

# CRYSTAL MK2 12K

PAC-100017

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## PORTABLE AIR CONDITIONER

USER MANUAL



Please read instructions before use  
Keep for future reference

Visit [ecoair.org](http://ecoair.org) to register your product



## INDEX

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## IMPORTANT SAFETY INSTRUCTIONS

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Use this appliance only as described in this instruction manual. As with any electrical appliances, the instructions aim to cover as many situations as possible, caution and common sense should be used when operating and installing this air conditioner.

- The appliance is manufactured for comfort cooling and dehumidification in domestic environments and must not be used for other purposes.
- This appliance must not be used outdoor or wet areas such as bathrooms.
- Do not alter or modify the appliance's characteristics in any way.
- The appliance must be installed in accordance with the relevant national legislation.
- Should repairs be necessary, contact EcoAir's Authorised Service Centre. Self-servicing or unauthorised servicing can be dangerous.
- The appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.
- Children and pets should be supervised to ensure they do not play with the appliance.
- If the power cable is damaged, do not use the appliance. It must be replaced by an EcoAir's Authorised Service Centre.
- The appliance must be plugged into a grounded 3-prong outlet and ensure that the voltage matches the rated specifications. If in doubt, check with a qualified technician.
- Do not use with extension cables or multi sockets.
- Always unplug the appliance before cleaning or maintenance or when not in use.
- Do not pull or place strain on the power cord when moving appliance.
- The appliance must not be installed where the atmosphere may contain combustible gasses, oil or sulphur or solvent or near heat sources (such as server rooms & factories).
- Do not use this appliance in a dusty environment or a potentially explosive environment.
- Do not place or rest any objects on the appliance.
- Do not place any objects or curtains in close proximity to the appliance. Always allow a minimum of 50 cm clearance around the appliance.
- Do not operate the appliance without a filter in place. Clean the filters at least once a week.
- Do not use the appliance near any other appliances that emits heat such as heaters, servers etc.
- The appliance must be always kept upright on an even and level floor, during use or transportation and when put into storage.
- Ensure the air inlet and outlet are not blocked or covered when in use.
- Do not operate or store the appliance under direct sunlight.
- Always switch of the power before unplugging from the socket.
- Do not leave the appliance running or plugged in over a long period of time unattended. Leaving unattended electrical appliances running is unsafe.
- Always make sure your hands are dry when operating the appliance.
- Only operate the appliance within the specified operating temperature range.
- Always observe the minimum room size for storing and operating the appliance.

## REFRIGERANT R290

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R290

This appliance contains R290 Refrigerant Gas

Our portable air conditioners contain the non-polluting refrigerant R290 with no harm to our ozone, it helps reduce global warming potential. This refrigerant complies with the European Environmental Directives.

There are some important safety precautions that you need to follow :-

1. Do not use these appliances in rooms smaller than shown in table below for each of the models to prevent fire, explosions .
2. Do not use these appliances in a room with continuous sources of ignition such as open flames, gas appliances, electric heaters, cigarette smoking and other sources of ignitions.
3. Always store these appliances in a well-ventilated area with a minimum size shown in the above table.
4. Keep any required ventilation openings clear of obstructions.
5. Never attempt to service or repair the appliances yourself, always ensure it is only serviced by a EcoAir approved engineer using original EcoAir parts.
6. If these appliances are installed, operated or stored in a non-ventilated area, then the room must be designed to prevent the accumulation of refrigerant leaks. Accumulation of refrigerant leaks in a non-ventilated area can be ignited by other causes such sparks or smoking or open flames from other appliance or causes such as electric heaters, stoves or other sources of ignition in the area.

Model	Minimum Floor Area (m <sup>2</sup> )	Contains R290 (Grams)
PAC-100015 - CRYSTAL MK2 7000 BTU	4	150
PAC-100016 -CRYSTAL MK2 9000 BTU	11	180
PAC-100017 - CRYSTAL MK2 12000 BTU	11	220
PAC-100013 - APOLLO 12000 BTU	11	220
PAC-100014 -ARTICA 9000 BTU	11	220

Failure to comply with these instructions may result in fire or explosions.

## BS PLUG WIRING

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Should it be necessary to change the plug, please note the wires in the mains lead are colour coded as follows:

BLUE - NEUTRAL

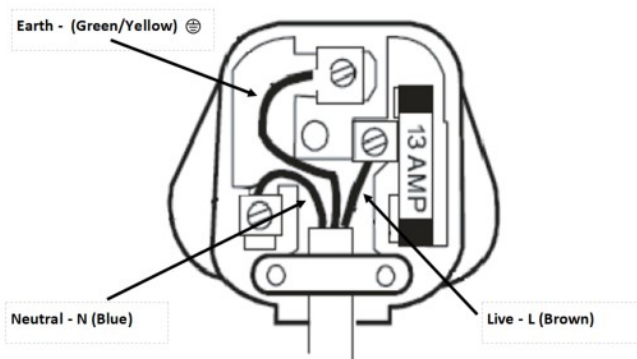
BROWN – LIVE

GREEN AND YELLOW - EARTH

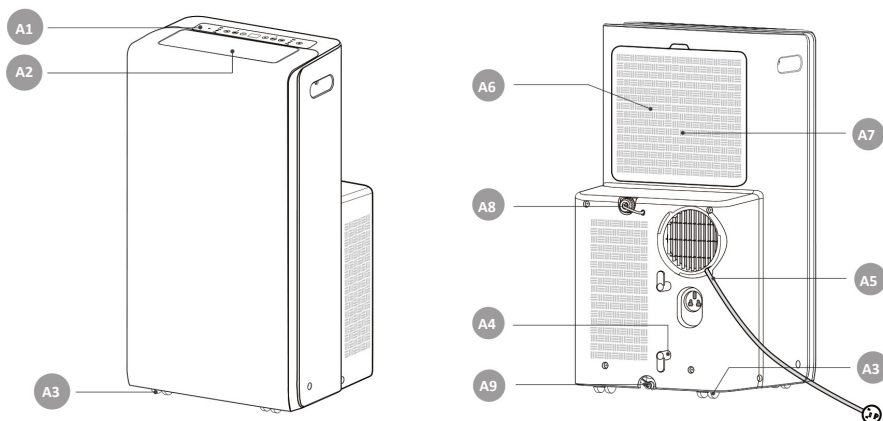
In the event that the colours of the wires in the mains lead of this appliance do not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

1. The BLUE wire is NEUTRAL and must be connected to the terminal which is marked with the letter N or coloured BLACK.
2. The BROWN wire is LIVE and must be connected to the terminal which is marked with the letter L or coloured RED.
3. The GREEN/YELLOW is EARTH and must be connected to the terminal which is marked with the letter E or  $\oplus$  or coloured GREEN or GREEN/YELLOW.
4. Always ensure that the cord grip is positioned and fastened correctly.
5. If a 13A (BS 1363) fused plug is used it must be fitted with a 13A -fuse. If in doubt consult a qualified electrician.

Please note the Earth, Neutral and Live Terminals are marked as E , N and L respectively.



## THE APPLIANCE & ACCESSORIES



### Accessories List

B1	B2	B3	B4	B5
B6	B7	B8	B9	

#### DESCRIPTION

Key	Description
A1	Control Panel
A2	Outlet Louvre
A3	Castor
A4	Cable Tidy
A5	Power Cord
A6	Filter
A7	Air Inlet Grille
A8	Continuous Drainage Port
A9	Excess Drainage Port

#### DESCRIPTION

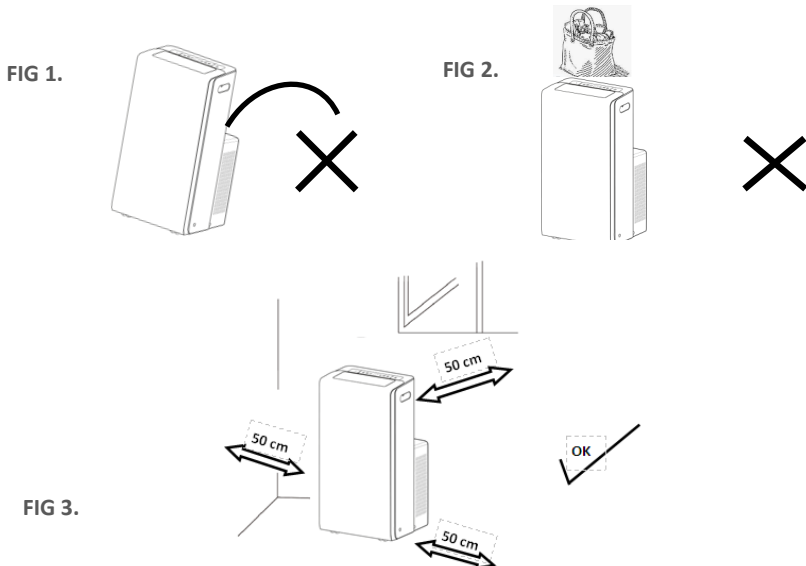
Key	Description
B1	Joint A (Hose to AC)
B2	Exhaust Hose
B3	Joint B (Hose to Window)
B4	Cable Tidy
B5	Screw x 2
B6	User Manual
B7	Remote Control
B8	Drainage Connector
B9	Continuous Drainage Hose 14mm (not included)

## IMPORTANT SAFEGUARDS

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Some important safeguards :-

1. This appliance is heavy. At least 2 persons are required to move and install the appliance
2. The appliance is for indoor use only.
3. Do not install in high humidity area such as wet room or laundry room.
4. Always keep appliance upright during storage, use or storage. In the event that it was in a non upright position, put it back on its upright position for at least 16 - 24 hours to allow the liquid inside the appliance to settle before use. Without allowing this time, will result in a shorter life expectancy of the appliance.
5. Never restrict the air inlet and air outlet.
6. For Cooling mode, use within the operating temperature of 16°C to 30°C. Using outside this range can cause the coils to frost.
7. Do not pull the appliance by the power cord. **FIG 1.**
8. Do not place objects on or cover the appliance. **FIG 2.**
9. Allow at least 50cm of air space on all sides of the appliance for good ventilation to avoid overheating. **FIG 3.**

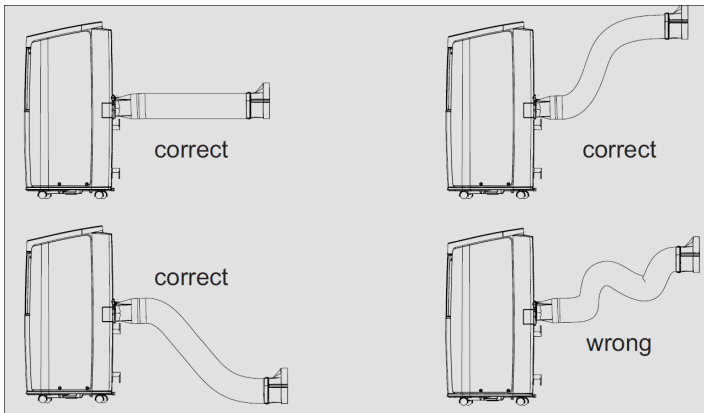




## IMPORTANT SAFEGUARDS

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1. Always use the original exhaust hose B2 supplied.
2. The length of the exhaust hose must not be longer than 1.5 meters.
3. Ensure that the hose is as straight as possible to ensure the heat is discharged efficiently. If there are kinks in the exhaust hose, the heat will not be discharged properly, causing it to overheat which can cause permanent malfunction.

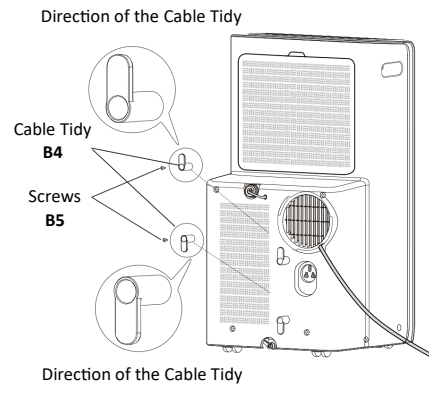


# INSTALLATION

## INSTALLATION OF CABLE TIDY

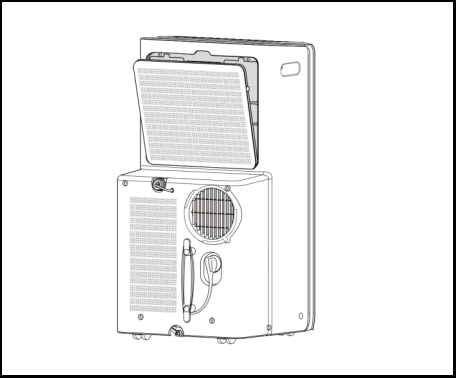
### STEP 1. ASSEMBLE THE CABLE TIDY

Fit the cable tidy **B4** at the back of the appliance as shown below.



### STEP 2. WIND THE POWER LEAD AROUND THE CABLE TIDY

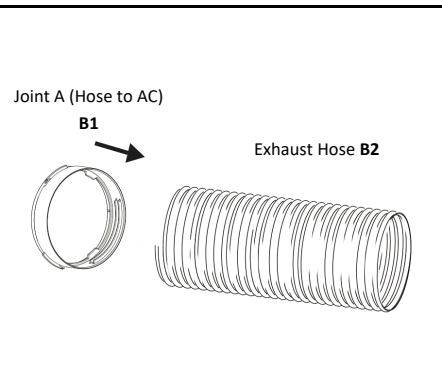
When you are not using the appliance wind the power lead around the cable tidy **B4** as shown below.



## INSTALLATION OF EXHAUST HOSE

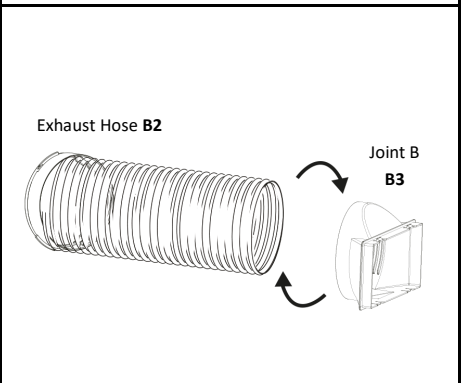
### STEP 3. CONNECT JOINT "A" TO EXHAUST HOSE

Attach Joint A (**B1**) to Exhaust Hose (**B2**)



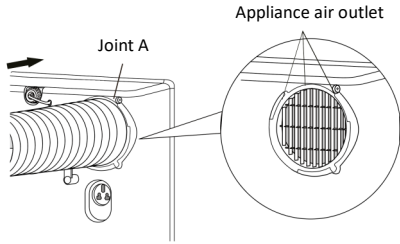
### STEP 4. CONNECT JOINT "B" TO EXHAUST HOSE

Attach Joint B (**B3**) to Exhaust Hose (**B2**)



# INSTALLATION

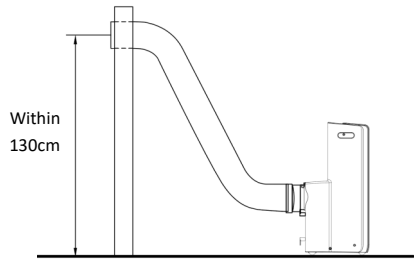
## STEP 5. CONNECT EXHAUST HOSE TO APPLIANCE



Attach Joint A (Hose to AC) **B1** to the air outlet slot (at the back of the appliance)

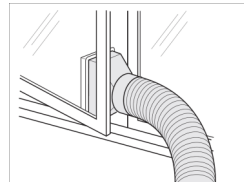
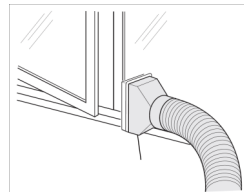
## STEP 6A. EXHAUST HOSE THROUGH A WALL

1. Drill a 150mm hole through the wall. (outer diameter 142mm)
2. Insert the exhaust hose **B2** through the hole.
3. Seal the gap between the wall and the exhaust hose **B2**



## STEP 6B. DISCHARGE EXHAUST HOSE (B2) THROUGH A WINDOW GAP

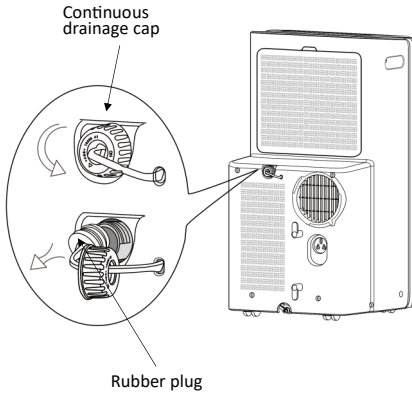
1. Pre-seal the window with a Window Seal Nylon Cloth (available for purchase)
2. Pass the exhaust hose **B2** (with or without Joint B **B3** attached) through the zipped opening.



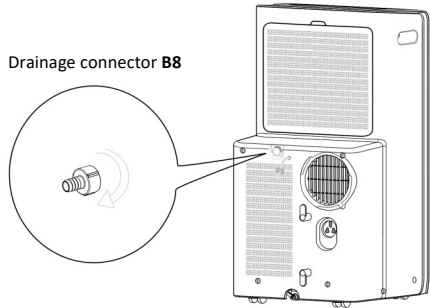
# SETUP CONTINUOUS DRAINAGE FOR DRY MODE

**FOR DRY MODE** Always setup the following drainage

**STEP 1.** Remove the continuous drainage cap and rubber plug from the drainage port.

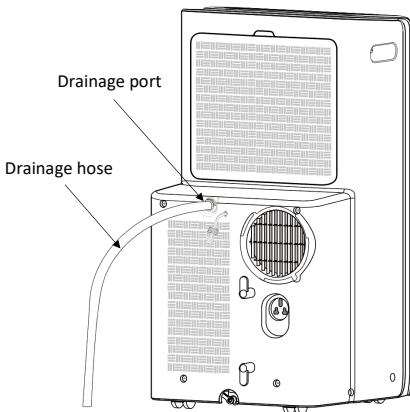


**STEP 2.** Fasten the Drainage Connector **B8** to the drainage port (turning clockwise).



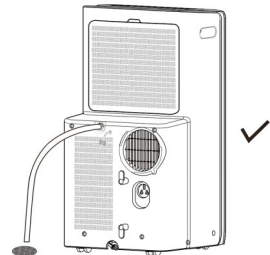
**STEP 3.** Securely attach Drainage Hose **B9** (14mm) into the drainage connector.

Make sure the Drainage Hose **B9** hangs downward.



## Tips to avoid water leakage

- ◆ Ensure the appliance is on an even level surface.
- ◆ Make sure the drainage hose **B9** is clear of any obstructions.
- ◆ The drainage hose **B9** must allow water to drain downwards from the drainage ports (without any kinks or upward angles)
- ◆ Do not submerge the end of the drainage hose in water (this will cause back pressure and the water will not drain).



## SETUP EXCESS DRAINAGE FOR DRY MODE & H8

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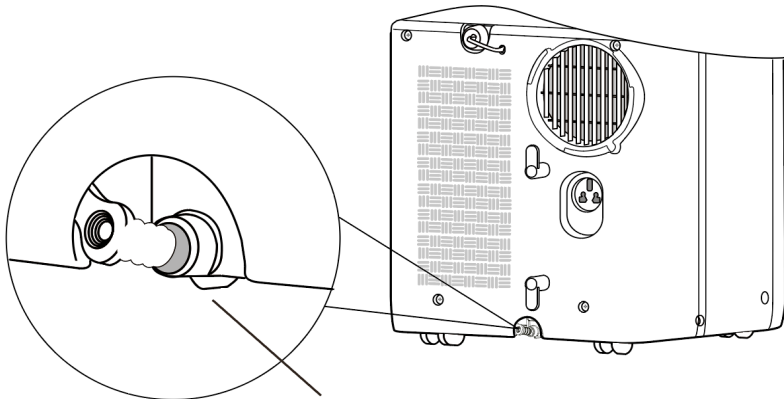
**When the control panel displays H8, this indicates the water tank is full**

**When using the dry mode, we recommend that you set up the excess condensation to continuously drain so that the appliance can continue to run without stopping when the water tank is full**

1. This air conditioning is a self-evaporating appliance. When the ambient air is very high in humidity, excess condensation can accumulate very quickly. The excess humidity may be collected into an internal tank that requires manual draining.
2. Always drain the excess condensation at the end of the season to keep the appliance clean and hygienic.

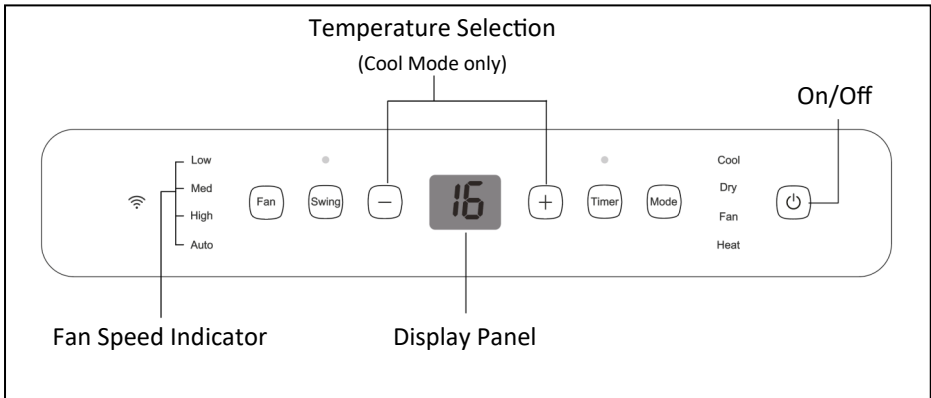
### **How to empty the tank:-**

1. Turn off the appliance and unplug from the socket
2. Remove the plug from the bottom drainage port
3. Attach a 14 mm hose
4. Drain the water
5. Reinsert the plug



**Excess Drainage Port A9**

## CONTROL PANEL



### COOL MODE

- 1) Turn appliance on
- 2) Select COOL mode
- 3) Select your desired fan speed (Low, Med, High, Auto)
- 4) Select your desired temperature (between 16C to 30C)
- 5) The display will show your desired temperature

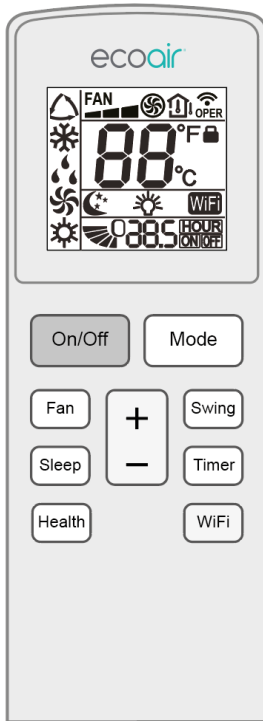
### DRY MODE

- 1) Turn appliance on
- 2) Select DRY mode
- 3) The fan will always default to low fan speed
- 4) The display does not show any information

### FAN MODE

- 1) Turn appliance on
- 2) Select FAN mode
- 3) Select your desired fan speed (Low, Med, High, Auto)
- 4) The display does not show any information

## REMOTE CONTROL



	Set fan speed	
	Send signal	
Operation mode		Auto mode
		Cool mode
		Dry mode
		Fan mode
	Sleep mode	
	Set temperature	
	WiFi function	
	Set time	
	Timer ON / Timer OFF	
	Night mode activated	
	Up & Down swing	
	Child lock	

## USEFUL INFORMATIONS

- ◆ During the operation, point the remote control towards the appliance not more than 6 meters away.
- ◆ Make sure there is no obstacles between the remote control and the appliance.
- ◆ Remote control signal may be interfered within the room where there is wireless telephone, fluorescent lamp.
- ◆ When appliance is not in use for a long time, please remove batteries.
- ◆ If there is no display on the remote control, please replace batteries.
- ◆ Health button only applies to selected models.

## TIMER

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### TIMER

Timer can be set up to 24 hours in half hour intervals

#### A) SETTING THE TIMER TO TURN ON

1. Turn the appliance on
2. Choose the mode and settings you desire for the timer
3. Press the ON /OFF button to switch off the appliance
4. Press **TIMER** on the remote control
5. Press “+” to set the timer (in half hourly intervals)
6. Press the **TIMER** again

The appliance will beep and the timer indicator light switches **ON** (on the control panel)

#### B) SETTING THE TIMER TO TURN OFF

1. Turn the appliance on
2. Choose the mode and settings you desire for the timer
3. Press **TIMER** on the remote control
4. Press “+” to set the timer (in half hourly intervals)
5. Press the **TIMER** again

The appliance will beep and the timer indicator light switches **ON** (on the control panel)

#### C) CANCELLING A TIMER

1. When a timer has been set, simply press the **TIMER** button to clear
2. The appliance will beep and the **TIMER** indicator light switches **OFF** on the control panel



## SLEEP & NIGHT MODES

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### SLEEP MODE

The Sleep mode will automatically adjust the room temperature during your sleep time. This slight change in temperature will not affect your comfort level due to the natural effects that sleeping has on the body, but it will save on energy consumption and will lower your electricity bill.

#### A) IN COOL MODE

1. The appliance will run at its current room setpoint for 1 hour
2. After 1 hour, the setpoint will increase by 1C
3. After 2 hours, the setpoint will increase by 2C and maintain this setpoint until the Sleep Mode is cancelled.

### NIGHT MODE

1. Turn off the lights on the control panel whilst the appliance is running. This is useful if using your appliance in the bedroom and you prefer to sleep without lights.
2. Turn on your appliance in your desired settings
3. Hold the + and **FAN** button **simultaneously** until the Night Mode symbol  disappears on the remote control.
4. To turn the control panel lights back on, press + and FAN button simultaneously again.

## WIFI & CHILD LOCK FUNCTION

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### WIFI

#### A Turning the WIFI on and off

1. Press the WIFI button to turn ON.
2. Press the WIFI button for 5 seconds to turn OFF

The WIFI icon will show on the remote control and the control panel when it is turned on.

#### B Installing the WIFI APP

Install the WIFI APP For up to date detailed information visit [ecoair.org/pages/support](https://ecoair.org/pages/support)

### CHILD LOCK

(ON REMOTE CONTROL ONLY)

1. Hold the + and - buttons **simultaneously** for 5 to 10 seconds until the Pad-lock symbol disappears on the remote control to activate and inactivate the Child Lock

## CLEANING AND MAINTENANCE

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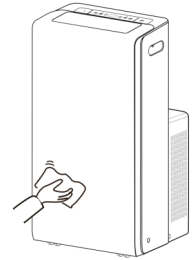
- Before cleaning the appliance, turn it off and disconnect power. Otherwise, it may cause electric shock.
- Do not wash appliance with water. Otherwise, it may cause electric shock.
- Do not use volatile liquid (such as thinner or gas) to clean the appliance. Otherwise, it may damage the appearance of appliance.

### Clean outer case:

If there's dust on the surface of outer case, use soft towel to wipe it.  
If the outer case is very dirty, use a damp cloth to clean it.

### Clean grille:

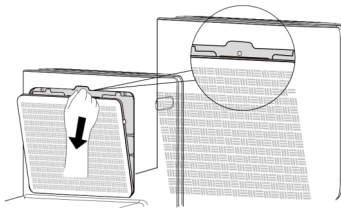
Use soft brush or cloth to clean it.



## CLEAN FILTER

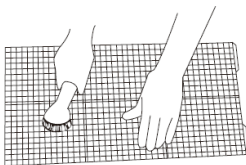
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### 1. REMOVE THE FILTER



### 2. CLEAN FILTER

Use vacuum cleaner, brush or water to clean the filter.



### 3. INSTALL FILTER

Before re-installing the filter, make sure the filter is dry.

### 3. USEFUL INFORMATION

The filter should be cleaned at least once every two weeks. For dusty environment, you should increase the cleaning frequency.

## STORING THE APPLIANCE

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Follow the simple steps below when storing the appliance away.

1. Disconnect power supply and wind the power lead around the cable tidy.
2. Clean filter and outer casing.
4. Drain the excess condensation from the appliance. (See Draining Excess Condensation pages).
5. Disassemble the Exhaust Hose
6. Clean the appliance and pack it well to prevent dust.
7. Remove the batteries from the remote control.

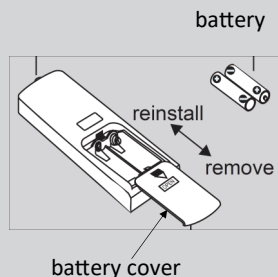
**Using the appliance after storage:-**

1. Check all inlet and outlet are clear of blockage and dust
2. Check filter is clean
3. Replace the remote control battery if necessary
4. Check the exhaust hose and accessories are not damaged and is complete.
5. Reconnect condensation drainage

## REPLACING BATTERIES

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1. Gently slide the battery cover to remove.
2. Replace two (AAA 1.5V) dry batteries and make sure the positions of plus and minus polar are correct.
3. Re-attach the cover of battery box.



## DISPLAY CODES

Display Code	Reason	Solution
H8	Internal water tank is full.	Drain the water from the excess drainage port.
F1	Ambient temperature sensor alert.	Check the appliance is within the operating temperature.
F2	Evaporator temperature sensor alert.	Check the appliance is within the operating temperature.
F4	Condenser temperature sensor is open/short-circuited	Short circuit of the main board. Temperature sensor or main board may have malfunctioned. If error persist, contact technical.
H3 E8 F0	Overload protection alert. Overload malfunction Heat exchanges, compressor, is blocked and clogged up with dust and dirt. Refrigerant may have leaked.	Check the ambient temperature is within the operating range. If its outside range, switch off until the ambient temperature is within range. Check the ambient humidity. High humidity in a hot environment can cause on overload. Switch off until the humidity level reduces. Clean the filters. Ensure there is at least 50 cm air space around the appliance for sufficient ventilation. If error persist, contact technical.
JF	Communication malfunction between indoor unit and inspection board	Poor connection between the indoor unit and the inspection board. The main board of indoor unit is damaged. The inspection board is damaged.

## TROUBLESHOOTING

Issue	Reason	Solution
Does not switch on	<ul style="list-style-type: none"> <li>• Power supply not connected properly.</li> <li>• Power plug is not inserted correctly</li> <li>• Socket or fuse is faulty</li> </ul>	<ul style="list-style-type: none"> <li>• Check power supply connection, or try on a different socket.</li> <li>• Change to fuse or plug.</li> </ul>
Poor Cooling & Heating	<ul style="list-style-type: none"> <li>• Filter clogged up</li> <li>• Set temperature might be incorrect</li> <li>• Room not properly sealed.</li> <li>• Exhaust hose too long or over-elevated</li> <li>• Exhaust hose not connected properly</li> <li>• Air inlet and outlet obstructed</li> <li>• Insufficient clearance around the appliance</li> <li>• Under capacity due to room size too large or excessive heat load in the room</li> </ul>	<ul style="list-style-type: none"> <li>• Clean or replace the air filter</li> <li>• Check set temperature.</li> <li>• Close doors &amp; windows and seal any gaps</li> <li>• Check Exhaust hose length is within 1.5m and elevation is within 130cm from floor level</li> <li>• Check air inlet and outlet are not obstructed</li> <li>• Check that there is 50cm clearance around the appliance</li> </ul>
Appliance not responding to remote control	<ul style="list-style-type: none"> <li>• Remote control is out of range, or blocked by obstacles or battery needs replacement.</li> </ul>	<ul style="list-style-type: none"> <li>• Use within 6 meter range</li> <li>• Remove obstacles</li> <li>• Replace battery</li> <li>• Inactivate child lock</li> </ul>
Fan is not working	<ul style="list-style-type: none"> <li>• Air inlet or outlet is blocked</li> <li>• Appliance is defrosting</li> <li>• Set temperature reached</li> </ul>	<ul style="list-style-type: none"> <li>• Clear blockage</li> <li>• Allow appliance to defrost.</li> <li>• Check the set temperature setting and change as desired</li> </ul>
Set Temperature cannot be adjusted	<ul style="list-style-type: none"> <li>• Temperature can only be adjusted when in cooling or heating mode only.</li> </ul>	<ul style="list-style-type: none"> <li>• Select the correct mode and refer to manual</li> <li>• Inactivate child lock</li> </ul>
Bad smell	<ul style="list-style-type: none"> <li>• Smoking, Cooking, recent building works and painting smells was absorbed.</li> </ul>	<ul style="list-style-type: none"> <li>• Turn off and air the room, clean the filter and run the appliance in fan mode for an hour to clear the inter-</li> </ul>
Appliance is noisy	<ul style="list-style-type: none"> <li>• Not on even level floor</li> <li>• Exhaust hose too long or not installed properly</li> </ul>	<ul style="list-style-type: none"> <li>• Place appliance on an even floor</li> <li>• Check Exhaust hose length is within 1.5m and elevation is within 130cm</li> </ul>
Water sound in the appliance	<ul style="list-style-type: none"> <li>• Refrigerant or water flowing sound</li> </ul>	<ul style="list-style-type: none"> <li>• Normal action</li> </ul>





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