

FAR INFRARED RAYS HEATER

USER'S MANUAL















MODEL : AH-1330

- ▶ Thank you for purchasing AiRREX Far Infrared Rays heater. Please read this user's manual carefully before you operate this heater.
- ▶ It is recommended you to put this manual on where the user can find easily.
- ▶ It is obligatory that the user read "Notice for Safety" carefully before using, and should be aware of this notice whenever using this heater.
- ▶ This heater is designed for your country only. If you use it in another country you have to check the electricity first, and if the electricity condition is same you can use it.
- ▶ Warranty card is enveloped in this manual.
- ▶ The contents(features & specifications) in this manual are subject to be changed without notice.



NOTICE FOR SAFETY

WARNING

-  It is dangerous to put your hands or any other thing into the grill or furnace, or to apply a considerable shock or force to the heater.
(It is exposed to fire, burn, or electric shock.)
-  Do not place any inflammable vinyl or plastic goods on top of heater, or cover the heater grill with clothes.
(It is exposed to fire or burn.)
-  Do not place any electrical item or heavy material on top of heater.
(It may cause malfunctioning or electrical shock, or if the heavy material is fallen user can be injured.)
-  It is dangerous to use this heater for a long time in the closed room or in case there are children or the old and the weak.
(It is recommended that the user open the windows to let fresh air in the room if the room is stuffy.)
-  Do not move or transport during operation.
(It may cause a fire or a burn)
(In case of moving this heater you must turn OFF, take out power plug before you move it.)
-  Do not touch any of the heated material such as grill, furnace, etc.
– While the heater is operating or just after extinguishing the grill and furnace are hot, so do not touch any of those parts. (Especially pay attention more to keep children away from the hot materials)
– It may cause a burn.
-  You must ventilate well while you are using the heater, and do not use it in the stuffy area where the ventilation is not possible.
(You need to ventilate with fresh air 1~2 times per hour.)
(In case of incomplete combustion due to the lack of oxygen, carbon monoxide can be increased to cause an accident from poisoning.)
-  It is recommended not to use this heater in the highly elevated areas.
(Do not use this heater in the areas where is higher than 1,500m from the sea level.)
(You need frequent ventilation in the areas of 700 ~ 1,500m from the sea level.)
(Due to the lack of oxygen, carbon monoxide can be increased to cause an accident from poisoning.)
-  In case of cleaning you must take out the plug from the outlet, wait until the heated furnace is cooled down sufficiently.
(Otherwise, it may cause an electric shock or a burn)
-  It is dangerous to turn OFF this heater by taking out the power plug.
(It may cause a malfunction or electrical shock. Please turn OFF using RUN/STOP button.)
-  Do not use this heater for another purpose other than heating.
(Do not use this heater for drying clothes because it may cause a fire.)
(Do not use this heater for keeping pet animal or plants warm.)
-  Pay attention to avoiding water into the heater during cleaning.
(It may cause a fire or electric shock.)
-  Do not operate this heater while you are sleeping.
(Due to no ventilation while you are sleeping the room easily get stuffy, and lack of oxygen.)
-  Do not use this heater on the unstable places.
(Do not use this heater on an inclined surface or a shaking support.)
(This heater may fall down, which cause a fire or malfunction.)

♣ Place this manual noticeably near the heater so that, if necessary, the user can always find it easily.

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NOTICE FOR SAFETY

This is for protecting the user's safety, and preventing any property damage, please read carefully and follow the instruction on this manual.

- It is classified as "Warning", and "Caution" by the contents.


 **WARNING** : In case of misuse, it may cause a serious wounds or death.


 **CAUTION** : In case of misuse, it may cause a slight injury or property damage.


Meaning of symbol


-  Forbidden  Obligatory


WARNING


 Use AC 220/230V power supply only, otherwise.
(It may cause a fire or an electric shock.)


 Do not use a damaged power cord or plug,
and a loose outlet.
(It may cause short, fire, a shock.)

 Do not take out the plug with holding
the cord or by the wet hands.
(It may cause a fire or an electric shock)


 Do not extend the power cord with
connecting another cable in the middle.
(It may cause a fire or an electric shock)


 In case of cleaning you must take out the
plug from the outlet, wait until the heated
furnace is cooled down sufficiently.
(Otherwise, it may cause an electric shock or a burn)


 Do not place or use any inflammable
near the heater including fuel, gas,
thinner, benzene, spray, solvents,
volatile organic compounds, etc.
(It is exposed to danger of fire or explosion.)


 Put a plug into the outlet tightly
after removing any dirt on the plug.
(It may cause emitting smoke or a fire by
electrical short.)

 Use the proper form of fuse. Otherwise
(it may cause malfunctioning or a fire.)

 Do not fold the power cord hardly, or
put a heavy material on it.
(It may be damaged on the covering material
which might cause a fire, or an electric shock.)

 Put a plug into the outlet tightly with
Earth(-) only.
(It may cause an electric shock)


 It is dangerous to turn OFF this heater
by taking out the power plug.
(It may cause a malfunction or electrical shock.
Please turn OFF using RUN/STOP button.)


 Do not place any inflammable material
near the heater including curtain,
carpet, paper, match, clothes, etc.
(It is exposed to danger of fire.)


- ♣ Place this manual noticeably near the heater so that, if necessary, the user can always find it easily.


NOTICE FOR SAFETY


CAUTION


 Do not put this heater on unstable surface of ground such as inclined or bumpy.
(The heater may not work properly.)


 Do not put an excessive physical shock to the remote controller, nor disassemble it arbitrarily.
(it arbitrarily.)


 Do not operate this heater in the place where it gets wet by the humid such as bathroom.
(It may cause an electrical short circuit or an electrical shock accident.)

 In case of storing this heater, be sure that you store it in the dry places indoor instead of hot and humid environment.
(Otherwise, it gets rusty or goes into trouble.)

 You must take out the plug from the outlet, if there is a flash of lightning or thunder or you don't use it for a long time.
(Otherwise, it is exposed to the danger of electrical shock, short circuit or a fire.)

 Do not shower water to the heater directly, nor use benzene, thinner, alcohol for cleaning.
(Otherwise, it is exposed to the danger of electrical shock, short circuit or a fire.)

 Call your local after sales service agent in case the power cord is damaged.
(Otherwise, it is exposed to the danger of electrical shock, short circuit or a fire.)

 If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or similarly qualified person in order to avoid a hazard.

TIPS BEFORE INSTALLATION....

1. Make sure the safety in the place where you wish to use this heater.

- ▶ The ground surface and surrounding should be plain and non-flammable, and solid.
- ▶ You need to have sufficient space surrounding the heater at least 15cm from the wall and the left & right side, at least 1m distance from the ceiling and the front side without any obstacle.
- ▶ You need to use exhaust duct in case of operating in small spaces.
(Recommended Duct specification :
75mmØ(Diameter) x 5meter long—aluminum duct)
(Be sure there must not be rain drops into the exhaust duct end.)
(You must ventilate frequently with fresh air by opening window or fan.)
- ▶ You must put an extinguisher beside the heater.
- ▶ There must not be direct sun light, excessive heat near the heater.
- ▶ After you fix the installation, lock the caster for avoiding unexpected movement.
- ▶ Do not use this heater near fabri curtain, carpet or plastic or vinyl curtain which may cover th heater in case of falling down by the wind or by any physical force, which may cause a fire.

▶ The heater must not be located immediately below a socket—outlet.

▶ Positioned so that the plug is accessible.

2. You must use Diesel or kerosene as fuel.

▶ If you use other fuel, it may cause an excessive soot or trouble of malfunction.

▶ In case of refueling make sure the heater is turned OFF.

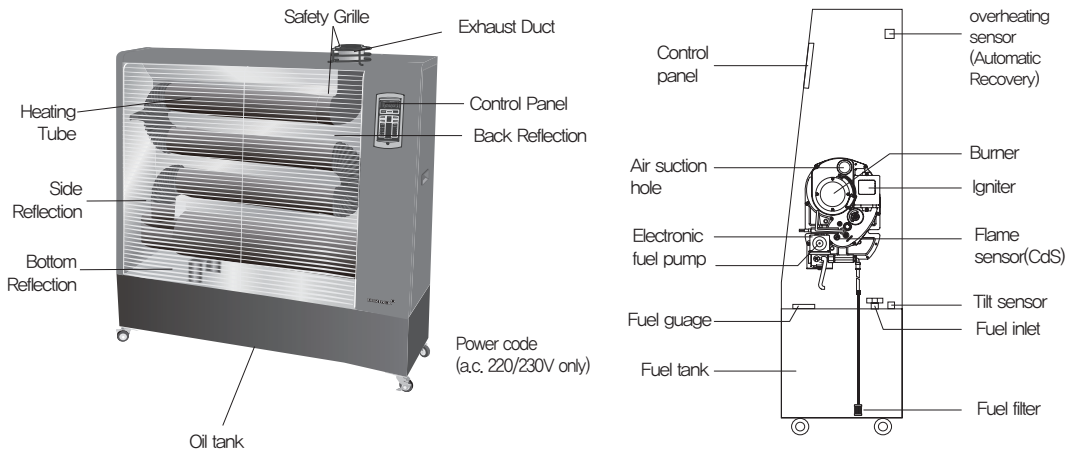
▶ To be made by the manufacturer or his service agent who should be contacted if there is an oil leakage.

▶ Regulations concerning the disposal of oil when scrapping the appliance have to be followed.

3. The proper electricity is 220/230V, 50Hz. It will be applied and adjusted as per customer's request. You must supply power as per its requirement only once it is adjusted.

STRUCTURE & DESCRIPTION

STRUCTURE & DESCRIPTION

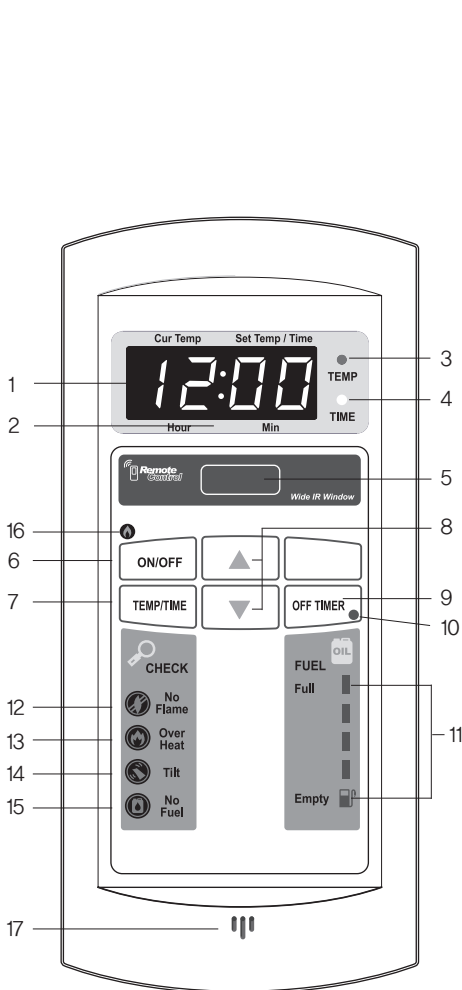


MODEL : AH-1330

♣ The structure and description shall be changed without any notice for improvement of quality and performance.

STRUCTURE & DESCRIPTION

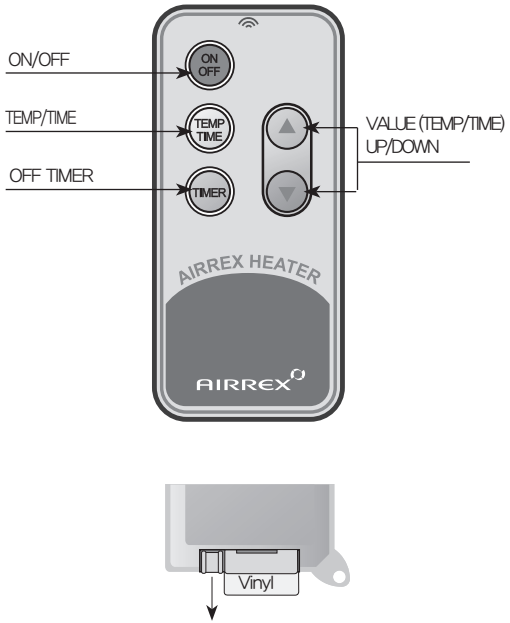
CONTROLLER



- 1. LED DISPLAY**
It displays the status of temperature, time, operation, and error, etc.
- 2. TIMER DISPLAY**
It displays remaining time at the Timer off mode.
- 3. TEMPERATURE CONTROL MODE**
It is lighten at the temperature control mode.
- 4. TIME CONTROL MODE**
It is lighten at the time control mode.
- 5. IR RECEIVER FOR REMOTE CONTROLLER**
It receives signal from remote controller.
- 6. ON / OFF**
Run and stop BUTTON
- 7. TEMP/TIME CONTROL SELECTION BUTTON**
To select temperature or time control mode.
- 8. UP/DOWN**
To set or change the temperature or time.
- 9. OFF TIMER**
You can timer off for 30 minute ~ 24 hours by 30minutes term.
To release press this switch for 1 second, then off timer mode will be released.
- 10. OFF TIMER LED**
To show whether timer off mode is operating or not.
- 11. FUEL GAUGE DISPLAY**
It displays fuel remain in 5 steps, when it become <refuel> the lamp will be flickering and buzzing 20 times.
- 12. MISFIRE**
It shows the misfire on the burner.
- 13. OVERHEATING**
It shows overheating status if the temperature goes up to 105°C. This sensor is recovered automatically.
- 14. TILT SENSOR**
It is turned on in case of inclination over 30deg, or an excessive motion is detected.
- 15. LACK OF FUEL :**
If the heater is running after buzzing of <<refuel>> without filling fuel, it becomes <<lack of fuel>>.
- 16. OPERATION LAMP**
It is lighten on operation.
- 17. BUZZER**
In case various errors are detected or fuel is almost runned out.

STRUCTURE & DESCRIPTION

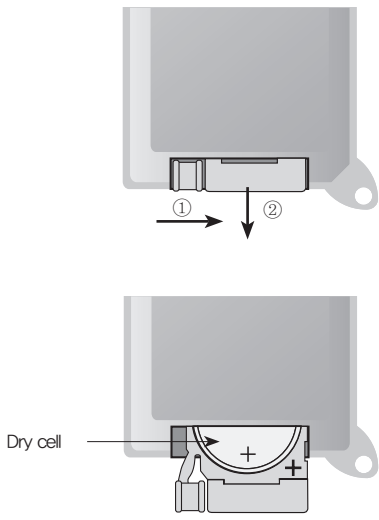
Remote control



The diagram shows the remote control with labels for its controls: ON/OFF, TEMP/TIME, OFF TIMER, and VALUE (TEMP/TIME) UP/DOWN. The remote is labeled AIRREX HEATER and AIRREX. Below it is a diagram of the battery compartment with a Vinyl battery cover.

- Point remote control at machine receiver.
- Remote control will not function where strong lights such as 3 florescent, neon or strong sunlight interferes. In this case use the remote control directly in front of the receiver on the unit.
- when the remote operates a “beep” sound will confirm that the remote signal has been sent.
- Remove batteries when you do not use the remote control for long periods, as leakage can occur.
- Ensure water and other liquids do not enter the remote control.
- ⦿ When using the remote control for the first time remove the vinyl battery contact cover.

Replacing batteries in remote control



The diagram illustrates the process of opening the battery cover and inserting a dry cell battery. Step 1 shows the cover being opened by pressing part ① and pulling part ②. Step 2 shows the battery being inserted into the compartment. Step 3 shows the cover being closed.

1. Open battery cover.
 - Press ① part way in, in the direction shown by the arrow, then pull the number ② part towards the direction shown by the arrow.
2. Exchange Battery.
 - Place as indicated +, -
3. Close cover
 - push until cover “click”.

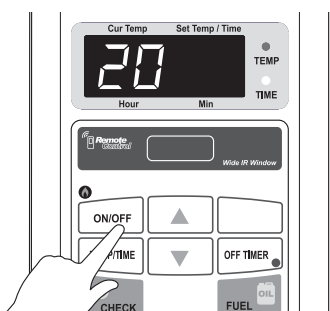
Dry cell

HOW TO USE

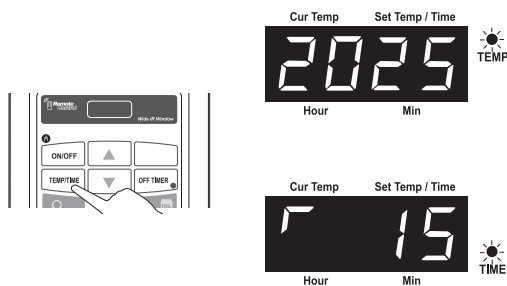
OPERATION & STOP

1. START WITH PRESSING "ON/OFF" SWITCH.

- Heater will be turned ON with "beep" sound, and automatically operated.
- If you wish to stop the unit press "ON/OFF" switch one more time.



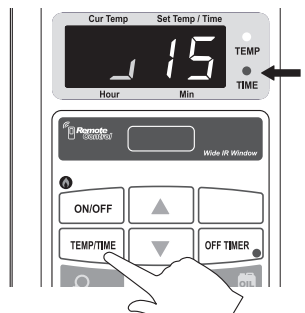
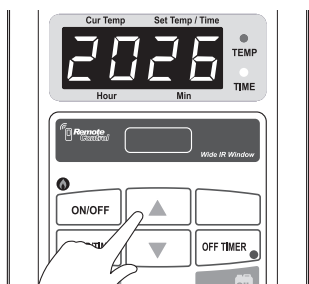
2. SELECT THE DESIRED OPERATION TYPE USING "TEMP/TIME" SWITCH.



3. Set the time or temperature by pressing

▲▼ switch.

- You can set the desired temperature between "0~40°C".
- Set the desired time limit between "15min ~ UP → ON



♣ Tip

- In order to be operated, the setting temperature should be higher than current temperature.
- After power On, the default mode is temperature control mode.
- During the operation if you push On/Off button, the heater is stop and the timer off fuction is cancelled.

- The model equipped "pre-heater" is operating its heater for 2min, after burner ignition. By this device, the oil warms up before being supplied to the burner, which improve remarkably the ignition and inflammability.

The model equipped "solenoid valve (by-pass device) makes the remaining oil returned to the oil tank.

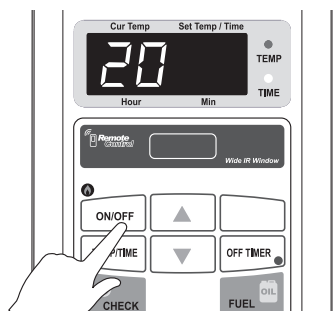
For 10sec. from the time of burner off, the solenoid valve is operation, which makes remaining oil returned to the oil tank, and by this device, the smell caused by unburned gas are remarkably shrunk.

HOW TO USE

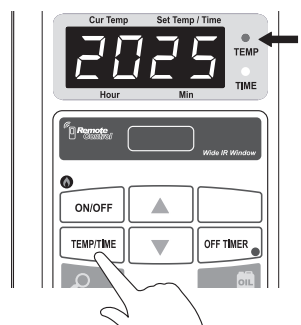
TEMPERATURE CONTROL

This mode enables the user set the desired temperature, and once it is fixed this heater works automatically with running and stop repeatedly to meet this temperature. (If power ON and Heater starts operation, the temperature control mode will be operated as default.)

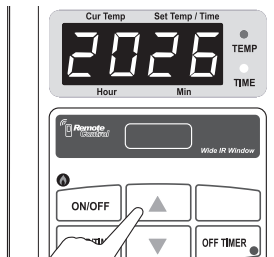
1. Push On/Off button.



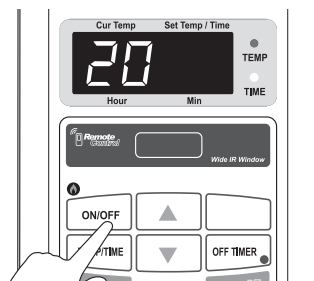
2. By pushing Temp/Time button, please select Temperature control mode.
· At that time, Temperature control lamp is lighted.



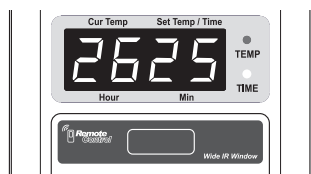
3. By pushing '▲▼' button, please select desire temperature.
· The setting range : 0~40°C
· The default value : 25°C
· During the time you push ▼ or ▲, the setting temperature is increased/decreased very fast.
· The range of current temp display : -9~50°C



4. During operation, the current temp. and setting temp. both are displayed, and if you push On/Off button and make the operation stop, only current temp. is shown.



5. When the setting temp. is higher 2°C than current temp., it starts operation, and the setting temp. is less than 1°C than current temp., the operation is stop.
· Current temp. < Setting temp. ... Operation (+2°C)
· Current temp. > Setting temp. ... Operation stop (-1°C)



Operation Stop

♣ Tip

- The current temp is less than -9°C(16°F), the display of the temp. is 'LO', and more than 50°C(99°F) it displays as 'HI' (50°C is not same value as 99°F, actually 37°C is same value as 99°F)
- The setting temperature is increased/decreased 1°C by pushing of (▲/▼) button, if you push the button more than for 2sec. the value is increased/decreased 1°C in 0.2 sec.
- If you push ▲ and ▼ button for 5sec. simultaneously, the unit is converted from °C to °F or from °F to °C (The default unit is °C)

HOW TO USE

SELF-DIAGNOSIS FOR THE SAFETY DEVICE

By self-diagnosis function, in case of error automatically all safety device which is equipped in the heater is detected, and the detect result is displayed immediately to the display window. (If problem happen, display and flickering Err / Er1 / Er2 / Er3 and buzzer sound.)



1. AUTO CHECK FOR NOT BURNING – DISPLAY “ Err ”

- If not burning, press reset button. Still not burning, then Not burning lamp is ON and post fuggy is worked, all other operation is stop.



2. SENSOR FOR OVER HEATING

- During the heater operation, if the inner temp is reached to 105°C, the over-heating sensor is worked, and over heating indication lamp is ON and all other function is stop. (Displaying “Err”)
(If time passing and the inner temp. is cool down below the temp. which is detected by over heating sensor, automatically heater start to operation.)



3. AUTO CHECK FOR EXTERNAL IMPACT OR PHYSICAL SHOCK AND INCLINATION

- Display “Err” If this heater is inclined more than 30°, or strong external impact is applied to the heater, oscillation light is ON, post fuggy is worked, and all other operation is stop



4. LACK OF FUEL LAMP – DISPLAY “OIL”

- If continuing operation even after display of the oil shortage and amount of oil is reached to the below limitation level, oil amount lamp is OFF and post fuggy is worked and all other operation is stop.



5. SAFETY OPERATION – DISPLAY “Er1”

- If detected fire before burner operation, post fuggy is worked and all other operation is stop.



6. CHECK FOR TEMP. SENSOR – “Er2” DISPLAY

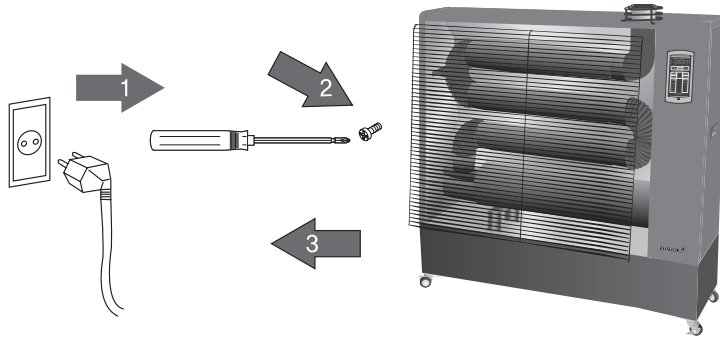
- If the temp. sensor which detects current temp. has problem, display error and operation is only by Time control operation. Display “Er2” and press On/Off button, it go to Time control operation.

♣ Notice

- Post fuggy : For the safety purpose, ventilate out the remain gas which is existing in burner side.
- When error message is displayed, please remove the problem factors and press the On/Off button.
- Then, display error is disappear and lamp is off.
- buzzer sound is stop when press the ON/OFF button.

CLEANING & MAINTENANCE

CLEANING & MAINTENANCE



To pull out the front grille, please raise a little and pull it out.(Assembly is opposition way.)

In case that you keep the heater for a long time and you want to maintain it in clean status, please power off and cool down the heater, and pull out the plug as the above picture and clean according to the following instruction.

- Please pull out the front grille by raising it and pull it out to the front.
- Please clean the heating reflection which is in the back side of heater and burner area.
(The burning pipe is coated by ceramic material so careful clean not to damage to the coating.)

※ **DO NOT DISASSEMBLE THE BURNING PARTS.**

- Please wipe out the front controller area with soft wool.
- After finishing of cleaning, please assemble the front grille to the heater

STORING

To store the heater, cool down the heater and plug out and wrap with plastic cover and keep in the well air-flowing place.

- You'd better consume all oil not to remain in.



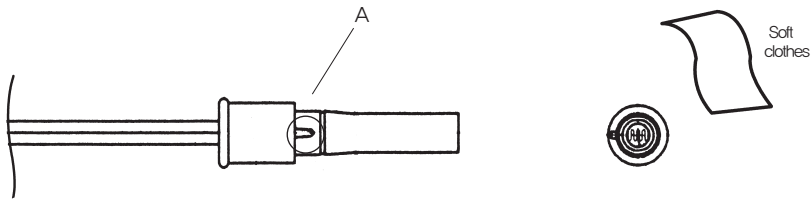
CAUTION

DAILY CHECK POINTS & ADJUSTMENT

DAILY CHECK POINTS

■ CLEAN OF FLAME SENSOR (CdS)

- If the detection part of CdS is contaminated by soot or other dirt, the performance can be lowered and it may cause a problem.
- Please take out CdS carefully which is placed in lower part of burner.
- Please clean the detection part of CdS by soft clothes.
- Please be sure CdS is fixed correctly.? (Mark "A" should be inserted fully.)



■ CHANGE OF COMPONENTS

- In case you need to change components, please contact us.
- In case repair or exchange of components, please contact the service center operated by our distributor or head office
- Do not try to repair this heater by non-licensed service personnel, because it may cause a worse condition, so please contact local service center, or distributor that is designated by our company.

DAILY CHECK POINTS & ADJUSTMENT

ADJUSTMENT

■ IN CASE OF SUDDEN STOP DURING OPERATION

- Please check if now is operating in the time control operation.? If so, the heater can be rest for 5min.
- Please check if now the setting temp. is less than the current temp.
- Please check if the heater is stop by pressing On/Off switch by remote controller or front controller.
- Please check if the heater is stop by sleep timer function.
- Please check if the heater is stop by auto-self-checking.

■ AIR FLOW-OUT

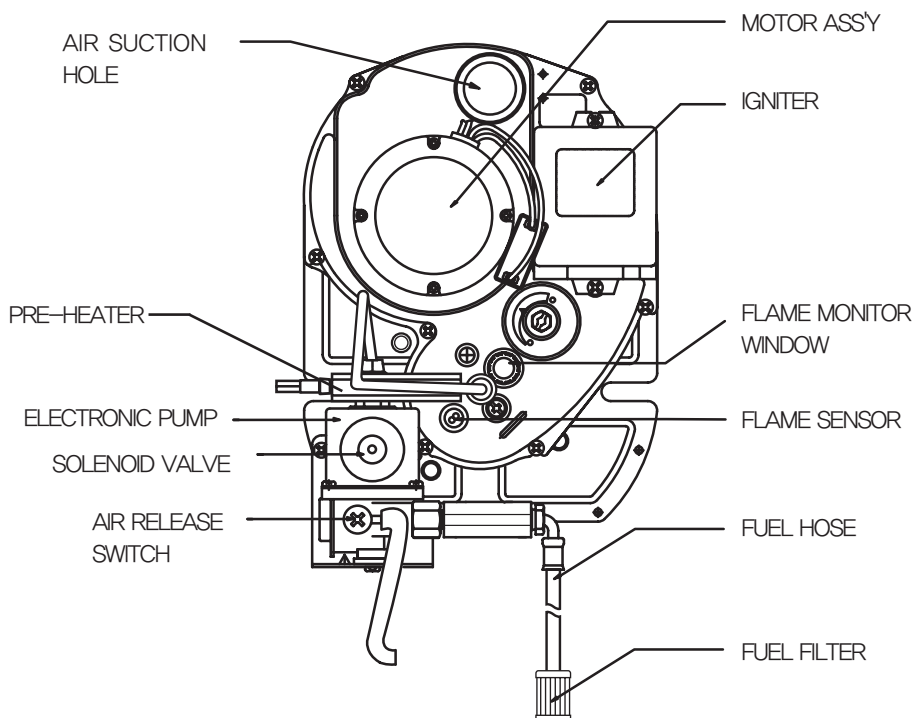
In case that Electric pump so noisy and burner no ignition, main cause of the problem is air flow into the electric pump and not distribute oil. If oil is all consumed without remaining in the tank, air can be flow into inside electric pump.

- The method to flow-out air

- ① Operate the heater
- ② When the electric pump operated, turn on the air outflow screw to counter-clockwise. And you wait till air flow out and oil start to come out.
- ③ When you see oil start to come out, turn off the air outflow screw to clockwise
(In case much air inside, please repeat same way 2~3times.)

■ DETAIL OF BURNER STRUCTURE

- When you contact service person with a problem, please refer the below detail structure of the burner.



TROUBLE SHOOTING

Please check below points before you think trouble has been occurred.

⚠ Is Power ON?



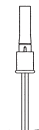
➔ 1

⚠ Is Fuel enough?



➔ 2

⚠ Is Flame sensor clean?



PROBLEM	CAUSE	SOLUTION
No Power supply ?		Check the power supply is proper. (ex. 220/230V a.c. 50Hz)
Check power plug is disconnected		Power plug into the outlet
Is the Fuse short ?		Replace fuse with new one (250V a.c. 3.15A)
'Lack of Fuel" light ON ?	Lack of Fuel	Fill it up with Kerosene or Diesel ♣ Do not mix or use together these two different fuel.
Is set temp. lower than current temp.?		Set the temp as higher than current temp.
Misfire lamp ON?	Air in the electric pump.	Remove the air in the electric pump. (Refer to page 19)
Overheating Lamp ON?	Under operation of overheating prevention	Ventilate with fresh air in the room, and turn OFF the heater for a while (Refer to page 16)
Inclination display lamp ON?	Ground surface is inclined or not plain	Replace the heater in plain ground (Refer to page 16)
Can you see "Er2" on the display?	Error on Temperature sensor	Select Timer control operation from temperature control mode. (Refer to page 16)
Is fuel filter stuffy?	Filter is contaminated	Clean the filter with compressed air, or replace with new one. (Refer to page 18)
Is air suction valve adjusted excessively or too small ?		Call after sales service agent.
Voltage is low?	In case of low voltage	Burner will not work properly, so use a booster to elevate voltage. (A/S)

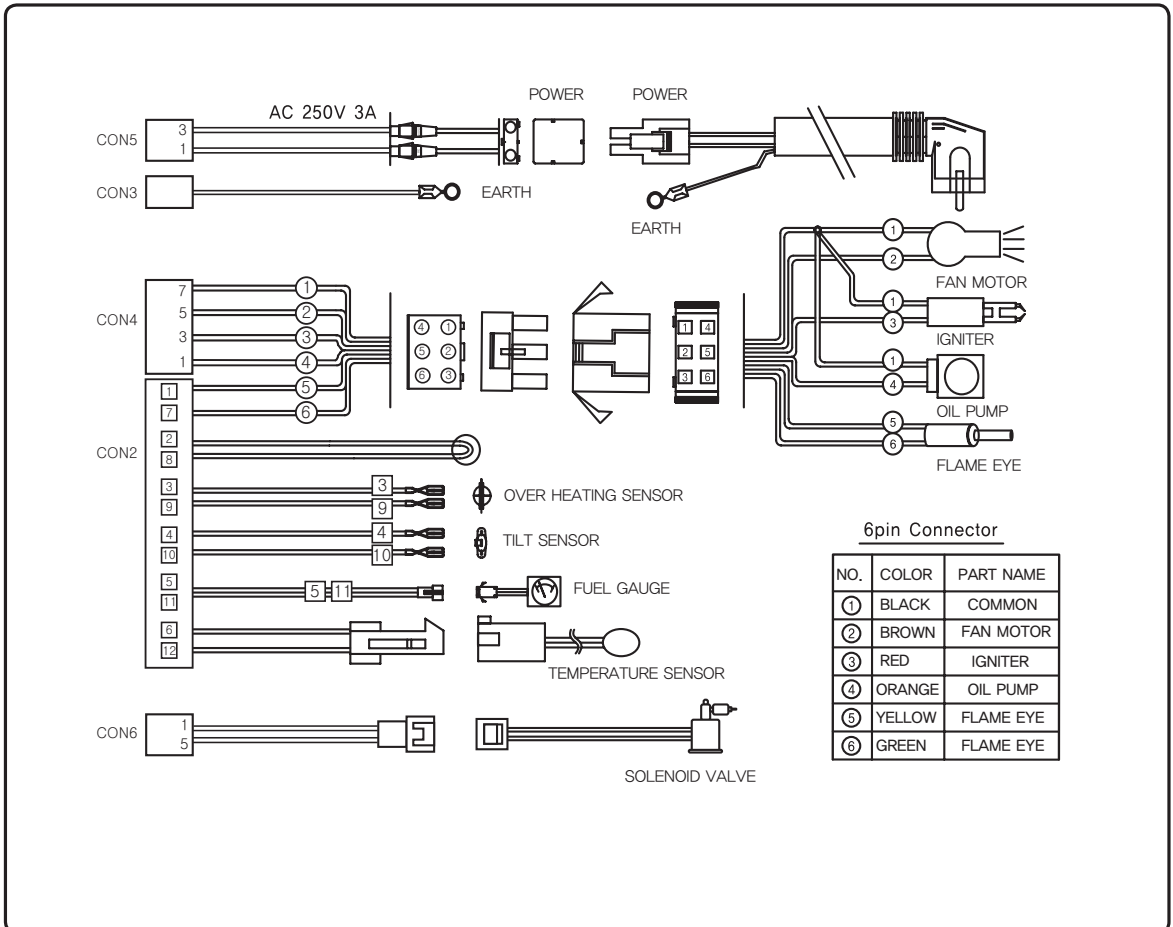
TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
"Lack of Fuel" light ON?	Running out of fuel	Fill up the fuel.
Check if the fuel is Diesel or kerosene	It may cause less performance & trouble	Drain the existing fuel, and fill with Diesel or kerosene only.
Water or any other impurities on fuel?	It may cause less performance & trouble	Replace the fuel with good quality one.
Is flame sensor located well?	In different position, it causes an error.	Place the sensor in original location.
Is flame sensor dirty?	Error because of soot or dirt	Call after sales service agent.
Noise in fuel pump?	Excessive air in the pump and nozzle.	Remove the air in the electric pump.
Check if the fuel is Diesel or kerosene	It may cause less performance & trouble	Drain the existing fuel, and fill with Diesel or kerosene only.
Water or any other impurities on fuel?	It may cause less performance & trouble	Replace the fuel with good quality one.
Is air suction valve adjusted excessively or too small?	Error on Temperature sensor	Call after sales service agent.
Is tube clogged?	Smoke may flow backward	Clean the tube by removing soot inside of tube, or replace with new one.
Is Fuel filter stuffy?	Dirty filter with impurities and contamination.	Clean or replace with new one (Refer to page 18)
Noise in fuel pump?	Excessive air in the pump and nozzle.	Remove the air in the electric pump. (Refer to page 19)

SPECIFICATION & ELECTRICAL WIRING DIAGRAM

ITEM	MODEL	AH-1330
CALORIC VALUE		14 ~ 16.3kW/h (12,000~14,000kcal/h)
FUEL CONSUMPTION		1.38~1.6 (ℓ/h)
BURNER TYPE		Electronic pump (pressurized spray type)
POWER SUPPLY		a.c. 220/230V , 50Hz, Single Phase
ELECTRIC POWER CONSUMPTION		80W
FUEL TANK SIZE		45 (ℓ)
PRODUCT SIZE (W x D x H)		950×305×1000 (mm)
WEIGHT		41 (kg)
SAFETY DEVICE		Overheating sensor, Auto misfire detection, Excessive shock / Inclination sensor, Fuel shortage
CONTROL METHOD		Digital MICOM controller
FUSE		Fast short type ampere fuse, [a.c. 250V , 3A]

- ♣ The structure and description shall be changed without any notice for improvement of quality and performance.
- ♣ a.c. 220/230V only (In case of using with a.c. 110V, this heater will not work properly, and we are obliged to charge any repair cost to the customer)



WARRANTY CARD

This AiRREX far infrared rays heater gives you more reliable performance and comfortableness, and durability the more you use it, because it is produced under the strict quality assurance system including various inspection during production and after production and reliance test, etc. In case you encounter any problem, please contact the local service agent, or a distributor. If the problem is occurred due to the production failure, or natural malfunctioning, we will offer you free repair service under our warranty clause.

GENERAL

1. Warranty period is 12 months after purchasing date.
 – If the problem is occurred by the mistake or misuse of the customer, we charge a repair cost even if it is within warranty period.
2. This warranty card is valid within your country.
3. Please keep this warranty card for better service in case of trouble.
4. Please contact your local distributor or after sales service agent.
5. Please fill out this form after purchase.

DESCRIPTION	AiRREX Far Infrared Rays Heater		
MODEL	AH-1330		
DATE OF PURCHASE		PRODUCT	
WARRANTY PERIOD	() Months	PRICE	US\$
DISTRIBUTOR	NAME OF COMPANY		
	TELEPHONE NO.		
CUSTOMER	NAME		
	ADDRESS		
	TELEPHONE NO.		