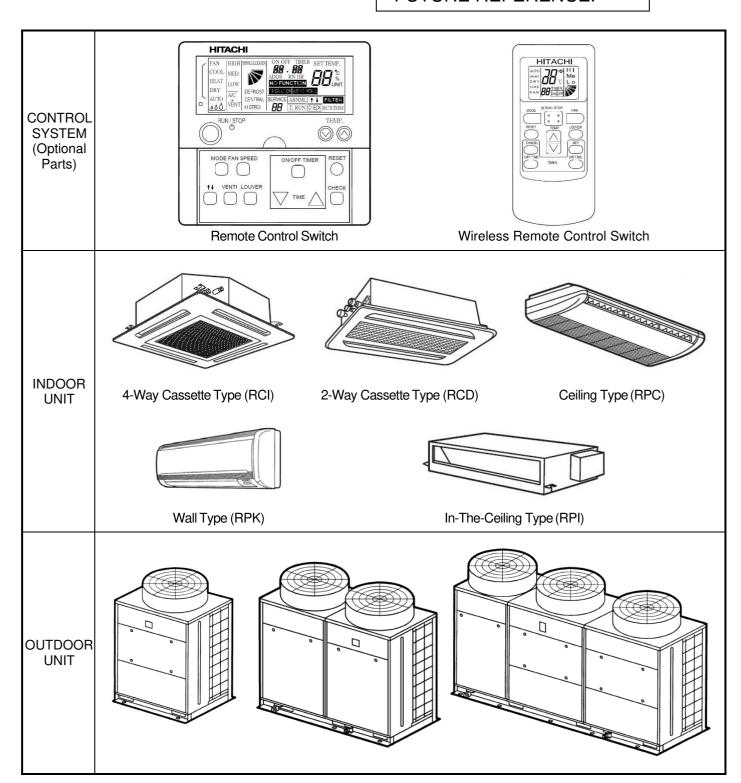
# **HITACHI**

## **Operation Manual**

INVERTER-DRIVEN MULTI-SPLIT SYSTEM AIR CONDITIONERS

## **IMPORTANT:**

READ AND UNDERSTAND THIS MANUAL BEFORE USING THIS HEAT-PUMP AIR CONDITIONERS. KEEP THIS MANUAL FOR FUTURE REFERENCE.



## **Important Notice**

- The air conditioner is designed for standard air conditioning only.
- Do not install the indoor unit, outdoor unit, controller, and cable in the following places:
  - Places where oil (including machinery oil).
  - Places where a lot of sulfide gas drifts such as in hot spring.
  - Places where inflammable gas may generate or flow.
  - Places where strong salty wind blows such as coast regions.
  - Places with an atmosphere of acidity or alkalinity.

Do not use for food, animals, plants, precision machinery, preservation of art works and other special purpose.

- Pay attention to the following points when the unit is installed in a hospital or other facilities where electromagnetic wave generates from medical equipment.
- Do not install the unit in the place where the electromagnetic wave is directly radiated to the electrical box, remote control cable or remote control switch.
- Install the unit at least 3 meters away from electromagnetic wave such as a radio.

### United the control of the control of

**P**Dang

Danger : Immediate hazards which will result

in serious injury or death.



Warning: Hazards or unsafe practices which

May result in serious injury

or death.



: Items to be aware of minor to warning

-



: Mandatory issues for general user.



Prohibitions.



Useful information for operation or

maintenance.



: Reference indication page.

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## **Safety Summary**

- Read this section before using the air conditioners and operate it correctly.
- Pay special attention to signs of "Warning" and "Danger" as incorrect installation may cause injuries and hazards, precautions during installation are listed below. Items that may cause hazards and danger are listed based on their situations. Regardless of their severity, please pay attention to items listed in either column and follow relevant instructions.
- Be sure to keep this manual and placed in a clearly visible place.

#### About Installation and Electrical Works



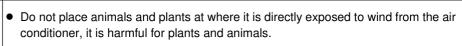
- Installation work must be done by the dealer or qualified person. Water leakage, electric shock, fire, or unit fall may occur if you install the unit by yourself.
- Electrical works must be done by qualified person. Please note that self-setup could easily cause electric shock if the construction is not completely.

## **Precaution Before Using**

## Operating • Do not operate switches with wet hands, it may cause electric shock. • Do not use flammable materials in the room when air conditioner is operating. Spray paint and other flammable and volatile oil (including oil) may cause fires. • Do not set burner at the place where the air conditioner wind can directly reach, it may cause incomplete combustion. • Do not let cold air blow on the body directly for a long time, it is bad for the health. If the unit and burner operate simultaneously, ventilation is needed, otherwise it will cause oxygen shortage. alwavs ventilation • If earth leakage breaker (ELB) or fuse is often activated, please stop the system, and **Danger** contact your service contractor. • When abnormal conditions occur (for example: burning smell), cut off the power to stop the unit immediately. To avoid electric shock and fire hazard, please contact the dealer. Refrigerant (Fluorocarbon) for this unit is incombustible, non-toxic, and odorless. However, if the refrigerant is leaked and is contacted with fire, toxic gas will generate. Also, because the fluorocarbon is heavier than air, the floor surface will be filled with it, which could cause suffocation. • If refrigerant leakage occurs, please turn OFF the appliance and open the windows, extinguish the fire immediately and contact the dealer. • Do not insert fingers or sticks into air inlet or outlet grille into the unit while the air outlet grille is removed. The high-speed fan can cause injury.

# >

## Precaution Before Using (Cont.)







 Do not disconnect the power supply of the indoor unit during summer. The condensed water inside will not be drained but will overflow from the container, which can wet the ceiling or floor.



### **Precautions During Shifting and Maintenance**

 Contact the dealer to move or maintain the air conditioner, do not do it yourself, it may cause electric shock or fire.

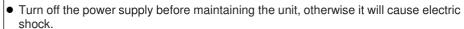


Prevent water entering the unit while maintaining, it may cause electric shock hazard.

- Do not make any arbitrary changes about unit electrical work to avoid major accident.
- Be sure to fix the frame underneath the unit to avoid falling damage.



• Be sure to grab the suction grille switch and filter tightly while maintaining or removing it, otherwise it could cause falling damage.





### **Other Dangers and Warnings**

When the fire occurs, cut off total power supply immediately to avoid electric shock.



 Do not place vases or other containers filled with water on the air conditioners, dripping water will damage the insulator inside the unit and cause electrical shock.



Do not touch the safety devices inside the outdoor units.



• Do not run the unit without service cover, it may cause electric shock.



Danger

Do not pour water into indoor or outdoor unit it will cause electrical shock.



Do not climb the outdoor unit or place items on it, it may topple over and cause an injury.



- Do not place flammable substance near the unit, it may cause fire.
- During the field decorating construction, do not operate the unit to prevent it from dust and defacement.
- Make sure the environment and the unit are all clean before running the unit, otherwise it may cause unit damage or water leakage.
- In the situation of no one in the field, the unit should not operate too long. In this case, make sure to maintain the unit every month, and install the monitoring devices, otherwise external factors such as earthquake, thunder or rat bite may cause accidents.

## **Operation Range**

To ensure the efficiency of the air conditioner, operate within the following range.

Condition	Air inlet temperature of outdoor unit	Air inlet temperature of indoor unit (Non-room temperature)
Cooling Operation	-5°C DB $\sim$ 43°C DB	21°C DB/15°C WB $\sim$ 32°C DB/23°C WB

DB : Dry Bulb WB : Wet Bulb

PS: If the units operate out of range, the protection device may cause the unit shut down or the condensed water drops.

## Usable methods and Cautions

### **Usable methods**

Don't open the doors and windows for a long time.	Put up the curtains it is exposed to dir				of heating conditioner
<ul> <li>Worse cooling capacity.</li> <li>Indoor unit dewing.</li> <li>Pay careful attention to ventilation.</li> </ul>	Better cooling capa	ncity with curtains.	cooling cal and conde	-	cause worse or unit dewing drop.
If ceiling is full of hot air, use the ventilation equipment.		If long time do n power switch.	ot use, plea	se turn of	f the main
Contact the dealer to improve indoo	Set to the OFF position.				
		J ON OFF			

## **Cautions When Using the Air Conditioner**

### **COOLING**

- 1. Air flow direction
  - If the room is not cold, adjust the air flow direction.

    (Note that if the wind blowing down for a long time, the air flow deflector may dew due to the wind direction, it will cause water droplets.)
- 2. Fan speed Usually use the "Me" speed to operate the unit. In the case of "Hi" speed, the air supply range is wider.
- 3. Temperature

  The recommended setting temperature is 27~29°C. If it is not cool enough, set the temperature lower.

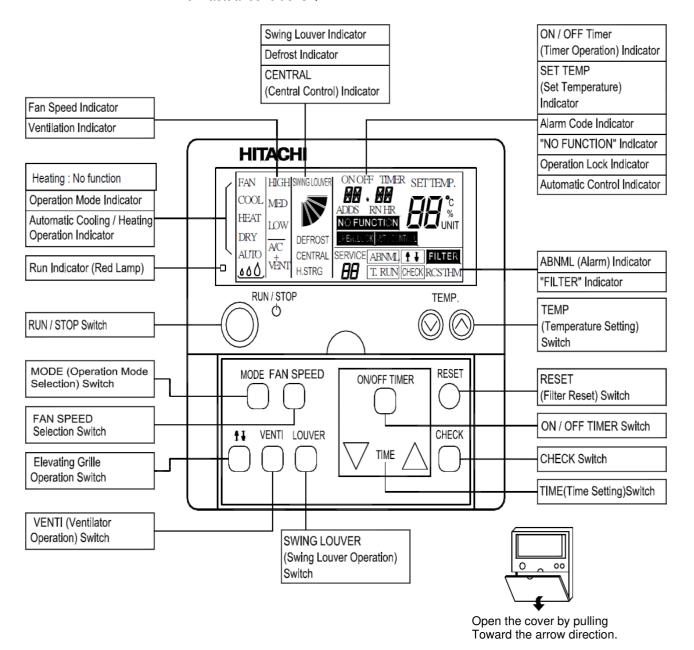


## Component Part of Remote Control Switch

## Wired Remote Control Switch (Optional)

**Display Section** 

(The figure shows all the indication for easy understanding. It might be different from actual conditions.)



**Operation Component** 

(The figure is the remote controller without the cover. )

## **SCAN ME**

Scan this QR code with your mobile device to see further instructions on how to maximize the functions of your air conditioner and for other related information.

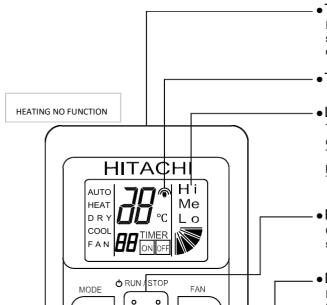




## Component Part of Remote Control Switch

## Wireless Remote Control Switch (Optional)

**Display Section** (The figure shows all the indications for easy understanding.)



o

TEMP

TIMER

LOUVER

SET

ON TIME

RESET

CANCEL

OFF TIME

#### Transmitter

Point the transmitter towards the receiver of the indoor unit when sending commands. The transmitting indication on the liquid crystal display flashes when sending commands.

### Transmitting Indication

### Liquid Crystal Display

The set temperature, timer operation, position of air louver, operation mode, air flow mode, etc., are indicated. The diagram of the display shown on the left is for explanation purposes only.

The display will differ during actual operation.

### Run/Stop Switch

Operation of the unit can be started or stopped by pressing this switch.

### Fan Speed Switch

Press this switch to select the fan speed. By repeatedly pressing the button, the setting will change sequentially through HIGH, MED and LOW.

(Fan speed is fixed at Low for dry operation.)

### Louver Angle Switch

The airflow angle and auto-louver operation can be set by this switch.

When pressing the switch, the angle is changed in the following order.

(In cool or dry operation modes, steps 1-5 and Auto swing is available.)



### Temp. Switch

The setting temperature can be adjusted using this switch.

#### Timer Switches

Four switches control the timer operation. The set time can be changed by pressing "ON TIME" or "OFF TIME" and is set by pressing the "SET" switch. Timer operation can be cancelled using "CANCEL".

### Reset Switch

- (1) Press RESET to turn off the filter indicator lamp after filter cleaning.
- (2) If the unit is stopped abnormally due to protection devices etc., press the RESET switch to cancel the control stoppage after the cause of the abnormality has been remove.

### Mode Selection Switch

By repeatedly pressing the mode switch, the unit cycles through the different operating modes in the order of HEAT, DRY, COOL and FAN.

To select auto operation, press the switch for more than 3 seconds. If the switch is pressed again, it will return to FAN mode.

## >Other Indications ——

## **Indications When in Normal Condition**

Thermo-controller	Thermo-controller operation.  The fan speed is LOW, and the LCD will not change. (Only in the heating operation.)	HEAT MED SET TEMP °C
Defrost	Defrost operation.  • " DEFROST " light will turn ON and the indoor fan will stop. louver will be fix at horizontal position but the LCD will show as louver still swinging. (Only if the indoor unit louver is set to swing automatically.	HEAT MED SET TEMP  A/C DEFROST  LIGHT ON
	Stop the unit during defrost operation.  The RUN indicator (Red) is OFF. However, the operation continues with "DEFROST" indication, and the unit is stopped after the defrost operation is finished.	
Filter	Filter clogged  • " FILTER " indication is ON when the filter is clogged.  Clean up the filter then press the RESET switch and the "FILTER" indicator will go off.	HEAT A/C SET TEMP.  SET TEMP.  *C  FILTEL  FILTEL

## **Indications When in Abnormal Condition**

Abnormality	<ul> <li>The RUN indicator (Red) will flash.</li> <li>"ALARM" will indicate on the LCD.</li> <li>The indoor unit number, the alarm code, the model code, and the connected number of indoor units are all indicated on the liquid crystal display.</li> <li>In the case that remote controller is connected to multiple indoor units, every indoor unit number will be indicated sequentially.</li> <li>Confirm the alarm code and contact the dealer for repair and maintenance.</li> </ul>	Indoor Unit Number Alarm Code  COOL MED ADDS RN A / C ABNML  Indicated for a second alternately.  COOL MED A / C ABNML  ABNML  ABNML  ABNML  ABNML		
<ul> <li>All the indications are OFF.</li> <li>Once the unit is stopped by power failure, the unit will not start again although the precovers. Please perform the starting procedures again.</li> <li>In case of instantaneous power failure within 2 seconds, the unit will start again auto</li> </ul>				
Electric Noise	Micro-computer active to protect the unit from electric noise, therefore the LCD goes off.     Set to start the unit again.			

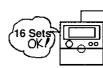
## Normal Automatic Operation

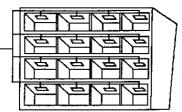
To increase the unit's protection and comfort, the following functions will be activated automatically.

Three Minute Guard (Enforced Stoppage)		To protect the compressor, once the unit has been stopped, it will not start again within 3 minutes.		
Three Minute Guard (Enforced Operation)		Ensure that the compressor will operate at least 3 minutes. If the power is turned off within three minutes after the unit start, the compressor will still operate for at least 3 minutes.		
	Frost Prevention	The compressor will stop automatically and change the mode to fan if the temperature of heat exchanger is too low, to prevent the heat exchanger from frosting.		
Cooling	Oil Return Operation	The unit will operate automatically if the indoor is shut down for more than 2 hours, to prevent the refrigerant oil from accumulating in the heat exchanger.		

## Operate Multiple Units Simultaneously -

- One remote controller can control more than one unit (maximum 16 units) simultaneously.
- Contact the dealer or service personnel to get details.





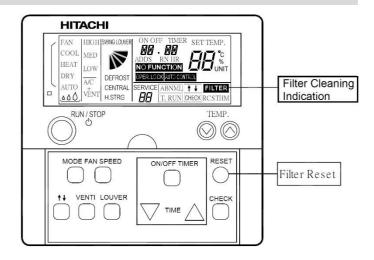
## **Maintenance Methods**

Warnings and cautions of maintenance as page 2.

## **Routine Maintenance**

### Filter Cleaning

When **FILTER** indicates, take out and clean the filter.

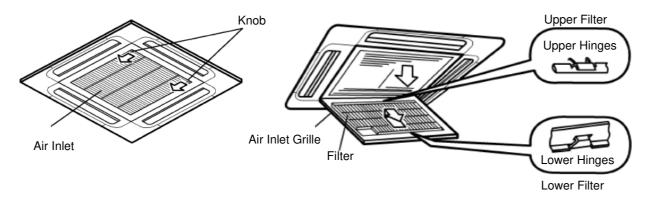


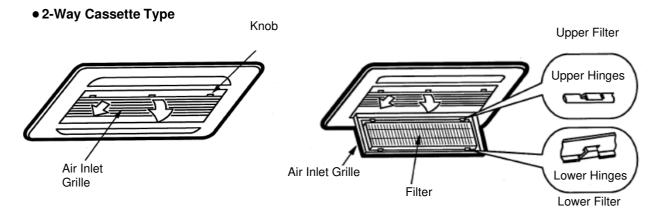
1 Take Out the Filter

Cassette Type (4-Way, 2-Way)

- 1. Open the air inlet grille after pushing the two knobs as shown by the arrow mark.
  - 4-Way Cassette Type

2. Support the bottom of air inlet grille manually, then grasp the handle of air filter and lift it up, and then detach the air filter and the fixing hinge seat to take out the air filter.

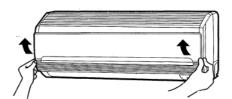


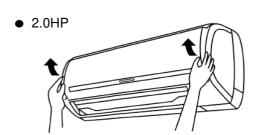


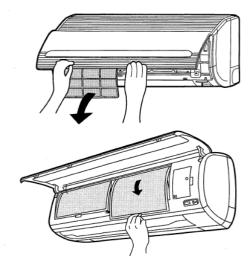
## Maintenance Methods (Cont.)

### Wall Type

- 1. Pull up the air inlet grille after pushing two "PUSH" marks on right and left side of the grille.
  - 0.8~1.5HP Filter is inserted into inside of the air inlet grille.
- 2. Lift the air inlet grille up and remove the air filter.







Air Inlet Grille

2.5~4.0HP
Pull the air filter
downward manually.

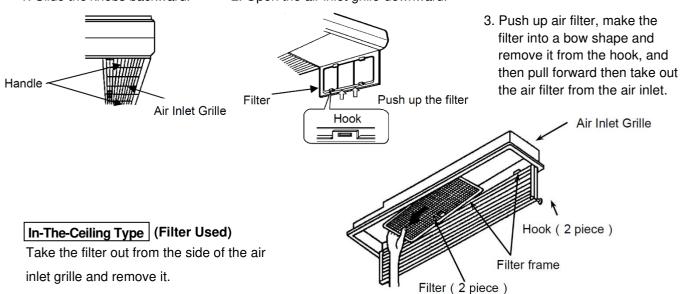
Filter

Handle

### **Ceiling Type**

1. Slide the knobs backward.

2. Open the air inlet grille downward.





## **Maintenance Methods (Cont.)**

## 2 Clean the Filter

- Please clean the filter twice a month.
- Use a vacuum cleaner to remove the dust from the filter or wash them with water.



or



• After washing the air filter, dry them in the shade.

### 3 Install the Filter

After cleaning the filter, be sure to dry and put it back correctly, then return the hook.





Make sure the air filter is installed correctly before closing the air inlet grille.





- Do not dry with fire, hairdryer, or other appliance, it will cause deformity.
- Do not use hot water temperature above 50 degrees to clean air filter, it will cause deformity.

## 5 Resetting of Filter Indication

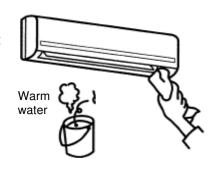
Press the RESET button on indoor unit to turn off the indicator after cleaning the air filter.

### Air Inlet, Outlet Grille and Cover Maintenance Methods

Wash it with warm water using a soft sponge or towel, twist dry and wipe it



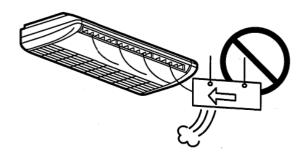
 Do not use volatile oils, thinners, cleaning agents or other solvents, it will cause deformity or discoloration.



## Start and End of the Air Conditioning Season

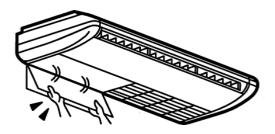
### Start of the season

- Check that the air outlet and inlet of the outdoor and indoor unit are not blocked.
- Check that the air filter is not clogged.



### End of the season

• Clean the air filter, air inlet and outlet grille.





## **Maintenance Methods (Cont.)**

### Check

Check the following points in the beginning and in the end of air conditioning season. Contact the dealer if there is any problem.

## 1 Ground wire

• Is the ground wire fall off or broken?



## 2 Installation of platform

 Check the platform underneath the outdoor unit, does it rust seriously or unstable?



## 3 Inspection and maintenance

The unit might be contaminated when the unit has been operated for long time, it will cause worse capacity.

- Depending on usage, unit maybe blocked or clogged by dust or litters, it will cause room odor. Therefore, besides routine maintenance, inspection is needed.
- Contact the dealer to get details about the cost of indoor and outdoor unit inspection and maintenance.

# Inspection and maintenance



- Use genuine filters only to ensure unit's performance and life.
- Do not operate the unit without filter, dust may enter the unit and cause damage.
- Check and clean the heat exchanger, the performance of the air conditioner will degrade if the air filters are covered with dust.





## This is Not Abnormal

Situation			Cause		
	Stop running	The LCD goes off.	Micro-computer is active to protect the air conditioner from electromagnetic wave.		
	Stop running	Reset the unit.	<ul> <li>Power failure.</li> <li>If power failed for only about 2 seconds, air conditioner will restart automatically.</li> </ul>		
	White mist	At restaurants or kitchen.	<ul> <li>The performance of heat exchanger might degrade and cause the white mist because of the oil on heat exchangerfins.</li> <li>Install the filter in the air panel.</li> </ul>		
		Dry operation	Due to the blowing out temperature is too low. Please change operation status.		
Indoor	Strange smell	Strange smell from indoor unit.	<ul> <li>Smell of smoke or other strange smell clings to the indoor unit, clean the air filter and panel, then pay careful attention to ventilation of the room.</li> </ul>		
	Strange sounds	Sound from deformed parts.	<ul> <li>During system starting or stopping and abrading sound might be heard. However, this is due to thermal deformation of plastic parts. It is normal.</li> </ul>		
		Refrigerant flow sounds.	While the system is being started or stopped, sounds caused by refrigerant flow may be heard. (About 3 minutes.)		
	Dew	Dew on air panel.	<ul> <li>When the cooling operation continues for a long period of time under high humidity conditions (higher than 27°C/ 80% R.H.), dew will be formed on the air panel.</li> </ul>		
	Not cold (Fan operation)	Press the remote control to start the cooling.	The compressor is in warm up state. (Therefore, don't turn off the power supply of outdoor unit during the using season.)		

## **Troubleshooting (Cont.)**

### **Check Before Service**

Situation		Examination method		Restart operation
Cannot run		<ul> <li>Make sure air conditioner power has turned ON.</li> </ul>	•	Please turn ON air-conditioner power supply.
		<ul> <li>Please check if the breaker is tripped or the fuse is blown.</li> </ul>	•	Replace the fuse or set the breaker to ON. If situation still did not improve, please contact the dealer.
Stop suddenly during operation.	Cooling	Make sure if the inlet or outlet of the outdoor unit is not clogged with paper, plastic bag, or clothes.	•	Remove objects blocking the air inlet or outlet.
Not cold or not warm enough.		<ul> <li>Is the operation mode correct or not?</li> </ul>	•	If you set 'FAN' mode, please change the settings to 'Cooling' or 'Heating' mode.
		<ul><li>Is temperature setting being suitable or not?</li></ul>	•	Press the temperature adjustment switch "\" or "\".
		<ul> <li>Is Air flow deflector setting being suitable or not?</li> </ul>	•	Change the air flow angle.
		<ul> <li>Ensure that the air filter is not clogged with dust.</li> </ul>	•	Clean the air filter.
		<ul> <li>Ensure that the doors or windows are closed.</li> </ul>	•	Close the doors and windows.
		<ul> <li>Ensure that the unit's air inlet or air outlet is not blocked.</li> </ul>	•	Clear the air intake or air outlet export obstacle.

### If Trouble Still Remains

- If the trouble remains after checking all the items, contact the dealer and inform them following items.
  - 1. Unit Model Name

2. Content of Trouble—Detail as possible

3. Alarm Code No. on Liquid Crystal Display ( Refer to page 6.)

### Guarantee and After-Sales Service

### Guarantee

In the warranty period, show dealer the warranty book.

Based on warranty item, repair may be free of charge or charge materials fee only.

### **After-Sales Service**

If abnormal situations occur while using this product, check the unit as stated in P.12 of this manual, and contact the dealer if the situation is not improved.

## **Emergency Treatment**

Turn off the unit and contact the dealer if following conditions occur.

- The power cord gets hot.
- The plastic insulator is damaged or melted.
- Fuse is blown or the breaker trips.
- The unit does not respond properly to run/stop commands.

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