

# Clarke®



## DIESEL/PARAFFIN HEATER

MODEL NO: XR360

PART NO: 6920199

## OPERATION & MAINTENANCE INSTRUCTIONS

UK  
CA | CE



ORIGINAL INSTRUCTIONS

GC06/25

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## **INTRODUCTION**

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Thank you for purchasing this CLARKE product.

Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully.

This is a forced air unit, where a fan pushes the air through the heater body. Proper combustion depends upon this air flow; therefore, the heater must not be modified or operated with parts removed or missing. Likewise, safety systems must not be circumvented or modified in order to operate the heater.

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## **GUARANTEE**

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This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required as proof of purchase. This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

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## **FUNCTION AND OPERATING PARAMETERS**

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This is a multi-fuel (Diesel or Paraffin), forced air heater. It's intended use is for drying and the warming of commercial/industrial buildings where adequate ventilation is provided.

- It must be operated as prescribed in the operating manual.
- It is not intended to be used for domestic use or for the heating of habitable areas.
- It is not intended to be used to reach and maintain a certain level of human thermal comfort within an enclosed space in which the heater is situated.
- It is not intended to be used in enclosed areas with restricted ventilation.
- It is not for use in areas with high levels of fluctuating drafts.
- The heater must be placed on a flat level non combustible surface during operation.
- It is not intended for warming animals or live stock.

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## SAFETY WARNINGS

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**CAUTION: DUE TO THE HIGH SURFACE AND EXHAUST TEMPERATURES, ADULTS, CHILDREN AND ANIMALS MUST KEEP CLEAR OF THE UNIT TO AVOID BURNS OR CLOTHING IGNITION.**

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**Your safety is important to you and to others, so please read these instructions before you operate this heater.**

1. Failure to comply with the precautions and instructions provided with this heater can result in death, serious bodily injury and property loss or damage from the hazards of fire, explosion, burns, asphyxiation, carbon monoxide poisoning, and/or electric shock.
2. Only persons who understand and follow the instructions should use or service this heater.
3. When used, the heater should rest on a non-combustible floor at least 1" thick and extending 3 feet or more beyond the heater in all directions.
4. **NOT** for home or recreational vehicle use.
5. **DO NOT** use petrol or other volatile fuels.
6. Disconnect the heater from the power supply before adding fuel.
7. **ALWAYS** re-fuel outdoors away from any open flame or other sources of ignition.
8. **DO NOT** use an external fuel source.
9. **DO NOT** use the heater where flammable liquids or vapours may be present.
10. **DO NOT** start the heater when the combustion chamber is hot.
11. Plug the electrical cable into a properly grounded mains socket.
12. **DO NOT** leave the heater unattended when in use.
13. **DO NOT** start or use the heater if there is unburned fuel in the combustion chamber.
14. **DO NOT** use if dropped.
15. Check the heater thoroughly for damage. **NEVER** operate a damaged heater.
16. This heater is for indoor use only.
17. **DO NOT** use this heater in the immediate surrounds of a bath, a shower or a swimming pool.
18. **DO NOT** use this heater in small rooms when they are occupied by persons not capable of leaving the room on their own unless constant supervision is provided.

19. Use in well ventilated spaces and provide at least 3 sq. ft. (0.28 sq.m) of air opening of outside air for every 100,000 Btu/hr (30kW) heater rating.
20. **ALWAYS** keep combustibles, like textiles, paper and wood at least 3m from the front of the heater and 1.5 m from the top, sides and rear.
21. Locate the heater 10 ft. (3 m) from canvas or plastic coverings and secure them to prevent movement.
22. Make sure that the heater is not directly exposed to rain or water spray.
23. **NEVER** use in living spaces and/or where children may be present.
24. **DO NOT** use with ductwork. **DO NOT** restrict air inlet or exit.
25. **DO NOT** move or service the heater while hot or in operation.
26. Use only in accordance with local regulations and relevant building codes.
27. This heater is only intended for use in industrial, commercial and building industries, it is **NOT** to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.
28. If the supply cable is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard.
29. **DO NOT** use this heater with a programmer, timer, separate remote control system or any other device that switches the heater on automatically, since a fire risk exists if the heater is covered or positioned incorrectly.

## SAFETY SYMBOLS

The following symbols appear on the heater.

	HOT SURFACE, DO NOT TOUCH		DO NOT COVER
	INDOOR USE ONLY		ALWAYS READ THE MANUAL
	GENERAL WARNING HAZARD		DANGER OF ELECTRIC SHOCK

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## GENERAL PRECAUTIONS

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### VENTILATION

Even though this heater operates very close to 100 percent combustion efficiency, it still produces small amounts of carbon monoxide.

- Carbon Monoxide (CO) is toxic.
- Pregnant women, persons with a heart or lung condition, anaemia or under the influence of alcohol, or those at high altitude, are more likely to be effected by Carbon Monoxide.
- CO can build up in a confined space and failure to provide adequate ventilation can be fatal.

The early symptoms of asphyxiation caused by inadequate ventilation are:

- headache
- nausea
- dizziness
- dry mouth or sore throat

Should anyone show these symptoms, they must **GET FRESH AIR IMMEDIATELY**. Turn off the heater and have it serviced before using again.

Be sure to follow all warnings in this manual.

### **WE RECOMMEND THE USE OF A CARBON MONOXIDE DETECTOR**

#### **BYSTANDERS**

When the heater is to be operated in the presence of other people the user is responsible for informing those present of the safety precautions and of the hazards involved.

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## ENVIRONMENTAL RECYCLING POLICY

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Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

In effect, this means that this product must not be disposed of with general household waste. It must be disposed of according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

# ELECTRICAL CONNECTIONS




**WARNING: READ THESE ELECTRICAL SAFETY INSTRUCTIONS THOROUGHLY BEFORE CONNECTING THE PRODUCT TO THE MAINS SUPPLY.**

Connect the mains lead to a standard, 230 Volt (50Hz) electrical supply through an approved BS1363/A plug fitted with a BS1362 7 amp fuse.

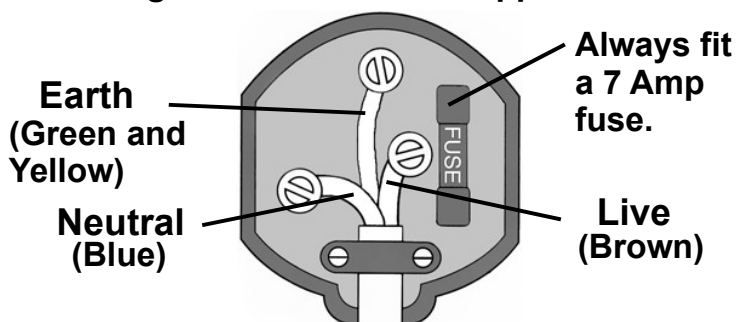
If the plug has to be changed because of damage, it must be removed and a replacement fitted, following the wiring instructions shown below. The old plug must be discarded safely, as insertion into a power socket could cause an electrical hazard.



**WARNING: WIRES IN THE MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE:  
GREEN/YELLOW = EARTH, BLUE = NEUTRAL, BROWN = LIVE.**

- The BLUE wire must be connected to the terminal marked N or coloured black.
- The BROWN wire must be connected to the terminal marked L or coloured red.
- The YELLOW AND GREEN wire must be connected to the terminal marked E or  or coloured green.

**Plug must be BS1363/A approved.**



**Ensure that the outer sheath of the cable is firmly held by the clamp**

**We strongly recommend that this machine is connected to the mains supply through a Residual Current Device (RCD)**

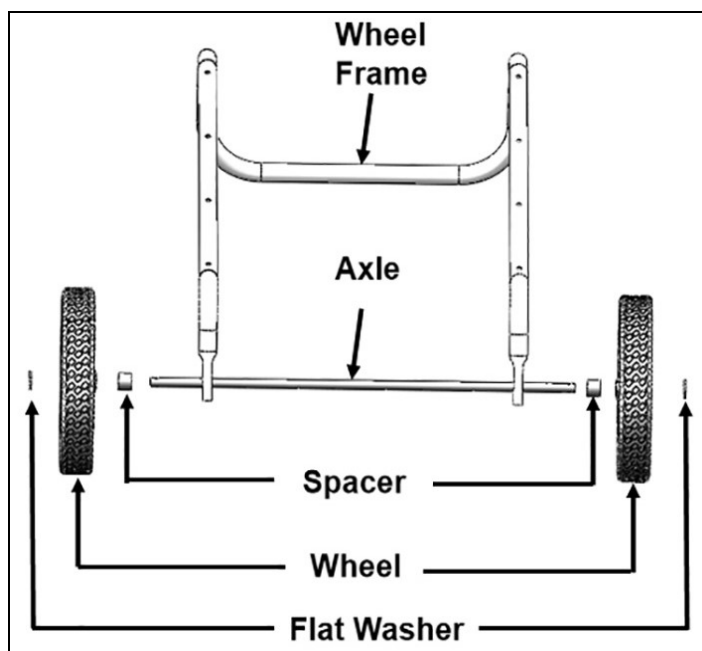
**If you are not sure, consult a qualified electrician. DO NOT try to do any repairs.**

## PREPARATION

Remove heater from crate and remove all protective material which may have been applied to the heater for shipment.

### ASSEMBLY

1. Pass the axle through the wheel frame as shown.
2. Fit a spacer onto each end.
3. Fit a wheel on to each end.
4. Fit a flat washer onto each end.
5. Secure in place by inserting a split-pin into the hole at the end of the axle.



6. Place the assembly into position and secure using four 35 mm bolts and nuts provided (2 each side).

### FUEL TYPES

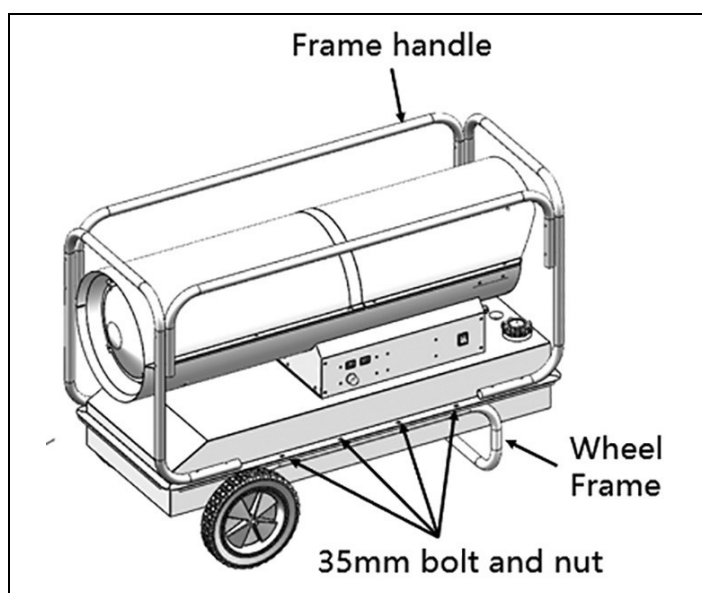
Diesel or paraffin are the only fuels that should be used in this heater.

### FILLING THE FUEL TANK

***IMPORTANT: Before filling the fuel tank the first time or after extended storage periods, drain the fuel tank of any moisture or condensation.***

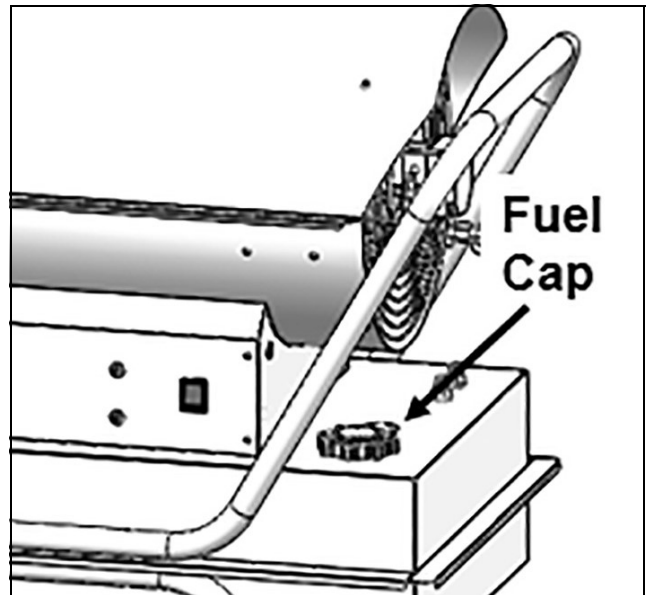
1. Follow all of the "Safety Warnings" on pages 3-4 of this manual.
2. Remove the fuel cap.

**NOTE:** If you lose the fuel cap a replacement must be obtained before use. This is available from your local CLARKE service department.



3. Fill the fuel tank with clean diesel or paraffin.

- In cold weather, condensation may develop in the tank if the tank is empty and it is recommended that a tablespoon of de-icer be added for each gallon of fuel in the tank.
- When filling the heater, make sure that the heater is level and do not overfill. Use a funnel or can with a long fill spout.
- **Fill with a minimum of 19 litres of fuel at all times to avoid fuel starvation if the supply is exhausted.**
- **ALWAYS** clean up any fuel spillages before starting the heater.



## HEATER LOCATION

- Locate heater at a safe distance from combustible materials.
- When used, the heater should rest on suitable non-combustible floor extending 3 ft or more beyond the heater in all directions.
- Only operate on a flat level and stable surface.



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# OPERATION

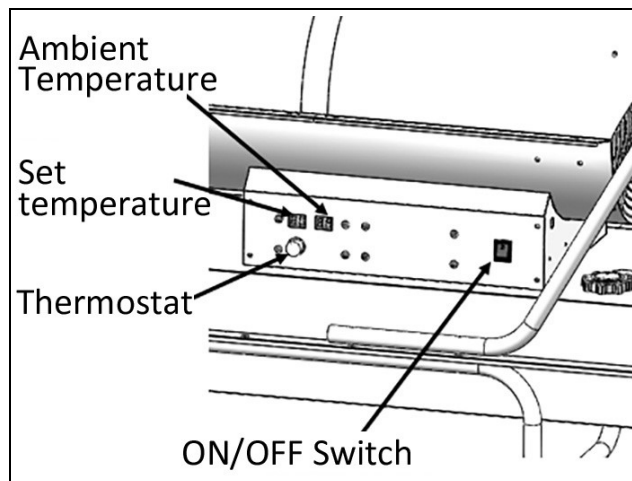
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## START UP



**WARNING: DO NOT START THE HEATER WHEN EXCESS FUEL HAS ACCUMULATED IN THE COMBUSTION CHAMBER.**

1. Make sure power switch is in the OFF position.
2. Plug the heater into the mains power supply.
3. Start heater by setting the power switch to the ON position.
4. Turn the thermostat control knob to the desired temperature as shown on the display. After waiting for several seconds, the heater starts.



## SHUT DOWN

1. Set the power switch to the OFF position.
2. For extended shut-down unplug the heater from the mains supply.
  - **DO NOT** 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.

## BEFORE STORAGE

- Clean the heater as described in the MAINTENANCE section on page 10.

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# MAINTENANCE

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**WARNING: TO PREVENT PERSONAL INJURY, UNPLUG THE HEATER FROM THE MAINS SUPPLY BEFORE SERVICING**

**WARNING: BEFORE STARTING ANY MAINTENANCE TASK, SHUT DOWN, UNPLUG AND LET THE HEATER COOL DOWN FOR AT LEAST 15 MINUTES.**

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## DAILY CHECKS

1. Make a general visual inspection of the heater for loose or damaged parts.
2. Damaged parts should be repaired or replaced before using the heater again.
3. Check heater operation to be sure it is operating normally as follows:
  - The flame is contained within the heater.
  - The flame is essentially yellow.
  - There is no disagreeable odour, eye burning or other physical discomfort.
  - There is no smoke or soot internal or external to the heater.

## GENERAL

- Regularly wipe the cover 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.
- Keep air inlet and fan free from dust and dirt. To clean inner parts, gently blow compressed air through air inlet. (Wear eye protection if using compressed air).
- Regularly inspect the power cable. If worn, cracked or damaged have it replaced by technical service.
- When cleaning, make sure that water does not enter the unit.
- **DO NOT** open the enclosure to clean the inner parts.
- Never use solvents, gasoline, toluene and similar aggressive chemicals to clean the heater.
- Clean twice a season. Drain and flush the fuel tank with clean fuel.

**NOTE:** The following checks BY QUALIFIED PERSONNEL ONLY are recommended before every seasonal use:

**NOTE: DO NOT** attempt any electrical repair yourself. If the heater needs service or repair, contact a qualified technician or CLARKE service department.

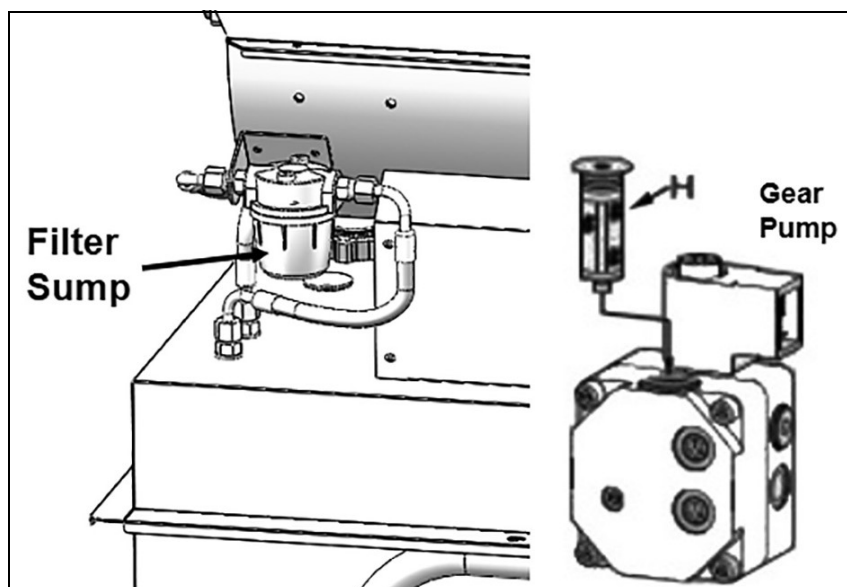
## FUEL FILTERS

Clean fuel filters by unscrewing the filter tray anticlockwise.

Remove the filter cartridge and wash it with petrol or replace it if necessary.

Check the seal O-ring and replace it if necessary. Reassemble the sump.

The fuel filter installed on the gear pump should be cleaned or replaced if necessary by unscrewing cap H.



## EXTRACT THE BURNER HEAD

### BURNER BLADES

Clean the burner blades by using a brush and then blowing compressed air onto them. (Wear eye protection if using compressed air). To get good combustion, the air flow openings in the whirl disc should be perfectly clear.

### NOZZLE

Carefully unscrew the nozzle from the nozzle fitting. Blow compressed air through the nozzle orifice to free it from dirt. (Wear eye protection if using compressed air)

Replace the nozzle if necessary.

### IGNITION ELECTRODES

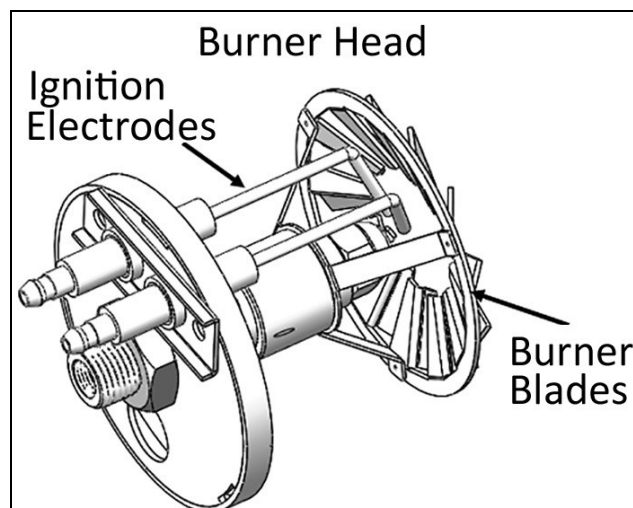
Clean, adjust and if necessary replace the ignition electrode.

### ELECTRICAL INSPECTION

Inspect cables, electrical parts and connections.

## STORAGE

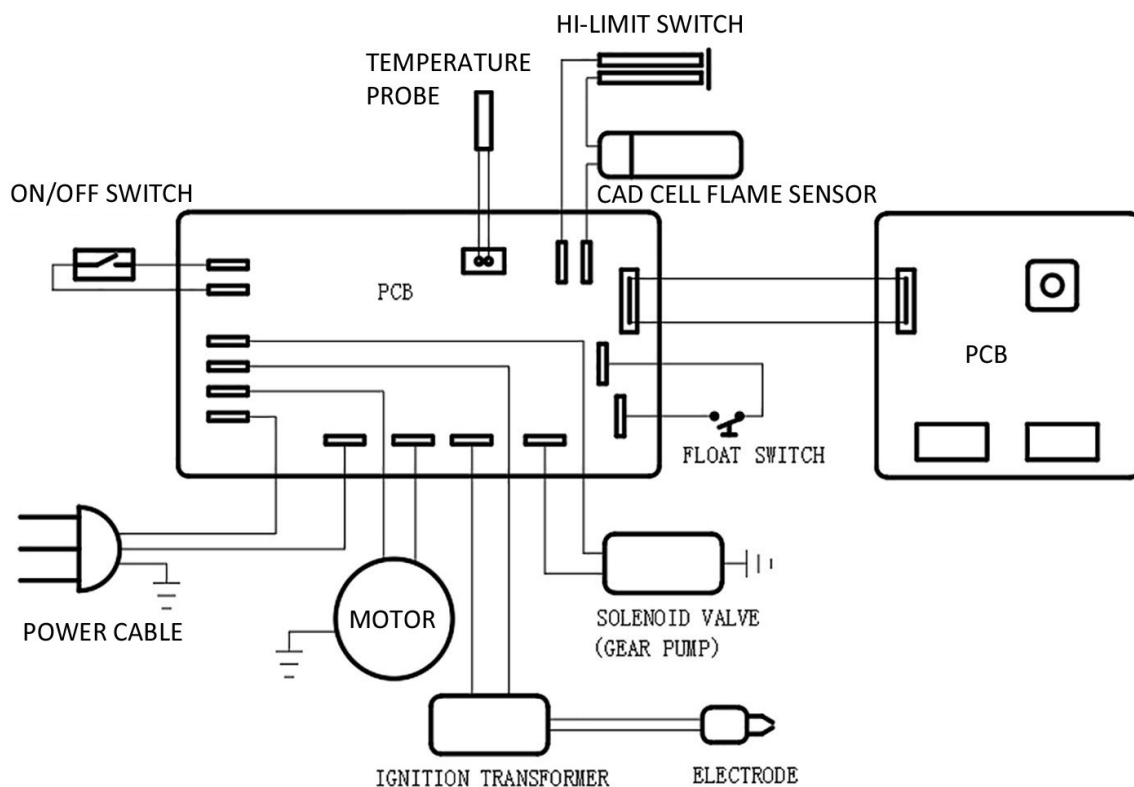
1. Drain any residual fuel / condensate from the fuel tank.
2. Before storing the heater, make sure it is perfectly cool and dry. Cover the unit with a plastic bag, put it in its packing box and store it in a dry, ventilated place.



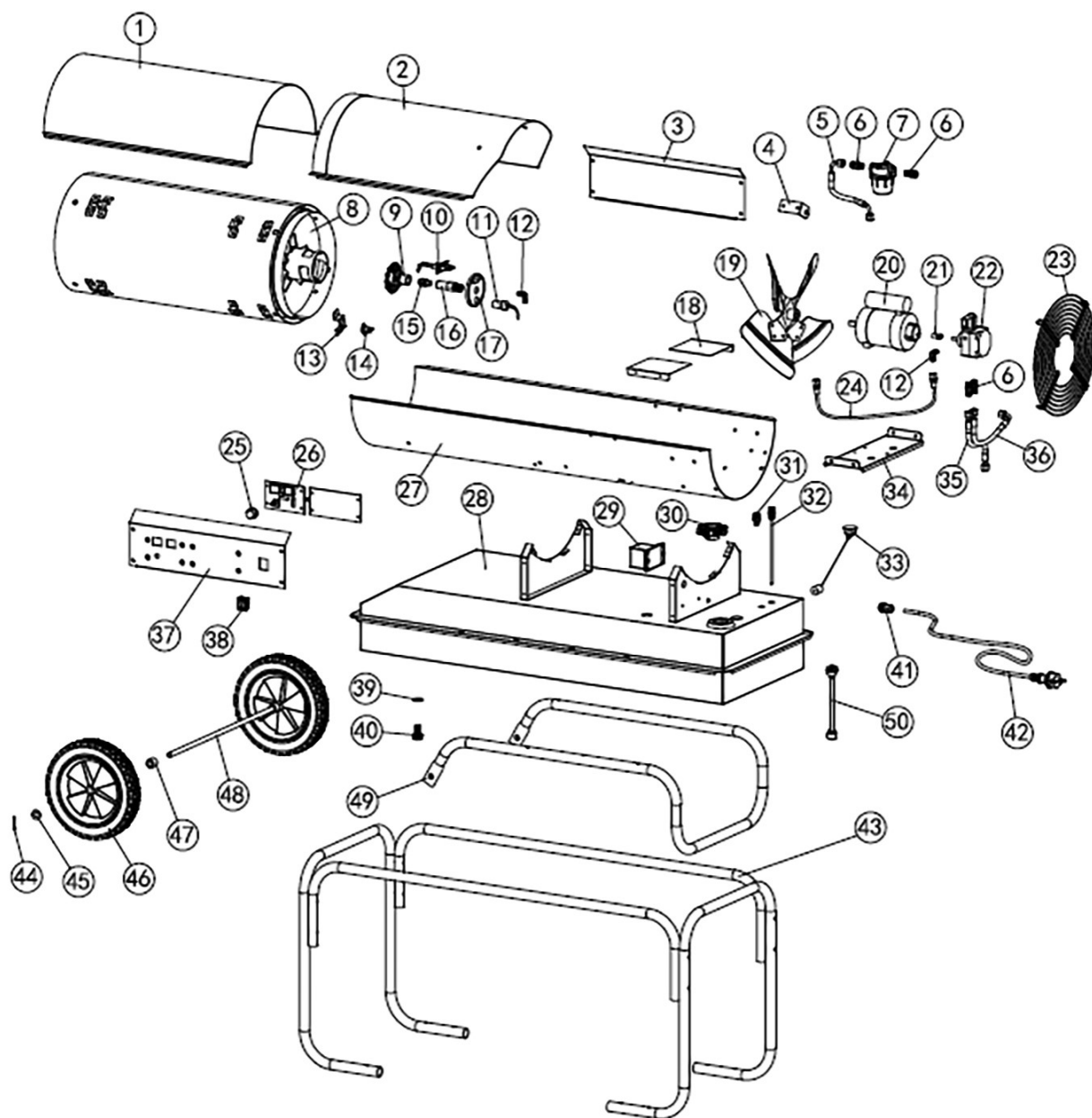
## TROUBLESHOOTING

LED	OPERATION	TROUBLE SHOOTING
E1	1. No flame detected 2. High limit switch failure (unit over-heated)	1 Heater fails to start. Check fuel level and that fuel cut-off switch is correctly set. 1.1 Check the mains plug is correctly fitted and that the fuse inside if has not blown. 1.2 Restart 1.3 Return to supplier for service. 2. Make sure heater is cooled down, 2.1 Make sure that the power switch is set to the OFF position. 2.2 Wait 5 minutes 2.3 Start heater by setting the power switch to the ON position.
E2	Temperature sensor open or error	Check whether the temperature sensor is loose/ re-tighten connections
E3	Low fuel level	Refuel heater
E4	Flame sensor failure	Return to CLARKE service department for repair.

## WIRING DIAGRAM



# COMPONENT PARTS



1	Top shell-front
2	Top shell-rear
3	Right panel
4	Fuel filter support
5	Fuel pipe A
6	Fuel filter joint
7	Fuel filter
8	Combustion chamber
9	Swivel disc

18	Air balance plate
19	Fan
20	Motor
21	Gear pump coupling
22	Gear pump
23	Fan guard
24	High pressure pipe
25	Thermostat knob
26	Flame control

35	Fuel pipe B
36	Fuel pipe C
37	Left panel
38	ON/Off switch
39	Oil drain seal ring
40	Oil drain screw
41	Strain relief bush
42	Power cable
43	Handle

10	Ignition electrode
11	Cad cell flame sensor
12	Elbow connection
13	Hi-limit switch support
14	Hi-limit switch
15	Nozzle
16	Nozzle support
17	Nozzle baseplate

27	Bottom shell
28	Fuel tank
29	Transformer
30	Fuel cap
31	Fuel pipe joint
32	Fuel draw pipe
33	Fuel gauge
34	Motor support

44	Split pin
45	Flat washer
46	Wheel
47	Spacer
48	Axle
49	Frame
50	Fuel level switch

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## SPECIFICATIONS

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Model	XR360
Fuel type	Diesel or paraffin
Burn Rate	105 kW
Fuel consumption:	9.8 L/hr
Approx Running Time:	7 hr
Pump pressure	15 bar
Electrical input:	230V ~ 50Hz
Heat Output	105 kW
Fuel Tank Capacity:	70 L
Ignition system:	Electric Ignition
Primary Safety Controls	Flame failure device & thermal cutout
Ingress Protection	IPX0
Weight (kg)	46.5 kg
Dimensions (DxWxH)mm	1125 x 590 x 780 (wheels & handle fitted)
Minimum Fuel Level for startup	19 L

# DECLARATIONS OF CONFORMITY



Hemnal Street, Epping, Essex, CM16 4LG

## DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation:


*The Ecodesign for Energy-Related Products Regulations 2010*  
*The Electromagnetic Compatibility Regulations 2016*  
*The Electrical Equipment (Safety) Regulations 2016*  
*The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012*

The following standards have been applied to the product(s):

EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019, EN IEC 61000-6-2:2019,  
EN 61000-3-3:2013+A1:2019+A2:2021, EN IEC 61000-3-2:2019+A1:2021, EN IEC 61000-6-4:2019,  
IEC 62321-4:2013+AMD1:2017, IEC 62321-7-1:2015, IEC 62321-7-2:2017, EN 60335-2-102:2016,  
IEC 62321-3-1:2013, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-8:2017, EN 13842:2004,  
EN 62233:2008

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The UKCA mark was first applied in: 2024

Product Description: Space Heater  
Model Number(s): XR360  
Serial/Batch Number: Refer to product/packaging label  
Date of Issue: 12/11/2024  
Signed: 

J.A. Clarke  
Director

XR360 UKCA Clarke DOC 111224

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Fitzwilliam Hall, Fitzwilliam Place, Dublin 2

## DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation:

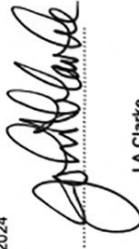
*Ecodesign Directive*  
*Electromagnetic Compatibility Directive*  
*Low Voltage Directive*  
*Restriction of Hazardous Substances (RoHS) Directive*

The following standards have been applied to the product(s):

EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019, EN IEC 61000-6-2:2019,  
EN 61000-3-3:2013+A1:2019+A2:2021, EN IEC 61000-3-2:2019+A1:2021, EN IEC 61000-6-4:2019,  
IEC 62321-4:2013+AMD1:2017, IEC 62321-7-1:2015, IEC 62321-7-2:2017, EN 60335-2-102:2016,  
IEC 62321-3-1:2013, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-8:2017, EN 13842:2004,  
EN 62233:2008

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2024

Product Description: Space Heater  
Model Number(s): XR360  
Serial/Batch Number: Refer to product/packaging label  
Date of Issue: 12/11/2024  
Signed: 

J.A. Clarke  
Director

XR360 CE Clarke DOC 111224

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# A SELECTION FROM THE VAST RANGE OF

# Clarke®

## QUALITY PRODUCTS



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## PARTS & SERVICE:

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