Hamilton Digital

Service Manual

DC Inverter Split type

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I .Installation

1. Safe Codes

1）The service supplier shall urge its service people to take effective human safety measures during operation.

2）The service people shall select an installation position that is solid, unlikely shocked and able to support the weight of machines.

3）To avoid fire, the installation position shall be away from the place where flammable gas exists.

4）When the outdoor unit is installed or relocated on the 2nd floor of a building or at a height over 2m, the service people must use the rope with adequate strength to fasten the outdoor unit securely (or take other safety measures) to prevent the machine from falling down.

5）For working on height, anti-fall measures shall be taken for the tools and materials used outside the building.

6） After completion, the installation people must carry out electrical safety inspection. The electrical wiring must be in conformance to the national or local safety standards to ensure no leakage.

7）If it is needed to refit the power supply during installation, approval must be obtained from the user and the operation must be carried out by the people qualified for electrical safety. The result must be in conformance to the national or local standards on electrical safety.

8）The service people must check each position of the casing during test run. In case of electric leakage, immediately stop the machine and check it. If it is the problem of installation, solve it and test again. Ensure the air conditioner works normally. If it is the problem of air conditioner, report it to the vendor.

9）During installation, if the service people find that the user's power supply has the potential safety problem, they must notify the user and record the details on the warranty card for confirmation, or take corrective actions.

10）Before completion of the installation or during removal or installation of the machine, it is prohibited to switch on the power and start the machine, in order to avoid safety accidents.

11）The service people must follow the national or local safety rules when using the welding tools. The welding must be performed by the people with safe operation qualification.

12）HD has the right to supervise the service supplier for its work safety. The accidents due to the service supplier's fault shall be the service supplier's responsibility.

13）During installation, the service people shall take care to avoid skid, cutting, scratch, burn, electric shock or fall. Take care to protect the eyes during welding.

14） After installation, ensure that the people or objects are away from the machine before you connect the power supply. Do not switch on the power or test the machine until the power supply is correctly connected.

2. Preparation of installation tools

Table: Configuration of Installation Tools

Tool	1. Impact drill, with Ø70mm bit 1 pc	
	2. Bit, Ø10mm or Ø12mm 1 pc	
	3. Slotted screwdriver and cross screwdriver, 1 pc for each (mini slotted screwdriver)	Slotted: 100 or 120mm; Cross: 120 or 145mm
	4. Torque wrench (2 pcs), spanner (3 pcs)	Spanner: 8×10, 10×12, 12×14mm
	5. Hammer (1 pc)	0.5Kg
	6. Electrical knife (1 pc)	

	7. Wire stripper (1 pc)	
	8. Sharp nose pliers and cutting pliers (1 pc for each)	Cutting pliers: 150mm
	9. Pipe bender (1 set)	
	10. Pipe expander (1 set)	For the expanding the opening of the added pipe
	11. Pipe cutter (1 pc)	For cutting the excess copper tube)
	12. Reamer (1 pc)	For deburring the copper tube
	13. File (1 pc)	150 or 200mm
	14. Multimeter (1 set)	Level 5.0
	15. Leakage detector or soap / sponge (1 pc)	For detecting if there is leakage at the connection
	16. Thermometer or digital temperature meter (1 pc)	For measuring the temperature of the intake and outlet air of the air conditioner
	17. Pressure gauge	For measuring the working pressure of the air conditioner system
	18. Level gauge or plummet (1 pc)	
	19. Putty scraper (1 pc)	
	20. Hex wrench (1 set)	
	21. Electric probe	
	22. Safety belt	
	23. Rope (acc. to weight-bearing requirements)	
	24. Laying cloth, cover cloth, shoe covers, wiping cloth	
	25. Ladder and other requisite tools	

Other auxiliary materials (depending on the site conditions)

Materials	1. Fixing support for outdoor unit	GB/T5059GB/T5213
	2. Expansion bolt 10mm (4 pcs)	
	3. Anchoring bolt (Ø10mm) (with spring washer) (4 pcs)	
	4. Concrete nail	
	5. Heat insulation strap	
	6. Insulation tape	
	7. Gypsum powder (1 bag)	
	8. Copper tube and power cable	
	9. PVC pipe (optional)	
	10. Square channel (optional)	For fixing the connection pipes and wires
	11. Others	

3.Check the machine (whether the appearance is in good condition, and whether the accessories are complete)

Machine Inspection	Focus on checking the single cooling, double temperature and cooling capacity whether conform to the specifications, in terms of the indoor and outdoor units are compatible, and the style of indoor unit conforms to the requirements. Look through the observation hole, and check whether the connection pipes, remote controller, Product Warranty Card and other accessories are complete. If not, do not open the package but contacting the vendor.

4. Check the user's power supply (kilowatt-meter capacity, wire diameter, electric leakage protection switch, ground wire and voltage)

Check the power supply	Use the multimeter to measure the power voltage, which shall be within +/-10% of the rated voltage.
	Use special line for the power supply of air conditioners, and ensuring that the capacity of entire supply line (branch line, power line, kilowatt-meter, air switch, etc) is higher than the maximum rated current of air conditioner.
	The power configuration and cable distribution must meet the local requirements for electrical safety.
	Advise the user to apply special air switch, electric leakage protector and other necessary protection devices for air conditioners. Their capacity shall meet the needs of air conditioner. For the line with fuse, it is prohibited to use copper wire to replace the fuse.

Table: The Requirements of Different Models for Power Supply

Table 1 (220V-240V)

Item / Model	Section Area of Power Cable (mm^2)	Circuit Switch (A)
Split Wall-Mounting Series		
9k	1,5	10
12k; 18k	2,5	16
24k	4,0	20

- Regulation of wire size and circuit breaker differs from each locality, please refer in accordance with local rules.

5 .Selection of Installation Position (Indoor / outdoor lens sequence needs adjustment)

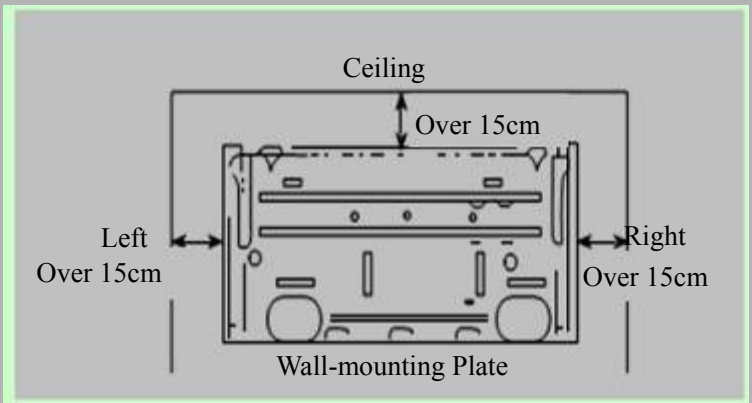
Requirements for Installation Position	The installation shall be operated at the place which is solid, unlikely subject to shock and able to bear the weight of machine.
	The outdoor unit shall be installed at the place which with good ventilation, and unlikely subject to rain or direct sunshine. Ensuring that the air conditioner can be easily accessed for maintenance and repair.
	Keep the indoor and outdoor units as close as possible. The connection pipe shall be short as it might be.
	To facilitate the air flow, keep adequate space around the indoor and outdoor unit, and avoid flammable or corrosive gas nearby. The drainage shall not affect the constructions of dwellers underneath or the user himself.
	The machine shall be kept 2m or more away from the electric appliances and heat source.
	Avoid TV set, sound box, computer and other deluxe home appliances below the indoor unit.
	The indoor unit shall be able to blow the cold and hot air evenly to everywhere of the room.
	According to the power supply mode (powered by indoor or outdoor unit) and the length of power cable, select the position which close to the power supply, in order to facilitate the connection of power line. Moreover, ensuring that it is not needed to extend the power cable and selecting a position beyond reach of children.
Determination of Installation Position	Select the final position of indoor and outdoor unit according to the requirements above (Mark properly if needed).

6 .Execution of Installation

Installation of Wall-mounted indoor unit	Unpack the machine and take out the accessories, wall-mounting plate and remote controller. Mount the bundled batteries into the remote controller and observe for abnormality. Before installation, make sure to energize the indoor unit and test it by using the remote controller. Observe the fan and swing louver for their working conditions. If any abnormality occurs, adjust immediately and install again.

Fix the wall-mounting plate according to the selected position of indoor unit and the route of the pipe.

Firstly, use a steel nail to fix the wall-mounting plate onto the wall. Level it with the level gauge and then fix tightly.

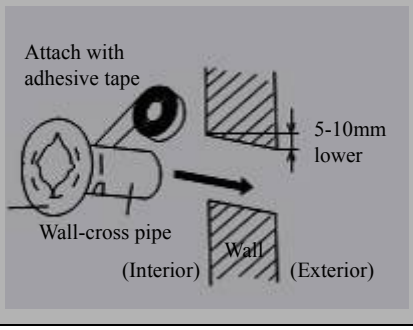


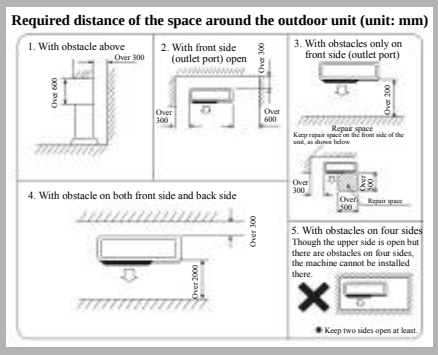
Note: When installing the models with additional functions (purification device), we shall take the position of this device into consideration for the distance to the ceiling.

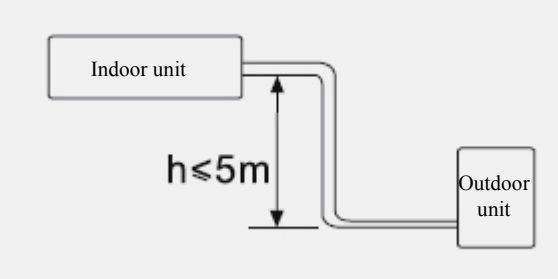
Select the position of wall-cross hole according to the position of wall-mounting plate.

Selection of piping mode: Try not to choose the mode of right exit-pipe so as to ensure the orderliness and smoothness of the pipe.

1. Route the pipe directly along the right side of the machine body. 2. Route the pipe directly on the rear. When bending the pipe, please support the elbow with your right hand and then use your left hand to rotate slightly for 90° before stop. 3. Route the pipe along the left side. This step is the same as the above step. The only difference is that the bending angle is higher than that in the previous step, that is, it should be bent to 180°. Take care to rotate this angle slightly and slowly; Otherwise the pipe would be flattened easily . Then, drill a hole (shuld be a little larger than the outer diameter of the wall-cross tube so as to ensure the wall-cross rube can be inserted through). Caution: For easy drainage of the water out of the internal unit, the indoor unit shall be mounted slightly higher than the wall-cross hole. Meanwhile, the wall-cross hole must be inclined outward down.



	Make sure to take dustproof measures when drilling holes with the impact drill.
	Hang the indoor unit onto the clamp of the wall-mounting plate. Move the body of indoor unit left and right, and check if it is fixed tight.
	When multiple indoor units are to be installed in one room (e.g. guest hall, meeting room, restaurant, etc.), full consideration should be made to the integral appearance and working performance. They should be installed on the same level (with the upper as the benchmark) and keep a certain distance, thus to ensure that the working performance of each indoor unit will not be affected.
Installation of Outdoor Unit	
	1. To install the outdoor unit onto the wall, use the bit of fixed depth to drill holes according to the selected position, but take care to avoid the wall clearance. Firstly, mount an expansion bolt 10x100 (mm). Then, use the rope to move the support outdoors and make a simple fixing. Calibrate the level with level gauge and mark out the other positioning holes. Then, remove the support and use the impact drill with fixed depth bit to drill the other fixing holes of the support. Finally, fix the support onto the exterior wall. 6 pcs required for model 61 or lower, and 8 pcs required for the model over 61. Note: The expansion tube of the expansion screw must be fully punched into the wall.

	1. Move the outdoor unit out of the room and put it onto the support with care. Fix with 4 bolts Ø10mm. (Note: The installation people working on the 2nd floor or higher must wear safety belt. The outdoor unit must be tied securely with rope before it can be put outdoors. Take anti-fall measures to avoid accident. ） 2. The outdoor unit is directly onto the ground (e.g. balcony, roof platform, outdoor ground of the 1st floor, and other platforms that can accommodate the outdoor unit adequately). According to the size of chassis mounting hole, select proper expansion screws to fix tightly. The height difference between indoor and outdoor unit shall not be higher than 5m; otherwise it might cause difficulty to oil return and affect the service performance. 
	Installation Requirements for Multiple Units 1. To install multiple units on the same wall or on the same direction of a building, all the machines on one floor should be installed on the same level (based on the level of machine leg), and the transverse spacing shall be kept at least 60cm or more, as long as the machine performance will not be affected. 2. If there are multiple units on different floors on the same wall or the same direction of the building, they should be preferably installed on the same vertical line (based on the left side of the body streamline). To avoid air return or mutual interference at the outlet, the longitudinal spacing shall be kept at least 65cm or more.
	Requirements for outdoor guardrail (optional): If the user is to install guardrail for the outdoor unit, the spacing to the machine body must be kept 0.5m or more.

Insert through Pipe	Bundle the connection wire to the connection pipe and drainage pipe. (The connection wire may also be inserted through PVC pipe)
	To insert through the pipe, protective measures should be taken to prevent the expanded bell mouth from damage and prevent the sand from entering the connection pipe.
Connect to Machine	Take a connection pipe with expanded mouth, coat frozen oil evenly onto the connector of the 2-way / 3-way valve and the expanded mouth .
	Put the expanded mouth and connector on the same straight line and rotate the nut to its end with hands, and tighten it with spanner.

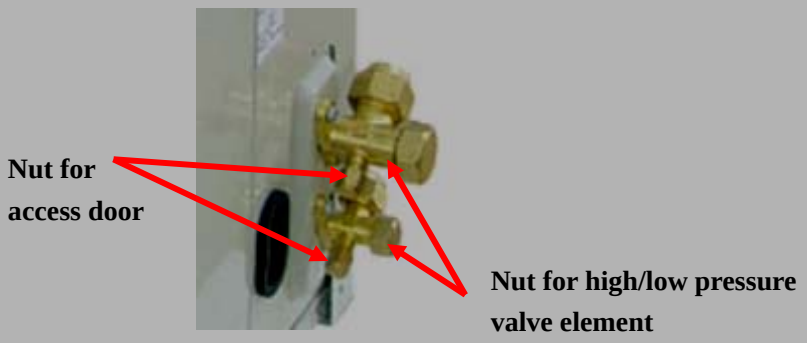
	Remove the end cover and clip of outdoor connection wire. Then, connect the wire to position according to color or mark indicated in the wiring diagram. When the exposed section is fully inserted, use the screw to press it tightly. Do not cut the round connector at the connection wire end into Y-shape. Fix the wire with clamp and then fix the end cover of the wire.
Vacuumming	After connecting the pipe between indoor and outdoor unit, it should be vacuumed with vacuum pump. Operate as follows: Loosen the nut on low-pressure valve element and filling portal, connect the vacuum pump to the filling portal by hose with pin, and then start the vacuum pump. When the indicator gauge points to 15Pa, stop vacuumming and hold for approx. 30s. Pay attention to the vacuum level. If decreased, be sure to eliminate the leakage. Repeat the above procedures. When the vacuumming process is completed, close the vacuum valve and open the high-pressure valve element for 1/4 turn to fill the refrigerant to the low-pressure section. Remove the connection hose. Fully open the high-pressure and low-pressure valves . Tighten the nuts on the valves.
Leakage Detection	Use a sponge soaked with soap water or a leakage detector to check the connectors and access-valves on indoor and outdoor units. Keep testing for no less than 3 minutes at each position. When the leakage detection is completed, do wash away the residual soap water. (Notes: In summer, leakage detection should be done under stop state. In winter, it should be done under heating mode). ） Position Most Likely to Leak  **Nut for access door** **Nut for high/low pressure valve element** Besides four connectors connecting outdoor pipes, nuts at high-pressure / low-pressure valve core and filling portal are most likely to leak but often neglected. Therefore, when installing the machine, make sure to fully open the valve core to dead position and tighten every nut and check for leakage.
	The connector with leakage problem should be reinstalled.
Pipe Wrapping and Wall Hole Blocking	Sort the pipeline in good order.
	Use pipe bender when bend the pipe with 90°. To avoid flattening or cracking the pipe without pipe bender, do bend it with a radius as large as possible.

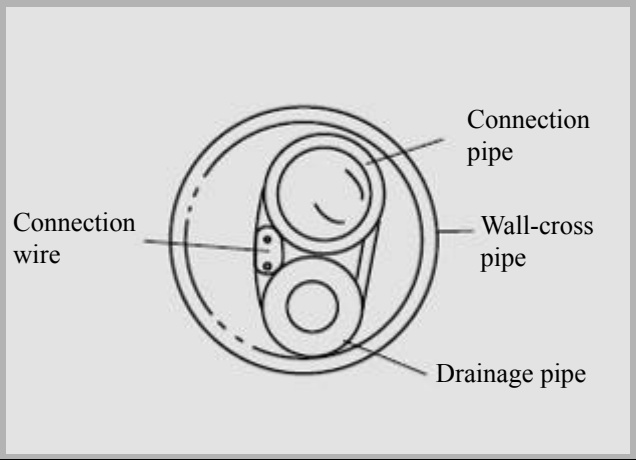
Table: Standard of piping torque:

1. Nut torque of connecting pipe (R410a、R407c)

Outer diameter of copper pipe		Torque
mm	inch	Kg.f/m
φ6.00	1/4	1.8
φ9.52	3/8	4.2
φ12.7	1/2	5.5
φ15.88	5/8	6.6
φ19.05	3/4	6.6

2. Nut torque of connecting pipe (R22)

Outer diameter of steel pipe		Fastening torque		Reinforced fastening torque	
mm	inch	Kgf/m	Kgf/inch	Kgf/m	Kgf/inch
∮ 6.00	1/4″	1.6	6.3	2.0	7.9
∮ 9.52	3/8″	3.0	11.8	3.5	13.8
∮ 12.7	1/2″	5.0	19.7	5.5	21.6
∮ 15.88	5/8″	7.5	29.5	8.0	31.5
∮ 19.05	3/4″	12.0	47.2	14	55.1

Pipeline wrapping and wall-hole blocking	Wrap the connection pipe and machine-connection wires together, water pipe shall be placed under the connection pipe and shall not be wounded and intersected, and it shall be wrapped from outdoor unit to indoor unit in case rainwater entered and had bad influence on temperature and insulation. 
	Heat insulation measures shall be adopted separately for the pipeline joint of the indoor unit.
	When the pipeline was wrapped, it shall be fixed on the wall by pipe clamps for every 1m distance.
	Block the wall-hole with plaster or putty with the machine, in case the rainwater and the wind entered. Meanwhile, make the blockage match the wall as possible.

Inspection before machine testing	Check if the internal wires of the unit are connected. It needs to be noted particularly that the wires shall be connected correspondingly; the grounding shall be reliable; and all the naked wires shall be pressed tightly. When the power was off, the insulating electric-resistance of the null line, the live wire and the ground wire of the plug shall be more than 2 megohm.
	Inspect whether the indoor and outdoor units are installed firmly.
	Make sure that all people or objectives are away from the machine, do check it's safe before turn the power on.
Power supply connection	Before installation and safety inspection, electrification is strictly forbidden.
	Power connection shall be in accordance to the region or country's safety requirments, and make sure that wires were firmly connected.
Inspection for machine test	When the power is on, turn on the machine by remote controller, and press every buttom to see if the machine responds. If the machine is a floor standing one, testing it with control panel is required.
	Inspect noise and vibration of the machine, if there are any abnormal phenomena, they shall be debugged or maintained.
	Inspect the drainage of the indoor unit. Pour a cup of water on the indoor unit evaporator and check the draining situation.
	Use remote controller (control panel when floor standing machine) to adjust the indoor fan to carry out switching of high, medium and low air speed, inspect whether the air swinging is flexible.
	Record the data of working voltage, current, system pressure, temperature, differences of inlet and outlet air etc. under modes of cooling and heating. In case of abnormal conditions such as smell, scorched flavor, smoking and so on, do stop the machine for inspection and solving it immediately. If problems caused by anything from the user, advices shall be given to improve.

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7 .Introduction of usage and maintenance knowledge

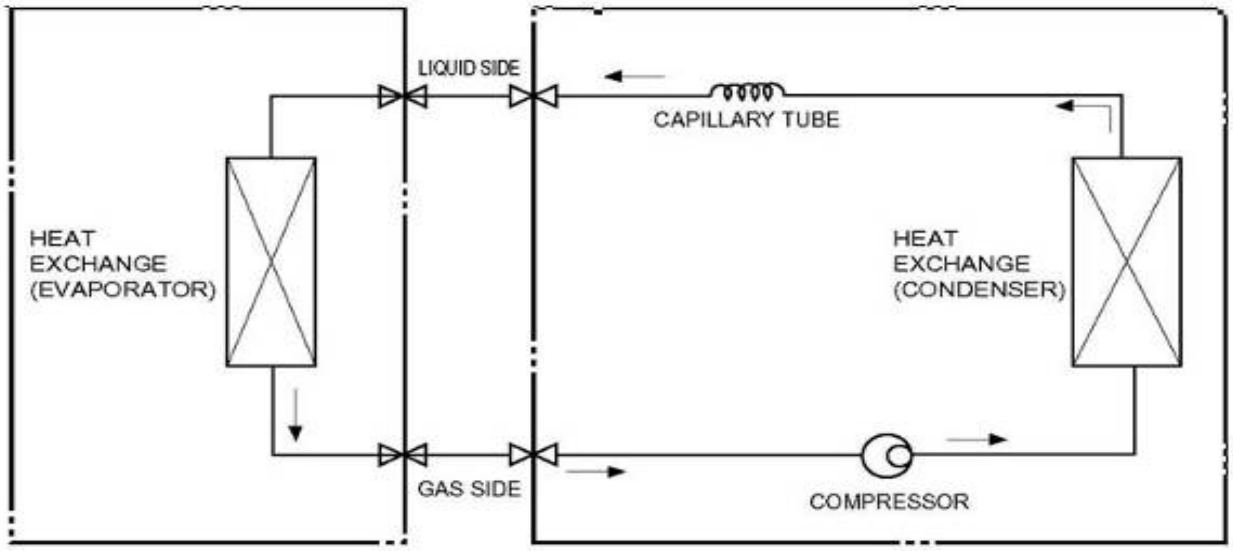
Test of testing machine	After start, setting cooling or heating mode according to the temperature.
	The installation personnel shall introduce the usage of the remote controller in detail to the user, including the function of every button, and how to judge the battery shall be changed and how to change. The power shall be cut and the battery of remote controller shall be taken out when the machine is not used for a long time.
	Introduce the method of disassembling and cleaning the filter net (replacing the air filter) to the user, and instruct them to operate until they are skillful. The outdoor unit shall be ventilated, so as to prevent sundries from blocking the condenser and influencing the heat dissipation. Users can inspect and clean the condenser and remove sundries when they can guarantee their safety, or they shall ask professionals for help.

8. Ending (clear the site, collect tools, fill the warranty card and say goodbye to the user)

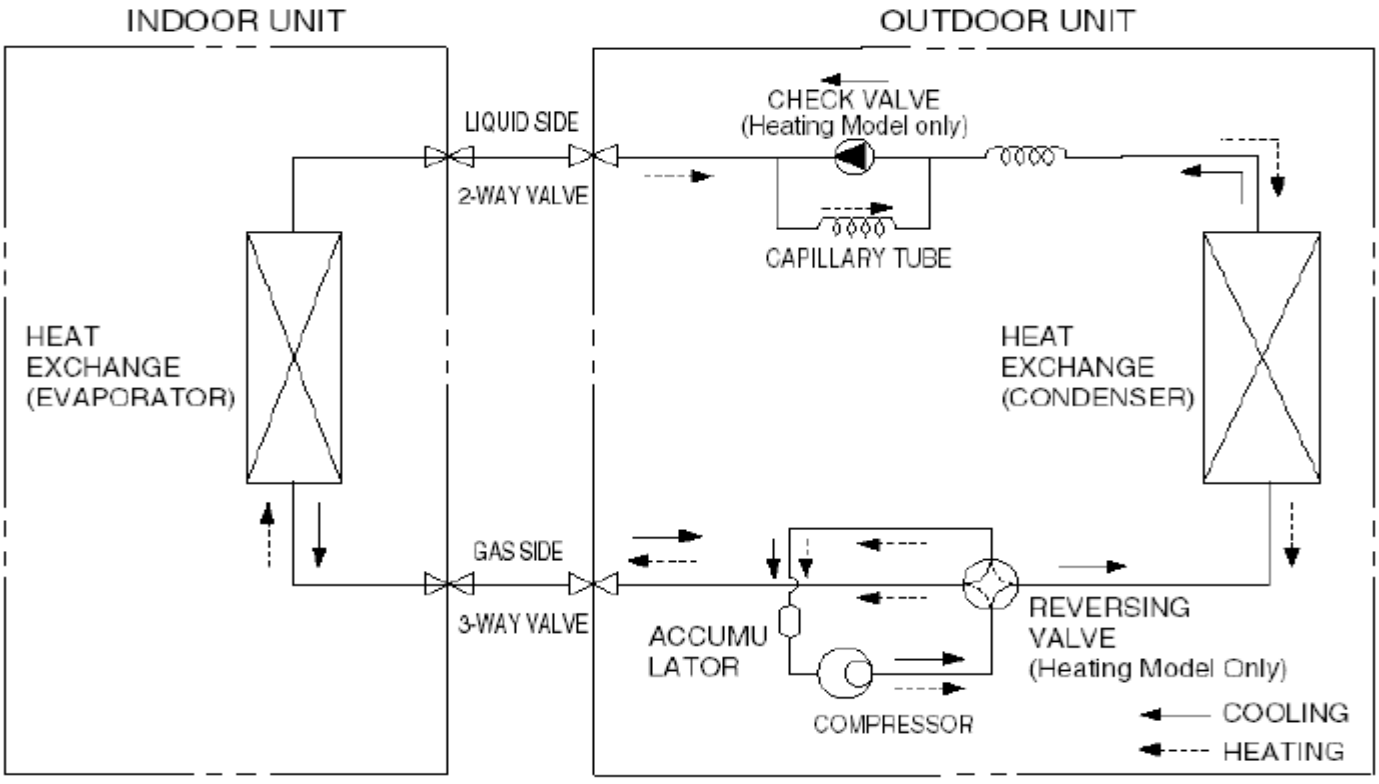
End of work	Hand over the instruction manual and accessories to the user.
	Collect the installation tools and do not ignore anything.
	Clean installation site, return the displaced articles and electric appliances.

II. Refrigerant cycle diagram

1 .Cooling only



2.Heat pump mode



III. The specifications on common software functions for inverter AC

1. Hardware requirements

1.1. Universal basic requirement

The power voltage's sphere of application：Alternating current 50/60Hz are compatible，to permit the voltage wave range:165V～265V or 100～130V。

The ambient temperature and humidity of using the PCB：-20℃～85℃，φ=30%～95%；

1.2. Displaying lamp panel

(1) The displaying lamp panel schematic diagram and PCB size are determined by the different styles 。You can make reference to appendix 2 about the display screen and introductions.

(2) The models append function within double 8 nixietube：except turning off the units，the display screen will show brightness when the mainboard receives the correct remote controller's signal。If not receive the relevant signal after 30 seconds，the display screen's brightness will reduce to 30%；certainly, the models haven't the reducing brightness function without double 8 nixietube。

(3) The displaying lamp panel demands to use 2618/2668 driving motion，the hardware interface should be universal 6 bit port.

1.3. Controlling mainboard

(1) The PCB illustrative diagram is decided by the model style and the relevant internal kernel.

(2) The communication circuit of the indoor and outdoor should demand to adopt JG/SJ 12-2008《 HD frequency conversion air-condi tioner indoor and outdoor controller communication rules》。

2. Software function

2.1. The symbol and wind speed's definitions

(1) **The symbol definition**

Ts：the setting temp.

Tr：the indoor temp.

Tp：the indoor coil pipe temp.

(2) **The wind speed definition**

The indoor fan（PG motor）wind speed definition. Please refer to the following **form 2-1.**

Form 2-1

model	mode	Super high winds	High winds	Mid winds	Low winds	Slightly winds
Any model	cooling	FS5	FS4	FS3	FS2	FS1
	heating	FS10	FS9	FS8	FS7	FS6

NOTE ：（1）The FS1～FS10 are programmable dates，and they are in the EEPROM；

（2）The motor rotate-speed should refer to the motor parameter, if the indoor motor uses the tapped control.

2.2 basic mode

2.2.1 **The automatic mode**

1、 the models with the universal remote controller

(1) the setting temperature is 25℃，and it is unadjustable 。

(2) If press the "emergency switch" button on standby or use the remote controller to set the automatic mode ，the air-conditioner will enter the automatic operating mode，and its default setting temperature is 25℃。.

(3) when enter the automatic mode，the system will decide the corresponding running mode according to the indoor ambient temperature，please refer to form 2-3：

Form 2-3

Indoor temp.	Tr＜21℃	21℃≤Tr≤26℃	26℃＜Tr
Running mode	heating	ventilation	cooling

(4) once the running mode is confirmed：

a) the mode doesn’t automatically change any more with the indoor temperature’s vary。

b) when the user makes remote controller or emergency switch turn off the unit, and enter the automatic mote again，the indoor software will judge the running mode once more 。

c) if different modes switching brings about the compressor’s stop，but 3 min protect is still effective.

(5) working condition of the compressor：it is determined by the entering running mode。

(6) working condition of the four-way valve：it is determined by the entering running mode。

(7) working condition of the outdoor fan：it is determined by the entering running mode。

2. meanwhile the indoor electronic control has the function that discriminates HD Two kinds of universal remote controller yards，after receiving remote controller signal, the indoor electronic control can confirm and adopt the relevant function according to identification

marks in remote control signal 。

2.2.2 **cooling mode**

1、the setting temperature's range：16℃-32℃。

2、working condition of the compressor：

In the cooling mode, the controller carries out the Fuzzy reasoning according to the deviation of current indoor environment temperature and setting temperature ,and indoor temperature's vary rate and so on. Thus it can decide the compressor's running condition and indoor fan's wind speed in order to achieve use requirement。

3、the compressor's starting frequency，running frequency's going up and down，running condition and the outdoor fan's working condition refer to the instructions of outdoor software function。

4、the processing of turning on and turning off the unit：

In cooling mode，the following chart 2-1 is the compressor's processing curve of turning on and turning off the unit：

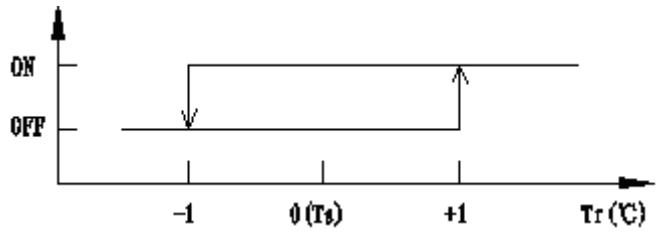


Chart 2-1

5、working condition of the indoor fan motor：

The indoor fan's speed can be chosen in automatic，high，mid，low condition；and runs at super high wind, high wind, mid wind or low wind speed.

when choose the automatic wind，the indoor fan's work is shown as the following chart 2-2：

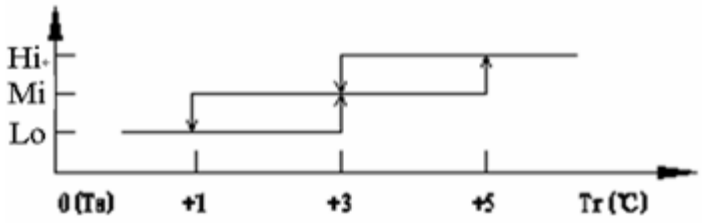


Chart 2-2

6、Blow remain cold function：when turning off the unit with the remote controller or emergency switch ，the indoor fan is at low wind speed ，and be turned off after time lag 30 seconds；the indoor wind swing times lag 35 seconds and be turned off，thus that can blowout

the remaining cold energy and ensure the indoor unit dry。

7、working condition of the four-way valve： the four-way valve is closed all the time in cooling mode。

8、working condition of the external air flap in cooling：

(1) confirm the air flap's full open position is Pch1,and the full closed position is Pch2。

(a)when the unit is electrified，firstly，the air flap opens to Pch1 position and then back to Pch2 position。

(b)turning on the unit, firstly，the air flap opens to Pch1 position and then back to Pch2 position。

(c)turning off the unit, firstly，the air flap opens to Pch1 position and then normally runs。

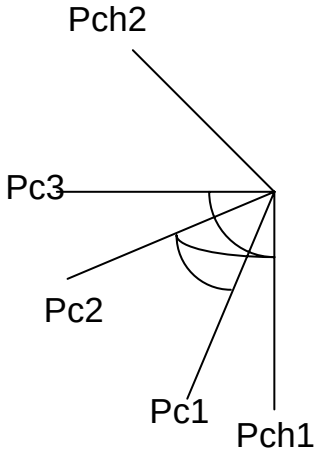


Chart 2-3

(2) working condition of the fixed wind in cooling：

(a)if the unit is electrified at the first, the condition is set fixed wind when turning on the unit，and firstly， the air flap opened to Pch1,and then stop to Pc2 position of the fixed wind。

(b)in the swing wind or natural wind, if it is transformed to fixed wind , the air flap will directly stop the current running position，and memories this position；next time the user starts the unit at the fixed wind，the wind pendulum is in last memory position

(3) operating condition of the swing wind in cooling：

(a)when it is swing wind, the air flap's starting point position is Pc1。

(b) the air flap firstly back to full open position Pch1 and then work at the swing wind way from the fixed wind or natural wind to swing wind。

(c) The air flap swings to go back and forth between Pc1 and Pc3 in swing wind condition.

(4) the natural wind is achieved when the wind pendulum swings two circles and stops 30 seconds in the swing wind condition。

The definition of the external air flap's position is showed below table 2-4：

Table 2-4

Full open	Full close	Fixed wind	Starting point to swing wind	Destination to swing wind
Pc1	Pch2	Pc2	Pc1	Pc3

NOTE： Pch1、Pch2、Pc1～Pc3 are programmable dates that be stored in EEPROM。

9、when the units operate in cooling mode ,the units have the relevant outdoor ambient

temperature's limiting and protection，the protection to the indoor coil pipe preventing frostbite，the outdoor exhaust temperature overheating protection，overcurrent protection，low-voltage protection，the compressor overheating protection，indoor fan fault protection，sensor fault protection，system fault protection，IPM fault protection，communications fault protection，3 minutes time lag protection of the compressor and so on。

2.2.3 Dehumidification mode

1、the range to the setting temperature：it is tolerated 25℃ and is unadjustable.

2、working condition of the compressor：

the compressor chooses the relevant running way according to the indoor temperature in the dehumidification mode。

3、working condition of outdoor fan： the outdoor is the synchronous operation with compressor in the dehumidification mode。

4、working condition of indoor fan：the indoor fan's wind speed is FS11 and is not adjustable in the dehumidification mode（FS11 is programmable date，and stored in the indoor EEPROM）。

5、working condition of the four-way valve：the four-way valve is closed all the time in the dehumidification mode。

6、working condition of the external air flap ：the external air flap is in the anti condensation position (P1) and can be not adjusted in the dehumidification mode。

NOTE：P1 is programmable date，and stored in the indoor EEPROM。

7、there are not the TURBO/ECONOMY functions in the dehumidification mode。

8、the indoor heat exchanger anti freezing function is still effective in the dehumidification mode。

9、when turn off the unit in the dehumidification mode ，the indoor fan and the wind pendulum's running are the same as that in the cooling mode。

2.2.4 heating mode

1、the range to the setting temperature：16℃-32℃

2、working condition of the compressor：

In the heating mode, the controller carries out the Fuzzy reasoning according to the deviation of current indoor environment temperature and setting temperature ,and indoor temperature's vary rate and so on. Thus it can decide the compressor's running condition and indoor fan's wind speed in order to achieve use requirement。

3、the compressor's starting frequency，running frequency's going up and down，running

condition refer to the instructions of outdoor software function。

4、the processing of turning on and turning off the unit：

In the heating mode , indoor ambient temperature increases 3℃ temperature compensation。that is： when ΔT is less than 2℃，the compressor starts (ΔT= Tr—Ts)；when ΔT is greater than or equal to 4℃， the compressor is turned off。

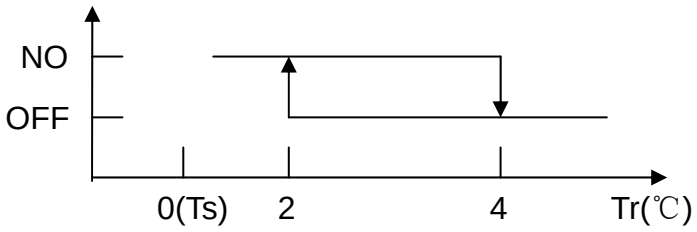


Chart 2-4

5、working condition of indoor fan：

The indoor fan's speed can be chosen in automatic，high，mid，low condition；and runs at super high wind, high wind, mid wind or low wind speed.

⑴ you could set the high wind, mid wind, low wind and automatic wind to run in the heating mode.

⑵ in the heating mode，the relation curve about the indoor fan and the indoor coil pipe temperature (Tp) as follows：

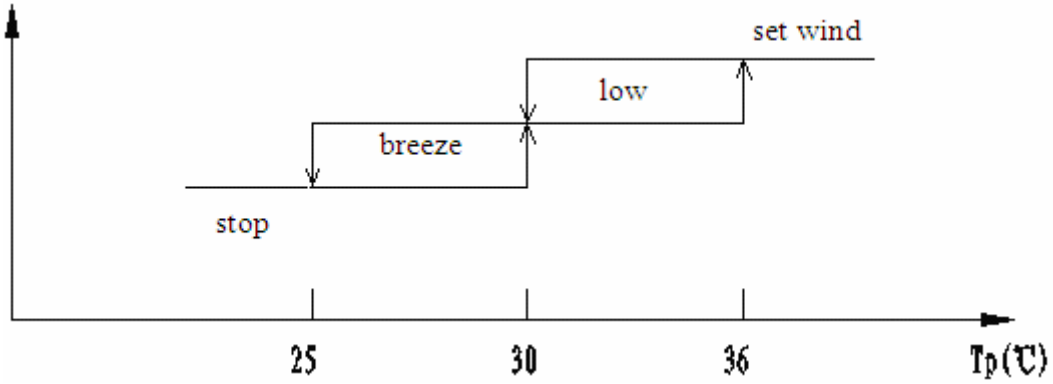


Chart 2-5

NOTE：①when Tp is less than 30℃ and the external air flap is in the anti cold wind angle，the indoor fan blows Slightly wind 。

a) Indoor coil temperature rise from 25 ℃to 30 ℃ process, the indoor fan blows tiny wind.

b) Indoor coil temperature reduces from 30 ℃to 25 ℃ process, the indoor fan blows low wind.。

c) when Tp is greater than or equal to 30℃，the indoor fan blows low wind and quit the anti cold wind state，this moment, the external air flap returns to the condition before the anti cold wind。

② when Tp is less than 25℃，the indoor fan stops running；when Tp is greater than or equal to 25℃，the air flap enters the anti cold condition,，until Tp is greater than or equal to 30℃，quits the anti cold wind state。

③ when the compressor stops running，the air flap is in the anti cold condition，the indoor fan blows tiny wind，satisfy ②。

⑶ the indoor fan's operation of curve as follows when set to automatic wind in the heating mode：

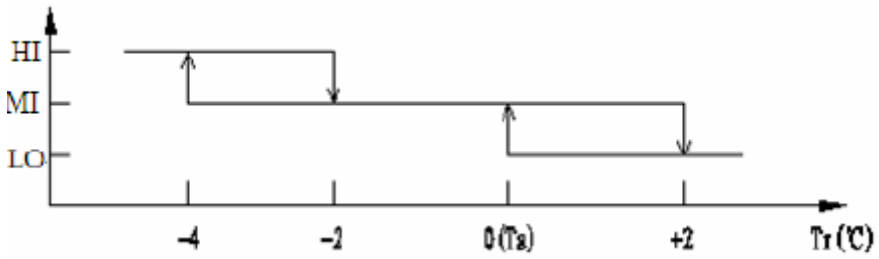


Chart 2-6

NOTE：Until conditions (2) meets the conditions (3) can run by the above curve。

6、 anti cold wind function：the heating mode light flashes by 1 Hz way in anti cold wind mode 。if this style has not the heating mode icon, the running light will flash at 1 Hz way.

7、blow the remaining heat function：turn off the unit with remote controller or emergency switch button，the indoor fan will time lag 30 seconds to turn off, meanwhile the remaining heat is blowed to the room。The indoor pendulum do time lag 35 seconds to shut down。

8、working condition of the outdoor fan：except that it runs at defrost in defrost mode，others are the same with the cooling mode。

9、working condition of the four-way valve：

（1）the four-way is open at all the time in the defrosting condition.

（2）when the unit enters the defrosting condition，the four-way valve satisfies the defrosting work requirements。

(3) when heating mode conversion to cooling ,dehumidification or ventilation mode，or the unit turns off in the heating mode , until the compressor shuts down for 2 minutes , the

four-way turns off, except defrosting mode.

10、operating condition of the air flap：

（1）confirm the air flap's full open position is Pch1,and the full closed position is Pch2。

(a) when the unit is electrified，firstly，the air flap opens to Pch1 position and then back to Pch2 position。

(b)turning off the unit, firstly，the air flap opens to Pch1 position and then back to Pch2 position。

(c)turning on the unit, firstly，the air flap returns to Pch1 position and then normally runs。

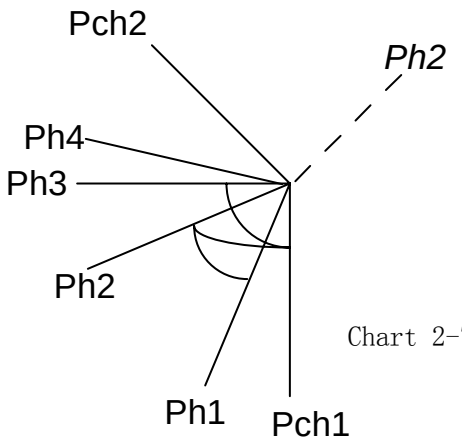


Chart 2-7

（2）when the compressor stops in heating mode，and the unit is in the anti cold wing or defrosting condition ，the air flap is in the position Ph4。When the system quits the anti cold wind condition ， the air flap returns to the position before preventing cold wind。

（3）working condition on fixed wind in heating mode：

(a)if the unit is electrified at the first, the condition is set fixed wind when turning on the unit，and firstly， the air flap opened to Pch1,and then stop to Ph2 position of the fixed wind。If no electrified at the first, the air flap stops the last memory position.

(b)in the swing wind or natural wind, if it is transformed to fixed wind , the air flap will directly stop the current running position。

（4）working condition of the swinging wind in heating mode：

(a) the air flap's starting point position is Ph1 in the swinging wind condition。

(b) the air flap firstly back to full open position Pch1 and then work at the swing wind way from the fixed wind or natural wind to swing wind。

(c) The air flap swings to go back and forth between Ph1 and Ph3 in swing wind condition.

（5）the natural wind is achieved when the wind pendulum swings two circles and stops 30 seconds in the swing wind condition，at the moment the air flap stops the starting position。

the external air flap's position is defined as follow table 2-5：

Table 2-5

Full open	Full close	Fixed wind	Swing wind starting point	Swing wind destination	Anti cold wind
Pch1	Pch2	Ph2	Ph1	Ph3	Ph4

NOTE：(1) Pch1、Pch2、Ph1～Ph4 are programmable dates that are stored in indoor EEPROM。
（2) broken line“Ph2” is the position where the M kernel fixed wind。

11、when the units operate in heating mode ,the units have the relevant protection to the indoor coil pipe preventing frostbite， the outdoor exhaust temperature overheating protection，overcurrent protection，low-voltage protection，the compressor overheating protection，indoor fan fault protection，sensor fault protection，system fault protection，IPM fault protection，communications fault protection，3 minutes time lag protection of the compressor and so on，please see details in Indoor general protection function and outdoor software functions and specifications。

12、defrosting function：please see the outdoor software functions specifications。

2.2.5 ventilation mode

1、the range to setting temperature：16℃-32℃

2、working condition of the compressor：

Compressor is closed all the time in the ventilation mode。

3、outdoor fan working condition：

Outdoor fan is closed all the time in the ventilation mode。

4、working condition of indoor fan：

In ventilation mode，indoor fan running is the same with that in cooling。

5、working condition of the four-way valve：

The four-way valve is closed all the time in the ventilation mode。

6、working condition of the external air flap：

In ventilation mode，the external air flap runs at the same with that in cooling。

7、there aren’t the blowing remain cool and heat functions in the ventilation mode。The indoor fan directly turned off when the unit is turned off，so does the wind pendulum。

2.3 The basic function

2.3.2 sleeping function

1、press button of "sleep", air-conditioners will in the state of sleep. Fan of indoor is running with low winds, then click "sleep" button, and then will cancel “sleep”, resume previous running state .close unit if press "on / off" button, at the same time cancel the sleep settings.

2、after setting sleep by remote 5s, display screen only display logo of “sleep” or the light of running and sleep is light, other logo is close. That is the sleep close screen.

(1) For multicolored screen only logo of sleep is light when in the state of sleep;

(2) For Nixie tube and LED light: the light of running and sleep is light, other logo is close.

Note: during the sleep operation, if the unit receives the timing time that has been adjusted, the twinkling of the 8LED on the display screen means that the status is being revised, if the unit receives that the set temperature has been adjusted, the 8LED will be directly lighten, the air conditioning will be adjusted to the operation status the same as the status before the sleep during the changing status, it will be closed if there is not any change in five seconds.

3、When the sleep is set at the refrigerating mode, the temperature is Ts+1℃ after one hour, Te+2℃ after two hours, and then retain constant after this.。

4、When the sleep is set at the heating mode, the temperature is Ts-1℃ after one hour, Ts-3℃ after two hours, Ts-5℃ after three hours, and then retain constant after this.。

5、When the sleep is set at the dehumidification mode, it still operates as the dehumidification mode; only the sleeping screen off is carried out.。

6、When the sleep is set at the ventilation mode, the temperature setting is not adjusted; only the sleeping screen off is carried out.。

7、When the sleep is set at the auto mode, the sleep function runs at the time of the sleep is set according to the corresponding mode which the auto mode enters into。

8、Under the sleep mode, the default of the indoor fan speed is low wind, but it can be

adjusted according to the remote control signal of the users (except the dehumidification mode)。

9、sleeping function and turbo function can't run at the same time，namely when turbo function runs, the sleeping function can't run，vice versa。

2.3.3 high-efficiency mode (economy) optional

（1）when press the "ECONO" button on the remote controller，the system enters high-efficiency mode，the indoor will run at high winds , and the wind speed is adjustable；press "ECONO" button again, the system can exit the high-efficiency mode；

（2）Compressor objective frequency is intermediate frequency test frequency of the corresponding modes, all various protections are effective under high－efficiency mode；

（3）the system doesn't run this function in starting default status，After conversion mode ，automatically cancelled this function。

2.3.4 Three-dimensional air function (support the style with tridimensional air pendulum)

(1) Three-dimensional air: the internal air door swings the wind from up to down and from right to left in the start-up condition matching with the external air door.。

(2) Operation condition of the internal air door: the working angle range of the air flap is defined between 0°and 120° as one cycle。

(3) When power on for the first time, the internal air flap will swing to one side firstly and return back the middle position。

(4) During start-up, the original air flap is set in the middle position。

(5) Pressing the "wind direction" button, the internal air door will switch in the method of swing --- stop.。

(6) The air flap works repeatedly between α1 and α2 during swing。

(7) Under the swing condition, pressing the "wind direction", the internal air door will stop directly at current position.。

remark: α1 is the swing wind starting point angle of internal air flap ，α2 is the swing wind destination angle of internal air flap，and they are stored in indoor EEPROM。

2.3.5 Turbo function

The turbo function is only applicable in the cooling and heating modes, when the remote control enters into the turbo, the indoor fan is super high wind, and the compressor is operating at the maximum frequency at present；

(1) When pressing the “turbo” button of the remote controller, the remote controller will switch circularly as “turbo” → “cancel” → “turbo”; when receiving the signal of the turbo button on the remote controller, the indoor “turbo lamp” will lighted immediately (when there is the “turbo lamp” on the display lamp board)。

(2) During the turbo operation, the compressor will operate at the current allowable maximum frequency point; the wind speed of the air conditioner is set at the “super high wind”, at this moment, the wind speed on the remote controller although can be set, but it is ineffective for the air conditioner.；

(3) During the turbo operation, the user can set the operating status with pressing other buttons (except on/off and modes), the air conditioner will not refresh the turbo operating time any more when receiving the turbo code；

(4) Ending conditions of the turbo operation：

a) When the operating time is longer than 20 minutes, the turbo operation will be cancelled automatically.。

b) Cancel with the turbo button of the remote controller。

(5) It will operate according to the corresponding work frequency of cooling/heating when the turbo is automatically cancelled, while it will operate according to the setting mode of the remote controller when cancelled in the method of remote control。

(6) The turbo operation can be set under the status of timing turn-on, when it is the time of the fixed time, the turbo method will start running.。

(7) During the turbo operation, all conditions of limitation and protection will act。

2.4 Auxiliary function

2.4.1 Self- check function

(1) the indoor unit possesses self-checking function。firstly press the emergency switch button ，and then switch on the power supply，thus enter the self-check state，all the delivery outlets output the relevant information in turn：

Model code（0.5S）－the running lamp brighten（0.5S）－the timing lamp brighten（0.5S）－the turbo lamp brighten（0.5S）－the economical operation lamp brighten（0.5S）－the high bit of the digital tubes all brighten（0.5S）－the low bit of the digital tubes all brighten（0.5S）－the indoor fan starts （time lag 0.5s）- power supply outputs（outdoor relay electrifies for 0.5S）－the buzzer sends 1 sound like “di”（time lag 0.5S）－the buzzer sends the second

sound and shows to end all the exports。

Remark: different types vary due to the difference between display lamp boards; the LED lamps and digital tubes will be lightened according to corresponding display.

(2) in self-check status ,the external air flap runs at closing motion, and the internal air flap operates at swing wind way。

(3) when the indoor fan starts，“the running lamp ”indicates the indoor fan’s feedback condition。If the running lamp flickers, it shows the feedback signal ，or else absence of feedback；quick twinkle shows the indoor fan runs at quick speed, or else low speed。

(4) model code： “25” stands for 25GW，“35” stands for 35GW，the rest may be deduced by analogy。

2.4.3 power-off memory function

EEPROM stores the running parameter before the air conditioner is shut down ，after power on again ,the air condition will return to the running status before power down。

(1) when the unit receives the correct remote control code in the starting up or standby status， The effective control code and data validation are checked and wrote in the designated unit EEPROM.。

(2) when turn on or turn off the unit with the emergency switch button，or press any buttons to set the air conditioner the relevant condition，thus the operation results will be key to control code written into the specified unit of EEPROM .

(3) timing time is renovated and stored in EEPROM every one hour，electrify again after power cut，the unit will run according to the timing time stored before power cut。

(4) because the sleeping function has not the operation timing turning off the unit , when have set the sleeping function，electrify again after power cut，the system will choose to turn on the unit , meanwhile doesn’t memory sleeping function any more；shut down the unit because of malfunction，electrify again after power cut，the system will select turning on the unit 。

(5) power-off memory only memories the operating mode , but don’t remember these auxiliary functions like turbo , highly efficiency, sleeping function and so on 。

2.4.4 Emergency switch function

Press the emergency switch button in the starting condition，the unit is shut down；vice versa，and its setting temp. is permitted to be 25℃。Press the emergency switch button every time, the buzzer sends one time sound。

2.4.5 Sound，light prompt function

(1) the controller possesses the buzzer。When it receives the order of the remote controller，and the system electrifies or shut down in the starting condition ， the buzzer will send one "di" sound。

(2) when the system appears the malfunction，the nixietube or LED indicate the relevant fault or protection code。

2.4.6 display shutting screen function (support the model with this function)optional

（1）when the air conditioner is starting，pressing the "LAMP" button on remote controller enter the display shutting screen function condition，shut all the indicator on the display lamp panel；press it again can exit the display shutting screen function，the display lamp panel display original status。

（2）when the unit receives the remote controller signal in the display shutting screen condition，the display lamp panel will show at the setting requirement，and then all the display lamp are shut after 10s。

（3）the system doesn't run this function in starting default status，After conversion mode automatically cancelled this function。

2.4.7 outdoor defrosting electrical heat tape function (support the model with this function)optional

When the ambient temperature is less 0℃，the system will start the outdoor defrosting electrical heat tape function。

3 indoor common malfunction / protection function

3.1 sensor malfunction protection

1、when indoor ambient temp. sensor and outdoor temp. sensor are short circuit or open circuit，the unit displays malfunction code，the total units stop running；

2、when inlet and outlet temp. sensor of indoor evaporator appears malfunction for DC inverter single-split series，the unit runs with fault and sends the middle part of indoor coil temperature to outdoor unit；

3、when inlet and outlet temp. sensor of indoor evaporator appears malfunction for DC

Inverter Multi-Split Air-Conditioner Unit，the current indoor unit will shut down and display the relevant malfunction code。

3.2 communication error protection

If the communication is abnormal for continuous 3min，the system will stop the compressor and display the relevant malfunction code。When the communication is normal and fault code disappears for 1 minute , the system will automatically start。

3.3 PG motor protection function

If the system checks the PG motor has not the feedback signal for continuous 20 seconds in the PG motor running，the PG motor will enter the running within fault；if the system checks the speed of PG motor is lower than 200rpm for continuous 60 seconds，thus the system considers PG motor faulty ，and then the total units stop running and report the relevant malfunction code。

The following is the setting motor speed during operation within fault：

(1) the system will break-over controlled silicon after zero passage 1mS in the high wind；

(2) the system will break-over controlled silicon after zero passage 2mS in the mid wind；

(3) the system will break-over controlled silicon after zero passage 2.5mS in the low wind；

(4) the system will break-over controlled silicon after zero passage 3mS in the slightly wind；

if the feedback signal returns to be normal during PG motor operation within fault，the PG motor still runs within fault，until the system starts again next time。

remark： there is not PG motor protection function in producing self-check。

3.4 indoor coil pipe antifreeze protection in cooling

(1) when indoor coil pipe temperature is less than 6℃ in cooling，the compressor doesn't run。

(2) when indoor coil pipe temperature is less than 1℃，the system stops compressor and displays indoor coil pipe overcooling/overheating protecting code；

(3) when indoor coil pipe temperature is less than 3℃，the compressor's frequency will drop，until lowest running frequency，thus the compressor stops running and the system displays indoor coil pipe overcooling/ overheating protecting code ；

(4) when indoor coil pipe temperature is greater than or equal to 3℃, but is less than 6℃，compressor frequency forbids rising；

(5) when indoor coil pipe temperature is greater than or equal to 6℃，the system runs normally；

(7)after this protection code appears for 1 minute，the system could start automatically。

3.5 indoor coil pipe overheating protection in heating

(1) when indoor coil pipe temperature is greater than or equal to 48℃ in heating，the compressor doesn't run；

(2) when indoor coil pipe temperature is greater than or equal to 73℃，the compressor stops running and the system displays indoor coil pipe overcooling/overheating protecting code；

(3) when indoor coil pipe temperature is greater than or equal to 63℃，the compressor's frequency will drop，until lowest running frequency，thus the compressor stops running and the system displays indoor coil pipe overcooling/ overheating protecting code ；

(4) when indoor coil pipe temperature is greater than or equal to 52℃, but is less than 63℃，compressor frequency forbids rising；

(5) when indoor coil pipe temperature is less than 52℃，the system runs normally；

(6) after this protection code appears for 1 minute，the system could start automatically。

3.6 system lacking refrigerant or 4-way valve fault

(1) during cooling：

After the compressor has operated for five minutes (which has been set in the EEPROM), if the temperature of the indoor coil can not be 5℃ lower than the room temperature, the indoor fan will automatically turns to the breeze operation, 13 minutes later, if above requirements can not been met with, the compressor will be stopped to display the fault code; it can only operate again after switching off.。

(2) during heating：

When the temperature of the indoor coil is lower than 20℃ (which is set in the EEPROM) for 20 minutes, the compressor will be stopped to display the fault code; it can only operate again after switching off.。

The system fault can only be determined within 20 minutes after the compressor is switched on, after that the faults will not be determined. After stopping in remote controlling or emergency or power off, the system fault should be determined within 20 minutes after starting on again. After the system fault occurs, the indoor fan will not work, and the flap will not be closed.。

Appendix Ⅰ：malfunction and protection display

1．Indoor fault and protection explanation

(1) when the indoor unit has not the nixietube，the malfunction and protection can display by LED lamp：firstly light 3 seconds，then flicker n at 1Hz，looping execution；

(2)when the indoor unit has the nixietube：

a) the nixietube shows “dF” code in defrosting；

b) under normal circumstances，the nixietube only shows the latest malfunction code or protection code；

(3) when malfunction and protection exist at the same time， the unit will shut down .but the system is priority to showing malfunction code。

2．Indoor unit fault display table

Check parts	Serial number	Malfunction content	Indoor unit display status		
			nixietube	LED（indoor unit without the nixietube）	
				Running lamp Flashing frequency n	Timing lamp Flashing frequency n
Indoor parts	1	The communication faults in the indoor and outdoor units	F1	1	Lighten
	2	Indoor ambient temp. sensor fault	F2	2	Lighten
	3	Indoor coil temp. sensor fault（include：inlet、middle of pipe、outlet）	F3	3	Lighten
	4	Indoor fan fault	F4	4	Lighten
Outdoor parts	1	Outdoor module fault	F5	5	Lighten
	2	Outdoor ambient temp. sensor fault	F6	6	Lighten
	3	Outdoor coil temp. sensor fault	F7	7	Lighten
	4	compressor suction temp. sensor fault	F8	8	Lighten
	5	compressor discharge temp. sensor fault	F9	9	Lighten
	6	inductor of current or voltage fault	FA	10	Lighten

	7	compressor drive abnormal fault	FC	11	Lighten
	8	Power supply phase lacking or phase sequence fault	FD	12	Lighten
	9	Return-air sensor abnormal （include these roads A、B、C、D）	FE	13	Lighten
	10	Others fault	FF	14	Lighten
	11	Outdoor DC fan fault	FH	15	Lighten

3．Indoor unit protection display table

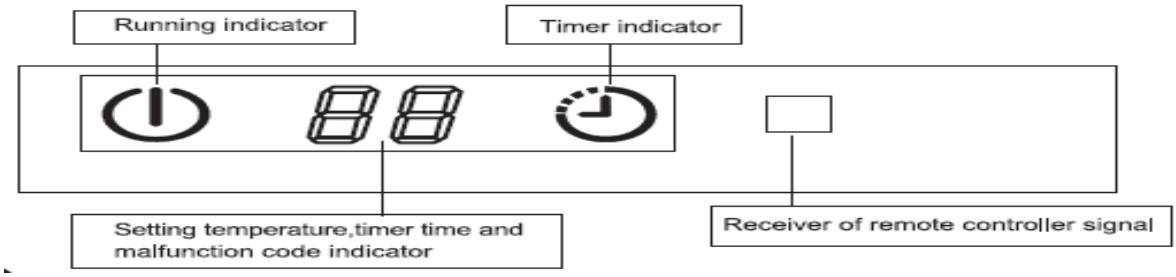
Check parts	Serial number	Protection content	Indoor unit display status		
			nixietube	LED（indoor unit without the nixietube）	
				Running lamp Flashing frequency n	Timing lamp Flashing frequency n
Indoor parts	1	Evaporator temp. protection	P1	Lighten	1
Outdoor parts	1	overheat, over current protection of inverter module	P2	Lighten	2
	2	over current protection	P3	Lighten	3
	3	Compressor discharging temp.protection	P4	Lighten	4
	4	over heat of compressor top protection	P5	Lighten	5
	5	suction temp. of compressor protection	P6	Lighten	6
	6	power supply overcurrent / overvoltage protection	P7	Lighten	7
	7	low presser of gas return protection	P8	Lighten	8
	8	high pressure of discharge protection	P9	Lighten	9
	9	high temp. of condenser protection	PA	Lighten	10
	10	high temp. of outdoor ambient protection	PC	Lighten	11
	11	system lacking fluorine or reversing valve protection	PH	Lighten	12

	12	Other protection	PF	Lighten	13

Appendix Ⅱ: display lamp panel

Note：when the system electrifies at first time，all the patterns on display lamp panel and LED lamp all lighten，and extinguish after 2s.

Display modes of two LED-indicating lamps and double-8-LED



(1) Running lamp: Lightened when starting-up with power on, extinguished when turning off, flash at the frequency of one time /one second in the mode of anti-cooling air.。

(2) Timing lamp: lightened during timing condition, extinguishing in other conditions.。

(3) Display of the digital tube：

a) The digital tube displays the set temperature of the air conditioner under the normal condition.；

b) When the user has set the timed turning on or off, the digital tube will display the time of the timed turning on or off, after the time has been set, it will return back to display the set temperature after the set time flashes for five seconds.；

c) Only the remaining time is displayed at the time of timed turn on.；

d) Only the “dF” is displayed during defrosting.；

e) The faults or protection codes are displayed at the time of the faults or protection.。

IV、Failure display

LED	running lamp(flicker times)	timer lamp(flicker times)	Fault content	The reason of fault and solution
F1	1	light	communication fault	1、Check whether the connection of the outdoor

				unit and indoor unit is one to one, otherwise connect the L, N and communication line of the indoor unit and outdoor unit one to one. 2、Measure whether the voltage between the zero line and the communication line is 18V-30AC half-wave signal, check whether the communication circuit on the indoor and outdoor electric control board has been damaged, otherwise replace it. 3、Check whether the LED on the outdoor power board has been on, otherwise replace the electric control board. 4、Check whether the unit is abnormal caused by the external interference, if it is, then find the interfering source, and removes it.
F2	2	light	The indoor ambient temp. sensor fault	1、Check whether the resistance of sensor is normal, otherwise replace it. 2、Check whether the sensor wire is short circuit or open circuit, and whether the plug is well contacted, whether there is welding off or rosin joint on the electric control board, repair it if there is any above. 3、When the 1 and 2 are both normal, then the components or integrated circuit is damaged, the electric control board should be replaced.
F3	3	light	The coil pipe temp. sensor of indoor unit fault(include : inlet, middle, outlet)	1、Check whether the resistance of sensor is normal, otherwise replace it. 2、Check whether the sensor wire is short circuit or open circuit, and whether the plug is well contacted, whether there is welding off or rosin joint on the electric control board, repair it if there is any above. 3、When the 1 and 2 are both normal, then the components or integrated circuit is damaged, the electric control board should be replaced.
F4	4	light	indoor fan fault	1、 Check whether the contact of the plug of the motor wire and socket is well, making sure well contact. 2、Check whether the indoor motor has damaged, the motor should be replaced when it is damaged. 3、Check whether the controllable silicon and other components on the electric control

				board have damaged, replace the controllable silicon or electric control board when they are damaged.
F5	5	light	module of outdoor unit fault	1、Check whether the connection of the compressor is reliable, otherwise connect firmly again. 2、Check whether the fixation between the IPM module and the radiator is firm. 3、Check whether the compressor is well, otherwise replace it. 4、Check whether the IPM module is abnormal, otherwise replace it.
F6	6	light	The outdoor ambient temp. sensor fault	1、Check whether the resistance of sensor is normal, otherwise replace it. 2、Check whether the sensor wire is short circuit or open circuit, and whether the plug is well contacted, whether there is welding off or rosin joint on the electric control board, repair it if there is any above. 3、When the 1 and 2 are both normal, then the components or integrated circuit is damaged, the electric control board should be replaced.
F7	7	light	The outdoor unit coil pipe temp. sensor fault	1、Check whether the resistance of sensor is normal, otherwise replace it. 2、Check whether the sensor wire is short circuit or open circuit, and whether the plug is well contacted, whether there is welding off or rosin joint on the electric control board, repair it if there is any above. 3、When the 1 and 2 are both normal, then the components or integrated circuit is damaged, the electric control board should be replaced.
F8	8	light	The compressor suction temp. sensor fault	1、Check whether the resistance of sensor is normal, otherwise replace it. 2、Check whether the sensor wire is short circuit or open circuit, and whether the plug is well contacted, whether there is welding off or rosin joint on the electric control board, repair it if there is any above. 3、When the 1 and 2 are both normal, then the components or integrated circuit is damaged, the electric control board should

				be replaced.
F9	9	light	The compressor discharge temp. sensor fault	1、Check whether the resistance of sensor is normal, otherwise replace it. 2、Check whether the sensor wire is short circuit or open circuit, and whether the plug is well contacted, whether there is welding off or rosin joint on the electric control board, repair it if there is any above. 3、When the 1 and 2 are both normal, then the components or integrated circuit is damaged, the electric control board should be replaced.
FA	10	light	inductor of current or voltage fault	1、Check whether inductor of current or voltage have been damaged, they should be replaced if they are fault.
FC	11	light	compressor drive fault	1、Power on again, and check the operation of the compressor is normal. 2、Check whether the connection of the compressor is reliable, otherwise repair. 3、Check whether the components on the electric control board have been damaged, if they are damaged, the components or the electric control board should be replaced.
FE	13	light	gas return sensor fault(include : A,B,C,D pipe road)	1、Check whether the resistance of sensor is normal, otherwise replace it. 2、Check whether the sensor wire is short circuit or open circuit, and whether the plug is well contacted, whether there is welding off or rosin joint on the electric control board, repair it if there is any above. 3、When the 1 and 2 are both normal, then the components or integrated circuit is damaged, the electric control board should be replaced.
FF	14	light	other fault	1 check whether the system pressure is normal, whether to have the broken tube result in the leakage of refrigerant. 2 check whether the indoor coil temperature sensor is installed in place. 3 check whether the four-way valve runs abnormally.
P1	light	1	The evaporator temp.	1、Check whether the filter of indoor unit is too

			protection	dirty, and it should be cleaned when it is too dirty. 2、Check whether it has barrier around indoor unit, it should be remove if it has. 3、Check whether the indoor motor is damaged, it should be replaced motor or electrical control board when it is damaged.
P2	light	2	overheat, over current protection of inverter module	1、Check whether the fixation between the IPM module and the radiator is firm. 2、Check whether the compressor is well, otherwise replace it. 3、Check whether the IPM module is abnormal, otherwise replace it.
P3	light	3	AC input current over large protection	1、Check whether the ambient temperature exceeds the operation range for the air conditioner 2、Check whether the current detection circuit is abnormal, the electric control should be replaced when it is abnormal.
P4	light	4	The discharge temp. of compressor protection	1、Check whether the air condition system and pressure are normal. 2、Check whether the sensor, connecting wire of the sensor and the detection circuit are abnormal.
P6	light	6	The suction temp. of compressor protection	1、Check whether the air condition system and pressure are normal. 2、Check whether the sensor, connecting wire of the sensor and the detection circuit are abnormal.
P7	light	7	low or high voltage protection	1、Check whether the supply voltage is out of rang from 150 to 270V 2、Check the voltage detection circuit of the IPM base board is abnormal, if it is abnormal, the IPM base board or the electric control board should be replaced.
P8	light	8	low presser of gas return protection	1、Check whether the pressure is normal when the unit is running, if it is abnormal, should detect the leakage and welding、 add refrigerant.
P9	light	9	high pressure of discharge protection	1、Check whether the pressure is normal when the unit is running, if it is abnormal, should detect the leakage and welding、 add refrigerant.

PA	light	10	The evaporator coil high temp. protection	1、Check whether the condenser of outdoor unit is too dirty, and it should be cleaned when it is too dirty. 2、Check whether it is running at bad condition long time. 3、Check whether senor and wire are normal.
PC	light	11	The outdoor ambient high temp. protection	1、Check the outdoor ambient temperature is too high or there is heat source around the outdoor unit. 2、Check whether the sensor and sensor wire are normal.
PH	light	12	Lack the refrigerant or reversal valve protection	1、check whether the system pressure is normal, whether to have the broken tube result in the leakage of refrigerant. 2、check whether the reversal valve runs abnormally.

V、Reference of the fault code and detecting methods for inverter

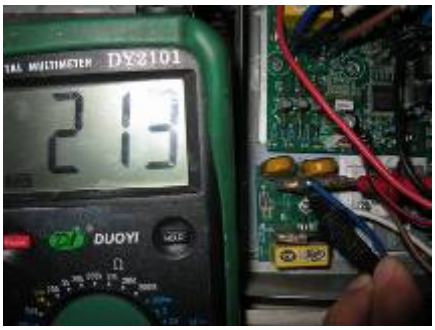
Please note: this operation guidance is for maintenance reference only, it can be different from the units you order.

A、F1 (Communication fault) the possible reasons and detecting measures:

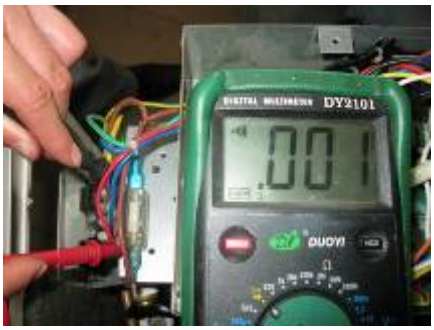
1. First, check whether the wires of the indoor and outdoor terminal boards are wrong connection or poor connection.

2. Check whether the alternating current of the outdoor PCB is normal, or whether the fuse is loosened or blew out.

(the input voltage of the outdoor terminal)

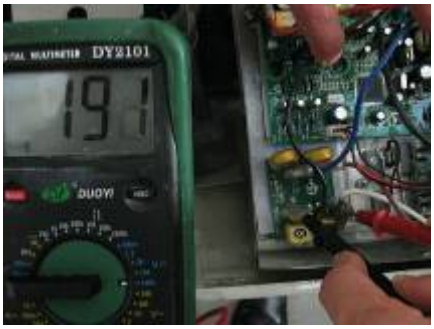


(the input voltage of the Bridge rectifier)



(the fuse can be gotten through under the normal situation. Change the fuse if it is open circuit.)

3. Check whether the voltage of the DC PN is normal. The normal voltage should be around 300V.



(the output voltage of the Bridge rectifier)

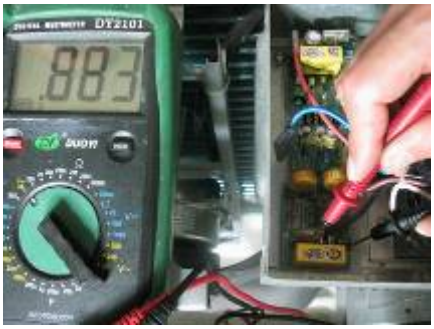
(the output voltage of the PN)

4. Check whether the input power cord or the output power cord is mistakenly connected in the controller board.

5. Check whether the communication voltage between the N and S is normal. Use the AC voltage gear to measure the voltage. If it changes from several volts to scores of volts, it means the communication voltage is normal.

6. Check whether the bridge rectifiers are damaged

(The forward resistance of every diode in the bridge rectifiers should be around 500Ω)



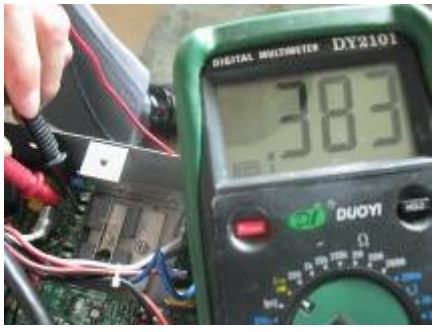
(remove one terminal when measuring the output resistance of the bridge rectifiers

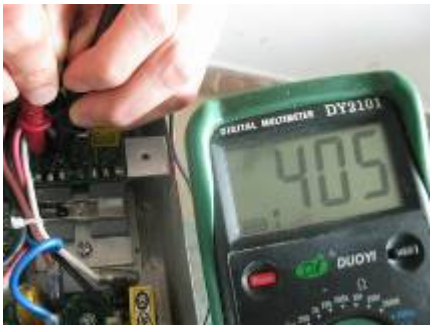
(the AC input resistance of the bridge rectifier should be infinite)

7. Check whether the electrolytic capacitor is convex or burned out.

Cracking and Convex

8. Check whether the IGBT is damaged





;

9. Check whether the relative electronic components are burned out or loose weld by eyeballing.

10. Check whether the external environment exists the source of the strong electromagnetism, which may cause disturb.

11. If the above procedures cannot solve the problem, please change the outdoor whole set of the electric control boards.

B. F2(Room Temperature sensor fault) F3 (Indoor coil exit temperature sensor fault, Indoor coil entry temperature sensor fault or Indoor coil mid point temperature sensor fault)

1. Measure the resistance of the temperature sensor and check it referring to the resistance table. Check if the resistance has a serious deviation to the table.

(the environment temperature is about 32 degrees centigrade)

2. Check whether the inserter or the wires of the sensor are damage by eyeballing.

3. Check whether the sensor’s circuit in the electronic control board is loss weld or damaged.

4. If the above procedures cannot solve the problem, please change the indoor electric board.

C、F4: fault of PG fan motor

1、 Check whether the contacted terminal of the fan motor is loose.

2、 Check whether the startup winding and running winding of the fan motor is broken (open circuit or short circuit)

3、 Check whether the fan motor or the blade of it is blocked.

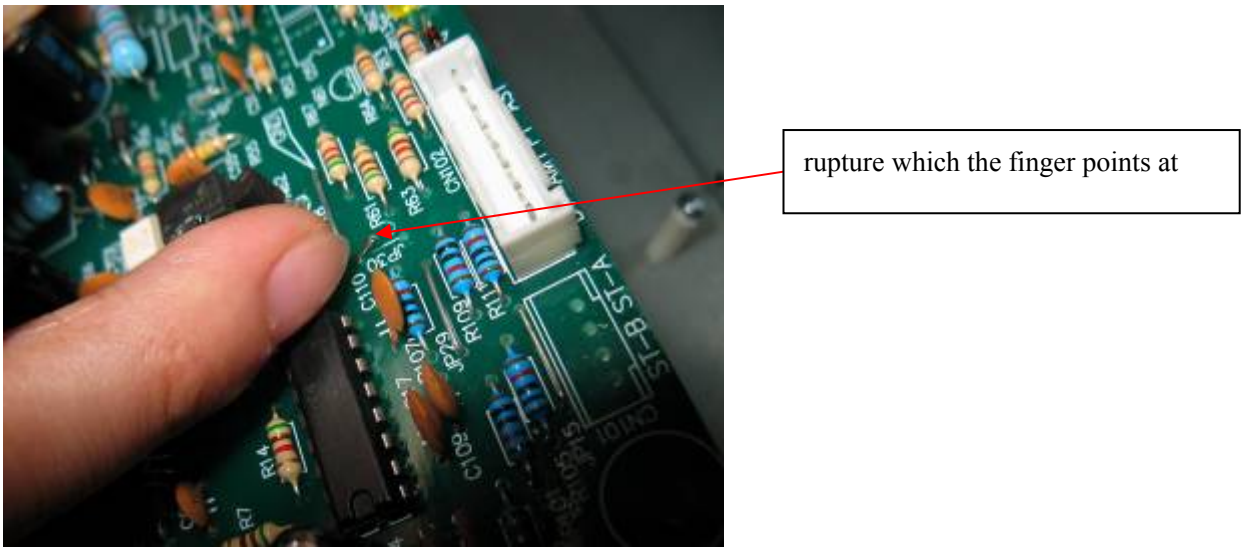
4、 Check whether the indoor PCB is faulty (no signal output of the fan motor)

D、F6 fault of the outdoor sensor

1、Measure the resistance of the sensor and check up with the temperature-resistance table, and see if there is a great departure with the resistance.

2、Check whether the contactor and the circuitry is well

3、Check whether there is loose weld or damage of the sensor circuit part, situation like rupture which the finger points at in the following picture:

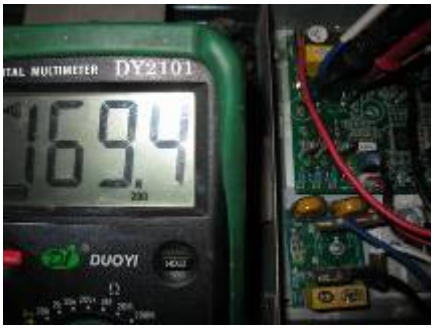


4、 If the above procedures cannot solve the problem, please change the indoor PCB.

E、FC fault of the outdoor drive and failure of the compressor startup

1、Drive module burns out, that is short circuit between P、U、V、W、N terminal.

(Normal forward resistance between P terminal and U,V,W,N terminal should be 380-450 Ω)



(Normal voltage between U terminal and V,W terminal should be 170-270V)

2、Check whether the U,V,W terminals is contacted well

3、Check whether the compressor winding is burnt out.

(Normal resistance of the three windings should be the same and probably equal to 1Ω)

5、Check whether the compressor is blocked. If blocked, please try to beat the compressor with rubber stick slightly.

F、dI mode conflict or not allowed

We suggest you reset the running mode (cold or heat), and make sure all the indoor units are running in the same mode.

G、 dF: defrost

1、Under the heat mode, it's a normal display of defrosting.

2、Under other mode except heat, if there is a dF code, perhaps the anti-jamming capacity of the

inductance is too weak which leads to a misinformed faulty code. Please check whether there is a magnetic ring on the connecting pipe of the indoor and outdoor units.

H、 P2:fault of the outdoor inverter module protection

1、Check whether the connection of the compressor is reliable. If not, please make it firmly enough.

2、Check whether the fixation between the IPM module and the radiator is firm.

3、Check whether the compressor is well. If not, please replace it.

4、Check whether the IPM module is normal. If not, please replace it.

I、P3 ac current input of the outdoor unit is too large

1、Check whether the ambient temperature exceeds the operation range of the air conditioner

2、Check whether the current detection circuit is abnormal. The electric control should be replaced if it is abnormal.

3、Check whether the outdoor fan motor is broken or not, following is the test method of ac outdoor motor:

4、 If the above procedures cannot solve the problem, we suggest changing the inductance.

J、 P4 discharge temperature of the outdoor compressor is too high, the outdoor ambient temperature is too high, temperature switch of compressor shell is breaking, the module is over temperature

1、Check whether the pressure is normal when the unit is running. If abnormal, should detect the leakage and welding, and then add refrigerant.

2、 Check whether outdoor ambient temp. is too high or too low, when the temp. is more than -20 degree and less than 55 degree, it can disappear automatically.

3、Communicate interference. Earth wire and communicate wire can't put in one cable.

4、Check whether temp. switch of compressor is damage, it should be replace if it' s

damaged.

K、 P7 dc generatrix voltage of outdoor unit is abnormal

1、Check whether the power supply voltage is out of rang from 150 to 270V

2.、Check the voltage detection circuit of the IPM base board is abnormal, if abnormal, the IPM base board or the electric control board should be replaced.

L、 P8: gas leakage or fault of the selector valve

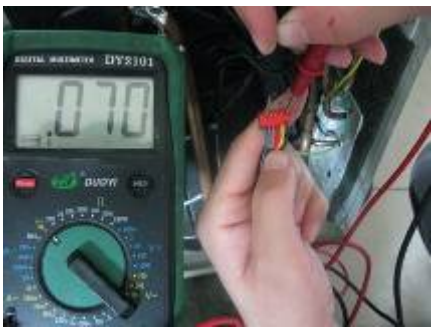
1、Check whether the high and low pressure valves have been opened. If not, please open the valves.

2、Check whether the indoor coil pipe temperature sensor is normal. If abnormal, the sensor should be replaced.

3、Check the system pressure is normal. If abnormal, should detect leakage repairing, welding and add the refrigerant

The high pressure pipe defrosts, which indicates gas leakage or electric expansion valves is not open completely.

4、Check whether the coil resistance of the electric expansion is normal and the valve body is open completely.



5、Check and listen if the sound of 4-way selector valve is crisp.

VI .User's Manual For Split Wall-Mounted Air Conditioner

Please read the user's manual carefully before using the product

Air conditioners are pieces of high value. In order to ensure your lawful rights and interests, please have the professional technicians to do the installation for you.

Addition to the user manual:

The appliance is not intended for use by young children or infirm persons without supervision;
Young children should be supervised to ensure that they do not play with the appliance.

Instructions to users

Please read the "Instruction Manual" carefully prior to the use of your air conditioner so as to ensure proper operations.

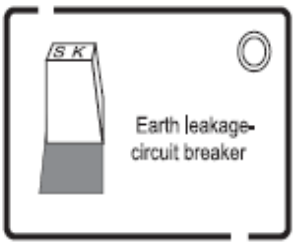
Instructions for Installation

- Make sure to have the professional after-sale service persons of our company or the authorized dealers to install the units before you use.

1. The units are not to be installed at places where there might be leakage of combustible gases.

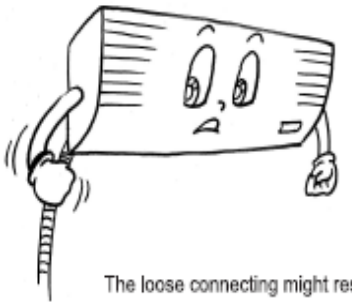
In case that the leaked gas accumulates around the units, there might occur the accident of fire hazards.

Make sure that the earth leakage-circuit breaker is installed.



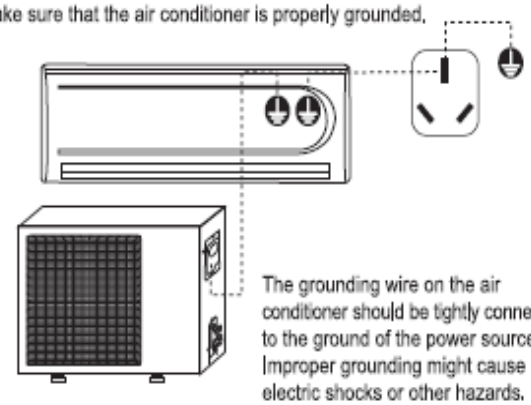
Absence of the earth leakage-circuit breaker might lead to electric shock and some other hazards.

After the connecting of the wires between the indoor unit and the outdoor unit, check whether the connecting is loose or not by pulling the wire with a little force.



The loose connecting might result in fire hazard.

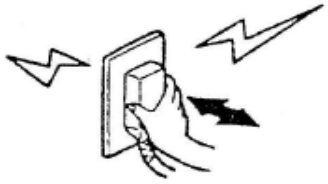
Make sure that the air conditioner is properly grounded.



The grounding wire on the air conditioner should be tightly connected to the ground of the power source. Improper grounding might cause electric shocks or other hazards.

Instructions for Operation

Never try to stop the operation of the air conditioner by pulling out the power supply line.



Such performance might cause electric shocks or fire hazards.

Do not connect the power supply line to an intermediate connector. Use of prolonged power line is strictly forbidden. Nor is it allowed to share the same plug connector with other electric appliances.

It might cause electric shocks, overheating, fire hazards or other accidents.

Do not press, stretch, damage, heat or modify the power line.

It might cause electric shocks, overheating, fire hazards, etc. If the power line wire is damaged or needs to be replaced due to some other reasons, please make sure to have dealer or the authorized maintenance people to do the replacement.

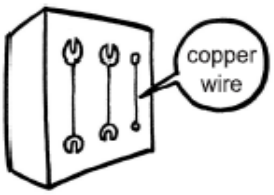
Do not operate the switch by wet hands.

It might cause electric shocks.

Before the connector is plugged in, please make sure that there is no dust on it and that it is plugged fully in place

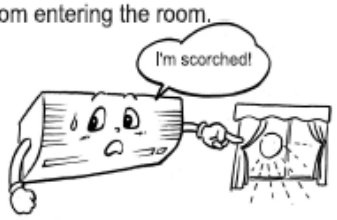
If there is dust on the plug or if the plug is not in place, it might cause electric shocks or fire hazards.

Never use the fuse with incorrect capacity or any other metal wires.



The use of metal or copper wires for fuse might cause operational failures or fire hazards.

Try to avoid the sunlight and hot air from entering the room.



During the cooling operation, curtains or window-blinds should be used to shade off the sunlight.

Try to minimize the generation of heat during the operation of cooling.

Place the heating sources out of the room.

Do not use combusting apparatuses in the air-conditioned room.

It might lead to the incomplete combustion of these apparatuses.

Do not place insecticides or paints and other flammable sprays near the air conditioner, or spray them directly at the air conditioner.

It might cause fire hazards.

When it is necessary to use the air conditioner and the combusting apparatuses in the same room, air ventilation has to be made from time to time.

Insufficient ventilation might lead to lack of oxygen or some other dangers.

Prior to the maintenance of the air conditioner, please cut off the power supply first. Never do the cleaning of the units when the fan is in high-speed operations.

Do not insert sticks or bars into the air vents.

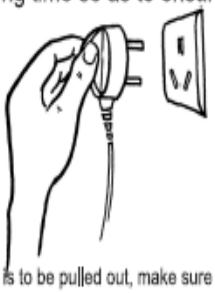
As the fan is in high-speed operation, the insertion might lead to accidents.

Adjust the air direction correctly.

Properly adjust the up/down and left/right directions of the air flow so as to get the even room temperature.

Do not keep exposed to the cool air for long time.

It might cause discomforts of the body, which is harmful to your health.

Do not clean the air conditioner with water.  It might cause electric shocks.	Do not attach, hang or stack articles on the air conditioner.  It might lead to the falling down of the air conditioner unit, which will result in accidents or injuries.	Check the supporting structures of the units carefully.  In case of damages, the supporting structures should be immediately repaired so as to avoid falling down of the unit, which might cause human injuries or other accidents.
Do not sit on the outdoor unit or place any other objects on it.  The falling down of the unit or the objects might cause human injuries and other accidents.	Do not use the following substances:  Hot water (over 40°C or 104°F) The use of hot water will deform the air conditioner or make it fade in color. Gasoline, paint diluent, benzene and polishing agents, etc. These substances will deform the air conditioner or cause scratches.	Pull out the plug when the unit is not in use for long time so as to ensure safety.  When the plug is to be pulled out, make sure that the switch of the air conditioner is turned off.

Instructions for Removal and Repair

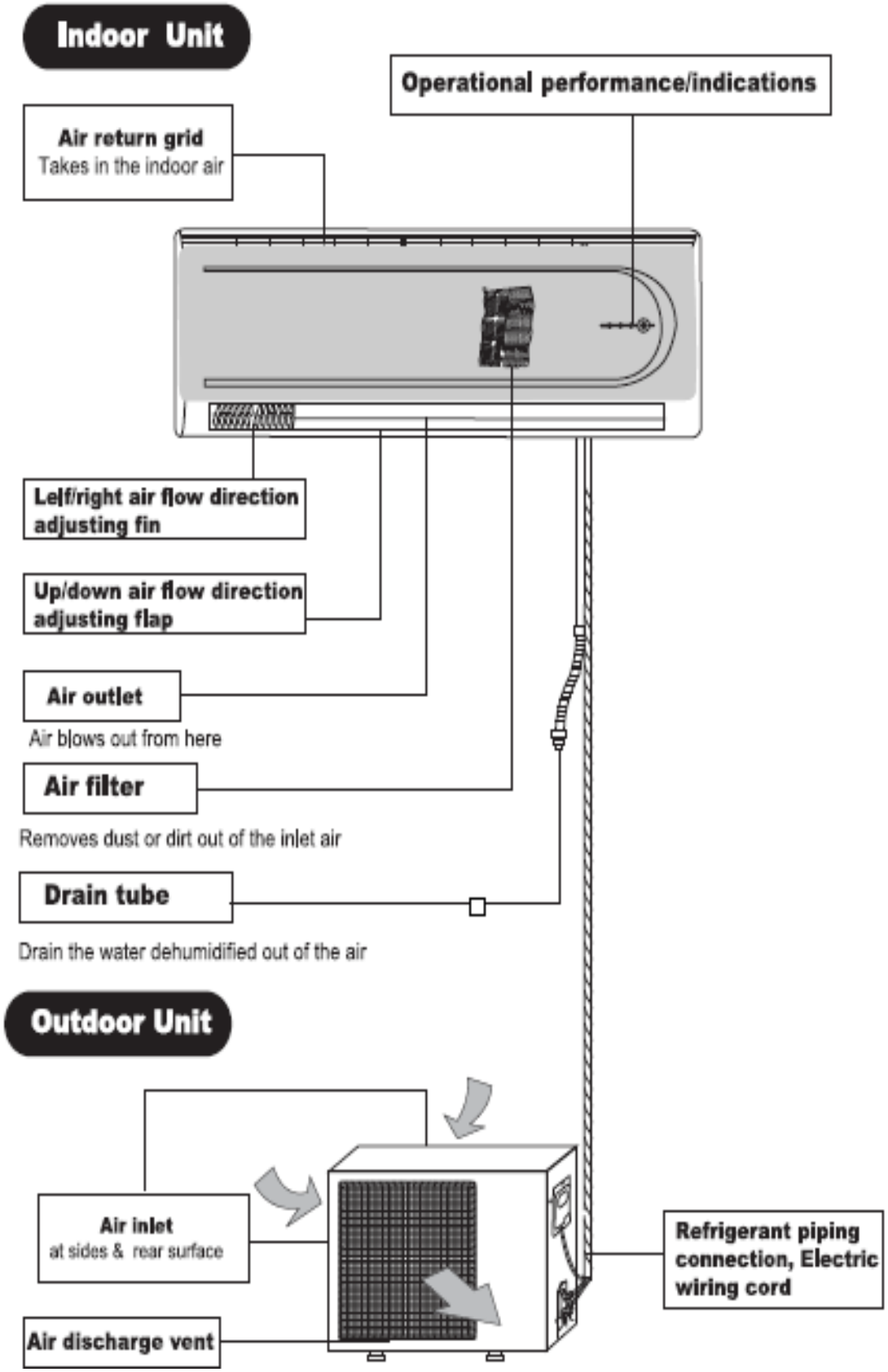
- When removal or repair is needed, please contact the dealer or authorized maintenance & installation people.
- In case of any abnormal occurrences (smell of burning), please stop the operation at once, cut off the power supply and contact the dealer or authorized maintenance people.

The name of each part and its function

【The name of each part and its function】

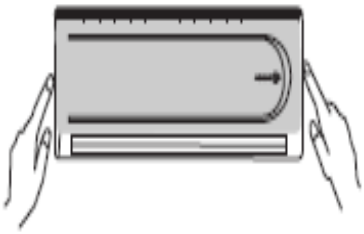
USER'S MANUAL
Split Wall-Mounted Air Conditioner

Because there are many models,features and appearance will vary,we only introduce the following pattern,Others please refer to using.


Indoor Unit
Operational performance/indications
Air return grid
Takes in the indoor air
Left/right air flow direction adjusting fin
Up/down air flow direction adjusting flap
Air outlet
Air blows out from here
Air filter
Removes dust or dirt out of the inlet air
Drain tube
Drain the water dehumidified out of the air
Outdoor Unit
Air inlet
at sides & rear surface
Air discharge vent
Refrigerant piping connection, Electric wiring cord

Unit operation section

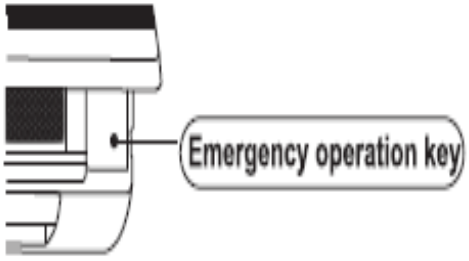
How to open



Lightly push both sides of the air inlet grid at the bottom and pull it to this side till a resistance is felt.

How to close

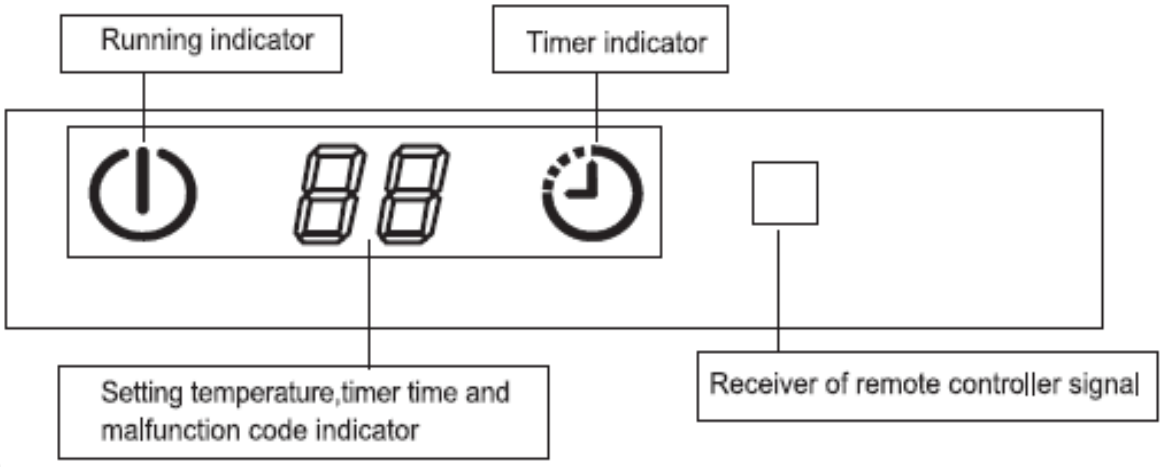
Push down the air inlet grid and then push both sides of air inlet grid at the bottom.



This button can be used as an emergency measure to turn on/off unit when remote controller is not available.

● Note: Do not open the grid at an angle over 60 degrees. Do not operate the units with too much force.

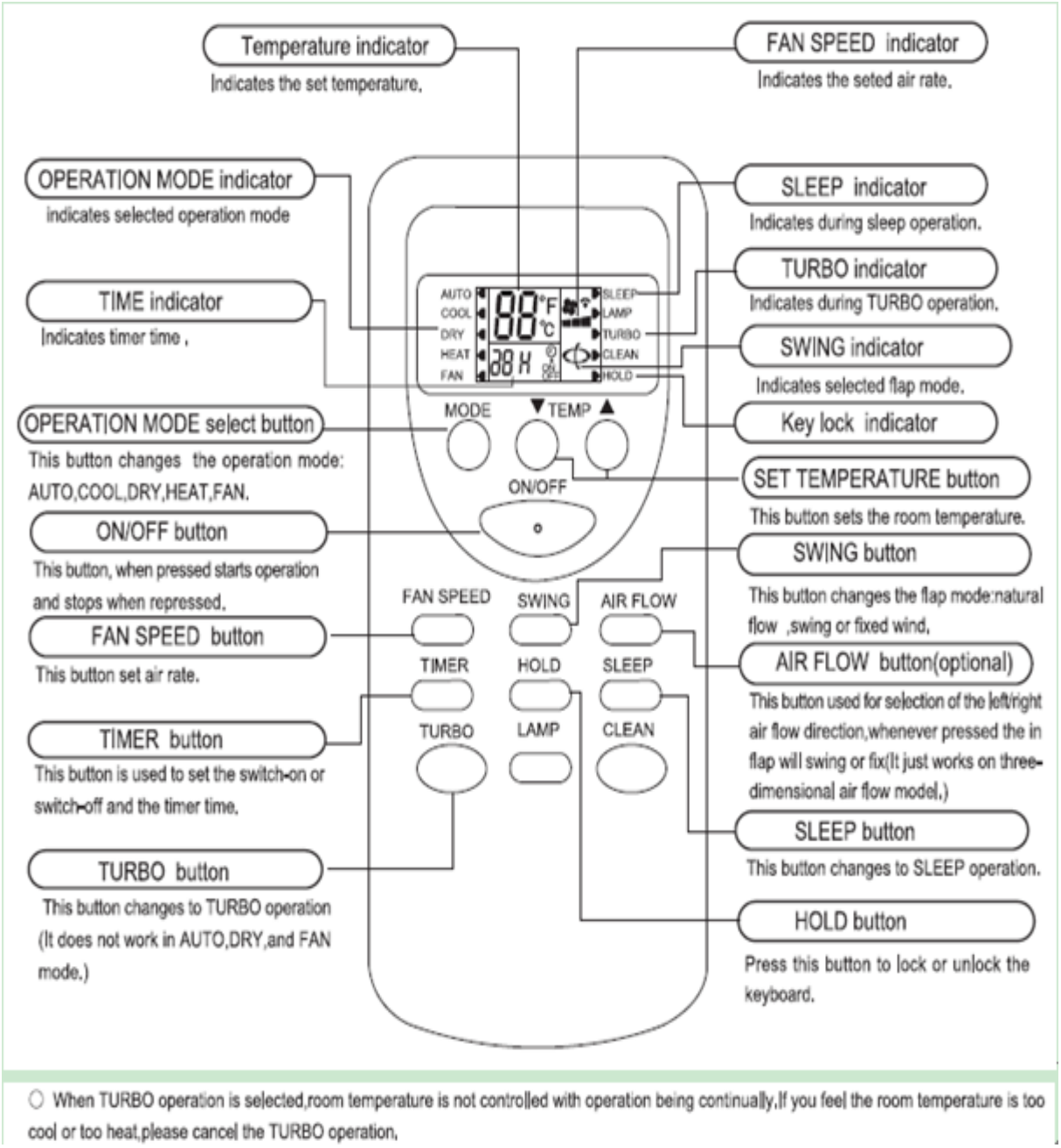
Indications of unit



Remote controller

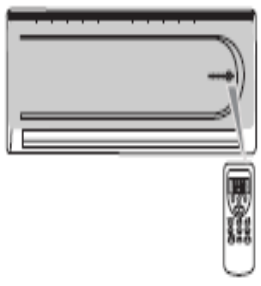
The "LAMP" and "CLEAN" button are applicable for special latest developed new models only instead of normal models.

The "AIR FLOW" button is an optional function button,it just works on those models with three-dimensional air flow function.



○ When TURBO operation is selected,room temperature is not controlled with operation being continually.If you feel the room temperature is too cool or too heat,please cancel the TURBO operation.

Transmission procedure



When each button on the remote controller is pressed with the remote controller pointing toward the air conditioner unit, signal is sent.
When the signal is received correctly, the receiving sound is emitted from the unit.

Use of remote controller

Operating machine in selected modes

1. Point the remote controller at the unit,press the ON/OFF button,then press the MODE button,select the needed mode: ATUO,COOL,DRY,HEAT,or FAN.
2. Press the SET TEMPERATURE button to increase or decrease the readings until the needed temperaure is displayed.The room set temperature range is from 16˚C-32˚C(61˚F-90˚F).
   (It would be automatically set at 25˚C(76˚F) and unadjustable in AUTO and DYR mode.)
3. Press the FAN SPEED button to choose the air rate you want:Low(display indicates" ▂ "),Med(display indicates " ▂▃ ",Hi(display indicates" ▂▃▅ ",Auto(display" ▂▃▅ "indicator flashing).
   (It would be automatically set at low speed and unadjustable in DRY mode.)
4. Press the SWING button to choose the up/down air flow direction you want:natural flow(display indicates " ("),swing(display" (" indicator flashing) ,fixed wind(display indicates " (").
   (It would be automatically set at fixed wind air flow direction in DRY mode.)

TURBO OPERATION

Press TURBO button during COOL or HEAT operation,the air rate can be setted in HIGH .Press the TURBO button again can release the TURBO operation.

Note: during TURBO operation,the air rate cann't be changed.

ADJUSTING LEFT/RIGHT AIR FLOW DIRECTION

Methods 1:Manually adjust

Adjust the direction by moving directly the left/right air flow direction adjusting fin by hand.

Caution:when adjust the direction,stop air conditioner.

Methods 2:Horizontal & vertical auto swing(three-dimensional air flow model)

Adjust the direction by remote controller.Press the AIR FLOW button,the air swinging fins will constantly make the left/right swinging or fixed direction in air delivery.

TIMER OPERATION

Set turning off time

Set the time for the unit to turn off and when it is time,the air conditioner will automatically stop operating.

1. During the operation of the air conditioner, press the TIMER button and the air conditioner will enter the timed switch-off mode.
2. Continuely press the TIMER button to set the needed time for switching off the machine. The timer can make the setting in the range from 1-24 hours.Every the button is pressed,indication change is the following sequence: 1 → 2 → ..... → 24 → cancel (no indication)→ 1.
3. After the setting of the timed switch-off, the digits shown on the display screen will go down by 1 for every elapsed hour. The displayed digits indicate the remaining time prior to the timed switch-off.

Set turning on time

Set the time for the unit to turn on and when it is time,the air conditioner will automatically start operating.

1. When the air conditioner is in the standby mode, press the TIMER button and the air conditioner will enter the timed switch-on mode.
2. Continuely press the TIMER button to set the needed time for switching on the machine. The timer can make the setting in the range from 1-24 hours.Every the button is pressed,indication change is the following sequence: 1 → 2 → ..... → 24 → cancel (no indication)→ 1.
3. After the setting of the timed switch-on, the digits shown on the display screen will go down by 1 for every elapsed hour. The displayed digits indicate the remaining time prior to the timed switch-on.

Releasing procedure

When the indication on display screen is 24 hour,press the TIMER button again to delete the timed mode.

SLEEP OPERATION

Use this mode to reduce operation sound when sleeping,etc.

Press the SLEEP button,the air flow sound from the indoor unit is decreased.

Press the SLEEP button again can release the mode.

NOTE:

- Use the sleep mode when you are going to bed.If this mode is used in the day,the capacity is reduced since the ambient temperature is too high.(COOL MODE).
- During the operation of cooling,the room temperature will be raised gradually by 2°C(4°F) higher than the setting after the machine begins to operate in the sleeping mode.
- During the operation of heating mode,the room temperature will be dropped gradually 5°C (9°F)lower than the setting after the machine begins to operate in the sleeping mode.

REPLACEMENT OF BATTERIES

- When the signal from the remote controller becomes weak and the indoor unit can not receive it properly;or the indications on the display screen becomes blurred,please slide the back cover and replace with two new batteries.

- The positive and negative poles must match the installation positions.
- New batteries of the same type have to be used for replacement.
- If the remote controller is not to be used for long time,take out the batteries so as to prevent the leakage of the electrolyte from damaging the controller.
- If when the remote controller is at abnormal state,you can take out the batteries on the back cover to clear off the display.

Basic principles and performances

Features of Heating Operations

○ The machines absorb heat from the outdoor air and transfer it indoors so as to heat the room air. The heating capabilities through this principle of heat pump go up/down with the increase/decrease of the temperatures of the outdoor air.

○ It only needs a fairly short time for such hot air circulation system to raise the room temperature.

○ When the outdoor air temperature is very low, the system can be used together with other heating devices. But good ventilation should be maintained to ensure safety and prevent accidents.

Defrosting

When the outdoor air temperature is very low and humidity is very high, frosting will occur to the heat exchanger of the outdoor unit, which has negative impacts upon the efficiency of the heating performance. In such case, the automatic defrosting function will come into play. The heating operation will be stopped for 5-10 minutes to do the defrosting.

○ The fans of both the outdoor and indoor units are stopped.

○ During the defrosting, the outdoor unit might generate some steam. It is caused by fast defrosting, which is not a performance failure.

○ Upon the completion of the defrosting process, the heating operation is resumed.

To be in compliance EN61000-3-11,the product shall be connected. only to a supply of the system impedance: |Zsys|=0 .22008 ohms or less. Before connect the product to public power network, please consult your Local power supply authority to ensure the power network meet above requirement.

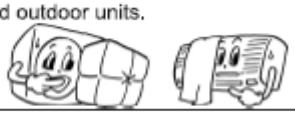
USER'S MANUAL
Split Wall-Mounted Air Conditioner

【Methods of maintenance】

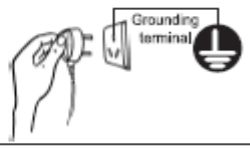
The air conditioner must be turned off and plug pulled out before the maintenance is to be carried out.

Before the season of operation

1. Check if there are any blocking materials in the intake and outlet vents of the indoor and outdoor units.



2. Check if the installation stand is corroded or rusty.
3. Check if the machine is properly grounded.

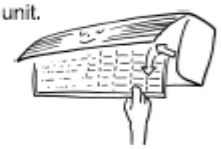


4. Check if the air filter is clean.
5. Connect to the power source.
6. Put batteries in the remote controller.

During the season of operation

The cleaning of the air filter screen (Standard intervals should be once every two weeks).

1. Remove the air filter screen from the unit.
   - Gently press the tow lower ends of the grid and open it.
   - Gently pull up the air filter screen and take it out in the direction of your body.



2. Clean the air filter screen.

   if the screen is very dirty, please use lukewarm water (about 30˚C or 86˚F) to clean it. Air it dry after the cleaning.

   Note:
   - Do not use boiling water to clean the screen.
   - Do not bake the screen dry over a fire.
   - Do not exert too much force in pulling and stretching the screen.

3. Install the air filter screen.

   To operate the air conditioner without the air filter screen on will cause the interior of the machine dirty which might lead to poor performances or damages to the units.

Clean the air conditioner

- Use a soft and dry cloth to rub the air conditioner, or use a vacuum cleaner to clean it.
- If the air conditioner is very dirty, use a piece of cloth and soak it with neutral home-use detergent to do the cleaning.

After the season of operation

1. Set the temperature at 30˚C or 86˚Fand operate in the fan status for about half a day.

To make the interior of the units dry

2. Stop the operation of the machine and turn off the power switch.

The air conditioner will consume about 5W of electric power after the machine is turned off. For the purpose of energy saving and safety, it is advisable to pull the plug out during the non-operational seasons.

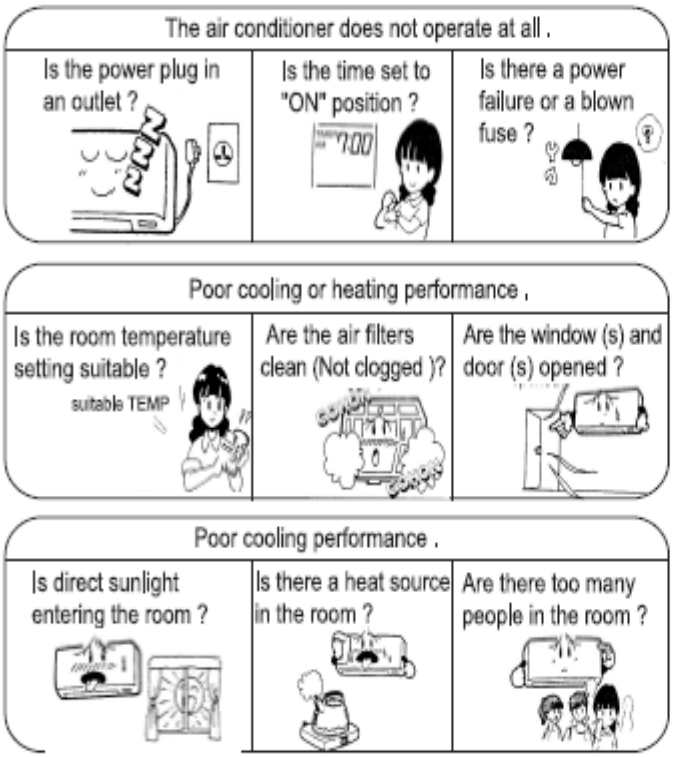
3. Clean and install the air filter screen.
4. Clean the indoor and outdoor units.

5. Take the batteries out from the remote controller.

Note:
If the air filter screen is blocked by dust or dirt, the performance of cooling and heating will be affected, with the operation noise and power consumption increased. Therefore, the air filter screen should be cleaned regularly.

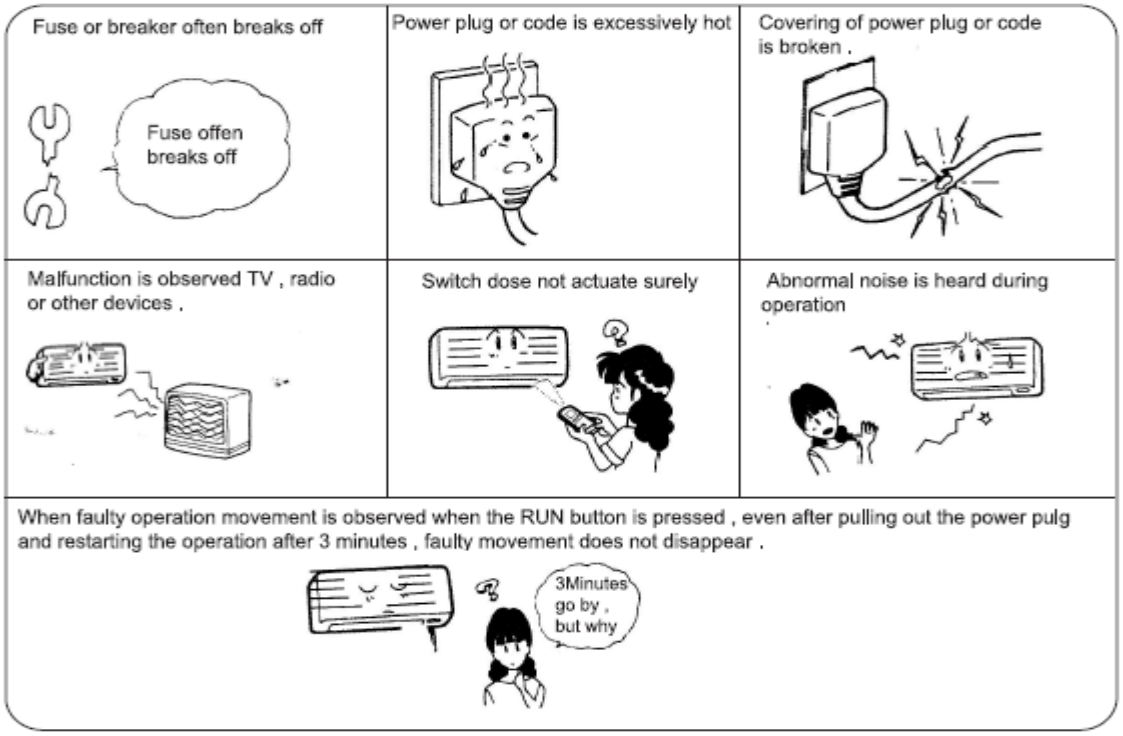
【Treatment at service call】

Please check the following before requesting after-sale service from your dealer .



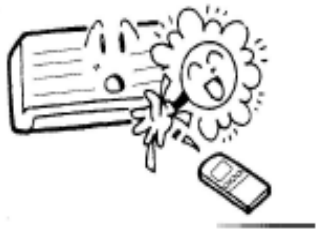
Cases requiring immediate contact with the distributor

Pull out the power plug immediately and inform to your distributor in the following situations:



【We hope you will know the following when using the unit】

The unit can not be restarted just after shut down . (RUN lamp is illuminating) 	Restart is stopped for 3 minutes after shut down to protect the unit .  Three-minute protection timer incorporated in the microcomputer actuates automatically , Except that power is connected , this function does not actuate ,
Air is not blown out at starting of heating operation,	Air blow is stopped to prevent blowing out of cold air until the indoor heat exchanger is warmed .(2 to 5 min) (HOT KEEP)
The unit will not stop blowing out the air immediately after shut down at COOL operation(some model).	Because the unit is doing mould proofing operation and indoor fan motor runs at low speed .The louver will not close down until after 30 seconds.
Air is not blown out for 6 to 12 min , at heating operation .	When outdoor temperature is low and humidity is high , the unit sometimes performs defrosting automatically , Please wait , During defrosting , water or steam are raising from the outdoor unit .
Air is not blown out at DRY operation .	Indoor fan is sometimes stopped to prevent vapor of dehumidified moisture and save energy .
Mist is blown out at COOL operation .	This phenomenon sometimes occurs when the temperature and humidity of the room are very high , but it will disappear with the lowering of the temperature and humidity .
Odor is sent out .	Air blown out during operation may smell . This is the smell of tobacco or cosmetics sticked to the unit .
Noise is heard cracking sound . 	This is caused by the refrigerant that is circulating inside the unit.

Noise is heard cracking sound ,After a power stoppage or after disconnecting the power supply plug.	This is caused by heat expansion or contraction of plastics.
Operation can not be restarted even if the power is recovered.	The memory circuit of the microcomputer is cleared, Operate the remote controller again to restart the operation .
Remote control signals are not received .	Remote control signals may not be received when signal receiver on the air conditioner body is exposed to direct sunlight or strong lighting . In that case , interrupt the sunlight or darken the lighting. 
Moisture may form on the air outlet grilles .	If the unit is operated for a long period of time with the high humidity , moisture may form on the air outlet grilles and drip down .