# CITIZEN §

Applicable to

CSRA-09 CSRA-12 CSRA-18

#### Split Type Wall-mounted Room Air Conditioner

# **Instruction Manual**

Thank you for purchasing of CITIZEN air conditioner. To guarantee safety and best efficiency, please read this manual carefully and keep a suitable storage for reference.

# **To Consumers**

- 1. The air conditioner should be installed and repaired by the qualified professional technicians according to this manual.
- 2. The air conditioner must be earthed reliably in installation.
- 3. Please pull out the plug (shut the power) when it is not in use, especial in the following situations:

① In disused seasons ② In thunderstorm weather.

4. Please clean the air filter nets 1-2 times per month when the air conditioner is in using season (detailed in inner pages).

#### Features:

- Adopt the world famous compressor and micro computer controlling chip, the performance is stable and reliable.
- High-efficiency compressor and heat exchanger are adopted to guarantee higher efficiency and energy-saving.
- Adopt random pitch fan, big fan wheel and stepping motor to drive fan, achieve quiet running.

#### Note:

Some contents in this manual might be changed as the renewal of products , if there are any differences with the material objects, please take the material objects as standard, pardon us for not giving extra notice.

# **Packing List**

Order	Name	Quantity	Remarks
1	Indoor Unit	1	
2	Remove Controller	1	
3	Wall-mounted Plate	1	In the indoor unit
4	Instruction Manual	1	packing box
5	Certificate of Quality	1	
6	Guarantee Certificate	1	
7	Remote Controller's Brace	1	
8	Batteries (AAA SIZE 1.5V)	2	
9	Outdoor Unit	1	In the outdoor unit
10	Drain Hose	1	
11	Catchment Trough	1	packing box

#### SAFETY PRECAUTIONS

- Please read the "Safety Precaution" carefully before operating the unit to ensure correct usage of the unit.
- Please observe the following safety precautions when using your air conditioner. If you fail to observe the precautions, it could cause fire, electrical shock or personalinjury.

This sign warns of risk of death or serious injury.	
This sign warns of injury or damage to property.	

S This symbol denotes an action that is PROHIBITED.

This symbol denotes an action that is COMPULSORY.

#### INSTALLATION PRECAUTIONS

	S • Do not install, removed and reinstall the unit yourself.			
	Improper installation may cause leakage, electric shock or fire			
	Please engage an authorized dealer or specialist for the			
	installation work.			
	⊕ • Please use earth line. Improper grounding could cause electric			
	shock.			
	Do not place the earth line near water or gas pipes,			
	lightning-conductor or the earth line of telephone. Improper			
	installation of earth line may cause electric shock.			
ZACACHON	S • Do not install the unit in a place where there are explosive gas			
	leaks. The unit may catch fire if flammable gas leaks around it.			
	• Please ensure smooth flow of water when installing the drain			
	hose.			
	<ul> <li>For the indoor unit installation height is at least 2.0m.</li> </ul>			
	<ul> <li>If the fuse on PCB board is broken, please change the same</li> </ul>			
	type fuse by professional person.			

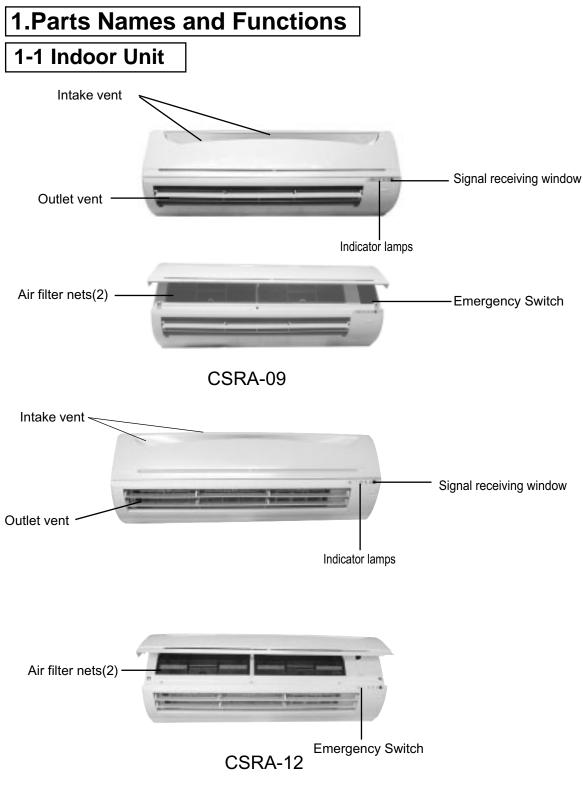
#### **OPERATION PRECAUTIONS**

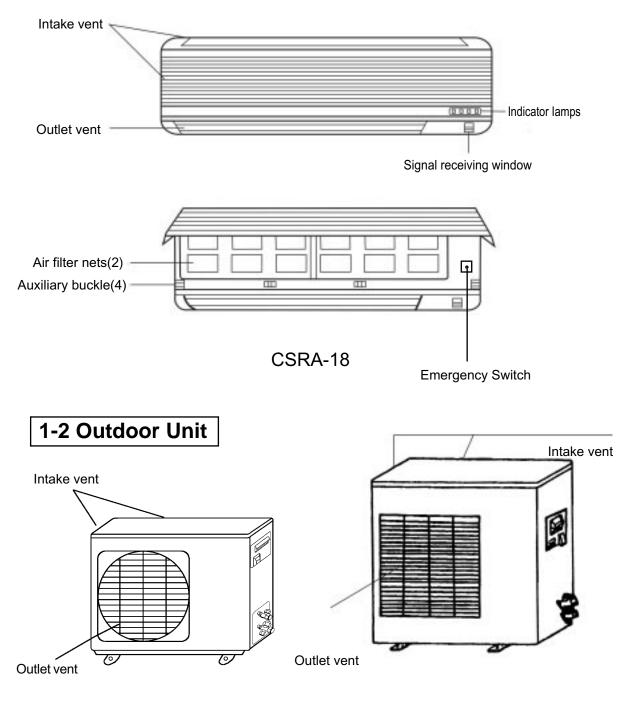
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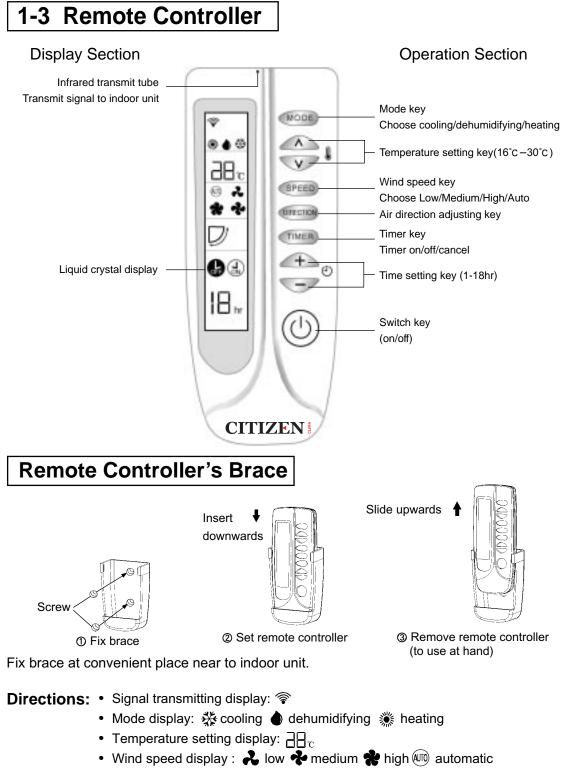
# **Part I Operation Instruction**





CSRA-09,CSRA-12





- Air direction display: D/ (Air direction adjusting)
- Timer display: 🔒 🕄
- Timer setting display:

- 1. There may be difference between the temperature set by the remote controller (The air conditioner will stop working while cooling or heating reach this temperature) and measured by temperature measuring device. You can regulate the temperature you want only by the remote controller.
- 2. It is not certain that the room temperature can reach the temperature displayed on the remote controller. Only when the room area is proper, the heat preservation is very good, etc., can they match each other. So, the temperature set by the remote controller and the temperature the room can get are two different concepts.
- 3. The displaying temperature on the remote controller is the set temperature.
- 4. The speed of indoor fan has three grades: high speed grade, low speed grade and breeze grade (the breeze grade can't be controlled by man but by microcomputer automatically). The remote controller transmit "mid-speed" signal, main frame will dispose it as low speed automatically.
- 5. The remote controller should be aimed at the receiving window of the main frame which will send out a "du" sound when the signal is received.

#### 2. Preparations before Operation

#### 2-1 Usage of Batteries

- 1. Remove the back cover of the remote controller according to the arrow direction.
- 2. Fill in two AAA size 1.5V batteries after confirming the porlarities.
- 3. Reinstall the back cover.

#### **2-2 Operation of the Remote Controller**

- Aim the signal transmitting tube to the signal receiving window of the indoor unit.
- There should be nothing between the remote controller and the signal receiving window.
- Avoid violent bumping.
- Avoid direct sunshine, heater and other heat resources.
- The remote controller should be kept clean and dry.
- Please adopt two AAA size 1.5V batteries with same brand.
- The batteries should be taken out if the unit won't be used for a long period of time.
- Change another two new batteries if the relative contents can't be displayed clearly on the LCD of the remote controller or the distance of controlling turns short obviously.
- Never mix the new battery with the old one.

#### 3. Operation Contents Setting

#### **3-1 Illustration of Indicating Lamps**

• Running lamp (green):on: The conditions satisfy the compressor to work.

flash: The unit is in the anti cold wind state of defoosting state.

out: The compressor does not work.

- Timer lamp (yellow)on: Indicate the air conditioner is timed to on or off.
- Protection lamp (red) flash: Indicate the air conditioner is abnomal, please notify the serviceman.

#### **3-2 Pre-set Temperature Operation**

Press "MODE" button and select "cooling" or "heating" (Heat Pump Type)mode, then press the temperature setting " $\land$ " or "  $\lor$ " button once, the pre-set temperature will be raised or lowered by 1°C.

#### 3-3 Up and Down Air Direction Controlling

Press the air "DIRECTION" button, the ventilating door will act in turns as following:

➡ static — ➡ up and down swing –

- change in turn 🔫

**Note:** If you need different static angle. Press "DIRECTION" button when the automatic up and down louver move to the position you want.

#### 4. Operation of the Timer

In the mode of "cooling" or "dehumidifying" or "heating" (Heat Pump Type) press "TIMER" button to select "timer off" or "timer on", then press "-" or "+" to set the time you need.

**Note:** • The initial value of timer time is 1 hour.

- The pre-setting time range is 1-18 hours.
- In the timer state, press any key, will cancel the set time except the time setting "-" or "+" buttons.

### 5. Running Mode

#### 5-1 Cooling

- Press "MODE" button, select cooling mode.
- Press pre-set temperature " ∧ " " V " buttons, set the temperature you need.
- Press "SPEED" button, choose the fan speed you need.
- Press "DIRECTION." button choose the air direction you want.
- Stop, press " (<sup>1</sup>) " button.

Attention: When it turns to the seasons not using air conditioner (before maintenance), keep the indoor unit running more than half an hour (method: In cooling mode, set temperature at 30°C).

**Note:** Running lamp turns from on to out indicates the room temperature has reached the pre-set temperature.

#### 5-2 Dehumidifying

- Press "MODE" button, choose dehumidifying mode.
- Press "DIRECTION" button, choose the suitable air direction.
- Stop,press " (<sup>1</sup>) " button.

Note: 1. The dehumidifying method: Keep the outdoor unit running for 10 minutes, then keep rest

- for 5 minutes, repeat in cycles, the fan speed of indoor unit should be at low speed.
- 2. The temperature can't be pre-set when in dehumidifying mode.

### 5-3 Heating

- Press "MODE" button, choose heating mode.
- Press pre-set temperature " ∧ " or " V " buttons, set the temperature you need.
- Press "SPEED" button, choose the fan speed you need.
- Press "DIRECTION" button, choose the air direction you want.
- Stop, press "()" button.

**Note:** The detailed directions of indicating lamps see 3-1.

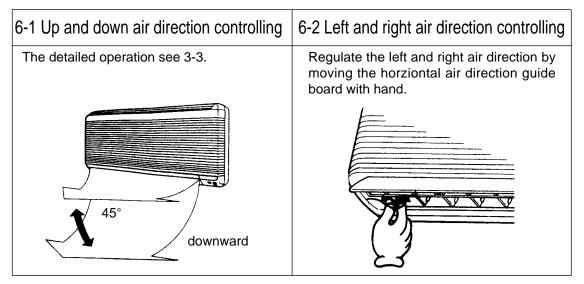
### 5-4Emergency Operation

Remove the front girll of the indoor unit ,and you may see the emergency switch(refer to1-1)

- At "off" state, press the emergency switch button, the air coditioner then it operation, which will choose cooling/dehumidifying automatically according to the indoor temperature.
- At"on"state, press the emergency switch button, the air coditioner stops operating.

Note: The function can be adopted only when the remote controller has been damaged or missed.

### **6.Air Direction Controlling**

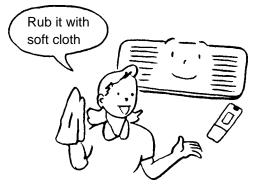


- **CAUTION** Please regulate up and down air direction by remote controller. Don't regulate the up and down air direction guide board with hand when the unit running, or the link will be damaged.
  - Be careful when regulate the left and right air direction because the fan runs in high speed.

### 7. Maintenance Methods

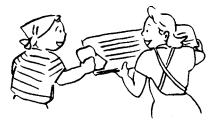
#### Clean the remote controller

• Dip the cloth into the cold water or warm water under 40°C , twist it and then rub the unit.



#### Clean the intake vent grille

- Wash it with soft things similar as sponge and then dry it.
- If it is very dirty, the neutral detergent solution can be used.



#### Clean the air filter (once per two weeks is suitable)

- 1. Hold the two ends of the grille and pull it up-forward, then draw out the air filters downward gently (Do not shake them,or the dust will be raised).
- 2. Use vaccum cleaner or water to clean them.Please dry them in shade after they have been washed.
- 3. Hold the two ends of the inlet grille, install the air filters according to the diagram, then shut the inlet grille.



#### $\Delta$ When the machine will not be used for a long period of time:

- Run it to dry the inside of the machine.
- Pull out the power plug after switching it off.
- Take out the batteries of the remote controller.



#### 8. Operation Experience Guide

- In cooling operation, the temperature difference between indoor and outdoor should be within 5°C, or it will do harm to your health.
- Try to reduce the invasion of outdoor heat (open the doors or windows as few as possible, avoid the direct sunlight, try to keep the heat sources out).
- The air filters shouldn't be blocked up, or they will lower the cooling efficiency.
- Adjust the vertical and horzontal air direction, make the indoor temperature evenly.
- Do not let the cold air blow your body directly for a long time.
- To raise the fan speed can enhance the cooling efficiency.
- In heating operation, the humidity of the room should be increased properly, or you will feel dry and uncomfortable.

**Warning:** If the electricity was restored after breaking off, please wait for 3 minutes, and the unit will restart automatically and run in the latest mode.

### 9. Trouble Shooting

Before calling a serviceman, please check the followings:

Symptom	Possible reason		
The air conditioner does not work	<ul> <li>The electrical wiring is plugged into the socket incorrectly.</li> <li>Mal-operation of the remote controller.</li> <li>The voltage is too low.</li> <li>The electricity was transmitted back immediately after been cut off.</li> <li>The voltage is uneven or owing to the thunder weather, please pull out the plug, restart the units in 3 minutes.</li> </ul>		
The compressor stops working	<ul> <li>In the drying operation, it works for 10 minutes, then rests for 5 minutes ··· repeats in cycles.</li> <li>The room temperature has reached the degrees set by the remote controller.</li> </ul>		
In heating operation the unit cannot emits warm air (Heat Pump Type)	<ul> <li>The compressor is at delay stage (To protect the compressor, there are several minutes delay for every start).</li> <li>It has the function that can prevent the cold air from blowing out ,please wait a moment after the compressor works.</li> <li>In defrosting operation, the hot airflow will be blown out automatically after defrosting operation.</li> </ul>		
The efficiency of cooling or heating is low	<ul> <li>The air filters are too dirty.</li> <li>The intake vent or outlet vent is blocked up.</li> <li>In heating operation, the ambient temperature is too low.</li> <li>Repeatedly heat and defrost.</li> </ul> Attention:The dirt between the fins of the outdoor heat exchanger should be cleaned regularly (cut off the power supply before cleanning, be careful and not be injured by fins.)		
Noise	<ul> <li>Sounds like water flow. It is the sound of the circulation of refrigerant.</li> <li>Sounds like air is condensed to leak out. In heating operation, at the beginning or ending of defrosting, there is the sound of the back-flow refrigerant(Heat Pump Type).</li> </ul>		
Abnormality of the remote controller display	<ul><li>The power of the batteries has run out.</li><li>The batteries are inserted inversely.</li><li>Take out the batteries and insert them again.</li></ul>		
Cold water leaks from the air conditioner	• Dew will occur in the air outlet due to the temperature difference.		

# Part II Installation Instruction

#### Preface

- To guarantee the unit working normally, please read the manual carefully before installation, and try to install it strictly according to this manual.
- Earth the air conditioner properly.
- Check the connecting cables and pipes carefully,make sure they are correct and firm before connecting the power of the air conditioner.
- The maximum length of the connecting pipe between the indoor unit and outdoor unit should be less than 5 metres. It will affect the efficiency of the air conditioner if the distance longer than that length.
- After installtaion, the consumer must operate the air conditioner correctly according to this manual, keep a suitable storage for maintenance and move of the air conditioner in the future.

#### 1. Select the Location for Installation

#### 1-1 Indoor Unit

- On a rigid wall without vibration.
- No obstacle in front of air inlet and outlet vents, the distance between the upper of the unit and the ceiling should no less than 10cm.
- The place where the cold air can be sent to the whole room.
- The maximum distance between the indoor unit and outdoor unit is 5 metres, so does the height difference between them.
- Avoid direct sunlight.
- Exhaust water can be easily drained.
- The air filter can be installed or removed easily (There should be more than 20 cm space down from the bottom of the unit to the ground).
- The distance between the unit and TV or radio should be more than 1 metre (because the unit can disturb the images of television and make noise).
- The place should more than 1 metre away from the fluorescent lamp or other electric bulbs. (For they may affect the remote controller working normally).

#### 1-2 Outdoor Unit

- It should be installed at the place that keeping away from strong wind.
- It should be installed at the place where there is good ventilation and low dust.
- It should be placed to avoid direct sunlight and rain.
- It should be installed at the area where the operating noise will not affect other pelple's work and rest.
- It should be placed on a rigid frame to aviod vibration or noise.
- Keep away from the flammble gases.
- When the unit is installed in a high place, make sure to fix the feet of the unit.

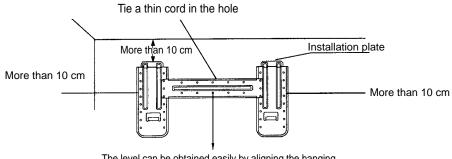
#### Attention:

Do not install the air conditioner in the following places, or it will cause a breakdown.

- The places where the machine oils are highly used.
- The places with high salt such as coastal areas.
- Hotspring areas.
- The places full of sulphur gases.
- Other places of special atmosphere environment.

#### 2. Installation of Indoor Unit 2-1 Fix the Wall-mounted Plate

#### Find a rigid parts of the wall (such as pillar etc.),install the plate at the same level, the plate must be fixed horizontally, or it will result in the indoor unit dropping water and abnormal noise.

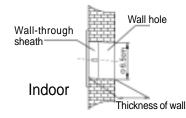


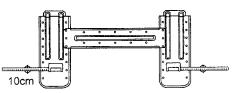
The level can be obtained easily by aligning the hanging cord with the stripe of middle holes

There should be more than 10cm space at the up,left and right sides while installing the indoor unit.

#### 2-2 Drill Hole in the Wall

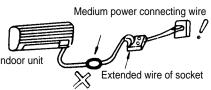
- Select the position of the wall-hole.
- Use an aiguille to drill a hole with ø6.5 cm or so.
- Insert the wall-through sheath into the hole.





#### 2-3 Installation of the Power Source

- There should be a separate circuit to connect the power supply socket should tally with the stipulation, the polarity of the socket should match with the air conditioner.
- The specification of the power wires and the connecting wires should tally with the relative standards.
- To connect power wires must strictly be in accordance with the electric diagrams and connecting marks.Only the same marks can be connected together.
- The position of connecting power wires between indoor <sup>Indoor unit</sup> unit and outdoor unit must be well selected and avoid direct sunlight.



#### Warning:

It is absolute wrong to cut the power wire open and connect the extended wire of the socket at the open place, unsuitable connecting wires is one of the major reasons to cause accidents.

If the power supply cord is damaged, it must be replaced by the manufacturer or its service agent or similar qualified persons in order to avoid hazard.

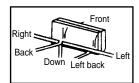
#### 2-4 Installation of Drain Hose

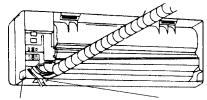
- The drain hose should be put below the refrigerant pipe (copper pipe)
- Do not bend the drain hose or raise it.
- Do not wrap the drain hose in tensile state.

#### 2-5 Arrangement of Pipes

Put together the refrigerent pipe, drain hose and the connecting wire of indoor and outdoor units etc. Wrap them with binding belt.

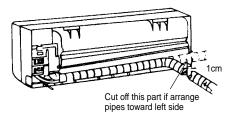
- Arrange the pipes can toward five directions such as back, right, down, left, and left-back etc.
- Attention that the drain hose must be put below the copper pipe.
- Bind the pipes with binding belt from the palce close to the elbow. (The overlap of the binding belt should be 1/2 of the belt's width.)
- Bind the pipes at the 1cm place inside of the unit, if you arrange the pipes from the left side.





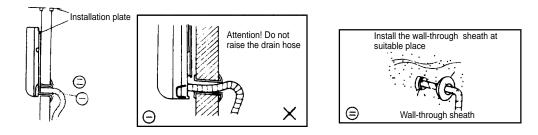
Cut off this part when arrange pipes to right side

Cut off this part when arrange pipes downward



#### 2-6 Installation of Indoor Unit

• Pass the pipes through the wall, hoist the unit on the installation plate, fix the lower part with a hook.



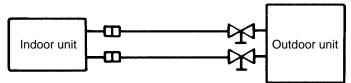
### 3. Installation of Outdoor Unit

- It should be installed on the rigid place. (Such as the concrete object.) If it was installed on the brick wall, the thickness of the brick wall should no less than 10cm.
- If there is vibration, please install the protective anti-vibration rubber spacer.
- Do not set the unit on the ground directly, it should be installed on the stable bearer which is strong enough to burden the unit, and the bear also should be firmly fixed with the expansion screws.
- In order to avoid trouble, please do not install the unit on the ground directly.
- The inclination angle of the installation place should be no more than 5°.

• While installing the outdoor unit, there should be more than 50cm space kept in front of the unit, more than 10cm space kept at rear, left and up sides, and more than 35cm space kept at right side.

#### 3-1 Flaring Joint

- There are flaring joint equipments on the indoor unit and the outdoor unit.
- As follow diagram indicates, the refrigerant pipe is used to connect the indoor unit and outdoor unit.

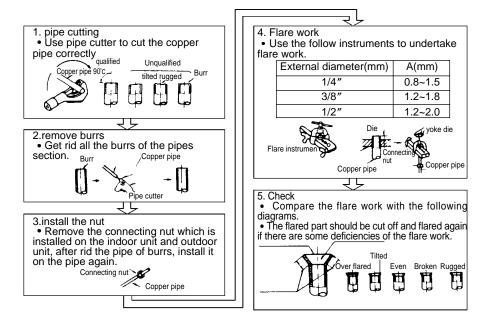


Refrigerant regulation … If the length of the pipe is more than 5m, please refill the refrigerant (fleon R410A).

Pipe length	less than 5m	need not to refill refrigerant	
Tipe length	more than 5m	need to refill refrigerant 50g/m	

#### 3-2 Pipe Joint

• One of the major reason causes gas leakage is the result of defective flare work, so please check the quality of the flare work according to the follow procedures.



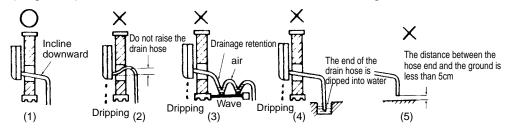
- ① Connection of indoor unit
   Connect the thick and thin pipes to the indoor unit.
- Apply a thin coat of refrigerating oil at the pipes joint.
- When connecting, first aim at the centre, then screw the first 3-4 turns of the connecting nut by hand.
- Take the wring torque diagram as the standard of indoor pipe's connection, use two spaners to tighten them, over-tighten will damage the flared part.
- ② Connection of outdoor unit
- Take the same way as that of the indoor unit, connect the pipe with the stop valve pipe of outdoor unit.
- Use a spanner to grip the valve and use the torque spanner to grip the connecting nut.
  - Connect the pipe to outdoor unit with the same wring torque as that of indoor unit connecting.

Attention:

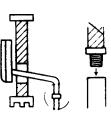
Be careful and adopt suitable insulation thickness. If over thick, it will cause accumulation at the back of the indoor unit, if too thin it will cause dew and water dripping.

#### 3-3 Drain Hose

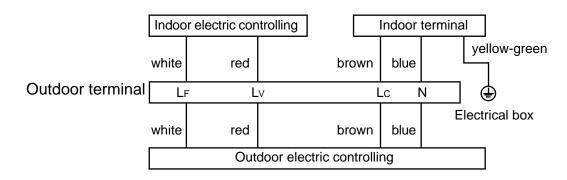
• For the convenience of draining off water, please incline the drain hose downward when arrange it (diagram 1). Do not make the connection of drain hose as diagram 2~5 illustrate.



- If the drain hose installed on the indoor unit is not long enough, please connect the drain hose in appendix.
- If the drain hose needs pass through indoors, please wrap it with heat insulation materials which are available on the market.



#### **3-4 Installation of Outdoor Wires**



External diameter(mm)	Wring torque(kgf · cm)	
1/4″	150~210	
3/8″	380~450	
1/2″	400~460	

The method of installation is as the diagram indicates, connect the power wires according to the stipulated fixed colour and order.

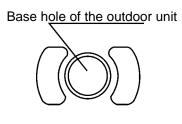
- a. Distinguish the colour, order and diameter of wires clearly while installation, the power wires between the indoor unit and the outdoor unit must be corresponding with each other, never be misconnected.
- b. The yellow-green() wire is the wire connecting to earth, it must be connected to the earth reliably or it will cause electricity shock.
- c. After installation, the wires must be pressed tightly with the wire clip, or it will cause serious accidents. Before press the wire, pull straight the wire, bind the remainder wire at the suitable place out of the unit to avoid being worn.
- d. The screws of terminals must be screwed tightly, make sure they are firm by pulling the wires gently after screwing them.
- e. Please add some connecting wires if the connecting wires are not long enough, the diameter of the wire must fit the stipulation and the colour must be the same.

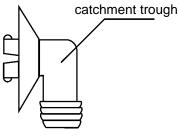
#### Attention:

Be careful! Do not misconnect the wires or it will cause the air conditioner can't work normally, or cause fuses blown out or other serious accidents.

#### **3-5 Installation of the outdoor drain pipe**

Insert the catchment trough into the hole of the base, connect an extended pipe to the trough. **Note:** The drained water should not affect neighbours. (not available for the cooling type).





#### 4. Test Run

#### 4-1 Pipe-cleaning and Taking Vacuum

Make sure all the pipe joints have been screwed tightly according to the fixed wring torque, then engage in the pipe-cleaning and taking vacuum operation.

- 1. Remove the valve core copper caps of the high pressure valve and the low pressure valve.
- 2. Remove copper cap of refrigerant-adding valve, take vacuum with vacuum pump, and the \ vacuum value should be less than 10Pa.
- 3. Fasten the copper cap of refrigerant-adding valve.
- 4. Loose the high pressure valve and low pressure valve all(anti-clockwise).
- 5. Use the leakage detector or soapy water to check the system pipe joint and valve cap for leakage.
- 6. If there is no leakage, cover the copper caps of valve cores(the must be screwed tightly).

#### 4-2 Test Run Procedure

Before test run operation, please check all the connecting wires and pipes carefully to see if they are correctly connected and firm, the stop valve has been completely opened or not, and if the air conditioner has been connected to earth reliablly.

- 1. Connect the air conditioner system to the power source, a "Du" sound emitted by the indoor buzzer should be heard .
- 2. Turn on the air conditioner with the remote controller.
- Please choose the "heating" mode and set temperature at 25°C to check its heating function.
- Please choose the "cooling" mode, set temperature at 16°C to check its cooling function.

#### Remark

Check the following items according to the related contents of this manual.

- 1. Indoor unit
- Is the noise abnormal?
- Does every indicating lamp light normally?
- Does it drain smoothly?
- 2. Outdoor unit
- Is there abnomal noise or vibration when it is running?
- Do the noise, wind and water caused affect the neighbours?
- Is there gas leakage?
- 3. The remote controller:
- Do all the function keys work normally?
- When transmit the signal, does the indoor unit emit a "Du" sound?

#### **4-3 Instructions to Consumers**

After installtion, the service technicians are required to do the following things for the consumers:

- Explain the operation methods, the keys functions, the things should be paid attention to and so on to the consumers according to the instruction manual.
- Introduce the removing and installing methods of the filter nets and the method of air direction controlling.
- The fitting and removing methods of the remote controller batteries.
- Advise the consumers to read the instruction manual carefully before operation, and answer the consumers' questions warmly.

# **Main Specifications**

Data Model Item	CSRA-09	CSRA-12	CSRA-18	
Туре	Cooling & Heating	Cooling & Heating	Cooling & Heating	
Cooling Capacity	2500W	3500W	5200W	
Heating Capatity	2800W	3800W	5900W	
Rated Voltage	220V-240V~			
Rated Frequency	50Hz			
Rated Cooling Power Input	770W	1090W	1620W	
Rated Heating Power Input	775W	1052W	1635W	
Mass:indoor unit/outdoor unit	8kg/35kg	11kg/37kg	15kg/49kg	
Air Flow:indoor unit	450m³/h	550m³/h	900m³/h	
Design pressure of High side	3.6MPa	3.6MPa	3.8MPa	
Design pressure of Low side	1.2MPa	1.2MPa	1.2MPa	
Refrigerant:type/quantity	R410A/0.68kg	R410A/1.1kg	R410A/1.3kg	

- Note: 1. The above-mentioned cooling capacity and heating capacity are measured under a certain standard situation, it may be changed as the ambient temperature or humidity varies. Please use the unit when the outdoor temperature ranges from -7°C to 43°C
  - 2. The power supply of Air conditioner should be connected to separate circuit.
  - 3. Extra notice will not be given if there are changes of the data, please take the nameplate on the machine as the standard.

Serial No.: eb48603 Version:070808

