CAUTION

READ THIS MANUAL CAREFULLY TO DIAGNOSE TROUBLE CORRECTLY BEFORE OFFERING SERVICE .

SERVICE MANUAL

Air Conditioners

MODEL: H2SM-(9+12)HV03/R2(DB)

H2SM-(9+9)HV03/R2(DB)

THIS MANUAL IS USED BY QUALIFIED APPLIANCE TECHNICIANS ONLY. HAIER DOES NOT ASSUME ANY RESPONSIBILITY FOR PROPERTY DAMAGE OR PERSONAL INJURY FOR IMPROPER SERVICE PROCEDURES DONE BY ONE UNQUALIFIED PERSON.

REVISION 0

IMPORTANT INFORMATION

MODEL: H2SM-(9+12)HV03/R2(DB)

●Features

- ●Comfortable: wide-angle airflow
- ●health air purifying
- ●quiet operation
- ●super energy efficient

●Main Specification

- ●Cooling Capacity： 2600/3500/5300W
- ●Rated Power/Current(cooling)：680/990/1600W/7.8A
- ●EER: 3.8/3.5/3.3W/W
- ●Heating Capacity： 3200/3800/6600W
- ●Rated Power/Current(heating): 1185/1455/1930W/9.2A
- ●COP: 2.7/2.6/3.4W/W
- ●Air Volume(Indoor): 500/550m^3/h
- ●Power: 1PH 220-230V~ 50 Hz

IMPORTANT INFORMATION

MODEL: H2SM-(9+9)HV03/R2(DB)

●Features

- ●Comfortable: wide-angle airflow
- ●health air purifying
- ●quiet operation
- ●super energy efficient

●Main Specification

- ●Cooling Capacity： 2600/5200W
- ●Rated Power/Current(cooling)：680/1520W/7.5A
- ●EER: 3.8/3.29W/W
- ●Heating Capacity： 3200/6500W
- ●Rated Power/Current(heating): 1185/1880W/8.8A
- ●COP: 2.8/3.2W/W
- ●Air Volume(Indoor): 500m^3/h
- ●Power: 1PH 220-230V~ 50 Hz

Safety Information

General Information

This Service Manual describes the operation,disassembly,troubleshooting,and repair of Haier Room Air Conditioners,etc. It is intended for use by authorized servicers who troubleshoot and repair these units.

NOTE:It is assumed that users of this manual are familiar with the use of tools and equipment used to troubleshoot and repair electrical,mechanical,and refrigeration systems;and understand the terminology used to describe and discuss them.

Haier urges you read and follow all safety precautions and warnings contained in this manual. Failure to comply with safety information may result in severe personal injury or death.

Related Publications

This is a base service manual,covering a range of similar models.It is intended to be used in conjunction with the Parts Manual and Technical Sheet covering specific model being serviced.

General Precautions and Warnings

WARNING

To avoid risk of personal injury or death due to electrical shock,disconnect electrical power to unit before attempting to service the unit.

WARNING

To avoid risk of personal injury or death due to electrical shock,**DO NOT**,under any circumstances,alter the grounding plug .Air conditioner must be grounded at all times.Do not remove warning tag from power cord.If a two-prong (non-grounding) wall receptacle is encountered,contact a qualified electrician and have the receptacle replaced with a properly grounder wall receptacle in accordance with the National Electrical Code.

WARNING

To avoid risk of personal injury or death due to electrical shock,grounding wires and wires colored like grounding wires are **NOT** to be used as current carrying conductors.The standard accepted color coding for ground wires is **green** or **green with a yellow stripe**.Electrical components such as the compressor and fan motor are grounded through an individual wire attached to the electrical component and to another part of the air conditioner.Grounding wires should not to be removed from individual components while servicing,unless the component is to be removed and replaced.It is extremely important to replace all removed grounding wires before completing service.

WARNING

To avoid risk of heat exposure,which may cause death or severe illness,air conditioner must be monitored when malfunctions or shuts down.

CONTENTS

SPECIFICATION

Model:	H2SM-(9+12)HV03/R2(DB)		Brand Mark:	-----	
Cooling	Cooling Capacity:	2600/3500/5300(1300-6100)W	Frequency Range:	50Hz	
	Rated Power/Current:	680/990/1600(380-2400)W/7.8A	Power	1PH 220-230V~ 50 Hz	
	Max Power/Current:	2530W/10.3A	Power Cord	Model×Sectional Area:	--------
	EER	3.8/3.5/3.3W/W			
Heating	Heating Capacity:	3200/3800/6600(1720-6960)W		Refer. No.:	--------
	Rated Power/Current:	1185/1455/1930(480-2340)W/9.2A	Compressor manufacturer/Type	SANYO C-6RZ132H1A	
	Max Power/Current:	2360W/10.4A	Compressor Oil charge	320ml	
	COP	2.7/2.6/3.4			
Power/Current of Electric Heating:		-----	Refrigerant	Type/Net Charge:	R410A 1800g
Operating temp. range		-7°C-43°C		Additional Charge for exhausting air.	0g
Indoor Velocity	H:	1200/1250 r/min		Charge if over Standrad Pipe Lenth	50g/m
	M:	1075 r/min	Capilary	Lenth×Internal/External Diametre	----
	L:	950 r/min		Refer No.:	----
Outdoor Velocity	H:	860 r/min	Height of rising radiator slice	Indoor:	1.30 mm
	H:	780 r/min		Outdoor:	1.8 mm
	H:	560 r/min	Indoor Weight	Net:	8.6kg
				Gross:	10.8kg
Air Volume (High)	Indoor:	500(09)/ 550(12) m^3/h	Outdoor Weight	Net:	49kg
				Gross:	53kg
	Outdoor:	----- m^3/h	Indoor Dimension(L×W×H):		795×265×182 mm
Capacitor of Fan Motor:		……	Indoor Packaging Dimension(L×W×H)		865x272x330 mm
Class of electric Shock Protection		I	Outdoor Dimension (L×W×H):		810×288×680 mm
Class of Water Proof:		IP 24	Outdoor Packaging dimension(L×W×H)		960×405×760 mm
Moisture Removal:		$1.2/2.4\times10^{-3}m^3/h$	Refrigerant Pipe	liquid /Gas pipe Diametre	φ6.35/9.52 mm
Remote Controller	Model:	YR-H76		standard Lenth	5m
	Refer. No.:	0010403792		Max Lenth	15 m
Remote Controller Bracket:		-----	Lenth/Diametre of Drain Hose		----
Appearance:		-----	Max. pressure at warm side:		4.15 MPa
Climate Type:		T1	Max.pressure at cool side:		4.15MPa
Installation Bracket Type:		-----	Plug Type(spec.):		---
Area available for clooling/heating		15-23 m^2	Ammeter spec.:		---
Max.running temperature(cooling):		Dry/Wet ball(indoor): 32 /23 ℃	Max.running temperature(heating):		Dry/Wet ball(indoor) 27℃/--℃
		Dry/Wet ball(outdoor): 43 ℃/ 26 ℃			Dry/Wet ball(outdoor):24℃/18℃

Model:	H2SM-(9+9)HV03/R2(DB)		Brand Mark:	-----	
Cooling	Cooling Capacity:	2600/5200(1250-6000)W	Frequency Range:	50Hz	
	Rated Power/Current:	680/1520(360-2300)W/7.5A	Power	1PH 220-230V~ 50 Hz	
	Max Power/Current:	2490W/10.2A	Power Cord	Model×Sectional Area:	--------
	EER	3.8/3.29W/W			
Heating	Heating Capacity:	3200/6500(1620-6800)W		Refer. No.:	--------
	Rated Power/Current:	1185/1880(420-2230)W/8.8A	Compressor manufacturer/Type	SANYO C-6RZ132H1A	
	Max Power/Current:	2300W/10.3A	Compressor Oil charge	320ml	
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Power/Current of Electric Heating:		-----	Refrigerant	Type/Net Charge:	R410A 1800g
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	M:	1075 r/min	Capilary	Lenth×Internal/External Diametre	----
	L:	950 r/min		Refer No.:	----
Outdoor Velocity	H:	860 r/min	Height of rising radiator slice	Indoor:	1.30 mm
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Remote Controller	Model:	YR-H76		standard Lenth	5m
	Refer. No.:	0010403792		Max Lenth	15 m
Remote Controller Bracket:		-----	Lenth/Diametre of Drain Hose		----
Appearance:		-----	Max. pressure at warm side:		4.15 MPa
Climate Type:		T1	Max.pressure at cool side:		4.15MPa
Installation Bracket Type:		-----	Plug Type(spec.):		---
Area available for clooling/heating		15-23 m^2	Ammeter spec.:		---
Max.running temperature(cooling):		Dry/Wet ball(indoor): 32 /23 ℃	Max.running temperature(heating):		Dry/Wet ball(indoor) 27 ℃/--℃
		Dry/Wet ball(outdoor): 43 ℃/ 26 ℃			Dry/Wet ball(outdoor):24℃/18℃

ACCESSORIES

H2SM-(9+12)HV03/R2(DB)

Number	Name	Refer No.	Description	Quality	Failure Rate(%)	Remark
1	remote controller	0010403792	None	1	0.2	*
2	battery	001A4600001	None	2	0.1	
3	mounting plate	0010101274	Fix mounting plate according to installation position and pipe direction		0	
4	drain pipe	001A0900011	Choose the place that can drain water and connect pipe easily	1	0.1	
5	connecting pipe	----	The maximal length of the connecting pipe is 15m,the maximal height between indoor unit and outdoor unit is 5m	1	0.2	*
6	connecting wire	----	The conecting methods include ring terminal and direct terminal .Ring terminal connecting method:Unscrew the screws ,and put it through the ring of connecting line ends,then connect it into the terminal block. Direct terminal connecting method:unscrew the screws,then fully insert the cable ends into.	. 1	0.2	*
7	manual	001A7265614	Operation	1	0	

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7	manual	001A7265614	Operation	1	0	

OPERRATION

Cautions

Disposal of the old air conditioner

Before disposing an old air conditioner that goes out of use, please make sure it's inoperative and safe. Unplug the air conditioner in order to avoid the risk of child entrapment.

It must be noticed that air conditioner system contains refrigerants, which require specialized waste disposal. The valuable materials contained in an air conditioner can be recycled .Contact your local waste disposal center for proper disposal of an old air conditioner and contact your local authority or your dealer if you have any question. Please ensure that the pipework of your air conditioner does not get damagedprior to being picked up by the relevant waste disposal center, and contribute to environmental awareness by insisting on an appropriate, anti-pollution method of disposal.

Disposal of the packaging of your new air conditioner

All the packaging materials employed in the package of your new air conditioner may be disposed without any danger to the environment.

The cardboard box may be broken or cut into smaller pieces and given to a waste paper disposal service. The wrapping bag made of polyethylene and the polyethylene foam pads contain no fluorochloric hydrocarbon.

All these valuable materials may be taken to a waste collecting center and used again after adequate recycling.

Consult your local authorities for the name and address of the waste materials collecting centers and waste paper disposal services nearest to your house.

Safety Instructions and Warnings

Before starting the air conditioner, read the information given in the User's Guide carefully. The User's Guide contains very important observations relating to the assembly, operation and maintenance of the air conditioner.

- The manufacturer does not accept responsibility for any damages that may arise due to non-observation of the following instruction.
- Damaged air conditioners are not to be put into operation. In case of doubt, consult your supplier.
- Use of the air conditioner is to be carried out in strict compliance with the relative instructions set forth in the User's Guide.
- Installation shall be done by professional people, don't install unit by yourself.
- For the purpose of the safety,the air conditioner must be properly grounded in accordance with specifications.
- Always remember to unplug the air conditioner before openning inlet grill. Never unplug your air conditioner by pulling on the power cord. Always grip plug firmly and pull straight out from the outlet.
- All electrical repairs must be carried out by qualified electricians. Inadequate repairs may result in a major source of danger for the user of the air conditioner.

Cautions

• Do not obstruct or cover the ventilation grille of the air conditoner.Do not put fingers or any other things into the inlet/outlet and swing louver.

• Do not allow children to play with the air conditioner.In no case should children be allowed to sit on the outdoor unit.

Specifications

• The refrigerating circuit is leak-proof.

The machine is adaptive in following situation

1.Applicable ambient temperature range:

Cooling	Indoor	Maximum:D.B/W.B	32°C/23°C
		Minimum:D.B/W.B	18°C/14°C
	Outdoor	Maximum:D.B/W.B	43°C/26°C
		Minimum:D.B	18°C
Heating	Indoor	Maximum:D.B	27°C
		Minimum:D.B	15°C
	Outdoor	Maximum:D.B/W.B	24°C/18°C
		Minimum:D.B/W.B	-15°C

2. If the power supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similar qualified person.

3. If the fuse of indoor unit on PC board is broken,please change it with the type of T. 3.15A/ 250V. If the fuse of outdoor unit is broken,change it with the type of T.25A/250V

4. The wiring method should be in line with the local wiring standard.

5. After installation, the power plug should be easily reached.

6. The waste battery should be disposed properly.

7. The appliance is not intended for use by young children or infirm persons without supervision.

8. Young children should be supervised to ensure that they do not play with the applience.

9.Please employ the proper power plug, which fit into the power supply cord.

10 .The power plug and connecting cable must have acquired the local attestation.

11.In order to protect the units,please turn off the A/C first, and at least 30 seconds later, cutting off the power.

Cautions

Safety Instruction

- Please read the following Safety Instructions carefully prior to use.
- The instructions are classified into two levels, WARNING and CAUTION according to the seriousness of possible risks and damages as follows. Compliance to the instructions are strictly required for safety use.

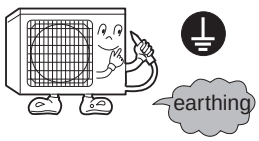
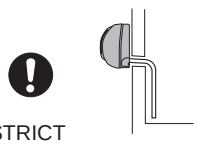
Installation

⚠WARNING

Please call Sales/Service Shop for the Installation.
Do not attempt to install the air conditioner by yourself because improper works may cause electric shock, fire, water leakage.

Installation in a inadequate place may cause accidents. Do not install in the following place.

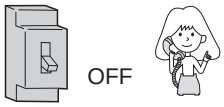
⚠CAUTION

Connect the earth cable.  	Do not install in the place where there is any possibility of inflammable gas leakage around the unit. PROHIBITION	Do not get the unit exposed to vapor or oil steam. PROHIBITION	Check proper installation of the drainage securely  STRICT ENFORCEMENT

Cautions

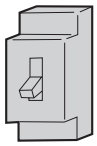
⚠ WARNING

When abnormality such as burnt-small found, immediately stop the operation button and contact sales shop.



STRICT ENFORCEMENT

Use an exclusive power source with a circuit breaker



Connect power supply cord to the outlet completely

STRICT ENFORCEMENT

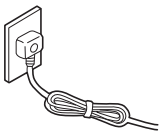
Use the proper voltage

STRICT ENFORCEMENT

Do not use power supply cord extended or connected in halfway

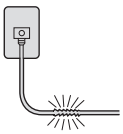
PROHIBITION

Do not use power supply cord in a bundle.



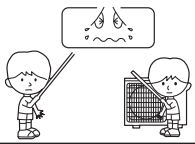
PROHIBITION

Take care not to damage the power supply cord.



PROHIBITION

Do not insert objects into the air inlet or outlet.

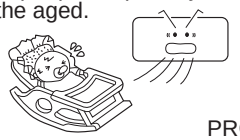


PROHIBITION

Do not start or stop the operation by disconnecting the power supply cord and so on.

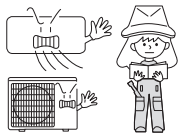
PROHIBITION

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



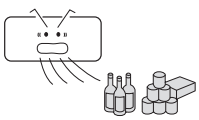
PROHIBITION

Do not try to repair or reconstruct by yourself.



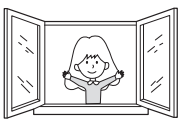
⚠ CAUTION

Do not use for the purpose of storage of food, art work, precise equipment, breeding, or cultivation.



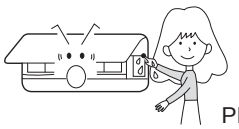
PROHIBITION

Take fresh air occasionally especially when gas appliance is running at the same time.



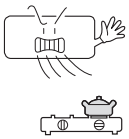
STRICT ENFORCEMENT

Do not operate the switch with wet hand.



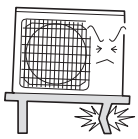
PROHIBITION

Do not install the unit near a fireplace or other heating apparatus.



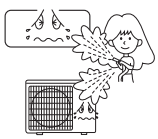
PROHIBITION

Check good condition of the installation stand



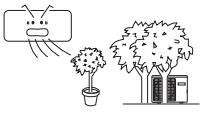
PROHIBITION

Do not pour water onto the unit for cleaning



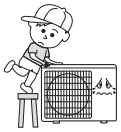
PROHIBITION

Do not place animals or plants in the direct path of the air flow



PROHIBITION

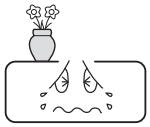
Do not place any objects on or climb on the unit.



PROHIBITION

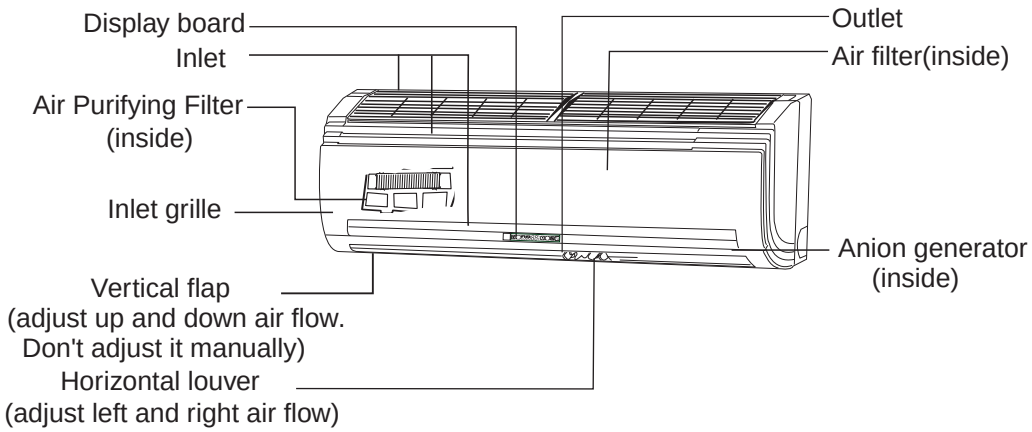
Do not place flower vase or water containers on the top of the unit.

PROHIBITION



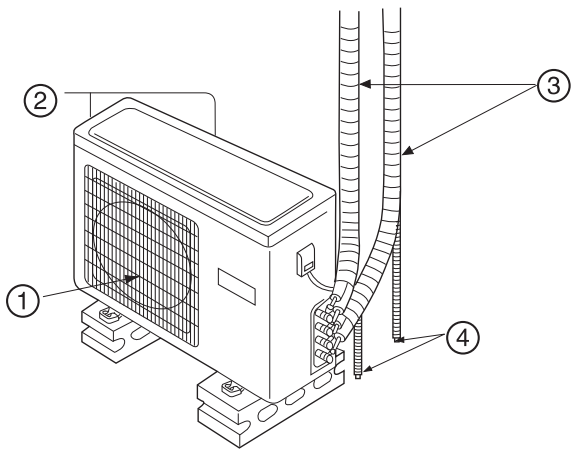
Parts and Functions

Indoor unit



For multi-split type, the power plug is on the outdoor unit

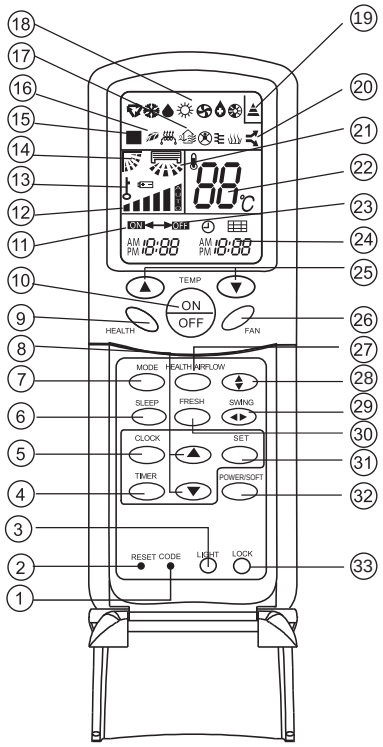
Outdoor unit



① OUTLET ③ CONNECTING PIPING AND ELECTRICAL WIRING

② INLET ④ DRAIN HOSE

Parts and Functions



1.CODE
Used to select CODE A or B with a press,A or B will be displayed on LCD.
Please select A without special explanation.

2.RESET
When the remote controller appears abnormal, use a sharp pointed article to press this button to reset the remote controller normal.

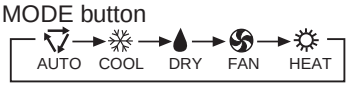
3.LIGHT button
Control the lightening and extinguishing of the indoor LED display board.

4. TIMER button
Used to select TIMER ON, TIMER OFF, TIMER ON-OFF.

5. CLOCK button
Used to set correct time.

6. SLEEP button
Used to select sleep mode.

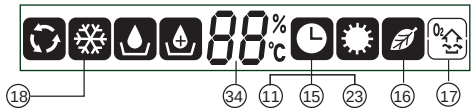
7. MODE button



8. HOUR button
Used to set clock and timer setting.

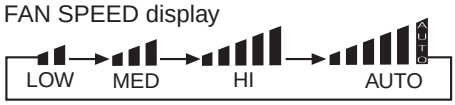
9. HEALTH button
Used to set healthy operation.

10. ON/OFF button
Used for unit start and stop.



11. TIMER ON display

12. FAN SPEED display



13. LOCK display
14. SWING UP/DOWN display
15. SLEEP display
16. HEALTH display
17.FRESH AIR display

18. Operation mode display

Operation mode	AUTO	COOL	DRY	HEAT	FAN
Remote controller					
Display board					

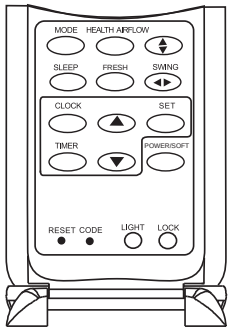
19.Singal sending display
20. POWER/SOFT display
21. Left/right air flow display
22. TEMP display
Remote controller: to display the TEMP. setting.
23. TIMER OFF display
24. CLOCK display
25. TEMP button
Used to select your desired temperature.
26. FAN button
Used to select fan speed: LOW,MED, HI, AUTO.
27. HEALTH AIRFLOW button
Used to set the health airflow mode.
28. SWING UP/DOWN button
Used to select up or down air sending direction.
29. SWING LEFT/RIGHT button
Used to select left/right air flow.
30. FRESH button
Use to set fresh air function.
31. SET button
Used to confirm timer and clock settings.
32. POWER/SOFT button
33. LOCK
Used to lock buttons and LCD display. If pressed, the other buttons will be disabled and the lock condition display appears. Press it once again, lock will be canceled and lock condition display disappears.
34. Ambient temp.display
When receiving the remote control signal, display the set temperature and in the rest time the room temperature is displayed and this room temperature is only for reference.

NOTE:(1) The following functions and related displays are not available:⑰ ㉚
(2) Cooling only unit do not have functions and displays related with heating.

Parts and Functions

■ Clock Set

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



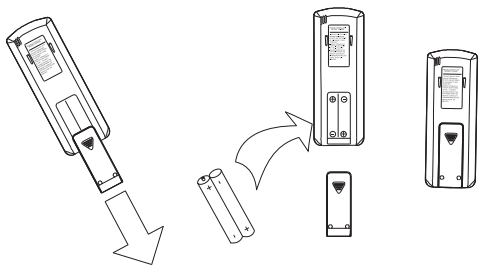
1. Press CLOCK button,"AM" or "PM" flashes.
2. Press△ or▽ to set correct time. Each press will increase or decrease 1 min. If the button is kept depressed, time will change quickly.
3. After time setting is confirmed, press SET, "AM" or "PM" stop flashing, while clock starts working.

■ 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 obstacle as well.
- Don't throw or knock the remoter controller.
- 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 disturbed in receiving the signals, so the distance to the indoor unit should be shorter.

■ Loading of the battery

Load the batteries as illustrated right
2 R-03 (7#) batteries



Remove the battery cover:

Slightly press" ▼ "area and push down the cover as illustrated.

Load the battery:

Be sure that the loading is in line with the "+" / "-". request as illustrated on the bottom of the case.

Put on the cover again.

Confirmation indicator:

After pressing power ON/OFF, if no display, reload the batteries.

Note:

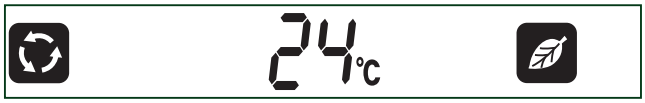
- Full display or unclear display during operation indicates the batteries have been used up. Please change batteries.
- Used two new same-typed batteries when loading.
- If the remote controller can't run normally during operation, please remove the batteries and reload several minutes later.

Hint:

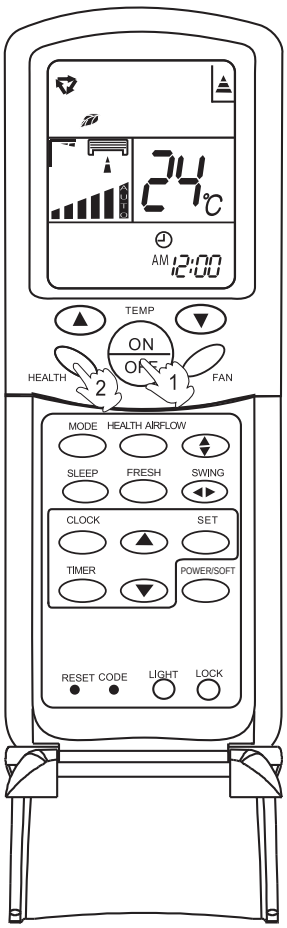
Remove the batteries in case unit won't be in usage for a long period. If there are any display after taking-out, just need to press reset key.

Operation

HEALTH operation



Remote controller



1.Unit start

Press ON/OFF on the remote controller, unit starts.

2.Health anion function

Press HEALTH button. For each press, is displayed.

Air conditioner starts health anion function operation.

For twice press, disappears,the operation stops.

When indoor fan motor is running, it has healthy process function. (It's available under any mode)

When the fan in the indoor unit does not work, the health lamp lights up, but the anion generator does not release anion.

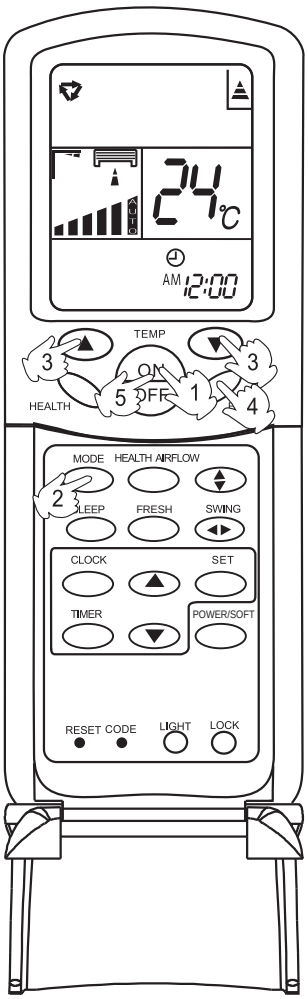
BRIEF INTRODUCTION TO HEALTH ANION FUCTION

The anion generator in the air conditioner can generate a lot of anion effectively balance the quantity of position and anion in the air and also to kill bacteria and speed up the dust sediment in he room and finally clean the air in the room.

Operation

Auto Operation

Remote controller



1. Unit start

Press ON/OFF on the remote controller, unit starts.

2.Select operation mode

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

Remote controller:

Then | Select Auto operation |

On the displaying board,colorful displaying bar will be white.

3.Select temp.setting

Press TEMP. button

△ Every time the button is pressed, temp.setting increase 1°C,if kept depressed, it will increase rapidly

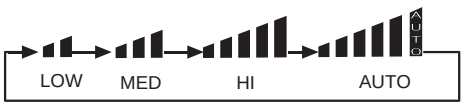
▽ Every time the button is pressed, temp.setting decrease 1°C,if kept depressed, it will decrease rapidly

Select a desired temperature.

4.Fan speed selection

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

Remote controller:



Air conditioner is running under displayed fan speed. When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature.

5.Unit stop

Press ON/OFF button, the unit stops.

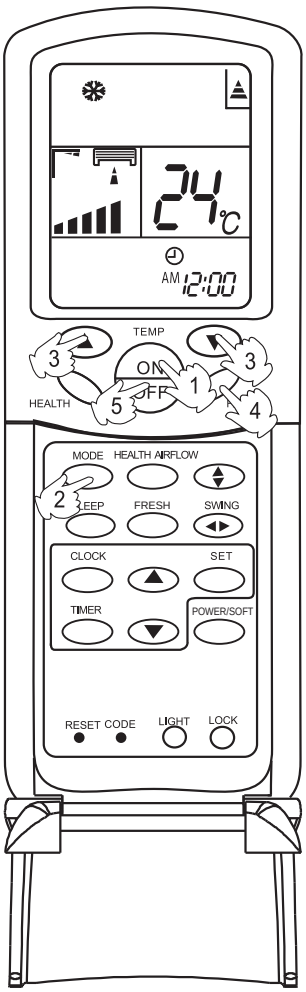
About Auto Operation

Under the mode of auto operation, air conditioner will automatically select Cool or Heat operation according to room temperature.

Operation

Cool Operation

Remote controller



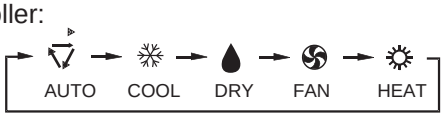
1. Unit start

Press ON/OFF on the remote controller, unit starts.

2.Select operation mode

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

Remote controller:



Then Select COOL operation

On the displaying board,colorful displaying bar will be blue.

3.Select temp.setting

Press TEMP. button

△ Every time the button is pressed, temp.setting increase 1°C,if kept depressed, it will increase rapidly

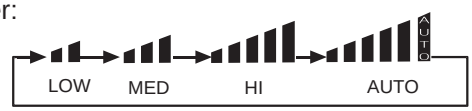
▽ Every time the button is pressed, temp.setting decrease 1°C,if kept depressed, it will decrease rapidly

Select a desired temperature.

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

4.Fan speed selection

Remote controller:



Air conditioner is running under displayed fan speed. When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature.

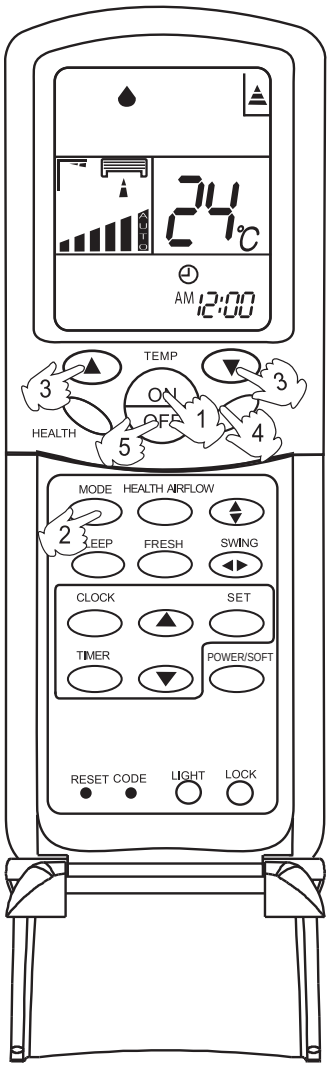
5.Unit stop

Press ON/OFF button, the unit stops.

Operation

Dry Operation

Remote controller



1. Unit start

Press ON/OFF on the remote controller, unit starts.

2.Select operation mode

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

Remote controller:

AUTO → COOL → DRY → FAN → HEAT

Then Select DRY operation

On the displaying board,colorful displaying bar will be light blue

3.Select temp.setting

Press TEMP. button

△ Every time the button is pressed, temp.setting increase 1°C,if kept depressed, it will increase rapidly

▽ Every time the button is pressed, temp.setting decrease 1°C,if kept depressed, it will decrease rapidly

Select a desired temperature.

4.Fan speed selection

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

Remote controller:

LOW → MED → HI → AUTO

Air conditioner is running under displayed fan speed. In DRY mode, when room temperature becomes lower than temp.setting+2°C,unit will run intermittently at LOW speed regardless of FAN setting.

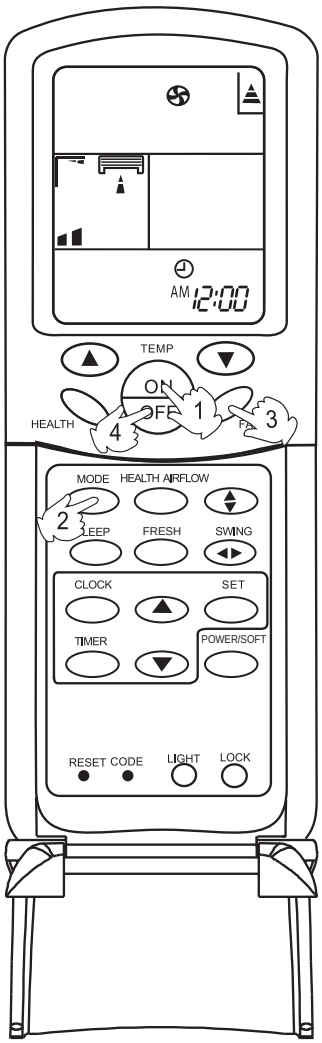
5.Unit stop

Press ON/OFF button, the unit stops.

Operation

Fan Operation

Remote controller



1. Unit start

Press ON/OFF on the remote controller, unit starts.

2.Select operation mode

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

Remote controller:

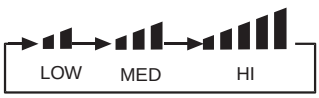
Then Select FAN operation

On the displaying board,colorful displaying bar will be pink.

3.Fan speed selection

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

Remote controller:



4.Unit stop

Press ON/OFF button, the unit stops.

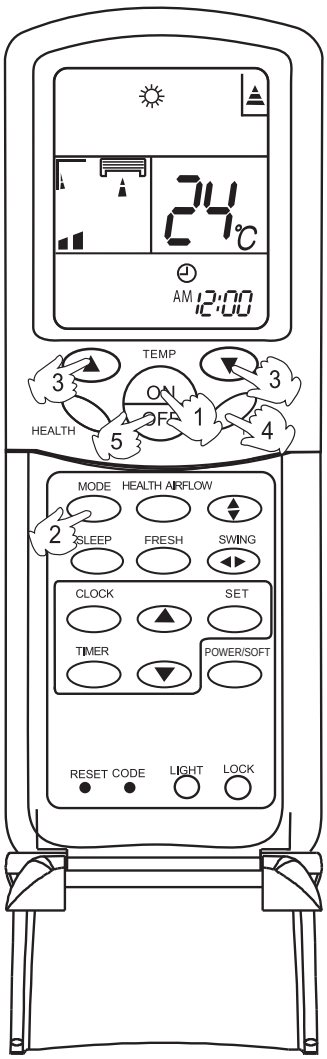
About FAN operation

In FAN operation mode, the unit will not operate in COOL or HEAT mode but only in FAN mode ,AUTO is not available in FAN mode.And temp.setting is disabled. In FAN mode,SLEEP and POWER/SOFT operation is not available.

Operation

Heat Operation

Remote controller



1. Unit start

Press ON/OFF on the remote controller, unit starts.

2.Select operation mode

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

Remote controller:

Then | Select HEAT operation |

On the displaying board,colorful displaying bar will be red

3.Select temp.setting

Press TEMP. button

△ Every time the button is pressed, temp.setting increase 1°C,if kept depressed, it will increase rapidly

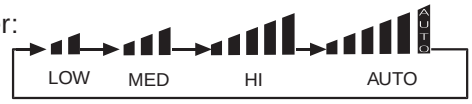
▽ Every time the button is pressed, temp.setting decrease 1°C,if kept depressed, it will decrease rapidly

Select a desired temperature.

4.Fan speed selection

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

Remote controller:



Air conditioner is running under displayed fan speed

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

When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature.

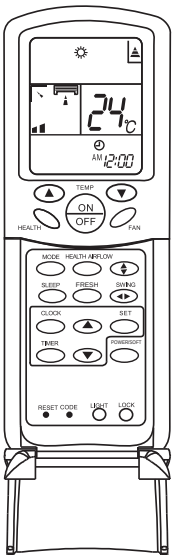
5.Unit stop

Press ON/OFF button, the unit stops.

Operation

Air Flow Direction Adjustment

1.Status display of air sending



Vertical flap

Pos.1
Pos.2
Pos.3
Pos.4
Pos.5
Pos.6 (Auto swing)

Horizontal louvers

Pos.1
Pos.2
Pos.3
Pos.4
Pos.5
Pos.6
Pos.7
Pos.8

2.Up and down air flow direction

For each press of button, air flow direction on remote controller displays as follows according to different operation modes:

COOL/DRY/FAN
remote controller: → Pos.1 → Pos.2 → Pos.3 → Pos.4 → Pos.6 →

HEAT:
remote controller: → Pos.5 → Pos.4 → Pos.3 → Pos.2 → Pos.1 → Pos.6 →

AUTO:
remote controller: → Pos.1 → Pos.2 → Pos.3 → Pos.4 → Pos.5 → Pos.6 →

The vertical flap will swing according to the above positions

3.Left and right air flow direction

For each press of button, remote controller displays as follows :
remote controller:

→ Pos.1 → Pos.2 → Pos.3 → Pos.4 → Pos.5 → Pos.6 → Pos.7 → Pos.8 →

The horizontal louvers will swing according to the above positions.

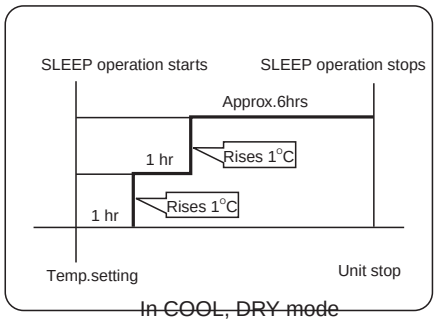
Note:When restart after remote turning off, the remote controller will automatically memorize the previous set swing position.

Operation

Sleep Operation

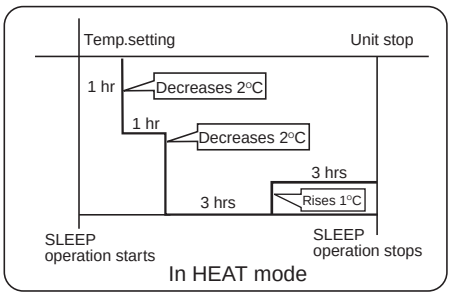
Before going to bed, you can simply press the SLEEP button and unit will operate in SLEEP mode and bring you a sound sleep.
Use of SLEEP function
After the unit starts, set the operation status, then press SLEEP button before which the clock must be adjusted and time being set.
Operation Mode

1. In COOL,DRY mode
   1 hours after SLEEP mode starts, temp. will become 1°C higher than temp. setting. After another 1 hours, temp. rises by 1°C further. The unit will run for further 6 hours then stops. Temp. is higher than temp. setting so that room temperature won't be too low for your sleep.



In COOL, DRY mode

2. In HEAT mode
   1 hours after SLEEP mode starts, temp will become 2 °C lower than temp. setting. After another 1 hours, temp decrease by 2 °C further. After more another 3 hours, temp. rises by 1°C further. The unit will run for further 3 hours then stops. Temp. is lower than temp. setting so that room temperature won't be too high for your sleep.

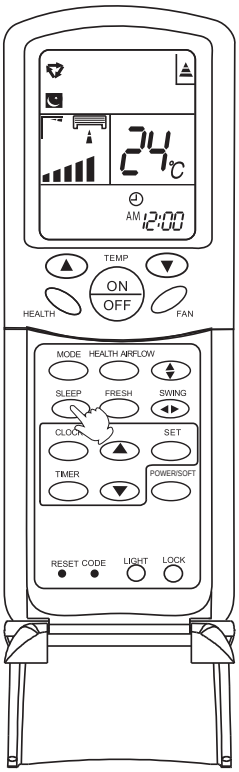


In HEAT mode

3. In AUTO mode
   The unit operates in corresponding sleep mode adapted to the automatically selected operation mode.
4. In FAN mode
   It has no SLEEP function.
5. Set the wind speed change when sleeping
   If the wind speed is high or middle before setting for the sleep, set for lowing the wind speed after sleeping.
   If it is low wind, no change.
6. Note to the power failure resume:
   press the sleep button ten times in five seconds and enter this function after hearing four sounds. And press the sleep button ten times within five seconds and leave this function after hearing two sounds.

NOTE: With the power failure resume, when setting the TIMER ON, TIMER OFF and TIMER ON/OFF, itís memorized as shutdown status when resuming after power out.

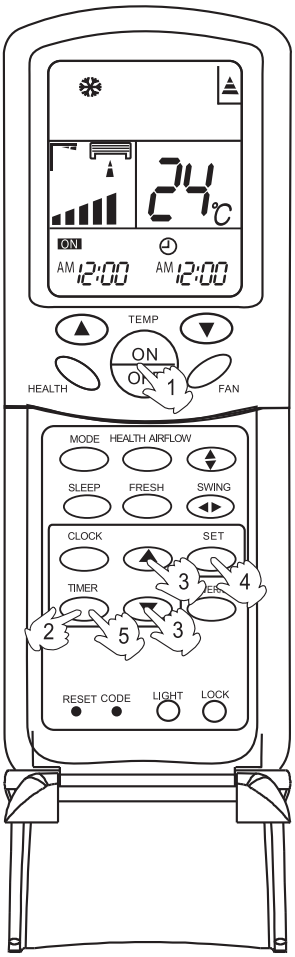
Remote Controller



Operation

Timer On/Off Operation

Remote Controller



Set clock correctly before starting TIMER operation.

1. After unit starts, 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:
   Remote controller:

   Then select your desired TIMER mode (TIMER ON or TIMER OFF). " ON "or " OFF "will flash.

3.Time setting

   Press HOUR △/ ▽ button.

   △ Every time the button is pressed, time setting increases 1 min, if kept depressed, it will increase rapidly.

   ▽ Every time the button is pressed, time setting decreases 1 min, if kept depressed, it will decrease rapidly.

   It can be adjusted within 24 hours.

4.Confirming your setting

   After setting correct time, press SET button to confirm " ON "or" OFF "on the remote controller stops flashing.
   Time displayed: Unit starts or stops at x hour x min. (TIMER ON or TIMER OFF).

5.Cancel TIMER mode

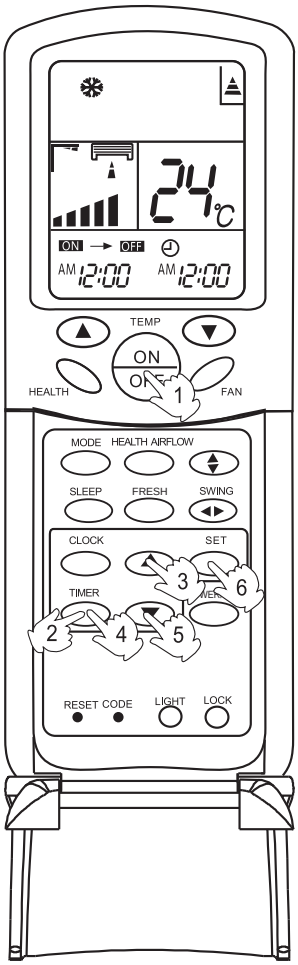
   Just press TIMER button several times until TIMER mode disappears.

Hints:
After replacing batteries or a power failure happens, time setting should be reset.
Remote controller possesses memory function, when use TIMER mode next time, just press SET button after mode selecting if time setting is the same as previous one.

Operation

Timer On-Off Operation

Remote Controller



Set clock correctly before starting TIMER operation.

1. After unit starts, 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:
   Remote controller:

   Then select your desired TIMER mode (TIMER ON - OFF).
   " ON "will flash.

3.Time setting
   Press HOUR △/ ▽ button.
   △ Every time the button is pressed, time setting increases 1 min, if kept depressed, it will increase rapidly.
   ▽ Every time the button is pressed, time setting decreases 1 min, if kept depressed, it will decrease rapidly.
   It can be adjusted within 24 hours.

4.Timer confirming for TIMER ON
   After setting correct time, press TIMER button to confirm
   " ON " on the remote controller stops flashing.
   " OFF " starts flashing.
   Time displayed: Unit starts or stops at x hour x min.

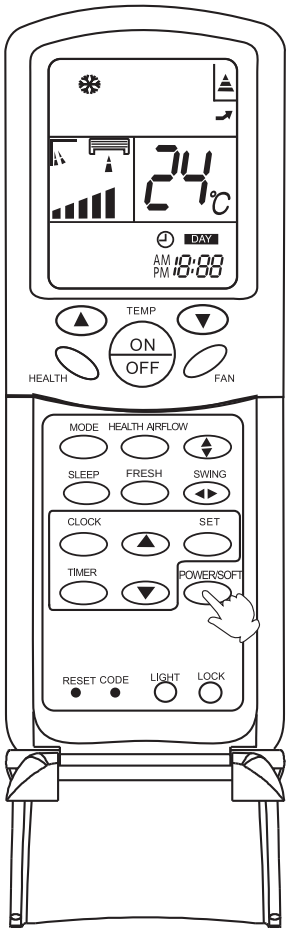
5.Time setting for TIMER OFF
   Just press HOUR button ,follow the same procedure in "Time setting for TIMER ON"

6.Time confirming for TIMER OFF
   After time setting,press SET button to confirm.
   " OFF " on the remote controller stops blinking.
   Time displayed:Unit stops at x hour x min.

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

Operation

POWER/SOFT Operation



POWER Operation

When you need rapid heating or cooling, you can use this funciton.

Selecting of POWER operation

Press POWER/SOFT button. Every time the button is pressed,display changes as follows:

POWER → SOFT → BLANK

Stop the display at" ↗ ".

In POWER operation status:

In HEAT or COOL mode, fan speed automatically runs in HI mode for 15 min then returns to original status setting.

To cancel POWER operation

Press POWER/SOFT button twice ,POWER/SOFT disappears.

SOFT Operation

You can use this function when silence is needed for rest or reading.

Selecting of SOFT operation

Press POWER/SOFT button. Every time the button is pressed,display changes as follows:

POWER → SOFT → BLANK

Stop the display at " ↘ ".

In SOFT operation mode, fan speed automatically takes"LOW"

To cancel SOFT operation

Press POWER/SOFT button twice ,POWER/SOFT disappears.

Hints:

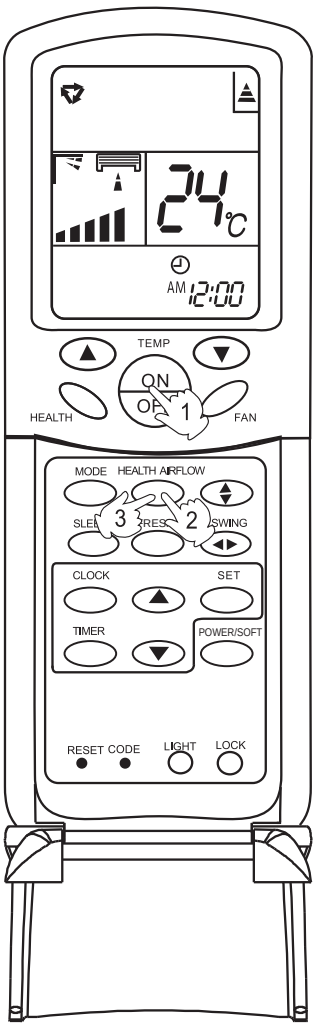
During POWER operation, in rapid HEAT or COOL mode, the room will show inhomogeneous temperature distribution.

Long period SOFT operation will cause effect of not too cool or not too warm.

Operation

Health airflow Operation

Remote controller



1.Press ON/OFF to starting

The liquid crystal will display the working state of last time (Except timer, sleeping, power/soft and health airflow). Setting the comfort work conditions.

2.The setting of health airflow function

1).Press the button of health airflow, appears on the display. The nether inlet and outlet grills of the air conditioner are closed and the airflow is blown horizontally from the above inlet and outlet grills. Avoid the strong airflow blows direct to the body.

2).Press the button of health airflow again, appears on the display. The above inlet and outlet grills of the air conditioner are closed and the airflow is blown vertically from the nether inlet and outlet grills. Avoid the strong airflow blows direct to the body.

3.The cancel of the health airflow function

Press the button of health airflow again, both the inlet and outlet grills of the air conditioner are opened, and the unit goes on working under the condition before the setting of health airflow function.

After stopping, the outlet grille will close automatically.

Notice: Cannot pull direct the outlet grille by hand. Otherwise, the grille will run incorrectly. If the grille is not run correctly, stop for a minute and then start, adjusting by remote controller.

Note:

1 .After setting the health airflow function, the position of inlet and outlet grills is fixed.

2.In heating, it is better to select the mode.

3.In cooling, it is better to select the mode.

4.In cooling and dry, using the air conditioner for a long time under the high air humidity, a phenomenon falling drips of water occurs at the outlet grille .

5.Select the appropriate fan direction according to the actual conditions.

Operation

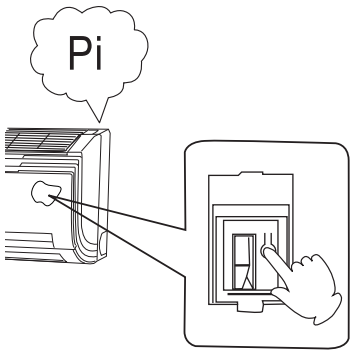
Emergency and Test Operation

Emergency operation:

- Use this operation only when the remote controller is defective or lost.
- When the emergency operation switch is pressed,the" Pi "sound is heard once, which means the start of this operation.
- In this operation, the system automatically selects the operation modes, cooling or heating, according to the room temperature.

Temperature	Operation mode	Designated temperature	Timer mode	Air flow
ABOVE 21°C	COOLING	24°C	NO	AUTOMATIC
BELOW 21°C	HEATING	24°C	NO	AUTOMATIC

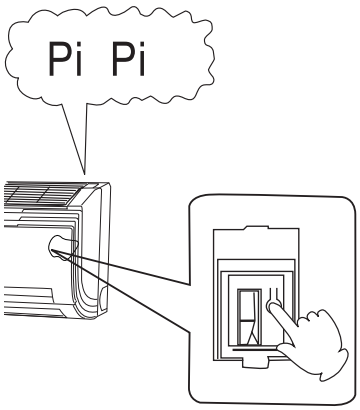
- It is not possible to operate in dry mode.



Test operation:

Test operation switch is the same as emergency switch.

- Use this switch in the test operation when the room temperature is below 16°C, do not use it in the normal operation.
- Continue to press the test operation switch for more than 5 seconds. After you hear the "Pi" sound twice, release your finger from the switch: the cooling operation starts with the air flow speed "Hi".
- After 30 minutes, test operation ends automatically.



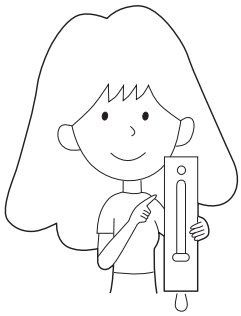
Removal of the restriction of emergency or test operation

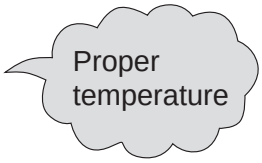
- Press the emergency operation switch once more, or manipulate through the remote controller; the "Pi" sound, the emergency or test operation is terminated.
- When the remote controller is manipulated, it gets the system back to the normal operation mode.

Maintenance

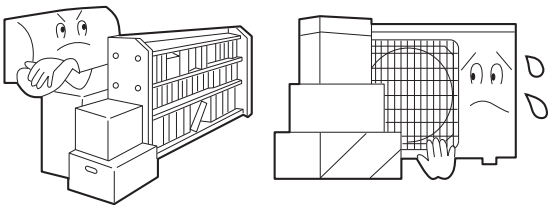
For Smart Use of The Air Conditioner

Setting of proper room temperature

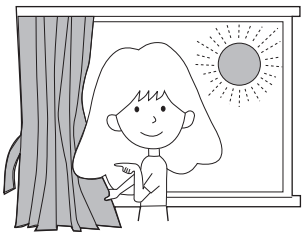


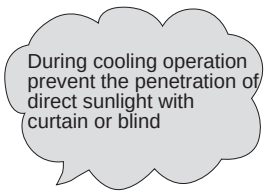


Do not block the air inlet or outlet

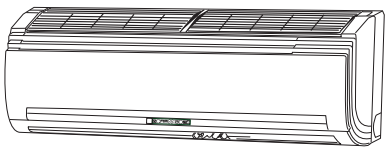


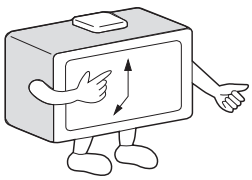
Close doors and windows during operation



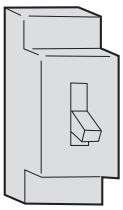


Use the timer effectively



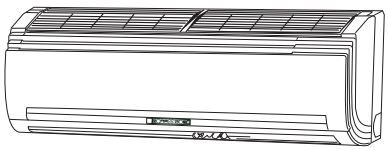


If the unit is not to be used for a long time, turn off the power supply main switch.



OFF

Use the louvers effectively



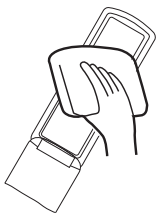
Maintenance

For Smart Use of The Air Conditioner

⚠ WARNING

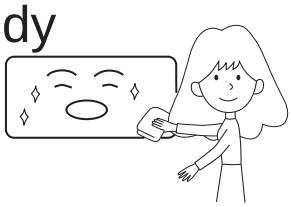
Before maintenance,be sure to turn off the system and the circuit breaker.

Remote Controller



Do not use water, wipe the controller with a dry cloth.Do not use glass cleaner or chemical cloth.

Indoor Body



Wipe the air conditioner by using a soft and dry cloth.For serious stains,use a neutral detergent diluted with water.Wring the water out of the cloth before wiping.then wipe off the detergent completely.

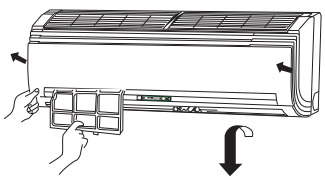
Do not use the following for cleaning

Gasoline,benzine, thinner or cleanser may damage the coating of the unit.

Hot water over 40°C(104°F) may cause discoloring or deformation.

Air Filter cleaning

1 Open the inlet grille by pulling it upward.



2 Remove the filter.

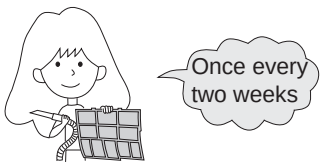
Push up the filter's center tab slightly until it is released from the stopper, and remove the filter downward.

3 Clean the filter.

Use a vacuum cleaner to remove dust, or wash the filter with water.After washing, dry the filter completely in the shade.

4 Attach the filter.

Attach the filter correctly so that the "FRONT" indication is facing to the front.Make sure that the filter is completely fixed behind the stopper.If the right and left filters are not attached correctly, that may cause defects.



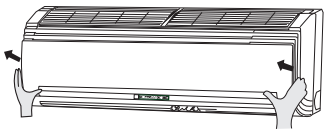
5 Close the inlet grille.

Maintenance

Replancement of Air Purifying Filter

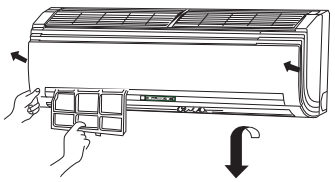
1.Open the Inlet Grille

Open the inlet grille by pushing each ends of the inlet grille upward.(use thumbs to push up)



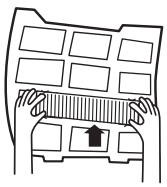
2.Detach the standard air filter

Slide the knob slightly upward to release the filter, then withdraw it.

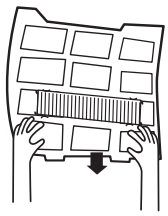


3.Attach old Air Purifying Filter

Put air purifying filter appliances into the right and left filter frames.



Detach old Air Purifying Filter



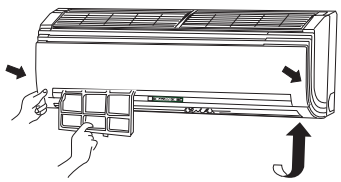
4.Attach the standard air filter

(Necessary installation)

Note: the bacteria-killing mediums placed on the left side. the multi-lights touching intermediary is placed on the right side.

5.Close the Inlet Grille

Close the Grille surely



NOTE:

- The photocatalyst air purifying filter and the bacteria-killing medium air purifying filter will be used based on real situation.
- The photocatalyst air purifying filter will be solarized in fixed time. In normal family, it will be solarized every 6 months. The solarization time will last no less than 8 hours under the state of abundant sun.
- The bacteria-killing medium air purifying filter is available for a long time and neednít to be changed. But it must be noticed to use the vacuum cleaner frequently to adsorb the dusts covering the purifying filter lest the covering dusts effect the function of the bacteria-killing medium air purifying filter. (It is strictly prohibited for the bacteria-killing medium air purifying filter to be washed)

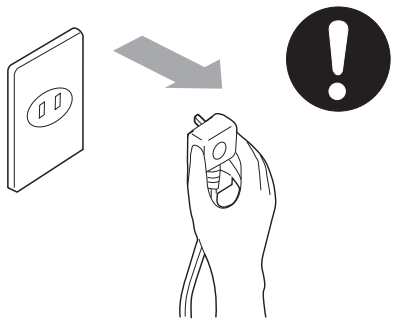
Maintenance

To Keep Your Air conditioner in Good Condition after Season.

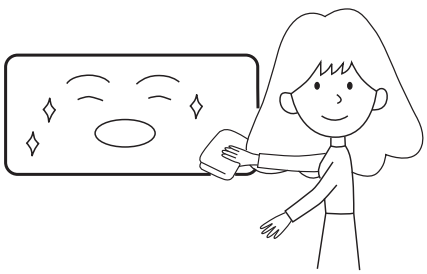
1 Operate in cooling mode for 2-3 hours.

To prevent breeding mold or bad smell, be sure to operate at the designated temperature or 30°C,cooling mode and High speed fan mode for 2-3 hours.

2 Put off the power supply cord.



3 Cleaning the body.



4 Take out the batteries from the wireless remote controller.

Maintenance

Before Setting in High season

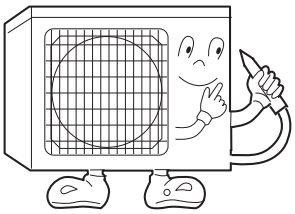
1 Cleaning the standard air filter.

Operation without filter may cause troubles.Be sure to attach both right and left filters prior to the operation. Each of them are of different shapes.

2 Connecting the earthing cable.

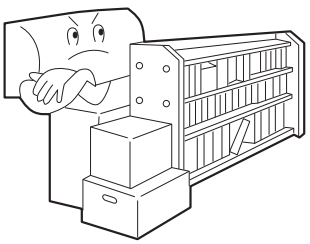
⚠ Caution

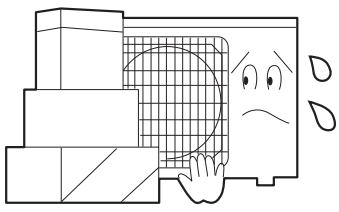
- Incomplete earthing may cause an electric shock.



EARTHING

3 Do not block the air inlet or outlet.

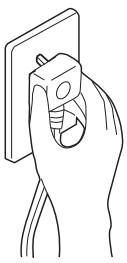




4 Plug-in

⚠ Caution

- After brush away dust at the plug, insert the plug of the power supply cord into the outlet completely.In case of suing exclusive circuit breaker,switch on the circuit breaker.



NO WET HAND

ELECTRICAL CONTROLL

1. Operation Mode

1. Automatic operation

When the system is under the automatic operation option, the appropriate operation mode will be decided according to the differences between the preset temperature and the indoor temperature after the system starts up. Then, the system will operate according to the chosen mode. In the following conditions, Tr stands for indoor temperature and Ts stands for outdoor temperature.

The system will choose the operation mode according to the following conditions when entering into the automatic operation option for the first time.

Tr≥Ts-3℃ Choose the cooling mode

Tr＜Ts-3℃ Choose the warming mode

Under the automatic option, the system will switch between the cooling and warming modes according to the change of the indoor temperature. If the air conditionic is under the cooling mode, when the preset temperature for stopping the compressor is reached, the compressor will be stopped. The indoor temperature will be tested again 15 minutes after the stop of the compressor. At the moment, if the tested temperature is under the Tr＜Ts-3℃ condition, the system will be switched into the warming mode. If not, the system will remain in the cooling mode. If the air conditionic is under the warming mode, when the preset temperature for stopping the compressor is reached, the compressor will be stopped. The indoor temperature will be tested again 15 minutes after the stop of the compressor. At the moment, if the tested temperature is under the Tr＞Ts+8℃ condition, the system will be switched into the cooling mode. If not, the system will remain in the warming mode.

2. Cooling operation mode

Temperature control range: 16℃---30℃

Temperature difference: ±1℃

* Control features: When Tr (input airflow) >Ts (set temperature) ℃, the outdoorunit will be opened,the indoor fan will operate at the set speed and the mode signal will be sent to the outdoor system. When Tr (input airflow) < Ts (set temperature) ℃, outdoorunit will be closed,the indoor fan will operate at the set speed and the mode signal will be sent to the outdoor system. The system will keep the original status if Tr= Ts.

Airflow speed control: (temperature difference 1℃)

Automatic: When Tr>=Ts+3℃, high speed.

When Ts+1℃=<Tr<Ts+3℃, medium speed

When Tr<Ts+1℃, low speed

When the sensor is off, low speed

When the airflow speed has no delay from the high to low switching, the speed should be delayed for 3 minutes (remain at high speed for 3 minutes.) before the next switch.

Manul: When the system is operating, you can set the high, medium or low speed manually. (When the sensor is on or off, the system will change the speed 2 seconds after receiving the signal.)

*Airgate location control: the location for the airgate can be set according to your needs.

*Defrosting function: preventing the frosting on the indoor heat exchanger (when cooling or demoisture). When the compressor works continuously for 5 minutes (adaptable in EEPROM) and the temperature of the indoor coils has been below zero centigrade for 10 seconds, the compressor will

be stopped and the malfunction will be recorded in the malfunction list. The indoor system will continue to run. When the temperature of the indoor coil is raised to 7℃, the compressor will be restarted again (the prerequirement of 3 minutes ' delay should be satisfied.)

* timing system on/off function.
* Dormant control function.

3. Demoisture mode.

* temperature control range: 16---30℃
* temperature difference: ±1℃

Control feature: send the demoisture signal to the outdoor system.

When Tr>Ts+2℃, the compressor will be turned on, the indoor fan will operate at the set speed.

When Tr is between the Ts and Ts+2℃, the outdoor system will operate at the high demoisture frequency for 10 minutes and then at the low demoisture mode for six minutes. The indoor fan will operate at low speed.

When Tr< Ts, the outsystem will be stopped, the indoor fan will be stopped for 3 minutes and then turned to the low speed option.

All the frequency converses have a ±1℃ difference.

* Wind speed control: Automatic:

When Tr >= Ts+ 5℃, high speed.
When Ts+3℃≤Tr< Ts+5℃, medium speed.
When Ts+2℃≤Tr< Ts+3℃, low speed.
When Tr<Ts+2℃, light speed.
If the outdoor fan stopped, the indoor fan will be paused for 3 minutes.
If the outdoor fan stopped for more than 3 minutes and the outdoor system still operates, the system will be changed into light speed mode.
When the airflow speed has no delay from the high to low switching, the speed should be delayed for 3 minutes (remain at high speed for 3 minutes.) before the next switch.

Manual: When the sensor is off or Tr< Ts+3℃, the manual operation can not be made. (obligatory automatic operation.)

*Airgate location control: the location for the airgate can be set according to your needs.

*Defrosting function: preventing the frosting on the indoor heat exchanger (when cooling or demoisture). When the compressor works continuously for 5 minutes (adaptable in EEPROM) and the temperature of the indoor coils has been below zero centigrade for 10 seconds, the compressor will be stopped and the malfunction will be recorded in the malfunction list. The indoor system will continue to run. When the temperature of the indoor coil is raised to 7℃, the compressor will be restarted again (the prerequirement of 3 minutes ' delay should be satisfied.)

* coil protection (synchronic overheating protection) are installed for the four directions latch malfunctions when demoisturing.

* timing system on/off function.
* Dormant control function.

4. Heating operation mode.

* temperature control range: 16---30℃

* temperature difference: ±1℃

* control feature: the temperature compensation is automatically added and the system will send the heating signals to the outdoor system.

If Tr≤Ts, the outdoor compressor is turned on, the indoor fan will be at the cold air proof mode.

If Tr>Ts+, the outdoor system is turned off, the indoor fan will be at the heat residue sending mode.

If Tr<Ts+, the outdoor system will be turned on again, the indoor fan will be at the cold air proof mode.

*Indoor fan control

manual control: You can choose high, medium, low and automatic speed control.

Automatic: When Tr<Ts, high speed.

When Ts=<Tr=<Ts+2℃, medium speed.

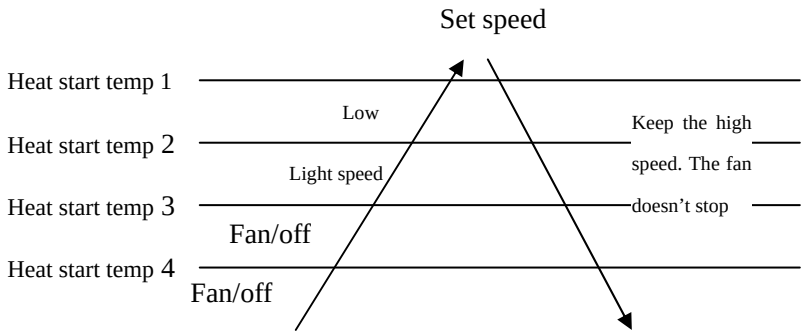
When Tr> Ts+2℃, low speed.

When the airflow speed has no delay from the high to low switching, the speed should be delayed for 3 minutes (remain at high speed for 3 minutes.) before the next switch.

*Airgate location control: the location for the airgate can be set according to your needs.

Coldair proof operation

1. The indoor operation within 4 minutes after the start up is as the following diagram, the air speed can be raised only after the speed has reached a certain level.



2. 4 minutes after the start up of the indoor fan, the light airflow and the low airflow will be turned to the set speed airflow.

3. In the cold air proof operation, the fan won't stop after the start up.

4. During the cold air proof operation, the indoor system will continuously send 'indoor high speed' signals to the outdoor system.

* Residue heat sending. The indoor fan will send the residue heat at a low speed for few seconds. If other conditions are satisified, when the compressor stops, the indoor system will operate at a light speed. The indoor fan will stop when the coil temperature is below the 'heat start temp 4'.

* Defrosting. When the system receives the defrosting signal from outdoors, the indoor fan will stop and the indoor temperature display won't change. At the time, any indoor coil malfunctions will be neglected. When the outdoor defrosting finishes, the coil malfunction will still be neglected until the compressor has been started up for 30 seconds. The indoor temperature display will not change and the system operates at the cold air proof mode.

* Automatic heating temperature compensation: when the system enters the heating mode, the temperature compensation will be added. When the status is switched off, the compensation will be erased.

2. Power operation

a. the system enters the mode after receiving the 'power signal'.

Send power operation signal to the outdoor system.

power operation for 15 minutes.

The power operation stops or finishes after the 15 minutes.

The mode change finishes the power operation.

Entering 'soft', you can have normal operation or signal control such as timing to finish the power operation.

When the system is at the automatic option with the power/ soft function, if the system enters the cooling mode, the cooling power/ soft function will be offered; if the system enters the heating mode, then the heating power/ soft function will be offered; if the system enters the airflow mode, there will be no power/ soft function.

3. Soft operation

the system enters the mode after receiving the ‘soft signal’.

a. soft heating: the airflow speed is slight, the system sends the soft signal to the outdoor system.

b. soft cooling: the airflow speed is slight, the system sends the soft signal to the outdoor system.

When the compressor operates, the airflow speed is soft speed. EEPROM is adaptable.

soft operation can not work under the demoisturing and airflow-sending operation.

4. Health operation

After receiving the signal from the remote control,(HV series: the background lighting is green the ‘health’ logo on. HS series: the ‘health’indicator will be lighted). If the fan operates, the negative ion generator operates to realize the negative sending function.

If the indoor fan stops, the negative ion generator is turned off.

When the negative ion generator is turned off, if the health system is turned on, the negative ion generator will be turned on when the fan operates.

5. Timing.

You can set 24 hours’ on/off timing accordingly. After the setting, the timing indicator will be lightened. Also, the light will be turning off after the timing is finished. The followings are several timing methods.

1.1 system /on timing: The timing indicator will be lightened and the indoor system is under the waiting mode. The light will be turned off when the timing is finished and the rest of the system will operate under a normal condition. The timing starts since the last reception of the timing singal. You can have the dormacy setting under the timing mode, the order of your settings will be operated according to the timing settings.

1.2 system /off timing: When the system is turned on, the timing indicator is lightened, the rest of the system will operated under a normal condition. When set time comes, the indicator light will be turned off and the system will be turned off. If you have set the dormant functions, the order of your settings will be operated according to the timing settings.

1.3 system /on and off timing: The settings will be completed according to the orders.

6. sleep operation

The sleep timing is an eight hours unadaptable one. The timing signs are shown on the V series board. (RC series show the sleep logo, HS series the timing light is lighted).

2.1 Under the cooling/ demoisture operation, after the setting of the sleep operation, the set temperature will be raised for 1 centigrade after 1 hour’s operation and will be raised for 1 centigrade 1 hour later. The system will keep this status for 6 hours and then close.

2.2 Under the heating mode, after the setting of the sleep operation, the et temperature will fall 2 centigrades after 1 hour’s operation and will fall 2 centigrades 1 hours later. 3 hours after the preceding operations, the set temperature will be raised for 1 centigrade and the system will keep this status for 3 hours and then close down.

2.3 During the dormant time, except the change of the system mode or a new press on the dormant setting keys, the timing of the 8 hours dormancy will take the first timing as the start time, any presses on other keys will not affect the original timing.

2.4 Indoor fan control under the sleep operation.

If the indoor fan is at the high speed before the sleep operation setting, the speed will be turned to medium after

the setting. If the fan is at the medium speed before the sleep setting, the speed will be turned to low after the setting. If the fan is at the low speed before the sleep setting, the speed will not change.

7. manual switch input

7.1 Press the manual switch the buzzer will ring. The system will enter the automatic mode if you don't press the button for more than 5 seconds.

Under the system off mode, if you press the manual switch for 5 to 10 seconds, the system will start the test operation.

Under the system off mode, If you press the manual switch for 10 to 15 seconds, the display screen will show the resume of the last malfunction.

If the system is under operation, the press on the manual switch will stop it.

Under the system off mode, the display screen will show automatic running sign.

Under the system off mode, the system will not receive the remote control signal if the press on the manual switch doesn't last for 15 seconds or if the key is loosened.

7.2 emergency operation: If you press the manual switch for less than 5 seconds, the buzzer will ring when you press the manual switch. The system will enter the emergency operation when the manual switch is loosened. The emergency operation is fully automatic.

7.3 Test operation.

a. The inlet temperature sensor doesn't work, the indoor fan and the indoor air direction board motor works synchronically. High speed airflow, cooling, outdoor system on, etc, will send the ambient temperature 30 centigrade and coil temperature 16 centigrade information to the outdoor system.

b. Test operation

The defrost protection of the evaporator doesn't work.

The temperature control doesn't work.

c. The test operation will be finished in 30 minutes.

d. The test operation can be stopped by the relative commands from the remote control.

8. Low load protection control

In order to prevent the frosting of the indoor heat interaction device, the outdoor system will be stopped if the indoor heat interaction temperature is below zero centigrade for 5 minutes, but the fan will continue to operate. The outdoor system will be started again when the heat interaction temperature is above 7 centigrade and the system has been stopped for 3 minutes. The malfunction will be stored in the malfunction resume and will not be revealed.

9. High load protection control

The outdoor system will be stopped if the coil temperature is above 65℃ for 2 minutes. The indoor fan will be controlled by the thermostat. The outdoor system can be restarted when the coil temperature is below 42℃ and the system has been stopped for 3 minutes. The malfunction will be stored in the malfunction resume and will not be revealed.

10. Abnormal operation of indoor system

When the outdoor system operates, if the indoor system operation differs from the outdoor system, the abnormal

operation malfunction will be reported. 30s after the report, the indoor system will be closed.

Outdoor system mode	Indoor system mode	conflicts
cooling	heating	yes
cooling	cooling	no
cooling	airflow	no
heating	heating	no
heating	airflow	yes
heating	cooling	yes

11. The last malfunction list resume.

Nothing is presented if there is no code list.

The malfunction display will automatically finish in 10 seconds.

The remote control only receives the sigals for stop. According to the signals, the malfunction resume presentation finishes.

The resume restores after the power supply restores.

12. abnormality confirmation approaches.

17.1 indoor temperature sensor abnormality: under the operation, the normal temperature ranges from 120 degree to -30 degree. When the temperature goes beyond this range, the abnormality can be confirmed. If the temperature goes back into the range, the system will automatically resume.

17.2 indoor heat interaction sensor abnormality: under the operation, the normal temperature ranges from 120 degree to -30 degree. When the temperature goes beyond this range, the abnormality can be confirmed. If the temperature goes back into the range, the system will automatically resume.

17.3 transmission abnormality.

If the indoor system can't receive the outdoor system for 8 minutes, the communication abnormality can be confirmed and reported and the outdoor system will be stopped.

13. Special features

1)Single indoor system operation

* Enter condition: First, set the high speed airflow and 30 centigrade set temperature, then press the dormant keys for 6 times within 7 seconds, the system will feedback with 6 rings.
* After the system enters the separate indoor system operation mode, the indoor system will operate according to the set mode and neglect the communication signals of the outdoor system. However, it has to send signals to the outdoor system.
* Quitting condition: This mode can be quitted after receiving the quitting signal from the remote control or urgency system. The indoor system thus can quit the single operation mode.

2)Power cut compensation.

* Entering condition: Press dormant button 10 times within 7 second, the buzzer will ring 4 times and the present system status will be stored into the EEPROM of the indoor system.
* After entering the power cut compensation mode, the processing of the indoor system should be

as the followings:

Remote control urgency singal: operate according to the remote control and the urgent conditions, the present status will be stored into the EEPROM of the indoor system.

* Quitting conditions: Press dormant button 10 times within 7 seconds and the buzzer will ring twice.

14. Other additional functions.

1) Display function

1-1 HV series and LCD display

When the system starts up, the background and the LCD will be fully lighted for 3 seconds. The background colour is white.

(1) Three-color background

The multi-color indicator is not lighted when the system is off. The mode-switching will change the indicator colors. Red color is for heating mode, blue for cooling, water color for demoisturing, white for automatic mode, pink for airflow sending, green for health mode and yellow green for air refreshing. The colors health, refreshing colors are preferred to the mode colors. If different status exist at the same time, then the last set color will be shown. The lighting key of the control board can turn on or off the display.

(2) LCD display

*Set timing to display timing signs, set dormant mode to display dormant sign.(The dormant signs will be shown on the G series panels.), set health mode to display health sign, set new airflow mode to display new airflow sign and set violet disinfection to display health sign.

*Set auto, heating, demoisturing, heating to display the relative signs. When you use a remote control to switch cooling, demoisturing and heating modes, the set temperature will be shown and the screen board will return to the room temperature 5 seconds later. If you choose the airflow sending mode, the screen board will show the room temperature directly.

*If the system is under malfunction status, the display will show the malfunction code. Please refer to the malfunction list.

1-2 HS series lights display

When the system starts up, the six LED indicator lights will be lighted for 3 seconds. (operation, timing, cooling, heating, demoisturing, health)

The operation light is lighted when the compress starts up.

When the system is under cooling, demoisturing or heating conditions, relative LED indicators will be lighted. When the system enters heating mode, the heating light will be lighted. When the system enters cooling mode, the cooling light will be lighted. When the system enters the airflow sending mode, the operation light will be lighted, the heating, cooling and demoistruing light will not be lighted.

When the timing is set, the timing light will be lighted. When dormant mode is set, the timing light will be lighted. If the health mode is set, the health light will be lighted.

If the system is under malfunction status, the malfunction display will be shown in how many times the indicator lights flash. Please refer to the malfunction list.

2). Malfunction display

Appendix 1 The malfunction code for the indoor and outdoor system interaction malfunctions.

Sample: ■ the led off ☐ the led on ★ the led flashing

Indoor system malfunction codes

malfunction codes	malfunction	HV series	HS series		
			operation	heating	cooling
1#	Indoor temperature sensor system break	E1	★	■	■
2#	Indoor heat interaction temperature sensor system break	E2	★	☐	☐
7#	Inefficient communication between indoor and outdoor system	E7	■	■	★
14#	Indoor fan abnormality	E14	■	☐	★
4#	Malfunction in reading or writing E2ROM	E4	★	☐	★

outdoor system malfunction code（the indoor unit can show you some malfunction code, as follow）

malfunction codes	malfunction	HV series	HS series		
			operation	heating	cooling
1#	Ambient sensors circuit break	F1	□	★	■
2#	Hot temperature sensor circuit breaks or shorts	F2	★	□	□
3#	Outlet temperature sensor circuit breaks or shorts	F3	★	□	■
4#	DC compressor feedback.	F4	★	■	□
5#	Outdoor system communication malfunction.	F5	■	■	★
6#	Current overcharge.	F6	★	■	★
7#	No load.	F7	★	■	★
8#	Overloaded/ under loaded voltage.	F8	■	★	□
9#	DC compressor failure.	F9	★	■	□
10#	Refrigerating overload	F10	★	★	★
12#	IPM protection	F12	★	★	□
13#	E^2 ROM reading failure	F13	★	□	★
14#	E^2 ROM coining failure	F14	★	□	★
15#	DC fan malfunction	F15	-----		
16#	NO AC power	F16	★	■	★
17#	Aspiration sensor circuit breaks	F17	□	□	★
19#	DC compressor speed control failure	F19	★	■	□
21#	Coil 1 sensor circuit breaks or shorts	F21	□	□	★
22#	Coil 2 sensor circuit breaks or shorts	F22	□	□	★
31#	System A communication malfunction	F31	■	■	★
32#	System B communication malfunction	F32	■	■	★

OUTDOOR SYSTEM FUNCTIONS

The outdoor system will decide the operation mode based on the principle of ‘first order preferred’ according to the startup signals of the two indoor systems.

a) cooling: Under the cooling operation, the four direction latch will not be closed. The outdoor fan will operate at the cooling mode. The compressor will operate under the cooling frequency.

b) heating: Under the heating operation, the four direction latch will be closed. The outdoor fan will operate at the heating mode. The compressor will operate under the heating frequency. When frosts appear at the outdoor system, the system will enter into the defrosting operation automatically. After the completion of the defrosting, the system will be resumed.

1. heat defrosting operation

1.1 Under the heating operation, when the indoor heat interaction temperature is below the ambient temperature and the heat interaction temperature is below zero centigrade, the frosts will appear on the heat exchanger. When the aggregated frost affects the heat interaction, the defrosting operation will begin.

1.2 frost confirmation condition. When either of the following condition appears, the system will enter the defrosting mode.

b) continuous operation for 47 minutes and Ta≥5℃, if Te ≤-3℃ for 2 minutes.

b) continuous operation for 47 minutes and Ta＜5℃, if Te≤-7℃ for 2 minutes.

c) continuous operation for 47 minutes and Ta＜-3℃, if Te≤-9℃ for 2 minutes.

d) If Ta≤-3℃ and the compressor worked for 3 hours without a defrosting operation, the system will process the defrosting for one time.

1.2.1 Defrosting process: After entering the defrosting operation, the compressor and the fan will be stopped. The four direction latch will be opened 30 seconds later. And the compressor will restart 10 seconds later. The system begins the defrosting operation.

1.2.5 defrosting quitting condition:

i) Time control: Defrosting time lasts 10 (EEPROM) minutes, the defrosting operation ends.

ii) Heat interaction control: When Te≥14℃(*EEPROM*), the defrosting operation ends.

1.2.6 Defrosting quitting process

After the completion of the defrosting, the compressor stops. 50 seconds later, the four direction latch changes direction. 10 seconds later, the compressor will start and the original heating operation resumes.

1.2.7 After the entering into the frosting mode, the compressor will operate at least for 1 minutes before stopping the defrosting. (The timing starts as the four direction latch starts.)

1.3 Outdoor main relay control

The outdoor main relay closure will be delayed for 2 seconds after connecting to the circuit.

1.4 Outdoor airflow control

1.4.1 airflow control at the cooling mode.

After the compressor is turned on for 5 seconds, the outdoor fan will start at a high speed. 10 seconds later, the speed will be controlled according to the outdoor ambient temperature. If the outdoor has only two option, M operates on H and L operates on L.

When the outdoor speed is M or L, the speed will change according to the heat interaction temperature. The status will be checked every minute.

Ta>28℃, high speed

26℃<Ta<28℃ , high/ low speed

Ta<26℃: Te≧40℃, high speed

37℃≦Te<40℃, high/ medium speed

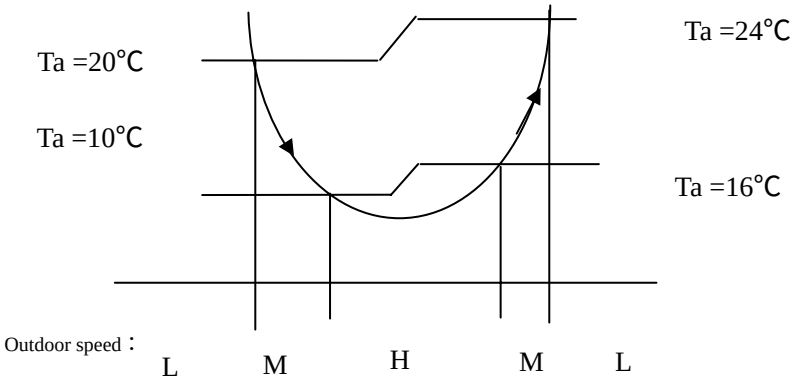
35℃≦Te , medium speed

30℃≦Te<35℃, medium/ low speed

Te<30℃, low speed

1.4.2 the speed control under the heating mode

The outdoor speed varies according to the outdoor ambient temperature. M operates on H under the two option mode.



Ta>24℃, low speed

24℃>Ta>20℃, low speed/ medium speed

Ta>16℃, medium speed

16℃>Ta>10℃, medium/high speed

Ta<10℃, high speed

1.5 Outdoor four direction control

Under the cooling mode, the outdoor four direction latch is not closed. Under the heating mode, the latch can be closed. When the heating compressor stops, the four direction latch will be closed 100 seconds later. The latch control under the defrosting operation has been discussed in the ‘defrosting operation’.

1.7 compressor frequency control

1.7.1 fixed test frequency

To fixing test frequency operation of the outdoor system.

the indoor system can be controlled manually. (refer to the indoor system specification).

1.7.1.1 If the indoor system has the fixed frequency test operation function, then the outdoor system will calculate the fixed frequency according to the number of the turned on systems and operate on the calculated frequency until the indoor system quit the test operation. When the two indoor systems are turned on at the same time, the outdoor system will enter the operation mode if either of the indoor systems sends the fixed test frequency.

i) The outdoor fixed frequency is set according to the indoor system signals. The operation is on the frequency stored in EEPROM

ii) The cooling and heating value under the double system operation

Under the single system fixed frequency test, the outdoor system will operate according to the turned-on indoor system status. The operation will on the frequency relative to the status. Under the double system operation test, the outdoor system will automatically operates on the double system fixed test frequency.

1.7.2 Normal operation frequency control

Under the outdoor system normal operation, the fixed frequencies of different indoor systems should be tested according to the different capacity of the respective indoor systems. Then the outdoor system will decide the operation frequency according to the fixed frequencies, the difference between set temperature and the indoor temperature and the indoor fan speed.

1.8 malfunction and protection

1. 8. 1 Three minutes ' waiting mode protection

1) No matter caused by which condition, the outdoor compressor is not allowed to be restart within 3 minutes after a compressor shut down.

2) If the compressor shut down is caused by malfunctions and the malfunction is corrected 3 minutes after, the compressor can restarted of the correction at once.

1.8.2 Intelligent power module protection.

i) Under the compressor operation, if the IPM protection happens under the voltage over/under loading, over heating or current overcharge, the compressor will stop and restart 3 minutes later.

ii) If the IPM protection happens 4 times continuously, the compressor will be totally turned off and can be restarted only by a second connection to the power supply.

1.8.3 Sensor malfunction protection.

i) There are 6 sensors in the outdoor system. The outdoor system will stop if any of the six sensors has malfunctions. The malfunction will be reported respectively.

ii) After the malfunction has been corrected for 3 minutes, the system can be restarted.

Outdoor restriction condition codes display:

When the outdoor system operates, because of the various temperature or electrical device restrictions, the compressor has to ensure the maximal output within a safe frequency range. This restriction condition only represent the most possible condition at the time, can only be used as a reference in experiments.

1# Normal, no restriction

2# Power voltage restriction

3# outdoor heat interaction restriction under the cooling mode; indoor heat interaction under the heating mode.

4# main current restriction

5# outlet temperature restriction

6# indoor heat interaction temperature restriction. (frosting prevention)

7# Indoor fan speed restriction

8# Outdoor frequency conversing voltage restriction

1.8.4 The malfunction codes：

After the stopping of the system, the flashing time of the LED02 is the malfunction code.

For example： Malfunction N.O 4

1# Ambient sensors circuit break.
2# Hot temperature sensor circuit breaks or shorts.
3# Outlet temperature sensor circuit breaks or shorts.
4# DC compressor feedback.
5# Outdoor system communication malfunction.
6# Current overcharge.
7# No load.
8# Overloaded/ under loaded voltage.
9# DC compressor failure.
10# Refrigerating overload.
11# Defrosting mode.
12# IPM protection.
13# E^2 ROM reading failure.
14# E^2 ROM coining failure.
16# NO AC power.
17# Aspiration sensor circuit breaks.
19# DC compressor speed control failure.
21# Coil 1 sensor circuit breaks or shorts.
22# Coil 2 sensor circuit breaks or shorts.
31# System A communication malfunction.
32# System B communication malfunction.

Dealing with the malfunctions

4# Compressor feedback malfunction: Check the main board CN301 and the module jack CN3. Check the CN04 on the main board and test the output of 15V DC current between the pins of CN04. Check the location of the chip COM01 at the back of the mainborad, to see if there is any circuit shorts. Check the states of the 3 phases of the modules. If the feedbacks of all the checks and tests are normal, then replace COM01.

5# Outdoor system communication malfunction: check the module jack CN401 on the main board, to see if the conducts of the jack are normally connected with the terminal stripe. Test if there is a 5V DC current between the pin 8 and pin 16 of IC03 on the main board. Check if the pin 3 and pin 13 of this chip are correctly connected with the pin 44 and pin 45 of the IC01, to test if there is any circuit shorts. Test if there is any communication wave output at the pin 4 of PQ 404 and PQ 408 and at the pin 2 of PQ403 and PQ 407 and if there is any circuit shorts on the systems of the surrounding devices (the misconnect between the live line and the zero line.)

6#. Current overcharge: Test if there is any circuit block on the system. Test the 4 diodes

D501-D504 on the main board with a multimeter. Test if there is any 5v circuit shorts at R501-R503 and D-505. Replace device CT501.

7#. No load: Test the 4 diodes D501-D504 on the main board with a multimeter. Test is there is any circuit short with GND at R501-R503 and D505(special focus on the possible circuit short condition the terminal A of D502 and terminal K of D504). To test if there is any formation of resistance or GND circuit short at the capacitor C501. Replace device CT501.

8# Overloaded/ under loaded voltage: Test if there is 310V DC between the terminal P and N of the program module. Test if there is any circuit short at R301-R304 , R324 and R325. Test if there is any formation of resistance or GND circuit short at the capacitor C304.

9# DC compressor start-up failure: Please restart; Check if the input and output at 7805(IC04) is correct. Check the status of the module on the module board. (the normal reading of the diode mode on the multimeter should be 0.45 at the P, N, U, V, W disconnect terminals.);Check the voltage of C4,C5,C6 on the module board is 15V or not.

10#. Refrigeration overload: the temperature of pipe is too high,if the malfunction is reported frequency, check the refrigerant is enough or not.

11# Defrosting condition: After the completion of the defrosting, the system will return to normal.

12#. IPM protection: check if the system circuits are at normal condition. Check if there is any GND short at R08 on the main board, to test if there is any formation of resistance or GND circuit short at the capacitor C02, or any other protection modes caused by temporal current surge as a result of inappropriate operation or other reasons.

13#,14# malfunctions: Check if the installation of IC05 on the main is correct. (if the installation is reversed), and if there is any break at the back of the main board. Replace IC05 directly.

16# No AC power: Check the power supply.

19#DC compressor speed control failure: Restart the compressor after it is turned of for a while. If the restart doesn't work, refer the suggestions of NO 9 and NO 4.

31# and 32# A/B system communication problem: please refer to NO 5 and check the indoor system communication circuit.

vals can be controlled in E2.

TROUBLE SHOOTING

Trouble shooting

Before asking for service, check the following first.

	Phenomenon	Cause or check points
Normal Performance inspection	The system does not restart immediately. 	• When unit is stopped, it won't restart immediately until 3 minutes have elapsed to protect the system. • When the electric plug is pulled out and reinserted, the protection circuit will work for 3 minutes to protect the air conditioner.
	Noise is heard 	• During unit operation or at stop, a swishing or gurgling noise may be heard. At first 2-3 minutes after unit start, this noise is more noticeable. (This noise is generated by refrigerant flowing in the system.) • During unit operation, a cracking noise may be heard. This noise is generated by the casing expanding or shrinking because of temperature changes • Should there be a big noise from air flow in unit operation, air filter may be too dirty.
	Smells are generated.	• This is because the system circulates smells from the interior air such as the smell of furniture, cigarettes.
	Mist or steam are blown out. 	• During COOL or DRY operation, indoor unit may blow out mist. This is due to the sudden cooling of indoor air.
Multiple check	Does not work at all. 	• Is power plug inserted? • Is there a power failure? • Is fuse blown out?
	Poor cooling 	• Is the air filter dirty? Normally it should be cleaned every 15 days. • Are there any obstacles before inlet and outlet? • Is temperature set correctly? • Are there some doors or windows left open? • Is there any direct sunlight through the window during the cooling operation?(Use curtain) • Are there too much heat sources or too many people in the room during cooling operation?

Application temp. range of air conditioner -7°C~43°C.

Abnormality Diagnosing

Number	Trouble phenomenon	Description	Parts that may appear problems and the Cause	Prepared parts and tools	Applicable machine
1	Not work with remote controller	Use the remote controller to boot machine and it doesn't work	7805,transformer, piezo resistance, fuse,remote controller, receiver. If it can be booted by using manual emergency switch, that indicate the power cable and wiring board are electriferous，remote controller or receiver isn't well；else check whether piezo resistance ,fuse and 7805 are well。	7805,transformer, fuse, piezo resistance, remote controller, receive,avometer	invariable frequency split unit
2	Outdoor fan motor doesn't work	Outdoor fan motor doesn't run when cooling or heating	Optical SCR, indoor P.C. board. Check the 2# and 4# terminal block of indoor unit, if it has 220V voltage, wiring board is normal, then check whether the optical SCR is good, replace it if it has flaw；else check whether there are something wrong with connecting line，outdoor fan motor capacitor and coil assembly。	Optical SCR, indoor P.C. board , outdoor fan motor capacitor, outdoor fan motor,avometer	invariable frequency split unit
3	Indoor fan motor doesn't work	Indoor fan motor doesn't run when cooling or heating	Optical SCR，indoor P.C. board 。Check whether indoor fan motor has 80-170V voltage，if it has，wiring board is normal, then check whether the optical SCR is good, replace it if it has flaw；else check whether there are something wrong with connecting line，indoor fan motor capacitor and coil assembly。	Optical SCR，indoor P.C. board , indoor fan motor capacitor, indoor fan motor,avometer	invariable frequency split unit
4	Not heating	Cooling but not heating	Indoor P.C. board , four-way valve coil, body of four-way valve，Check the 2# and 3# terminal block of indoor unit, if it has 220V voltage when heating but no when cooling, then P.C. board is abnormal; else check whether four-way valve coil and the body of four-way valve are damaged。	Indoor P.C. board , four-way valve coil, body of four-way valve, avometer	invariable frequency split unit

5	Indoor unit make water	Oriented wind panel or drain pan makes water when used	Drain pan, drain hose. Check whether the indoor unit is installed horizontal, drain hose of indoor unit is leveled off ,the hole is over high ， filter and drain hose is dirty and walled up、drain pipe is underwater。	drain pan, drain hose	invariable frequency split unit
6	Compressor doesn't work	running indicator lights up，but compressor doesn't work	Indoor P.C. board , startup capacity for compressor, overheat protector, compressor. Check the 1# and 2# terminal block of indoor unit whether it has single AV，if not then examine the power relay of P.C. board ， else check overheat protector, startup capacity for compressor and compressor itself	Indoor P.C. board , startup capacity for compressor, overheat protector, compressor,avometer	invariable frequency split unit
7	The outdoor fan motor and compressor don't work	The running lamp of air conditioner lights but the outdoor fan motor and compressor don't run	Remote controller 、electrolytic capacitor of 2500UF、7805、outdoor heat exchanger sensor and ambient temperature sensor. Use temperature key of remote controller to watch how much times the timing lamp glitters and judge what's the trouble .If there is no glitter we should check the terminal block to see if there is AC voltage about 220V.Check the electrolytic capacitor of 2500UF and see if there is current about 310V.Examine the output of the 7805 and switch transformer together with the resistance of the sensor.	Remote controller ,electrolytic capacitor of 2500UF、7805、outdoor heat exchanger sensor and ambient temperature sensor、avometer	Little split unit of frequency conversion
8	The outdoor fan motor runs but the compressor doesn't run	The running lamp of air conditioner lights ,the outdoor fan motor works, but the compressor doesn't work	Power model、switch transformer、compressor. Check the temperature key of remote controller to watch how many times the timing lamp glitters and judge what's the trouble. Examine the two ends of PN to see if there is DC voltage about 310V.Four group DC power resource of 15V.Check the triphase coil assembly of the compressor and see if they are the same.	Power model、switch transformer、compressor、avometer	Little split unit of frequency conversion

9	Don't make heat	The air conditioner can refrigerate but can't make heat	Outdoor P.C. Board、4 way valve coil、 4 way valve body. Examine the CN204 at Outdoor P.C. Board and watch if there is 220V voltage .If there doesn't have we can judge that the P.C. Board is bad. If there has, we need to connect and check the whether the 4 way valve coil and the 4way valve body have been damaged .	Outdoor P.C. Board、4way valve coil、 4 way valve body、avometer.	Little split unit of frequency conversion
10	Show error code E8	The machine doesn't work and shows error code E8	Multimeter negative generator、indoor P.C. board 、connecting and inserting lines .Check if the Multimeter negative generator is plane and the grounding (CF) is touching well, then examine not only whether the indoor P.C. Board and control board have been damaged or not but also the connecting lines are good.	Multimeter negative generator、indoor P.C. Board、control board 、grounding (CF)、avometer.	The series of frequency fixed cabinet type
11	Can't start	The air conditioner can't start	Transformer、indoor microcomputer plate、fuse. Check if the transformer has been burned. power wave filter、LX102.Check whether the fuse and indoor microcomputer plate have been damaged.	Transformer、power wave filter、indoor microcomputer plate、fuse、avometer.	The series of frequency fixed cabinet type
12	Show error code F11	When the air conditioner has run about 5minutes the indoor unit shows the error code F11.	The system pressure、outdoor P.C. Board、Power source voltage、power model、the connecting lines of compressor. The cause is that protective action has been taken when it runs with large burden, there is more refrigerant than it should be .Examine the outdoor P.C. Board、Power source voltage、power model and see whether they have been damaged and the connecting lines touch well, if not, adjust it to be normal.	outdoor P.C. Board、Power source voltage、power model .	The machine of frequency conversion split unit

INSTALLATION

Installation Manual of Room Air Conditioner

- Read this manual before installation
- Explain sufficiently the operating means to the user according to this manual.

Necessary Tools for Installation

1.Driver
2.Hacksaw
3.Hole core drill
4.Spanner(17,19 and 26mm)
5.Torque wrench(17mm,22mm,26mm)
6.Pipe cutter
7.Flaring tool
8.Knife
9.Nipper
10.Gas leakage detector or soap-and-water solution
11.Measuring tape
12.Reamer

Drawing for the installation of indoor and outdoor units

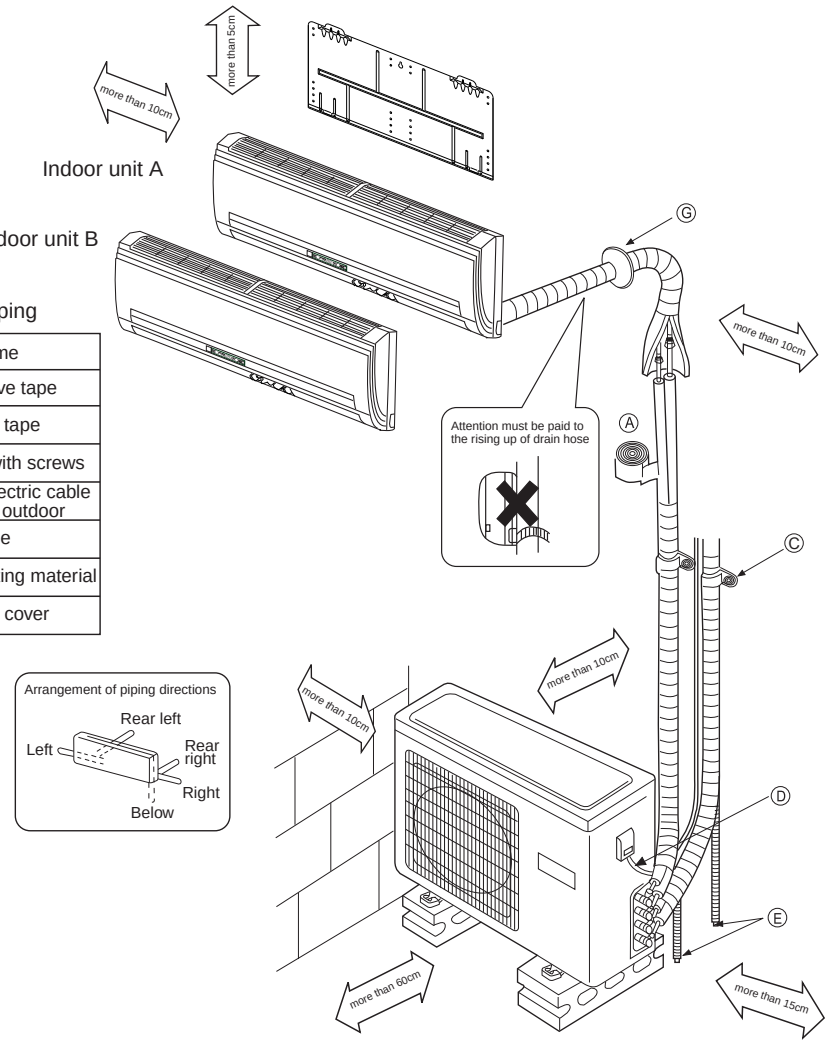
※ The models adopt HFC free refrigerant R410A

Accessory parts

No.	Accessory parts	Number of articles
①	Remote controller	2
②	R-03 dry battery	4
③	Mounting plate	2
④	Drain hose	2
⑤	ϕ4X25 Screw, Plastic cap	8
⑥	Drain-elbow	1
⑦	Cushion	4

Optional parts for piping

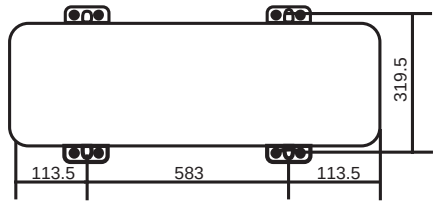
Mark	Parts name
Ⓐ	Non-adhesive tape
Ⓑ	Adhesive tape
Ⓒ	Saddle(L.S) with screws
Ⓓ	Connecting electric cable for indoor and outdoor
Ⓔ	Drain hose
Ⓕ	Heating insulating material
Ⓖ	Piping hole cover



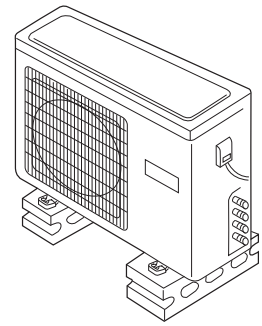
※ The marks from Ⓐ to Ⓖ in the figure are the parts numbers.

※ The distance between the indoor unit and the floor should be more than 2m.

No.0010557180



Floor fixing dimensions of the outdoor unit (Unit:mm)



Fixing of outdoor unit

- Fix the unit to concrete or block with bolts(ϕ10mm) and nuts firmly and horizontally.
- When fitting the unit to wall surface, roof or rooftop, fix a supporter surely with nails or wires in consideration of earthquake and strong wind.
- If vibration may affect the house, fix the unit by attaching a vibration-proof mat.

Selection of Installation Place

Indoor Unit

- Place, robust not causing vibration, where the body can be supported sufficiently.
- Place, not affected by heat or steam generated in the vicinity, where inlet and outlet of the unit are not disturbed.
- Place, possible to drain easily, where piping can be connected with the outdoor unit.
- Place, where cold air can be spread in a room entirely.
- Place, nearby a power receptacle, with enough space around. (Refer to drawings).
- Place where the distance of more than lm from televisions, radios, wireless apparatuses and fluorescent lamps can be left.
- In the case of fixing the remote controller on a wall, place where the indoor unit can receive signals when the fluorescent lamps in the room are lightened.

Outdoor Unit

- Place, which is less affected by rain or direct sunlight and is sufficiently ventilated.
- Place, possible to bear the unit, where vibration and noise are not increased.
- Place, where discharged wind and noise do not cause a nuisance to the neighbors.
- Place, where a distance marked ⇦⇨is available as illustrated in the above figure.

Power Source

- Before inserting power plug into receptacle, check the voltage without fail. The power source is the same as the corresponding name plate.
- Install an exclusive branch circuit of the power.
- A receptacle shall be set up in a distance where the power cable can be reached. Do not extend the cable by cutting it.

Selection of pipe

- To this unit, both liquid and gas pipes shall be insulated as they become low temperature in operation.
- Use optional parts for piping set or pipes covered with equivalent insulation material.
- The thickness of the pipe must be 0.8 mm at least.

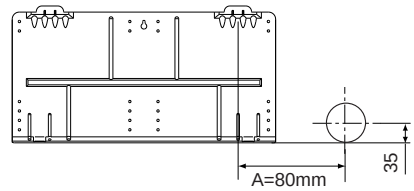
Liquid pipe(ϕ)	6.35mm(1/4")
Gas pipe(ϕ)	9.52mm(3/8")

Indoor unit

1.Fitting of the Mounting Plate and Positioning of the wall Hole

When the mounting plate is first fixed

1.Carry out, based on the neighboring pillars or lintels, a proper leveling for the plate to be fixed against the wall, then temporarily fasten the plate with one steel nail.
2. Make sure once more the proper level of the plate, by hanging a thread with a weight from the central top of the plate, then fasten securely the plate with the attachment steel nail.
3. Find the wall hole location A using a measuring tape



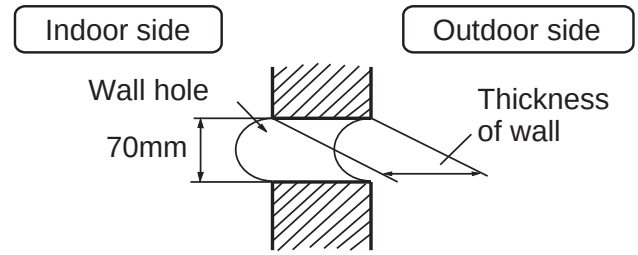
Fit the level line

When the mounting plate is fixed side bar and lintel

- Fix to side bar and lintel a mounting bar, Which is separately sold, and then fasten the plate to the fixed mounting bar.
- Refer to the previous article, " When the mounting plate is first fixed ", for the position of wall hole.

2.Making a Hole on the Wall and Fitting the Piping Hole Cover

- Make a hole of 70 mm in diameter, slightly descending to outside the wall.
- Install piping hole cover and seal it off with putty after installation



(Section of wall hole) Ⓖ Piping hole pipe

3.Installation of the Indoor Unit

Drawing of pipe

[Rear piping]

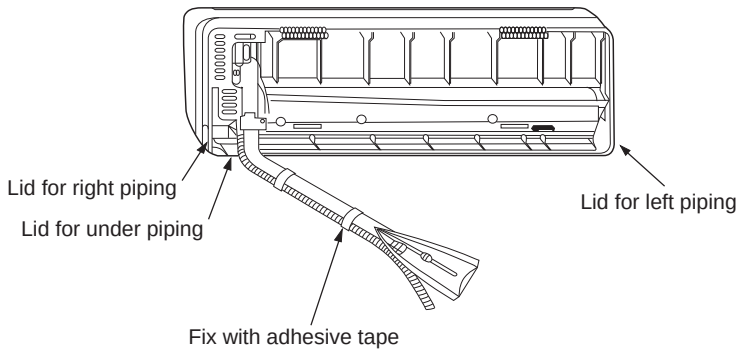
- Draw pipes and the drain hose, then fasten them with the adhesive tape

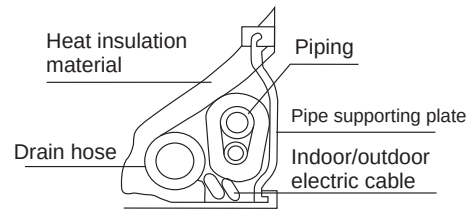
[Left • Left-rear piping]

- In case of left side piping, cut away, with a nipper, the lid for left piping.
- In case of left-rear piping, bend the pipes according to the piping direction to the mark of hole for left-rear piping which is marked on heat insulation materials.

1. Insert the drain hose into the dent of heat insulation materials of indoor unit.
2. Insert the indoor/outdoor electric cable from backside of indoor unit, and pull it out on the front side, then connect them.
3. Coat the flaring seal face with refrigerant oil and connect pipes.
   Cover the connection part with heat insulation materials closely, and make sure fixing with adhesive tape

Indoor unit





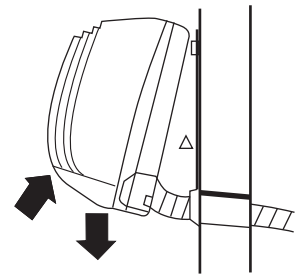
- Indoor/outdoor electric cable and drain hose must be bound with refrigerant piping by protecting tape.

[Other direction piping]

- Cut away, with a nipper, the lid for piping according to the piping direction and then bend the pipe according to the position of wall hole. When bending, be careful not to crash pipes.
- Connect beforehand the indoor/outdoor electric cable, and then pull out the connected to the heat insulation of connecting part specially.

Fixing the indoor unit body

- Hang surely the unit body onto the upper notches of the mounting plate. Move the body from side to side to verify its secure fixing.
- In order to fix the body onto the mounting plate,hold up the body aslant from the underside and then put it down perpendicularly.



4.Connecting the indoor/outdoor Electric Cable

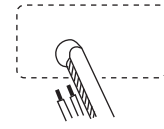
[Cautions]

1.Make sure it is unit A or unit B, when make wiring.
2.Unit to be connected to stop valve A on outdoor unit is unit A,while the one to be connected to stop valve B is unit B.
3.Refer to wiring diagram.

Removing the wiring cover

- Remove terminal cover at right bottom corner of indoor unit, then take off wiring cover by removing its screws.

When connecting the cable after installing the indoor unit



1. Insert from outside the room cable into left side of the wall hole, in which the pipe has already existed.
2. Pull out the cable on the front side, and connect the cable making a loop.

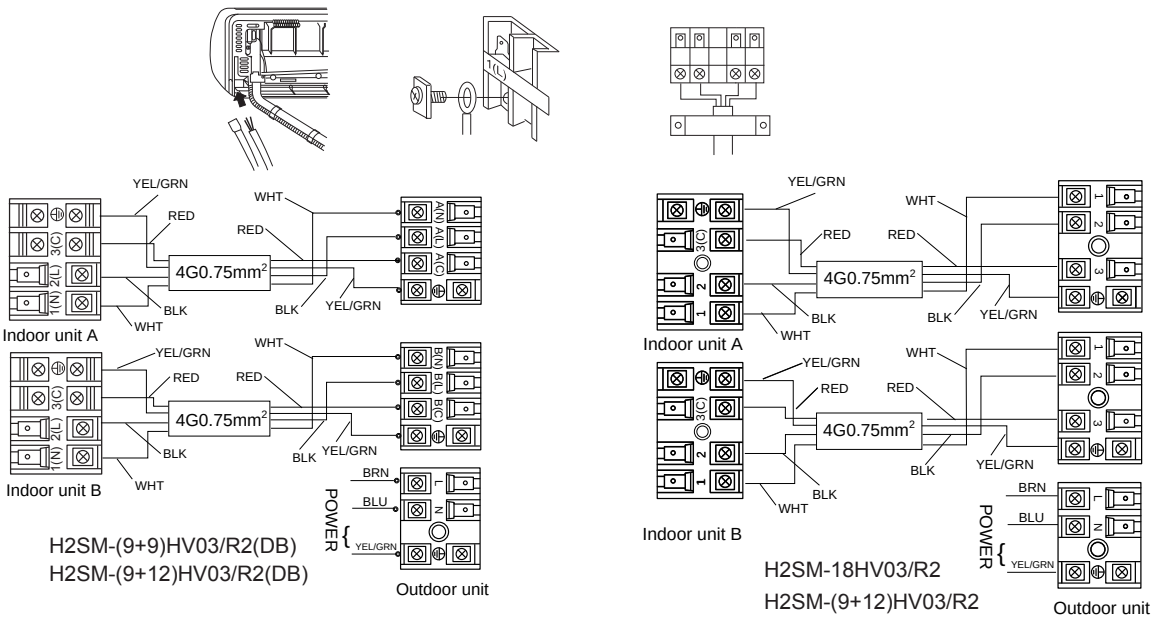
Indoor unit

When connecting the cable before installing the indoor unit

- Insert the cable from the back side of the unit, then pull it out on the front side.
- Loosen the screws and insert the cable ends fully into terminal block, then tighten the screws.
- Pull the cable slightly to make sure the cables have been properly inserted and tightened.
- After the cable connection, never fail to fasten the connected cable with the wiring cover.
- IMeans for disconnection from the supply mains having a contact separation in all poles must be incorporated in the fixed wiring in accordance with the wiring rules.
- The power plug is self-provided,the power plug must acquired the local attestation.

Note: When connecting the cable, confirm the terminal number of indoor and outdoor units carefully. If wiring is not correct, proper operation can not be carried out and will cause defect.

1. If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similar qualified person. The type of connecting wire is H05RN-F or H07RN-F.
2. If the fuse on PC board is broken please change it with the type of T. 3.15A/250V.
3. The wiring method should be in line with the local wiring standard.
4. After installation, the power plug should be easily reached.
5. A breaker should be incorporated into fixed wiring. The breaker should be all-pole switch and the distance between its two contacts should be not less than 3mm



Power cable: 3G4.0mm²

5.Easily-demount cleaning of indoor unit

1.Top inlet can be taken down

Open the inlet grille, press the claw of the clip on the unit,then take down the top inlet.(according to figure 1)

2.Vertical flap can be taken down

Overturn the vertical flap, press the claw of the clip ,then take down vertical flap.(according to figure 2)

3.Horizontal louvers can be taken down

After taking down vertical flap.Horizontal louvers are appeared,draw the middle louver,and take down the horizontal louvers . (according to figure 3)

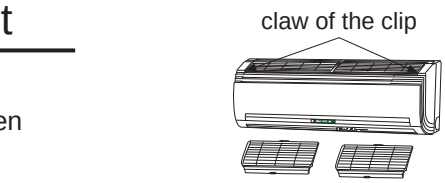


Figure 1

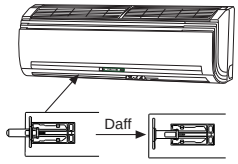


Figure 2

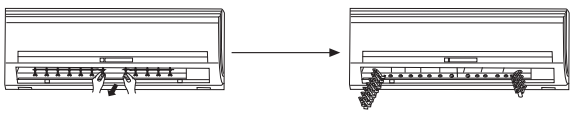


Figure 3

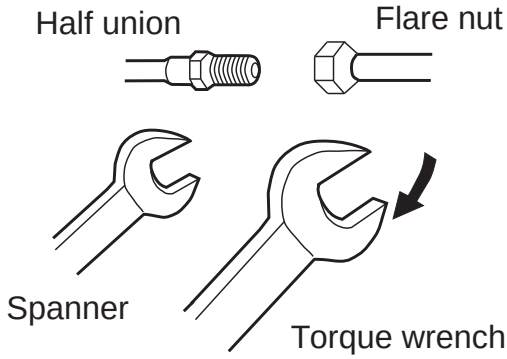
Outdoor unit

1.Installation of Outdoor Unit

Install according to (Drawing for the installation of indoor and outdoor units)

2.Connection of pipes

- To bend a pipe, give the roundness as large as possible not to crush the pipe ,and the bending radius should be 30 to 40 mm or longer.
- Connecting the pipe of gas side first makes working easier.
- The connection pipe is specialized for R410A.
- The max vertical distance between the indoor unit and the outdoor unit is 5 m.



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

Pipe Diameter (ϕ)	Fastening torque
Liquid side 6.35mm(1/4")	18N.m
Gas side 9.52mm(3/8")	40N.m
Gas side 12.7mm(1/2")	55N.m

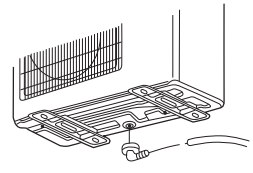
Be careful that matters, such as wastes of sands, etc. shall not enter the pipe.
The standard pipe length is 5m. If it is over 5m, the function of the unit will be affected. If the pipe has to be lengthened, the refrigerant should be charged, according to 20 g/m. But the charge of refrigerant must be conducted by professional air conditioner engineer. Before adding additional refrigerant, perform air purging from the refrigerant pipes and indoor unit using a vacuum pump,then charge additional refrigerant.

3.Connection

- Use the same method on indoor unit. Loosen the screws on terminal block and insert the plugs fully into terminal block, then tighten the screws.
- Insert the cable according to terminal number in the same manner as the indoor unit.
- If wiring is not correct, proper operation can not be carried out and controller may be damaged.
- Fix the cable with a clamp.

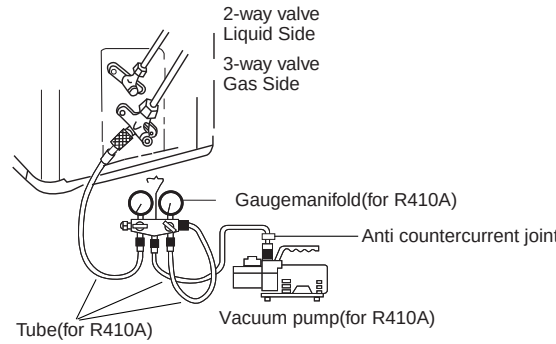
4.Attaching Drain-Elbow

- If the drain-elbow is used, please attach it as figure. (Note: Only for heat pump unit.)



Outdoor unit

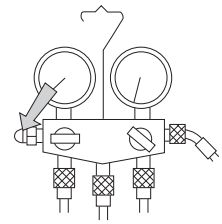
6.Purging Method:To use vacuum pump



① Detach the service port's cap of 3-way valve, the valve rod's cap for 2-way valve and 3-way's, connect the service port into the projection of charge hose (low) for gaugemanifold. Then connect the projection of charge hose (center) for gaugemanifold into vacuum pump.

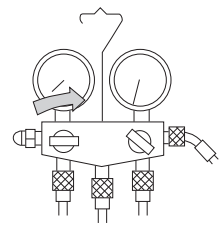
② Open the handle at low in gaugemanifold, operate vacuum pump. If the scale-moves of gause (low) reach vacuum condition in a moment, check ① again.

② Open

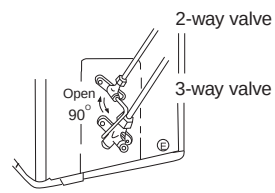


③ Vacuumize for over 15min. And check the level gauge which should read -0.1 MPa (-76 cm Hg) at low pressure side. After the completion of vacuumizing, close the handle 'Lo' in gaugemanifold and stop the operation of the vacuum pump.
Check the condition of the scale and hold it for 1-2min. If the scale-moves back in spite of tightening, make flaring work again, the return to the beginning of ③ .

③ Close



④ Open the valve rod for the 2-way valve to an angle of anticlockwise 90 degrees.
After 6 seconds, close the 2-way valve and make the inspection of gas leakage.

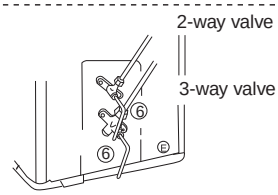


⑤ No gas leakage?

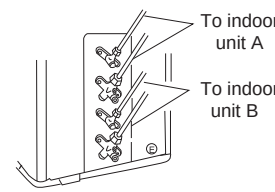
In case of gas leakage, tighten parts of pipe connection. If leakage stops, then proceed ⑥ steps.

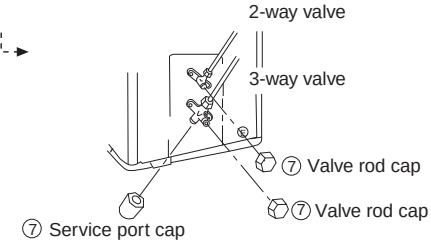
If it does not stop gas leakage, discharge whole refrigerants from the service port. After flaring work again and vacuumize, fill up prescribed refrigerant from the gas cylinder.

⑥ Detach the charge hose from the service port, open 2-way valve and 3-way. Turn the valve rod anticlockwise until hitting lightly.



⑦ To prevent the gas leakage, turn the service port's cap, the valve rod's cap for 2-way valve and 3-way's a little more than the point where the torque increases suddenly.





⑧ After attaching the each caps, check the gas leakage around the caps.

CAUTION:

1.If the refrigerant of the air conditioner leaks, it is necessary to discharge all the refrigerant. Vacuumize first, then charge the liquid refrigerant into air conditioner according to the amount marked on the name plate.

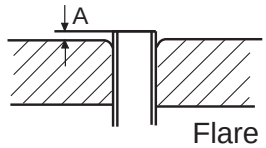
2.Please do not let other cooling medium, except specified one (R410A), or air enter into the cooling circulation system. Otherwise, there will be abnormal high pressure in the system to make it crack and lead to personal injuries.

1.Power Source Installation

- The power source must be exclusively used for air conditioner. (Over I0A)
- In the case of installing an air conditioner in a moist place, please install an earth leakage breaker.
- For installation in other places, use a circuit breaker as far as possible.

2.Cutting and Flaring Work of Piping

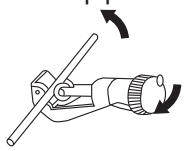
- Pipe cutting is carried out with a pipe cutter and burs must be removed.
- After inserting the flare nut, flaring work is carried out.



Flare tooling die

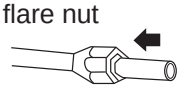
	Flare tool for R410A	Conventional flare tool	
	Clutch-type	clutch-type(Rigid-type)	Wing-nut type (Imperial-type)
A	0~0.5mm	1.0~1.5mm	1.5~2.0mm

1.Cut pipe

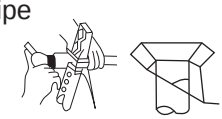


2.Remove burs

3.Insert the flare nut



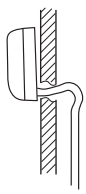
4.Flare pipe



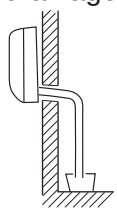
Correct	Incorrect				
					
	Lean	Damage of flare	Crack	Partial	Too outside

3.On Drainage

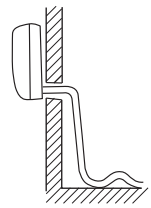
Please install the drain hose so as to be downward slope without fail.
Please don't do the drainage as shown below.



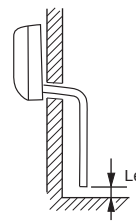
It becomes high midway.



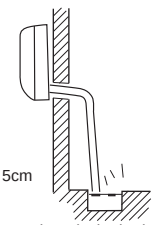
The end is immersed in water.



It waves.



The gap with the ground is too small



There is the bad smell from a ditch

- Please pour water in the drain pan of the indoor unit, and confirm that drainage is carried out surely to outdoor.
- In case that the attached drain hose is in a room, please apply heat insulation to it without fail.

Check for Installation and Test Run

- Please kindly explain to our customers how to operate through the instruction manual.

Check Items for Test Run

☐ Put check mark ✓ in boxes

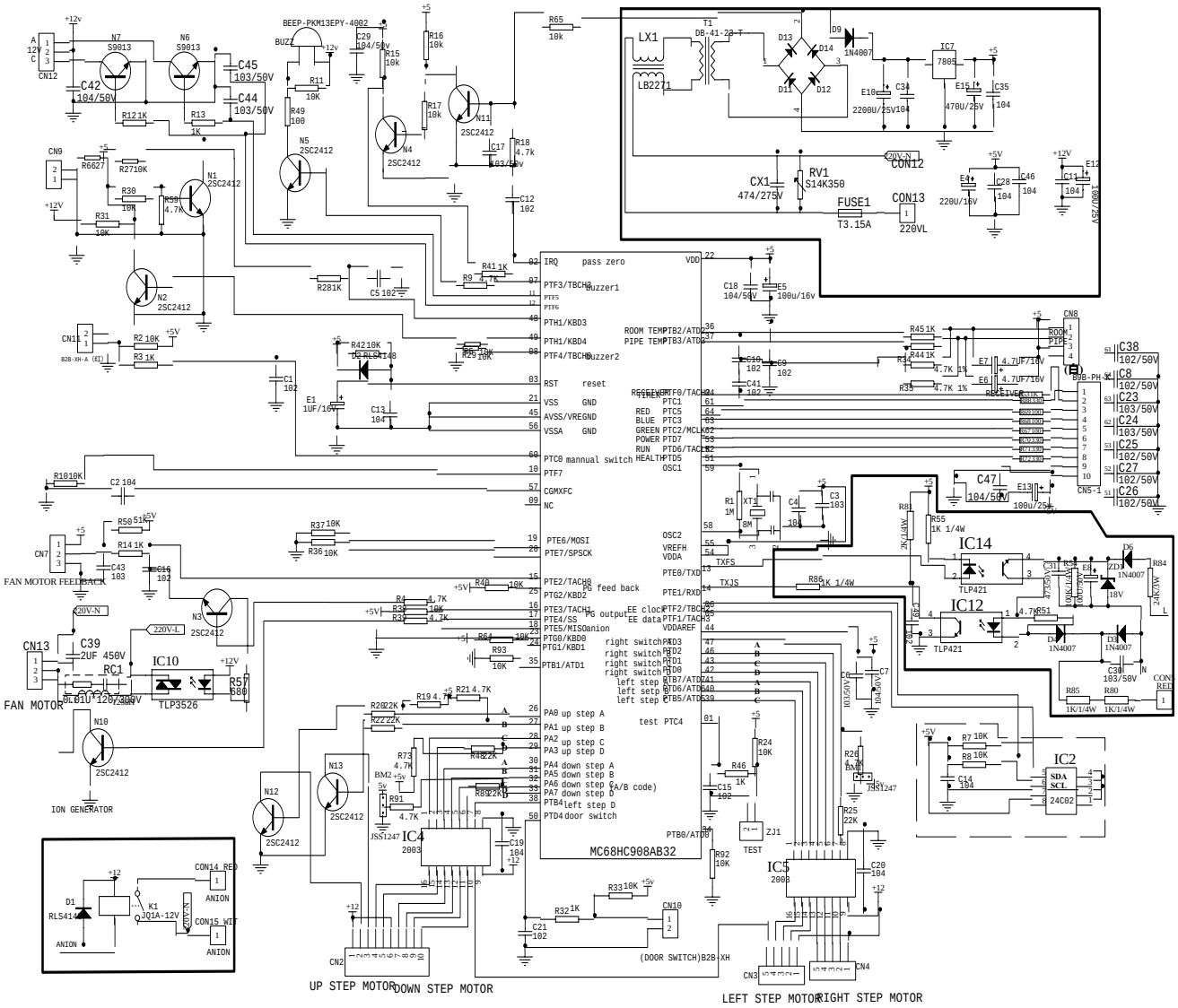
☐ Gas leak from pipe connecting?
☐ Heat insulation of pipe connecting?
☐ Are the connecting wirings of indoor and outdoor firmly inserted to the terminal block?
☐ Is the connecting wiring of indoor and outdoor firmly fixed?
☐ Is drainage securely carried out?
☐ Is the earth line securely connected?
☐ Is the indoor unit securely fixed?
☐ Is power source voltage abided by the code?
☐ Is there any noise?
☐ Is the lamp normally lighting?
☐ Are cooling and heating (when in heat pump) performed normally?
☐ Is the operation of room temperature regulator normal?

CIRCUIT AND WIRING DIAGRAM

INDOORS CIRCUIT DIAGRAM

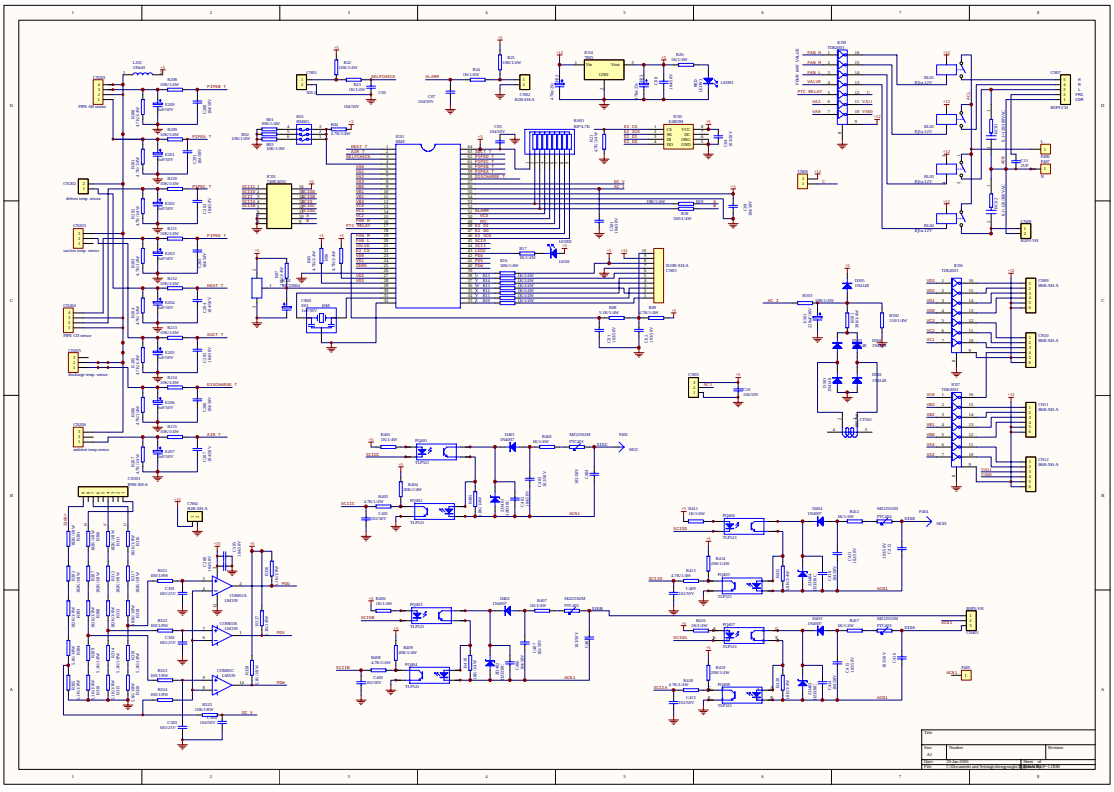
H2SM-(9+12)HV03/R2(DB)

H2SM-(9+9)HV03/R2(DB)



OUTDOORS CIRCUIT DIAGRAM

H2SM-(9+12)HV03/R2(DB)
H2SM-(9+9)HV03/R2(DB)



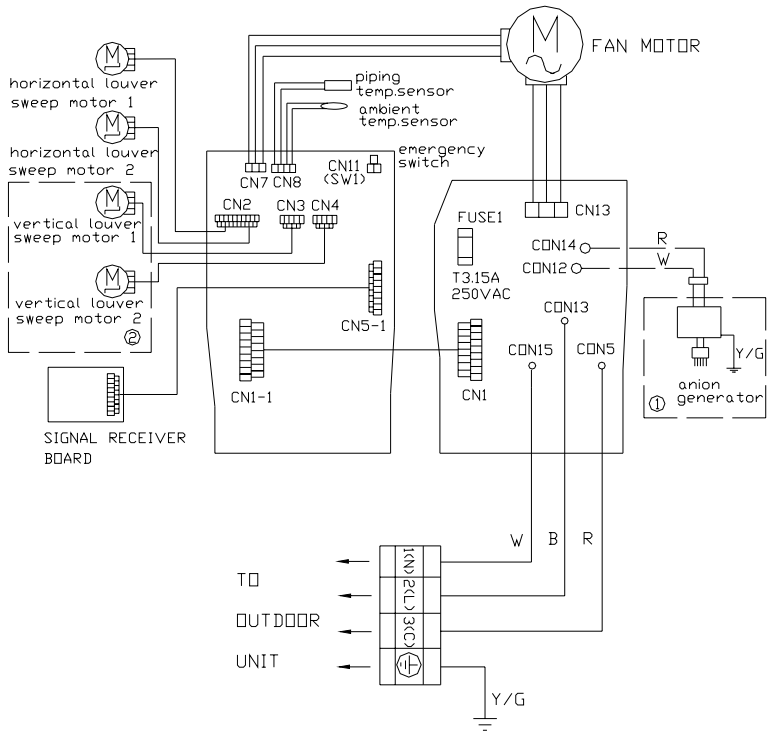
H2SM-(9+12)HV03/R2(DB)

H2SM-(9+9)HV03/R2(DB)

INDOORS WIRING DIAGRAM

0010557325

WIRING DIAGRAM



NOTE:

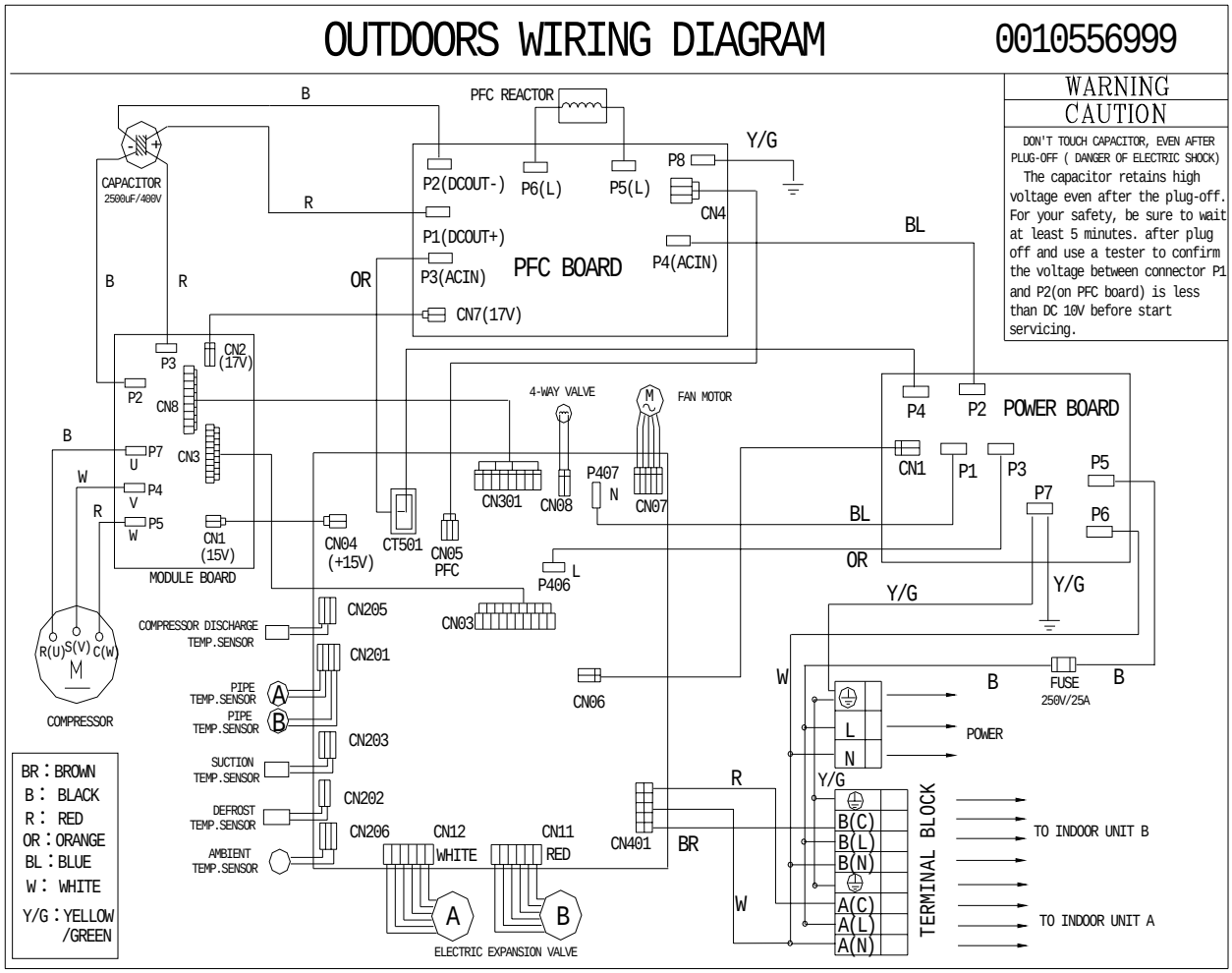
THE DASHED FRAME ① AND ② IS OPTION

B	BLACK
W	WHITE
R	RED
Y/G	YELLOW/GREEN

H2SM-(9+12)HV03/R2(DB)

H2SM-(9+9)HV03/R2(DB)

OUTDOORS WIRING DIAGRAM



Sincere Forever

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