



# **FANMASTER**

**COOLING HEATING VENTILATION EXTRACTION**

## **INSTRUCTION MANUAL**



### **INDUSTRIAL DIESEL RADIANT HEATER**

**MODEL: HDR20**

**FOR INDUSTRIAL USE ONLY  
ADEQUATE VENTILATION REQUIRED**

**TO PREVENT SERIOUS INJURY, READ & UNDERSTAND ALL WARNINGS & INSTRUCTIONS BEFORE USE. PLEASE KEEP THIS DOCUMENT FOR YOUR RECORDS**

# FOR YOUR INFORMATION

Thank you for purchasing a Fanmaster diesel heater. Please read this instruction manual carefully before using this heater.

## **Disclaimer:**

Fanmaster reserves the right to make alterations to specifications, quantities, dimensions, for production or other reasons, subsequent to publication.

While we believe the information is accurate and complete, we make no warranty or representation for any particular purposes. The information is offered in good faith and with the understanding that any use of the units or accessories in breach of the directions and warnings in this document is at the sole discretion and risk of the user.

## **Disposal Guidelines:**

Do not dispose of this product with general household waste. This product must be disposed according to the laws governing Waste Electrical and Electronic Equipment. If required, contact your local authorities for information regarding the available disposal facilities.



# 1. GENERAL SAFETY RULES & WARNINGS



- PLEASE READ INSTRUCTIONS CAREFULLY.
- PLACE INSTRUCTION MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE. DO NOT ALLOW ANYONE WHO HAS NOT READ THESE INSTRUCTIONS TO ASSEMBLE, ADJUST OR OPERATE THIS HEATER.
- IF THE INFORMATION IN THIS MANUAL IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT IN CAUSING PROPERTY DAMAGE, SERIOUS INJURY OR LOSS OF LIFE.
- FAILURE TO COMPLY WITH THE PRECAUTIONS AND INSTRUCTIONS PROVIDED WITH THIS HEATER, CAN RESULT IN DEATH, SERIOUS INJURY AND PROPERTY LOSS OR DAMAGE FROM HAZARDS OF FIRE, EXPLOSION, BURN, ASPHYXIATION, CARBON MONOXIDE POISONING, AND/OR ELECTRICAL SHOCK.
- ONLY PERSONS WHO CAN UNDERSTAND AND FOLLOW THE INSTRUCTIONS SHOULD USE OR SERVICE THIS HEATER. IF YOU NEED ASSISTANCE OR REQUIRE HEATER INFORMATION SUCH AS AN INSTRUCTION MANUAL, LABELS, ETC. CONTACT FANMASTER.
- ADEQUATE VENTILATION IS REQUIRED. DO NOT USE IN ENCLOSED ENVIRONMENTS.
- UNVENTED PORTABLE HEATERS USE AIR (OXYGEN) FROM THE EXISTING AREA. ADEQUATE COMBUSTION & VENTILATION AIR MUST BE PROVIDED.
- DO NOT STORE OR USE GASOLINE, PETROL OR ANY OTHER FLAMMABLE OR COMBUSTIBLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS HEATER.
- FIRE, BURN, INHALATION, AND EXPLOSION HAZARD. KEEP SOLID COMBUSTIBLES, SUCH AS BUILDING MATERIALS, PAPER OR CARDBOARD, A SAFE DISTANCE AWAY FROM THE HEATER AS RECOMMENDED BY THE INSTRUCTIONS. NEVER USE THE HEATER IN SPACES WHICH DO OR MAY CONTAIN VOLATILE OR AIRBORNE COMBUSTIBLES, OR PRODUCTS SUCH AS GASOLINE, SOLVENTS, PAINT THINNER, DUST PARTICLES OR UNKNOWN CHEMICALS
- DIRECT-FIRED HEATERS MAY CAUSE CARBON MONOXIDE (CO) POISONING WHEN INCORRECTLY USED, E.G INDOORS WITHOUT ADEQUATE AIR CIRCULATION, OR IF NOT PROPERLY WORKING. CO POISONING MAY LEAD TO DEATH.
- NOT FOR DOMESTIC OR RECREATIONAL VEHICLE USE
- THE ELECTRICAL SYSTEM TO WHICH THE APPLIANCE IS CONNECTED MUST COMPLY WITH LOCAL REGULATIONS. A RESIDUAL-CURRENT DEVICE (RCD) MUST BE INSTALLED.
- UNPLUG THE APPLIANCE BEFORE PERFORMING ANY MAINTENANCE OPERATIONS.
- ALWAYS CHECK THE POWER CABLE BEFORE USING THE APPLIANCE. IT MUST NOT BE BENT, TAUT, STRETCHED, CRUSHED OR ANY WAY DAMAGED.
- IF THE POWER CORD AND/OR PLUG IS DAMAGED, IT MUST BE REPLACED BY FANMASTER, A SERVICE AGENT OR A QUALIFIED PERSONS.
- THE FRONT OUTLET IS VERY HOT DURING OPERATION. DO NOT TOUCH! BURN DANGER.
- DO NOT LEAVE THE HEATER UNATTENDED WHEN IN USE.
- NEVER USE THE HEATER WITH WET HANDS OR WHEN EITHER THE HEATER OR THE POWER CABLE IS WET.
- CHILDREN SHOULD BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE HEATER.
- THE HEATER IS NOT INTENDED FOR USE BY PERSONS (INCLUDING CHILDREN) WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES, OR LACK OF EXPERIENCE & KNOWLEDGE.

# 2. PRODUCT DESCRIPTION & SPECIFICATIONS

## PRODUCT DESCRIPTION

Industrial diesel or kerosene portable radiant heater with open combustion chamber.

## SPECIFICATIONS

MODEL	HDR20
Heat Output*	20KW 68,240 BTU
Air Flow (L/s)	165
Fuel Type	Diesel or Kerosene
Fuel Consumption (L/h)	1.7
Fuel Nozzle Size (gph)	0.4
Voltage (V/Hz)	AC220-240V/50
Current Rating (A)	0.46
Electrical Power (W)	110
Net Weight (kg)	18
Tank Capacity (L)	10.5
Operating Range (H)	~6.1

## OPERATING PRINCIPLE

Air flow is necessary to ensure proper combustion, it is supplied by the internal burner fan. The air enters the burner funnel and gets mixed with a high-pressure fuel. The fuel flow is secured by an electrical pump, which sucks the fuel away from the tank and moves it to the nozzle under high pressure.

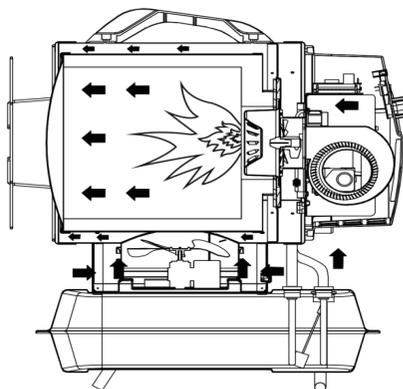
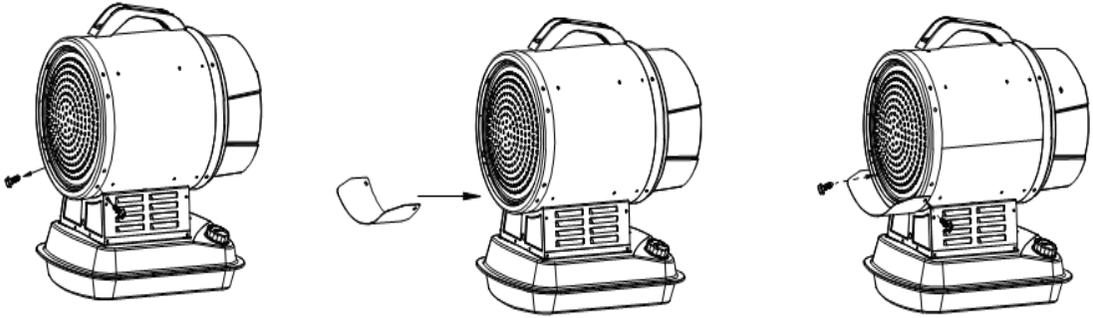


Fig 1.

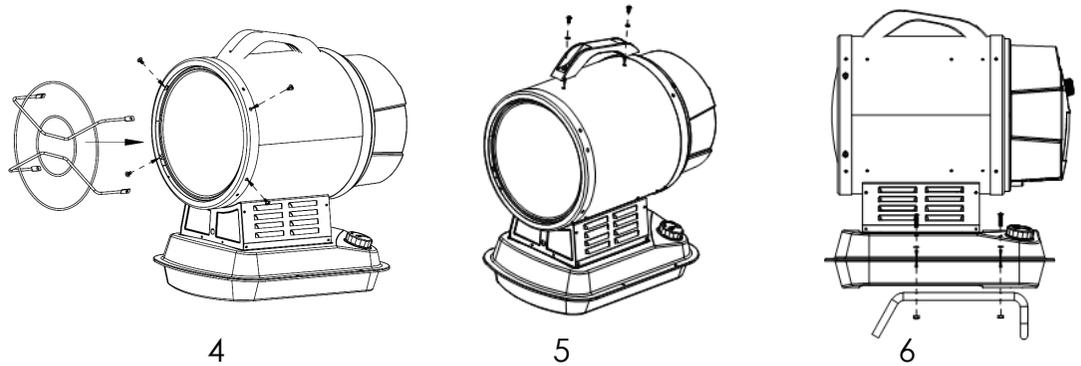
# 3. ASSEMBLING INSTRUCTIONS

Remove the heater from the carton. If the heater is damaged, please contact Fanmaster or where you purchased the heater from.

1. Remove the 2 screws from the front fixed ring
2. Place the protection panel on the bottom
3. Align the holes and fit the 2 screws.



4. Front grill installation - align the 4 holes & fix with screws
5. Handle installation - align the 2 holes & fix with screws
6. Stand feet installation - align the 4 holes & fix with screws



# 4. OPERATING INSTRUCTIONS



- Position the heater on a flat, level, non-flammable & solid surface.
- Only position the heater in the normal upright position (on the wheels)
- Do not place the heater near walls, corners or low ceilings.
- Do not place the heater below a power socket outlet.
- Do not place the heater on moving vehicles or where it can tip over.
- Keep the heater away from flammable, combustible, explosive or corrosive materials.
- Keep the heater away from curtains or similar materials that could block the air inlet and outlet.
- Never block or restrict the air inlet and outlet for any reason.
- Keep the power cable away from heat sources, sharp edges, cutting and moving parts.
- Do not expose directly to the weather or to excessive humidity.
- Do not place the heater in the immediate surroundings of a bath, shower or swimming pool.
- Ensure the following minimum safety clearances from materials or objects in the surroundings of the heater:

Side:	0.6m
Air inlet side:	1m
Top:	1.5m
Hot air outlet side:	3m

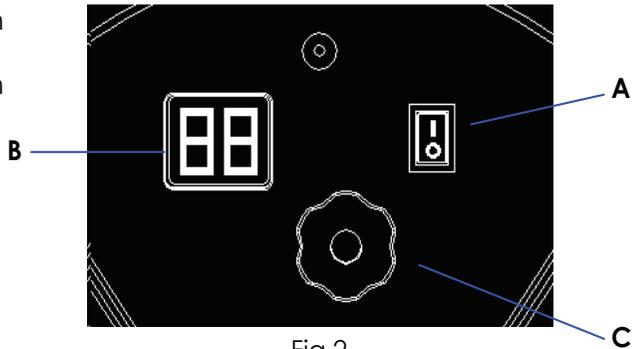


Fig 2.

## START-UP

- Fill the tank with clean fuel. Only use Diesel or Kerosene
- Connect the plug to the relevant power source
- Turn the "ON/OFF" switch to "ON" (I) (Fig 2. A), it will turn on after a few second
- Check position of the thermostat (Fig 2. C)

## SHUTDOWN

- Move switch to "OFF" (O) position.
- Never disconnect the heater from mains to stop it while in operation.
- Always allow the cooling sequence to be completed, otherwise the residual heat could damage internal components.
- Do not cover the heater. Do not block the air inlet and outlet.
- The heater outlet is very hot during operation and after use. Do not touch! Use personal protecting equipment if needed.
- Unplug the heater before moving it. Never pull the cable to unplug or move the unit.

# 5. CLEANING, MAINTENANCE & STORAGE

- Before starting any maintenance task, shut down, unplug and let the heater cool down for at least 15 minutes.
- Do not attempt any electrical repair yourself. If the heater needs service or repair, contact a qualified persons.
- When cleaning, make sure that water does not enter the unit.
- Do not open the enclosure to clean the inner parts. Do not spray water into the heater.
- Never use solvents, gasoline, toluene and similar aggressive chemicals to clean the heater.

Regularly wipe the enclosure using a soft sponge or cloth. For very dirty parts, use a sponge wetted with lukewarm water and a mild detergent, then dry using a clean cloth. Regularly inspect the power cable: if worn, cracked or damaged have it replaced by a qualified persons only.

Before storing the heater, make sure it is perfectly cool and dry. Cover the unit with a blanket or tarp and store it in a dry, ventilated place.

The following checks are recommended before every seasonal use:

## Fuel Filter

- Remove the plug on the fuel tank
- Remove the filter from the tank
- Take out the fuel suction hose
- Clean the fuel suction hose & filter with clean diesel or kerosene
- Replace filter if very dirty

## Fuel Tank

- Empty fuel tank
- Flush out fuel tank with clean fuel & dispose of fuel.

## MAINTENANCE SCHEDULE

PART	FREQUENCY
Fuel Tank	Clean a minimum once a year
Fuel Nozzle	Clean or replace once per season
Fuel Filter	Clean or replace once per season
Photocell	Clean or replace once per season
Ignition Device	Clean or replace every 1000 hours of operation
Fan Blades	Clean as required

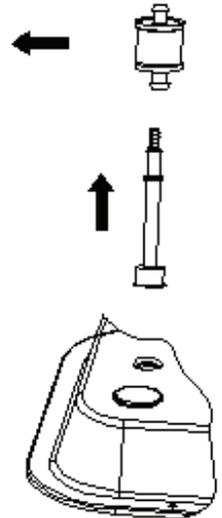
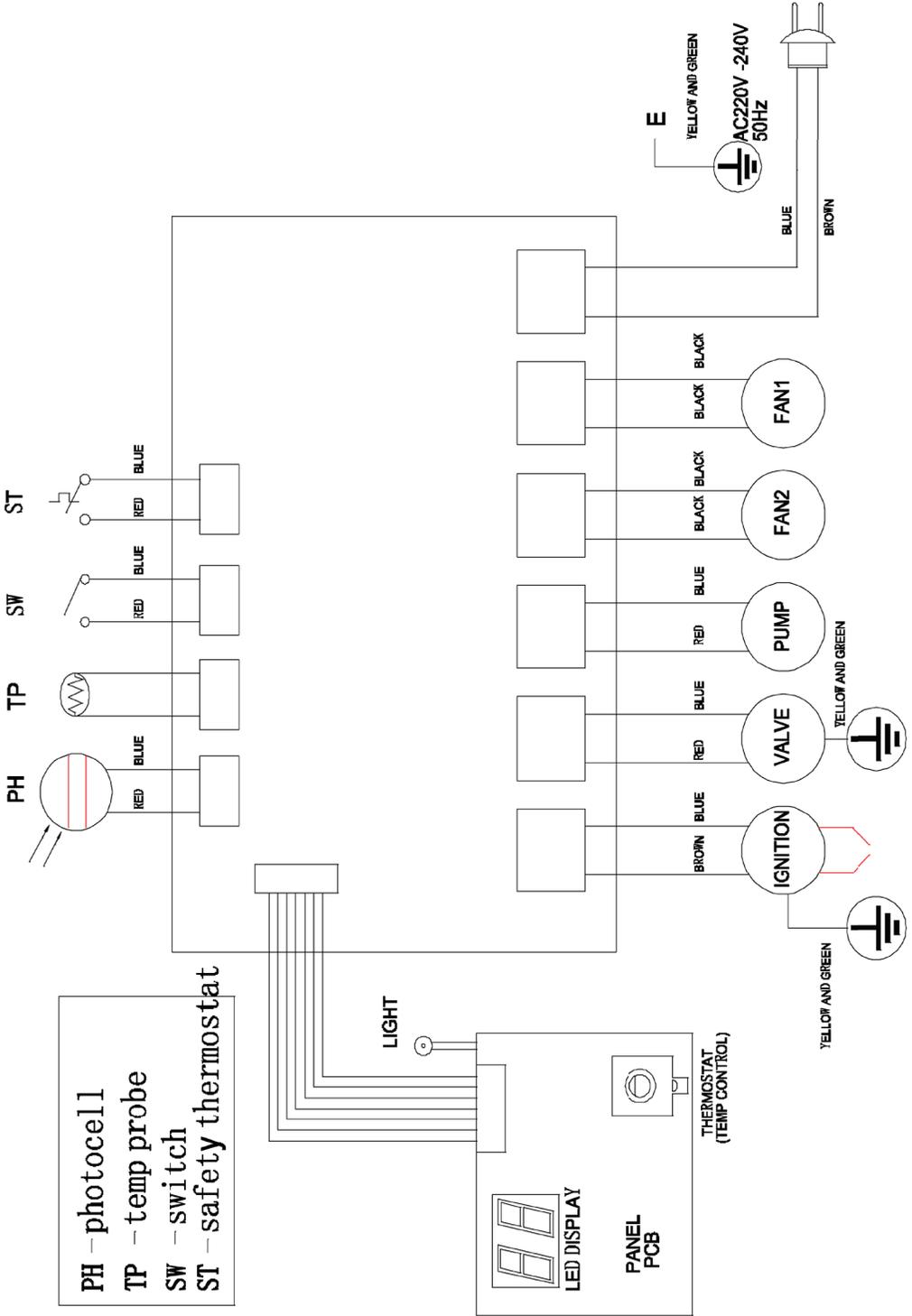


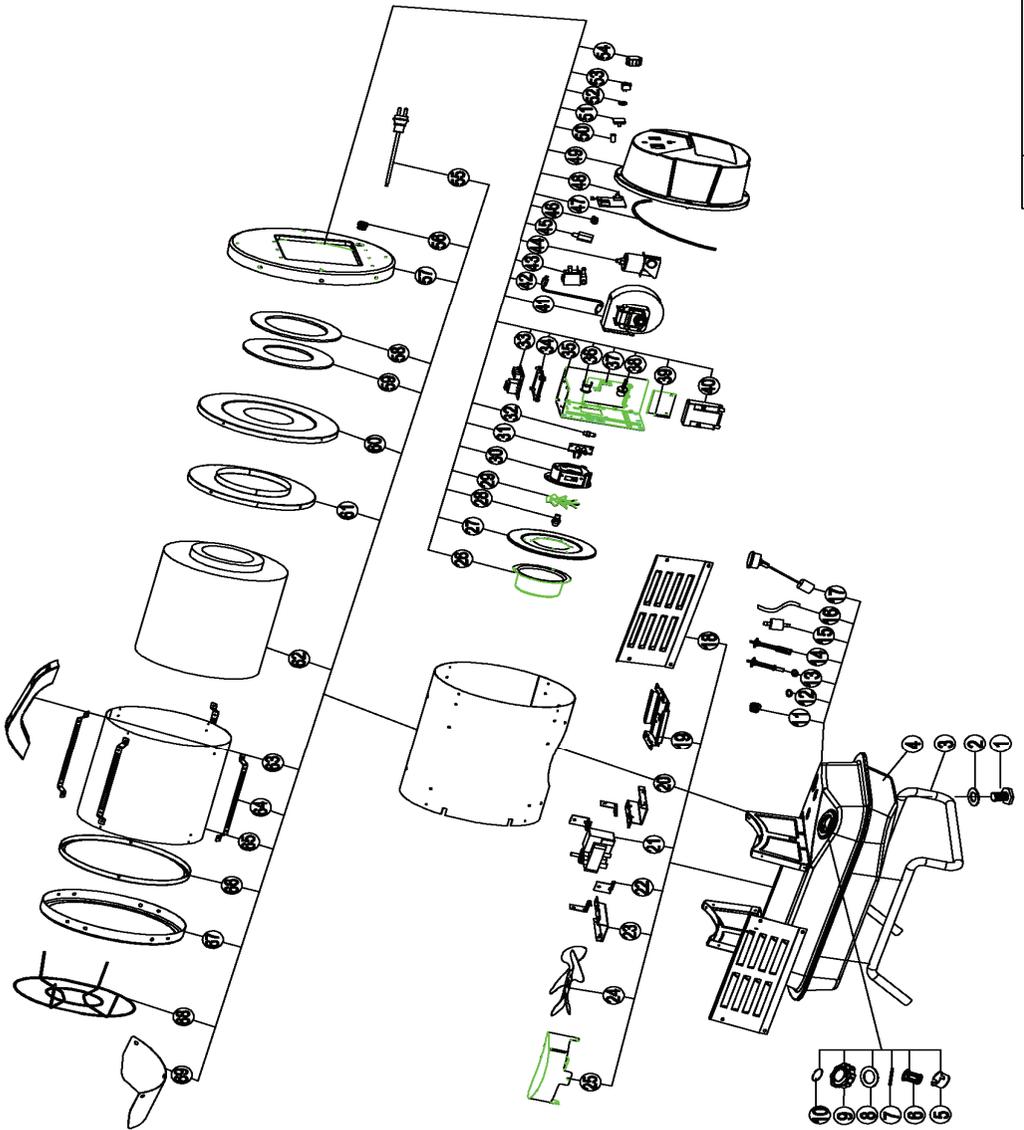
Fig 3.

# 6. WIRING DIAGRAM



# 7. PARTS BREAKDOWN

Key No.	Description	QTY	Key No.	Description	QTY
69	Lower protection	1	34	PCB bracket	1
68	Safety frame	1	33	Power PCB1	1
67	Body front ring	1	32	Burner head connector	1
66	Front cover	1	31	Ignition needle	1
65	Heat insulation casing	1	30	Burner head	1
64	Chamber steel bracket	4	29	Back for combustion chamber	1
63	Head	1	28	Nozzle	1
62	Combustion chamber	1	27	Sealing ring long pins	1
61	Chamber rear cover	1	26	Dilution cap	1
60	Air flow adjustment collar	1	25	Air passage	1
59	Sealing ring 2	1	24	Fan	1
58	Sealing ring 1	1	23	Motor support	2
57	Body rear ring	1	22	Air passage support	4
56	Cable fastener BN-4	1	21	Motor	1
55	Power cord	1	20	Body shell	1
54	Thermocouple adjustment knob	1	19	Support	1
53	On/off switch	1	18	Side plate	2
52	Thermocouple adjustment knob	1	17	Oil leveler	1
51	Display window	1	16	Oil hose	1
50	Light cover	1	15	Oil filter	1
49	Rear plate cover	1	14	Fuel filter Assy	1
48	Display PCB2	1	13	Fuel filter	1
47	Waterproof gasket	1	12	Sealing ring	1
46	Connector for fuel electromagnetic pump connector	1	11	Cable fastener BN-4	1
45	Electromagnetic pump connector	1	10	Breath cover	1
44	Fuel pump	1	9	Fuel tank cap	1
43	Solenoid valve	1	8	Tank cap gasket	1
42	Fuel pipe Assy	1	7	Tank cap shell	1
41	Rotor motor	1	6	Oil inlet filter	1
40	Ignition transformer	1	5	Oil inlet filter rotor	1
39	Bracket of ignition transformer	1	4	Fuel tank	1
38	Procedural Assy	1	3	Tank support	1
37	Processor Assy	1	2	Oil drain seal ring	1
36	Re-set thermocouple	1	1	Oil drain screw	1
35	Support bracket	1			



# 8. TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
<b>FO</b>	The ON/OFF switch is on the turned ON position when plugged in	Disconnect the plug, turn the switch to "O" OFF position. Reconnect the plug & switch heater to "I" ON position.
<b>F1</b>	No Fuel	Turn the switch to "O" OFF, reill the fuel tank.
	Fuel is contaminated	Turn the switch to "O" OFF, empty & refill the fuel tank. Clean the filter using clean fuel.
	Photocell is dirty or damaged	Clean photocell with a soft cloth or tissue
	Fuel Filter is dirty or blocked	Clean fuel filter with clean fuel
	Ignition error	Contact Fanmaster
<b>F2</b>	Damaged cable	Replace or contact Fanmaster
	Sensor is damaged	Replace or contact Fanmaster
<b>F3</b>	Internals overheating	Turn the heater off & wait until the heater has cooled down
	Tilting sensor intervened	Ensure heater is on flat level ground
<b>LO</b>	External Temperature is below -9°C	
<b>CH</b>	Continuous operation (55°C)	

## 8. TROUBLESHOOTING - CONTINUED

PROBLEM	CAUSE	SOLUTION
<b>Heater does not run</b>	The switch is in the "O" OFF position	Turn the switch to "I" ON
	No power	Check the plug is properly connected to the power source. Check the power supply
	Thermostat setting	Adjust the thermostat higher than the ambient temperature
	Temperature sensor override	Wait for 10 minutes & try to start the heater again
	Fuse damaged	Replace fuse
<b>Motor/Pump runs but no flame</b>	No Fuel	Turn the switch to "O" OFF, reill the fuel tank.
	Ignition device is dirty	Check & clean electrodes
	Fuel Filter is dirty or blocked	Clean fuel filter with clean fuel
	Fuel Nozzle is dirty or blocked	Clean fuel nozzle with clean fuel or replace
	Photocell is dirty, damaged or installed incorrectly	Clean photocell with a soft cloth or tissue. Replace if needed
	Dirty fuel	Empty & refill the tank with clean fuel & empty again
<b>Fan blocked or spins to slowly</b>	Fan is damaged	Check & replace fan assembly

# 9. WARRANTY

Any claim under this warranty must be made within 12 months of the date of purchase of the product. To make a claim under the warranty, take the product (with proof of purchase) to the store where you purchased the product or go to <https://www.fanmaster.com.au/warranty-claims-returns>.

This warranty is given by Fanmaster Pty Ltd  
ABN: 45 353 934 457  
Unit 1/6-8 Yalgar Rd, KIRRAWEE NSW 2232  
P: 1300 900 345  
E: [warranties@fanmaster.com.au](mailto:warranties@fanmaster.com.au)

This warranty is provided in addition to other rights and remedies you have under law: Our goods come with guarantees which cannot be excluded under the Australian Consumer Law. You are entitled to replacement or refund for a major failure and to compensation for other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Exclusions: This warranty does not cover:

- Any defects caused by an accident, misuse, abuse, improper installation or operation, lack of reasonable care, unauthorized modification, loss of parts, tampering or attempted repair by a person not authorized by the distributor.
- Any product that has not been installed, operated or maintained to a satisfactory level.
- Any damage caused by improper power input or improper cable connection.









Fanmaster Pty Ltd | 1/6-8 Yalgar Road, KIRRAWEE NSW 2232  
1300 900 345 | sales@fanmaster.com.au | www.fanmaster.com.au



N11664  
MADE IN CHINA