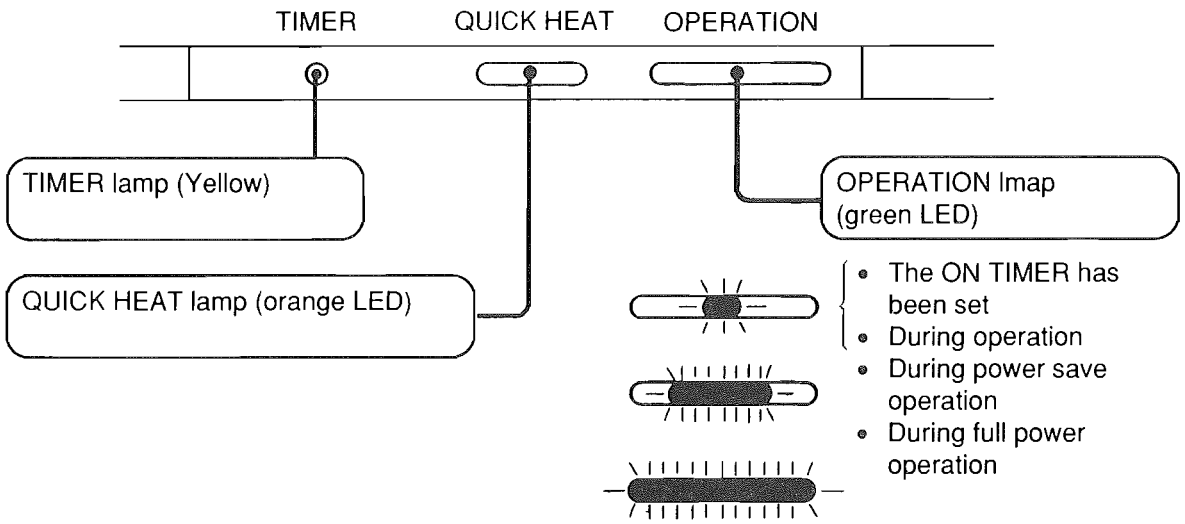
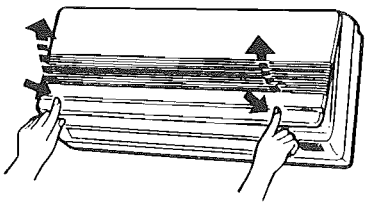
9. OPERATION DESCRIPTION

NAMES AND FUNCTIONS OF INDICATORS AND CONTROLS ON INDOOR UNIT

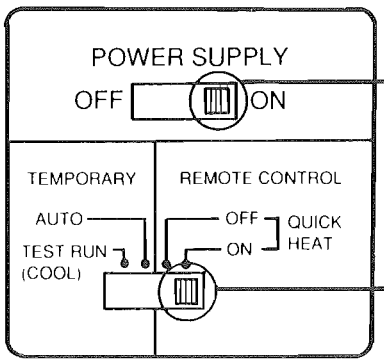
Display Panel The operating conditions are indicated below.



Control panel Lift the front panel to perform control panel settings.



- Opening the front panel
  Push the PUSH on both lower ends of the front panel. Open the panel. You can lift the panel up to an angle where it will remain fixed. Do not lift the panel any further when it stops with a clicking sound.
- Closing the front panel
  Push the PUSH on both lower ends of the front panel. Close the panel firmly.



POWER SUPPLY switch

Normally set the switch to ON. Set it to OFF if you do not operate the unit for a few weeks.

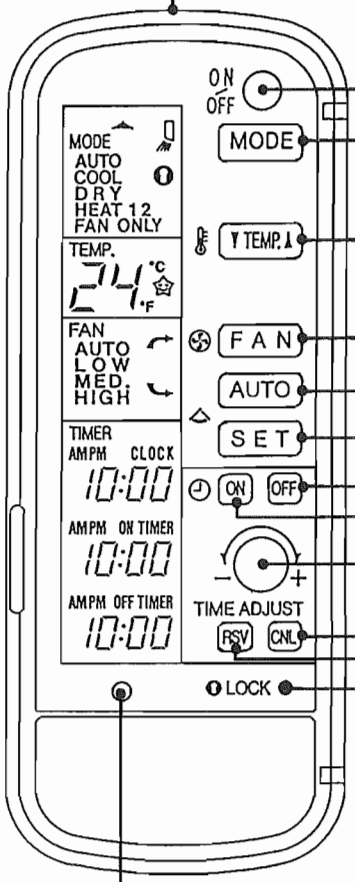
QUICK HEAT switch

Set the QUICK HEAT switch ON before starting heating operation to deliver warm air in a few minutes.

TEMPORARY OPERATION switch

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

REMOTE CONTROLS AND THEIR FUNCTIONS



ON/OFF button

Push the button to start operation. (A receiving beep is heard.)
Push the button again to stop operation. (A receiving beep is heard.)
If no receiving sound is heard from the air conditioner main unit, push the button twice.

Infrared signal emitter

Transmits a signal to the main air conditioner unit.

MODE select button

Push this button to select modes. Each time you push the button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, HEAT, FAN ONLY, and back to AUTO.

TEMP. button

▲ .... The set temperature is increased to 30°C.
▼ .... The set temperature is decreased to 17°C.

FAN speed button

Push this button to select fan speed. When you select AUTO, the fan speed is automatically adjusted according to the room temperature. You can also manually select the desired fan speed from three settings.

AUTO louver button

Push this button to swing louver. (A receiving beep is heard.)
Push this button again to stop louver swinging. (A receiving beep is heard.)

SET louver button

To adjust the air flow direction by the wireless REMOTE CONTROLLER during the air conditioner operation, push this button. (A receiving beep is heard.)
While this button is kept depressed, the receiving tone continuously sounds.

OFF TIMER button

Push this button to set the OFF timer.

ON TIMER button

Push this button to set the ON timer.

TIME ADJUST dial

Turn this dial to set time.

CANCEL button

Push this button to cancel on timer and off timer.

RESERVE button

Push this button to reserve timer settings.

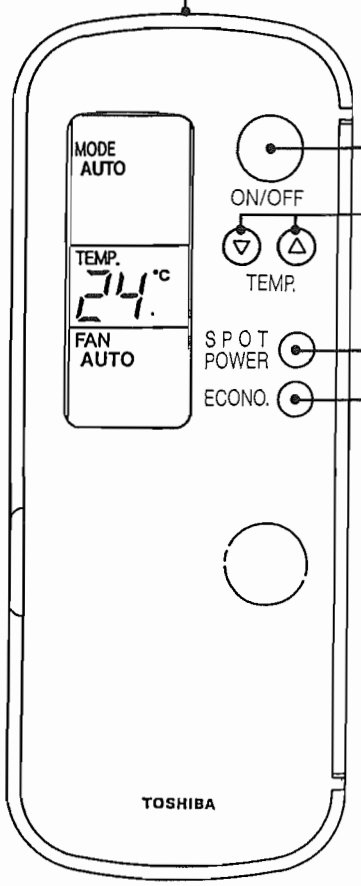
Cover button

When the cover is closed, this button is pushed to activate the buttons on the cover.

LOCK button

Push this button to lock all settings. Push the button again releases the lock.

REMOTE CONTROLS AND THEIR FUNCTIONS



Infrared signal emitter

Transmits a signal to the air conditioner unit.

ON/OFF button

Push the button to start operation. (A receiving beep is heard.)
Push the button again to stop operation. (A receiving beep is heard.)
If no receiving sound is heard from the air conditioner unit, push the button twice.

TEMP. button

▲ .... The set temperature is increased to 30°C.
▼ .... The set temperature is decreased to 17°C.

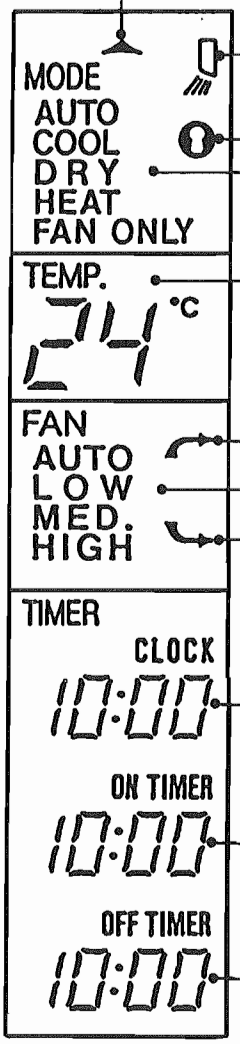
SPOT POWER button

Push this button to set the spot-power operation mode of the air conditioner.

ECONO. button

Push this button to set the economical operation mode of the air conditioner.

NAMES AND FUNCTIONS OF INDICATORS ON REMOTE CONTROLLER



Transmission indicator

This transmission indicator lights when the remote controller transmits signals to the main unit.

ON/OFF display

Displayed by pushing the ON/OFF button.
Push the ON/OFF button again to disappear.

LOCK display

Displayed by pushing the LOCK button.
Push the LOCK button again to disappear.

MODE display

Displays the current operation mode.

THERMO display

Displays the temperature setting (17°C to 30°C).
When you set the operating mode to FAN ONLY, no temperature setting is displayed.

SPOT POWER display

Displayed by pushing the SPOT POWER button.
Push the SPOT POWER button again to disappear.

FAN SPEED display

Displays the selected fan speed. AUTO and three fan speed levels "LOW" "MED" "HIGH" can be indicated. Displays AUTO when the operating mode is either AUTO or DRY.

ECONO. display

Displayed by pushing the ECONO. button.
Push the ECONO. button again to disappear.

CLOCK display

The current time is indicated.

TIMER display

The time set for timer operation is indicated.

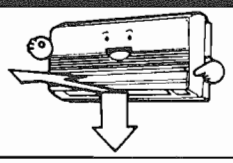
- In the above illustration, all displays are indicated for the sake of clarity. During operation, only the relevant displays will be shown on the remote controller.

ADJUSTING AIR FLOW DIRECTION

- Adjust the air flow direction properly. Otherwise, it might cause discomfort and make the room temperature uneven.
- Adjust the vertical air flow louver using the remote controller.
- Adjust the horizontal air flow grilles manually.

Adjusting the Vertical Air Flow Direction

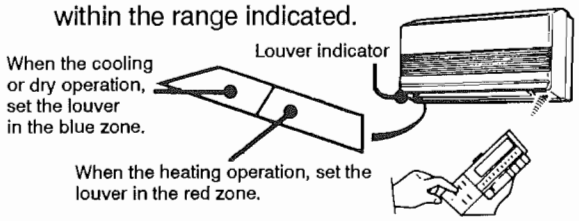
The air conditioner automatically adjusts the vertical air flow direction in accordance with the operating conditions.



To set the air flow direction you desire

Perform this function while the unit is in operation.
Keep pushing the SET button on the remote controller to move the louver in the desired direction.

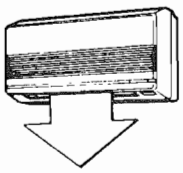
▶ Change the vertical air flow louver direction within the range indicated.



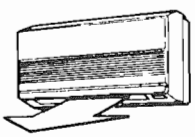
- In subsequent operations, the vertical air flow is automatically set in the direction to which you adjusted the louver using the SET button.

How the air flows during the heating operation

When the room temperature is low, the air flow will be in a downward direction in order to heat the floor level.



When the room temperature rises, the air flow will be in a diagonal direction in order to heat the whole room.



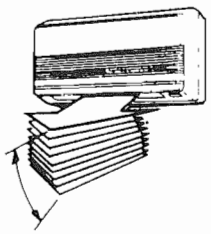
When you have set the vertical air flow direction using the SET button, the air flows downward at first and then automatically change to the direction you desire.

- When you stop operation using the remote controller, the vertical air flow louver will automatically close.

To automatically swing the air flow direction

Perform this function while the unit is in operation.
Push the AUTO button on the remote controller.

- To stop the function, push the AUTO button again.
- To change the swing direction, push the SET button.

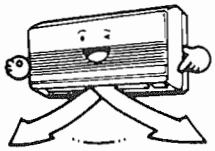


CAUTION

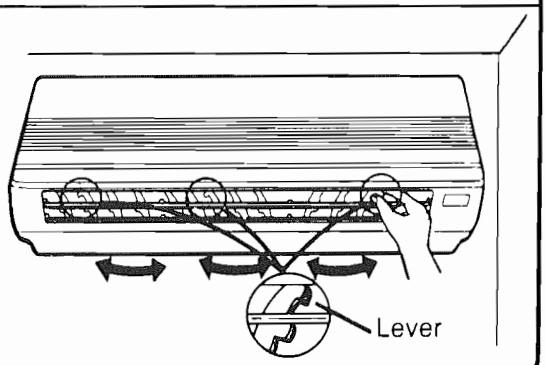
- The SET and AUTO buttons will be disabled when the unit is not in operation (including when the ON TIMER is set).
- Do not operate the unit for long hours with the air flow direction set downward during the cooling or dry operation. Otherwise, dew may occur on the surface of the vertical louver and cause dew dripping.
- Do not move the vertical louver manually. Always use the SET button. If you move the louver manually, it may malfunction during operation. If the louver malfunctions, stop the unit once, and restart.
- When the unit is started immediately after it was stopped, the vertical louver might not move for 10 seconds or so.
- If you change the temperature setting during the heating operation (especially when the room temperature is high), unit may stop, and the vertical louver may close temporarily and move to the position stored in memory.

Adjusting the Horizontal Air Flow Direction

Preparation: For the cooling or dry operation, move the vertical air flow louver downward using the SET button on the remote controller.



- Take hold of the lever on the horizontal air flow grilles and move them to adjust the air flow direction as required.
- You can adjust the air flow at the left, center, and right locations of the grilles.
- For the cooling or dry operation, return the vertical air flow louver to the original position using the SET button on the remote controller.



How the unit operates when there is a power failure or a malfunction

When there is a power failure while the unit is operating, all operations stop.

- When the power returns, the OPERATION lamp (green LED) on the main unit display panel starts flashing.
  Push the ON/OFF button on the remote controller.

If the unit malfunctions during operation due to a disturbance caused by thunder or automobile radios, turn OFF the POWER switch of the main unit control panel.
Subsequently, turn ON the POWER switch and push the ON/OFF button on the remote controller.

Notes on handling the remote controller

- Do not throw and take care not to drop the remote controller. Do no allow water to spill on it.
- Do not place the remote controller in direct sunlight or near a stove.
- When the receiver (main unit) is subject to direct sunlight, the air conditioner may not operate normally. Shield sunlight using a curtain or any other suitable means.
- The signal may not be received in the room where a fluorescent lamp with an electronic glow starter is used. Place the conditioner as far away from the fluorescent lamp as possible.
- The air conditioner is not operative if there is an obstruction, such as a curtain, between the air conditioner and remote controller or if the air conditioner is far away from the remote controller. The distance within which the air conditioner can receive signal from the remote controller is about 7m. (This distance differs according to the battery strength, and the positional relationship between the remote controller and air conditioner.)
- The sensitivity of the receiver may be lowered if dust builds up on the transmitter (inferred rays emitter) or receiver (main unit).
- If another air conditioner or electrical apparatus is operated by the remote controller, place it away from the controller.
- This wireless remote controller is not interchangeable with those of previous business years.

OVERVIEW OF AIR CONDITIONER CONTROL

This air conditioner uses a TRIAC controlled variable-speed stepless induction motor as its indoor fan motor and a power proportionate control compressor which can change the motor speed in the range of 900 to 8400 r.p.m. to change the level of power. The indoor unit is equipped with a motor phase control circuit, and the outdoor unit has an inverter (frequency change device) for controlling the compressor motor.

The air conditioner as a whole is primarily controlled by the indoor unit control section.

The indoor control section drives the indoor fan motor according to an operation command signal from this remote controller and transfers the operation command signal (specification of cool operation and compressor operation frequency) to the outdoor unit control section. The outdoor unit control section receives the signal from the indoor unit control section controls the outdoor fan and four-way valve, controls the inverter output voltage and frequency supplied to the compressor motor, and changes the compressor motor speed. It also sends information concerning the operation condition of the outdoor unit back to the indoor unit control section.

1. Indoor fan control

Although the variable-speed stepless induction motor is used to drive the indoor fan, only six-speed stages are used in the AUTO position of fan speed and only three speed stages are used in MANUAL position for control purposes. No switching sound is heard when the speed is changed since no relay tap switching is used.

2. Capacity control

The cooling and heating capacity is varied by changing the compressor motor speed. The inverter converts the AC 220–240V for RAS-10YKHT into DC 310–340V to generate a 15 to 140Hz three-phase AC power by the transistor module (which contains six transistors) and feeds it to the compressor to change its speed. The range of frequencies fed to the compressor varies with different operation conditions. (cool, dry, or heat).

Cool operation:15 to 86Hz, Dry operation:15 to 40Hz Heat operation:15 to 140Hz

3. Current limit control

The outdoor unit control section (inverter assembly) detects input current to the outdoor unit. If the current exceeds the specified value due to compressor motor speed following the command from the indoor unit, the control section decreases the compressor motor speed to make it equal to or as close as possible but not greater than the speed specified by the command.