

GERMAN
POOL

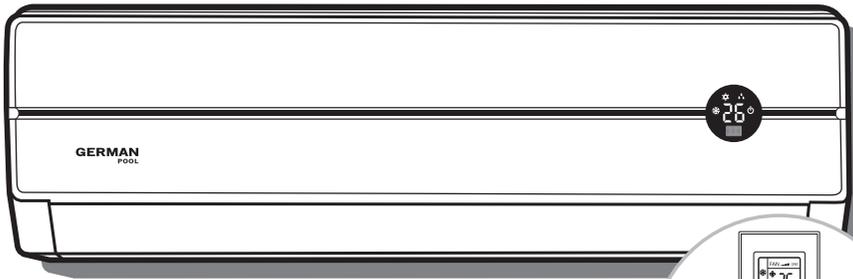


德國寶

掛牆分體式冷暖空調

Wall-Mount Split Type
Reverse Cycle Air Conditioner

SH-09 SH-12
SH-18B SH-24
SH-28



(附遙控器 With Remote Control)

在使用之前請詳細閱讀「使用說明書」及「保用條例」，並妥為保存。
Please read these instructions and warranty information carefully
before use and keep them handy for future reference.

使用說明書 OPERATING INSTRUCTIONS

◆ CONTENTS

Operation and maintenance

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This symbol stands for the items should be forbidden.



This symbol stands for the items should be followed

The products in this manual may be different with the real one, according to different models, some models have displayer and some models without displayer, the position and shape of the displayer please refer to the real one.

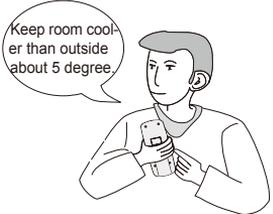
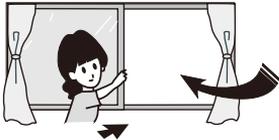
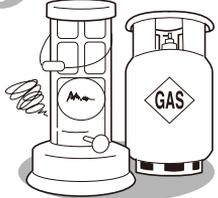
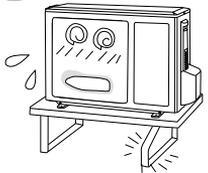
This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.



Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

◆ Operation and maintenance-notice for operation

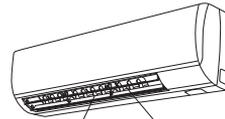
| | | |
|--|--|---|
| <p>★ Earth: The ground be connected!</p>   <p>If not, please ask the qualified personnel to install. Furthermore, don't connect each wire to the gas pipe, water pipe, drainage pipe or any other improper places.</p> | <p>★ Be sure to pull out the power plug when not using the air conditioner for a long time.</p>   <p>Otherwise, the accumulated dust may cause fire or electric shock.</p> | <p>★ Select the most appropriate temperature.</p>  <p>It can preclude the electricity wasted.</p> |
| <p>★ Don't leave windows and doors open for a long time while operating the air conditioner.</p>  <p>It can decrease the air conditioning capacity.</p> | <p>★ Don't block the air intake or outlet vents of both the outdoor and indoor units.</p>   <p>It can decrease the air conditioning capacity or cause a malfunction.</p> | <p>★ Keep combustible spray away from the units more than 1m.</p>   <p>It can cause a fire or explosion.</p> |
| <p>★ Please note whether the installed stand is firm enough or not.</p>   <p>If it is damaged, it may lead to the fall of the unit and cause the injury.</p> | <p>★ Don't step on the top of the outdoor unit or place something on it.</p>   <p>As falling off the outdoor unit can be dangerous.</p> | <p>★ Don't attempt to repair the air conditioner by yourself.</p>   <p>The wrong repair will lead to an electric shock or fire, so you should contact the service center to repair.</p> |

◆ Notices for operation

- ★ If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.



- ★ The airflow direction can be adjusted appropriately. At operating, adjust the vertical airflow direction by adjusting the louvers of upward/downward direction. And then, hold two ends of left and right louver to adjust the horizontal airflow.



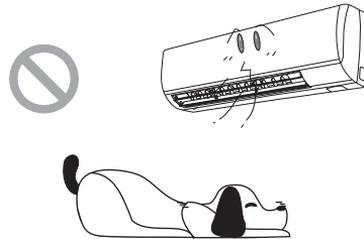
Louver of left/right direction Louver of upward/downward direction.

- ★ Don't insert your hands or stick into the air intake or outlet vents.

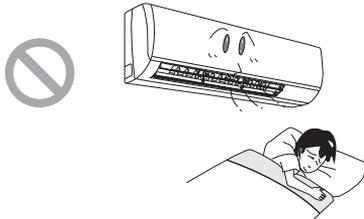


Otherwise it will cause accident.

- ★ Don't blow the wind to animals and plants directly. It can cause a bad influence to them.

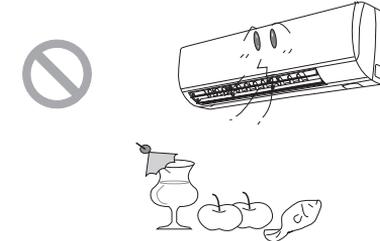


- ★ Don't apply the cold wind to the body for a long time.

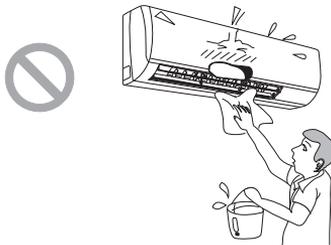


It can cause the health problems.

- ★ Don't use the air conditioner for other purposes, such as drying clothes, preserving foods, etc.



- ★ Splashing water on the air conditioner can cause an electric shock and malfunction.



- ★ Don't place a space heater near the air conditioner.



Or CO toxicosis may occur for incomplete burning.

◆ Notices for use

Working principle and special functions for cooling

Principle:

Air conditioner absorbs heat in the room and transmit to outdoor and discharged, so that indoor ambient temperature decreased, its cooling capacity will increase or decrease by outdoor ambient temperature.

Anti-freezing function:

If the unit is running in COOL mode and in low temperature, there will be frost formed on the heat exchanger, when indoor heat exchanger temperature decreased below 0°C, the indoor unit microcomputer will stop compressor running and protect the unit.

Working principle and special functions for heating

Principle:

- * Air conditioner absorbs heat from outdoor and transmits to indoor, in this way to increase room temperature. This is the heat pump heating principle, its heating capacity will be reduced due to outdoor temperature decrease.
- * If outdoor temperature becomes very low, please operate with other heating equipment.

Defrosting:

- * When outdoor temperature is low but high humidity, after a long while running, frost will form on outdoor unit, that will effect the heating effect, at this time, the auto defrosting function will act, the heat running will stop for 8-10mins.
- * During the auto defrosting, the fan motors of indoor unit and outdoor unit will stop.
- * During the defrosting, the indoor indicator flashes, the outdoor unit may emit vapor. This is due to the defrosting, it isn't malfunction.
- * After defrosting finished, the heating will recover automatically.

Anti-cool wind function:

In "Heat" mode, under the following three kinds of state, if indoor heat exchanger doesn't arrive at certain temp., indoor fan will not act, in order to prevent cool wind blowing(within 2 mins):

1. Heating starts.
2. After Auto Defrost finished.
3. Heating under the low temperature.

Gentle Breeze

In the following situation, the indoor unit may blow gentle breeze, and the guide louver rotate to a certain position:

1. In "Heat" mode, the unit turned on, the compressor doesn't arrive the starting condition.
2. In "Heat" mode, the temperature arrive at the setting value and the compressor stop running about 1min.

◆ Notices for use

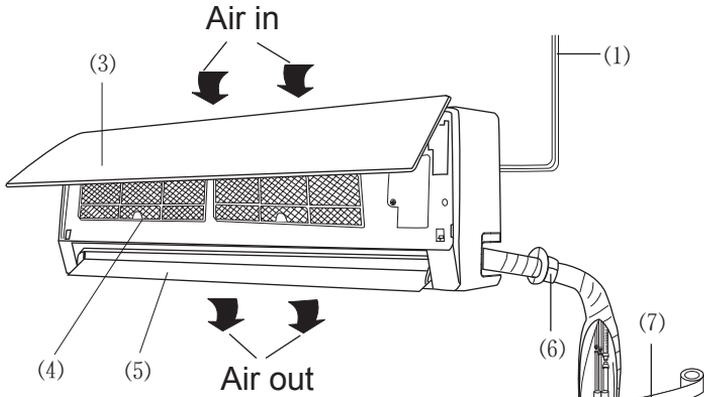
※ Working temperature range

| | Indoor sideDB/WB(°C) | Outdoor sideDB/WB(°C) |
|-----------------|----------------------|-----------------------|
| Maximum cooling | 32/23 | 43/26 |
| Maximum heating | 27/— | 24/18 |

The operating temperature range (outdoor temperature) for cooling only unit is 18°C ~ 43°C ;
for heat pump unit is -7°C ~ 43°C .

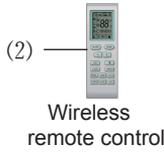
◆ Names and functions of each part

Indoor unit



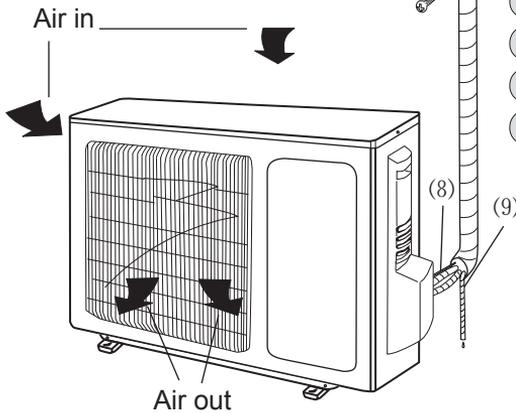
The pattern in displayer:

- ☀ : Cool
- 💧 : Dry
- 🌀 : Fan
- ☀ : Heat
- ⏻ : Run
- BB : Set temp.



- (1) Power cable
- (2) Remote control
- (3) Front panel
- (4) Filter
- (5) Guide louver
- (6) Wall pipe
- (7) Bind tape
- (8) Connection wire
- (9) Drainage pipe

Outdoor unit



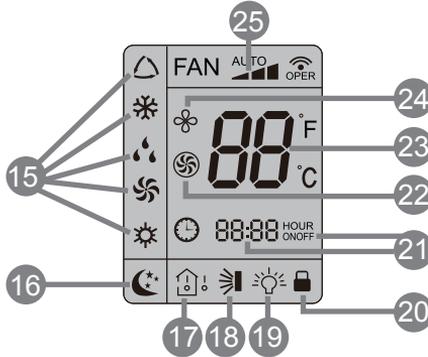
◆ Operation of Remote Controller

Remote Controller Description



- 1 **ON/OFF**
Press it to start or stop operation
- 2 **MODE**
Press it to select operation mode (AUTO/COOL/DRY/FAN/HEAT)
- 3 **+** : Press it to increase temperature setting
- 4 **-** : Press it to decrease temperature setting
- 5 **FAN**
Press it to set fan speed
- 6 
Press it to set swing angle
- 7 **TIMER ON**
Press it to set auto-on timer
- 8 **TIMER OFF**
Press it to set auto-off timer
- 9 **CLOCK**
Press it to set clock
- 10 **Blow** (page 9)
- 11 **TEMP** (page 9)
- 12 **TURBO**(page 9)
- 13 **SLEEP**(page 9)
- 14 **LIGHT**
Press it to turn on/off the light.

◆ Operation of Remote Controller



15 MODE icon:

If MODE button is pressed, current operation mode icon \triangle (AUTO), \ast (COOL), flame (DRY), fan (FAN) or sun (HEAT is only for heat pump models) will show.

16 SLEEP icon :

moon is displayed by pressing the SLEEP button. Press this button again to clear the display.

17 TEMP icon:

Pressing TEMP button, up arrow (set temperature), house (indoor ambient temperature) outdoor (outdoor ambient temperature) and blank is displayed circularly.

18 Up & down swing icon:

up-down arrow is displayed when pressing the up & down swing button. Press this button again to clear the display.

19 LIGHT icon:

light is displayed by pressing the LIGHT button. Press LIGHT button again to clear the display.

20 LOCK icon:

lock is displayed by pressing "+" and "-" buttons simultaneously. Press them again to clear the display.

21 SET TIME display:

After pressing TIMER button, ON or OFF will blink. This area will show the set time.

22 TURBO icon:

turbo is displayed when pressing the TURBO button. Press this button again to clear the display.

23 DIGITAL display:

This area will show the set temperature. In SAVE mode, "SE" will be displayed. During defrosting operation, "H1" will be displayed.

24 X-FAN icon:

x-fan is displayed when pressing the X-FAN button. Press this button again to clear the display.

25 FAN SPEED display:

Press FAN button to select the desired fan speed setting (AUTO-Low-Med-High). Your selection will be displayed in the LCD windows, except the AUTO fan speed.

◆ Operation of Remote Controller

Remote Controller Description

1 ON/OFF :

Press this button to turn on the unit. Press this button again to turn off the unit.

2 MODE :

Each time you press this button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, FAN, and HEAT *, as the following:



*Note: Only for models with heating function.

After energization, AUTO mode is defaulted. In AUTO mode, the set temperature will not be displayed on the LCD, and the unit will automatically select the suitable operation mode in accordance with the room temperature to make indoor room comfortable.

3 + :

Press this button to increase set temperature. Hold it down for above 2 seconds to rapidly increase set temperature. In AUTO mode, set temperature is not adjustable.

4 - :

Press this button to decrease set temperature. Hold it down for above 2 seconds to rapidly decrease set temperature. In AUTO mode, set temperature is not adjustable.

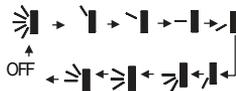
5 FAN :

This button is used for setting fan speed in the sequence that goes from AUTO, Low speed, Medium speed, High speed, then back to Auto.



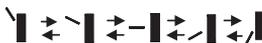
6 Swing :

Press this button to set up & down swing angle, which circularly changes as below:



This remote controller is universal. If any command , or is sent out, the unit will carry out the command as .

indicates the guide louver swings as:



◆ Operation of Remote Controller

7 TIMER ON:

Press this button to initiate the auto-ON timer. To cancel the auto-timer program, simply press this button again.

After pressing this button,  disappears and "ON "blinks. 00:00 is displayed for ON time setting. Within 5 seconds, press + or - button to adjust the time value. Every press of either button changes the time setting by 1 minute. Holding down either button rapidly changes the time setting by 1 minute and then 10 minutes. Within 5 seconds after setting, press TIMER ON button to confirm.

8 TIMER OFF:

Press this button to initiate the auto-off timer. To cancel the auto-timer program, simply press the button again. TIMER OFF setting is the same as TIMER ON.

9 CLOCK :

Pressing CLOCK button,  blinks. Within 5 seconds, pressing + or - button adjusts the present time. Holding down either button above 2 seconds increases or decreases the time by 1 minute every 0.5 second and then by 10 minutes every 0.5 second. During blinking after setting, press CLOCK button again to confirm the setting, and then  will be constantly displayed.

10 Blow :

Pressing Blow button in COOL or DRY mode, the icon  is displayed and the indoor fan will continue operation for 10 minutes in order to dry the indoor unit even though you have turned off the unit.

After energization, Blow OFF is defaulted. Blow is not available in AUTO, FAN or HEAT mode.

11 TEMP:

Press this button, could select displaying the indoor setting temperature or indoor ambient temperature. When the indoor unit firstly power on it will display the setting temperature, if the temperature's displaying status is changed from other status to "" , displays the ambient temperature, 5s later or within 5s, it receives other remote control signal that will return to display the setting temperature. if the users haven't set up the temperature displaying status, that will display the setting temperature.

12 TURBO:

Press this button to activate / deactivate the Turbo function which enables the unit to reach the preset temperature in the shortest time. In COOL mode, the unit will blow strong cooling air at super high fan speed. In HEAT mode, the unit will blow strong heating air at super high fan speed. (This function is not applicable for some models).

13 SLEEP:

Press this button to go into the SLEEP operation mode. Press it again to cancel this function. This function is available in COOL, HEAT (Only for models with heating function) or DRY mode to maintain the most comfortable temperature for you.

Operation of Remote Controller

14 LIGHT:

Press LIGHT button to turn on the display's light and press this button again to turn off the display's light. If the light is turned on, ☀️ is displayed. If the light is turned off, ☀️ disappears.

15 Combination of "+" and "-" buttons: About lock

Press "+" and "-" buttons simultaneously to lock or unlock the keypad. If the remote controller is locked, 🔒 is displayed. In this case, pressing any button, 🔒 blinks three times.

16 Combination of "MODE" and "-" buttons: About switch between Fahrenheit and Centigrade

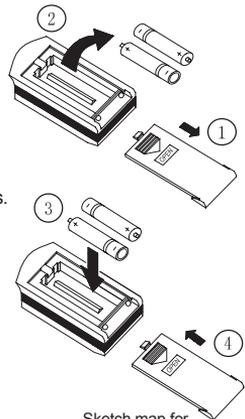
At unit OFF, press "MODE" and "-" buttons simultaneously to switch between °C and °F.

Replacement of Batteries

1. Remove the battery cover plate from the rear of the remote controller.
(As shown in the figure)
2. Take out the old batteries.
3. Insert two new AAA1.5V dry batteries, and pay attention to the polarity.
4. Reinstall the battery cover plate.

★ Notes:

- When replacing the batteries, do not use old or different types of batteries. Otherwise, it may cause malfunction.
- If the remote controller will not be used for a long time, please remove batteries to prevent batteries from leaking.
- The operation should be performed in its receiving range.
- It should be kept 1m away from the TV set or stereo sound sets.
- If the remote controller does not operate normally, please take the batteries out and reinsert them after 30 seconds. If it still can't operate properly, replace the batteries.



◆ Emergency operation

Displayer indicator light control of indoor unit

It's a special selective button for the users ,who are not accustomed to the light at sleeping.

- Get the displayer indicator light on: When setting the light function, the mark  will display on the remote controller screen by pressing this button. In which case, the displayer indicator light will be on if the AC receives this signal.
- Get the displayer indicator light off: If cancel the light function, the mark  will disappear on the remote controller screen by pressing this button. In which case, the displayer indicator light will be off if the AC receives this signal.

Emergency operation

If the wireless remote control is lost or broken, please use the manual switch button. At this time, the unit will run at the Auto mode, but the temperature and fan speed cannot be changed. The operation was shown as below:

To open the panel, the manual switch is on the displayer box.

- Turn on the unit: At unit turned off, press the button, the unit will run at Auto mode immediately. The microcomputer will accord to the indoor temperature to select (Cooling, Heating, Fan) and obtain the comfortable effect.
- Turn off the unit: At unit turned on, press the button, the unit will stop working.

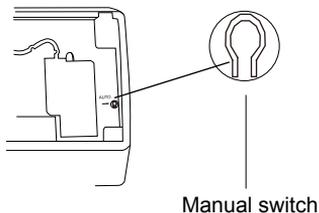


Fig.3

◆ Clean and care



Caution

- Turn power off and pull out the power plug before cleaning air conditioner, or it may cause electric shock.
- Never sprinkle water on the indoor unit and the outdoor unit for cleaning because it can cause an electric shock.
- Volatile liquid (e.g. thinner or gasoline) will damage the air conditioner. (So wipe the units with a dry soft cloth, or a cloth slightly moistened with water or cleanser.)

Clean the front panel

When cleaning the front panel, please dip the cloth into the water temperature of 45°C below, then to dry the cloth and wipe the dirty part.

Note: Please do not to immerse the front panel in water, due to there are microcomputer components and circuit diagrams on the front panel.

Clean the air filter (Recommended once every three months)

NOTE: If dust is much more around the air conditioner, the air filters should be cleaned many times. After taking off the filter, don't touch the fin of indoor unit, in order to avoid hurt your fingers.

① Take down the air filter

At the slot of surface panel to open an angle, pull the air filter downward and take it out, please see the Fig. 4(a, b).

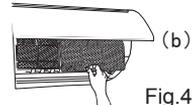
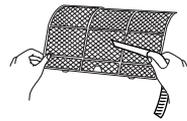


Fig.4

② Clean the air filter

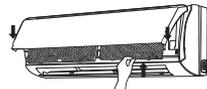
To clean the dust adhering to the filters, you can either use a vacuum cleaner, or wash them with warm water (the water with the neutral detergent should below 45 degree), and dry it in the shade.

NOTE: Never use water above 45°C to clean, or it can cause deformation or discoloration. Never parch it by fire, or can cause a fire or deformation.



③ Insert the air filter

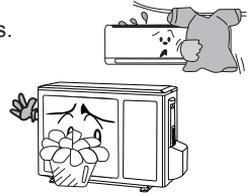
Reinsert the filters along the direction of arrowhead, and then to cover the cover and clasp it.



◆ Clean and care

Check before use

- ① Be sure that nothing obstructs the air outlet and intake vents.
- ② Check that whether ground wire is properly connected or not.
- ③ Check that whether the batteries of air conditioner are changed or not.
- ④ Check that whether the installation stand of the outdoor unit is damaged or not. If damaged, please contact the dealer.



Maintain after use

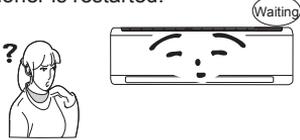
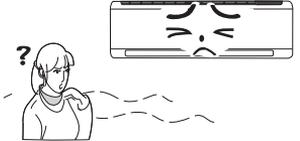
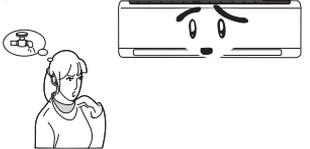
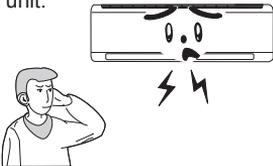
- ① Turn main power off.
- ② Clean the filter and indoor and outdoor units' bodies.
- ③ Clear dust and obstructions from the outdoor unit.
- ④ Repaint the rubiginous place on the outdoor unit to prevent it from spreading.
- ⑤ Adopt the special shield to cover the outdoor unit, avoid the rain water, dust enter into the unit and get rust.

◆ Troubleshooting

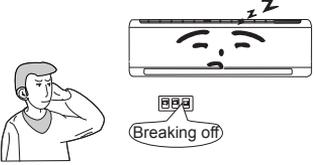
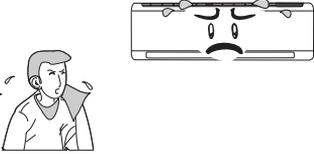
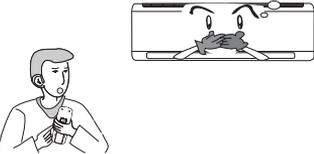


CAUTION

Don't attempt to repair the air conditioner by yourself, it can cause an electric shock or fire. Please check the following items before asking for repair, it can save your time and money.

| Phenomenon | Troubleshooting |
|--|--|
| <p>Not operate immediately when the air conditioner is restarted.</p>  | <ul style="list-style-type: none"> Once the air conditioner is stopped, it will not operate in approximately 3 minutes to protect itself. |
| <p>There's unusual smell blowing from the outlet after operation is started.</p>  | <ul style="list-style-type: none"> The unit has no peculiar smell by itself. If has, that is due to the smell accumulated in the ambient. Solution method: Cleaning the filter. If problem still has, so need to clean air conditioner. (Please contact with the authorized maintenance center.) |
| <p>Sound of water flow can be heard during the operation.</p>  | <ul style="list-style-type: none"> The air conditioner is started, when it is running the compressor started or stopped running, or the unit is stopped, sometimes there is swoosh or gurgle, the sound is due to refrigerant flowing they are not malfunctions. |
| <p>In COOL mode, sometimes the mist emitted from the air outlet vent.</p>  | <ul style="list-style-type: none"> When the indoor temperature and humidity are very high, this phenomenon would happen. This is caused by the room air is swiftly cooled down. After running for a while, indoor temperature and humidity will fall down, the mist will die away. |
| <p>Creaking noise can be heard when start or stop the unit.</p>  | <ul style="list-style-type: none"> This is caused by the deformation of plastic due to the changes of temperature. |

◆ Troubleshooting

| Phenomenon | Troubleshooting |
|--|--|
| <p>The unit can not run.</p>  | <ul style="list-style-type: none"> ● Has the power been shut down? ● Is power plug loosed? ● Is the circuit protection device tripped off or not? ● Is voltage higher or lower? (Tested by professionals) ● Is the TIMER correctly used? |
| <p>Cooling(Heating) efficiency is not good.</p>  | <ul style="list-style-type: none"> ● Is Temp. setting suitable? ● Were inlet and outlet vents obstructed? ● Is filter dirty? ● Are the windows and doors closed? ● Did Fan speed set at low speed? ● Is there any heat sources in the room? |
| <p>Wireless remote control is not available.</p>  | <ul style="list-style-type: none"> ● The unit is interfered by abnormal or frequent functions switchover occasionally the controller cannot operate. At this time, you need to pull out of the plug, and reinsert it. ● Is it in its receiving range? Or obstructed? To check the voltage in wireless remote control inside is charged, otherwise to replace the batteries. ● Whether the wireless remote control is damaged. |
| <p>If water leakage in the room.</p> | <ul style="list-style-type: none"> ● The air humidity is on the high side. ● Condensing water over flowed. ● The connection position of indoor unit drainage pipe is loosed. |
| <p>If water leakage in outdoor unit.</p> | <ul style="list-style-type: none"> ● When the unit is running in COOL mode, the pipe and connection of pipe would be condensed due to the water cooled down. ● When the unit is running in Auto Defrosting mode the ice thawed and flowed out. ● When the unit is running in HEAT mode, the water adhered on heat exchanger dripped off. |
| <p>Noise from indoor unit emitted.</p> | <ul style="list-style-type: none"> ● The sound of fan or compressor relay is switching on or off. ● When the defrosting is started or stop running, it will sound. That is due to the refrigerant flowed to the reverse direction. |

◆ Troubleshooting

| Phenomenon | Troubleshooting |
|---------------------------------|--|
| Indoor unit cannot deliver air. | <ul style="list-style-type: none"> ● In HEAT mode, when the temperature of indoor heat exchanger is very low, that will stop deliver air in order to prevent cool air. (Within 2min) ● In HEAT mode, when the outdoor temperature is low or high humidity, there are much frost be formed on the outdoor heat exchanger, that the unit will automatically defrost, indoor unit stop blowing air for 3-12min. During the defrosting, there is water flowing out or vapor be produced. ● In dehumidifying mode, sometimes indoor fan will stop, in order to avoid condensing water be vaporized again, restrain temperature rising. |
| Moisture on air outlet vent. | <ul style="list-style-type: none"> ● If unit is running under the high humidity for a long time, the moisture will be condensed on the air outlet grill and drip off. |
| H1 Defrosting | <ul style="list-style-type: none"> ● It is normal. |



Immediately stop all operations and plug out, contact the dealer in following situations.

There is harsh sound during operation.
 The terrible odors emitted during operation.
 Water is leaking in the room.
 Air switch or protection switch often breaks.
 Carelessly splash water or something into unit.
 There is an abnormal heat in power supply cord and power plug.



Stop running and pull out of the plug.

◆ Notices for installation



Important Notices

1. The unit installation work must be done by qualified personnel according to the local rules and this manual.
2. Before installation, please contact with local authorized maintenance center, if unit is not installed by the authorized maintenance center, the malfunction may not solved, due to discommodious contacts.
3. When removing the unit to the other place, please firstly contact with the authorized Maintenance Center in the local area.
4. the appliance must be positioned so that the plug is accessible
5. After pull out the power plug then make the appliance operation again , to avoid the icing of outdoor unit damage axial flow fan , should electrify the appliance but not operation for 4 hours for warm-up purpose(only for SH-09 model) .

Basic Requirements For Installation Position

Install in the following place may cause malfunction. If it is unavoidable contact with service center please:

- Place where strong heat sources, vapors, flammable gas or volatile object are emitted.
- Place where high-frequency waves are generated by radio equipment, welders and medical equipment.
- Place where a lot of salinities such as coast exists.
- Place where the oil (machine oil) is contained in the air.
- Place where a sulfured gas such as the hot spring zones is generated.
- Other place with special circumstance.

Indoor Unit Installation Position Selection

1. The air inlet and outlet vent should be far from the obstruction, make sure that the air can be blown through the whole room.
2. Select a position where the condensing water can be easily drained out, and the place is easily connected for outdoor unit.
3. Select a location where the children can not reach.
4. Can select the place where is strong enough to withstand the full weight and vibration of the unit. And will not increase the noise.
5. Be sure to leave enough space to allow access for routine maintenance. The height of the installed location should be 250cm or more from the floor.
6. Select a place about 1m or more away from TVset or any other electric appliances.
7. Select a place where the filter can be easily taken out.
8. Make sure that the indoor unit installation should accord with installation dimension diagram requirements.
9. Do not use the unit in the immediate surroundings of a laundry a bath a shower or a swimming pool.

◆ Notices for installation

Outdoor Unit Installation Position Selection

1. Select a location from which noise and outflow air emitted by unit will not inconvenience neighbors, animals, plants.
2. Select a location where there should be sufficient ventilation.
3. Select a location where there should be no obstructions cover the inlet and outlet vent.
4. The location should be able to withstand the full weight and vibration of the outdoor unit and permit safe installation.
5. Select a dry place, but do not expose under the direct sunlight or strong wind.
6. Make sure that the outdoor unit installation dimension should accord with installation dimension diagram, convenient for maintenance, repair.
7. The height difference of connecting the tubing within 5m, the length of connecting the tubing within 10m.
8. Select a place where it is out of reach for the children.
9. Select a place where will not block the passage and do not influence the city appearance.

Safety Requirements For Electric Appliances

1. The power supply should be used the rated voltage and AC exclusive circuit, the power cable diameter should be satisfied.
2. Don't drag the power cable emphatically.
3. It should be reliably earthed, and it should be connected to the special earth device, the installation work should be operated by the professional.
The air switch must have the functions of magnetic tripping and heat tripping, in order to protect the short circuit and overloading.
4. The min. distance from the unit and combustive surface is 1.5m.
5. The appliance shall be installed in accordance with national wiring regulations.
6. An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring. For models with a power plug, make sure the plug is within reach after installation.

Note:

- Make sure that the Live wire or Zero line as well as the earth wire in the family power socket cannot be wrong connected, there should be reliable and no short circuit in the diagram.
- wrong connection may cause fire.
- Recommend to use connected power wire H07RN-F 3G1.5 and H05RN-F 2X0.75 when installing the unit(only for SH-12 model).

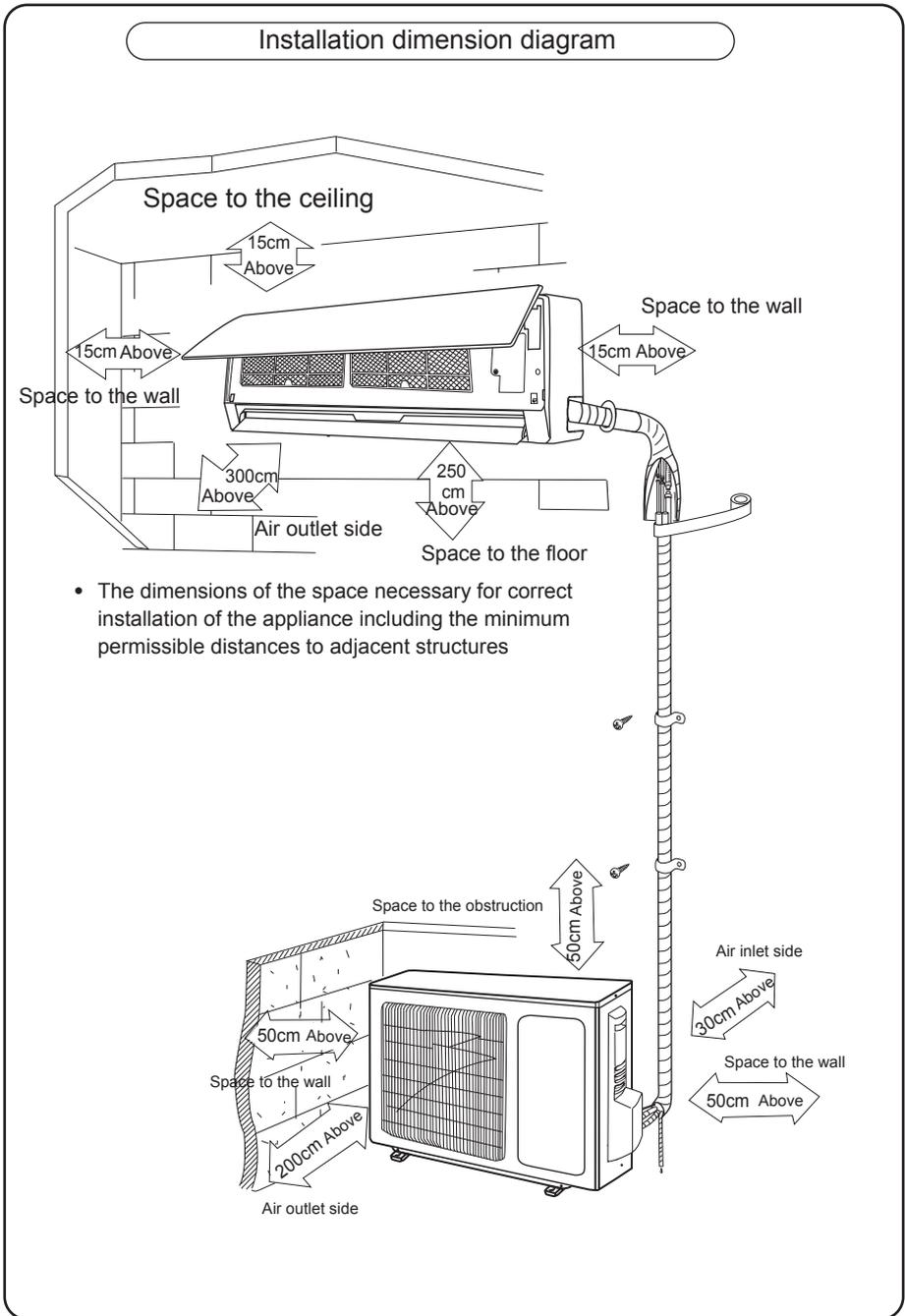
◆ Notices for installation

Earthing requirements

1. Air conditioner is type I electric appliance, thus please do conduct reliable earthing measure.
2. The yellow-green two-color wire in air conditioner is earthing wire and cannot be used for other propose. It cannot be cut off and be fix it by screw, otherwise it would cause electric shock.
3. The earth resistance should accord to the National Criterion.
4. The user power must offer the reliable earthing terminal. Please don't connect the earthing wire with the following place:
 - ① Tap water pipe.
 - ② Gas pipe.
 - ③ Contamination pipe.
 - ④ Other places that professional personnel consider them unreliable.
5. Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

| Air-conditioner | Air switch capacity |
|-----------------|---------------------|
| 05、07、09 | 10A |
| 12、14、15 | 16A |
| 18、24 | 25A |
| 28 | 32A |

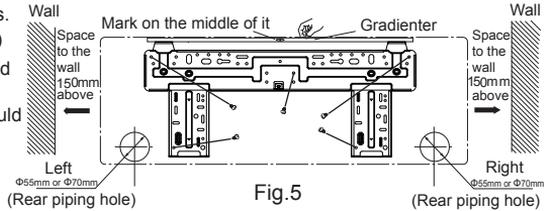
◆ Installation dimension diagram



Install indoor unit

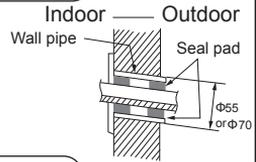
Install the rear panel

1. Always mount the rear panel horizontally. Due to the water tray of indoor unit has been adopted the both-way drainage design, the outlet of water tray should be adjusted slightly down when installing, that is taking the outlet of the water tray as the center of a circle, the included angle between the evaporator and level should be 0 or more, that is good for condensing water drainage.
2. Fix the rear panel on the wall with screws. (Where is pre-covered with plastic granula)
3. Be sure that the rear panel has been fixed firmly enough to withstand the weight of an adult of 60kg, further more, the weight should be evenly shared by each screw.



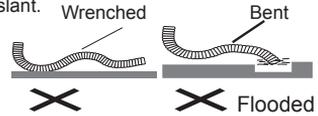
Install the piping hole

1. Make the piping hole ($\Phi 55$ or $\Phi 70$) in the wall at a slight downward slant to the outdoor side.
2. Insert the piping-hole sleeve into the hole to prevent the connection piping and wiring from being damaged when passing through the hole.



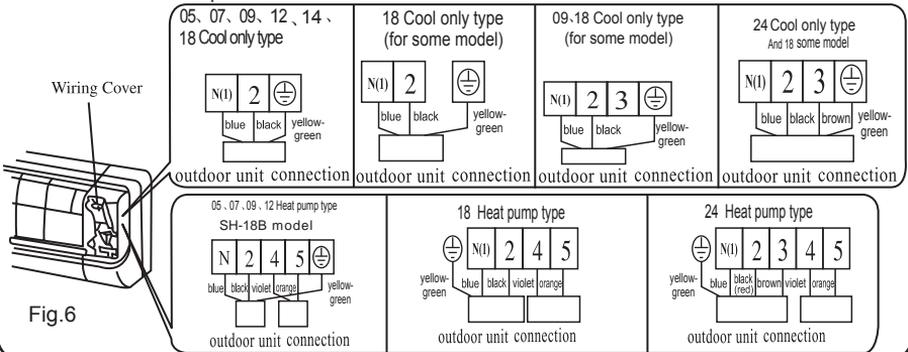
Install the water drainage pipe

1. For well draining, the drain hose should be placed at a downward slant.
2. Do not wrench or bend the drain hose or flood its end by water.
3. When the long drainage hose passing through indoor, should wrap the insulation materials.



Connect indoor and outdoor electric wires

1. Open the surface panel.
2. Remove the wiring cover Fig.6.
3. Route the power connection cord and signal control wire (for heat pump type only) from the back of the indoor unit and pull it toward the front through the wiring hole for connection.
4. Connect the inter connection cord to the terminal block, and then fix the cord with cord anchorage.
5. Reassemble the clamp and wiring cover.
6. Recover the surface panel.



◆ Install indoor unit

NOTE:

When connecting the electric wire if the wire length is not enough, please contact with the authorized service shop to buy a exclusive electric wire that is long enough and the joint on the wire are not allowed.

- The electric wiring must be correctly connected, wrong connection may cause spare parts malfunction.
- Tighten the terminal screw in order to prevent loose.
- After tighten the screw, slight pull the wire and confirm whether is it firm or not.
- If the earth wire is wrong connection, that may cause electric shock.
- The cover plate must be fixed, and tighten the connection wire, if it is poor installed, that the dust, moisture may enter in or the connection terminal will be affected by outside force, and will cause fire or electric shock.

Install the indoor unit

- The piping can be lead out from right, right rear, left left rear.
1. When routing the piping and wiring from the left or right side of indoor unit, cut off the tailings from the chassis in necessary(Show in Fig.7)
 - (1) Cut off the tailings 1 when routing the wiring only;
 - (2) Cut off the tailings 1 and tailings 2 when routing both the wiring and piping.
 2. Take out the piping from body case, wrap the piping electric wire, water pipe with tape and pull them through the piping hole (As show in Fig.8)
 3. Hange the mounting slots of the indoor unit on the upper tabs of the rear panel and check if it is firm enough.(As show in Fig.9)
 4. The height of the installed location should be 2.5m or more from the floor.

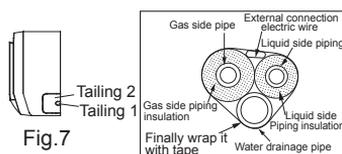


Fig.7

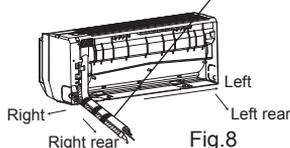


Fig.8

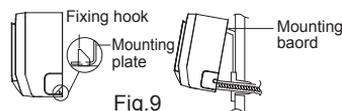
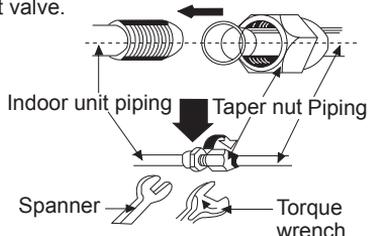


Fig.9

Install the connection pipe

1. Align the center of the piping flare with the relevant valve.
2. Screw in the flare nut by hand and then tighten the nut with spanner and torque wrench refer to the following:

| Hex nut diameter | Tightening torque (N·m) |
|------------------|-------------------------|
| Φ6 | 15~20 |
| Φ 9.52 | 31~35 |
| Φ 12 | 50~55 |
| Φ 16 | 60~65 |
| Φ 19 | 70~75 |



NOTE: Firstly connect the connection pipe to indoor unit, then to outdoor unit; pay attention to the piping bending, do not damage the connection pipe; the joint nut couldn't tighten too much, otherwise it may cause leakage.

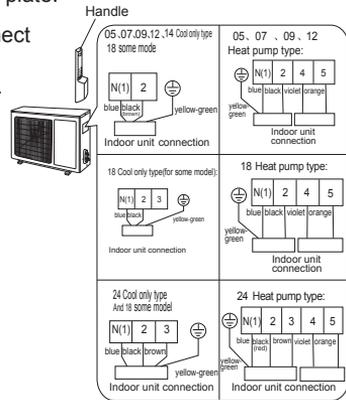
Install outdoor unit

Electric wiring

1. Disassemble the handle on the outdoor unit right side plate.
2. Take off cord anchorage. Connect and fix power connect cord (for heat pump type, connect and fix power connect cord and signal control wire) to terminal block.
3. Fix the power connection cable with cord anchorage, (for heat pump type, use the cord anchorage to fix the power connection cable and the signal control wire).
4. Ensure wire has been fixed well.
5. Install the handle.

NOTE:

- Wrong wiring may cause spare parts malfunction.
- After the cable fixed, make sure there should be a free space between the connection and connection and fixing place on the lead wire.



Air purging and leakage test

1. Connect charging hose of manifold valve to charge end of low pressure valve (both high/low pressure valves must be tightly shut).
2. Connect joint of charging hose to vacuum pump.
3. Fully open handle of Lo manifold valve.
4. Open the vacuum pump to evacuate. At the beginning, slightly loosen joint nut of low pressure valve to check if there is air coming inside. (If noise of vacuum pump has been changed, the reading of multimeter is 0) Then tighten the nut.
5. Keep evacuating for more than 15mins and make sure the reading of multi-meter is -1.0×10^5 pa (-76cmHg).
6. Fully open high/low pressure valves.
7. Remove charging hose from charging end of low pressure valve.
8. Tighten bonnet of low-pressure valve. (As shown in Fig.10)

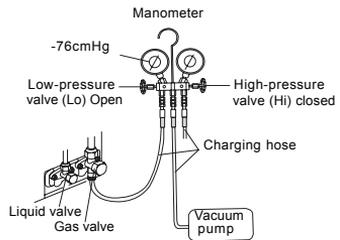
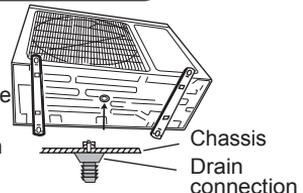


Fig.10

Condensate drainage of outdoor unit (no for cooling only)

The condensate and defrosting water formed during heating in the outdoor unit can be properly discharged by drainage pipe.

Installation method: set the drain connection in $\Phi 25$ hole of the chassis has been installed and then connect drainage pipe with drain nozzle, so that condensate and defrosting water can be properly discharged.



◆ Check after installation and test operation

Check after installation

| Items to be checked | Possible malfunction |
|--|---|
| Has it been fixed firmly? | The unit may drop, shake or emit noise. |
| Have you done the refrigerant leakage test? | It may cause insufficient cooling(heating) capacity |
| Is heat insulation sufficient? | It may cause condensation and dripping. |
| Is water drainage well? | It may cause condensation and dripping. |
| Is the voltage in accordance with the rated voltage marked on the nameplate? | It may cause electric malfunction or damage the part. |
| Is the electric wiring and piping connection installed correctly and securely? | It may cause electric malfunction or damage the part. |
| Has the unit been connected to a secure earth connection? | It may cause electrical leakage. |
| Is the power cord specified? | It may cause electric malfunction or damage the part. |
| Is the inlet and outlet been covered? | It may cause insufficient cooling(heating) capacity. |
| Has the length of connection pipes and refrigerant capacity been recorded? | The refrigerant capacity is not accurate. |

Test Operation

1. Before test operation

- (1) Do not switch on power before installation is finished completely.
- (2) Electric wiring must be connected correctly and securely.
- (3) Cut-off valves of the connection pipes should be opened.
- (4) All the impurities such as scraps and thrums must be cleared from the unit.

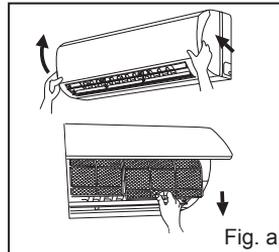
2. Test operation method

- (1) Switch on power, press "ON/OFF" button on the wireless remote control to start the operation.
- (2) Press MODE button, to select the COOL, HEAT (Cooling only unit is not available), FAN to check whether the operation is normal or not.

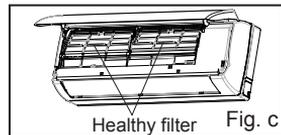
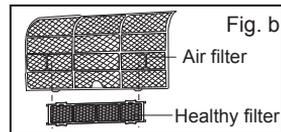
◆ Installation and Maintenance of Healthy Filter

Installation Instructions

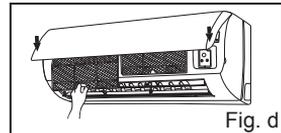
1. Forcibly pull the panel for a specific angle from the two ends of the front panel according to the arrow direction. Then pull the air filter downwards to remove it. (See Fig.a)



2. Mount the healthy filter onto the air filter, (as shown in Fig.b). If the air filter cannot be installed, please mount the healthy filter on the front case. (as shown in Fig.c)



3. Mount the air filter properly along the arrow direction in Fig.d, and then close the panel cover.



Cleaning and Maintenance

Take out the healthy filter before cleaning and reinstall it after cleaning according to the installation instruction. Pay special attention to that silver ion filter can't be cleaned with water, while active carbon, photocatalyst, low temperature conversion (LTC) catalyst, formaldehyde eliminator, catechin or mite killing filter can, but can't with brush or hard things. Dry it in the shade or sun after cleaning, but not by wiping.

Service Life

The healthy filter commonly has its usage lifetime for one year under normal condition. As for silver ion filter, it is invalid when its surface becomes black (green).

- This supplementary instruction is provided for reference to the unit with healthy filter. If the graphics provided herein is different from the physical goods, the latter one shall prevail. The quantity of healthy filters shall be based on the actual delivery.

◆ Configuration of connection pipe and additional volume of refrigerant

1. Standard length of connection pipe

5m、7.5m、8m

2. Min length of connection pipe

For the unit with standard connection pipe of 5m, there is no limitation for the min length of connection pipe. For the unit with standard connection pipe of 7.5m and 8m, the min length of connection pipe is 3m.

3. Max length of connection pipe

Sheet 1 Max length of connection pipe Unit: m

| Capacity | Max length of connection pipe | | Capacity | Max length of connection pipe |
|-------------------------|-------------------------------|--|--------------------------|-------------------------------|
| 5000 Btu/h (1465 W) | 15 | | 24000 Btu/h (7032 W) | 25 |
| 7000 Btu/h (2051 W) | 15 | | 28000 Btu/h (8204 W) | 30 |
| 9000 Btu/h (2637 W) | 15 | | 36000 Btu/h (10548 W) | 30 |
| 12000 Btu/h (3516 W) | 20 | | 42000 Btu/h (12306 W) | 30 |
| 18000 Btu/h (5274 W) | 25 | | 48000 Btu/h (14064 W) | 30 |

4. The calculation method of additional refrigerant oil and refrigerant charging amount after prolonging connection pipe

After the length of connection pipe is prolonged for 10m at the basis of standard length, you should add 5ml of refrigerant oil for each additional 5m of connection pipe.

The calculation method of additional refrigerant charging amount (on the basis of liquid pipe):

- (1) Additional refrigerant charging amount= prolonged length of liquid pipe × additional refrigerant charging amount per meter
- (2) When the length of connection pipe is above 5m, add refrigerant according to the prolonged length of liquid pipe. The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See Sheet 2.

◆ Configuration of connection pipe and additional volume of refrigerant

Sheet 2. Additional refrigerant charging amount for R22, R407C, R410A and R134a

| Diameter of connection pipe mm | | Indoor unit throttle | Outdoor unit throttle | |
|--------------------------------|----------------|---|-------------------------|-----------------------------------|
| Liquid pipe | Gas pipe | Cooling only, cooling and heating (g / m) | Cooling only (g / m) | Cooling and heating (g / m) |
| Φ6 | Φ9.5 or Φ12 | 20 | 15 | 20 |
| Φ6 or Φ9.5 | Φ16 or Φ19 | 50 | 15 | 50 |
| Φ12 | Φ19 or Φ22.2 | 100 | 30 | 120 |
| Φ16 | Φ25.4 or Φ31.8 | 170 | 60 | 120 |
| Φ19 | - | 250 | 250 | 250 |
| Φ22.2 | - | 350 | 350 | 350 |

Note: The additional refrigerant charging amount in Sheet 2 is recommended value, not compulsory.

請填妥以下空格並與發票一併保存，以便維修時核對資料。用戶提供本公司之所有資料必須正確無誤，否則免費保用將會無效。
Please fill out the form below. This information and the purchase invoice will be required for any repairs. Warranty will be invalid if information provided is found to be inaccurate.

型號 Model No. : SH-09 SH-12 SH-18B SH-24 SH-28

機身號碼 Serial No. : _____ 發票號碼 Invoice No. : _____

購買商號 Purchased From : _____ 購買日期 Purchase Date : _____

保用條款

此保用提供德國寶產品之機件在正常使用下三年全機零件及五年壓縮機保用(自購買日起計算)。

* 貴戶須在購機十天內，以下列其中一種方式向本公司登記資料，保用手續方正式生效：

- 1) 填妥本公司網頁內之保用登記表格
www.germanpool.com/warranty。
- 2) 填妥保用登記卡，並連同購機發票之副本一併郵寄到客戶服務部(本公司將不發還發票副本或登記卡)。

1. 未能出示購買發票正本者，將不獲免費維修服務。

2. 用戶應依照說明書的指示操作。本保用並不包括：
- 安裝、上門檢驗、更換零件之人工或運輸費用等；
- 因天然與人為意外造成的損壞(包括運輸及其他)；
- 電源接合不當、不依說明書而錯誤或疏忽使用本機所引致之損壞。

3. 於下列情況下，用戶之保用資格將被取消：
- 購買發票有任何非認可之刪改；
- 產品被用作商業或工業用途；
- 產品經非認可之技術人員改裝或加裝任何配件；
- 機身編號被撞自塗改、破壞或刪除。

4. 總代理有權選擇維修或更換配件或其損壞部份。

5. 產品一經被轉讓，其保用即被視作無效。

客戶服務部

德國寶(香港)有限公司

香港九龍土瓜灣馬頭角道116號

新寶工商中心高層地下2-4室

電話：+852 2333 6249

傳真：+852 2356 9798

電郵：repairs@germanpool.com

Warranty Terms & Conditions

Under normal operations, the product will receive a 3-year parts replacement warranty & 5-year compressor warranty provided by German Pool (effective starting from the date of purchase).

* This warranty is not valid until Customer's registration information is returned to and received by our Service Centre within 10 days of purchase via one of the following methods:

- 1) Visit our website and register online:
www.germanpool.com/warranty.
- 2) Complete all fields on the attached Warranty Card and mail it back to our Customer Service Centre along with a photocopy of the purchase invoice (Warranty Card and invoice copy will not be returned to Customer).

1. Customer who fails to present original purchase invoice will be disqualified for free warranty.

2. Customer should always follow the operating instructions. This warranty does not apply to:
- labour costs for installation, on-site check-up, replacement of parts and other transportation costs;
- damages caused by accidents of any kind (including transport and others);
- operating failures resulted from incorrect voltage, improper operations and unauthorized installations or repairs.

3. This warranty is invalid if:
- purchase invoice is modified by unauthorized party;
- product is used for any commercial or industrial applications;
- product is repaired or modified by unauthorized personnel, or unauthorized parts are installed;
- serial number is modified, damaged or removed from the product.

4. German Pool will, in its discretion, repair or replace any defective part.

5. This warranty will be void if there is any transfer of ownership from the original purchaser.

Customer Service Centre

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Towkawan, Kowloon, Hong Kong

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GERMAN
POOL



德國寶



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