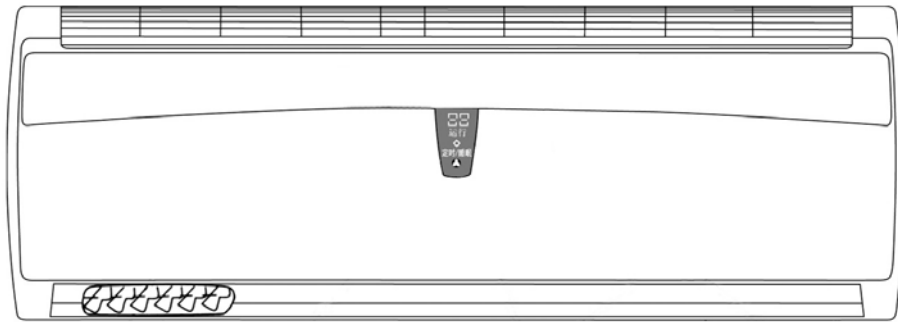




1st SUNFLOWER
RENEWABLE ENERGY

Installation and Operation Instruction



Notes to Users

We appreciate your purchasing our solar air conditioner. We will serve for you loyally. provided with excellent performance and reliable security property. For protecting your rights and interests, for guaranteeing the eximious performance of solar air conditioner to function normally, and for ensuring you receiving the better service, we plead you to necessarily advert to the following items.

I The part of the *Installation Guide* in the *Notes* only provides for the consultation of professional installers.

II When you are going to use the solar air conditioner, please be sure to read the *Notices* to avoid damaging the solar air conditioner or other accidents as a result of false operations.

III Please be sure to cut off the power of the solar air conditioner, just like the other apparatus, when you stop using.

IV The correct installation and application assure the eximious performance of the solar air conditioner. Please read the *Operation Instruction* before installation, adjustment and application.

V This machine and the *Operation Instruction* are subject to ameliorate without notice.

VI The carried standard of the product is Q/320581FSC001-2006

CONTENTS

I . The Performance Characteristics of Solar Air Conditioner.....	3
II . Chief Property Parameters.....	4
III. Application Notice.....	9
IV. Solar Air Conditioner Application.....	10
V . Solar Air Conditioner Components' Names.....	11
VI.Remote Control Function.....	12
VII. Repair and Maintenance.....	16
1.Common Faults and Solutions.....	17
2.Common Failures Diagnosis and Elimination.....	18
VIII. Solar Air-conditioner Installment.....	19
1.Installation Guide.....	19
2.Indoor Unit Installation.....	21
3.Solar Collector Installation.....	22

4. Tube Butt.....	26
5. Empty the air.....	27
IX. The Circuit Diagram.....	29
X. The Packing List.....	31

The Performance Characteristics of Solar Air Conditioner

- The product adopts both solar and electric energy. The solar energy is the supplementary.
- According to the fluid mechanics principle and the photo-electrical complementary effect, the solar air conditioner saves energy greatly.
- The compressor, which is of the international famous brand, cools and heats powerfully, operates most smoothly, and runs on low load. Service life is extended.
- The operation is calm and silent. The air conditioner adopts the advanced off-center blades and foam air duct. The high performance low noise blower is adopted. The noise reduces remarkably.
- Via auxiliary heating by electricity energy, the solar air conditioner is exactly fit for the freezing area, and brings warmth in severe cold days. It saves more electricity compared with electric heating.
- It is provided with an elegant, graceful, grand design of a new appearance.

- It is provided with the microcomputer control technique. The remote control and the control panel can be applied interchangeably. The operation is convenient and simple. The solar air conditioner is also provided with an automatic detection display system. You will feel beneficial, comfortable, and enjoyable with our solar air conditioner.

Notice: The above-mentioned advantages are the main functions of our solar air conditioner. We hereby inform that they maybe slightly different literally with advertising materials.

Chief Property Parameters

TKF(R)-26GW, TKF(R)-26GW/A(R410a)

Item/Mode		TKF(R)-26GW	TKF(R)-26GW/A
Rated Cooling Capacity (W)		2600	2600
Rated Heating Capacity (W)		2900(Heat)	2900(Heat)
Rated Power Input (V/Hz)		220V/50Hz/60Hz	220V/50Hz/60Hz
Rated Cooling Power Input (W)		650~770	650~770
Rated Cooling Input Current (A)		2.95~3.50	2.95~3.50
Max Cooling Power Input (W)		962	962
Max Cooling Input Current (A)		4.38	4.38
Rated Heating Power Input (W)		650~780	650~780
Rated Heating Input Current (A)		2.95~3.55	2.95~3.55
Max Heating Power Input (W)		975	975
Max Heating Input Current (A)		4.44	4.44
Auxiliary Electric Heating Rated Power Input (W)		600	600
Auxiliary Electric Heating Rated Input Current (A)		2.73	2.73
Inhaling Max Working Pressure (MPa)		0.8	1.15
Exhausting Max Working Pressure (MPa)		2.8	4.1
Amount of Added Refrigerant (kg)		850g	800g
Air Circulation of Outdoor Unit (m ³ /h)		450	450
Waterproof Grade		1PX4	1PX4
Net Weight (kg)	Outdoor unit	30	30
	Indoor unit	8	8
Dimensions(mm) length*width* height	Outdoor unit	790*260*540	790*260*540
	Indoor unit	700*230*160	700*230*160
Noise Level dB(a)	Outdoor unit	<50	<50
	Indoor unit	<40	<40

Note:

1.Parameters in the form are measured in the rated working state of GB/T7725-2004 (outdoor temp 35℃DB/24℃WB; indoor temp27℃DB/19℃WB). Changes may appear according to the real working state.

2. Parameters may change due to the product improvement. Please refer to the products

TKF(R)-32GW, TKF(R)-32GW/A (R410a)

Item/Mode	TKF(R)-32GW	TKF(R)-32GW/A
Rated Cooling Capacity (W)	3200	3200
Rated Heating Capacity (W)	3500(Heat)	3500(Heat)
Rated Power Input (V/Hz)	220V/50Hz/60Hz	220V/50Hz/60Hz
Rated Cooling Power Input (W)	780~940	780~940
Rated Cooling Input Current (A)	3.55~4.27	3.55~4.27
Max Cooling Power Input (W)	1180	1180
Max Cooling Input Current (A)	5.33	5.33
Rated Heating Power Input (W)	780~950	780~950
Rated Heating Input Current (A)	3.55~4.31	3.55~4.31
Max Heating Power Input (W)	1190	1190
Max Heating Input Current (A)	5.39	5.39
Auxiliary Electric Heating Rated Power Input (W)	800	800
Auxiliary Electric Heating Rated Input Current (A)	3.63	3.63
Inhaling Max Working Pressure (MPa)	0.8	1.15
Exhausting Max Working Pressure (MPa)	2.8	4.1
Amount of Added Refrigerant (kg)	1000g	1000g
Air Circulation of Outdoor Unit (m ³ /h)	520	520
Waterproof Grade	1PX4	1PX4
Net Weight (kg)	Outdoor unit	38
	Indoor unit	10.5
Dimensions(mm) len	Outdoor unit	790*260*540

gth*width* height	Indoor unit	785*285*210	785*285*210
Noise Level dB(a)	Outdoor unit	<50	<50
	Indoor unit	<42	<42

Note:

1.Parameters in the form are measured in the rated working state of GB/T7725-2004 (outdoor temp 35℃ DB/24℃ WB; indoor temp 27℃ DB/19℃ WB). Changes may appear according to the real working state.

2. Parameters may change due to the product improvement. Please refer to the products

TKF(R)-35GW, TKF(R)-35GW/A(R410a)

Item/Mode	TKF(R)-35GW	TKF(R)-35GW/A
Rated Cooling Capacity (W)	3500	3500
Rated Heating Capacity (W)	3800(Heat)	3800(Heat)
Rated Power Input (V/Hz)	220v/50Hz/60Hz	220v/50Hz/60Hz
Rated Cooling Power Input (W)	800~1025	800~1025
Rated Cooling Input Current (A)	3.64~4.66	3.64~4.66
Max Cooling Power Input (W)	1280	1280
Max Cooling Input Current (A)	5.83	5.83
Rated Heating Power Input (W)	800~1050	800~1050
Rated Heating Input Current (A)	3.64~4.77	3.64~4.77
Max Heating Power Input of Heat Pump (W)	1310	1310
Max Input Current of Heat Pump (A)	5.96	5.96
Auxiliary Electric Heating Rated Power Input (W)	800	800
Auxiliary Electric Heating Rated Input Current (A)	3.63	3.63
Inhaling Maximum Working Pressure (MPa)	0.8	1.15
Exhausting Maximum Working Pressure (MPa)	2.8	4.1
Amount of Added Refrigerant (kg)	1300g	1150g
Air Circulation of Outdoor Unit (m ³ /h)	550	550
Waterproof Grade	1PX4	1PX4

Net Weight (kg)	Outdoor unit	38	38
	Indoor unit	10.5	10.5
Dimensions(mm) length*width* height	Outdoor unit	790*260*540	790*260*540
	Indoor unit	785*285*210	785*285*210
Noise Level dB(a)	Outdoor unit	<52	<52
	Indoor unit	<42	<42

Note:

1.Parameters in the form are measured in the rated working state of GB/T7725-2004 (outdoor temp 35℃ DB/24℃ WB; indoor temp 27℃ DB/19℃ WB). Changes may appear according to the real working state.

2. Parameters may change due to the product improvement. Please refer to the products

TKFR-60GW, TKFR-60GW/A(R410a)

Item/Mode	TKF(R)-60GW	TKF(R)-60GW/A
Rated Cooling Capacity (W)	6000	6000
Rated Heating Capacity (W)	6600(Heat)	6600(Heat)
Rated Power Input (V/Hz)	220V/50Hz/60Hz	220V/50Hz/60Hz
Rated Cooling Power Input (W)	1350~1560	1350~1560
Rated Cooling Input Current (A)	6.14~7.09	6.14~7.09
Max Cooling Power Input (W)	1950	1950
Max Cooling Input Current (A)	8.86	8.86
Rated Heating Power Input (W)	1350~1590	1350~1590
Rated Heating Input Current (A)	6.14~7.23	6.14~7.23
Max Heating Power Input (W)	2000	2000
Max Heating Input Current (A)	9	9
Auxiliary Electric Heating Rated Power Input (W)	1500	1500
Auxiliary Electric Heating Rated Input Current (A)	8.1	8.1
Inhaling Max Working Pressure (MPa)	0.8	1.15
Exhausting Max Working Pressure (MPa)	2.8	4.1

Amount of Added Refrigerant (kg)		1700g	1600g
Air Circulation of Outdoor Unit (m ³ /h)		850	850
Waterproof Grade		1PX4	1PX4
Net Weight (kg)	Outdoor unit	55	55
	Indoor unit	21	21
Dimensions(mm) length*width* height	Outdoor unit	940*300*755	940*300*755
	Indoor unit	985*325*230	985*325*230
Noise Level dB(a)	Outdoor unit	<56	<56
	Indoor unit	<46	<46
<p>Note:1. Parameters in the form are measured in the rated working state of GB/T7725-2004 (outdoor temp 35 °C DB/24 °C WB; indoor temp 27 °C DB/19 °C WB). Changes may appear according to the real working state.</p> <p>2. Parameters may change due to the product improvement. Please refer to the products</p>			

TKFR-72GW, TKFR-72GW/A(R410a)

Item/Mode	TKF(R)-72GW	TKF(R)-72GW/A
Rated Cooling Capacity (W)	7200	7200
Rated Heating Capacity (W)	7900(Heat)	7900(Heat)
Rated Power Input (V/Hz)	220/50Hz/60Hz	220/50Hz/60Hz
Rated Cooling Power Input (W)	1700~1900	1700~1900
Rated Cooling Input Current (A)	7.73~8.64	7.73~8.64
Max Cooling Power Input (W)	2375	2375
Max Cooling Input Current (A)	10.8	10.8
Rated Heating Power Input (W)	1700~1950	1700~1950
Rated Heating Input Current (A)	7.73~8.64	7.73~8.64
Max Heating Power Input (W)	2440	2440
Max Heating Input Current (A)	10.8	10.8

Auxiliary Electric Heating Rated Power Input (W)		1800	1800
Auxiliary Electric Heating Rated Input Current (A)		8.18	8.18
Inhaling Max Working Pressure (MPa)		0.8	1.15
Exhausting Max Working Pressure (MPa)		2.8	4.1
Amount of Added Refrigerant (kg)		1950g	1800g
Air Circulation of Outdoor Unit (m ³ /h)		1050	1050
Waterproof Grade		1PX4	1PX4
Net Weight (kg)	Outdoor unit	62	62
	Indoor unit	19	19
Dimensions(mm) length*width* height	Outdoor unit	940*300*755	940*300*755
	Indoor unit	985*325*230	985*325*230
Noise Level dB(a)	Outdoor unit	<54	<54
	Indoor unit	<42	<42

Note:1. Parameters in the form are measured in the rated working state of GB/T7725-2004 (outdoor temp 35 °C DB/24 °C WB; indoor temp 27 °C DB/19 °C WB). Changes may appear according to the real working state.

2. Parameters may change due to the product improvement. Please refer to the products

Notice

Application Notice

Safety Specification

△ **Warning:**

- Keep the switch of solar air conditioner out of the reach of children in order to prevent children from playing with the electricity.
- Please switch off the power in the thunderstorm weather; otherwise the thunder would cause damages to the machine.
- Please switch off the power when the machine is not in use, or when you leave the room for a long time. Otherwise the solar air conditioner may cause incidents.
- Please switch off the power before cleaning or maintaining the machine. Otherwise incidents may happen.
- Never rinse the machine with liquid detergent, liquefied cleaning agent, and corrosive cleaning agent. Never sprinkle water or other liquid to the machine. Liquid would damage the plastic accessories. Even the electricity-shock may be caused.

△ **Danger:**

- Never put your hands or a stick into the air outlet of the indoor or outdoor machine, otherwise the high-speed fan would bring about damages.
- Never touch the board when the wind board is running, otherwise it will clamp your fingers, or damage the transmission component of the wind board.
- Never remove the ventilating hood of the machine, or the high-speed fan would cause damage to people.
- Never allow children to play with the solar air conditioner. Such condition may cause an accident.
- Never moisten the indoor machine and the remote controller. Otherwise it may cause short circuit, even a fire.
- Never put or use combustible liquid or gas such as hair styling jelly, paint, and gasoline near the machine. Otherwise it may cause a fire.

- If some abnormal situation happens, such as abnormal noise, smell, smoke, temperature increment, creepage, please cut off the power instantly. Call the local distributors or solar air conditioner after-sale service centers. Don't maintain and repair the machine by yourself.

Solar Air Conditioner Application

Pre-checking

- *Please check if the groundwire is rightly connected or not.
- *Please check if the air strainer is fixed.
- *If the solar air conditioner is idle for a long time, please rinse the strainer before start-up. For more details, please consult the chapter *Repair and Maintenance*.
- *The inlet opening and the outlet opening of the indoor and the outdoor units should be unblocked.

Optimum operation

- *Please set a proper comfortable temperature. Avoid exceedingly hot or cold, especially where the elders, children and patients live.
- * When cooling, please use curtain or shutter to avoid sunlight from shining in.
- *Please shut the windows, otherwise the convection of indoor and outdoor air will decrease the effect of cooling and heating
- *If you need to set the pre-runtime, please use the remote controller.
- *Never place barriers, which baffle the airflow, near the indoor and outdoor units. It will decrease the effect of air conditioner system; even stop the running of the system.
- *Please rinse the air strainer frequently. If the air strainer is blocked, it decreases effect of cooling and heating.

Working temperature range

Mode	Cooling	Heating
Temperature		
Indoor Temperature	above 18 °C	below 31 °C
Outdoor Temperature	18 °C ~53 °C	-7 °C ~24 °C

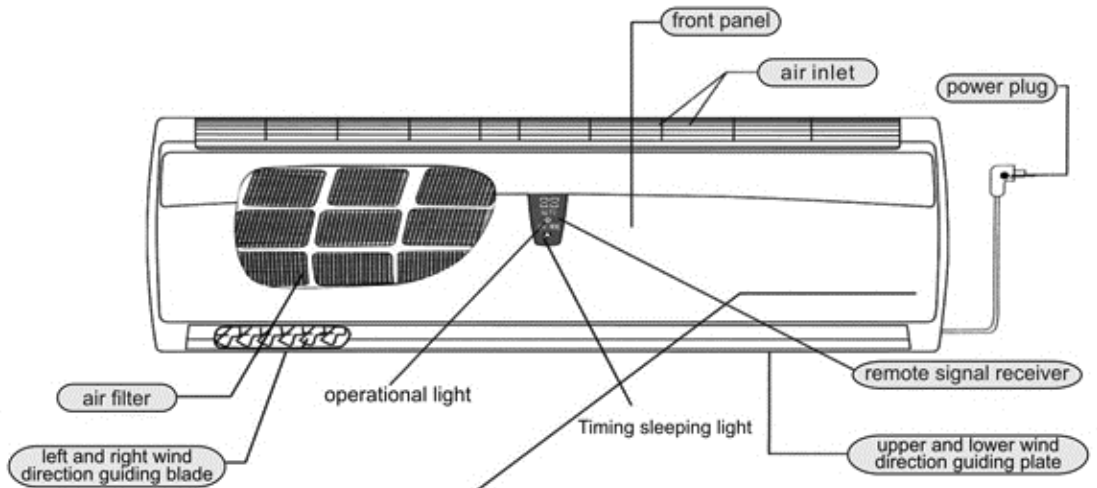
For ensuring normal working of solar air conditioner, please use it in working temperature

range. Otherwise, the interior protection, water dripping, or low efficiency may be induced.

Solar Air Conditioner Components' Names

Notice: The graphic example is based on the standard type solar air-conditioner. Thus, it may be different in appearance of that of yours.

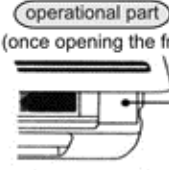
- Please cut off the power supply before opening the air intake fence.



left and right wind direction adjustment please adjust the left and right wind blades manually before operation. otherwise, free swinging of upper and lower wind blades may hurt your fingers by pinching.



remote controller



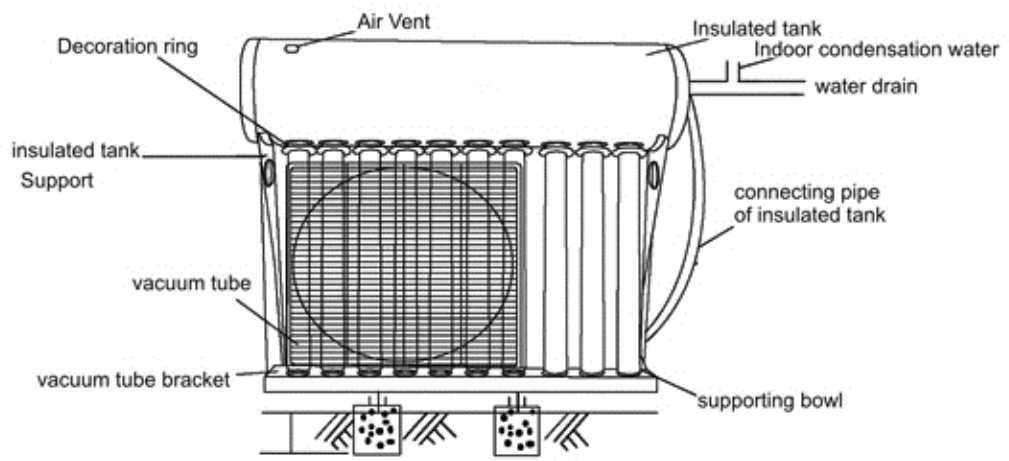
operational part (once opening the front panel)

emergency switch

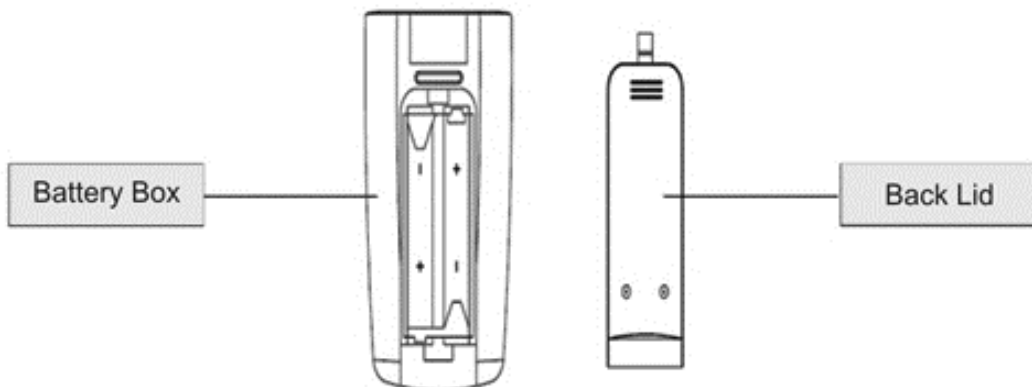
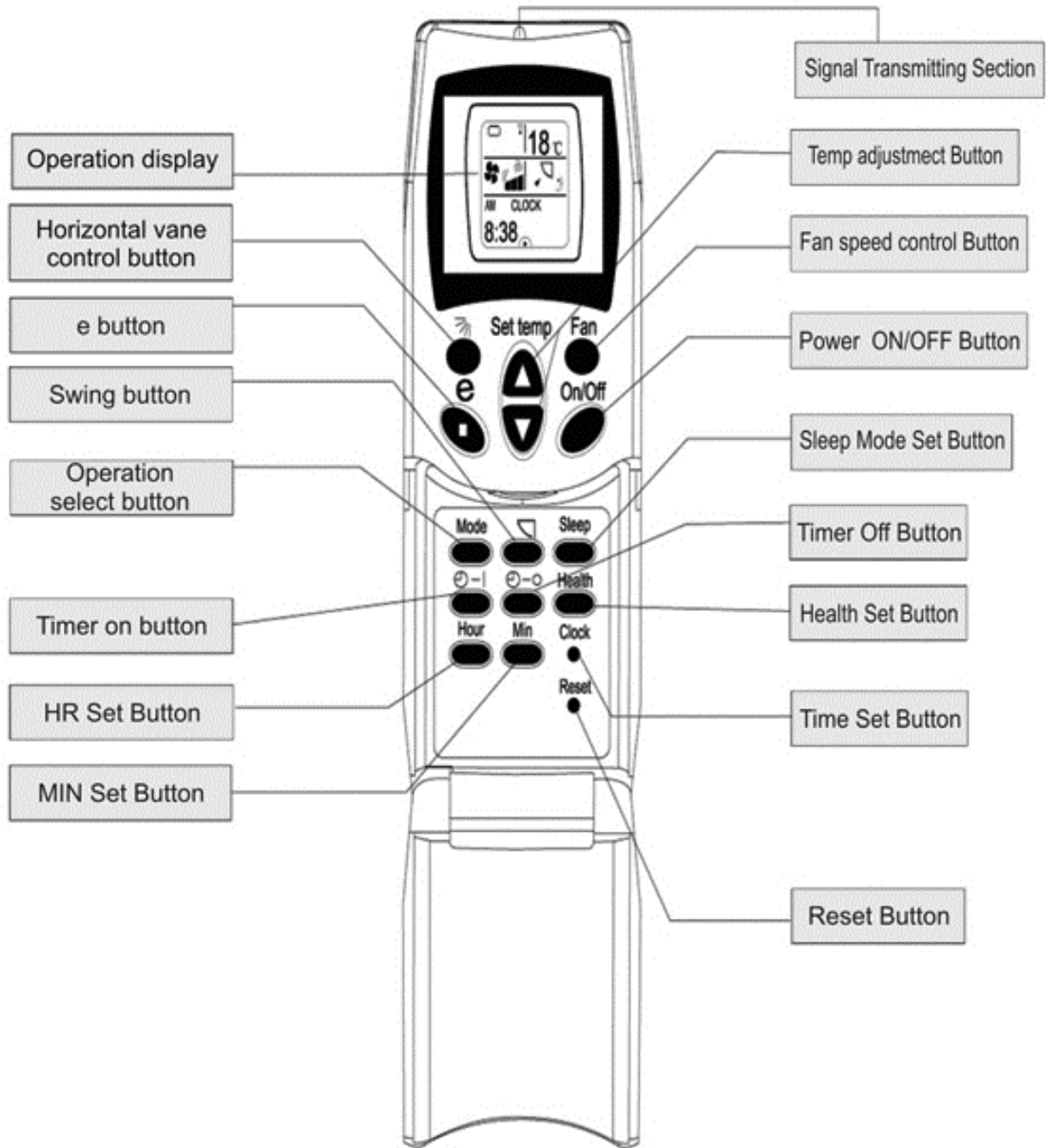
Operational indicating light: the operational indicating light will shine once the air conditioner is on, timing sleeping indicating light: the indicating light will shine once the air conditioner responds to the timing or sleeping functions

Emergency switch: the emergency switch can be used for emergency operation once the dry batteries of remote controller is used up or in case of remote controller malfunctions

- Type TKFR Emergency refrigerating—heating—stop in sequence once pressing the button
- Type TKF Emergency refrigerating—stop in sequence once pressing the button



Remote Control Function

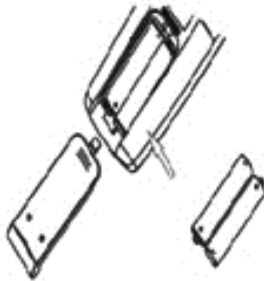


Remote Control Function

Operation Instruction

Set Remote Controller Clock

1. Remove the back lid and insert two batteries



Do not confuse (+) and (-)

2. Reset button



Press it by sharp object

3. Clock set button

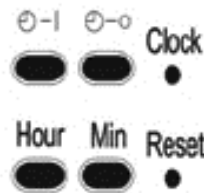


Press it by sharp object

Warning

- The batteries must be removed from the appliance before it is scrapped and that they are disposed.
- The range that the signal can reach is about 6 metres of safely. One or two beeps will be heard after the unit receiving the signal.
- When the signal does not operate the indoor unit, or the display becomes dim, replace the 2 batteries with new ones of the same type.
- Use the remote controller carefully. If it is dropped, thrown or gets wet, it may not operate.
- Do not use rechargeable batteries

4. Press the buttons HR and MIN to set the current time, press HR button each time, the time adds 1 hour, press MIN button each time, time will add 1 minute.



5. Press clock set button again



Press it by sharp object

Operate automatically

According to the room temperature when the operation starts, the operation mode is automatically selected between COOL, DRY and HEAT. However, when operation is started again within 2 hours after the operation is stopped, the same operation mode before it is stopped is selected.

Room temperature when started	Operation mode
About 25°C or higher	COOL
About 20°C-25°C	DRY
About 20°C or lower	HEAT FAN

To start operation

1. The signal transmitting section of the controller should be pointed at the receiving section.
2. Press the ON/OFF to start air-conditioner
3. To select the Auto mode, each time the button is pressed, the operation mode is changed in sequence form: AUTO-COOL-DRY-HEAT

To stop operation

Press the ON/OFF button




While too warm or too cool

When about 3-15 min passes, press after operation start, if you feel slightly warm or cool

1. Press the ▲ button to raise the temperature, One press raises the temperature by about 1°C
2. Press the ▼ button to lower the temperature, One press lowers the temperature by about 1°C

Remote Control Function



To select the "COOL" "DRY" "FAN" "ON/OFF" modes

1. Press the ON/OFF button to start the machine
2. Select the operation mode by pressing the MODE.
Each time this function is pressed, the operation mode is changed in sequence, from "AUTO"→"COOL"→"DRY"→"HEAT" (Example) To select the cool operation mode, press MODE button continually until "COOL" is on display screen.
3. Press the  button to select the fan speed
4. Press the  button to select air flow blowing direction
5. Press the  button to stop machine.

Note:

1. Once the operation mode has been selected, the same operation mode will start after the ON/OFF button pressed on
2. For TKFR unit no FAN mode
3. For TKF unit no HEAT

Change the set temperature

To lower the temperature, press the  button. Press once, the set temperature drops 1°C.
To raise the temperature, press the  button. Press once, the set temperature raise 1°C.

In "HEAT" operation

1. The solar air conditioner's efficiency is related to the outdoor temperature. If the unit is used in cold area, a heater can be sued together if the air conditioner's heat is not enough.
2. Defrosting operation when outdoor temperature is very low, the fans in the outdoor and indoor unit are stopped, meanwhile defrosting operates for 2-10 minutes to protect the outdoor heat exchanger from frozen.



In "DRY" Operation

1. In "DRY" operation the fan speed can't be changed.
2. Controlled by the microprocessor, the fans in the outdoor and indoor unit operate occasionally for "DRY" operation.
3. The room temperature is slightly lowered in the operation mode, the "DRY" function can't be done when room temperature is 13°C or lower.

CAUTION

1. When the temperature is slightly lowered in the outdoor and indoor unit, operate occasionally for "DRY" operation
2.3 min delay start
3. In order to reduce the compressor high load, the unit cannot be operated for 3 minutes when restarted with only the electric fan works, This will be effective in following conditions.
4. -Power cut -Power source cut off
-Main power breaker turn off

Air Flow Velocity Adjustment

1. Press the button  to adjust the air flow velocity, Each time the button is pressed, Fan speed is changed as follows: AUTO→LOW→MEDIUM→HIGH
2. To adjust the up/down fan, please press the button . Each time press the button on position of " → ← / → ← | → ← "

1. In daily time, please select swing.
2. When "COOL" or "DRY", please select the position of " / " and "HEAT" select to " | " Position

Note: To change the horizontal direction of the air flow. Adjust the vertical vanes manually before operation starts. Since horizontal vane moves automatically you may be caught.










Override Opera

TKFR Type: Each time the switch is pressed, the unit alternates between the override COOL mode, HEAT mode and STOP mode.

TKF Type: Each time the switch is pressed, the unit alternates between the override COOL Mode and STOP mode

Remote Control Function

To set timer on/off function

Press the timer on button , the  appears in the display and begins to glitter. It will last 1 min, to inform you that you can start to set the timer on  function. Press the timer on button again, the function will be cancelled. When the unit is on, press the timer off button, or press the timer on  button first to set the timer on, then press the timer off button, the  appears in the display and begins to glitter, and it will last 1 minute to inform you that you can start to set the timer off function. Press the timer off button again, the function will be cancel. Press the  and  button to set timer on and timer off function which you need. Each press of the , the set time will raise by 1 hour. Each press the , the set time will raise by 10minutes.

To use the timer on/off function together


Press the timer on button to set the timer on function first and then press the timer off button to set the timer off function. At the time, the timer on/off functions are used together.

Stands the operation order of the timer on/off function.

Note:

1. Before setting the timer on/off function, please confirm whether the electric clock is rightly set or not.
2. If the current time is the time of the timer on/off, and the state of the machine is the same as the requirement of the time set, the operating mode will not change.
3. The remote controller has the function of setting daily recycle of timer on/off function (everyday set the timer on/off function rotatively); and setting weekly recycle of timer on/off function rotatively from Monday to Friday, and stop the unit on Saturday and Sunday). Some other air conditioner may not have this function and will not be informed.
4. In the stop state, press the "temperature+" and "temperature -" at the same time to set or cancel the weekly display state easily.

Set the comfortable sleeping mode function





1. The machine is on
2. Press the sleeping button  to enter the operation for this function.

Sleeping function

1. The indoor fan changes to the low speed
2. In cooling function, each hour the temperature will raise by 1°C but changing range is only 2°C.
3. In heating function, each hour the temperature will decrease by 1°C but changing range is only 2°C.
4. In dehumidify function, the room temperature doesn't change.

To cancel the Sleeping mode function

You can cancel the sleeping mode function by selecting one way below:

1. Press the sleeping mode  set button again
2. Press the on/off button  or stop the machine automatically
3. Press the mode button  to change the mode
4. Press the fan speed button  to change the fan speed.


"e" button function

Press "e" button once the unit goes on "AUTO" function mode, fan speed. Press it again, the same function works. Press "ON/OFF" or "MODE" to cancel "e" function.

The night light function

The button ON/OFF has night light indication

NOTE

1. If the instruction of this remote controller has different from the object, please confirm by this instruction.
2. If this remote controller is used together with the floor standing type, please press  button \square 0 times then the mode is the current mode.
3. This remote controller doesn't set anion function.

Repair and Maintenance

Repair and Maintenance

Please cut off the electricity before repair and maintenance.

1. Check The Heat Conductor Level Periodically Or Before Starting Up.

- (1) Please dismount the exhaust cap on the insulating tank.
- (2) Take out the level meter; observe the liquid level mark on it.
- (3) Please contact with the local distributor or the solar air conditioner after sale service center in time if the liquid is insufficient. Don't open the machine by yourself.

2. Rinse the Air Filter

- 1) Dismount the filter
 - (1) Please open upwards the foreplate of the indoor unit.
 - (2) Extract downwards the two air filter screens.
 - 2) Rinse the air filter screen
 - (1) Clean the filter screen by a dust collector.
 - (2) Wash the filter screens with clean warm water below 40°C.
 - 3) Reinstall the filter screens after airing.
 - 4) Close the inlet grilles of the indoor unit.
- * Please rinse the filter screen every 15 days.

3. Clean the Outer Surface of the Solar Air Conditioner

- ① Wipe the outer surface with soft cloth and clean water.
- ② Wipe the outer surface with soft cloth and neutral abluent.

Attention:

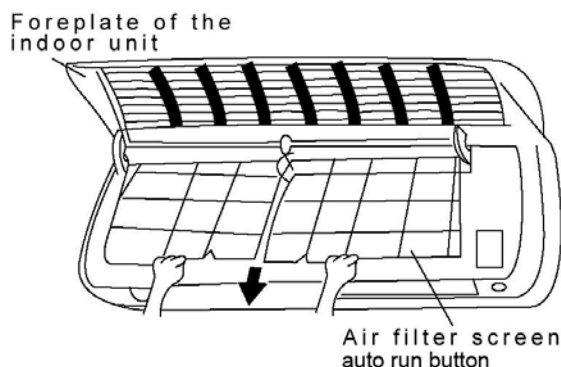
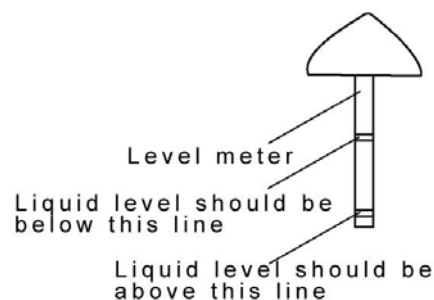
- ① Hot water above 40°C may cause deformation or discoloration to the solar air conditioner's surface.
- ② Volatile liquid such as thinner or gas, may damage the color of the solar air conditioner's surface.

4. Inspection during Season Changes

- 1) When the air conditioner has not operated for a long time
- ① Please switch on the air conditioner in cooling mode in a fine weather. The moisture inside can be removed if the machine keeps running for 6 to 8 hours.
- ② Please switch off the solar air conditioner by the remote controller, cut off the electricity, and take out the batteries in the remote controller.
- ③ Clean the outdoor unit, and wrap it with a plastic film cover.
- 2) Air conditioner inspection before starting up during season changes
- ① Take off the plastic protection cover of the outdoor unit.
- ② Check the power circuit and connecting wire to find the possible damages.
- ③ Make sure that no obstacle is in the outlets of the indoor unit or the outdoor unit.
- ④ The drainpipe is without a crack or bruise.
- ⑤ Rinse the filter screens and reinstall them. Switch on the air conditioner after the electricity is connected for above half an hour.

5. Attention

- a) Never place inflammables or explosive goods such as paint, shampoo, etc near the air conditioner.
- b) Never apply the air conditioner for other purposes such as blowing dry clothes and food preservation.
- c) Keep other heat sources away from the solar air conditioner.



- d) If the power wire or the connecting wire is damaged, please cut off the electricity and call after sale serviceman for repair in order to avoid an accident.
- e) Prepare an individual socket for the source wire of the air conditioner. The rated current of the fuse is 15A. The copper core section area of the electric power conductor is at least 2.5mm^2 .

Common Faults and Solutions

If your solar air conditioner cannot work normally, please check the following items before maintenance. If the faults cannot be solved, please contact our Repair Center or the distributor.

Phenomenon	Possible Reason	Solution
Out of operation	<ol style="list-style-type: none"> 1. Power failure 2. The leakage breaker tripping 3. The voltage is exceedingly low. 4. The air conditioner special fuse is burnt out. 5. The air conditioner is switched off as a result of misoperation of the timer 6. The air conditioner is on defrosting mode. 	<ol style="list-style-type: none"> 1. Re-connect the power supply 2. Contact the repair center 3. Consult the electrician or distributor. Buy a stabilizing voltage supply to ensure operation. (below 190v) 4. Change the fuse or consult the after service center. 5. Cancel the timing and reboot 6. Please wait for a moment.
Poor cooling and heating effect	<ol style="list-style-type: none"> 1. The filters are dirty or blocked 2. A heating source or many people are indoors 3. The temperature setting is incorrect. 4. The air inlet and air outlet of the indoor machine are blocked. 5. The window or the door is open. 6. Outdoor temperature is below 0°C while heating. 7. The liquid is insufficient in the insulated tank. 	<ol style="list-style-type: none"> 1. Clean filters to improve air flow fluency 2. Remove the heating source if possible. (Please pay attention to the air conditioner type when purchasing.) 3. Reset the temperature. 4. Remove the obstacles to ensure the airflow unhindered 5. Close the door and window to avoid cooling air or heating air from escaping. 6. Other subsidiary heating apparatuses can be applied simultaneously. 7. Contact the repair center when the liquid is in shortage.
Noise is aloud	<ol style="list-style-type: none"> 1. Water flow sound 2. Exhausting sound 3. Arrangement is instable. 4. The operation noise is obviously unusual. 	<ol style="list-style-type: none"> 1. Cooling fluid is flowing in the machine when the air conditioner switches on and switches off. Please wait for a moment. 2. This is the sound of the four way valve switching. Please wait for a moment. 3. Please contact the distributor 4. If any unusual noise is heard, please contact the repair center.
Compressor cannot work.	<ol style="list-style-type: none"> 1. The temperature setting is incorrect. 2. The LCD shows that the timing is 'on'. 3. For protection, the compressor will not work in the first 3 minutes. Please wait for a moment. 	<ol style="list-style-type: none"> 1. Reset the temperature. 2. Cancel the timing and then reboot. 3. It is a normal phenomenon. Please wait for a moment.
No immediate wind blows out during heating.	If the air conditioner blows when the evaporator is at a low temperature, the wind will be uncomfortable. Please wait till the evaporator is heated.	Please wait for a moment.
The compressor starts and stops frequently.	<ol style="list-style-type: none"> 1. The input voltage is exceedingly low. 2. Too many appliances are applied on the same line. The voltage for the air conditioner is insufficient. 3. The heat preservation capacity of the room 	<ol style="list-style-type: none"> 1. Check the electric power source (voltage and wire diameter). When the voltage is low, and the wire diameter is too short, please buy a power stabilizer and another power cord in time or consult the electrician or the distributor.

	is poor.	<ol style="list-style-type: none"> 2. Prepare a special power cord for the air conditioner. 3. Improve the heat preservation capacity of the room.
The displayer of remote controller is not clear or not working	<ol style="list-style-type: none"> 1. The battery is exhausted. 2. The anode and cathode are confused so as to the battery is in stalled wrongly. 	<ol style="list-style-type: none"> 1. Change another two of 7th alkaline batteries 2. Install the batteries rightly

Common Failures Diagnosis and Elimination

Non-failure Phenomena

1. When you turn on or turn off the solar air conditioner, sometimes you will hear sizzle sound, which is the flowing sound of the cooling agent, and is not a malfunction.
2. The solar air conditioner cannot restart at once after stops, though it is switched on. Within 3 minutes, the compressor will not run for the cooling, dehumidifying and heating.
3. Sometimes, the solar air conditioner inbreathes the bad smell so as to blow out the mawkish air. Under such condition, no failure is with the solar air conditioner. The filter screen needs cleaning.
4. When heating, the indoor machine and the outdoor machine may stop simultaneity, but the compressor still runs. It is on defrosting mode. he heating performance will continue after defrosting finished.
5. When heating, the outdoor machine may generate water flow or hydrosphere. This is a result of defrosting and thawing, and is not a malfunction.
6. After the heat pump solar air conditioner, which is applied in the Inner Mongolia, starts or stops, the air conditioner may beep. This is a result of self balanced pressure, and is not a malfunction.

Clew of Saving Energy:

Never jam the air inlet and the air outlet of the solar air conditioner. The air conditioner will not run normally and may be damaged if the outlets are obstructed. When cooling, please avoid direct sun radiation into the room. Please adopt the sun shield or curtains. If the wall and ceiling of the room is heated by sunshine, the period of cooling will be long. Please always keep the air filter screen clean. Filter screen jamming will greatly reduce the efficiency of the air conditioner. Keep the window, door and any openings closed, so as to avoid cooling air escaping.

Failure Display Status List

TKF(R)-26GW, TKF(R)-32GW,TKF(R)-35GW, “B” type

Failure Type	Display Status
Indoor Temperature Sensor Failure	E1
Indoor Coiler Transmitter Failure	E2
System Failure	E4

TKF(R)-60GW, TKF(R)-72GW, “D” type

TKF(R)-26GW, TKF(R)-32GW,TKF(R)-35GW, “HC” type

Failure Type	Display Status
Indoor Temperature Sensor Failure	Light shines 1time/8seconds

Indoor Coiler Transmitter Failure	Light shines 2times/8seconds
System Failure	Light shines 4times/8seconds

If any of the above-mentioned failures happen, please contact the distributor or the after service center.

Solar Air-conditioner Installment

The Installation Guide

Warning: Solar air conditioner must be installed by the professionals. Do not install by yourself according to this instruction booklet. In order to install it correctly, please first read the content of 'Installation Part'. The installation of this solar air conditioner should be in accordance with the stipulation of *GB17790 National Standard Room Air Conditioners Installation Criteria*s and the requirements of this instruction booklet.

After installation, the professional should give some advice to the user about how to use and maintain the air conditioner; ask the user to read carefully and to take care of the 'installation and application instruction'.

Installation Notice:

Installing the air conditioner in the following places may cause malfunctions. If this can not be avoided, please contact the after sale service center.

- ① Places where the air contains oil element (lubricating oil).
- ② Places where the air contains the sulfide gas (sulfide hot spring).
- ③ Places where the air contains the inflammable gas or the volatile is spread.
- ④ Seashore alkaline land.
- ⑤ Places where the high frequency equipments are arranged, such as the wireless apparatus, the welding apparatus, and the medical equipment.
- ⑥ Special surroundings.

Electrical work

Electrical work should conform to the corresponding stipulations of the *GB17790 National Standard Room Air Conditioners Installation Criteria*s

⊙ Electric appliance security requirements during the first installation

1. If the user's electricity environment is provided with serious security hidden danger, the installer should refuse to install and explain clearly. Only after the security hidden danger is removed, the installation can be continued.

2. Fluctuation scope of power line voltage is usually between $\pm 10\%$, if the voltage is not in this scope, please take measures to regulate it.

3. A leak-protector and a master switch should be provided on the line. The fuse is forbidden to be replaced by the copper wire and other wires. Please select the appropriate fuse according to the maximum of the electric power consumption, which comprises 1.5 to 3 times of the maximum current of the solar air conditioner and the current of other electric appliances.

4. The power cord should be provided with effective ground wire. If not, the installer should refuse to install and clearly explain.

5. The power source must be supplied only for the solar air conditioner and should satisfy following items.

Form 5. Comparison of the Standards of Electric Conductor Cross Section Area (Diameter of Wire), Power Switch, Fuse and Load Current

Special power distribution equipment and electric wire for solar air conditioner			Power distribution equipment and electric wire for the power bus		
Air conditioner's maximum current (A)	Electric conductor's cross-sectional area(mm ²)	Standard spec (A) of the socket or power of the switch /fuse.	Circuit's maximum current×(1.5 to 3 times) (A)	Electric conductor's cross sectional area(mm ²)	Standard spec (A) of the power switch / the fuse

≦ 10	1 or 1.5	16/16	≦ 16	1.5~4	32/25
≦ 16	1.5 or 2.5	32/25	≦ 25	2.5~4	63/50
≦ 25	2.5 or 4	63/50	≦ 32	4~10	63/50
≦ 32	4 or 6	63/50	≦ 40	6~16	100/80
			≦ 63	10~25	125/125

Notice: The maximal electric current of the solar air conditioner refers to the maximal input electric current, which is printed on the brand of the indoor unit. The maximal electric current of the circuit refers to the total summation of the maximal electric current, which comprises the maximal electric current of the solar air-conditioner and the maximal electric current of other appliance.



The electric security requirement of installation of solar air conditioner

1. Power cord of indoor and outdoor units cannot adopt polyvinyl chloride, and must adopt chloroprene rubber wires (including high-tension signal wires). It is forbidden to lengthen or shorten the wires by yourself. The exceedingly long wire of electric source should be folded as large round curves. It is strictly forbidden to wind wires into small circles.

2. The ground wire must adopt yellow and green wires with adequate wire size. The ground wire is strictly prohibited to connect to pipe of tap water, pipe of coal gas, zero line of electric source, and overhead ground wire.

3. When you connect wires, please refer to the electric circuit diagram in the machine and ensure everything is correct.

Please install the air conditioner at a place, which is provided with following characteristics.

1) Indoor Unit

- ① Indoor unit should be installed upon a firm vibrationless wall.
- ② Entrance and vent are supposed to be expedited. The hot wind and the cool wind are supposed to should blow toward all around the room.
- ③ Indoor unit should be installed where it is convenient to connect with the outdoor unit.
- ④ Indoor unit Installation should avoid direct solar radiation.
- ⑤ Indoor unit should be installed where drainage is convenient.
- ⑥ Indoor unit Installation should consider about future maintenance. The filter screen should be dismountable.
- ⑦ Indoor unit Installation should ensure the spaces which are shown in the following picture.

2) Outdoor Unit

* Outdoor unit should be installed on the solid foundation, because the infirm foundation will increase noise and libration.

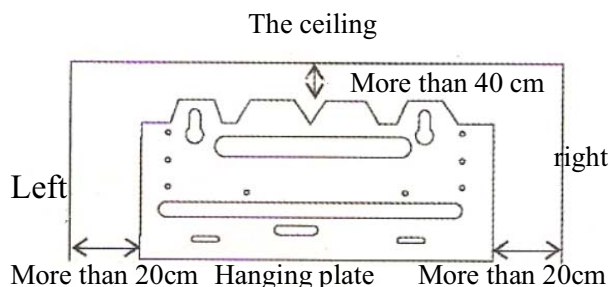
* Please ensure that no barrier blocks the vent.

* At the seaside, please do not install the outdoor unit at a high altitude where the sea wind is more forceful. To ensure the fan work normally, the solar air conditioner should be arranged tightly upon the wall. A baffle is to be adopted.

* Preventing wind blows to the inside of solar air conditioner, epically in places where the wind is particularly strong.

* Any barriers, which may block spreading heat, should be removed.

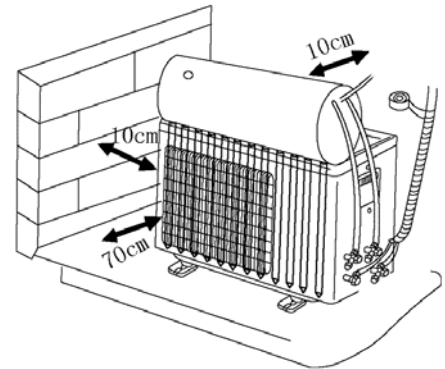
* If you adopt hanging installation, the wall should be composed of solid brick, concrete, or other equally firm structure. Otherwise, please reinforce, stabilize, and secure the solar air conditioner installation. Slip, overturn and drop should be avoided.



* Design and manufacture of erecting frame should make full consideration of bearing intension of material and structure, corrosion resistance, and convenience for installation and maintenance. The intension of outdoor erecting frame should be able to endure the weight above 180kg. Steel components must be joined firmly, accept anticorrosive treatment, and satisfy the standards of the *GB17790-1999 National Standard Room Air Conditioners Installation Criteria*

* The foot screw of outdoor unit should be fixed by the M8 or M10 bolt.

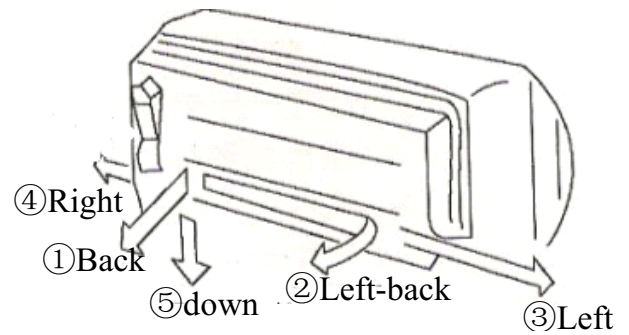
- ① Outdoor unit should be installed on a solid foundation.
- ② If the outdoor unit quivers on the concrete foundation, please lay an aseismatic rubber cushion.
- ③ The unit should install vertically and horizontally, the gradient is below 5°.
- ④ Outdoor unit installation should avoid places which some water drops spatter upon directly, and which is near thermal spring with sulphur and nitrogen gas.
- ⑤ Indoor unit installation should ensure the space distance shown on the right picture.



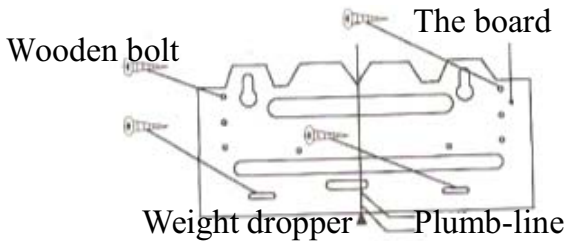
Installation of the Solar Air Conditioner

2. Indoor Unit Installation

1) As shown in the following picture, pipelines are connected in five directions with the indoor unit. When the pipelines are connected in ③ or ④ direction, please adopt the saw to open a preformed groove on the panel. When the pipelines are connected in ⑤ direction, please adopt the saw to open a preformed groove under the panel.



2) Adopt five 5Y51 size wooden bolts to fix the board on the wall

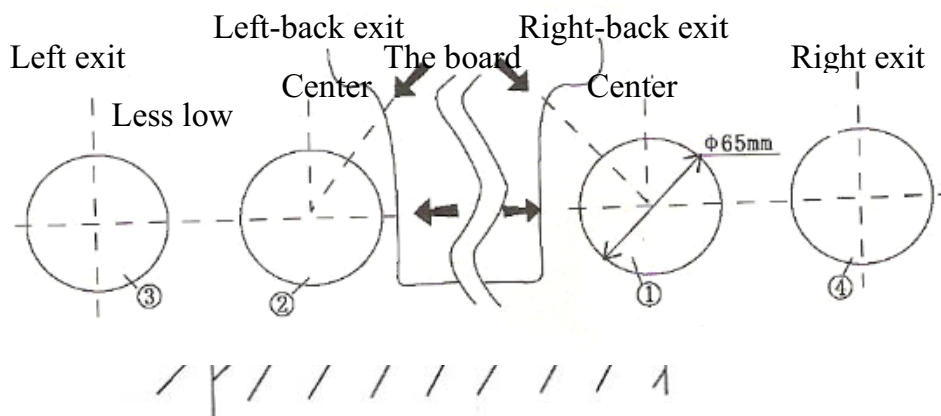


Notice:

- * If indoor unit is installed on the concrete wall, please adopt bulgy bolt.
- * When you install the board, you are supposed to use weight dropper to test the board whether it is horizontal or vertical.
- * The installed board should be able to bear 50 kg.

* Ensure that the board is firm and solid.

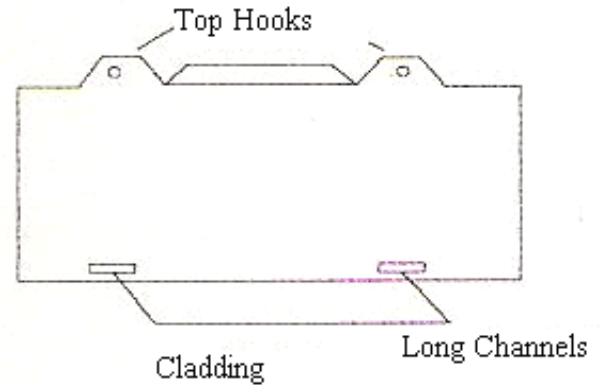
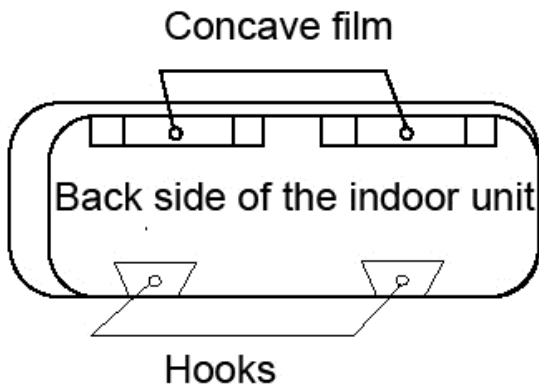
3) Based on the junction direction of the pipeline (Please consult the following picture), a hole which is provided with the diameter of 65 mm, is drilled in the corresponding place on the wall. Then the wall bushing and the tube cap are placed into the hole. If the pipeline is connected in the ③ or ④ direction, the hole in the ③ or ④ should be opened a little lower than the height of the hole in the ① or ②. The aim is to ensure the condensate flowing out of the pipeline conveniently.



Installation of the Solar Air Conditioner

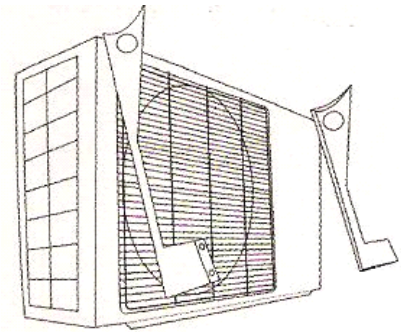
4) Please install the pipe of the indoor unit according to the direction of the wall hole; the outflow pipe, the cable line, and the indoor unit should be bundled by an adhesive tape. The outflow pipe is below the other two.

5) Lead the affixed pipes going through the wall bushing, and hang up the indoor unit on via the top hooks, the bottom long channels of the indoor unit is shown in the following picture.

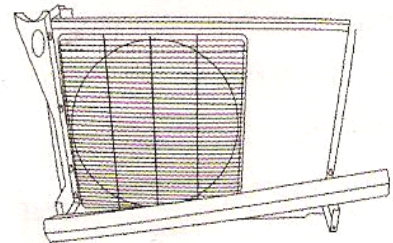


3. Installation of the solar collector A Vacuum tube type

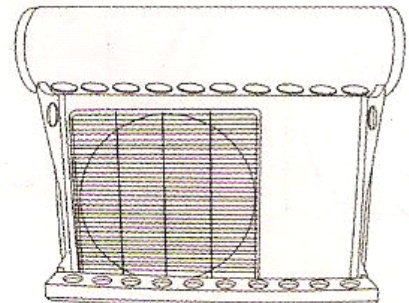
1) Install the insulating tank supports respectively on the panel of the outdoor unit, and then fix them with bolts. (As shown in the following picture)



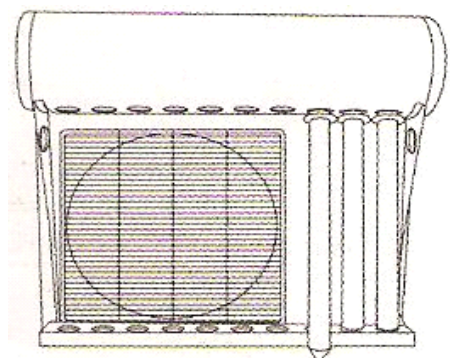
2) Install the vacuum tube bracket on the lower part of the insulating tank supports, and then fix it with bolts. (As shown in the following picture)



3) Install the insulating tank on upper part of the insulating tank supports. (As shown in the following picture)



4) Insert the vacuum tubes into the insulating tank orderly, and fix the bottom of the vacuum tube in the bracket holes. (As shown in the following picture)

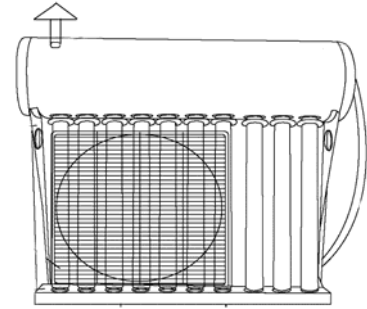


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- a. put the supporting bowl on the hole of lower bracket
- b. put the black soft rubber ring on the open end of the tube
- c. moisture the opening end with detergent or soap
- d. screw it into the tank slowly. When screwing, please don't upturn the silicon gel ring on the tank.

5) Air vent installation:

moisture the small end with detergent or soap and screw it into the tank



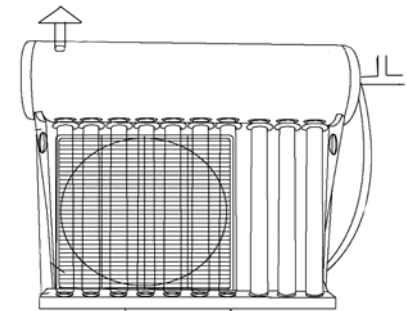
6) Tee joint (condensing water joint) installation:

a. moisture the small end with detergent and screw it into the tank

b. fill water into the tank from this joint till water comes out from its hole. (water also can be filled from the air vent) Note: before filling water, please make sure the temperature inside tube is not high, otherwise will cause tube broken because of the cold water.

c. connect it with the PVC pipe whose other end is connecting to indoor unit, for condensing water supply to the tank.

d. connect the other end for drain water



B Flat plate type collector (2 ways for your choice: A/B)

1) Adjust the distance between outdoor unit and the panel. (piping is only 1m) Make sure they are able to connect by pipes later.

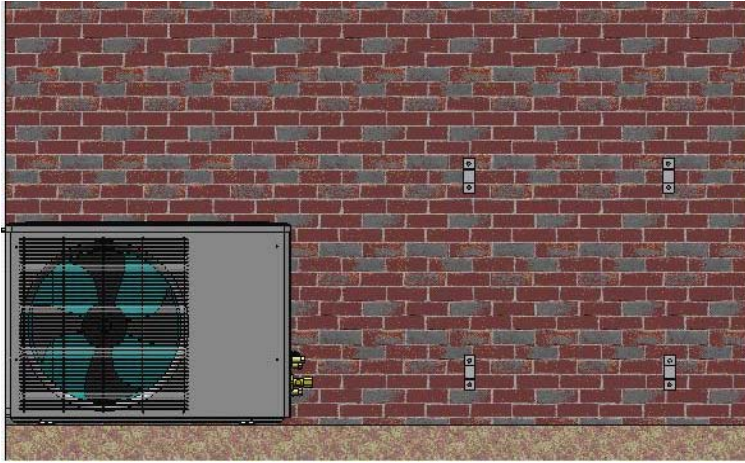
2) Screw the two brackets on the bottom to the wall. Adjust the position of the upper 2 brackets; screw them to the wall too

3) Put the panel inside the brackets from left/right side

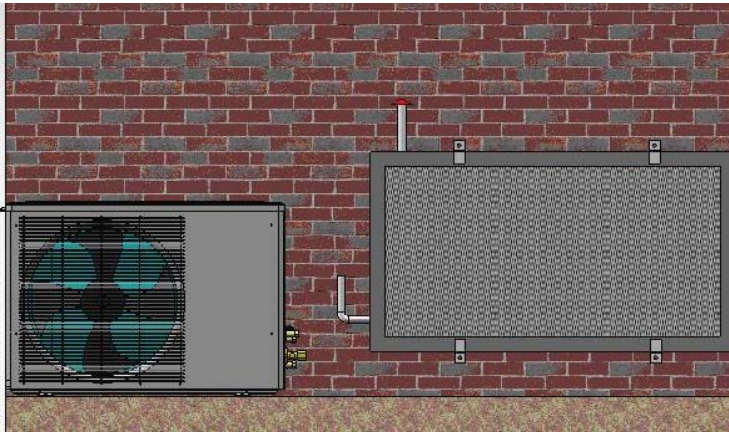
4) Link the short PP pipe to the panel, input water from it till water comes out from the small hole on it. Then put the air vent cap on it.

5) Connect the PVC pipe to the PP pipe, which is from indoor unit condensation

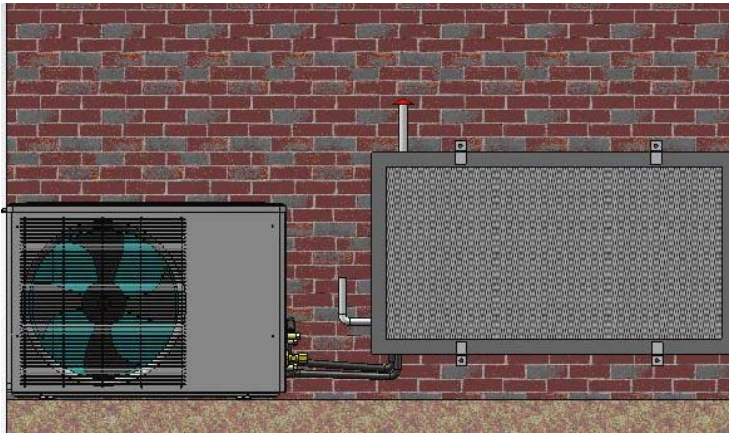
6) Connect the panel to the outdoor unit by 2 cooper pipes (1m)



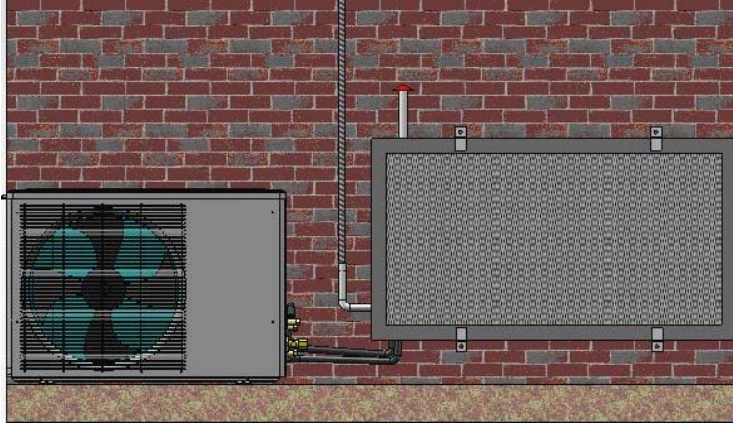
A-1



A-2



A-3



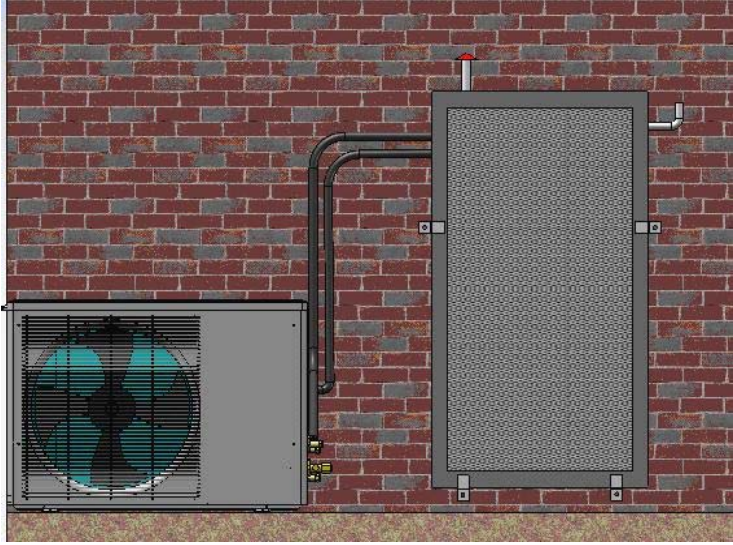
A-4



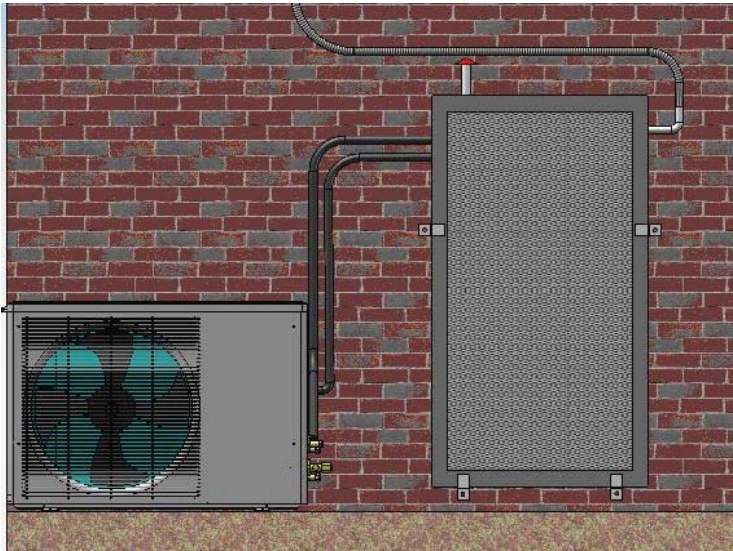
B-1



B-2



B-3

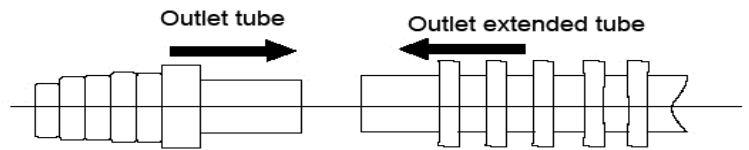


B-4

Solar Air Conditioner Installation

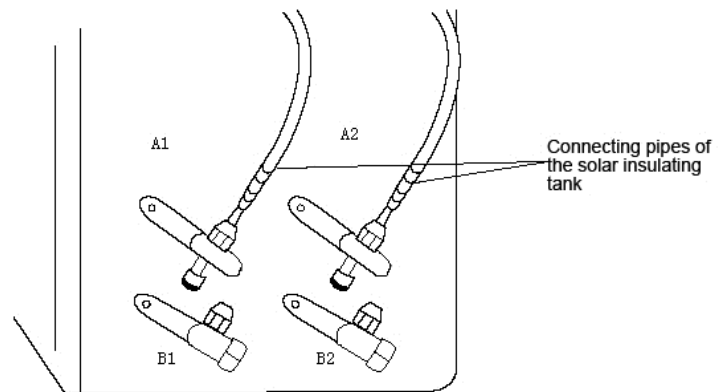
4. Tube Butt

1) Connect one end of the outflow extended pipe to the outflow pipe head of the indoor unit. (As shown in the following picture)

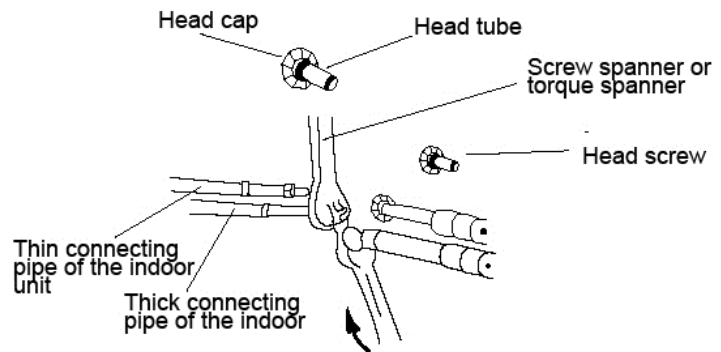


2) Release the nitrogen filled in the radiator of the indoor unit when the air conditioner leaves the factory. Dismount the cover cap of the thick connecting pipe and the cover cap of the thin connecting pipe of the radiator.

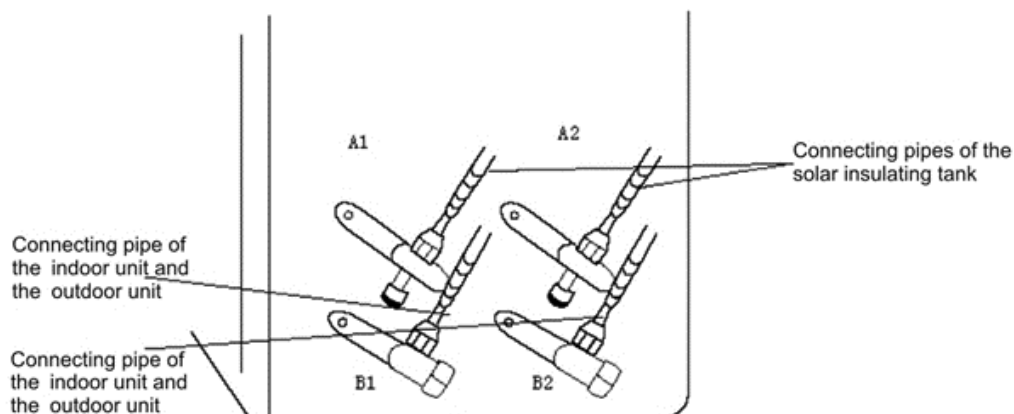
3) Take out the two connecting pipes carefully, dismount the cover caps of the pipes and connect them to the stop valve A1 and A2 orderly. (As shown in the following picture)



4) Dismount the head bolts of the two connecting pipes, and tighten the screws of the low pressure and the high pressure connecting pipes (As shown in the following picture)



5) Dismount the head bolts on the stop valves of the low pressure and the high pressure connecting pipes, screw one end of the thick connecting pipe and one end of the thin connecting pipe on the stop valves of the low pressure and the high pressure connecting pipes, and tighten the screws of the thick and thin connecting pipes by a spanner. (As shown in the following picture)



Solar Air Conditioner Installation

5. Empty the air in the insulating tank and indoor unit completely

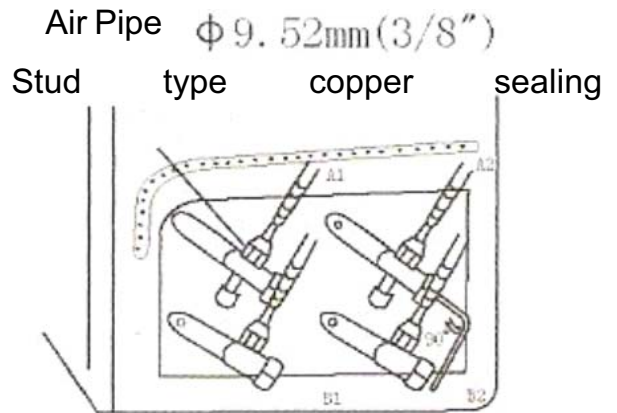
If air, water or other impurity, which is mixed in the solar air conditioner system, it will lead to the working current exceedingly high, the capillary blocked, etc which will affect the performance of the air conditioner. As a result, please eliminate air, water and other impurity in the cooling pipe of insulated tank and side tube of indoor unit.

Empty the insulating tank

Please follow the instructions to eliminate the air in the insulating tank.

(As shown in the picture)

- ① Please adopt the wrench to dismount the A1 and the A2 cut-off valve bonnets of the outdoor unit.
- ② Please adopt the wrench to loosen the stud type copper sealing appurtenance half a circle upon the air pipe of A1 cut-off valve.
- ③ Please adopt the inner hexagonal wrench to loosen the center of A2 cut-off valve for 90°. After 7 to 11 seconds, fasten up the A2 cut-off valve. Air is exhausted from A1 air stud type copper sealing appurtenance. When there is no air escaping, according to the moment from 20 to 25N·M, please fasten the stud type copper sealing appurtenance.
- ④ Please adopt the inner hexagonal wrench to open the A1 and A2 cut-off valve cores.
- ⑤ Please fasten A1 and A2 cut-off valve bonnets.
- ⑥ Please adopt soapy water or halogen detection instrument to detect leakage. If you find leakage, you need to fasten A1 and A2 cut-off valve bonnet. And then you can adopt refrigerant air from outside of the system to empty air.



Empty the connecting pipe of the indoor unit

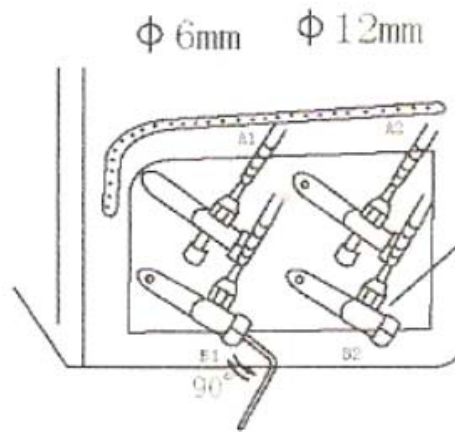
Please follow the instruction to eliminate the air in the insulating tank.

(As shown in the picture)

- ① Please adopt the wrench to dismount the B1 and the B2 cut-off valve bonnets of the outdoor unit
- ② Please adopt the wrench to loosen the stud type copper sealing appurtenance half a circle upon the air pipe of B2 cut-off valve.
- ③ Please adopt the inner hexagonal wrench to loosen the center of B1 cut-off valve for 90°. After 7 to 11 seconds, fasten up the B1 cut-off valve. Air is exhausted from B2 air stud type copper sealing appurtenance. When there is no air escaping, according to the moment from 20 to 25N·M, please fasten the stud type copper sealing appurtenance.
- ④ Please adopt inner hexagonal wrench to open the of B1 and B2 cut-off valve cores.
- ⑤ Please fasten B1 and B2 cut-off valve bonnets.
- ⑥ Please adopt soapy water or halogen detection instrument to detect leakage. If you find leakage, you need to fasten B1 and B2 cut-off valve bonnets. And then you can adopt refrigerant gas from outside of the system to empty air.

Liquid Pipe

Air Pipe



Study type copper sealing appurtenance

Solar Air Conditioner Installation

The length of piping and freon

① When the pipe line is extended, discharge the air in the connecting pipe with refrigerant gas, which is from the outside of the system. And then, discharge the redundant refrigerant in degassing method.

② Installation height of the indoor unit and the outdoor unit should be below 5 m.

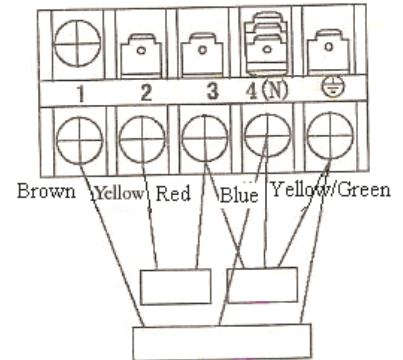
③ The length of the pipe, which connects the indoor unit and the outdoor unit, should be less than 8m and TKF(R)-72GW shall be less than 10m.

④ The refrigerant filling amount of the solar air conditioner should be adjusted according to the length of the pipe (L). The refrigerant increment $G = (L - \text{length of the standard pipe}) * N$ (g/m). After Freon added, please check the inhaling maximum working pressure with the parameters.

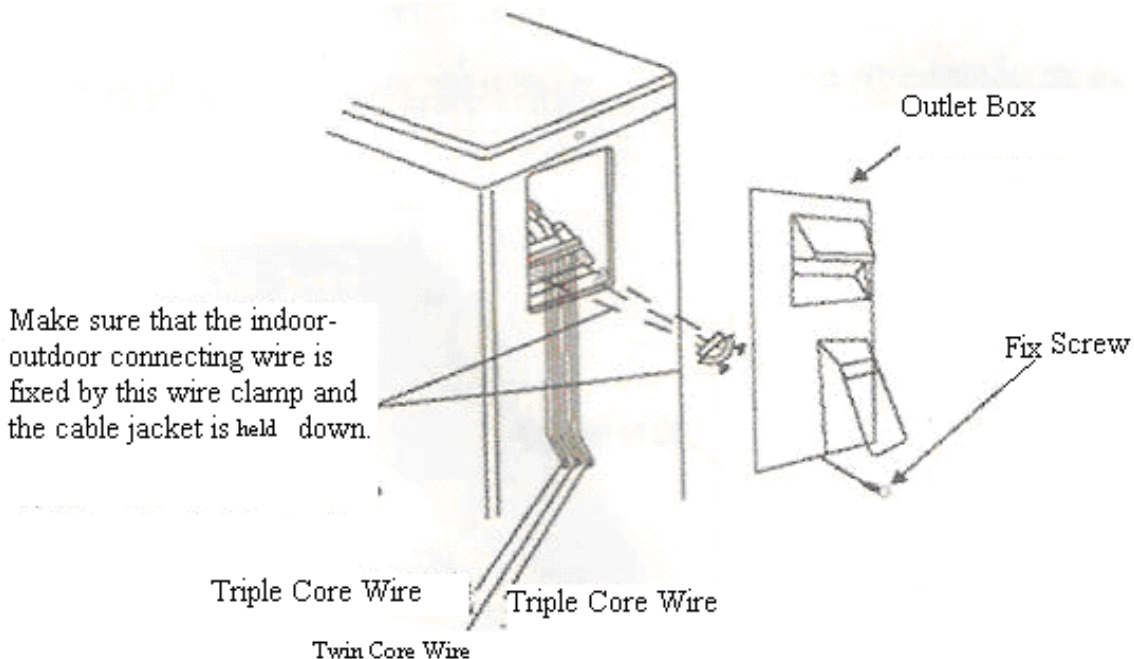
Model	N
TKF(R)-26GW	35g
TKF(R)-32GW	45g
TKF(R)-35GW	50g
TKF(R)-60GW	70g
TKF(R)-72GW	100g

Connection of the Power Supply of the Outdoor Units

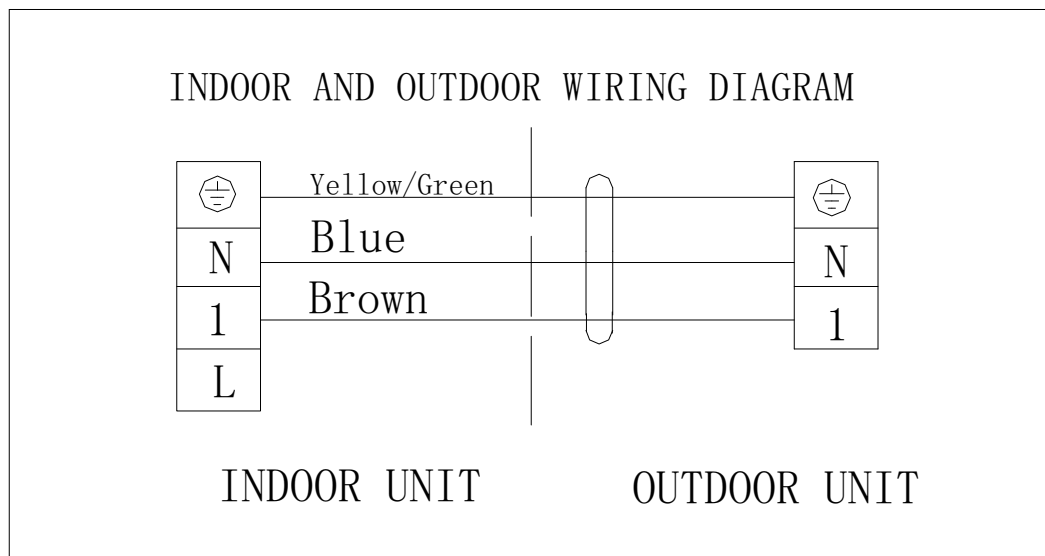
Dismount the outlet box of the outdoor unit; connect the triple core wire and the twin core wire with the five jacks of the connecting terminals in accordance with their colors. As shown in the following form, the connection method of the triple core wire of the subsidiary electric heating pipe on the insulating barrel is that the blue wire is connected with terminal board 4 (N), the red wire is connected with terminal board 3; the yellow/green wires are connected with terminal board grounded.



The Terminal Board Base on the Outdoor Units	1	2	3	4(N)	
The Color of Wire Connected With the Indoor Unit	Brown	Yellow	Red	Blue	Yellow/Green
Connecting with the Auxiliary Electric Heating Tank			Red	Blue	Yellow/Green

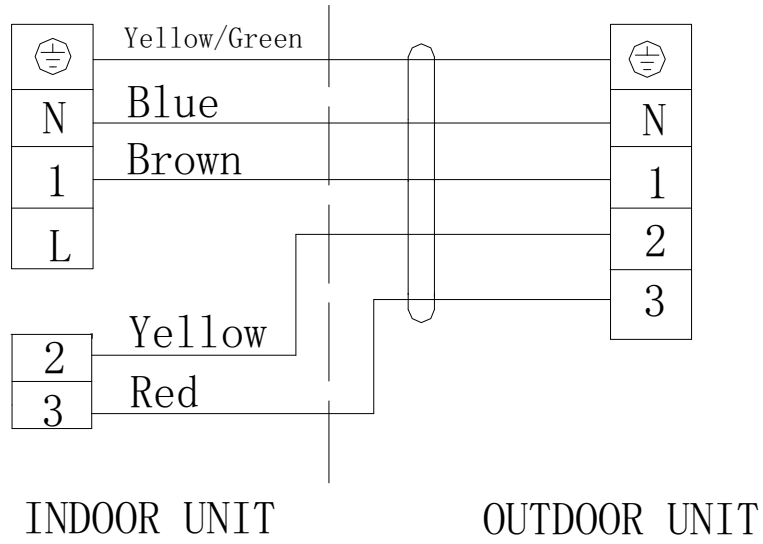


Simple Principle Circuit Diagram of the Solar Air Conditioner

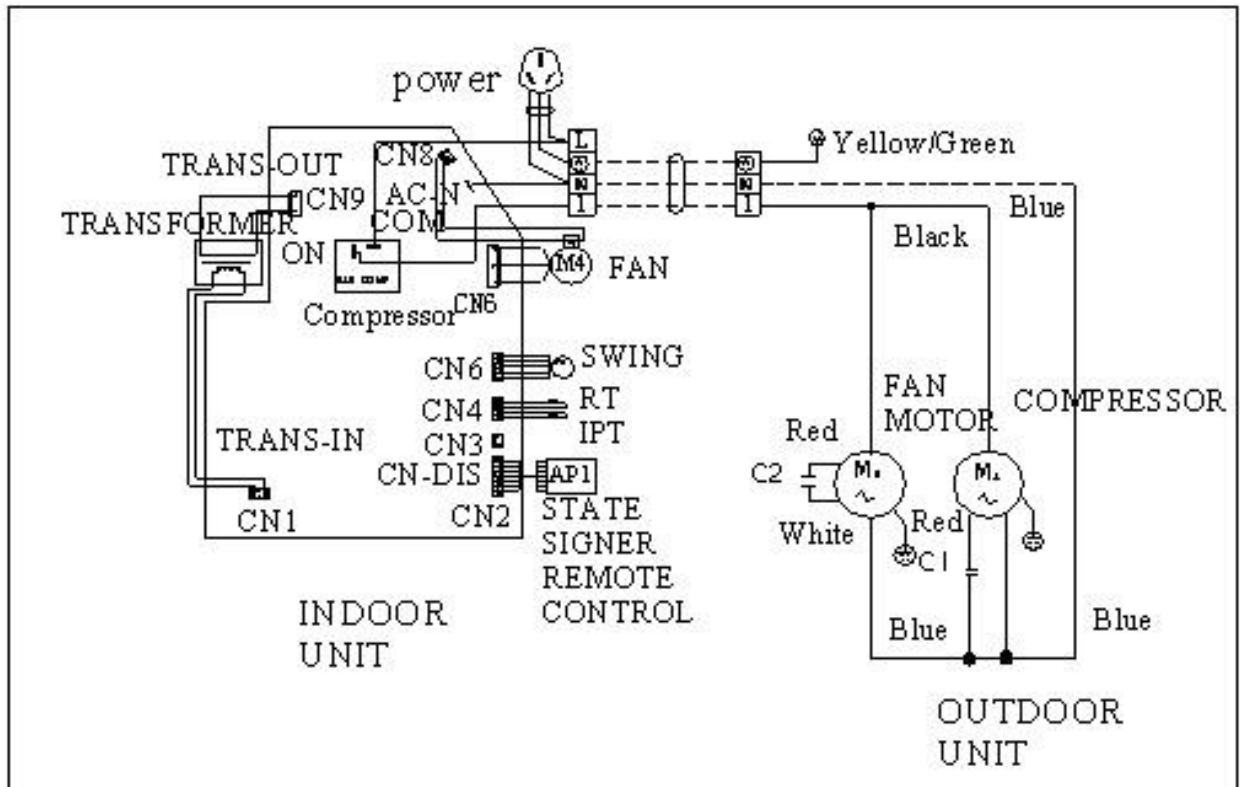


TKF-26GW TKF-32GW TKF-35GW
TKF-60GW TKF-72GW

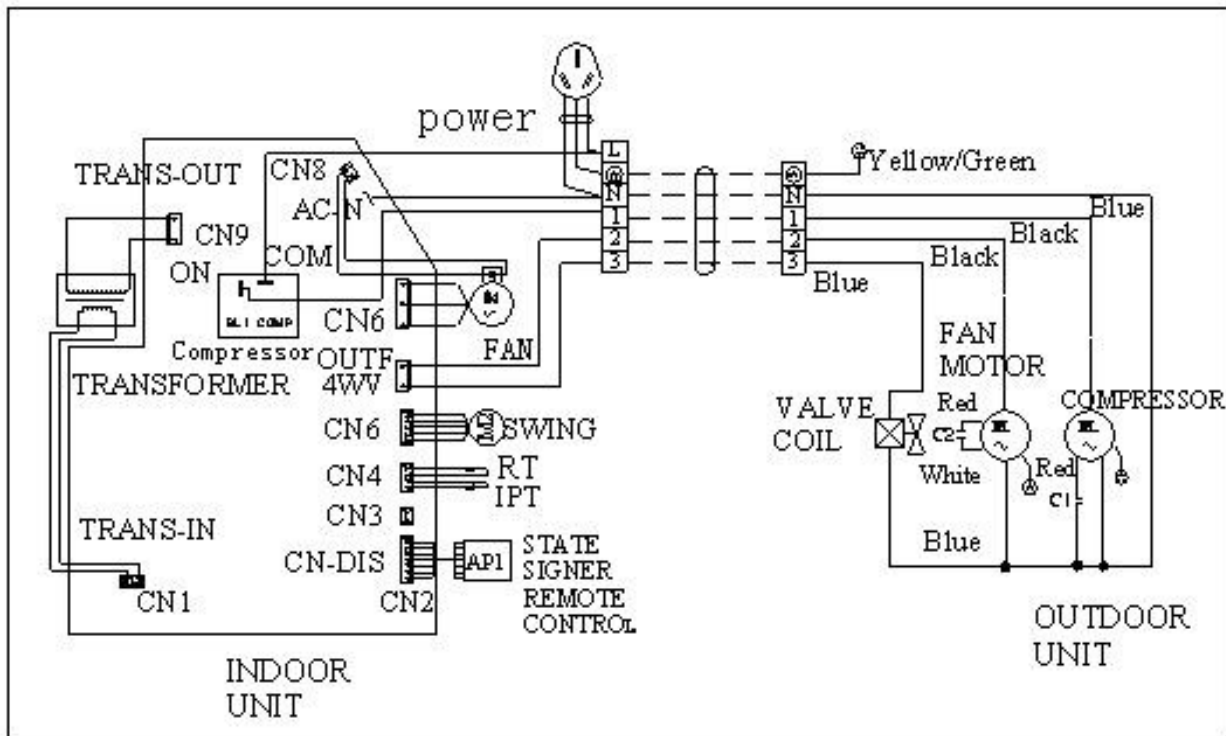
INDOOR AND OUTDOOR WIRING DIAGRAM



TKFR-26GW TKFR-32GW TKFR-35GW
TKFR-60GW TKFR-72GW



TKF-26GW TKF-32GW TKF-35GW
 TKF-60GW TKF-72GW



TKFR-26GW TKFR-32GW TKFR-35GW
TKFR-60GW TKFR-72GW

Packing List

Solar Collector Packing List

1. Vacuum Tube Type

No.	Name	Quantity
1	Insulated Tank	1pc
2	Vacuum Tube	10pcs (TKF(R)-26/32/35GW) 11pcs (TKF(R)-60/72GW)
3	Insulated Tank Support	1pc
4	Collector Tube Bracket	1pc
5	Ventilation Cap Groupware	1pc
6	Tube supporting bowl	10 or 11pcs
7	Decoration ring	10 or 11pcs

8	Connecting pipe	2pcs
9	Plastic Tee joint	1pc
10	Pvc pipe	1pc

2. Flat Plate Type

No.	Name	Quantity
1	collector	1pc
2	Connecting pipe	2pcs
3	Brackets	4pc
4	Pvc pipe	1pc
5	Ventilation Cap Groupware	1pc
6	Plastic water outlet pipe	1pc

Indoor Unit Packing List

No.	Name	Quantity
1	Indoor Unit	1pc
2	Application and Installation manual	1pc
3	Remote Controller	1pc
4	Standard AAA Battery	2pc
5	bracket	1pc
50g6	Rubber mud	1pc
7	Expansion screw	5pcs

8	Screw	5pcs
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Outdoor Unit Packing List

TKF(R)-26GW, TKF(R)-32GW, TKF(R)-35GW, TKF(R)-60GW,

No.	Name	Spec	Quantity
1	Outdoor Unit	/	1
2	Low Voltage Connecting Pipe	TP2M Φ 12.7*0.7*3600mm	1
3	High Voltage Connecting Pipe	TP2M Φ 6.35*0.7*3600mm	1
4	Plastic Belting	T8*20m	2
5	Penetration	ABS Φ 60mm	1
6	draining pipe	PVC	1
7	Joint #6 (cool&heat type)	PVC	1

TKF(R)-72GW

No.	Name	Spec	Quantity
1	Outdoor Unit	/	1
2	Low Voltage Connecting Pipe	TP2M Φ 15.88*1.0*4000mm	1
3	High Voltage Connecting Pipe	TP2M Φ 9.52*0.75*4000mm	1
4	Plastic Belting	T8*20m	2
5	Penetration	ABS Φ 60mm	1
6	draining pipe	PVC	1
7	Joint #6 (cool&heat type)	PVC	1