

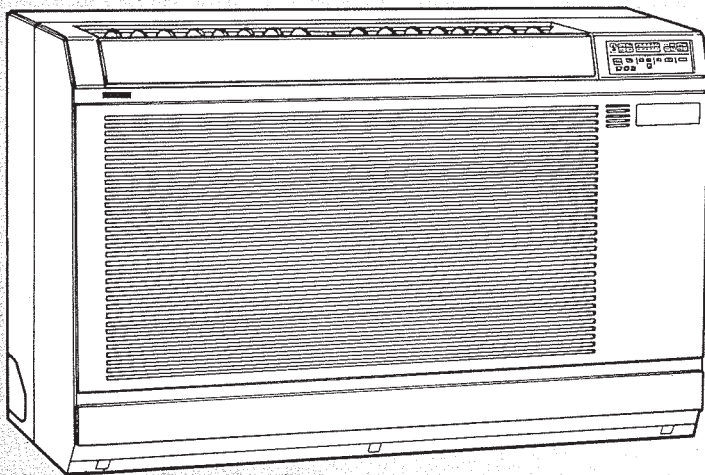


SPLIT-TYPE HEAT PUMP AIR CONDITIONERS

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# Models **MFH-12/17E** series

## OPERATING INSTRUCTIONS



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Read these instructions carefully before use.

After reading keep this manual in a safe place for future reference. It will prove useful later when further information is required or the air conditioner malfunctions.

# 1. PRECAUTIONS

**Do not install the unit in mobile homes or caravans.**

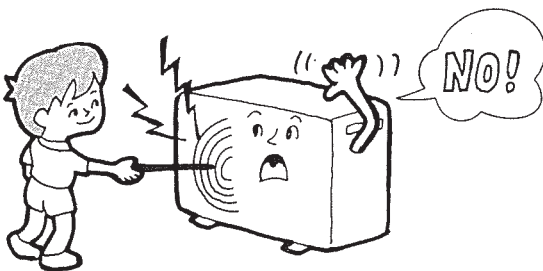
The following items require special attention. Read the entire text carefully, as there are many important points the user should know.

- In any of the following cases, cut off the power supply main switch and contact your local dealer for service.
  - If the switches do not work properly.
  - If the safety mechanism (fuse or circuit breaker) is actuated frequently.
  - If water is accidentally splashed onto the air conditioner.
  - If something is dropped into the air conditioner.
  - If the air conditioner malfunctions.

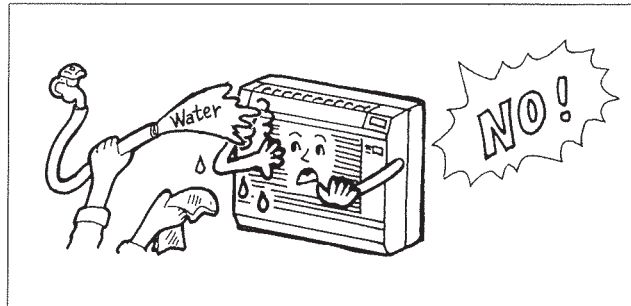
- Use the correct power (voltage and frequency) indicated on the unit to operate the air conditioner and use only fuses with specified capacity. Do not use pieces of wire instead of fuses.



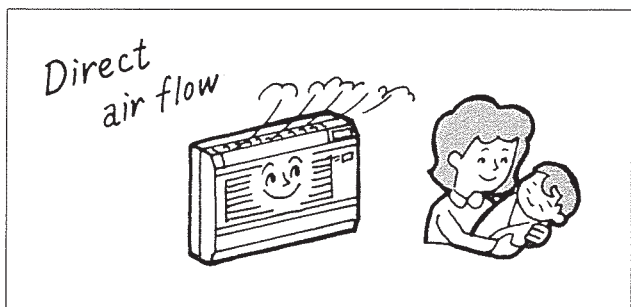
- Do not insert objects into the AIR INLET or OUTLET when the air conditioner is running. Damage or personal injury may result. Pay special attention when children are around.



- Do not pour water onto the unit for cleaning. Do not place anything containing water on the unit.

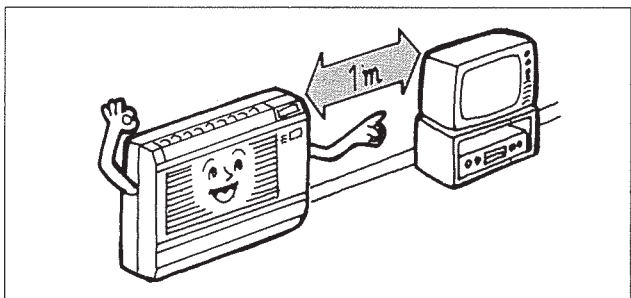


- Do not channel the air flow directly at people, especially at infants, aged, or handicapped.

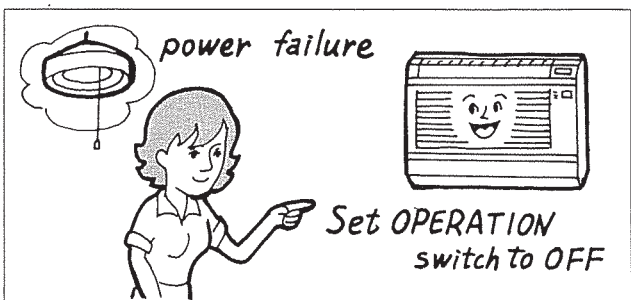


- Install the unit with at least 1m (about 3 feet) away from TV set or radio.

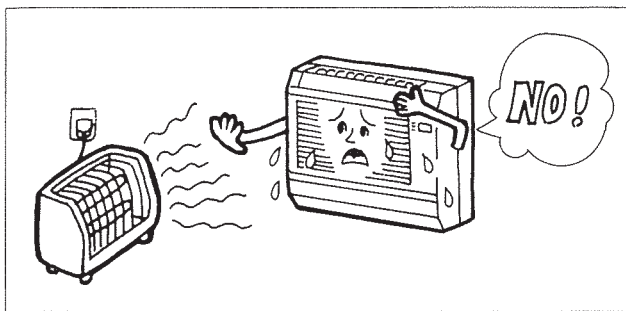
Can cause interference to TV screen image and noise trouble.



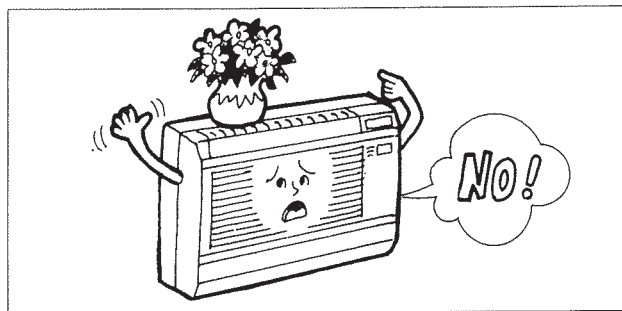
- If power fails while the air conditioner is working, always turn POWER switch OFF. If the unit is not to be used for a long time, cut off the power supply main switch.



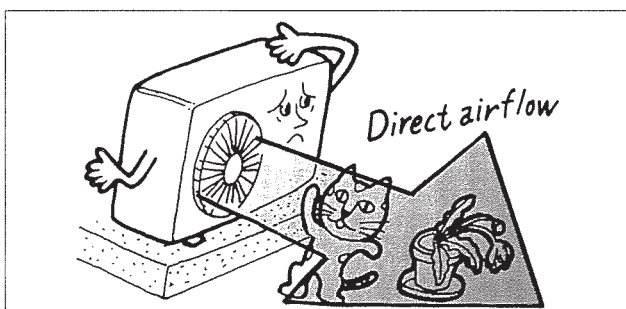
- Do not place a heater or other source of intense heat near the unit. Heat may deform the FRONT PANEL.



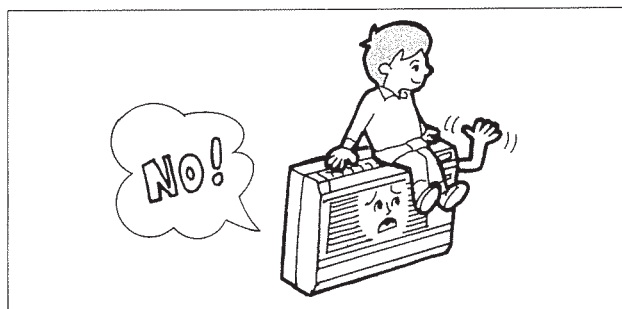
- Do not put anything on the unit.



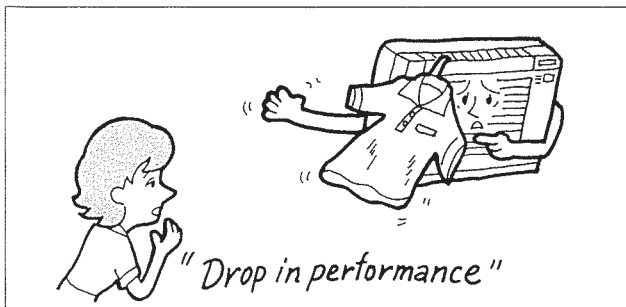
- Do not channel airflow directly at pets or plants, and pay attention to the air discharged from the OUTDOOR UNIT.



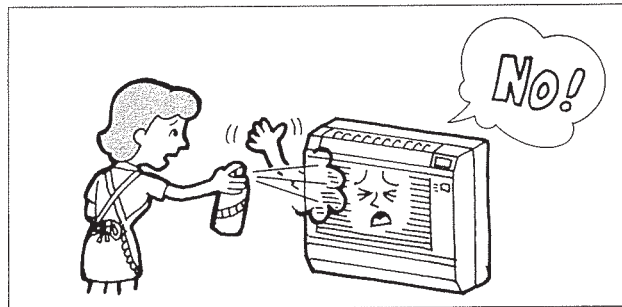
- Do not sit on the unit. Causes damage or deform of the front panel.



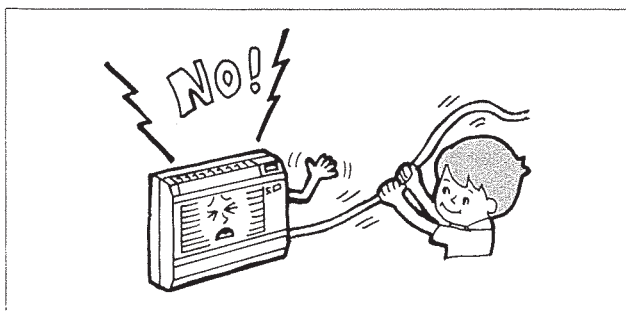
- Do not hang clothes, etc. near the air outlet. They can cause lowered performance or malfunction.



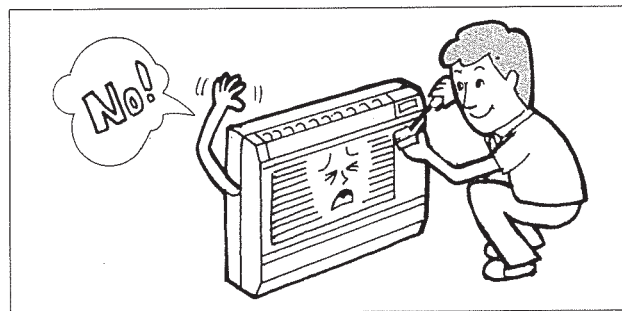
- Do not apply insecticide or combustible sprays direct to the unit.



- Do not tug on the POWER SUPPLY cord. It can cause malfunction.

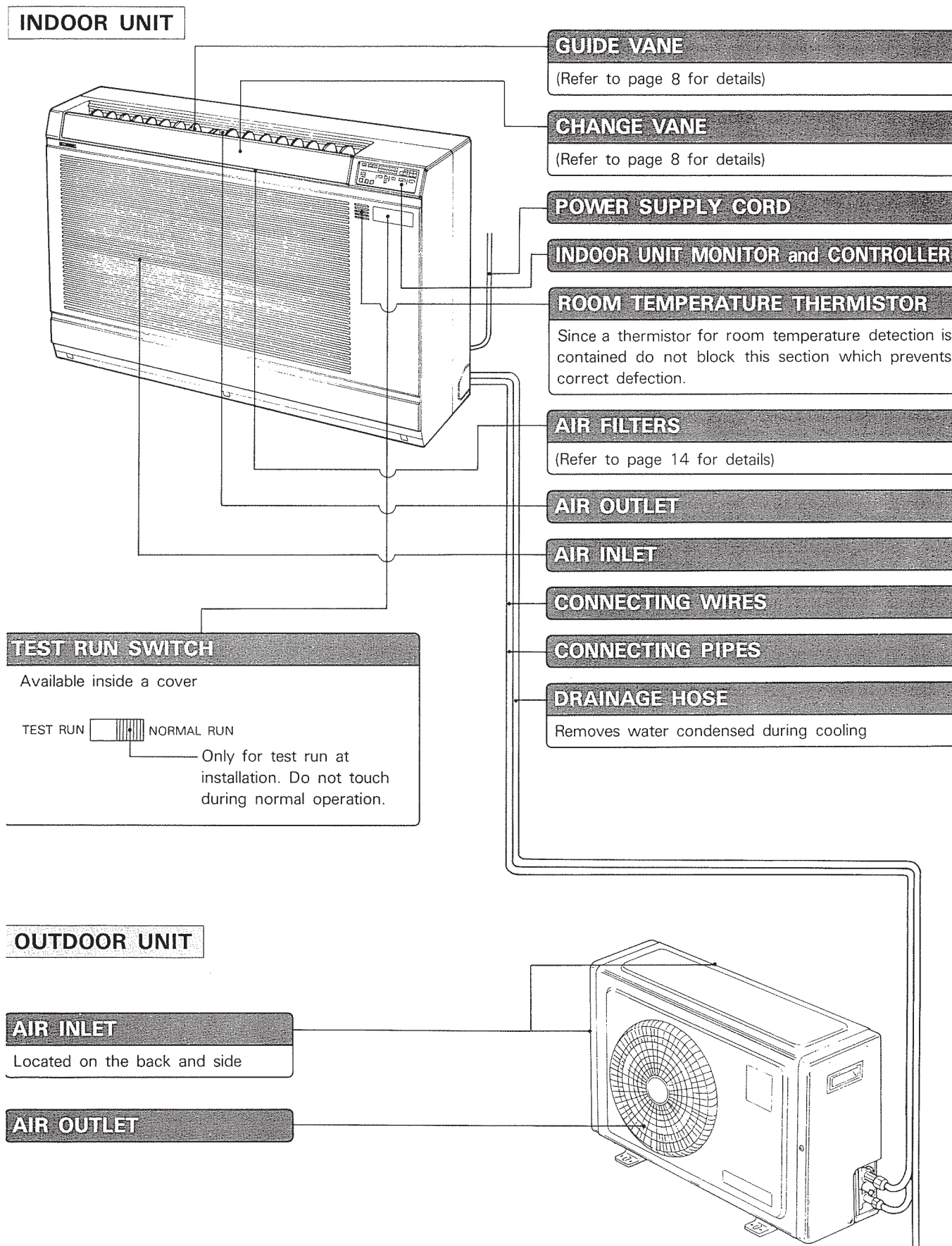


- Do not attempt repair or modification yourself.





## 2. PART NAMES AND THEIR FUNCTIONS



## INDOOR UNIT MONITOR AND CONTROLLER

### DEFROST lamp

This lamp blinks at start of heating and lights while defrosting. While defrosting the indoor fan may stop for a while.

### TIMER lamp

Displays the remaining time in the timer.

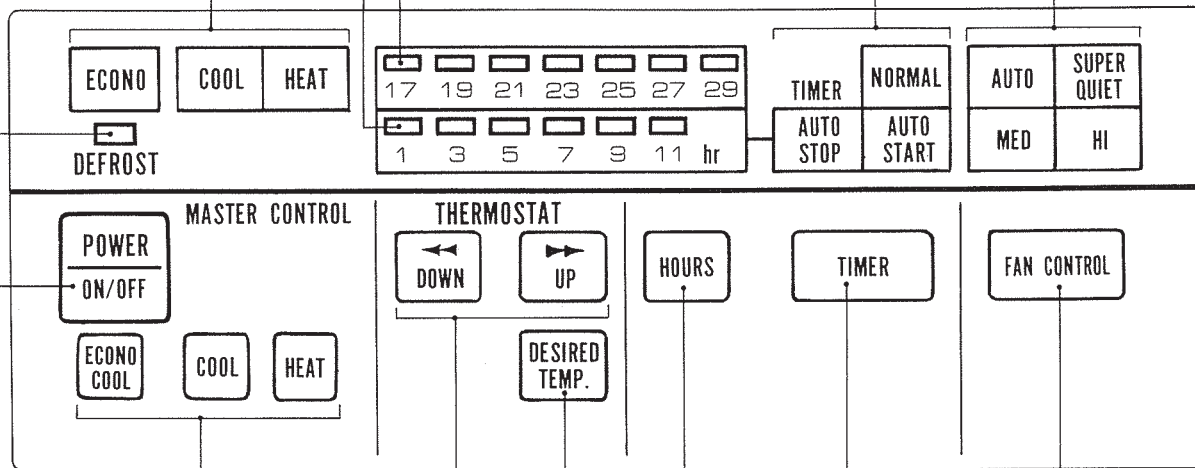
### TIMER SELECT lamp

### FAN CONTROL lamp

### OPERATING MODE lamp

### GREEN SIGN

This system uses a glowing lamp to show the temperature you've selected, and a flashing lamp to show the present room temperature.



### MASTER CONTROL buttons

A selector for **ECONO COOL**, **COOL** and **HEAT**

### POWER button

Pressing this button once turns the power ON, and pressing again turns the power OFF.

### THERMOSTAT buttons

Controls the room temperature.

**DOWN** button lowers the set temperature.

**UP** button rise up the set temperature.

Each time the button is pressed the set temperature changes by 1°C, and changes continuously when held pressed.

### DESIRED TEMP button

Displays the set temperature for 5 seconds.

### TIMER SET button

Use this button to set the time for timer control operation.

Increases by one hour each time the button is pressed. The time increases continuously when held pressed. Returns to one hour next to 11 hours.

### FAN CONTROL button

A selector for **AUTO**, **SUPER QUIET**, **MED** and **HI**

### TIMER button

A selector for automatic ON/OFF of the air conditioner.

When **NORMAL** is selected by **TIMER**, the unit operates continuously.

**AUTO STOP** or **AUTO START**

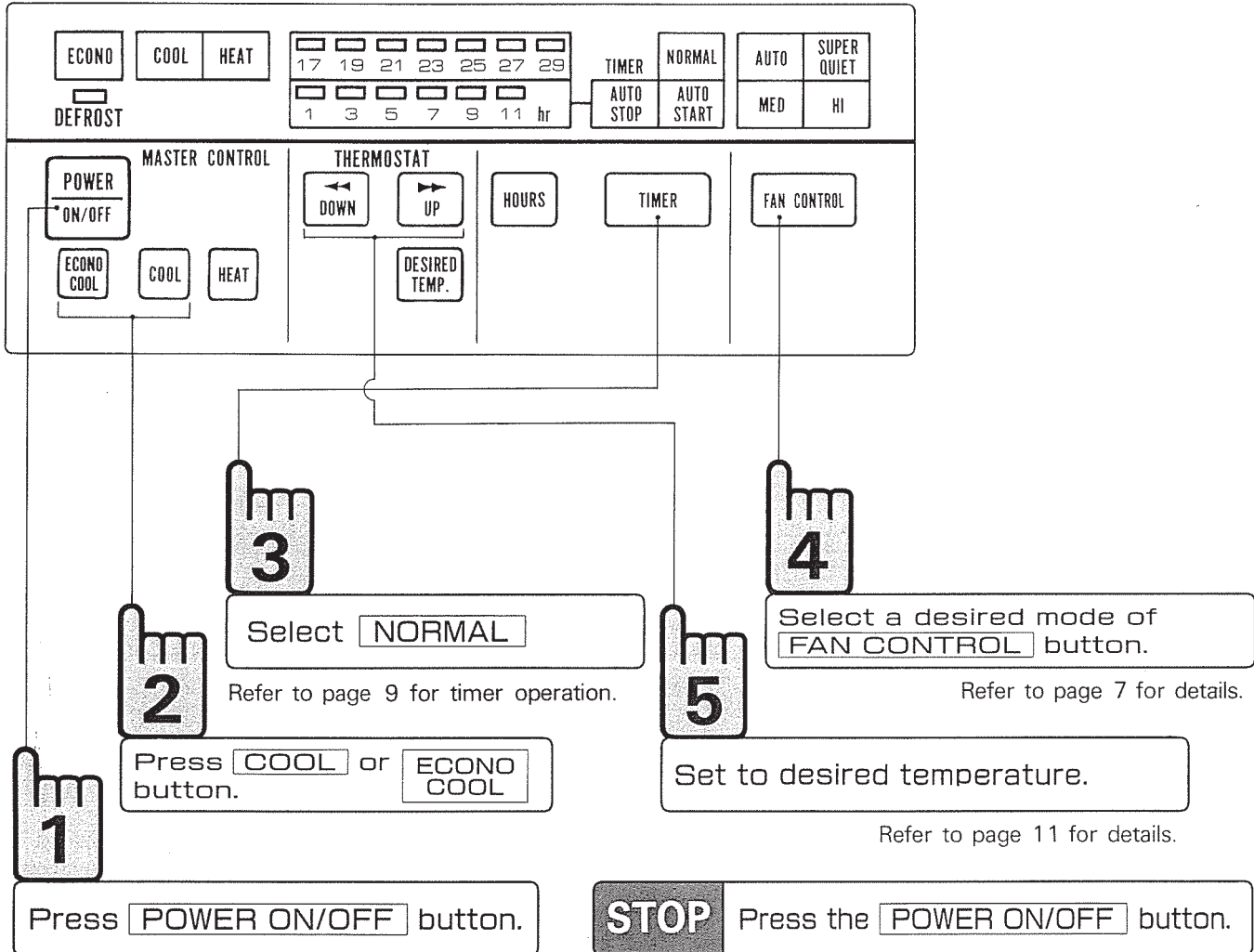
Refer to page 9 to 10 for detail.

### 3. OPERATING PROCEDURE

#### (1) Cooling (COOL or ECONO COOL)

● How to set the CONTROLS.

● Refer to page 13 for ECONO COOL.



★ Once all switches are set to desired position, the same setting can be repeated only by pressing the POWER button.

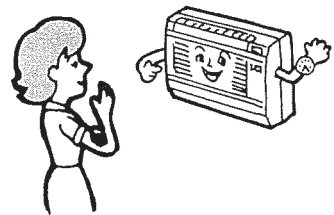
#### CAUTION

The fan may stop during ECONO COOL operation. (Refer to page 13)

#### 3 minutes restart prevention mechanism

■ The unit doesn't restart within about 3 minutes after the cooling is stopped. (3 minutes restart prevention mechanism) This prevention mechanism is provided to protect the unit. When the prevention mechanism is working, the unit operates with only airflow and automatically switches to cooling after about 3 minutes.

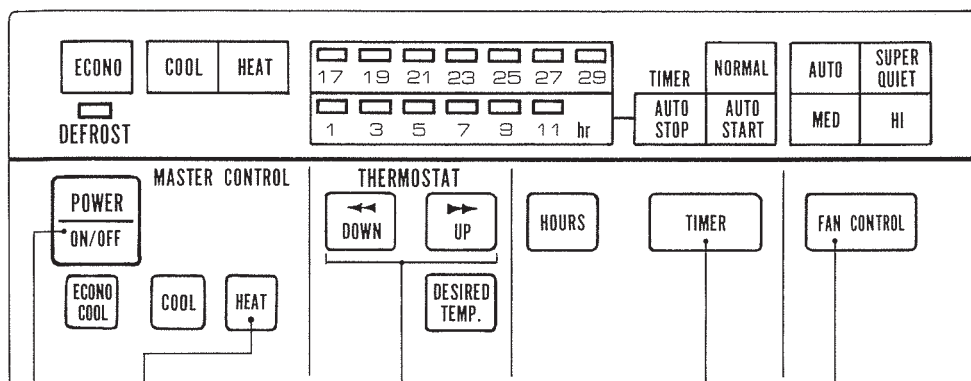
- Works if restarted in the following.
- When power button is turned OFF.
  - Power failure.



## (2) Heating

● How to set the CONTROLS.

● Refer to page 13 for HEATING.



Press **POWER ON/OFF** button.



Press **HEAT** button.



Select **NORMAL**

Refer to page 9 for timer operation.



Set to desired temperature.

Refer to page 11 for details.



Select a desired mode of **FAN CONTROL** button.

Refer to page 7 for details.

**STOP**

Press the **POWER ON/OFF** button.

### CAUTION

■ The indoor unit fan does not run at start of operation and during defrosting.

## (3) FAN control

**AUTO**

Automatically operates the air conditioner at optimum airflow according to the room temperature.

**SUPER QUIET**

Air blows out softly with low operating sound at SUPER QUIET.

**MED**

Air blows out medium airflow at MED.

**HI**

Air blows out high airflow at HI.

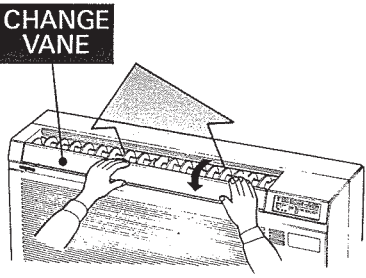
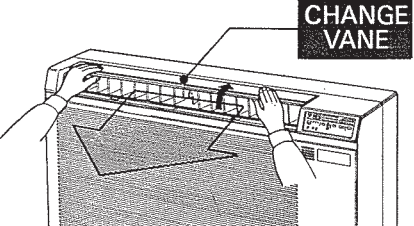
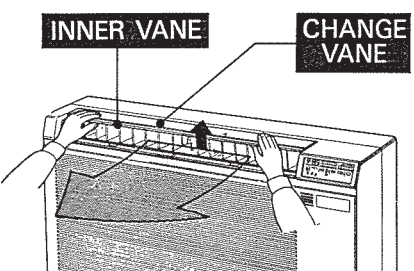
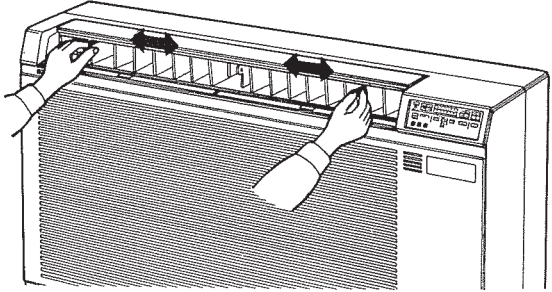
★ On ECONO COOL operation, the indoor fan becomes low speed when the compressor is off and then stops after 1 minute. (Refer to page 13 for details.)



#### (4) Airflow direction adjustment

##### ● Setting procedure

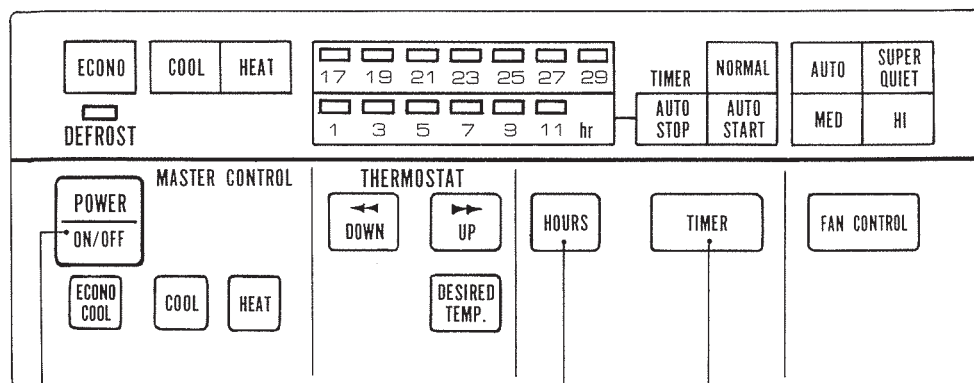
Airflow direction can be changed up-down, right-left by adjustment of the CHANGE VANE and GUIDE VANE before start of operation.

	How to use	Cooling	Heating
Up/downward airflow adjustment	<p>For cooling operation set for upward airflow.</p> <ul style="list-style-type: none"> <li>● For upward airflow set the <b>CHANGE VANE</b> in the arrow mark direction shown at right.</li> </ul> <p><b>NOTE</b> Adjust the change vane by hands.</p>		
	<p>If an obstacle exists above the indoor unit or for heating, use either straight (horizontal) or diagonal upward airflow.</p> <p><b>NOTE</b> Adjust the change vane by hands.</p>		<p>① For straight (horizontal) air flow Direct the <b>CHANGE VANE</b> in the arrow mark direction.</p>  <p>② For diagonal upward airflow Adjust inner vane of lower side of <b>CHANGE VANE</b> in the arrow mark shown at right.</p> 
Right/left airflow adjustment	<p>Adjust the GUIDE VANE with holding levers.</p>		



## (5) TIMER operation

### ● How to set the CONTROLS.



#### TIMER lamp display

- Indicates time remaining with the timer and the lamp goes off when the set time comes.



Indicates 3 hours



Indicates 4 hours

**1** Press **POWER ON/OFF** button.

**2** Set to **AUTO STOP** or **AUTO START**

**3** Set a desired time.

**RELEASE** Reset the **TIMER** button to **NORMAL**

- ★ Once the timer is set the set time is memorized in the microprocessor and the same timer operation can be repeated by just pressing the power button.

- Set the TIMER with watching TIMER lamp. The set time increases one hour each time pressing TIMER button. Then maximum set time is 11 hours. The set time increases continuously when held pressed. Return to one hour next to 11 hours.

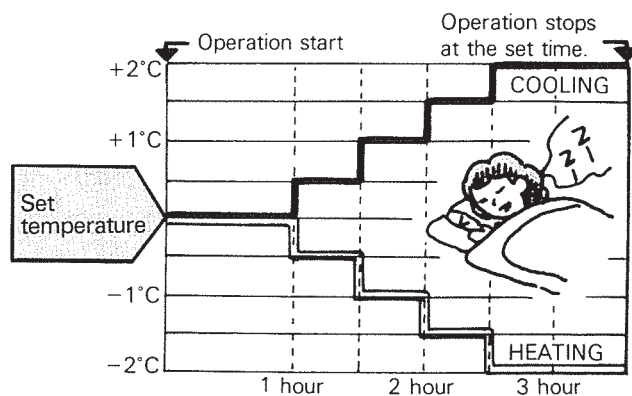
#### CAUTION

- Reset in the following cases.
  - If the circuit breaker worked.
  - In the case of power failure.

## FUNCTIONS OF TIMER

### AUTO STOP

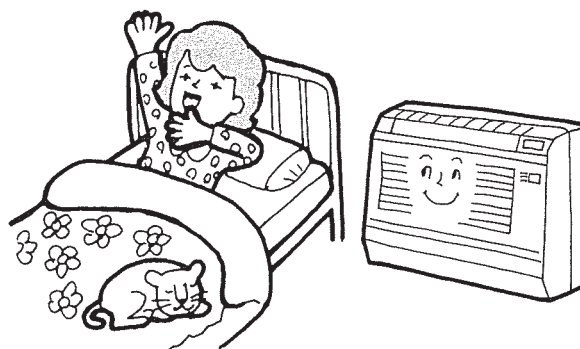
- Stops the air conditioner at a set time. Set off time before going to bed or before going out somewhere.
- Setting **AUTO STOP** before going to bed controls the temperature to a healthy and comfortable level while sleeping with the sleep soft circuit.
- As time passes the set temperature changes to a slightly higher level during cooling or to a slightly lower level during heating.



### AUTO START

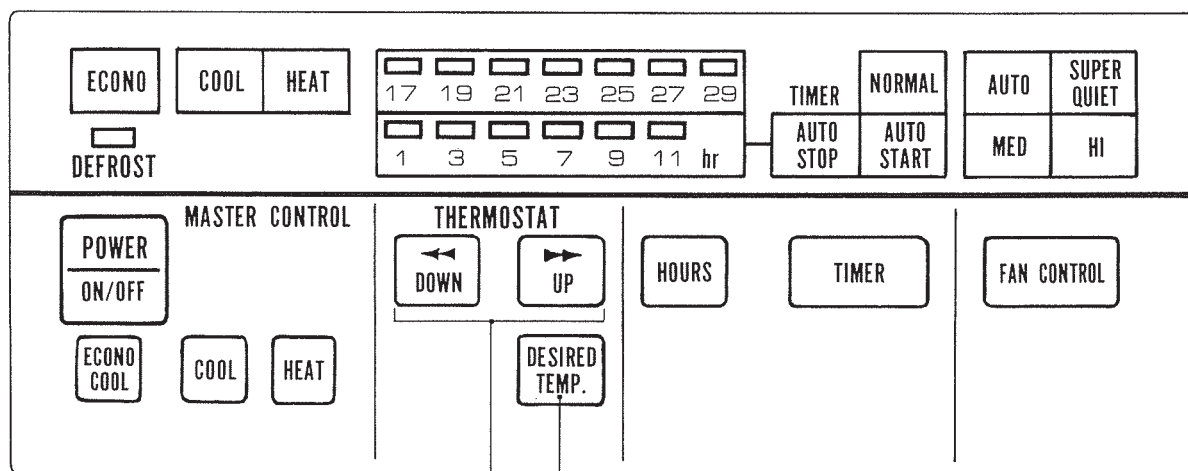
- Starts operation at a set time. Set **AUTO START** to match with time to get up or coming home from outside.
- For heating operation starts before the set time with warming up circuit. (Refer to page 13)
- Relationship between room temperature and operation start time is as shown below.

Room temperature	Operation start time
0°C or lower	About 1 hour before setting
0°C ~ 10°C	About 30 minutes before setting
10°C or higher	About 15 minutes before setting



## (6) THERMOSTAT adjustment (GREEN SIGN)

- Set desired temperature while watching the GREEN SIGN.



Press THERMOSTAT button to select a desired temperature.

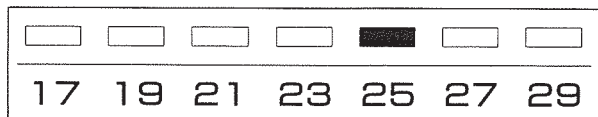
Lowers or rises the set temperature. Each time button is pressed the set temperature lowers or rises by 1°C. The set temperature changes continuously if the button is pressed continuously. The set temperature will be displayed for 5 seconds after pressing the button.

Press the DESIRED TEMP switch

Check the set temperature displayed for 5 seconds.

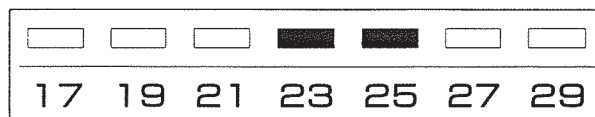
### GREEN SIGN display

Indicates 25°C



Turning the power ON lights the GREEN SIGN lamp. Blinking lamp indicates the room temperature.

Indicates 24°C



When the lamp lights it indicates the set temperature. (Displays when DESIRED TEMP. switch or THERMOSTAT button is pressed)

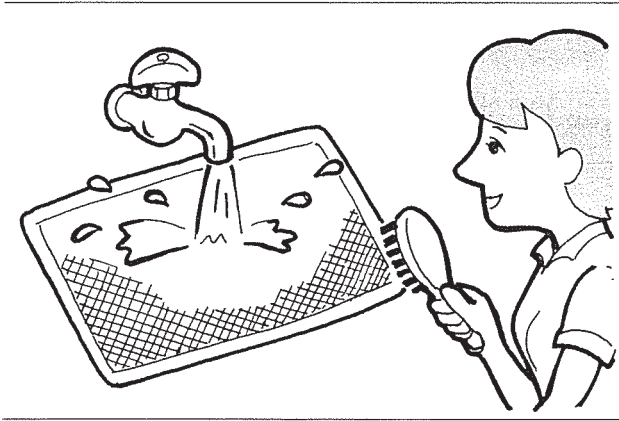


## 4. OPERATING HINTS

By bearing these few tips in mind, you can improve the cooling effects and cut down on the noise level and electricity bill.

### ■ Clean the air filter regularly

Clogged air filter reduces airflow and cooling effects. Clean the air filters once every two weeks; (more often in a dusty environment).

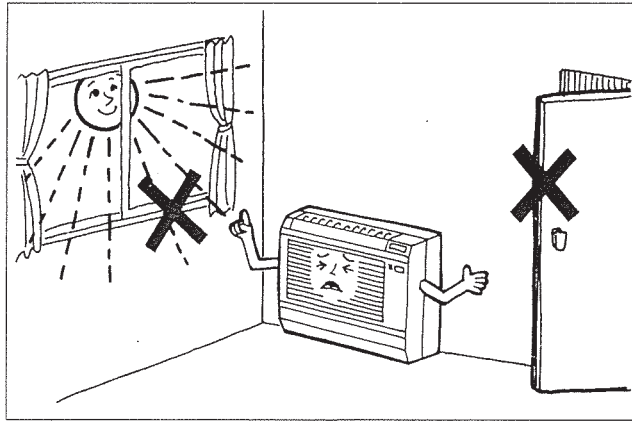


### ■ Keep an even temperature distribution in the room.

Keep an even temperature distribution in the room by making sure nothing is blocking the air outlet and impeding a smooth flow of cool air inside the room.

### ■ Prevent heat gain during cooling.

Draw curtains when cooling if the room is exposed to direct sunlight. Do not open doors etc. unless necessary during cooling.



■ When starting cooling operation, set the switch to Hi so that the desired temperature is reached quickly. Then, set it to MED or SUPER QUIET. Operation noise will be lower and more humidity will be removed.

■ Air can become dirty in a closed room. Ventilate the room periodically.

## 5. OPERATION CHARACTERISTICS

### ECONO COOL

ECONO COOL controls the indoor fan operation by micro-processor, keeps the room humidity at level lower than normal cooling, automatically controls the setting operation, and performs economical cooling without spoiling the comfortableness.

### CAUTION

ECONO COOL intermittently stops the fan to prevent humidity inside the room from rising. Occasionally the fan may stop even when POWER button is turned ON and ECONO lamp lights which is not a problem.

### HEATING

- Relations between atmospheric temperature and heating capacity.

Therefore, heating capacity decreases as the outdoor temperature lowers. If heating is not sufficient, use of an additional heater is recommended.

- Defrosting operation

The heat exchanger of the outdoor unit may become frosted and heating performance may be lowered when the outdoor temperature is extremely low. To prevent a decrease in heating capacity, the automatic defrosting device functions for 5 to 10 minutes.

(The defrosting time varies with the outdoor temperature.)

In the above case, the indoor fan stops. After defrosting, it automatically restarts.

- Warming up circuit

Setting to AUTO START during heating automatically detects the room temperature starting 1 hour before the set time, then starts operation at temperature and time shown below:

Room temperature	Operation start time
0°C or below	1 hour before
0°C to 10°C	30 minutes before
10°C or over	15 minutes before

- Air flow control for heating

Prevention of cold air flow of operation start.

No air flows out unit the inside of indoor unit warms up even when heating operation starts.

As the outlet temperature rises the indoor unit fan rises from slow up to the speed of the set air flow.

- When the room temperature rises to the set temperature while heating, fan speed will become either low or come to a stop.

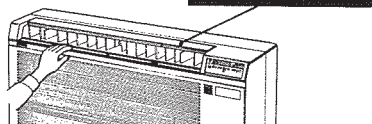
## 6. MAINTENANCE

Before inspection and maintenance, always set the POWER switch to OFF and cut off the power supply main switch.

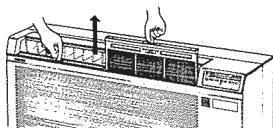
### (1) Cleaning the AIR FILTERS

#### ■ Removing the AIR FILTERS

- Set change vane to straight (horizontal) airflow position.



- Hold the top of air filter and pull up. There are two Air filters.



#### ■ Cleaning

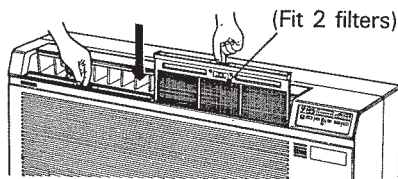
Tap the AIR FILTER lightly or use a vacuum cleaner to remove dust and dirt. If the AIR FILTER is very dirty, wash it in lukewarm water containing a mild detergent.

Rinse away the detergent, and after drying well, reinstall the AIR FILTER.



#### ■ Installing the AIR FILTERS

Push them into the unit firmly in the arrow mark direction.



#### CAUTION

- Do not dry the AIR FILTER in direct sunlight or over open flames. AIR FILTERS can deform.
- AIR FILTERS may deform when washed in hot water (above 50°C).

### (2) Cleaning the unit.

Clean the front panel from time to time.

#### ■ Cleaning

Wipe with a dry cloth or use a vacuum cleaner. If a damp cloth is to be used, wiping out all excessive moisture. After wiping, remove the moisture using a dry cloth.

#### CAUTION

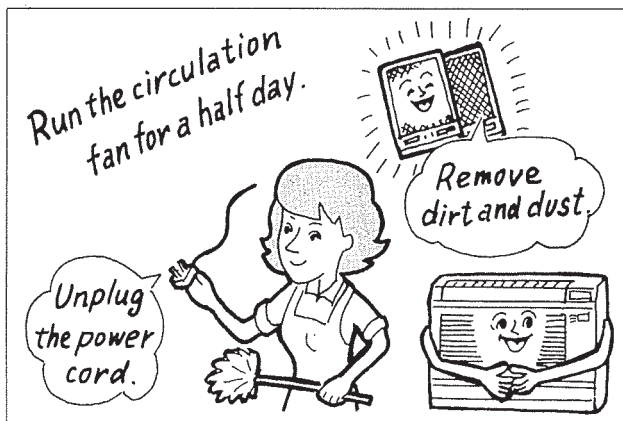
- This product can be damaged by gasoline, paint thinners, polishing powder, chemically treated cloths, detergents, etc. Do not use them.
- Pouring water on the unit when cleaning can cause malfunction.
- Do not use spray-type insecticides, etc. directly on the unit.

### (3) At the start of the season

- Check that nothing blocks the air inlet and outlet of the indoor and outdoor units.
- Running the unit without AIR FILTERS can cause malfunctions due to dirt or dust. Always install the AIR FILTERS.
- Check that the unit's are properly installed.
- Check that drainage hoses are not bent or clogged.

### (4) During the off season

- On a sunny day leave the circulation fan running for about half a day to dry out the inside of the unit.
- Clean the AIR FILTER and other parts.
- Cut off the power supply main switch.



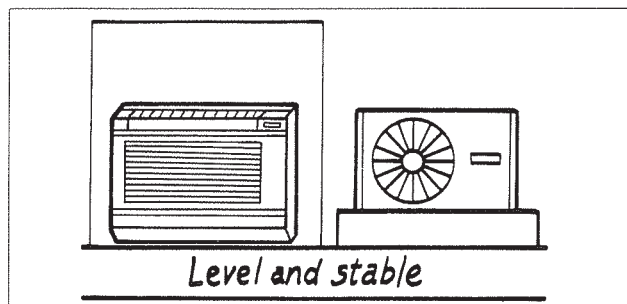


## 7. FOR LONGER SERVICE LIFE

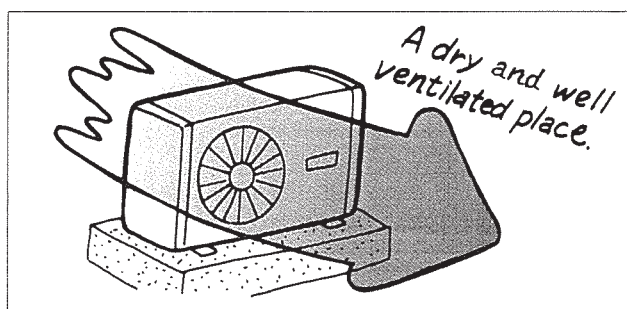
Observe the following points for safe and comfortable operation.

### Installation location

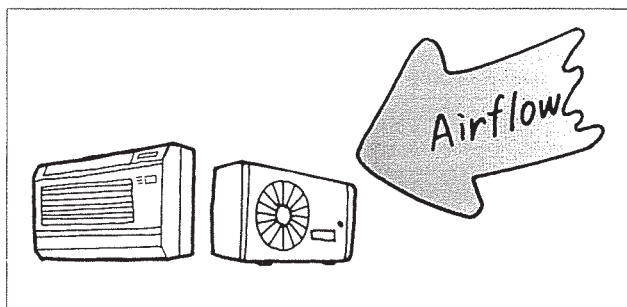
- Install the indoor and outdoor units at a strong, stable, and level place.



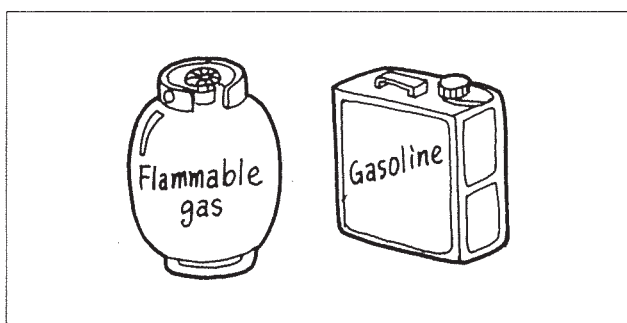
- Choose a well ventilated and dry location for the outdoor unit.



- Make sure that air flows freely around the indoor and outdoor units.



- Avoid locations with danger of flammable gas leakage.



### Pay attention to noise

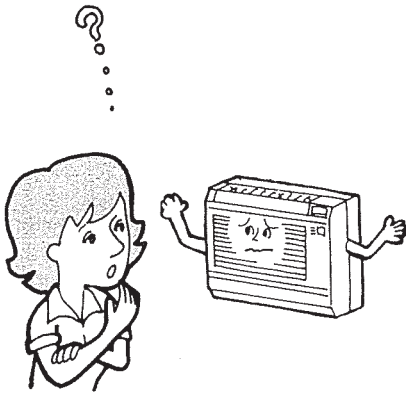
- (1) When installing, select a location with sufficient strength to withstand the unit's weight which also does not amplify the unit's noise or vibration.
- (2) Choose a location where hot air and noise emitted by the outdoor unit will not disturb the neighbors.
- (3) Do not place objects near the outdoor unit's air outlet. They can cause lowered performance or amplify the noise.
- (4) Consult your local dealer if any unusual noise is noted during operation.

- This air conditioner is meant for home-use only.
- Avoid using the air conditioner in a harsh environment such as:
  - Where there is a lot of machine oil.
  - Hot-spring regions.
  - Where there is much salt in the air, for example, near beaches, etc.
  - Where there is exposure to sulfuric gases.The environment itself can cause a machine malfunction. For details, consult your local dealer.

## 8. BEFORE CONTACTING THE SERVICEMAN

Check the following before a service call is requested. If the air conditioner fails to operate properly after checking, contact your local dealer.

### NO OPERATION



■ Check if the power supply main switch is OFF.

■ Check if the fuse has blown.

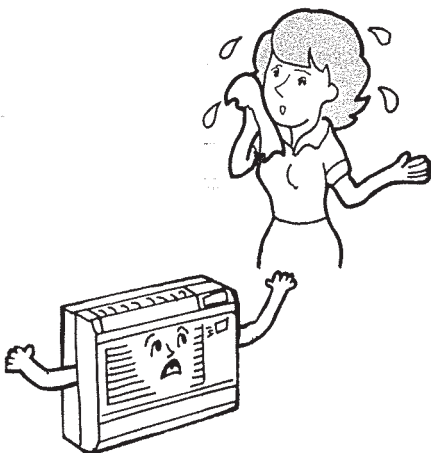
■ Check if you have a power failure.

■ Check if the TIMER is AUTO START.

#### No air flow

■ Check if the air conditioner is in ECONO COOLING operation mode.

### AIR CONDITIONER RUNS BUT WON'T COOL OR HEAT



■ Is the THERMOSTAT setting wrong ?

(Cooling) Is the set temperature higher than the room temperature ?

(Heating) Is the set temperature lower than the room temperature ?

■ Check if sunlight comes in the room directly (cooling).

■ Check if a window or door is opened.

■ Check if there is any object that block the air inlet or outlet of the indoor and outdoor units.

■ Check if there are too many heat source in the room (cooling).

■ Is the AIR FILTER clogged up ?

Unable to control the room temperature.

■ Is the unit set to TEST RUN ?

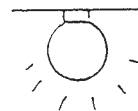
### PROBLEMS WHICH DO NOT EFFECT OPERATION

■ A cracking noise may be heard after starting or stopping of the cooling cycle. This is due to the expansion/contraction of the front panel which occurs following changes in the temperature, but is not a functional problem.

■ Odour from the air flow of the unit in the room.

Reset the circuit breaker or replace fuse.

Check by turning the lights ON.

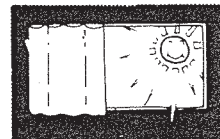


Set to NORMAL.

Wait for a while.

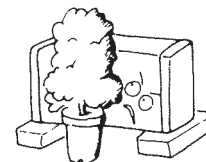
Reset the THERMOSTAT.

Draw curtains/blinds to shade from direct sunlight.



Close doors, or windows.

Remove the obstacle.



Clean the AIR FILTER.



Reset the TEST RUN switch to NORMAL operation and set the THERMOSTAT for desired room temperature.

It is not a functional problem but cleaning the AIR FILTER and front panel will help.

#### After-sales service

The air conditioner should perform satisfactorily as long as the correct operational procedures are followed. However, should a problem arise, turn off main power switch and contact your local dealer.



## NOTE

NOTE

 **mitsubishi electric corporation**  
HEAD OFFICE MITSUBISHI DENKI BLDG. MARUNOUCHI TOKYO 100 TELEX J24532 CABLE MELCO TOKYO

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