
- The distance between the signal transmission head and the receiver hole should be within 7m without any obstacles as well.
- Don't throw the controller, prevent it from being damaged.
- When electronic-started type fluorescent lamp or change-over type fluorescent lamp or wireless telephone is installed in the room, the receiver is apt to be interfered in receiving the signal so the distance to the indoor unit should be nearer.

Loading of the battery

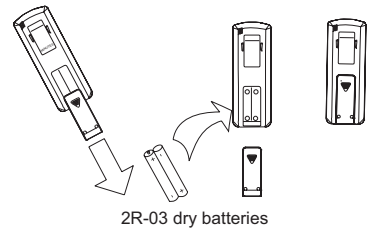
Slightly press "▼" and push down the cover.

Load the batteries as illustrated.

2 R-03 dry batteries (cylinder),

Be sure that the loading is in line with the "+" / "-" pole request as illustrated.

Put on the cover again.



Confirmation indicator:

In disorderation, reload the batteries or load the new batteries after 5 mins.

If the remote controller can't function normally or doesn't work at all, use a sharp object item to press the reset key.

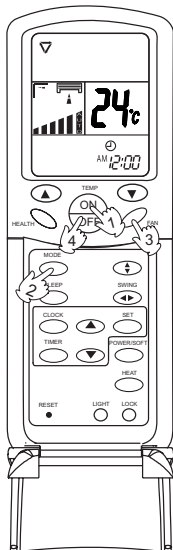
Hint: Remove the batteries in case unit won't be used for a long period.

If there are any displays after being taken out, just need to press reset key.

When throwing away the waste batteries, please perform in accordance with the local regulation.

Note: The waste batteries should be disposed properly, and use two new same type batteries when loading.

Auto operation



- ① Press ON/OFF button
Unit starts running.
The previous status appears on the display (except for TIMER, SLEEP mode)
- ② Press MODE button. For each press, operation mode changes as follows:



Select Auto run,

"▼" appears and auto run starts.

- ③ Select temp. button
Press TEMP button
 - ▲ Every time the button is pressed, temp. setting increases 1°C
 - ▼ Every time the button is pressed, temp. setting decreases 1°C
 If the button is kept pressed, setting will increase or decrease quickly.

- ④ Press FAN, For each press, operation mode changes as follows:



Unit runs at the speed displayed on LCD.

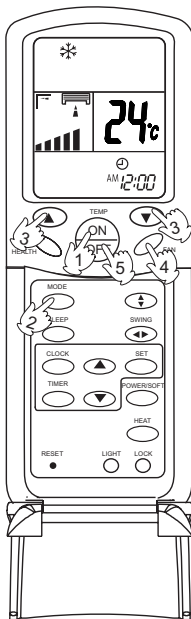
When fan speed is AUTO, it is changed automatically according to the indoor temperature.

- ⑤ Press ON/OFF button
Unit stops running.

Note:

During Auto run operation, temp. setting which can be adjusted will be shown in LCD display, unit will select heating, cooling or fan operation according to the room temp.

Cooling operation



- ① Press ON/OFF button
Unit starts running.
The previous status appears on the display (except for TIMER, SLEEP mode)
- ② Press MODE button. For each press, operation mode changes as follows:



Select cooling operation, Shows "❄", Cooling operation starts.

- ③ Select temp. button
Press TEMP button
▲ Every time the button is pressed, temp. setting increases 1 °C
▼ Every time the button is pressed, temp. setting decreases 1 °C
If the button is kept pressed, setting will increase or decrease quickly.
- ④ Press FAN button. For each press, fan speed changes as follows:



Unit runs at the speed displayed on LCD.

When fan speed is AUTO, it is changed automatically according to the indoor temperature.

- ⑤ Press ON/OFF button
Unit stops running, and when entry this mode for the next time, it will show the previous setting.

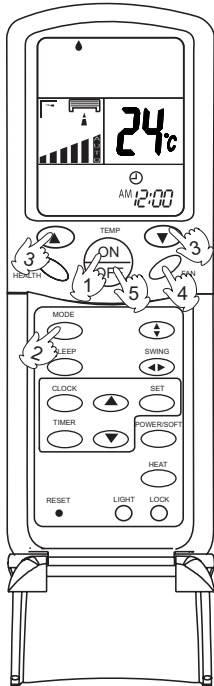
Dry operation

- ① Press ON/OFF button
Unit starts running.
The previous status appears on the display (except for TIMER, SLEEP mode)
- ② Press MODE button. For each press, operation mode changes as follows:

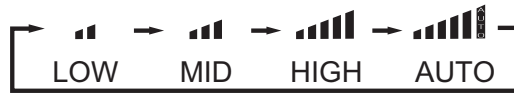


Select Drying operation shows "💧", Dry operation starts

- ③ Select temp. button
Press TEMP button
▲ Every time the button is pressed, temp. setting increases 1 °C
▼ Every time the button is pressed, temp. setting decreases 1 °C
If the button is kept pressed, setting will increase or decrease quickly.



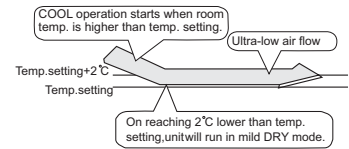
- ④ Press FAN button. For each press, fan speed changes as follows:



Unit runs at the speed displayed on LCD.

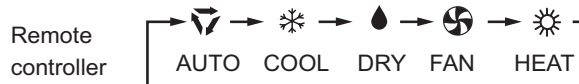
In DRY mode, when room temp. becomes 2°C lower than temp. setting, unit will run intermittently at LOW speed regardless of FAN setting.

- ⑤ Press ON/OFF button
Unit stops running, and when entering this mode for the next time, it will show the previous setting



Fan operation

- ① Press ON/OFF button
Unit starts running.
The previous status appears on the display (except. TIMER, SLEEP mode)
- ② Press MODE button. For each press, operation mode changes as follows:



Select Fan operation shows "🌀", Fan operation starts.

- ③ Press FAN button. For each press, fan speed changes as follows:

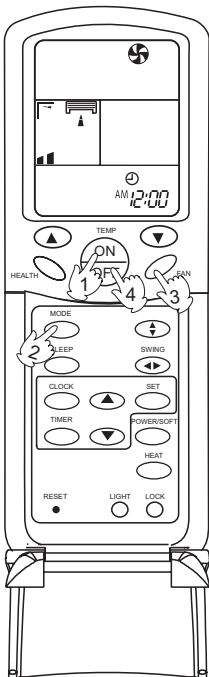


Unit runs at the speed displayed on LCD.

- ④ Press ON/OFF button
Unit stops running, and when entering this mode for the next time, it will show the previous setting.

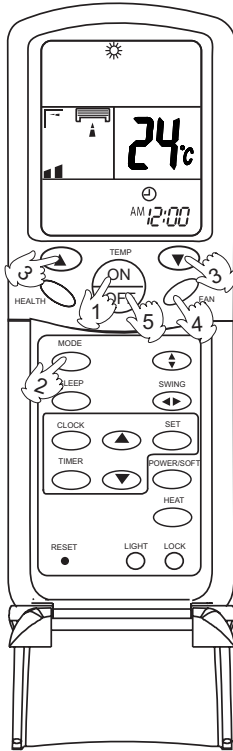
Note:

In this mode, temp. can't be selected, temp. setting will not be shown in LCD display. In Fan operation mode, "AUTO" fan speed is not available. Operation cycles are as follows:



Heating operation

Note: For cooling only type, this function is invalid.



- ① Press ON/OFF button
Unit starts running.
The previous status appears on the display (except. TIMER, SLEEP mode)
- ② Press MODE button. For each press, operation mode changes as follows:



Select Heating operation "☀" appears and Heating operation starts.

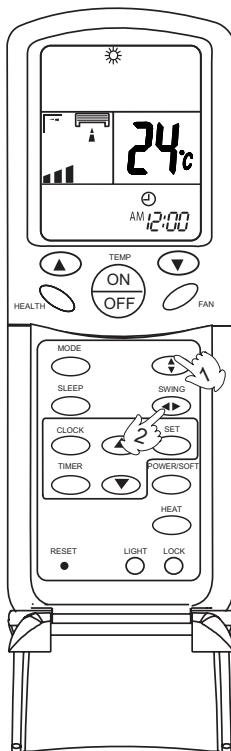
- ③ Select temp. button
Press TEMP button
▲Every time the button is pressed, temp. setting increases 1℃
▼Every time the button is pressed, temp. setting decreases 1℃
If the button is kept pressed, setting will increase or decrease quickly.
- ④ Press FAN button. For each press, fan speed changes as follows:



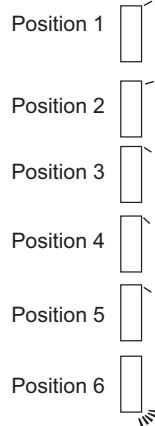
In heat mode, warm air will blow out after a short period of time due to cold-draft prevention function.

- ⑤ Press ON/OFF button
Unit stops running, and when entering this mode for the next time, it will show the previous setting.

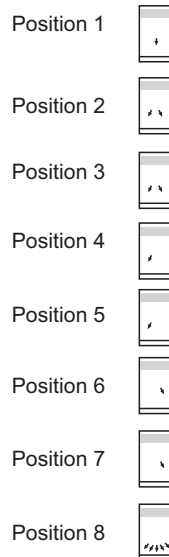
Air flow adjustment



Swing louvers
Up and down
(Horizontal louvers)



Left and right
(Vertical louvers)



Swing

- Press SWING the vertical louvers move from left and right.

Fixed position

- Press the SWING again to fix the vertical louvers at your desired position.

Swing

- Press SWING the horizontal louvers move from up to down.

Fixed position

- Press the SWING again to fix the horizontal louvers at your desired position.

Note: Put louvers at up position in cooling and down position in heating mode.
This will be helpful to keep an even room temp.

Note: In cooling or dry operation, don't put horizontal louvers at downward position for a long time, or outlet grill might get frosted. Don't expose your skin to cool or warm air for a long time.

Sleep operation

Remote control unit

Before going to bed, you can press the Sleep button, then the air conditioner will operate in comfortable sleep mode to make your sleep more comfortable.

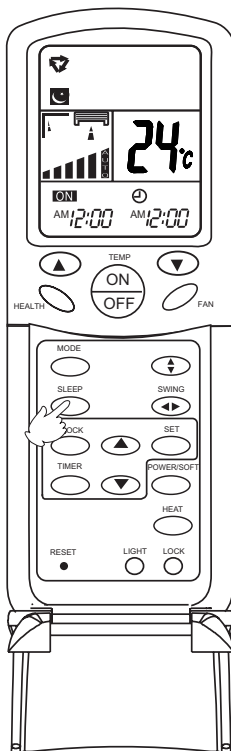
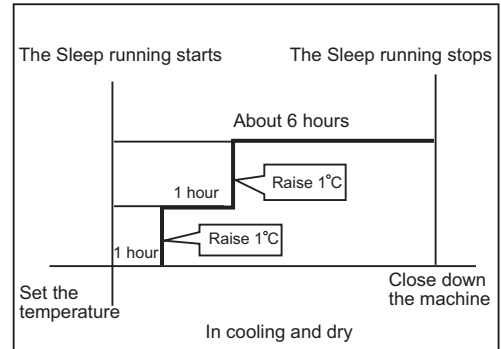
Usage of the Sleep function

After starting, set the Run mode and press the Sleep button.

Run mode

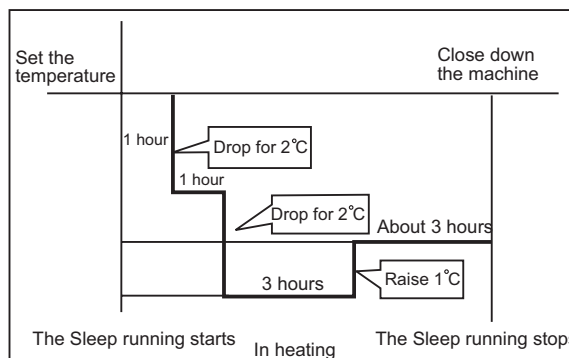
1. In cooling and dry

After starting of the Sleep operation, the temperature will be raised for 1 C higher than the set temperature 1 hour later, and be raised for 1 C after another hour. It continues under that condition for 6 hours, then the machine will be switched off. The temperature is higher than the set temperature so as to avoid catching cold in sleeping.



2. In heating (the single-cooling conditioners do not have the function)

After the Sleep running starts, the temperature will drop for 2 C after another one hour. The temperature will raise for 1 C after 3 hours running under the above temperature, and the conditioner will be closed down after running for 3 hours. The temperature is lower than the set temperature so as to avoid uneasiness in sleeping.



3. In automatic running

The conditioner will run under automatically selected working mode of sleeping.

4. In Fan running

The Sleep function is invalid.

Timer on/off operation

Set Clock correctly before starting Timer operation (refer to page 2)

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

TIMER ON/OFF

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

Operation mode will be displayed on LCD.

(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 (TIMER ON or TIMER OFF) ON or OFF will flash.

(3) Timer setting

Press Timer button first, then press ▲ / ▼ button.

▲ Every time the button is pressed, time increases 1 second, If button is kept pressed, time will change quickly.

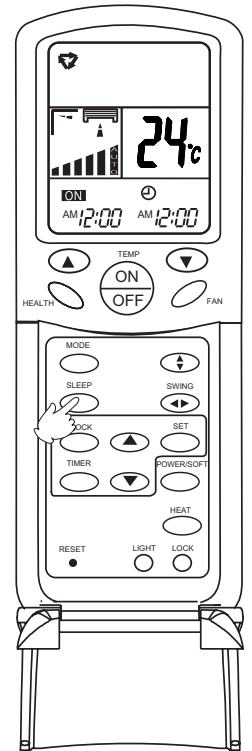
▼ Every time the button is pressed, time decreases 1 second, If button is kept pressed, time will change quickly. Time will be shown on LCD. It can be adjusted within 24 hours.

(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 (TIMER ON or TIMER OFF)

Timer mode indicator on indoor unit lights up.



To cancel TIMER mode

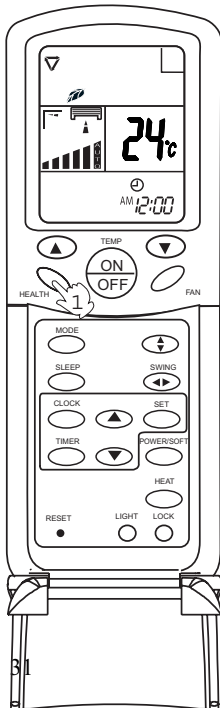
Just press TIMER button several times until TIMER mode disappears.

Hints

After replacing batteries or a power failure happens, Time setting should be reset.

Remote controller has memory function when in TIMER mode next time, just Press SET button after selecting mode if timer setting is as the same as the previous one.

Health operation



After turning on the unit and set the desired working mode. Press the Health button, the LCD will display " 🌿 ", the unit begins health operation (start the negative ion generation device). Press the Health button again, the " 🌿 " displayed on the LCD disappears, health operation is cancelled (turn off the negative ion generation device).

Note: When indoor fan motor does not work, the unit will automatically turn off negative ion generation device.

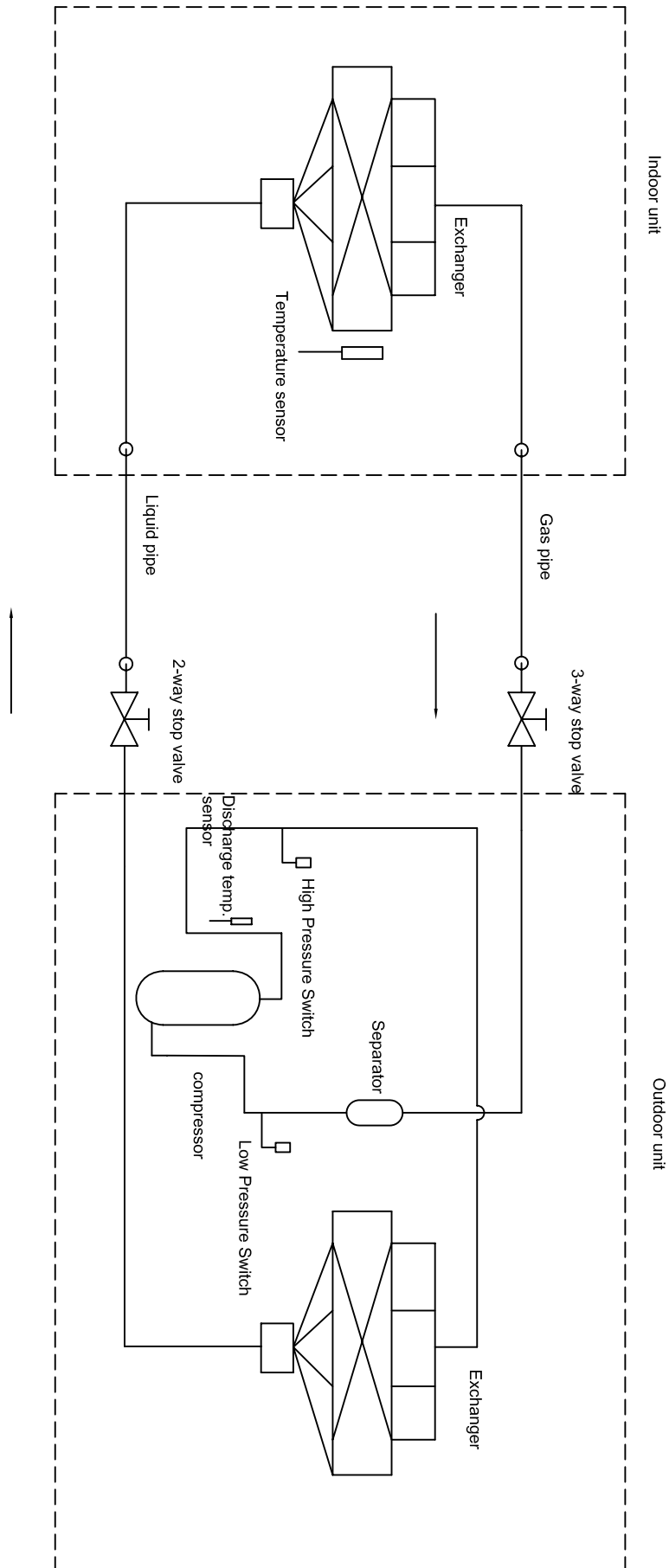
About Health operation

After the start of Health operation, the negative ion generator will generate large amount of negative ion, which can effectively balance the amount of positive & negative ion in the air and has the bacteria-killing function and accelerates the dust deposition of the room to make the room air fresh and healthy.

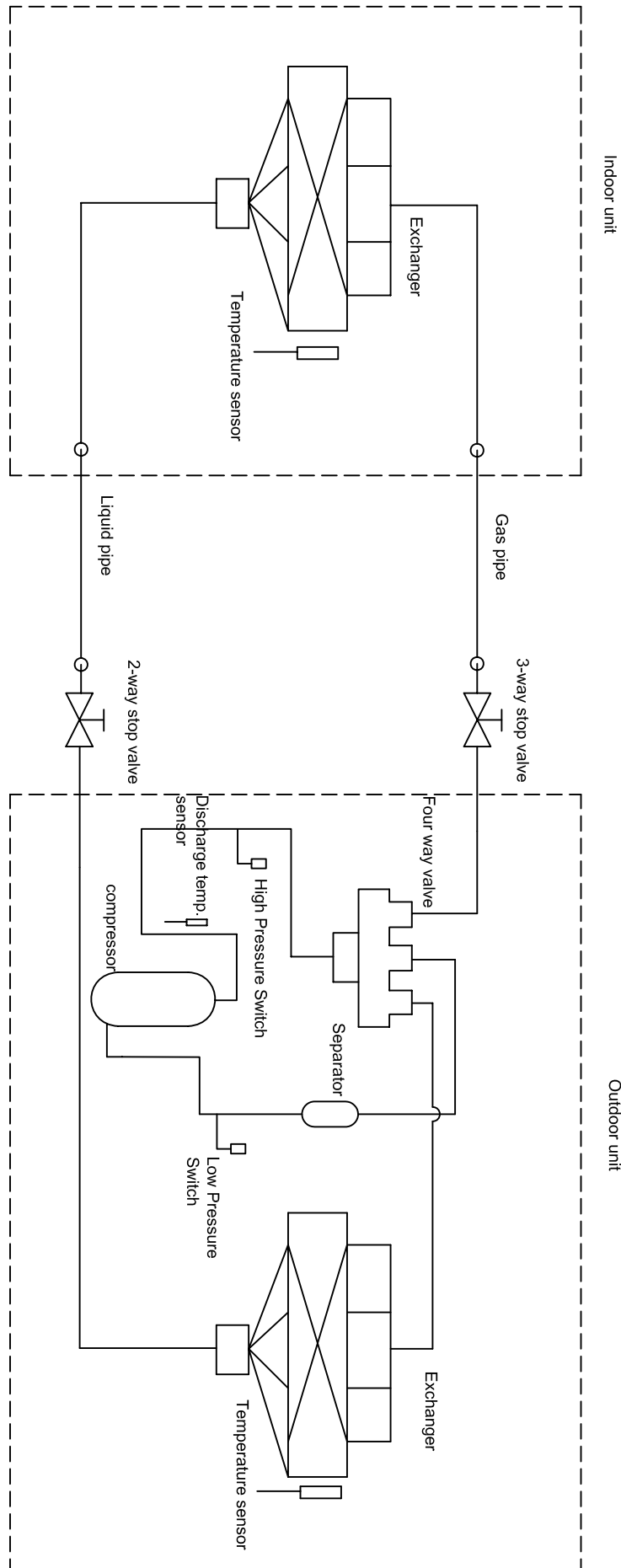
Wired controller YR-E12 (please see other manuals)

8. Refrigerant Diagram

HCFU-42CF03



HCFU-42HF03



9 ELECTRICAL CONTROL FUNCTIONS

9.1 Control Features

The brief introduction includes those for each item of various types of air conditioners and their electric control functions.

7.1 Brief introduction of electric control

(1) Automatic run

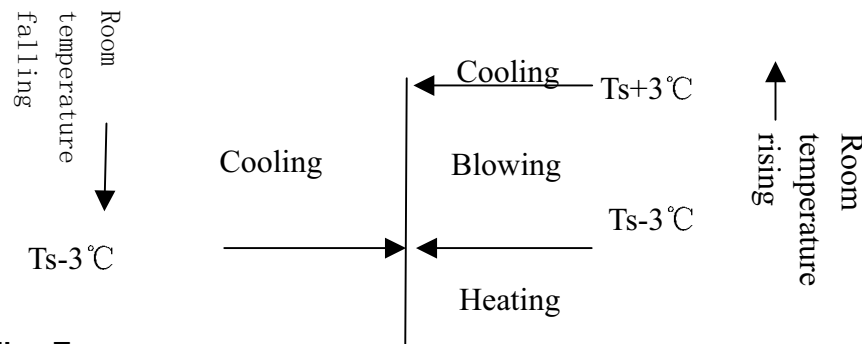
a. Cooling-heating type

After the machine being started and running mode changes to AUTO, the system will decide running mode according to difference between the present room temperature and setting temperature, then runs as the decided mode. In the following selections, T_r means room temperature and T_s means setting temperature.

Select running mode according to the following conditions at the first time to enter Auto mode:

- $T_r \geq T_s - 3^\circ\text{C}$ to select cooling mode (with setting temperature being $T_s + 3$)
- $T_r < T_s - 3^\circ\text{C}$ to select heating mode (with setting temperature being T_s)

After the system entering auto run mode, the running mode can convert automatically according to variation of room temperature between cooling, blowing and heating in the way shown as the chart below:

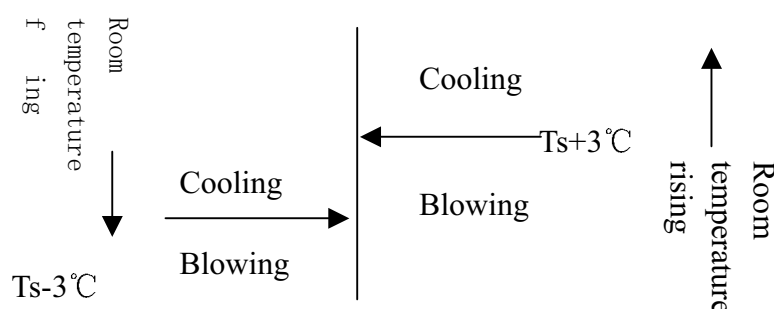


b. Single Cooling Type

Select running mode according to the following conditions at the first time to enter Auto mode:

- $T_r \geq T_s + 3^\circ\text{C}$ to select cooling mode
- $T_r < T_s + 3^\circ\text{C}$ to select blowing mode

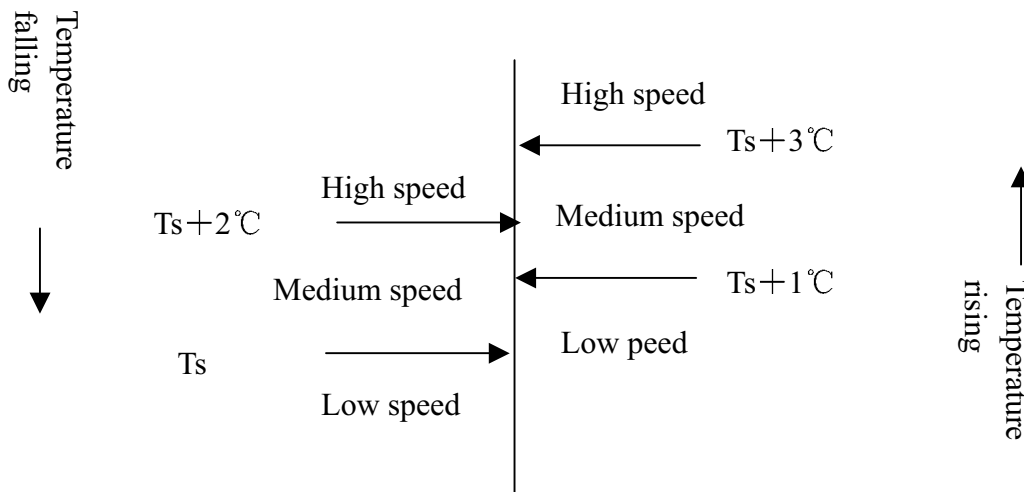
After the system entering auto run, the running mode can convert automatically according to variation of room temperature between cooling and blowing functions in the way shown as the chart below:



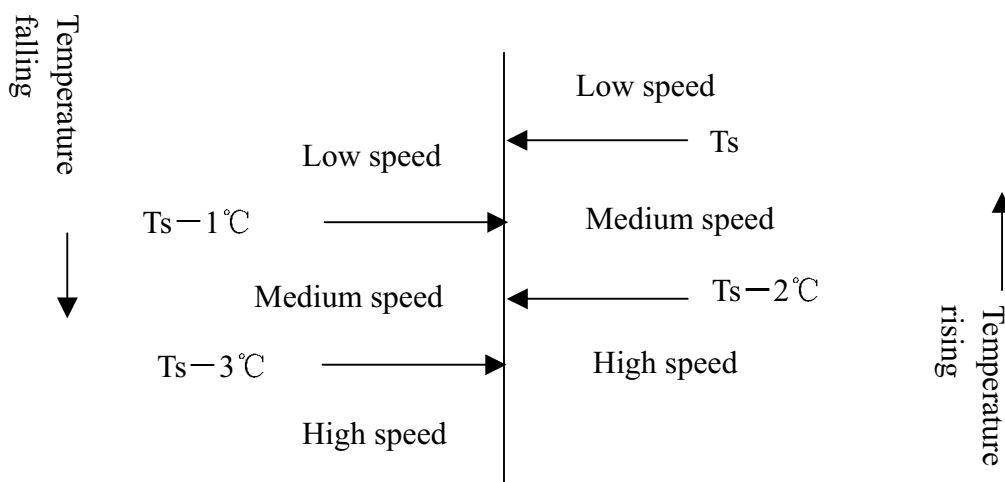
(2) Auto Selection of Wind Speed

In the following, T_r means room temperature while T_s means setting temperature.

a. During cooling program, conversion of wind speed from the low to high won't work until the present speed has continued for 3 minutes while conversion from the high to low needs no time delay. The chart below is the sketch map of conversion:



b. During heating program (applicable for cooling-heating type), conversion of wind speed from the low to high won't work until the present speed has continued for 3 minutes while conversion from the high to low needs no time delay. The chart below is the sketch map of conversion:



(3) Dehumidifying program

In the following, T_r means room temperature while T_s means setting temperature.

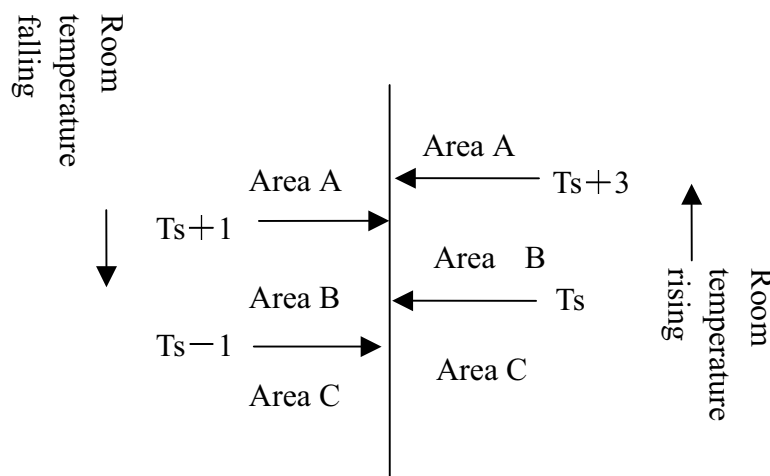
a. After the system entering dehumidifying program, the compressor, outdoor and indoor blowing fans run according to the following rules:

(1) $T_r > T_s + 2^\circ\text{C}$, the compressor and outdoor blowing fan run continuously while indoor

blowing fan runs at setting wind speed. This working area is defined as area A.

- (2) $T_s \leq T_r \leq T_s + 2^\circ\text{C}$, the compressor and outdoor blowing fan run for 10 minutes then pause for 6 minutes, while indoor blowing fan runs at low wind speed. This working area is defined as area B.
- (3) $T_r < T_s$, the compressor and outdoor blowing fan stop working while outdoor blowing fan runs at low wind speed. This working area is defined as area C.

a. After dehumidifying program starting, the system converts between A, B and C areas according to variations of room temperature with running mode being shown as the chart below:



(4) Cutoff protection against overload and overheat

During heating program, if the indoor blowing fan has been started and the compressor has been running more than 2 minutes, and the **temperature of indoor coil pipe (Ticp)** $> 64^\circ\text{C}$, the outdoor blowing fan will stop running; If $Ticp \leq 50^\circ\text{C}$ and the outdoor blowing fan has kept stop state for 45 seconds, then it will restore rotation; If $Ticp > 67^\circ\text{C}$ and such temperature has last for 10 seconds, the compressor will stop running and indoor blowing fan run according to conditions as it reaches setting temperature. When $Ticp < 58^\circ\text{C}$, and the compressor has kept stop state over 3 minutes, then the compressor and outdoor blowing fan will restore normal running.

Cutoff protection for heating current

After 60 seconds from the compressor being started, if CT current exceeds I1 (9.2A) and such case has kept 5 seconds, the outdoor blowing fan will stop. If 45 seconds has passed after the outdoor blowing stops and the current of the compressor is less than I2 (7.5A), the blowing fan will restore running. If CT current exceeds I3 (14.3A) and such case lasts for 3 seconds, the compressor and outdoor blowing fan will stop. The compressor will not restore running until 3 minutes passes with CT current less than 12A.

(5) Cool wind prevention during heating program

At the first time entering heating program or after ending the latest frost removal, if the **temperature of indoor coil pipe (Ticp)** $< 28^\circ\text{C}$, the indoor blowing fan will stop running; If $28^\circ\text{C} \leq Ticp < 38^\circ\text{C}$, the indoor blowing fan will run at low speed; If $Ticp > 38^\circ\text{C}$ or the compressor has been running for more than 4 minutes, the indoor blowing fan will run at

setting wind speed.

(6) Afterheat blowing during heating program

During heating program, the compressor will stop running (except overheat protection or frost removal) while the indoor blowing fan will firstly run for 50 seconds at low speed then stop.

(7) Frost removal control (applicable for cooling-heating type)

(1) Starting conditions for frost removal:

- A. The indoor unit is in overload protection and outdoor blowing fan stops. The outdoor blowing fan does not enter overheat mode in 10 minutes after it is restarted, the compressor has run over 45 minutes totally while 20 minutes continuously, and the temperature of indoor coil pipe is lower than 43°C;
- B. After the compressor continuously running for 20 minutes, the temperature of indoor coil pipe falls 1°C every 6 minutes and such case continuously appears three times, and the temperature of indoor coil pipe is less than 40°C, and 5 minutes have passed after the compressor is restarted;
- C. The compressor has run totally over 3 hours while 20 minutes continuously, and the temperature of indoor coil pipe is less than 40°C;
- D. The difference between room temperature and the one of indoor coil pipe is less than 16°C and the compressor has totally run over 45 minutes while 20 minutes continuously;

Frost removal will start if any one of the above conditions is satisfied.

(2) Ending conditions for frost removal:

- 1) Time of frost removal has exceeded 9 minutes;
- 2) CT current exceeds I4(8.2A);

(3) Actions of each load after the frost removal starts:

The compressor and outdoor blowing fan stop, and indoor blowing fan also stops. 55 seconds later the reversal valve is closed and next 5 seconds later the compressor is started.

(4) Actions of each load after the frost removal ends:

The compressor stops running while outdoor blowing fan immediately runs at high speed, 55 seconds later the reversal valve is opened and next 5 seconds later the compressor restores running and indoor blowing fan runs as conditions for cool wind prevention.

(8) Freeze protection

After the compressor has run for 9 minutes, the system will check **temperature of indoor coil pipe (Ticp)**. If Ticp is less than -1°C, the compressor and outdoor blowing fan will stop. They will run again after the compressor stops if both the following conditions are satisfied:

- 1) 3 minutes have passed since compressor stops.
- 2) Ticp exceeds 7°C.

(9) 3 minutes protection for compressor

After compressor stops, it cannot be started until 3 minutes later. During the machine's running, if time after losing power not exceeds 3 minutes, the compressor cannot be

restarted until 3 minutes later after it is reenergized.

(10) Power breakdown memory

If the machine suddenly loses power while running, or stops for maintenance or trouble shooting, it will restart running as the status when it stops after the power is restored.

Note: 1. Function setting: Continuously press sleep button on the remote controller 10 times in 5 seconds and buzzer on control panel shall beep 4 times.

2. Memory content: Running mode, wind speed setting, temperature setting, swing status.

3. Cancel: Press sleep button on the remote controller 10 times and buzzer on control panel beeps 2 times.

(11) Control of water pump

a. In cooling (including automatic cooling mode) and dehumidifying modes, the water pump works if the compressor runs while stops 5 minutes later after the compressor stops.

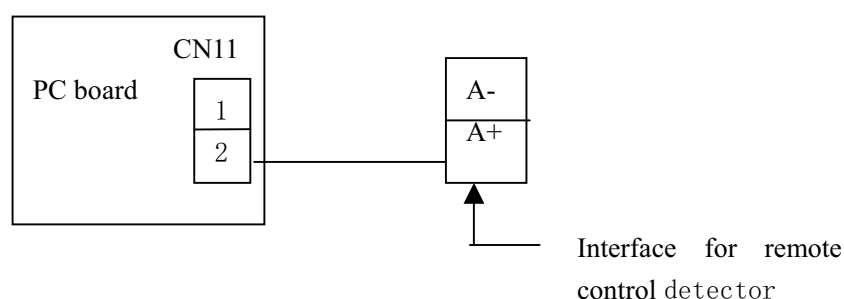
b. When water tank is fully filled, the float switch will be off. The water pump will start to work after a controller has detected this signal and it will continue working for 5 minutes after the float restores to normal state.

c. If the full water signal is detected continuously over 5 minutes, the water pump indicator lamp will flash to alarm and compressor stops running. The water pump will run 5 minutes, then pause for 5 seconds before next 5 minutes' running, ... until the float restores to normal state, after which the pump will run for 5 minutes then stop.

(12) Monitoring of remote network

Through preset interface, the air conditioner is connected to remote control detector (made by Haier) with 2-core cables for wire communication, to execute instructions sent from computer or centralized controller via remote control detector and meanwhile send present running status and trouble information of the machine to remote control detector.

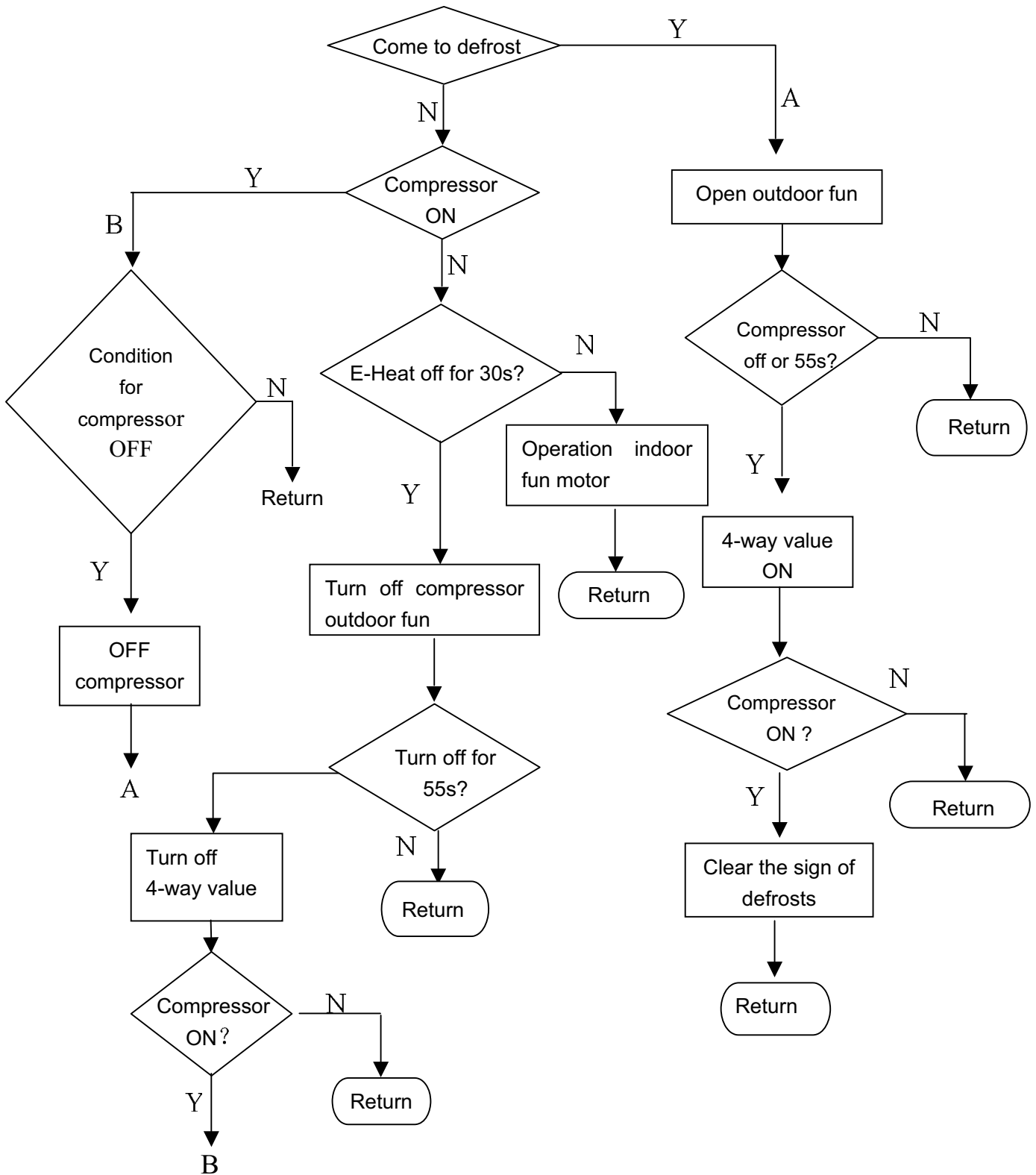
Connection between air conditioner and remote control detector:



(13) Trial run

Under shut-down state, hold pressing mandatory button. The buzzer will beep once, then twice after 5 seconds. Release the button to enter mandatory cooling mode, under which the indoor blowing fan runs at high speed with both the compressor and outdoor blowing fan working. Press the mandatory button again can end the mandatory mode.

9.2 Defrost operation flow chart



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.

Cooling:

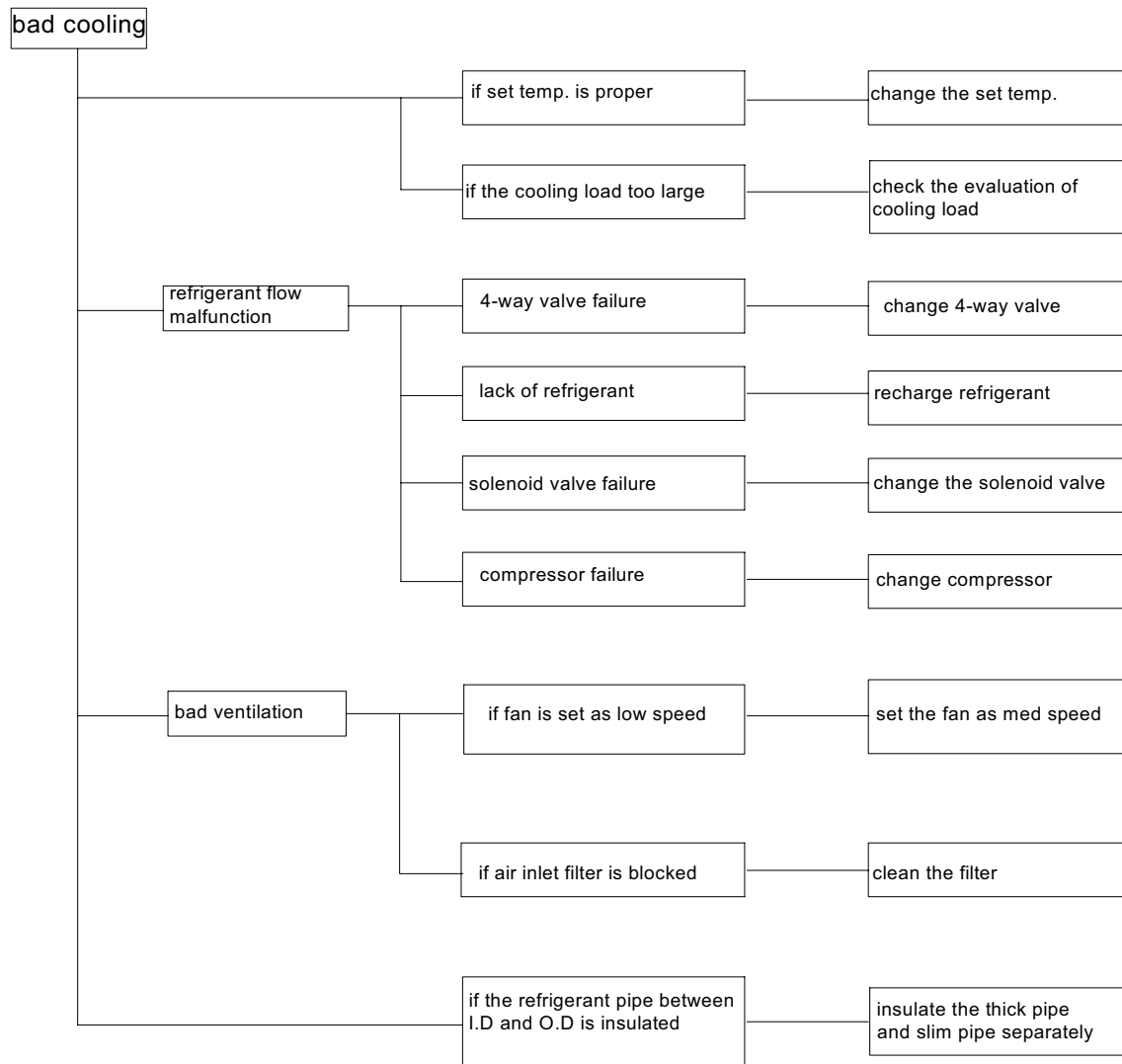


Figure 1

12.2 Failure code

The remote receiver, wired controller and indoor PCB indicator all can indicate the failure code.

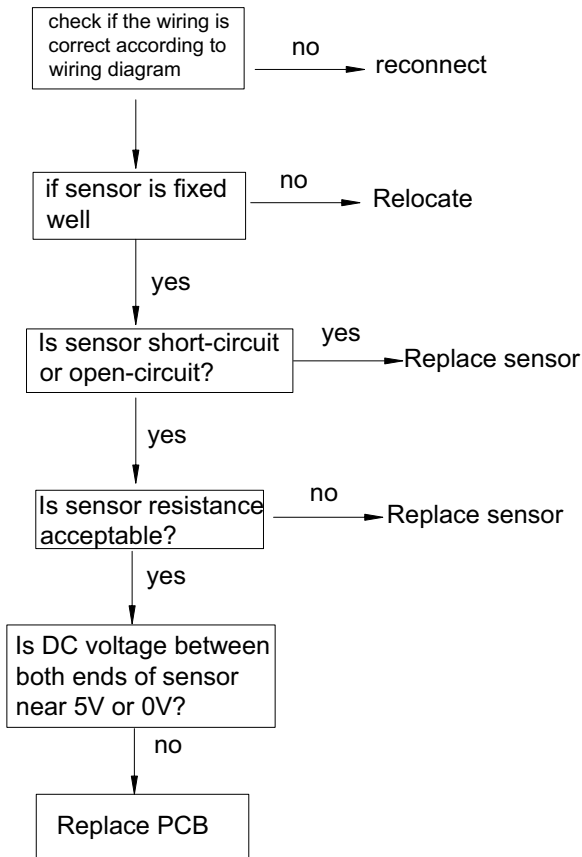
12.2.1 Failure code list

Failure code with wired controller YR-E12:

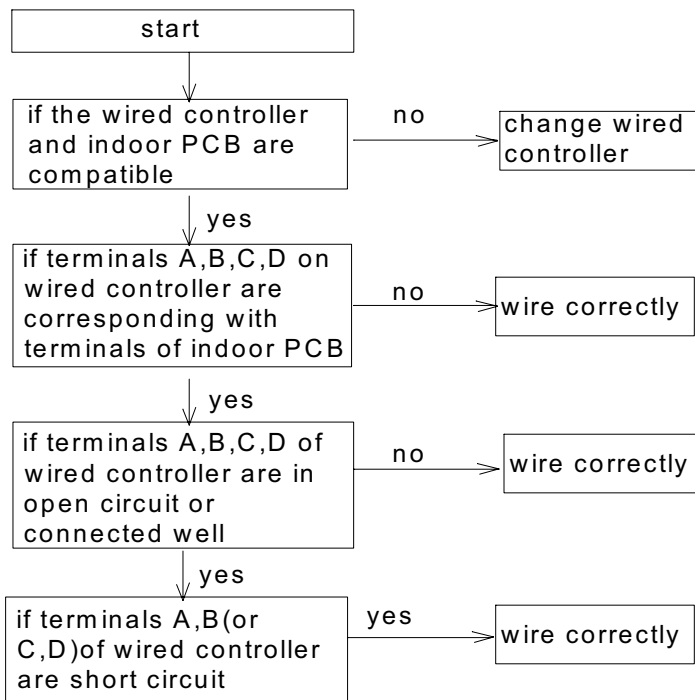
For remote type, flash times	Failure code on wired controller	For central control, failure code	Failure description	Reason
10	08	21	Drainage system failure	Float switch broken down for more than 25m continuously
1	01	01	Indoor ambient temp. sensor failure	sensor broken down or short circuit for more than 2m continuously
2	02	02	Indoor coil temp. sensor failure	sensor broken down or short circuit for more than 2m continuously
3	4A	11	Outdoor ambient temp. sensor failure	sensor broken down or short circuit for more than 2m continuously
4	49	12	Outdoor coil temp. sensor failure (compressor discharging temp. sensor)	Sensor broken down or short circuit for more than 2m continuously
5	48	10	Over-current protection	CT check abnormal 3 times in 30m
6	53	14	High pressure abnormal	High pressure switch acts 3 times in 30m
8	07	06	Communication between wired controller and indoor abnormal	Communication abnormal for more than 4m continuously
9	06	05	Communication between indoor and outdoor abnormal	Communication abnormal for more than 4m continuously
11	0B	30	Outside alarm signal input	Outside signal broken down for more than 10s
12	03	20	Gas pipe temp. sensor abnormal	Sensor broken down or short circuit for more than 2m continuously
13	0D	31	Solenoid valve abnormal	Solenoid valve act incorrectly 3 times continuously
15	05	17	EEPROM abnormal	EEPROM data missing
16	54	26D	Outdoor pressure switch or discharging protector abnormal	Pressure switch or discharging protector disconnected; or CN11 on indoor PCB disconnected. The failure occurs only when there is no outdoor PCB.

Diagnose and troubleshooting:

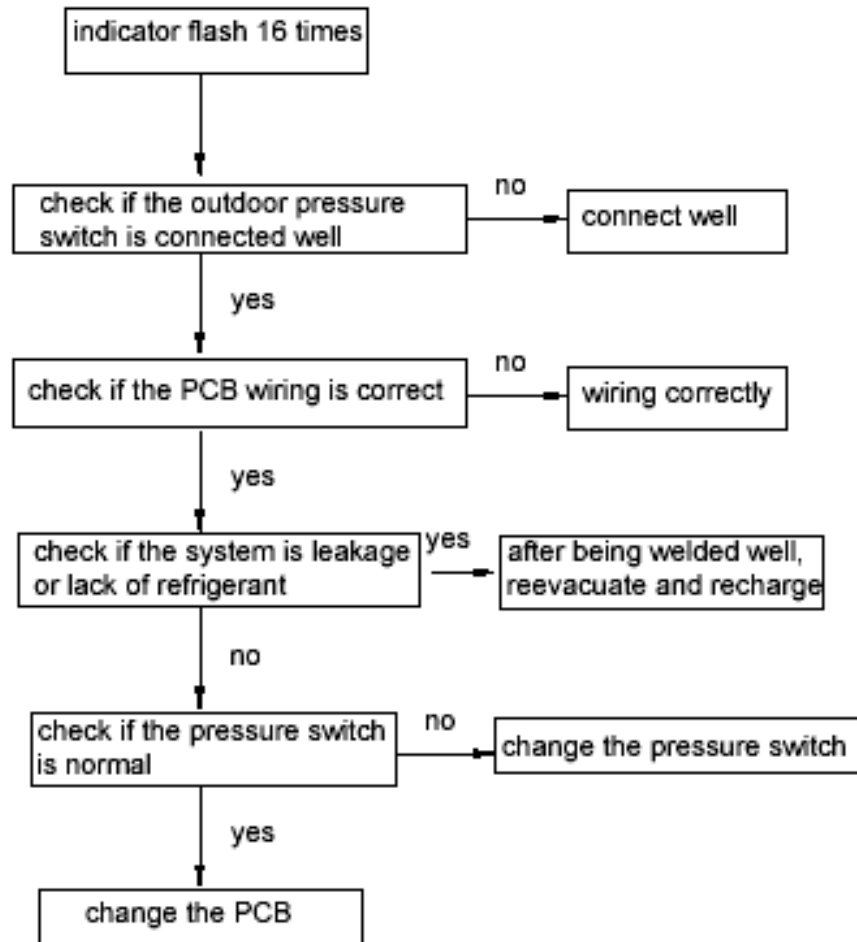
1) Sensor failure



2) Communication failure between operation panel and indoor unit



3) Low pressure abnormal

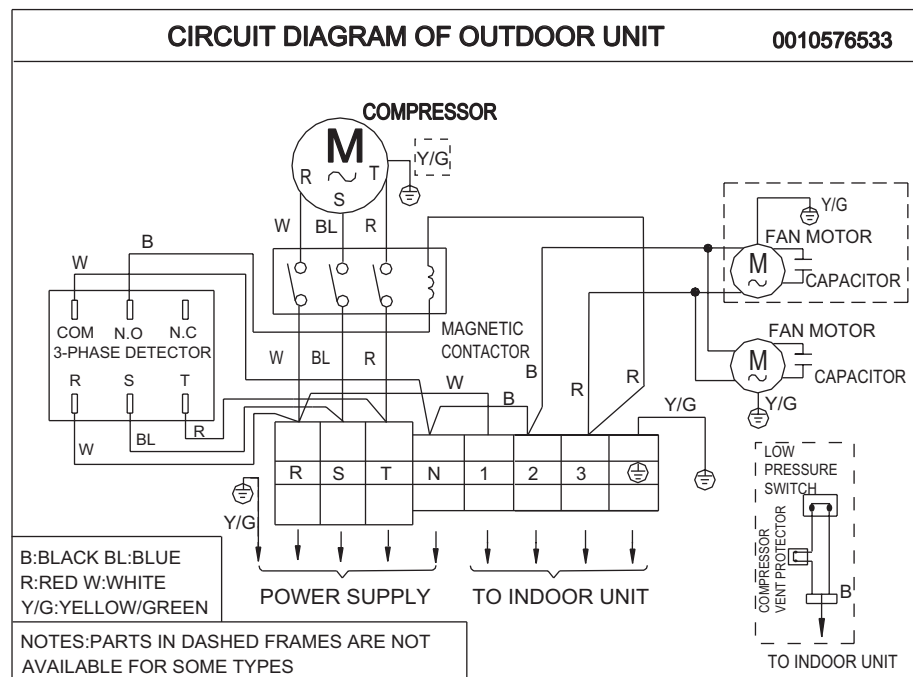
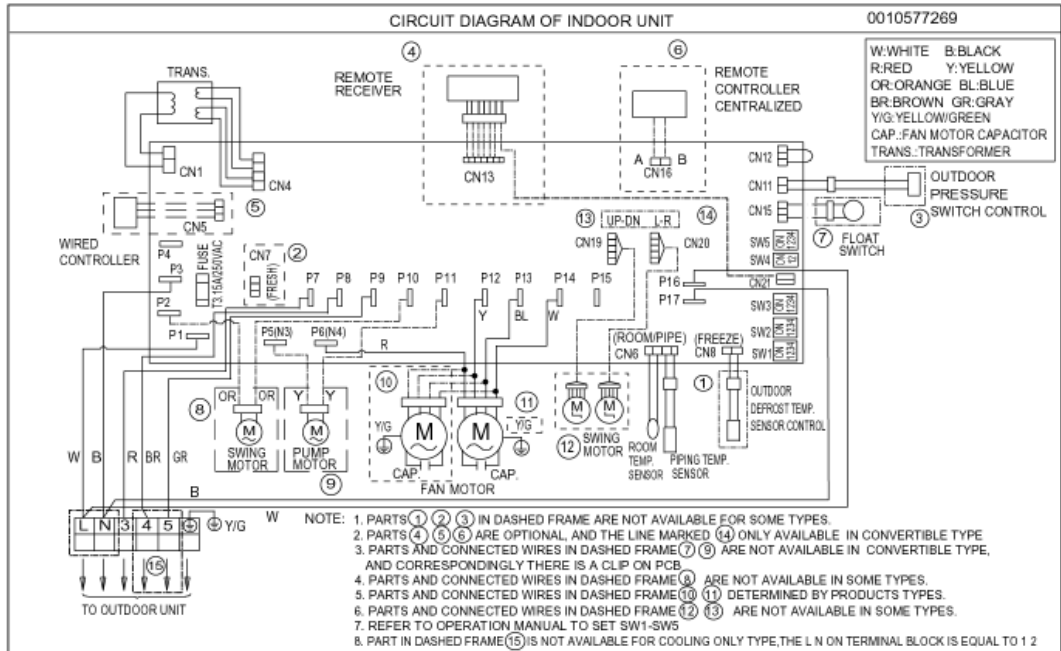


If there is other failure, please check if the dip switch is correct.

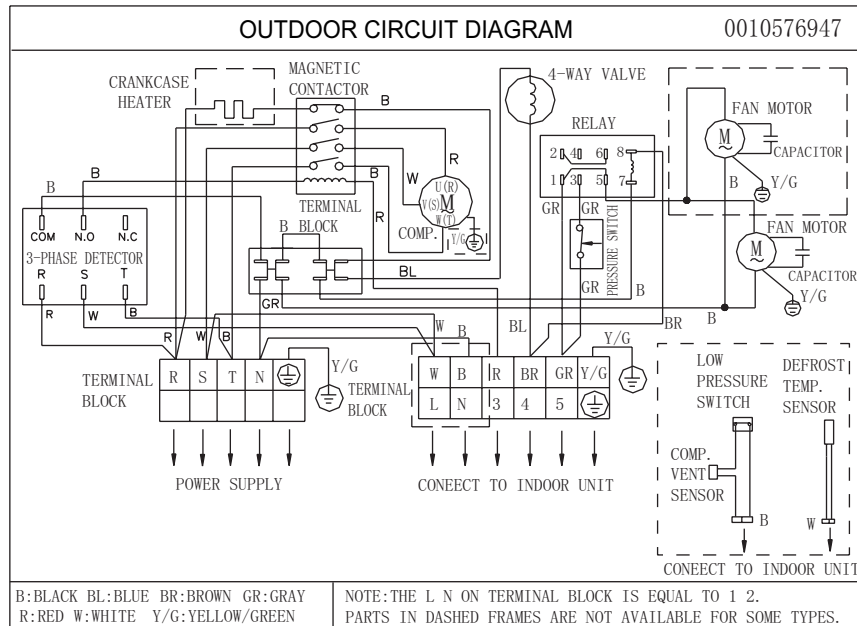
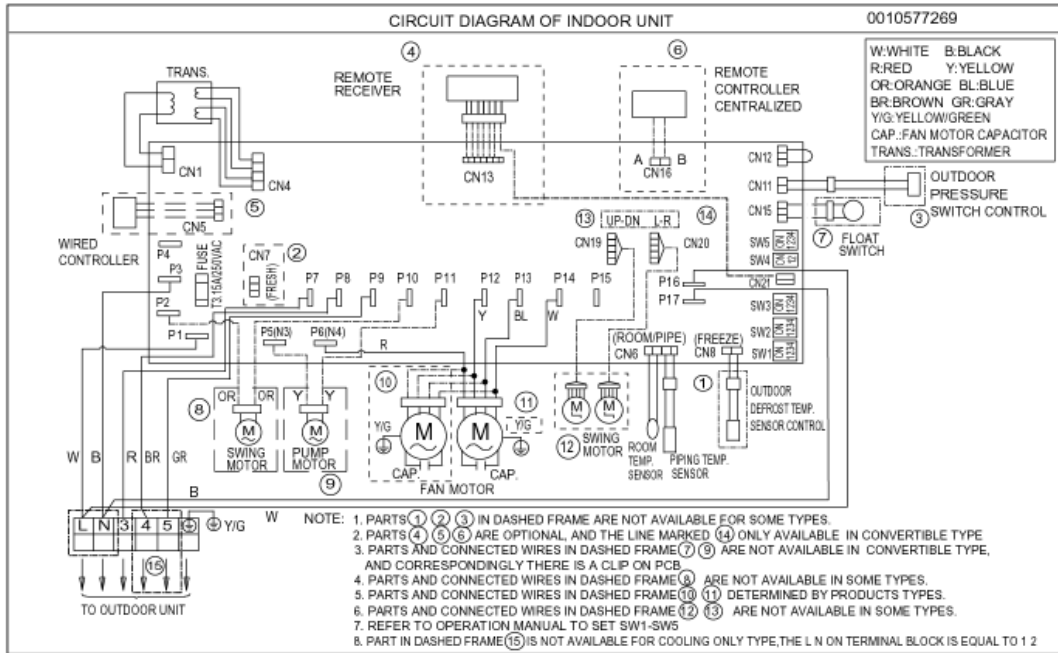
11. Electric data

11.1 Wiring diagram

HCFU-42CF03

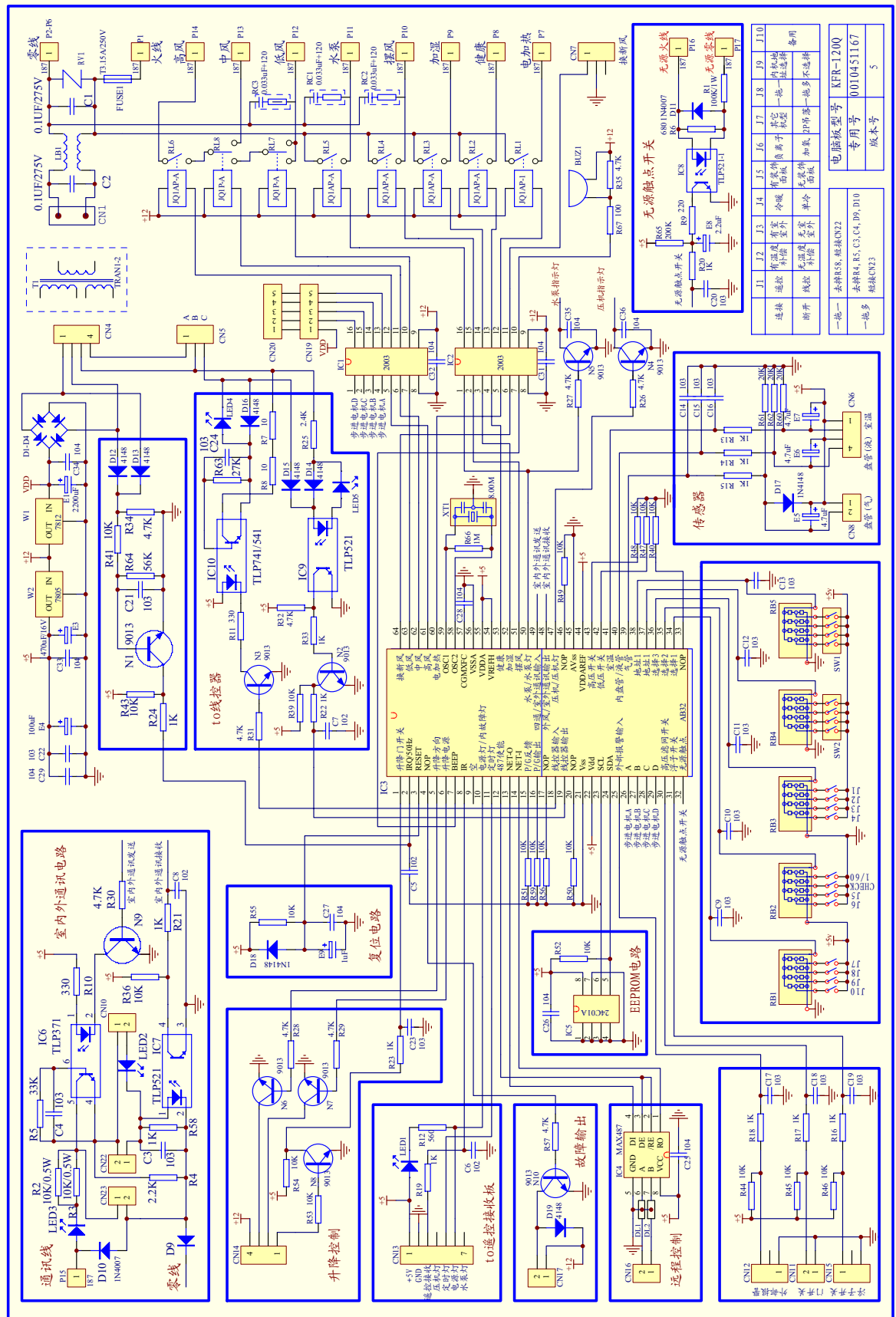


HCFU-42HF03

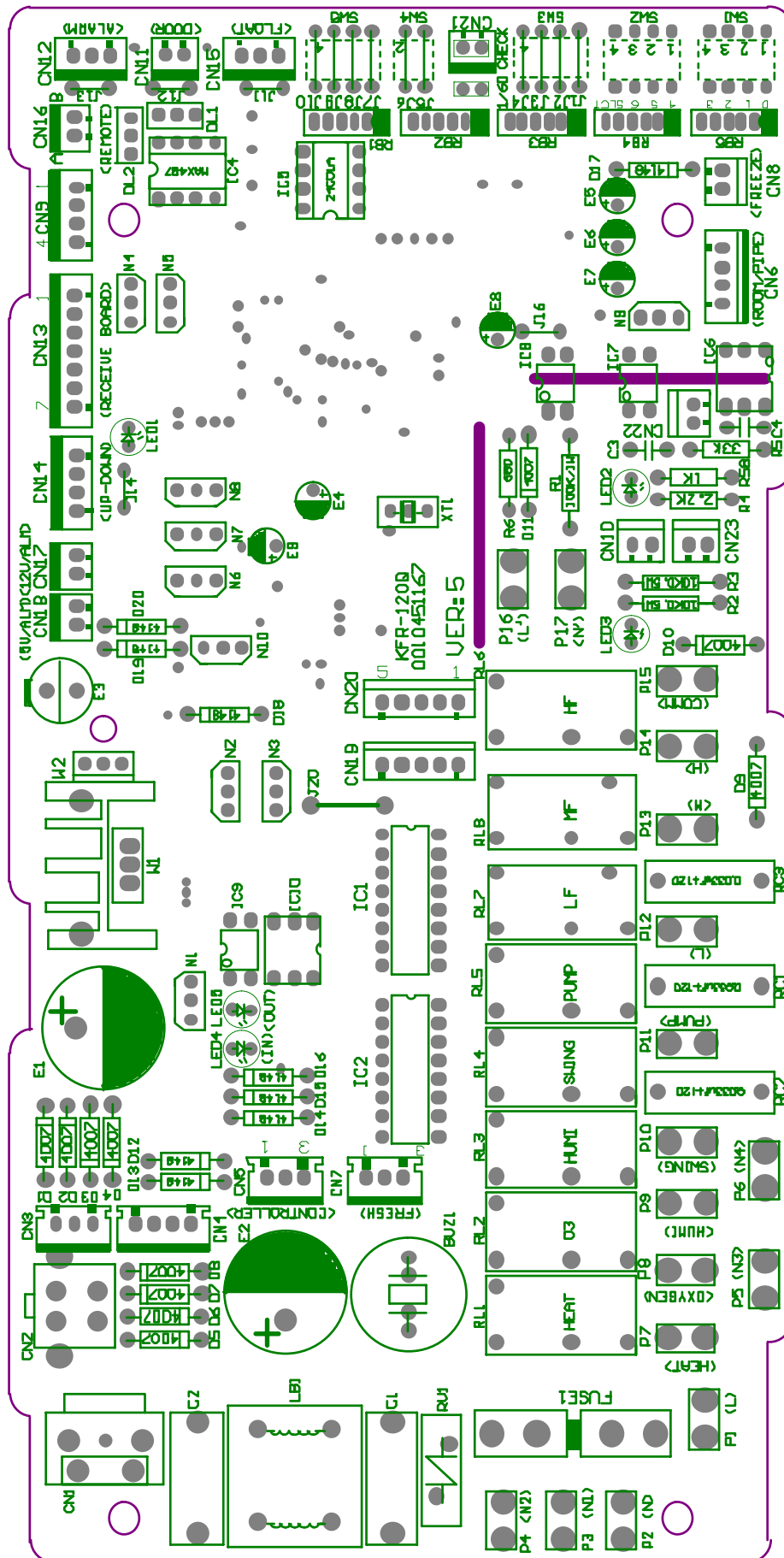


11.2 Circuit diagram

0010451167 PCB information circuit diagram



0010451167 PCB information characters on board (horizontal)



Condition for the PCB data:

1. Working ambient temperature: $-10^{\circ}\text{C} \sim 70^{\circ}\text{C}$, relative humidity: 30%~95%
2. Preserved ambient temperature: $-20^{\circ}\text{C} \sim 80^{\circ}\text{C}$, relative humidity: 30%~95%
3. Power supply: 220VAC、50/60Hz, voltage range: 160V~250V
4. Precise of temperature control: $\pm 1^{\circ}\text{C}$

0010451167 PCB information – port and definition

- P1——connect to external power supply, live line: L (220VAC)
- P2——connect to external power supply, neutral line: N (0VAC)
- P3、4、5、6——control external load, neutral line: N1、N2、N3、N4(0VAC)
- P7——control external load, if there is outdoor PCB, electrical heat: HEAT (control output 220VAC); if there is not outdoor PCB, compressor control function(control output 220VAC).
- P8——control external load, if there is outdoor PCB, health function: OXYGEN (control output 220VAC); if there is not outdoor PCB, 4-way valve control(control output 220VAC).
- P9——control external load, if there is outdoor PCB, humidification: HUMI (control output 220VAC); if there is not outdoor PCB, outdoor fan motor control(control output 220VAC).
- P10——control external load, SWING(control output 220VAC)
- P11——control external load, WATER PUMP(control output 220VAC)
- P12——control external load, indoor fan motor low speed: L(control output 220VAC)
- P13——control external load, indoor fan motor mid speed: M(control output 220VAC)
- P14——control external load, indoor fan motor high speed: H(control output 220VAC)
- P15——communication with fixed frequency single outdoor unit: COMM(0~220VAC)
- P16——input control, signal live line: L'(220VAC)
- P17——input control, signal neutral line: N'(0VAC)
- CN1——input port of transformer (220VAC)
- CN2——input port 1 of transformer (no use)
- CN3——input port 2 of transformer (no use)
- CN4——input port 3 of transformer (1-2、14VAC, 3-4、12VAC)
- CN5——input control, connecting port to wired controller: CONTROLLER (three bits: 1. power supply: 12VAC, 2. power supply: 0VAC, 3. communication: COMM.) .
- CN6——input control, ambient temp.-coil temp. sensor connecting port: ROOM/PIPE (1-2, ROOM, 3-4, PIPE.)
- Indoor ambient temp. sensor: $R_{25}=23\text{K}\Omega \pm 2.5\%$, $B_{25/50}=4200\text{K} \pm 3\%$, range: (-40, 80)
- Indoor coil temp. sensor: $R_{25}=10\text{K}\Omega \pm 3\%$, $B_{25/50}=3700\text{K} \pm 3\%$, range: (-20, 90)
- CN7——control external load, fresh air control: FRESH (1. blank, 2. power supply 0VDC, 3. control output: 12VDC.)
- CN8——input signal: FREEZE
- CN9——input control (no use)
- CN10——communication with fixed frequency single outdoor unit: (0~12VDC)
- CN11——input signal, outdoor pressure switch control function (for the unit without outdoor PCB)
- CN12——input signal, external alarm input: ALARM (1-3 short circuit is normal, if cut off, air conditioner stops work.)

CN13—input signal, wiring port of remote receiver board: RECEIVE BOARD (1. power supply 5VDC, 2. power supply 0VDC, 3. remote signal, 4. signal output of running lamp 0VDC, 5. signal output of timer lamp 0VDC, 6. signal output of power lamp 0VDC, 7. signal output of water pump running lamp 0VDC)

CN14—control external load, auto elevating function (1. signal of door switch close, 2. output of elevating direction control 0VDC, 3. output of elevating power control 0VDC, 4. power supply 12VDC)

CN15—input signal, detecting water level of float switch (1-3 short circuit is normal, cut off shows that level exceeds the limitation) .If float switch cuts off or occurs other failure, LED1 will flash 10 times.

CN16—input control, wiring port of central controller: REMOTE (1、RS485-B, 2、RS485-A.)

CN17—output signal, output signal of failure alarm, control external load, 12V/ALM(1. control output 0VDC, 2. power supply 12VDC)

CN18—output signal (no use)

CN19—control external load, swing 1 (1、16VDC, 2、0VDC, 3、0VDC, 4、0VDC, 5、0VDC.)

CN20—control external load, swing 2 (1、16VDC, 2、0VDC, 3、0VDC, 4、0VDC, 5、0VDC.)

CN21—input signal, spring switch, CHECK (1、input signal of earthing, 2. power supply 0VDC)

CN22—short circuit means selecting single split communication type.

CN23—short circuit means selecting multi split communication type.

0010451167 PCB information – function selection (ON is 1, OFF is 0)

The standard condition for PCB in factory

SW1: 4 bits are OFF

SW2: 4 bits are OFF

SW3: 4 bits are ON

SW4: 2 bits are ON

SW5: 4 bits are ON

SW1-SW2: used for indoor unit to set unit address from 1 to 16'

SW3-SW5: used for indoor unit to select different functions.(every dip switches are corresponding to J1-J10.

SW2-4——logistic relationship of control function (door card control and remote/ wired control) 0 means logistic relationship is “and”, 1 means the later coming is preferential.

J1, SW3-1——function selection-control type: 1 means remote control, 0 means wired control.

J2, SW3-2——function selection-temperature compensation in heating mode: 1means “yes”, 0means “no”.

J3, SW3-3——function selection-outdoor communication: 1means “yes”, 0means “no”. This PCB must be 1.

J4, SW3-4——function selection-heat pump unit: 1means “heat pump”, 0means “cooling only”.

1/60——test in short circuit, but in operation short circuit mustn't be permitted.

CHECK——short spring switch control, it also can be used as switch of convertible type except for testing.

J5, SW4-1——function selection-outdoor pressure switch control function(if outdoor is without PCB): 1means the pressure switch is invalid, 0 means the pressure switch is valid.

J6, SW4-2——function selection –outdoor defrosting temp. sensor control function(when outdoor is without PCB): 1means outdoor defrost temp. sensor is invalid; 0 means outdoor defrost temp. sensor is valid.

J7, SW5-1——function selection –swing mode: 1 means common (simultaneous motor) , 0 means special (swing motor).

J8, SW5-2——function selection – system combination: 1means fixed frequency single unit, 0 means fixed frequency multi split.

J9, SW5-3——function selection –group control: 1 stands for the master unit (its address in wired controller is 0), 0 stands for the slave units (the address should be set by the dip switch, their addresses only can be in the range: 1~15)

J10, SW5-4——function selection –preset: 1 no meaning, 0 no meaning

The standard condition for **HCFU-42CF03** PCB in factory:

- SW1: 4 bits are OFF
- SW2: 4 bits are OFF
- SW3: 1 ON 2 ON 3 OFF 4 ON
- SW4: 1 OFF 2 ON
- SW5: 1 OFF 2 ON 3 ON 4 OFF

The standard condition for **HCFU-42HF03** PCB in factory:

- SW1: 4 bits are OFF
- SW2: 4 bits are OFF
- SW3: 1 ON 2 ON 3 OFF 4 ON
- SW4: 1 ON 2 ON
- SW5: 1 OFF 2 ON 3 ON 4 OFF

0010451167 PCB information- control type

Control type selection between remote and wired: select by dip switch J1, SW3-1 (1 means remote control; 0 means wired control) .

For remote control type, please use remote controller, and a remote receiver is equipped with indoor unit.

Door card control: controls ON/OFF, the start up setting will comply with last time request memorized according to condition memorize function. Its difference with emergency switch of convertible type unit lies: the emergency switch control will perform in the condition: 24degrees, auto fan speed in auto mode.

The function combination between door card and remote/wired control type: select by dip switch: SW2-4 (0 means "and", 1 means later coming is preferential.)

Dip switch position in central control type: the addresses (SW1:1~4; SW2:1~4) of indoor units connected with central controller can not repeat. In principle, they should be in the order from small to big.

Wiring request in central control type: port A-B is connected with indoor port CN16 (A-B) through 2-core shield wire. Requirements:

1. Port A connects with port CN16 (A) of all indoor units.
2. Port B connects with port CN16 (B) of all indoor units.

LED in indoor PCB:

1. LED1: is the state lamp for remote receiver as well as failure lamp. If indoor unit is normal, LED1 is on, or if failure occurs, LED1 flashes regularly, and you can adjust failure type according to the flash times.
2. LED2: is used for multi split units as communication lamp. If communication between indoor and outdoor is normal, LED2 will be on.
3. LED3: is used for single split units as communication lamp. If communication between indoor and outdoor is normal, LED3 will be on.
4. LED4、LED5: is the lamp that shows the data receiving or sending between wired controller and PCB, If LED4、LED5 be on in turn, communication between wired controller and PCB is normal.

Sincere Forever

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