

# HITACHI

Hitachi Commercial Split Air Conditioner

## In-the-ceiling thin-shell duct type

Thank you for choosing Hitachi Commercial split air conditioner.

**For correct operation of the product, read carefully this operation manual before operation.**

After reading, keep this manual for future reference. If you have any questions, please contact the distributor.

Kick off in the bracket of the indoor unit model that you have purchased. ( ✓ )

		Model of Indoor Units
Heat Pump Unit	Single Phase	<input type="checkbox"/> RPI-56HQ1
		<input type="checkbox"/> RPI-72HQ1
		<input type="checkbox"/> RPI-120HQ1
		<input type="checkbox"/> RPI-130HQ1
Cooling Only Unit	Single Phase Unit	<input type="checkbox"/> RPI-56AQ1
		<input type="checkbox"/> RPI-72AQ1
		<input type="checkbox"/> RPI-120AQ1
		<input type="checkbox"/> RPI-130AQ1

The outdoor unit matching the indoor unit is  
**RAS-**   
 Fill the model of the outdoor unit and deliver to the user.

This manual is for embedded duct type indoor unit. While reading this manual, also refer to the operation manual of the outdoor unit.

## Operation Manual



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## SAFETY SUMMARY

### DANGER

- Do not pour water into the indoor or outdoor unit. These products are equipped with electrical parts. If poured, it will cause a serious electrical shock.
- Do not touch or adjust safety devices inside the indoor or outdoor units. If these devices are touched or readjusted, it may cause a serious accident.
- Do not open the service cover or access the indoor or outdoor units without cutting OFF the main power supply.

### WARNING

- Turn OFF the main switch, put out fire at once and contact your service contractor, if leakage occurs. Refrigerant leakage can cause difficulty with breathing due to insufficient air.
- Do not use any sprays such as insecticide, lacquer, hair spray or other flammable gases within approximately one (1) meter from the system.
- If circuit breaker or fuse is often activated, stop the system and contact your service contractor.

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### NOTE

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- It is recommended that the room be ventilated every 3 to 4 hours.
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## Foreword

- Don't use this unit for storing foods, animals and plants, precision instruments and artworks.
- Don't install this unit in the following sites, otherwise failure may occur:
  - Places with oil (including machinery oil) and steam;
  - Places with much sulfurated gas, like hot spring;
  - Places where inflammable gases may be produced or flow in;
  - Coast areas with high content of salt;
  - Areas with acid or alkaline.
- When using the medical machines generating electromagnetic waves, take special care to avoid the error action of air conditioner. Don't install the signal face emitting electromagnetic waves toward the remote control switch. Also don't install the indoor unit within approximately 3 meters from strong electromagnetic wave radiators such as appliance or radio.

### Definitions of Signal Words

Attention Before Installation

	: Immediate hazards which will result in severe personal injury or death.		: Forbidden actions.
	: Improper operation that could result in severe personal injury or death.		: Mandatory actions. Instructions for non-specific general users.
	: Error operation may cause injury and physical damage.		: Help you for easier operation.
	: Notices indicating matters other than warning and caution.		: Reference page.




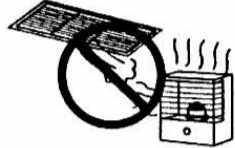
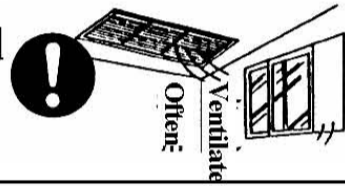

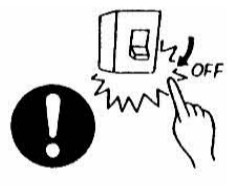
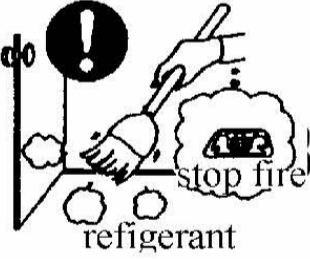



## Safety Notes

- Before operation, read the Safety Notes carefully.
- Precautions are categorized into such signs as “Warning”, “Caution” in this manual. Improper installation may cause severe injury or even death. Therefore, these precautions are recorded in the “Warning” column. “Caution” may also include severe results depending on different situations. These two precautions contain key information concerning safety, which shall be strictly followed.
- After reading, keep this manual for future reference.

### Installation • Electrical Work

	● Installation shall be performed by the distributor or the professional installation personnel. Improper installation may cause electrical shock, fire or falling of unit.
	● When the unit is installed in a small room, measures shall be taken to avoid leakage of refrigerant exceeding the specified density. Leakage of refrigerant exceeding the specified density will result in loss of oxygen.
	● The electrical installation personnel shall hold installation licenses. Entrust the licensed distributor for installation. In case of installation by yourself, incorrect installation may result in electrical shock.

**Safety Notes (Continued)**

<b>In Operation</b>	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Attention Before Installation</div> <div style="text-align: center; margin-top: 10px;">   <b>Warning</b> </div>	<ul style="list-style-type: none"> <li>● Don't operate with wet hand, as it may cause electrical shock. </li> </ul>
	<ul style="list-style-type: none"> <li>● The steam of inflammable spray like paint and oil (including machine oil) will cause fire, don't use these inflammables in the room with running. </li> </ul>
	<ul style="list-style-type: none"> <li>● In order to avoid incomplete burning of the burner, don't place the burner at the place where the air from air-conditioner directly flows. </li> </ul>
	<ul style="list-style-type: none"> <li>● To avoid harm on human body, don't let the cool air toward human body.</li> </ul>
	<ul style="list-style-type: none"> <li>● When using the unit and the burner together, the air shall be changed frequently. Insufficient air change will cause insufficiency of air. </li> </ul>
	<ul style="list-style-type: none"> <li>● In case of multiple motions of the safety device that cause unstable operation of the RUN switch, immediately cut off the power. Otherwise electrical shock, fire or breakage will occur due to electrical leakage and over-current. Consult the distributor or the aftersales service department of our company. </li> </ul>
	<ul style="list-style-type: none"> <li>● In case of abnormality of the unit (smell), stop operation and cut off the power supply immediately. Operation under abnormal situation will result in failure, electrical shock or fire etc. Consult the distributor or the aftersales service department of our company. </li> </ul>
	<ul style="list-style-type: none"> <li>● Though the unit uses nonflammable, nontoxic and flavorless safety refrigerant (HCFC), the refrigerant contacting fire will result in harmful gas. As the density of the refrigerant is heavy than the air, it will deposit on the floor to result in lack of oxygen.</li> <li>● In case of leakage of refrigerant, first extinguish stove fire, clean floor and ventilate room. Consult the distributor or the aftersales service department of our company. </li> </ul>
<div style="text-align: center; margin-bottom: 10px;">   <b>Caution</b> </div>	<ul style="list-style-type: none"> <li>● To avoid bad influence on animals (plants), don't let the air from the unit directly toward the animal (plants) </li> </ul>
	<ul style="list-style-type: none"> <li>● In COOL (HEAT) season, don't cut off the indoor power supply. If the power is cut off, the condensation will not be forced out and the spillage from the water collecting tray will spoil the ceiling and floor.   <small>Operation Season at ON Position</small></li> </ul>

## ► Safety Notes (Continued)

### Maintenance and Relocation



Warning

- For maintenance and relocation of the air conditioner unit, consult the distributor or the aftersales service department of our company.  
Incorrect maintenance and installation will result in electrical shock and fire accident.

### Other warnings and cautions

Attention  
Before  
Installation



Warning

- In maintenance and service, make sure not water flows into the air conditioner, as the electrical parts with water will cause electrical shock.
- Don't change the electric wiring. Otherwise severe accident may occur.
- In maintenance and service, use firm scaffold. Otherwise the falling scaffold will cause injury.
- In maintenance and service, don't spray water or detergent into the unit. Otherwise the short circuit will cause fire.
- In service, make necessary protection on the electrical parts and the connections against water. If water flows into unit, it will cause short circuit to result in fire or electrical shock.



Caution

- In removing the air discharge grille and the filter, hold with hand so as to avoid falling of the grille or filter to cause injury.
- Make sure to install the filter. Otherwise clogging of the heat exchanger or drain pipe may result in water leakage.

## ► How to Operate

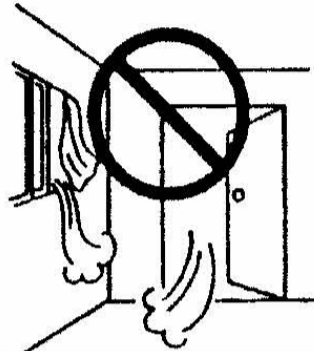
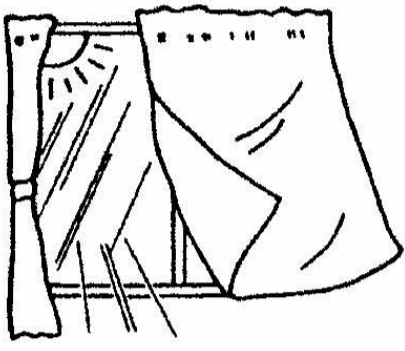
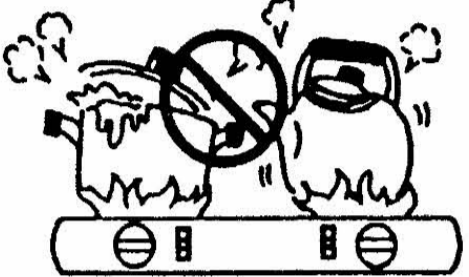
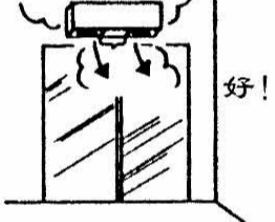
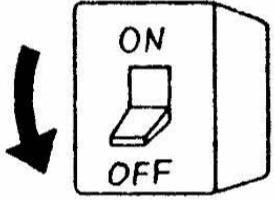
The operation range of the unit is as the following:

Conditions Differentiation	Intake Air Temperature of Outdoor Unit	Intake Air Temperature of Indoor Unit (non-indoor temperature)
COOL operation	Heat pump: -5°C ~ 43°CDB Cooling only: 20°C ~ 43°CDB	21°C ~ 30°CDB (relative humidity below 80%)
HEAT operation	-10°C ~ 15.5°CWB	17°C ~ 27°CDB

- Note: 1. In operation of this unit exceeding the above range, the mechanical protection device will work, so that no operation will happen nor condensation water will drip from the unit.  
2. When this unit is used with the cooling only outdoor unit, no heating operation may be obtained.

## How to Operate (continued)

### How to effectively use this unit

<p>Don't use this unit with the windows open.</p>	<p>Use curtain or shutter.</p>	<p>In cooling operation, don't use heating appliance.</p>
<p>The unit operation efficiency will decrease when the windows are open. Condensation will occur in indoor unit. (Sufficient ventilation is required)</p> 	<p>Avoid direct sunlight to increase cooling effect.</p> 	<p>Use of heating appliance will decrease the cooling effect, cause condensation and water dripping.</p> 
<p>Attention Before Installation</p>	<p>When hot air accumulates on the surface of ceiling, use the cycling operation.</p>	
	<p>It may increase the comfort of room. For details consult the distributor.</p> 	<p>Cut off the mains supply switch in case of long idle time.</p> <p>If the mains supply switch is not cut off, even if the air conditioner is not used, it will consume power.</p>  <p>Turn to OFF for long idle time.</p>

### How to make full use of cooling and heating effects


COOLING
<p>1. Fan Usually set [MEDIUM]. Setting of [HIGH] will cover wider area.</p> <p>2. Temperature It is recommended that the temperature set at 27~29 °C . If the refrigerating volume is insufficient, lower temperature may be set.</p>

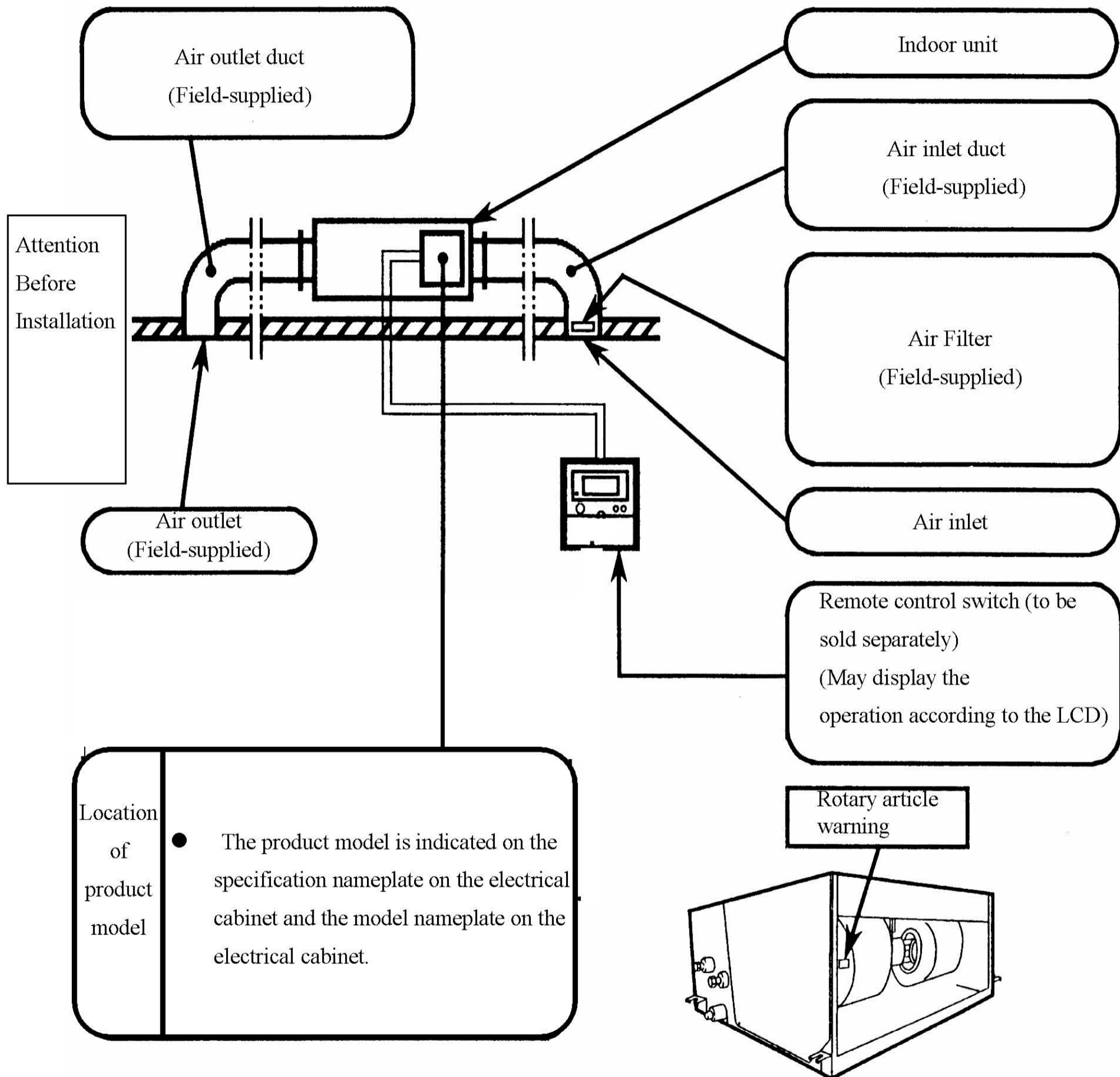
HEATING
<p>1. Fan Usually set [MEDIUM]. Setting of [HIGH] will cover wider area.</p> <p>2. Temperature It is recommended that the temperature set at 18~20 °C . If the heating volume is insufficient, higher temperature may be set.</p>

## Part Name and Indications of Safety Notes

### Indoor Unit

- For the safety of user in operation of this product, safety notes are indicated on the air conditioner body. Do follow such notices in operation and maintenance.

Safety Notes	Rotary article warning
Display content	⚠Warning
	 Danger Don't put hands or rod inside.



**Location of product model**

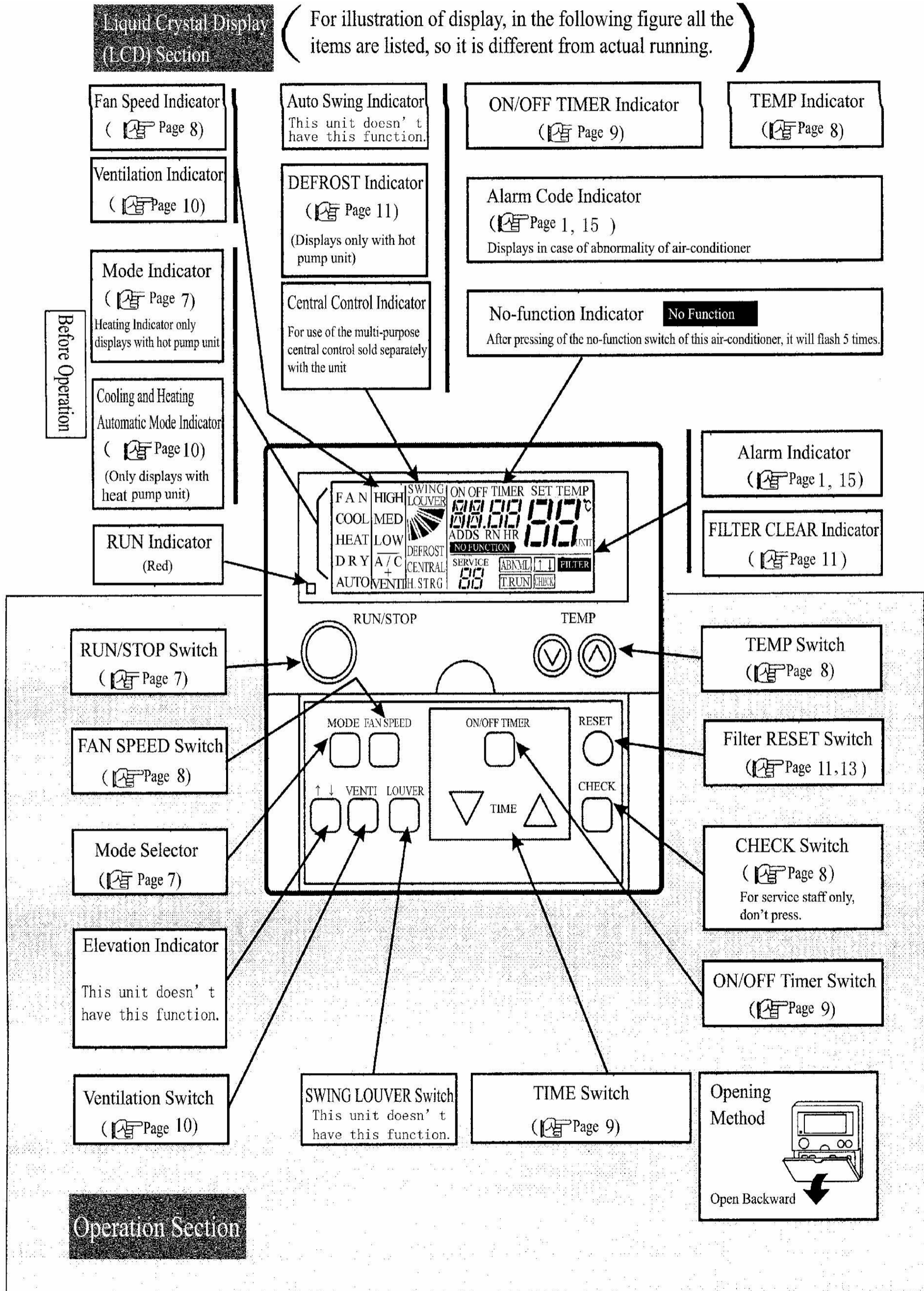
- The product model is indicated on the specification nameplate on the electrical cabinet and the model nameplate on the electrical cabinet.

Location with safety notes      Affix on the  in the above figure.

**Notice**

- Press the button slightly with fingers to operate the remote. If operate with ball pen that has sharp end, the operation part may be damaged.
- In using the separately sold wireless remote control switch, read the operation manual accompanied with the remote control switch for operation.

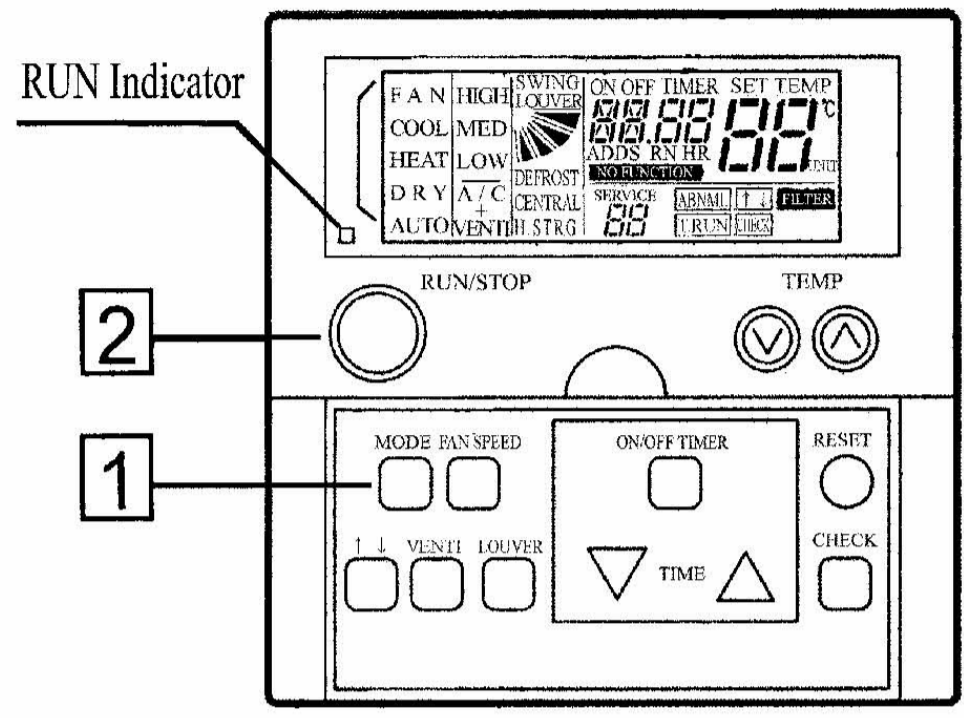
# Part Name of Remote Control Switch





# COOL, HEAT, DRY and FAN

Only the pump unit has the HEAT operation function. The cooling only unit doesn't have such function.



- ### Run Modes and Functions
- COOL..... supplies cool air to the room
  - HEAT..... supplies heat to the room
  - DRY ..... decreases humidity of room
  - FAN ..... circulate the indoor air

- ### Tips
- COOL .....27~29°C
  - HEAT .....18~20°C
  - DRY .....23~25°C

Run Method

**Preparation**

**Connect Power**

To protect the compressor, connect power 12 hours before operation.  
For frequent operation season, don't disconnect the power.

**1**

**MODE**

Press this switch

Press the switch one time, it will display in order of COOL → HEAT → DRY → FAN  
(For refrigerating unit only → COOL → DRY → FAN)

("COOL" mode)

**2**

**RUN/STOP**

Press this switch

RUN Indicator turns on  
RUN start.

**Setting of TEMP, FAN and SWING LOUVER**

- After setting, the setting state will be memorized, so the daily setting is not needed. For change of setting, refer to the operation in the next page.

**STOP**

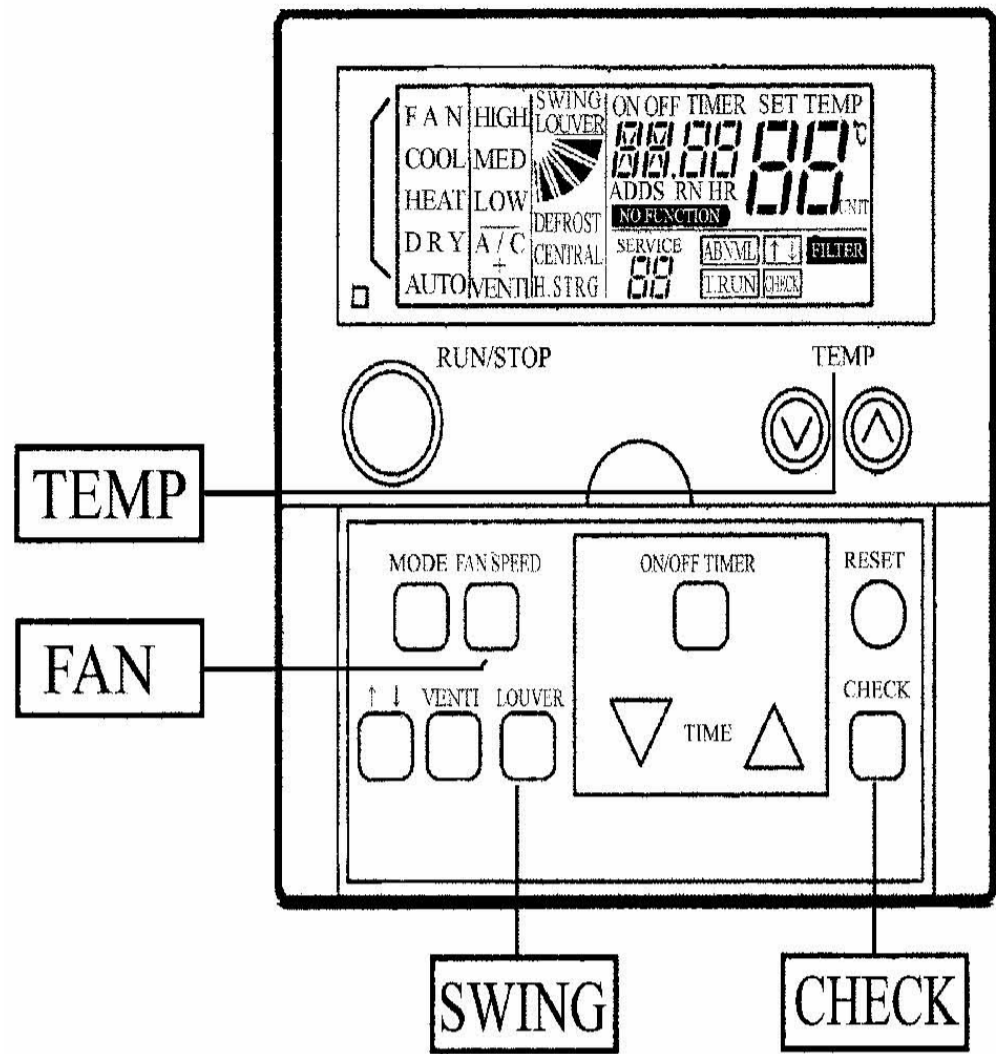
**RUN/STOP**

Press this switch

RUN Indicator turns off.  
Stops running.

- After the Heat running, normally there is about 2-minute Fan running.

# TEMP, FAN



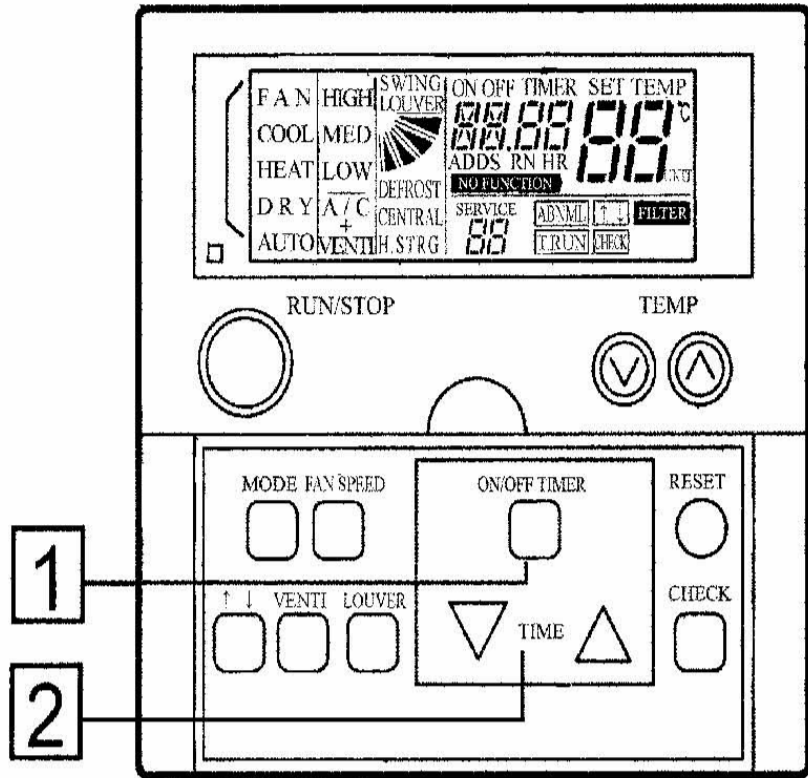
**Tips**

- Don't press this **SWITCH**
- For maintenance only.
- In case of CHECK mode by mistake, press **CHECK** again for 3s and after 10s press **CHECK** again, it will return to the previous running mode.

Run Method	<p><b>TEMP Regulation</b></p> <p>  Press this switch for TEMP setting.</p> <p> Press this switch once for increase of 1°C . (Max. 30°C )</p> <p> Press this switch once for decrease of 1°C .</p> <p>( In COOL·DRY·FAN mode ..... min. 19°C )</p> <p>( 17 In HEAT mode ..... min. 17°C )</p>	<p>(Indicates TEMP of 28°C )</p>
	<p><b>FAN</b></p> <p> Press this switch</p> <p>Press this switch to move in order of →HIGH→MEDIUM→LOW</p> <p>But this product does not provide the switch function of FAN speed.</p> <p>In actual operation, all the FAN speed settings are the same as that of "HIGH".</p>	<p>(Indicates MEDIUM)</p>

- This air conditioner doesn't have the SWING LOUVER function. When the SWING LOUVER switch is pressed by mistake, LCD will display "No Function" and flash 5s.

# ▶ TIME Operation



## TIMER • RUN

- TIME operation is to set start or stop of unit after a period of time.
- Set "TIMER" to ON/OFF.

### "TIME ON"

Press switch when air conditioner is OFF and after the set time it starts.

### "TIME OFF"

Press switch when air conditioner is ON and after the set time it stops.

Run Method	1	<p>TIMER <input type="checkbox"/> Press this switch</p> <p>Press this switch In OFF state, it displays "ON TIME".</p> <p>Press this switch In ON state, it displays "OFF TIME".</p>	<p>(Indicates setting of "ON TIME")</p>
	2	<p>▽TIME ▲ Press this switch for setting of time.</p> <ul style="list-style-type: none"> <li>● Press ▲ to increase time at 0.5hr (30min), max. 24 hours.</li> <li>Press ▲ to decrease time at 0.5hr (30min), min. 0.5 hours.</li> <li>● In case of no setting, the automatic time setting is 8 hours.</li> </ul>	<p>(Indicates TIME period is 8.5 hours)</p>
	Cancel	<p>Press switch <input type="checkbox"/> again</p>	

## COOL/HEAT Auto RUN

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Only the hot pump unit has the COOL/HEAT Auto Run function. Single cool unit has no COOL/HEAT Auto RUN function.

COOL/HEAT Auto RUN is optional, which shall be set.  
For details consult the distributor.

### Tips

- COOL/HEAT Auto RUN ..... Based on the expected temperature, changes between "COOL" and "HEAT"
- When the intake air temperature is approx. 3 ° higher than the set temperature, it automatically changes to [COOL], if 3 ° lower, it changes to [HEAT].

- When the ambient temperature is above 21°C, no HEAT operation is possible.
- Due to sharp changes of temperature in COOL and HEAT operations, this function shall not be used for precision control of room temperature and humidity.

# Other LCD

## Normal display

Run Method

DEFROST  For heat pump unit only.	In DEFROST running, <ul style="list-style-type: none"> <li>● “DEFROSTING” turns on</li> </ul> Indoor FAN stops; Swing louver stops horizontally and LCD continues.	
	Stop unit in DEFROST operation <ul style="list-style-type: none"> <li>● RUN indicator turns off, “DEFROSTING” display continues and stops after defrosting.</li> </ul>	
FILTER	<ul style="list-style-type: none"> <li>● When <b>FILTER</b> appears, clean the filter. After cleaning, press  switch to cancel the display.</li> </ul>	

## Display of abnormality

Abnormality	<ul style="list-style-type: none"> <li>● RUN indicator flashes (red).</li> <li>● <b>ALARM</b> appears on the LCD.</li> <li>● LCD displays indoor unit designation, alarm code, unit code and number of systems.</li> <li>● When the remote controller is connected to multiple indoor units, it will display units one by one.</li> </ul> <p style="text-align: center;">Check the display on LCD and contact the distributor.</p>	<p>Indoor unit Number      Alarm code</p> <p>Alternative display of 1s      Alarm code</p> <p style="text-align: center;">Model code connected No. of Indoor Units.</p>
Power cut	<ul style="list-style-type: none"> <li>● All displays disappear.</li> <li>● After stop due to power cut, it will not restore operation even power is on. Re-start operation.</li> <li>● After instant power cut of 2s, the unit will restore operation after power-on.</li> </ul>	
Interference	<ul style="list-style-type: none"> <li>● All displays disappear, and the unit may continue to run or stop. This is because the anti-interference microprocessor is installed. Re-start operation.</li> </ul>	

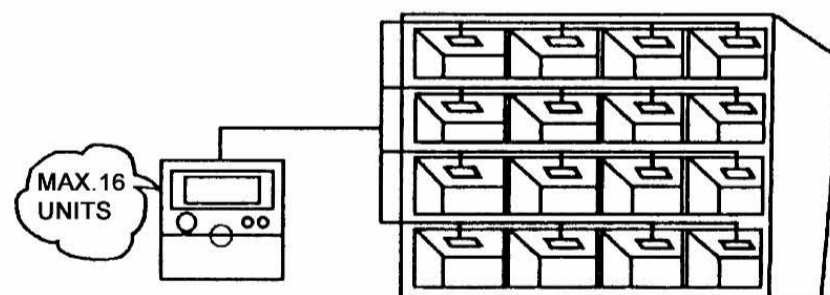
## Automatic Control of Product

When this unit is used with the cooling only outdoor, no heating operation may be obtained.



Running Method	3min protection		In order to protect the compressor of the outdoor unit, after stop of the unit, wait at least 3min. After about 3min, it will automatically run.
	COOL	Prevent Freezing	If the temperature of the indoor unit heat exchanger drops abnormally, the compressor will stop automatically and only the FAN runs to avoid freezing of the heat exchanger.
	HEAT	HOT start	To start HEAT operation, in order to avoid discharge of cool air, the FAN running will automatically change slowly in the order of <b>LOW</b> → <b>SET FAN</b>
		DEFROST/FAN stop	In DEFROST operation, in order to avoid discharge of cool air, the FAN automatically stops.
		Excess heat removal	When the HEAT operation ends, in order to reduce the indoor unit temperature, sometimes FAN operation will be extended 2min.
Prevention of overload		In HEAT operation, different indoor temperature will have different overload point. When outdoor unit is high (over 21°C), it stops.	

## Multiple Units Running Simultaneously

One remote control switch may control multiple air conditioners (max. 16 units). For details consult the distributor or the aftersales service department of our company.



## Maintenance Method

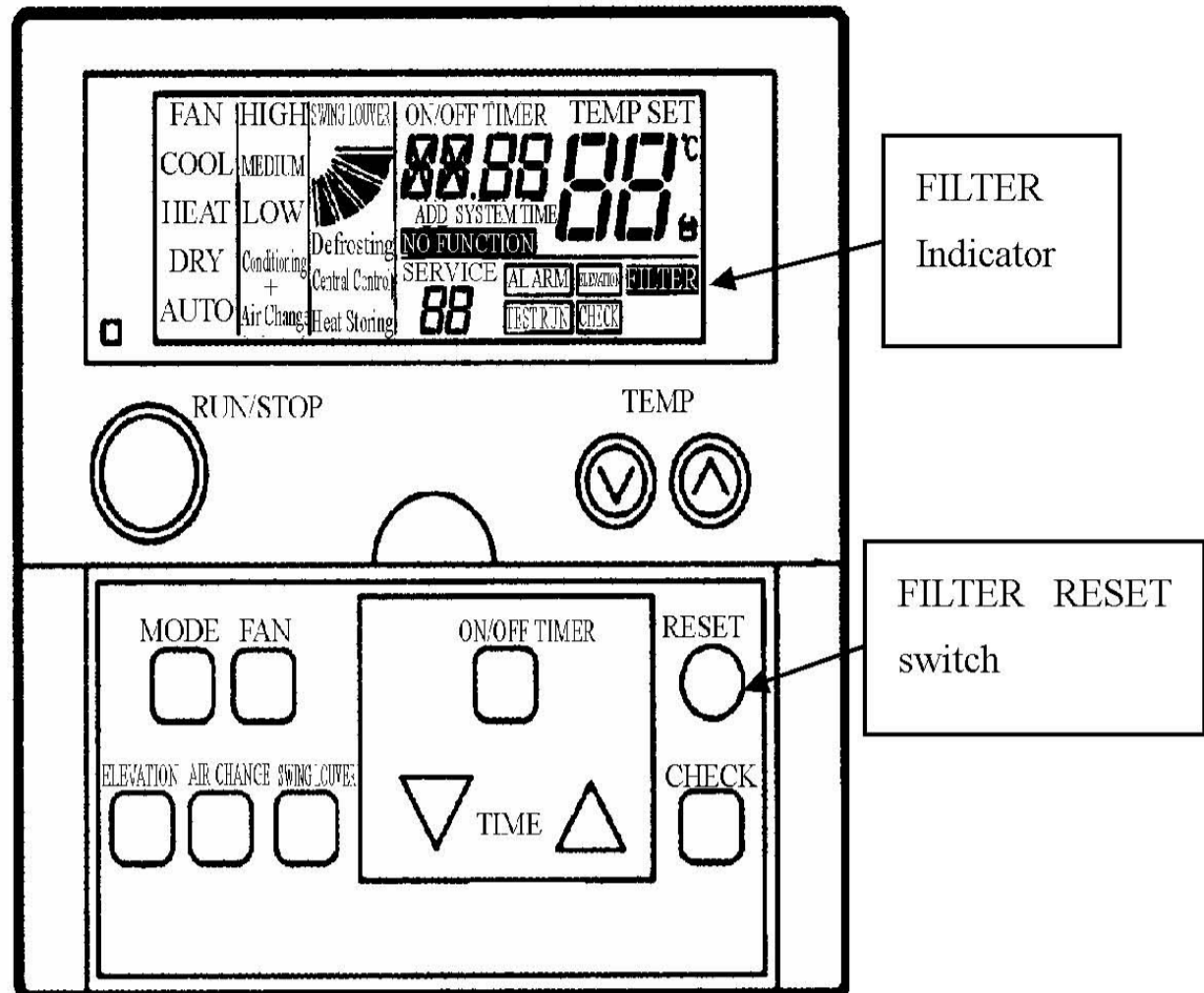
Maintenance and Aftersales Service	 Warning	<ul style="list-style-type: none"> <li>To avoid injury from electrical shock, cut off the main power of the air conditioner before operation.</li> <li>In maintenance, use firm scaffold to avoid falling to cause injury.</li> </ul>
	 Caution	<ul style="list-style-type: none"> <li>In installing and removing air intake grille and filter, hold with hands to avoid falling of grille and filter to cause accident.</li> </ul>
		<ul style="list-style-type: none"> <li>Install the filter. Otherwise clogging will occur in heat exchanger or drain pipe.</li> </ul>

## ► Maintenance Method (continued)

### Daily Maintenance

#### Cleaning of air filter

When the FILTER indicator turns on, clean the air filter.



#### 1 Cleaning air filter

- For method of cleaning the filter, consult the distributor.
- As the installation conditions are different in different places, sometimes the air filter may be installed where it is hard to take out.

Maintenance  
and  
Aftersales  
Service

#### 2 After cleaning the air filter and installation, press RESET switch.

- In re-operation, don't forget press the signal RESET  switch of the remote control switch. When the FILTER indicator turns off, it will start timing for the next cleaning.

### Maintenance of Air Intake Grille and Air Discharge Grille

- Different materials and shapes of the grilles will require different maintenance methods. For maintenance method, consult the distributor.

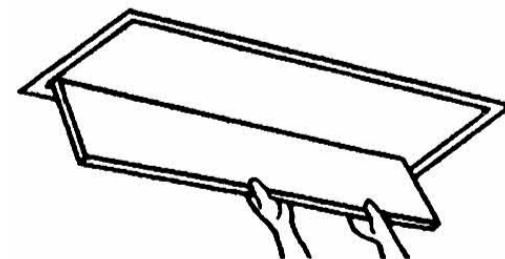
### Maintenance At Start and End of Air-conditioning Season

Start of air-conditioning season

End of air-conditioning season

- Clear away the dirt and foreign substances on the air intake grilles and the air outlets of the indoor unit and the outdoor unit.
- Check if the air filter of the indoor unit is clogged.

- Clean the air intake grille and air discharge grille of the air filter.



## ► False Failures

The following occasions are not failures.

		Symptom	Cause
Maintenance and Aftersales Service	Stop of running	All the indicators on the remote control switch turn off	Influence from electromagnetic wave causes motion of protection device chip. Reset by re-operation.
		At power cut	Re-start operation. For instant power cut within 2 seconds, re-operation will start automatically.
	Generation of white fume	At the initial running of HEAT season	Foreign substances on the indoor unit heat exchanger are being removed.
	Generation of fog	Unit used in canteen or kitchen	Oil adhering to the fin result in decrease of performance of heat exchanger together with fog. ● It is recommended not to use stainless steel filter.
	Peculiar smell	Peculiar smell from the indoor unit air in running	The cigar smoke or peculiar smell in the room enters into the indoor unit.  Maintenance of the air filter and the air outlet panel or sufficient ventilation through FAN operation will improve the situation.
	Abnormal noise	At start and end of running, slight abnormal noise occurs.	This is the noise of friction between the deformed plastic and other parts in change of temperature.
		Noises of water flowing and water boiling.	This is the noise of refrigerant flowing or pumping noise of the drain system (optional). Especially at the start and end of operation (about 3min), it will occur.
	Condensation	Condensation on unit casing or water dripping.	Under high humidity (relative humidity of 80%), long operation will result in condensation.



## ► Authorized Maintenance

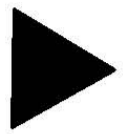
### Matters to be checked before authorized maintenance

Symptom		Matters to be checked	Re-operation
No-operation		Whether the mains supply of the air conditioner is power-on.	Connect the mains supply of the air conditioner
		Whether the fuse on the mains supply breaks off and if the switch is on.	Replace the fuse or turn on the switch. In case of re-occurrence, consult the distributor or the aftersales service department of our company.
Stop after running	In Cooling	Check if the air inlet and air outlet of the outdoor unit are clogged with paper, plastic membrane or rinsing matter.	Clear away the things clogging in the air inlet and air outlet.
	In Heating	Check if the air inlet and air outlet of the indoor unit are clogged with any articles.	Clear away the things influencing air flow
		Check if the exhaust air is directly taken from the air inlet.	
Insufficient cooling volume or heating volume		Running mode proper or not	If it is FAN mode, change to COOL (HEAT) mode
		Set temperature proper or not	Regulate the TEMP switch
		Fan direction proper or not	Change swing direction
		Filter clogged or not	Clean filter
		Window closed or not	Close door and window
		Indoor unit and outdoor unit air inlets and air outlets clogged or not	Remove clogging things.

### Authorized Maintenance

- After checking the above matters, if the unit is still under improper situation or has other symptoms than those indicated above, stop operation. Consult the distributor or the aftersales service department of our company.

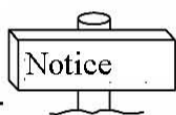
Maintenance and Aftersales Service	<p>Contact the distributor and inform the following:</p> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="border: 1px solid black; width: 30px; height: 30px; text-align: center; margin-right: 10px;">1</div> <div>For unit model see page 5 --- Product Model Indication Location.</div> </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="border: 1px solid black; width: 30px; height: 30px; text-align: center; margin-right: 10px;">2</div> <div>Advise in detail the failure to the distributor or consultant.</div> </div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 30px; height: 30px; text-align: center; margin-right: 10px;">3</div> <div>For alarm codes see page 11.</div> </div>
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## Product Types and Noise Value

		RPI-56HQ1 RPI-56AQ1	RPI-72HQ1 RPI-72AQ1	RPI-120HQ1 RPI-120AQ1	RPI-130HQ1 RPI-130AQ1
Type	Function	Heat pump type unit, cooling only type unit			
	Structure of unit	Split type			
	Cooling method of condenser	Air cooling type			
	Fan method	Air duct connection air exhaust			
Power supply	Indoor unit	220V or 240V 1Φ 50Hz			
Unit outside static pressure (Pa)		Low static pressure setting: 20 High static pressure setting: 50			
Noise value (dB)		40-38-36	42-40-37	44-42-40	45-43-40

Maintenance  
and  
Aftersales  
Service



The above noise value is measured in an anechoic room at the location 1.4 meter under the low static pressure indoor unit.

**Opinion of user :**

For convenience of aftersales service, the distributor is required to fill out the following before delivering to the user.

**Distributor:**

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**Tel:**

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**Date:**

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Specification in this manual are subject to change without notice in order that HITACHI may bring the latest innovations our customers.

Manufacturer: Hitachi Air-conditioning & Refrigerating Products (Guangzhou) Co., Ltd.