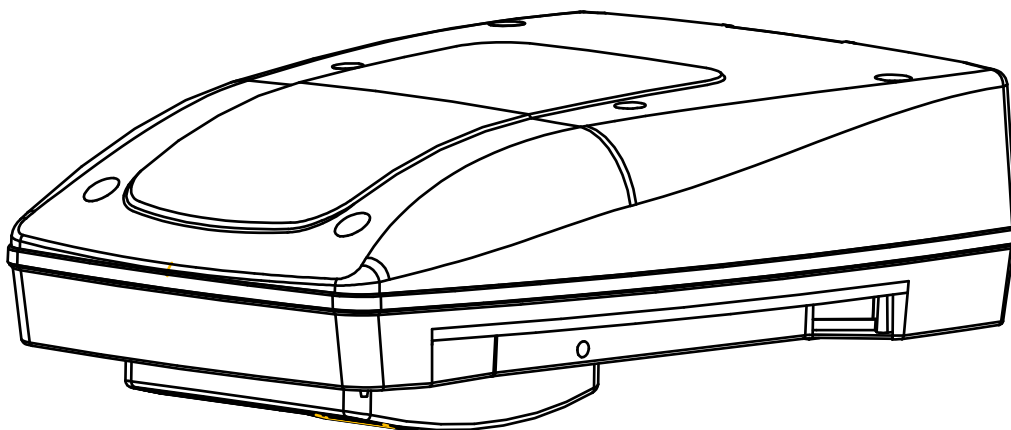




# **Operation and Installation Manual**

## **For Vehicle Air Conditioner**

Model: KL-5200



**Before installation and using this unit, please read it carefully.  
Keep this manual for future reference.**

Imported by

**KLIMACO BV The Netherlands**

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# 1 General information

## 1.1 Introduction

Thank you for purchasing the Klimaco 5200 air conditioner.

This unit has been designed and manufactured to be installed on to a vehicle (i.e. camping-cars, caravans, motor homes), improve the temperature conditions in vehicle. It supplies fresh and dehumidified air. Use to improve the air in your vehicle by providing cooling, dehumidifying, fan-only, and automatic operation mode through a very simple operation.

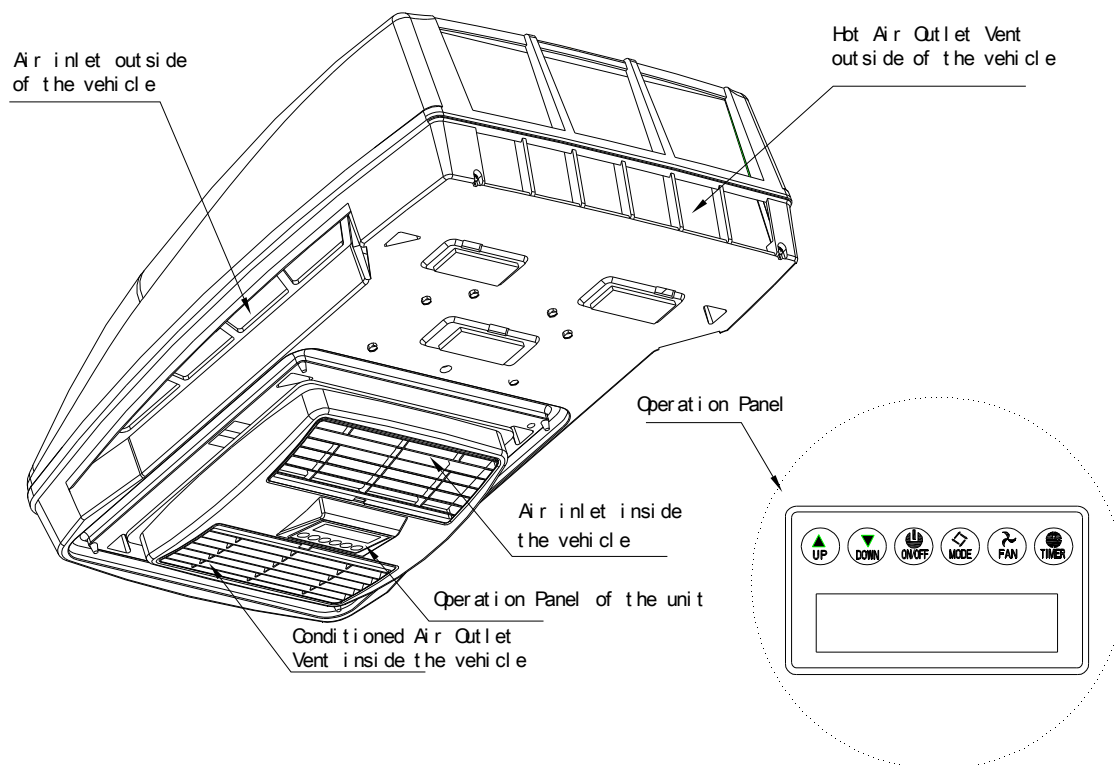
Please take the time to read this manual carefully, which will help you enjoy the happiness and comfort completely. And after reading, keep these manual in a safe place for future reference, and together with the unit if another person is to use it.

## 1.2 Description of the air conditioner

This air conditioner is composed of compressor, condenser, evaporator, fan-motor and refrigerant under pressure. According to the physical state of the refrigerant gas –i.e. liquid or gaseous, it heats or cools the components where it passes through.

Evaporator side fan forces the internal air through the cooled evaporator from where it comes out cooled down and dehumidified. This action, with the time pass, reduces the temperature inside the vehicle.

Please see the following figure as the reference to let you know about your unit.



## 1.3 How to use the air conditioner

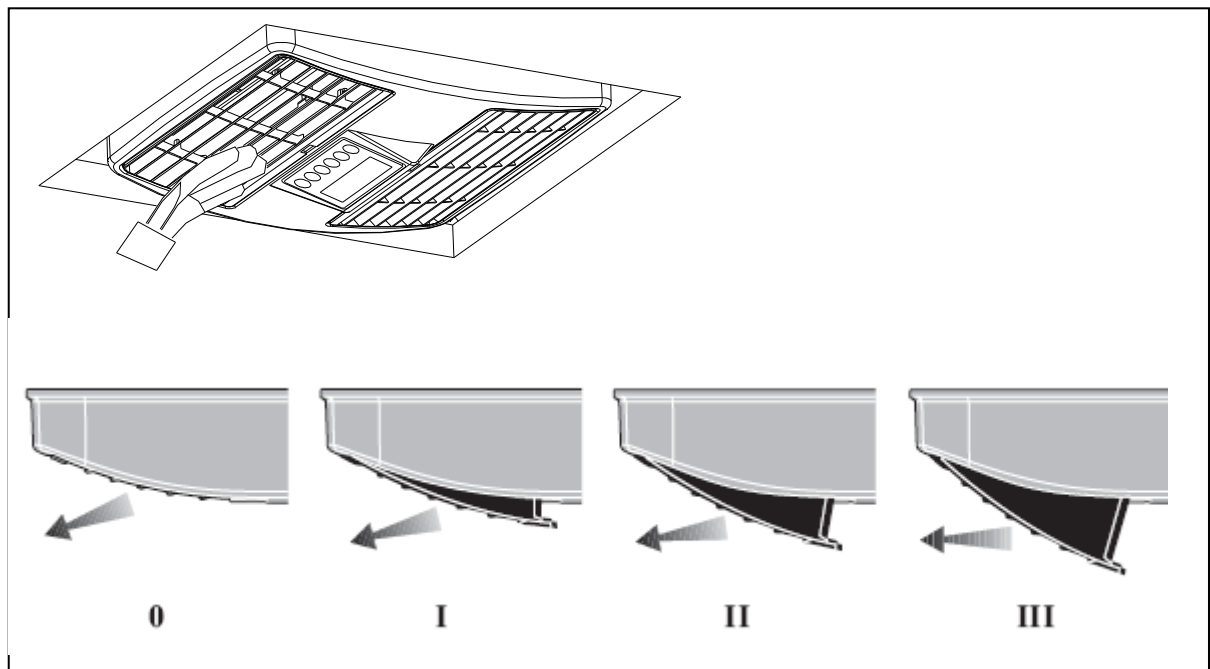
**Helpful hints:** The air conditioner performance can be improved by taking some simple methods.

- . Improve the thermal insulation of the vehicle by closing and opening and by covering any glassed surfaces with reflecting curtains.
- . Avoid opening doors and windows unnecessarily.
- . Select the most suitable temperature and speed.
- . Properly direct the air flaps.

To prevent troubles and minimize risk for people, please take following precautions:

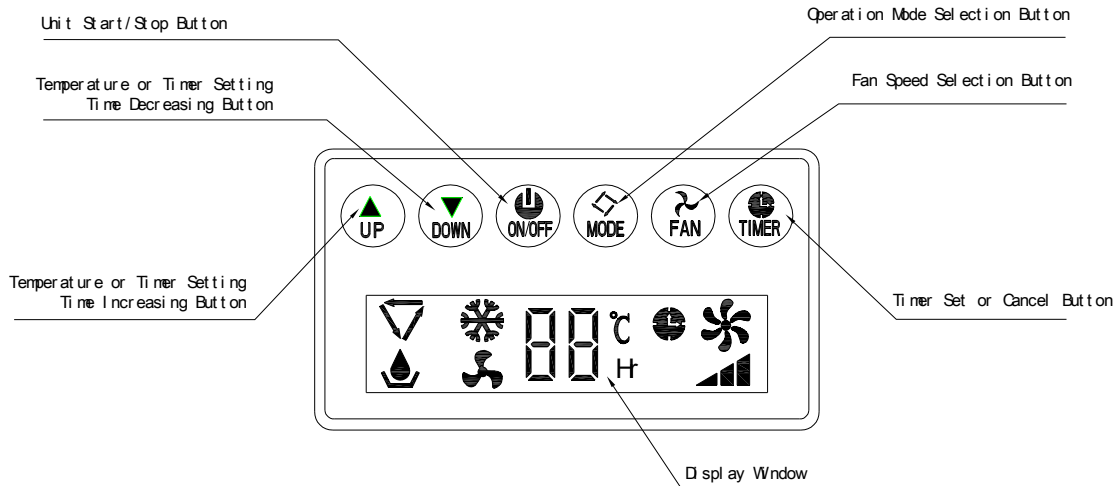
- . Always wait some minutes (at least 3 minutes) before attempting to turn the air conditioner on, after turning it off, to prevent damage to the compressor;
- . Do not obstruct the air inlets and outlets with cloths, paper or other objects;
- . Do not spray the air conditioner with water;
- . Do not introduce your hands or other objects into the openings;
- . Keep flammable substance away from the air conditioner.
- . Set the unit to maximum cooling and high fan initially, then adjust the unit to a comfortable setting.

### Adjusting the air direction:

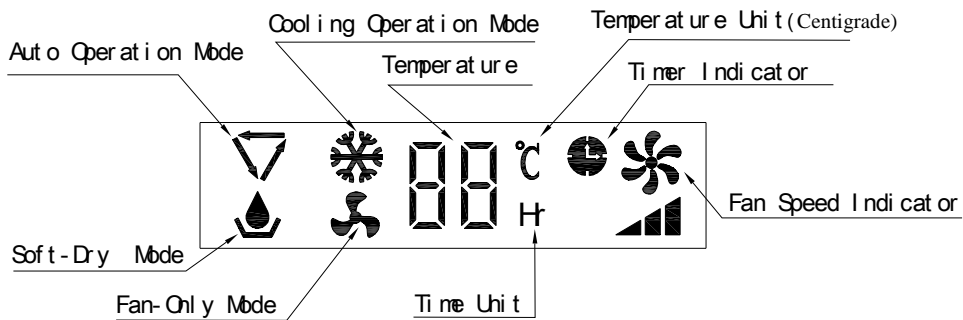


## 1.4 Description of the control

### Operation Panel



### Display Window:



1)  : On/Off Button: Use to Start or Stop the Unit

2)  : Operation Mode Selection Button

Use to select the operation mode: **Auto** Mode, **Fan-Only** Mode, **Soft-Dry** Mode, and **Cooling** Mode.


3)  : Fan Speed Selection Button

Use to Select the fan speed: High, Medium or Low speed.

4)  or  : Temperature or Time Changing Button

Use these two buttons to set to your desired temperature.

During the timer setting, the buttons are used to change the timer delay time.

5)  : Timer setting or Canceling Button

Use to set or cancel ON-TIMER or OFF-TIMER timer. When the unit is on, the unit can be set with OFF-Timer. And when the unit is off, the unit can be set with ON-Timer.


When the unit is on, press this Timer button, the temperature unit indicator “°C” will be off at once, and time unit indicator “Hr” will lit on at same time, and the temperature digit now change

to the time digit and flash. After 10 seconds of the TIMER setting, the Digit will also recover to display the temperature and the temperature unit indicator “°C” will be on again. If the unit has been set with the OFF-TIMER, then first press this button to check the timer delay time, second press in 10 seconds to cancel the OFF-TIMER setting.

When the unit is off, if the unit hasn't been set with ON-TIMER, then press this button, the unit enter Timer program. If the unit has been set with ON-TIMER, then press this button two times to cancel the ON-TIMER set.

## **Operation Procedure**

### **Cooling operation**


- 1) Turn on the unit by pressing the ON/OFF Button.
- 2) Press  Mode Selection Button until signal “❄️” appears in the display window
- 3) Set the temperature to your desired temperature with Temperature changing Button.

The temperature ranges: 16°C-32 °C,

Recommend: 28°C


- 4) Select the fan speed by pressing the Fan Button.

### **Dehumidifying operation**


- 1) Turn on the unit by pressing the ON/OFF Button on the control panel.
- 2) Press  Mode Selection Button until the signal “💧” appears in the display window.

Keep the glass windows and the doors closed to aid the effectiveness of the unit in removing the moisture from the vehicle.

### **Fan-only Operation**

- 1) Turn on the unit by pressing the ON/OFF Button on the control panel.
- 2) Press  Mode Selection Button until signal “🌀” appears in the display window.
- 3) Select the fan speed by pressing the Fan Speed Button.

### **Auto Operation**

- 1) Turn on the unit by pressing the ON/OFF Button on the control panel.
- 2) Press  Mode Selection Button until the signal “▽” appears in

the display window.

- 3) Select the fan speed by using FAN button.

During the AUTO mode, the unit will be at Fan-only mode when the actual temperature inside vehicle is below 27°C. It operates at cooling mode when the actual temperature inside the vehicle is above 27°C.



## Timer Setting Procedure

### ON-TIMER program setting

How to set

When the unit is off, you can set to let the unit start after some hours.

- 1) Press the TIMER button on the control panel. Now the digit in the display window change to the Timer delay time and flash, the temperature unit “°C” is off and time unit “Hr” change to be on. And the Timer Indicator in the display window will lit on.

- 2) Press “” or “” button to change the Timer delay time to your desired number, after 10 seconds of no any press the button, the last flashing digit will be remembered by the control. And the digit will recover to actual temperature display, but Timer Indicator in display window will always be on until the timer delay time change to zero and unit start, which means that the unit is set with Timer.

How to cancel



When the unit is set with ON-TIMER while off-state, press TIMER button two times to cancel it. And the Timer Indicator in the display window will also turn off.

### OFF-TIMER program setting

How to set

When the unit is on, after set with the OFF-TIMER, the unit will stop after your set delay time.

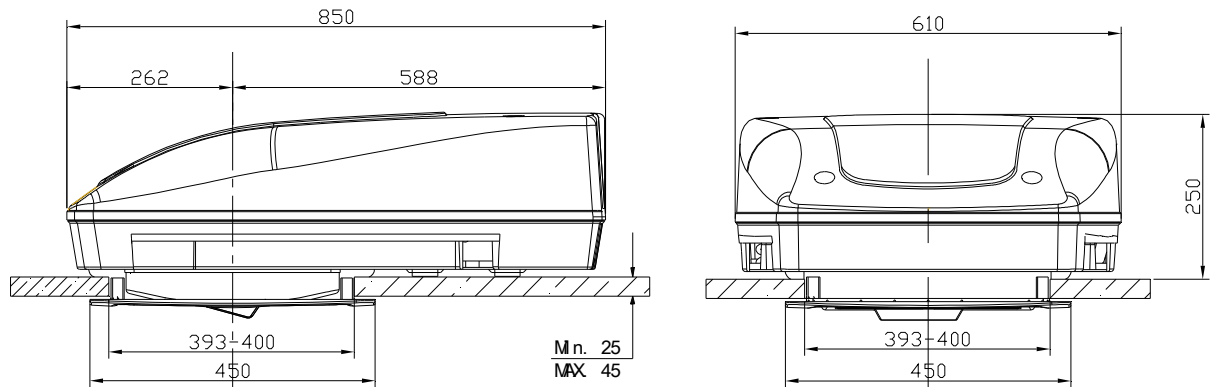
- 1) Press the TIMER button on the control panel. Now the digit in the display window change to the Timer delay time and flash, the temperature unit “°C” is off and time unit “Hr” change to be on, and the Timer Indicator on the control panel will lit on.

- 2) Press “” or “” button to change the Timer delay time to your desired number, after 10 seconds of no any press the button, the last flashing digit will be remembered by the control. And the digit will recover to actual temperature display, but Timer Indicator in display window will always be on until the timer delay time change to zero and unit stop running, which means that the unit is set with OFF-Timer.

## How to cancel

When the unit is set with OFF-TIMER while the unit is on, first press TIMER button, then the digit will change to the Time number and the unit “Hr” will lit on, then second press TIMER button, now the OFF-TIMER setting is canceled. And the Timer Indicator on the control panel will turn off, and the digit and it’s unit recover to temperature display.

## 1.5 Technical Specification



Item	KQ-15
Electrical Power Supply	230Vac/50Hz
Cooling Capacity(W) [Btu]	1500 [5200]
Rated Power Consumption During Cooling	560W
Full Load(A)	3.0
Refrigeration & Charged Quantity	R407C 420g
Cooling Side Fan Speed	3 Speed
Airflow Circulation Volume H/M/L	200/180/160m <sup>3</sup> /h
Dimension(LxWxH)(mm)	850x610x250
Net. Weight	Appro. 24Kg
Recommended Generator Output(KW)	3
***Heating Capacity(W)***	600
Fuse Size(A)	4.0

## 1.6 Ordinary Maintenance



Make sure power supply is disconnected from switched off and the plug is pulled out of the power outlet before performing any maintenance activities.

Do not pour liquids into the unit.

Take special precaution to avoid the sharp cutting



edges of some parts.

### **Clean or replace filter**

If the air filter is blocked with a lot of dust, the airflow volume will reduce and the cooling effect will lower. It is recommended to clean the filter once every one month or as needed.

- a) Pull and rotate down the air inlet panel completely, then take down the filter on the back of this panel.
- b) Wash the air filter by immersing it gently into warm (about 40°C) water with a neutral detergent. Rinse the filter and dry it thoroughly in a shaded place.
- c) Refit the filter back to the filter compartment after it is thoroughly dried.
- d) If the filter is torn or unusable, order a new filter by calling the contact section of this manual.

### **External plastic parts**

- a) Periodically clean the air conditioner and remove dust with a damp cloth. When necessary, use with a mild detergent. Do not use petrol or solvent.
- b) Regularly check the air conditioner and make sure the water outlet holes are not clogged.

## **2. Installation Instructions**

The air conditioner must be installed by the skilled technician or by the manufacturer. In addition to the requirement, the people making the unit installation must make sure that the working conditions are safe for everybody concerned.

### **2.1. Unpacking Your Product and the Parts of the Unit**

When you get this unit, please transport the product in an upright position only, and place the packaged product on an even surface. Then remove the cardboard box without turning it upside down, or laying it on its side.

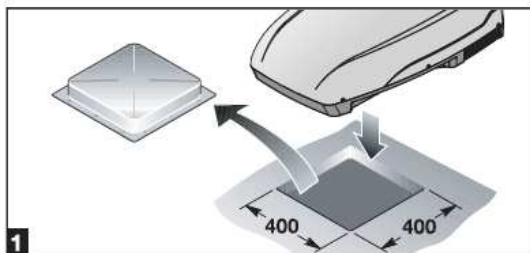
- a. Remove the adhesive tape on the top of the cardboard packaging box.
- b. Open the cardboard packaging box, always follow the instructions printed on the packaging.
- c. Remove the Styrofoam packing and angle-protection board.
- d. Lift and held the unit from the packaging by two people without being tilted, and make sure that it is not damaged. **Note: Never use rear air openings to lift the air conditioner from its packaging.**
- e. If the mounting opening has not been ready, first rest the unit on special supports to protect

its bottom. Don't place the unit directly on the floor or table, which will damage the surface and the bottom.

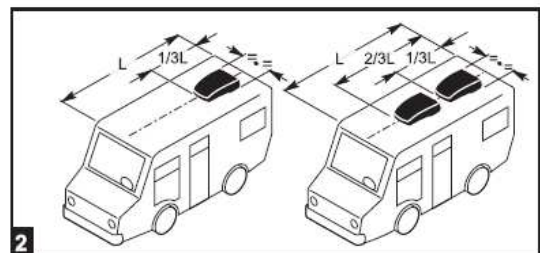


- f. Wipe it clean if necessary.
- g. Move the unit to the installation site under safe condition.

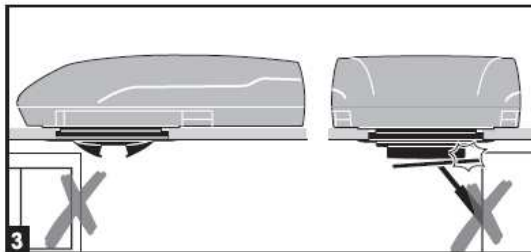
## 2.2. Preparing the roof opening



**1** To install the air conditioner, the roof shall have an opening of suitable sizes. It is possible to use an existing air inlet or make a new one.



**2** According to the vehicle dimensions and depending on the air conditioning needs, one or more units can be installed. The air conditioner must be installed right in the middle with respect to the vehicle width. If only one unit is going to be installed, this must be positioned in the rear part of the vehicle.

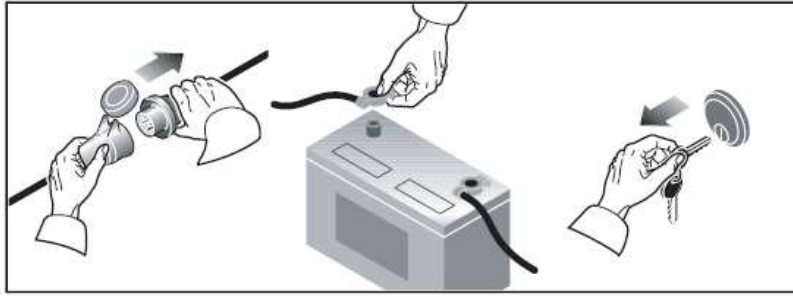


Before installing the unit, make sure that the opening does not interfere with the existing furnishing (lamps, wardrobes, doors, curtains, etc.). This check allows for an easy mounting of the air conditioner and a troublefree air circulation.

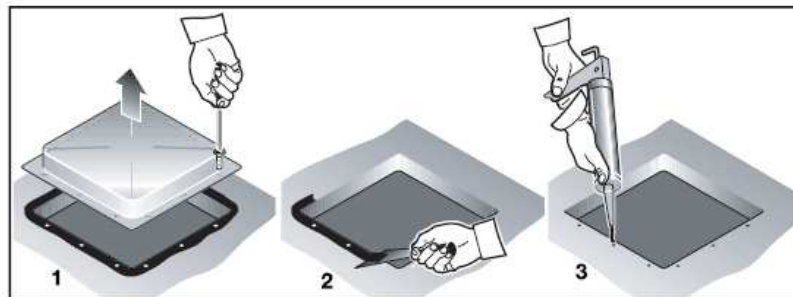
**⚠** Contact the vehicle manufacturer and make sure that the roof structure can tolerate the static load and the stress transmitted vehicle, especially under running conditions. Sometimes vehicle manufacturers previously arrange areas for the unit installation weakening and/or electric cable from being cut.

**⚠** The air conditioner should preferably be installed on a level plane. Maximum allowed inclination: 10°.

**When using the existing opening, do some preparing work as following figure:**



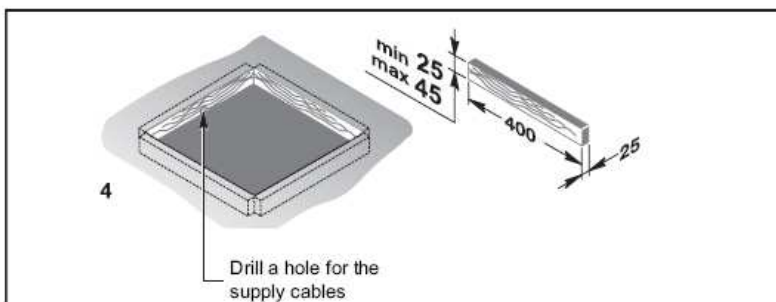
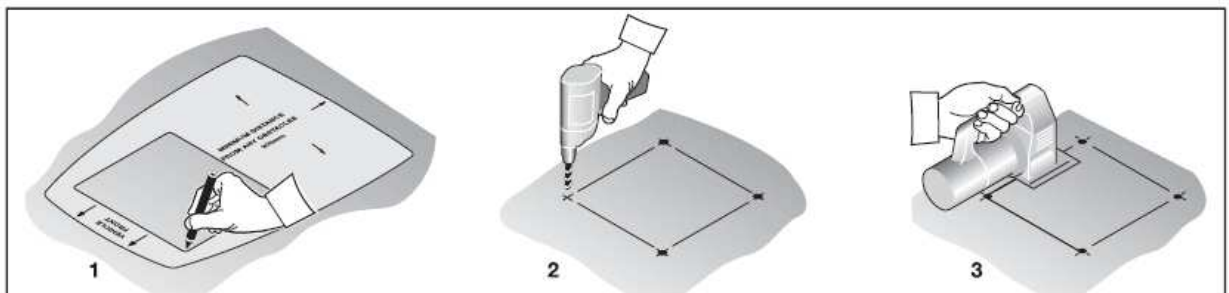
**⚠ Danger of electrical hazards.**  
Turn all power sources off



**Using an existing opening**

1. Remove the skylight cover.
2. Clean the installation opening all around by removing any adhesive residues.
3. Fill any existing screw hole or deformation with filler or silicone.

**When using the new opening, make it like following figure.**



**New installation opening**

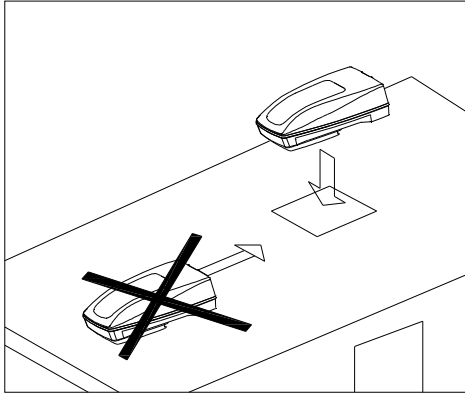
1. Using the printed cardboard template supplied with the unit, find the position and dimensions of the new opening.
2. Drill the four corners.
3. Cut by joining the previously made holes.
4. If necessary, mount a reinforcing wooden frame.

## 2.3. Mounting the air conditioner.

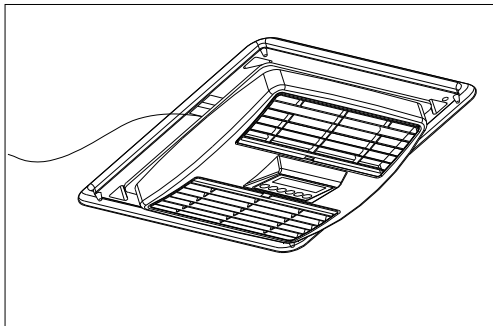
**STEP 1** Set the air conditioner onto the roof opening.

And before it, properly fix the sealing gasket (No. 15 showed in parts list drawing) to the groove of bottom base.

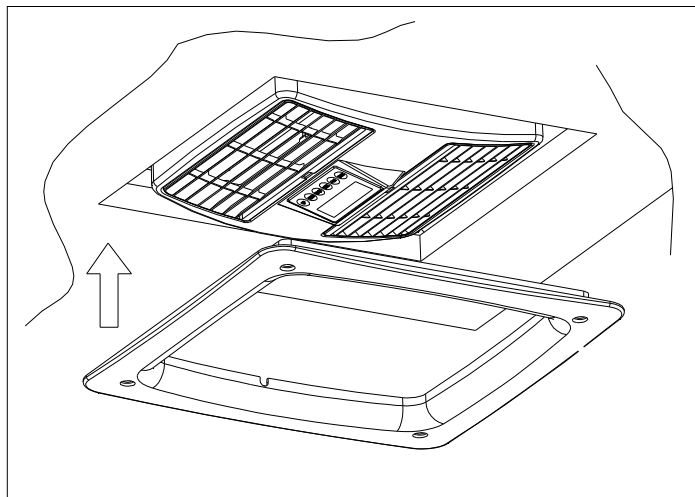
Never slide the air conditioner on the roof, but lift when moving it.



**STEP 2** Do the electrical connection as described in the paragraph 2.4



**STEP 3** Before mounting the plastic frame, use it to center the air conditioner on the opening



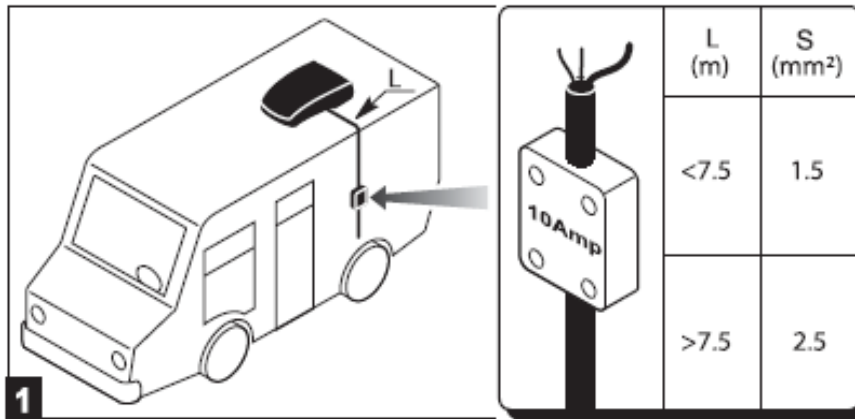
**STEP 4** Fit the plastic frame and tighten the screw using a dynamometric wrench. Always tighten to the recommended torque. Do not over-tighten.

**STEP 5** If necessary, to spread the silicone glue along the gap between the sealing gasket and the roof of the vehicle, to avoiding the water soaking into the vehicle.

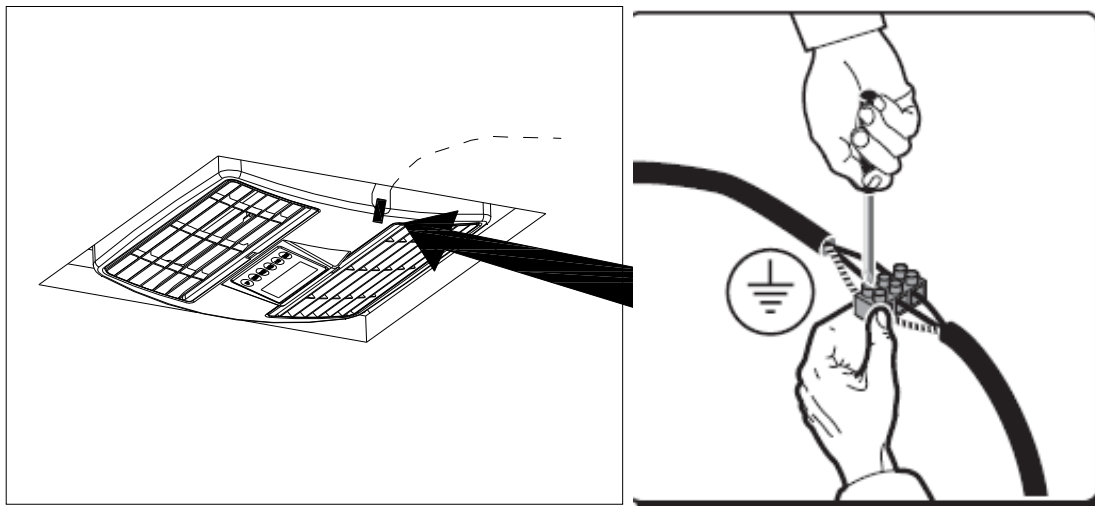
## **2.4. Electrical Connection**

For the electrical connection, always follow the national and local regulation

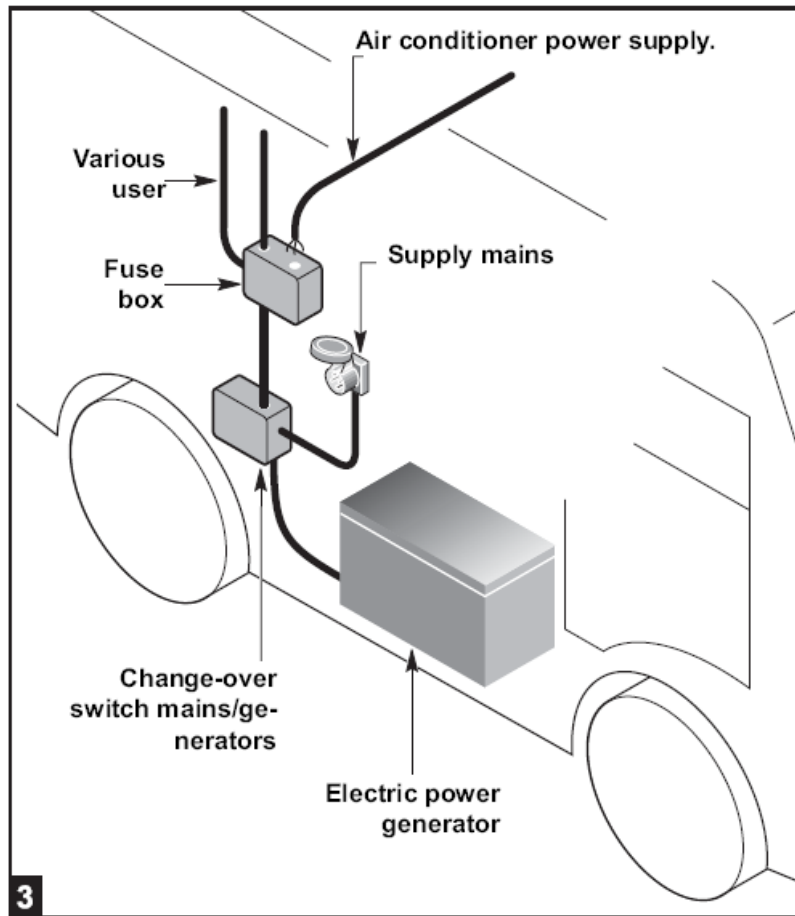
STEP 1 Arrange a specific electrical system protected by a 10-AMP slow fuse.



STEP 2 Connect the wire to the air conditioner.



STEP 3 Connect the electrical system to a circuit supplying the required power (See technical data) and fitted with a good grounding system..



### 3 Troubleshooting, maintenance, recycling

#### 3.1. Troubleshooting

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
The unit doesn't run or start completely	Power failure or no power	Check the power supply by calling the electrician.
	The main switch or fuse has been tripped	Call your electrician
	Power supply voltage is too low	Call your electrician
The unit has only fan, no cooling completely	The ambient temperature is not at working range	Check your temperature
	The set temperature is too high	Re-set the temperature to more lower
	The unit itself has the problem Like: no refrigerant in cooling system; compressor damage; defective outside fan; defective control system; defective temperature sensor; etc.	Call special service man to check and maintenance it.

No air circulation into the vehicle	Defective inside fan	Call the special service man to check it, and change to a new one.
	The filter is clogged	Clean the filter and reinstall back.
The unit seems do a little or do not cool quickly	The filter is dirty and obstructed	Clean the filer
	Inside air through is blocked	Remove the block
	There is direct sunshine	Close the curtain or blinds
	The unit is set at dehumidifying mode	Set at cooling mode
	Set at low fan speed	Re-set the fan speed at High speed
The unit has worked for long time, but feel that it is not cold enough inside the vehicle	Windows or doors are open.	Close all of the windows and doors when the unit is working
	Too many people in the vehicle	Wait more time.
	Extreme hot temperature outside	Wait more time.
Water leaks into the vehicle.	Water outlet holes are clogged.	Removing the blockage.
	Damaged sealing gasket.	Call the special service man to check it, and change to a new one.
Too noisy	The unit is not installed properly or evenly	Check it again.
	The unit is loaded with the heavy substance on the roof of the vehicle, causing internal parts touch each other.	Removing the heavy substance.
The unit stops running suddenly.	Low voltage	Call the electrician.
	Defective thermal protection of inside fan motor or overheating of the motor	Call the special service man to check it, and change to a new one.

### 3.2. Extraordinary maintenance

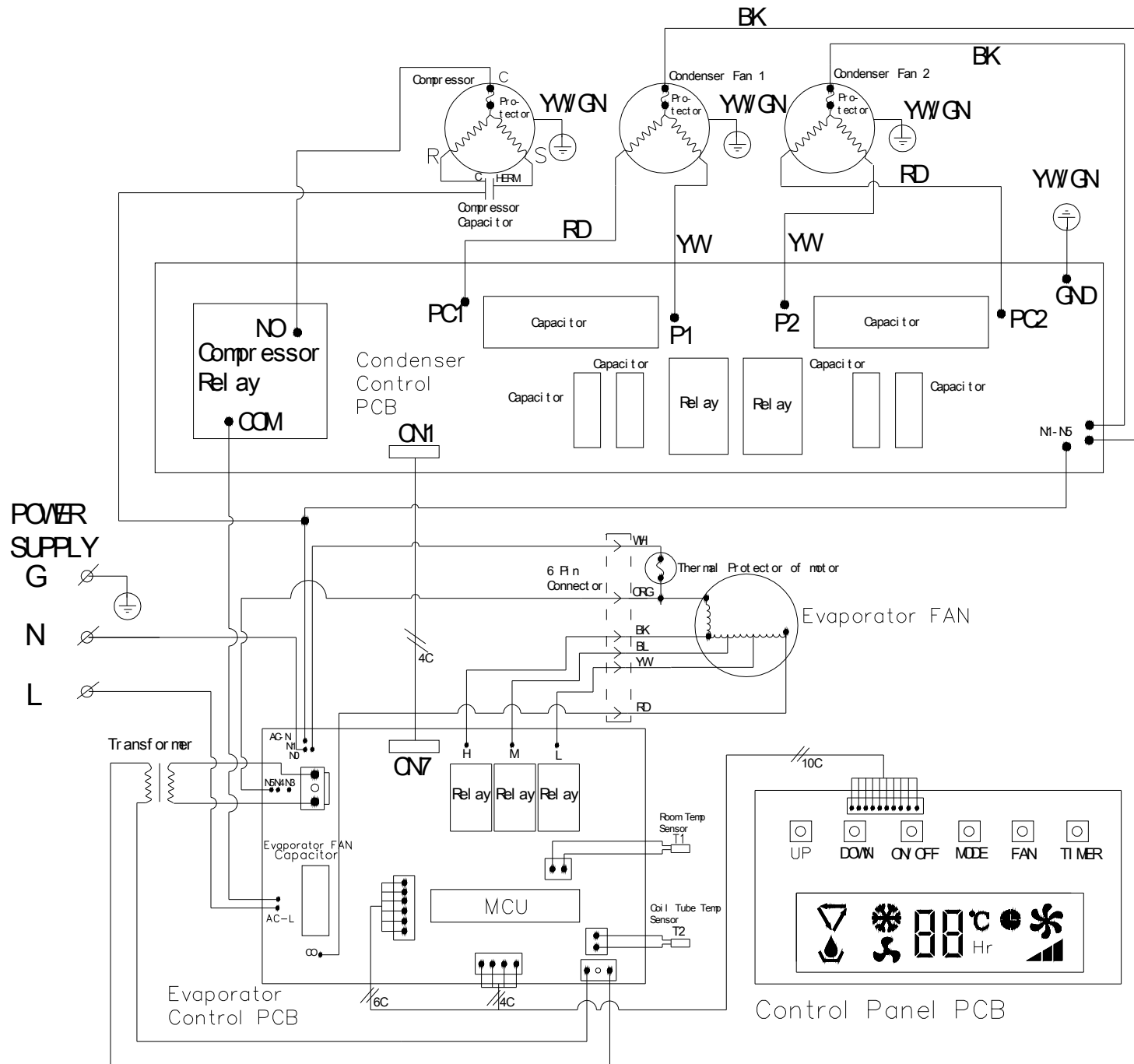
For the best cooling performance of your air conditioner, have your dealer/workshop clean it thoroughly before use:

1. thermal exchange batteries
2. water outlet holes are properly cleaned.
3. When the new cooling season is coming, clean the air filter.

### 3.3 Recycling

Regarding disposal and recycling, follow the national or local regulation. To this end, address to authorized environment bodies.

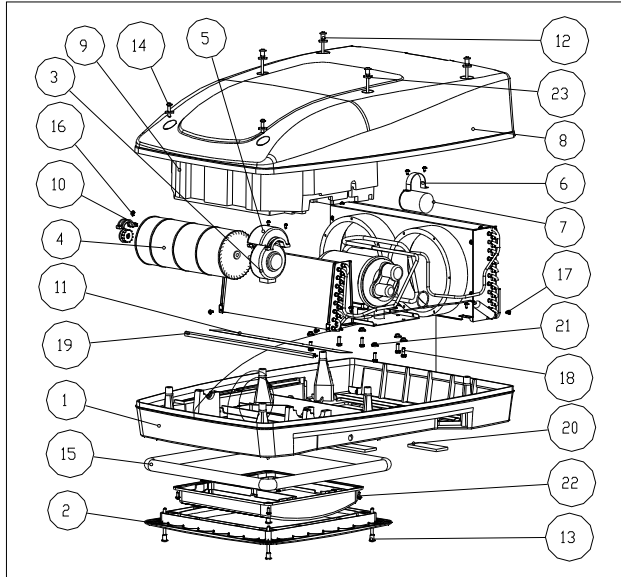
## 4. Wiring Diagram





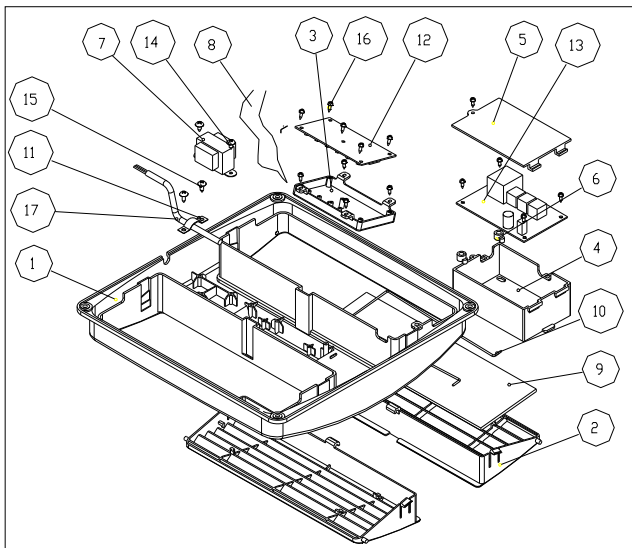
## 5. Parts List

### For main unit



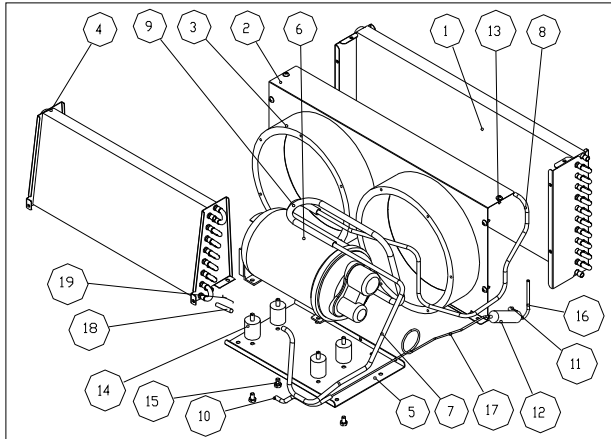
23	2.04.28.08.06000	Rubber Flat Washer	6
22	9.07.D.04001610	Sheet Metal, 4*16	4
21	GB.6177.-M6	Hexvangular Flange Nuts, M6	6
20	2.04.28.08.07000	Cushion for bottom base	3
19	2.04.28.08.02000	Sponge for Gutter Scaleboard	1
18	GB.5781.-M6*16	Hexvangular Flange Nuts, M6	6
17	9.07.D.04001210	Sheet Metal, 4*12	17
16	9.07.D.04001210	Sheet Metal, 4*12	3
15	2.04.28.08.01000	Sealing gasket	1
14	2.04.28.05.01002	Internal Hexangular Screw,30	2
13	2.04.28.05.01000	Internal Hexangular Screw,85	4
12	2.04.28.05.01000	Internal Hexangular Screw,122	4
11	2.04.28.05.02000	Scaleboard for gutter	1
10	2.04.28.02.11000	Clamp for sleeve bearing	1
9	2.04.28.00.07000	Air volute	1
8	2.04.28.02.12000	Top cover	1
7	9.06.05.1.015010	Compressor Capacitor	1
6	2.04.01.05.08000	Clamp for capacitor	1
5	2.04.28.02.10000	Clamp for motor	1
4	2.04.28.02.09000	Inside Blower	1
3	2.04.28.03.08000	Inside Fan Motor	1
2	2.04.28.02.01000	Fixing and Decorative Panel	1
1	2.04.28.02.02000	Bottom Base	1
Nb	Parts Number	Description	Qty.

### For air outlet assembly



17	2.04.28.03.02000	Power Supply Cord	1
16	9.07.Q.03001020	Sheet Metal Screw, 3*10	16
15	9.07.D.04001210	Sheet Metal Screw, 4*12	2
14	9.07.D.04001010	Sheet Metal Screw, 4*10	2
13	2.04.28.03.06000	Main Control PCB	1
12	2.04.28.03.05000	Low Voltage PCB	1
11	2.04.01.05.11000	Clamp for Power Cord	1
10	2.04.28.05.06000	Fixing Steel wire for air filter	1
9	2.04.28.08.05000	Air Filter	1
8	2.04.01.05.12000	Wiring assembly	1
7	2.04.28.03.03000	Transformer	1
6	2.04.28.02.07000	Clamp of Control Box	2
5	2.04.28.02.08000	Cover of Control Box	1
4	2.04.28.02.06000	Electric Control Box	1
3	2.04.28.02.05000	Operation Panel	1
2	2.04.28.02.03000	Air Grill	2
1	2.04.28.02.04000	Air Panel Frame	1
Nb	Parts No.	Description	Qty.

## For cooling system assembly



19	9.05.09.001	Clamp for sensor head	1
18	9.03.2.08040030	Sensor Tube	1
17	2.04.28.06.06000	Capillary	1
16	2.04.28.06.03000	Copper Tube	1
15	GB.5781.-M6*10	Hexvangular Bolts,M6*10	4
14	2.04.28.08.03000	Rubber cushion for compressor	4
13	9.07.D.04001210	Sheet Metal Screw, 4*12	6
12	2.04.28.06.04000	Dry Filter	1
11	2.04.28.06.03000	Outlet Pipe of Condenser	1
10	2.04.28.06.06000	Inlet pipe of evaporator	1
9	2.04.28.06.02000	Inlet pipe of compressor	1
8	2.04.28.06.01000	Discharging Pipe of compressor	1
7	2.04.28.06.07000	Outlet Pipe of evaporator	1
6	C.HAF065121A	Compressor	1
5	2.04.28.05.08000	Fixing Board for compressor	1
4	2.04.28.07.02000	Evaporator	1
3	2.04.28.03.01000	Condenser Fan	2
2	2.04.28.05.05000	Fixing Frame for Fan motor	1
1	2.04.28.07.01000	Condenser	1
No.	Parts No.	Description	Qty