

TOSHIBA

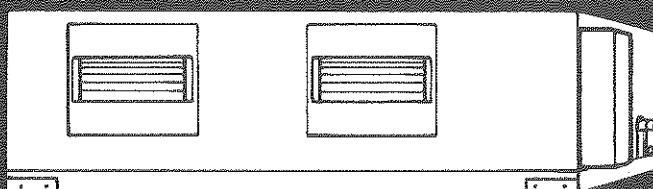
AIR CONDITIONER SPLIT (Recessed Ceiling Duct Type)

Indoor Unit

RAV-1800UDHE

Outdoor Unit

RAV-S1800HE



CONTENTS

Thank you very much for your purchase of our TOSHIBA air conditioner. Please read this manual carefully before starting operations with your air conditioner to ensure satisfactory performance. After reading the manual be sure to keep it with you.

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POST-INSTALLATION CHECKOUT

As a duct mounting type, this air conditioner is not supplied with an air filter. However, since your installation contractor has been instructed to install an air filter near the air inlet, make the following checks on receiving the air conditioner after its test run is complete:

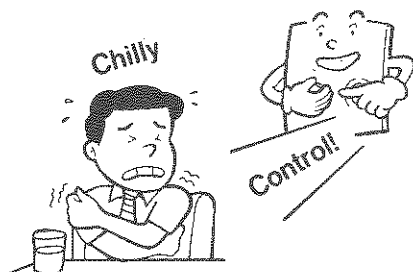
- Where the air filter is located
- How the air filter can be removed
- How the air filter can be cleaned

Without an air filter installed, the heat exchanger would be clogged with dust, resulting in an air conditioner malfunction or water leak.

HELPFUL OPERATING HINTS

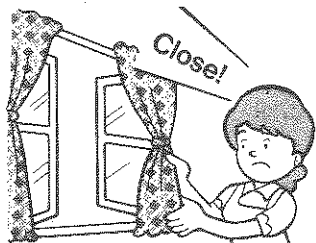
Follow these hints to cut your electricity bills and get comfortable cooling and heating.

Keep Room Temperature at Comfortable Level



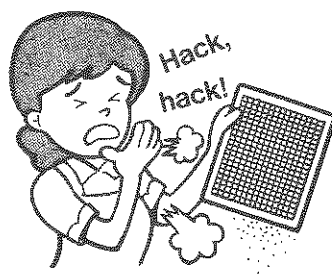
Overcooling or overheating is bad to your health. For comfortable air conditioning, set the THERMO control to 3-4 for cooling, to 4-5 for heating.

Do Not Open Windows and Doors More Often Than Necessary



To prevent outflow of chilled or heated air from the room, do not open windows and doors more often than necessary.

Clean Air Filter

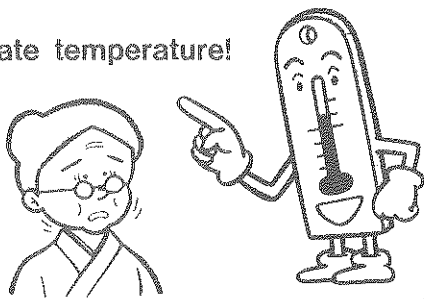


A clogged air filter will reduce cooling and heating effects. Clean the air filter regularly.

PRECAUTIONS

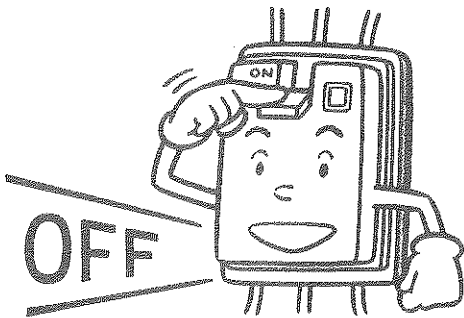
Adjust for Comfortable Room Temperature

Regulate temperature!



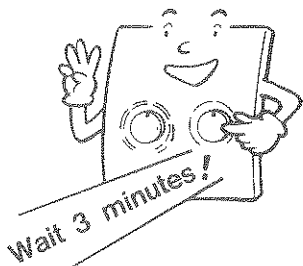
Have room air regulated to comfortable levels for physically handicapped persons, babies, or senior people present in the room.

Do Not Start or Stop Air Condition with Hand Power Switch



An air condition malfunction might result.

Do Not Restart Air Conditioner Immediately After It is Stopped



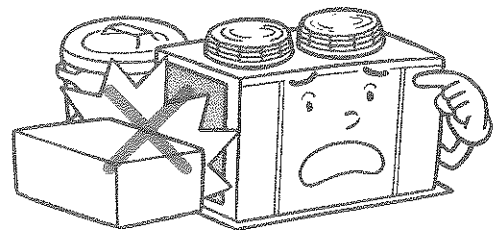
Allow for at least 3 minutes before restarting cooling or heating operation after the air condition has been shut down. Otherwise, excessive current flow in the air conditioner might trip protective device, thereby disabling operation.

Do Not Poke Rods into Air Inlet and Outlet



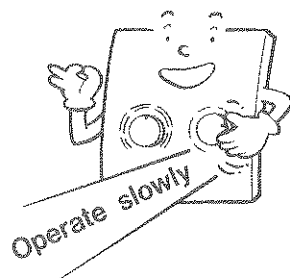
Watch that children are particularly apt to do this. The fan is running at hazardously high speed inside.

Do Not Block Air Inlet and Outlet



Resultant overload on the air conditioner might damage performance or trip the protective device, there by disabling operation.

Do Not Start and Stop Air Conditioner at Short Intervals



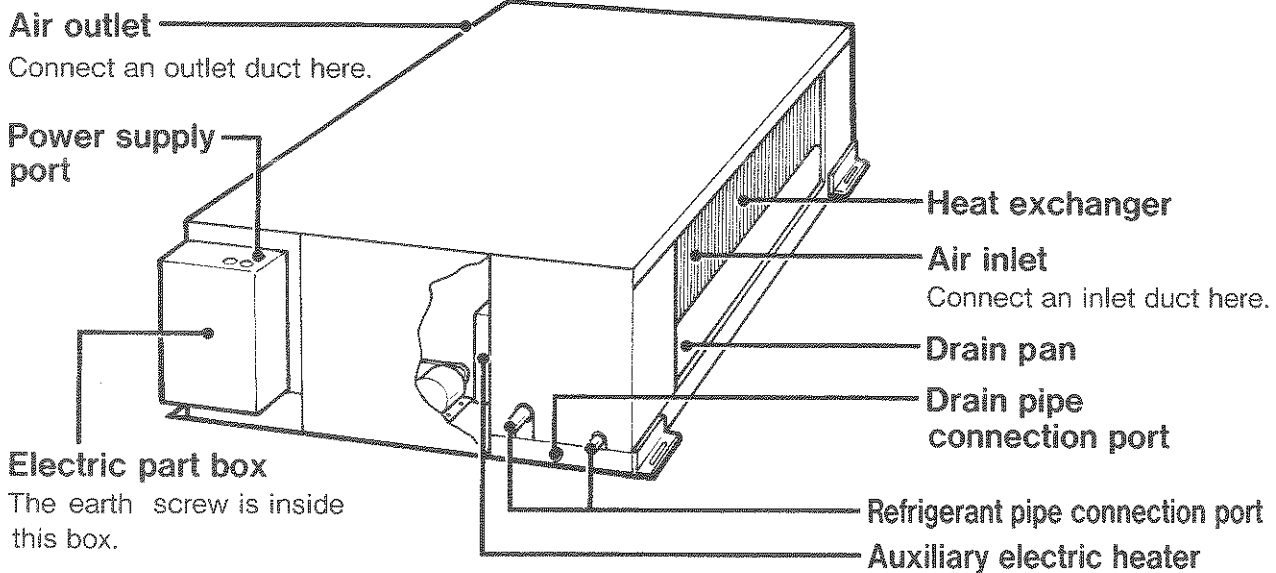
Operate the SELECTOR and THERMO controls slowly. Frequent operations of these dials can cause an air conditioner malfunction.

NAMES AND FUNCTIONS OF COMPONENTS

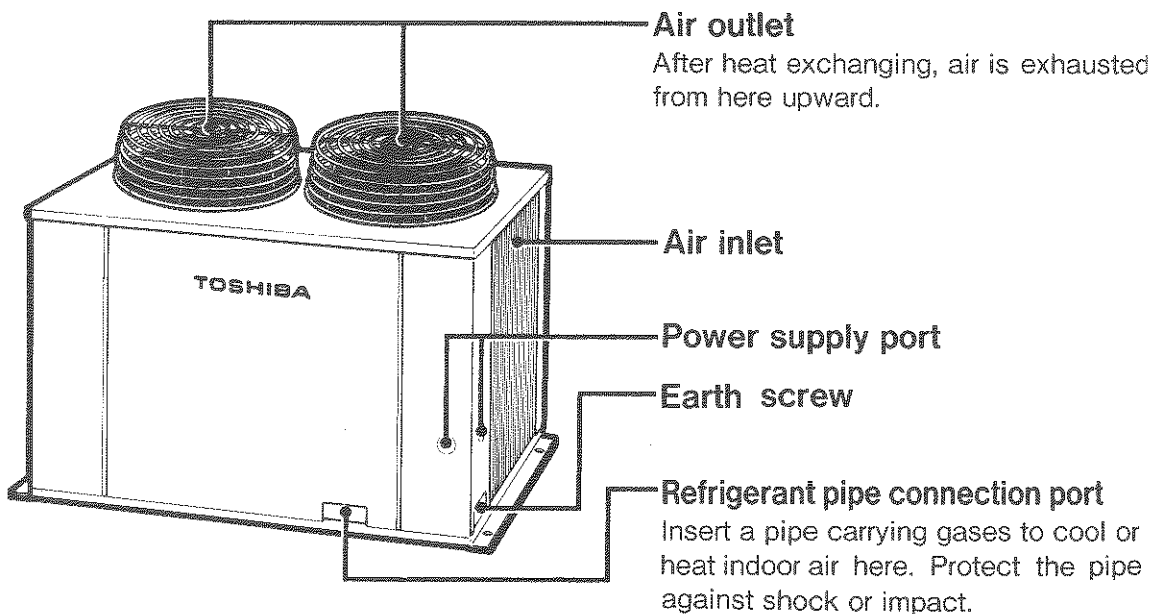
Indoor Unit



Remote controller



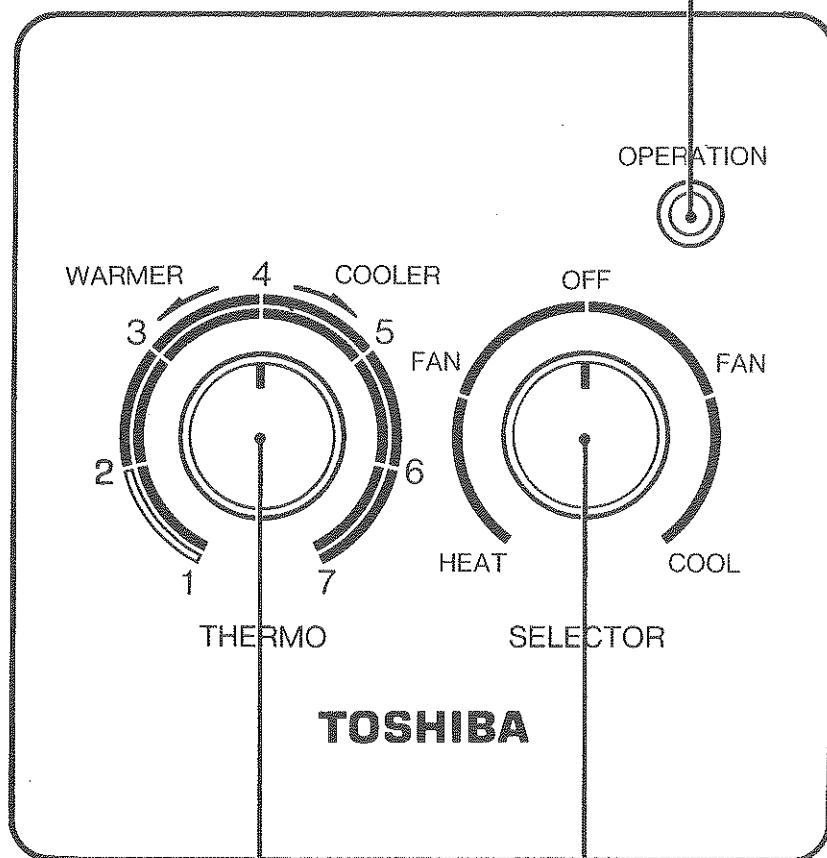
Outdoor Unit



NAMES AND FUNCTIONS OF CONTROLS

Operation lamp:

Lights when the SELECTOR control is set to FAN, COOL, or HEAT.



Mode select control:

Adjust the control to OFF, FAN, COOL, and HEAT positions to stop the air conditioner, blow, cool and heat air, respectively.

Thermostat control:

Use this control to maintain indoor temperature levels according to indicated numerals during cooling or heating. Adjust the control to positions 2-7 for heating.

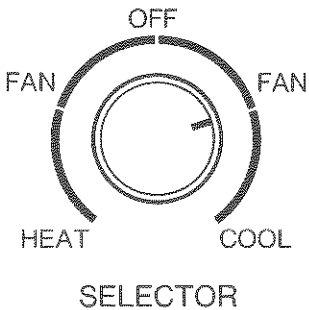
OPERATION

Preparation

Keep the outdoor unit hand power switch turned on at least 12 hours prior to starting the air conditioner. Never turn off the power while the air conditioner is in operation.
(This is because the crankcase heater need be energized to protect the air conditioner from being overloaded at startup time.)

Cooling Operation

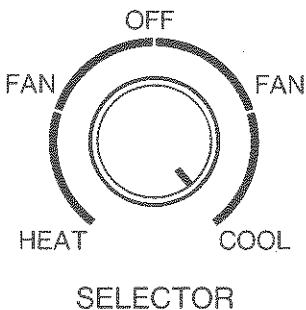
1



Set the SELECTOR control to FAN.

The blower starts running and air begins to be vented from the air outlet. At the same time, the OPERATION lamp lights.

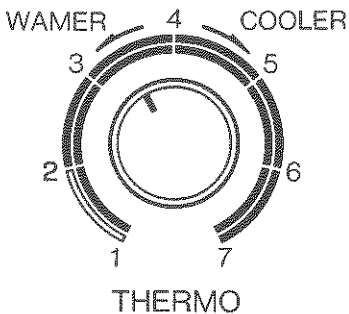
2



Set the SELECTOR control to COOL.

Cooling operation starts.

3



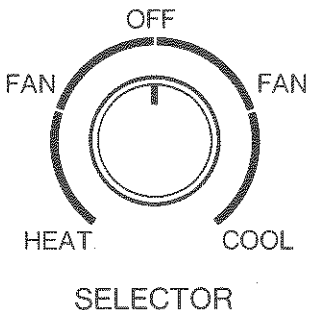
Set the THERMO control to a desired temperature level.

The air conditioner will repetitively shut off and restart automatically to keep indoor temperature at the level of your choosing.

- Turn the control toward 7 for lower temperature levels.
- When it is necessary to set the control from 7 to 1, then back to 7, allow for at least 3 minutes.

Returning the control immediately to 7 may overload the air conditioner, causing the power fuse or safety breaker to be tripped.

4

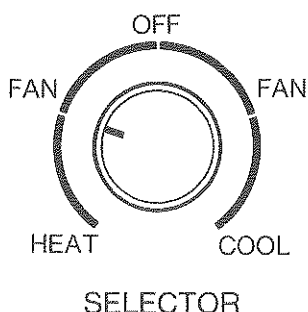


To shut down the air conditioner, set the SELECTOR control to OFF during operation.

The OPERATION lamp will go off and all operations are shut down.

Heating Operation

1

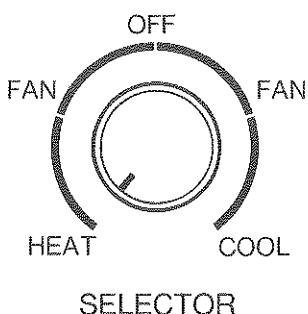


Set the **SELECTOR** control to **FAN**.

The blower starts running and air begins to be vented from the air outlet.

At the same time, the OPERATION lamp lights.

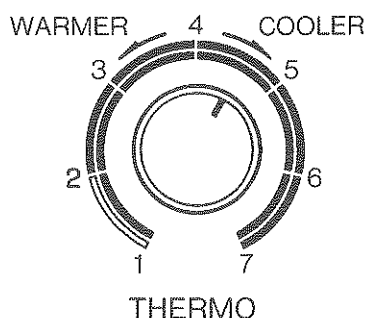
2



Set the **SELECTOR** control to **HEAT**.

Heating operation starts.

3



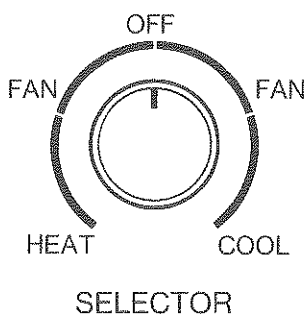
Set the **THERMO** control to a desired temperature level.

The air conditioner will repetitively shut off and restart automatically to keep indoor temperature at the level of your choosing.

- Use the control within the range of the red line 2-7.
- Turn the control toward 2 for higher temperature levels.
- When it is necessary to set the control from 2 to 7, then back to 2, allow for at least 3 minutes.

Returning the control immediately to 2 may overload the air conditioner, causing the power fuse or safety breaker to be tripped.

4



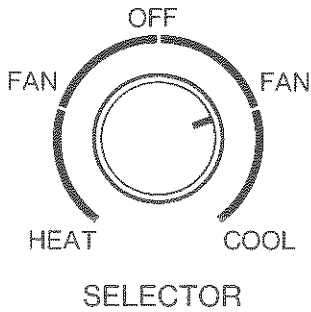
To shut down the the air conditioner, set the **SELECTOR** control to **OFF** during operation.

The OPERATION lamp will go off and all operations are shut down.

- To stop heating, set the SELECTOR control to FAN first and allow for at least 3 minutes of venting before setting the SELECTOR control to STOP. Bringing the control direct to OFF will cause abnormal temperature rises in the air conditioner due to residual heat from the built-in electric heater, resulting in a malfunction.

Blowing

1



Set the SELECTOR control to FAN, and the OPERATION lamp will go on.

The air conditioner will simply circulate room air, without heating or cooling it, while trapping air-borne dust.

CAUTIONS

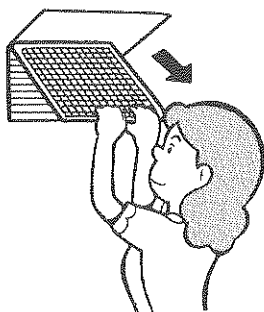
- In the event a power failure has occurred during operation of the air conditioner, return the SELECTOR control once to OFF. When the power is subsequently recovered, adjust the SELECTOR control according to operating instructions.
- Keep the hand power switch turned off when the air conditioner is not used for extended periods of time.

CARE INFORMATION

Proper care practice can prolong the service life of your air conditioner and assure maximum performance.

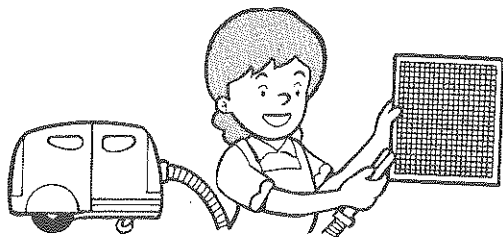
In-Season Care

Clean Air Filter Regularly



- To prevent clogging, clean the air filter regularly (about once every two weeks).

How To Clean Air Filter



- To clean, use a vacuum cleaner or tap the air filter lightly. To remove persistent dirt, washing with lukewarm or cold water with a neutral detergent dissolved in it will be effective. After washing rinse the air filter thoroughly and allow it to dry in the sunshade.
- Depending on the type of the air cleaner installed, different cleaning procedures are used. Check with your installation contractor or the dealer from whom your air conditioner was purchased.

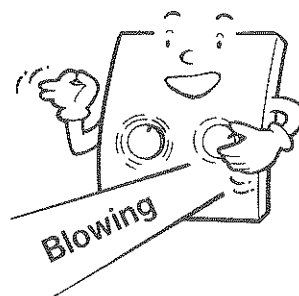
Caution

Turn Off Hand Power Switch First

Turn off the hand power switch before starting to maintain the air conditioner.

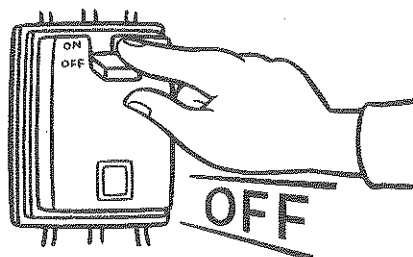
Post-Season Care

Blowing for a Half Day



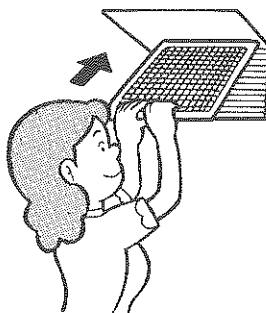
- Perform venting operation for about a half day to fully dry interiors of the air conditioner.

Turn Off Hand Power Switch



- Turn off the hand power switch.

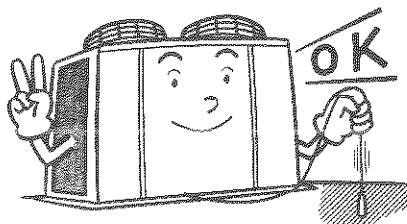
Clean Air Filter



- Clean the air filter and install it in original position.

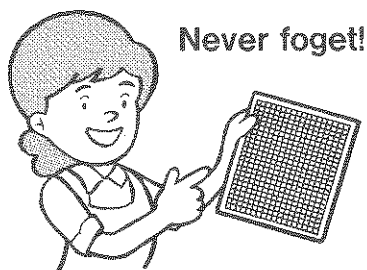
Pre-Season Checks

Check Earth Wire



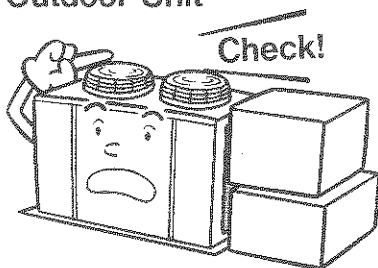
- Check the earth wire for breakage and disconnection.

Check Air Filter



- Check that the air filter is in position.

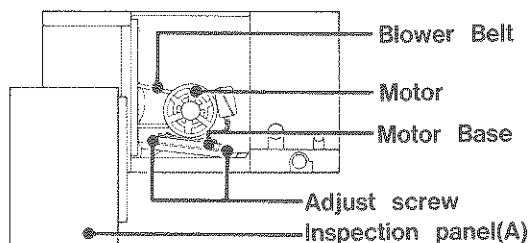
Check Outdoor Unit



- Check that the air inlet and outlet of the outdoor unit are not blocked.
- The outdoor unit is secured to the foundation to prevent overturning. Check for screw tightness once each year.

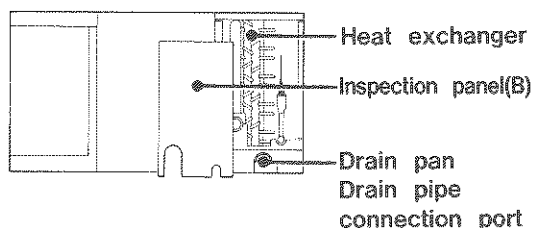
Adjust Blower Belt

- The blower belt tends to be lengthened as it is used. Check the belt once each year. If found lengthened, loosen the adjust screw on motor base and push the motor rearwards to tighten the belt.
- A lengthened belt can cause be a source of noise or vibration.
- To inspect the blower, remove the inspection panel (A).



Clean Drain Pan

- Before each cooling season sets in, clean the drain pan. Dust accumulated in the drain pan or drain port could prevent drainage and sometimes result in water overflowing the drain pan to wet the ceiling. Be sure to clean the drain pan before the cooling season starts.
- To inspect the drain pan, remove the inspection panel(B).



Notice

For blower belt adjustment and drain pan cleaning, consult the dealer from whom your air conditioner was purchased or your installation contractor, since these works are to be conducted on the ceiling.

HANDLING INFORMATION

Crankcase Heater

- The crankcase serves to heat the compressor to prevent refrigerant from being dissolved into the lubricant.
- If the air conditioner were started with a large quantity of refrigerant being dissolved in the lubricant, the air conditioner could be overloaded, causing a malfunction to develop.
- If the hand power switch is left turned on when the air conditioner is shut down only for short intervals, as in the nighttime or over the weekend, the crankcase heater can be energized to heat the compressor.

Characteristics of Heating Operation

- The indoor unit has a built-in auxiliary electric heater. In heating, the indoor unit is automatically controlled to best economize operations of the heater and the compressor according to the temperature level setting of the THERMOSTAT control.

Defrosting during Heating Operation

- If the outdoor unit is defrosted during heating operation, the air conditioner starts a defrost operation (for about 2-10 minutes) automatically to increase heating effects.
- The outdoor blower is stopped while the outdoor unit is being defrosted.
- During defrosting, drafts of cold air may be vented from the air conditioner but this is not a malfunction.

Protective Device (High-Pressure Switch)

The protective device automatically shuts down the air conditioner when it is overloaded.

It may be tripped in the following cases:

During cooling operation

- The air inlet or outlet of the outdoor unit is blocked.
- The air outlet of the outdoor unit is exposed to continuous blows of strong winds.

During heating operation

- An unusually large amount of dirt or dust has accumulated on the air filter.
- The air outlet of the indoor unit is blocked.

The protective device resets itself automatically. Restart the air conditioner after removing the cause of tripping of the protective device.

Air Conditioner Operating Conditions

Run the air conditioner under the following ambient conditions to ensure proper performance:

Cooling operation	Outdoor air temperature About 21°C or more but 43°C or less Room temperature About 21°C or more but 32°C or less Room relative humidity 80% or less Dew may be condensed and dripped over the surfaces of the air conditioner if it is run over extended time periods at a relative humidity of 80 % or more.
Heating operation	Outdoor air temperature 21°C or less Room temperature 28°C or less

The protective device could be tripped to disable operation of the air conditioner if it were run under temperature conditions other than those specified above.

Heating Capacity

Since this air conditioner operates on a heat pump principle, whereby outdoor heat is absorbed and released indoors, its heating capacity drops as the outdoor air temperature is lowered.

When the outdoor air temperature is low, use of a heating apparatus in addition to the air conditioner is recommended.

		Heating capacity (BTU/h)
Room temperature	Outdoor air wet-bulb temperature	RAV-1800UDHE8
21°C	10°C	105,880
	6°C	98,800
	0°C	83,880

The value at the room temperature of 21°C and outdoor air wet-bulb temperature of 6°C is the heating capacity value measured under JIS B8615.

The above table assumes the auxiliary electric heater in operation.

INSTALLATION

Installation place

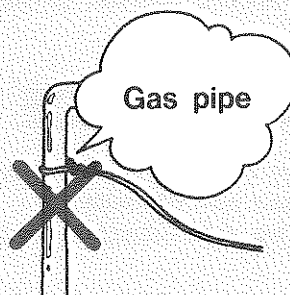
- 1** • Install both indoor and outdoor units in such a place that endures a heavy weight and vibration.
- 2** • Run the drain piping in such a way that the indoor unit can discharge the drain (water removed from the air) completely.
- 3** • Do not install in such a place that might be exposed to a leaked combustible gas.
- 4** • Install the outdoor unit in such a place that the hot air and noise from the unit do not bother neighbors.
- 5** • Avoid using the air-conditioner in oily environment (including machine oil environment), saline environment as of a coastal region, and sulfide gas environment as of a hot-spring resort. Otherwise, the air-conditioner will be troubled.
If installing in such a place is unavoidable, consult with the seller because special measures are required to be taken.

Wiring

- 1** • Install the earthing wire for protection against an electric shock. For details, consult with the seller where you purchased.
- 2** • Use the power source dedicated to the air-conditioner.
- 3** • A law concerned requires the installation of an earth leakage circuit breaker. For details, consult with the seller or an electric work executor.
- 4** • In the event of a blow-out of the power fuse, replace it with a fuse of a rated ampere. Never use a steel or copper wire. Using such a wire as a fuse causes a trouble to the air-conditioner and a fire.

Caution

When the earthing wire is connected to the water service pipe, note that earthing does not work if a vinyl chloride pipe is installed in the water line. Never connect the earthing wire to the gas piping.



Change of Installation Place

Moving an air-conditioner to another location requires special technique. Therefore, if it is necessary, consult with the seller. You will be charged an actual cost in this case.

TROUBLESHOOTING

Before requesting service, check the following points.

Symptom		Cause
These are not failures.	An opaque, misty current of chilled air arises from the outdoor unit.	<ul style="list-style-type: none"> ● The outdoor blower stops, and the air conditioner is defrosting automatically.
	The room smells.	<ul style="list-style-type: none"> ● The smells of the wall, carpet, furniture, clothes and others are adsorbed in the air conditioner, and discharged from it.
	The noise "bush" sounds sometimes.	<ul style="list-style-type: none"> ● At the beginning and the end of defrosting, the solenoid valve operates with this sound.
Please check it again.	The air conditioner does not run.	<ul style="list-style-type: none"> ● Isn't the electric current shut off? ● Doesn't the power source switch go off? ● Doesn't the power fuse blow or the circuit breaker trip?
	The room air is not cooled or heated well.	<ul style="list-style-type: none"> ● Isn't the outdoor unit air intake or outlet blocked? ● Isn't the door or window left open? ● Isn't the air filter clogged with dirt or dust? ● Isn't the room temperature control switch set at proper position?

In case of the symptoms below, stop the operation and set off the power source switch.
Please request diagnostics from the dealer from whom your air conditioner was purchased.

- The switches don't operate surely.
- The power fuse or circuit breaker often blows.
- Someone has put a thing or water into the air conditioner by mistake.
- The air conditioner operates unusually.

REPAIR SERVICE

- In the event of an occurrence of any abnormality, stop operation, and turn OFF the power switch.
Then, consult with the seller.
When holding a consultation with the seller, inform it of the model of your air-conditioner and the purchase date.
- For details of the repair service, consult with the seller where you purchased.

Maintenance Service

Utilize our maintenance service to run the TOSHIBA AIR-CONDITIONER under optimum conditions for a long period of time.

- Maintenance is one of essential factors to determine the service life and performance of the TOSHIBA AIR-CONDITIONER.
- For application for or inquiry about the maintenance service, consult with the seller.



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