

# FAR INFRARED RAYS HEATER

# USER'S MANUAL

MODEL: AH-200/300/800

- ► 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.
- ▶ This manual also includes a guide how to activate the 3-year warranty.
- ► The contents(features & specifications) in this manual are subject to be changed without notice.





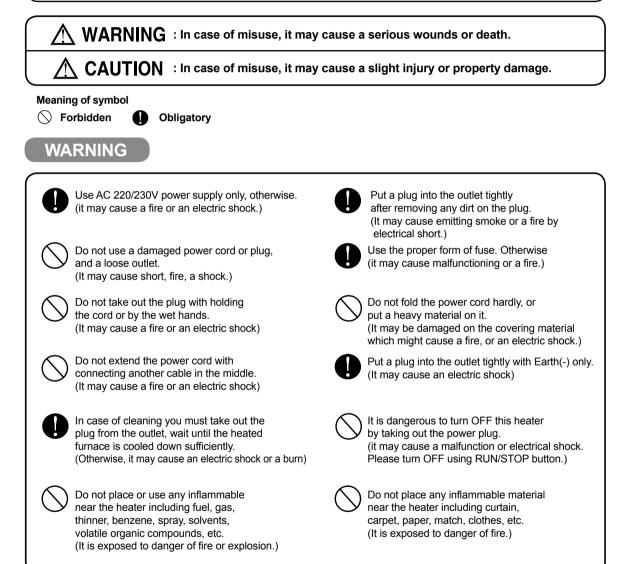
# TABLE OF CONTENTS

■ NOTICE FOR SAF			
■ TIPS BEFORE INS			
STRUCTURE & D	ESCRIPTION	••••••	····· 6~7
· STRUTURE & DESCRIPTI	ON FOR MODEL	***************	6
· CONTROLLER ·······	•••••	•••••	····· 6
$\cdot \ REMOTE \ CONTROLLER$	•••••	• • • • • • • • • • • • • • • • • • • •	······7
· REPLACING BATTERIES	IN REMOTE CONT	ROLLER	7
■ HOW TO USE ······			8~11
· OPERATION & STOP	•••••	•••••	8
· TEMPERATURE CONTRO	DL	•••••	9
· TIME CONTROL ······	•••••	• • • • • • • • • • • • • • • • • • • •	10
· SELF DIAGNOSIS FOR TH	HE SAFETY DEVIC	<u> </u>	11
CLEANING & MA	INTENANCE		······ 12
DAILY CHECK PO	DINTS & ADJU	STMENT	13~14
TROUBLE SHOOT	ΓING	•••••	15~16
SPECIFICATION 8	& ELECTRICA	L WIRING DI	AGRAM ··· 17
WARRANTY CAR	D		18
VENTILATION	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	20

### 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.



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

# 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 heat (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 he (In case of incomplete combustion due to the lack oxygen, carbon monoxide can be increased to ca an accident from poisoning.)	of (You need frequent ventilation in the areas of
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 but	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.

### 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.)



You must take out the plug from the outlet, if there is a flash of lightening 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 put an excessive physical shock to the remote controller, nor disassemble it arbitrarily. (it arbitrarily.)



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.)



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.)



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.)



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.)



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 incase 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.)

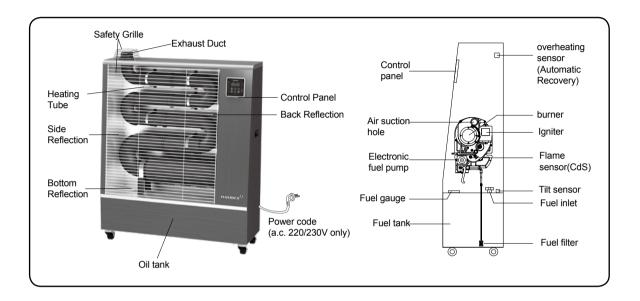
(You must ventilate frequently with fresh air by opening window or fan.)

- ▶ 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.

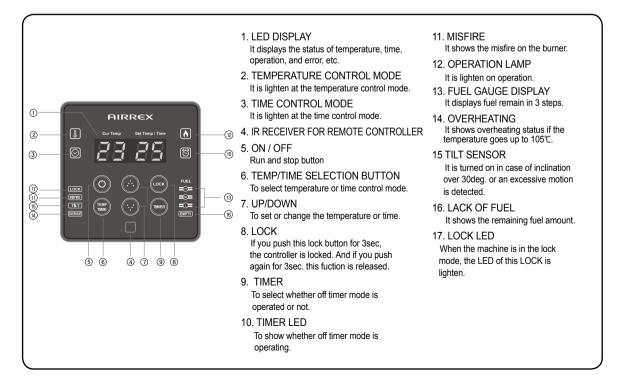
- The heater must not be located immediately below a socket-outlet.
- ▶ Positioned so that the plug is accessible.
- 2. You must use Diesel or kerosene as fuel.
  - ▶ If you use other fuel, it may cause an excessive soot or trouble of malfunction.
  - Incase of refueling make sure the heater is turned 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.
- 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 FOR MODEL

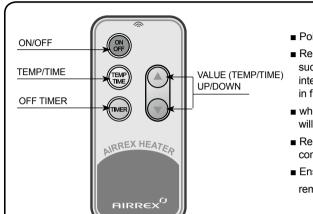


### CONTROLLER



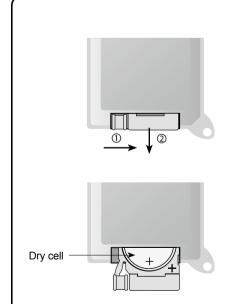
### STRUCTURE & DESCRIPTION

### REMOTE CONTROLLER



- 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.

### REPLACING BATTERIES IN REMOTE CONTROLLER



- 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".

### **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 off timer fuction is cancelled.
- The model equipped "pre-heater" is operating its heater for 1min. 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.

### **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 pusing Temp/Time button, please select Temperature control mode.
  - · At that time, Temperature control lamp is lighten.



- 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℃



 During operaton, 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. ... Opeartion (+2°C)
  - · Current temp. > Setting temp. ... Opearation stop (-1°C)



#### **♣** Tip

- ·The current temp is less than -9°C(16°F), the dispaly of the temp. is 'LO', and more than 50°C(99°F) it dispalys 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 defaulte unit is °C)

### TIME CONTROL

1. Push On/Off button.



By pushing Temp/Time button, please select Time control mode. At that time, Time control lamp is lighten.



3. By pushing '▼ ▲' button, please select desire repetition time. When you increase or decrease the repeatition time by pushing '▼ ▲' button, the time is blinking, and if you don't push button for 3sec., this displayed blinking time is set as 'Repetition time'. At that time, the former Repetition time is automatically erased.



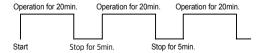
4. At the opertion mode, the opartion simbol and repetition time both are displaed, and when you make Off by pushing On/Off button, STOP simbol (--) only displayed, When the heater is in 'Interval Pause Time', STOP symbol (--) and repetition time both displayed.





Repetition time 20 means, every 20min. Operation and 5min. Pause

5. The repitition time can be set from 10min. to 55min. The opeartion is as much as setting time, and 5min. pause time, which is repeated. When you increase one more from max. time 55min. It goes to 'Constant opeartion'. This means, without pause time, the opration is constantly made.



Repetition time cycle can be set from 10min. to 55min.



In case of setting the repetition time as 20min.



Constant operationer status

### **SELF-DIAGNOSIS FOR THE SAFETY DEVICE**













#### 1. AUTO CHECK FOR NOT BURNING - DISPLAY "Err"

· If not burning, it try to re-start, and if still not burning, then Not burning lamp is ON and post fuggy is worked, all other operation is stop.

#### 2. SAFETY CHECKING 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 the 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, tilt 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 shoarge lamp is ON 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

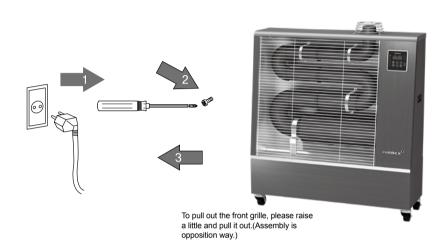
 If the temp. sensor which detects current temp. has problem, display error and operation is only by Time control operation. Display "Er2" and press On/Off button, it go to Time control operation.

#### ♣ 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**



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.

- $\cdot$  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 damange to the coating.)

#### **\* DO NOT DISASSEMBLE THE BURNING PARTS.**

- · Please wipe out the front controller area with soft wool.
- $\cdot$  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.



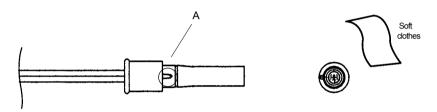
To keep heater in outdoor or humidity place is major cause of problem.

# DAILY CHECK POINTS & ADJUSTMENT

### **CLEANING OF FLAME SENSOR**

#### ■ 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.

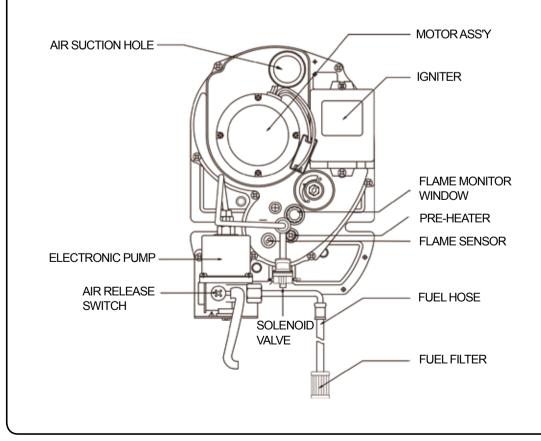
#### ■ AIR FLOW-OUT

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
- 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.



PROBLEM		CAUSE	SOLUTION	
	No Power supply?		Check the power supply is proper. (ex. 220/230V a.c. 50Hz)	
NO OPERATION	Check power plug is disconnected		Power plug into the outlet	
	Is the Fuse short?		Replace fuse with new one (250V a.c. 3A)	
	"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.	
NO FAN MOTOR	Misfire lamp ON?	Air in the electric pump.	Remove the air in the electric pump. (Refer to page 19)	
FAN MOTOR OPERATED.	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" Error on on the display?	Temperature sensor	Select Timer control operation from temperature control mode. (Refer to page 16)	
NO IGNITION ON BURNER	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.	
IMMEDIATE STOP JUST AFTER IGNITION	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.	
EXCESSIVE	Water or any other impurities on fuel?	It may cause less performance & trouble	Replace the fuel with good quality one.	
SOOT IS GENERATED.	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.	
NOISE IN	Is Fuel filter stuffy?	Dirty filter with impurities and contamination.	Clean or replace with new one	
BURNER	Noise in fuel pump?	Excessive air in the pump and nozzle.	Remove the air in the electric pump.	

#### If the heater stops when using

Ensure the oxygen supply for the heater, open the doors or inlet and outlet valves in the space where the heater is used. If the heater starts and runs better now, ventilation must be added to the room. If the heater does not start, call for service.

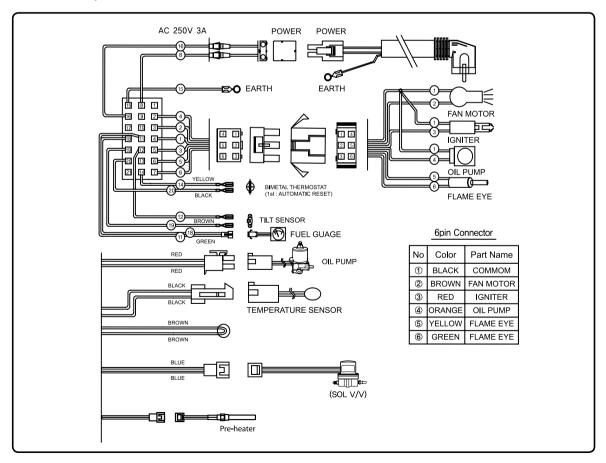
#### The burner smokes and soots:

Check the oxygen supply in the room where the device is used. The heater will not get enough oxygen.

# SPECIFICATION & ELECTRICAL WIRING DIAGRAM

ITEM MODEL	AH-200	AH-300	AH-800	
CALORIC VALUE	13 kW/h (11,180kcal/h)	15 kW/h (12,900kcal/h)	22 kW/h (18,920kcal/h)	
FUEL CONSUMPTION	0.95~1.14 (ℓ/h)	1.14~1.33 (ℓ/h)	1.71~1.9 (ℓ/h)	
BURNER TYPE		Electronic pump (pressurized spray type) a.c. 220/230V , 50Hz, Single Phase		
POWER SUPPLY				
ELECTRIC POWER CONSUMPTION	80W	80W	80W	
FUEL TANK SIZE	25 (ℓ)	45 ( <b>ℓ</b> )	70 (ℓ)	
PRODUCT SIZE (W x D x H)	780×305×950 (mm)	950×305×1,000 (mm)	1,300×350×1,370 (mm)	
WEIGHT	31 (kg)	41 (kg)	65 (kg)	
SAFETY DEVICE	Dual step overheating prevention	Dual step overheating prevention, auto misfire detection, Excessive shock / Inclination sensor, Fuel shortage		
CONTROL METHOD		Digital MICOM controller		
FUSE	Fast short type ampere fuse, [a.c. 250V , 3A]			

- ♣ We recommend not use the heaters at less than -20℃, It may cause a misfire from the ignition step.
- ♣ The structure and description shall be changed without any notice for improvement of quality and performance.
- . a.c. 220/230V only.



### 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 assuarance 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.
- 2. 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.
- 3. The prerequisite for warranty service or repair is the original purchase receipt from which the purchase date can be verified.
- 4. The condition for warranty service or repair is that the device has been purchased from an authorized reseller authorized by the importer.

#### **3 YEAR ADDITIONAL WARRANTY**

Importer of Airrex infrared heaters Rex Nordic Oy grants 3 year warranty for imported diesel infrared heaters. One of the prerequisites for a 3-year warranty is that you activate the warranty within 4 weeks of the date of purchase. The guarantee must be activated electronically at: www.rexnordic.com/guarantee

#### **3 YEAR WARRANTY CONDITIONS**

- The warranty covers all parts of the general warranty.
- The warranty covers only products imported by Rex Nordic Oy and sold by its official distributors.
- Only Rex Nordic Oy authorized dealers will be able to market and advertise the 3 year warranty.
- Print a warranty certificate you receive from the extended warranty period and keep it enclosed with the purchase receipt.
- If the product is shipped with warranty service within the extended warranty period,
   it must be accompanied by a receipt and an extended warranty period warranty certificate.
   If the fault or malfunction is due to improper use of the device or damage to the device caused by an external factor, all repair costs will be charged from the customer.
- The condition for warranty service or repair is the purchase receipt and the extended warranty period certificate.
- All costs incurred in carrying the device for warranty service or repair are the responsibility of the customer. Store the original product packaging for transport.
- The reseller / importer is responsible for the costs of returning the warranty / repair service (if the device is approved for warranty service / repair).

#### **3 YEAR WARRANTY VALIDITY**

The warranty period is 3 years from the date of purchase in the receipt. The 3-year warranty is valid only with one original payment document. Be sure to keep the receipt. It is a certificate of guarantee validity.

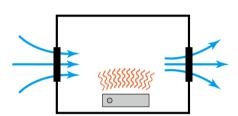
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#### Ventilation

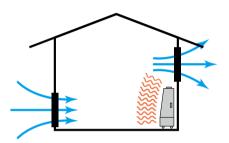
#### MAKE SURE YOU HAVE ENOUGH VENTILATION

It is best to place the heater in a central and open position, where it can openly heat. The heater needs oxygen to work and it must be ensured that the room is enough ventilated. The gravity-compliant ventilation according to the building regulations is sufficient as long as the inlet or exhaust air valves are not blocked. It is also not advisable to place the machine close to the compensation air valve so that the thermostat control is not interfered. The recommended diameter of the ventilation holes is 75-100 mm.





#### SIDE VIEW





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