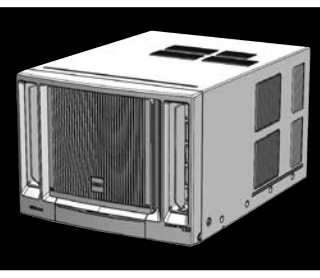
# HITACHI

MODEL
RA-08RF
RA-10RF
RA-13RF

## WINDOW TYPE ROOM AIR CONDITIONER OPERATION AND INSTALLATION MANUAL



## SAFETY PRECAUTION

- Read the safety precautions including the supplementary R32 Safety Precaution (Additional) carefully before operating the unit.
- The contents of this section are vital to ensure safety. Please pay special attention to the following signs.

**⚠ WARNING ..... Incorrect methods of installation may cause death or serious injury.**

**⚠ CAUTION ..... Improper installation may result in serious consequence.**

**⃠ The sign in the figure indicates prohibition.**

Be sure that the unit operates in proper condition after installation. Explain to customer the proper way of operating the unit as described in the user's manual.

## PRECAUTIONS DURING INSTALLATION

| | |
|---|---|
| ⚠ WARNING | • Please ask sales agent or qualified technician for the installation of the unit. Water leakage, short circuit or fire may occur if install the unit improperly. |
| ⚠ CAUTION | • Please use earth wire. Do not place the earth wire near water or gas pipes, lightning-conductor, or the earth wire of telephone. Improper installation of earth wire may cause electric shock. |
| | • A circuit breaker should be installed depending on the mounting site of the unit. Without a circuit breaker, the danger of electric shock exists. |
| | • Do not install near location where there is flammable gas. The unit may catch fire if flammable gas leaks around it. |
| | • If drain pan is used, please ensure that when installing the drain hose, water is able to flow freely without any obstruction. |

## PRECAUTIONS DURING SHIFTING OR MAINTENANCE

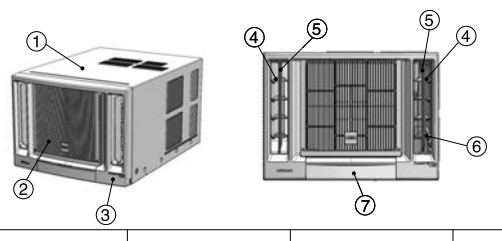
| | |
|---|---|
| ⚠ WARNING | • If abnormal situation arises (like burning smell), please stop the unit and turn off the circuit breaker. Fault, short circuit or fire may occur if the unit continues to operate under abnormal situation. |
| | • Please contact your agent for maintenance. Improper maintenance may cause electric shock and fire. |
| | • Please contact your agent if you need to remove and reinstall the unit. Electric shock or fire may occur if you remove and reinstall the unit improperly. |

## PRECAUTIONS DURING OPERATION

⚠ WARNING

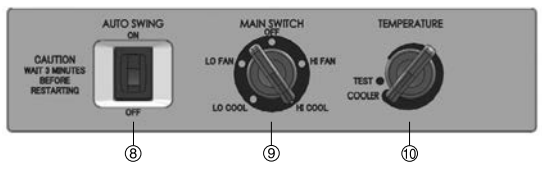
- Avoid an extended period of direct air flow from the unit for your health.
- Do not put objects like thin rods into the unit because the high-speed fan inside may cause danger.
- Do not use any conductor as fuse wire, this could cause fatal accident.
- During thunder storm, disconnect the power supply and turn off the circuit breaker.
- The product shall be operated under the manufacturer specification and not for any other intended use.
- Do not attempt to operate the unit with wet hands, this could cause fatal accident.
- When operating the unit with burning apparatus, regularly ventilate the room to avoid oxygen insufficiency.
- Do not direct the cool air from the air-conditioner towards any household heating apparatus as this may affect the operation of apparatus such as the electric kettle, oven etc.
- Please ensure that mounting frame is always stable, firm and without defect. Otherwise, the unit may collapse and cause danger.
- Do not splash or direct water to the body of the unit when cleaning it as this may cause short circuit.
- Do not place plants directly under the air flow as it is bad for the plants.
- Please switch off the unit and turn off the circuit breaker during cleaning, the high-speed fan inside the unit may cause danger.
- Turn off the circuit breaker if the unit is not be operated for a long period.
- Do not climb on the unit or put objects on it.
- Do not put water container (like vase) on the unit to avoid water dripping into the unit. Dripping water will damage the insulator inside the unit and causes short circuit.
- When operating the unit with the door and windows opened, and/or with the air deflector facing down for a long period of time, water will be condensed on the air deflector and drip down occasionally. This will wet your furniture. Therefore, do not operate under such condition for a long time.
- If the amount of heat in the room is above the cooling capability of the unit (for example: more people entering the room, using heating equipments and etc.), the preset room temperature cannot be achieved.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
  Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

## PARTS IDENTIFICATION AND OPERATIONS




① Cabinet
② Suction Grille
③ Front Cover
④ Horizontal Deflectors
⑤ Vertical Deflector
⑥ Air Exhaust Lever
⑦ Switch Panel Cover
⑧ Auto Swing Switch
⑨ Operation Mode Selection Dial
⑩ Thermostat Dial

| Model | Width | Height | Depth |
|---|---|---|---|
| RA-08RF<br>RA-10RF | 18 ½", 470mm | 13 ½", 345mm | 25 3/16", 640mm |
| RA-13RF | 22 3/64", 560mm | 14 ¾", 375mm | 27 29/32", 709mm |




| Model | R32 Refrigerant Charge Amount (kg) | Min. Installation Height (m) | Min. Room Area (m²) |
|---|---|---|---|
| RA-08RF | 0.40 | 0.75 | N/A |
| RA-10RF | 0.40 | 0.75 | N/A |
| RA-13RF | 0.60 | 0.75 | N/A |

## AUTO SWING

- When the AUTO SWING switch is turned to "ON" position, the vertical deflectors automatically oscillate right and left sweeping the cold air alternately to obtain comfortable cooling.
- The vertical deflectors will stop to swing when the AUTO SWING switch is turned "OFF"

## OPERATION MODE SELECTOR DIAL

| | |
|---|---|
| OFF | Stop the fan and cooling operation. |
| LO FAN | Fan operation only at low speed. |
| HI FAN | Fan operation only at high speed. |
| LO COOL | Cooling operation with low fan speed. This is recommended for sleeping comfort. |
| HI COOL | Cooling operation with high fan speed for maximum cooling power. |

- The start of operation will occur an abnormal sound (turbo sound) which doesn't affect the operation.

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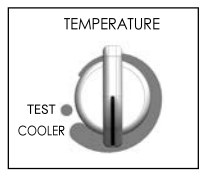
## THERMOSTAT DIAL

Setting the desired room temperature. Turn the dial further clockwise for cooler indoor temperature.

**⚠ CAUTIONS**

- Do not set the dial to "TEST" for normal usage. This setting is only for technician. If the unit is operate at "TEST" for normal use, it may cause the evaporator frosted and consequence of no cooling, noisy and water leakage may be found.
- If the evaporator is found frosted, it means the temperature at evaporator is too low. Please turn the dial anti-clockwise and check if any obstacle in front of air outlet and inlet like curtain.
- When the compressor stops, please wait 3 minutes before turning the dial clockwise.



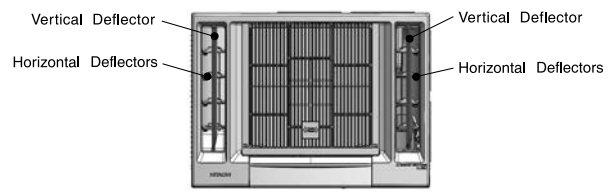

## AIR DEFLECTORS

### VERTICAL DEFLECTORS

Vertical deflectors at both sides of outlets can be set to either auto-swing or static position to direct discharge air rightward, leftward or forward direction.

### HORIZONTAL DEFLECTORS

Horizontal deflectors at both sides of the outlets can be set to direct discharge air upward, downward or forward direction.

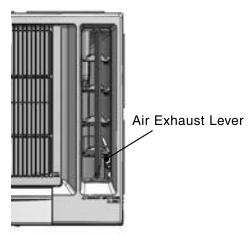



**⚠ CAUTIONS**

To avoid dew forming on the deflectors which eventually may drip to the floor, please do not adjust horizontal deflectors extremely downward position or vertical deflectors extremely leftward or rightward position during cool operation for a long time.
Also, do not adjust the vertical deflectors position by hand or any other object under normal use condition.

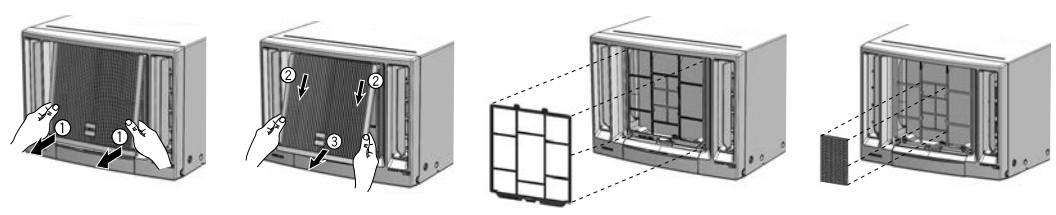
## AIR EXHAUST LEVER

Set the air exhaust lever to the down (⇩OPEN) position for air ventilation in the room. The air exhaust lever should normally be kept in up (⇧CLOSE) position during cooling operation and in the case of typhoon.




## PM2.5 WASABI AIR PURIFYING FILTER

Always stop the operation before installing the wasabi air purifying filter.



1. Pull and remove the suction grille
2. Remove the pre-filter
3. Install the Wasabi air purifying filter in the frame
4. Install back the pre-filter and close the suction grille

Wasabi air purifying filter are not washable. It is recommended to use vacuum cleaner to clean it. It can be used for 1 year. Model number for this wasabi air purifying filter is <SPX-CFH9WPM25>. Please use this number for ordering when you want to renew it.

## NOTES ON OPERATION

### TEMPERATURE AND HUMIDITY

Avoid to use the room air conditioner for cooling operation when the outside temperature is below 21°C (70°F). Recommended operation humidity should be below 80%. Continuous operation at over 80% humidity (indoor) will cause some dews form on the outlet grille and deflectors of the unit.

### NOISE

In a quiet environment during the starting or stopping the operation, phenomena like flowing sound of refrigerant in the refrigerating cycle and rubbing noise from the fan casing may occasionally occur, but this is normal for the operation.
Water will be condensed on the evaporator coil and collected in the bottom tray, it is picked up by the condenser fan and blown onto the condenser coil, this creates a "splashing" sound which is normal.

### ODOR

The odor will possibly be emitted from the room air conditioner especially at the starting of operation and in a high humidity condition. This is not abnormal phenomena, but this is resulted from the various kind of odors emitted by smoke, food stuffs, cosmetics and others which may stick to the room air conditioner. So, the pre-filter and the evaporator must be cleaned regularly to reduce the odor.

## THE IDEAL WAYS OF OPERATION

**Suitable Room Temperature**

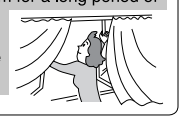
**⚠ Warning**
Freezing temperature is bad for health and a waste of electric power.

**Install curtain or blinds**

It is possible to reduce heat entering the room through windows.

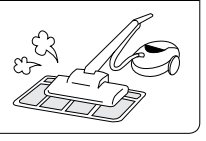
**Ventilation**

**⚠ Caution**
Do not close the room for a long period of time. Occasionally open the door and windows to allow the entrance of fresh air.



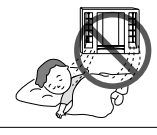
**Do Not Forget To Clean The Pre-Filter**

Dusty pre-filter will reduce the air volume and the cooling efficiency. To prevent from wasting electric energy, please clean the pre-filter every 20 days.



**Please Adjust Suitable Temperature For Baby And Children**

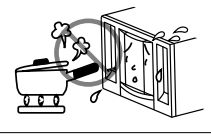
Please pay attention to the room temperature and air flow direction when operating the unit for baby, children and old people who have difficulty in movement.



## FOR USER'S INFORMATION

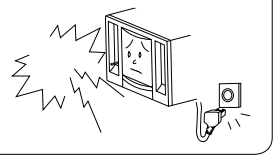
### The Air Conditioner And The Heat Source In The Room

**⚠ Caution**
If the amount of heat in the room is above the cooling capability of the air conditioner (for example: more people entering the room, using heating equipments and etc.), the preset room temperature cannot be achieved.



### When Lightning Occurs

**⚠ Warning**
To protect the unit during lightning, please stop operating the unit and remove the plug from the socket.



# MAINTENANCE

**⚠ CAUTION**

Always turn off and unplug the unit before any cleaning or maintenance to ensure safety.

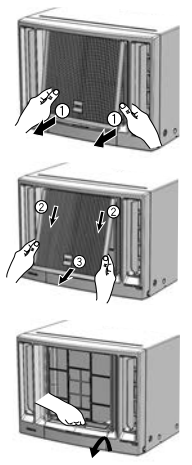
## PRE-FILTER

If the pre-filter is clogged with dust, the air flow volume will be decreased and resulting in poor cooling performance, and increased operating noise. Be sure to clean the filter about every 20 days.

① Remove the suction grille by pulling the bottom corner and slightly lift up the suction grille.

②-③ Pull downward to unhook the suction grille and remove the suction grille.

- Lift and unhook the bottom of the pre-filter and remove it.
- Remove dust from the pre-filter by using a vacuum cleaner. If the pre-filter is very dirty, wash it with detergent and rinse properly with water. Dry the pre-filter with soft cloth and do not expose it to heat or under direct sunlight.
- Install the pre-filter by fitting the top hooks and then hook the bottom of the pre-filter.
- Attach the suction grille back to its place by hooking at the top side to the front cover, then gently push at bottom corner.



**⚠ CAUTION**

- Do not use hot water above 40°C for cleaning the pre-filter.
- Do not operate the air conditioner without the pre-filter.

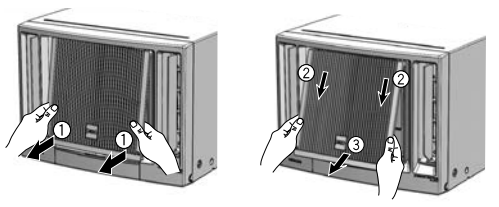
## FRONT COVER AND SUCTION GRILLE

Clean the front cover and suction grille with a soft dry cloth. When it is excessively dirty, wipe it with a soft cloth dampened with mild soap, then wipe it again thoroughly with a soft dry cloth.

The suction grille can also be removed and be washed with water and mild soap. Remove the suction grille in the following manner.

① Remove the suction grille by pulling the bottom corner and slightly lift up the suction grille .

②-③ Pull downward to unhook the suction grille and remove the suction grille.



**⚠ CAUTIONS**

Never use hot water above 50°C, erosive chemicals or brush to clean the front cover and suction grille because they will damage the plastic surface.

# BEFORE ASKING FOR SERVICE

Check the following items before asking for service. If the malfunction persists, please contact service centre.

| Symptom | Check |
|---|---|
| Does not operate at all | ① Is the power cord loosened or unplugged?<br>② Is the fuse blown out or the circuit breaker tripped?<br>③ Is the voltage normal?<br>④ Is the main switch set to "OFF" position? |
| Poor cooling performance | ① Is the pre-filter covered with heavy dust?<br>Clean pre-filter and replace it.<br>② Is the temperature setting correct?<br>③ Is the sunlight fall directly in the air conditioner?<br>④ Is the air flow on the rear side (outdoor) blocked?<br>Leave a space of 900 mm (3 feet) behind the rear side of air conditioner.<br>⑤ The doors or windows may be opened widely or there are other sources of heat in the room.<br>⑥ Is the ventilation damper opened? |

**⚠ CAUTION**

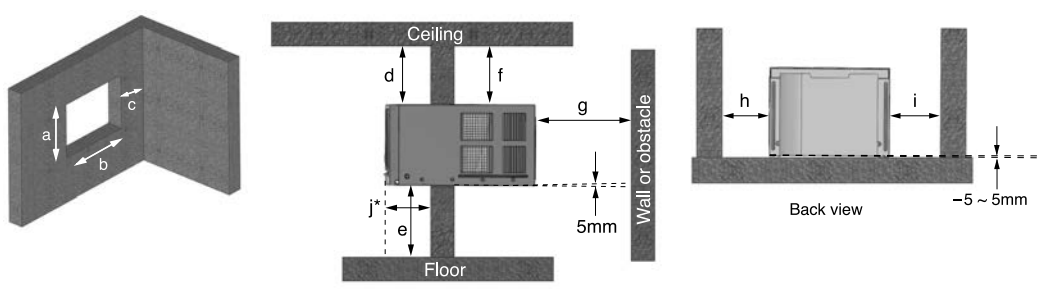
If the power supply cord is damaged, it must be replaced by the manufacturer, its service agent or similiarly qualified persons in order to avoid a hazard.

# INSTALLATION INSTRUCTIONS

Remove all the shipping parts before installation and consult an authorised dealer concerning installation requirements, otherwise may damage the air conditioner.

## LOCATION

- Select a location that can support the weight of the air conditioner and will not cause increased operating noise and vibration.
- Select a location to avoid direct sunlight on the air conditioner.
- Select a good location for efficient air circulation.
- Select a location where there is no obstacles near the air inlet and outlet.




| Model | Dimension (mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | a | b | c | d | e | f | g | h | i | j* |
| RA-08RF | 365 | 490 | Over 200 | Over 100 | Min. 750 | Over 150 | Over 900 | Over 200 | Over 200 | 160 or more |
| RA-10RF | | | | | | | | | | |
| RA-13RF | 395 | 580 | Over 200 | | | | | | | 160 or more |

* Recommended dimension for performance testing purpose only.

**⚠ CAUTIONS**

- The installation material must be corrosion proof, especially the air conditioner is installed near the sea or hot spring.
- Do not install air conditioner in the places where there is a possibility of inflammable gas leaks.
- Secure tightly the cabinet with screws to the frame. Otherwise there may be danger of the air conditioner dropping.
- Please keep the recommended installation dimensions. Otherwise waterdrops or malfunction may occur.

**Explanation of symbols displayed on unit**

| | | | |
|---|---|---|---|
| | **WARNING**<br>This symbol shows that this equipment uses a flammable refrigerant.<br>If the refrigerant is leaked, together with an external ignition source, there is a possibility of ignition. | | **CAUTION**<br>This symbol shows that a service personnel should be handling this equipment with reference to the Installation Manual. |
| | **CAUTION**<br>This symbol shows that the Operation Instructions should be read carefully. | | **CAUTION**<br>This symbol shows that there is information included in the Operation Manual and/or Installation Manual. |

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## POWER SOURCE

- Check the capacity of wiring and power outlet. The power outlet should be used exclusively for the air conditioner. Do not use it with other appliances. Any wiring must follow the national wiring regulation.
- Ground the air conditioner to prevent danger of electric shock.
- Connect the air conditioner with power source securely.
- Use a fuse as below:

| | |
|---|---|
| RA-08RF<br>RA-10RF<br>RA-13RF | 15A Circuit Breaker |

| | |
|---|---|
| Voltage rating | 50Hz 220V |
| Operatable Voltage range | 50Hz 198-242V |

**⚠ CAUTION**

This appliance must be earthed

## REMOVE THE FRONT COVER

Remove the front cover in the following manner.

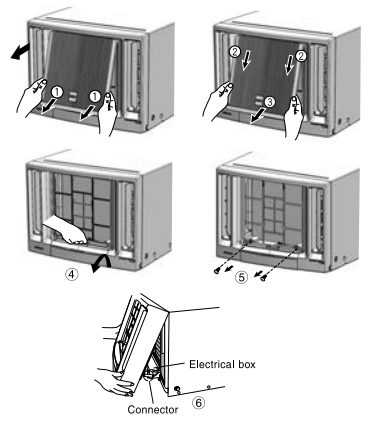
① Remove the suction grille by pulling the bottom corner and slightly lift up the suction grille.

②-③ Pull downward to unhook the suction grille and remove the suction grille.

④ Lift and unhook the bottom of the pre-filter and remove it.

⑤ Remove two screws which secure the front cover.

⑥ Remove the front cover from lower side. Disconnect the timing motor connector at right side of the electrical box.




## SLIDE OUT THE UNIT

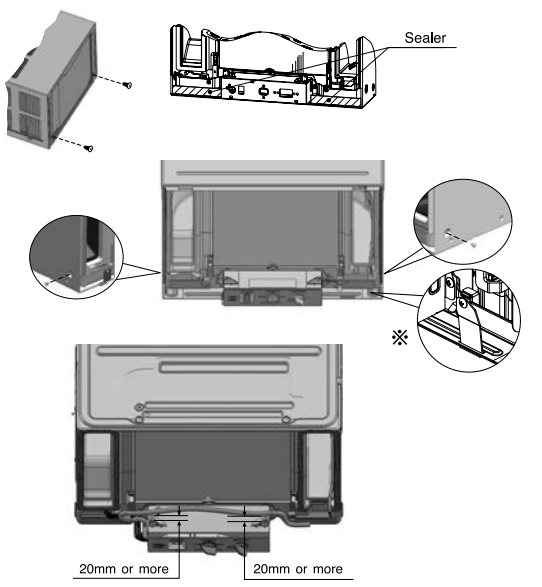
① Remove the four screws which fasten the base pan to the cabinet at the side and back.

② Remove the stopper at front left side of base. (RA-13RF)

③ Slide out the unit by pulling the handles.

After slide in the unit, please install a sealer between the base pan and cabinet to prevent from entering rain water in case of typhoon. Reinstall the stopper at front side of base and fasten the unit to cabinet at the side with the screw, then refit the front cover.

※ For RA-08RF and RA-10RF series, please find stopper in accessories.




## POWER CORD ARRANGEMENT

If power cord is withdrawn from left side of unit, please arrange the power cord as in figure after installing the front cover.

## DRAIN PAN

**CONDENSED WATER DRAINAGE**

This air conditioner use a "turbo fan splashing ring" which is designed to splash the condensed water on the condenser surface for maximum cooling efficiency, thus producing a splashing sound.
If you are uncomfortable with the sound, you can install an outside drainage by using the following procedure which may, reduce the cooling operation performance.

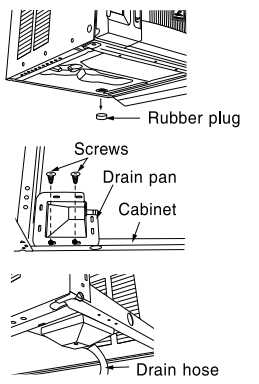
① Remove the rubber plug from the base pan.

② Install the drain pan by using 2 pieces of screws (provided) at the cabinet.

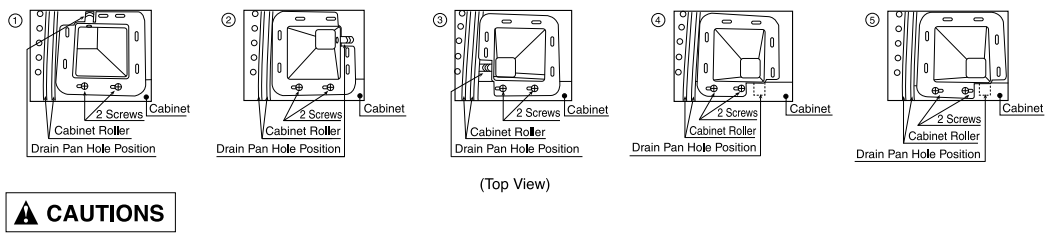
③ Connect the drain pan with the drain hose to drain point. (Drain hose or tubing can be purchased locally. Drain hose inner diameter should be around ø13mm or 1/2 inch.)

④ Pour 2 glasses of water into the drain pan to ensure the drainage is functioning normally.

⑤ Slide the air conditioner unit back into the cabinet.




The Drain Pan can be used in any positions as below and be secured by 2 screws to avoid water dropping problem:




**⚠ CAUTIONS**

Drain Pan edge shall not exceed the cabinet roller.

## CAUTION

When using operation of auto swing function, if the vertical deflector swing angle is incomplete, please turn the deflector manually to the utmost left angle. An abnormal sound will occur when adjusting the vertical deflector. This sound indicates that the engagement of gear is in position and does not affect the operation.

When raining, rain water will enter the outdoor side. An abnormal sound will occur during operation of unit in raining conditions and approximately 10 minutes after rain stops. This will not affect the performance or liability of the room air conditioner.

## INSTALLATION WORK INSPECTION CHECK LIST

| Item No. | Check Item | Confirm |
|---|---|---|
| 1 | Have you removed the shipping parts? Please check the caution sheet which is attached at front cover. | |
| 2 | Is the incline of room air conditioner regarding front and rear, right and left all right after installation? | |
| 3 | Is the strength of installation sufficient? | |
| 4 | Have you grounded the room air conditioner? | |
| 5 | Have you fastened the unit to the cabinet? | |
| 6 | Have you done a test operation, and are there any abnormal phenomena? | |

Recommended temperature range for safety testing should be as below:

| | | | |
|---|---|---|---|
| Cold side : | Dry bulb | 21 – 32°C |
| | Wet bulb | 15 – 23°C |
| Hot side : | Dry bulb | 21 – 43°C |
| | Wet bulb | 15 – 26°C |

# MEMO

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