



## DX Air Curtain Installation and Owner's manual

Model name:

For commercial use

- RAV-CT100/150/200/250BH-M/L** DX Air Curtain Built-in (Medium / Large)
- RAV-CT100/150/200/250CH-M/L** DX Air Curtain Free-Hanging (Medium / Large)
- RAV-CT100/150/200/250UH-M/L** DX Air Curtain Cassette (Medium / Large)

**ENGLISH**



# 14 OWNER'S: PRECAUTIONS FOR SAFETY

## ⚠ WARNING

### WARNINGS ABOUT INSTALLATION

- Make sure to ask the qualified installation professional in electric work to install the air conditioner. If the air conditioner is inappropriate installed by yourself, it may cause water leak, electric shock, fire, and so on.
- Be sure to connect earth wire. (grounding work) Incomplete grounding cause an electric shock. Do not connect ground wires to gas pipes, water pipes, lightning rods or ground wires for telephone wires.
- If you install the indoor unit in a small room, take appropriate measures to prevent the refrigerant from exceeding the limit concentration even if it leaks. Consult the dealer from whom you purchased the air conditioner when you implement the measures. Accumulation of highly-concentrated refrigerant may cause an oxygen deficiency accident.
- Check whether the piping work has been properly completed. When existing pipes are used and if they are not constructed properly, the refrigerant gas may leak. Contact the installation company and confirm that the piping work has been properly completed. For details of installation of the air conditioner, refer to the Installation Manual. Use tools and piping materials for R410 only. Failure to do so or improper installation may cause a burst of pipe, resulting in injury.



### WARNINGS ABOUT OPERATION

- Cleaning of the air filter and other parts of the discharge louver involves dangerous work in high places, so be sure to have a service person do it.
- When you notice something abnormal with the air conditioner (smells like scorching, poor heating, etc), immediately turn off the main switch, the circuit breaker, from the mains to stop the air conditioner, and contact the dealer.
- If the air conditioner is continually operated with something abnormal it may cause machine failure, electric shock, fire, and so on.

### WARNINGS ABOUT MOVEMENT AND REPAIR

- When the air conditioner cannot cool or heat a room well, contact the dealer from whom you purchased the air conditioner as refrigerant leakage is considered as the cause. In the case of repair that requires refill of refrigerant, ask service personnel about details of the repair. The refrigerant used in the air conditioner is harmless. Generally, the refrigerant does not leak. However, if the refrigerant leaks in a room and a heater or stove burner in the room catches fire, it may generate toxic gas. When you ask service personnel for repairing refrigerant leakage, confirm that the leakage portion has been completely repaired.
- Do not move or repair any unit by yourself. Since there is high voltage inside the unit, you may get electric shock when removing the cover and main unit.
- Whenever the air conditioner needs repair, make sure to ask the dealer to do it. If it is repaired imperfectly, it may cause electric shock or fire.
- When moving the air conditioner for re-installing at another place, ask the dealer to do it. If it is imperfectly installed, it may cause electric shock or fire.

## ⚠ CAUTION

### TO DISCONNECT THE APPLIANCE FROM THE MAINS SUPPLY

- This appliance must be connected to the mains by means of a switch with a contact separation of at least **3 mm**.
- **The installation fuse 40A, 25A or 16A must be used for the power supply line of this air conditioner.**

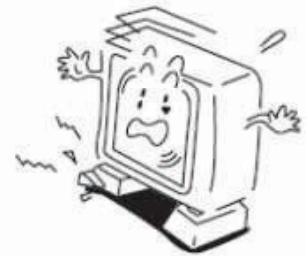
### CAUTIONS ABOUT INSTALLATION (Be sure to confirm the following cautions.)

- Use an exclusive power circuit for the air conditioner. Use the rated voltage.
- Do not install the unit in a place where inflammable gas may leak. If inflammable gas accumulates around the unit, it may cause a fire.



### CAUTIONS ABOUT OPERATION

- Carefully read this manual before starting the air conditioner. There are many important things to keep in mind for daily operation.
- Do not use this air conditioner for special purpose such as preserving food, precision instruments, art objects, breeding animals, car, vessel, etc.
- When the air conditioner is operated with a combustion appliance in the same place, be careful of ventilation to let fresh air enter the room. Poor ventilation causes oxygen shortage.
- Do not place any combustion appliance in a place where it is directly exposed to the wind of air conditioner, otherwise it may cause imperfect combustion.
- When the air conditioner is used in a closed room, be careful of sufficient ventilation of the room. Poor ventilation causes oxygen shortage.
- Do not touch any switches with wet finger, otherwise you may get an electric shock.
- If the air conditioner won't be used for a considerably long time, turn off the main switch or the circuit breaker, for safety.
- Do not put anything on the outdoor unit nor step onto it. If so, it may not only topple over the unit, but also injure yourself.
- To make the air conditioner operate in its original performance, operate it within the range of the operating temperature specified in the instructions. Otherwise it may cause a malfunction, or water leak from the unit.
- Prevent any liquid from falling into the remote controller. Do not spill juice, water or any kind of liquid.



# 15 OWNER'S: REMOTE CONTROLLER INSTRUCTIONS

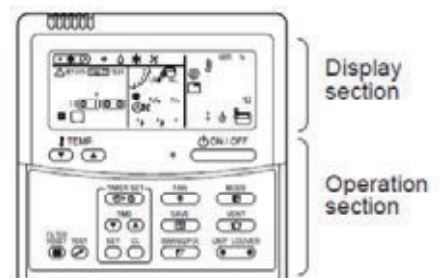
This remote controller can control the operation of up to 8 indoor units.

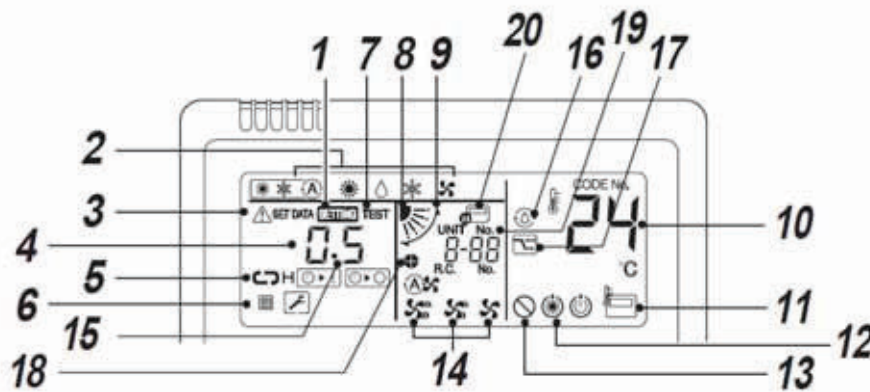
## ■ Display section

In the display example, all indicators are displayed for the explanation. In reality, only the selected contents are indicated.

- When turning on the leak breaker at the first time, **SETTING** flashes on the display part of the remote controller.
- While this display is flashing, the model is being automatically confirmed.

Accordingly, wait for a while after **SETTING** display has disappeared, and then use the remote controller.




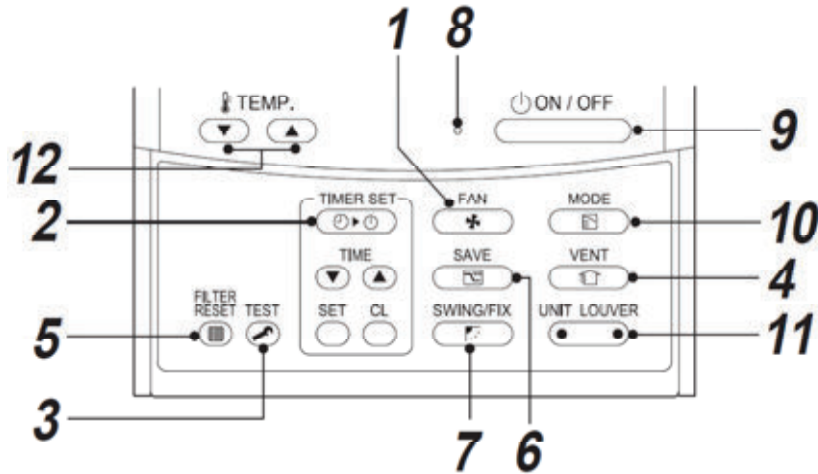



- 1 SETTING display**  
Displayed during setup of the timer etc.
- 2 Operation mode select display**  
The selected operation mode is displayed.
- 3 CHECK display**  
Displayed while the protective device works or a trouble occurs.
- 4 Timer time display**  
Time of the timer is display.  
(when a trouble occurs, the check code is displayed).
- 5 Timer SET IN setup display**  
When pushing the Timer SET IN button, the display of the timer is selected in order of [OFF] → [OFF] repeat OFF timer → [ON] → No display.
- 6 Filter display**  
If "FILTER " is displayed, clean the air filter.
- 7 TEST run display**  
Displayed during a test run.
- 8 Louver position display**  
Displays louver position.
- 9 SWING display**  
Displayed during up/down movement of the louver.
- 10 Set up temperature display**  
The selected set up temp. is displayed.
- 11 Remote controller sensor display**  
Displayed while the sensor of the remote controller is used.
- 12 PRE-HEAT display**  
Displayed when the heating operation starts or defrost operation is carried out.  
While this indication is displayed, the indoor fan stops.
- 13 No function display**  
Displayed if there is no function even if the button is pushed.
- 14 Air volume select display**  
The selected air volume mode is displayed.  
(AUTO)   
(HIGH)   
(MED.)   
(LOW)
- 15 Louver Number display.**  
(example:01, 02, 03, 04)
- 16 Dry operation in self cleaning function**  
Displayed during dry operation in self cleaning function.
- 17 Power saving mode display**  
Displayed during capacity saving mode by temporary peak-cut limiting the power current level of the outdoor unit.
- 18 Louver lock display**  
Displayed when there is a louver-locked unit in the group (including 1indoor unit by 1outdoor unit).
- 19 Unit Number display**  
Unit number of the indoor unit selected with the unit select button or abnormal indicate the indoor/outdoor unit.
- 20 Central control display**  
Displayed when the air conditioner is used under the central control in combination with a central control remote controller. In case the remote controller is disabled by the central control system, flashes. The button operation is not accepted. Even when you push ON/OFF, MODE, or TEMP. button, and the button operation is not accepted. (Settings made by the remote controller vary with the central control mode. For details, refer to the Owner's Manual of the central control remote controller.)

## Operation section


Push each button to select a desired operation.


- The details of the operation needs to be set up once, afterwards, the air conditioner can be used by pushing  button only.




**1**  button (Air volume select button)  
Selects the desired air volume mode.


**2**  button (Timer set button)  
TIMER SET button is used when the timer is set up.

**3**  button (Check button)  
The Check button is used for the check operation. During normal operation, do not use this button.

**4**  button (Ventilation button)  
Ventilation button is used when a fan which is sold on the market is connected.


- If "No function"  is displayed on the remote controller when pushing the Ventilation button, a fan is not connected.


**5**  button (Filter reset button)  
Resets (Erases) "FILTER"  display.


**6**  button (Power save operation)  
SAVE button is used for power save operation.




**7**  button (Swing/Wind direction button)  
No function.

**8** **Operation lamp**  
Lamp is lit during operation. Lamp is off when stopped.  
Although it flashes when operating the protection device or abnormal time.

**9**  button  
When the button is pushed, the operation starts, and it stops by pushing the button again. When the operation has stopped, the operation lamp and all the displays disappear.

**10**  button (Operation select button)  
Selects desired operation mode.

**11**  Button (Unit/Louver select button)  
Select a unit number (left) and louver number (right).  
**UNIT:**  
Selects an indoor unit when adjusting wind direction when multiple indoor units are controlled with one remote controller.  
**LOUVER:**  
No function.

**12**  button (Set up temperature button)  
Adjust the room temperature.  
Set the desired set temperature by pushing  TEMP. .

### OPTIONS:

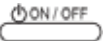
#### Remote controller sensor

Usually the TEMP. sensor of the indoor unit senses the temperature. The temperature on the surrounding of the remote controller can also be sensed.

For details, contact the dealer from which you have purchased the air conditioner.



# 16 OWNER'S: CORRECT USAGE

- When you use the air conditioner for the first time or when you change the SET DATA value, follow the procedure below. From the next time, the operation displayed on the remote controller will start by pushing the  button only.


## Preparation

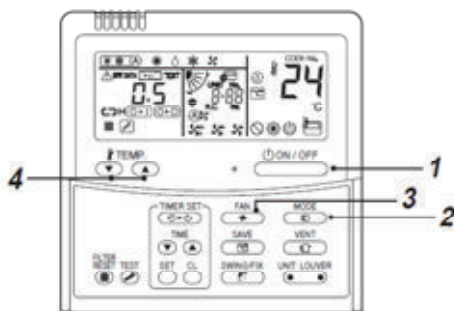
Turn on the main power switch and/or the leakage breaker.

Push each button to select a desired operation.

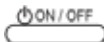

- When the power supply is turned on, a partition line is displayed on the display part of the remote controller.
- After the power supply is turned on, the remote controller does not accept an operation for approx. 1 minute, but it is not a failure.

### REQUIREMENT


- While using the air conditioner, operate it only with  button without turning off the main power switch and the leak breaker.
- When you use the air conditioner after it has not been used for a long period, turn on the leakage breaker at least 12 hours before starting operation.

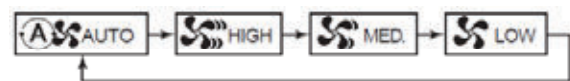









## Start

- 1 Push  button.**  
The operation lamp goes on, and the operation starts.
- 2 Select an operation mode with the "MODE  " button.**  
One push of the button, and the display changes in the order shown as follows.




- 3 Select air volume with "  " button.**  
One push of the button, and the display changes in the order shown as follows.



- When the air volume is "  AUTO ", air volume differs according to the room temperature.
  - In heating operation, if the room temperature is not heated sufficiently with VOLUME "  LOW " operation, select "  MED " or "  HIGH " operation.
  - The temperature sensor senses temperature near the suction air port of the indoor unit, which differs from the room temperature depending on the installation condition.  
A value of setting temperature is the measure of room temperature.  
("  AUTO " is not selectable in the FAN mode).
- 4 Determine the set up temperature by pushing the  TEMP.  button.**

## Stop

- Push  button.  
The operation lamp goes off, and the operation stops.

**In case of heating**

- The heating operation mode is selected in accordance with the room temperature and operation starts after approximately 3 to 5 minutes.
- After the heating operation has stopped, FAN operation may continue for approx. 30 seconds.
- When the room temperature reaches the set temperature and the outdoor unit stops, low fan speed is discharged and the air volume decreases.

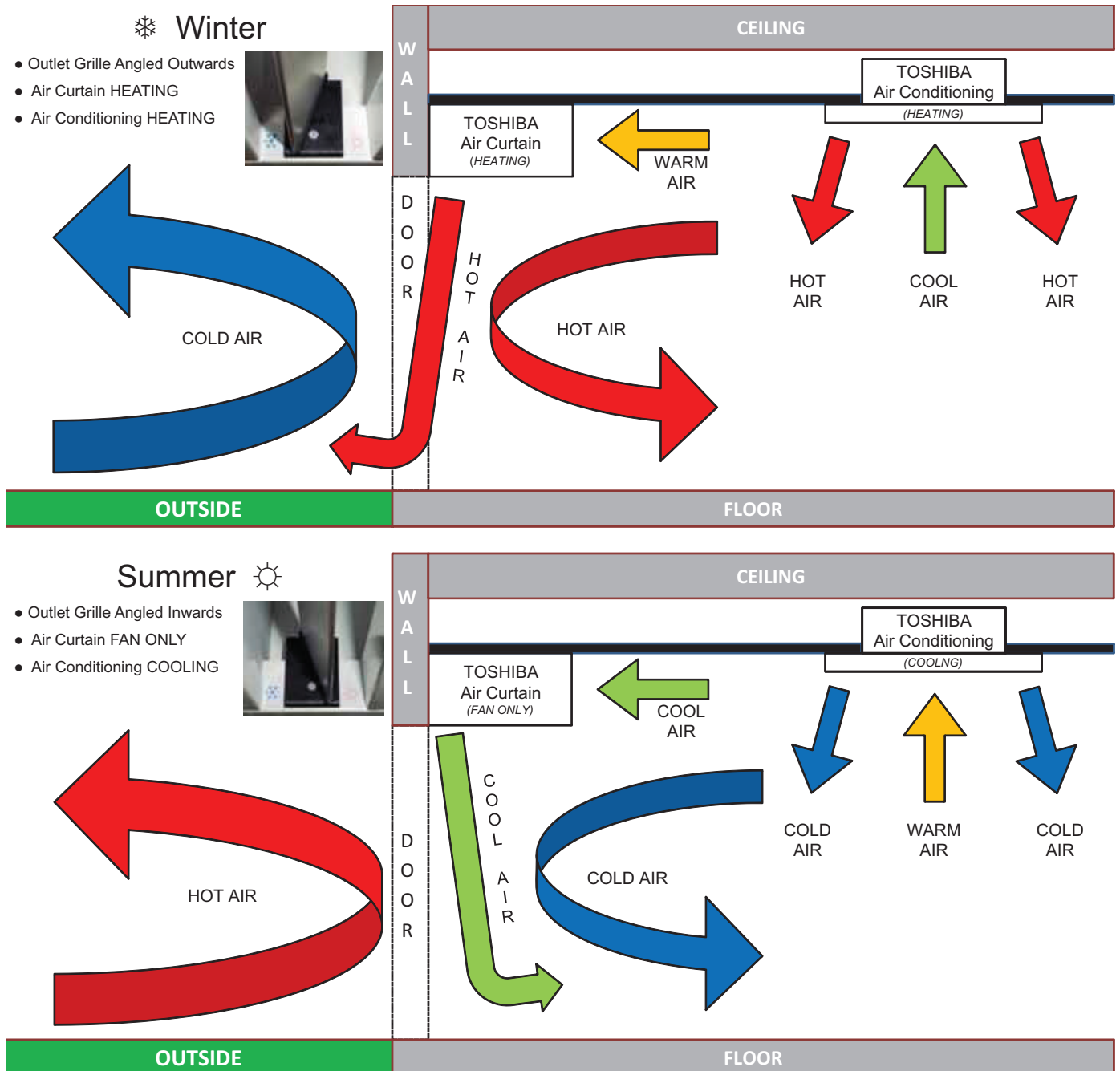
**REQUIREMENT**

**When restarting the operation after stop**

- When restarting the operation immediately after stop, the air conditioner does not operate for approx. 3minutes to protect the machine.

▪ **Recommendation for Winter and Summer Operation**

The outlet grille can be manually adjusted to 5 different positions. In winter the outlet grille needs to be adjusted outwards (Heating), in summer inwards (Fan Only). The airstreams then needs to be adjusted in a way that the air stream reaches the ground at room temperature.

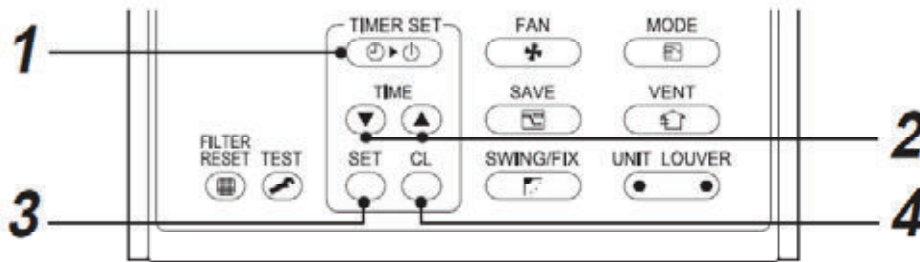


# 17 OWNER'S: TIMER OPERATION

A type of timer operation can be selected from the following three types. (Setting of up to 168hours is enabled.)

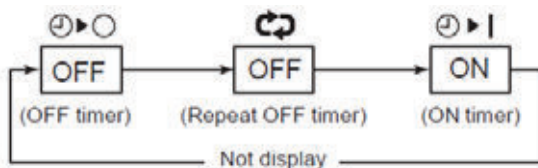
- OFF timer: The operation stops when the time of timer has reached the set time.  
 Repeat OFF timer: Every time, the operation stops after the set time has passed.  
 ON Timer: The operation starts when the time of timer has reached the set time.

## Timer operation



### Set

- 1 Push TIMER SET button.**  
 The timer display (type) changes for every push of the button.



- **SETTING** and timer time display flash.

- 2 Push  $\downarrow$   $\uparrow$  to select "SET TIME".**

- For every push of  $\uparrow$  button, the set time increases in the unit of 0.5hr (30minutes). When setting a time more than 24hours for timer operation, timer time can be set in the unit of 1hr.  
 The maximum set time is 168hr (7days).The remote controller displays the set time with time (between 0.5 and 23.5 hours) (\*1) or number of days and time (24 hours or more) (\*2) as shown across.

- 4 Cancel of timer operation**  
**Push  $\circ$  button.**  
 TIMER display disappears.

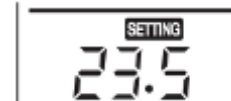
### NOTE

- When the operation stops after the timer reached the preset time, the Repeat OFF timer resumes the

- For every push of  $\downarrow$  button, the set time decreases in the unit of 0.5hr (30minutes) (0.5 to 23.5hours) or 1hr (24 to 168hours).

#### Example of remote controller display

- In the case of 23.5 hours (\*1)



- In the case of 34hours (\*2)



Number of days Time

1d Shows 1 day (24 hours)

10h Shows 10 hours. (Total 34 hours)

- 3 Push SET button.**

- **SETTING** display disappears and timer time display goes on, and  $\circ$   $\uparrow$   $\downarrow$  or  $\circ$   $\uparrow$   $\downarrow$  display flashes.  
 (When ON timer is activated, timer time, ON timer  $\circ$   $\uparrow$   $\downarrow$  are displayed and other displays disappear.)

operation by pushing  $\circ$   $\uparrow$   $\downarrow$  button and stops the operation after the time of the timer has reached the set time.

- When you push  $\circ$   $\uparrow$   $\downarrow$  while the OFF timer function of the air conditioner is active, the indication of the timer function disappears and then appears again after about 5 seconds. This is due to normal processing of the remote controller.




# 18 OWNER'S: MAINTENANCE



## ⚠ WARNING

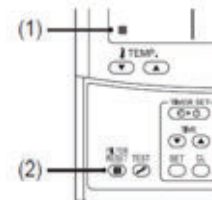
**Cleaning of the air filter and other parts of the air filter involves dangerous work in high places, so be sure to have a service person do it. Do not attempt it yourself.**

### Cleaning of air filters

Clogging of air filters will reduce the cooling and heating performance.

(1) When "FILTER  appears on the remote controller, clean the air filters.

(2) When the cleaning of air filters has been completed, push  button. "FILTER  disappears.



## ⚠ CAUTION

### Cleaning of unit

Clean the unit with a soft dry cloth. If dirt cannot be removed with the dry cloth, use a cloth slightly dampened with lukewarm (under 40 °C) water.

### Cleaning of remote controller

- Use a dry cloth to wipe the remote controller.
- A cloth dampened with cold water may be used on the indoor unit if it is very dirty.
- Never use a damp cloth on the remote controller.
- Do not use a chemically-treated duster for wiping or leave such materials on the unit for long. It may damage or fade the surface of the unit.
- Do not use benzene, thinner, polishing powder, or similar solvents for cleaning. These may cause the plastic surface to crack or deform.

### Periodic check

Long-period use of the air conditioner may cause deterioration or failure of parts due to heat, humidity, dust, and operating conditions, or may cause poor drainage of dehumidified water.

### If you do not plan to use the unit for more than 1 month

- (1) Operate the fan for 1 or 2 hours to dry inside the unit.
  - Operate "FAN" mode.
- (2) Stop the air conditioner and turn off the main power switch or the circuit breaker.

### Checks before operation

- (1) Check that the air filters are installed.
- (2) Check that the air outlet or inlet is not blocked.
- (3) Turn on the main power switch or the circuit breaker for the main power supply to the air conditioner.



**NOTE**

- For environmental conservation, it is strongly recommended that the indoor and outdoor units of the air conditioner in use be cleaned and maintained regularly to ensure efficient operation of the air conditioner. When the air conditioner is operated for a long time, periodic maintenance (once a year) is recommended. Furthermore, regularly check the outdoor unit for rust and scratches, and remove them or apply rustproof treatment, if necessary. As a general rule, when an indoor unit is operated for 8 hours or more daily, clean the indoor unit and outdoor unit at least once every 3 months. Ask a professional for this cleaning/maintenance work. Such maintenance can extend the life of the product though it involves the owner's expense. Failure to clean the indoor and outdoor units regularly will result in poor performance, freezing, water leakage, and even compressor failure.

**Maintenance List**

<b>Part</b>	<b>Unit</b>	<b>Check (visual/auditory)</b>	<b>Maintenance</b>
Heat exchanger	Indoor / Outdoor	Dust/dirt clogging, scratches	Wash the heat exchanger when it is clogged.
Fan motor	Indoor / Outdoor	Sound	Take appropriate measures when abnormal sound is generated.
Filter	Indoor	Dust/dirt, breakage	Wash the filter with water when it is contaminated. Replace when it is damaged.
Fan	Indoor	Vibration, balance Dust/dirt, appearance	Replace the fan when vibration or balance is terrible Brush the fan when it is contaminated.
Air inlet / outlet grilles	Indoor / Outdoor	Dust/dirt, appearance	Fix or replace them when they are deformed or damaged.
Louvers	Indoor	Dust/dirt, scratches	Wash them when they are contaminated or apply repair coating.
Exterior	Outdoor	Rust, peeling of insulator Peeling/lift of coat	Apply repair coating.

# 19 OWNER'S: AIR CONDITIONER OPERATIONS AND PERFORMANCE

## 3 minutes protection function

3-minutes protection function prevents the air conditioner from starting for initial 3 minutes after the main power switch/circuit breaker is turned on for re-starting the air conditioner.

## Power failure

Power failure during operation will stop the unit completely.

- To restart the operation, push the START/STOP button on the remote controller.
- Lightning or a wireless car telephone operating nearby may cause the unit to malfunction. Turn off the main power switch or circuit breaker and then turn them on again. Push the START/STOP button on the remote controller to restart.

## Heating characteristics

### Preheating operation

The air conditioner will not deliver warm air immediately after it is turned on. Warm air will start to flow out after approximately 5 minutes when the indoor heat exchanger warmed up.

### Warm air control (In heating operation)

When the room temperature reaches the set temperature, the fan speed is automatically reduced to prevent to blow cold draft. At this time, the outdoor unit will stop.

### Defrosting operation

If the outdoor unit is frosted during the heating operation, defrosting starts automatically (for approximately 2 to 10 minutes) to maintain the heating capacity.

- The fans in both indoor and outdoor units will stop during the defrosting operation.
- During the defrosting operation, the defrosted water will be drained from the bottom plate of the outdoor unit.

### Heating capacity

In the heating operation, the heat is absorbed from the outside and brought into the room. This way of heating is called heat pump system. When the outside temperature is too low, it is recommended to use another heating apparatus in combination with the air conditioner.

### Attention to snowfall and freeze on the outdoor unit

- In snowy areas, the air inlet and air outlet of the outdoor unit are often covered with snow or frozen up. If snow or freeze on the outdoor unit is left as it is, it may cause machine failure or poor warming.
- In cold areas, pay attention to the drain hose so that it perfectly drains water without water remaining inside for freeze prevention. If water freezes in the drain hose or inside the outdoor unit, it may cause machine failure or poor warming.



### Air conditioner operating conditions

For proper performance, operate the air conditioner under the following temperature conditions:

Heating operation	Outdoor temperature	-15°C to 15°C (Wet bulb temp.)
	Room temperature	15°C to 28°C (Dry bulb temp.)

If the air conditioner is used outside of the above conditions, safety protection may work.

Toshiba Carrier (UK) Ltd  
Porsham Close  
Belliver Industrial Estate  
Plymouth  
Devon  
United Kingdom  
PL6 7DB

 +44 (0) 1752 753200  
 +44 (0) 1752 753222