

TOSHIBA

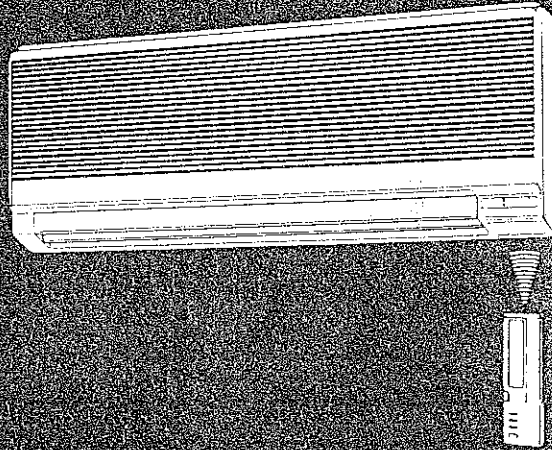
AIR CONDITIONER (SPLIT TYPE)

Indoor Unit

RAS-45BKHV(W)

Outdoor Unit

RAS-45BAHV



**Thank you very much for purchasing TOSHIBA
Air Conditioner. Please read this owner's manual
carefully before using your Air Conditioner.**

This Equipment complies with EEC directive 82/499/EEC

IMPORTANT SAFETY INFORMATION

DO NOT ATTEMPT TO INSTALL & SERVICE YOURSELF

CAUTIONS

DO NOT ATTEMPT TO INSTALL THIS UNIT YOURSELF. THIS UNIT REQUIRES INSTALLATION BY QUALIFIED PERSONS

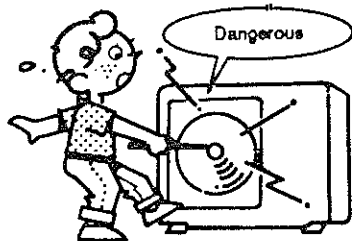
DANGER

DO NOT ATTEMPT TO SERVICE THE UNIT YOURSELF. THIS UNIT HAS NO USER SERVICEABLE COMPONENTS. OPENING OR REMOVING THE COVER WILL EXPOSE YOU TO DANGEROUS VOLTAGE. TURNING OFF THE POWER SUPPLY WILL NOT PREVENT POTENTIAL ELECTRIC SHOCK.

NEVER PUT HANDS OR OBJECTS INTO THE AIR OUTLET

DANGER

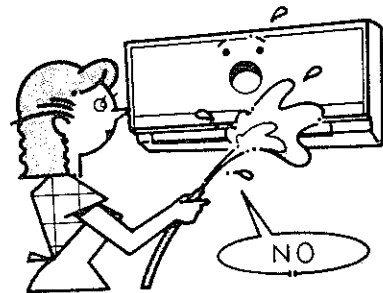
NEVER PUT HANDS OR OBJECTS INTO THE AIR OUTLET OF INDOOR AND OUTDOOR UNITS. THESE UNITS CONTAIN A FAN RUNNING AT HIGH SPEED. CONTACT WITH THE MOVING FAN WILL CAUSE SERIOUS INJURY.



NEVER SPRINKLE WATER

DANGER

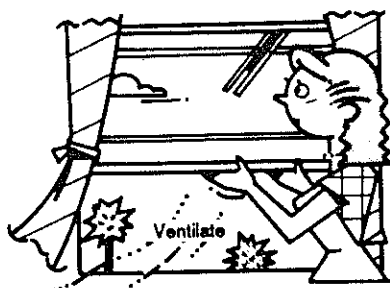
TO AVOID THE RISK OF SERIOUS ELECTRICAL SHOCK, NEVER SPRINKLE OR SPILL WATER OR LIQUIDS ON THE UNIT.



Especially if there is also a gas appliance in use

WARNING

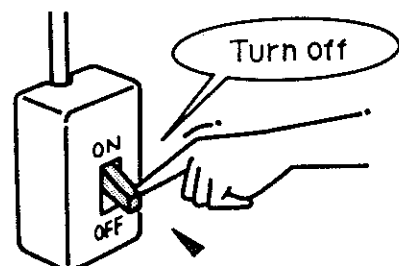
Ventilate the room occasionally while the air conditioner is in use, especially if there is also a gas appliance in use in this room. Failure to follow these directions may result in a loss of oxygen in the room.



Before maintenance

WARNING

To prevent electric shock, turn off the power before beginning any cleaning or other routine maintenance. Follow the directions for cleaning in the Owner's Manual.



Do not use liquid cleaners or aerosol

WARNING

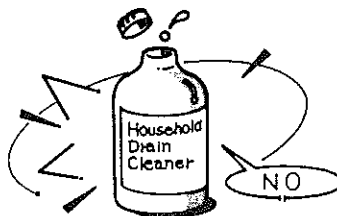
Do not use liquid cleaners or aerosol cleaners, use a soft and dry cloth for cleaning the unit. To avoid electric shock, never attempt to clean the unit by sprinkling water on it.



Do not use caustic drain cleaner

CAUTION

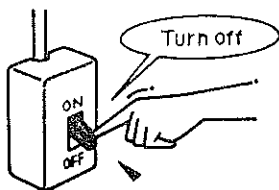
Do not use caustic household drain cleaners in the unit. Drain cleaners can quickly destroy the unit components (drain pan and heat exchanger coil etc.).



For protection from damage due to lightning, or power line surges

CAUTION

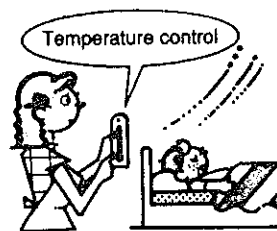
For protection during a lightning storm, or when the unit is left unattended and not used for a long time, turn off the power supply to the unit. This will prevent the unit from damage due to lightning, or power line surges.



Control room temperature for comfort

CAUTION

Be careful to keep room temperature comfortable, especially when using the air conditioner for physically handicapped persons, children, or senior persons.

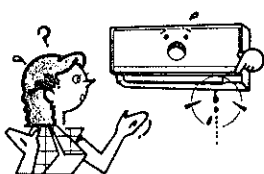


Do not operate beyond usable conditions

NOTE

For proper performance, operate the unit under the usable operating temperature and humidity conditions indicated in this owner's manual.

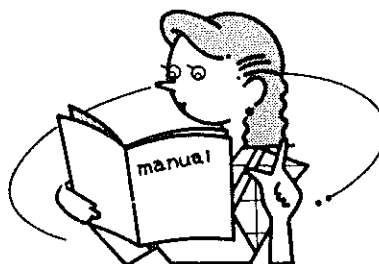
If the unit is operated beyond these conditions, it may cause malfunctions of the unit or dew dripping from the unit.



Please read this owner's manual

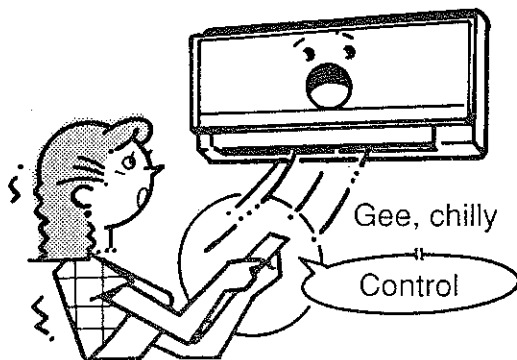
CAUTION

Please read this owner's manual carefully before operating the unit. It contains further important instructions for proper operation.



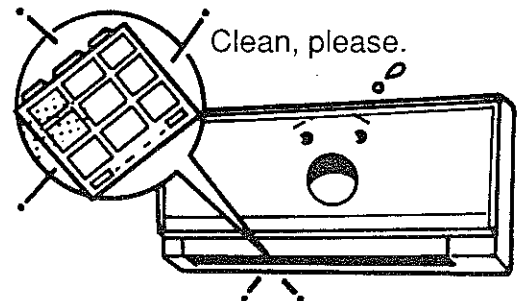
HINTS FOR ECONOMICAL OPERATION

Maintain room temperature at Comfortable level



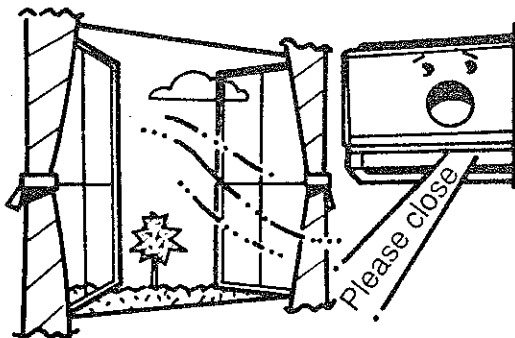
Clean air filter

A clogged air filter impairs cooling efficiency. Clean it once two weeks.



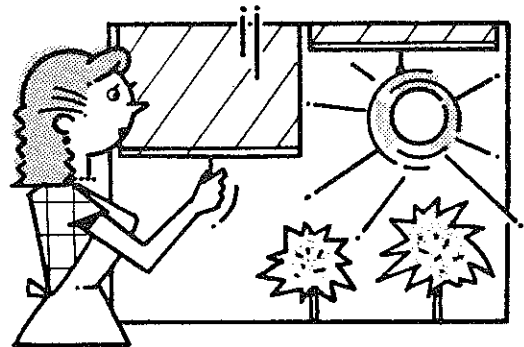
Never open doors and windows more often than necessary

To keep chilled or heated air in the room, never open doors and windows more often than necessary.



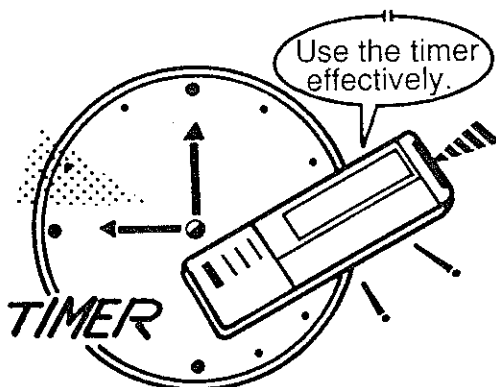
Window curtains

In cooling, close the curtains to avoid direct sunlight; in heating, lay a carpet on the floor.



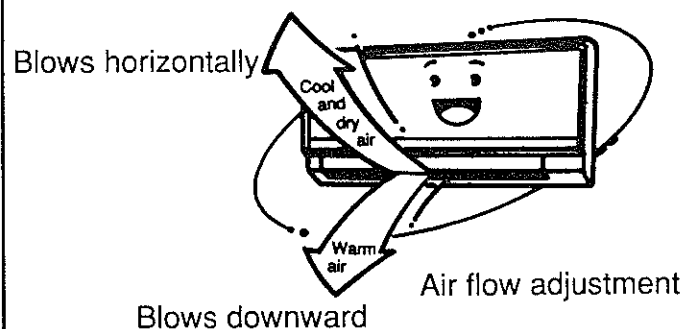
Use the timer effectively

Set the timer for the desired operating time.



Get uniform circulation of room air

Adjust air flow direction for even circulation of room air.



AIR CONDITIONER OPERATIONS



PARTS NAME 5

**NAMES AND FUNCTIONS OF
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ADJUSTING AIR FLOW DIRECTION . 17

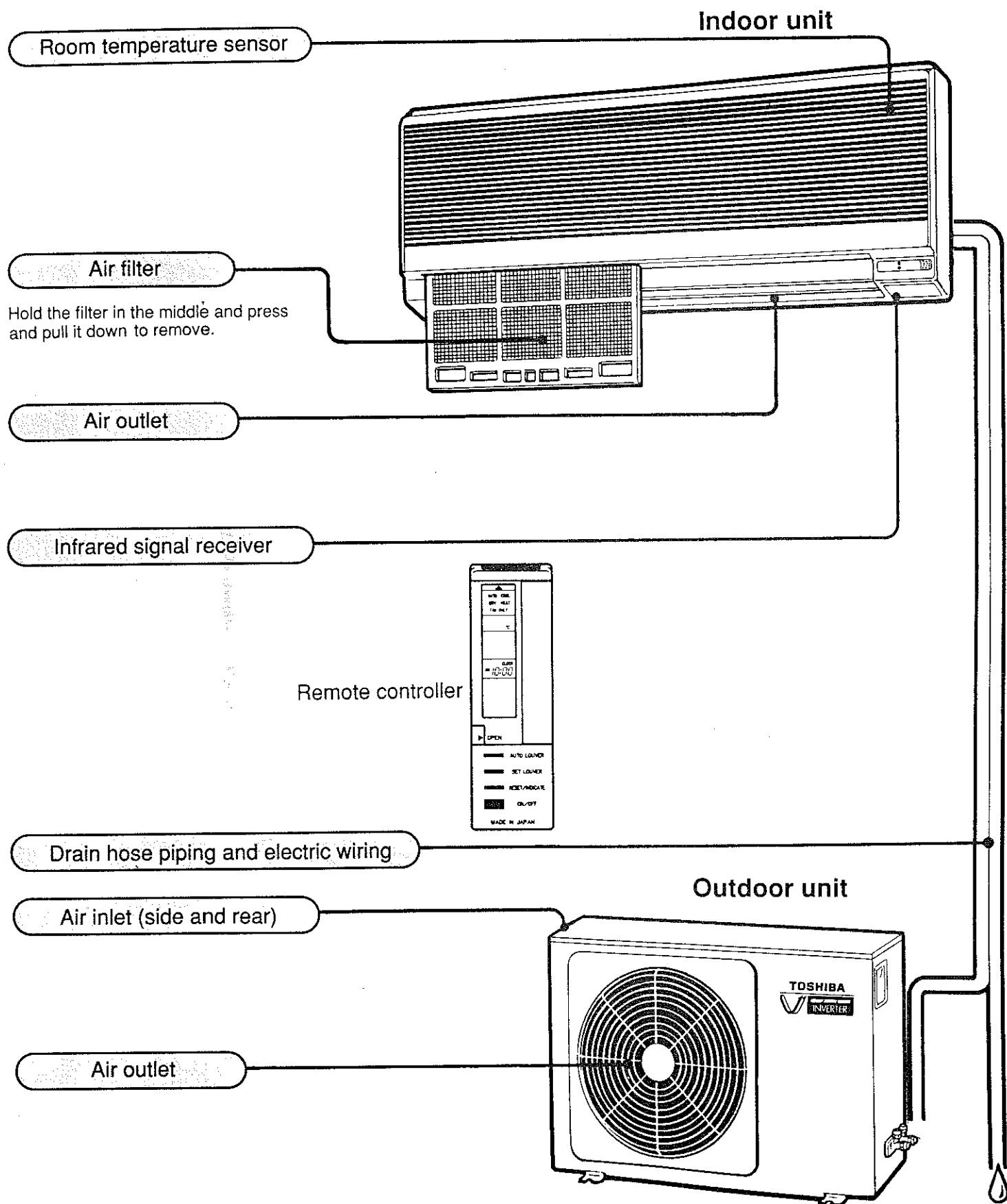
AUTOMATIC OPERATION 19

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TEMPORARY OPERATION 20

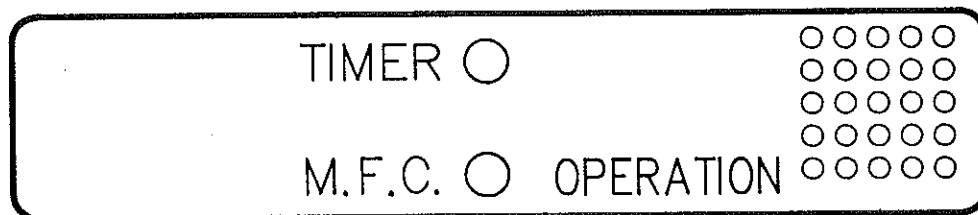
THERMAL RADIATION SENSOR .. 20

PARTS NAME



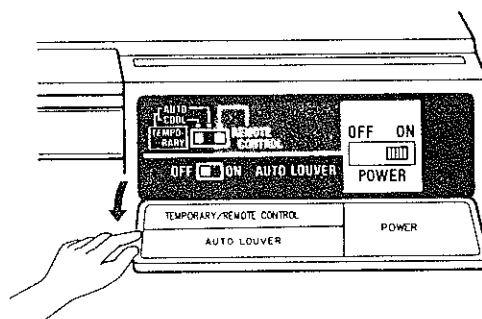
NAMES AND FUNCTIONS OF INDICATORS AND CONTROLS ON INDOOR UNIT

Display panel



- Operation indicator lamp .. Green LED: This lamp will light in green when unit is on.
- Timer indicator lamp .. Yellow LED: This lamp will light in yellow when timer is set.
- M.F.C. lamp .. Red LED: This lamp will light in red when multifunction is checked.

Control panel Close the panel cover after you set the control switches.

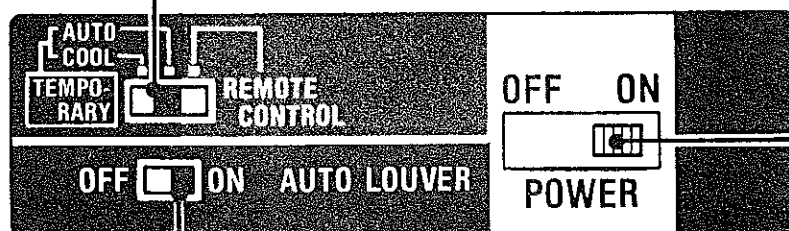


TEMPORARY operation switch See page 20

Normally set this switch to REMOTE CONTROL. If you misplace or lose the remote controller or its batteries are exhausted, set this switch to the AUTO position of TEMPORARY operation.

POWER switch

The main power ON/OFF switch controls both units of the air conditioner, normally set the switch to ON. Set it to OFF if you do not plan to use the unit for a few weeks.

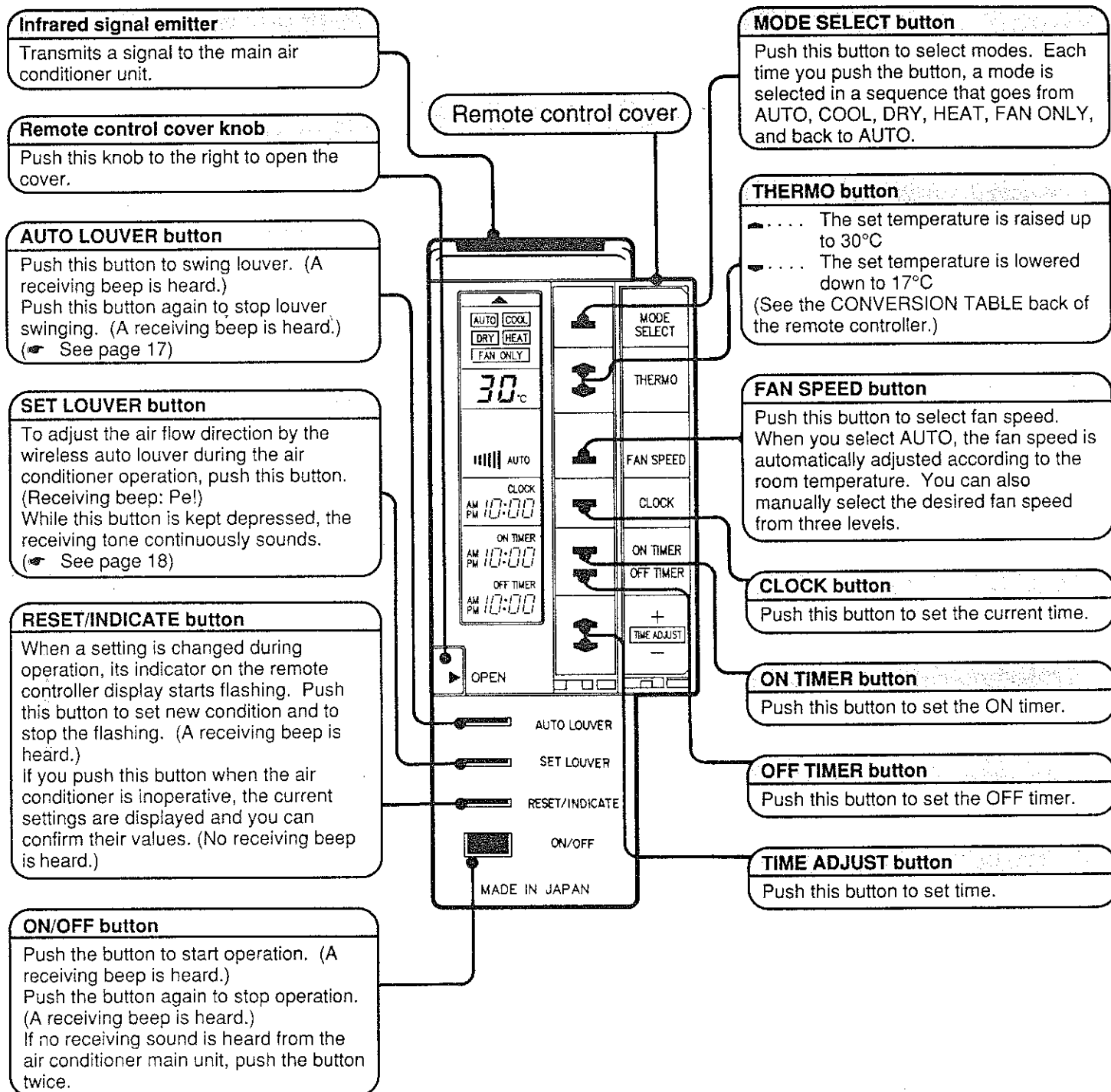


AUTO LOUVER switch See page 17

Normally keep this switch in the ON position so the direction of the air flow will automatically change depending on the operation selected.

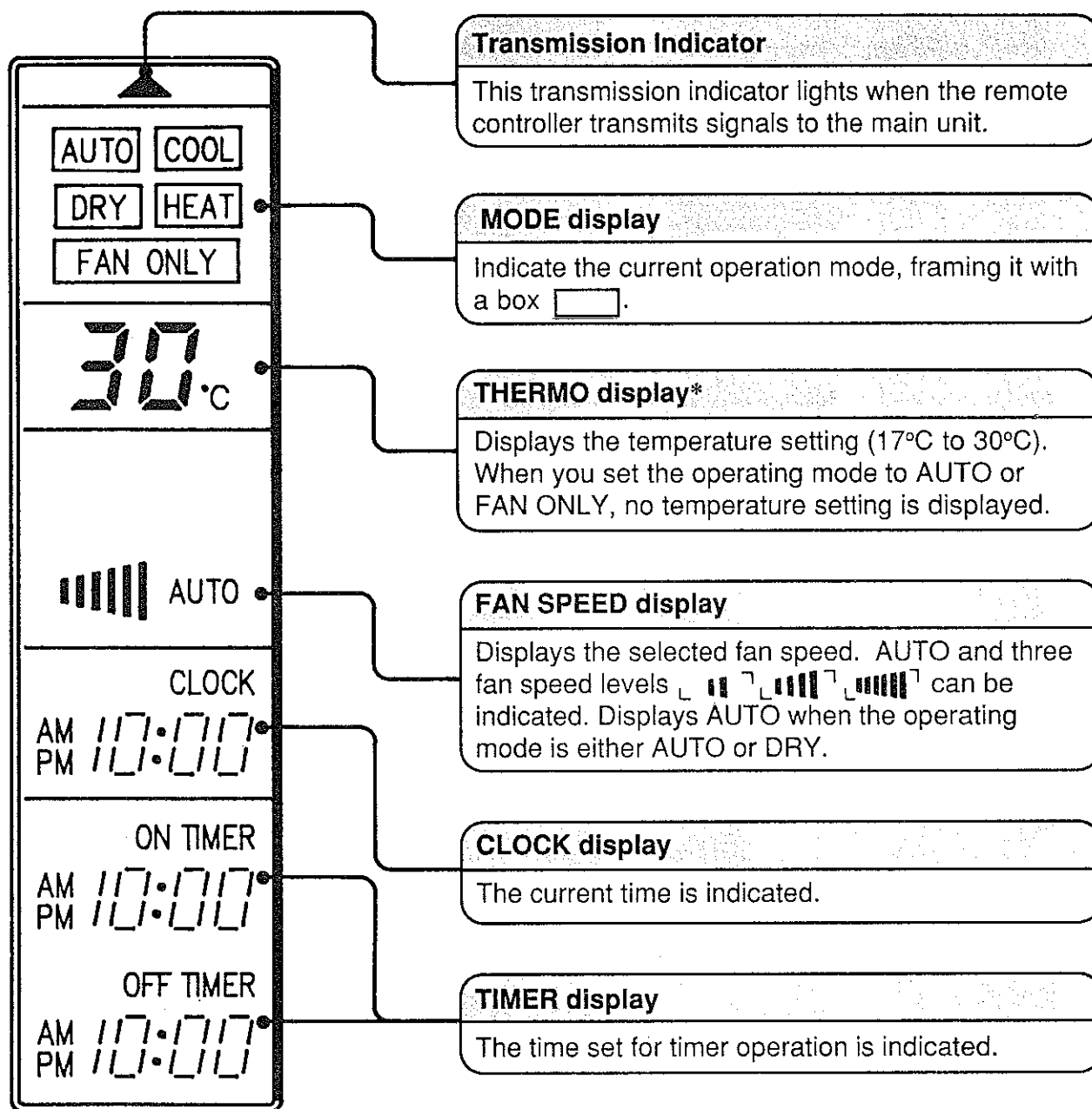
REMOTE CONTROLS AND THEIR FUNCTIONS

Push the RESET/INDICATE button to display current operating settings.



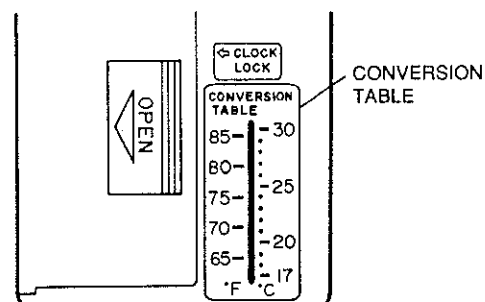
- The setting indicators on the remote controller display flash when a setting is changed. Push the RESET/INDICATE button to set the new conditions and stop the flashing.
- If you push the MODE SELECT button accidentally during operation and leave its indicator flashing, the operating mode will be changed to the one indicated when you turn on the unit next time.

NAMES AND FUNCTIONS OF INDICATORS ON REMOTE CONTROLLER



- In the above illustration, all displays are indicated for the sake of clarity. During operation, only the relevant displays will be shown on the remote controller.

* See the CONVERSION TABLE back of the remote controller



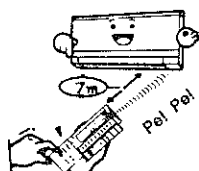
HANDLING THE REMOTE CONTROLLER

CAUTIONS

- The air conditioner will not operate if curtains, doors or other materials block the signals from the remote controller to the main unit.
- Prevent any liquid from falling into the remote controller.
Do not expose the remote controller to direct sunlight or heat.
- If the infrared signal receiver at the main unit is exposed to direct sunlight, the air conditioner may not function properly. Use curtains to prevent the sunlight from falling on the receiver.
- If the room using the air conditioner has fluorescent lighting with electronic starters, signals may not be properly received. If you are planning to use such fluorescent lamps, consult your local dealer.
- If other electrical appliances react to the remote control, either move these appliances or consult your local dealer.

Location of the remote controller

- Keep the remote controller where its signals can reach the receiver of the air conditioner (a distance of 7m is allowed).
- When you select the timer operation, the remote controller automatically transmits a signal to the main unit at the specified time. If you keep the remote controller in a position that hinders proper signal transmission, a time delay of up to 15 minutes may occur.

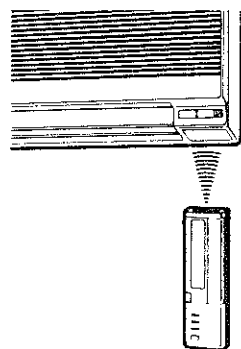


Remote controller mounting fixture

A mounting fixture for the remote controller is supplied with it.

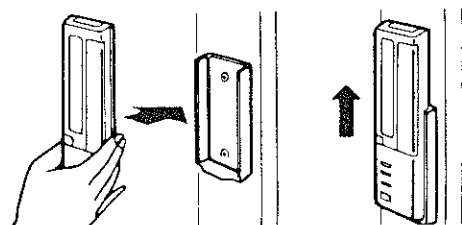
Installing the mounting fixture

- Before you actually install the mounting fixture on a wall or pillar, check whether the remote control unit signals from the location where you will install the fixture can be received by the main unit.



Mounting and removing the remote controller

- To mount, hold the remote controller parallel to the mounting fixture and push it in fully. To remove, slide the unit upwards and out from the mounting fixture.



Replacing batteries

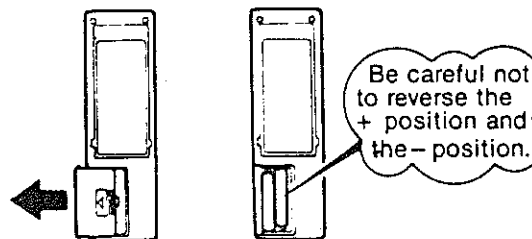
The remote controller uses two alkaline dry batteries (AM4).

- (1) Remove the cover of the battery compartment at the back of the remote controller by sliding it out in the direction of the arrow.

Remove the used batteries and insert new batteries.

- After replacing batteries, set the remote controller clock.

After you remove the old batteries and before inserting new cells, short-circuit the metal terminals next to the battery holders with a coin.



- (2) Before replacing the battery compartment cover, confirm that the clock panel on the remote controller displays "12:00 AM" in flashing characters.

Notes:

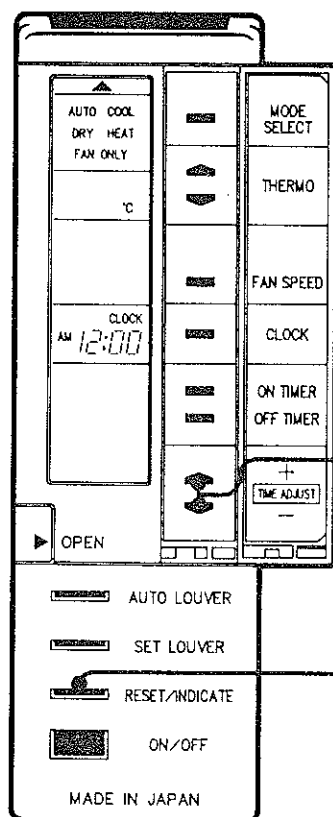
- When replacing batteries, do not use used batteries or batteries of a different type. Such use may cause the unit to malfunction.
- If you do not use the remote controller for more a few months, remove the batteries. Otherwise, battery leakage may damage the unit.
- The average battery life during normal use is approximately one year.
- Replace the batteries when there is no receiving tone from the main unit or if the transmission indicator on the remote control unit fails to light.

SETTING THE CLOCK

Before you start operating the air conditioner, set the clock of the remote controller using the procedures given in this section. The clock panel on the remote controller will display the time regardless of whether the air conditioner is in use or not.

Initial Setting of the Clock

When batteries are inserted in the remote controller, the clock panel will display "12:00 AM" in flashing characters.



(1)

TIME ADJUST button

➡ Forward

Push to set the time.

⬅ Backward

- Each time you push the button, the time moves forward or backward by one minute depending on which side you push. If you keep the button pushed, the movement in either direction is in 10-minute units.

(2)

RESET/INDICATE button

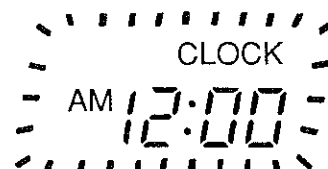
Push this button.

- When you push the RESET/INDICATE button, the clock (panel) time display stops flashing and the clock starts operating.

Readjusting the Clock

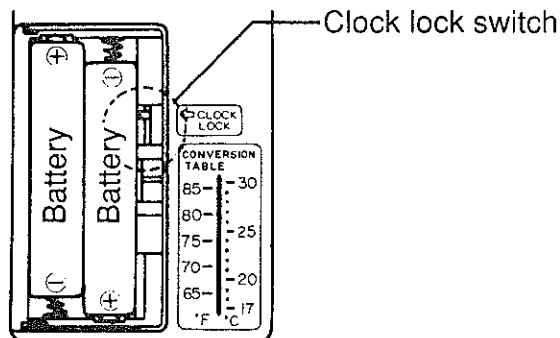
Push the CLOCK button for approximately 3 seconds. The current time display on the clock will start flashing. To set the new time, follow (1) and (2) of "Initial Setting of the Clock."

* Clock accuracy is within ± 60 seconds per month.



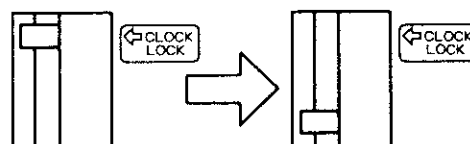
Clock Lock Switch

The CLOCK LOCK switch prevents the current time setting from being altered in case you push the CLOCK button accidentally.



- To activate the lock, move the Clock Lock switch to the ⬅ position using the tip of a pencil or similar object.

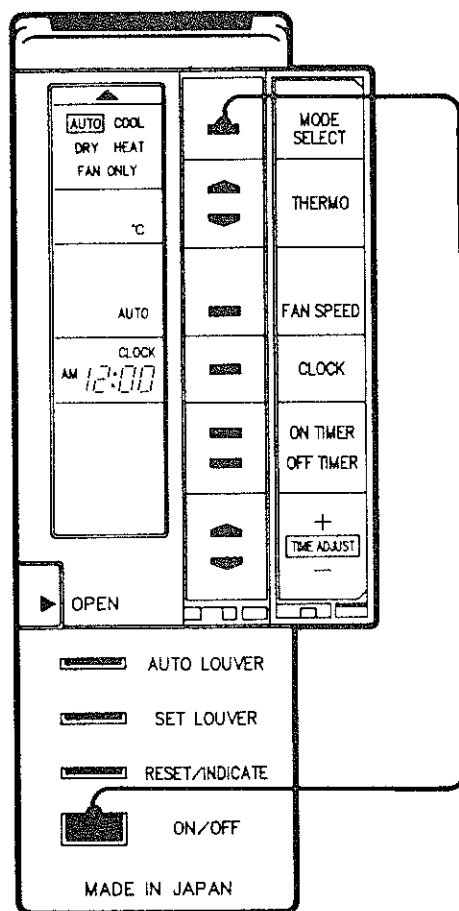
When the CLOCK LOCK switch is in the ⬅ position, you cannot readjust the clock. To readjust the clock, release the lock by moving the switch with the tip of a pencil or similar object.



AUTOMATIC OPERATION

When you set the air conditioner in AUTO mode, it will automatically select cooling, drying, heating, or fan operation depending on the room temperature at starting time. See the details on page 19.

In the AUTO mode, the conditions you set for operation are saved in the unit's microcomputer memory. Thereafter, the air conditioner will start operating under the same conditions when you simply push the ON/OFF button of the remote controller.



Start

Turn ON the POWER switch on the control panel of the main unit.
The OPERATION lamp (green LED) on the display panel of the main unit starts flashing. Push the RESET/INDICATE button of the remote controller.
The indicators of the remote controller display the current settings (for 30 seconds).

1

MODE SELECT button
Select AUTO.

2

ON/OFF button

Push this button to start the air conditioner.

- The OPERATION lamp (green LED) on the display panel of the main unit lights. The operating mode is selected in accordance with the room temperature and operation starts after approximately 3 minutes.

Stop

ON/OFF button

Push this button again to stop the air conditioner.

- If the AUTO mode is uncomfortable, you can select the desired conditions manually.
- When you change the operating conditions, the setting indicators on the remote controller start flashing. Be sure to push the RESET/INDICATE button to confirm the settings.
- When you select the AUTO mode, you do not have to set the fan speed. The FAN SPEED display will show AUTO and the fan speed will be automatically controlled.

On temperature control

Room temperature at starting time	Operation conditions
Above 28°C	Cooling
24°C to 28°C	Drying
23°C to 24°C	Fan Only
Below 23°C	Heating

HEATING/COOLING/ FAN ONLY OPERATION

Once you select the operating mode, the operating conditions are saved in the unit's microcomputer memory. Thereafter, the air conditioner will start operating under the same conditions when you simply push the ON/OFF button of the remote controller.

Start

Turn ON the POWER switch on the control panel of the main unit.

The OPERATION lamp (green LED) on the display panel of the main unit starts flashing. Push the RESET/INDICATE button of the remote controller.

The indicators of the remote controller display the current setting (for 30 seconds).

1

MODE SELECT button

Select HEAT, COOL, or FAN ONLY




2

THERMO button

Set the desired temperature.

3

FAN SPEED button

Select any of the 「AUTO」 「」 (low) 「」 (med.) and 「」 (high).

4

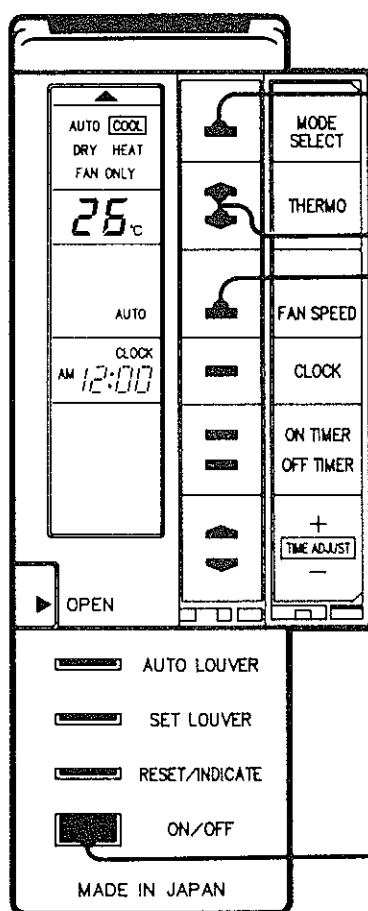
ON/OFF button

Push this button to start the air conditioner. The OPERATION lamp (green LED) on the display panel of the main unit lights. The operating mode is selected in accordance with the room temperature and operation starts after approximately 3 minutes (If you select FAN ONLY mode, the unit will start immediately.).

Stop

ON/OFF button

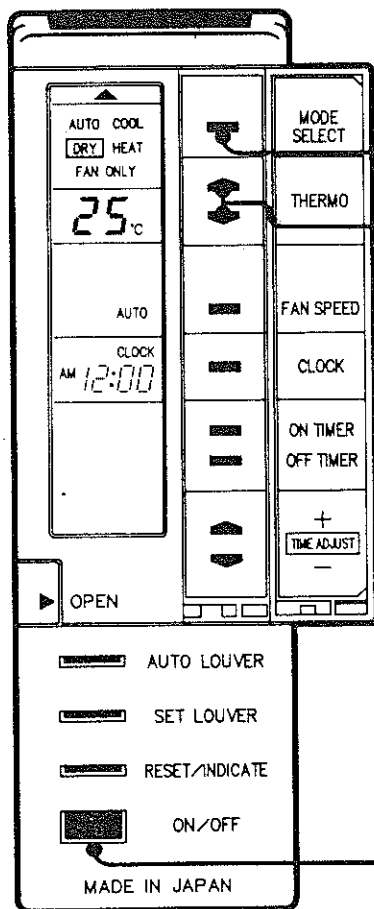
Push this button again to stop the air conditioner.



- When you change operating conditions, the setting indicators of the remote controller start flashing. Be sure to push the RESET/INDICATE button to confirm the settings.
- The FAN ONLY mode does not control temperature. Therefore, perform only steps ①, ③, and ④ to select this mode.

DRY OPERATION

Once you select the dry operation mode, the operating conditions are saved in the unit's microcomputer memory. Thereafter, the air conditioner will start operating under the same conditions when you simply push the ON/OFF button of the remote controller.



Start

Turn ON the POWER switch on the control panel of the main unit.
The OPERATION lamp (green LED) on the display panel of the main unit starts flashing.
Push the RESET/INDICATE button of the remote controller.
The indicators of the remote controller display the current settings (for 30 seconds).

1

MODE SELECT button
Select DRY.

2

THERMO button
Set the desired temperature.

FAN SPEED button

The fan speed indicator displays AUTO. The Indoor fan speed will be automatically selected low.

3

ON/OFF button

Push this button to start the air conditioner.
• The OPERATION lamp (green LED) on the display panel of the main unit lights, and operation starts after approximately 3 minutes.

Stop

ON/OFF button

Push this button again to stop the air conditioner.

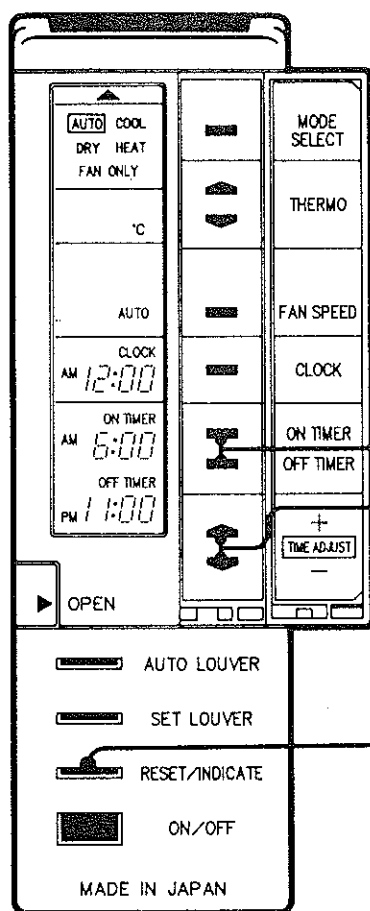
- When you change the operating conditions, the setting indicators of the remote controller start flashing. Be sure to push the RESET/INDICATE button to confirm the settings.
- See details on page 19.

TIMER OPERATION

Once you select the timer operation, the settings are saved in the unit's microcomputer memory. Thereafter, the air conditioner will start operating under the same conditions when you simply push the ON/OFF button of the remote controller.

If the clock panel displays flashing characters, you cannot set the timer.

Follow the instructions in the section "SETTING THE CLOCK" on page 10 to set the clock, and then set the timer.



Start

RESET/INDICATE button

Push this button. The indicators of the remote controller will display the current settings (for approximately 30 seconds).

1

ON/OFF TIMER button

Push the ON or OFF TIMER buttons as required.

- The current timer setting flashes on the ON/OFF TIMER indicator.

2

TIME ADJUST button

Forward Push to set the desired time.
Backward

- Each time you push the button, the time moves forward or backward by one minute depending on which side you push. If you keep the button pushed, the movement in either direction is in 10-minute units.

3

RESET/INDICATE button

Push this button. Check if the TIMER lamp (yellow LED) on the display panel of the main unit is lit.

- If the TIMER lamp does not light, push the ON/OFF button. The TIMER lamp will light.

Canceling the timer operation

When you push the ON or OFF TIMER buttons, the current timer setting will disappear and the colon which remains, will start flashing. Push the RESET/INDICATE button to cancel the timer setting.

Changing the timer setting

Push the ON or OFF TIMER buttons twice. The current timer setting will start flashing. Perform steps ② and ③ to change the setting.

CAUTION

When you select the timer operation, the remote controller automatically transmits the timer signal to the main unit at the specified time. Therefore, keep the remote controller in a location from which it can transmit the signal to the main unit properly.

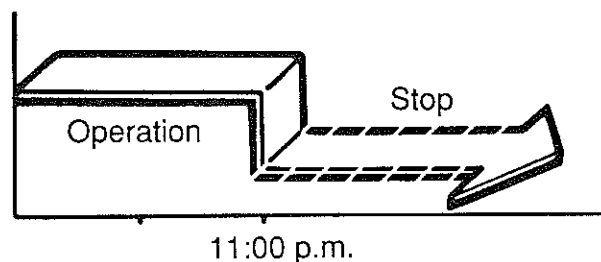
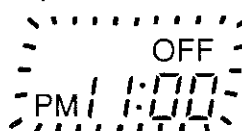
Example of Timer Setting

OFF timer (Operation → Stop)

The OFF timer feature is useful when you go to sleep. The air conditioner will stop automatically at the time set.

Example: To stop the air conditioner at 11:00 p.m.

- (1) Push the OFF TIMER button.
- (2) Use the TIME ADJUST button to display "11:00 PM" on the OFF timer indicator.
- (3) Push the RESET/INDICATE button.

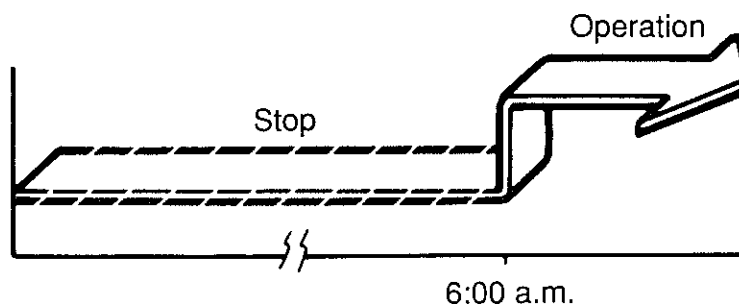
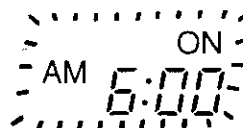


ON timer (Stop → Operation)

The ON timer feature is useful when you wake up in the morning or when you return home. The air conditioner will automatically start operating at the time set.

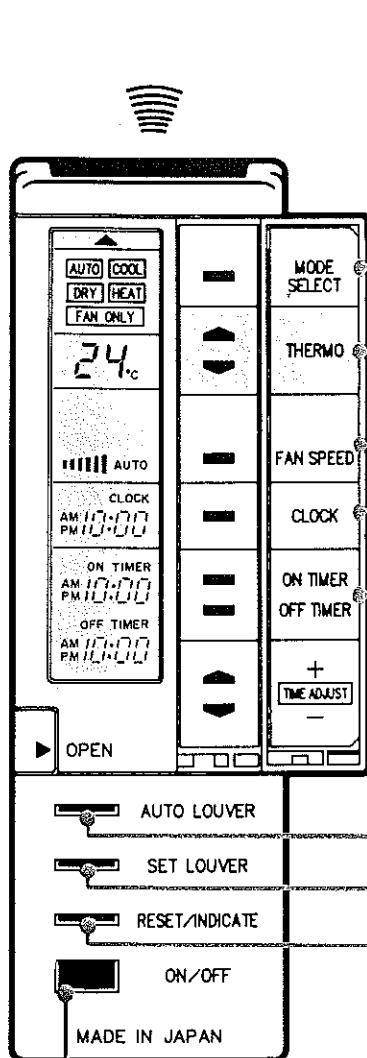
Example: To start the air conditioner at 6:00 a.m.

- (1) Push the RESET/INDICATE button. The indicators of the remote controller will display the current settings.
- (2) Push the ON TIMER button.
- (3) Use the TIME ADJUST button to display "6:00 AM" on the ON timer indicator of the remote controller.
- (4) Push the ON/OFF button.



For details, refer to the Owner's Manual.

- The operating condition is displayed on the remote controller.
- Operate the controller while confirming the indicators.




When these buttons are pushed, the indicators start flashing. Be sure to push the **RESET/INDICATE** or **ON/OFF** button.

Select the operating mode.

The selected mode is indicated by the framed square .

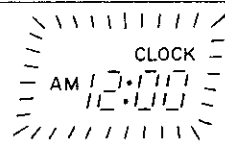
Set the temperature. (17°C to 30°C)

Select the fan speed. (4 steps of 'AUTO' and '  ')

When setting to 'AUTO', the fan speed automatically changes.

How to set the clock

① When the batteries are inserted.

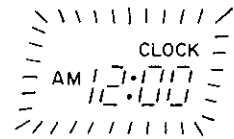


The clock display flashes.

When the clock is set again.

Push the **CLOCK** button for about 3 seconds.

"CLOCK" and the present time flash.



The clock display flashes.

② Set the present time by pushing the **TIME ADJUST** button.

③ Push the **RESET/INDICATE** button.

The flashing of the time indication stops and the clock starts moving.

When setting the time of the clock, release the **CLOCK LOCK** switch firstly.

- Select 'ON TIMER' or 'OFF TIMER' function by pushing either of them. The time is adjusted by the **TIME ADJUST** buttons.

ON/OFF button

Push this button to start operation. (A receiving beep sound is heard.) Push it again to stop operation. (A receiving beep sound is heard.)

RESET/INDICATE button

Push this button each time after changing the operating condition during operation. (A receiving beep is heard and the indicator stops flashing.) Also push it when confirming the previous operating condition before starting operation. So, the previous operating condition is displayed for 30 seconds. (ON/OFF operation is not performed.)

AUTO LOUVER button

Push this button to swing the louver. Push it again to stop the louver swinging.

SET LOUVER button

Push this button to adjust the air flow direction during the operation.

It is Automatic Operation by Micro Processor in the Following Case.

Setting Change is Impossible.

- It is impossible to change the fan speed during the 'AUTO' or 'DRY' operation.

Indicator Never Comes On.


- The **THERMO** indicator never comes on during the 'AUTO' or 'FAN ONLY' operation.

When 'ON TIMER' is set, the operation of the air conditioner does not start immediately.


For details, refer to the Owner's Manual.

- When pushing each operation button, direct the remote controller to the receiver on the air conditioner.
- Once operating conditions are set, the micro processor memorizes the set conditions, and whenever the ON/OFF button is pushed thereafter, the air conditioner repeats the same operation.
- If no receiving beep comes out from the receiver when pushing ON/OFF button, repeatedly push ON/OFF button twice.

Starting Operation

1  **RESET/INDICATE**
Push the RESET/INDICATE button and confirm the set operating conditions.


2 To change the operating conditions, carry out the following 'Changing Method', (The indicators start flashing.)

















3  **ON/OFF**
Push the ON/OFF button to start operation of the air conditioner.

To stop the operation, push the ON/OFF button once again.

Changing Operating Conditions

1 Follow the 'Changing Method'.
The indicators of the changed items flash.

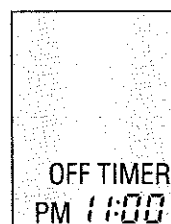
2  **RESET/INDICATE**
Push the RESET/INDICATE button.

	Changing Method	Cooling Operation	Heating Operation	Dry Operation	Auto Operation
Operation mode change	Select the desired operating mode by pushing the MODE SELECT button. (The frame indicator  moves.)	AUTO  DRY  FAN ONLY	AUTO  DRY  FAN ONLY	AUTO   HEAT FAN ONLY	  DRY  FAN ONLY
Temperature change	Select the desired temperature by pushing the THERMO button.	21°C to 30°C	17°C to 28°C	17°C to 30°C	The microprocessor automatically sets the optimum temperature. (The indication is not displayed.)
Fan speed change	Select any of the AUTO,  ,  ,  , by pushing the FAN SPEED button.	 ,  ,  , AUTO		The microprocessor automatically selects the optimum fan speed. (The indication is AUTO.)	

Setting Timer Operation

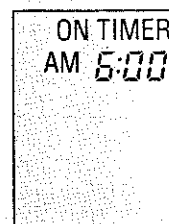
- Push the RESET/INDICATE button.
- Select the 'ON TIMER' or 'OFF TIMER' by pushing the TIMER select button.
 - * The previous set time is flashing.
- Select the desired time by pushing the TIME ADJUST button.
 - * When pushing the button once, the time changes by one minute, and when continued to push it, the time changes by the unit of 10 minutes.
- Push the ON/OFF button. (The TIMER lamp (yellow) on the main unit comes on and the timer operation starts.)
 - * Even if some operating conditions are changed during the operation, the set time of timer remains unchanged.
 - * Replace the batteries about one minute later, after the removal of the used batteries. Otherwise, remember to shortcircuit the terminals beside the battery holder with a coin or some other materials after replacing the batteries.

OFF TIMER



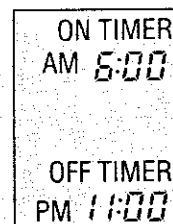
The operation stops at 11:00 PM

ON TIMER



The operation starts at 6:00 AM

Combination timer



The timer function (ON or OFF) activate first the set time which is closer to the actual time.

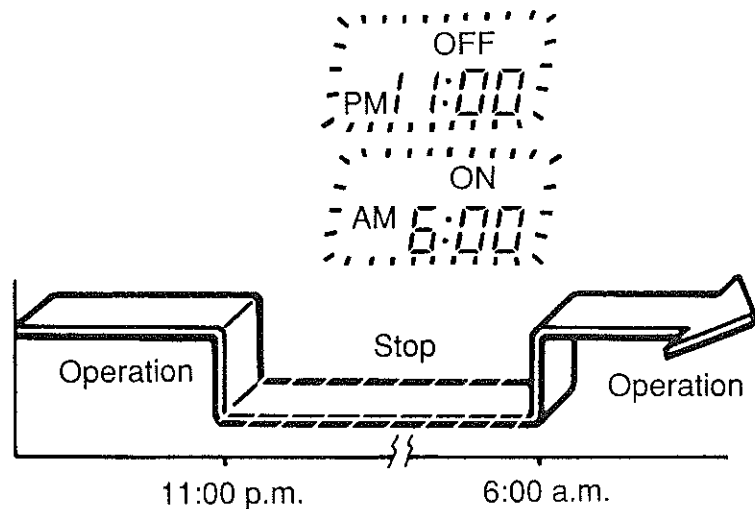
Combined Timer (Setting both ON and OFF timers simultaneously)

OFF timer → ON timer (Operation → Stop → Operation)

This feature is useful when you want to stop the air conditioner after you go to sleep, and start it again in the morning when you wake up.

Example: To stop the air conditioner at 11:00 p.m. and start it again next morning at 6:00 a.m..

- (1) Push the OFF TIMER button.
- (2) Use the TIME ADJUST button to display "11:00 PM" on the OFF timer indicator.
- (3) Push the ON TIMER button.
- (4) Use the TIME ADJUST button to display "6:00 AM" on the ON timer indicator.
- (5) Push the RESET/INDICATE button.

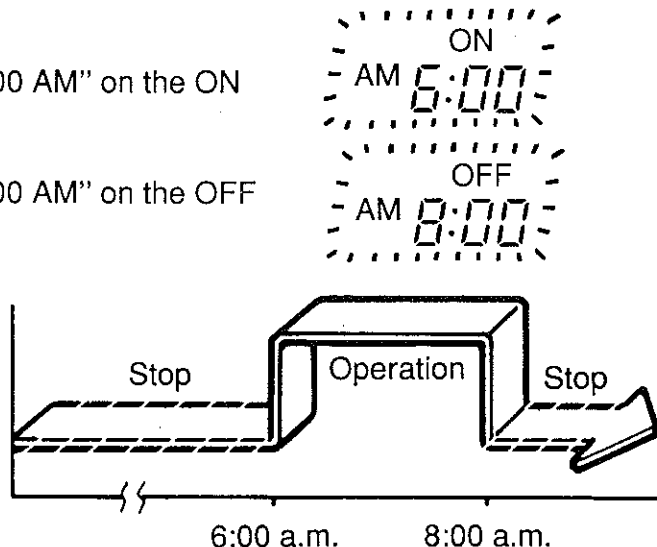


ON timer → OFF timer (Stop → Operation → Stop)

You can use this setting to start the air conditioner when you wake up and stop it when you leave the house.

Example: To start the air conditioner at 6:00 a.m. next morning, and stop it at 8:00 a.m.

- (1) Push the RESET/INDICATE button. The indicators of the remote controller will display the current settings.
- (2) Push the ON TIMER button.
- (3) Use the TIME ADJUST button to display "6:00 AM" on the ON timer indicator of the remote controller.
- (4) Push the OFF TIMER button.
- (5) Use the TIME ADJUST button to display "8:00 AM" on the OFF timer indicator.
- (6) Push the ON/OFF button.



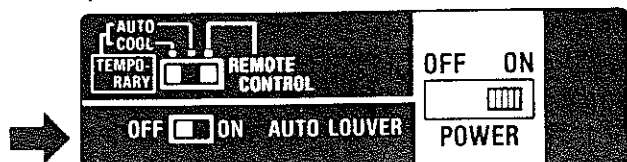
- The timer function (ON or OFF) which in time is closest to the actual time will be activated first.
- If the same time is set for both ON and OFF timers, no timer operation is performed. Also, the air conditioner may stop operating.

ADJUSTING AIR FLOW DIRECTION

Adjustment of Vertical Air Flow Direction

When using the wireless auto louver

Set the AUTO LOUVER switch of the main unit control panel to ON.

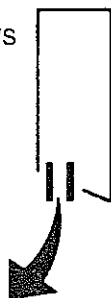


The air flow direction changes according to the operating condition.

During Heat Operation

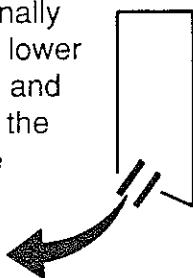
When the room temperature is low

The air flows downward and heats from floor level.



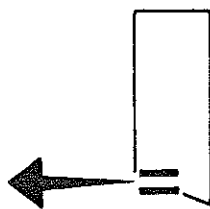
As the room temperature rises

The air flows diagonally to the lower levels and heats the whole room.



During Cool or Dry Operation

At the start of operation, the air flows horizontally and extends over the whole room.



When the room temperature reaches the set temperature, the unit enters the cool wind jet mode.

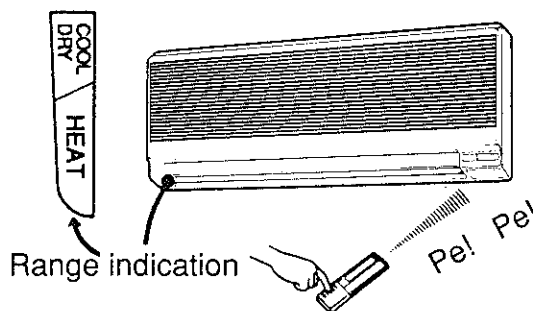


Adjusting the Louver Direction

Hold down the SET LOUVER button of the remote controller and set the air flow in the direction you desire.

During Cool, Dry and Heat Operations

Change the air flow direction within the range indicated by the side of the louver.



When you stop operation using the remote controller

The louver turns downward.



If you do not prefer the wireless auto louver operation

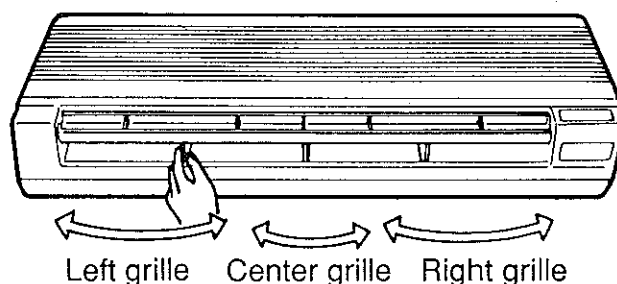
Set the AUTO LOUVER switch of the main unit control panel to OFF. During automatic operation, however, the air flow direction will change automatically according to the operation mode.

CAUTION

- To avoid condensation and damage to the louvers, do not use the downward air flow for a prolonged period when using the Cool or Dry mode.
- The air flow direction can be changed using the remote controller while the air conditioner is in use. When the air conditioner is turned on the next time, the air flow will automatically revert to horizontal during Cool or Dry operation or vertical during Heat operation.
- The air flow cannot be adjusted with the remote controller when the air conditioner is off or when the ON TIMER is setting.

Adjustment of Horizontal Air Flow Direction

- The horizontal air flow can be independently adjusted by means of the center, left and right grilles.
- Optionally adjust the horizontal air flow direction according to the room condition by moving each grille with a hand.

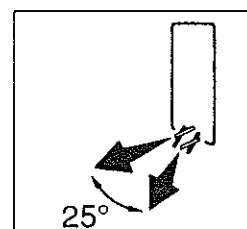
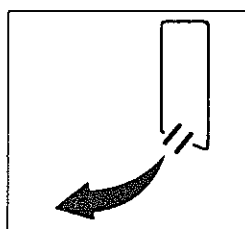
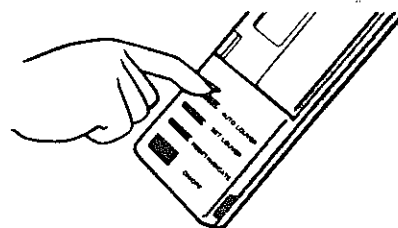


Horizontal air flow direction adjustment grilles

Other Function of Wireless Auto Louver

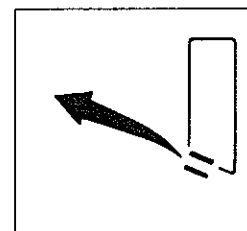
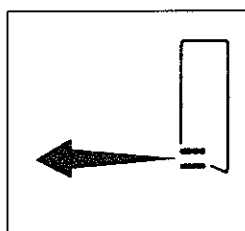
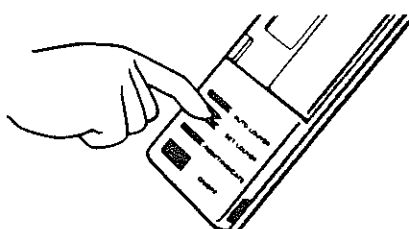
Louver Swing

- When the AUTO LOUVER button on the remote controller is pushed, the louver vertically swings within range of 25°. Remember to keep AUTO LOUVER button on the main unit in the ON position.
- To change the swing position, push the SET LOUVER button on the remote controller and then adjust the swing position.
- To stop the swing action, push the AUTO LOUVER button on the remote controller once again.



Cool Wind Jet

- If the SET LOUVER button on the remote controller is pushed while the air flows is horizontal, the louver direct the air flow upward. This will prevent a draft from blowing directly on your body. This option can be used with the COOL or DRY mode.
- To continue the cool wind jet feature, set the AUTO LOUVER switch to the "OFF" position after setting the louver in the desired position. You may use the louver swing option and the cool wind jet option at the same time.



AUTOMATIC OPERATION

- The air conditioner selects and operates in one of the operating modes for cooling, drying, heating, or fan only, depending on the room temperature.
- If the AUTO mode is uncomfortable, you can select the desired conditions manually.

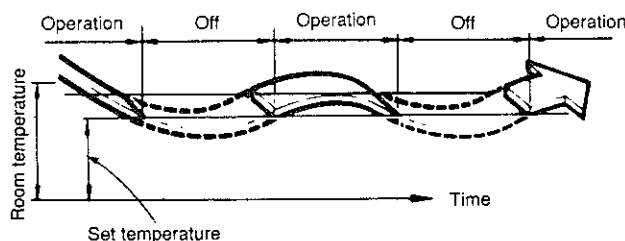
Room temperature at start of operation	Conditions for mode selection	
More than 28°C (hot)	Cooling mode	Cooling operation is performed with the temperature setting at 26°C. The fan speed is set to automatic.
26°C to 28°C (high humidity)	Dry mode	Dry operation is performed with the temperature setting at 25°C. A low fan speed is used.
24°C to 26°C (hot and humid)	Dry mode	Dry operation is performed with the temperature setting at 23°C. A low fan speed is used.
23°C to 24°C	Fan only mode	The Fan operation (low speed) is performed while monitoring the room temperature. If the room temperature changes, the operating mode is switched to the dry or heating operation modes.
Less than 23°C (cold)	Heating mode	Heating operation is performed with the temperature setting at 23°C. The fan speed is set to AUTO.

DRY OPERATION

The dry mode will automatically select the cooling dry operation based on the difference between the set temperature and the actual room temperature.

Cooling dry operation

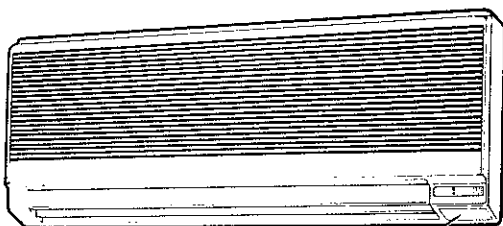
This operation is performed when the room temperature is higher than the set temperature. The temperature is regulated while dehumidifying by repeated turning on and off of the cooling operation. The fan speed indicator will display AUTO and a low speed will be used.



TEMPORARY OPERATION

The temporary operation may be used when the remote controller is either lost, or inoperative due to exhausted batteries.

Set the switch to the REMOTE CONTROL position during normal operation.

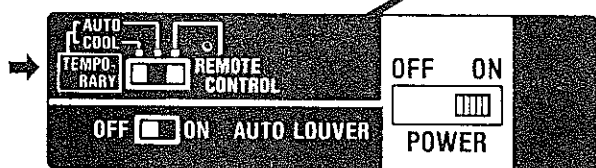


If the TEMPORARY switch is set to AUTO

The air conditioner operates by automatically selecting the cooling, dry, fan only, heating mode depending on the room temperature.

If the TEMPORARY switch is set to COOL

The air conditioner operates in the cooling mode (at a low fan speed).

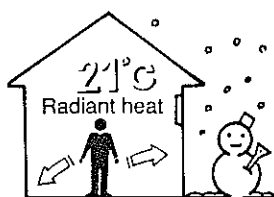


THERMAL RADIATION SENSOR

Influence of Radiant Heat

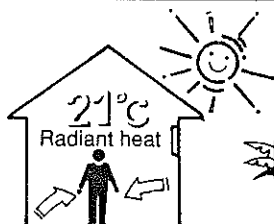
Even the same room temperature is sensed differently on the body.

When the temperature of the walls, floor, etc. is lower than the room temperature.



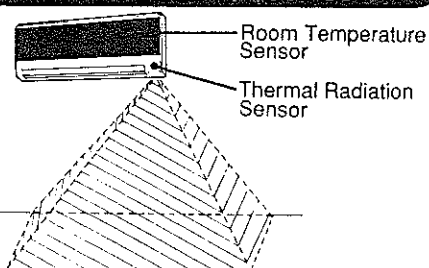
You will feel chilly since the body heat is taken away.

When the temperature of the walls, floor, etc. is higher than the room temperature.



You will feel hot on account of the radiant heat from the walls, floor, etc.

Function and Effect of Thermal Radiation Sensor



The thermal radiation sensor to detect the radiant heat from the floor etc. interlocked with the room temperature sensor automatically regulates the setting temperature so as to prevent the chills in winter and the oppressive heat in the summer, and ensure the comfortable and energy saving operation.

- The thermal radiation sensor detects the average radiant heat from the floor, etc. under the indoor unit.

ENSURING PROPER AIR CONDITIONER USAGE



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FOR MAINTENANCE

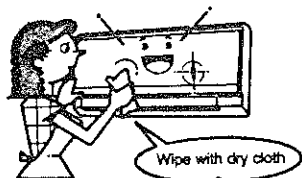
WARNING

Before you clean the air conditioner, be sure to turn it OFF.

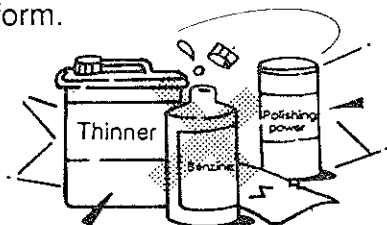
Cleaning the main unit and the remote controller

CAUTION

- Use a dry cloth to wipe the main unit and remote controller.
- A cloth dampened with cold water may be used on the main unit if it is very dirty.
- Never use a damp cloth on the remote controller.

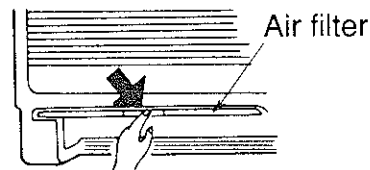


- Do not use a chemically-treated duster for wiping or leave such materials on the unit for long. It may damage or fade the surface of the unit.
- Do not use benzine, thinner, polishing powder, or similar solvents for cleaning. These may cause the plastic surface to crack or deform.



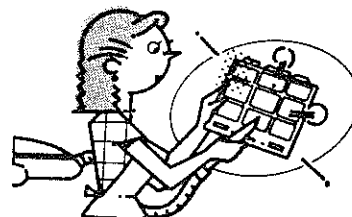
Cleaning the air filter

- Clean the air filter every 2 weeks.
- (1) The air filter may be removed by holding it in the center indentation and pulling downwards.



Pull the air filter downward to take out.

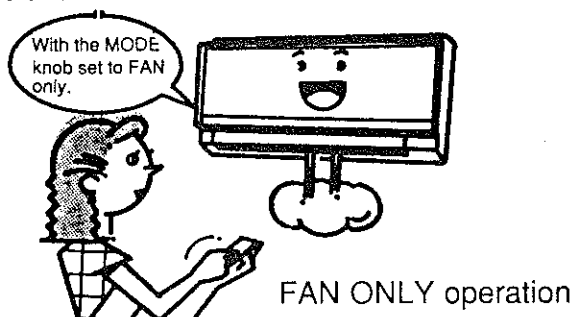
- (2) Use a vacuum cleaner or pat the air filter to remove the dust. If the air filter is very dirty, immerse it in lukewarm water (lower than 40°C) with mild neutral detergent and shake it. Dry the filter in the shade after rinsing well.



- (3) After cleaning, replace the filter, inserting it firmly until it clicks into place.

If you do not plan to use the unit for at least 1 month

- (1) Operate the fan for about half a day to dry the inside of the unit.
- (2) Stop the air conditioner and disconnect power.
- (3) Remove the batteries from the remote controller.



Checks before operation

CAUTION

- Check that the ground wire is not broken or disconnected.
- Check that the air filter is installed.
- Check that the outdoor unit air outlet or inlet is not blocked.

AIR CONDITIONER OPERATIONS AND PERFORMANCE

Three-minute protection feature

A protection feature prevents the air conditioner from being activated for approximately 3 minutes when it is restarted immediately after operation or when the POWER switch (see page 6) is set to on. This will protect the machine.

Heating characteristics

Preheating operation

The air conditioner will not deliver warm air immediately after it is started. Warm air flows out after approximately 5 minutes when the indoor heat exchanger warms up.

Warm air control

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

Defrosting

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

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

Heating capacity

This air conditioner uses an inverter that raises the rotational speed of the compressor to maintain the heating capacity when the outdoor temperature becomes low. If you still feel chilly, it is recommended to use another heating apparatus in combination with the air conditioner.

Consideration for accumulated snow

Select the position for the outdoor unit where it will not be subjected to snow drifts, accumulation of leaves or other seasonal debris. It is important that the air flow for the outdoor unit is not impeded as this will result in reduced heating or cooling performance. During the heating mode, and at sub-zero temperatures, the water drained off the outdoor unit as a result of the automatic defrost may accumulate and freeze. It is important that adequate drainage or a soak-way is provided.

Power failure

Power failure during operation will stop the unit completely.

- The OPERATION lamp (green LED) on the main unit will start flashing when power is restored.
- To restart operation, push the ON/OFF button on the remote controller.
- Lightning or a car wireless telephone operating nearby may cause the unit to malfunction. Turn POWER switch on the main unit to OFF and then to ON. Press the ON/OFF button on the remote controller to restart.

Air conditioner operating conditions

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

Cooling operation	Outdoor temperature: 21 to 43°C (Usable outdoor temperature: 10 to 43°C)
	Room temperature: 21 to 32°C
Heating operation	Outdoor temperature: -5 to 21°C (Usable outdoor temperature: -10 to 21°C)
	Room temperature: Less than 28°C
Dry operation	Outdoor temperature: 11 to 43°C
	Room temperature: 17°C to 32°C

CAUTION

Room relative humidity – less than 80 %. If the unit operates in excess of this figure, the surface of the unit may attract condensation.

If the unit is used outside of the above conditions, safety protection features may come into operation.

INSTALLATION

Location

- Your air conditioner removes moisture from the room air when cooling. Arrange a pipe to drain all water from the unit.
- Keep the indoor unit at least 1m apart from the TV set or radio to protect them against image disturbances or noises.
- Powerful radio transmitters or any other devices radiating high-frequency radio waves can cause the air conditioner to malfunction. Please consult the shop where you purchased the air conditioner before installing it.
- Don't install the unit in a hazardous location where combustible gas or vapor is likely to concentrate in the air.
- If the air conditioner is operated in an atmosphere containing oils (machine oil), salt near a coastal area, sulfide gas near a hot spring, etc. Such substances may lead to failure of the unit.

Be careful with noise or vibrations

- Install the air conditioner on solid ground to prevent transmission of noises or vibrations to other sites or their amplification.
- Objects placed near the air outlet of the outdoor unit could amplify noises emitted from it.
- Locate the outdoor unit where noise emitted by it or hot air from its air outlet will cause no nuisance to your neighbors.
- If the air conditioner sounds abnormal during operation, contact the shop where you purchased this unit.

Wiring

- Ground the air conditioner for prevention of electric shock.
- Provide an outlet for exclusive use with your air conditioner.
- Never pull the power cord tight or remote controller cord.
- Ground the air conditioner in accordance with the applicable local regulations.
- Use a fuse with the correct rated ampere, if it is needed.

Warning

THIS APPLIANCE MUST BE EARTHED.

IMPORTANT

THE WIRES IN THIS MAINS LEAD ARE COLORED IN ACCORDANCE WITH THE FOLLOWING CODE:

Green and Yellow	- EARTH
Blue	- NEUTRAL
Brown	- LIVE

As the colors of the flexible cord of the this appliance may not correspond with the colored markings identifying terminals in your plug, proceed as follows:

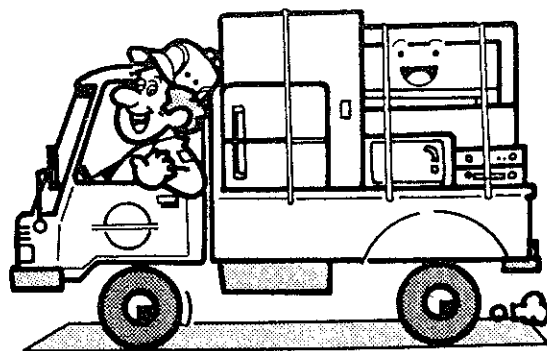
Connect GREEN AND YELLOW colored core to plug terminal marked letter "E" or Earth Symbol " \perp " or colored Green or Green and Yellow.

Connect BROWN colored core to plug terminal marked letter "L" or colored Red.

Connect BLUE colored core to plug terminal marked letter "N" or colored Black.

Relocation

If you move out or if it is desired to relocate the air conditioner, consult your dealer because the special skills to withdraw Freon, purge air, and perform other operations are required.



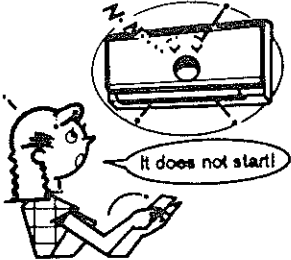
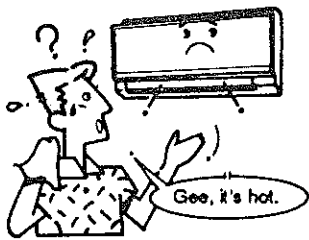
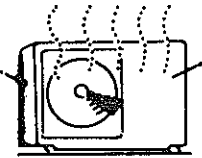
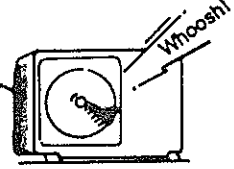
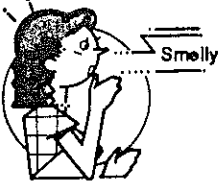
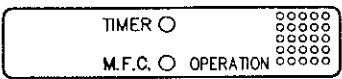
TROUBLES AND CAUSES

CAUTION

If any of the following conditions occur, stop the air conditioner immediately, set to off the power switch, and contact the dealer:

- The indicator lamps flash rapidly (five times per second), you turn OFF the POWER switch, and turn it ON again after two or three minutes but the lamps still flash.
- Switch operations are erratic.
- The fuse is blown frequently or the circuit breaker is tripped frequently.
- Foreign matter or water has fallen inside the air conditioner.
- Any other unusual condition is observed.


Before you ask for servicing or repairs, check the following points.

Symptoms		Possible Causes
Recheck	 <p>Inoperative.</p>	<ul style="list-style-type: none"> • The power supply switch of the main unit is set to off. • The power fuse is blown or the circuit breaker has been tripped. • The batteries in the remote control unit are exhausted. • The timer is set.
	 <p>Does not cool or heat well.</p>	<ul style="list-style-type: none"> • The air inlet or outlet of the outdoor unit is blocked. • Doors or windows are open. • The air filter is clogged with dust. • The louver is not at the correct position. • The fan speed is set to low. • The temperature setting is too high or too low.
These are not failures	 <p>A white mist of chilled air or water is generated from the outdoor unit.</p>	<ul style="list-style-type: none"> • The outdoor unit fan has automatically stopped for the defrost operation.
	 <p>A noise is sometimes heard from the outdoor unit.</p>	<ul style="list-style-type: none"> • The solenoid valve produces this noise when it starts to operate at the beginning and end of the defrost operation. A brief noise may also be heard from the indoor unit sometimes.
	 <p>Room air is smelly. A bad odor comes from the air conditioner.</p>	<ul style="list-style-type: none"> • Smells impregnated in the wall, carpet, furniture, clothing, or furs, are coming out.
	 <p>The OPERATION lamp (green) flashes.</p>	<ul style="list-style-type: none"> • The lamp flashes once per second when power is restored after a power failure, or when the POWER switch is set to on. (To stop flashing, see "Power Failure" on page 24.)

TROUBLES AND CAUSES


(Concerning Remote Controller)

Before you ask for servicing or repairs, check the following points.

Setting Change Is Impossible		
Symptoms	Causes	Reason and Disposal
The fan speed can not be changed.	<ul style="list-style-type: none"> Check whether the MODE indicated on the display is "AUTO". <div style="border: 1px solid black; padding: 5px; text-align: center; width: fit-content; margin: 10px auto;">AUTO</div>	When the automatic mode is selected, the air conditioner automatically selects the fan speed.
	<ul style="list-style-type: none"> Check whether the MODE indicated on the display is "DRY". <div style="border: 1px solid black; padding: 5px; text-align: center; width: fit-content; margin: 10px auto;">DRY</div>	When dry operation is selected, the air conditioner automatically selects the fan speed. The fan speed can be selected during "COOL" and "FAN ONLY".
The timer can not be changed.	<p>The same time has been set for the ON and OFF timers. A colon (:) flashes on either the ON or OFF timer display.</p> <div style="text-align: center; margin-top: 20px;">  </div>	When a colon flashes on the ON (or OFF) timer display, you cannot set the time. To reset timer, push the timer button where the colon appears. (See page 14 for complete directions.)

The Transmission Indicator '▲' Never Comes On		
Symptoms	Causes	Reason and Disposal
The remote control signal is not transmitted even when the RESET/INDICATE button is pushed. (The transmission indicator '▲' does not come on.)	<ul style="list-style-type: none"> Check whether the RESET/INDICATE button is pushed when the air conditioner operation is kept stopped and the display is kept off. 	Even if only the display comes on, remote control signals are never transmitted, and even if the RESET/INDICATE button is continuously pushed thereafter, the signal transmission still remains impossible.
	<ul style="list-style-type: none"> Check whether the battery life has expired. 	Restart the air conditioner by pushing the ON/OFF button on the remote controller. Replace batteries if worn out. (☛ Page 9)
The remote control signal is not transmitted even when the SET LOUVER button is pushed.	<ul style="list-style-type: none"> Check whether the ON TIMER is indicated on the display. 	The remote control signal is not transmitted, because the air conditioner is off.

The Display Never Comes On

Symptoms	Causes	Reasons
The THERMO indicator does not come on.	<ul style="list-style-type: none"> Check whether the MODE indicated on the display is "AUTO". <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;"> AUTO </div>	The microcomputer automatically selects the temperature.
	<ul style="list-style-type: none"> Check whether the MODE indicated on the display is "FAN ONLY". <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;"> FAN ONLY </div>	The temperature cannot be set during fan only operation.
The clock is unable to be set.	The CLOCK LOCK switch is set to the  position.	When the CLOCK LOCK switch is set to the ⇄ position, you cannot adjust the time. (☞ page 10)

The Display Goes Off

Symptoms	Causes	Reasons
The indication on the display disappears after a lapse of time.	<ul style="list-style-type: none"> Check whether the timer operation come to end when the OFF TIMER is indicated on the display. 	The air conditioner operation stops since the set time elapsed.
	<ul style="list-style-type: none"> Check whether the display block is turned on by pushing the RESET/INDICATE button when the air conditioner operation is kept stopped. 	The indication is turned on by pushing the RESET/INDICATE button while the air conditioner operation is kept stopped, the indication automatically goes off in about 30 seconds.
The TIMER indicators go off after a lapse of certain time.	<ul style="list-style-type: none"> Check whether the timer operation is started when the ON TIMER is indicated on the display. 	When the time set to stop the air conditioner is reached, the air conditioner will automatically stop and the appropriate indicator will go off.

The Signal Receiving Tone Does Not Come Out

Symptoms	Causes	Disposal
No receiving tone comes out of the indoor unit even when the ON/OFF button is pushed.	<ul style="list-style-type: none"> Check whether the signal transmitter of the remote controller is properly directed to the receiver of the indoor unit when the ON/OFF button is pushed. 	Direct the signal transmitter of the remote controller to the receiver of the indoor unit, and then repeatedly push the ON/OFF button twice.

SPECIFICATIONS

MODEL	Indoor unit RAS-45BKHV (W)	Outdoor unit RAS-45BAHV
Type	Reverse Cycle, Split type	
Power supply	1 ϕ , 50Hz, 220/240V	
Cooling Capacity	17000 Btu/h	
Amps	0.3/0.28 A	12.1/11.12 A
Watts	60 W	2390 W
Power factor	90 %	90 %
Heating Capacity	24000 Btu/h	
Amps	0.33/0.3 A	14.17/13.0 A
Watts	65 W	2805 W
Power factor	90 %	90 %
Net weight	13 kg	55 kg
Dimension width	960 mm	720 mm
Height	370 mm	675 mm
Depth	175 mm	300 + 23 mm
Starting current	7.0 A	

- The specifications may be subject to change without notice for purpose of improvement.

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