

# SHARP®



## AIR-TO-AIR HEAT PUMP

### OPERATION MANUAL

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*Uses Refrigerant R410A*



Plasmacluster is a trademark  
of Sharp Corporation.

**INDOOR UNIT**  
**AY-ZP60LZ**

**OUTDOOR UNIT**  
**AE-Z60LZ**

Please read this manual carefully before using the product. This manual should be kept in a safe place for handy reference.



# **SAFETY PRECAUTIONS**

## **WARNINGS FOR USE**

- This model should be installed with a fixed power cord to the meter box.
- Be careful not to expose your body to the outlet air for prolonged periods. It may affect your physical condition.
- When using the unit for infants, children, elderly, bedridden or disabled people make sure the room temperature is suitable for those in the room.
- Never insert objects into the unit. Inserting objects can result in injury due to the high speed rotation of the internal fans.
- If anything abnormal is noticed with the air conditioner (eg burning smell), stop the operation immediately and turn the circuit breaker off.
- This unit should be installed by a licensed heat pump contractor in accordance with AS/NZS 3000 and your electricity suppliers service rules.
- There are local council rules regarding maximum allowable noise levels emitted by heat pump, your licensed heat pump contractor will advise you on the correct location of your outdoor unit.
- If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard. Use only the manufacture-specified power cord for replacement.
- Do not pour water directly on the unit. Water can cause electrical shock or equipment failure.

## **WARNINGS FOR INSTALLATION/ REMOVAL/REPAIR**

For your safety, ensure that your new heat pump is installed by a licensed heat pump contractor in accordance with the AUSTRALIAN/NEW ZEALAND WIRING RULES.

- Do not attempt to install/remove/repair the unit by yourself. Incorrect installation could cause electric shock, water leak, fire etc. Consult a licensed heat pump contractor for the installation/removal/repair of the unit.

## **CAUTIONS FOR USE**

- If a gas appliance is used in the same room as the heat pump, ventilate the room periodically to prevent oxygen depletion.
- For safety, do not touch the unit with wet hands, it may cause an electric shock.
- For safety, turn the circuit breaker off when not using the unit for an extended period of time.
- For safety, do not place anything on top of the outdoor unit or step on it.
- This unit is designed for residential use. Do not use for other applications such as in a kennel or greenhouse to raise animals or grow plants.
- Do not block the air inlets or outlets of the unit. It may result in degraded performance or unit damage/failure.
- For safety, be sure to turn the unit off at the circuit breaker before performing any maintenance or cleaning.
- This appliance is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure that they can use the appliance safely.  
Young children should be supervised to ensure that they do not play with the appliance.

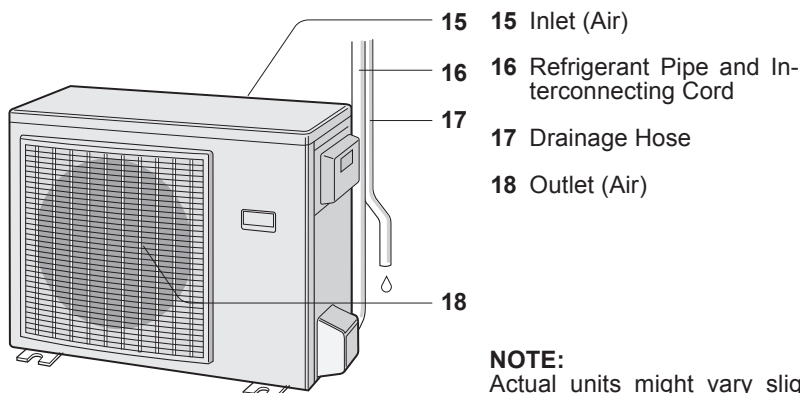
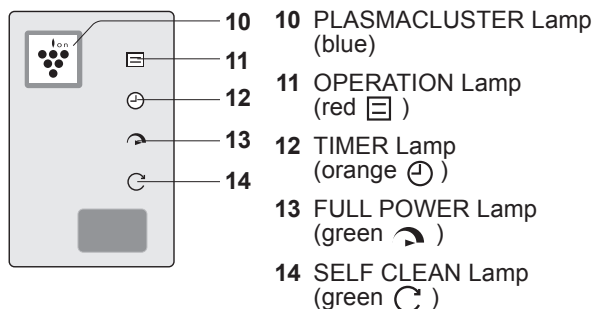
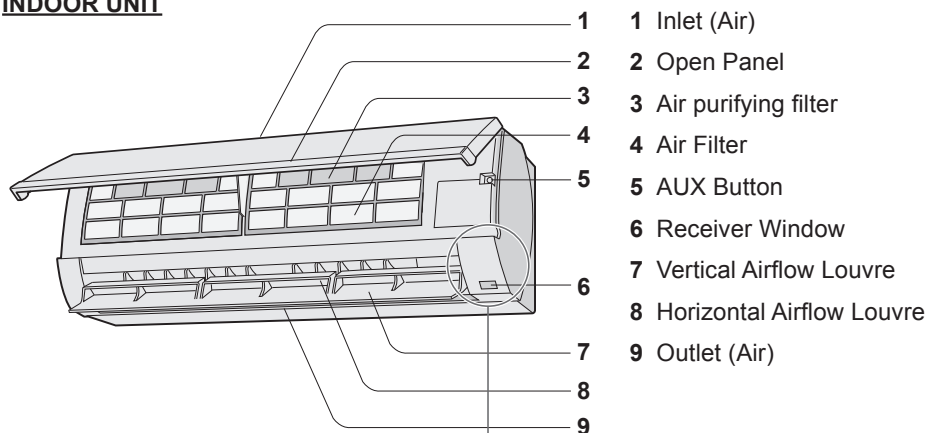
## **CAUTIONS FOR LOCATION/ INSTALLATION**

To ensure that your warranty is not affected, both the indoor/outdoor units and supply/interconnecting cables must be installed by a licensed heat pump contractor.

- The unit is designed to operate on 220-240 VAC, 50Hz.
- Do not install the unit where flammable gas may leak. It may cause a fire.

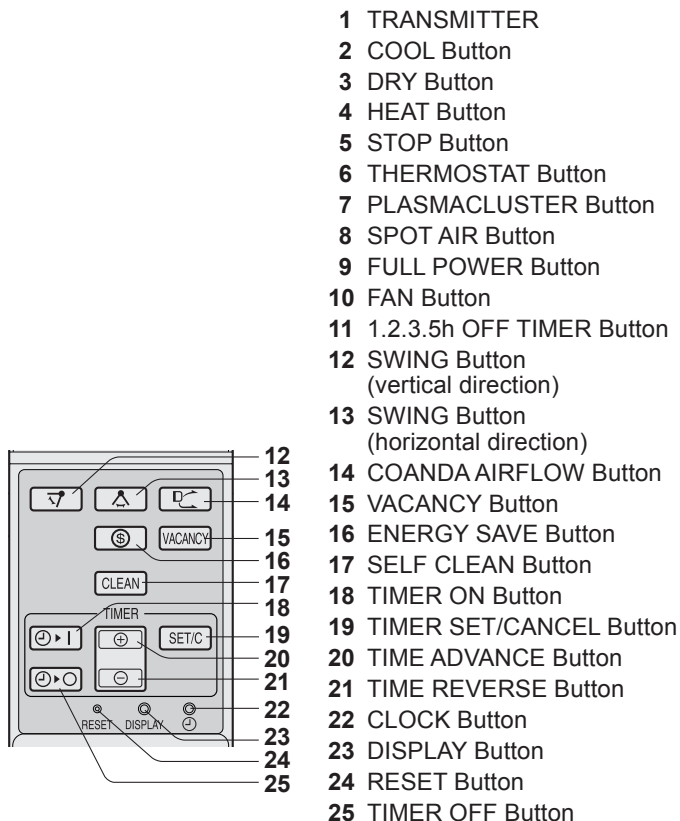
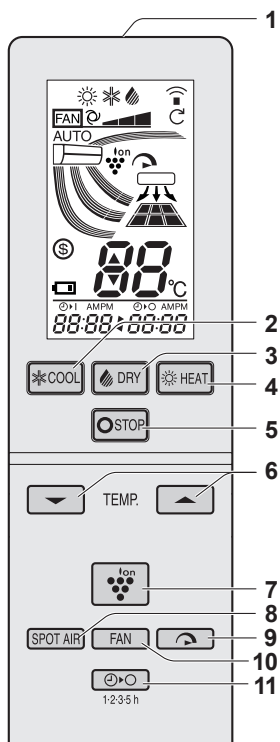
# PART NAMES

## INDOOR UNIT

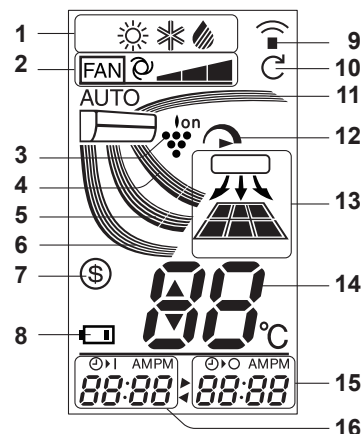


**NOTE:**  
Actual units might vary slightly from those shown above.

## REMOTE CONTROL



## DISPLAY

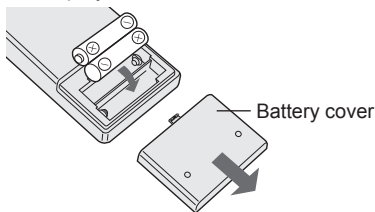


- 1 MODE Symbols
- 2 FAN SPEED Symbols
- 3 PLASMACLUSTER Symbol
- 4 AIR FLOW Symbol (COOL/DRY)
- 5 AIRFLOW Symbol (HEAT)
- 6 COANDA AIRFLOW Symbol (HEAT)
- 7 ENERGY SAVE Symbol
- 8 BATTERY Symbol
- 9 TRANSMITTING Symbol
- 10 SELF CLEAN Symbol
- 11 COANDA AIRFLOW Symbol (COOL/DRY)
- 12 FULL POWER Symbol
- 13 SPOT AIR Symbol
- 14 TEMPERATURE Indicator
- 15 TIMER OFF Indicator
- 16 TIMER ON Indicator / CLOCK

## USING THE REMOTE CONTROL

### LOADING BATTERIES

- 1 Remove the battery cover.**
- 2 Insert two batteries.** (AAA(R03))
  - Make sure the (+) and (-) polarities are correctly aligned.
- 3 Reinstall the battery cover.**
- 4 Press the RESET Button**
  - The display indicates "AM 6:00".



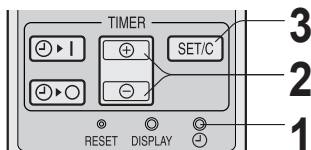
#### NOTE:

- The battery life is approximately 1 year in normal use.
- Replace the batteries when the remote control displays " ".
- When replacing the batteries, always change both and use the same type.
- If you will not be using the unit for a long time, remove the batteries from the remote control.

### SETTING THE CURRENT TIME

There are two clock modes: 12-hour mode and 24-hour mode.

- 1 To set the 12-hour mode, press the CLOCK button once.**  
To set the 24-hour mode, press the CLOCK button twice.
- 2 Press the TIME ADVANCE or REVERSE button to set the current time.**
  - Hold down the button to advance or reverse the time quickly.
- 3 Press the SET/C button.**
  - The colon (:) blinks.



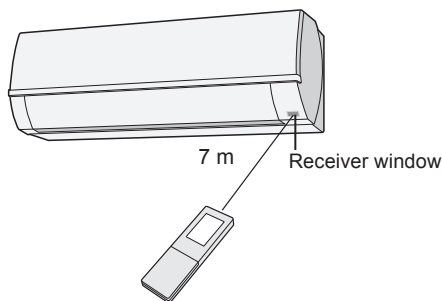
#### NOTE:

- The current time cannot be set when the timer is set.

### USING THE REMOTE CONTROL

Point the remote control towards the receiver window and press the desired button. The unit generates a beep when it receives the signal.

- Make sure nothing, such as curtains, block the signal receiver window.
- The signal effective distance is 7 m.



#### CAUTION:

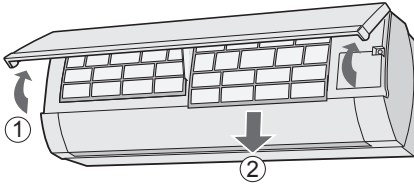
- Do not expose the receiver window to direct sunlight. This may adversely affect its operation.
- Use of certain fluorescent lamp in the same room may interfere with transmission of the signal.
- Do not leave the remote control in direct sunlight or near a heater. Protect the remote control from moisture and shock.

## SETTING AIR PURIFYING FILTER

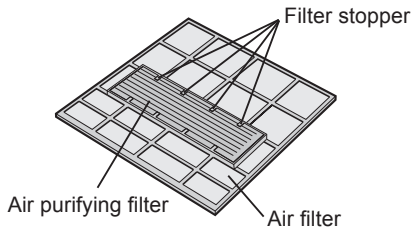
The air purifying filters remove dust from the air and discharge clean air.

### 1 Take out the air filters.

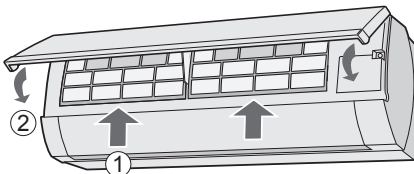
- ① Open the open panel.
- ② Pull the air filters down to remove them.



### 2 Set the air purifying filter under the filter stoppers on the air filter.



### 3 Reinstall the air filters and close the open panel.



#### NOTE:

- Do not open the plastic bag until using the filters. (Otherwise the filters life may get shorter.)
- Do not expose the filters to direct sunlight. (Otherwise they may deteriorate.)

## TIPS ON SAVING ENERGY

Below are some simple ways to save energy when you use your air conditioner.

### Set the proper temperature

- Setting to higher or lower than necessary temperature point will result in increased power consumption.

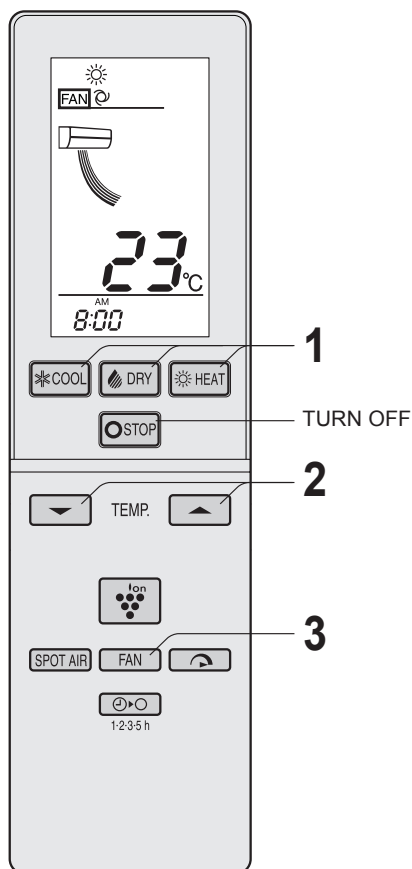
### Block direct sunlight and prevent drafts

- Blocking direct sunlight during cooling operation will reduce power consumption.
- Close the windows and doors during cooling and heating operations.

### Keep filter clean to ensure the most efficient operation

### Turn off the circuit breaker when the unit is not used for an extended period of time

- The indoor unit still consumes a small amount of power when it is not operating.



## 1 Press the HEAT, COOL or DRY button .

☀: HEAT

❄: COOL

💧: DRY

- The red OPERATION lamp (☐) will light up.

### TO TURN OFF

Press the STOP button.

- The red OPERATION lamp (☐) will turn off.

## 2 Press the THERMOSTAT button to set the desired temperature.

(HEAT/COOL mode)

The temperature setting range: 18-32 °C.

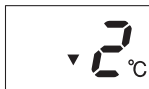
(DRY mode)

The temperature can be changed up to  $\pm 2$  °C the automatically set of temperature.

(Example: 1 °C higher)



(Example: 2 °C lower)



## 3 Press the FAN button to set the desired fan speed.

AUTO    SOFT    LOW    HIGH





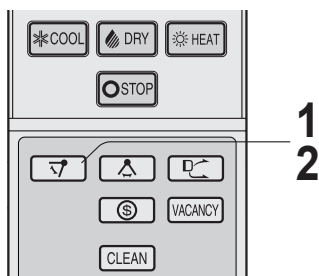
- In the DRY mode, the fan speed is preset to AUTO and cannot be changed.





## ADJUSTING THE AIR FLOW DIRECTION

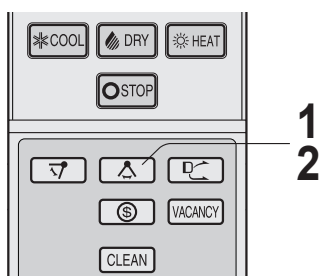
### VERTICAL AIR FLOW DIRECTION

- 1 Press the **SWING** button (  ).  
• The vertical airflow louvre will swing.
- 2 Press the **SWING** button (  ) again to stop the desired position.



### HORIZONTAL AIR FLOW DIRECTION

- 1 Press the **SWING** button (  ).  
• The horizontal airflow louvre will swing.
- 2 Press the **SWING** button (  ) again to stop the desired position.



### CAUTION:

Never attempt to adjust the louvres manually.

- Manual adjustment of the louvres can cause the unit to malfunction.
- When the vertical adjustment louvre is positioned at the lowest position in the COOL or DRY mode for an extended period of time, condensation may result.


### NOTE:

- The adjustment range is narrower the SWING range in order to prevent condensation from dripping.

## PLASMACLUSTER OPERATION

Plasmacluster ions released into the room will reduce some airborne mold.

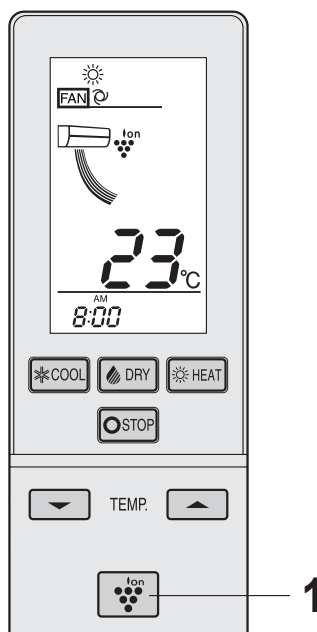
- 1 During operation, press the **PLASMACLUSTER** button.

- The remote control will display “  ”.
- The blue PLASMACLUSTER lamp will light up.

### TO CANCEL

Press the PLASMACLUSTER button again.

- The blue PLASMACLUSTER lamp will turn off.



### NOTE:

- Use of the PLASMACLUSTER operation will be memorized, and it will be activated the next time you turn on the unit.
- To perform Plasmacluster operation in FAN only mode, press the PLASMACLUSTER button when the unit is not operating. The mode symbol of the remote control will go off and the fan speed cannot be set to AUTO.

## COANDA AIRFLOW

In heat mode, vertical airflow louver is set downward to deliver the warm air down to the floor. In cool or dry mode, vertical airflow louver is set obliquely upward to deliver cool air to the ceiling in order to avoid direct airflow.

### 1 During operation, press the COANDA AIFLOW button.

(HEAT mode)

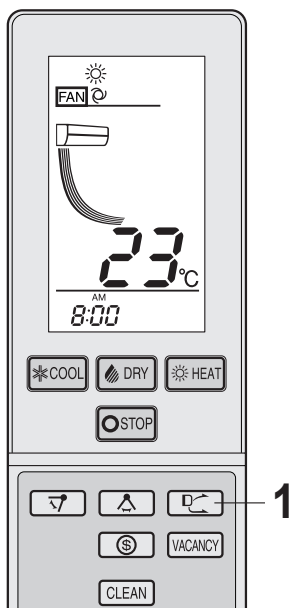
- The remote control will display “ ”.

(COOL / DRY mode)

- The remote control will display “ ”.

### TO CANCEL

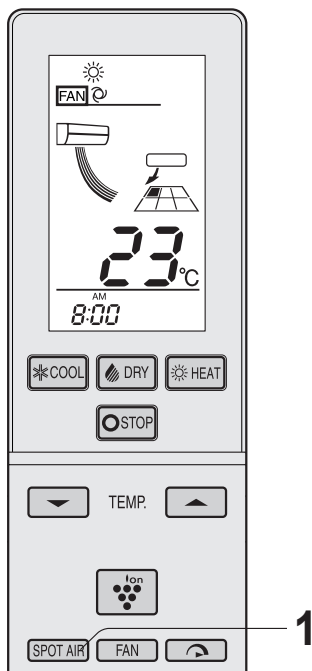
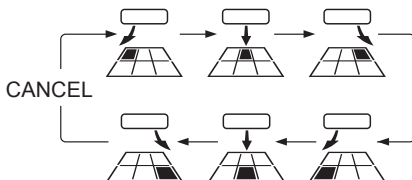
Press the COANDA AIFLOW button again.



## SPOT AIR

The louvers are adjusted so that air flow is delivered to the desired area.

### 1 Press the SPOT AIR button to select the desired air flow direction.



### NOTE:

- If you want COANDA AIRFLOW operation in FULL POWER mode, press COANDA AIRFLOW button during FULL POWER operation.
- The COANDA AIRFLOW setting and the SPOT AIR setting can not be used together.



### NOTE:

- If you want the SPOT AIR setting in the FULL POWER mode, press the SPOT AIR button during the FULL POWER operation.
- The COANDA AIRFLOW setting and the SPOT AIR setting can not be used together.

## FULL POWER OPERATION

The air conditioner works at the maximum power to makes the room cool or warm rapidly.

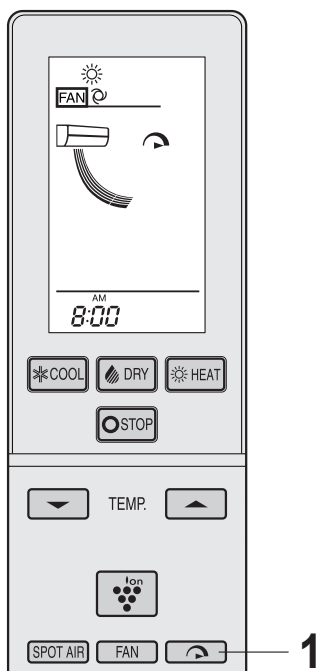
### 1 During operation, press the FULL POWER button.

- The remote control will display “” and AIR FLOW symbol will get longer.
- The temperature display will go off.
- The green FULL POWER lamp () will light up.

### TO CANCEL

Press the FULL POWER button again.

- The green FULL POWER lamp () will turn off.




### NOTE:

- The air conditioner will operate at “Extra HIGH” fan speed for 5 minutes, and then shift to “HIGH” fan speed.
- You can not set the temperature or fan speed during the FULL POWER operation.
- The ENERGY SAVING operation and the FULL POWER operation can not be used together.

## ENERGY SAVING OPERATION

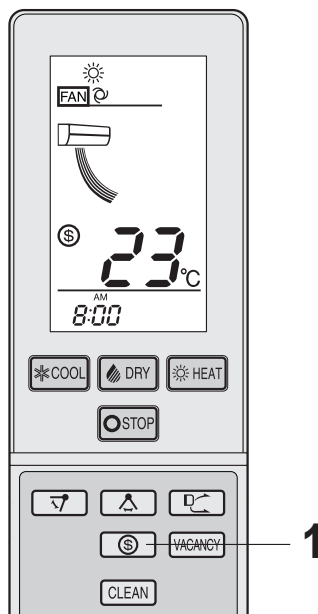
The temperature set point is automatically controlled to save energy.

### 1 During operation, press the ENERGY SAVE button.

- The remote control will display “”.
- The fan speed will be set to AUTO.

### TO CANCEL

Press the ENERGY SAVE button again.



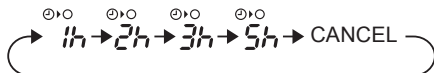
### NOTE:

- In HEAT mode, the temperature set point will be automatically fluctuated between 0 - 2 °C lower than the original temperature setting.  
In COOL or DRY mode, the temperature set point will be automatically fluctuated between 0 - 1 °C higher than the original temperature setting.
- The ENERGY SAVING operation and the FULL POWER operation can not be used together.

## 1-2-3-5h OFF TIMER

When the 1-2-3-5h OFF TIMER is set, the unit will automatically turn off after the setting hours.

### 1 Press the 1-2-3-5h OFF TIMER button to set the desired time.



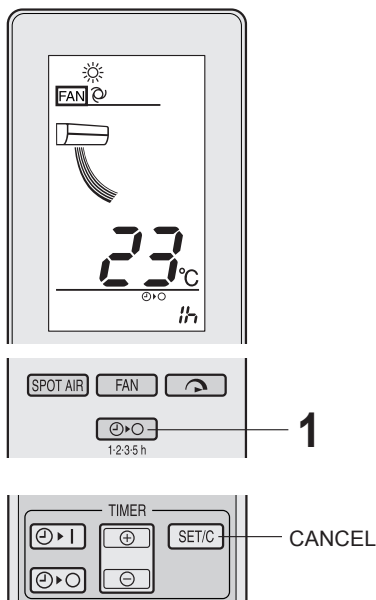
- The orange TIMER lamp (⌚) will light up.
- The remaining time will be indicated on the remote control in 1-hour increments.

### TO CANCEL

Press the SET/C button.

Alternatively, press the 1-2-3-5h OFF TIMER button.

- The orange TIMER lamp (⌚) will turn off.



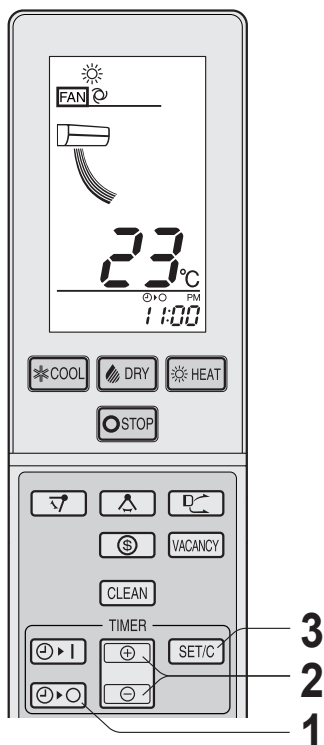
### NOTE:

- The 1-2-3-5h OFF TIMER has priority over TIMER ON and TIMER OFF.
- If the 1-2-3-5h OFF TIMER is set while the unit is not operating, the unit will operate at the formerly set condition.
- If TIMER ON and/or TIMER OFF are set, TIMER CANCEL button cancels every setting.

## TIMER OPERATION

### TIMER OFF

- 1 Press the **TIMER OFF** button.
  - The TIMER OFF indicator will blink.
- 2 Press the **TIME ADVANCE** or **REVERSE** button to set the desired time.
  - The time can be set in 10-minute increments.
- 3 Press the **SET/C** button.
  - The orange TIMER lamp (⌚) will light up.

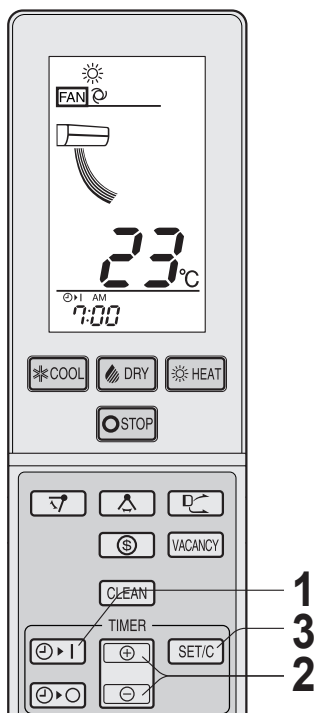


### NOTE:

- When the TIMER OFF is set, the temperature setting is automatically adjusted to prevent the room from becoming excessively cold or warm, for example while you sleep. (Auto Sleep function)  
 HEAT mode: One hour after the timer is set, the temperature setting drops by 3 °C.  
 COOL mode: One hour after the timer is set, the temperature setting rises by 1 °C.

## TIMER ON

- 1 Press the TIMER ON button.**
  - The TIMER ON indicator will blink.
- 2 Press the TIME ADVANCE or REVERSE button to set the desired time.**
  - The time can be set in 10-minute increments.
- 3 Press the SET/C button.**
  - The orange TIMER lamp (⌚) will light up.



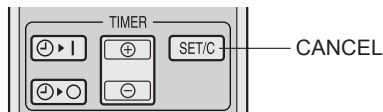
### **NOTE:**

- The unit will turn on prior to the set time to allow the room to reach the desired temperature. (Awaking function)

## TO CANCEL

**Press the SET/C button.**

- The orange TIMER lamp (⌚) will turn off.
- The current time will be displayed on the remote control.



## TO CHANGE TIME SETTING

**Cancel the TIMER setting, then set it again**

## TO COMBINE TIMER ON AND TIMER OFF

**Set the TIMER OFF and TIMER ON.**

**Example**

(Current time: 9:00 p.m.)

OFF TIMER at 11:00 p.m.

ON TIMER at 7:00 a.m.



- The arrow (▼ or ▲) between the TIMER ON indicator and the TIMER OFF indicator shows which timer will activate first.

### **NOTE:**

- You cannot program the ON-TIMER and OFF-TIMER to operate the unit at different temperatures or other settings.
- Either timer can be programmed to activate prior the other.

## SELF CLEAN OPERATION

SELF CLEAN operation will reduce the growth mold fungus with Plasmacluster ions and dry inside of the unit. It is recommended to utilize the operation at seasonal change over.

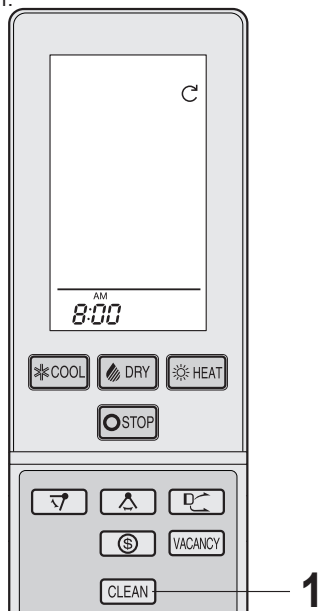
### 1 Press the SELF CLEAN button when the unit is not operating.

- The remote control will display “ C ”.
- The green SELF CLEAN LAMP ( C ) and the blue PLASMACLUSTER lamp will light up.
- The unit will stop operation after 40 minutes.

### TO CANCEL

Press the SELF CLEAN button.

- The green SELF CLEAN LAMP ( C ) and the blue PLASMACLUSTER lamp will turn off.



## VACANCY OPERATION

Heating operation with 10°C set temperature will be performed to protect your home and furniture from frost damage, even when you are out.

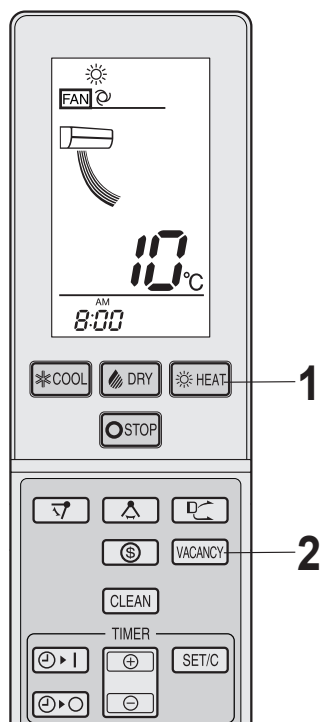
### 1 Press the HEAT button.

### 2 Press the VACANCY button.

- The remote control will display “ 10°C ”.

### TO CANCEL

Press the VACANCY button again.



### NOTE:

- You cannot set the temperature, fan speed, air flow direction or timer setting during the SELF CLEAN operation.
- Mold fungus already grown can not be eliminated by this operation.

## DISPLAY BUTTON

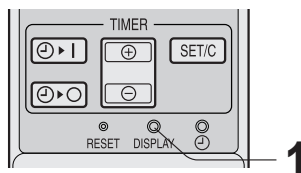
Press the DISPLAY button when the lamps on the unit are too bright. (The red OPERATION lamp and the orange TIMER lamp cannot be turned off.)

### 1 During operation, press the DISPLAY button.

- The blue PLASMACLUSTER lamp, the green SELF CLEAN LAMP (☺) and/or the green FULL POWER lamp (☺) will turn off.

### TO LIGHT UP

Press the DISPLAY button again.



## AUXILIARY MODE

Use this mode when the remote control is not available.

### TO TURN ON

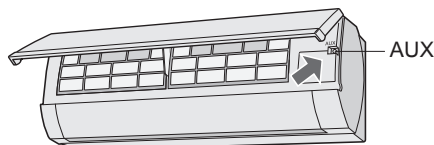
**Press the AUX button.**

- The red OPERATION lamp (☹) will light.
- The mode and the temperature setting are automatically selected according to the room temperature and the outdoor temperature when the unit is turned on. The fan speed is set to AUTO.

### TO TURN OFF

**Press the AUX button again.**

- The red OPERATION lamp (☹) will turn off.



## NOTE ON OPERATION

### OPERATING CONDITION

		Indoor temperature	Outdoor temperature
Heating	upper limit	27°C	24°C
	lower limit	—	-20°C
Cooling	upper limit	32°C	43°C
	lower limit	21°C	-10°C

- The built-in protective device may prevent the unit from operating when used at higher temperature than this range.
- Condensation may form on the air outlet if the unit operates continuously in the COOL or DRY mode when humidity is over 80 %.

### WHEN POWER FAILURE OCCURS

- This air conditioner has a memory function to store settings when a power failure occurs. After power recovery, the unit will automatically re-start in the same settings which were active before the power failure, except for timer settings.
- If a power failure occurs while the timer is set, the timer setting will be cancelled and will not be retrieved even after the power is restored.

### NOTE ON HEATING OPERATION

#### DEFROSTING FUNCTION

- When frost forms on the outdoor unit during heating operation, the unit operate automatic defrosting for about 5 to 10 minutes to remove the frost. During defrosting, the inside and outside fans stop operating.

#### HEATING EFFICIENCY

- The unit employs a heat pump that draws heat from the outside air and releases it into the room. The outside temperature therefore greatly affects the heating efficiency.
- If the heating efficiency is reduced due to low outside temperatures, use an additional heater.
- It takes time to warm up and heat the entire room because of the forced air circulation system.

## MAINTENANCE

Be sure to stop the operation and turn off the circuit breaker before performing any maintenance.

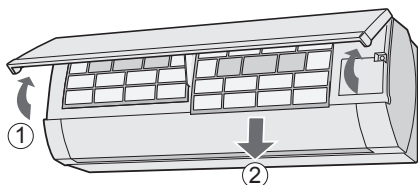
### CLEANING THE AIR FILTERS

The filters should be cleaned every two weeks.

#### **1** Turn off the unit.

#### **2** Remove the filters.

- ① Lift the open panel.
- ② Pull the air filters down to remove them.



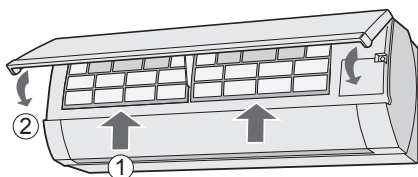
#### **3** Take off the air purifying filters from the air filters.

#### **4** Clean the filters.

Use a vacuum cleaner to remove dust. If the filters are dirty, wash them with warm water and a mild detergent. Dry filters in the shade before reinstalling.

#### **5** Reinstall the air purifying filters.

#### **6** Reinstall the filters and close the open panel.



### CLEANING THE UNIT AND THE REMOTE CONTROL

- Wipe them with a soft cloth.
- Do not directly splash or pour water on them. It can cause electrical shock or equipment damage.
- Do not use hot water, thinner, abrasive powders or strong solvents.

### MAINTENANCE AFTER AIR CONDITIONER SEASON

#### **1** Operate the unit in the SELF CLEAN operation to thoroughly dry inside the unit.

#### **2** Stop the operation and turn off the circuit breaker.

#### **3** Clean the filters, then reinstall them.

### MAINTENANCE BEFORE AIR CONDITIONER SEASON

#### **1** Make sure that the air filters are not dirty.

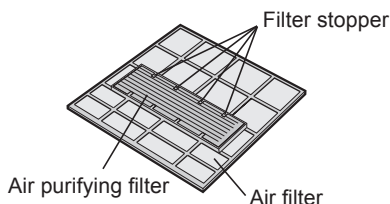
#### **2** Make sure that nothing obstructs the air inlet or outlet.

### REPLACING THE AIR PURIFYING FILTER

The filters should be changed every 3 - 6 months

#### **1** Take off the old air purifying filters from the air filters.

#### **2** Set the new air purifying filters, under the filter stoppers on the air filters.



#### **NOTE:**

- The air purifying filters are not washable for reuse. The new filters are available at your nearest dealer.

#### **Disposal of Filters**

Please dispose of replaced filters according to the local disposal laws and regulations.

AIR PURIFYING filter materials

Filter: Polypropylene

Frame: Polyester



## BEFORE CALLING FOR SERVICE

The following conditions do not denote equipment malfunctions.

### Unit does not operate

- The unit will not operate if it is turned on immediately after it is turned off. The unit will not operate immediately after the mode is changed. This is to protect the unit. Wait 3 minutes before operating the unit.

### Unit does not send out warm air

- In heating operation, the indoor fan may not start for 2 to 5 minutes after the unit is turned on to prevent cold air from blowing out of the unit.
- The unit is defrosting. Wait for 5 to 10 minutes.

### Odors

- Carpet and furniture odors that entered into the unit may be sent out from the unit.

### Cracking noise

- This sound is generated by the friction of the unit expanding or connecting due to a temperature change.

### A low buzzing noise

- This is a sound of the unit generating Plasma-cluster ions.

### Swishing noise

- The soft, swishing noise is the sound of the refrigerant flowing inside the unit.

### Mist seen at indoor air outlet

- In cooling operation, this is caused by the difference between the room air temperature and the air discharged.

### Water vapour

- In heating operation, water vapour may flow out of the outdoor unit during defrosting.

### The outdoor unit does not stop

- After stopping the operation, the outdoor unit will rotate its fan for about a minute to cool down the unit.

### Odor emitted from the plasma-cluster air outlet

- This is the smell of ozone generated from the Plasmacluster Ion generator. The ozone concentration is very small, posing no adverse effect on your health. The ozone discharged into the air rapidly decomposes, and its density in the room will not increase.

Check the following points before calling for service.

### The unit does not operate

- Check if the circuit breaker has tripped or the fuse has blown.

### The unit does not heat (or cool) the room effectively

- Check the filters. If dirty, clean them.
- Check the outdoor unit to make sure nothing is blocking the air inlet or outlet.
- Check the thermostat is proper setting.
- Make sure windows and doors are closed tightly.

### The unit does not receive the remote control signal

- Check whether the remote control batteries have become old and weak.
- Try to send the signal again with the remote control pointed properly towards the unit's signal receiver window.
- Check whether the remote control batteries are installed properly.

Please call for service when OPERATION lamp, TIMER lamp and/or PLASMACLUSTER lamp on the unit blink.

## SPECIFICATIONS

Indoor unit		AY-ZP60LZ
Outdoor unit		AE-Z60LZ
Rated A.C. voltage (V)		220-240
Rated frequency (Hz)		50
Capacity (kW)	Cooling	5.0
	Heating	6.0
Rated input (W)	Cooling	1470
	Heating	1660

When tested in accordance with AS/NZS 3823.1.1





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