



INSTRUCTION MANUAL

COOL / HEAT Model

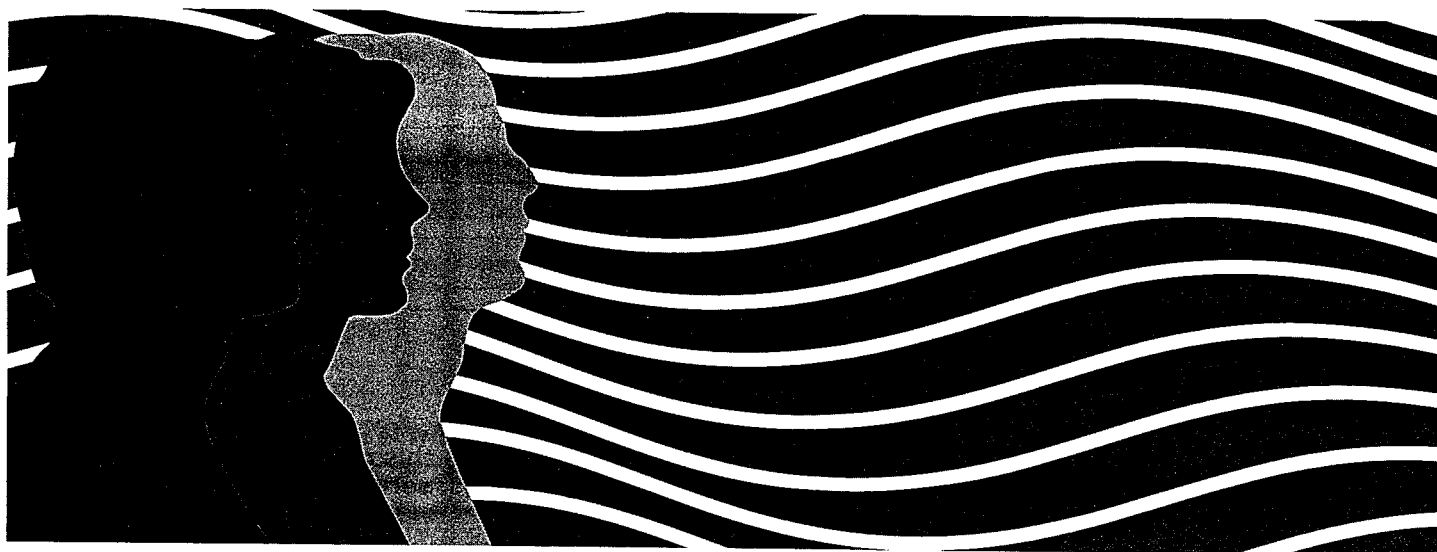
Split System Air Conditioner

FH1222

FH1822

FH1222W

FH1822W



Save These Instructions!

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Product Information

If you have problems or questions concerning your Air Conditioner, you will need the following information. Model and serial numbers are on the name-plate on the right side of the cabinet.

Model No. _____ Serial No. _____

Date of purchase _____

Dealer's address _____

Phone number _____

Alert Symbols

The following symbols used in this manual, alert you to potentially dangerous conditions to users, service personnels or the appliance:



This symbol warns of immediate hazards which will result in severe personal injury or death. This symbol will be used in an extreme case.



This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

Installation Location

- We recommend that this air conditioner be installed properly by a qualified installation technician in accordance with the Installation Instructions provided with the unit.
- Before installation, check that the voltage of the electric supply in your home or office is the same as the voltage shown on the nameplate.



WARNING:



Avoid:

- Do not install this air conditioner where there are fumes or flammable gases, or in an extremely humid space such as a greenhouse.
- Do not install the air conditioner where excessively high heat-generating objects are placed.

- To protect the air conditioner from heavy corrosion, avoid installing the outdoor unit where salty sea water can splash directly onto it or in sulphurous air near a spa.

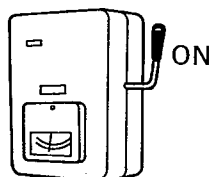
Electrical Requirements

1. All wiring must conform to the local electrical codes. Consult your dealer or a qualified electrician for details.
2. Each unit must be properly grounded with a ground (or earth) wire or through the supply wiring.
3. Wiring must be done by a qualified electrician.



CAUTION:

Power mains



To warm up the system, the power mains must be turned on at least five (5) hours before operation. Leave the power mains ON unless you will not be using this appliance for an extended period.

Safety Instructions

- Read this booklet carefully before using this air conditioner. If you still have any difficulties or problems, consult your dealer for help.
- This air conditioner is designed to give you comfortable room conditions. Use this only for its intended purpose as described in this Instruction Manual.



WARNING:

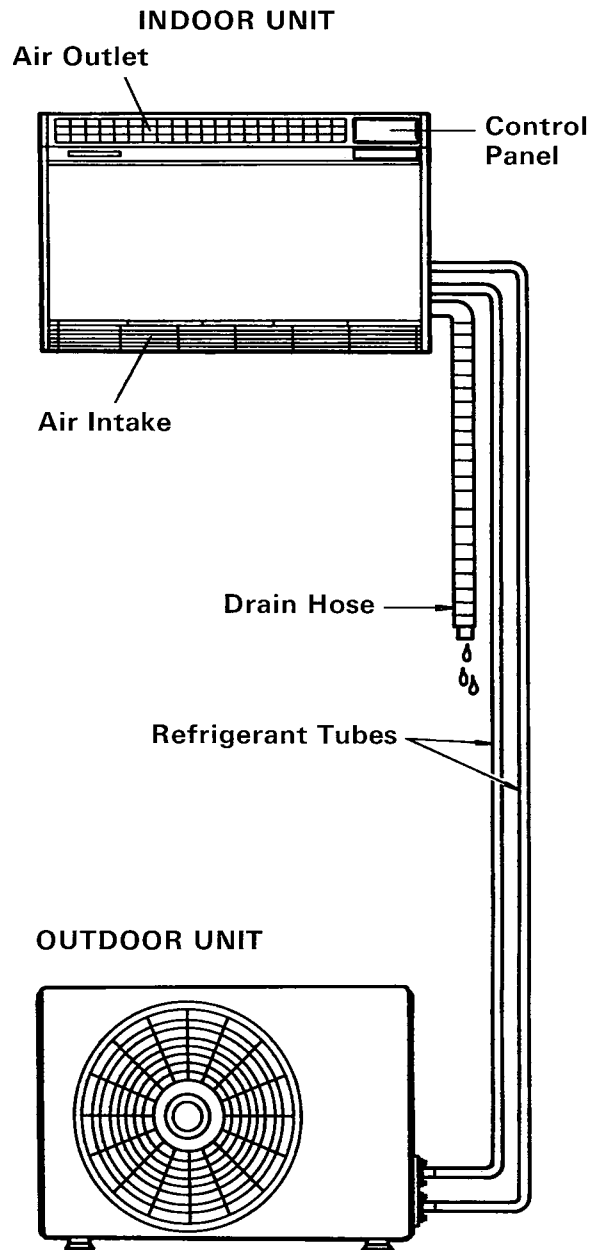
- Never use or store gasoline or other flammable vapor or liquid near the air conditioner — it is very dangerous.
- This air conditioner has no ventilator for intaking fresh air from outdoors. You must open doors or windows frequently when you use gas or oil heating appliances in the same room, which consume a lot of oxygen from the air. Otherwise there is a risk of suffocation in an extreme case.



CAUTION:

- Do not turn the air conditioner on and off from the power mains switch. Use the operation ON/OFF button.
- Do not stick anything into the air outlet of the air conditioner. This is dangerous because the fan is rotating at high speed.
- Do not let children play with the air conditioner.
- Do not cool or heat the room too much if babies or invalids are present.

Names of Parts



NOTE:

This illustration is based on the external view of a standard model. Consequently, the shape may differ from that of the air conditioner which you have selected.

This air conditioner consists of an indoor unit and an outdoor unit. You can control the air conditioner with the remote control unit.

Air Intake

Air Outlet
Control Panel

Refrigerant Tubes

Drain Hose
Outdoor (Condensing) Unit

Air from the room is drawn into this section and passes through air filters which remove dust.

Cool air is blown out of the air conditioner through the air outlet.

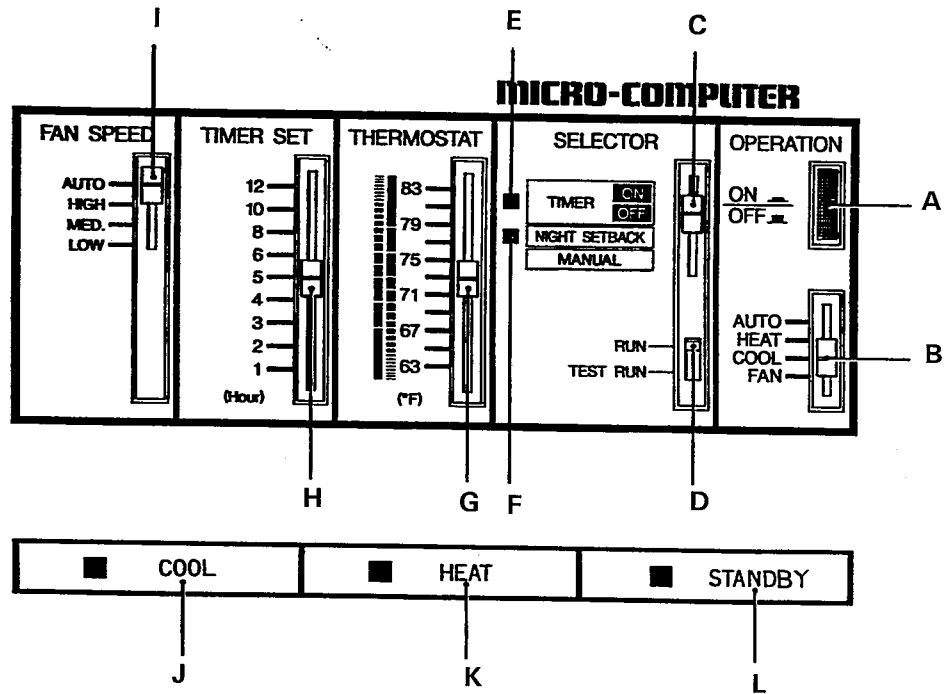
The control panel contains controls for OPERATION ON/OFF, operation mode selection, temperature adjustment, fan speed, and timer setting.

The indoor and outdoor units are connected by copper tubes through which refrigerant gas flows.

Moisture in the room condenses and drains off through this hose.

The outdoor unit contains the compressor, fan motor, heat exchanger coil, and other electrical components.

Control Panel



A. OPERATION BUTTON

This button is used to turn the air conditioner ON/OFF.

B. MODE SELECTOR

This has four options:

- AUTO:** When this setting is selected, the air conditioner calculates the difference between the thermostat setting and the room temperature and automatically switches to the "COOL" or to "HEAT" mode as appropriate.
- HEAT:** Used for normal heating operation.
- COOL:** Used for normal cooling operation.
- FAN:** Choose this setting to run the fan only, without the heating or cooling function.

C. OPERATION SELECTOR

This has four options:

- TIMER ON:** Used to start the system at the set time.
- TIMER OFF:** Used to stop the system at the set time.
- NIGHT SETBACK:** Used for programmed energy saving operation at night.
- MANUAL:** Used for conventional temperature control operation using the thermostat.

D. SERVICE TEST RUN SWITCH (recessed)

This is used for servicing the air conditioner. During normal operation, this switch must be set in the RUN position.



CAUTION:

TEST RUN position is used only when servicing the air conditioner, so don't leave the switch in this position.

E. TIMER LAMP

This lamp lights when the system is operating in the timer mode.

F. NIGHT SETBACK LAMP

This lamp lights when the NIGHT SETBACK mode is selected.

Control Panel (Continued)

G. THERMOSTAT KNOB

You can regulate the room temperature as desired by adjusting this knob. The numbers constitute the temperature scale (°F).

H. TIMER SET KNOB

This control is used to set the time at which you wish the air conditioner to go on or off. Each number on the scale shows the setting hour.

I. FAN SPEED SELECTOR

AUTO: In this mode the fan speed is set automatically.

HIGH

MED.: You can manually select the desired fan speed.

LOW

J. COOLING OPERATION LAMP

This lamp lights when the "COOL" mode is selected.

K. HEATING OPERATION LAMP

This lamp lights when the "HEAT" mode is selected.




L. STANDBY LAMP

This lamp lights at the beginning of heating and when the system is in the defrosting mode.

Operation Thumbnails

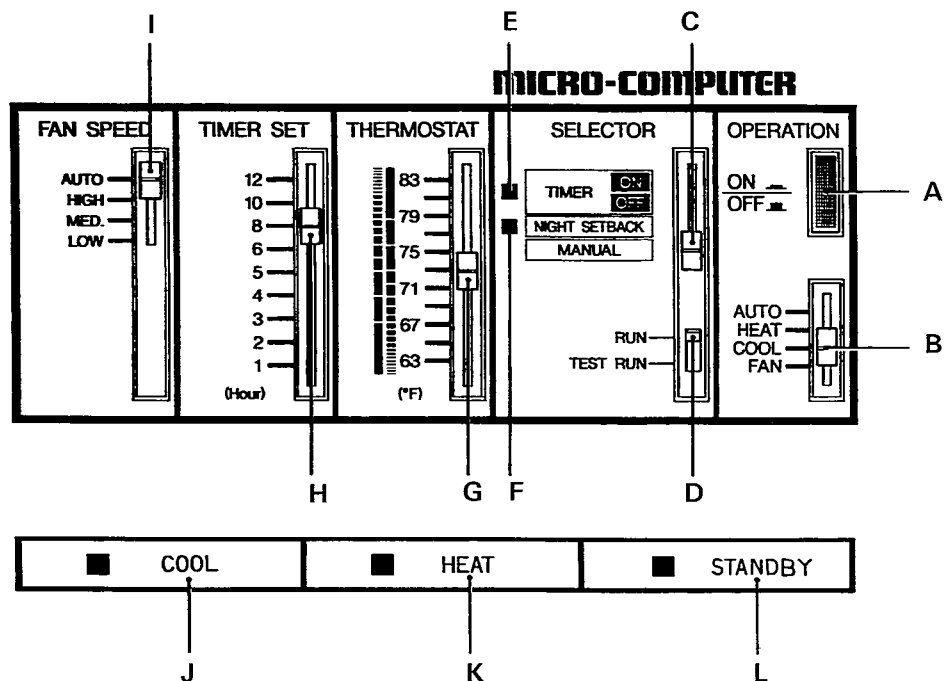
By setting this air conditioner once to the desired temperature, it will automatically regulate the room temperature to that value. Thus you can operate the air conditioner or stop it by simply pressing the OPERATION ON/OFF button.

First, open the door of the control panel to gain access. Next, carry out the following steps while referring to the sub-section "Control Panel" on the previous page.

What you wish to do	How to do it	What will happen
		
<ul style="list-style-type: none">• Start the air conditioner to get the desired room temperature very easily.	<ol style="list-style-type: none">1. Set the "B" knob to AUTO.2. Set the "C" knob to MANUAL.3. Set the "I" knob to AUTO.4. Set the "G" knob to the desired temperature.5. Press the "A" OPERATION ON/OFF button.	<p>If the room temperature is higher than the thermostat setting, the "J" lamp will light and after a few minutes cooling will begin. If, on the other hand, the room temperature is lower than the thermostat settings, the "K" lamp will light and heating will begin.</p>
<ul style="list-style-type: none">• To stop the air conditioner immediately while it is operating	<ol style="list-style-type: none">1. Press the "A" OPERATION ON/OFF button.	<p>The air conditioner will stop immediately, and all indicator lamps will go out.</p>
<ul style="list-style-type: none">• To use the TIMER to stop the air conditioner after several hours	<ol style="list-style-type: none">1. Set the "H" knob to the number of hours at which you wish to stop the air conditioner.2. Set the "C" knob to the TIMER OFF position.	<p>The "E" lamp will light and after the set hours have elapsed the air conditioner will stop automatically.</p>
<ul style="list-style-type: none">• To switch the air conditioner to the ENERGY SAVING mode during manual cooling (or heating)	<p>Set the "C" knob from the MANUAL to the NIGHT SETBACK position.</p>	<p>The "F" lamp will light, the set temperature will automatically change, and the air conditioner will continue to operate in the NIGHT SETBACK mode.</p>
<ul style="list-style-type: none">• To use the TIMER to start the air conditioner after several hours	<ol style="list-style-type: none">1. Set the "H" knob to the number of hours at which you wish to start the air conditioner.2. Set the "C" knob to the TIMER ON position.3. Press the "A" OPERATION ON/OFF button.	<p>The "E" lamp will light and after the set hours have elapsed the air conditioner will start to operate automatically.</p>
<ul style="list-style-type: none">• To circulate the air in the room without air conditioning (fan-only operation)	<ol style="list-style-type: none">1. Set the "B" knob to FAN.2. Press the "A" OPERATION ON/OFF button.	<p>The air conditioner will operate as a circulation fan without changing the room temperature.</p>

The above description is intended to provide you with basic knowledge of your air conditioner. For details of each function, read the relevant sections.

Operation



1. "Carefree" Operation

Once this mode is selected and the unit is preset by following the steps below, you can have the air conditioner automatically bring the room to the desired temperature simply by pressing the OPERATION ON/OFF button.

- STEP 1:** Set the "B" MODE SELECTOR knob to AUTO.
STEP 2: Set the "C" OPERATION SELECTOR knob to MANUAL.
STEP 3: Set the "I" FAN SPEED at AUTO.
STEP 4: Press the "A" OPERATION ON/OFF button.
To stop the air conditioner, press the OPERATION ON/OFF button again.

Sequence of Operation

Press the "A" OPERATION ON/OFF button. If the room temperature is higher than temperature you set using the "G" knob, the "J" lamp will light and after a few minutes cooling will begin. If, on the other hand, the room temperature is lower, the "K" lamp will light and heating will begin.

2. Cooling

A. Cooling

The Manual mode is used for normal cooling operation.

- STEP 1:** Set the "B" MODE SELECTOR knob to COOL.
STEP 2: Set the "C" OPERATION SELECTOR knob to MANUAL.
STEP 3: Set the "I" FAN SPEED as desired.
STEP 4: Press the "A" OPERATION ON/OFF button.
To stop the air conditioner, press the OPERATION ON/OFF button again.



NOTE:

1. This appliance has a built-in time delay circuit to ensure reliable operation. When the operation button is pressed, the compressor will start running after a few minutes.
In the event of power failure, the unit will stop. When the power is restored, the unit will re-start automatically after 3 minutes.



CAUTION:

To prevent the appliance from malfunctioning, do not set the selector knob between the two indicated positions. Make sure that it clicks into position.

Operation (Continued)



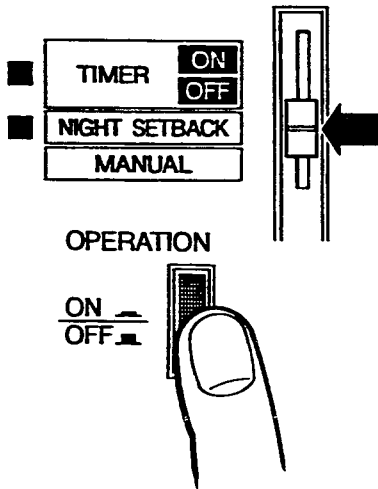
CAUTION:

If the outdoor temperature is too cool:

When the outdoor temperature stays at around 59° F, the air conditioner suspends the cooling operation and the STANDBY (orange) lamp keeps on flashing.

When it becomes warmer, the air conditioner automatically resumes the cooling operation.

B. Night Setback Mode in Cooling



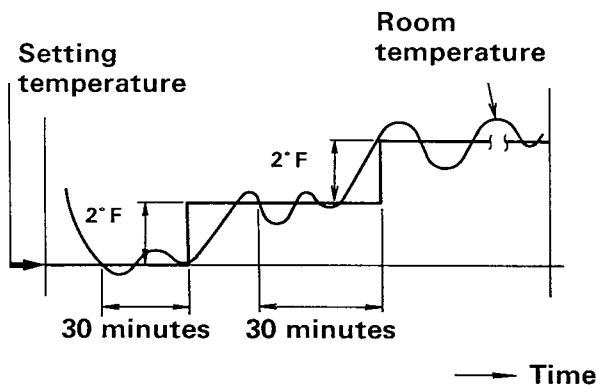
- STEP 1:** Set the "C" OPERATION SELECTOR knob to NIGHT SETBACK before turning the system on.
- STEP 2:** Check that "B" mode selector knob is set at cool position.
- STEP 3:** Press the "A" OPERATION ON/OFF button.
The NIGHT SETBACK and COOL lamp will light.

To cancel the Night Setback mode, move the selector to MANUAL.



What does the Night Setback mode mean?

By selecting this mode, then pressing the OPERATION ON/OFF button, the air conditioner will perform cooling operation until the temperature in the room reaches the set value, then the thermostat will cause the unit to pause. After about 30 minutes, the air conditioner will automatically raise the set temperature by 2° F. When the room temperature reaches the newly set value, the thermostat will cause the unit to pause again. After about 30 minutes the temperature is again raised by 2° F as shown below. This enables you to save energy. This function is convenient when leaving the air conditioner on all night or soft cooling is needed.



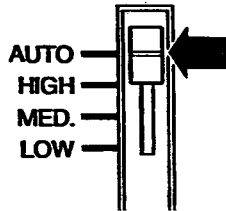
Operation (Continued)

3. Adjusting the Fan Speed

A. Automatic

Simply set the "I" FAN SPEED selector to the "AUTO" position.

FAN SPEED



A microcomputer in the air conditioner automatically controls the fan speed when the AUTO mode is selected. When the air conditioner starts operating, the difference between the room temperature and the set temperature is detected by the microcomputer which then automatically switches the fan speed to the most suitable level.

B. Manual

If you want to adjust fan speed manually during cooling, just set the FAN SPEED selector as desired. [HIGH, MED., or LOW]

Cooling mode:

When difference between room temperature and set temperature is	FAN SPEED
Above 4° F	High
Between 4° F and 2° F	Medium
Below 2° F	Low

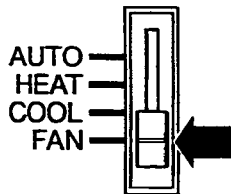
Heating mode:

When difference between room temperature and set temperature is	FAN SPEED
2° F and over	High
Below 2° F	Medium

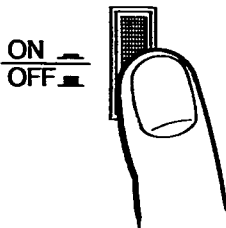
4. Fan Only

If you want to circulate air without any temperature control, follow these steps:

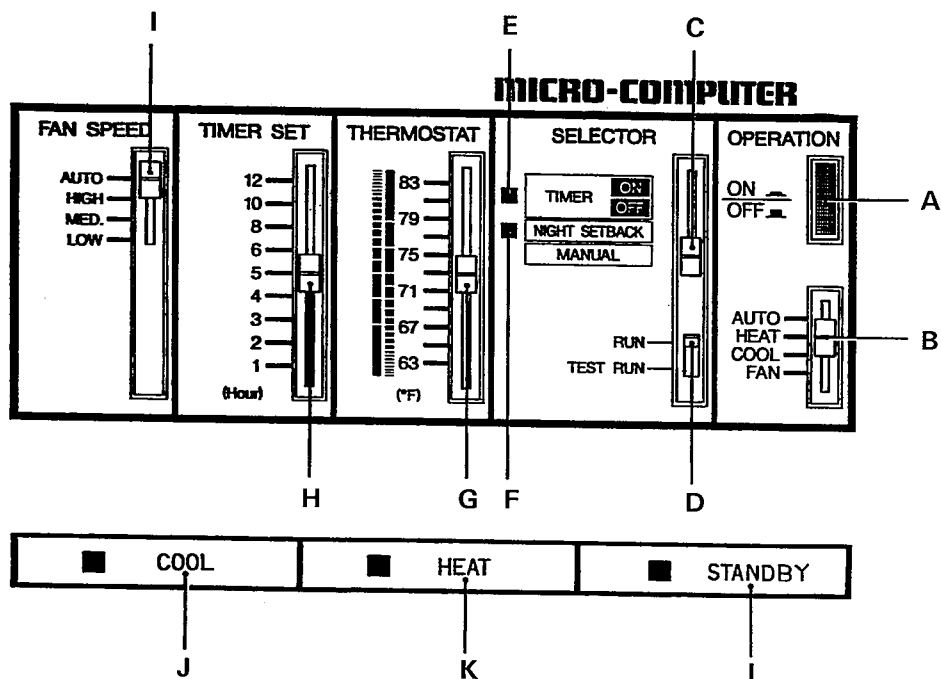
- STEP 1:** Set the "B" MODE SELECTOR knob to FAN.
STEP 2: Press the "A" OPERATION ON/OFF button.



OPERATION



Operation (Continued)



5. Heating

A.Heating

This Manual mode is used for normal heating operation.

- STEP 1:** Set the "B" MODE SELECTOR knob to HEAT.
STEP 2: Set the "C" OPERATION SELECTOR knob to MANUAL.
STEP 3: Set the "I" FAN SPEED as desired.
STEP 4: Press the "A" OPERATION ON/OFF button.
To stop the air conditioner, press the OPERATION ON/OFF button again.



NOTE:

1. This appliance has a built-in time delay circuit to ensure reliable operation. When the operation button is pressed, the compressor will start running after a few minutes.
 In the event of power failure, the unit will stop. When the power is resumed, the unit will re-start automatically after 3 minutes.



CAUTION:

To prevent the appliance from malfunctioning, do not set the selector knob between the two indicated positions. Make sure that it clicks into position.

2. In order to protect the appliance from overloading, the fan sometimes continues to rotate for about 30 seconds after the OPERATION ON/OFF button is pressed OFF.

Special remarks on heating

Heating Operation

Heating performance

- Because this air conditioner heats a room by drawing in the heat of the outside air (heat pump system), the heating efficiency will fall off when the outdoor temperature is very low.



NOTE:

Concerning the Heating Function

1. When the outside temperature is higher than 10°F, heating is performed in heat pump mode. If the room temperature is lower than the set temperature by two degrees or more, the electric heater built into the air conditioner turns on automatically and heating is performed by both the heat pump and the electric heater.
If the outside temperature falls to 10°F or lower, the compressor stops and the heating operation switches to the electric heater only. Once the outside temperature rises to approximately 17°F, the air conditioner automatically resumes heat pump operation.
2. If sufficient heat cannot be obtained with this air conditioner, use another heating appliance in conjunction with it.

Defrosting

- When the outdoor temperature is low, frost or ice may form on the heat exchanger coil, reducing the heating performance. When this happens, a microcomputer defrosting system operates. At the same time, the fan on the indoor unit stops and the STANDBY LAMP remains lit until defrosting is completed. Heating operation restarts after several minutes. (This interval will vary slightly depending upon the outdoor temperature and the way in which frost forms.)

STANDBY LAMP

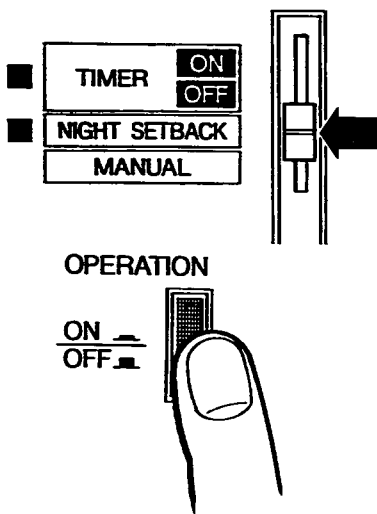
- For several minutes after the start of heating operation, the indoor fan will not start running until the indoor heat exchanger coil has warmed up sufficiently. This is because the COLD DRAFT PREVENTION SYSTEM is operating. During this period, the STANDBY LAMP remains lit.
- The STANDBY lamp also remains lit during defrosting or when the compressor has been turned off by the thermostat when the system is in the heating mode.
- Upon completion of defrosting and when the compressor is turned on again, for heating operation, the STANDBY LAMP will go off automatically.

"HIGH" Fan Speed in heating

- If the room temperature and outdoor temperature are high when the air conditioner is operating in the heating mode, the indoor fan speed will switch to High, regardless of the setting of the FAN SPEED selector, and in some cases, this condition will be repeated. This is because the safety unit operates to prevent the system from overloading.

Operation (Continued)

B. Night Setback Mode in Heating



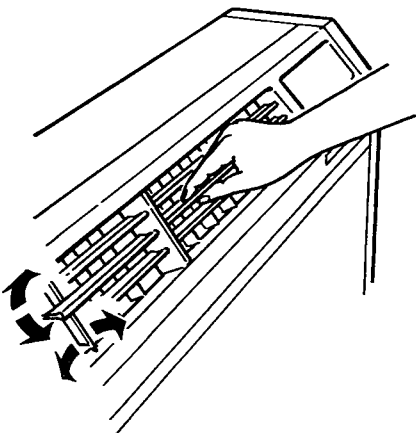
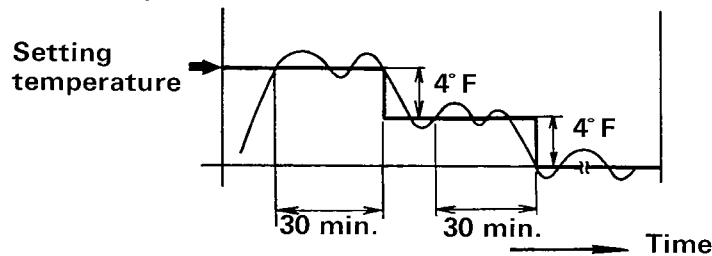
- STEP 1:** Set the "C" OPERATION SELECTOR knob to NIGHT SETBACK before turning the system on.
- STEP 2:** Check that "B" mode selector knob is set at HEAT position.
- STEP 3:** Press the "A" OPERATION ON/OFF button. The NIGHT SETBACK and HEAT lamp will light.

To cancel the Night Setback mode, move the selector to MANUAL.



What does the Night Setback mode mean?

By selecting this mode, then pressing the OPERATION ON/OFF button, the air conditioner will perform heating operation until the temperature in the room reaches the set value, then the thermostat will cause the unit to pause. After about 30 minutes, the air conditioner will automatically lower the set temperature by 4° F. When the room temperature reaches the newly set value, the thermostat will cause the unit to pause. After about 30 minutes, the temperature is again lowered by 4° F as shown below. This function is convenient when leaving the air conditioner on all night or when mild heating is needed.



Adjusting the Air Flow Direction

A. Horizontal

The horizontal air flow can be adjusted by moving the vertical vane to the left or right.

B. Vertical

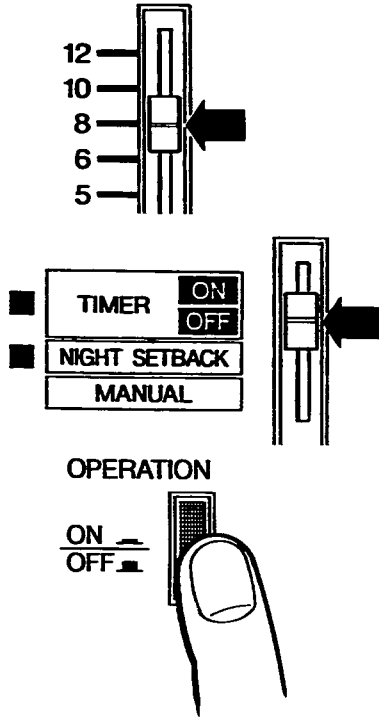
Hold both ends of the flap and move the flap up and down to adjust the vertical air flow.

Setting the Timer

A. TIMER OFF Mode

The system stops after the set hours have elapsed.

TIMER SET



STEP 1: Set the "H" TIMER SET knob to the desired number of hours. When the timer is set to 8, for instance, the system stops after eight hours.

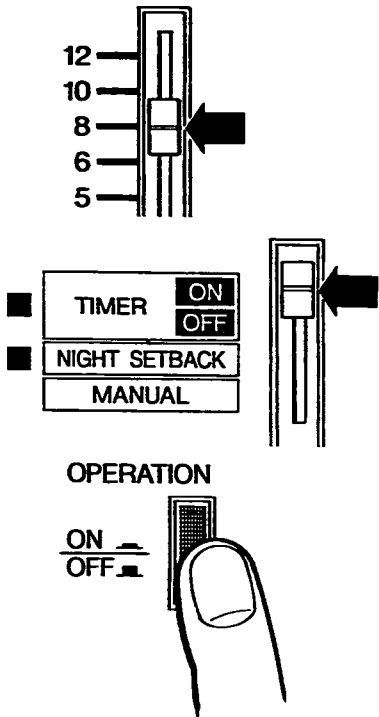
STEP 2: Set the "C" OPERATION SELECTOR knob to TIMER OFF.

STEP 3: Press the "A" OPERATION ON/OFF button. The TIMER lamp will light.

B. TIMER ON Mode

The system starts at the set time.

TIMER SET



STEP 1: Set the "H" TIMER SET knob to the desired time. When the timer is set to 8, for instance, the system starts after eight hours.

STEP 2: Set the "C" OPERATION SELECTOR knob to TIMER ON.

STEP 3: Press the "A" OPERATION ON/OFF button. The TIMER lamp will light.

**Power Failure During
Timer Operation**

When power failure occurs, the time counted up to that point will become void. After the power is resumed, the timer newly starts counting at the set time.



NOTE:

If you set the SELECTOR ON position while the air conditioner is operating in the NIGHT SETBACK or MANUAL mode, the air conditioner will stop, then after several minutes it will re-start automatically.

Care and Cleaning



WARNING:

Casing and Grille (Indoor Unit)

For safety's sake, be sure to turn the air conditioner off and also disconnect it from the power mains before cleaning it.

Clean the casing and grille of the indoor unit with a vacuum cleaner brush, or wipe them with a clean soft cloth.

If these parts are stained, use a clean cloth moistened with a mild liquid detergent.

When cleaning the grille, be careful so as not to force the vanes out of place.



CAUTION:

Outdoor unit



CAUTION:

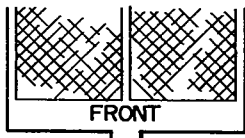
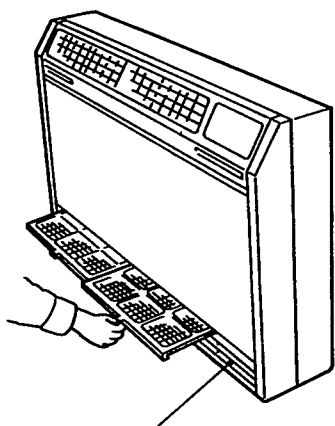
1. Do not pour water on the unit to clean it. This will damage the internal components and cause an electric shock hazard.
2. Never use solvents, or harsh chemicals. Do not wipe the plastic casing using very hot water.

1. Certain metal edges and the condenser fins are sharp and may cause injury if handled improperly; special care should be taken when you clean these parts.
2. Periodically check the outdoor unit to see if the air outlet or air intake are clogged with dirt or soot.
3. The internal coil and other components of the outdoor unit must also be cleaned periodically. Consult your dealer or service shop.

Air Filter

The air filter behind the air intake grille should be checked and cleaned at least once every two weeks.

How to remove the filter



1. Grasp the air filter by the tab at the intake grill, and pull it toward you.

Use a vacuum cleaner to remove light dust. If there is sticky dust on the filter, wash the filter in lukewarm, soapy water, rinse it in clean water, and dry it.

When replacing the filter, check that the FRONT mark is facing you.



CAUTION:

DO NOT operate the air conditioner without the air filter. This can damage the unit.

Troubleshooting

If your air conditioner does not work properly, first check the following points before requesting service. If it still does not work properly, contact your dealer or a service center.

Trouble	Possible Cause	Remedy
Air conditioner does not run at all	<ol style="list-style-type: none"> 1. Power failure 2. Leakage breaker tripped 3. Line voltage too low 4. Operation button is OFF 	<ol style="list-style-type: none"> 1. Restore power 2. Contact service center 3. Consult with electrician or dealer 4. Press the button again
Compressor runs but soon stops	<ol style="list-style-type: none"> 1. Obstruction in front of condenser coil 	<ol style="list-style-type: none"> 1. Remove obstruction
Poor cooling (or heating) performance	<ol style="list-style-type: none"> 1. Dirty or clogged air filter 2. Heat source or many people in room 3. Doors and/or windows are open 4. Obstacle near air intake or air discharge port 5. Thermostat is set too high for cooling (or too low for heating) 6. (Outdoor temperature is too low) 7. (Defrosting system does not work) 	<ol style="list-style-type: none"> 1. Clean air filter to improve airflow 2. Eliminate heat source if possible 3. Shut them to keep the heat out 4. Remove it to ensure good airflow 5. Set the temperature lower 6. (Try to use any back-up heater) 7. (Consult your dealer)

Tips for Energy Saving



Do not:



Do:

- **Block the air intake and outlet of the unit. If it is obstructed, the unit will not work well, and may be damaged.**
- Let direct sunlight into the room. Use sunshades, blinds or curtains. If the walls and ceiling of the room are warmed by the sun, it will take longer to cool the room.
- Always try to keep the air filter clean. (Refer to "Care and Cleaning".) A clogged filter will impair the performance of the unit.
- To prevent conditioned air from escaping, keep windows, doors and any other openings closed.

Operating Range

	Temperature	Indoor air intake	Outdoor air intake
Cooling	Maximum	95° F DB/- 71° F WB	115° F DB
	Minimum	67° F DB/- 57° F WB	67° F DB
Heating	Maximum	80° F DB/- 67° F WB	75° F DB/- 65° F WB
	Minimum	— DB/- — WB	17° F DB/- 15° F WB

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